FINAL

ENVIRONMENTAL IMPACT REPORT

Almaden / Chynoweth Project

PDC 96-02-011

Application by

Arcadia Development Company

June 25, 1998 96 - 011

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CITY OF SAN JOSE

INTRODUCTION

This Environmental Impact Report (EIR) was prepared to conform to the California Environmental Quality Act (CEQA), adopted Guidelines thereto, and Title 21 of the San Jose Municipal Code.

The report covers Arcadia Development Company's Planned Development (PD) rezoning application and subsequent approvals for the construction of a maximum of 350,000 square feet of commercial space, or up to a maximum of 400 units or any equivalent combination of commercial and residential uses that conforms to the City's Transportation Level of Service Policy (5-3), on approximately 43.5 acres on the northeasterly quadrant of Almaden Expressway and State Route 85 (S.R. 85).

A Draft Environmental Impact Report was prepared and circulated for public review from March 6, 1998 to April 20, 1998. Written comments were received and responses to the comments and text amendments were prepared. The report was reviewed at a public hearing before the City of San Jose Planning Commission on June 24, 1998.

Copies of the comments and responses, the text amendments, and records of the public hearing are included with this report. The text amendments have been incorporated into this report. The Planning Commission found that the EIR was complete and in compliance with CEQA.

The Final Environmental Impact Report is comprised of the following:

- Draft EIR - March 3, 1998
- First Amendment - June 5, 1998
  Written comments, responses and text amendments
- Final Amendment - June 25, 1998
  Summary of the June 24, 1998 Planning Commission Hearing

The City of San Jose, as Lead Agency, is expected to use this EIR in its decision making process for discretionary approvals.

An Environmental Impact Report is an informational document which, when fully prepared in accordance with the CEQA and State CEQA Guidelines, will inform public decision makers and the general public of the environmental effects of projects they propose to carry out or approve. The EIR process is intended to enable public agencies to evaluate a project to determine whether it may have a significant effect on the environment, to examine and institute methods of reducing adverse impact, and to consider alternatives to the project as proposed. These things must be done prior to approval of the project. While CEQA requires that major consideration be given to preventing environmental damage, it is recognized that public agencies have obligations to balance other public objectives, including economic and social factors, in determining whether and how a project should be approved.

As defined in the State CEQA Guidelines, the standards for adequacy of an EIR are that it should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes into account environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement. The courts have not looked for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

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SUMMARY

PROJECT DESCRIPTION

The project is a Planned Development zoning application for the construction of a maximum of 350,000 square feet of commercial space, or up to a maximum of 400 units or any equivalent combination of commercial and residential uses that conforms to the City's Transportation Level of Service Policy (5-3), on approximately 43.5 acres on the northeasterly quadrant of Almaden Expressway and State Route 85.

POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

The project has several potentially significant environmental impacts that warrant detailed review through the EIR process. These impacts and their level of significance are listed below followed by a discussion of each.

	Unavoidable Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact without Mitigation
Land Use	●		
Geology, Soils and Seismic Effects		●	
Vegetation and Wildlife		●	
Waterways and Flooding			●
Water Quality		●	
Energy		●	
Cultural Resources		●	
Traffic		●	
Noise		●	
Air Quality	●		
Hazardous Materials		●	
Visual Impacts			●
Sanitary Sewers			●
Wastewater Treatment			●
Water Supply			●
Storm Drainage Facilities			●
Solid Waste			●
Gas, Electric and Telephone			●

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IMPACT	MITIGATION
Land Use The project site consists of fallow agricultural land. A complex of buildings in the southwesterly corner along Almaden Expressway is utilized for the production and sale of agricultural products. There are two existing wells on the site. The project would change the land use and zoning on the site from agricultural to commercial and/or residential use, which are compatible with the surrounding area; however, the proposed commercial use on the site could potentially conflict with the proposed onsite residential use. Development of the site would result in the loss of prime farmland. **Significant Impact**	Land use impacts would be reduced by the sealing of the wells in accordance with Santa Clara Valley Water District standards and by the implementation of specific commercial design and operation components. There is no mitigation for the loss of prime farmland. **Unavoidable Significant Impact**
Geology, Soils and Seismic Effects The project site is underlain by highly expansive soils and development of the site may subject the soils to accelerated erosion. There are no identified earthquake faults on the site; thus, the probability of ground rupture due to an earthquake is low. Ground shaking at this site could be caused by moderate to major activity on the active Bay Area faults, which could endanger structures and occupants/residents on the site. **Significant Impact**	Expansive soils and erosion hazards and seismic shaking impacts would be reduced by the implementation of commonly used mitigation measures including special foundations systems, pre-moisturizing programs, control of drainage, construction erosion control measures and the Uniform Building Code requirements regarding the design and construction of buildings to resist earthquake forces. **Less-Than-Significant Impact with Mitigation**

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IMPACT	MITIGATION
Vegetation and Wildlife The project site has been previously utilized for agricultural row crops; however, no crops were planted in 1997. A total of 33 trees were tagged and evaluated on the site, located in the northerly portion and in the southwesterly corner as well as riparian vegetation located in the northeasterly portion along the Guadalupe River. Project development could impact trees, the riparian corridor, burrowing owls (although no evidence of occupation or use was observed during 1995, 1996 and 1998 surveys) and active raptor nests (although none was observed during 1996 surveys). **Significant Impact**	Impacts to vegetation and wildlife would be reduced by the implementation of the San Jose Tree Ordinance, the addition of new trees, the provision of a riparian corridor setback along the northeasterly boundary, pre-construction surveys for burrowing owls by a qualified ornithologist prior to construction and the development and implementation of a burrowing owl mitigation program if owls are discovered using the site, and a pre-construction survey for nesting raptors by a qualified ornithologist prior to construction and no disturbance to active raptors nests if discovered. **Less-Than-Significant Impact with Mitigation**
Waterways and Flooding There are no waterways on the project site; however, the Guadalupe River is located along the northeasterly and easterly site boundaries. The site would not be subject to inundation in the event of a 100-year flood. **Less-Than-Significant Impact**	None required.
Water Quality The project site currently drains to the adjacent Guadalupe River. Project development would not significantly impact surface or groundwater quality in the area. Construction-related activities such as clearing, grading, or excavation could result in potentially significant temporary impacts to water quality. **Significant Impact**	Water quality impacts would be reduced by the implementation of the stormwater discharge requirements in compliance with the NPDES General Permit and the Stormwater Pollution Prevention Plan and post-construction erosion control plan, the timing of grading activities, construction erosion control measures and the damp sweeping and washing down of streets. **Less-Than-Significant Impact with Mitigation**

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IMPACT	MITIGATION
Energy California and the nation in general are subject to increasingly higher energy costs and depletion of non-renewable energy resources. Project development would increase the energy demand. **Significant Impact**	Energy impacts would be reduced by the implementation of the provisions of Title 24 of the California Administrative Code requiring energy efficient design. **Less-Than-Significant Impact with Mitigation**
Cultural Resources The project site is in a potential archaeological resource zone; however, there are no recorded sites located on the property, no known Native American burials, and a reconnaissance of the site did not locate any cultural resources. Except for a prehistoric isolate found on the surface during extensive subsurface testing operations, no evidence of significant archaeological resources was found on the surface or to an average depth of 6.5 feet. A 19th century farm owned by George Greenawalt was located on the project site; extant structures dating to the subsequent Cassibba and Malech occupation have been determined not to be historically or architecturally significant. There is still a possibility that small or isolated prehistoric and/or historic subsurface deposits may exist. Disturbances due to grading and trenching operations may result in potentially significant prehistoric and/or historic archaeological impacts. **Significant Impact**	Impacts to prehistoric and/or historic archaeological resources would be reduced by the implementation of State laws regarding the discovery of human remains and a subsequent archaeological mitigation program, if isolated resources are found during construction. **Less-Than-Significant Impact with Mitigation**

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IMPACT	MITIGATION
Traffic Eleven intersections that would be affected by the project were analyzed, five of which are projected to operate below Level D with existing plus approved projects. Project development would generate approximately 11,000 daily trips. The addition of project traffic would not cause any additional intersections to operate below Level D; the p.m. peak hour level of service at the intersection of Almaden Expressway and Cherry Avenue/Chynoweth Avenue would remain at Level F with the addition of project traffic, but the critical volume is expected to increase by more than one percent. **Significant Impact**	Traffic impacts would be reduced by the implementation of specified improvements to the intersection of Almaden Expressway and Cherry Avenue/Chynoweth Avenue and by the contribution toward the construction of the Chynoweth Avenue bridge over the Guadalupe River. **Less-Than-Significant Impact with Mitigation**
Noise Noise intrusion over the project site originates primarily from vehicular traffic sources on Almaden Expressway and on S.R. 85, and from loading dock and mechanical equipment sources at the adjacent Pak 'n Save store. Traffic noise from the future extension of Chynoweth Avenue would also add to the site's noise environment. Projected future exterior noise levels at the planned commercial area would exceed the City standard of 60 dB DNL; however, noise sensitive exterior uses are not anticipated. Operations and mechanical equipment noise from the existing commercial use at the northwesterly corner of the project site (Pak 'n Save) exceeds the City standards by 15 dB DNL and the Title 24 criterion by 10 dB DNL at the planned residential portion of the project, and projected future noise levels from combined traffic sources at the planned residential area would exceed the City exterior and interior	Vehicular traffic and mechanical equipment noise impacts would be reduced by the implementation of a detailed acoustical study that would specify required mitigation measures for any onsite residential area at the PD Permit stage, increased residential setbacks from the existing offsite commercial use (Pak 'n Save), a detailed acoustical study at the PD Permit stage to ensure that commercial noise sources would not exceed standards, and the regulation of equipment noise levels and hours of construction; and by side yard noise attenuation fences and specified STC rated windows at affected homes on the section of Chynoweth Avenue across the Guadalupe River as part of the bridge project. **Less-Than-Significant Impact with Mitigation**

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IMPACT	MITIGATION
standards and Title 24 by up to 8 dB DNL. Project-generated operations and mechanical equipment noise from the planned commercial portion could adversely impact the planned residential portion of the project. Project construction would result in temporary noise impacts. Vehicular traffic noise from the Chynoweth Avenue bridge "connection" would exceed City exterior and interior standards by up to 5 dB DNL at existing offsite residences on the easterly side of the Guadalupe River, within 120 feet of the bridge. **Significant Impact**	
Air Quality There are no existing sources on the project site that currently adversely affect local air quality. The addition of project traffic would not exceed State CO standards; however, total daily vehicular emissions of carbon monoxide, reactive organic gases, nitrogen oxides and particulates would exceed BAAQMD significance thresholds. Temporary particulate impacts would also be generated from construction dust during grading. **Significant Impact**	Temporary construction dust impacts would be reduced by the development and implementation of a Construction Air Quality Plan. There are no mitigation measures available for the project-generated air quality impact. **Unavoidable Significant Impact**

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IMPACT	MITIGATION
Hazardous Materials Pesticides in the form of DDT and its derivatives, and Dieldrin, as well as lead and mercury from the previous agricultural operations were detected in samples throughout the site; however, the detected levels are below EPA PRG levels and are not significant. Neither arsenic nor petroleum hydrocarbons were detected on the site. Four aboveground storage tanks (ASTs) used for water, pesticides and/or fertilizer were observed on the site, and two existing wells are located on the site. **Significant Impact**	Hazardous materials impacts would be reduced by the sealing of the wells in accordance with Santa Clara Valley Water District standards and by the removal and disposal of the ASTs prior to site development. **Less-Than-Significant Impact with Mitigation**
Visual Impacts Current views of the site are primarily of fallow agricultural land with a fruit stand, two houses and several agricultural buildings in the southwesterly corner. Several trees are located in the area of the buildings, in the northerly corner and along the Guadalupe River frontage. Development of the site would change the existing views by introducing commercial and/or residential buildings, roadways, parking areas and landscaping that would be visible from Almaden Expressway, S.R. 85 and Chynoweth Avenue; however, specific program elements incorporated in the project would eliminate any adverse visual impacts. **Less-Than-Significant Impact**	None required.

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IMPACT	MITIGATION
Sanitary Sewers There are existing City sanitary sewer collector lines adjacent to the project site that are available and adequate to serve the project. **Less-Than-Significant Impact**	None required.
Wastewater Treatment The San Jose-Santa Clara Water Pollution Control Plant has an existing capacity of 167 MGD and it is currently processing an estimated 135 MGD of dry weather flow. At the same time, the WPCP is currently operating under a 120 MGD dry weather flow trigger. This requirement is based upon the State Water Resources Board and the Regional Water Quality Control Board (RWQCB) concerns of the effects of additional freshwater discharges on the salt-water marsh habitat, and pollutants loading to the South Bay from the WPCP. The project is estimated to generate approximately 0.03 MGD (commercial) or approximately 0.05 MGD (residential) of effluent. **Less-Than-Significant Impact**	None required.
Water Supply Water service for the area is provided by the San Jose Water Company. Existing water service facilities adjacent to the site are available and adequate to serve the project. The project is estimated to require approximately 35,000 gallons of water per day (commercial) or approximately 91,600 gallons per day (residential). **Less-Than-Significant Impact**	None required.

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IMPACT	MITIGATION
Storm Drainage Facilities The project site currently drains naturally to the Guadalupe River to the north. Project development would increase the amount of stormwater runoff. A large City storm drainage culvert in (future) Sanchez Drive that outfalls to the Guadalupe River is available to serve the project. **Less-Than-Significant Impact**	None required.
Solid Waste There are several solid waste disposal companies available for commercial purposes in San Jose, and residential solid waste disposal service for San Jose is provided by GreenTeam of San Jose and/or Western Waste Industries. Solid waste disposal capacity is available at the Newby Island and Kirby Canyon sanitary land-fills. The City's residential recycling program is resulting in an approximately 55 percent reduction in residential solid waste that previously required disposal in a landfill. The increase in solid waste generated by project development would not constitute a significant impact. **Less-Than-Significant Impact**	None required.
Gas, Electric and Telephone Gas and electric services in the area are provided by Pacific Gas & Electric Company; and telephone service is provided by Pacific Bell. The increase in demand for these services generated by project development would not constitute a significant impact. **Less-Than-Significant Impact**	None required.

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IMPACT *MITIGATION*

CUMULATIVE IMPACTS

There are currently no pending projects in the vicinity; therefore, there are no cumulative development impacts to be analyzed. The projects that were pending at the time of preparation of the Draft EIR are now all approved.

Guadalupe River Watershed Planning Study

The proposed project site is located within Reach 12 of the Santa Clara Valley Water District's Guadalupe River watershed project. The flood control project plans indicate that an off-stream percolation pond and associated wetlands revegetation area as well as riparian revegetation on the west side of the Guadalupe River are proposed to be located on the residential portion of the project site. Improvements proposed south of future Chynoweth Avenue would not impact the project site. The Guadalupe River project, as proposed, would require right-of-way acquisition of a portion of the proposed project site. Plans are currently being made to facilitate such right-of-way acquisition by the Water District.

The proposed project is not consistent with the Santa Clara Valley Water District planned flood control project as it impacts proposed flood control improvements for Reach 12, and could also affect implementation of the General Plan designated Guadalupe River Trail Corridor along the west bank of the river.

Not Consistent

ALTERNATIVES

The following alternative land uses: 1) No Project and 2) Reduced Project are evaluated. The "No Project" and the Reduced Project alternatives are the "environmentally superior" alternatives.

VIEWS OF LOCAL GROUPS

Vista Park homeowners expressed concern regarding additional development in the area during review of the nearby Eden Housing project, southeasterly of Chynoweth Avenue and Pearl Avenue.

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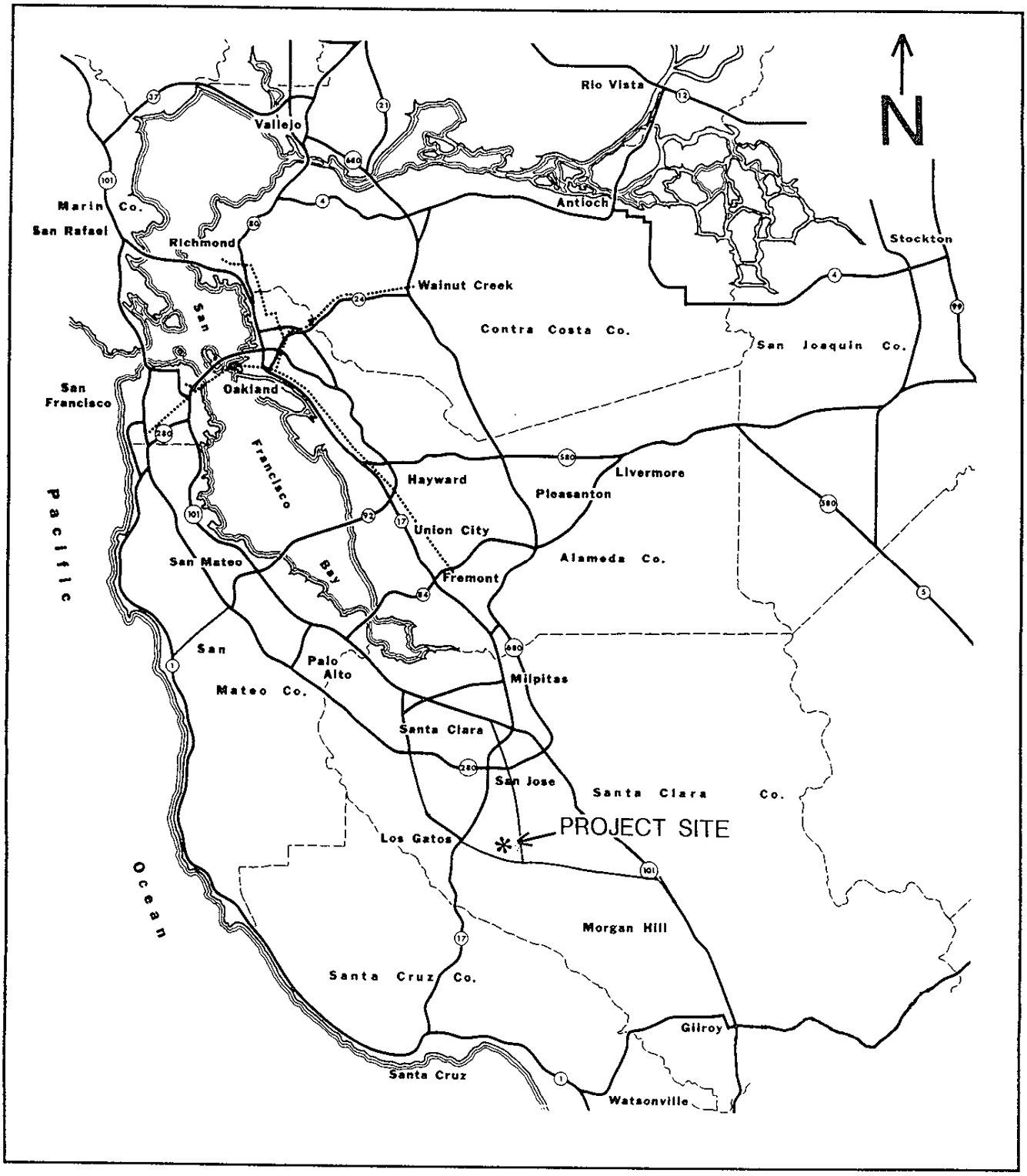

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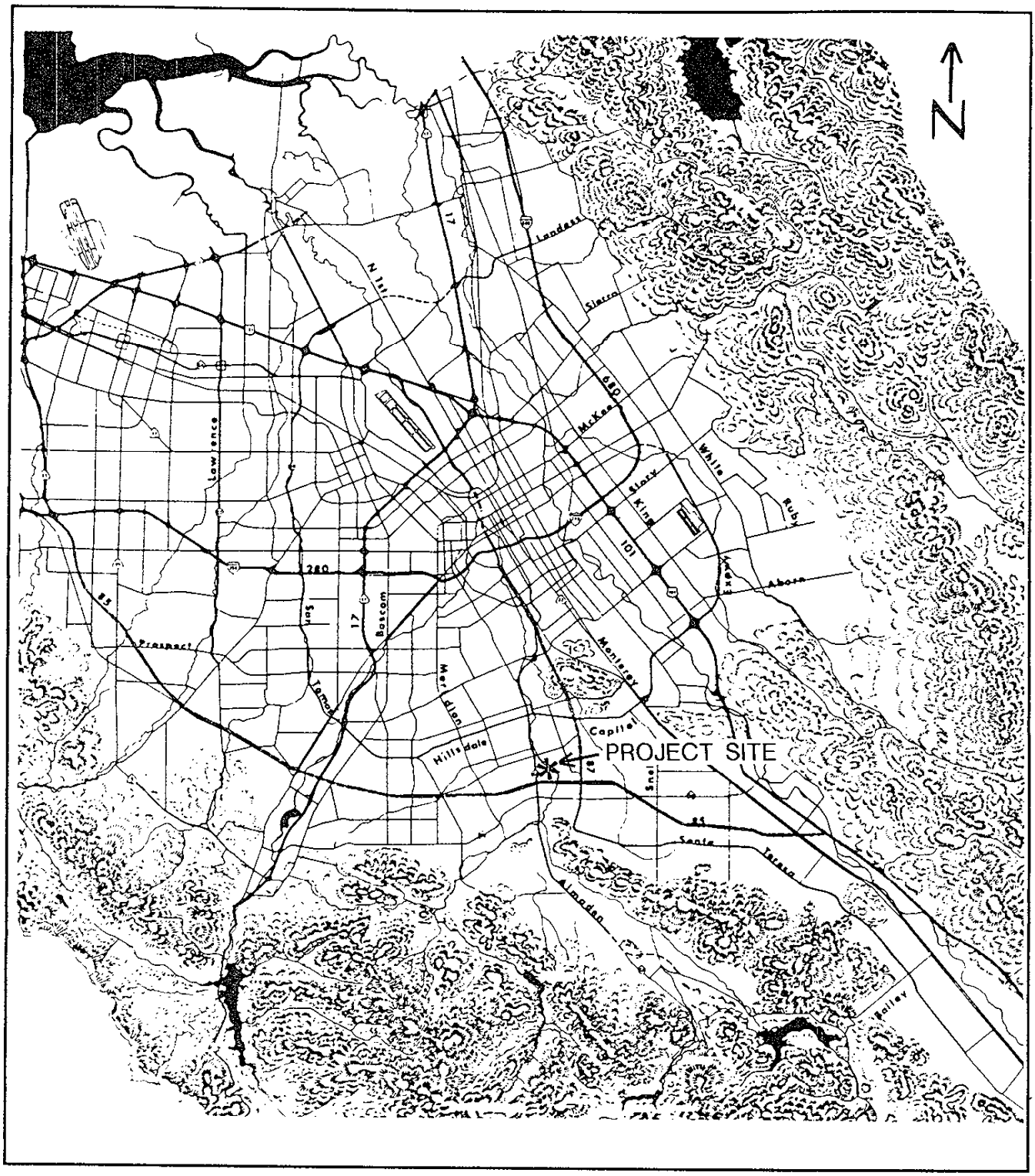
Bay Area Map

Figure 1



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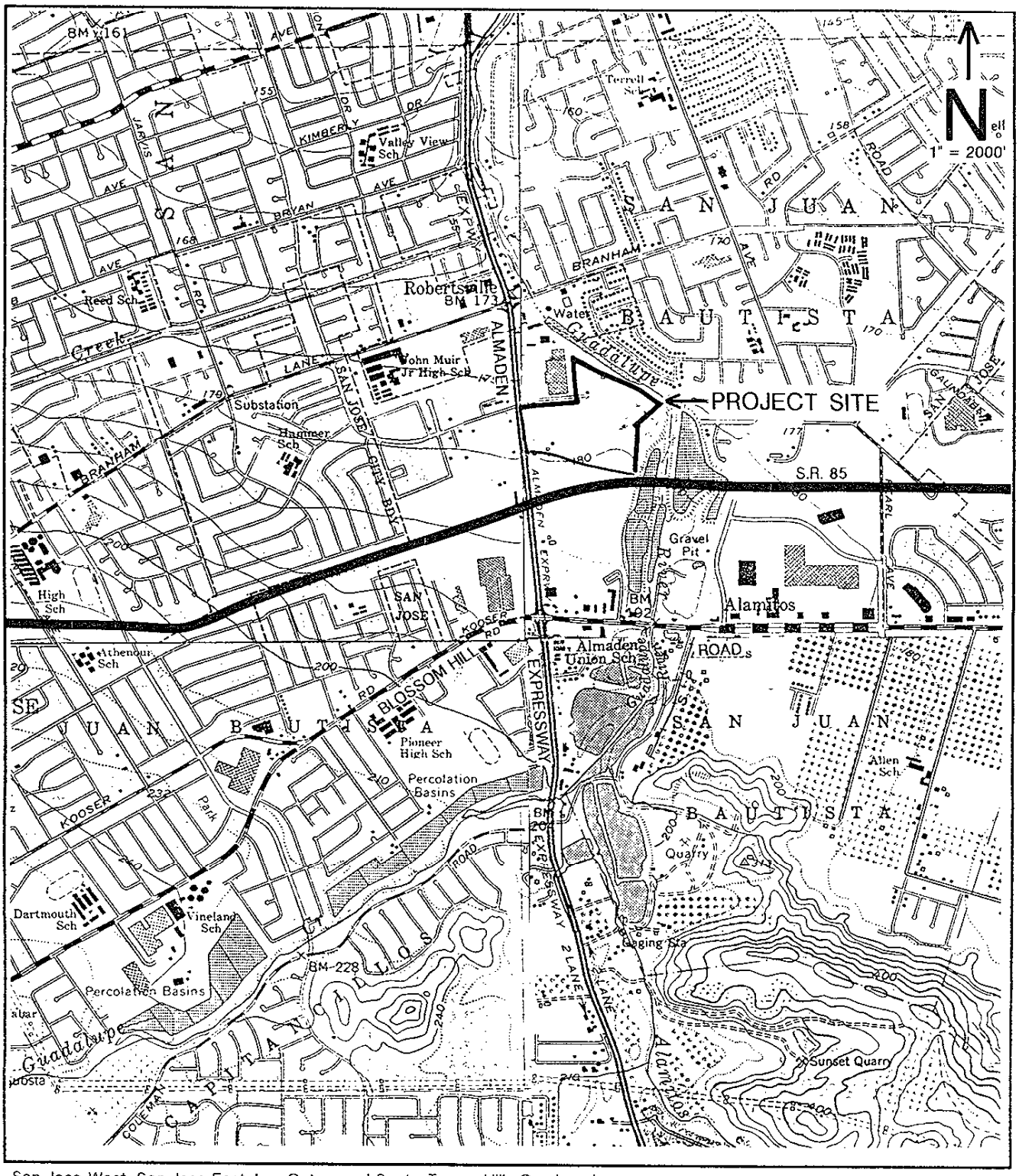
Santa Clara Valley Map

Figure 2



San Jose West, San Jose East, Los Gatos, and Santa Teresa Hills Quadrangles

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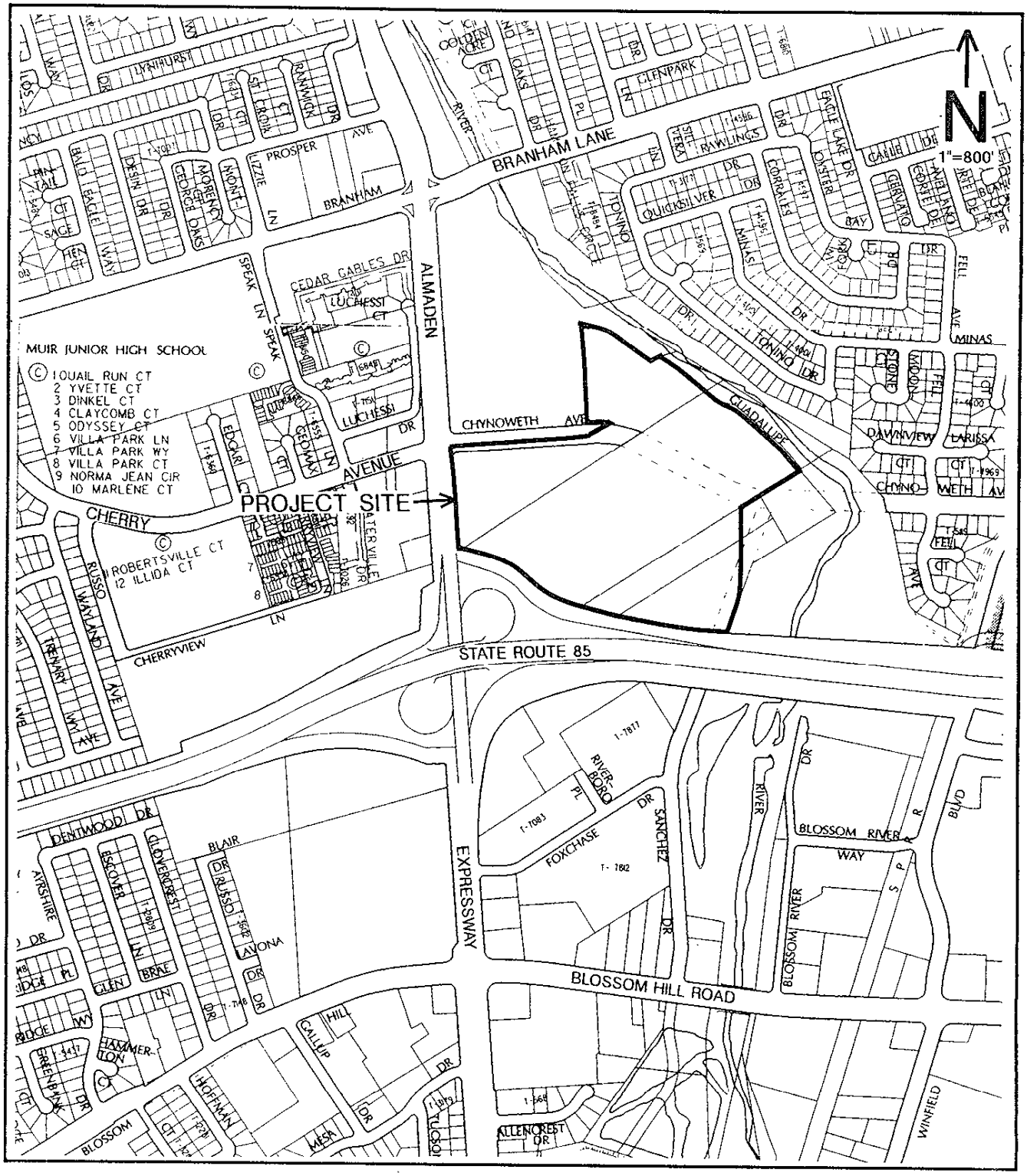
USGS Map

Figure 3



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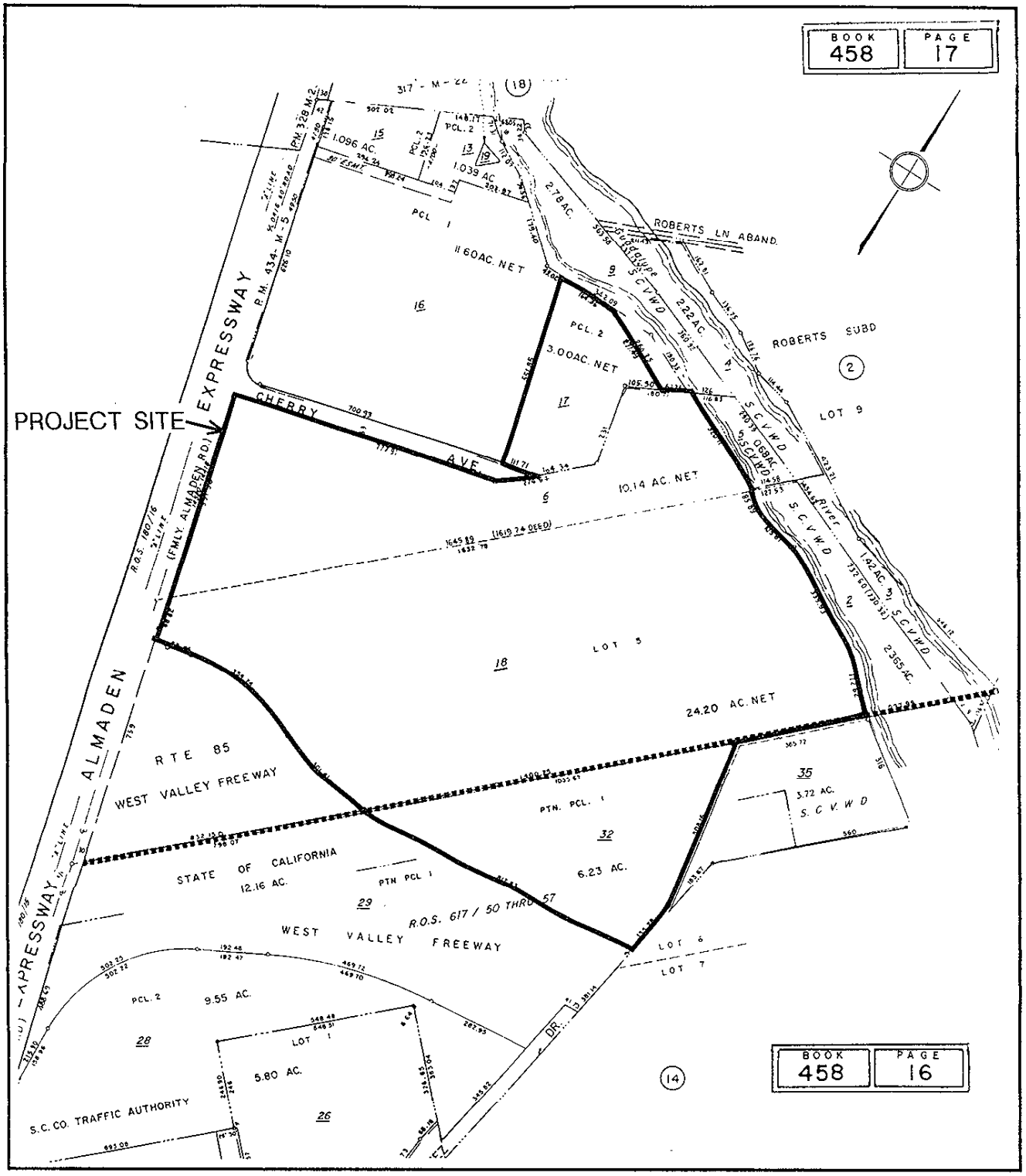
Vicinity Map

Figure 4



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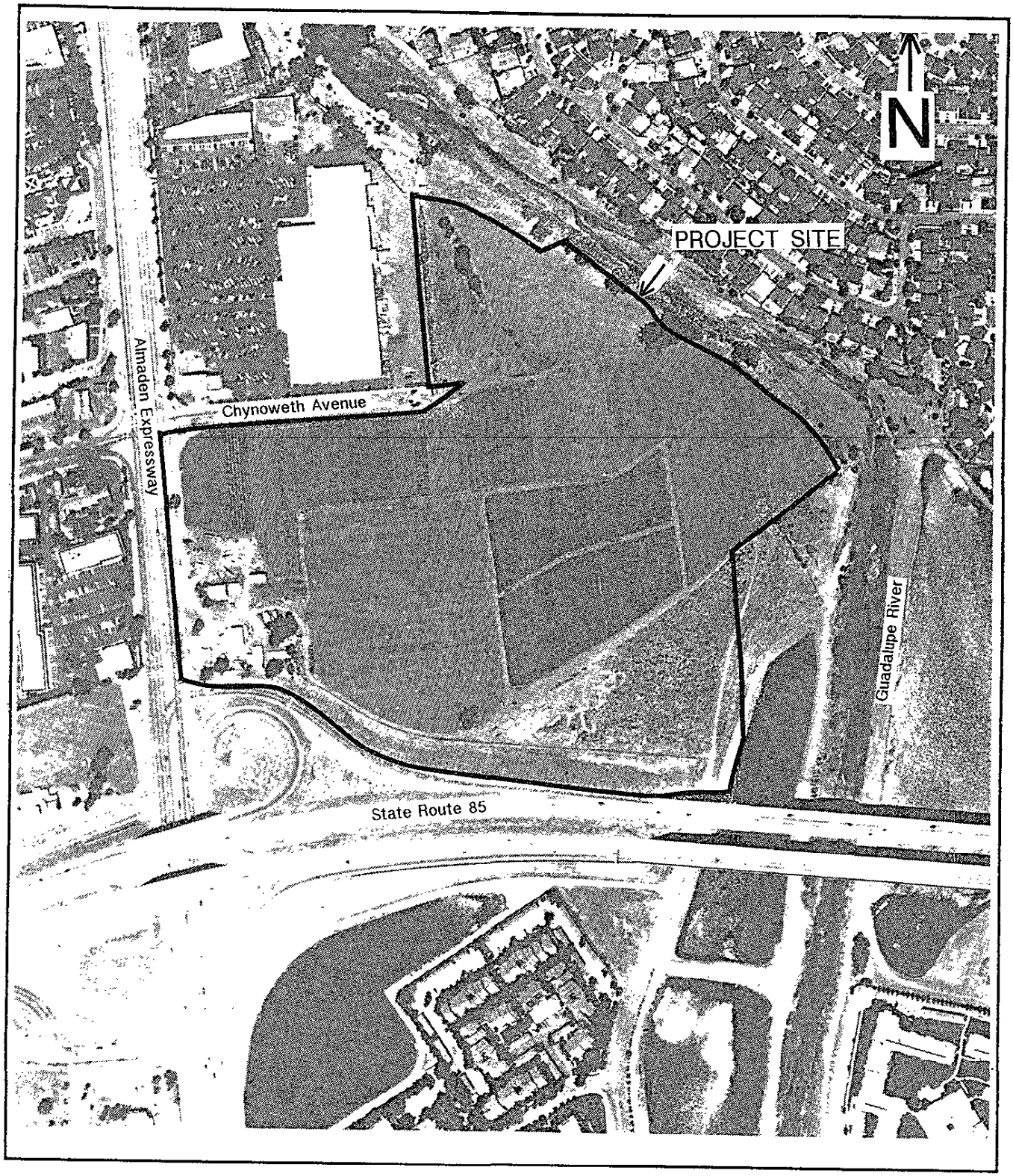
Assessor's Parcels

Figure 5



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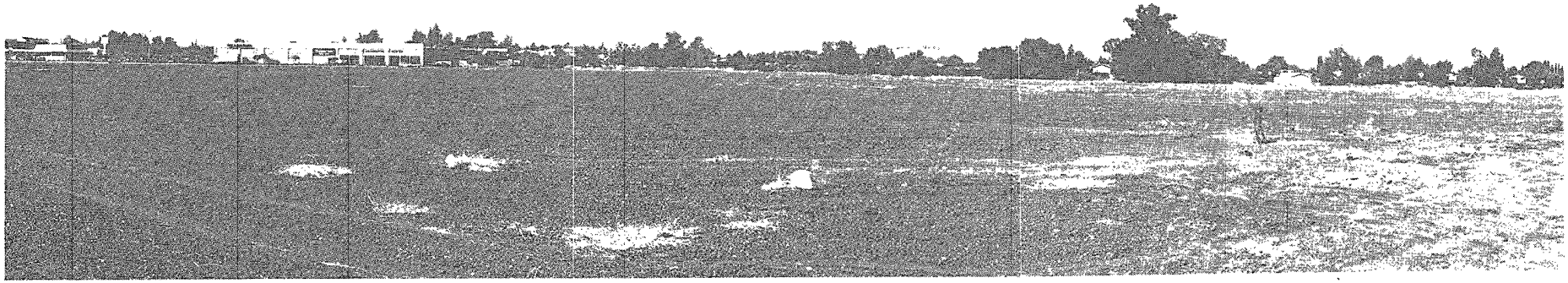
Aerial Photograph

July, 1996

Figure 6



Viewing northerly from along the southerly boundary.

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Viewing northwesterly from the southeasterly corner.

View of the Site

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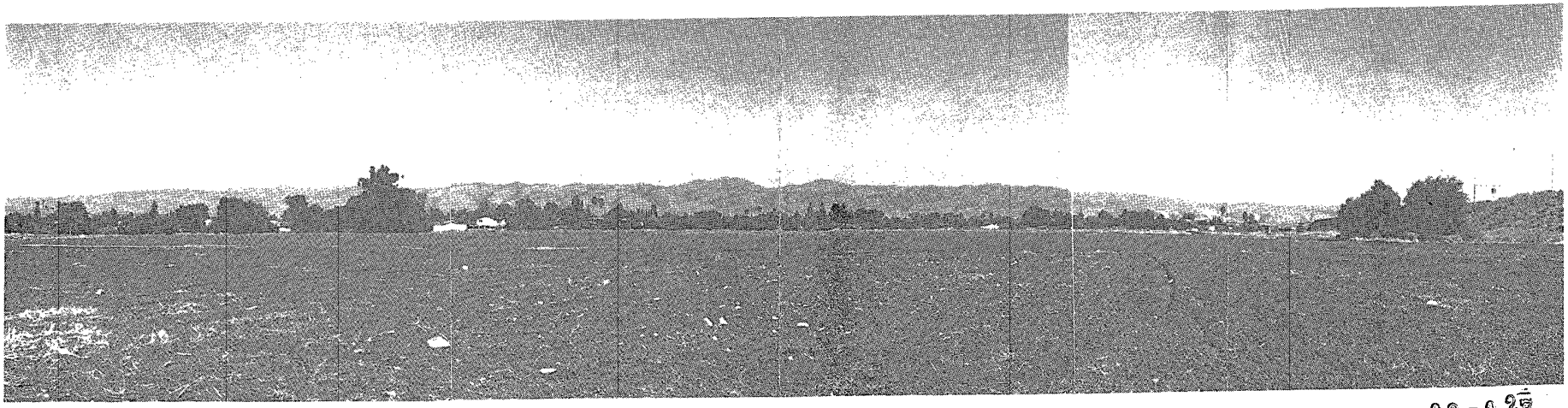
Viewing southeasterly from the northwest corner along Almaden Expressway



Viewing northeasterly from the southwest corner

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I. PROJECT DESCRIPTION

A. LOCATION

The project site is located at the northeasterly quadrant of Almaden Expressway and State Route 85. Chynoweth Avenue forms a portion of the site's northwesterly boundary, and the Guadalupe River forms the northeasterly and easterly boundaries. The site includes the following Assessor's Parcel Numbers: 458-16-032 and 458-17-006, 017, and 018.

The location is at the southerly end of San Francisco Bay in the southerly section of the highly urbanized Santa Clara Valley. Locally, the site is in the Robertsville area of the City of San Jose. Areas immediately adjacent to the site are primarily commercial, residential, and transportation. Beyond the immediate area, the City of San Jose is urbanized with residential, commercial, industrial, institutional, and recreational uses intermixed with some undeveloped parcels. The location of the site and the local setting are shown on the preceding maps, aerial photographs, and views of the site.

B. DESCRIPTION

Planned Development Zoning - Commercial / Residential

The project is a rezoning application from A-Agriculture to A(PD) for the development of a maximum of 350,000 square feet of commercial space, or up to a maximum of 400 units or any equivalent combination of commercial and residential uses that conforms to the City's Transportation Level of Service Policy (5-3) in accordance with the General Development Plans. The project site is configured such that commercial development would only occur on the portion southerly of Chynoweth Avenue (Area 1) and that residential development would only occur on the portion northerly of Chynoweth Avenue (Area 2). If only a portion of the site is developed in accordance with the above restrictions, the remainder of the site would retain its agricultural zoning. Future development of any portion of the site that is not developed in accordance with the above restrictions would require rezoning and would have to meet all applicable City policies. The General Plan land use designations for the project site would allow up to approximately 400,000 square feet of commercial space on Area 1 and up to 504 residential units on Area 2; however, development on the project site is restricted by traffic constraints in the area based on conformance with the City's Transportation Level of Service Policy.

The Project Data table and a reduced copy of the project Land Use Plan follows. Full size copies of the General Development Plans are available for review at the City of San Jose Department of Planning, Building and Code Enforcement.

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To remain consistent with the General Plan, the amount of buildable project development will be balanced at the PD Permit stage with the required street network improvements. To support development of the property, the project will construct certain street improvements as listed in the traffic analysis, as well as participate in the funding of the Chynoweth Avenue bridge construction. Development of the site will be phased to coincide with available traffic capacity and proposed roadway improvement timing. The project site may have additional development potential in accordance with the General Plan land use designations in the future depending upon the availability of traffic capacity.

Commercial

Uses permitted in the commercial portion of the project would include those uses as permitted in the C-3 Commercial District. These include, but are not limited to, such uses as financial institutions, business offices and agencies, personal service shops, professional offices, public eating establishments, gasoline service stations, automobile sales and other retail businesses or retail commercial enterprises or any use similar to those listed. Site development would conform to the City's Commercial Design Guidelines and Sign Ordinance.

Residential

Uses permitted in the residential portion of the project include residential condominiums, either flats or townhomes, and/or rental apartments. Site development would meet the standards in the City's Residential Design Guidelines, or to the satisfaction of the Director of Planning. Density would range between 25 to 40 units per net acre.

As indicated on the Development Standards sheet of the General Development Plans, the architectural theme of the residential portion would be designed to be compatible with the remainder of the project site. Building massing would be softened where practical with sloped roofs and trellises. Roof slopes would be low to medium pitch, avoiding visibly flat roofs. Residential buildings that are placed along the Chynoweth Avenue frontage would be placed at the building setback line to the extent possible. Bedroom windows with a direct view of Chynoweth Avenue would be avoided.

Appropriate exterior finishes include wood siding, shingle siding and stucco or a combination of these materials. Masonry is appropriate as an accent material in wainscoting and column bases. Wood trim and the use of wood columns is also appropriate, along with the use of wood shutters, planter-boxes and awnings as accent materials. Divided-light windows are appropriate. Roof, eaves and overhang materials would be limited to architectural quality composition, wood shake and flat concrete tile. Accent colors would be in harmony with the color palette of the overall project.

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Chynoweth Avenue Bridge "Connection"

The project also includes the completion of Chynoweth Avenue between Almaden Expressway and the Guadalupe River. Since a connection across the river is required for traffic circulation for the proposed development, the Chynoweth Avenue "connection" across the Guadalupe River is included as a part of the project description for this EIR. The analysis of the bridge will address traffic, traffic noise, and associated air quality impacts of only the connection, but will not include the environmental review of the actual bridge structure. The bridge structure will be designed and analyzed separately as a City Capital Improvement Program (CIP) project.

Access and Street System

Access is from Almaden Expressway, Chynoweth Avenue and Sanchez Drive. Internal project roadways are to be private. The project includes the widening and construction of Chynoweth Avenue to the future City of San Jose bridge across the Guadalupe River and the construction of Sanchez Drive from its present northerly terminus to Chynoweth Avenue. The public streets and private roadways are to be constructed of asphaltic concrete on a rock base, with concrete curbs, gutters, and sidewalks, and street trees and electroliers in accordance with City standards. All of the utilities within the project are to be underground.

Phasing

The development of the project would be phased, in accordance with the General Development Plan--Exhibit C to coincide with available traffic capacity and the timing of proposed roadway improvements. The amount of development would be balanced at the PD Permit stage in accordance with the required street network improvements, as follows:

- Approval of this Planned Development Rezoning would constitute an allocation in the City's Approved Trips Inventory not to exceed 350,000 square feet of commercial space.

- The submittal of a Planned Development Permit for a proposed project with a combination of commercial and residential uses or for all residential units shall require the submittal of a traffic analysis to precisely determine the level of alternative development intensity that is equivalent to 350,000 square feet of commercial space to the satisfaction of the Director of Public Works, prior to the issuance of the PD Permit.

- A PD Permit may be approved for up to 350,000 square feet of commercial space, or any total development combination of commercial space and residential units which does not exceed the traffic impacts to the transportation system of 350,000 square feet of commercial space and conforms to the LOS Policy as determined by a traffic analysis.

- Building permits may be issued for up to 78,000 square feet of commercial space, or an equivalent combination of commercial and residential development as determined by a traffic analysis, without the construction of the Chynoweth Avenue bridge.

- A fair share contribution to be determined by the Director of Public Works shall be made toward the construction of the Chynoweth Avenue bridge.

- Building permits may be issued for greater than 78,000 square feet and up to 350,000 square feet of commercial space, or an equivalent combination of commercial and residential development as determined by a traffic analysis, no earlier than 12 months prior to the opening of the Chynoweth Avenue bridge.

Grading

The final lot and street grading for the project is to be designed to conform to the natural ground as closely as possible. The amount of grading planned would be the minimum required to provide public streets, private roadways, and parking areas that meet requirements for structural section and rate of grade, and to allow the construction of level building pads and parking areas with positive drainage. In addition to the pad and street excavation, trenching is required for the underground utilities and sewer system. The Master Grading and Utility Plan of the General Development Plans shows the general grading concept for the site. The residential area would be graded to slope southerly and drain away from the Guadalupe River toward Chynoweth Avenue. On the commercial side, a finished floor elevation of 181.0± is shown for the building pad area. There would be several low point drainage pickups in the parking area. Although a detailed conceptual grading plan has not been prepared, approximately 100,000 to 200,000 cubic yards of material are estimated to be moved during the grading operations. The maximum finished cut or fill is estimated to be less than five feet, and no significant import or export of natural material is expected.

Public Improvements

Public improvements planned with the project include the additional dedication (as required) and improvement of Chynoweth Avenue through the project site and of Almaden Expressway and Sanchez Drive adjacent to the project site. The precise dedication and improvement widths and public street rights-of-way are to be in conformance with City plans and requirements.

Public Land Reservations

There are no public land reservations with this project.

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C. PROJECT OBJECTIVE

The objective of this project is to construct a high quality development of a maximum of 350,000 square feet of commercial space and/or up to a maximum of 400 multi-family residential units in accordance with the goals and policies of the City of San Jose. The commercial component of the project is in conformance with the Economic Development strategy of the General Plan by generating needed jobs within the City and would help generate a more robust and stable tax base that is necessary to fund the City's urban service needs. The residential component is in conformance with the Housing strategy in that higher density infill housing works to ensure the efficient use of land and to reduce the pressure to build more housing at the fringe of the City. There is a need and a market for commercial and multi-family residential uses in this area. In addition, the proposed high density residential would support the General Plan policy of providing high density housing near mass transit facilities.

D. USES OF THE EIR

This Environmental Impact Report (EIR) will be used to provide environmental review for the proposed project. It is the intent of this EIR to provide the City of San Jose and the general public with relevant environmental information to use in considering the approval of the project.

The following agency will use this EIR in its decision making process for the discretionary approvals to implement the project, including those that are listed below.

Lead Agency: **City of San Jose**

- Planned Development Rezoning
- Planned Development Permit(s)
- Tentative Map(s)

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Table 1. Project Data

Category	Figure
Gross Acreage	43.5
Net Acreage	39.2
Start/Completion Dates	Fall, 1998 / Unknown
Commercial	
Net Acreage *	30.4
Estimated Building Area *(square feet)*	350,000
Estimated Number of Employees	875
Estimated Wastewater *(gallons/day)*	26,600
Estimated Water Demand *(gallons/day)*	35,000
Estimated Solid Waste *(tons/year)*	182
Residential	
Net Acreage *	8.8
Estimated Number of Multi-Family Units	400
Estimated Population **	916
Estimated School Children K-12 *(0.17)*	68
Estimated Wastewater *(gallons/day)*	48,400
Estimated Water Demand *(gallons/day)*	91,600
Estimated Solid Waste *(tons/year)*	226
Maximum Allowable Density *(units/net acre)*	40.0

* The final net commercial and residential acreages are subject to the precise alignment of Chynoweth Avenue and Sanchez Drive, which will be determined at the PD Permit stage. The maximum of 400 residential units would only be achieved if the residential acreage is increased.

** Based on City-wide 1990 Census average of 2.29 persons per multi-family dwelling unit.

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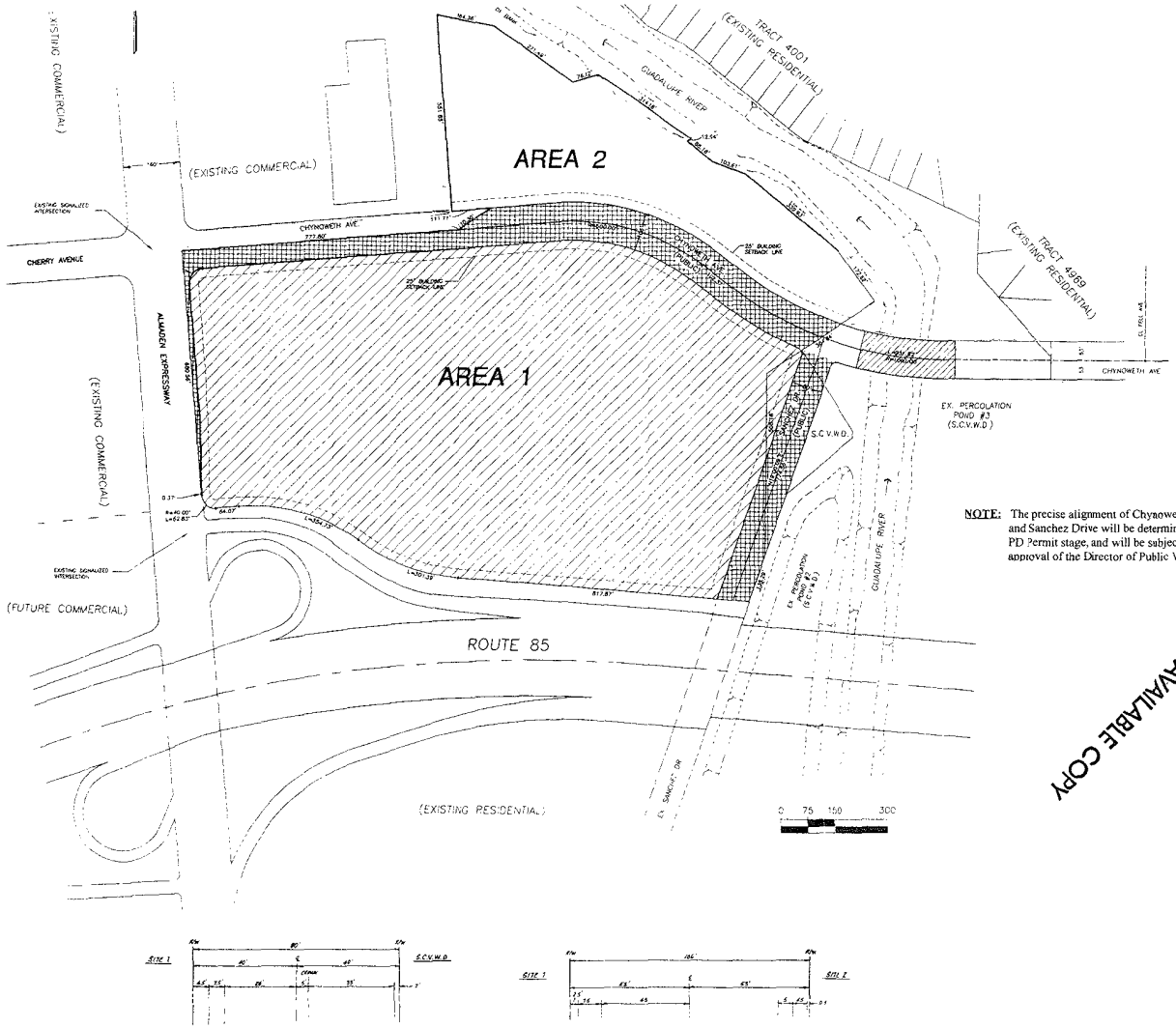

NOTE: The precise alignment of Chynoweth Ave and Sanchez Drive will be determined at the PD Permit stage, and will be subject to the approval of the Director of Public Works

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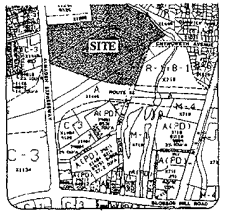

VICINITY MAP
SCALE: 1" = 1000'

APPROVAL CONDITIONS

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USE TABLE

	PUBLIC STREET DEDICATION
AREA 2	SINGLE FAMILY ATTACHED RESIDENTIAL/OPEN SPACE (SEE SHEET 3 FOR DEVELOPMENT STANDARDS)
AREA 1	RETAIL COMMERCIAL/ OPEN SPACE (SEE SHEET 3 FOR DEVELOPMENT STANDARDS)

REVIEWED BY PLANNING DIV.
REVISED ORDINANCE NO.

Revision	Description

CDV
Designed
Drawn CDV
Checked

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ARCADIA DEVELOPMENT COMPANY

RUTH AND GOING, INC.

GENERAL DEVELOPMENT PLAN
EXHIBIT C

LAND USE PLAN

Scale SHOWN

II. PLANS AND POLICIES

This section briefly describes adopted regional and local plans for the area and the project's consistency with them.

A. ASSOCIATION OF BAY AREA GOVERNMENTS (ABAG) THE SAN FRANCISCO BAY AREA ENVIRONMENTAL MANAGEMENT PLAN

This plan was prepared by ABAG with the assistance of the Bay Area Air Quality Management District (BAAQMD), the Metropolitan Transportation Commission (MTC), and the San Francisco Bay Regional Water Quality Control Board under the direction of the Environmental Management Task Force. The plan presents actions to solve regional water quality, water supply, solid waste, and air quality problems to meet State and Federal standards, and designates agencies responsible for carrying out the actions. The majority of the responsible agencies designated in the plan are local, regional, State, and Federal governmental agencies and legislative bodies. The sections of the plan applicable to the project are summarized below with discussions of pertinent policies.

Water Quality

This section includes 12 policies and 40 recommended actions. Policy 8 recommends the establishment of a surface runoff control program by each jurisdiction that emphasizes low cost measures to reduce pollutant loads. All of the following measures would be considered and utilized by the City to reduce the pollutant loads in surface runoff: improved street sweeping, control of certain chemicals, storm system cleaning, litter control, street repair, erosion control, and control of land use along creeks.

Water Supply

There are 3 policies and 13 recommended actions in this section. Policy 2 encourages water saving. Actions recommended include built-in water savings devices such as shower heads with flow control devices and low flush toilets in new construction and the use of landscaping appropriate to the Bay Area climate. These measures would be included in the project.

Air Quality

See Bay Area '97 Clean Air Plan discussion.

Conclusion

The proposed project would be consistent with the plan.

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B. BAY AREA '97 CLEAN AIR PLAN

The Bay Area '97 Clean Air Plan (CAP) was adopted in December, 1997 in response to requirements of the California Clean Air Act (CCAA) of 1988 as amended. Prepared by the Bay Area Air Quality Management District in cooperation with MTC and ABAG, the plan is intended to reduce the health impacts of ozone in ambient air. The Bay Area attained the State carbon monoxide (CO) standard in 1993 so the CCAA planning requirements for CO non-attainment areas no longer apply to the Bay Area. The '97 CAP is the third in a series to be prepared at approximately three-year intervals, as required by State law.

The strategy of the CAP is to implement all feasible measures on an expeditious schedule to reduce pollutant emissions as quickly as possible. Control measures in the CAP will reduce two precursors to the formation of ozone - reactive organic gases (ROG) and oxides of nitrogen (NO_X). The plan includes increasingly stringent State and Federal programs affecting motor vehicles, fuel and other sources, and associated turnover of the motor vehicle fleet; more stringent controls on polluting industries and businesses; reformulation of paints and consumer products to reduce volatile pollutant content; programs to reduce automobile use and traffic congestion; and efforts to maintain and improve public transit systems and to encourage development patterns that reduce automobile dependence. The '97 CAP proposes 14 new control measures beyond those proposed in 1994: 10 new stationary source measures, 2 new mobile source measures and 2 new transportation control measures. At a minimum, ozone pollutants must be reduced by 5 percent annually, or all feasible measures to achieve emission reduction must be taken.

The commercial square footage and/or number of residential dwelling units with the proposed project are fewer than what is allowed for the site under the General Plan. As the '97 CAP used the General Plan buildout assumptions in its calculations, the air quality impact of the proposed project would be less than what was anticipated. The project-specific air quality impacts are analyzed in section III. J. Air Quality. **The proposed project would not conflict with the implementation of the plan.**

C. THE SAN JOSE 2020 GENERAL PLAN

The San Jose 2020 General Plan, adopted on August 16, 1994, is a comprehensive long-term plan for the City of San Jose. This General Plan represents the City's assessment of the amount, type, and phasing of development needed to achieve the City's social, economic, and environmental goals. The elements and parts of this plan comprise an integrated, internally consistent and compatible statement of the official land use policy of the City of San Jose. It contains a statement of development policies and includes a Land Use/Transportation Diagram as well as text which sets forth the objectives, principles, standards, and plan proposals.

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The Land Use/Transportation Diagram, Major Strategies, and Goals and Policies set forth in the plan guide the action of the City in its attempts to achieve its long term objectives. Discussions of the land use element, major strategies, and policies that are applicable to the project follow along with a discussion of the project's consistency.

The Land Use/Transportation Diagram land use designations for the project site are General Commercial on the southerly side of Chynoweth Avenue and Very High Density Residential (25-40 du/ac) on the northerly side of Chynoweth Avenue. **The proposed project is consistent with the San Jose 2020 General Plan Land Use/Transportation Diagram.**

GOALS AND POLICIES

Residential Land Use Policy No. 3

"Higher residential densities should be distributed throughout the community. Locations near commercial and financial centers, employment centers, the light rail transit stations and along bus transit routes are preferable for higher density housing. The Housing Initiative program encourages the construction of high density housing and supportive mixed uses. The Housing Initiative area includes the Downtown Frame, major arterials radiating from Downtown, and sites within 2,000 feet of Light Rail Stations located along the Guadalupe Corridor from the Metro/Airport to Cottle Road stations."

The project would provide higher residential densities (very high density) located near the commercial centers along Almaden Expressway and Blossom Hill Road, along bus transit routes on Almaden Expressway and in the vicinity of the Ohlone/Chynoweth Light Rail Transit Station.

Commercial Land Use Policy No. 1

"Commercial land in San Jose should be distributed in a manner that maximizes community accessibility to a variety of retail commercial outlets and services and minimizes the need for automobile travel. New commercial development should be located near existing centers of employment or population or in close proximity to transit facilities and should be designed to encourage pedestrian and bicycle access through techniques such as minimizing building separation from the street, providing convenient and pleasant pedestrian connections, secure bike storage, etc. Employee intensive uses should be encouraged to locate along multi-modal transit corridors."

The project would provide commercial development located near existing residential development on the easterly side of the Guadalupe River, along bus transit routes on Almaden Expressway and in the vicinity of the Ohlone/Chynoweth Light Rail Transit Station.

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Urban Design Policy No. 1
"The City should continue to apply strong architectural and site design controls on all types of development for the protection and development of neighborhood character and for the proper transition between areas with different types of land uses."

The project must go through the City's Planned Development zoning procedure, which requires the submittal of detailed architectural and landscape plans for review and approval at the Planned Development (PD) Permit stage. The proper transition between areas with different types of land uses would be one of the criteria in that review.

Urban Design Policy No. 17
"Development adjacent to creekside areas should incorporate compatible design and landscaping including plant species which are native to the area or are compatible with native species."

Detailed landscape plans would be submitted at the PD Permit stage. The design and plant species would be reviewed at that time.

Urban Design Policy No. 24
"New development projects should include the preservation of ordinance-sized and other significant trees. Any adverse effect on the health and longevity of such trees should be avoided through appropriate design measures and construction practices. When tree preservation is not feasible, the project should include appropriate tree replacement."

The existing trees are not compatible with future commercial/residential development. All trees that are removed will be replaced with suitable replacement quantities and species.

Transportation Policy No. 3
"Public street right-of-way dedication and improvements should be required as development occurs. Ultimate thoroughfare right-of-way should be no less than the dimensions as shown on the Land Use/Transportation Diagram except when a lesser right-of-way will avoid significant social, neighborhood or environmental impacts and perform the same traffic movement function."

Public improvements planned with the project include the additional dedication (as required) and improvement of Chynoweth Avenue through the project site and of Almaden Expressway and Sanchez Drive adjacent to the project site. The precise dedication and improvement widths and public street rights-of-way are to be in conformance with City plans and requirements.

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Parks and Recreation Policy No. 3
"Through the development review process, private open space and recreation facilities should be encouraged in high density residential projects, mixed use projects and major employment complexes in the vicinity of major transit corridors in order to meet a portion of the open space and recreation needs of residents, employees and visitors that will be generated by that development."

Private open space and recreational facilities would be considered and reviewed at the PD Permit stage.

Trails and Pathways Policy No. 1
"The City should control land development along designated Trails and Pathways Corridors in order to provide sufficient trail right-of-way and to ensure that new development adjacent to the corridors does not compromise safe trail access nor detract from the scenic and aesthetic qualities of the corridor."

The riparian setback, which will be determined at the PD Permit stage in accordance with the Riparian Corridor Policy Study, would allow for sufficient trail right-of-way along the Guadalupe River.

Riparian Corridors and Upland Wetlands Policy No. 2
"New public and private development adjacent to riparian corridors should be consistent with the provisions of the Riparian Corridor Policy Study."

The riparian setback, which will be determined at the PD Permit stage, would be consistent with the provisions of the Riparian Corridor Policy Study.

Riparian Corridors and Upland Wetlands Policy No. 3
"New development within the Urban Service Area should be set back from the outside edge of riparian habitat (or top of bank, whichever is greater) a distance sufficient to buffer the impacts of adjacent human activities and provide avenues for wildlife dispersal."

The riparian setback, which will be determined at the PD Permit stage in accordance with the Riparian Corridor Policy Study, would protect the adjacent riparian corridor.

Conclusion

Overall, the proposed project is consistent with the applicable goals and policies of the San Jose 2020 General Plan.

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D. COMMERCIAL DESIGN GUIDELINES, CITY OF SAN JOSE

The City of San Jose has established Commercial Design Guidelines to address issues of neighborhood compatibility, project function and aesthetics. The guidelines seek to assure that new commercial development preserves or improves the positive character of the existing neighborhood and that negative impacts on nearby residences be avoided. The guidelines encourage the provision of efficient and safe vehicular and pedestrian circulation, connections to public transit, and well designed service areas. Substantial landscaping and careful building design are requirements intended to contribute to the visual character of the neighborhood and the overall image of the City.

The guidelines include general sections on the setting - surrounding area character, site character, and interfaces; structures - building orientation, building form and scale, complexity/unity, roofs, and finish materials; landscaping - general, perimeter landscaping, internal site landscaping, and furniture/fixtures; service facilities - service yards, garbage/trash, loading, storage, utility equipment, mechanical equipment, lighting, and recycling facilities; parking and circulation - general, automobile, truck, pedestrian/bicycle, parking structures, and drive through uses; and signs - general, detached signs, and attached signs. There is also a specific section on Neighborhood Centers.

Conclusion

Specific commercial design and operational components would be proposed, reviewed and approved at the PD Permit stage. The project would be designed to be consistent with the guidelines.

E. TOWARD COMMUNITY, RESIDENTIAL DESIGN GUIDELINES FOR THE CITY OF SAN JOSE

The City of San Jose has established Residential Design Guidelines in order to address the private residential environment of the citizens of San Jose and the public world created by their dwellings in aggregation, with the expectation that their use will encourage creativity and result in a high level of residential design quality. The subject matter of the design guidelines is both the quality of housing and the quality of the City itself.

The guidelines include sections on the relationship to surroundings, internal organization, and additional guidelines for specific housing types. The relationship to surroundings deals with perimeter areas of new residential projects; that is, how new residential development relates to existing neighborhoods, public streets, public open spaces, and other new projects. The guidelines also deal with the internal organization of new residential development to ensure that the relationships of units to each other and to other onsite uses are both functional and attractive.

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Additional guidelines for eight specific housing types are also delineated. These housing types, which represent nearly the full range of the city's housing stock, include single family detached houses (less than 6,000 sf), paired dwellings, rowhouses, garden townhouses, entry court townhouses, cluster housing, podium cluster housing, and corridor buildings.

Conclusion

Specific residential design components would be proposed, reviewed and approved at the PD Permit stage. The project would be designed to be consistent with the guidelines.

F. RIPARIAN CORRIDOR POLICY STUDY

The Riparian Corridor Policy Study, which was approved by the San Jose City Council on May 17, 1994, was conducted to explore in detail issues related to General Plan policies that promote the preservation of riparian corridors and how these corridors should be treated for consistency with the General Plan. The study identifies each riparian corridor within the City's Urban Service Area (USA) and Urban Reserves; and discusses the importance of the riparian corridors, how they may be at risk, and how they should be protected. The Guadalupe River is one of the corridors within the study area.

Discussions of the major guidelines that are applicable to the proposed project follow along with a discussion of the project's consistency.

> **Guideline 1C: Setback Areas**
> "Riparian Setback Dimensions. *All buildings, other structures (with the exception of bridges and minor interpretative node structures), impervious surfaces, outdoor activity areas (except for passive or intermittent activities) and ornamental landscaped areas should be separated a minimum of 100 feet from the edge of the riparian corridor (or top of bank, whichever is greater)."*

The riparian setback, which will be determined at the PD Permit stage, would be consistent with the provisions of the Riparian Corridor Policy Study.

> **Guideline 7E: Protection from Construction**
> *"During construction on sites adjacent to riparian corridors, temporary fencing or solid barriers should be placed outside the riparian habitat area to protect it from damage due to construction activity. Any other applicable NPS construction BMP's should also be used."*

Temporary fencing would be placed at the outside edge of the riparian corridor setback during construction to protect the riparian corridor from damage. Best Management Practices (BMP's) would be utilized as discussed in section III. E. Water Quality.

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Conclusion

The proposed project would be consistent with the Riparian Corridor Policy Study.

G. GUADALUPE RIVER SOUTH CORRIDOR PARK MASTER PLAN INTERIM REPORT

The primary intent of the Interim Report is to recommend preferred arrangements of trails and land use improvements along the Guadalupe River between I-280 and Almaden Lake Park. The planning process was intended to coincide with the Santa Clara Valley Water District flood control master plan process for the same area (see the discussion of the Guadalupe Watershed Planning Study in section IV. C.); however, because of delays in the flood control planning schedule, a concept plan was prepared. Once the flood control master plan is completed, recommendations for trails and park improvements will be updated to master plan status, incorporating approved flood control solutions. The project site is located adjacent to Reach 12. The plan recommends a trail along the west bank that would be integrated with the river channel, the percolation ponds and Sanchez Drive. The open space north of the Chynoweth Avenue extension is identified for neighborhood park use and the report recommends that all private development be planned to either visually or physically feature the river corridor. Sanchez Drive is to serve as a river frontage road to allow visual surveillance into the river corridor.

Recommendations in the Interim Report have been considered in the ongoing planning process for the Guadalupe River flood control master plan and the review and updating of the City's General Plan. The area north of Chynoweth Avenue has not been identified as a park site in the General Plan and the trail system is still being developed in this area.

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III. POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

A. LAND USE

SETTING

Existing Uses

The project site is fallow agricultural land. A complex of buildings in the southwesterly corner along Almaden Expressway is utilized for the production and sale of agricultural products.

Surrounding Uses

The surrounding development consists of a wide variety of commercial and residential uses. Land uses immediately adjacent to the project site include commercial and public/quasi-public (Guadalupe River) to the north, public/quasi-public (Guadalupe River and Santa Clara Valley Water District percolation ponds) and residential to the east, transportation (State Route 85) to the south, and transportation (Almaden Expressway) and commercial to the west as shown on the preceding Aerial Photograph, Figure 6.

Trails and Pathways Corridors

The Guadalupe River, which is located along the northeasterly and easterly site boundaries, is designated as a Trails and Pathways Corridor on the General Plan Scenic Routes and Trails Diagram. These corridors form the inter-connecting trail system in the City of San Jose, providing many important access links to the regional parks and open spaces in or adjoining the City. Many of these corridors follow the existing creeks and riverbeds and include the public and quasi-public creek rights-of-way of the Santa Clara Valley Water District and other agencies. The trail system is intended to provide diverse recreational opportunities for all segments of the population; the varied needs of hikers, equestrians, and bicyclists are to be accommodated where appropriate in the trail corridors.

Important Farmlands

The *Important Farmland Map* for the County, prepared by the California Department of Conservation and the USDA Soil Conservation Service, classifies land in seven categories in order of significance: 1) prime farmland, 2) farmland of Statewide importance, 3) unique farmland, 4) farmland of local importance, 5) grazing land, 6) urban and built-up land, and 7) other land. The project site is classified as "prime farmland," which is defined as land with the best combination of physical and chemical features for the production of agricultural crops.

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Water Wells

There are two existing agricultural water wells located on the project site. One, located near the center of the property, is capped and has not been used for a number of years. The second is located near the buildings adjacent to Almaden Expressway and was used to provide water to the crops grown on the site.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on land use if it:

- Disrupts or divides the physical arrangement of an established community.
- Conflicts with established recreational, educational, religious, or scientific uses in an area.
- Converts prime agricultural land to urban use (or impairs the agricultural productivity of prime agricultural land).
- Results in a substantial alteration of the present or planned use of an area.
- Substantially or adversely changes the type or intensity of existing or planned land use in the area.
- Is incompatible with surrounding land uses or with the general character of the surrounding area, including density and building height.

IMPACT AND MITIGATION

Compatibility

The project would change the land use and zoning on the site from agricultural to commercial and/or residential use in accordance with the General Plan land use designations. Commercial and residential uses are compatible with the surrounding area; commercial use on the site would be compatible with residential uses to the east of the site because of the physical separation provided by Sanchez Drive and the Guadalupe River. Compatibility with the Guadalupe River and its riparian corridor are addressed in section III. C. The riparian corridor would be protected by a riparian corridor setback in conformance with the Riparian Corridor Policy Study. Development of the project site would introduce new roads, commercial and/or residential buildings and parking areas to the area. These uses would change the view of the site and would generate increases in traffic, noise, and air pollution in the area that are evaluated in this report.

Internal Compatibility

Proposed commercial use on the site could potentially conflict with proposed residential uses on the site; however, a commercial use on the site would be compatible with onsite residential uses because of the physical separation provided by Chynoweth Avenue and with the inclusion of design and operation components such as 1) limiting commercial truck access routes, 2) limiting truck operations hours, 3) locating the commercial loading docks away from any proposed residential buildings, 4) including landscape buffers between commercial and residential uses and 5) providing adequate building setbacks.

Important Farmlands

The project site is classified as prime farmland on the *Important Farmland Map* for Santa Clara County. San Jose has been built on prime soils, and most of the remaining vacant, valley floor land in San Jose is designated as prime farmland. The San Jose 2020 General Plan recognizes that "*preservation of all prime soil land would mean a virtual halt to urbanization and is not a reasonable goal*". The project site has an urban land use designation on the San Jose 2020 General Plan. Development of the site would result in the loss of this prime farmland.

Water Wells

There are two existing agricultural wells on the project site that would be destroyed prior to the construction of the project. If not properly destroyed, the wells could cause contamination of the groundwater. Well destruction is regulated by the Santa Clara Valley Water District's Ordinance No. 90-1 in order to assure that such wells will not cause pollution or contamination of groundwater or otherwise jeopardize the health, safety, or welfare of the people of the district. The Ordinance requires that a permit be obtained before a well can be destroyed.

Impact Summary

Proposed commercial use on the site could potentially be incompatible with the proposed onsite residential use. The presence of agricultural wells on the site and the loss of prime farmland would result in significant impacts.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Water Wells

- Well destruction permits shall be obtained from the Santa Clara Valley Water District, and the wells shall be destroyed in accordance with District standards.

Internal Compatibility

- The project shall include design and operation components such as limiting commercial truck access routes, 2) limiting truck operations hours, 3) locating the commercial loading docks away from any proposed residential buildings, 4) including landscape buffers between commercial and residential uses and 5) providing adequate building setbacks.

CONCLUSION

The sealing of the agricultural wells in accordance with Santa Clara Valley Water District standards and the implementation of specified design and operation components would reduce these land use impacts to a **less-than-significant impact with mitigation.** There is no mitigation for the loss of prime farmland. The loss of prime farmland due to project development would be be an **unavoidable significant impact.**

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B. GEOLOGY, SOILS AND SEISMIC EFFECTS

Earth Systems Consultants Northern California conducted soil engineering studies that are included in Appendix A.

SETTING

Topography

The project site has a uniform northwesterly slope of less than one percent. Elevations on the site range from approximately 180 feet at the southeasterly portion to approximately 173 feet at the northwesterly tip. There are no significant topographic features on the site.

Geology

The project site is underlain by Quaternary alluvium, which consists of unconsolidated to weakly consolidated silt, sand, and gravel. Quaternary alluvium includes Holocene and late Pleistocene alluvium and minor deposits of beach and dune sand and marine terrace deposits.

The project site is not located in a geologic hazard zone as mapped by the City of San Jose in accordance with the Geologic Hazards Ordinance.

Soils

The project site is underlain by the alluvial soils of the Yolo association as classified by the United States Department of Agriculture, Soil Conservation Service. Yolo silty clay loam, 0-2% slopes (YeA) and Garretson gravelly loam, 0-5% slopes (GbB) are the specific soil types identified at the site.

Yolo silty clay loam is characterized by a grayish brown, massive, hard, mildly alkaline surface layer approximately 26 to 32 inches thick; good natural drainage; moderately slow subsoil permeability; very slow surface runoff; no erosion hazard; high inherent fertility (Class I); and a moderate shrink/swell capacity.

Garretson gravelly loam is characterized by a grayish brown, massive, hard, neutral surface layer approximately 16 to 28 inches thick; good natural drainage; moderately rapid subsoil permeability; slow surface runoff; slight erosion hazard; moderate inherent fertility (Class II-III); and a low shrink/swell capacity.

According to Cooper-Clark and Associates' *San Jose Geotechnical Investigation*, the site is mapped as having a moderately high to high liquefaction potential, weak soil layers and lenses occurring at random locations and depths, moderate to low expansion potential, slight to no erosion potential, and is not susceptible to landslides.

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Active Faults

An active fault is defined as a fault along which ground displacement at or near the surface (within a few tens of feet) during the last 11,000 years (Holocene age) can be demonstrated. There are no identified active earthquake faults on the site, nor is the site within a State-mandated Earthquake Fault Zone. The nearest active fault zones are the Hayward and Calaveras faults, which are approximately 8.0 and 11.0 miles respectively to the northeast, and the San Andreas Fault, which is approximately 9.0 miles to the southwest.

Potentially Active Faults

A potentially active fault is defined as a fault along which ground displacement during the last two million years (Quaternary age) can be demonstrated or along which fault such displacement is suggested. The nearest potentially active fault zones are the Piercy, Silver Creek and Evergreen faults, which are approximately 4, 6 and 7 miles to the northeast, respectively.

Soil Engineering Studies

Soil engineering studies were conducted on the project site to provide design criteria for commercial and residential foundations and recommendations for site preparation, grading, drainage and paving. The studies included a review of a previous (1977) study performed on the site and other pertinent geological literature, a site reconnaissance, subsurface exploration of the site with classification of the subsurface soils, laboratory testing of selected soil samples, engineering analyses of gathered data, and the formulation of recommendations for site development.

Geologic Literature Review

The site is located near the base of the western foothills of the Hamilton-Diablo mountain range in the Coast Range Geomorphic Province of Central California. The bedrock in the site vicinity is a part of a northwest-trending belt of material that lies along the eastern side of the San Andreas fault system. The mapped regional geology shows the site to be underlain by Quaternary alluvium deposits described as alluvium, gravel, sand and clay (Dibblee) and by Holocene alluvial fan deposits described as brown medium dense, gravelly sand and clayey gravel that grades upward to sandy or silty clay (Helley and Wesling).

Subsurface Exploration and Laboratory Testing

Eight cone penetrometer tests (CPTs) were conducted on June 18, 1996 across the project site. The CPT is an electronic instrument that is pushed through the soil at a constant rate. The measured tip resistance and sleeve friction can be utilized to determine the type of soil behavior characteristics of subsurface deposits. The soil was tested to depths between 23.0 and 40.0 feet below the existing ground surface.

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In addition, 12 borings were drilled on the site on August 31, 1977 during a previous soil investigation by Applied Soil Mechanics, Inc. These borings were drilled to depths between 10 and 30 feet below the existing ground surface. The locations of the 8 CPT's and the 12 borings are shown on the following Testing Locations map, and the logs are included in the reports in Appendix A.

Laboratory tests were performed on selected samples of the near-surface soil materials encountered to determine some of the physical and engineering characteristics of the soils considered pertinent to the design of the proposed project. These tests included Atterberg Limits tests, which aid in determining the expansive characteristics of the soil tested, and R-Value tests, which determine the subgrade characteristics for use in pavement design. The surface and near-surface soils exhibit a moderate to high shrink/swell (expansive) potential when subjected to fluctuations in water content. The results of the laboratory tests are presented in the reports in Appendix A.

Subsurface Conditions

The project site is underlain by alluvial soils from the Guadalupe River. The subsurface profile underlying the commercial portion of the site can generally be divided into 2 different areas. The eastern half of the site is generally underlain by a surficial clayey layer over sandy soils. The upper 12 to 16 feet in this portion of the site consist of light to dark brown, moist, stiff silty and sandy clay with minor gravel and occasional silty sand layers. The soils beneath this surface layer consist generally of brown, moist, medium dense to dense silty sand and poorly graded sand with layers of gravel and clayey sand. The western half of the site is generally overlain by silty/clayey soils to at least 40 feet in depth. These soils are brown to light brown, moist to wet, generally stiff, silty and sandy clay with some gravel.

The soils underlying the residential portion of the site can also be divided into 2 different areas. The portion of the site along the Guadalupe River is generally underlain by a surficial silty layer over sandy soils. This area covers about one-third of the residential portion of the site. The upper 2 feet consist of a brown, moist, stiff sandy silt with minor gravel and some clay binder. The soils beneath the surface layer consist generally of brown, moist, medium dense to dense silty sand and poorly graded sand with layers of gravel and clayey sand. The remaining two-thirds of the residential portion of the site is generally overlain by silty/clayey soils over sandy material. The near surface silty and clayey soils extend to depths of between 4 to 12 feet below the ground surface. This material is brown to dark brown, dry to moist, stiff, silty clay and clayey silt with some sand. The underlying soils consist of brown, moist, medium dense to dense silty sand with pockets of gravel and clay.

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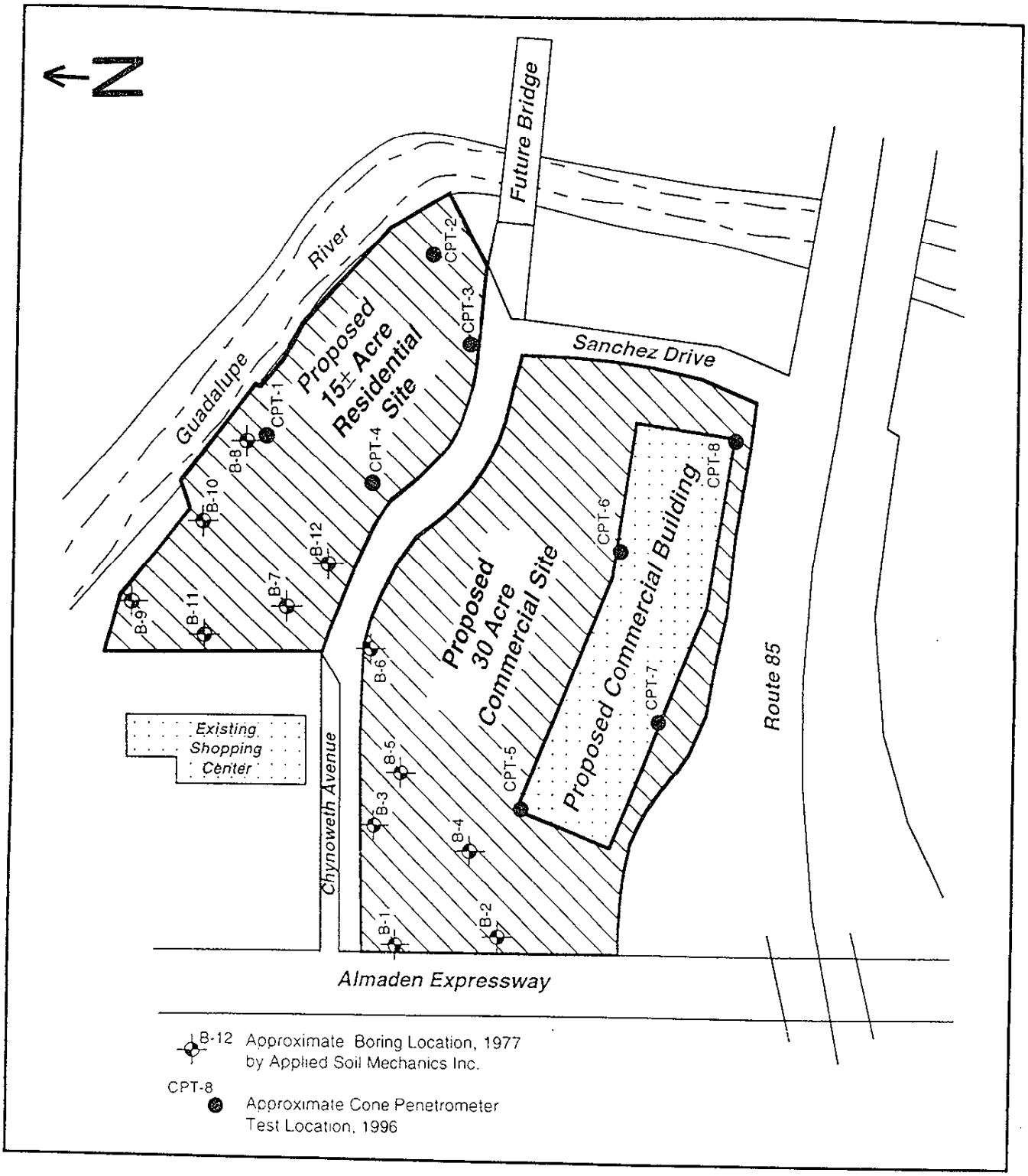

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Testing Locations

Figure 10

Pore water dissipation readings at the site show the groundwater table to be at a depth of about 17.5 to 18 feet below the ground surface. Standing water was not encountered in the 1977 borings. In general, groundwater levels can fluctuate over time and therefore the subsurface moisture conditions encountered present only the current conditions at the boring locations. The Guadalupe River floods occasionally during the winter season; however, the flood waters normally recede rather rapidly, and a long-term rise in the groundwater level is not expected.

Investigative Conclusions

The major considerations in foundation design at the site are the expansion potential of the soils and the potential for moderate to severe groundshaking during a moderate to major seismic event. The site is considered geotechnically suitable for the proposed commercial and/or residential development provided the recommendations presented in the soil engineering studies are implemented.

SIGNIFICANCE CRITERIA

The proposed project would have a significant geology, soils, and seismic impact if it:

- Causes substantial erosion or siltation.
- Exposes people or property to major geologic hazards.

IMPACT AND MITIGATION

Topography

There are no significant topographical features on the site that would be altered by the project.

Expansive Soils

Commercial

The surface and near surface soils on the commercial portion of the site pose a hazard to building foundations because of their moderate to high shrink/swell (expansive) potential. Mitigation measures for this problem include a nonexpansive, import fill for the top 12 inches of the soil building pad and increased foundation trenching depths relative to a nonexpansive site. Additionally, pre-moisturizing programs for the overall site, the foundation trenches, and soil subgrades for concrete slabs-on-grade, may be required as deemed necessary during construction. Since the surface and near surface native soils exhibit stiff consistencies, conventional shallow strip and spread footings may be used to support the proposed structure(s) once the recommended clearing and site preparation operations have been completed.

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Residential

The surface and near surface soils on the residential portion of the site pose a hazard to building foundations because of their moderate to high shrink/swell potential. Mitigation measures for this problem include controlling drainage away from structures and pavements, extra reinforcing steel in concrete floor slabs, and increased foundation trenching depths relative to a non-expansive site. Additionally, pre-moisturizing programs for the overall site, the foundation trenches, and soil subgrades for concrete slabs-on-grade may be required as deemed necessary during construction. Conventional shallow strip and spread footings may be used to support the proposed structures once the recommended clearing and site preparation operations have been completed.

Erosion

Development of the project site may subject the soils to accelerated erosion. In order to minimize erosion, erosion control measures such as those described in the ABAG *Manual of Standards for Erosion & Sediment Control Measures* would be incorporated into the project.

Ground Rupture

Ground rupture (surface faulting) tends to occur along lines of previous faulting. As no evidence was found for the existence of active or potentially active faulting on the site, the potential for ground rupture to occur is considered to be low.

Secondary Seismic Effects

Seismic Shaking

The maximum seismic event occurring on the site would probably be from effects originating from the Hayward, Calaveras, or San Andreas fault systems. Ground shaking effects can be expected in the project area during a major earthquake originating along any of the active faults within the Bay Area. At present, it is not possible to predict when or where movement will occur on these faults. It must be assumed, however, that movement along one or more of these faults will result in a moderate or major earthquake during the lifetime of any construction on this site. The effects on development would depend on the distance to the earthquake epicenter, duration, magnitude of shaking, design and quality of construction, and geologic character of materials underlying foundations.

The maximum credible earthquake, which is defined as *"the maximum earthquake that appears capable of occurring under the presently known framework"*, for the San Andreas Fault ranges from magnitude 8.0 to 8.3; and from magnitude 7.0 to 7.5 for either the Hayward or Calaveras Faults. The maximum probable earthquake, which is defined as *"the maximum earthquake that is likely to occur during a 100-year interval"*, for the San Andreas Fault ranges from magnitude 7.5 to 8.5; from magnitude 6.75 to 7.5 for the Hayward Fault; and from magnitude 6.5 to 7.0 for the Calaveras Fault.

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Structural damage due to ground shaking is caused by the transmission of earthquake vibrations from the ground into the structure. The most destructive effects of an earthquake usually occur where the ground is unstable and structures are poorly designed and constructed. Preliminary estimates of ground response characteristics at this site indicate that severe ground shaking at this site could be caused by moderate to major activity on the active Bay Area faults. Structures at this site would be designed to accommodate earthquake vibrations, thus minimizing structural damage resulting from seismic ground shaking.

The project would be designed and constructed in accordance with Uniform Building Code requirements, which are intended to reduce seismic risks to an acceptable level.

Ground Failures

Seismically induced ground failures, such as liquefaction, lurch cracking, lateral spreading and local subsidence, are related to soil, bedrock, and groundwater conditions. The conditions at this site are such that the potentials for these phenomena to occur are considered to be low.

Impact Summary

Hazards associated with highly expansive soils, erosion, and seismic shaking would result in significant geologic, soils and seismic impacts.

MITIGATION MEASURES INCLUDED IN THE PROJECT

General

- All earthwork and foundation plans and specifications shall comply with the recommendations of the commercial and residential soil engineering studies by Earth Systems Consultants Northern California. Each soil engineering study lists approximately 45 recommendations that are included in the project for site grading, temporary cut slopes, foundations, slabs-on-grade, retaining walls, utility trenches, drainage, and asphalt pavement design, most of which reflect standard engineering practices that are not required to mitigate environmental impacts. The recommendations that specifically address potential soils hazards found on the site are included below.

Expansive Soils

- Pre-moisturizing programs for the overall site, the foundation trenches, and soil subgrades for concrete slabs-on-grade shall be utilized during construction, if required.

- Drainage shall be controlled away from all structures and pavements.

Commercial

- A nonexpansive, import fill for the top 12 inches of the soil building pad, and increased foundation trenching depths shall be utilized in the commercial building(s).

Residential

- Extra reinforcing steel in concrete floor slabs and increased foundation trenching depths shall be utilized in the residential building(s).

Erosion

- A City approved Construction Erosion Control Plan shall be developed and implemented with such measures as: 1) temporary and permanent planting of exposed soil, 2) temporary check dams, 3) temporary sediment basins and traps, and 4) temporary silt fences.

Seismic Shaking

- All structures shall be designed and constructed to incorporate wall bracing, mudsil anchors, tie downs, and/or hinge connectors to ensure structural stability as required by the earthquake design regulations of the Uniform Building Code.

CONCLUSION

The implementation of commonly used mitigation measures including special foundations systems, pre-moisturizing programs, control of drainage, construction erosion control measures and the Uniform Building Code requirements regarding the design and construction of buildings to resist earthquake forces would reduce the expansive soils and erosion hazards and the seismic shaking impacts to a **less-than-significant impact with mitigation.**

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C. VEGETATION AND WILDLIFE

H.T. Harvey & Associates conducted a biological assessment and updates that are included in Appendix B and a Tree Survey that is included in Appendix C.

SETTING

Vegetation

A biotic survey of the project site was conducted on August 3, 1995 and updated on November 14, 1996. The project site consisted of agricultural row crops, including strawberries, corn, tomatoes, beans, squash and peppers at that time; however, no crops were planted in 1997. Ruderal areas of non-native grassland were located along the northerly and southeasterly edges of the site. The vegetation at the northern edge was sparse, with the exception of a few large trees. Vegetation along the southeast corner included yellow-star thistle and fennel, interspersed with low-growing non-native grasses. The site, which is completely surrounded by development (except for the Guadalupe River), has been extensively farmed for several decades and does not support any natural habitats. Therefore, the site lacks any suitable habitat for special-status plant species that occur in this region of Santa Clara County.

Trees

A detailed tree survey of all trees on the site having trunk diameters of 4 inches or greater, or having multiple trunks, was conducted. A total of 33 trees, ranging in diameter from 7 inches to 68 inches, were tagged and evaluated. Fourteen trees exceed 18 inches in diameter and come under the review of the City's Tree Ordinance. There are no designated Heritage Trees on the site. The approximate locations of the trees are shown on the following Tree Locations map, and their description by type, size, and general condition is given in the following table.

General conditions were determined using a rating system for individual tree health and vigor conditions, by assigning values from zero to five, with values of zero being the worst rating and values of five being the best. Trees with values of five were rated as "excellent", values of four were rated as "good", values of three were rated as "fair", values of one to two were rated as "poor", and values of zero were dead.

Riparian Corridor

The Guadalupe River is located adjacent to the site's northeasterly boundary and slightly beyond the site's easterly boundary. The northeasterly boundary of the site varies from 10 to 100 feet from the bank of the Guadalupe River. However, the majority of the northeasterly boundary is within 10 to 20 feet of the top of bank. The project boundary is generally closer to the top of bank in the south and further from it in the north.

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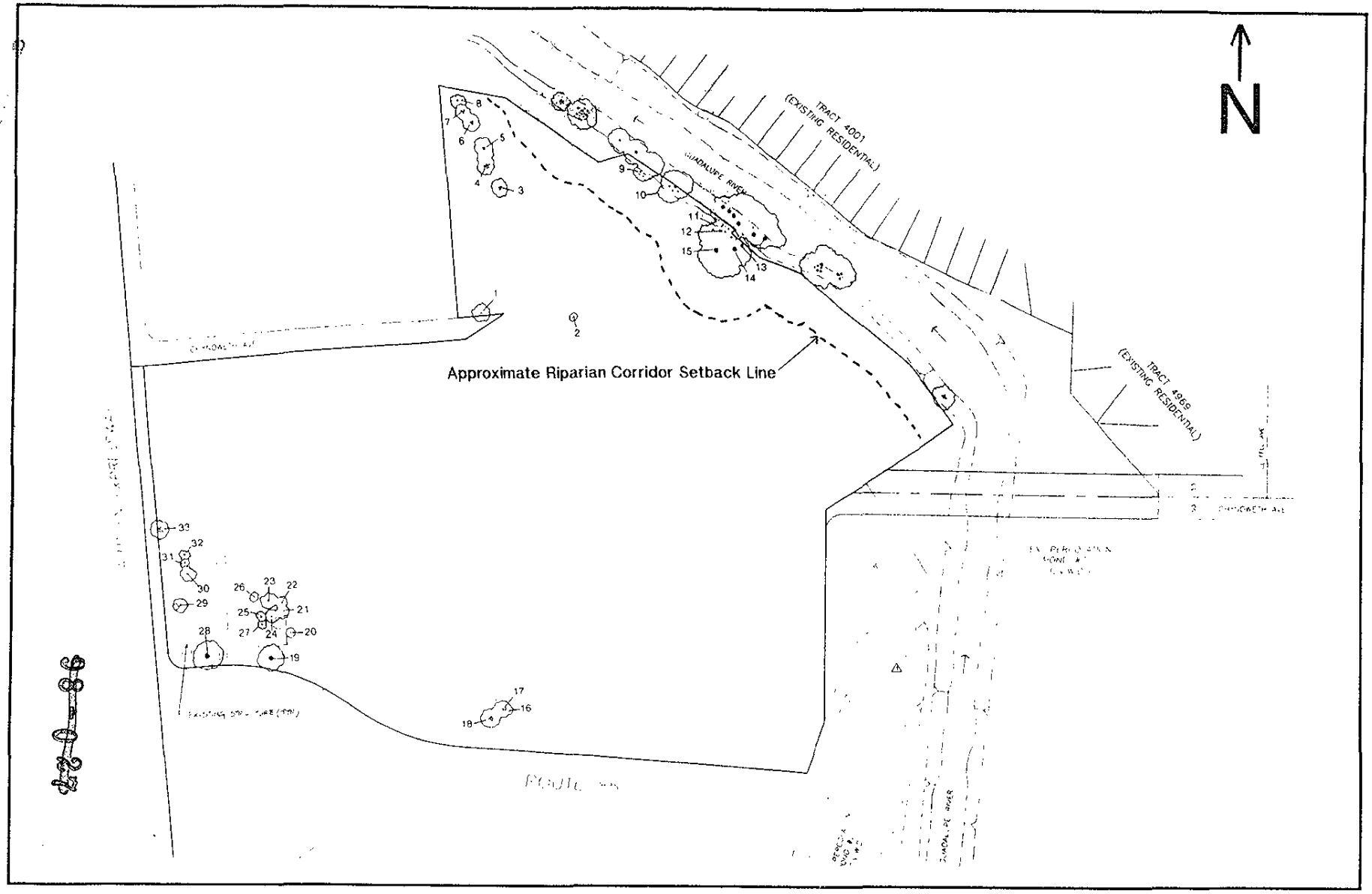

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Tree Locations

Figure 11

Table 2. Existing Trees

No.	Scientific Name	Common Name	Diameter *(inches)* *	General Condition
1.	*Quercus lobata*	Valley Oak	9	F
2.	na	(Unidentified Ornamental)	7,7,5	G
3.	*Juglans hindsii*	California Black Walnut	11,7,6	P
4.	*Juglans hindsii*	California Black Walnut	20,14,9	G
5.	*Platanus racemosa*	California Sycamore	26	G
6.	*Juglans regia*	English Walnut (graft)	20	P
7.	*Juglans hindsii*	California Black Walnut	27	G
8.	*Juglans hindsii*	California Black Walnut	17,16,10	P
9.	*Juglans hindsii*	California Black Walnut	16,16,13	F
10.	*Platanus racemosa*	California Sycamore	38,29,23	E
11.	*Platanus racemosa*	California Sycamore	18,15,8	F
12.	*Platanus racemosa*	California Sycamore	16,15,14	G
13.	*Platanus racemosa*	California Sycamore	16,12	F
14.	*Eucalyptus globulus*	Blue Gum	68	G
15.	*Eucalyptus globulus*	Blue Gum	41	G
16.	*Sambucus mexicanus*	Mexican Elderberry	9,7,7	F
17.	*Sambucus mexicanus*	Mexican Elderberry	18,15,9	G
18.	*Ulmus parvifolia*	Chinese Elm	12,10,10	E
19.	*Juglans hindsii*	California Black Walnut	33	G
20.	*Juglans regia*	English Walnut	10,9	F
21.	*Robinia pseudoacacia*	Black Locust	14,11,7	F
22.	*Robinia pseudoacacia*	Black Locust	15	F
23.	*Robinia pseudoacacia*	Black Locust	18	F
24.	*Robinia pseudoacacia*	Black Locust	13,9	F
25.	*Robinia pseudoacacia*	Black Locust	18	F
26.	*Juglans regia*	English Walnut	12,4,3	F
27.	*Acer sp.*	Maple	19	F
28.	*Oleo europaea*	Olive	68	E
29.	*Robinia pseudoacacia*	Black Locust	17	F
30.	*Acacia sp.*	Acacia	12,10	G
31.	*Acacia sp.*	Acacia	9	F
32.	*Acacia sp.*	Acacia	10	D
33.	*Ailanthus altissima*	Tree of Heaven	9,9,9	G

E - excellent G - good F - fair P - poor D - dead * Diameter at 2 feet above ground

Note: Some trees have multiple stems from a single trunk; only up to the three largest are listed.

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The riparian canopy varies considerably along the property boundary. Several sections of the river, especially to the north, contain little or no woody vegetation. In other sections of the river, especially in the central portion of the site, the riparian canopy extends well beyond the top of bank and approximately 15 to 20 feet into the parcel. The riparian canopy extends over 75 feet into the parcel along a 100-foot section in the south-central portion of the site.

The riparian vegetation adjacent to the parcel is generally degraded. There is little if any woody vegetation within the channel and lower banks of the river. However, moderate quality riparian vegetation does occur from the upper banks of the river to several feet beyond the top of bank in some areas. Approximately 50 percent of the riparian vegetation along the property boundary is of moderate quality. The remaining vegetation within the property boundary is of low quality being either bare or sparsely vegetated.

The riparian vegetation along the property boundary varies from open to moderately dense and is dominated by California sycamore. Other woody species include red willow, Mexican elderberry, buckeye, black walnut, coast live oak, coyote brush, mule fat, Himalaya berry, and common snowberry. The herbaceous vegetation is a mixture of non-native grasses and forbs.

Wildlife

The project site contains disturbed/agricultural habitat. Wildlife typically associated with this habitat type include birds, reptiles, and small mammals. Several special-status animal species that may occur in the vicinity of the site include the California tiger salamander, California red-legged frog, white-tailed kite, Northern harrier, and tri-colored blackbird. However, due to the disturbed nature of the site and the fact that it has been farmed continuously for over 30 years, no suitable habitat exists onsite for any of these species.

Burrowing Owls

Status: Federal Migratory Bird Treaty Act; State Species of Special Concern

The burrowing owl, a small terrestrial owl, prefers open grassland and sparse shrubland ecosystems. These owls prefer annual and perennial grasslands, typically with sparse or non-existent tree or shrub canopies. Burrowing owls are generally found in close association with California ground squirrels. Owls use the abandoned burrows of ground squirrels for shelter and nesting. Owls also use sites for wintering, foraging or migration stopovers. Occupancy of suitable habitat is verified by observations of one or more burrowing owls on the site, or by the presence of owl feathers, cast pellets (or other prey remains), eggshell fragments, or excrement in, or near, a burrow entrance.

Surveys for burrowing owls were conducted on the site on August 3, 1995, on November 14, 1996 and on January 14, 1998. Walking transects for owls or their sign (e.g., whitewash, regurgitated pellets, and feathers) were conducted (approximately 50 feet apart) in all areas of the site that

were not planted. Planted areas were visually inspected but due to recent disking they do not support ground squirrel burrows or other suitable burrows. On the first two occasions, six active California ground squirrel burrows were observed in the southeasterly corner of the site. No evidence of occupation or use by burrowing owls was observed at any of these burrows. It was unlikely that burrowing owls would use these burrows because the burrows were obscured by brushy and weedy vegetation, and the majority of the site was farmed on a continuous basis prior to 1997 and did not contain habitat suitable for burrowing owls.

The 1998 survey results are consistent with the results of the burrowing owl surveys conducted at the site in 1995 and 1996. No burrowing owls were observed on or adjacent to the property in 1998 and the site was found to be largely unsuitable for burrowing owls due to a general lack of small mammal burrows that could be utilized for nesting and roosting and the less than optimal foraging habitat present. Since the site has been extensively farmed over the years and has no history of owl occupation, the site currently does not comprise habitat. The site does, however, contain debris piles that could, conceivably, provide breeding and roosting habitat for burrowing owls, and several California ground squirrel burrows also occur immediately adjacent to the site.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on vegetation and wildlife if it:

- Substantially deteriorates the habitat of a fish or wildlife species.
- Causes a fish or wildlife population to drop below self-sustaining levels.
- Threatens to eliminate a plant or animal community.
- Reduces the number or restricts the range of a rare or endangered plant or animal species.
- Substantially affects a rare or endangered species of animal or plant or the habitat of the species.
- Interferes substantially with the movement of any resident or migratory fish or wildlife species.
- Directly affects species under provisions of the Migratory Bird Treaty Act (e.g. burrowing owls and nesting raptors).
- Substantially affects sensitive habitat (e.g. woodlands, riparian areas, oak woodland, and serpentine grassland).
- Substantially diminishes habitat for fish, wildlife, or plants.

IMPACT AND MITIGATION

Vegetation

Trees

There are 33 trees on the project site, ranging in diameter from 7 to 68 inches. When specific site designs are developed at the PD Permit stage, the trees would be assessed to determine which ones would be removed. Fourteen of the trees exceed 18 inches in diameter (56-inch circumference) and come under the review of the City's Tree Ordinance, which requires a permit

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for the removal of any tree with an 18-inch diameter (56-inch circumference) or greater. Any tree(s) that is removed would be replaced with a new tree(s) at the ratio specified in the Mitigation section.

Riparian Corridor

The northeasterly and easterly boundaries of the project site are located along the Guadalupe River. Riparian vegetation adjacent to the site is generally degraded; approximately 50 percent is of moderate quality while the remainder is of low quality being either bare or sparsely vegetated.

The project site would comply with the Riparian Corridor Policy of the City of San Jose. The Guadalupe River is a riparian corridor inside the Urban Service Area. The Riparian Corridor Policy recommends a 100-foot setback from the top of bank or outside edge of riparian habitat (whichever is greater) from development. The specific riparian setback along the northeasterly boundary of the site would be determined at the PD Permit stage in accordance with the Riparian Corridor Policy Study. The project would include a riparian corridor setback, the approximate location of which is shown on the Tree Locations map, Figure 11.

Wildlife

The project would require the removal of the trees and vegetation on the site. The birds and small mammals would diminish during the initial construction, but as the urban landscaping matures, birds that have adapted to the urban environment would return.

Burrowing Owls

The majority of the project site was farmed on a continuous basis until 1997 and does not contain habitat suitable for burrowing owls. Six California ground squirrel burrows have been observed in the southeasterly corner of the site; however, no evidence of occupation or use by burrowing owls was observed at any of these burrows during 1995, 1996 and 1998 surveys, and it is unlikely that burrowing owls would use these burrows as they are obscured by brushy and weedy vegetation. Onsite debris piles and/or offsite ground squirrel burrows, immediately adjacent to the project site, could provide breeding and roosting habitat for burrowing owls, however. It is possible for a breeding pair to move in during some future breeding season. Owls might also winter on the site. Therefore, pre-construction surveys should be conducted by a qualified ornithologist to insure that burrowing owls are not using any of the debris piles or burrows on or immediately adjacent to the site during either the breeding or winter seasons.

If no owls are located during these surveys, then no additional action is warranted. However, if owls are located on or adjacent to the site, then an ornithologist would determine the extent of a construction-free buffer zone around the active nesting burrowing owls. No construction activities should proceed that would disturb breeding owls. Burrowing owls discovered using the site during the non-breeding season may be passively relocated by installing one-way doors in active burrows.

Active Raptor Nests

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under provisions of the Migratory Bird Treaty Act and California Department of Fish and Game (CDFG) code. Construction disturbance could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Two or three eucalyptus trees located in the northeasterly portion of the site may provide habitat suitable for raptors; however, no raptor nests were detected during surveys conducted in November, 1996. Nonetheless, raptors may nest on the site in future breeding seasons. Pre-construction surveys should be conducted if project construction is to occur between February and July.

Impact Summary

Project development would result in significant impacts on trees, the riparian corridor along the Guadalupe River, burrowing owls and active raptor nests.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Trees

- A permit shall be obtained for the removal of any tree with a diameter of 18 inches (56-inch circumference) or greater; and any such tree(s) that is removed shall be replaced with a tree(s) as required by the San Jose Tree Ordinance.

- Trees to remain shall be safeguarded during construction by a Tree Protection Plan, including measures such as the storage of oil, gasoline, chemicals, etc. away from trees; grading around trees only as approved, and prevention of drying out of exposed soil where cuts are made; no dumping of liquid or solid wastes in the dripline or uphill from any tree; and construction of barricades around the dripline of the trees, as outlined in the City's Tree Ordinance, that shall be approved by the Planning Department prior to the issuance of a grading permit.

- Street trees shall be planted along the public streets.

- Any trees that are removed shall be replaced by new trees at the following ratios:

• $\geq$18-inch diameter	4	24-inch box
• 12 to 17-inch diameter	2	24-inch box
• <12-inch diameter	1	15 gallon

Riparian Corridor

- A riparian setback along the northeasterly boundary of the site shall be determined at the PD Permit stage in accordance with the Riparian Corridor Policy Study in order to protect the riparian corridor from any proposed development.

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Burrowing Owls

- Construction activities during the nesting season (February to July) shall be preceded by pre-construction surveys for nesting burrowing owls conducted by a qualified ornithologist.

- No construction activities that would result in disturbance to nesting burrowing owls shall occur.

- If any burrowing owls are discovered using the site during the non-breeding season, a passive burrowing owl relocation plan to be approved by the City of San Jose, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service shall be developed and implemented, including the following measures:

  - One-way doors shall be installed in active burrows and shall remain for up to four days to ensure no owls remain underground.

  - All active burrows shall then be carefully excavated to ensure that no owls remain underground.

  - All burrows in the construction area shall be plugged to prevent owls from using them.

Active Raptor Nests

- Construction activities during the nesting season (February to July) shall be preceded by pre-construction surveys for nesting raptors by a qualified ornithologist. No construction activities, including tree removal, grading, etc., which would result in disturbance to active raptor nests, shall proceed. A qualified ornithologist shall determine the extent of construction-free zones around active raptor nests located during surveys. The USFWS and CDFG should also be notified of any active raptor nest within the construction zone.

CONCLUSION

The implementation of the San Jose Tree Ordinance, the addition of new trees, the provision of a riparian corridor setback along the northeasterly boundary, pre-construction surveys for burrowing owls by a qualified ornithologist prior to construction and the development and implementation of a burrowing owl mitigation program if owls are discovered using the site, and a pre-construction survey for nesting raptors by a qualified ornithologist prior to construction and no disturbance to active raptor nests if discovered would reduce the significant impacts to vegetation and wildlife to a **less-than-significant impact with mitigation.**

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D. WATERWAYS AND FLOODING

SETTING

There are no waterways on the project site; however, the Guadalupe River, a Santa Clara Valley Water District facility, is located along the northeasterly and easterly site boundaries. According to the Federal Emergency Management Agency's *Flood Insurance Rate Maps*, the site is not within Zone A, the area of a 100-year flood. The Santa Clara Valley Water District's *Maps of Flood Control Facilities and Limits of 1% Flooding* also indicate that the project site does not lie within a flood zone, as shown on the following Potential Flooding map.

SIGNIFICANCE CRITERIA

The proposed project would have a significant waterways and flooding impact if it:

- Causes substantial flooding.
- Exposes people or property to water-related hazards such as flooding or tidal waves.

IMPACT AND MITIGATION

The project site would not be subject to flooding in the event of a 100-year flood. Development of the site with urban uses would increase runoff from the site. Flood control facilities in the area, i.e., the Guadalupe River, is designed for urban runoff from the site; therefore, the project would not cause substantial flooding.

CONCLUSION

As the project site is not subject to flooding, flood hazards would be a **less-than-significant impact.**

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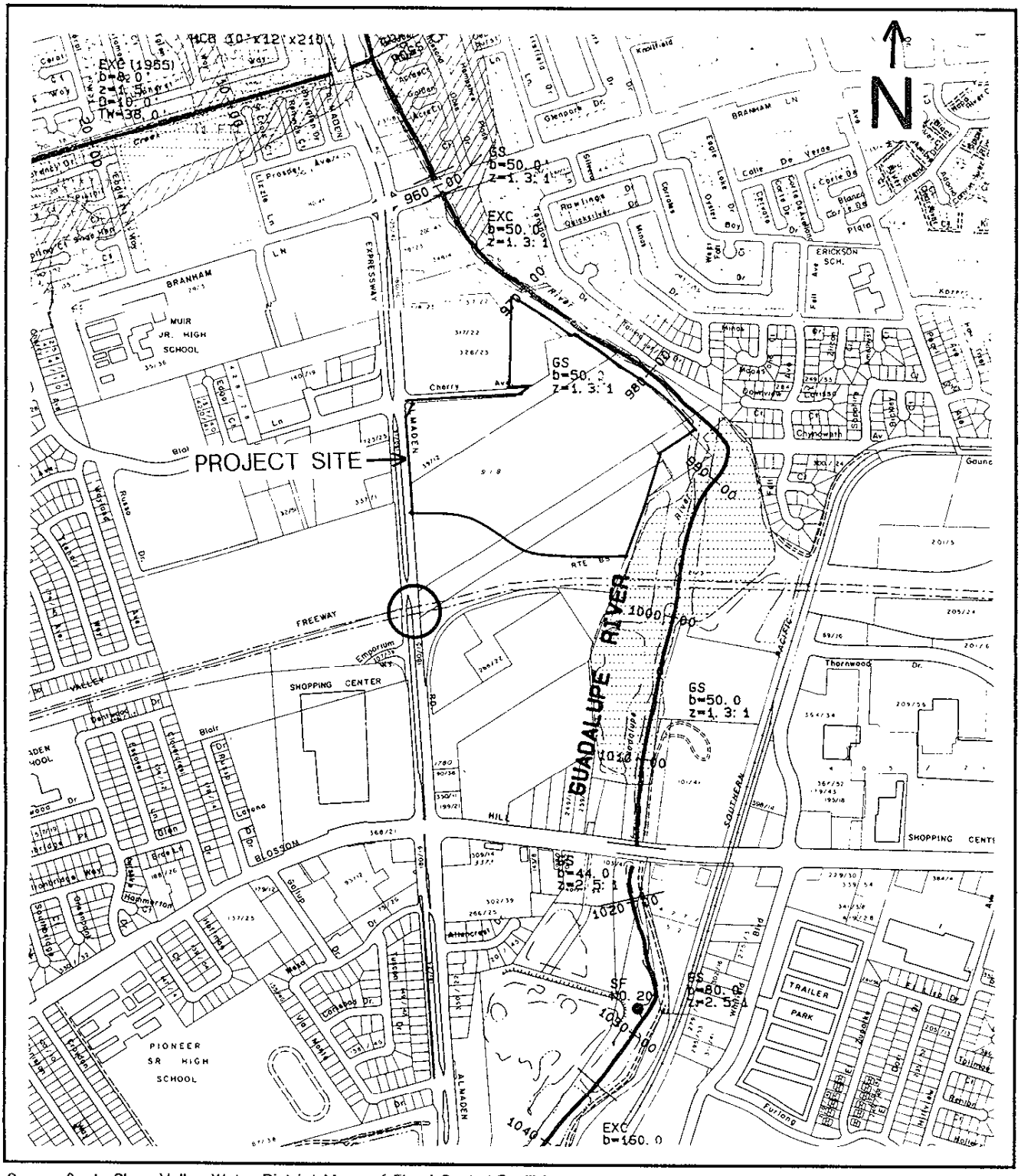

Source: Santa Clara Valley Water District Maps of Flood Control Facilities and Limits of 1% Flooding

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Potential Flooding

Figure 12

E. WATER QUALITY

SETTING

Stormwater runoff from the project site drains northeasterly to the adjacent Guadalupe River, which flows northerly to San Francisco Bay. Water in the Guadalupe River is released into a Santa Clara Valley Water District groundwater recharge pond immediately easterly of the project site, which is one of several in the area. The ponds supplement natural groundwater recharge by allowing the river water to penetrate into the vast gravel and sand aquifers that lie beneath the floor of the Santa Clara Valley and hold the Valley's water supply.

Nonpoint Sources

The Clean Water Act states that the discharge of pollutants in stormwater to Waters of the United States from any point source is unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The U.S. Environmental Protection Agency requires under the Clean Water Act that any stormwater discharge from construction sites larger than five acres be in compliance with the NPDES. The State Regional Water Quality Control Board (RWQCB), which is responsible for implementing and enforcing the program, issued a statewide General Permit for construction activities. Provisions of the current Permit require that the following issues be addressed with respect to water quality regardless of the size of the site: 1) erosion and sedimentation during clearing, grading, or excavation of a site; and 2) the discharge of stormwater once construction is completed. Coverage under this permit would be obtained by submitting a Notice of Intent to the RWQCB that identifies the responsible party, location, and scope of operation; and by developing and implementing a Stormwater Pollution Prevention Plan (SWPPP) as well as monitoring the effectiveness of the plan.

In response to, and in order to comply with, Federal, State, and regional regulations for stormwater discharges, the Santa Clara Valley Nonpoint Source Control Program was undertaken in 1990. The program was initiated and is supported by the City of San Jose, the County of Santa Clara, and the Santa Clara Valley Water District. The primary objectives of the program are to identify and characterize sources of nonpoint pollution, develop programs to control the sources, and present an implementation program. The program is currently directed toward monitoring existing levels in selected streams, and identifying and eliminating illicit connections and/or illegal dumping that result in the discharge of (primarily) industrial or sanitary wastes into the municipal storm drain systems. A number of control measures, including those related to development activities, industrial and construction inspections, public agency activities, and public outreach efforts, are also currently being developed and implemented. The development, implementation, and enforcement of control measures to reduce pollutant discharges from areas of new development are the responsibility of the Nonpoint Source Control Program in cooperation with the RWQCB.

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SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on water quality if it:

- Substantially degrades water quality or contaminates a public water supply.
- Substantially degrades or depletes groundwater resources or interferes substantially with groundwater recharge.

IMPACT AND MITIGATION

The primary impact on water quality would be from street drainage. Particulates, oils, greases, toxic heavy metals, pesticides, and organic materials are typically found in urban storm runoff. Commercial development would result in an increase in the area of impervious parking surface at the site, increasing the vehicle use and potential discharge of associated pollutants. Leaks of fuel or lubricants, tire wear and fallout from exhaust contribute petroleum hydrocarbons, heavy metals and sediment to the pollutant load.

Construction Water Quality

Construction of a typical commercial/residential project causes several short-term water quality impacts. Grading and construction just prior to and during the rainy season could cause minor increases in erosion, and vehicles could track mud and debris onto public streets.

Impact Summary

Stormwater runoff associated with project development and construction-related activities such as clearing, grading, or excavation would result in significant impacts to water quality.

MITIGATION MEASURES INCLUDED IN THE PROJECT

- A Notice of Intent and a Stormwater Pollution Prevention Plan that addresses both construction and post-construction periods and specifies erosion and sediment control measures, waste disposal controls, maintenance responsibilities, and non-stormwater management controls, shall be submitted to the RWQCB to comply with the stormwater discharge requirements of the NPDES General Permit.

- A City approved Stormwater Pollution Prevention Plan and post-construction erosion control plan shall be developed to control siltation and sedimentation and implemented during and/or after construction with such measures as: 1) erection of a silt fence or diversion dikes around the perimeter of the site to capture and detain sediment; 2) protection of onsite and offsite stormwater inlets with straw bales, sand bags, filter fabric or other suitable measures to prevent sediment from entering the storm drains; 3) regular sprinkling of graded areas by a water truck to suppress dust; 4) painting of educational messages on all stormwater inlets to prevent unlawful dumping of waste materials; 5) landscaping and irrigation of all areas not covered by hardscape to control erosion; and, if required, 6) installation of a system to remove

pollutants from stormwater runoff, e.g., grassy swales, filters at each catch basin or interceptor structures on drainage lines before they exit the site.

Construction Water Quality

- Grading operations shall be conducted during the dry months to minimize the potential for erosion during construction.

- A City approved Construction Erosion Control Plan shall be developed and implemented with such measures as: 1) temporary and permanent planting of exposed soil, 2) temporary check dams, 3) temporary sediment basins and traps, and 4) temporary silt fences.

- Public streets that are impacted by project construction activities shall be damp swept and washed down daily.

CONCLUSION

The implementation of the stormwater discharge requirements in compliance with the NPDES General Permit and of the Stormwater Pollution Prevention Plan and post-construction erosion control plan and the timing of grading activities, construction erosion control measures and the damp sweeping and washing down of streets would reduce water quality impacts to a **less-than-significant impact with mitigation.**

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F. ENERGY

SETTING

California and the nation in general have been in an extended period of increasingly higher energy costs and depleting non-renewable energy resources for utilities and transportation. Public utilities and public transit that are available to serve the project are located in the project vicinity.

SIGNIFICANCE CRITERIA

The proposed project would have a significant energy impact if it:

- Encourages activities which result in the use of large amounts of fuel and energy.

IMPACT AND MITIGATION

The construction and operational phases of the project require the consumption of energy. During the construction phase, gasoline and diesel would be used to power equipment and electricity would be required for power tools. Upon completion and occupancy of the project, electricity and natural gas would be required for heating, cooling, lighting, and office equipment. Gasoline and other fuels would also be consumed by vehicles transporting employees and other persons and services to the project.

The automobile would be the primary means of access to the project site; however, the availability of transit service on Almaden Expressway and along State Route 87/85 (the Guadalupe Light Rail Transit system) provides an alternate, energy conserving means of transportation for future project employees/residents.

The major opportunities to conserve energy are related to the building design. An east-west longitudinal building orientation (maximum southerly window exposure) is the optimum arrangement for capturing the sun's energy during winter months. Where windows with southerly exposure are used, a 32 to 34-inch eave overhang would be required to shield the windows from the summer sun.

A list of energy conservation measures that can be considered is included in Appendix D.

Impact Summary

The increase in demand for energy generated by project development would be a significant impact.

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MITIGATION MEASURES INCLUDED IN THE PROJECT

- The buildings shall be designed and constructed in accordance with all applicable insulation and energy conservation regulations, as prescribed by Title 24 of the California Administrative Code, including the design and exposure of windows, insulation, mechanical and electrical equipment, and landscaping.

CONCLUSION

The implementation of the provisions of Title 24 of the California Administrative Code would reduce energy impacts to a **less-than-significant impact with mitigation.**

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G. CULTURAL RESOURCES

Holman & Associates conducted an archaeological reconnaissance and subsurface testing program that are included in Appendix E, and Archives & Architecture conducted an historical and architectural evaluation that is included in Appendix F.

SETTING

Archival Review

Prehistoric

The project site is within a potential archaeological resource zone as outlined on the maps on file at the City of San Jose Department of City Planning. Prior to a field reconnaissance, maps and records at the California Historical Resources Information System, located at Sonoma State University, were consulted for any record of archaeological remains in and around the project area. No recorded sites are located in the immediate area, although eight archaeological surveys have been conducted either near or partially within the project borders. These studies account for less than one quarter of the current project area.

Historic

A 19th century farm on the project site was owned by George Greenawalt, who established the farm on Lot 4 of the 200± acre property that was subdivided upon the death of his father, David Greenawalt, in 1888. An 1897 map shows the location of a ranch toward the end of a long tree-lined driveway, which closely corresponds to the current Chynoweth Avenue. The tree-lined roadway passes due east past the Greenawalt tract to end near the Guadalupe River.

Site Reconnaissance

A field reconnaissance of the project site was conducted during July, 1996 as described in the report in Appendix E. The reconnaissance was conducted by walking over the site in parallel lines spaced closely enough to provide a visual inspection of all areas not flooded; covered by buildings, pavement, fill or trash; or by dense vegetation (or about 25 percent of the property). Approximately 75 percent of the property was visible. Additional time was spent in the general vicinity of the former Greenawalt House and the end of the former tree-lined road, inspecting it for any signs of historical archaeological material or obscured archaeological features. No surface historic or prehistoric material was found; however, the project site is located in the area of the confluence of the Guadalupe River and Alamitos Creek that has been repeatedly crossed by meanders of either creek. Elsewhere in the Santa Clara Valley, numerous buried prehistoric sites have been found next to buried meanders of creeks where there has been silting and further modifications by historic farming activity. Therefore, subsurface testing is warranted to determine if there are any prehistoric sites buried on the project site that could be impacted by the proposed project.

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Subsurface Testing

A total of 69 backhoe trenches were excavated in a regular grid pattern across the entire project site to average lengths of approximately 8 feet and average depths of approximately 6.5 feet in July, 1997. The emerging soil, backdirt and all walls of the trenches were constantly examined for archaeological indicators. A single isolated prehistoric artifact was found on the surface; however, no evidence of archaeological or historic resources was found during the trenching operations.

Site History

The earliest known owner of the project site was Edward B. Dunn of Kentucky, as noted on an 1852 survey. A portion of the Dunn property was conveyed to F.M. Fowler in 1860 and the remainder in 1867. Later in 1867, David Greenawalt acquired approximately 200 acres lying just south of Branham Lane and fronting both sides of Almaden Road. The land transactions that occurred in 1867 probably cleared the title so that Fowler could legally sell the property to Greenawalt, who engaged in diversified farming, raising wheat, barley and hay. David Greenawalt passed away in 1888, and his property was divided between his seven children. The project site consists of portions of Lot 4, Lot 5 and Lot 6 of this Greenawalt Partition, as shown in the report in Appendix F.

Lot 4 (APN 458-17-006,017), which contained approximately 32.6 acres, was inherited by George Greenawalt. It is surmised that in the late 1880s or early 1890s, George built the house shown on an 1897 map of the property. A butcher shop was located just behind the house. Approximately 13.92 acres in the southern portion were split off and sold following George's death sometime after 1893. In 1922 this 13.92-acre property was purchased by Joseph and Rose Cassibba, Italian immigrants, who cultivated prune and apricot orchards. After their son, Ralph's, marriage in 1951, the small white circa 1915 bungalow that is currently located at 14520 Almaden Expressway was moved onto the property in 1952. Following Rose's death in 1965, the old Cassibba house on the property was occupied by daughter Palma Cassibba Nichols and her family until it was sold in 1970. After the sale, this house was demolished and the orchards removed. Ralph stayed on the property until 1978. All that remains of the Cassibba occupation of the site is the small Ralph Cassibba house with a garage to the rear. The remainder of the property was used for growing row crops.

Lot 5 (APN 458-17-018) was inherited by John Kooser Greenawalt, an orchardist, who sold the 32.63-acre property to Mary J. Hatch in 1897. Mary's niece, Gertrude Welch, married Gustave Malech, a German immigrant, in 1902 and they acquired title to the property in 1906. By 1914, the property had a five-room cottage, bath and barn, and consisted of prune, apricot and peach orchards and an alfalfa hay crop. The Malech house and barn stood until they were demolished during the construction of State Route 85 in the early 1990's. The older farm buildings that remain on the property relate to the Malech occupation. The fruit stand was built sometime after 1945. The orchards were replaced with vegetable fields.

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The southeast corner of the project site was the northeast corner of Lot 6 (APN 458-16-32) of the Greenawalt Partition, which was inherited by Amelia Greenawalt Withers. The Withers house was outside of the project area, and there were no buildings located on this portion of the Withers property. This area was used to grow vegetables.

Potential Historic Resources

Extant structures dating to the Cassibba occupation of Lot 4 consist of a small white, California bungalow located at 14520 Almaden Expressway. Constructed about 1915, this building was moved from an unknown location in 1952. A garage is located to the rear of the house. An irrigation well is located at the southwest corner of the property. A small shed is located just to the east of this well and appears to date to the 1920s. Project area maps show the well and pump house located on the Cassibba property; however, Mrs. Nichols claims that this was the Malech well.

The older buildings still present on Lot 5 appear to date to the Malech occupation of the site. This complex of buildings includes a small laborer's cottage with clapboard siding, a board-and-batten chicken coop, and several other agriculture-related sheds. The fruit stand dates to sometime since 1945. Recent structures on the property include a modular home.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on cultural resources if it:

- Disrupts or adversely affects a prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic group or social group, or a paleontological site except as part of a scientific study.
- Adversely impacts a cultural or historical resource that is listed, or meets the criteria for listing, as a Landmark on any Federal, State or local listing.

IMPACT AND MITIGATION

Potential Archaeological Resources

The project site is in a potential archaeological resource zone; however, there are no recorded sites on the property, no known Native American burials, and a reconnaissance of the site did not locate any cultural resources. Except for a prehistoric isolate found on the surface during the subsurface testing operations, no evidence of significant archaeological resources was found on the surface or to an average depth of 6.5 feet. This lack of surface and/or subsurface indicators of either historic and/or prehistoric materials does not, however, totally preclude the possibility that small or isolated subsurface deposits may still exist or that evidence of such resources has been obscured by more recent natural or cultural factors. The project area is found at the confluence of both the Guadalupe River and Alamitos Creek, in an area that has been crossed repeatedly by meanders of either creek. Elsewhere in the Santa Clara Valley, numerous buried prehistoric sites have been found as the result of construction-related earthmoving, situated next to buried

meanders of creeks. The problem of buried archaeological and historical materials is compounded by the fact that this area has clearly been built up by flood deposited silt materials, and has been further modified by historic farming activity dating back to the mid 1800s. Lot 4 of the Greenawalt Partition (APN 458-17-006,017) has the potential for historic resources in the form of subsurface archaeological deposits that may date to the 1850s. There is also a potential for deposits associated with the farm complex/butcher shop dating to the late 1880s/1890s. Disturbances due to grading and trenching operations may result in potentially significant archaeological impacts.

Potential Historic Resources

Potential historic resources on the project site include the c1915 Ralph Cassibba house and the small laborer's cottage and related outbuildings associated with the Malech occupation.

Evaluation

The extant structures were evaluated according to the City of San Jose's criteria for historical significance as described in the report in Appendix F. Based on these criteria, the San Jose Historical Landmarks Commission has established a process by which historical resources are evaluated for significance and a numerical value is assigned. Scores of 134-67 points qualify the resource for nomination as a City Landmark; 66-33 points qualify the resource as a Structure of Merit or as a Contributing Structure to an historic district, and for listing on the Inventory of Historic Resources; and resources scoring 32 points or less are not eligible for a category of significance. Because of the lack of architectural integrity and historical significance, the Ralph Cassibba house earned an evaluation score of 17.26 points, making it ineligible for listing on the San Jose Historic Resources Inventory. The laborer's cottage and other outbuildings associated with the Malech property earned an evaluation score of 7.25 points, also making them ineligible for listing on the San Jose Historic Resources Inventory. The California State Historic Resource Inventory forms and City evaluation forms completed for the project site are located in the report in Appendix F.

The buildings in the project area do not appear to met the criteria for the National Register of Historic Places. The property is not associated with events that have made a significant contribution to the broad pattern of the area's local history (Criterion A). Historically, the buildings were associated with the Cassibba and Malech families who were well-known members of the local agricultural community; however, they were not known to have made any significant contributions to the development of local agriculture (Criterion B). Criterion C addresses the architectural characteristics of the buildings. The simple California bungalow architectural style of the Ralph Cassibba house is typical of many homes that were built in San Jose during this period. The laborer's cottage and other outbuildings associated with the Malech property represent rural vernacular architecture popular during the early 1900s; however, they do not exhibit significant architectural characteristics. Criterion D addresses the potential of significant archaeological deposits and features. A surface reconnaissance and subsurface testing on the site

did not locate any archaeological resources. It is therefore concluded that the early twentieth century buildings at this site do not meet any of the criteria for the National Register of Historic Places.

Impact Summary

The potential historic resources on the site have been determined not to be historically or architecturally significant. Although a surface reconnaissance and an extensive subsurface testing program did not locate any significant resources, disturbances due to grading and trenching operations may result in significant impacts to isolated prehistoric and/or historic cultural resources.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Native American Remains

- Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California: In the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified by the developer and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission, who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the landowner shall reinter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

- Any Native American human remains that are discovered and would be subject to disturbance shall be removed and analyzed, a report shall be prepared, and the remains shall be reburied in consultation and agreement with the Native American Most Likely Descendant designated by the Native American Heritage Commission.

Prehistoric and/or Historic Resources

- Should evidence of prehistoric and/or historic cultural resources be discovered during construction, work within 30 feet of the find shall be stopped to allow adequate time for evaluation and mitigation, and a qualified professional archaeologist shall be called in to make an evaluation; the material shall be evaluated; and if significant, a mitigation program including collection and analysis of the materials prior to the resumption of grading, preparation of a report, and curation of the materials at a recognized storage facility shall be developed and implemented under the direction of the Director of Planning.

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CONCLUSION

The implementation of State laws regarding the discovery of human remains and the archaeological mitigation program, if isolated resources are found during construction, would reduce the prehistoric and/or historic archaeological impacts to a **less-than-significant impact with mitigation.**

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H. TRAFFIC

Pang Engineers, Inc. conducted a traffic analysis and an update memo that are included in Appendix G.

SETTING

The proposed project's traffic impacts are analyzed using the City of San Jose Level of Service Program and the Santa Clara County Congestion Management Program methodologies. The San Jose methodology is used for the purposes of determining if the project would have a significant impact on the environment and the need for mitigation under the California Environmental Quality Act (CEQA), while the Congestion Management Program analysis is provided for information purposes only.

Street System

Access to the project site is to be provided by Almaden Expressway with right turns in and out planned from an existing and future driveway, plus Chynoweth Avenue with median openings for full intersections and driveways with right turns in and out, and (future) Sanchez Drive with median openings for full intersections and right turns in and out driveways. Almaden Expressway, which carries an Average Daily Traffic (ADT) volume of approximately 48,000 along the site, is a major six-lane north-south expressway along the site's westerly boundary. State Route 85, which carries an ADT volume of approximately 84,000 along the site, is a four-lane freeway located along the site's southerly boundary that has an interchange with Almaden Expressway. Chynoweth Avenue is a four-lane east-west street constructed from Almaden Expressway easterly, currently terminating where development on the north side of Chynoweth Avenue has completed the street improvements. This segment carries an ADT volume of approximately 2,700. Chynoweth Avenue continues as a four-lane east-west street easterly from the Guadalupe River. Sanchez Drive is currently a major four-lane north-south arterial street from Blossom Hill Road northerly to State Route 85.

Level of Service

In an urban street network, the critical determinants for overall traffic conditions are the operational characteristics of the major intersections. To establish a standard frame of reference when describing traffic flow, the concept of level of service is used. As described by the *Highway Capacity Manual*, the level of service of a facility is a theoretical traffic volume determined by its physical and operational characteristics and by stipulated conditions of traffic flow. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time, which is measured as the average stopped delay per vehicle. Flow conditions vary from unrestricted at Level A to forced flow at Level F, as described on the second following page.

The major street system in the project site vicinity and the levels of service are shown on the following Major Street System map.

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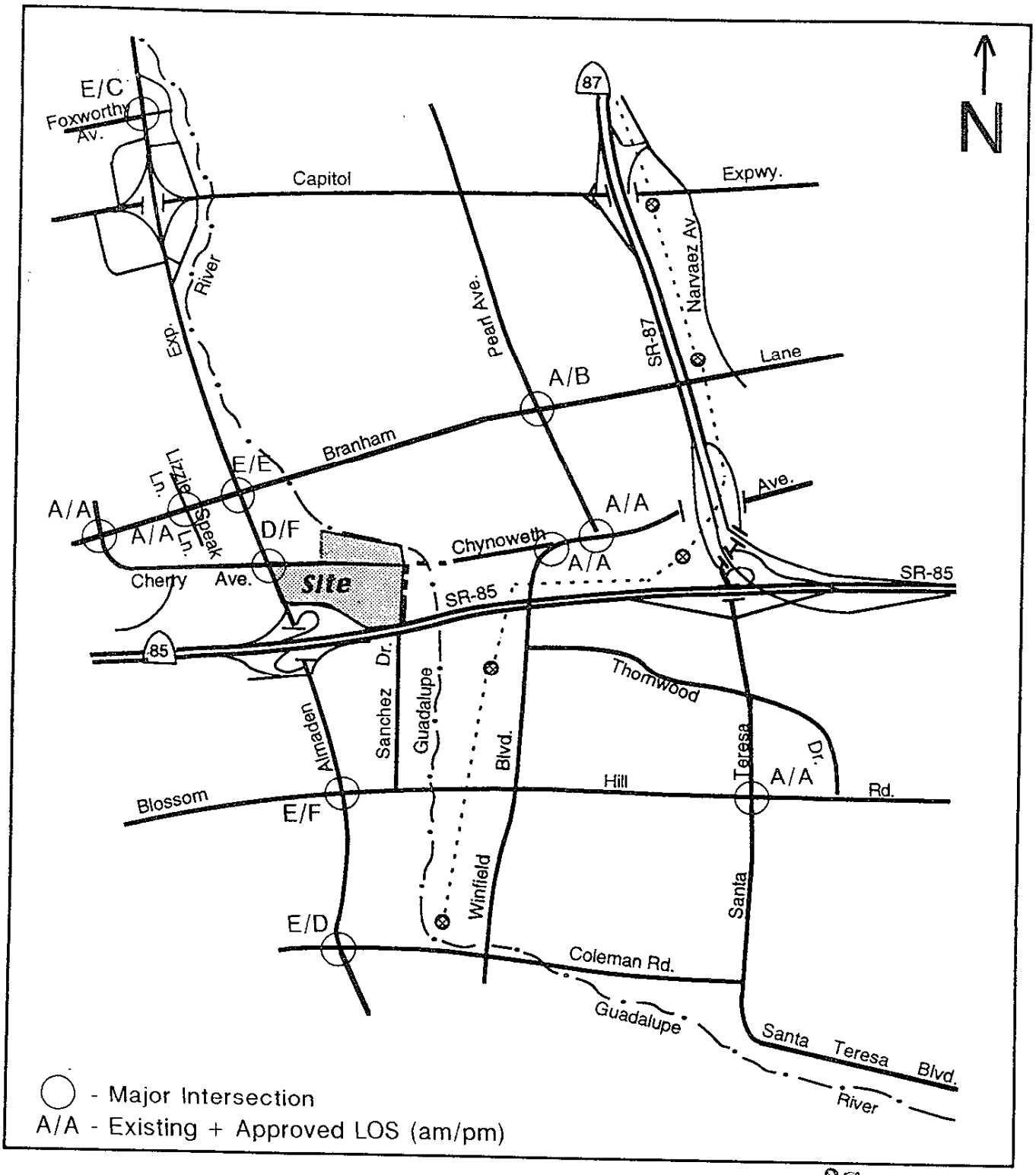

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Major Street System

Figure 13

Level of Service	Type of Flow	Traffic Conditions	San Jose Method V/C Ratio	CMP Delay (sec.)
A	Free	No approach phase fully utilized. No vehicle waits longer than one red indication.	<0.60	≤5.0
B	Stable	An occasional approach phase is fully utilized.	0.60-0.69	5.1-15.0
C	Stable	Occasional drivers may have to wait through more than one red signal. Backups may develop behind turning vehicles.	0.70-0.79	15.1-25.0
D	Approaching Unstable	Delays to vehicles may be substantial during short peaks, but periodic clearance of queues prevents excessive backups from developing.	0.80-0.89	25.1-40.0
E	Unstable	Capacity, with sustained delays and backups.	0.90-0.99*	40.1-60.0
F	Forced	Excessive delay.	Varies	>60.0

* In general, V/C ratios could not be greater than 1.00. However, if future demand projections are considered for analytical purposes, a ratio greater than 1.00 might be obtained, indicating that the projected demand would exceed the capacity.

Existing Conditions - City of San Jose Method

The capacity analysis technique developed by the City of San Jose Department of Public Works Development Services Division is used to evaluate local conditions and project impacts. Eleven major intersections that would be affected by the project were selected by the Department of Public Works Development Services Division staff for review. The General Plan/Transportation Level of Service Policy requires a minimum level of service "D" on City streets during peak traffic periods.

The major intersections were evaluated under existing and future traffic conditions to determine their level of service. Future conditions were determined by adding traffic projections from approved projects that have not been occupied, as provided by the City Department of Public Works Development Services Division, to the existing condition.

Four additional pending projects in the project vicinity that were previously included in the cumulative traffic scenario (Giacomazzi Property, Rubino Property, Lands of San Jose Water Company and Eden Housing) have since been approved by the City. These recently approved projects -- for up to 1,288 residential dwelling units and up to 82,400 square feet of commercial space -- were added to the City's Approved Trips Inventory, and their a.m. and p.m. peak hour volumes have been added to the existing plus approved condition for the proposed project. Additionally, a 3.6 percent per year growth rate from the original May, 1996 analysis date, or approximately 6.9 percent, has been added to update the existing plus approved traffic condition.

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The following table lists the volume/capacity ratios and levels of service for the existing and existing plus approved a.m. and p.m. peak hours.

Table 3. Existing Levels of Service - City of San Jose Method

Intersection	Peak Hour	Existing V/C Ratio	Existing Service Level	Existing + Approved V/C Ratio	Existing + Approved Service Level
Almaden Expressway and	a.m.	0.889	D	**0.993**	**E**
Branham Lane	p.m.	0.844	D	**0.962**	**E**
Almaden Expressway and	a.m.	0.749	C	0.844	D
Cherry Ave./Chynoweth Ave.	p.m.	0.925	E	**1.068**	**F**
Almaden Expressway and	a.m.	0.851	D	**0.983**	**E**
Blossom Hill Road	p.m.	0.889	D	**1.014**	**F**
Branham Lane and	a.m.	0.344	A	0.356	A
Cherry Avenue	p.m.	0.468	A	0.486	A
Branham Lane and	a.m.	0.265	A	0.272	A
Lizzie Lane	p.m.	0.575	A	0.591	A
Branham Lane and	a.m.	0.381	A	0.404	A
Pearl Avenue	p.m.	0.653	B	0.687	B
Almaden Expressway and	a.m.	0.912	E	**0.994**	**E**
Foxworthy Avenue	p.m.	0.659	B	0.728	C
Almaden Expressway and	a.m.	0.854	D	**0.976**	**E**
Coleman Road	p.m.	0.777	C	0.868	D
Blossom Hill Road and	a.m.	0.441	A	0.479	A
Santa Teresa Boulevard	p.m.	0.528	A	0.561	A
Chynoweth Avenue and	a.m.	0.322	A	0.393	A
Pearl Avenue	p.m.	0.303	A	0.392	A
Chynoweth Avenue and	a.m.	0.127	A	0.157	A
Winfield Blvd./Sapphire Ct.	p.m.	0.268	A	0.293	A

V/C = Volume to capacity

Under the existing and approved condition, five of the intersections, as shown in the above table in **bold**, are operating below Level D.

Public Transit

Public transit is provided in the project area by the Valley Transportation Authority. Bus route 64 travels along Almaden Expressway with bus stops at Cherry Avenue/Chynoweth Avenue. This route offers numerous connections to other transit routes allowing transit riders to reach most destinations throughout the county. In addition, the Ohlone-Chynoweth light rail station at the Route 85 and 87 interchange is located approximately a half mile to the east.

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Traffic Demand Management

Traffic Demand Management (TDM) measures are designed to reduce the number of commute-generated vehicular trips and total miles traveled. TDM measures such as carpooling and vanpooling are typically applied at the employment end of trips in order to be most effective. As discussed above, bus routes are conveniently located near the site. In addition, the commercial and/or residential development could be designed to facilitate pedestrian and bicycle access to public transit facilities.

Existing Conditions - Congestion Management Program

A Congestion Management Program (CMP) analysis was also performed using the guidelines outlined in the Santa Clara County CMP. Level of service calculations were performed for six critical intersections identified by the City of San Jose Department of Public Works Development Services Division. The CMP requires the use of CAPSSI-11 software for intersection level of service calculations. This software package is based on the method found in the 1985 *Highway Capacity Manual* for the analysis of signalized intersections. The level of service is determined based on average vehicle delay.

The following table lists the weighted average delays and the equivalent levels of service for the existing a.m. and p.m. peak hours.

Table 4. Existing Levels of Service - CMP Method

		Existing		Existing + Approved	
Intersection	Peak Hour	Delay* (sec.)	LOS	Delay* (sec.)	LOS
Almaden Expressway and	a.m.	29	D+	30	D+
Branham Lane	p.m.	35	D-	38	D-
S.R. 85 and	a.m.	6	B+	7	B+
Almaden Expressway (Northbound)	p.m.	24	C-	37	D-
S.R. 85 and	a.m.	9	B+	9	B+
Almaden Expressway (Southbound)	p.m.	12	B-	13	B-
Almaden Expressway and	a.m.	28	D+	31	D
Blossom Hill Road	p.m.	45	E+	48	E
Almaden Expressway and	a.m.	26	D+	28	D+
Coleman Road	p.m.	33	D	36	D-
Blossom Hill Road and	a.m.	25	C-	25	C-
Santa Teresa Boulevard	p.m.	27	D+	28	D+

LOS = Level of Service

* Delay = Average stopped delay per vehicle in seconds.

Under the existing plus approved condition, none of the intersections has a weighted average delay equivalent to a level of service F.

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Freeway Segments

A freeway segment analysis was performed along State Route 87 north of State Route 85, and on State Route 85 both east and west of Almaden Expressway. For freeway segments, the 1985 *Highway Capacity Manual* utilizes density of the freeway traffic stream as the parameter to define the level of service, and has published a table relating density to level of service, volume-to-capacity (V/C), speed, and maximum service flow rate per lane. Descriptions of the various service levels and their corresponding volume/capacity ratio ranges are as follows:

Level of Service	Description	Volume/Capacity Ratio
A	Primarily free-flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	<0.36
B	Reasonably free-flow conditions. The ability to maneuver within the traffic stream is only slightly restricted.	0.36 to 0.54
C	Provides for stable operation, however flows approach the range in which small increases will cause a substantial deterioration in service. Freedom to maneuver within the traffic stream is noticeably restricted.	0.55 to 0.77
D	Borders on unstable flow. Small increases in flow cause substantial deterioration in service. Freedom to maneuver within the traffic stream is severely limited. Minor incidents can be expected to create substantial queuing, as the traffic stream has little space to absorb disruptions.	0.78 to 0.93
E	Operations are extremely unstable. Any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability within the traffic stream is extremely limited.	0.94 to 1.00
F	Forced or breakdown conditions. Such conditions generally exist within queues forming behind breakdown points.	>1.00

Source: 1985 *Highway Capacity Manual* for freeway sections with a 70 mph design speed and a 55 mph posted speed limit.

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The Year 2010 volumes on both State Route 87 and State Route 85 were obtained from the City of San Jose Transportation Division. The following table lists the volume/capacity ratios and levels of service for the Year 2010 evening peak hour.

Table 5. Freeway Segment Levels of Service - Year 2010 (P.M. Peak Hour)

Freeway Segment	Capacity *	Volume	V/C Ratio	LOS
S.R. 87 - North of S.R. 85				
Northbound	5,500	2,133	0.39	A
Southbound	5,500	3,741	0.68	B
S.R. 85 - West of Almaden Expressway				
Eastbound	5,500	3,872	0.70	C
Westbound	5,500	2,593	0.47	A
S.R. 85 - East of Almaden Expressway				
Eastbound	5,500	3,009	0.55	A
Westbound	5,500	2,260	0.41	A

V/C = Volume-to-Capacity LOS = Level of Service

* At 2,200 vehicles per lane per hour for two mixed flow lanes and 1,100 vehicles per lane per hour for the high occupancy vehicle lane.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on traffic if it:

- Causes a City intersection operating at Level D or better to operate at Level E or F; or causes a one percent or greater increase in the critical volume of a City intersection that is projected to operate at Level E or F with existing plus approved projects.
- Increases the traffic volume by one percent or more of the facility capacity on a freeway segment that is operating at Level F.

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IMPACT AND MITIGATION

Trip Generation

The project traffic generation is estimated in the following table.

Table 6. Project Traffic Generation

Land Use	Size (sq. ft.)	Trip Rate*	Daily Trips	Peak Hour Rate* (A.M./P.M.)	A.M. Peak Hour Trips In *(63%)*	A.M. Peak Hour Trips Out *(37%)*	P.M. Peak Hour Trips In *(50%)*	P.M. Peak Hour Trips Out *(50%)*
Commercial	350,000	31.53	11,036	0.69/2.97	152	90	520	520
w/29% passby					242		1,040	

* per 1,000 square feet gross floor area

Trip Distribution and Assignment

The project generated trips were distributed and assigned to the local street system in accordance with existing traffic volumes, other projects in proximity to this development, and the availability of a Chynoweth Avenue bridge over the Guadalupe River, as follows. Further trip distributions are detailed in the traffic analysis in Appendix G.

Direction	Percent
North	20
South	11
East	45
West	24
	100

Chynoweth Avenue Bridge

The four-lane Chynoweth Avenue bridge is an integral aspect of this project. The intent of the major roadways diagram, as shown on the San Jose 2020 General Plan, is to provide east-west through street capacity. The bridge is to be constructed as a City Capital Improvement Program (CIP) project. The project is presently in the design stage, with award of contract scheduled for March, 1999. Construction funding is scheduled to be allocated within the 1998-99 fiscal year. Project completion is currently scheduled for June, 2000.

Project Impacts - City of San Jose Method

The major intersections were analyzed for changes in volume/capacity ratio and level of service with the addition of project traffic. The volume/capacity ratios and corresponding levels of service are listed in the following table and graph, and the levels of service are shown on the following Traffic Impacts map.

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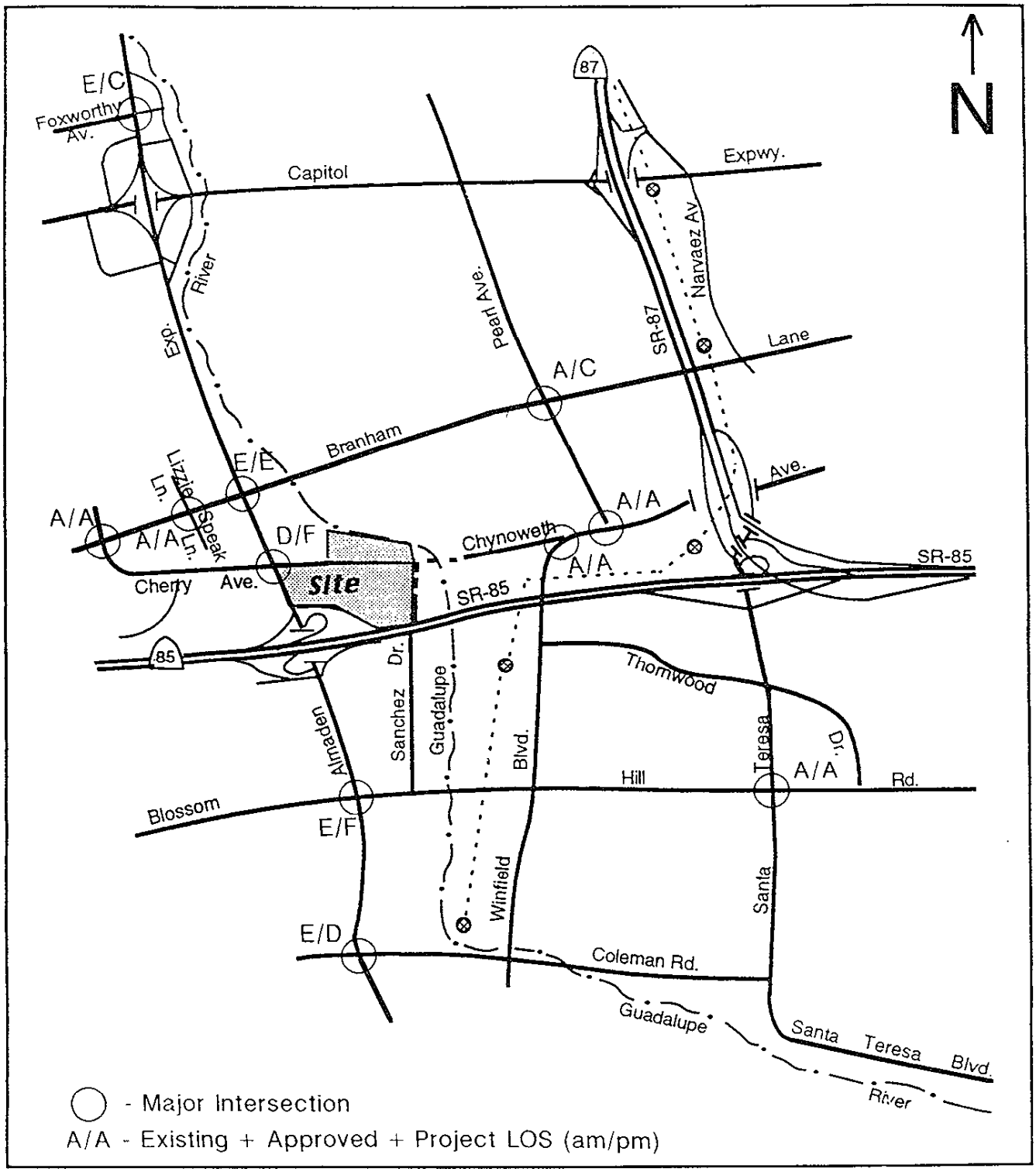

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Traffic Impacts

Figure 14

Table 7. Project Levels of Service - City of San Jose Method

Intersection	Peak Hour	Exist + Approved V/C Ratio	Exist + Approved Service Level	Exist. + App. + Project V/C Ratio	Exist. + App. + Project Service Level	Exist. + App. + Project %*
Almaden Expressway and	a.m.	0.993	E	0.996	E	0.12
Branham Lane	p.m.	0.962	E	0.966	E	0.71
Almaden Expressway and	a.m.	0.844	D	0.874	D	1.96
Cherry Ave./Chynoweth Ave.	p.m.	1.068	F	**1.284**	**F**	**8.53**
Almaden Expressway and	a.m.	0.983	E	0.986	E	0.24
Blossom Hill Road	p.m.	1.014	F	1.025	F	0.92
Branham Lane and	a.m.	0.356	A	0.362	A	1.44
Cherry Avenue	p.m.	0.486	A	0.507	A	4.13
Branham Lane and	a.m.	0.272	A	0.272	A	0.00
Lizzie Lane	p.m.	0.591	A	0.591	A	0.00
Branham Lane and	a.m.	0.404	A	0.407	A	0.62
Pearl Avenue	p.m.	0.687	B	0.703	C	1.33
Almaden Expressway and	a.m.	0.994	E	0.995	E	0.07
Foxworthy Avenue	p.m.	0.728	C	0.731	C	0.46
Almaden Expressway and	a.m.	0.976	E	0.980	E	0.31
Coleman Road	p.m.	0.868	D	0.873	D	0.78
Blossom Hill Road and	a.m.	0.479	A	0.480	A	0.32
Santa Teresa Boulevard	p.m.	0.561	A	0.566	A	1.03
Chynoweth Avenue and	a.m.	0.393	A	0.413	A	4.66
Pearl Avenue	p.m.	0.392	A	0.460	A	16.27
Chynoweth Avenue and	a.m.	0.157	A	0.182	A	17.03
Winfield Blvd./Sapphire Ct.	p.m.	0.293	A	0.404	A	38.60

V/C = Volume to capacity
* Project traffic as a percent increase to the critical movement volume.

The existing plus approved level of service at six of the eleven intersections would remain at acceptable levels with the addition of project traffic. Three intersections would remain at Level E with the addition of project traffic and one intersection would remain at Level F, but the project would not add more than one percent to the critical volume at these intersections. The Almaden Expressway and Cherry Avenue/Chynoweth Avenue intersection p.m. peak hour level of service is projected to remain at Level F with the addition of project traffic, and the critical volume is expected to increase by more than one percent. Thus, mitigation would be required at this intersection.

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Table 7A. Project Levels of Service - City of San Jose Method w/Diversion*

Intersection	Peak Hour	Existing + Approved V/C Ratio	Existing + Approved Service Level	Exist. + App. + Project V/C Ratio	Exist. + App. + Project Service Level
Almaden Expressway and	a.m.	0.993	E	0.976	E
Branham Lane	p.m.	0.962	E	0.951	E
Almaden Expressway and	a.m.	0.844	D	0.801	D
Cherry Ave./Chynoweth Ave.	p.m.	1.068	F	0.972	E
Almaden Expressway and	a.m.	0.983	E	0.986	E
Blossom Hill Road	p.m.	1.014	F	1.054	F
Almaden Expressway and	a.m.	0.994	E	0.995	E
Foxworthy Avenue	p.m.	0.728	C	0.731	C
Almaden Expressway and	a.m.	0.976	E	0.980	E
Coleman Road	p.m.	0.868	D	0.873	D

V/C = Volume to capacity

* With "travel diversion" at the five critical intersections due to the Chynoweth Avenue bridge connection. This is the estimated traffic from Blossom Hill Road and from Branham Lane that would use Chynoweth Avenue.

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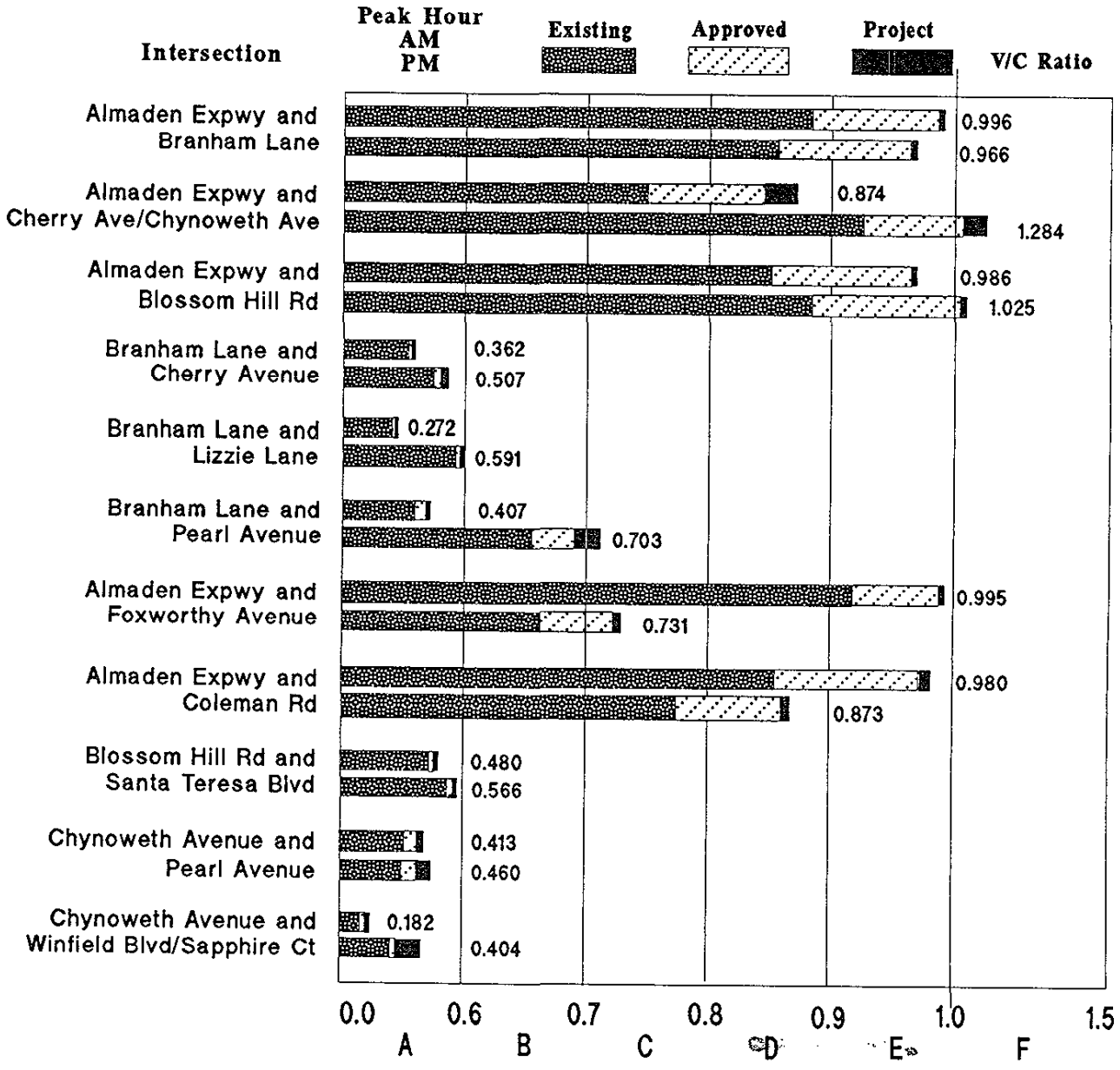

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Levels of Service

Figure 15

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Traffic related improvements planned with the project include the dedication (as required) and improvement of Chynoweth Avenue through the project site and of Almaden Expressway and Sanchez Drive adjacent to the project site; and the payment of the Building and Structures Tax and the Commercial-Residential-Mobile Home Park Building Tax to be used by the City for funding major street improvements.

Access and Circulation

Vehicular access to and from the project site is planned from the existing signalized intersection of Almaden Expressway and Cherry Avenue/Chynoweth Avenue; several median openings on Chynoweth Avenue and Sanchez Drive; and appropriate right turns in and out only driveways on Almaden Expressway, Chynoweth Avenue and Sanchez Drive. All of the street improvements fronting the property along Almaden Expressway, Chynoweth Avenue and Sanchez Drive would be constructed with the project. Additionally, a bridge extending Chynoweth Avenue across the Guadalupe River to be constructed by the City of San Jose is assumed as part of the proposed improvements to provide access from the east. Additional vehicular access and traffic signal studies may be required at the Planned Development Permit stage, e.g., traffic signals at the Chynoweth Avenue and Sanchez Drive and the Chynoweth Avenue and main commercial driveway intersections. With the suggested improvements in place, the vehicular access and circulation appears adequate to serve the commercial and/or commercial and residential project.

Congestion Management Program

The CMP level of service standard requires that a project's impact on an intersection not cause the level of service to drop below Level E, or if an intersection is already operating at Level F the CMP policy is that the increase in delay be less than four seconds.

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The six identified intersections were analyzed for changes in weighted average delays, level of service, and increase in delay with the addition of project traffic, as shown in the following table.

Table 8. Project Levels of Service - CMP Method

Intersection	Peak Hour	Existing + App. Delay* (sec.)	LOS	Exist. + App. + Project Delay* (sec.)	LOS	Increase in Delay*	Growth** Delay * (sec.)	LOS
Almaden Expressway and	a.m.	30	D+	30	D+	0	31	D
Branham Lane	p.m.	38	D-	38	D-	0	39	D-
S.R. 85 and	a.m.	7	B+	8	B+	1	8	B+
Almaden Expressway (N)	p.m.	37	D-	36	D-	1	40	D-
S.R. 85 and	a.m.	9	B+	10	B+	1	10	B+
Almaden Expressway (S)	p.m.	13	B-	14	B-	1	14	B-
Almaden Expressway and	a.m.	31	D	31	D	0	32	D
Blossom Hill Road	p.m.	48	E	49	E	1	51	E
Almaden Expressway and	a.m.	28	D+	28	D+	0	29	D+
Coleman Road	p.m.	36	D-	36	D-	0	36	D-
Blossom Hill Road and	a.m.	25	C-	25	C-	0	25	C-
Santa Teresa Boulevard	p.m.	28	D+	28	D+	0	28	D+

LOS = Level of Service
* Delay = Average stopped delay per vehicle in seconds.
** 1.2 percent per annum from 1996 to 1998

All of the six intersections would have weighted average delays equivalent to a Level of Service E or better. The project would conform to the CMP level of service standard and policy.

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Freeway Segments

The studied freeway segments were analyzed for changes in volume/capacity ratio and level of service with the project traffic. The volume/capacity ratios and corresponding levels of service are listed in the following table.

Table 9. Project Freeway Segment Levels of Service - Year 2010 (P.M. Peak Hour)

		Year 2010			With Project		
Freeway Segment	Capacity *	Volume	V/C Ratio	LOS	Volume	V/C Ratio	LOS
S.R. 87 - North of S.R. 85							
Northbound	5,500	2,133	0.39	A	2,185	0.40	A
Southbound	5,500	3,741	0.68	B	3,793	0.69	B
S.R. 85 - West of Almaden Expressway							
Eastbound	5,500	3,872	0.70	C	3,950	0.72	C
Westbound	5,500	2,593	0.47	A	2,671	0.49	A
S.R. 85 - East of Almaden Expressway							
Eastbound	5,500	3,009	0.55	A	3,087	0.56	A
Westbound	5,500	2,260	0.41	A	2,338	0.43	A

V/C = Volume-to-Capacity LOS = Level of Service

* At 2,200 vehicles per lane per hour for two mixed flow lanes and 1,100 vehicles per lane per hour for the high occupancy vehicle lane.

The freeway segment along State Route 87, northerly of State Route 85, and on State Route 85, east and west of Almaden Expressway, would have traffic from the project that exceeds 1 percent of the current peak hour directional capacity of 4,400 for State Route 87 and 5,500 for State Route 85. This capacity is based on two mixed flow lanes and one high occupancy vehicle lane on State Route 85, and two mixed flow lanes on State Route 87. In the future year 2010, the LOS would be at "B" or better on State Route 87, and "C" or better on State Route 85 for the freeway segments analyzed. It is assumed that State Route 87 is built out with two additional HOV lanes. Thus, the CMP guidelines of an "E" or better LOS on freeway segments is satisfied.

Impact Summary

The addition of project traffic would result in a significant impact on the intersection of Almaden Expressway and Cherry Avenue/Chynoweth Avenue during the p.m. peak hour.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Almaden Expressway and Cherry Avenue/Chynoweth Avenue

- A second left-turn lane shall be added to the north leg; the east leg shall be widened to provide two left-turn lanes, two through lanes and a right-turn lane; the south leg shall be widened to add a second left-turn lane and a right-turn lane; and the west leg shall be widened to include a left-turn lane, two through lanes and a right-turn lane. (A.M. V/C 0.783 - C; P.M. V/C 0.897 - D)

Chynoweth Avenue Bridge

- A contribution shall be made for the construction of the Chynoweth Avenue bridge over the Guadalupe River to improve traffic circulation in the area.

CONCLUSION

The implementation of the specified improvements to the intersection of Almaden Expressway and Cherry Avenue/Chynoweth Avenue and the contribution toward the construction of the Chynoweth Avenue bridge over the Guadalupe River would reduce the project traffic impacts to a **less-than-significant impact with mitigation.**

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I. NOISE

Edward L. Pack Associates, Inc. conducted a noise assessment study that is included in Appendix H.

SETTING

PROJECT SITE

Existing Noise Sources

Noise intrusion over the site originates primarily from vehicular traffic sources on Almaden Expressway to the west and on State Route 85 to the south, which carry Average Daily Traffic (ADT) volumes of 48,900 and 66,900, respectively, along the site. The site's noise environment is also impacted by loading dock and mechanical equipment sources at the adjacent Pak 'n Save store. The site is level and is at-grade with Almaden Expressway and Chynoweth Avenue. State Route 85 passes over Almaden Expressway at an elevation of approximately 30 feet. The northbound Almaden Expressway interchange ramp slopes down along the site to reveal at-grade as it intersects with Almaden Expressway.

Measurements

To assess the site's existing noise environment, continuous sound level recordings were taken at three locations: 1) 100 feet from the centerline of Almaden Expressway, 2) 130 feet from the southerly boundary of the commercial site along State Route 85, 350 feet from the centerline of the freeway, and 3) along the property line contiguous with the existing Pak 'n Save supermarket, 135 feet from the rear facade of the store.

Noise levels are described in terms of the Day-Night Sound Level (DNL), which is the 24-hour descriptor used by the City of San Jose to define acceptable noise levels. These values are calculated from the energy equivalent level (L_{eq}) as outlined in the noise assessment in Appendix H.

To obtain the L_{eq} values, sound level measurements were made on August 27-29, 1996, for a total period of 24 hours at each location, and included hours in the daytime and nighttime periods of the DNL index. The results of the recordings, including the L_{max}, L_{10}, L_{50}, L_{90}, L_{min}, and L_{eq} are listed in the noise assessment. Calculations using the above information result in DNL values of 73 dB at the planned commercial setback from Almaden Expressway (75 feet from the centerline); 66 dB at ground floor elevations at the planned commercial setback from State Route 85 (210 feet from the centerline); 58 dB at the planned residential setback from Almaden Expressway (780 feet from the centerline); 60, 60 and 65 dB at first, second and third floor elevations at the planned residential setback from State Route 85 (870 feet from the centerline); and 70 dB at the planned minimum residential setback from the Pak 'n Save supermarket.

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CHYNOWETH AVENUE OFFSITE

The assumed continuation of Chynoweth Avenue by the City of San Jose would connect Chynoweth Avenue at Almaden Expressway to Winfield Boulevard east of the Guadalupe River via a bridge across the river. It is assumed that Chynoweth Avenue would be paved with asphalt the entire length of the road, with the exception of the section on the bridge that would have a rough concrete surface. A design similar to the Hedding Street bridge over the Guadalupe River near downtown San Jose is assumed.

Measurements

To assess the existing noise environment in the residential area east of the Guadalupe River, continuous sound level recordings were taken at the curb of the home at 967 Chynoweth Avenue. This home is on the north side of the street at the end of Chynoweth Avenue adjacent to the river. There is currently no through traffic at this location; therefore, the noise environment is created primarily by traffic on State Route 85. Because of the large separation distance between State Route 85 and the residential area along Chynoweth Avenue, the noise environment is fairly consistent.

Sound level measurements were made on July 29-30, 1997, for a total period of 24 hours, and included hours in the daytime and nighttime periods of the DNL index. The results of the recordings, including the L_{max}, L_{10}, L_{50}, L_{90}, L_{min}, and L_{eq} are listed in the noise assessment in Appendix H. Calculations using the above information result in a DNL value of 60 dB at the existing residences along Chynoweth Avenue east of the Guadalupe River.

SIGNIFICANCE CRITERIA

The proposed project would have a significant noise impact if it:

- Raises existing (ambient) noise levels in adjoining areas or areas of sensitive receptors in excess of the applicable criteria.
- Generates construction noise levels exceeding 60 dBA during the daytime or 55 dBA during the nighttime near a sensitive receptor.
- Generates noise that increases average ambient noise levels which are already above the applicable criteria by more than 3 dB DNL.

IMPACT AND MITIGATION

Standards

Noise criteria that apply to the project are the Noise Insulation Standards of the California Code of Regulations, Title 24, and the City of San Jose General Plan. Title 24 is applicable to all new multi-family dwellings.

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The Title 24 standards, which utilize the DNL descriptor, establish an exterior reference level of 60 dB and specify that residential buildings to be located within an annual DNL zone of 60 dB or greater require an acoustical analysis. The analysis report must show that the planned buildings provide adequate attenuation to limit intruding noise from exterior sources to an annual DNL of 45 dB in any habitable space.

The City of San Jose General Plan establishes a policy of requiring noise mitigation from transportation noise for residential and commercial land uses where the exterior level exceeds 60 dB DNL and/or the interior level exceeds 45 dB DNL. When residential exterior noise exposures are below 60 dB DNL, interior noise exposures will be less than 45 dB DNL, assuming standard residential building construction. When commercial exteriors are below 73 dB DNL, the commercial interior will be less than 45 dB DNL, assuming standard commercial construction. The General Plan exterior noise limit at residential areas impacted by non-transportation related noise sources, such as commercial uses, trucking, loading dock operations and mechanical equipment, is specified as 55 dB DNL. Exterior and interior noise levels and mitigation measures that comply with these San Jose standards would also achieve compliance with the Title 24 standards.

PROJECT IMPACTS

Exterior Noise Levels

Commercial

Onsite measurements and calculations determined that the maximum DNL at the planned commercial setback from Almaden Expressway under existing traffic conditions is 73 dB, and the maximum DNL at the planned commercial setback from State Route 85 under existing traffic conditions is 66 dB.

To assess the impact of traffic noise on the project, future traffic levels must also be considered. Under future traffic conditions, the noise exposures would increase to 74 dB DNL and to 68 dB DNL, respectively. These future levels would exceed the City of San Jose exterior limit by 14 dB and by 8 dB, respectively. Although the exterior noise exposure impacts to the planned commercial area exceed the City of San Jose Noise Element standard of 60 dB DNL, noise sensitive exterior uses are not anticipated.

Residential

Onsite measurements and calculations determined that the maximum DNL at the planned residential setback from Almaden Expressway under existing traffic conditions is 58 dB; and the maximum DNL at the planned residential setback from State Route 85 under existing traffic conditions is 60, 60 and 65 dB at first, second and third floor elevations, respectively. Under future traffic conditions, the noise exposure at the planned residential setback from Almaden Expressway would increase to 59 dB DNL; and the noise exposures at the planned residential setback from State Route 85 would increase to 62, 62 and 67 dB DNL at first, second and third

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floors. The exterior noise exposures due to Almaden Expressway traffic are within the limits of the City of San Jose Noise Element standard; however, the noise exposures due to State Route 85 traffic would be up to 7 dB in excess of the City standard and the Title 24 criterion.

The existing noise exposure at the planned minimum residential setback from the Pak 'n Save supermarket is 70 dB DNL. The Pak 'n Save air handler and roof-mounted chillers create a significant source of noise throughout the daytime and nighttime periods. Trucks with refrigeration units were noticed to leave their engines and "reefer" units on during unloading. The loading docks are open, i.e., unloading occurs outside of the building structure. Thus, the noise exposure is 15 dB in excess of the City of San Jose Noise Element standard and 10 dB in excess of the Title 24 criterion. Noise mitigation for exterior living spaces of the residential site is not feasible for units within 165 feet of the property line contiguous with the Pak 'n Save store; therefore, no residential units would be allowed within that distance if the equipment noise source remains.

Future Chynoweth Avenue

Traffic noise from the future extension of Chynoweth Avenue would add to the noise environment on the project site. Chynoweth Avenue traffic noise exposures were predicted from data acquired for 25 recent traffic noise surveys in the South Bay Area as described in the report in Appendix H. The data from these were adjusted to account for an average vehicle speed of 35 mph, a traffic volume of 8,812 ADT and both asphalt and concrete road surfaces. The noise levels of traffic on a concrete surfaced bridge would be 3 dB higher than the traffic noise levels on a ground based asphalt surface. At a distance of 50 feet from the centerline of the road, the average of the 25 noise surveys, with the adjustments, was 66 dB DNL for a concrete surface and 63 dB for an asphalt surface. The noise exposure at the planned minimum setback of units on the project site from Chynoweth Avenue (90 feet from the centerline) would be 59 dB DNL. Adding the 62 to 67 dB DNL from State Route 85, the combined future noise exposure would be 64, 64 and 68 dB DNL at first, second and third floor elevations, respectively. Thus, the noise exposures would be raised by up to 8 dB in excess of the San Jose Noise Element standards.

Interior Noise Levels

Commercial

To determine the commercial interior DNL values, a 28 dB attenuation factor is applied to the measured exterior level. This assessment uses 3/16-inch fixed glass, typical of a "storefront". The interior noise exposures at the planned commercial setback from Almaden Expressway would be 46 dB DNL under future traffic conditions, 1 dB in excess of the City of San Jose Noise Element standard. The interior noise exposures at the planned commercial setback from State Route 85 would be 40 dB DNL, which is within the limits of the City Noise Element standard.

The noise exposures within the planned commercial unit(s) from the future extension of Chynoweth Avenue would be 45 dB DNL. Thus, the noise exposure from the planned Chynoweth Avenue traffic would be at the limit of the City standard.

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Residential

To determine the residential interior DNL values, a 15 dB attenuation factor is applied to the measured exterior level. This factor represents an annual average condition; i.e., assuming that windows with single-strength glass are kept open up to 50 percent of the time for natural ventilation. The interior noise exposures at the planned residential setback from Almaden Expressway would be 44 dB DNL under future traffic conditions, within the limits of the City of San Jose Noise Element and the Title 24 standards. The interior noise exposure at the most impacted planned residential setback of the proposed project along Chynoweth Avenue would be 49, 49 and 53 dB DNL at first, second and third floor elevations, respectively, under future traffic conditions. Thus, the noise exposures due to combined State Route 85 and Chynoweth Avenue traffic would be up to 8 dB in excess of the City Noise Element and Title 24.

The interior noise exposure in the most impacted living spaces of units behind the Pak 'n Save supermarket would be 55 dB DNL, up to 10 dB in excess of the City Noise Element and Title 24.

Project-Generated Commercial Noise

Project-generated noise levels cannot be precisely determined without detailed information regarding trucking, loading dock, and mechanical equipment operations that is not currently available. To determine potential noise impacts from commercial center activity, noise level information from recent acoustical studies was reviewed. These studies revealed minimum distances required to maintain noise exposures in compliance with the City of San Jose Noise Element standards, given their specific truck volumes, loading dock hours, and mechanical equipment details.

The project-generated noise exposures will be a function of truck operations, loading dock operations, mechanical equipment locations and sizes, and most importantly, hours of operation. The DNL penalizes noise created between the hours of 10:00 p.m. and 7:00 a.m. by 10 dB. Therefore, noise created at night often controls the DNL.

Loading Dock Operations

Loading dock operations typically consist of trucks entering the dock area, turning around to back into the dock, and unloading material. Many of the trucks used for perishable grocery items contain refrigeration equipment that is usually situated at the top of the cab. These "reefer" units, which are quite noisy, are usually left on during unloading. Gas powered forklifts are common at outside loading docks and they are also quite noisy. Electric forklifts are barely audible at a distance of 35 to 40 feet. Backing horns on trucks and forklifts are required by OSHA and they must generate a specific sound level at a certain distance.

Typical loading dock operations by lumber companies, hardware stores, do-it-yourself centers, and grocery stores generate noise exposures of 55 dB DNL at a distance of 80 feet from the truck dock utilizing a scenario of 1 truck unloading every 2 hours from 8:00 a.m. to 9:00 p.m. Grocery store

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loading dock noise is more readily mitigable as dock seals are often used and as long as trucks with refrigeration units can be shut off. Noise control barriers to mitigate truck noise, whether it is due to truck passbys or unloading, are typically at least 15 feet high. The primary noise source from truck operations is exhaust noise, assuming the refrigeration units are turned off. Gas powered forklifts, if used outdoors, are also primary noise producers at loading docks.

Mechanical Equipment

Mechanical equipment typically consists of chillers, compressors, and air-handlers and exhaust fans. Smaller commercial tenants may have individual air-conditioning package units. Grocery stores would also have refrigeration equipment consisting of large banks of compressors.

Noise from mechanical equipment varies greatly depending upon the use of the site and size of the buildings. Roof-mounted equipment may have less of a noise impact for first floor neighbors; however, upper floor neighbors may have a line-of-sight to the commercial rooftops, thereby exposing the residents to undue noise. Ground mounted mechanical equipment can also be effectively mitigated for first floor neighbors using noise control barriers and equipment enclosures, while upper floor neighbors will usually have a line-of-sight over the barriers to the equipment.

The noise exposures generated by the proposed project are averaged over a 24-hour period for the evaluations against the City of San Jose and Title 24 standards. The noise levels created at a loading dock consist of many types of noises including low frequency rumbles from truck passbys, backing horns of forklifts, occasional dropping of materials, and vocal orders. These types of noises may cause annoyance to some neighbors and complaints of noise are likely if careful site planning is not utilized. The planned commercial uses will be at least 150 feet from the planned residential area. Therefore, noise impacts from the commercial uses to the residences should be less than significant provided that the commercial uses are typical.

Although noise excesses from the planned commercial center are not anticipated due to the distance between the commercial center and the residential area, careful site planning can preclude noise annoyances.

Project-Generated Traffic Noise

Traffic volume increases of at least 25 percent are required to increase the noise environment by 1 dBA. Project-generated traffic noise increases are expected to be less than 1 dBA on Almaden Expressway and would be considered to be insignificant.

Construction Noise

During construction, the site preparation and construction phase would generate temporary sound levels ranging from approximately 70 to 90 dBA at 50 foot distances from heavy equipment and vehicles. These construction vehicles and equipment are generally diesel powered, and produce a

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characteristic noise that is primarily concentrated in the lower frequencies. No pile driving would be required for project construction, as evidenced in the soil engineering studies in Appendix A.

The powered equipment and vehicles act as point sources of sound, which diminish with distance over open terrain at the rate of 6 dBA for each doubling of the distance from the noise source. For example, the 70 to 90 dBA equipment peak noise range at 50 feet will reduce to 64 to 84 dBA at 100 feet, and to 58 to 78 dBA at 200 feet. Therefore, during the construction operations, sound level increases of 20 to 40 dBA due to these sources could occur near the project boundary.

CHYNOWETH AVENUE OFFSITE IMPACTS

Exterior Noise Levels

Chynoweth Avenue traffic noise exposures were predicted from data acquired for 25 recent traffic noise surveys in the South Bay Area. The data from these were adjusted to account for an average vehicle speed of 35 mph, a traffic volume of 8,250 ADT and both asphalt and concrete road surfaces. The noise levels of traffic on a concrete surfaced bridge would be 3 dB higher than the traffic noise levels on a ground based asphalt surface.

At a distance of 50 feet from the centerline of the road, the average of the 25 noise surveys, with the adjustments, was 66 dB for a concrete surface and 63 dB for an asphalt surface. The residential setbacks of homes east of Guadalupe River are approximately 75 feet. The noise exposure at the most impacted residential setback from the planned continuation of Chynoweth Avenue (75 feet from the centerline) would be 60 dB DNL along asphalt sections of the road and 63 dB DNL near the bridge.

The combined noise exposure at the existing residential area east of Guadalupe River from both State Route 85 and Chynoweth Avenue would be 63 dB DNL along asphalt sections of Chynoweth Avenue and 65 dB DNL near the bridge. Thus, the combined exterior noise exposure would be up to 5 dB in excess of the standards of the City of San Jose Noise Element. The continuation of Chynoweth Avenue through the residential area would increase the noise environment by up to 5 dB. The ensuing noise environment would be approximately 20 percent louder than present levels.

Interior Noise Levels

Using the 15 dB reduction due to standard residential construction, the interior noise exposure from the continuation of Chynoweth Avenue in the most impacted existing residences east of Guadalupe River would be 45 dB DNL in homes along the asphalt section of the road and 48 dB DNL in homes within 120 feet of the bridge.

The combined noise exposure in the existing residences east of Guadalupe River would be 48 and 50 dB DNL in homes along the asphalt section and those within 120 feet of the bridge,

respectively. Thus, the combined interior noise exposures would be up to 5 dB in excess of the standards. The interior noise environments would increase by 5 dB.

Impact Summary

Vehicular traffic noise along Almaden Expressway and from State Route 85 and future Chynoweth Avenue and noise from the existing commercial use at the northwesterly corner of the project site (Pak 'n Save) would have a significant impact on the proposed commercial and/or residential areas. Project-generated commercial operations and mechanical equipment noise could have a significant impact on the planned residential portion. Vehicular traffic noise from the Chynoweth Avenue bridge "connection" would have a significant impact on existing residences on the east side of the bridge.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Mitigation measure discussions in this section refer to the following Future Noise Contours and/or Offsite Noise Attenuation maps. Details and specifications are included in the noise assessments.

PROJECT SITE

Residential Exterior Noise

- A detailed acoustical study shall be conducted to precisely locate and configure exterior noise mitigation measures, to include such measures as acoustically effective property line or patio fences and balcony railings that would be incorporated into the project when a Site Plan is developed at the PD Permit stage.

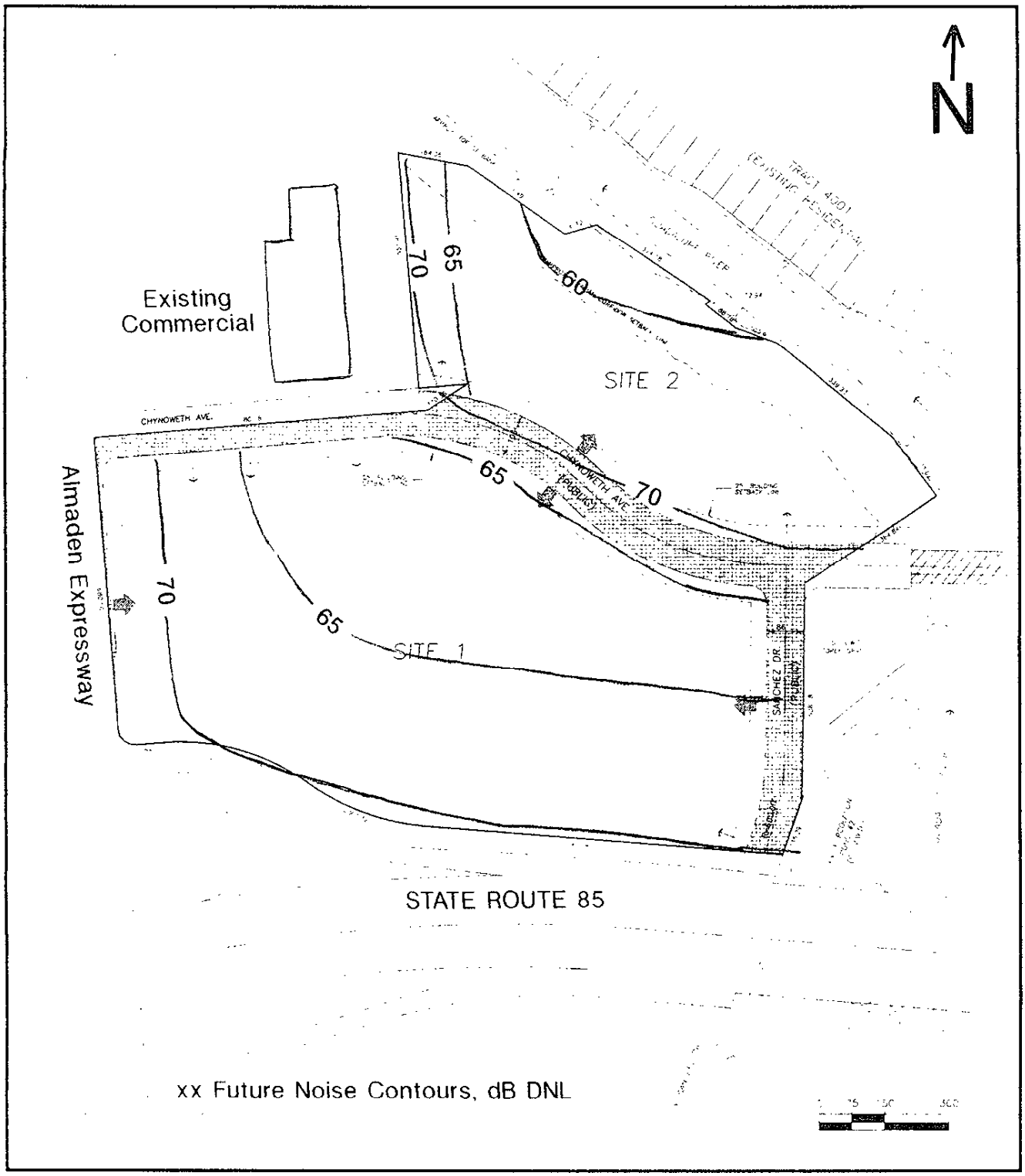
- No residential units shall be allowed within 165 feet of the property line contiguous with the Pak 'n Save store if the equipment noise source remains.

Residential Interior Noise

- A detailed acoustical study shall be conducted to develop interior noise mitigation measures, to include such measures as specified STC rated windows, building orientation and construction that would be incorporated into the project when a Site Plan is developed at the PD Permit stage.

Commercial Noise

- A detailed acoustical study shall be performed by a qualified acoustician at the Planned Development Permit stage for all uses within the commercial center upon determination of loading dock locations and operations, precise designs of mechanical equipment, and detailed designs of the building structures. Measures such as 1) limiting truck operations on Chynoweth Avenue; 2) locating the loading docks on the sides of buildings facing away from the residences; 3) preventing direct lines-of-sight from any residential area to the loading



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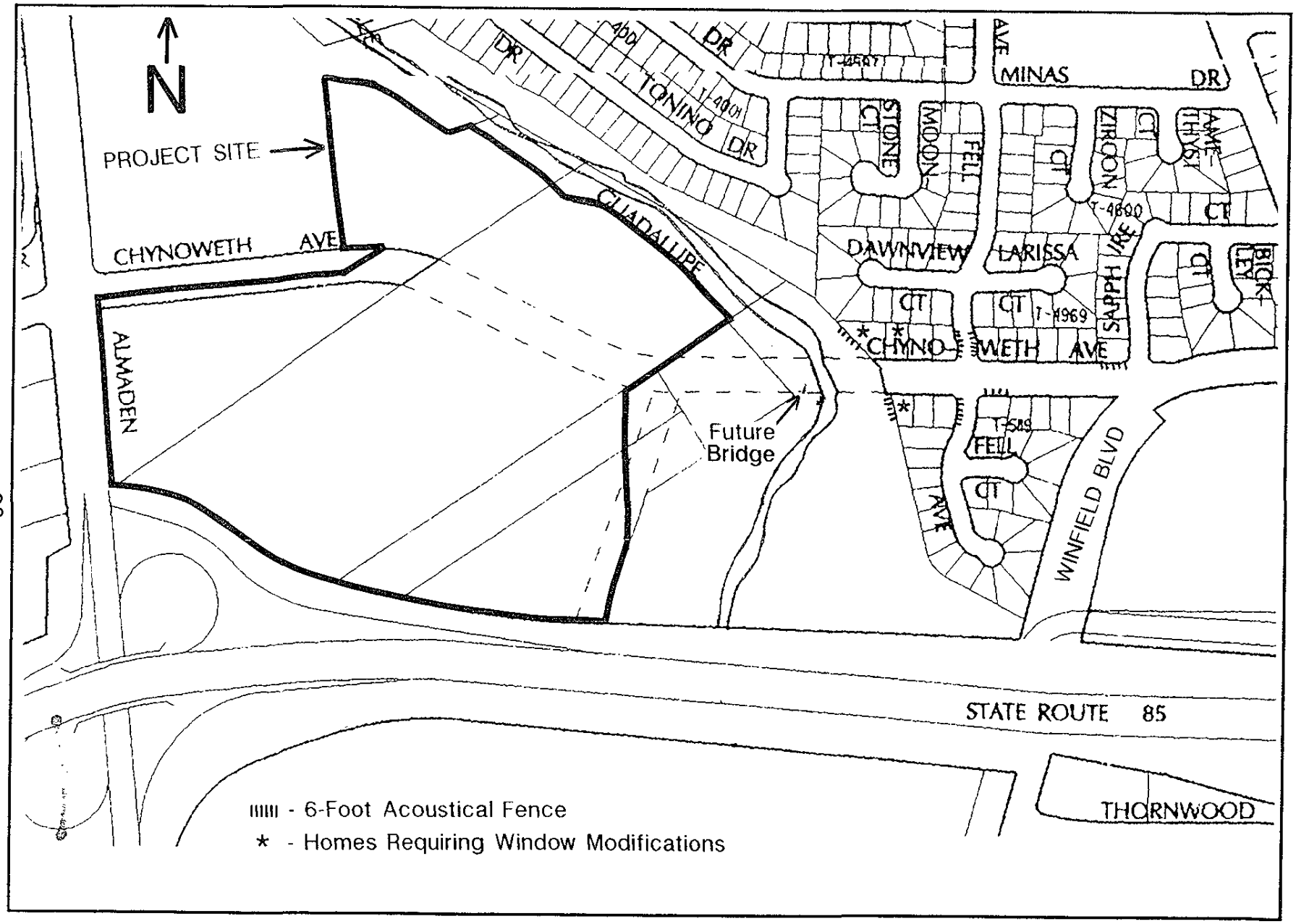
Future Noise Contours

Figure 16



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Offsite Noise Attenuation

Figure 17

docks; 4) utilizing electric forklifts at the docks wherever possible, regardless of dock location; 5) limiting loading dock hours to the daytime hours of 7:00 a.m. to 10:00 p.m.; and 6) locating mechanical equipment on the sides of buildings facing away from the residences or on the rooftops, providing that the equipment is placed in a well and is enclosed adequately, and/or parapets are designed to effectively shield rooftop equipment, shall be developed and implemented to ensure that a noise level of 55 dB DNL is not exceeded at the nearest residential property line.

Construction Noise

- Construction equipment shall be regulated to limit noise levels to 90 dBA at a distance of 50 feet from the source.

- Noisy operations shall be scheduled for the daytime hours of 7:00 a.m. to 7:00 p.m. Monday through Friday so as to avoid the more sensitive evening, nighttime, and weekend hours.

MITIGATION MEASURES NOT INCLUDED IN THE PROJECT

CHYNOWETH AVENUE OFFSITE

Residential Exterior Noise

- Prior to construction of the Chynoweth Avenue bridge, a 6-foot-high fence would be constructed at all side yards within 120 feet of the centerline of Chynoweth Avenue between the Guadalupe River and Winfield Boulevard.

Residential Interior Noise

- Prior to construction of the Chynoweth Avenue bridge, STC 33 or higher rated windows would be installed at the three homes within 160 feet of the centerline of the concrete section of Chynoweth Avenue at the bridge, and having a direct or side view of the roadway.

CONCLUSION

A detailed acoustical study that would specify required mitigation measures for any onsite residential area at the PD Permit stage, increased residential setbacks from the existing offsite commercial use (Pak 'n Save), a detailed acoustical study at the PD Permit stage to ensure that commercial noise sources would not exceed standards, the regulation of equipment noise levels and hours of construction, and side yard noise attenuation fences and specified STC rated windows at affected homes on the section of Chynoweth Avenue across the Guadalupe River as part of the bridge project would reduce vehicular traffic and mechanical equipment noise impacts to a **less-than-significant impact with mitigation.**

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J. AIR QUALITY

Environmental Consulting Services conducted an air quality impact study that is included in Appendix I.

SETTING

Bay Area Air Quality Management District

The project site is located in the Bay Area Air Quality Management District (BAAQMD). The District includes seven Bay Area counties and portions of two others. Air quality emission and control standards are established by the BAAQMD and the California Air Resources Board, and by the Environmental Protection Agency (EPA) at the Federal level. These agencies are responsible for developing and enforcing regulations involving industrial and vehicular pollutant emissions, including transportation management and control mitigation measures.

Regional Air Quality

Because there have been consistent exceedances of ambient standards in the Bay Area for many years, the District until recently was designated a Non-Attainment Area by the EPA for carbon monoxide and ozone. Regional improvements in basin air quality allowed the District to reach Attainment status for Federal ozone and California 8-hour CO standards in 1994. However, there have been numerous exceedances of adopted standards, particularly State standards, after 1994. The EPA has notified BAAQMD of its intention to redesignate the District as a Non-Attainment Area for ozone. For these reasons, all significant stationary and vehicular sources in the District share the responsibility for continuing improvement in air quality in the basin. Regional and local planning agencies must follow adopted air quality plans and programs to improve and maintain the basin air quality and reduce potential impacts of proposed new projects.

Local Air Quality

Air quality in the project area is subject to the problems experienced by most of the Bay Area, and particularly the south portion. Emissions from millions of vehicle-miles of travel each day often are not mixed and diluted because of poor ventilation, but are trapped near ground level by an atmospheric temperature inversion. Prevailing air currents generally sweep from the mouth of the Bay toward the south, picking up and concentrating pollutants in the basin around San Jose and the Almaden Valley. A combination of emissions in the South Bay, the transport of pollutants from other areas, and the natural mountain barriers (the Diablo Range to the east and the Santa Cruz Range to the southwest) can produce high concentrations, which sometimes exceed ambient air quality limits established by the BAAQMD. Air quality data from the last three years at the primary BAAQMD monitoring station in San Jose, and Federal and State standards, are shown in the following table.

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Table 10. Local Air Quality

Pollutant	Standard Federal	Standard State	Measurement Units	1994	1995	1996
OZONE						
Maximum	12	9	pphm, 1-hour avg.	11	13	11
Federal exceedances	<1		days per year	0	1	0
State exceedances		0	days per year	2	14	5
CARBON MONOXIDE						
Maximum 8-hour	9	9	ppm, 8-hour avg.	8.1	9.0	6.5
8-hour exceedances	1		days per year	0	0	0
NITROGEN DIOXIDE						
Maximum		25	pphm, 1-hour avg.	11	12	11
Exceedances		1	days per year	0	0	0
PARTICULATE MATTER						
Annual average	50		ug/m^3, annual arithmetic mean	30.9	25.8	na
24-hour average		1*	days above 50 ug/m^3	13%	7%	na
Annual mean		30	ug/m^3, annual geometric mean	26.6	22.0	22.1

SOURCE: Bay Area Air Quality Management District monitoring data for San Jose.

* One day above the 50 ug/m^3 standard is considered an exceedance. Since the District does not measure every day, the percent of the days measured that exceed the standard is shown.

Ozone

Ozone, the primary oxidant "smog" component, is produced by complex atmospheric reactions of reactive organic gases (ROG) and nitrogen oxides (NO_x) and sunlight. The significant effects of ozone in the atmosphere are visibility reduction, eye irritation, and impairment of respiratory function. Precursor pollutants ROG and NO_x are produced primarily by vehicle emissions. Daily ozone concentrations are heavily dependent upon the weather, and thus vary substantially from day to day and from year to year. The Federal oxidant standard of 12 parts per hundred million (pphm) has been exceeded only four times in the past ten years. However, the more stringent State standard of 9 pphm is exceeded a number of times annually, six times or less per year at the San Jose station since 1990, except for 1995, when numerous atmospheric inversions created 14 days of exceedances, the highest number since 1988.

Carbon Monoxide

Another problem pollutant in the South Bay is carbon monoxide (CO), which at moderate concentrations can cause reduction of oxygen-carrying capability in the blood and consequently can lead to dizziness, fatigue, headache, and adverse central nervous system effects. Like oxidant, CO is heavily dependent upon both vehicle emissions and daily weather conditions. High CO concentrations in the South Bay occur mostly during winter evenings with severe temperature inversions and low wind speeds. There have been fewer than 6 incidents of CO concentrations above the 9 parts per million (ppm) 8-hour standard each year since 1989, within none in the past four years. High incidents of both CO and oxidant have been reduced significantly by improved emission controls on new automobiles in the past 20 years.

Nitrogen Oxides

Nitrogen oxides (NO_x) are responsible for brown haze and visibility reduction on smoggy days, respiratory impacts on humans, and damage to some types of plants. NO_x are produced heavily by vehicles and high-temperature industrial operations, but as yet have not posed serious problems in the Bay Area. Only one exceedance has occurred in San Jose in the past 15 years (1980). However, the San Jose station has registered the highest annual NO_2 concentration reading in the District each year for the past 15 years.

Particulate Matter

The effects of particulate matter in the air (previously referred to as Total Suspended Particulates, TSP) depend upon the size distribution of the particles, which range in size from the largest dirt and mist to the smallest smoke and pollens. Particulate matter is produced by vehicles, heavy industry, and soil-moving activities. Annual concentrations have been stabilized in the project area in the past several years, even with significant construction in the vicinity. Although the Federal Annual Average standard has not been exceeded in the area, the State 24-hour average for PM_{10} has been exceeded in the north Santa Clara County area on 5 to 25 percent of the days in recent years.

Sulfur Dioxide

Sulfur dioxide (SO_2) can cause plant damage and respiratory illness. SO_2 is primarily associated with chemical and refining industries and has never approached the ambient standard in the San Jose area, nor have SO_2 standards been exceeded anywhere in the District since 1976. The superior emission controls required on chemical and process plants are largely responsible for this condition.

Project Site

The project site is similar to other locations in the South Bay; air quality meets adopted State and/or Federal standards (the more stringent standard applies) on most days, and during periods when regional atmospheric conditions are stagnated, the air quality is poor throughout the

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extended South Bay area. There are no existing sources on the project site that currently adversely affect local air quality.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on air quality if it:

- Violates any ambient air quality standard.
- Contributes substantially to an existing or projected air quality violation.
- Exposes sensitive receptors to substantial pollutant concentrations.
- Generates emissions exceeding 550 lbs/day for carbon monoxide and/or 80 lbs/day for reactive organic gases, nitrogen oxides, or particulates.

IMPACT AND MITIGATION

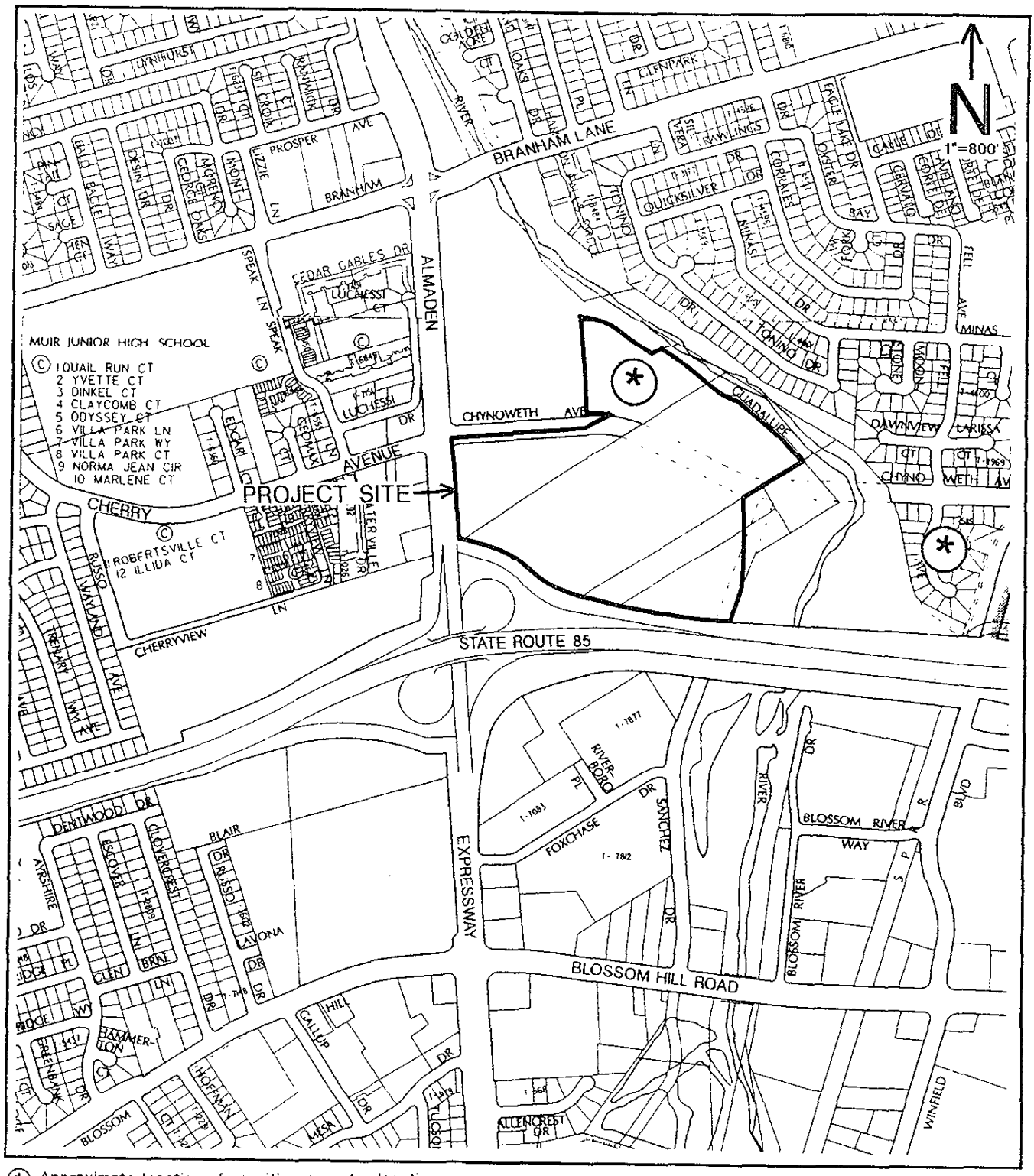
Particulates

Stationary sources of pollutants associated with the project include emissions from heating systems and other installed equipment, which produce minimal impacts. Potential dust and particulates generated during grading and site preparation are controlled by the routine application of water and/or road oil to surface areas being worked or traveled on. Particulates generated both by construction and by roadway resuspension are recognized, but small, contributing sources. Although it is possible to estimate a range of values for resuspension contributions with available rough formulae, because of the number of variables involved, e.g., soils conditions, moisture, wind, tire types, and vehicle speeds, the estimates would have little validity except under specific and controlled conditions.

Carbon Monoxide Peak and 8-Hour Vehicle Emissions

The major source of potential air quality impacts would be vehicle emissions from trips associated with the project. The primary receptor locations for project impacts would be 1) the residential area north of Chynoweth Avenue on the project site, and 2) the residential area south of Chynoweth Avenue near Winfield Boulevard. The locations of these sites are shown on the following Receptor Locations map. These locations were analyzed to determine the magnitudes of the roadside impacts, and represent the potential worst-case impacts. Other receptor locations not specifically evaluated would experience similar or lesser impacts.

Under normal ventilation conditions, vehicular carbon monoxide emissions are directly related to the number of vehicle trips on nearby streets, and to the average vehicle emission rate. Newer vehicles have lower emission rates than older vehicles because of better controls. In addition, average emissions per mile decrease as average speed increases. But after the pollutants are emitted, atmospheric conditions control pollutant mixing, dispersion, and the ultimate concentrations achieved. These interrelated factors are considered in a simplified way by roadside



(*) Approximate location of sensitive receptor locations.

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Receptor Locations

Figure 18

CO modeling techniques. The model used for this study was developed by the BAAQMD. Assumptions include very poor atmospheric conditions, which occur on numerous occasions each year in the area.

Although vehicles emit a number of pollutants, roadside impacts are generally analyzed for carbon monoxide (CO), as an indicator of overall traffic impact on local air quality. Carbon monoxide concentrations at the receptor sites have been modeled for peak hour and maximum eight-hour traffic conditions. The vehicle emission and background values used are taken from BAAQMD Guidelines. Local background concentrations are the combined result of vehicular emissions from all streets in an area. The resulting CO concentrations at the receptor locations are shown in the following table.

Table 11. Roadside CO Concentrations (ppm)

Receptor Location	Period	State Standard	Back-ground	Background + Ex. + App. Traffic	Background + Ex. + App. + Proj. Traffic
Project Site, North of Chynoweth Avenue	Peak	20.0	4.5	6.5	6.7
	8-Hr.	9.0	3.0	3.8	3.9
Chynoweth Avenue near Winfield Boulevard	Peak	20.0	4.5	6.2	6.5
	8-Hr.	9.0	3.0	3.8	3.9

Ex. = Existing App. = Approved Proj. = Project

The concentrations shown in the preceding table indicate that the additional project traffic under poor conditions (wind speeds of 1 to 2 meters per second and a low inversion height) would produce negligible CO levels, and when added to existing plus approved traffic and background levels would not exceed State standards with or without the project.

BAAQMD studies have also shown that high CO concentrations extend throughout a region, independent of distance to major roadways. When ventilation and mixing are good, which is most of the time, pollutant concentrations are low, even next to heavy traffic. During strong inversions, however, much of the area has very similar pollutant concentrations regardless of location. This holds both for oxidant and also CO episodes. Air quality at the project site is not significantly better or worse than other South Bay locations.

Daily Project Emissions

Another measure of potential impact of project vehicle-generated emissions is the total daily emissions. These emissions are considered to be significant by the BAAQMD if they equal or exceed the levels set by the District to trigger Best Available Control Technology requirements for

a stationary source. Project total daily vehicle emissions and the District's significance thresholds are shown in the following table. Daily project emissions would exceed all four of the BAAQMD significance thresholds.

Table 12. Total Daily Vehicle Emissions (Lbs/Day)

Pollutant	BAAQMD Project Significance Thresholds	Project
Carbon Monoxide	550	1,243
Reactive Organic Gases	80	103
Nitrogen Oxides	80	188
Particulates	80	170

Construction Air Quality

Project construction would produce short-term fugitive dust generated as a result of soil movement and site preparation. Construction would cause dust emissions that could have a significant temporary impact on local air quality. Fugitive dust emissions would be associated with site preparation activities, such as excavation and grading, and building construction. Dust emissions would vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions. Particulates generated by construction are recognized, but small, contributing sources to regional air quality. While it is a potential impact, construction dust emissions can be mitigated by dust control and suppression practices that are appropriate for the project and level of activity.

Impact Summary

Total daily vehicle emissions of carbon monoxide, reactive organic gases, nitrogen oxides and particulates generated by the project would result in significant air quality impacts. In addition, particulate impacts from temporary construction dust during grading would result in a significant impact.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Construction Air Quality

- A Construction Air Quality Plan shall be developed and implemented for dust control to include dust suppression practices such as 1) frequent watering, 2) vehicle speed controls, 3) watering of haul routes, 4) prohibition of grading during high winds, 5) hydroseeding areas where grading is completed, 6) covering of loads in haul vehicles, 7) limiting the area being graded at a given time, 8) monitoring of particulate levels, and 9) enforcement measures.

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- The public right-of-way shall be kept free from construction dirt and debris, and all onsite construction debris shall be removed at least weekly, in accordance with the San Jose Municipal Code.

MITIGATION MEASURES NOT INCLUDED IN THE PROJECT

- Bicycle and pedestrian facility improvements could be provided to reduce the need for vehicular travel, including safe pedestrian sidewalks, a protected bicycle route system and secure bicycle storage facilities.

- A transportation systems management plan for the project could be implemented to include provisions for ridesharing, parking management, transit use, bicycles, etc.

- Preferential parking for commuter carpools and vanpools could be provided.

- Employers' participation in commute alternatives program could be expanded.

CONCLUSION

The development and implementation of the Construction Air Quality Plan would reduce the temporary construction dust impacts to a **less-than-significant impact with mitigation.** Although there are air quality mitigation measures included in the project as well as additional measures currently not proposed by the project, incorporation of all these measures would not reduce the total daily carbon monoxide, reactive organic gases, nitrogen oxides and particulates emissions from project traffic below the BAAQMD's significance criteria; therefore, the emissions would be an **unavoidable significant impact.**

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K. HAZARDOUS MATERIALS

Earth Systems Consultants Northern California conducted a Phase I environmental site assessment and addendum, an environmental concerns summary, and a Phase II environmental site assessment that are included in Appendix J.

SETTING

Phase I Environmental Site Assessment

A Phase I environmental site assessment was conducted to evaluate areas of potential environmental concern that may be a result of past or present usage, handling or storage of hazardous materials on or near the project site. The assessment included a site reconnaissance and a review of geologic and hydrogeologic literature, historical site usage and regulatory databases.

Site Reconnaissance

A reconnaissance of the project site was performed on June 18, 1996. The intent of the reconnaissance was to document possible sources and visual evidence of contamination resulting from the use, storage or handling of hazardous materials on or adjacent to the site. The project site consisted of agricultural farming land. Strawberries, corn and tomatoes were planted. Fallow land was located along the northerly and northwesterly edges. A vegetable stand and several structures were located in the southwesterly portion of the site. Four aboveground storage tanks (ASTs) were observed. Three of the ASTs were located between the southern dirt road and property boundary; two of these ASTs were mounted on trailers, and one on a ground stand. The fourth AST was located near a grove of trees; it was empty with one corner missing, appearing to have been intentionally cut out. Several 55-gallon drums (one marked "diesel") were located in the vicinity of the fourth AST; they appeared to be old and empty. No stressed vegetation or surface staining was observed. Two agricultural wells were observed onsite, and a Santa Clara Valley Water District monitoring well was located just outside the property line near the east central portion of the property, westerly of the Guadalupe River.

Historical Site Usage

Historical use of the site was determined through interpretation of aerial photographs and interviews with the property tenant.

Five aerial photographs from 1954 through 1994 were reviewed. Several structures, interpreted as a residence, barn, and associated out-buildings, can be seen on the site in 1954 at the east end of the present day Chynoweth Avenue. Similar structures can also be seen near the southwest corner of the property. Site use was agricultural, and an orchard can be seen across most of the site. Row crops appear in the northeast corner of the property. By 1960, some of the orchard had been removed and row crops are now visible in the south central portion of the site. The residence, barn, and associated outbuildings formerly at the east end of Chynoweth Avenue had been

removed by 1974; and by 1984, the remaining orchard has been removed, and row crops appear across most of the site. An area near the structures in the southwesterly corner appeared to be used as storage for equipment and miscellaneous debris.

According to the property tenant, one of the trailer-mounted ASTs was used to spray water for dust control purposes. The second mounted AST was used for dilution and spraying of pesticides. The groundstand-mounted AST was attached to a drip system for distribution of diluted fertilizer to the plants. The fourth AST was used at one time for the storage of water, but is no longer in use. The land was used for the production of strawberries, corn, tomatoes, and other assorted row crops for the last 50± years. Pests were controlled primarily through the use of beneficial insects. In order to maintain the population of beneficial insects, only severe infestations were treated with the pesticide, Malathion, an organic phosphate insecticide-acaricide that does not persist in the soil.

Regulatory Agency Review

A search of 17 governmental databases was performed in order to identify environmental violations, use and storage of hazardous materials, or reported loss of hazardous materials at the project site and/or within a 1.25-mile radius of the project site, as detailed in the report in Appendix J. A total of 19 facilities were identified and mapped within the 1.25-mile radius, with 3 facilities located within 3/8 mile of the site. As these facilities are down-gradient from the project site, they are considered to have a low potential for environmental impact to the project site.

Conclusions

Potential environmental concerns resulting from possible past or present hazardous materials use, handling or storage on the site include the possible use of pesticides due to the historical agricultural use; the presence of agricultural wells; and the presence of ASTs, storage drums and miscellaneous debris. The near-surface soils should be tested for the presence of pesticides; however, based on the reported limited use of Malathion and its lack of persistence in the soil, testing of the soil for this compound is not considered to be warranted. The near-surface soils should also be tested for the presence of petroleum hydrocarbons near the fuel storage areas. The wells are to be destroyed in accordance with Santa Clara Valley Water District standards as previously discussed in section III. A. Land Use.

Phase II Environmental Site Assessment

The Phase II environmental site assessment was conducted in order to determine whether the site had been impacted by the use of pesticides during its use as an orchard. Use of pesticides in combination with lead, mercury and arsenic was common in orchards through the 1970s. Concerns were also raised about the possible impact of hydrocarbons in the vicinity of the 55-gallon storage drum marked "diesel." The project site was partitioned into 15 subplots, with one near-surface soil sample collected from the approximate center of most of the areas. Some of the sample locations were positioned adjacent to an agricultural well, ASTs, "diesel" storage drum

and/or farm storage areas. Sample A-2 was inadvertently collected from an adjacent vacant property and is not included. The sampling locations are shown on the following Sampling Locations exhibit.

Each sample was analyzed for organochlorine pesticides, arsenic, lead and mercury. The sample collected from area A-10 was also analyzed for benzene, toluene, ethyl benzene and total xylenes (BTEX), total petroleum hydrocarbons as gasoline (TPHG) and total petroleum hydrocarbons as diesel (TPHD). The samples were analyzed by a California state-certified laboratory and the results were compared to the 1995 Preliminary Remediation Goals (PRGs) for residential site uses provided by the U.S. EPA; and to Regional Water Quality Control Board (RWQCB) Guidelines for petroleum hydrocarbons in order to assess the need for remediation of any detected constituents. The results of the laboratory tests are included in the report in Appendix J.

Pesticides

Pesticides in the form of DDT and its derivatives, DDD and DDE, were detected in 13 of the 14 samples analyzed for this site. In order to properly evaluate the impact of DDT in the soil, the reported concentrations of DDT, DDD, and DDE were added together and reviewed as a sum. The highest concentration of DDT/DDD/DDE was reported in sample A-3 at 0.905 parts per million (ppm). One additional pesticide, Dieldrin, was detected in sample A-8 at a concentration of 0.008 ppm.

Lead

Lead was reported in all samples collected at the site. The highest reported concentration was 32 ppm in sample A-10, with an average concentration across the site of 19.8 ppm.

Mercury

Mercury was reported in all samples collected at the site. The highest reported concentration was 3.8 ppm in sample A-1, with an average concentration across the site of 0.49 ppm.

Arsenic

Arsenic was not detected in any of the samples collected from this site.

Petroleum Hydrocarbons

Petroleum hydrocarbons were not detected in the sample collected from area A-10.

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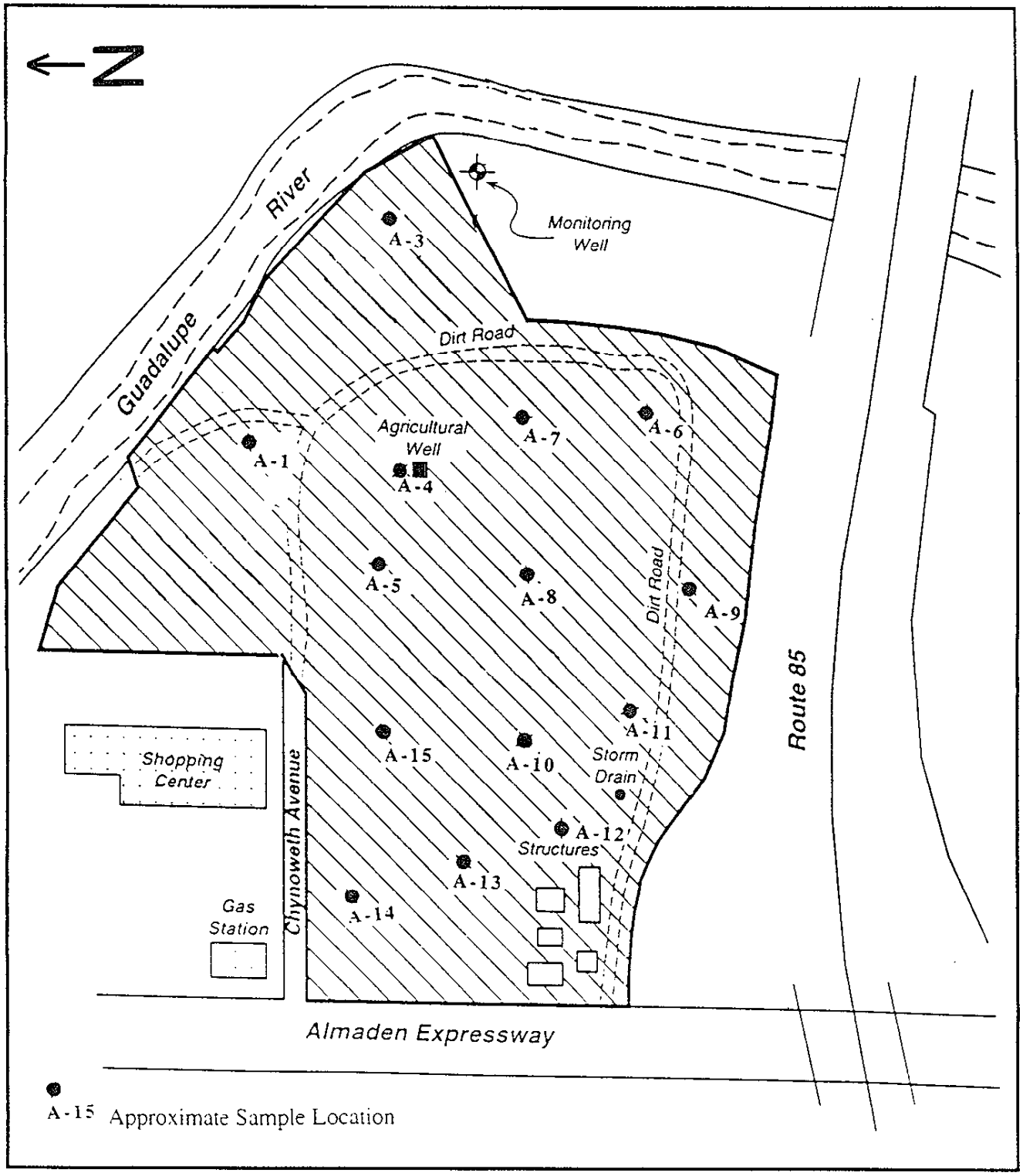

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Sampling Locations

Figure 19

SIGNIFICANCE CRITERIA

The proposed project would have a significant hazardous materials impact if it:

- Exposes the public to a significant risk associated with the storage, use, and disposal of hazardous materials on the site or from existing hazardous materials contamination on the site.
- Creates a potential public health hazard or involves the use, production, or disposal of materials which pose a hazard to people, or animal, or plant populations in the area affected.

IMPACT AND MITIGATION

Water Wells

There are two existing agricultural wells on the project site that would be destroyed prior to the construction of the project as previously discussed in section III. A. Land Use. If not properly destroyed, the wells could cause contamination of the groundwater.

Aboveground Storage Tanks

Four ASTs were observed on the property in June, 1996, which were used for water, pesticides and/or fertilizer. All of the ASTs would be removed and disposed of prior to development.

Pesticides

Pesticides in the form of DDT and derivatives, and Dieldrin, were detected in samples collected from this site. The highest concentration of DDT and derivatives was 0.905 ppm, reported in sample A-3. A comparison of this value to the EPA PRGs for soil in residential areas shows that it is below the PRG for DDT of 1.3 ppm. The reported concentration of 0.008 ppm Dieldrin is also below its PRG of 0.028 ppm. Organochlorine pesticides are not considered to be a concern on the project site.

Lead

Lead was detected in all samples collected at the site. The highest concentration of lead was reported in sample A-10 as 32 ppm, which is below the PRG residential value of 130 ppm. Lead is not considered to be a concern on the project site.

Mercury

Mercury was detected in all samples collected at the site. The highest concentration of mercury was reported in sample A-1 as 3.8 ppm, which is below the PRG residential value of 6.5 ppm. Mercury is not considered to be a concern on the project site.

Arsenic

Arsenic was not detected at the site, and is not considered to be a concern on the project site.

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Petroleum Hydrocarbons

Petroleum hydrocarbons were not detected in the sample collected adjacent to the 55-gallon drum in area A-10. Petroleum hydrocarbons are, therefore, not considered to be a concern on the project site.

Impact Summary

Pesticide, lead and mercury levels from the previous agricultural operations are below EPA Preliminary Remediation Goals (PRG) levels for residential uses and would be a less-than-significant impact. Neither arsenic nor petroleum hydrocarbons were detected on the site. The presence of four ASTs and two agricultural wells could have significant impacts.

MITIGATION MEASURES INCLUDED IN THE PROJECT

Water Wells

- Well destruction permits shall be obtained from the Santa Clara Valley Water District, and the wells shall be destroyed in accordance with District standards.

Aboveground Storage Tanks

- The four ASTs shall be removed and disposed of prior to site development.

CONCLUSION

The sealing of the agricultural wells in accordance with Water District standards and the removal and disposal of the ASTs would reduce the potential hazardous materials impacts to a **less-than-significant impact with mitigation.**

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L. VISUAL IMPACTS

SETTING

The project site is visible from Almaden Expressway and State Route 85 and would be visible from Chynoweth Avenue. The current view of the project site consists primarily of fallow agricultural land, which can be seen in the preceding photographs, Figures 7 and 8. A fruit stand, two houses and several agricultural buildings are located in the southwesterly corner along Almaden Expressway. There are ornamental trees in the area of the buildings along Almaden Expressway and some large trees in the northerly corner and along the Guadalupe River frontage.

SIGNIFICANCE CRITERIA

The proposed project would have a significant visual impact if it:

- Has a substantial, demonstrable negative aesthetic effect.
- Obstructs a scenic vista or public view.
- Restricts or impairs the view within a designated scenic corridor.

IMPACT AND MITIGATION

The project would change the view of the site from primarily vacant fallow land to commercial and/or residential buildings, roadways, parking areas and landscaping. Although plans for the commercial and residential areas have not been prepared, architectural design and landscape standards are shown on the Development Standards sheet of the General Development Plans. The development would comply with the City's Commercial and Residential Design Guidelines and would presumably be comparable to other recent developments in the area.

The back and rooftops of the commercial buildings would be visible from State Route 85, which is elevated above the site. The conceptual details shown on the Development Standards sheet provide for roof screens, articulating walls, roof ornamentation, varying roof heights, architectural detailing on rear walls, and landscape screening along rear walls, which would all improve the view of the commercial buildings from State Route 85. The residential buildings would be approximately 1,000 feet from the freeway across the site and would not be as visible.

The commercial area would be visible from Almaden Expressway and from Chynoweth Avenue. The view of commercial buildings, signs, parking and landscaping would be similar to other recent commercial developments in the area. The residential buildings would not be visible from Almaden Expressway, but would be visible from Chynoweth Avenue. They also may be visible from some of the residential areas on the east side of the Guadalupe River depending upon their location and the intervening trees and vegetation.

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There are 29 trees on the site as described in section III. C. Vegetation and Wildlife. Some of these trees would be removed as part of the project. The trees that are removed would be replaced with new trees at ratios of 1:1 to 4:1 depending on the size of the tree.

Judgments regarding aesthetic qualities are highly subjective and vary from one person to the next. The Planned Development zoning procedure that the project must go through requires the submittal of detailed architectural and landscape plans for review and approval. The visual quality of the project would be one of the criteria in that review. Specific program elements incorporated in the project include:

- Street trees to be planted along the public streets.
- Development on the site to comply with the City's Commercial and Residential Design Guidelines and sign regulations.
- Commercial buildings backing up to the freeway and/or expressway to include roof screens, articulating walls, roof ornamentation, varying roof heights, architectural detailing on rear walls, and landscape screening along rear walls.
- Landscaping to be provided that includes trees, shrubs, and groundcover near the buildings, parking areas, and along the roadways to provide partial screening.
- Any trees that are removed to be replaced by new trees at the following ratios:

• ≥18-inch diameter	4	24-inch box
• 12 to 17-inch diameter	2	24-inch box
• <12-inch diameter	1	15 gallon

Construction Visual Impacts

Construction of a typical commercial/residential project causes short-term visual impacts. The grading operations create a visual impact, and construction debris, rubbish and trash can accumulate on construction sites and are unsightly if visible from public streets. The completion of the project improvements and landscaping would eliminate the short-term visual impacts of the grading and construction operations.

CONCLUSION

The change of the existing views of the site would result in a **less-than-significant impact.**

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M. SANITARY SEWERS

SETTING

There is an existing 8-inch City of San Jose sanitary sewer in a portion of Chynoweth Avenue and a 21-inch City sewer in (future) Sanchez Drive. Both of these lines are available to serve the project. Extensions from these lines within the project would be required. Downstream capacity is sufficient to serve the project.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on sanitary sewers if it:

- Extends a sewer trunk line with capacity to serve new development.

IMPACT AND MITIGATION

There are existing City sanitary sewer collector lines in Chynoweth Avenue and in (future) Sanchez Drive that are available and adequate to serve the project. The project does not require the extension of new sanitary sewer lines that could serve new development.

CONCLUSION

The increase in demand for sanitary sewer capacity generated by project development would be a **less-than-significant impact.**

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N. WASTEWATER TREATMENT

SETTING

Wastewater treatment for the City of San Jose is provided by the San Jose-Santa Clara Water Pollution Control Plant (WPCP). Capacity is expected to be available to serve the site based on the rated capacity of 167 million gallons per day (MGD). A Growth Management System regulates new development to assure that the capacity is not exceeded.

The existing capacity of the Water Pollution Control Plant is 167 MGD and it is currently processing an estimated 135 MGD of dry weather flow. At the same time, the WPCP is currently operating under a 120 MGD dry weather flow trigger. This requirement is based upon the State Water Resources Board and the Regional Water Quality Control Board (RWQCB) concerns over the effects of additional freshwater discharges on the saltwater marsh habitat, and pollutants loading to the South Bay from the WPCP.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on wastewater treatment if it:

- Extends a sewer trunk line with capacity to serve new development.
- Exceeds the capacity of the Water Pollution Control Plant.

IMPACT AND MITIGATION

Commercial

The commercial portion of the project (up to 350,000 square feet) is estimated to generate an average of approximately 26,600 gallons per day (0.03 MGD) of effluent, based on the Growth Management System's land use/effluent coefficient of 0.076 gallons per day per square foot of retail (small structures) space.

Residential

The residential portion of the project (up to 400 units) is estimated to generate an average of approximately 48,400 gallons per day (0.05 MGD) of effluent, based on the Growth Management System's land use/effluent coefficient of 121 gallons per day per multi-family residential unit.

CONCLUSION

The increase in wastewater generated by project development would be a **less-than-significant impact.**

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O. WATER SUPPLY

SETTING

There is an existing 20-inch San Jose Water Company (SJWC) water line in Almaden Expressway, an existing 10-inch SJWC water line in Sanchez Drive that ends where the roadway ends, and an existing 12-inch SJWC water line in the portion of existing Chynoweth Avenue easterly of Almaden Expressway and also in Chynoweth Avenue easterly of the Guadalupe River. All of these lines are available to serve the project. Connections and/or extensions from these lines within the project would be required.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on water supply if it:

- Uses water in a wasteful manner.
- Substantially reduces the amount of water otherwise available for public water supply.

IMPACT AND MITIGATION

Commercial

The commercial portion of the project (up to 350,000 square feet) is estimated to require approximately 35,000 gallons of water per day, based on 100 gallons per 1,000 square feet per day.

Residential

The residential portion of the project (up to 400 units) is estimated to require approximately 91,600 gallons of water per day, based on 100 gallons per person per day.

A combination of commercial and residential uses would require a proportionate amount of water per day. The project incorporates built-in water savings devices such as shower heads with flow control devices and low flush toilets to reduce water usage.

CONCLUSION

The increase in water demand associated with the project would be a **less-than-significant impact.**

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P. STORM DRAINAGE FACILITIES

SETTING

There are no existing storm drainage facilities on the site, which drains naturally to the north. There is a large existing City of San Jose storm drainage culvert in (future) Sanchez Drive that outfalls to the Guadalupe River as shown on the Master Grading and Utility Plan of the General Development Plans. This line, which also drains the area south of State Route 85, is available to serve the project. Extensions within the project would be required.

SIGNIFICANCE CRITERIA

The proposed project would have a significant impact on storm drainage facilities if it:

- Results in a need for substantial alteration of existing storm drainage service.

IMPACT AND MITIGATION

An increase in impervious surfaces associated with project development would cause an increase in stormwater runoff. An onsite collection system including streets, parking areas, curbs, gutters, and an underground system would be required.

CONCLUSION

The increase in stormwater runoff generated by project development would be a **less-than-significant impact.**

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Q. SOLID WASTE

SETTING

Commercial

There are several solid waste disposal service companies available for commercial purposes in San Jose. They are using the Newby Island sanitary landfill disposal site operated by International Disposal Company, and/or the Kirby Canyon disposal site operated by Waste Management of California, Inc. Newby Island has an estimated service life of 30 years. Kirby Canyon has an estimated service life of up to 50 years.

Residential

Residential solid waste disposal service for San Jose is provided by GreenTeam of San Jose and/or Western Waste Industries. They are currently using the Newby Island sanitary landfill disposal site operated by International Disposal Company. The landfill area is 342 acres and has an estimated service life of 30 years. The Kirby Canyon sanitary landfill disposal site is also available to serve San Jose; Kirby Canyon has an estimated service life of up to 50 years.

An unlimited residential recycling program in the City allows the recycling of newspapers, glass bottles and jars, tin and aluminum cans, plastic soft drink bottles, yard waste, used motor oil, mixed paper, plastic bags and bottles, milk and juice cartons, polystyrene, scrap metals, textiles, and corrugated cardboard. This collection program is currently resulting in an approximately 55 percent reduction in residential solid waste that typically required disposal in a landfill; an ultimate reduction of 80 percent is targeted.

SIGNIFICANCE CRITERIA

The proposed project would have a significant solid waste impact if it:

- Exceeds published national, state, or local standards relating to solid waste or litter control.
- Results in a need for substantial alteration of existing solid waste disposal system.

IMPACT AND MITIGATION

Commercial

The commercial portion of the project (up to 350,000 square feet) is estimated to generate up to approximately 182 tons of commercial solid waste per year, based on 20 pounds per 1,000 square feet per week. Solid waste disposal capacity is available at the Newby Island and Kirby Canyon sanitary landfills.

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Residential

The residential portion of the project (up to 400 units) is estimated to generate up to approximately 502 tons of residential solid waste per year, based on 3.0 pounds per person per day; however, with a 55 percent reduction due to recycling, the amount disposed of in a landfill could be reduced to approximately 226 tons per year. Solid waste disposal capacity is available at the Newby Island and Kirby Canyon sanitary landfills.

Capacity would also be available for a combination of commercial and residential uses.

CONCLUSION

The increase in solid waste generated by project development would be a **less-than-significant impact.**

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R. GAS, ELECTRIC AND TELEPHONE

SETTING

There are existing Pacific Gas and Electric Company gas and electric services in the area, and existing Pacific Bell telephone facilities in the area, that would be extended as required to serve the project.

SIGNIFICANCE CRITERIA

The proposed project would have a significant gas, electric or telephone impact if it:

- Encourages activities which would result in the use of large amounts of fuel and energy.
- Results in a need for substantial alteration of existing gas and electric service.
- Results in a need for substantial alteration of existing telephone service.

IMPACT AND MITIGATION

Standard connections from existing facilities would be required for gas, electric, and telephone services. There is sufficient capacity in these utility systems to provide adequate project service.

CONCLUSION

The increase in demand for gas, electric and telephone services generated by project development would be a **less-than-significant impact**.

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S. PUBLIC SERVICES

Public services, which include schools, parks and recreation, fire protection, and police protection, are provided to the City as a whole from a central location or a neighborhood facility. The delivery of the services is financed on a City-wide basis. New development would create an incremental increase in the demand for these services. The amount of the demand would vary widely, depending on both the nature of the development (residential vs. industrial, for example), the type of service, as well as the specific characteristics of the development (conventional housing vs. senior housing, for example). The impact of development resulting from a proposed project would therefore generally be a fiscal impact. The increase in the demand for a service could cause an increase in the cost of providing the service due to the eventual need for additional personnel and equipment. CEQA does not require an analysis of fiscal impacts. Although not required by CEQA, discussions of public services that would have fiscal rather than environmental impacts are permitted where they may be of concern to the community and/or decision makers, and where the information contributes to an understanding of the proposed project.

Schools

The project site is in the San Jose Unified School District (K-12). The closest schools are as follows:

School	Address	Capacity
Erikson Elementary	4849 Pearl Avenue	at capacity
John Muir Middle	1260 Branham Lane	near capacity
Gunderson High	622 Gaundabert Lane	near capacity

The District also includes several magnet schools, which offer educational options to students with special interests, talents, career goals, or instructional needs. The District is returning to neighborhood-serving schools starting at the kindergarten level; however, actual school attendance will also be determined by magnet school requests and by current District busing practices.

Commercial

The State School Facilities Act provides for school district impaction fees for elementary and high schools and related facilities as a condition of approval of non-residential projects, when a link is found between the new non-residential development and the need for schools. San Jose Unified School District has implemented such a fee. The one-time fee, which is currently capped at $0.30 per square foot of newly constructed non-residential (commercial or industrial) use, would be paid prior to the issuance of a building permit.

Residential

The residential portion of the project (up to 400 units) would add additional students to the San Jose Unified School District, as follows:

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School	Capacity	Students Per DU	Total No. of Students
Erikson Elementary	at capacity	*	*
John Muir Middle	near capacity	*	*
Gunderson High	near capacity	*	*
		0.17	68

* The San Jose Unified School District uses a district total generation factor.

Based on the district generation factor listed above, the project would generate a total of up to 68 students.

The State School Facilities Act provides for school district impaction fees for elementary and high schools and related facilities as a condition of approval of residential projects. San Jose Unified School District has implemented such a fee. The one-time fee, which is currently capped at $1.84 per square foot of new habitable residential construction, would be paid prior to the issuance of a building permit.

The City has also established a School Facility Availability Policy and Ordinance that provide a process whereby the City will consider the availability of school facilities during the development review process. The process applies only in participating school districts that have filed an annual School Availability Statement indicating a lack of adequate school facility capacity. San Jose Unified School District is a participating district. The policy establishes a presumptive payment for new residential development that would be paid prior to the issuance of a building permit.

Parks and Recreation

There is one developed City of San Jose park that is technically within walking distance (3/4 mile) of the project site. Erikson Park, a 1.6-acre neighborhood mini-park, is located at Pearl Avenue and Branham Lane, adjacent to Erikson Elementary School. It contains picnic tables, a barbecue pit, tot lot and basketball court. Existing pedestrian access to Erikson Park from the project site is constrained due to the current lack of a bridge crossing the Guadalupe River. In addition, the project site is not considered to be within the neighborhood service area of Erikson Park.

Commercial

The commercial portion of the project is not expected to have an impact on City park and recreation facilities, although employees could utilize them during lunch periods or after work.

Residential

Future project residents would increase the demand for public park facilities; however, even though there is a developed City mini-park within the 3/4 mile reasonable walking distance standard, the project area is considered park deficient. Erikson Park is a small park that can

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barely serve its designated neighborhood, of which the project site is not considered a part. The planned Chynoweth Avenue bridge across the Guadalupe River by the City of San Jose would be required to provide access from the project.

The project proposes residential use in an area that is physically separated from surrounding residential uses and the public neighborhood facilities that serve them by major roadways (e.g., State Route 85 and Almaden Expressway) and by the Guadalupe River; therefore, the development of onsite recreation amenities would be appropriate within a residential project.

The City has established a Park Impact Fee Ordinance that requires dedication of land and/or payment of fees for any net increase in residential units to help provide park and recreational facilities in accordance with the Services and Facilities and the Parks and Recreation Goals and Policies of the General Plan. There are currently no plans to dedicate land for park purposes with the project. If residential development occurs, the project would generate the need for 3.2 acres of public neighborhood/community-serving park land, based on the City's service level objective for public neighborhood-serving park land and a person-per-household ratio of 2.29.

Fire Protection

The project site is in the service area of the San Jose Fire Department. The fire stations responding to emergency calls within the project site and their approximate response times are as follows:

			Projected Response Time		
Station No.		Address	w/o Chynoweth Bridge (Existing)	with Chynoweth Bridge	Response Time Standard
1st Due:	17	1494 Ridgewood Drive	4.5 min.	4.5 min.	4.0 min.
2nd Due:	13	4380 Pearl Avenue	5.0 min.	3.0 min.*	6.0 min.
Ladder truck:	9	3410 Ross Avenue	7.0 min.	7.0 min.	6.0 min.
(USR unit):	13	4380 Pearl Avenue	5.0 min.	3.0 min.	6.0 min.

* With the Chynoweth Avenue bridge, the 1st due station would become Station 13 at 3.0 minutes.

The first and second due station response times are within the recommended limits; however, the ladder truck response exceeds the 6-minute recommended limit. This response time exceedance, which also occurs in several other areas in the City, is not considered by the Fire Department to be a serious deficiency for this project. The ladder truck at Station 13 has been converted to an Urban Search and Rescue (USR) unit. It can respond to fires, but it no longer carries all the equipment necessary for a fire response. In the event Truck 13 is dispatched to a fire (maximum 5.0 minutes to the project site), a complete ladder truck (Truck 9 - approximately 7.0 minutes to the project site) would still need to be sent to provide adequate service. The slightly excessive

projected response time for Truck 9 would be partially offset by the quickness of Station 13's USR response.

Police Protection

The project site is within Beat No. A-2 of the San Jose Police Department's service area. The major felony crimes reported in Beat A-2 in terms of frequency during 1995 were grand theft and patrollable auto theft. The most commonly reported misdemeanors were petty theft and simple assault. Overall, Beat A-2 ranked 28th among all 60 police beats in terms of number of crimes reported per 1,000 population, with a rank of 1 indicating the highest crime rate.

Development of the project site would result in an increased demand for police services. No additional police personnel or equipment are expected to be necessary due to the implementation of this project.

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IV. CUMULATIVE IMPACTS

As defined in Section 15355 of the State CEQA Guidelines, cumulative impacts are two or more individual impacts that when considered together are considerable, or which compound or increase other environmental impacts. They may be from a single project, or from several separate projects.

There are currently no pending projects in the vicinity; therefore, there are no cumulative development impacts to be analyzed. The projects that were pending at the time of preparation of the Draft EIR are now all approved.

A. GUADALUPE RIVER WATERSHED PLANNING STUDY

An Engineer's Report for the Guadalupe River Watershed Planning Study and a Draft Environmental Impact Report/Environmental Impact Statement for the Upper Guadalupe River Flood Control Project were prepared by the Santa Clara Valley Water District (and U.S. Army Corps of Engineers) in January, 1997. The project includes the upper half of the Guadalupe River watershed, from I-280 to Blossom Hill Road, as well as Canoas and Ross creeks. This proposed improvement area is the last portion of the Guadalupe River that lacks adequate capacity to safely convey the 100-year flood flow, lacks continuity for a future trail from Alamitos Creek to downtown San Jose, and contains fish barriers that hinder fish migration to upstream habitat.

The proposed project site is located within Reach 12 (Branham Lane to Blossom Hill Road) of the Guadalupe River watershed project. This reach has capacity to contain the 1 percent flow but does not have adequate freeboard from future Chynoweth Avenue to Blossom Hill Road. Adjacent to the river are several off-stream ponds owned by the District, which has been utilizing these ponds and the river channel for groundwater percolation.

The two feasible alternatives considered in this reach were levee raising only; and bypass channel, off-stream percolation ponds and levee raising. The selected alternative is the levee raising only alternative, which proposes to acquire adjacent land on the west bank, from Branham Lane to future Chynoweth Avenue, to create riparian, wetlands and open water habitat. From future Chynoweth Avenue to Blossom Hill Road, the east and west bank levees would be reconstructed and raised up to 6 feet on both banks. The west bank levee would also be widened 25 feet to the west to create a revegetation bench.

The flood control project plans indicate that a 4.7-acre off-stream percolation pond and an associated wetlands revegetation area as well as riparian revegetation on the west side of the Guadalupe River are proposed to be located on the residential portion of the project site, northerly of future Chynoweth Avenue. Improvements proposed south of future Chynoweth Avenue would not extend westerly of future Sanchez Drive, and would not impact the commercial portion of the proposed project site. The Santa Clara Valley Water District is currently responding to comments received on the Draft EIR/EIS, with certification expected in 1998.

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Construction of the improvements along Reach 12 is scheduled for 1998-1999 as shown on the following cost and schedule summary.

The Guadalupe River project, as proposed, would require right-of-way acquisition by the Water District of a portion of the proposed project site. Plans are currently being made to facilitate such right-of-way acquisition. The proposed project is not consistent with the Santa Clara Valley Water District planned flood control project as it impacts proposed flood control improvements for Reach 12 that are shown on the following Plan and Profile sheet and Cross Section. The project's impacts on the planned flood control improvements could also affect implementation of the General Plan designated Guadalupe River Trail Corridor along the west bank of the river. The riparian setback, which will be determined at the PD Permit stage when building, parking and landscaping areas are known, would allow for sufficient trail right-of-way along the Guadalupe River.

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Table 13. Guadalupe River Capital Improvement Project Cost and Schedule Summary

Reach	Scheduled Construction[1]	Right of Way ($ M)	Mitigation ($ M)	Construction ($ Mi)	Total ($ M)
A	1998-1999	0.0	0.0	1.6	1.6
6	1998-1999	11.3	0.2	7.5	19.0
7	1999-2001	8.0	0.2	12.8	21.0
8	2002-2003	5.3	0.0	5.0	10.3
9	2008-2010	3.9	0.2	9.7	13.8
10	2010-2017[2,3]	3.8	1.0	8.4	13.2
11	2021-2023[2]	3.0	0.3	7.5	10.8
12	1998-1999	12.1	0.7	5.5	18.3
Canoas Creek	2022-2023	0.0	0.0	1.8	1.8
Ross Creek	2017-2018	0.0	0.0	3.7	3.7
Fish Barrier Modifications[2]	1997-2023	0.0	0.0	0.5	0.5
PROJECT TOTAL		47.4	2.6	64.0	114.0

[1] Assumptions: (1) no federal funding; (2) benefit assessment continues beyond year 2000. In the current program in the District's Central Zone the average homeowner pays $30 per year for benefit assessment. That program will sunset in the year 2000 if not continued by voters.

[2] Including fish barrier removal.[3] Interim fish barrier remediation will be provided.

Source: **Guadalupe River Watershed Planning Study Engineers' Report, January, 1997 Table 3.25 Guadalupe River I-101 to I-880 - I-280 to Blossom Hill Road Capital Improvement Project Cost and Schedule Summary.**

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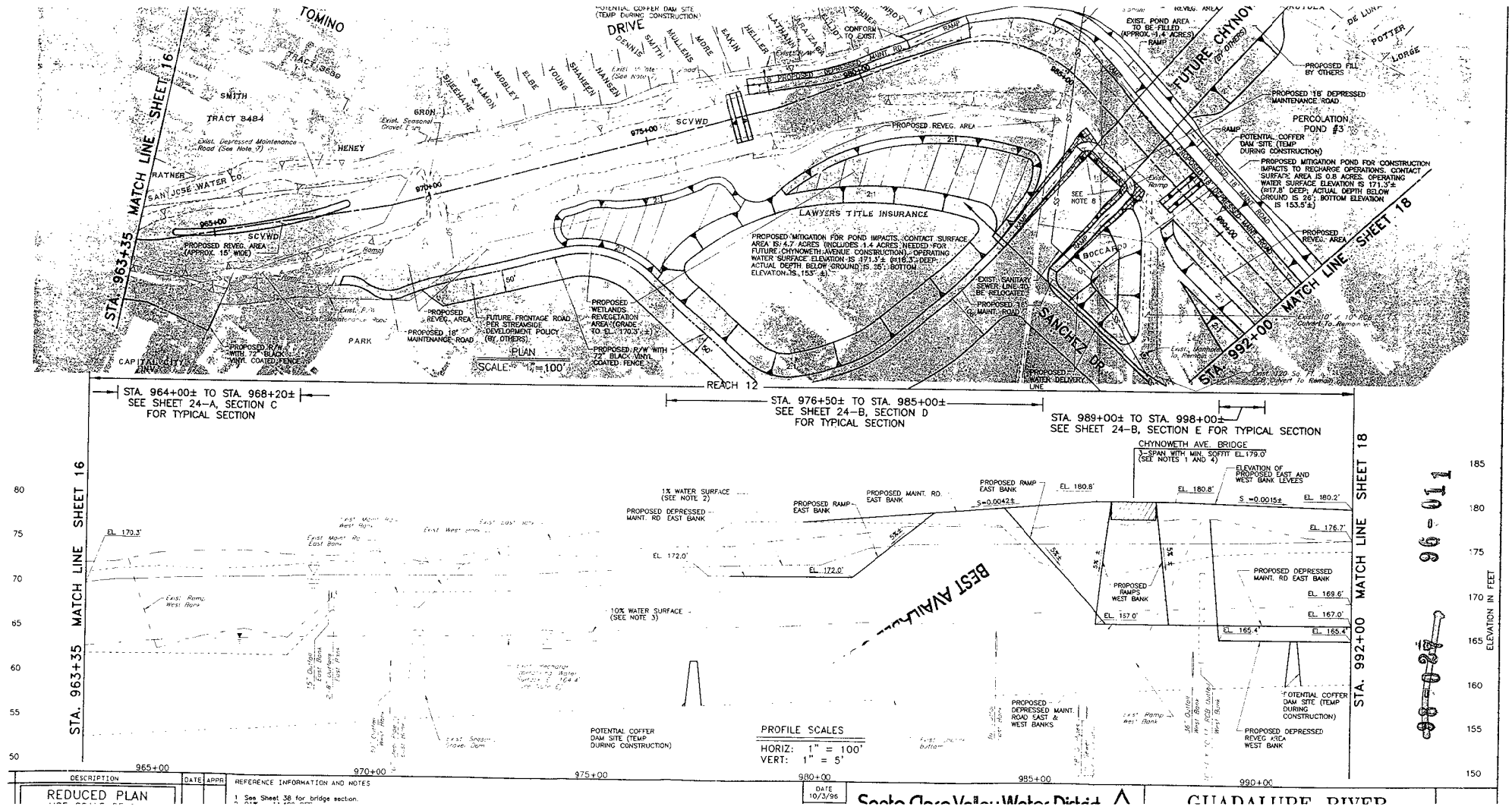

TOMINO DRIVE
SMITH
TRACT 8484
HENEY
RATNER
SAN JOSE WATER CO.
SCVWD
PARK
CAPITAL CITY
LAWYERS TITLE INSURANCE
PROPOSED MITIGATION FOR POND IMPACTS. CONTACT SURFACE AREA IS 4.7 ACRES (INCLUDES 1.4 ACRES NEEDED FOR FUTURE CHYNOWETH AVENUE CONSTRUCTION). OPERATING WATER SURFACE ELEVATION IS 171.3'± (≈18.3' DEEP; ACTUAL DEPTH BELOW GROUND IS 35'; BOTTOM ELEVATION IS 153'±)
PROPOSED REVEG. AREA
PROPOSED 18' MAINTENANCE ROAD
FUTURE FRONTAGE ROAD PER STREAMSIDE DEVELOPMENT POLICY (BY OTHERS)
PROPOSED WETLANDS REVEGETATION AREA (GRADE TO EL. 170.3'±)
PROPOSED R/W WITH 72" BLACK VINYL COATED FENCE
PLAN
SCALE: 1" = 100'
REACH 12
STA. 964+00± TO STA. 968+20± SEE SHEET 24-A, SECTION C FOR TYPICAL SECTION
STA. 976+50± TO STA. 985+00± SEE SHEET 24-B, SECTION D FOR TYPICAL SECTION
STA. 989+00± TO STA. 998+00± SEE SHEET 24-B, SECTION E FOR TYPICAL SECTION
CHYNOWETH AVE. BRIDGE
3-SPAN WITH MIN. SOFFIT EL. 179.0' (SEE NOTES 1 AND 4)
ELEVATION OF PROPOSED EAST AND WEST BANK LEVEES
1% WATER SURFACE (SEE NOTE 2)
PROPOSED DEPRESSED MAINT. RD EAST BANK
PROPOSED RAMP EAST BANK
PROPOSED MAINT. RD. EAST BANK
PROPOSED RAMPS WEST BANK
PROPOSED DEPRESSED MAINT. RD EAST BANK
10% WATER SURFACE (SEE NOTE 3)
BEST AVAILABLE
POTENTIAL COFFER DAM SITE (TEMP DURING CONSTRUCTION)
PROPOSED DEPRESSED MAINT. ROAD EAST & WEST BANKS
PROPOSED DEPRESSED REVEG AREA WEST BANK
PROFILE SCALES
HORIZ: 1" = 100'
VERT: 1" = 5'
STA. 963+35 MATCH LINE SHEET 16
STA. 992+00 MATCH LINE SHEET 18
ELEVATION IN FEET
965+00
970+00
975+00
980+00
985+00
990+00
REDUCED PLAN
REFERENCE INFORMATION AND NOTES
1 See Sheet 38 for bridge section.
DATE 10/3/96
Santa Clara Valley Water District
GUADALUPE RIVER

Figure 20

V. UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

As defined in the State CEQA Guidelines, a significant impact on the environment is "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the activity..." Suggested significant environmental impacts of the project are listed below. Final determination of the significant impacts is by the decision making body of the Lead Agency having final approval authority over the project. All of the other identified potentially significant impacts of the project are mitigated by measures to be considered in the approval of the project or are not expected to have a substantial adverse impact on the environment, based on final determination by the decision making body.

Land Use

Project development would result in the loss of prime farmland.

Air Quality

Total daily vehicle emissions of carbon monoxide, reactive organic gases, nitrogen oxides and particulates generated by the project would exceed BAAQMD significance criteria.

When an Environmental Impact Report identifies significant impacts, Section 15091 of the State CEQA Guidelines requires that one or more of the following written findings be made when a public agency approves the project: 1) changes or alterations have been required to avoid or substantially lessen the impact, 2) changes or alterations are within the responsibility of another agency, or 3) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. CEQA requires decision makers to balance the benefits of a project against its unavoidable environmental risks in determining whether to approve the project. When the decision of the public agency allows the occurrence of significant impacts that are not at least substantially mitigated, a "Statement of Overriding Considerations" shall be prepared in accordance with Section 15093.

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VI. ALTERNATIVES

The State CEQA Guidelines' Section 15126 requires the description of a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic project objectives and an evaluation of the comparative merits of the alternatives. The range of alternatives to be analyzed is governed by the Rule of Reason, which requires only an analysis of those alternatives necessary to permit a reasonable choice. If the environmentally superior alternative is the "No Project", an environmentally superior alternative is to be identified among the other alternatives. A comparison of the alternatives is provided at the end of this section.

A. NO PROJECT ALTERNATIVE

If the project does not proceed, the project impacts would be eliminated. The site probably would remain vacant for an unknown length of time; however, since it is in private ownership and located in a developing area, is designated for commercial and residential development on the City's General Plan, and is located in a City where there is a multiple-family housing shortage and a need for jobs, continuous efforts to develop the site in accordance with the General Plan land use designations can be expected.

B. ALTERNATIVE LAND USE - REDUCED PROJECT

This alternative would consist of the development of a maximum of approximately 148,900 square feet of commercial space or up to a maximum of 170 units or any equivalent combination of commercial and residential uses that would not exceed 4,696 daily trips, which would reduce the total daily vehicle emissions air quality impact to acceptable levels. The BAAQMD significance criteria for air quality impacts are 550 lbs/day for carbon monoxide and 80 lbs/day for reactive organic gases, nitrogen oxides and particulates; this is the number of daily trips that would reduce the daily emissions from the project to less than these values. This alternative would require similar geotechnical, water quality, noise, and hazardous materials mitigation as the proposed project, and would have similar impacts to land use and cultural resources. This alternative would have less of an impact on vegetation and wildlife, on the riparian corridor and on visual considerations (more open space) and would generate less of an increase in traffic, air pollution and utilities/services impacts. Because of the reduced land area required for 148,900 square feet of commercial space, the project could be designed to accommodate the Santa Clara Valley Water District's planned project as described in section IV. A. This alternative would not meet the project objective of a maximum of 350,000 square feet of commercial space and/or up to a maximum of 400 residential units.

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C. ALTERNATIVES COMPARISON

A comparison of the alternative land uses and locations is generally summarized in the following Alternatives Matrix. The "No Project" alternative is the environmentally superior alternative. The Reduced Project alternative is the next "environmentally superior" alternative because of the reduction in vegetation and wildlife, riparian, traffic and air quality impacts.

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	PROJECT SITE		
Category	Project	No Project	Reduced Project
Land Use	●	○	●
Geology, Soils & Seismic	◍	○	◍
Vegetation & Wildlife	◍	○	◍
Waterways & Flooding	○	○	○
Water Quality	◍	○	◍
Energy	○	○	○
Cultural Resources	◍	○	◍
Traffic	◍	○	◍
Noise	◍	○	◍
Air Quality	●	○	○
Hazardous Materials	◍	○	◍
Visual Impacts	◍	○	◍
Sanitary Sewers	○	○	○
Wastewater Treatment	○	○	○
Water Supply	○	○	○
Storm Drainage Facilities	○	○	○
Solid Waste	○	○	○
Gas, Electric & Telephone	○	○	○

○ No concern ◍ Some concern ● Major concern

Alternatives Matrix

Figure 22

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VII. GROWTH INDUCING IMPACT

Direct Growth Inducing Impacts

Direct growth inducing impacts include the construction of streets and utilities that would provide access to or capacity for additional undeveloped land. The site is bordered by major transportation routes (Almaden Expressway and State Route 85), the Guadalupe River, and developed commercial and/or residential land. The proposed project would not result in direct growth inducing impacts associated with the extension of utilities and services adequate to serve adjacent areas. The project would not have a direct growth inducing impact.

Less-Than-Significant Impact

Indirect Growth Inducing Impacts

Indirect growth inducing impacts include increases in population and economic impacts. There would be short-term increases in employment in the construction industry. Future residents would reflect an increase in population to the area and added economic support to businesses in the area, and future residents would add to the cumulative demand for services. The indirect growth inducing impact of the project is not considered significant.

Less-Than-Significant Impact

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VIII. ANY SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES, WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The project would result in the loss of open space and the visual change caused by grading and construction of buildings, roadways, parking areas, utilities, and landscaping. Once the project is developed, reversion to the site's current state would be unlikely. Alternative use of the land after the project is developed would not be totally precluded - but would be highly unlikely.

IX. VIEWS OF LOCAL GROUPS

Vista Park homeowners expressed concern regarding additional development in the area during review of the nearby Eden Housing project, southeasterly of Chynoweth Avenue and Pearl Avenue.

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X. NOTICE OF PREPARATION

A Notice of Preparation is sent to each responsible agency, federal agency involved in approving or funding the project, and to each trustee agency responsible for natural resources affected by the project. Responses are to identify significant environmental issues and reasonable alternatives and mitigation measures that the responsible agency will need to have explored in the Draft EIR, and whether the agency will be a responsible agency or trustee agency for the project. On June 23, 1997, a Notice of Preparation for the project was sent to the following agencies. Responses are required within 30 days or it is presumed the agency has no response. Copies of the response letters are included in Appendix K.

Agency	Response Received
County of Santa Clara	
Planning Department	
Public Works Department	
Parks and Recreation Depart.	
Transportation Agency	
Regional Agencies	
Bay Area Air Quality Management Dist.	
Association of Bay Area Governments	
Regional Water Quality Control Board	
Metropolitan Transportation Commission	
Santa Clara Valley Transportation Authority	●
State Agencies	
State Clearinghouse	
Caltrans	●
Resources Agency	
Dept. of Conservation	
Dept. of Parks and Recreation	
Dept. of Fish and Game	●
Archaeological Information Center	
State Lands Commission	
California Highway Patrol	
Federal Agencies	
Federal Highway Administration	
Public Utilities	
Pacific Gas and Electric Company	
San Jose Water Company	
Pacific Bell	
Special Districts	
Santa Clara Valley Water District	●
Evergreen Resource Conservation District	

Agency	Response Received
Other Cities	
Campbell	
Los Altos	
Local Organizations	
Sierra Club	
Audubon Society	
Native Plant Society	

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XI. AUTHORS AND CONSULTANTS

City of San Jose
Department of Planning, Building and Code Enforcement
801 North First Street
San Jose, CA 95110

James R. Derryberry
Director of Planning

Julie Caporgno
Report Manager

Janis Moore
Project Coordinator

Mindigo & Associates
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San Jose, CA 95126

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Louanne Quilici
Linda Akeley

Earth Systems Consultants Northern California
Consultants in Geotechnical Engineering
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Fremont, CA 94539-7400

Soils Engineering
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Carl W. Greenlee

Hazardous Materials
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Timothy Conroy

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P.O. Box 1180
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Biological
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Rick A. Hopkins
Penelope Delevoryas

Tree Survey
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Patrick H. Reynolds
Max J. Busnardo

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Consulting Archaeologist
3615 Folsom Street
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Matthew R. Clark
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Glory Anne Laffey
Charlene Duval

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Mountain View, CA 94040

Gay Lawrence Pang

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Acoustical Consultants
13980 Blossom Hill Road, Suite 100
Los Gatos, CA 95032

Jeffrey K. Pack

Environmental Consulting Services
Air Quality Consultants
20430 Town Center Lane - 5H
Cupertino, CA 95014

Stan Shelly

Schaaf & Wheeler
Consulting Civil Engineers
100 N. Winchester Blvd., Suite 200
Santa Clara, CA 95050

Kirk Wheeler

Although Mindigo & Associates have used their best efforts to prepare a complete and competent report, Mindigo & Associates shall not be liable for cost or damage to any project due to judicial or administrative action, whether or not such action is based on the form or content of this report or portion prepared by Mindigo & Associates. Any services of staff or subconsultants of Mindigo & Associates required by any party in any litigation on or related to this report shall be paid for by the party requesting such services at the current, standard consulting rates of Mindigo & Associates.

Signed economic disclosure statements for the above consultants are on file with the San Jose Department of City Planning. None of these firms has any direct or indirect economic interest in the project.

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XII. PERSONS AND ORGANIZATIONS CONSULTED

Lou Tersini, Arcadia Development Company

Gerry De Young, President, Ruth & Going, Inc.

Mike Sheehy, Civil Engineer, Ruth & Going, Inc.

Cesario Rodriguez, Planner, Department of City Planning, City of San Jose

Jim Tanner, Floodplain Manager, Development Services Division, Department of Public Works, City of San Jose

Catherine Masters, Community Services Administrator, San Jose Unified School District

Ebrahim Sohrabi, Transportation Engineer, Transportation Division, Public Works Department, City of San Jose

Walter S. Fujczak, Fire Protection Engineer, Fire Protection Planning, San Jose Fire Department

Joel Slavit, Park Planner, Park Planning and Development Department, Architectural Engineering Division, City of San Jose

Lance Morgan, Gas and Electrical Mapping Departments, Pacific Gas and Electric Company

Skip Lacaze, Senior Environmental Specialist, Office of Environmental Management, City of San Jose

Rene Cordero, Associate Civil Engineer, Transportation Division, Public Works Department, City of San Jose

Sami Areikat, Sanitary Engineer, Environmental Services Department, City of San Jose

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XIII. SOURCES AND REFERENCES

San Jose 2020 General Plan, Focus on the Future, City of San Jose Department of City Planning and Building, November 18, 1996

San Jose East Quadrangle, United States Geological Survey, 1980

City Maps, Department of Public Works, City of San Jose, 1993

San Jose Geotechnical Investigation, Cooper-Clark and Associates, July, 1974

A Plan for the Conservation of Resources, Santa Clara County Planning Department, November, 1973

Soils of Santa Clara County, United States Department of Agriculture, Soil Conservation Service, 1968

Assessor's Maps, Office of County Assessor, Santa Clara County, 1996-1997

Flood Insurance Rate Maps, San Jose, California, Federal Emergency Management Agency, August 2, 1982

Maps of Flood Control Facilities and Limits of 1% Flooding, Santa Clara Valley Water District, June, 1993

Special Studies Zones Map, San Jose East Quadrangle, California Division of Mines and Geology, January 1, 1982

Fault Hazard Maps, San Jose East Quadrangle, City of San Jose, 1983

Geologic Hazard Zones, City of San Jose, November, 1985

Generalized Geologic Map, Roger D. Borcherdt, James F. Gibbs, and Kenneth R. Lajoie, 1975

Santa Clara Valley Map, Barclay Maps, 1993

Potential Archaeological Resource Maps, San Jose Department of City Planning

Santa Clara County Heritage Resource Inventory, Santa Clara County Historical Heritage Commission, October, 1975 with Amendments

96 - 011 ~~98 - 0 [illegible]~~

Historic Resources Inventory, City of San Jose Historic Landmarks Commission, Department of City Planning and Building, September, 1996

At The Crossroads, State of California Resources Agency, Fish and Game Commission, and Department of Fish and Game, December, 1980 as amended July, 1983

Inventory of Rare and Endangered Vascular Plants of California, Robert M. Powell, California Native Plant Society Special Publication No. 1, 1974

Heritage Tree List, San Jose City Council, August 26, 1988

Leisure and Life 2000, San Jose Department of Recreation, Parks and Community Services, March 2, 1988

Facilities and Services Inventory, Council District 10, San Jose Parks and Recreation Department, September, 1985

Park Impact Fee Ordinance, City of San Jose, June 14, 1994

1995 Demographic Data Book, San Jose Police Department

Specific Use Codes and Sewage Coefficients - Development Tracking Information System, City of San Jose, March 1, 1985

Transportation Level of Service Policy 5-3, City of San Jose City Council, August 26, 1980

Santa Clara County Important Farmland Map, State of California Department of Conservation and the United States Department of Agriculture, Soil Conservation Service, July 1, 1988

Advisory Guidelines for the Farmland Mapping and Monitoring Program, California Department of Conservation, Division of Land Resource Protection, April, 1984

Standards for the Sealing of Abandoned Wells, Santa Clara County, Santa Clara Valley Water District and Santa Clara County Health Department, July 27, 1976

Ordinance No. 90-1, Santa Clara Valley Water District, April 24, 1990

Manual of Standards for Erosion and Sediment Control Measures, Association of Bay Area Governments, June, 1981

Order 95-180, NPDES Permit No. CAS029718, California Regional Water Quality Control Board San Francisco Bay Region, August 23, 1995

96 - 011 ~~70 - 087~~

Application for Environmental Clearance, Planned Development Rezoning for Arcadia Development Company, Ruth & Going, Inc., May 7, 1997

Guadalupe River Watershed Planning Study, Engineer's Report, Santa Clara Valley Water District, January, 1997

Draft Environmental Impact Report / Environmental Impact Statement for the Upper Guadalupe River Flood Control Project, Santa Clara Valley Water District and U.S. Army Corps of Engineers, January, 1997

Air Currents, Bay Area Air Quality Management District, May, 1997

Draft Environmental Impact Report, Rubino Property Project, City of San Jose, October 7, 1997

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TECHNICAL APPENDIX LIST

A copy of the following consultants' reports and accessory information, which were prepared for the Almaden/Chynoweth Project, are summarized in this Environmental Impact Report and included in the Technical Appendix, a separate document. Copies are on file at the City of San Jose Department of Planning, Building and Code Enforcement. In accordance with the State CEQA Guidelines, these reports are incorporated by reference and not reproduced in the body of the EIR in order to reduce the size and number of pages.

APPENDIX

A **Soil Engineering Study, Commercial Development, Almaden Expressway at Highway 85, San Jose, California**, Earth Systems Consultants Northern California, July 10, 1996

and

Soil Engineering Study, Proposed Multi-Family Residential Development, Almaden Expressway at Highway 85, San Jose, California, Earth Systems Consultants Northern California, July 22, 1996

B **Biotic Survey, 42.5-Acre Arcadia Property, Almaden Expressway, San Jose**, H.T. Harvey & Associates, August 7, 1995

and

Biological Assessment Update, 42.5-Acre Arcadia Property, Almaden Expressway, San Jose, H.T. Harvey & Associates, November 15, 1996

and

Arcadia Burrowing Owl Survey, H.T. Harvey & Associates, January 27, 1998

and

Burrowing Owl Response Letter, H.T. Harvey & Associates, May 28, 1998

and

Prohibited Landscape Plants on SCVWD Creeks List, Santa Clara Valley Water District

C **Tree Survey, Lands of Arcadia**, H.T. Harvey & Associates, October 14, 1997

D **Energy Conservation Measures**

E **Report of Findings of an Archaeological Field Inspection of the Arcadia Property located at Almaden Expressway and Highway 85, San Jose, Santa Clara County, California**, Holman & Associates, July 17, 1996

and

Subsurface Testing for Archaeological Resources at the Arcadia Development Project Area, Highway 85 and Almaden Expressway, San Jose, California, Holman & Associates, August, 1997

F **Historical and Architectural Evaluation for the Arcadia Property, 14520, 14540 Almaden Expressway, City of San Jose, County of Santa Clara**, Archives & Architecture, July 17, 1996

96 - 011 ~~98-028~~

APPENDIX

G **Traffic Analysis Report, Almaden-Chynoweth, Commercial Retail and Residential, City of San Jose**, Pang Engineers, Inc., October 23, 1996

and

Freeway Segments/Cumulative Traffic Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., September 15, 1997

and

Updated Approved Trips Inventory Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., April 9, 1998

H **Noise Assessment Study for the Proposed Commercial/Residential Mixed-Use Development, Almaden Expressway and Highway 85, San Jose**, Edward L. Pack Associates, Inc., July 30, 1996

and

Noise Assessment Study of the Proposed Continuation of Chynoweth Avenue Between Winfield Boulevard and Almaden Expressway, San Jose, Edward L. Pack Associates, Inc., November 20, 1997

I **Air Quality Impact and Mitigation Study, Almaden-Chynoweth Development Project, San Jose, CA**, Environmental Consulting Services, July 30, 1997

J **Phase I Environmental Site Assessment, Arcadia Development, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California**, Earth Systems Consultants Northern California, August 13, 1996

and

Addendum to Phase I Environmental Site Assessment, Northeast Corner Highway 85 & Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, September 19, 1997

and

Environmental Concerns Summary Letter Report, Northeast Corner of Highway 85 & Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, November 14, 1996

and

Phase II Environmental Site Assessment, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, January 10, 1997

and

Response to SCVWD Comments, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, May 11, 1998

K **Notice of Preparation Response Letters**

L (Separate) **Level of Service Calculations, Traffic Analysis Report, Almaden-Chynoweth, Commercial Retail and Residential, City of San Jose**, Pang Engineers, Inc., October 23, 1996

and

Level of Service Calculations, Freeway Segments/Cumulative Traffic Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., September 15, 1997

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APPENDIX	
M	**Hydrology Study, Almaden/Chynoweth Development**, Schaaf & Wheeler, May 28, 1998
N (Separate)	**Hydrology Study, Almaden/Chynoweth Development, Technical Appendix**, Schaaf & Wheeler, May 28, 1998

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APPENDIX O

FIRST and FINAL AMENDMENTS

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APPENDIX O

This document includes the First and Final Amendments to the Draft Environmental Impact Report on the Almaden/Chynoweth Project. These documents, together with the Draft EIR, comprise the Final EIR. The contents of each Amendment are listed below.

First Amendment, June 5, 1998

- List of Organizations and Agencies Commenting on the Draft EIR
- Responses to Comments on the Draft EIR
- Text Amendments
- Draft EIR Distribution List

Final Amendment, June 25, 1998

- Summary of the June 24, 1998 Planning Commission Hearing on the Draft EIR

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1st Amendment

to the

DRAFT

ENVIRONMENTAL IMPACT REPORT

Almaden / Chynoweth Project

PDC 96-02-011

Application by

Arcadia Development Company

June 5, 1998

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CITY OF SAN JOSE

ALMADEN / CHYNOWETH PROJECT

INTRODUCTION

This Addendum, which becomes a part of the Final EIR, includes responses to written comments that were received on the Draft EIR, and text amendments. Following is a list of the persons and agencies who submitted written comments. The responses are on the opposite page following the comment page. The number preceding the response refers to the comment's designation. Where the comments were not designated, they have been numbered consecutively.

WRITTEN COMMENTS

Commentor	*Date of Letter*	*Date Received*	*Response Required*	*Page*
1. California Department of Fish and Game	4/9/98	4/13/98	Yes	A-1
2. County of Santa Clara,	4/17/98	4/20/98	No	A-7
Roads and Airports Department	4/27/98	4/29/98	Yes	A-9
3. Guadalupe-Coyote Resource Conservation District	4/20/98	4/23/98	Yes	A-25
4. Santa Clara Valley Transportation Authority	4/20/98	4/20/98	Yes	A-27
5. Santa Clara Valley Water District	4/22/98	4/22/98	Yes	A-33

TEXT AMENDMENTS A-53

DRAFT EIR DISTRIBUTION LIST A-119

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State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

PETE WILSON, *Governor*

April 9, 1998

RECEIVED
APR 13 1998
CITY OF SAN JOSE
PLANNING DEPARTMENT

Ms. Janis Moore
City of San Jose
City Hall Annex Room 400
801 North First Street
San Jose, California 95110-1795

Dear Ms. Moore:

Almaden/Chynoweth Planned Development Rezoning
(PDC 96-02-011) Draft Environmental Impact Report
SCH # 97062105

Department of Fish and Game personnel have reviewed the Draft Environmental Impact Report (DEIR) for the Almaden/ Chynoweth project, located adjacent to the Guadalupe River in south San Jose. The project would allow the rezoning of 43.6 acres currently zoned for agriculture to zoning for commercial and/or residential uses. We have the following comments.

1. As is stated in the DEIR, the California red-legged frog (*Rana aurora draytonii*) is expected to exist in the project vicinity. However, the DEIR contends that no suitable habitat exists because of the disturbed nature of the site. The U. S. Fish and Wildlife Service should be contacted to determine survey and avoidance or mitigation measures appropriate for this Federally-listed species.

2. Daytime reconnaissance-level surveys for burrowing owls (*Speotyto cunicularia*) were done on one day in August 1995, in November 1996, and January 1998. Six ground squirrel holes were found on the first occasion, and several others near a debris pile were found on the most recent survey. As explained in our response to the Notice of Preparation (NOP) for this project, if the project site contains suitable habitat for burrowing owls, this Department recommends that surveying for the owls be conducted over at least four consecutive evenings during the height of the nesting season, between April 15 and July 15, and over four evenings between December 1 and January 31 for winter residents. If burrowing owls are found during nesting season surveys, further survey work may be unnecessary. These surveys need to be conducted prior to project approval so that, if

96-011

Conserving California's Wildlife Since 1870.

Responses to **California Department of Fish and Game**

1. The report states on page 38 that several special-status species including California red-legged frog "...may occur in the vicinity of the site ... However, due to the disturbed nature of the site and the fact that it has been farmed continuously for over 30 years, no suitable habitat exists onsite for any of these species." The biotic survey prepared for the project did not find evidence of the red-legged frog. The EIR does not conclude that the red-legged frog exists onsite; therefore, additional survey and avoidance or mitigation measures are not required for this species.

2. Six active ground squirrel burrows that were obscured by brushy and weedy vegetation were observed in the southeasterly section of the site. Because of the vegetation around the burrows and the continuous agricultural activity on the site prior to 1997, it is unlikely that burrowing owls would use these burrows. There were no additional burrows near debris piles on the site; however, the debris piles themselves could provide breeding and roosting habitat. H.T. Harvey & Associates reviewed their previous survey results and concluded that, since the site has been extensively farmed over the years and has no history of owl occupation, the site currently does not comprise habitat. See Text Amendments, section III. C. Vegetation and Wildlife, page 39. The report recognizes that there is a possibility that burrowing owls could arrive on the site prior to construction and includes mitigation measures to conduct surveys in accordance with Fish and Game protocol prior to construction and measures to protect any owls that are found.

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burrowing owls are found on the site, appropriate avoidance or mitigation measures can be included in the EIR. Details regarding recommended survey protocol may be obtained from this Department. General recommendations regarding mitigation for habitat loss for burrowing owls was provided in our NOP response; further information can be provided if owls are found on site.

3. According to the DEIR, the majority of the project site is within 10 to 20 feet of the top of the bank of the Guadalupe River, with the riparian canopy extending more than 75 feet into the parcel in some locations. As stated in our NOP response, this Department recommends a minimum 100-foot buffer, measured outward from the top of each creekbank, be established to protect the creeks and riparian vegetation, and to provide a travel corridor for wildlife. No roads, buildings, yards, or other development should be permitted within the buffer. Pedestrian trails should be located along the outside edge of the riparian vegetation. The City of San Jose's Riparian Corridor Policy generally provides for a 100-foot buffer, but allows alternative setbacks of smaller distances. For this project, we specifically recommend that the minimum 100-foot setback be maintained.

4. It is stated in the Project Description that the project also includes completion of Chynoweth Avenue between Almaden Expressway and the Guadalupe River, and that the "connection" across the river is included in the project description, but analysis of impacts of the bridge across the river is not included in the EIR. If the road to the river is part of the project, we believe that discussion of the bridge crossing the river should also be included.

The Department has direct jurisdiction under Fish and Game Code sections 1601-1603 in regard to any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any stream. We recommend early consultation since modification of the proposed project may be required to avoid impacts to fish and wildlife resources. Formal notification under Fish and Game Code Section 1603 should be made after all other permits and certifications have been obtained. Work cannot be initiated until a streambed alteration agreement is executed.

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A-3

3. A majority of the northeasterly boundary of the project site is located within 10 to 20 feet of the top of bank of the Guadalupe River, not the majority of the site. See the Land Use Plan, Figure 9. The text has been clarified. See Text Amendments, section III. C. Vegetation and Wildlife, page 35. The City's Riparian Corridor Policy Study is discussed in section II. F. on page 22 and in section III. C. on pages 35, 36, 40 and 41. The project will comply with the Riparian Corridor Policy Study. The riparian corridor setback will be determined at the PD Permit stage when a specific plan showing the locations of building, paving, parking, etc. is available and will meet the overall 100-foot setback requirement.

4. The Chynoweth Avenue "connection" across the Guadalupe River is included for EIR analysis purposes because development of 350,000 square feet of retail commercial space on the site requires the completion of the bridge as mitigation for traffic circulation: a total of only 78,000 square feet can be developed without the bridge. This DEIR addresses the impacts of the project with the bridge in place, i.e., traffic, noise and air quality resulting from the trip diversion. The project is required to contribute to the construction cost of the bridge; however, the bridge construction itself is a City project and is undergoing separate environmental review. A Notice of Preparation of an EIR for the bridge project was issued on March 24, 1998 and was sent to the State Clearinghouse.

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96-011

The U. S. Army Corps of Engineers also has jurisdiction over the discharge of fill to streams and wetlands under Section 404 of the Clean Water Act. We recommend that the Corps be contacted to determine if they have jurisdiction and if they require a permit.

Specific measures to adequately mitigate unavoidable impacts, including cumulative ones, need to be incorporated into project design prior to certification of the EIR. A monitoring program, as required by Assembly Bill 3180, must ensure that mitigation measures are effective and must provide for corrective action if they are not effective.

We request that subsequent documents related to this project be submitted to this Department for our review. If you have any questions regarding our comments, please contact Martha Schauss, Associate Wildlife Biologist, at (408) 623-4989; or Carl Wilcox, Environmental Services Supervisor, at (707) 944-5525.

Sincerely,

Brian Hunter
Regional Manager
Region 3

96-011

~~96-087~~

The U.S. Army Corps of Engineers will be sent all documents pertaining to the bridge construction project.

~~98-027~~

96-011

County of Santa Clara

Roads and Airports Department
Land Development and Permits

101 Skyport Drive
San Jose, California 95110

April 17, 1998

Mr. James R. Derryberry
Director of Planning
City of San Jose
801 North First Street
San Jose, CA 95110

Subject: Draft Environmental Impact Report (EIR) Project Coordinator: Janis Moore

City File No.: PDC 96-02-011
Almaden Expressway/Chynoweth Avenue, Southeast Corner

Dear Mr. Derryberry:

This letter is a follow-up to the phone voicemail message of April 17, 1998 left for Ms. Moore, requesting additional review time up to May 5, 1998.

As indicated in the phone message, your March 3, 1998 letter along with the Draft EIR was received in our office on April 6, 1998. As a result, not enough time was available to us for review and comments prior to the April 20, 1998 response date.

We have serious concerns/comments for this project. We will send in our comments on the subject Draft EIR on or before May 5, 1998. We appreciate your help in this matter.

Thank you for the opportunity to review and comment on this project. If you have any questions, please call me at 573-2462.

Sincerely,

96-011

Ashok Vyas
Project Engineer

AAV:rtj
cc: Ron Conn, Development Services, City of San Jose
RBP, DEC, JME, MA, File

Board of Supervisors: Donald F. Gage, Blanca Alvarado, Pete McHugh, James T. Beall, Jr., S. Joseph Simitian
County Executive: Richard Wittenberg

Responses to **County of Santa Clara Roads and Airports Department**

The comment is acknowledged. See the following letter dated April 27, 1998.

~~98-027~~

96-011

County of Santa Clara

Roads and Airports Department
Land Development and Permits

101 Skyport Drive
San Jose, California 95110

April 27, 1998

RECEIVED
MAY 01 1998
FAX REC'D W/O ATTACHMENTS 4/29/98
PLANNING DEPARTMENT

Mr. James R. Derryberry
Director of Planning
City of San Jose
801 North First Street
San Jose, CA 95110

Subject: Draft Environmental Impact Report (EIR) Project Coordinator: Janis Moore

City File No.: PDC 96-02-011
Almaden Expressway/Chynoweth Avenue, Southeast Corner

Dear Mr. Derryberry:

Your March 6, 1998 letter along with the subject Draft EIR was received in our office on April 6, 1998.

A. GENERAL COMMENT

Per our April 17, 1998 letter, we requested additional review time up to May 5, 1998 since the documents were received late.

By a phone conversation on April 24, 1998, Mr. Moore of your staff declined to grant our request for additional time up to May 5, 1998. Ms. Moore indicated that we have until April 29, 1998 to issue the comments.

In order to extend our cooperation, we are trying our best to issue the comments on or before April 29, 1998.

It should also be noted that the City did not send a Notice of Preparation (NOP) for the proposed project for our review and comments. A review of Page 126 indicated that Roads and Airports Department of the County of Santa Clara was not listed as an Agency to whom a NOP was sent on June 23, 1997.

96-011 ~~98-027~~

Board of Supervisors: Donald F. Gage, Blanca Alvarado, Pete McHugh, James T. Beall, Jr., S. Joseph Simitian
County Executive: Richard Wittenberg

Responses to **County of Santa Clara Roads and Airports Department**

A. The comments are acknowledged. No response is required.

~~98-027~~

96-011

COMMENTS ON DRAFT EIR

(1) At the time of the site development, we will recommend that the City require the developer to dedicate and improve sufficient right-of-way (not less than 79 ft. half street) along the site's Almaden Expressway frontage, including the return at Chynoweth Avenue. The developer should relinquish access control to the County along Almaden Expressway, except the approved access openings.

(2) The City should also require the developer to modify the traffic signal (at no cost to the County) at Almaden Expressway/Chynoweth Avenue intersection.

(3) The County should review and approve street and drainage improvement plans along the site's Almaden Expressway frontage, including the traffic signal modification plans. all work within the County's Almaden Expressway jurisdiction shall conform to the county's Standard Specifications (latest edition) and 1997 Standard Details Manual.

(4) A County encroachment permit should be obtained prior to the beginning of any work within the County's Almaden Expressway jurisdiction.

(5) On Page V. under Summary, noise impacts and mitigation are discussed. If the potential traffic generated due to the project results in exceeding the County noise standards, then the City should require the developer to install the soundwall along Almaden Expressway frontage for residential area of Luchessi Drive frontage road.

(6) On Page 19 under Transportation Policy No. 3, it is stated as follows:

"Public improvements planned with the project include the additional dedication (as required) and improvement of Chynoweth Avenue through the project site and of Almaden Expressway and Sanchez Drive adjacent to the project site. The precise dedication and improvement widths and public street rights-of-way are to be in conformance with City plans and requirements."

As stated above, the dedication and improvements along Almaden Expressway shall conform to the County's plans and requirements.

(7) On Page 56, it is stated that access to the site is to be provided by Almaden Expressway with right turns in and out planned from an existing and future driveway. Please note that Figure 9 of the Draft EIR does not show any existing or future right turns in and out access openings. In addition, the traffic analysis does not discuss traffic impacts of the subject access openings. Therefore, no access from the site to Almaden Expressway is

1. The PD Zoning includes the recommended right-of-way, which is planned to be dedicated and improved as shown on the Land Use Plan, Figure 9, and detailed in the Traffic Analysis Plate 4A. The right-of-way dedication and improvement will be approved at the PD Permit stage. At that time, plans will be forwarded to the County for review in conformance with County requirements. There is an existing access driveway to the site on Almaden Expressway. Future development of the site would likely have a similar access that will be determined at the PD Permit stage.

2. The traffic signal would be modified in conjunction with the intersection modifications.

3. All work in the County jurisdiction would be done in accordance with County specifications and standards and would be forwarded to the County for review.

4. An encroachment permit would be obtained for work in the County's jurisdiction.

5. The existing traffic volume along Almaden Expressway is 48,000 vehicles per day. The proposed project would add approximately 1,650 vehicles per day north of Cherry Avenue/Chynoweth Avenue. This increase in traffic would not result in a significant change in the noise level. A doubling of the volume is required for a change to be noticeable; therefore, the increase from the proposed project is considered minor.

6. See response to comment Nos. 1 and 3.

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7. See response to comment No. 1, 3 and 4.

96-011

proposed or permitted at this time. A County Standard Private Access Opening (please see the attachment) may be allowed after the traffic impacts of the opening are submitted to the County by the traffic engineer and approved by the staff.

(8) On Page 70, it is stated as follows:

Almaden Expressway and Cherry Avenue/Chynoweth Avenue

- A second left-turn lane shall be added to the north leg; the east leg shall be widened to provide two left-turn lanes, two through lanes and a right-turn lane; the south leg shall be widened to add a second left-turn land and a right-turn lane; and the west leg shall be widened to include a left-turn lane, two through lanes and a right-turn lane. (A.M. V/C 0.744 - C; P.M. V/C 0.850 - D).

The dedication of the right-of-way should be sufficient to accommodate the proposed intersection configuration.

(9) On Page 39 of the Draft EIR -- Technical appendix, it is stated as follows:

"Thus, the City of San Jose's LOS policy of a "D" or better LOS, or for "E" or worse conditions with increases in critical volumes of less that 1%, is satisfied for all intersections except the Almaden Expressway / Branham Lane and Almaden Expressway / Blossom Hill Road intersection. Those two intersections do however satisfy the Congestion Management Program criteria."

Please explain the above statement.

(10) Some other traffic comments are included in the attached Exhibit A (4 Pages).

Thank you for the opportunity to review and comment on this project. If you have any questions, please call me at 573-2462.

Sincerely,

Ashok Vyas
Project Engineer

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AAV:rtj
Attachments
cc: Ron Conn, Development Services, City of San Jose
RBP, DEC, JME, MA, File

8. See response to comment Nos. 1 and 3.

9. That statement is the result of an analysis of the impacts of a project with 350,000 square feet of retail commercial space and 400 residential units. While this scenario would not meet the City's Level of Service Policy, a CMP analysis using the CAPSSI methodology shows it would meet the CMP criterion of Level E or better. Due to traffic capacity limitations based on the City's LOS Policy, the project was reduced to a proposal for up to 350,000 square feet of retail commercial space, or up to a maximum of 400 residential units, or any equivalent combination of commercial and residential uses that conforms to the City's Transportation Level of Service Policy (5-3) as analyzed in the Draft EIR. If the rezoning is approved, additional environmental review, including a traffic analysis, will be required for a residential or combined residential/commercial project. In addition, the 350,000 square feet of commercial development requires the Chynoweth Avenue bridge as mitigation. A new traffic analysis will be required as part of the EIR for the bridge project.

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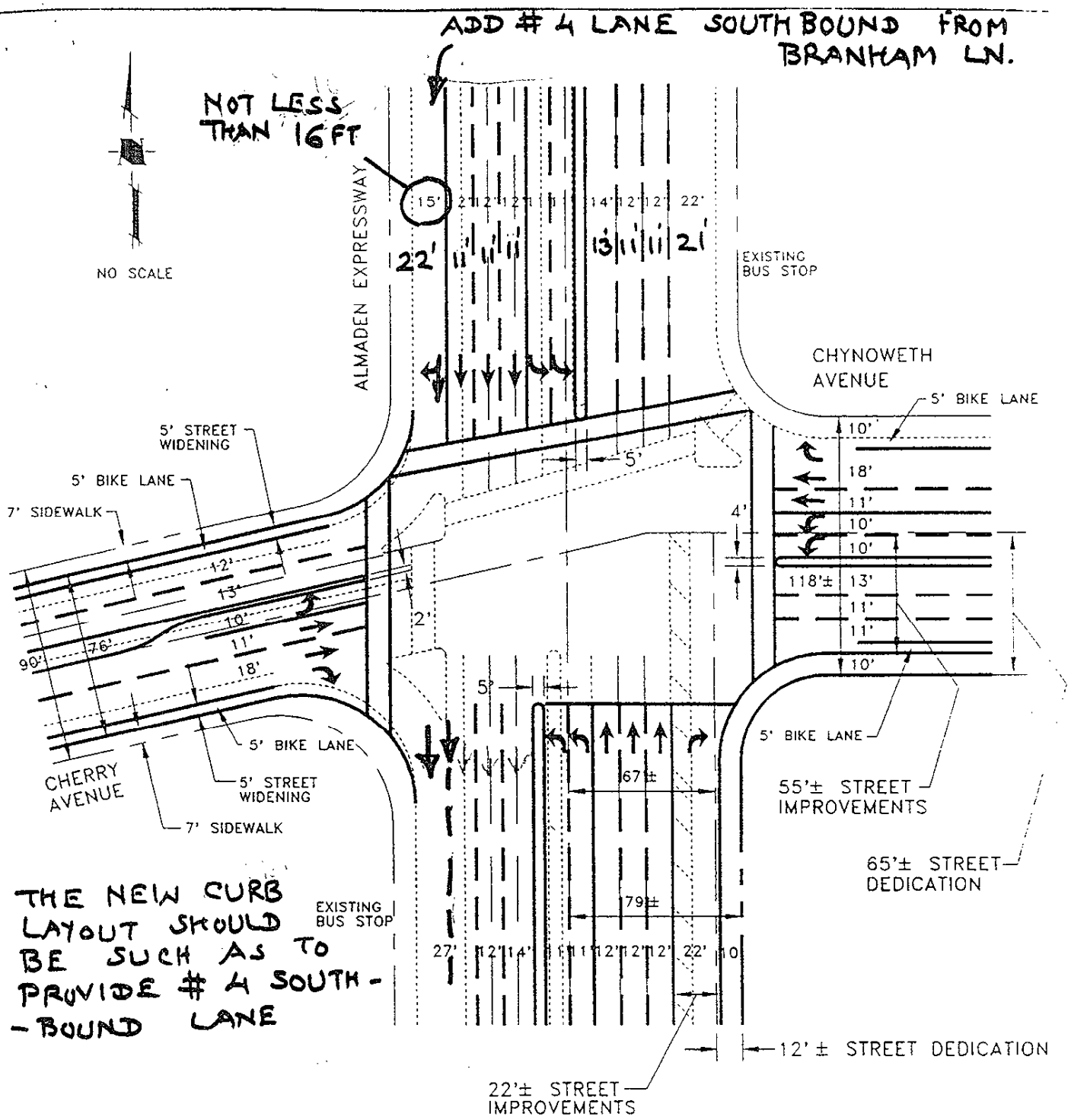

PLATE 4A

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
CHERRY AVENUE - CHYNOWETH AVENUE

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EXHIBIT A (4 PAGES)

PANG ENGINEERS, INC

PAGE 1/4

10. Exhibit A-1. The lane width change to 16 feet suggested by the County could be accommodated within the existing right-of-way; however, a fourth southbound lane is not required to meet the City's Level of Service Policy, and, therefore, is not required for CEQA mitigation,. This lane addition is not proposed by the project.

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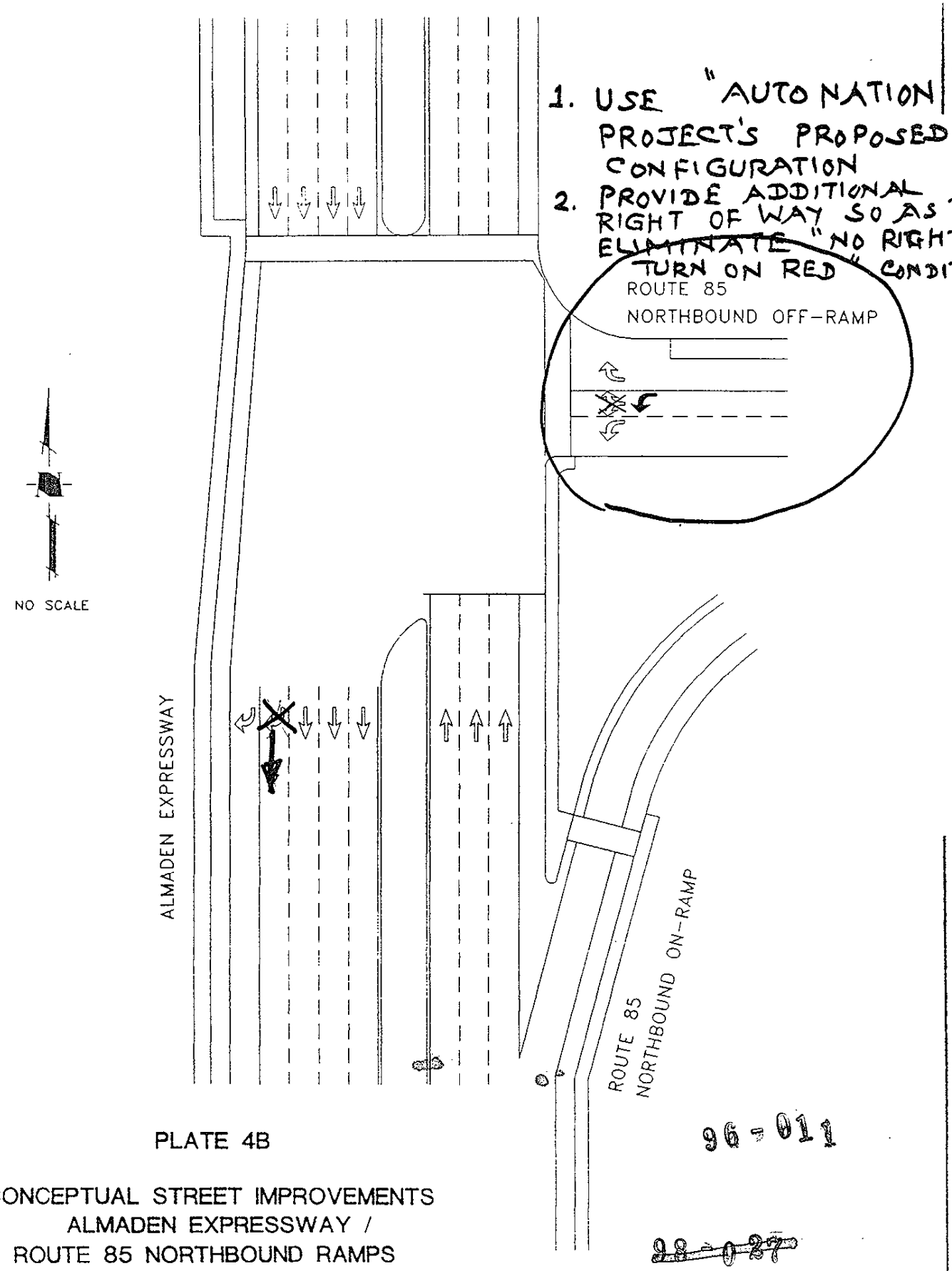

PLATE 4B

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
ROUTE 85 NORTHBOUND RAMPS

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~~98-027~~

PANG ENGINEERS, INC

PAGE 2/4

10. Exhibit A-2. These changes are not proposed as part of this project, but are proposed as part of the AutoNation project across Almaden Expressway. Until the AutoNation project is approved, these improvements cannot be considered part of the transportation network.

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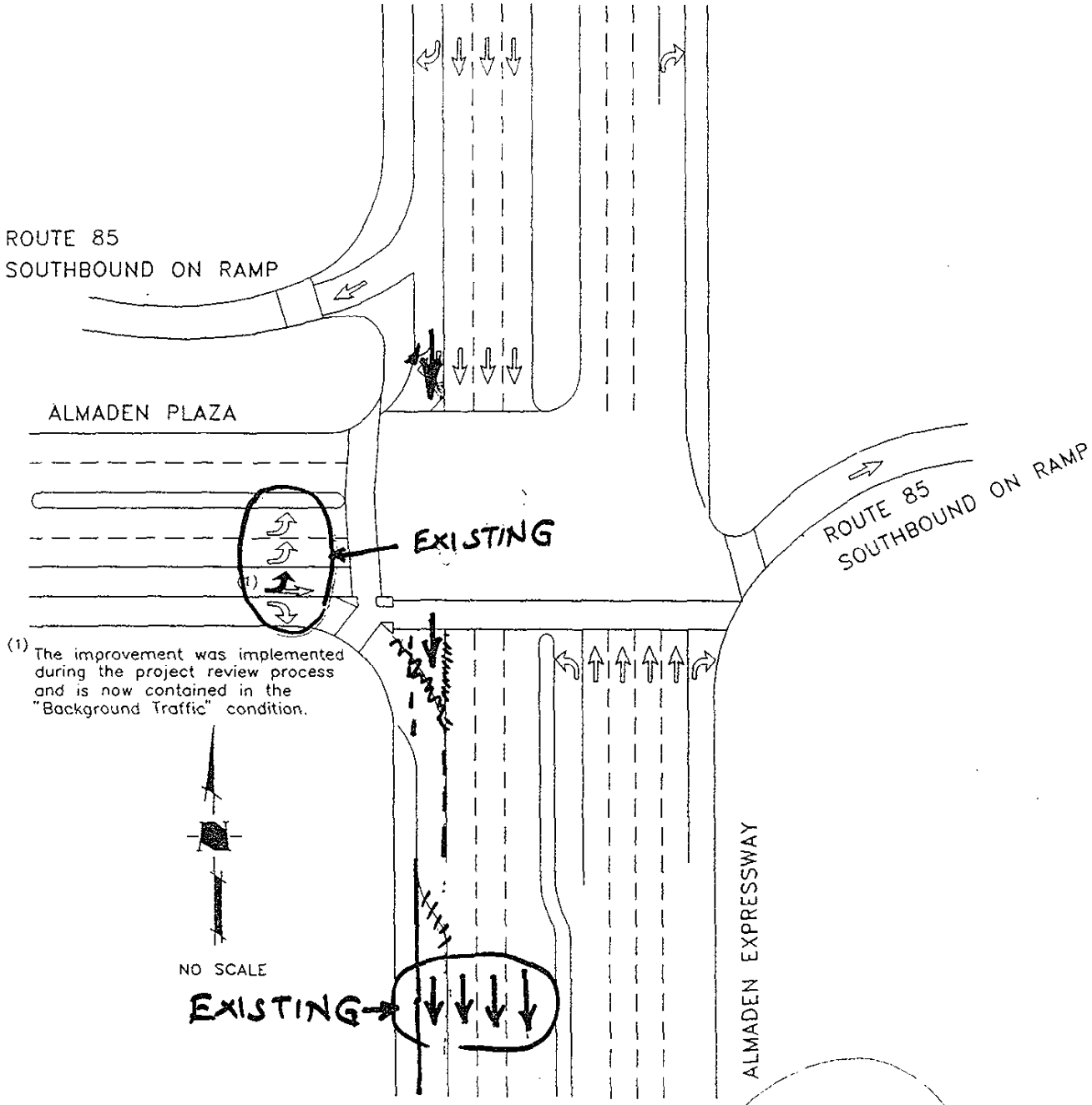

PLATE 4C

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
ROUTE 85 SOUTHBOUND ON RAMP

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PAGE 3/4

PANG ENGINEERS, INC

#9511-2

10. Exhibit A-3. These improvements were made after the traffic analysis was prepared. The Traffic analysis of the DEIR has been revised to reflect these improvements. See Text Amendments, Appendix G.

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TABLE III A

CONGESTION MANAGEMENT PROGRAM
LEVEL OF SERVICE
CAPSSI METHODOLOGY

INTERSECTION	EXISTING (1996) or BASE 1997		EXISTING (1996) + ATI (1)		WITH THIS PROJECT (2)(5)		WITH GROWTH (3)		WITH IMP. (6)	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Almaden Exp. / Branham										
AM	29	E ~~D+~~	30	D+	30	D+	31	D	-	-
PM	35	E ~~D-~~	38	D-	38	D-	39	D-	-	-
3.Rt.85 / Almaden Exp. (N)										
AM	6	B+	7	B+	8	B+	8	B+	3	A
PM	24	D ~~C~~	37	D-	36	D-	40	D-	17	C+
4. Rt.85 / Almaden Exp. (S)(4)										
AM	9	B+	9	B+	10	B+	10	B+	-	-
PM	12	C ~~C~~	13	B-	14	B-	14	B-	-	-
6. Almaden / Blossom Hill										
AM	28	D+	31	D	31	D	32	D	-	-
PM	45	E+	48	E	49	E	51	E	-	-
11. Almaden Exp / Coleman										
AM	26	D+	28	D+	28	D+	29	D+	-	-
PM	33	E ~~C~~	36	D-	36	D-	36	D-	-	-
12. Blossom Hill / Santa Teresa										
AM	25	C-	25	C-	25	C-	25	C-	-	-
PM	27	D+	28	D+	28	D+	28	D+	-	-

LOS = Level of Service
ATI = Approved Trip Inventory
(1) Existing (1996) + ATI = "Background Traffic" condition.
(2) Existing (1996) + ATI + With This Project
(3) With Growth = 1.2% per annum growth of "Existing (1996) + ATI", plus Project for two years to 1998.
(4) With improvements in place on the west leg which includes two lefts, one left-thru and one right turn lane.
(5) 350,000 square foot commercial.
(6) With suggested improvements to enhance signal operation.

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PANG ENGINEERS, INC.
TRAFFIC AND TRANSPORTATION CONSULTANTS

PAGE 4/4

#9511-5

10. Exhibit A-4. The comments are acknowledged. The traffic analysis was prepared in October, 1996 and, therefore, uses a 1996 base. The 1996 base was updated using a 3.6 percent per year growth factor to reflect current conditions. This is considered a conservative growth assumption. Actual counts are usually lower. In addition, if the rezoning is approved, additional environmental review, including a traffic analysis, will be required for a residential or combined residential/commercial project. The 350,000 square feet of commercial development requires the Chynoweth Avenue bridge as mitigation. A new traffic analysis will be required as part of the EIR for the bridge project.

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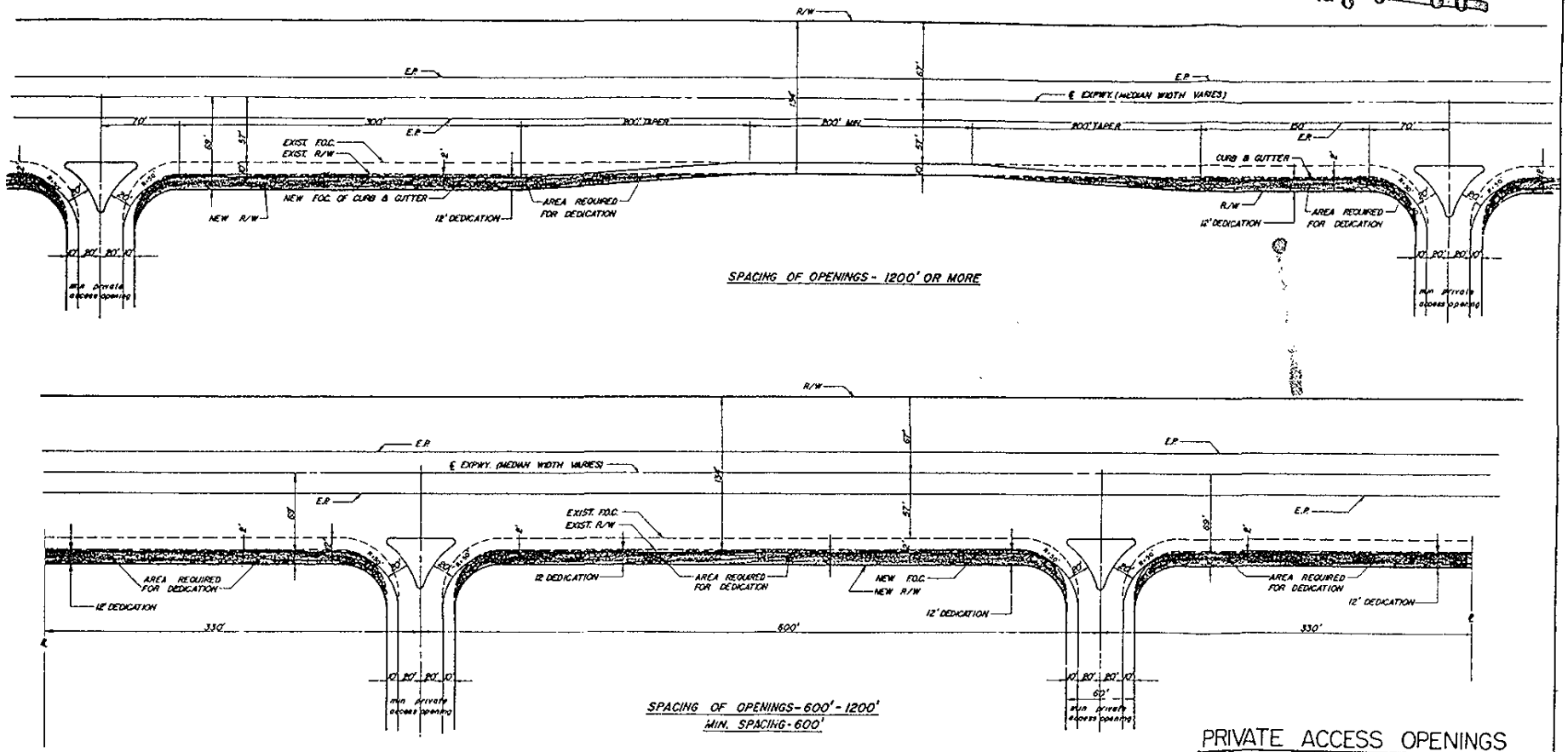
PRIVATE ACCESS OPENINGS
RIGHT TURNS ONLY



PRIVATE ACCESS OPENINGS
RIGHT TURNS ONLY

FIGURE 3

PAGE 32

A-23

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GUADALUPE - COYOTE
RESOURCE CONSERVATION DISTRICT
888 NORTH FIRST STREET RM. 204, SAN JOSE, CA 95112
OFFICE (408) 288-5888 FAX (408) 993-8728

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PLANNING DEPARTMENT

FAX 408 277-3250

April 20, 1998

Janis Moore
Department of Planning, Building and Code Enforcement
801 North First Street
San Jose, CA 95110-1795

Dear Ms. Moore,

1. In regards the Almaden/Chynoweth Draft Environmental Impact Report, File No. PDC 96-02-011, SCH NO. 97062105 we would appreciate receiving more specific detail on the interface of the project with the riparian corridor, before the May 13 public hearing.

2. This agriculture preserve has been included in three recent documents on the flood control project for the Upper and Lower Guadalupe River by the Santa Clara Valley Water District and by the Sacramento and San Francisco Districts of the US Army Corps of Engineers.

3. It is under consideration for mitigation for the Lower Guadalupe River SRA (shaded riverine aquatic) habitat requirements, as well as for revegetation to ensure a healthy riparian corridor.

4. We want to be sure that all these approved and ongoing Guadalupe River plans can be accomodated with the development that is being proposed, as this land appears to be one of the few remaining capabilities to bring the flood design into compliance with resource protection guidelines. (page 114 noted).

5. It is stated on page 12 that there are no public land reservations with this project. We do endorse the City of San Jose's recreation trail system and so ask that trail dedication be considered, to extend the full river frontage of the project outside the riparian corridor and on the upper bank.

6. It is regrettable that the agricultural preserve was disced before the investigation was recently conducted for burrowing owls. If any burrowing owls are discovered, it is of some concern that any possible refugia or ground squirrel burrows are to be destroyed. As this area appears to be adjacent to the #85 corridor, Sanchez Drive, and percolation pond, cannot a small corner of green space be kept in the parking lot for human and ground squirrel refugia?

7. Drainage of this parking lot will be undertaken to outfall where in the river? Can wetlands be enhanced in any way to modify this outfall?

8. On page 40 we do have concerns that all trees and vegetation be removed from this site in any proximity to the Guadalupe River corridor or the percolation ponds. Mature tree cover contributes a greatdeal in keeping summer temperatures viable in these water bodies. Can this tree loss be avoided?

Thank you for allowing us the opportunity to review this development proposal.

Larry Johmann, Board President
Larry Johmann

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Responses to **Guadalupe - Coyote Resource Conservation District**

1. The riparian corridor setback will comply with the overall 100-foot setback requirement in compliance with the City's Riparian Corridor Policy Study. The specific setback will be determined at the PD Permit stage when a specific plan showing the locations of buildings, paving, parking, etc. is available.

2. In conformance with CEQA, this DEIR addresses the project on file with the City. The Guadalupe River Watershed Planning Study is discussed in section IV. C. on pages 113-117 of the Draft EIR. It is acknowledged that the District is considering a portion of the site as a mitigation area. The project applicant has met with the District staff on numerous occasions and will continue to meet to negotiate a mitigation proposal.

3. See response to comment No. 2.

4. See response to comment No. 2. The Reduced Project alternative would be able to accommodate the Lower Guadalupe River flood control project.

5. As described in sections II. G. on page 23 and in III. A. on page 24, the Guadalupe River South Corridor Park Master Plan Interim Report and the General Plan Scenic Routes and Trails Diagram show a trail along the west side of the Guadalupe River. Since a specific development proposal is not being considered at this time, the location and alignment of a future trail would be incorporated at the PD Permit stage. The project will provide trail connections in conformance with the General Plan.

6. The project site was in agricultural production, which included regular disking of the site, until 1997. Discing is now done on a regular basis to control weeds and vegetation on the site. The site has been surveyed on three occasions since 1995 and no burrowing owls have been seen. H.T. Harvey & Associates reviewed their previous survey results and concluded that, since the site has been extensively farmed over the years and has no history of owl occupation, the site currently does not comprise habitat. See Text Amendments, section III. C. Vegetation and Wildlife, page 39. Under normal commercial development guidelines, approximately 20 percent of the site will be devoted to landscaping. The size and location of these areas will be determined at the PD Permit stage.

7. As described in section III. P., the storm drainage outfall for future runoff from the project site is an existing culvert in future Sanchez Drive east of the site. No modifications to the outfall are planned.

8. The large trees and vegetation along the Guadalupe River are within the riparian setback from the river and would very likely be retained within the setback area at the PD Permit stage. These trees are located within the riparian corridor area along the northeasterly boundary, many of which are located off the site, and are shown on the Tree Locations map, Figure 11, of the DEIR.

SANTA CLARA
Valley Transportation Authority

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PLANNING DEPARTMENT

April 20, 1998

City of San Jose
Department of Planning and Building
801 North First Street
San Jose, CA 95110

Attention: Janis Moore, Planner II

Subject: Almaden/Chynoweth Project

Dear Ms. Moore:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the Draft EIR for the project referenced above to allow development of a maximum of 350,000 square feet of commercial space, or up to a maximum of 400 residential units, or any equivalent combination of commercial and residential uses that conforms to the City's Level of Service Policy (5-3). The project is located at the northeast corner of Almaden Expressway and State Route 85 on a 43.5-acre site. VTA comments follow, and are separated into *Transit Service* and *Congestion Management Program (CMP)* issues to reflect our dual role in reviewing the Draft EIR.

Transit Service

1. In our July 18, 1997 comments on the Notice of Preparation for the Draft EIR, we requested that the transit service section include an analysis of how the project minimizes pedestrian barriers to transit and encourages transit usage in order to reduce vehicle trips. The Traffic Demand Management Section (page 60) states that "the commercial and/or residential development could be designed to facilitate pedestrian and bicycle access to public transit facilities." We recommend that the Final EIR provide more detailed plans for facilitating direct bicycle access to public transit (i.e., a discussion on facilities that will be provided such as sidewalks, walkways, bikeways, pedestrian-oriented streetscapes, etc.). We also recommend that bicycle and pedestrian connections across the Chynoweth Avenue Bridge be evaluated in the Draft EIR.

Congestion Management Program (CMP)

2. • The Congestion Management Program's Traffic Impact Analysis Guidelines require a description of the existing and future (planned) transportation system in the area. Bicycle and Pedestrian Networks are an integral part of any transportation system. However, this topic seems to have been excluded from the traffic analysis. We recommend that all bikeways (including bicycle paths, lanes, and routes) and pedestrian facilities be described by way of a map for the project area. This description should include ease of access and/or barriers to transit and bicycle ways.

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3331 North First Street · San Jose, CA 95134-1906 · Administration 408.321.5555 · Customer Service 408.321.2300

Responses to **Santa Clara Valley Transportation Authority**

1. Chynoweth Avenue and the bridge across the Guadalupe River will include public sidewalks and a bike route to the Ohlone-Chynoweth light rail station at Chynoweth Avenue and State Route 87. Transit service Route 64 along Almaden Expressway, with stops at Cherry Avenue/Chynoweth Avenue, is within walking distance from the site. The project will be transit/bicycle/pedestrian friendly by including measures from the Commercial Design Guidelines and TDM measures, such as clearly-defined pedestrian access, bicycle parking racks and transit access. It is anticipated that the Chynoweth Avenue bridge connection may allow new or rerouted transit service from the west side of the Guadalupe River to the Ohlone-Chynoweth LRT station.

2. A map showing the location of bikeways has been added to the Traffic Analysis and to the traffic section of the DEIR. See Text Amendments, Appendix G. With the construction of the Chynoweth Avenue bridge that is required for full development of the project site, there will be no barriers to access public transportation, i.e., buses and the light rail system. The project will also provide Guadalupe River trail system connections, to be designed at the PD Permit stage.

3. • In order to determine the traffic impacts of a project, it is necessary to first perform an analysis of the existing and background conditions and then compare this with the project conditions. The traffic analysis contains a Freeway Level of Service Analysis for the year 2010. However, the existing level of service analysis was excluded. We recommend that an existing level of service analysis be included in the traffic study.

4. • The freeway traffic volumes for the year 2010 appear to be extremely low. According to the CMP's 1996 Annual Monitoring Report (see attached table), the traffic volumes which were counted in 1996 already exceed the 2010 volumes in the traffic analysis. The CMP statutes require that a local jurisdiction use a computer model consistent with the designated CMP's transportation model. Therefore, it is recommended that the forecasted freeway level of service be reanalyzed with traffic volumes derived from the CMP model (maintained by the Center for Urban Analysis).

5. • In addition to level of service impacts, there are other types of impacts which should be evaluated to determine if mitigation is required. These impacts include queuing analysis of CMP intersections. Left-turn storage length should be evaluated for those intersections where project traffic may cause traffic to spill over onto the through lane(s). Please include pass-by or diverted trips for intersections near the project site when analyzing queuing impacts.

Thank you for the opportunity to review this project. If you have any questions, please call Roy Molseed of my staff at (408) 321-5784.

Sincerely,

Roy Molseed for

Thomas Rountree
Environmental Program Manager

TDR:RM:kh

cc: Timm Borden, San Jose Public Works Department

96-011 ~~98-027~~

3. An analysis of existing p.m. peak hour freeway volumes was added to the Traffic Analysis. See Text Amendments, Appendix G.

4. The City of San Jose's TRANPLAN long range transportation model is an accepted ~~CMP~~ model*. The City's forecasts for the Year 2010 assume approximately 18 percent travel diversion due to transportation demand management techniques, increase in Light Rail Transit routes and service, and land use and travel pattern changes. Estimated travel diversion includes:

   - Transportation Demand Management (TDM) improvements, e.g., additional staggered work hours, increased carpooling and express bus service, etc., for a vehicular travel diversion of about 10 percent.

   - Light Rail Transit (LRT) including the expanded routes under the Measure A + B proposal for a travel diversion of about 8 percent.

   - Land use and travel changes.

   A comparison of the City and Center for Urban Analysis (CUA) results was added to the Traffic Analysis. See Text Amendments, Table VIII, Appendix G. The City's projected future volumes differ from those contained in the model output from the CUA due to different input assumptions, i.e., travel patterns, system improvements, vehicle occupancy, transit ridership, etc., and a different forecast year. The City's model forecasts traffic volumes for the year 2010. The CUA projected volumes are for the years 2005 and 2015.

5. Improvements to the Almaden Expressway and Cherry Avenue/Chynoweth Avenue intersection are planned as part of the project. Queuing is an operational issue. A queuing analysis, including pass-by or diverted trips, will be done as part of the design and review of the improvements proposed to meet the City's Level of Service Policy at the PD Permit stage.

~~98-027~~

* *San Jose's TRANPLAN is an accepted model for local planning purposes.*

96-011

Table 5
Freeway Traffic Counts
P.M. Peak Hour

FREEWAY SEGMENT					1994/95	1996		
No.	Route	Location	Direction	No. of Lanes	Volume	Peak Hour	Volume	Average Speed
1	SR 17	S. of Santa Cruz Ave.	NB	2	1,770	4:15	2,207	55
			SB	2	3,181	4:15	3,615	20
2	SR 17	S. of Hamilton Ave.	NB	3	5,007	4:45	4,462	60
			SB	3	6,933	4:45	5,806	60
3	SR 85	S. of Cottle Rd.	NB	2	NM	4:45	2,223	65
			NB (HOV)	1	NM		229	
			SB	3	NM	4:45	2,498	65
4	SR 85	at Blosson Hill Rd.	NB	3	NM	5:00	4,656	65
			SB	3	NM	5:15	3,606	60
5	SR 85	N. of Camden Rd.	NB	2	NM	5:00	2,587	60
			NB (HOV)	1	NM		235	
			SB	2	NM	5:00	4,512	50
			SB (HOV)	1	NM		1,198	
6	SR 85	N. of SR 17	NB	3	NM	4:45	3,155	60
			NB (HOV)	1	NM		211	
			SB	3	NM	4:30	2,612	55
			SB (HOV)	1	NM		834	
7	SR 85	at McLellan Rd.	NB	3	NM	5:00	3,927	65
			NB (HOV)	1	NM		336	
			SB	3	NM	3:30	***5,007***	***30***
8	SR 85	N. of Fremont Ave.	NB	2	2,939	5:00	3,156	60
			NB (HOV)	1	185		262	
			SB	3	4,534	5:30	***4,569***	***20***
9	SR 87	at Branham Ln.	NB	2	NM	5:00	2,629	55
			SB	2	NM	5:15	3,992	60
10	US 101	N. of Cochrane Rd.	NB	3	2,527	4:45	2,440	65
			SB	3	3,629	5:15	3,406	65
11	US 101	N. of Hellyer Ave.	NB	3	NM	4:45	3,644	60
			NB (HOV)	1	NM		270	
			SB	3	NM	5:30	4,384	60
			SB (HOV)	1	NM		739	
12	US 101	N. of Tully Rd.	NB	4	5,567	3:45	6,218	60
			NB (HOV)	1	864		597	
			SB	4	7,265	5:15	***6,975***	***25***
			SB (HOV)	1	1,092		1,419	
13	US 101	N. of McKee Rd.	NB	3	4,280	5:00	3,663	65
			NB (HOV)	1	1,727		222	
			SB	3	5,332	5:15	5,793	55
			SB (HOV)	1	1,586		1,820	
14	US 101	S. of 10th St.	NB	4	1,369	4:45	4,424	60
			SB	4	1,797	5:15	***7,930***	***30***

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Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 265-2600
FACSIMILE (408) 266-0271
www.scvwd.dst.ca.us

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April 22, 1998

Ms. Janis Moore
Department of Planning, Building,
and Code Enforcement
City of San Jose
801 North First Street
San Jose, CA 95110-1708

Dear Ms. Moore:

Subject: Draft Environmental Impact Report for Arcadia Property, City File No. PDC 96-02-011

Santa Clara Valley Water District (District) staff have reviewed the Draft Environmental Impact Report (DEIR) for the proposed rezoning and development of the Arcadia Property Project. The following general issues must be adequately addressed in the DEIR before comprehensive project specific comments can be provided by the District.

A. The DEIR lacks sufficient detail about significant environmental impacts, mitigation measures to minimize significant environmental impacts, feasible project alternatives, monitoring criteria to ensure success for the proposed mitigation measures and cumulative environmental impacts. Until all significant impacts and appropriate mitigation measures are identified and included in the DEIR, the District requests the City reject approval of this incomplete document.

B. CEQA Section 15126 specifically states that "All phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development, and operation." However, the DEIR indicates that the project may be one of the following: construction of up to 400 residential units; construction of up to 350,000 square feet of commercial space; or some combination of commercial and residential space. Each of these proposals must be addressed individually. The impacts associated with these different projects will differ, not only for hydrology, water quality and riparian corridor habitat, but for traffic and air quality.

C. The DEIR has not specifically addressed impacts or cumulative impacts to the riparian corridor for any of the proposed projects. The DEIR also lacks sufficient detail regarding potential induced flooding impacts caused by increased storm water runoff, Chynoweth bridge impacts, compatibility with the City's Park Master Plan, special handling procedures for hazardous material, adequacy of the existing storm drain system, and compatibility with the District's January 1997 DEIR for the Guadalupe River Watershed Planning Study.

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Responses to **Santa Clara Valley Water District**

A. The Draft EIR does include sufficient detail to analyze the proposed project based on the level of specificity provided in the proposal. The State CEQA Guidelines provide for tiered environmental review, which is a multi-level approach. The first-tier EIR covers a broad, generalized level of analysis and subsequent review documents analyze more specific aspects of the project when they are known. The subsequent environmental documents for this project could be a Supplemental EIR, Mitigated Negative Declaration, or a Negative Declaration. CEQA requires analysis of a project as proposed and does not invite speculation.

B. Traffic, noise and air quality impacts are analyzed based on development of up to 350,000 square feet of commercial space, which is considered a worst-case scenario. The impacts of the proposed project are addressed at the level of specificity provided in the proposal. Further environmental review will be required for development of the site at the PD Permit stage when site design is known. The zoning proposal is conditioned to allow up to 350,000 square feet of commercial development with the completion of the Chynoweth Avenue bridge. If the PD Permit is for a wholly residential or residential/commercial project, new traffic, noise and air quality analyses will be required. Based on these analyses, the appropriate environmental review will be prepared. Specific mitigation measures for riparian corridor, hydrology and water quality impacts will be identified at the project stage and must be consistent with the general requirements and conclusions of this DEIR or a Supplement to this EIR will be prepared.

C. The impacts to the riparian corridor are addressed in section III. C. Responses to the other issues raised in this comment are addressed in the following responses to comment Nos. 1-34.

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D. In addition to identifying project impacts, CEQA Section 15126 states that mitigation measures to minimize the significant effects of the project must be described. CEQA requires effective mitigation measures to state the objective of the measure and why it is recommended, explain the specifics of the mitigation measure and how it will be designed and implemented, identify measurable performance standards by which the success of the mitigation can be determined, provide for contingent mitigation if monitoring reveals that the success standards are not satisfied, identify the agency, organization, or individual responsible for implementing the measure, identify the specific location of the mitigation measure, and develop a schedule for implementation. For the most part, the mitigation measures are not specifically identified in the DEIR. The DEIR must inform the public of the types of mitigation required, how much mitigation is required and where mitigation measures will be located. Stating that issues, concerns or specific impacts will be reduced by implementation of an existing City of San Jose policy or ordinance, or that they will be addressed or determined "at the PD Permit stage" is not sufficient to allow for informed decision-making and informed public participation.

E. The DEIR does not adequately address, nor is it consistent with, the District's planned flood control project. District staff have been working with City staff and the developer for many years to coordinate the incorporation of flood protection improvements necessary to address the public's need for flood protection into the proposed development project plans. In January 1997, the District released the Guadalupe River Watershed Planning Study DEIR for public review. The District's document reflects some of the coordination that has transpired over the last several years. At a minimum, CEQA's "rule of reason," as stated in Section 15126 (d) (5), requires the subject DEIR to include those alternatives necessary to permit a reasonable choice. Since the need for flood protection has not diminished and the District has published a DEIR for flood control improvements within the subject site, the subject DEIR should address an alternative project, one of which includes the District's proposed project with a slightly smaller commercial and or housing development. Because the likelihood of this flood control included alternative project being implemented at the subject site is high, it should be included as an alternative.

The following represents specific comments related to the submitted DEIR:

1. **Introduction, third paragraph** The statement "The City of San Jose, as Lead Agency, is expected to use this EIR in its decision making process for discretionary approvals," exemplifies the non-conforming nature of the DEIR. Many conclusions and proposed mitigation measures rely on being "proposed, reviewed and approved at the PD Permit stage." CEQA requires the discussion of specific conclusions and mitigation measures in the DEIR to allow for informed decision making and informed public participation. Discretionary approvals by City staff at the PD Permit stage, particularly of major project components, bypasses the CEQA process and does not provide for public review.

2. **Assessor's Parcels, Figure 5,** pg. 5 The assessor's parcel map needs to be revised to show that the S. C. Co. Traffic Authority parcel is now owned by the District. Note that APN 458-16-31 and 458-16-12 have been combined into APN 458-16-35.

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D. Mitigation measures to reduce significant impacts are adequately described in the Draft EIR given the degree of project specificity. CEQA allows subsequent review of project details at a later stage under the tiering process. Further environmental review and public participation would occur at the subsequent PD Permit stage. As part of Resolution findings adopted by the City Council at the time of project approval, a mitigation monitoring plan would be approved in compliance with CEQA.

E. The District's plan for the Guadalupe River is discussed in section IV. C. While the District, City staff and project applicant have been working together, up to this point none of the parties has had a firm plan to negotiate the acquisition or dedication of flood control improvement or mitigation areas. CEQA requires the discussion of alternatives that would reduce significant impacts. The Reduced Project alternative described in section VI. B. includes reduced development levels that would provide for the District's proposal. The Reduced Project alternative would require less acreage than the proposed project and could accommodate the flood control project. It should also be noted that it may be possible to develop the full 350,000 square feet and full District development.

1. See response A. The DEIR adequately addresses the proposed rezoning. CEQA would be applicable for all subsequent project approvals. The City would determine the degree of environmental review required for subsequent approvals based on individual proposals. Based on the environmental analysis, the City could prepare an Addendum to the EIR, issue a Negative Declaration or require a Supplement to this EIR.

2. The Assessor's Parcels map has been revised. See Text Amendments, Maps, page 5.

3. **I. Project Description, B. Description, Planned Development Zoning—Commercial/Residential**, pg. 9. As previously stated, the planned development zoning portion of the DEIR is unclear. Is the proposed project a maximum of 350,000 square feet of commercial space, or a maximum of 400 residential units, or both a maximum of 350,000 square feet of commercial space and a maximum of 400 residential units, or some equivalent combination of commercial and residential space? Also, if it is possible for the project site to eventually be developed to the General Plan land use designations (400,000 square feet of commercial space and 504 residential units), the DEIR should address this alternative.

4. **I. Project Description, B. Description, Chynoweth Avenue Bridge "Connection"**, pg. 11. The Notice of Preparation of a Draft Environmental Impact Report for the Chynoweth Avenue Bridge Project was released on March 24, 1998. Construction of this bridge is a vital and necessary part of developing the subject property and should be included in the DEIR analysis. The DEIR text states that "a connection is required across the Guadalupe River for traffic circulation for the proposed development" however, no analysis for the bridge is included. If the bridge is necessary and planned, impacts, cumulative impacts and mitigation measures associated with the bridge construction must be described in this DEIR. Since bridge impacts on the Guadalupe River environment will require mitigation measures, the location of the proposed mitigation site must be identified and described as it will most likely require the encumbrance of some portion of the subject property. Required mitigation for impacts associated with the bridge and required mitigation associated with the subject property development must be clearly delineated in the DEIR in order to foster informed decision making comments.

5. **I. Project Description, B. Description, Public Improvements**, pg. 12. It is unclear how much property dedication will be required from the developer to construct the Chynoweth Avenue extension, the Sanchez Drive extension, and to widen Almaden Expressway. Clarification of the public rights of way street improvement widths required, and whether or not the developer will be required to dedicate the entire street alignments or if the City will be purchasing street rights of way. The District has not approved of the proposed alignment of Sanchez Drive across our property. In addition to public rights of way, clarify how much property the developer will dedicate towards mitigation measures required by project impacts. Identify how much property will be dedicated to allow for the continuation of the Guadalupe River trail system between Interstate 280 and Almaden Lake Park. Development of this site without consideration of the future trail system or the local park needs will reduce or eliminate the future options for trail alignments and public open space/park.

6. **I. Project Description, B. Description, Public Land Reservations**, pg. 12. As discussed in the Public Services section of the DEIR, this area of the city will be deficient 3.2 acres of public neighborhood/community-serving park land if residential development occurs. Since residential development is one of the proposed projects, the DEIR must identify this impact to the local community and also identify whether the mitigation for this impact will require the dedication of 3.2 acres of the subject property for park land or whether Park Impact Fees will be collected. This information is necessary to be able to provide informed decision making comments.

7. **II. Plans and Policies, C. The San Jose 2020 General Plan, Urban Design Policy No. 17**, pg. 19. Due to the sensitive nature of riparian corridors, landscape plans should limit the type of plants installed near the river to species native to the area. In most cases, "native to the area"

3. As stated in the Project Description, "The project is a rezoning application from A-Agriculture to A(PD) for the development of a maximum of 350,000 square feet of commercial space, **or** up to a maximum of 400 units **or** any equivalent combination of commercial and residential uses that conforms to the City's Transportation Level of Service Policy (5-3) in accordance with the General Development Plans." It is not possible at this time to fully develop the site in accordance with the General Plan land use designations due to traffic constraints, and there is currently no proposal for that level of development. If the site were to be developed at the General Plan intensities, a rezoning would be required.

4. The Chynoweth Avenue bridge is considered a separate project although the bridge is required as mitigation for full development of the Almaden/Chynoweth project. The Chynoweth Avenue "connection" across the Guadalupe River is included as mitigation in the DEIR analysis because development of 350,000 square feet of retail commercial space on the site requires the completion of the bridge for traffic circulation; a total of only 78,000 square feet can be developed without the bridge. This DEIR, in conformance with CEQA, addressed the traffic, noise and air quality impacts with the bridge in place and traffic redistributed. The project will be required to contribute to the construction cost of the bridge; however, the bridge itself is a City project undergoing separate environmental review. If this project is not approved, the bridge will still be constructed. A Notice of Preparation of an EIR for the bridge project was issued on March 24, 1998.

5. Public street dedications planned with the project for Almaden Expressway, Chynoweth Avenue and Sanchez Drive are shown on the Land Use Plan, Figure 9. Other dedications that will be considered, including trail dedications would be reviewed at the PD Permit stage. Adjustments to the alignment of Sanchez Drive and of Chynoweth Avenue could also be considered at that time as noted on Figure 9. The alignment will be dependent upon final plans for acquisition from the District, street intersection geometry, bridge design and proposed parcelization. Modifications to the alignments are not expected to change any of the environmental impacts or mitigation addressed in this DEIR; however, once the alignments have been finalized, a determination will be made if additional environmental review is necessary.

6. The potential parkland impact is identified in section III. S. where it also states that no parkland dedication is proposed; the project would be required to meet the City's Park Impact Fee Ordinance through the payment of fees or dedication of land. The City may require dedication of parkland upon review of a specific residential proposal. The City generally does not develop public parkland of less than 5 acres; however, a 3-acre park might be considered, which would be required for an approximately 400-unit project.

7. The District's list of prohibited plants will be utilized in the development of project landscape plans. The City typically utilizes native plant palates in riparian areas, utilizing the experience of qualified biologists for developing the planting plans. A copy of the list of prohibited plants has been incorporated into the EIR Appendix. See Text Amendments, Appendix B.

species must be container grown from seeds or cuttings collected from the impacted site. "Native to the area" species are generally not available at local nurseries. The DEIR should identify this limitation on plant species located in the general area of the river. For the City's information, the District has a list of prohibited landscape plants for creek areas available.

8. **II. Plans and Policies, C. The San Jose 2020 General Plan, Urban Design Policy No. 24**, pg. 19. It is unclear which "other significant trees" located near or in the riparian corridor will be preserved. The DEIR did not identify which trees near the river will be impacted by this project. The DEIR must individually identify the impacted trees to allow the public the opportunity to come to their own conclusion of whether preservation or replacement is being implemented. If replacement is the chosen option, suitable replacement quantities and species must be identified in the DEIR. Location of the mitigation replacement trees must be indicated, as well as a description of the monitoring plan for the replacement trees.

9. **II. Plans and Policies, C. The San Jose 2020 General Plan, Parks and Recreation Policy No. 3**, pg. 20. Private open space and recreational facilities are essential public necessities and the determination of whether or not these benefits will be provided as part of this project must be identified in the DEIR. The goal of this policy is private open space for recreation. Additional information is necessary to determine whether this goal is to be met. The statement "Private open space and recreational facilities would be considered and reviewed at the PD Permit stage" does not meet CEQA requirements for identifying impacts and mitigation measures to reduce the impact to less than significant. Will the riparian setback area in Area 2, required by the City's Riparian Corridor Policy Study, be utilized as open space?

10. **II. Plans and Policies, C. The San Jose 2020 General Plan, Trails and Pathways Policy No. 1**, pg. 20 Quantify the riparian setback in the DEIR. Appropriate comments can not be provided without an understanding of what setback will be required. Will the project development incorporate a setback adequate enough to not detract from the scenic and aesthetic qualities of the corridor?

11. **II. Plans and Policies, C. The San Jose 2020 General Plan, Riparian Corridors and Upland Wetlands Policy No. 2**, pg. 20 The Riparian Corridor Policy has been routinely ignored or waived in recent developments. To use the Policy as an implement for approval of this project without firm commitments from the supervising authorities to enforce it in any upcoming projects is ineffective. This undermines the credibility of using the policy as mitigation for the significant impacts to vegetation and wildlife. Itemize which aspects of this project are/are not compatible with the Riparian Corridor Policy Study and quantify where applicable.

12. **II. Plans and Policies, C. The San Jose 2020 General Plan, Riparian Corridors and Upland Wetlands Policy No. 3**, pg. 20 Quantify the riparian setback in the DEIR so it can be judged for adequacy in buffering impacts of adjacent human activities.

13. **II. Plans and Policies, F. Riparian Corridor Policy Study, Guideline 1C: Setback Areas**, pg. 22 Quantify the riparian setback required for this project. As stated in the policy, a minimum setback of 100 feet should be required. If the proposed Guadalupe Trail Extension is to be extended along the river in conjunction with the project, an additional setback should be included to accommodate a trail easement. The trail is inconsistent with the Riparian Corridor Policy due

8. The trees that would be removed are those located outside the approximate riparian corridor setback as shown on the Tree Locations map, Figure 11. Replacement ratios are listed in section III. C.; however, precise tree removal plans will be determined at the PD Permit stage. All tree removals will be in compliance with the City's Tree Removal Ordinance.

9. CEQA requires an analysis of consistency with goals and policies; however, private recreation space is not a CEQA issue. There is no requirement to identify impact/mitigation if goals and policies are not met. The riparian setback area is not area counted towards the open space requirement that would meet the needs of any residential development in Area 2.

10. The project will meet the required overall setback of 100 feet for the project interface with the Guadalupe River. The final determination of the setback in relation to the scenic and aesthetic qualities of the corridor will be made at that time. Any reduction from the 100-foot setback would be determined by a qualified biologist and would be based on the quality of the riparian habitat present.

11. A condition of the rezoning is compliance with the Riparian Corridor Policy Study. The City requires the 100-foot setback for new development except where the Riparian Corridor Policy Study specifically allows a lesser setback. Such exceptions have recently included the Rubino Property where a 50-foot setback was deemed appropriate for Canoas Creek where the "creek" is a man-made trapezoidal channel with a concrete floor with walnut trees as the predominant "riparian" vegetation.

12. See response to comment No. 10.

13. As stated in Guideline 4A. Recreation Facilities in the City's Riparian Corridor Policy Study: "Multi-use trails should be located 10 feet from the riparian edge if feasible, but in no case should this guideline be used to preclude the development of continuous trail access along riparian corridors." The rezoning does not provide for flood control provisions. In accordance with CEQA, the environmental analysis addresses impacts from the proposed project.

to its impervious surfaces and activity types that would impact the riparian corridor, therefore, an additional area is needed to accommodate a trail. A minimum setback of 100 feet for the riparian corridor, plus an additional trail easement should be incorporated into the project proposal. Also, a riparian setback will infringe upon the area identified for the District's proposed flood control project. Clarify the restrictions placed on riparian setback areas and how those restriction might impact the District's proposed project.

14. **II. Plans and Policies, F. Riparian Corridor Policy Study, Guideline 7E: Protection from Construction**, pg. 22 Temporary construction fencing should be placed at the outside edge of the riparian corridor setback, not at the edge of the riparian corridor.

15. **II. Plans and Policies, F. Riparian Corridor Policy Study, Conclusion**, pg. 23 The DEIR lacks sufficient information as to how the proposed project complies with the Riparian Corridor Policy Study. It is inaccurate to say the proposed project would be consistent with the Riparian Corridor Policy Study when DEIR lacks a specific commitment. To state the riparian setback will be determined at the PD Permit Stage is not a valid argument for consistency.

16. **II. Plans and Policies, G. Guadalupe River South Corridor Park Master Plan Interim Report**, pg. 23 The proposed trail system for this segment of the I280 to Almaden Lake Park should be incorporated into this proposed project. To accommodate the trail, an easement for the trail should be developed and the alignment placed outside of the riparian corridor setback. The meaning of the statement "planned to either visually or physically feature the river corridor" is unclear. The Interim Report states that an open space area north of Chynoweth Avenue is identified for neighborhood park and the Parks and Recreation section of the DEIR identifies this area as deficient 3.2 acres of park land because of the potential residential aspect of the proposed project. Clarify where open space / park land will be made available as it may impact the proposed development project and the District's proposed flood control improvements north of Chynoweth Avenue.

17. **III. Potentially Significant Environmental Impacts, A. Land Use, Compatibility**, pg. 25 The compatibility section does not address the incompatibility of the proposed project with the existing riparian corridor or the City's Riparian Corridor Policy Study. The disruption of the existing physical arrangement of an established wildlife and riparian community, the conflict with an established recreational area, and the incompatibility of wildlife and riparian habitat with residential or commercial development is a significant impact that must be addressed in the DEIR.

18. **III. Potentially Significant Environmental Impacts, A. Land Use, Mitigation Measures Included with the Project**, pg. 26 Mitigation measures must address the incompatibility of wildlife and riparian habitat with the proposed project.

19. **III. Potentially Significant Environmental Impacts, A. Land Use, Conclusion**, pg. 26 Specific mitigation measures and a location for the measures must be identified, and a monitoring program defined before the impacts on the wildlife and riparian habitat can be reduced to less that significant.

20. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Riparian Corridor**, pg. 35 Designate Trees #5, 10, 11, 12, 13 and 17 as Riparian Heritage Trees and

14. Fencing typically occurs at the dripline of the corridor and a second fence at the setback to allow minor grading within the setback area, but outside of driplines, to enhance the riparian habitat. The location of the temporary construction fencing would be placed at the riparian setback. The DEIR has been revised to include this information. See Text Amendments, section II. F. Riparian Corridor Policy Study, page 22.

15. An overall 100-foot setback will be required of this project as conditioned by the rezoning. The statement that private development should be planned to either visually or physically feature the river corridor means that development should be oriented to take advantage of the views toward the corridor, open space should be near the corridor, and structures should not wall off the corridor.

16. See responses to comment Nos. 10-15 and to comment No 6. The specific location of a public park, if determined by the City to be appropriate, will be greatly influenced by the number of units proposed, final configuration of District flood control land acquisition and alignment of Chynoweth Avenue.

17, 18 and 19. The incorporation of the overall 100-foot riparian corridor setback in conformance with the Riparian Corridor Policy Study, including setbacks, uses, landscaping requirements, etc., makes the proposed land uses compatible with the adjacent Guadalupe River. See Text Amendments, section III. A. Land Use, page 25.

20. The California sycamore trees, Nos. 10, 11, 12 and 13, are located near the bank, well within the approximate riparian corridor setback, and would not be removed. The other California sycamore tree, No. 5, is located outside the approximate setback area, but will be considered for preservation at the PD Permit stage. Tree No. 17 is a Mexican elderberry that is located near the southerly boundary and is not a riparian resource. The City is concerned with the removal of large native trees such as oaks and sycamores and concurs with the District that removal of such trees should be avoided.

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afford them special protection as the few remaining representatives of a dwindling riparian forest resource. California Sycamore trees of this size cannot be "replaced" by planting others. Mitigation planting for the loss of this species is not reliable, let alone assured. Replacement mitigation planting should be discarded as an option until mitigation specifics and a monitoring program are established in this DEIR. Preservation is the preferred option.

21. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Riparian Corridor**, pg. 38 The text seems inconsistent with the information presented in Table 2, Existing Trees. Text states that "the riparian vegetation adjacent to the parcel is generally degraded" and that "approximately 50 percent of the riparian vegetation along the riparian corridor is of moderate quality". The Existing Trees table indicates that, of the riparian and riparian-associated natives found on the project, the majority have excellent or good ratings with a lower number being classified as fair. None of the riparian natives received a poor rating. Based on the general condition of the riparian trees, it is misleading to state that the riparian value is of low quality. There are approximately 1600 lineal feet of existing riparian habitat in Area 2. Define how much of this existing riparian habitat is of low, medium or high value and discuss how trees described as excellent or good condition can provide a low riparian value. The DEIR does not indicate how much of the existing riparian habitat will be affected by the proposed project, making it difficult to measure the validity of the DEIR's "low quality" statement. The proposed project may reduce the value of the adjacent existing riparian resource along the Guadalupe River. Cumulative impacts to the riparian community along the Guadalupe River should be identified in the DEIR.

22. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Impact and Mitigation, Vegetation, Trees**, pg. 39 Under District Ordinance 83-2, any trees removed within 50 feet of the Guadalupe River bank require a permit. A Best Management Practice should be incorporated into the document that would identify and protect the existing riparian natives on the site. Impacts are not able to be mitigated under proposed measures identified in the DEIR. Preservation should be stressed. The sycamores on and adjacent the project site are very large specimens that are an endangered ecosystem in the valley and cannot be replaced. These specimens should be protected. Any Platanus racemosa found in the project area should be preserved even to the point of being incorporated into the project. The San Jose Tree Ordinance states that it is unlawful to "remove or cause to be removed any tree . . ." Root damage will cause eventual tree demise and removal, yet this DEIR offers no protection to the tree root zone, let alone a fence located 3 times the canopy radius from the trunk which is the current recommendation for protection. Trunk protection is all that is required in the Ordinance, but even if this is done to the letter of the law, fatal root damage would be allowed without penalty. Construction, incidental construction traffic or grade changes within the root zone will in time cause the tree to be removed. The substrate must also be preserved in its original state if a tree is to be preserved because it supplies essential air, water and nutrients. A degraded soil condition can, in essence, reduce the amount of functioning roots until there are too few to support the needs of the top of the tree. A slow decline will result with increasingly frequent insect and disease attacks.

23. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Impact and Mitigation, Vegetation, Riparian Corridor**, pg. 40 The arbitrary nature of the implementation of the Riparian Corridor Policy Study allows for deviation from the minimum 100 feet setback requirements. The DEIR does not state the setback distance that will be required for this project,

21. The habitat quality within the project reach of the Guadalupe River is approximately 50 percent low quality habitat and approximately 50 percent moderate quality habitat. The low quality habitat areas are classified as such because they support little woody vegetation and are dominated by non-native, ruderal (weedy) vegetation. The moderate quality habitat areas are classified as such due to the disturbance the area has endured over many years. The lower bank portions of the moderate quality areas support very little woody vegetation because of Santa Clara Valley Water District maintenance practices and impacts associated with a former District instream summer dam. The upper portion of the moderate quality habitat areas, especially those areas where the vegetation extends beyond the top of bank, has been degraded by historic agricultural practices that have limited the establishment of understory species. Thus, even though many of the trees present are of excellent or good health and vigor, the quality of the riparian habitat is only moderate. The DEIR addresses the riparian corridor impacts in conjunction with existing conditions including recent project approvals. There are no pending cumulative projects in the area that would impact the corridor.

22. See response to comment No. 21. No trees within 50 feet of the bank, which would require a District permit, would be removed by the project. All trees to be retained on the project site would be protected by fencing at the dripline at a minimum, and, at a maximum, at the full riparian setback. The PD Permit typically includes tree protection conditions. A list of typical tree protection measures is included in the DEIR.

    The San Jose Tree Ordinance includes an application process for the removal of trees 56 inches or greater in circumference located on private property. The application requires information on why the tree should be removed and a list of adjacent property owners for notification. City staff then reviews the application with the City Arborist, makes a recommendation, conducts a public hearing (Director's Hearing) on the matter and approves or denies the request. The Director's decision is appealable to the Planning Commission.

23. See response to comment Nos. 10, 11, 12 and 13. The overall 100-foot setback is the setback conditioned in the rezoning proposal. The specific riparian corridor setback proposed at the PD Permit stage will be submitted to the District for review. The City reviews the reports prepared by qualified biologists utilizing the criteria of the Riparian Corridor Policy Study. The District's biologists are encouraged to utilize the City's Riparian Corridor Policy Study in designing new District flood control projects to ensure preservation and enhancement of the critical and important riparian resources in Santa Clara Valley.

but states that "alternative setbacks" can be designated based on consultation with a qualified biologist. Will any of the District's qualified biologists be consulted on this matter? Doesn't CEQA state that you can not defer mitigation measures to another study or review by others? The riparian setback must be quantified in the DEIR.

24. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Impact and Mitigation, Wildlife**, pg. 40 Because of the close proximity to the river, the urban landscaping required for this development must be compatible with the riparian habitat to avoid impacts associated with possible genetic contamination and introduction of aggressive nonnative plants.

25. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Mitigation Measures Included in the Project, Trees**, pg. 41 Under Ordinance 83-2, a permit from the District will be necessary for any work located within 50 feet of Guadalupe River, including removal of riparian trees. Safeguarding of trees during construction must include protective fencing around root zones. Current arboricultural standards recommend protection of the root zone at 3 times the canopy radius. How much root zone protection will be provided under the Tree Protection Plan? Provide information in the DEIR about where the replacement trees are to be planted, soil type, fill type and depth, drainage, compaction percentage, and how close to buildings, streets, sidewalks, or other hardscape and infrastructure the replacement trees will be planted. This information will help determine whether native or non-native species are appropriate for replacement. If site conditions determine that native species cannot be replanted, will the existing native specimens be preserved? If site conditions are suitable for replacement planting, natives must be contract grown from the local plant community. Protection of genetic integrity of the associated riparian vegetation would require collection of local native stock for later replanting into the area. It will take 4 to 5 years to grow a 24" box Platanus or Quercus from seed. Since most developers are unwilling to make this 4 or 5 year commitment, it is unreasonable to require 24 inch replacement trees for impacts to native trees. Tree sizes shown in the table are excessive, unachievable and unwise given the reputation of native trees for susceptibility to root rot when grown for a long period of time in containers. The mitigation requirement for trees needs to be reevaluated. A distinction should be made between mitigation for native riparian species versus non-native species, with preservation of existing native trees as a primary goal. Non-natives are not a concern UNLESS non-local natives are proposed as replacements for riparian trees. Alternative mitigation ratios for riparian natives should be created if preservation of these trees can not be achieved. For replacing native trees, species should be a key factor rather than solely size. The replacement ratio for a native riparian tree less than 12 inches in diameter is unreasonable. Native trees grow in areas conducive to that particular species. Planting replacement native trees at a one to one ratio is a formula for failure. Without specific mitigation and monitoring goals being outlined in the DEIR, the success of the replacement plantings is unlikely. Street trees planted along Sanchez Drive and along Chynoweth Avenue near the river should be compatible with riparian trees.

26. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Mitigation Measures Included in the Project, Riparian Corridor**, pg. 41 Enough information is known about the proposed project to make a determination as to how much riparian setback will be necessary or required. Since riparian habitat is an endangered ecosystem in the valley, the District strongly recommends Riparian Corridor Policy Study's minimum 100 foot setback be required as part of this project.

24. See response to comment No. 7 and refer to Text Amendments, Appendix B, for a list of prohibited plants. Landscaping proposed for the project will be reviewed to insure that where it is located within, or in close proximity to, a riparian setback area, it is compatible with the nearby riparian habitat.

25. See response to comment Nos. 8 and 22. A list of typical tree protection measures is included in the DEIR. Future landscape plans would consider native species. The City typically utilizes native plant palates in riparian areas and would not include species on the District's list of prohibited plants.

26. See response to comment Nos. 10, 11, 13 and 23.

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27. **III. Potentially Significant Environmental Impacts, C. Vegetation and Wildlife, Mitigation Measures Included in the Project, Conclusion**, pg. 42 The implementation of the San Jose Tree Ordinance, the addition of new trees, and the provision of a riparian corridor setback are meaningless as mitigation measures unless more specific details are included in the DEIR. Reducing a significant impact to a less than significant impact can only be achieved if specific mitigation measures are outlined in the DEIR. No specific details are included in this DEIR. Until this DEIR includes specifics as to how many trees will be impacted (removed or harmed), where new replacement trees will be planted, and a monitoring criteria established, this DEIR is insufficient in meeting CEQA requirements.

28. **III. Potentially Significant Environmental Impacts, D. Waterways and Flooding**, pg. 43 The analysis for flooding impacts is inadequate. The DEIR only addresses flooding to the project site and omits any discussion of the contribution to downstream flooding caused by development related increases in storm water runoff. Residents located downstream of this project site have experienced flooding from Guadalupe River several times in the last four years. Each of these flooding events has been substantially less than a 100-year flood flow. In fact, these flood events were less than the 10-year flood flow. This illustrates the potential for disastrous flooding to occur along the Guadalupe River, downstream of the proposed project site. As stated in the text, "Development of the site with urban uses would increase runoff from the site;" however, no consideration was given to how the increase in storm water runoff will effect the existing flooding condition. It is unclear whether or not the increase in storm water runoff will exacerbate the flooding condition for downstream residents. The statement in the DEIR" the Guadalupe River is designed for urban runoff from the site; therefore, the project would not cause substantial flooding" is inaccurate and unsubstantiated. The Guadalupe River, as it exists today adjacent and downstream of the project site , is an unimproved channel that is NOT adequate to contain floodwaters of less than the 10-year flood flow. The river can flood frequently and, in fact, has caused flood damage in recent years to flood-prone areas downstream of the project site, as noted above. Development of this large project site will increase storm water runoff and potentially adversely affect a flooding condition which is already unacceptable to downstream residents.

29. **III. Potentially Significant Environmental Impacts, E. Water Quality,** , pg. 46 The impacts and mitigation measures are inadequate. This section fails to address the impacts and cumulative impacts to water quality associated with the Chynoweth Avenue bridge construction or the impacts associated with post-construction nonpoint source conditions. Mitigation measures included with the project should include specific details about which nonpoint source control measures will be implemented with this development. Mitigation for construction related water quality impacts (i.e. implementation of Erosion Control Plan, street sweeping during construction , construction during dry months) should be addressed separately from post-construction conditions (parking lot BMP's).

30. **III. Potentially Significant Environmental Impacts, E. Hazardous Materials**, pg. 94 The impact summary for the Impact and Mitigation section does not address the potential problems with reuse or disposing of soil from the project site. Detected levels of Pesticides, Lead, and Mercury included in the DEIR indicate that soil found on this site may require special handling or a special designation before reuse or disposal. For instance, the levels of Total Mercury exceed ten times the Soluble Threshold Limit Concentration values for Hazwaste Classification.

27. See response A. Of the 33 trees on the site, 7 (Nos. 9-15) are near the top of bank in the approximate riparian corridor setback and would not be removed. There is also one free-standing sycamore (No. 5) that the City would be strongly in favor of retaining. The trees will be reviewed at the PD Permit stage and, where suitable and feasible, existing trees will be retained. Replacement trees will be required in accordance with the City's Tree Ordinance, and additional tree planting will be required as part of project landscaping requirements. New trees will conform with the requirements of the Riparian Corridor Policy Study, the Commercial and Residential Design Guidelines and the Landscape and Irrigation Guidelines.

28. An analysis of the flooding impacts of the project was prepared by Schaaf & Wheeler. A copy of their report is included in the Appendix.

The development of the proposed project would increase the peak runoff from the site. The estimated peak runoff from the site for the 10- and 100-year floods is shown below.

Event	Existing Conditions Peak Runoff (cfs)	Project Conditions Peak Runoff (cfs)	Percent Increase
10-Year	19	37	95
100-Year	29	56	93

The estimated increase in the peak runoff rate was due to both the increased runoff from the impervious areas and the improved drainage system, which would allow the runoff to reach the Guadalupe River more rapidly. The estimates assume that after development, the drainage would discharge directly to the river through the storm drain system or overland with a minimum of ponding.

Based on the flood hydrographs from the District design hydrology for the 10- and 100-year flood events, the proposed development would have no impact on the peak flow in the Guadalupe River at the site. This is due to the differences in timing between the local site drainage and the flood flows in the Guadalupe River.

The peak runoff from the site occurs approximately 30 minutes after the peak rainfall for existing conditions, and approximately 15 minutes for the project conditions. The peak flow in the Guadalupe River occurs approximately 90 minutes after the peak rainfall. Due to the difference in timing, the peak runoff from the site enters the river before the peak flow in the Guadalupe River. Based on the rainfall pattern used in the District design hydrology, at the time of the peak flow in the Guadalupe River, the runoff from the site would be less after development than for existing conditions. This rainfall pattern was also used for the Corps of Engineers' Guadalupe River Project, and the FEMA Flood Insurance Study.

The time of the Guadalupe River peak flow is shown on the 10- and 100-year runoff hydrographs from the site. For both events, the peak in the river occurs in the late portion of the hydrograph when the development condition hydrograph is at or below the existing condition hydrograph. The site contribution to the Guadalupe River peak is approximately 2 cubic feet per second (cfs) lower after development. However, since the 100-year peak flow rate is approximately 11,800 cfs, the potential change would not be significant.

The District design hydrology model was also used to route the additional flow from the site development downstream to the area near Alma Avenue, W. Virginia Street and I-280 where the Guadalupe River has flooded several times in recent years.

31. **III. Potentially Significant Environmental Impacts, P. Storm Drainage Facilities**, pg. 101 The conclusion that "The increase in storm water runoff generated by the project development would be a less than significant impact" is unsubstantiated. An increase in storm water runoff may have an adverse impact on flood prone residents located downstream of the project site. Additional floodplain studies are necessary before this conclusion can be reached. It is unclear whether the existing storm drainage system (a 30 inch storm drain in the future Sanchez Drive alignment and a 27 inch storm drain in Chynoweth Avenue) will be adequate to handle the increase in storm water runoff from the site. Will these two storm drain systems need to be upgraded or will these two systems be adequate for the proposed development?

32. **III. Potentially Significant Environmental Impacts, S. Public Services, Commercial**, pg. 106 It is misleading to state that the commercial portion of the project is not expected to have an impact on City park and recreation facilities. A public trail system or open space park area adjacent to the proposed project will provide employees at existing or proposed commercial businesses with a valuable resource which can be utilized by the employees or the general public at all hours of the day.

33. **IV. Cumulative Impacts, C. Guadalupe River Watershed Planning Study**, pg. 113 The District would like to emphasize that the proposed project is NOT consistent with the District's planned flood control project as it impacts proposed flood control improvements for Reach 12 that are shown in the District's draft EIR/EIS. The District's proposed improvements at this project site are critical to receiving acceptance from the regulatory agencies with oversight responsibilities for this proposed flood control project. Based on the alternatives discussed in this DEIR, the proposed development will eliminate the possibility of flood control improvements being constructed at this site. Is it the City's position that the proposed residential / commercial development project will provide greater benefits than providing flood protection for downstream residents?

34. **VI. Alternatives**, pg. 119 The alternatives presented in this section do not represent reasonable choices for the public. The "Alternative Land Use - Reduced Project" is incomplete in providing a realistic alternative and the "Alternative Location" discussion analyzes a site which was already under development when this DEIR was drafted. Alternatives presented in the DEIR should represent a reasonable attempt at providing a choice for the public. If alternatives analyzed are governed by the "Rule of Reason", it is reasonable to evaluate an alternative that is consistent with the District's already published flood control improvement project. Considering the City and developer have been involved with the development of the District's flood control project EIR/EIS, the District's proposal should at least be included as part of a "Reduced Project" alternative. According to CEQA, Section 15126 (d), project "alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." The "Alternative Land Use - Reduced Project" option discussion does not adequately address the development objective of the proposal or the reasons why this option was eliminated. Incorporation of the District's project into the development of this property could reduce or eliminate many of the significant impacts associated with the proposed project. The "Alternative Location" alternative presented in the DEIR is irrelevant. The Rubino Property is an unavailable project site that has already been approved through the EIR process and

Routing the Guadalupe River hydrograph downstream with the development condition runoff hydrograph from the site shows no change in the flood peak downstream. Therefore, the increased runoff from the site does not add to other local inflows downstream of the site to increase the peak flow in the river. There is no increase in the estimated Guadalupe River flows for either the 10-year or the 100-year flood events.

29. See response to comment Nos. A, D and 4. The bridge is a City of San Jose project and will be constructed regardless of this project. The project, however, requires the bridge as mitigation for maximum site development. This DEIR addressed the impacts from the project with the bridge in place in accordance with CEQA. The City is conducting the environmental review of the bridge. A Notice of Preparation of an EIR for the bridge project was issued on March 24, 1998. Specific details for the Stormwater Pollution Prevention Plan (SWPPP) will be developed when specific details of the project are known. Mitigation for construction related impacts and post-construction conditions will be addressed separately in the SWPPP. The DEIR identifies typical construction and post-construction Best Management Practices. The SWPPP for the project will incorporate appropriate BMP's at the PD Permit stage.

30. Concentrations of chlorinated pesticides and lead detected in soil samples collected from the site are below the EPA Preliminary Remedial Goals (PRG's) and the Total Threshold Limit Concentration (TTLC), and are less than ten times the Soluble Threshold Limit Concentration (STLC). Soil from one location on the site contained a TTLC of mercury greater than ten times the STLC value, which is an indicator of potential hazardous levels; therefore, another sample was taken on April 30, 1998 and tested. The STLC was 0.0065 milligrams per liter (mg/l), which is well below the STLC of mercury of 0.2 mg/l. Disposal and/or reuse of the soil from the site would not require special handling or a special designation. See Text Amendments, Appendix J, for the letter report by Earth Systems Consultants.

31. The City's storm drainage system is designed based on the General Plan land use designations. Since the land use designations are not changing, the existing storm drainage system in Sanchez Drive is considered adequate to handle storm runoff from the project. Based on the existing pipe slopes, the 27-inch and 30-inch storm lines have a combined capacity of approximately 40 cfs and the estimated 10-year runoff is 37 cfs. If further review (when project details are known) shows that additional capacity is required, the line and outfall would be upgraded as needed. (See Schaaf & Wheeler assessment in the Appendix of this document.)

32. The comment is acknowledged. The project will provide trail connections in conformance with the General Plan. Employees of a commercial development could use the future trail system; however, when determining public park needs, the City of San Jose bases its park needs on the population of a residential neighborhood; therefore, the project, if all commercial, will not be required to provide parkland or in lieu fees.

33. The Guadalupe River Watershed Planning Study is discussed in Section IV. C. on pages 113-117 of the Draft EIR. It is acknowledged that the District is considering a portion of the site as a mitigation area. The project applicant has met with the District staff on numerous occasions to negotiate a mitigation proposal. This DEIR addresses the project on file with the City. The City is not responsible for requiring a negotiated agreement between the Water District and the applicant. At this time there is no agreement between the District and the applicant. Approval of the proposed zoning does not preclude the acquisition of a portion of the site and the implementation of the District's project. The City cannot require reservation or dedication of a portion of the site for flood protection measures that do not benefit the project site. The Reduced Project alternative could accommodate the District's flood control project; however, the Reduced Project alternative would not meet the Project Objectives.

approved by the City. Therefore, the Rubino Property is not an Alternative Location and the Final EIR should remove this alternative location from the record.

In summary, the DEIR lacks sufficient required information for adequate evaluation of this project with regard to the potential impact to the riparian corridor, District facilities and the District's proposed flood control project. Until such time as this information is made available, and the information demonstrates to our satisfaction that there will be no adverse impacts to the riparian corridor or our facilities, we must recommend City reject approval of this DEIR.

Thank you for the opportunity to review and comment on this DEIR. We look forward to continuing to work with the City of San Jose on this project. If you have any comments or questions, you may write or call me at (408) 265-2607, extension 2301.

Sincerely,

Scott D. Katric

Scott D. Katric, P.E.
Assistant Civil Engineer
Community Projects Review Unit

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34. No alternative has been eliminated. CEQA requires an analysis of project alternatives to enable decision makers an opportunity to consider alternatives. A decision on the project or alternatives has not been made. The Reduced Project alternative could accommodate the District's flood control project. See Text Amendments, section VI. B. Alternative Land Use – Reduced Project, page 109. At the time the report was drafted, the Rubino Property was not an approved project; therefore, it was analyzed in the DEIR. The DEIR text has been revised to delete this reference. See Text Amendments, section VI. C. Alternative Location, page 109.

F. As described in the preceding responses, the DEIR includes sufficient information to evaluate the project, the riparian corridor, District facilities and the District's proposed flood control project at the level of specificity required. When additional information is available at the PD Permit stage, there will be further review and additional opportunity for Water District input.

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TEXT AMENDMENTS

The following sections of the report are amended as noted. New wording is underlined. Deleted wording is lined out. ~~Deleted~~.

SUMMARY

Revise the Summary as necessary in accordance with the following Text Amendments.

MAPS

page 5 *Replace the Assessor's Parcels map, Figure 5, with the revised map shown on the following page.*

II. F. RIPARIAN CORRIDOR POLICY STUDY

page 22 *Revise the response to Guideline 7E as follows:*

Temporary fencing would be placed ~~adjacent to~~at the outside edge of the riparian corridor setback during construction to protect the riparian corridor from damage. Best Management Practices (BMP's) would be utilized as discussed in section III. E. Water Quality.

III. A. LAND USE

page 25 *Revise the third paragraph as follows:*

Compatibility

The project would change the land use and zoning on the site from agricultural to commercial and/or residential use in accordance with the General Plan land use designations. Commercial and residential uses are compatible with the surrounding area; commercial use on the site would be compatible with residential uses to the east of the site because of the physical separation provided by Sanchez Drive and the Guadalupe River. Compatibility with the Guadalupe River and its riparian corridor are addressed in section III. C. The riparian corridor would be protected by a riparian corridor setback in conformance with the Riparian Corridor Policy Study. Development of the project site would introduce new roads, commercial and/or residential buildings and parking areas to the area. These uses would change the view of the site and would generate increases in traffic, noise, and air pollution in the area that are evaluated in this report.

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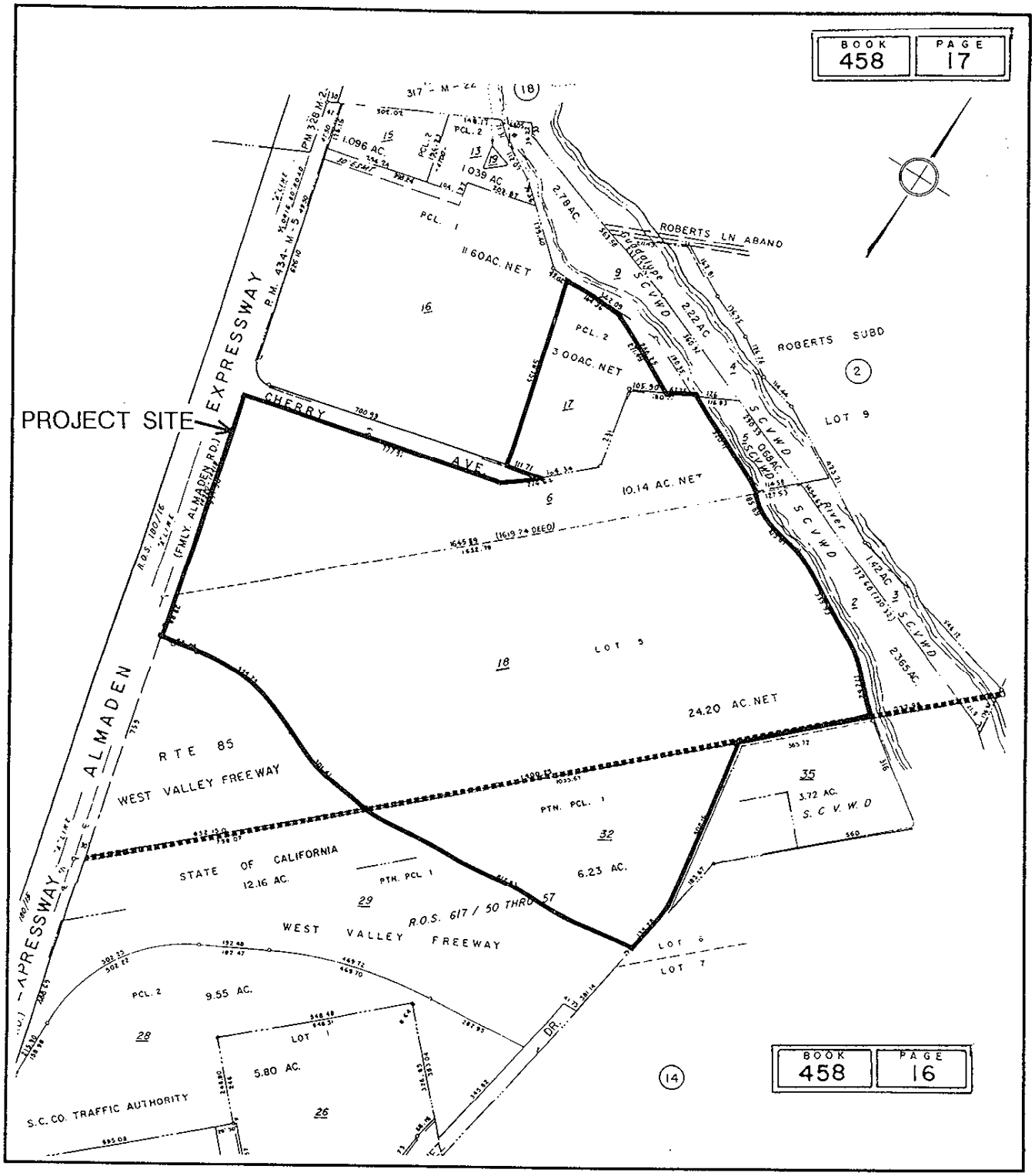

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Assessor's Parcels

Figure 5

III. C. VEGETATION AND WILDLIFE

page 35 *Revise the last paragraph as follows:*

Riparian Corridor

The Guadalupe River is located adjacent to the site's northeasterly boundary and slightly beyond the site's easterly boundary. The northeasterly boundary of the site varies from 10 to 100 feet from the bank of the Guadalupe River. However, the majority of the ~~site~~northeasterly boundary is within 10 to 20 feet of the top of bank. The project boundary is generally closer to the top of bank in the south and further from it in the north.

page 39 *Revise the second paragraph as follows:*

The 1998 survey results are consistent with the results of the burrowing owl surveys conducted at the site in 1995 and 1996. No burrowing owls were observed on or adjacent to the property in 1998 and the site was found to be largely unsuitable for burrowing owls due to a general lack of small mammal burrows that could be utilized for nesting and roosting and the less than optimal foraging habitat present. Since the site has been extensively farmed over the years and has no history of owl occupation, the site currently does not comprise habitat. The site does, however, contain debris piles that could, conceivably, provide breeding and roosting habitat for burrowing owls, and several California ground squirrel burrows also occur immediately adjacent to the site.

page 40 *Revise the second paragraph as follows:*

The project site would ~~be subject to~~ comply with the Riparian Corridor Policy of the City of San Jose. The Guadalupe River is a riparian corridor inside the Urban Service Area. The Riparian corridor Policy recommends a 100-foot setback from the top of bank or outside edge of riparian habitat (whichever is greater) from development~~, but also provides for alternative setbacks based on consultation with a qualified biologist~~. The specific riparian setback along the northeasterly boundary of the site would be determined at the PD Permit stage in accordance with the Riparian Corridor Policy Study. The project would include a riparian corridor setback, the approximate location of which is shown on the Tree Locations map, Figure 11.

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III. H. TRAFFIC

page 56 *Revise the first paragraph as follows:*

Pang Engineers, Inc. conducted a traffic analysis and an update memo that ~~is~~are included in Appendix G.

page 58 *Add the following after the last paragraph:*

Four additional pending projects in the project vicinity that were previously included in the cumulative traffic scenario (Giacomazzi Property, Rubino Property, Lands of San Jose Water Company and Eden Housing) have since been approved by the City. These recently approved projects -- for up to 1,288 residential dwelling units and up to 82,400 square feet of commercial space -- were added to the City's Approved Trips Inventory, and their a.m. and p.m. peak hour volumes have been added to the existing plus approved condition for the proposed project. Additionally, a 3.6 percent per year growth rate from the original May, 1996 analysis date, or approximately 6.9 percent, has been added to update the existing plus approved traffic condition.

pp 57,59,64,65 and 66 *Revise the five critical intersections in Figures 13, 14 and 15 and in Tables 3 and 7 in accordance with the following updated information:*

Intersection	Peak Hour	Exist + Approved V/C Ratio	Exist + Approved Service Level	Exist. + App. + Project V/C Ratio	Exist. + App. + Project Service Level	%*
Almaden Expressway and	a.m.	~~0.940~~0.993	E	~~0.940~~0.996	E	~~0.13~~0.12
Branham Lane	p.m.	~~0.902~~0.962	E	~~0.907~~0.966	E	~~0.76~~0.71
Almaden Expressway and	a.m.	~~0.796~~0.844	~~C~~D	~~0.826~~0.874	D	~~2.10~~1.96
Cherry Ave./Chynoweth Ave.	p.m.	~~0.994~~1.068	~~E~~F	**~~1.199~~1.284**	**F**	**~~9.17~~8.53**
Almaden Expressway and	a.m.	~~0.927~~0.983	E	~~0.927~~0.986	E	~~0.26~~0.24
Blossom Hill Road	p.m.	~~0.953~~1.014	~~E~~F	~~0.962~~1.025	~~E~~F	~~0.99~~0.92
Almaden Expressway and	a.m.	~~0.942~~0.994	E	~~0.941~~0.995	E	0.07
Foxworthy Avenue	p.m.	~~0.686~~0.728	~~B~~C	~~0.688~~0.731	~~B~~C	~~0.49~~0.46
Almaden Expressway and	a.m.	~~0.920~~0.976	E	~~0.924~~0.980	E	~~0.33~~0.31
Coleman Road	p.m.	~~0.819~~0.868	D	~~0.824~~0.873	D	~~0.83~~0.78

V/C = Volume to capacity

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In addition, Table 7A is added to show the levels of service at the five critical intersections with "travel diversion" due to the Chynoweth Avenue bridge connection. This is the estimated traffic from Blossom Hill Road and from Branham Lane that would use Chynoweth Avenue.

Table 7A. Project Levels of Service-City of San Jose Method w/Diversion

		Exist + Approved		Exist. + App. + Project	
Intersection	Peak Hour	V/C Ratio	Service Level	V/C Ratio	Service Level
Almaden Expressway and	a.m.	~~0.940~~0.993	E	~~0.940~~0.976	E
Branham Lane	p.m.	~~0.902~~0.962	E	~~0.907~~0.951	E
Almaden Expressway and	a.m.	~~0.796~~0.844	~~C~~D	~~0.826~~0.801	D
Cherry Ave./Chynoweth Ave.	p.m.	~~0.994~~1.068	~~E~~F	~~1.199~~0.972	~~F~~E
Almaden Expressway and	a.m.	~~0.927~~0.983	E	~~0.927~~0.986	E
Blossom Hill Road	p.m.	~~0.953~~1.014	~~E~~F	~~0.962~~1.054	~~E~~F
Almaden Expressway and	a.m.	~~0.942~~0.994	E	~~0.941~~0.995	E
Foxworthy Avenue	p.m.	~~0.686~~0.728	~~B~~C	~~0.688~~0.731	~~B~~C
Almaden Expressway and	a.m.	~~0.920~~0.976	E	~~0.924~~0.980	E
Coleman Road	p.m.	~~0.819~~0.868	D	~~0.824~~0.873	D

V/C = Volume to capacity

page 65 *Revise the first paragraph as follows:*

The existing plus approved level of service at six of the eleven intersections would remain at acceptable levels with the addition of project traffic. ~~Four~~Three intersections would remain at Level E with the addition of project traffic and one intersection would remain at Level F, but the project would not add more than one percent to the critical volume at these intersections. The Almaden Expressway and Cherry Avenue/Chynoweth Avenue intersection p.m. peak hour level of service is projected to ~~change from E to~~remain at Level F with the addition of project traffic, and the critical volume is expected to increase by more than one percent. Thus, mitigation would be required at this intersection.

page 70 *Revise the first Mitigation Measure Included in the Project as follows:*

Almaden Expressway and Cherry Avenue/Chynoweth Avenue

- A second left-turn lane shall be added to the north leg; the east leg shall be widened to provide two left-turn lanes, two through lanes and a right-turn lane; the south leg shall be widened to add a second left-turn lane and a right-turn lane; and the west leg shall be widened to include a left-turn lane, two through lanes and a right-turn lane. (A.M. V/C ~~0.744~~0.783 - C; P.M. V/C ~~0.850~~0.897 - D)

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III. J. AIR QUALITY

page 87 *Revise Table 11. as follows:*

Table 11. Roadside CO Concentrations (ppm)

Receptor Location	Period	State Standard	Back-ground	Background + Ex. + App. Traffic	Background + Ex. + App.+ Proj. Traffic
Project Site, North of	Peak	20.0	4.5	~~6.4~~6.5	~~6.6~~6.7
Chynoweth Avenue	8-Hr.	9.0	3.0	3.8	3.9
Chynoweth Avenue	Peak	20.0	4.5	~~6.1~~6.2	~~6.4~~6.5
near Winfield Boulevard	8-Hr.	9.0	3.0	~~3.7~~3.8	~~3.8~~3.9

Ex. = Existing App. = Approved Proj. = Project

IV. CUMULATIVE IMPACTS

page 109 *Revise the second paragraph as follows:*

~~No significant cumulative impacts would occur to land use; geology, soils and seismic effects; vegetation and wildlife; waterways and flooding; water quality; energy; cultural resources; noise; hazardous materials; visual impacts; public utilities or public services.~~There are currently no pending projects in the vicinity; therefore, there are no cumulative development impacts to be analyzed. The projects that were pending at the time of preparation of the Draft EIR are now all approved.

IV. A. TRAFFIC

pp 109-113 *As the previously pending projects analyzed under the cumulative traffic condition have been approved, they have now been added as approved projects to the existing plus approved condition in section III. H., and there are no additional pending projects in the vicinity, delete the entire cumulative traffic and air quality sections and revise the subsequent cumulative heading as follows:*

~~A. TRAFFIC~~
~~B. AIR QUALITY~~
~~C~~A. GUADALUPE RIVER WATERSHED PLANNING STUDY

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A-58

VI. B. ALTERNATIVE LAND USE - REDUCED PROJECT

page 109 *Revise the third paragraph as follows:*

This alternative would consist of the development of a maximum of approximately 148,900 square feet of commercial space or up to a maximum of 170 units or any equivalent combination of commercial and residential uses that would not exceed 4,696 daily trips, which would reduce the total daily vehicle emissions air quality impact to acceptable levels. The BAAQMD significance criteria for air quality impacts are 550 lbs/day for carbon monoxide and 80 lbs/day for reactive organic gases, nitrogen oxides and particulates; this is the number of daily trips that would reduce the daily emissions from the project to less than these values. This alternative would require similar geotechnical, water quality, noise and hazardous materials mitigation as the proposed project, and would have similar impacts to land use and cultural resources. This alternative would have less of an impact on vegetation and wildlife, on the riparian corridor and on visual considerations (more open space) and would generate less of an increase in traffic, air pollution and utilities/services impacts. Because of the reduced land area required for 148,900 square feet of commercial space, the project could be designed to accommodate the Santa Clara Valley Water District's planned project as described in section IV. C. This alternative would not meet the project objective of a maximum of 350,000 square feet of commercial space and/or up to a maximum of 400 residential units.

VI. C. ALTERNATIVE LOCATION

page 109 *Delete this section.*

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TECHNICAL APPENDIX

Add the following to the TECHNICAL APPENDIX LIST, which is the list of the reports in the Technical Appendix that are summarized in the Draft EIR and included in the Technical Appendix:

B **Biotic Survey, 42.5-Acre Arcadia Property, Almaden Expressway, San Jose**, H.T. Harvey & Associates, August 7, 1995

and

Biological Assessment Update, 42.5-Acre Arcadia Property, Almaden Expressway, San Jose, H.T. Harvey & Associates, November 15, 1996

and

Arcadia Burrowing Owl Survey, H.T. Harvey & Associates, January 27, 1998

and

Burrowing Owl Response Letter, H.T. Harvey & Associates, May 28, 1998

and

Prohibited Landscape Plants on SCVWD Creeks List, Santa Clara Valley Water District

G **Traffic Analysis Report, Almaden-Chynoweth, Commercial Retail and Residential, City of San Jose**, Pang Engineers, Inc., October 23, 1996

and

Freeway Segments/Cumulative Traffic Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., September 15, 1997

and

Updated Approved Trips Inventory Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., April 9, 1998

J **Phase I Environmental Site Assessment, Arcadia Development, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California**, Earth Systems Consultants Northern California, August 13, 1996

and

Addendum to Phase I Environmental Site Assessment, Northeast Corner of Highway 85 & Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, September 19, 1997

and

Environmental Concerns Summary Letter Report, Northeast Corner of Highway 85 & Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, November 14, 1996

and

Phase II Environmental Site Assessment, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, January 10, 1997

and

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Response to SCVWD Comments, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, May 11, 1998

The following consultant's report was prepared in response to a comment on the Draft EIR.

M **Hydrology Study, Almaden/Chynoweth Development**, Schaaf & Wheeler, May 28, 1998

N **Hydrology Study, Almaden/Chynoweth Development, Technical Appendix**, Schaaf & Wheeler, May 28, 1998 (- A Separate Document)

APPENDIX B - Biological Surveys

Add the following Burrowing Owl Reponse Letter to the end of Appendix B.

Add the Prohibited Landscape Plants on SCVWD Creeks list, as shown on the second following page, to the end of Appendix B.

APPENDIX G - Traffic Reports

Add the following Conceptual Street Improvements, Almaden Expressway/Route 85 Southbound On Ramp exhibit, Plate 4C, to the October 23, 1996 Traffic Analysis Report.

Add the following Bicycle Routes exhibit, Plate 6, to the October 23, 1996 Traffic Analysis Report.

Add the following Table VII. Freeway Volumes PM Peak Hour - Existing to the end of the September 15, 1997 Traffic Report.

Add the following Table VIII. Freeway Volumes PM Peak Hour - Year 2010 to the end of the September 15, 1997 Traffic Report.

Aad the following to the end of Appendix G:

Updated Approved Trips Inventory Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., April 9, 1998

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APPENDIX J – Hazardous Materials Reports

Add the following to the end of Appendix J:

Response to SCVWD Comments, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, May 11, 1998

APPENDIX M – Hydrology Study

Add the following as Appendix M:

Hydrology Study, Almaden/Chynoweth Development, Schaaf & Wheeler, May 28, 1998

APPENDIX N – Hydrology Study Technical Appendix

Add the following as Appendix N:

Hydrology Study, Almaden/Chynoweth Development Technical Appendix, Schaaf & Wheeler, May 28, 1998 (- A Separate Document)

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~~98 - 027~~

Add to Appendix B:

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

28 May 1998

Richard Mindigo
Mindigo and Associates
Environmental Consultants
1984 The Alameda
San Jose, CA 95126

Dear Richard,

In response to your request regarding the status of the Almaden/Chynoweth Project site with respect to Burrowing Owls, I have reviewed the reports of three earlier surveys of the site and discussed the situation with Dr. David Plumpton, an expert on the species and the last individual to conduct a survey of the site.

Surveys conducted in August 1995, November 1996, and January 1998 failed to find any owls. The determination of the first two surveys (conducted by Penelope Delevoryas) was that the "majority of the site is farmed on a continuous basis and does not contain habitat suitable for Burrowing Owls" and that "Burrowing Owls are not expected to occur on site" In January of this year, David Plumpton determined that no Burrowing Owls were on the site and that this was due to a general lack of small mammal burrows.

Since the site has been extensively farmed over the years and has no history of owl occupation, the site currently does not comprise habitat. David Plumpton did recommend, however, that preconstruction surveys be conducted because of several debris piles which could conceivably provide habitat and the presence of several squirrel burrows near the site which might be occupied by owls in the future, especially if the agricultural condition of the site changes. Dr. Plumpton stressed that this provision was to avoid possible take if an owl moved onto the site in the future should conditions change, and not because the site currently comprised owl habitat.

I hope this information is sufficient for your needs. Please let me know if you require clarification or futher information.

Sincerely,

Scott Terrill, Ph.D.
Senior Ornithologist

~~98-027~~

96-011

☐ Alviso Office
906 Elizabeth Street • P.O. Box 1180
Alviso, CA 95002 • 408-263-1814 • Fax: 408-263-3823

☐ Fresno Office
423 West Fallbrook, Suite 206
Fresno, CA 93711 • 209-449-1423 • Fax: 209-449-8248

PROHIBITED LANDSCAPE PLANTS ON SCVWD CREEKS
Note: This short list is not all-inclusive.
Linda Spahr O:\data\weedlist.wpd
Last Updated: 11 May 98

acacia (Acacia spp.)
almond (Prunus dulcis)
bamboo, running types (Arundinaria, Chimonobambusa, Phyllostachys, etc.)
black locust (Robinia pseudoacacia)
broom, French (Genista monspessulana, previously Cytisus monspessulanus)
broom, Scotch (Cytisus scoparius)
broom, Spanish (Spartium junceum)
Cape weed (Arctotheca calendula)
cotoneaster (Cotoneaster spp.)
elm (Ulmus spp.)
eucalyptus (Eucalyptus spp.)
fig (Ficus carica)
flowering plum, fruitful varieties (Prunus spp.)
fountain grass (Pennisetum setaceum)
foxglove (Digitalis purpurea)
giant reed (Arundo donax)
glossy privet (Ligustrum lucidum)
gorse (Ulex europaea)
Himalayan blackberry (Rubus discolor)
holly oak (Quercus ilex)
iceplants (Carpobrotus edulis, C. chilensis, Mesembryanthemum spp.)
ivy, Algerian (Hedera canariensis)
ivy, Cape (Delairea odorata, previously Senecio mikanioides)
ivy, English (Hedera helix)
kikuyu grass (Pennisetum clandestinum)
lemon balm (Melissa officinalis)
Lombardy poplar (Populus nigra 'Italica')
London plane tree (Platanus acerifolia)
mint, any kind including pennyroyal, peppermint, spearmint (Mentha spp.)
Monterey pine (Pinus radiata)
myoporum (Myoporum laetum)
olive (Olea europaea) (species to be determined)
pampas grass, jubata grass (Cortaderia selloana, C. jubata)
pepper trees (Schinus spp.)
periwinkle (Vinca major)
pyracantha (Pyrancantha spp.)
tamarisk, salt cedar (Tamarix spp.)
tree of heaven (Ailanthus altissima)
walnut, English or black (Juglans regia, Juglans californica var. hindsii)

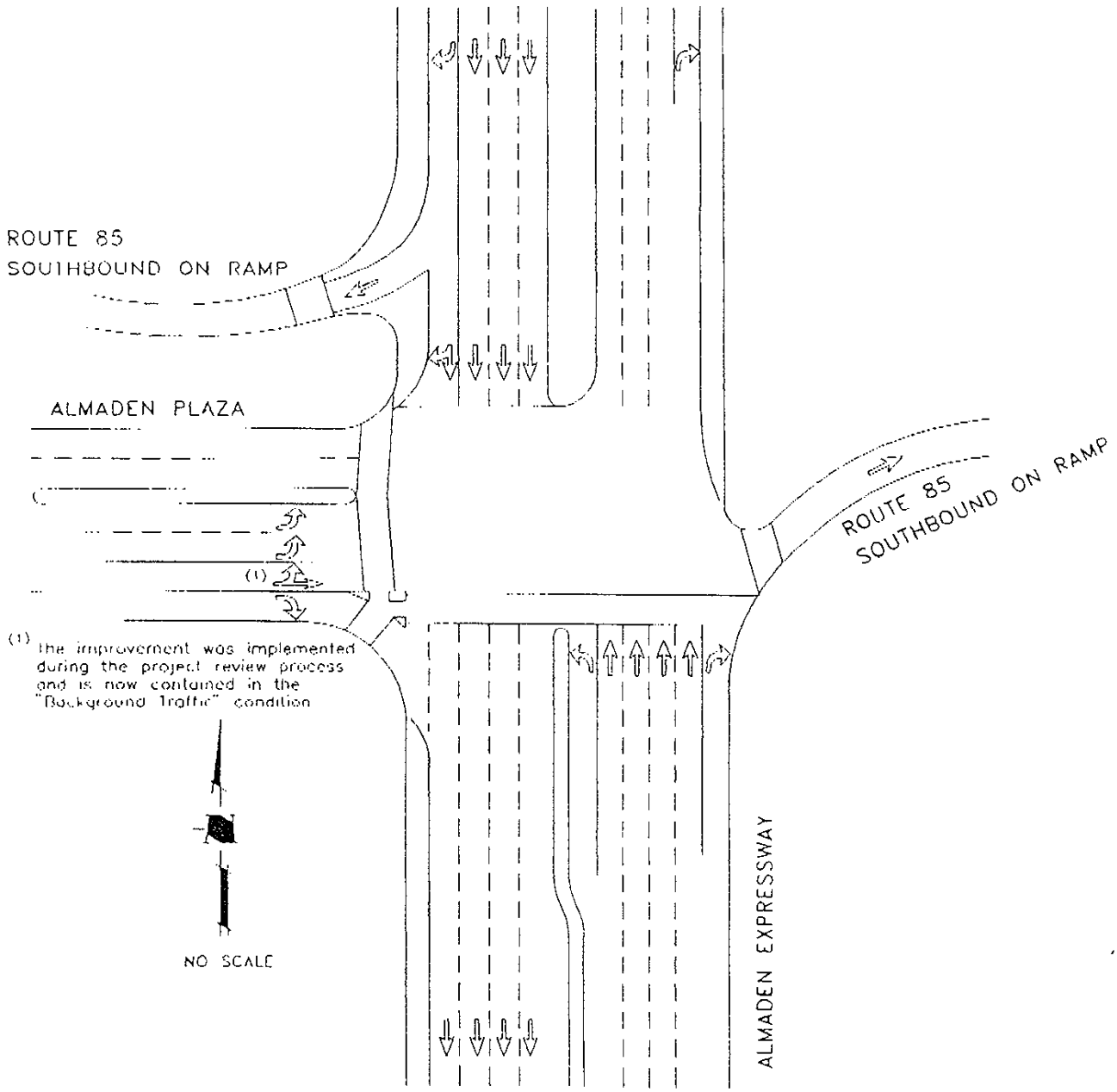

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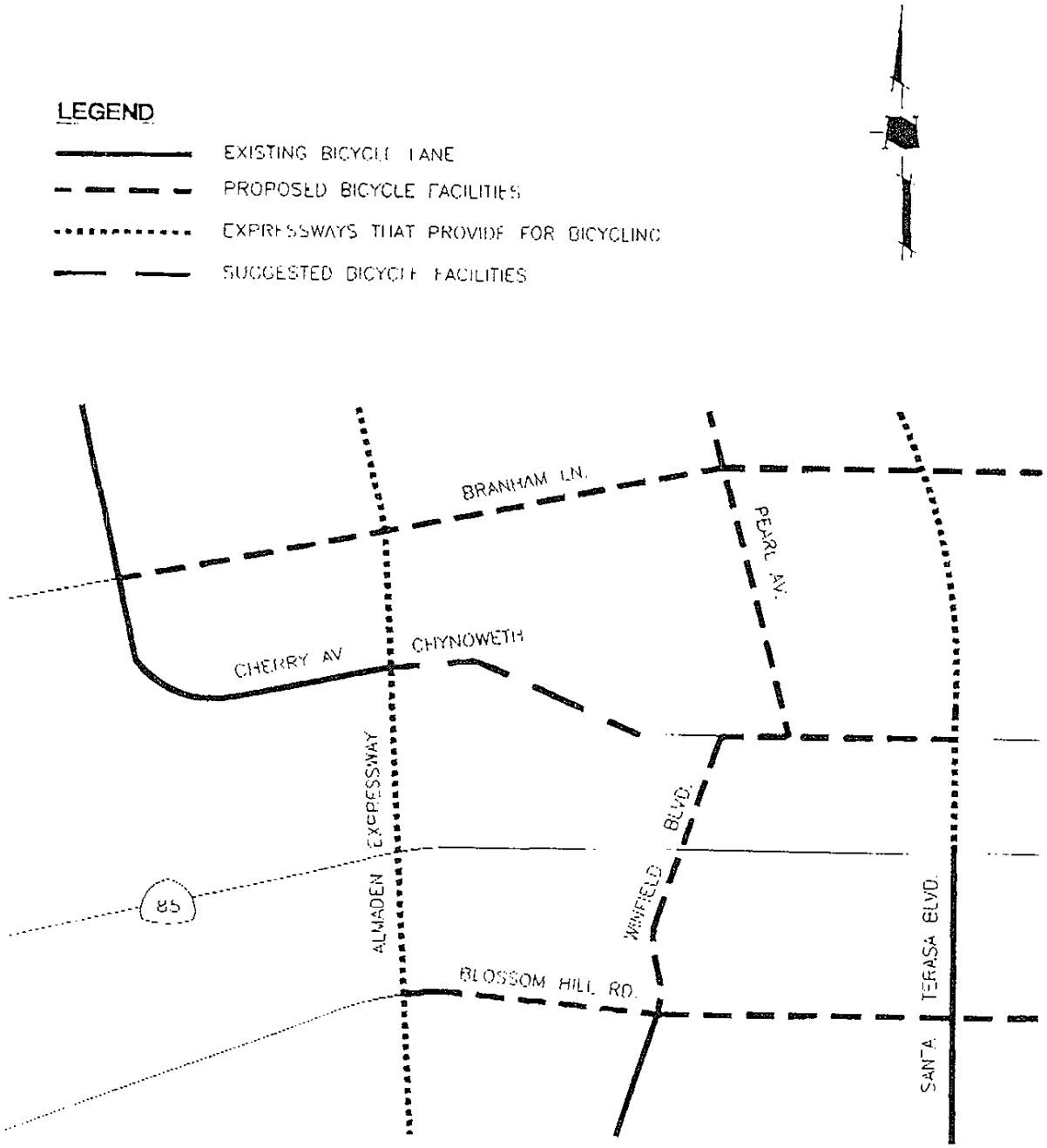
PLATE 4C

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
ROUTE 85 SOUTHBOUND ON RAMP

96-011

PANG ENGINEERS, INC

/9511 2



98-027

SOURCE CITY OF SAN JOSE TRANSPORTATION BICYCLE NETWORK

PLATE 6
BICYCLE ROUTES

96-011

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TRAFFIC AND TRANSPORTATION CONSULTANTS

#9511

TABLE VII

FREEWAY VOLUMES
PM PEAK HOUR
EXISTING

Freeway Segment	Direction	Peak Hour Volume Existing (1)	Peak Hour Volume C	V/C Existing	LOS Existing
Route 85					
West of Almaden Expressway at Camden Avenue					
PM	EB	5710	5500 (2)	1.04	F
	WB	2822	5500	0.51	A
East of Almaden Expressway at Blossom Hill Road					
PM	EB	3606	6600 (4)	0.55	A
	WB	4656	6600	0.71	C
Route 87					
North of Route 85 at Branham Lane					
PM	NB	2629	4400 (3)	0.60	A
	SB	3992	4400	0.91	E

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

C = Capacity in vehicles per hour

V/C = Volume to capacity ratio
LOS = Level of Service

(1) Source: Santa Clara Valley Transportation Authority, 1996 Monitoring & Conformance Report.
(2) At 2200 vehicles per lane per hour for two mixed flow lanes and 1100 vehicles per lane per hour for the high occupancy vehicle lane.
(3) At 2200 vehicles per lane per hour for two mixed flow lanes.
(4) At 2200 vehicles per lane per hour for three mixed flow lanes.

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96-011

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9511-5

TABLE VIII

FREEWAY VOLUMES
PM PEAK HOUR
YEAR 2010

Freeway Segment	Direction	Peak Hour Volume (1) Year 2010	Peak Hour Volume (2) Year 2010
Route 85			
West of Almaden Expressway			
PM	EB	3872	4548
	WB	2593	4474
East of Almaden Expressway			
PM	EB	3009	3306
	WB	2260	3236
Route 87			
North of Route 85			
PM	NB	2133	2088
	SB	3741	3267

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

(1) Source: City of San Jose, Department of Public Works, Transportation Division
(2) Source: Center for Urban Analysis, Santa Clara County; (Average between the Years 2005 and 2015).

96-011

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Add to Appendix G:

PANG ENGINEERS, INC.

TRAFFIC AND TRANSPORTATION CONSULTANTS

GAY LAWRENCE PANG C.E. T.E.

9511-5
April 9, 1998

Mr. Richard Mindigo
MINDIGO & ASSOCIATES
1984 The Alameda
San Jose, CA 95126

RE: Arcadia -Malech Property
Almaden Expressway at Chynoweth Avenue
City of San Jose

Dear Richard:

Pursuant to your request of March 30, 1998, we are providing additional traffic information in response to the City of San Jose Planning Department comments. In general, the concern is related to the approval of four projects in the vicinity of the proposed 350,000 square foot commercial project within the last two years. The projects are as follows:

1. Lands of Giacomazzi-78,000 square foot commercial, west side of Almaden Expressway, directly opposite of the northbound State Route 85 off-ramp;
2. Rubino residential-1,000 single family and apartment units, north of the Pearl Avenue Extension;
3. San Jose Water Company/Dow Drive-82 single family residential;
4. Eden Housing project at the Ohlone-Chynoweth Light Rail Transit station.

The intent is to add these recently approved projects to the previous "Approved Trips Inventory" of March, 1996 to bring the ATI current. Additionally, a 3.6% per annum growth factor or approximately 6.9% from the earlier May 31, 1996 analysis date, is also added to bring the "Background Traffic" condition current. The original turning movement counts for the AM and PM peak hours are utilized to maintain the same basis as the other projects.

The new ATI was extracted from the four Traffic Impact Analysis reports provided by the City of San Jose and added to the previous ATI for the AM and PM peak hours. Since this project is assuming that a two lane Chynoweth Avenue bridge will be constructed as a mitigation measure, an alternative scenario of LOS calculations were also performed at the five critical intersections with the future assumed "Travel Diversion", i.e. trips diverted from Branham Lane and Blossom Hill Road and added to the Chynoweth Avenue bridge and its adjacent intersections. The spread sheet calculations are attached for each of the five critical intersections which require an updated analysis. The critical intersections were obtained from an evaluation of Table II A, "City of San Jose, Level of Service". The intersections analyzed are at a "D" or worse level of service for at least one of the peak hours. Five intersections satisfied that criteria and are listed below with the corresponding intersection number:

PO BOX 4255
MOUNTAIN VIEW
CA 94040

(650) 948-1030
FAX (650) 941-PANG

~~98-027~~

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A-69

1. Almaden Expressway/Branham Lane;
2. Almaden Expressway/Cherry-Chynoweth Avenue;
6. Almaden Expressway/Blossom Hill Road;
10. Almaden Expressway/Foxworthy Avenue;
11. Almaden Expressway/Coleman Road.

Table II A, "City of San Jose, Level of Service, With New Approved Trip Inventory", contains the level of service calculations for the five critical intersections with the following conditions:

1. Existing;
2. Existing + New Approved Trip Inventory, or "Background Traffic";
3. "Background Traffic" + With This Project.

Four of the five intersections along Almaden Expressway at Branham, Blossom Hill, Foxworthy and Coleman are at an "E" or worse LOS for at least one peak hour. However, the increase in critical volumes is less than 1% at all four intersections. At the Almaden Expressway/Cherry-Chynoweth intersection, the proposed mitigation measure of widening the approaches on Cherry Avenue, Chynoweth Avenue and Almaden Expressway along with a traffic signal modification results in a "D" or better LOS assuming the Chynoweth Avenue bridge in place. Thus, the analysis satisfies the City of San Jose's level of service policy of a "D" or better LOS, or if at an"E" or worse LOS with the increase in critical volumes of less than 1% for the peak hours for a 350,000 square foot commercial project.

An analysis with travel diversion is shown on Table II AA. At the four intersections excluding Cherry-Chynoweth, the LOS is identical to the "With Project" condition. At the Almaden Expressway/Cherry-Chynoweth intersection, the LOS would be worsened from a high "C" to a low "D" for the AM peak hour, and from a high "D" to a high "E" for the PM peak hour.

Very Truly Yours,

Gay Lawrence Pang

Enclosure: Table II A-w/ New ATI
Table II AA-w/ Travel Diversion
LOS calcs

CC: Eli Reinhard (w/ encl)
Gerry de Young (w/ encl)

96-011 ~~98-027~~

TABLE II A

CITY OF SAN JOSE
LEVEL OF SERVICE
WITH NEW APPROVED PROJECTS

INTERSECTION		EXISTING		EXISTING + APPROVED[1]		EXISTING + APPROVED + PROJECT[3]		PER-CENT INC[2]
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	(%)
1. Almaden Exp. / Branham								
AM	1/31/95	0.889	D	0.993	E	0.996	E	0.12
PM	4/26/95	0.844	D	0.962	E	0.966	E	0.71
2. Almaden / Cherry-Chynoweth								
AM	1/31/95	0.749	C	0.844	D	0.874	D	1.96
w/ Mitigation		-	-	-	-	0.783	C	-
PM	1/31/95	0.925	E	1.068	F	1.284	F	8.53
w/ Mitigation		-	-	-	-	0.897	D	-
6. Almaden / Blossom Hill								
AM	1/19/95	0.851	D	0.983	E	0.986	E	0.24
PM	6/95	0.889	D	1.014	F	1.025	F	0.92
10. Almaden / Foxworthy								
AM	5/10/95	0.912	E	0.994	E	0.995	E	0.07
PM	5/10/95	0.659	B	0.728	C	0.731	C	0.46
11. Almaden Exp / Coleman								
AM	11/15/94	0.854	D	0.976	E	0.980	E	0.31
PM	6/95	0.777	C	0.868	D	0.873	D	0.78

LOS = Level of Service
V/C = Volume to Capacity Ratio

(1) Existing + Approved Projects = "Background Traffic" condition.
(2) PERCENT INCREASE refers to the increase in critical volumes with the approval of this project.
(3) 350,000 square foot commercial.

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#9511-5
1/8/98

TABLE II AA

CITY OF SAN JOSE
LEVEL OF SERVICE
WITH TRAVEL DIVERSION

INTERSECTION		EXISTING + APPROVED + PROJECT(1)		WITH TRAVEL DIVERSION(2)	
	Date of Count	V/C	LOS	V/C	LOS
1. Almaden Exp. / Branham					
AM	1/31/95	0.996	E	0.976	E
PM	4/26/95	0.966	E	0.951	E
2. Almaden / Cherry-Chynoweth					
AM	1/31/95	0.874	D	-	-
w/ Mitigation		0.783	C	0.801	D
PM	1/31/95	1.284	F	-	-
w/ Mitigation		0.897	D	0.972	E
6. Almaden / Blossom Hill					
AM	1/19/95	0.986	E	0.986	E
PM	6/95	1.025	F	1.054	F
10. Almaden / Foxworthy					
AM	5/10/95	0.995	E	0.995	E
PM	5/10/95	0.731	C	0.731	C
11. Almaden Exp / Coleman					
AM	11/15/94	0.980	E	0.980	E
PM	6/95	0.873	D	0.873	D

LOS = Level of Service
V/C = Volume to Capacity Ratio

(1) 350,000 square foot commercial.
(2) Source: City of San Jose

96-011

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PANG ENGINEERS, INC.
TRAFFIC AND TRANSPORTATION CONSULTANTS
#9511-5
4/8/98

APPROVED TRIPS INVENTORY

NEW APPROVED PROJECTS (AM)

Giaconmazi - 78k Commercial

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	4	0	0	0	5	3	3	1	2	0	0
Almaden / Cherry-Chynoweth	0	11	0	0	0	0	0	6	4	7	0	0
Almaden / Blossom Hill	2	3	3	4	0	0	0	6	0	0	0	3
Almaden / Foxworthy	0	3	0	0	0	0	0	2	0	0	0	0
Almaden / Coleman	0	2	1	1	0	0	0	4	0	0	0	1

Rubino - 1000 DU (w/ barrier)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	38	0	0	0	0	0	0	0	0	0	0
Almaden / Cherry-Chynoweth	0	38	0	0	0	0	0	0	0	0	0	0
Almaden / Blossom Hill	0	19	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	0	28	0	38	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

San Jose Water Dow Dr. - 82 DU

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	5	0	0	0	0	0	2	0	0	0	0
Almaden / Cherry-Chynoweth	0	5	0	0	0	0	0	2	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	4	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Ohlone - Chynoweth (Eden Housing) ~~98-027~~

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	1	0	0	0	0	0	10	0	0	0	0
Almaden / Cherry-Chynoweth	0	0	5	13	0	5	0	0	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Total - New Approved Projects (AM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	48	0	0	0	5	3	15	1	2	0	0
Almaden / Cherry-Chynoweth	0	54	5	13	0	5	0	8	4	7	0	0
Almaden / Blossom Hill	2	22	3	4	0	0	0	6	0	0	0	3
Almaden / Foxworthy	0	3	4	28	0	38	0	2	0	0	0	0
Almaden / Coleman	0	2	1	1	0	0	0	4	0	0	0	1

ATI (3/4/96)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	5	43	0	0	4	6	11	77	5	3	3	4
Almaden / Cherry-Chynoweth	0	45	0	0	0	0	0	92	8	2	0	0
Almaden / Blossom Hill	7	46	37	51	34	11	4	80	23	18	25	10
Almaden / Foxworthy	0	3	0	60	2	0	0	30	1	0	2	0
Almaden / Coleman	2	37	29	59	0	13	6	48	12	15	0	1

Total ATI (AM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	5	91	0	0	4	11	14	92	6	5	3	4
Almaden / Cherry-Chynoweth	0	99	5	13	0	5	0	100	12	9	0	0
Almaden / Blossom Hill	9	68	40	55	34	11	4	86	23	18	25	13
Almaden / Foxworthy	0	6	4	88	2	38	0	32	1	0	2	0
Almaden / Coleman	2	39	30	60	0	13	6	52	12	15	0	2

Travel Diversion

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	45	-45	-50	-49	-49	-44	50	0	0	-44	0
Almaden / Cherry-Chynoweth	0	-49	45	50	49	123	111	-44	0	0	44	0
Almaden / Blossom Hill	25	24	-22	-25	-25	-24	-23	23	0	0	-22	22
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Source: City of San Jose

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96-011

APPROVED TRIPS INVENTORY

NEW APPROVED PROJECTS (PM)

Giaconmazi - 78k Commercial

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	7	0	0	0	7	7	7	3	3	0	0
Almaden / Cherry-Chynoweth	0	17	0	0	0	0	0	17	12	12	0	0
Almaden / Blossom Hill	4	10	7	7	0	0	0	10	0	0	0	4
Almaden / Foxworthy	0	4	0	0	0	0	0	4	0	0	0	0
Almaden / Coleman	1	7	2	2	0	0	0	7	0	0	0	1

Rubino - 1000 DU (w/ barrier)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	0	0	0	0	0	0	37	0	0	0	0
Almaden / Cherry-Chynoweth	0	0	0	0	0	0	0	37	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	18	0	0	0	0
Almaden / Foxworthy	0	0	55	0	0	0	37	0	0	0	18	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

San Jose Water Dow Dr. - 82 DU

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	2	0	0	0	0	0	5	0	0	0	0
Almaden / Cherry-Chynoweth	0	5	0	0	0	0	0	5	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	8	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Ohlone - Chynoweth (Eden Housing)

~~98-027~~

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Cherry-Chynoweth	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Total - New Approved Projects (PM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	9	0	0	0	7	7	49	3	3	0	0
Almaden / Cherry-Chynoweth	0	22	0	0	0	0	0	59	12	12	0	0
Almaden / Blossom Hill	4	10	7	7	0	0	0	28	0	0	0	4
Almaden / Foxworthy	0	4	63	0	0	0	37	4	0	0	18	0
Almaden / Coleman	1	7	2	2	0	0	0	7	0	0	0	1

ATI (3/4/96)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	4	96	0	0	3	16	11	62	11	13	4	5
Almaden / Cherry-Chynoweth	0	124	0	0	0	0	0	77	2	16	0	0
Almaden / Blossom Hill	10	85	56	42	52	4	11	51	28	33	61	7
Almaden / Foxworthy	0	30	60	0	2	0	0	3	0	1	2	0
Almaden / Coleman	1	59	63	33	0	6	13	48	15	12	0	2

Total ATI (PM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	4	105	0	0	3	23	18	111	14	16	4	5
Almaden / Cherry-Chynoweth	0	146	0	0	0	0	0	136	14	28	0	0
Almaden / Blossom Hill	14	95	63	49	52	4	11	79	28	33	61	11
Almaden / Foxworthy	0	34	123	0	2	0	37	7	0	1	20	0
Almaden / Coleman	2	66	65	35	0	6	13	55	15	12	0	3

Travel Diversion

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	46	-46	-33	-34	-33	-46	33	0	0	-47	0
Almaden / Cherry-Chynoweth	0	-33	46	33	34	210	298	-46	0	0	47	0
Almaden / Blossom Hill	59	59	-90	-59	-59	-59	-81	81	0	0	-81	81
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Source: City of San Jose

96-011

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Level of Service Calculations with New Approved Projects

~~98-027~~

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED
N-S 111.00 9.50
E-W 51.00 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	131	739	51	0	91	5	0	7	0	146	921	62
E	202010	474	434	366	11	4	0	0	0	0	539	487	408
S	203010	135	2767	284	6	92	14	0	5	0	156	3179	330
W	202010	305	196	61	4	3	5	0	0	0	344	221	73

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	131	3015	0.043	0.026	0.069	208
E	2	0 0 2 0 0 0	434	3560	0.122	0.026	0.148	527
S	3	0 0 3 0 0 0	2767	5340	0.518	0.039	0.557	2974
W	2	2 0 0 0 0 0	305	3015	0.101	0.026	0.127	383
				LT =	0.100			
TOTALS	9		3637		0.884			4092

1 - 0.884 = 0.116 / 9 = 0.013

V/C = 0.889

EXISTING LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	146	3015	0.048	0.002	0.050	151
E	2	0 0 2 0 0 0	487	3560	0.137	0.002	0.139	495
S	3	0 0 3 0 0 0	3174	5340	0.594	0.002	0.596	3183
W	2	2 0 0 0 0 0	344	3015	0.114	0.002	0.116	350
				LT =	0.100			
TOTALS	9		4151		0.993			4179

1 - 0.993 = 0.007 / 9 = 0.001

V/C = 0.993

EXISTING + APPROVED LEVEL OF SERVICE = E

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	146	3015	0.048	0.001	0.049	148
E	2	0 0 2 0 0 0	487	3560	0.137	0.001	0.138	491
S	3	0 0 3 0 0 0	3179	5340	0.595	0.002	0.597	3188
W	2	2 0 0 0 0 0	344	3015	0.114	0.001	0.115	347
				LT =	0.100			
TOTALS	9		4156		0.994			4174

1 - 0.994 = 0.006 / 9 = 0.001

V/C = 0.996

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4156 - 4151)/ 4151 = 0.12 PERCENT INCREASE IN CRITICAL VOLUME

~~98-027~~

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 4/26/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 10.5

SIGNAL TYPE : FULLY ACTUATED

N-S	111.00	9.50
E-W	51.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	371	1924	281	0	105	4	0	26	0	410	2257	315
E	202010	359	417	124	23	3	0	0	0	0	420	464	137
S	203010	360	814	442	14	111	18	0	26	0	412	1036	506
W	202010	153	539	149	5	4	16	0	0	0	174	600	181

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1924	5340	0.360	0.050	0.410	2189
E	2	2 0 0 0 0 0	359	3015	0.119	0.034	0.153	461
S	2	2 0 0 0 0 0	360	3015	0.119	0.034	0.153	461
W	2	0 0 2 0 0 0	539	3560	0.151	0.034	0.185	659
				LT =	0.100			
TOTALS	9		3182		0.849			3770

1 - 0.849 = 0.151 / 9 = 0.017

V/C = 0.844

EXISTING LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2231	5340	0.418	0.012	0.430	2296
E	2	2 0 0 0 0 0	420	3015	0.139	0.008	0.147	443
S	2	2 0 0 0 0 0	412	3015	0.137	0.008	0.145	437
W	2	0 0 2 0 0 0	600	3560	0.169	0.008	0.177	630
				LT =	0.100			
TOTALS	9		3663		0.963			3806

1 - 0.963 = 0.037 / 9 = 0.004

V/C = 0.962

EXISTING + APPROVED LEVEL OF SERVICE = E

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2257	5340	0.423	0.011	0.434	2318
E	2	2 0 0 0 0 0	420	3015	0.139	0.007	0.146	440
S	2	2 0 0 0 0 0	412	3015	0.137	0.007	0.144	434
W	2	0 0 2 0 0 0	600	3560	0.169	0.007	0.176	627
				LT =	0.100			
TOTALS	9		3689		0.968			3819

1 - 0.968 = 0.032 / 9 = 0.004

V/C = 0.966

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3689 - 3663)/ 3663 = 0.71 PERCENT INCREASE IN CRITICAL VOLUME

96-011

~~98-037~~

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	57	1178	53	5	99	0	7	0	0	75	1411	59
E	010010	65	7	18	5	0	13	33	9	5	110	17	38
S	103000	346	2530	0	12	100	0	0	0	56	397	2918	56
W	010010	153	16	473	0	0	9	0	15	0	170	33	536

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	57	1675	0.034	0.045	0.079	132
E	1	0 1 0 0 0 0	72	1685	0.043	0.045	0.088	148
S	3	0 0 3 0 0 0	2530	5340	0.474	0.135	0.609	3252
W	1	0 1 0 0 0 0	169	1685	0.100	0.045	0.145	244
				LT =	0.079			
TOTALS	6		2928		0.730			3776

1 - 0.730 = 0.270 / 6 = 0.045

V/C = 0.749

EXISTING LEVEL OF SERVICE = C

N	1	1 0 0 0 0 0	68	1675	0.041	0.029	0.070	117
E	1	0 1 0 0 0 0	85	1685	0.050	0.029	0.079	133
S	3	0 0 3 0 0 0	2918	5340	0.546	0.086	0.632	3375
W	1	0 1 0 0 0 0	188	1685	0.112	0.029	0.141	238
				LT =	0.079			
TOTALS	6		3259		0.828			3863

1 - 0.828 = 0.172 / 6 = 0.029

V/C = 0.844

EXISTING + APPROVED LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	75	1675	0.045	0.023	0.068	114
E	1	0 1 0 0 0 0	127	1689	0.075	0.023	0.098	166
S	3	0 0 3 0 0 0	2918	5340	0.546	0.068	0.614	3279
W	1	0 1 0 0 0 0	203	1692	0.120	0.023	0.143	242
				LT =	0.079			
TOTALS	6		3323		0.865			3801

1 - 0.865 = 0.135 / 6 = 0.023

V/C = 0.874

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3323 - 3259)/ 3259 = 1.96 PERCENT INCREASE IN CRITICAL VOLUME

~~98-027~~

96-011

/19/88 LV

A-80

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY CHYNOWETH

MESSAGE: W/MITIGATION (350K COMM.)

PEAK HOUR: AM

COUNT DATE: 1/31/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094

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96-011

~~88-027~~

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	75	1411	59	0	0	0	0	0	0	75	1411	59
E	202010	110	17	38	0	0	0	0	0	0	110	17	38
S	203010	397	2918	56	0	0	0	0	0	0	397	2918	56
W	102010	170	33	536	0	0	0	0	0	0	170	33	536

LEG	# LANES	CRIT. MOVE (L S T / R S O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	75	3015	0.025	0.057	0.082	247
E	2	0 0 2 0 0 0	17	3560	0.005	0.057	0.062	221
S	3	0 0 3 0 0 0	2918	5340	0.546	0.086	0.632	3375
W	1	1 0 0 0 0 0	170	1675	0.101	0.029	0.130	218
				LT =	0.094			
TOTALS	8		3180		0.771			4061

1 - 0.771 = 0.229 / 8 = 0.029

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 1/31/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED
N-S 115.00 8.00
E-W 25.00 4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	135	2288	166	0	146	0	26	0	0	176	2695	185
E	010010	140	31	24	0	0	0	195	52	26	351	87	53
S	103000	414	1560	14	14	136	0	0	0	191	475	1874	207
W	010010	106	22	477	0	0	28	0	52	0	118	77	559

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2288	5340	0.428	0.035	0.463	2472
E	1	0 1 0 0 0 0	171	1694	0.101	0.012	0.113	191
S	1	1 0 0 0 0 0	414	1675	0.247	0.012	0.259	434
W	1	0 1 0 0 0 0	128	1693	0.076	0.012	0.088	149
				LT =	0.079			
TOTALS	6		3001		0.931			3246

1 - 0.931 = 0.069 / 6 = 0.012

V/C = 0.925

EXISTING LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2695	5340	0.505	-.032	0.473	2526
E	1	0 1 0 0 0 0	191	1694	0.113	-.011	0.102	173
S	1	1 0 0 0 0 0	475	1675	0.284	-.011	0.273	457
W	1	0 1 0 0 0 0	143	1693	0.084	-.011	0.073	124
				LT =	0.079			
TOTALS	6		3504		1.065			3280

1 - 1.065 = -.065 / 6 = -.011

V/C = 1.068

EXISTING + APPROVED LEVEL OF SERVICE = F

N	3	0 0 3 0 0 0	2695	5340	0.505	-.120	0.385	2056
E	1	0 1 0 0 0 0	438	1696	0.258	-.040	0.218	370
S	1	1 0 0 0 0 0	475	1675	0.284	-.040	0.244	409
W	1	0 1 0 0 0 0	195	1716	0.114	-.040	0.074	127
				LT =	0.079			
TOTALS	6		3803		1.240			2962

1 - 1.240 = -.240 / 6 = -.040

V/C = 1.284

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = F

(3803 - 3504)/ 3504 = 8.53 PERCENT INCREASE IN CRITICAL VOLUME

~~98-087~~

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY-CHYNOWETH

MESSAGE: W/MITIGATION (350K COMM.)

PEAK HOUR: PM

COUNT DATE: 1/31/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094

G

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96-011

~~98-027~~

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	176	2695	185	0	0	0	0	0	0	176	2695	185
E	202010	351	87	53	0	0	0	0	0	0	351	87	53
S	203010	475	1874	207	0	0	0	0	0	0	475	1874	207
W	102010	118	77	559	0	0	0	0	0	0	118	77	559

LEG	# LANES	CRIT. MOVE (L L S T R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2695	5340	0.505	0.035	0.540	2884
E	2	2 0 0 0 0 0	351	3015	0.116	0.023	0.139	419
S	2	2 0 0 0 0 0	475	3015	0.158	0.023	0.181	546
W	2	0 0 2 0 0 0	77	3560	0.022	0.023	0.045	160
				LT =	0.094			
TOTALS	9		3598		0.895			4009

1 - 0.895 = 0.105 / 9 = 0.012

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP.

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 7:15-8:15 AM
COUNT DATE: 1/19/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED

N-S	103.00	9.50
E-W	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	118	684	272	40	68	9	0	4	2	171	834	314
E	203010	99	311	177	11	34	55	2	0	0	123	380	252
S	203010	114	2678	40	23	86	4	0	8	3	150	3077	52
W	203010	480	189	80	13	25	18	2	3	0	550	239	107

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	118	3015	0.039	0.029	0.068	205
E	3	0 0 3 0 0 0	311	5340	0.058	0.043	0.101	539
S	3	0 0 3 0 0 0	2678	5340	0.501	0.043	0.544	2905
W	2	2 0 0 0 0 0	480	3015	0.159	0.029	0.188	567
				LT =	0.100			
TOTALS	%10		3587		0.857			4216

1 - 0.857 = 0.143 / %10 = 0.014
V/C = 0.851

EXISTING LEVEL OF SERVICE = D

N	2	2 0 0 0 0 0	171	3015	0.057	0.003	0.060	181
E	3	0 0 3 0 0 0	380	5340	0.071	0.005	0.076	406
S	3	0 0 3 0 0 0	3069	5340	0.575	0.005	0.580	3097
W	2	2 0 0 0 0 0	548	3015	0.182	0.003	0.185	558
				LT =	0.100			
TOTALS	%10		4168		0.985			4242

1 - 0.985 = 0.015 / %10 = 0.002
V/C = 0.983

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	171	3015	0.057	0.003	0.060	181
E	3	0 0 3 0 0 0	380	5340	0.071	0.004	0.075	401
S	3	0 0 3 0 0 0	3077	5340	0.576	0.004	0.580	3097
W	2	2 0 0 0 0 0	550	3015	0.182	0.003	0.185	558
				LT =	0.100			
TOTALS	%10		4178		0.986			4237

1 - 0.986 = 0.014 / %10 = 0.001
V/C = 0.986

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4178 - 4168)/ 4168 = 0.24 PERCENT INCREASE
IN CRITICAL VOLUME

~~98-027~~

96-011

5/19/88 LV

A-84

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 9.9

SIGNAL TYPE : FULLY ACTUATED
N-S 103.00 9.50
E-W 59.00 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	689	2366	406	63	95	14	0	27	12	820	2722	472
E	203010	238	559	364	4	52	49	9	4	0	275	670	449
S	203010	253	1257	232	28	79	11	0	27	9	306	1487	275
W	203010	494	675	141	11	61	33	8	8	0	562	811	188

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2366	5340	0.443	0.031	0.474	2531
E	3	0 0 3 0 0 0	559	5340	0.105	0.031	0.136	726
S	2	2 0 0 0 0 0	253	3015	0.084	0.021	0.105	317
W	2	2 0 0 0 0 0	494	3015	0.164	0.021	0.185	558
					LT = 0.100			
TOTALS	%10		3672		0.896			4132

1 - 0.896 = 0.104 / %10 = 0.010
V/C = 0.889

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2695	5340	0.505	-.004	0.501	2675
E	3	0 0 3 0 0 0	666	5340	0.125	-.004	0.121	646
S	2	2 0 0 0 0 0	306	3015	0.101	-.003	0.098	295
W	2	2 0 0 0 0 0	554	3015	0.184	-.003	0.181	546
					LT = 0.100			
TOTALS	%10		4221		1.015			4162

1 - 1.015 = -.015 / %10 = -.002
V/C = 1.014

EXISTING + APPROVED LEVEL OF SERVICE = F

N	3	0 0 3 0 0 0	2722	5340	0.510	-.007	0.503	2686
E	3	0 0 3 0 0 0	670	5340	0.125	-.007	0.118	630
S	2	2 0 0 0 0 0	306	3015	0.101	-.004	0.097	292
W	2	2 0 0 0 0 0	562	3015	0.186	-.004	0.182	549
					LT = 0.100			
TOTALS	%10		4260		1.022			4157

1 - 1.022 = -.022 / %10 = -.002
V/C = 1.025

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = F

260 - 4221)/ 4221 = 0.92 PERCENT INCREASE
IN CRITICAL VOLUME

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 5/10/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 10.2

SIGNAL TYPE : FULLY ACTUATED
N-S 134.50 9.50
E-W 33.50 4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	121	879	43	4	6	0	0	4	0	137	979	47
E	101010	29	50	200	38	2	88	0	0	0	70	57	308
S	103010	47	3627	31	1	32	0	0	3	0	53	4032	34
W	101010	66	60	145	0	2	0	0	0	0	73	68	160

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	121	1675	0.072	0.018	0.090	151
E	1	0 0 1 0 0 0	50	1780	0.028	0.018	0.046	82
S	3	0 0 3 0 0 0	3627	5340	0.679	0.053	0.732	3909
W	1	1 0 0 0 0 0	66	1675	0.039	0.018	0.057	95
				LT =	0.077			
TOTALS	6		3864		0.895			4237

1 - 0.895 = 0.105 / 6 = 0.018

V/C = 0.912

EXISTING LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	137	1675	0.082	0.001	0.083	139
E	1	1 0 0 0 0 0	70	1675	0.042	0.001	0.043	72
S	3	0 0 3 0 0 0	4029	5340	0.754	0.004	0.758	4048
W	1	0 0 1 0 0 0	68	1780	0.038	0.001	0.039	69
				LT =	0.077			
TOTALS	6		4304		0.993			4328

1 - 0.993 = 0.007 / 6 = 0.001

V/C = 0.994

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	137	1675	0.082	0.001	0.083	139
E	1	1 0 0 0 0 0	70	1675	0.042	0.001	0.043	72
S	3	0 0 3 0 0 0	4032	5340	0.755	0.003	0.758	4048
W	1	0 0 1 0 0 0	68	1780	0.038	0.001	0.039	69
				LT =	0.077			
TOTALS	6		4307		0.994			4328

1 - 0.994 = 0.006 / 6 = 0.001

V/C = 0.995

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4307 - 4304)/ 4304 = 0.07 PERCENT INCREASE IN CRITICAL VOLUME

~~98-027~~

96-011

A-86

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 5/10/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 10.2

SIGNAL TYPE : FULLY ACTUATED
N-S 134.50 9.50
E-W 33.50 4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	249	2665	134	123	34	0	0	16	0	397	2987	148
E	101010	43	71	65	0	2	0	0	0	0	47	80	72
S	103010	140	953	29	0	7	37	0	16	0	154	1073	69
W	101010	113	95	64	0	20	1	0	0	0	125	125	72

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	2799	7085	0.395	0.193	0.588	4166
E	1	0 0 1 0 0 0	71	1780	0.040	0.048	0.088	157
S	1	1 0 0 0 0 0	140	1675	0.084	0.048	0.132	221
W	1	1 0 0 0 0 0	113	1675	0.067	0.048	0.115	193
				LT =	0.077			
TOTALS	7		3123		0.663			4737
				1 - 0.663 =	0.337 / 7 =	0.048		
							V/C =	0.659

EXISTING LEVEL OF SERVICE = B

N	4	0 0 3 1 0 0	3119	7085	0.440	0.155	0.595	4216
E	1	0 0 1 0 0 0	80	1780	0.045	0.039	0.084	150
S	1	1 0 0 0 0 0	154	1675	0.092	0.039	0.131	219
W	1	1 0 0 0 0 0	125	1675	0.075	0.039	0.114	191
				LT =	0.077			
TOTALS	7		3478		0.729			4776
				1 - 0.729 =	0.271 / 7 =	0.039		
							V/C =	0.728

EXISTING + APPROVED LEVEL OF SERVICE = C

N	4	0 0 3 1 0 0	3135	7085	0.442	0.154	0.596	4223
E	1	0 0 1 0 0 0	80	1780	0.045	0.038	0.083	148
S	1	1 0 0 0 0 0	154	1675	0.092	0.038	0.130	218
W	1	1 0 0 0 0 0	125	1675	0.075	0.038	0.113	189
				LT =	0.077			
TOTALS	7		3494		0.731			4778
				1 - 0.731 =	0.269 / 7 =	0.038		
							V/C =	0.731

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

3494 - 3478)/ 3478 = 0.46 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 730
COUNT DATE: 11/15/94
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 12.0

SIGNAL TYPE : FULLY ACTUATED
N-S 93.50 9.50
E-W 68.50 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	45	704	62	30	39	2	0	4	2	80	831	73
E	202010	476	258	263	13	0	60	0	0	0	546	289	355
S	203010	27	2529	655	12	52	6	0	8	0	42	2892	740
W	102010	309	195	21	2	0	15	3	0	0	351	218	39

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	45	1675	0.027	0.020	0.047	79
E	2	0 0 2 0 0 0	258	3560	0.072	0.041	0.113	402
S	3	0 0 3 0 0 0	2529	5340	0.474	0.061	0.535	2857
W	1	1 0 0 0 0 0	309	1675	0.184	0.020	0.204	342
				LT =	0.100			
TOTALS	7		3141		0.857			3680

1 - 0.857 = 0.143 / 7 = 0.020

V/C = 0.854

EXISTING LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	80	1675	0.048	0.003	0.051	85
E	2	0 0 2 0 0 0	289	3560	0.081	0.007	0.088	313
S	3	0 0 3 0 0 0	2884	5340	0.540	0.010	0.550	2937
W	1	1 0 0 0 0 0	348	1675	0.208	0.003	0.211	353
				LT =	0.100			
TOTALS	7		3601		0.977			3688

1 - 0.977 = 0.023 / 7 = 0.003

V/C = 0.976

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	80	1675	0.048	0.003	0.051	85
E	2	0 0 2 0 0 0	289	3560	0.081	0.005	0.086	306
S	3	0 0 3 0 0 0	2892	5340	0.542	0.008	0.550	2937
W	1	1 0 0 0 0 0	351	1675	0.210	0.003	0.213	357
				LT =	0.100			
TOTALS	7		3612		0.981			3685

1 - 0.981 = 0.019 / 7 = 0.003

V/C = 0.980

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3612 - 3601)/ 3601 = 0.31 PERCENT INCREASE IN CRITICAL VOLUME

~~98-027~~

5/19/88 LW

96-011

A-98

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 9.9

SIGNAL TYPE : FULLY ACTUATED
N-S 93.50 9.50
E-W 68.50 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	227	1933	306	65	66	2	0	26	10	314	2216	348
E	202010	720	277	123	6	0	35	0	0	0	797	304	170
S	203010	36	946	517	15	55	13	0	26	0	55	1121	581
W	102010	126	256	31	3	0	12	10	0	0	151	281	46

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1933	5340	0.362	0.072	0.434	2318
E	2	2 0 0 0 0 0	720	3015	0.239	0.048	0.287	865
S	2	2 0 0 0 0 0	36	3015	0.012	0.048	0.060	181
W	2	0 0 2 0 0 0	256	3560	0.072	0.048	0.120	427
				LT =	0.100			
TOTALS	9		2945		0.785			3791

1 - 0.785 = 0.215 / 9 = 0.024

V/C = 0.77

EXISTING LEVEL OF SERVICE = C

N	3	0 0 3 0 0 0	2190	5340	0.410	0.043	0.453	2419
E	2	2 0 0 0 0 0	797	3015	0.264	0.029	0.293	883
S	2	2 0 0 0 0 0	55	3015	0.018	0.029	0.047	142
W	2	0 0 2 0 0 0	281	3560	0.079	0.029	0.108	384
				LT =	0.100			
TOTALS	9		3323		0.871			3828

1 - 0.871 = 0.129 / 9 = 0.014

V/C = 0.868

EXISTING + APPROVED LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2216	5340	0.415	0.041	0.456	2435
E	2	2 0 0 0 0 0	797	3015	0.264	0.028	0.292	880
S	2	2 0 0 0 0 0	55	3015	0.018	0.028	0.046	139
W	2	0 0 2 0 0 0	281	3560	0.079	0.028	0.107	381
				LT =	0.100			
TOTALS	9		3349		0.876			3835

1 - 0.876 = 0.124 / 9 = 0.014

V/C = 0.873

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3349 - 3323)/ 3323 = 0.78 PERCENT INCREASE IN CRITICAL VOLUME

96-011

Level of Service Calculations with Travel Diversion

96-011

~~98-027~~

A-90

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 1/31/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	111	9.5	
E-W	51	8.5	G
CYCLE LENGTH =	180		Y
LOST TIME =	.100		R

98-027

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	101	966	62	0	0	0	0	0	0	101	966	62
E	202010	490	438	358	0	0	0	0	0	0	490	438	358
S	203010	156	3229	286	0	0	0	0	0	0	156	3229	286
W	202010	344	177	73	0	0	0	0	0	0	344	177	73

LEG	# LANES	CRIT. MOVE L S T R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	101	3015	0.033	0.006	0.039	118
E	2	0 0 2 0 0 0	438	3560	0.123	0.006	0.129	459
S	3	0 0 3 0 0 0	3229	5340	0.605	0.008	0.613	3273
W	2	2 0 0 0 0 0	344	3015	0.114	0.006	0.120	362
				LT =	0.100			
TOTALS	9		4112		0.975			4212

1 - 0.975 = 0.025 / 9 = 0.003

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .976 LEVEL OF SERVICE = E

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 4/26/95

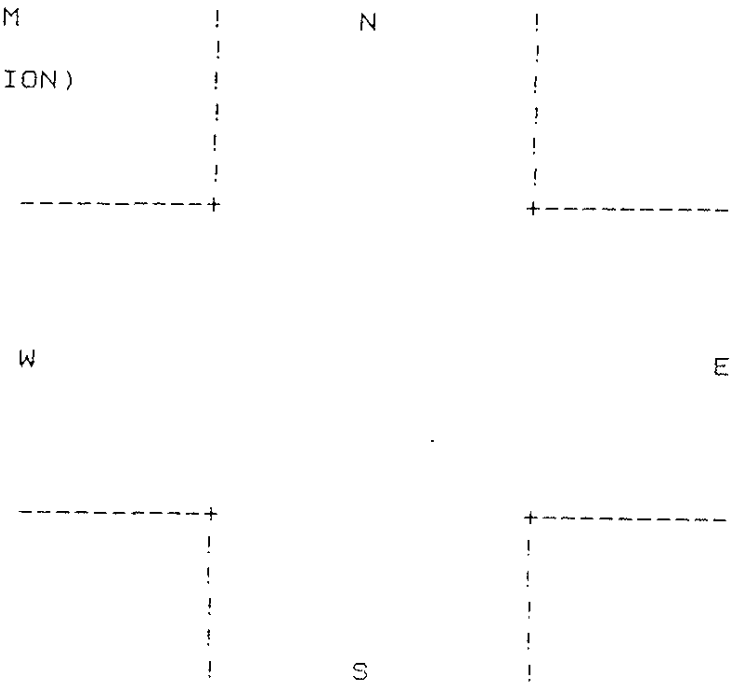
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9.5
E-W	51	8.5

CYCLE LENGTH = 180

LOST TIME = .100

G
Y
R

96-011

~~98-027~~

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	364	2303	315	0	0	0	0	0	0	364	2303	315
E	202010	387	430	104	0	0	0	0	0	0	387	430	104
S	203010	412	1069	460	0	0	0	0	0	0	412	1069	460
W	202010	174	553	181	0	0	0	0	0	0	174	553	181

LEG	# LANES	CRIT. MOVE (L L S T R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2303	5340	0.431	0.016	0.447	2387
E	2	2 0 0 0 0 0	387	3015	0.128	0.011	0.139	419
S	2	2 0 0 0 0 0	412	3015	0.137	0.011	0.148	446
W	2	0 0 2 0 0 0	553	3560	0.155	0.011	0.166	591
				LT =	0.100			
TOTALS	9		3655		0.951			3843

1 - 0.951 = 0.049 / 9 = 0.005

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .951 LEVEL OF SERVICE = E

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY CHYNOWETH

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 1/31/95

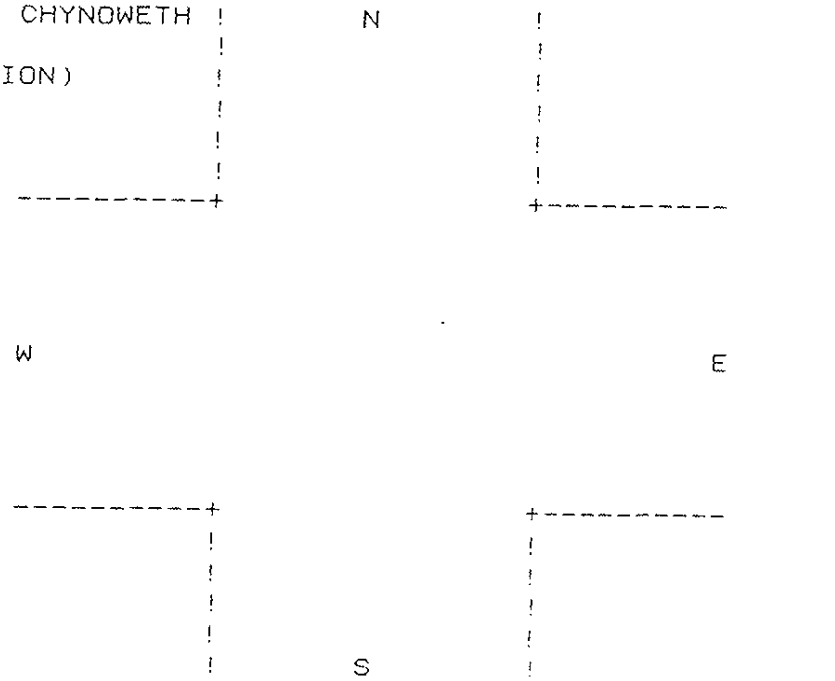
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094

G
Y
R

96-011

~~98-027~~

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	120	1362	59	0	0	0	0	0	0	120	1362	59
E	202010	233	66	88	0	0	0	0	0	0	233	66	88
S	203010	397	2874	167	0	0	0	0	0	0	397	2874	167
W	102010	170	77	536	0	0	0	0	0	0	170	77	536

LEG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2	0	0	0	0	120	3015	0.040	0.052	0.092	277
E	2	0	0	2	0	0	66	3560	0.019	0.052	0.071	253
S	3	0	0	3	0	0	2874	5340	0.538	0.078	0.616	3289
W	1	1	0	0	0	0	170	1675	0.101	0.026	0.127	213
								LT =	0.094			
TOTALS	8						3230		0.792			4032

1 - 0.792 = 0.208 / 8 = 0.026

==========

V/C = TOTAL CRIT. VOL. /TOTAL CRIT. CAP. LEVEL OF SERVICE = D

A-93

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY CHYNOWETH

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 1/31/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LFG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094

96-011

~~98-027~~

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	222	2662	185	0	0	0	0	0	0	222	2662	185
E	202010	561	121	86	0	0	0	0	0	0	561	121	86
S	203010	475	1828	505	0	0	0	0	0	0	475	1828	505
W	102010	118	124	559	0	0	0	0	0	0	118	124	559

LEG	# LANES	CRIT. MOVE L S T	R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3	0 0 0	2662	5340	0.499	0.009	0.508	2713
E	2	2 0 0	0 0 0	561	3015	0.186	0.006	0.192	579
S	2	2 0 0	0 0 0	475	3015	0.158	0.006	0.164	494
W	2	0 0 2	0 0 0	124	3560	0.035	0.006	0.041	146
					LT =	0.094			
TALS	9			3822		0.972			3932

1 - 0.972 = 0.028 / 9 = 0.003

= TOTAL CRIT. VOL./TOTAL CRIT. CAP

A-94

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 1/19/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

```
                    N
                    !
                    !
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                    !
                    !
                    !
----------+         +----------
W                             E
----------+         +----------
          !         !
          !         !
          !         !
          !         !
          !         !
          S         !
```

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	103	9.5	
E-W	59	8.5	G
CYCLE LENGTH =	180		Y
LOST TIME =	.100		R

96-011

~~98-027~~

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	149	858	339	0	0	0	0	0	0	149	858	339
E	203010	99	355	227	0	0	0	0	0	0	99	355	227
S	203010	150	3100	29	0	0	0	0	0	0	150	3100	29
W	203010	572	217	107	0	0	0	0	0	0	572	217	107

LEG	# LANES	CRIT. MOVE (L S T L R R)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	149	3015	0.049	0.003	0.052	157
E	3	0 0 3 0 0 0	355	5340	0.066	0.004	0.070	374
S	3	0 0 3 0 0 0	3100	5340	0.581	0.004	0.585	3124
W	2	2 0 0 0 0 0	572	3015	0.190	0.003	0.193	582
				LT =	0.100			
TOTALS	%10		4176		0.986			4237

1 - 0.986 = 0.014 / %10 = 0.001

==========

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .986 LEVEL OF SERVICE = E

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LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 6/95

ANAL. DATE: 4/8/98

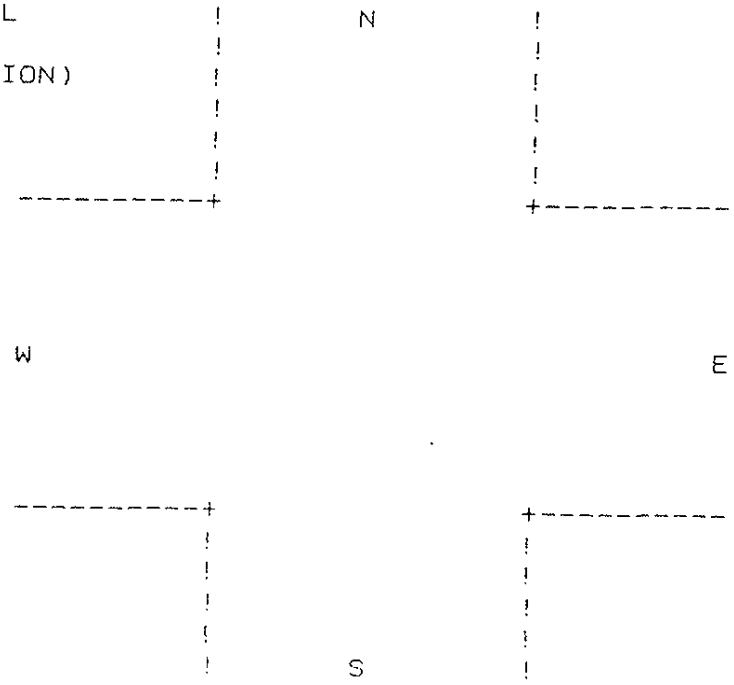
GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED



LEG	GREEN	YEL+RED
N-S	103	9.5
E-W	59	8.5

CYCLE LENGTH = 180

LOST TIME = 100

G
Y
R

96-011

98-027

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	730	2781	531	0	0	0	0	0	0	730	2781	531
E	203010	216	611	390	0	0	0	0	0	0	216	611	390
S	203010	306	1568	194	0	0	0	0	0	0	306	1568	194
W	203010	643	730	188	0	0	0	0	0	0	643	730	188

LEG	# LANES	CRIT. MOVE L S	T	R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0	3	0	0	0	2781	5340	0.521	-.015	0.506	2702
E	3	0 0	3	0	0	0	611	5340	0.114	-.015	0.099	529
S	2	2 0	0	0	0	0	306	3015	0.101	-.010	0.091	274
W	2	2 0	0	0	0	0	643	3015	0.213	-.010	0.203	612
								LT =	0.100			
TOTALS	%10						4341		1.049			4117

1 - 1.049 = -.049 / %10 = -.005

==========

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = 1.054 LEVEL OF SERVICE = F

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A-96

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 5/10/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

N

W E

S

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	134.5	9.5
E-W	33.5	4.5

CYCLE LENGTH = 182

LOST TIME = .077

G
Y
R

96 - 011

98 - 027

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	137	979	47	0	0	0	0	0	0	137	979	47
E	101010	70	57	308	0	0	0	0	0	0	70	57	308
S	103010	53	4032	34	0	0	0	0	0	0	53	4032	34
W	101010	73	68	160	0	0	0	0	0	0	73	68	160

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	137	1675	0.082	0.001	0.083	139
E	1	1 0 0 0 0 0	70	1675	0.042	0.001	0.043	72
S	3	0 0 3 0 0 0	4032	5340	0.755	0.003	0.758	4048
W	1	0 0 1 0 0 0	68	1780	0.038	0.001	0.039	69
				LT =	0.077			
TOTALS	6		4307		0.994			4328

1 - 0.994 = 0.006 / 6 = 0.001

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .995 LEVEL OF SERVICE = E

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 5/10/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	134.5	9.5	
E-W	33.5	4.5	G
CYCLE LENGTH =	182		Y
LOST TIME =	.077		R

96-011

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LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	397	2987	148	0	0	0	0	0	0	397	2987	148
E	101010	47	80	72	0	0	0	0	0	0	47	80	72
S	103010	154	1073	69	0	0	0	0	0	0	154	1073	69
W	101010	125	125	72	0	0	0	0	0	0	125	125	72

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	3135	7085	0.442	0.154	0.596	4223
E	1	0 0 1 0 0 0	80	1780	0.045	0.038	0.083	148
S	1	1 0 0 0 0 0	154	1675	0.092	0.038	0.130	218
W	1	1 0 0 0 0 0	125	1675	0.075	0.038	0.113	189
				LT =	0.077			
TOTALS	7		3494		0.731			4778

1 - 0.731 = 0.269 / 7 = 0.038

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .731 LEVEL OF SERVICE = C

A-98

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 11/15/94

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	93.5	9.5
E-W	68.5	8.5

G

CYCLE LENGTH = 180

Y

96-011

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LOST TIME = .100

R

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	103010	80	831	73	0	0	0	0	0	0	80	831	73
E	202010	546	289	355	0	0	0	0	0	0	546	289	355
S	203010	42	2892	740	0	0	0	0	0	0	42	2892	740
W	102010	351	218	39	0	0	0	0	0	0	351	218	39

LEG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0	0	0	0	0	80	1675	0.048	0.003	0.051	85
E	2	0 0	2	0	0	0	289	3560	0.081	0.005	0.086	306
S	3	0 0	3	0	0	0	2892	5340	0.542	0.008	0.550	2937
W	1	1 0	0	0	0	0	351	1675	0.210	0.003	0.213	357
								LT =	0.100			
TOTALS	7						3612		0.981			3685

1 - 0.981 = 0.019 / 7 = 0.003

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .98 LEVEL OF SERVICE = E

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 6/95

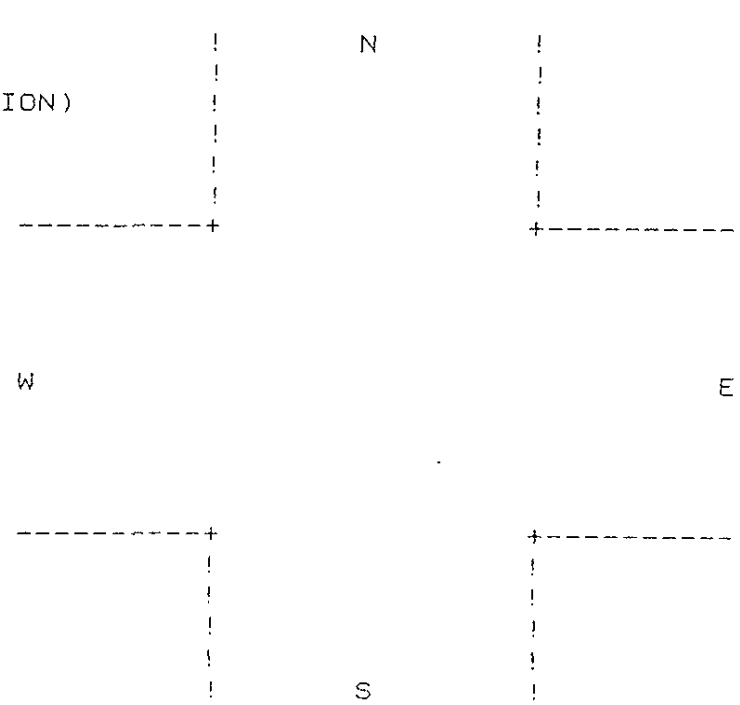
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
S	93.5	9.5
W	68.5	8.5

CYCLE LENGTH = 180

LOST TIME = .100

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LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	314	2216	348	0	0	0	0	0	0	314	2216	348
E	202010	797	304	170	0	0	0	0	0	0	797	304	170
S	203010	55	1121	581	0	0	0	0	0	0	55	1121	581
W	102010	151	281	46	0	0	0	0	0	0	151	281	46

LEG	# LANES	CRIT. MOVE (L S T / L S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2216	5340	0.415	0.041	0.456	2435
E	2	2 0 0 0 0 0	797	3015	0.264	0.028	0.292	880
S	2	2 0 0 0 0 0	55	3015	0.018	0.028	0.046	139
W	2	0 0 2 0 0 0	281	3560	0.079	0.028	0.107	381
				LT =	0.100			
TOTALS	9		3349		0.876			3835

1 - 0.876 = 0.124 / 9 = 0.014

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .873 LEVEL OF SERVICE = D

A-100

Add to Appendix J:

Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

File No. NFA-3695-05
May 11, 1998

Arcadia Development Co.
P.O. Box 5368
San Jose, California 95150

Attention: Mr. Pete Merrill

Subject: **RESPONSE TO SCVWD COMMENTS**
Northeast Corner of Highway 85 and Almaden Expressway
San Jose, California

Dear Mr. Merrill:

Earth Systems Consultants Northern California (ESCNC) has prepared the following response to comments from the Santa Clara Valley Water District (SCVWD) regarding reuse or disposal of soil from the the subject site.

Concentrations of chlorinated pesticides and lead detected in soil samples collected from the site in December 1996 fall below the EPA Preliminary Remedial Goals (PRG's) for residential soil. The reported concentrations also fall below the Total Threshold Limit Concentration (TTLC) and are less than ten times the Soluble Threshold Limit Concentration (STLC) values used for Hazwaste Classification. Disposal and/or reuse of the soil with respect to these constituents therefore should not be an issue.

Reported concentrations of mercury were also less than the PRG and TTLC values. The detected levels of mercury in 13 of the 14 samples analyzed, as well as the average concentration of mercury across the site, were less than ten times the STLC.

Soil collected from a location near the north central portion of the site, designated A-1, was reported to contain a concentration of mercury greater than ten times the STLC value. ESCNC collected a sample from the vicinity of A-1 on April 30, 1998 and requested analysis for soluble mercury. Sparger Technology, Inc., a state certified analitical laboratory, detected a concentration of 0.0065 milliagrams per liter (mg/l) mercury in that sample (laboratory results are attached). This

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File No. NFA-3695-05
May 11, 1998

is below the STLC of mercury of 0.2 mg/l. Disposal and/or reuse of the soil from the site with respect to mercury should not be an issue.

We appreciate this opportunity to be of service. Should you have any questions or comments regarding this report, please contact this office at 510-353-0320.

Very truly yours,

EARTH SYSTEMS CONSULTANTS
Northern California

Nissa L. Nack, REA# 06102
Staff Geologist

Timothy Conroy
Project Geologist

NLN/TC:ah Ltr#6

Distribution: 1 to Addressee
3 to Mindigo & Associates

Attachments: Laboratory Results

96-011

~~98-029~~

A-102

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project #:	NFE-3695-04	Project Name:	Almaden & 85
Matrix:	Leachate	Dilution:	1: 1

LAB ID	Client ID	Concentration	Reporting Limit	Units
9454-001A	A1B	0.0065	0.0010	mg/l

ppm= parts per million = mg/l = milligrams per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

96 - 011

Lucrora Abellanosa
L. Abellanosa, Inorganics Supervisor

May 8, 1998
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 1614)

98-029

STLCHg001

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

A-103

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury
Method Blank

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project #:	NFE-3695-04	Project Name:	Almaden & 85
Client ID:	Method Blank	LAB ID:	MB980507A
Matrix:	Leachate	Dilution:	1: 1

Name	Concentration	Reporting Limit	Units
Mercury (Hg)	ND	0.0010	mg/l

ppm= parts per million = mg/l = milligrams per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

96 - 011

~~98 - 027~~

Leonora Abellanosa

L. Abellanosa, Inorganics Supervisor

May 8, 1998

Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

(Certification No 1514)

Stlcmb

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

A-104

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury
LCS/LCSD Recoveries

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project ID:	NFE-3695-04	Project Name:	Almaden & 85
Client ID:	LCS/LCSD	LAB ID:	980507A
Matrix:	Leachate	Dilution:	

Units : (mg/l)

Element	Spike Conc.	LCS	LCS % Recovery	LCSD	LCSD % Recovery	% RSD
Mercury (Hg)	0.00500	0.00513	103%	0.00508	102%	1.0%

ppm= parts per million = mg/l = milligrams per liter

ND = Not Detected Compound(s) may be present at concentrations below the detection limit.

96 - 011

98-027

Lorrera Abellanosa
L. Abellanosa, Inorganics Supervisor

May 8, 1998
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 1514)

Stlcics

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

A-105

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury
MS/MSD Recoveries

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project ID:	NFE-3695-04	Project Name:	Almaden & 85
Client ID:	MS/MSD	LAB ID:	9454-001A
Matrix:	Leachate		

Units : (mg/l)

Element	Sample Conc.	Spike Conc.	MS	MS % Recovery	MSD	MSD % Recovery	% RSD
Mercury (Hg)	0.00650	0.00500	0.0111	92.0%	0.0112	94.0%	2.2%

ppm= parts per million = mg/l = milligram per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

96 - 011

~~98 - 027~~

Lorrera Abellanosa

L. Abellanosa, Inorganics Supervisor

May 8, 1998
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

(Certification No 1614)

Stlcms

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

A-106

CHAIN OF CUSTODY RECORD

9454

Project No. NFE-3695-04

Project Name Almaden & 85

Sampler (Signature) Nissa L. Nack

P.O. # NFE-3695-04

Lab Sparger

Turn Around Time Normal 5-day

No.	Date	Time	Sample Description	STLC Mercury							Remarks
A1-B	4/30/98	206	Soil - 4" Brass liner	✓							

98-027

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Relinquished By:	Date:	Time:	Received By:	Relinquished By:	Date:	Time:	Received by:
Nissa L. Nack	4/30/98	250	- for mail to UPS	- - >	5/1/98	10:10	[signature]
Relinquished By:	Date:	Time:	Received By:	Relinquished By:	Date:	Time:	Received By:

Remarks:

Report To: Nissa L. Nack

Earth Systems Consultants
Northern California
47853 Warm Springs Blvd.
Fremont, CA. 94539-7400
Phone (510) 353-0320
Fax (510) 353-0344

A107

Add as Appendix M:

ALMADEN/CHYNOWETH DEVELOPMENT

Hydrology Study

Prepared for:
Arcadia Development Company

May 28, 1998

98-027

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS
100 N. Winchester Blvd., #200
Santa Clara, CA 95050
(408) 246-4848
FAX: 408-246-5624

ALMADEN/CHYNOWETH DEVELOPMENT

ARCADIA DEVELOPMENT COMPANY

HYDROLOGY STUDY

Introduction

The Almaden/Chynoweth project site is a 43.5 acre parcel in the City of San Jose, proposed for commercial and high density residential development. The proposed commercial development would include approximately 30.4 acres of the site. The residential development would include approximately 8.8 acres of the parcel. The site is located in the northeasterly quadrant of Almaden Expressway and State Route 85. Chynoweth Avenue forms a portion of the site's northwesterly boundary, and the Guadalupe River forms the northeasterly and easterly boundaries. The project site is shown in Figure 1.

Existing Flood Conditions

The effective City of San Jose FIRM (August 2, 1982) shows the project site located within Zone D. An area of possible but unknown flood risk. Most of the areas outside the 100-year flood plain are shown as Zone D due to the potential food risk due to levee failures. The current flood maps were prepared prior to the current FEMA levee policy and did not consider levee failures.

The existing flood insurance rate map flood plain for the project site is shown in Figure 2. The majority of the site is located above the estimated 100-year flood elevation for the Guadalupe River. A portion of the project site along the Guadalupe River extends within the stream channel and is within the Zone A, 100-year flood plain. The project site slopes toward the Guadalupe River. The average slope on the site is approximately 0.4 percent. The area of the site outside the Guadalupe River stream channel would not be subject to 100-year flooding for FEMA purposes.

The project site drains to the Guadalupe River. The Guadalupe River is a generally natural channel which has been partially improved for flood control purposes. The SCVWD and the Corps of Engineers (COE) are in the process of completing the flood control project for the Lower Guadalupe River which would provide 100-year design capacity from San Francisco Bay to Highway 280 in downtown San Jose. The project is currently scheduled for completion in 2000.

The existing Guadalupe River channel upstream of Highway 280 does not have 100-year design capacity. The area near West Virginia Street has flooded several times in the past 20 years, including 1995 and 1998. The estimated channel capacity in the channel reach near West Virginia Street is close to the estimated 10-year flood flow rate. Based on the flood insurance study information, the 100-year flood would overflow upstream of Capitol Expressway and Branham Lane and overflows would occur from lower Ross Creek and Canoas Creek due, in

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part, to high water levels in the Guadalupe River. The SCVWD has proposed a flood control project for the Upper Guadalupe River to provide 100-year capacity. The projected time frame for the project is approximately 20 years.

Hydrology Methodology

The increase in impervious surfaces associated with project development would generally cause an increase in storm water runoff. The SCVWD has expressed concern that increased runoff from development on the project site may affect the existing flood conditions for flood plain areas downstream on the Guadalupe River.

The SCVWD's hydrology model was used to evaluate the potential impact of the proposed project development on the hydrology for the Guadalupe River. The SCVWD HEC-1 model includes the entire upper Guadalupe River. The project site is located in Subarea G, the local area adjacent to the Guadalupe River between Guadalupe Creek and Ross Creek. In the SCVWD design model, Subbasin G is included as an urbanized area. The SCVWD hydrology model develops separate runoff hydrographs for the pervious and impervious portions of each subarea and adds these hydrographs for the total subarea runoff hydrograph. For Subarea G, the areas were assumed to be developed with 53% impervious area and 47% pervious area.

The existing HEC-1 model uses a time interval of 30 minutes for calculation, which is sufficient for large watersheds with subareas of several square miles which have times of concentration greater than 90 minutes. For the smaller drainage area for the project site, the typical time of concentration is approximately 20 minutes, or less, and a smaller time interval was required. The project site runoff was modeled separately using a time interval of 5 minutes. The 30-minute rainfall pattern was divided into 5 minute intervals. Within the 30 minute interval of maximum rainfall, the rainfall was distributed to match the ratios of the 5- and 10- minute rainfall to the 30-minute rainfall from the San Jose Intensity-Duration-Frequency curve for a 100-year recurrence interval.

The subarea 5-minute interval model was calibrated for another project for an unurbanized condition to match the SCVWD 100-year peak flow regional regression equation. The calibration model assumed a Clark's unit hydrograph and SCS curve number loss rate function. The unit hydrograph assumed a storage coefficient based on a ratio of $R/(T_c+R)$ of 0.5 for the unurbanized condition. The calibrated peak flow rate was within 4 percent of the regression equation estimate for the 100-year flood.

For urbanized watersheds, the SCVWD model routes the runoff hydrograph through the storm drain system using the HEC-1 storage-discharge routing technique. The runoff hydrographs from the project site were not routed through storm drains systems. The site runoff was assumed to drain directly to the creek without routing through a storm drain storage relationship. Runoff which does not enter the storm drain system would flow overland to the channel with little or no ponding, unless the street grades are designed to promote ponding in the streets.

The existing and developed conditions runoff hydrographs for the project site were estimated using the SCS Curve Number (CN) methodology. The CN methodology includes model parameters to consider soil types and ground cover complexes which are not considered in the SCVWD procedure. The major difference in the procedures is the calculated loss rates for pervious areas. The loss rate represents the portion of rainfall which is assumed to infiltrate into the soil and does not runoff as surface flow. The SCVWD procedure assumes a uniform loss rate throughout the watershed and does not consider local variations in soil types and vegetation. The existing conditions on the project site are generally flat agricultural fields with deep clay-loam type soils and grass or crop type vegetation. This means that the potential losses to infiltration would be higher than for other areas with shallow soils and more clay type soils.

For the CN procedure, impervious areas were assumed to have a CN of 98 (maximum runoff). The crop land open space areas were assumed to have a CN of 85 (for Antecedent Moisture Condition II (AMC II). Lawn and open space areas after development were assumed to have a CN of 74 (AMC II). The AMC values were previously calibrated for the 10- and 100-year flood conditions to match the SCVWD design values for other natural watersheds. The calibrated AMC values were AMC II for the 10-year flood event, and AMC II½ for the 100-year flood. AMC II½ is half way between AMC II and AMC III. Based on the CN procedure, AMC II implies 1.4 to 2.1 inches of rainfall in the previous 5 days. AMC II implies more than 2.1 inches of rainfall in the previous 5 days. The 24 hour rainfall and storm pattern from the SCVWD procedure were used for the CN procedure.

Site Runoff

The existing condition and development condition runoff was estimated for the project site using the CN procedure. The local drainage area is 43.5 acres.

Table 1
Local Drainage Area Peak Flow Rates
CN Hydrology Procedure

Recurrence Interval	Existing Conditions Peak Flow (cfs)	Developed Conditions Peak Flow (cfs)
10 Year Storm	19	37
100 Year Storm	29	56

Based on the CN hydrology procedure, the 10-year peak runoff was estimated to be 19 cfs for existing conditions, and 37 cfs for development conditions, an increase of 18 cfs, or 95 percent. The 100-year peak runoff was estimated to be 29 cfs for existing conditions, and 56 cfs for development conditions, an increase of 27 cfs, or 93 percent. The 10- and 100-year runoff hydrographs are show in Figures 3 and 4.

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The increased peak runoff from the project site are due to both the increased impervious area on the site and the improved storm drain collection system on the site after development. For existing conditions, runoff would flow overland to the existing storm drain, or overland directly to the river. After development, the improved storm drain system would convey the runoff to the river faster than the existing overland flow. Since the runoff would reach the river in a shorter period of time, the flow rate would be higher after development even if there were no change in impervious area.

Guadalupe River Flow Rates

Because the SCVWD has expressed concern that increased runoff from the project site may affect the flood flows and flood elevations in the Guadalupe River. The existing and developed condition runoff hydrographs were each added to the SCVWD design hydrology model for the 10- and 100-year flood events to evaluate the potential increases in the Guadalupe River. The results of the model for the Guadalupe River upstream of Ross Creek are shown below for existing conditions and developed conditions.

Table 2
Guadalupe River Peak Flow Rates
SCVWD Design Hydrology Procedure

Recurrence Interval	Existing Conditions Peak Flow (cfs)	Developed Conditions Peak Flow (cfs)
10 Year Storm	5229	5228
100 Year Storm	11775	11773

Based on the flood hydrographs from the SCVWD design hydrology for the 10- and 100-year flood events, the proposed development would have no impact on the peak flow in the Guadalupe River at the site. This is due to the difference in timing between the local site drainage and the flood flows in the Guadalupe River.

The peak runoff from the site occurs approximately 30 minutes after the peak rainfall for existing conditions, and approximately 15 minutes for the project conditions. The peak flow in the Guadalupe River occurs approximately 90 minutes after the peak rainfall. Due to the difference in timing, the peak runoff from the site enters the river before the peak flow in the Guadalupe River. Based on the rainfall pattern used in the SCVWD design hydrology, at the time of the peak flow in the Guadalupe River, the runoff from the site would be less after development than for existing conditions. This rainfall pattern was also used for the COE Guadalupe River Project, and the FEMA Flood Insurance Study.

The time of the Guadalupe River peak flow is shown on the 10- and 100-year runoff hydrographs from the site. For both events, the peak in the river occurs in the late portion of the hydrograph

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when the development condition hydrograph is at or below the existing condition hydrograph. The site contribution to the Guadalupe River peak is approximately 2 cfs lower after development. However, since the 100-year peak flow rate is approximately 11,800 cfs, the potential change would not be significant.

The SCVWD design hydrology model was also used to route the additional flow from the site development downstream to the area near West Virginia Street 280 where the Guadalupe River has flooded several times in recent years. This analysis was included to evaluate whether the increased runoff from the project site before the peak flow from the upper Guadalupe River may add to other local inflows from other areas downstream of the site to increase the peak flows in the channel.

Routing the Guadalupe River hydrograph downstream with the development condition runoff hydrograph from the site shows no change in the flood peak downstream. Therefore the increased runoff from the site does not add to other local inflows downstream of the site to increase the peak flow in the river. There is no increase in the estimated Guadalupe River flows for either the 10-year or the 100-year flood events.

Storm Drainage

The SCVWD has raised the concern that the existing 27-inch and 30-inch storm drains may not be adequate for the development. Based on the existing pipe slopes, the storm drains have a combined capacity of approximately 40 cfs. The existing 27-inch storm drain has an estimated capacity of 20 cfs. The 36-inch outfall for the 30-inch storm drain system has a capacity of 47 cfs, of which approximately 27 cfs may be used by the 30-inch storm drain which serves other development areas south of Route 85. This leaves approximately 20 cfs in the 36-inch outfall available for the project site. The two storm drain systems have a combined available capacity of approximately 40 cfs. The estimated 10-year runoff is 37 cfs. Therefore, the existing storm drains should be adequate for the proposed development. However, the contribution and design flow rates in each storm drain will depend on the final project layout and grading and will require a detailed evaluation of the individual storm drains.

The runoff hydrographs for the project site assumed that the time of concentration would be the same for both the 10- and 100-year hydrographs, and that no significant ponding would occur during the 100-year event. This assumes that the storm drain excess during the 100-year flood event could flow overland along the streets to the Guadalupe River. Based on the estimated 100-year runoff hydrograph, if the storm drain excess during the 100-year flood were ponded on the site, the ponded volume could drain through the storm drain system to the Guadalupe River before the peak flow on the Guadalupe River. Therefore, even if the storm drain excess ponds on the site, the peak flow in the Guadalupe River would not be increased.

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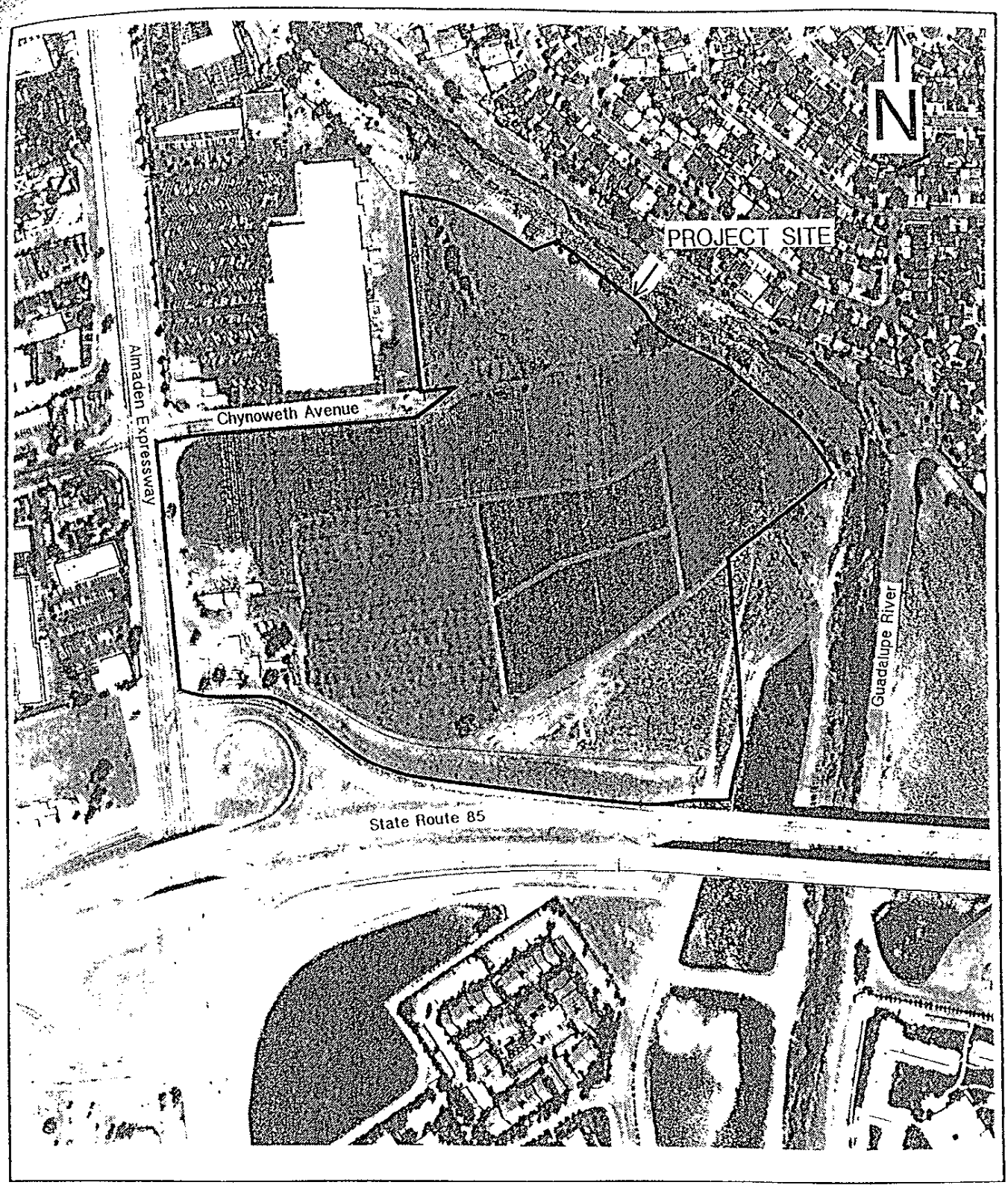

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Figure 1. Aerial Photograph
July, 1996

Figure 1

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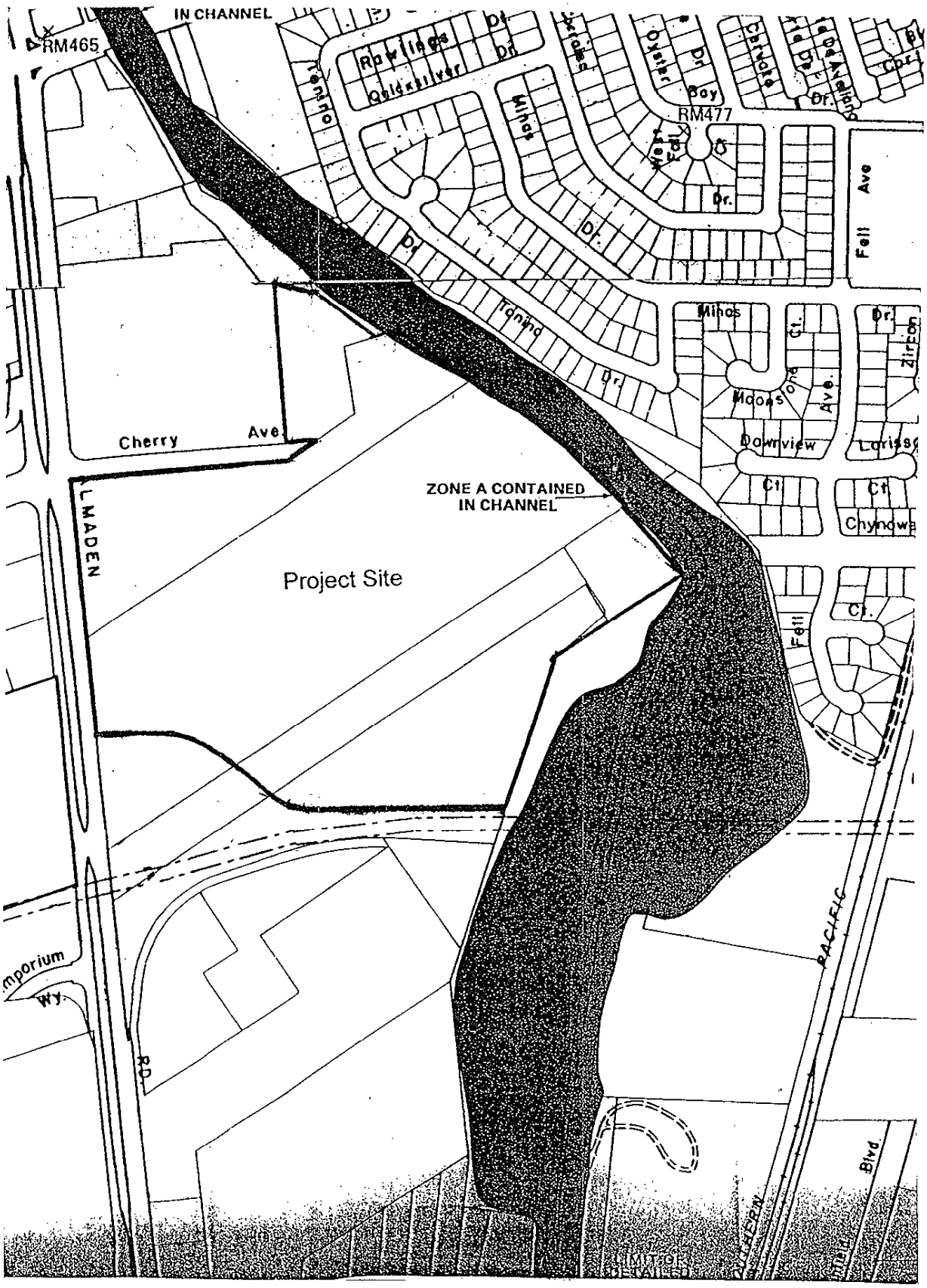

Figure 2. FEMA 100-yr Floodplain

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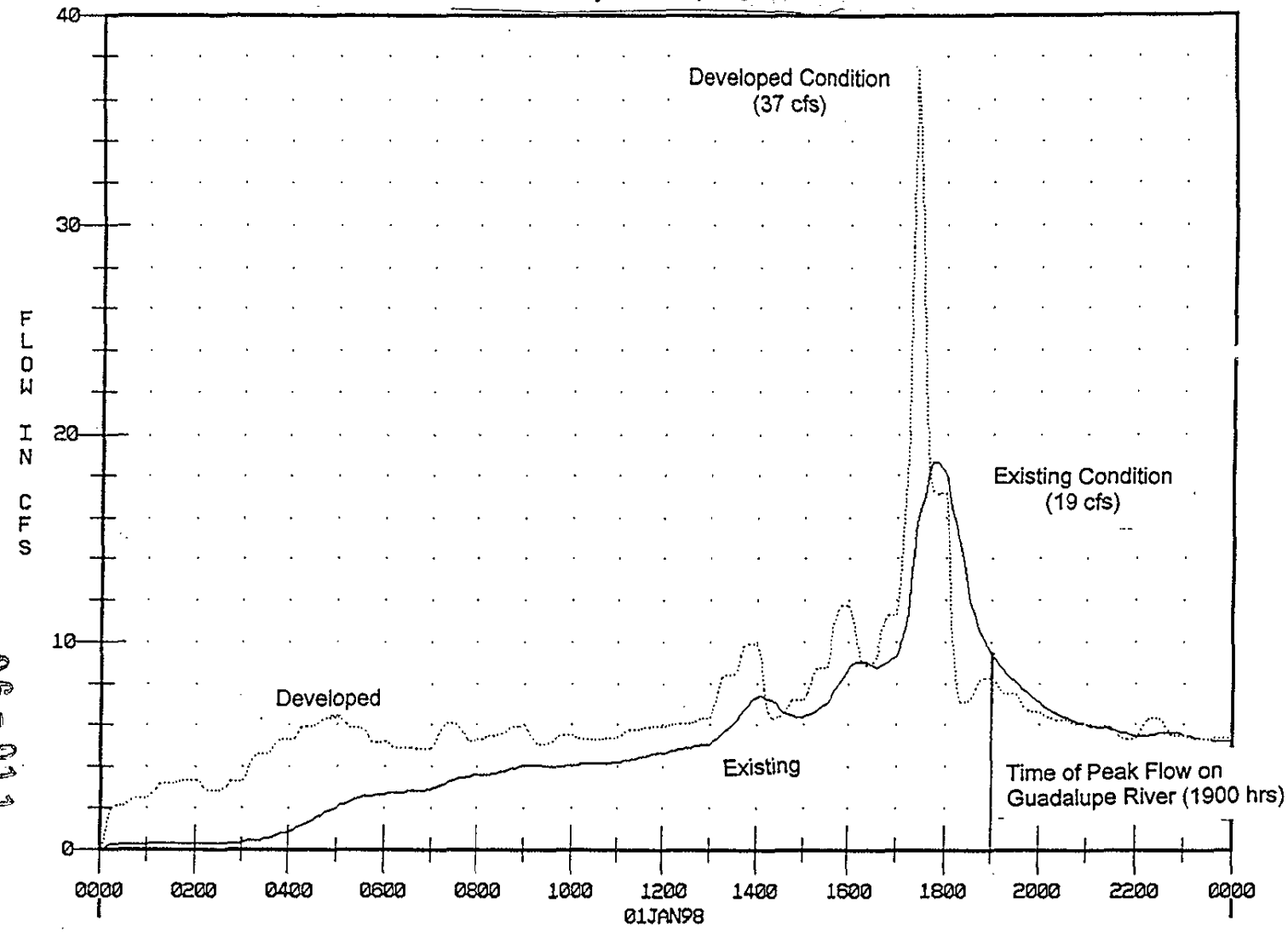
Arcadia Development- Existing and Developed Condition
10-Year Project Site Hydrographs



COMB_E EXISTING FLOW
COMB_P PROJECT FLOW

Figure 3. Arcadia Development- Existing and Developed Condition 10-Year Project Site Hydrographs

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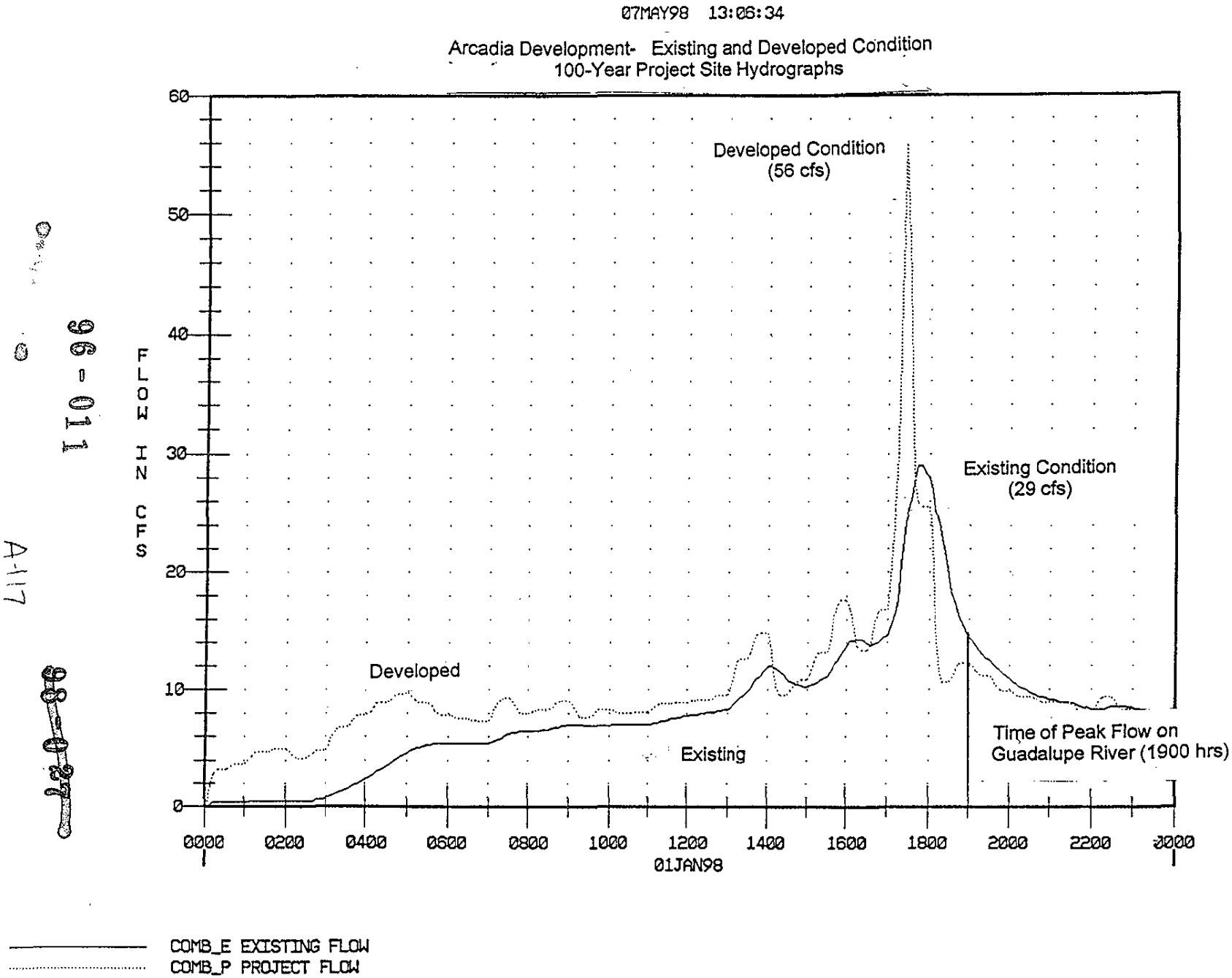

Figure 4. Arcadia Development- Existing and Developed Condition 100-Year Project Site Hydrographs

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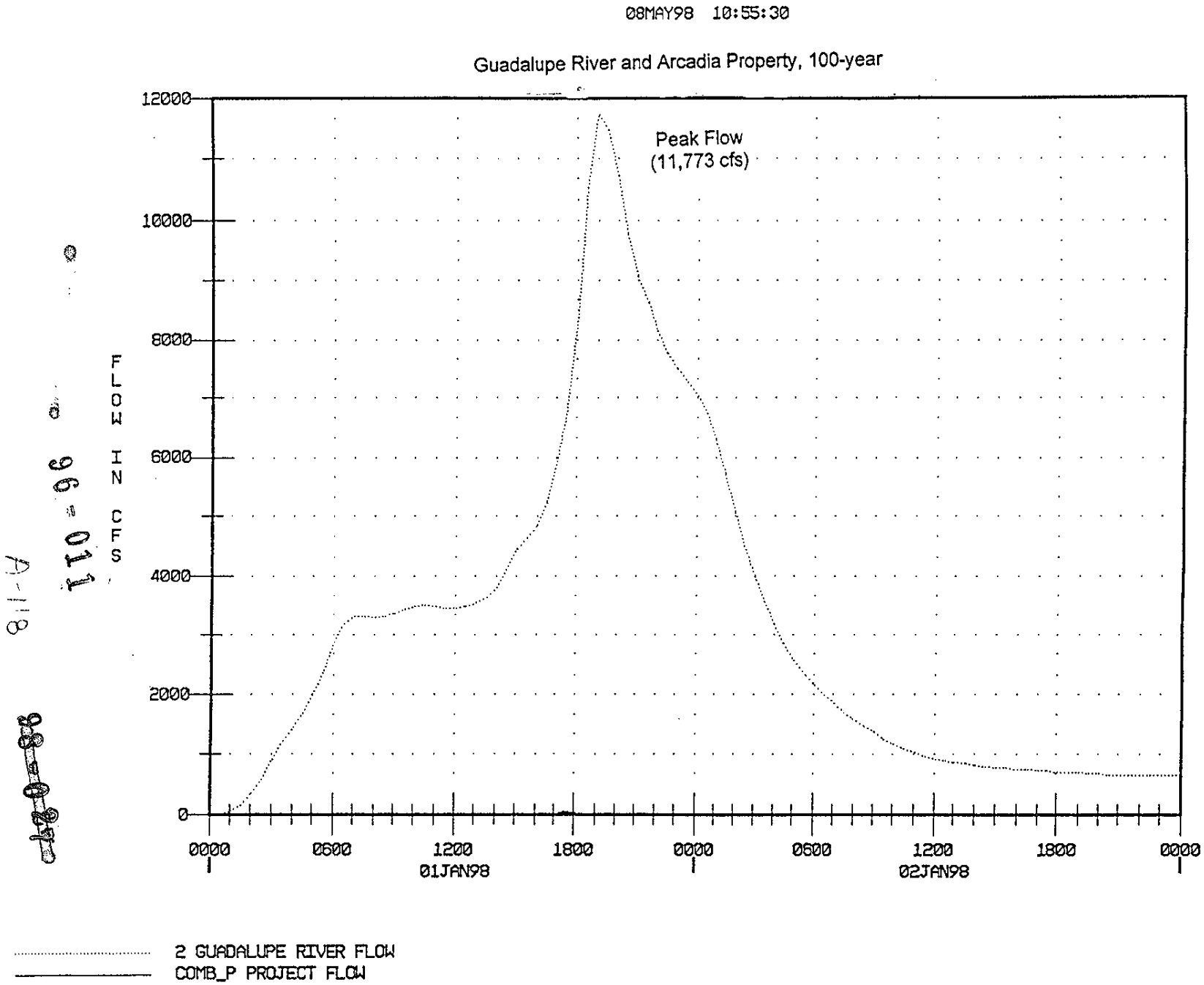

Figure 5. Guadalupe River and Arcadia Property, 100 Year Storm Event

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PUBLIC REVIEW PERIOD (TO BE FILLED IN BY LEAD AGENCY)

STARTING DATE MARCH 6, 1998 ENDING DATE APRIL 20, 1998

SIGNATURE [signature] DATE MARCH 4, 1998

Lead Agency: City of San Jose	
Consulting Firm:	Mindigo & Associates, Inc.
Address:	1984 The Alameda
City/State/Zip:	San José, CA 95126
Contact:	Richard Mindigo
Phone:	(408) 554-6531

Applicant:	Arcadia Development Company
Address:	PO Box 5368
City/State/Zip:	San Jose, CA 95150
Phone:	(408) 371-0500

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Date Review Starts:
Date to Agencies:
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Clearance Date:
Notes: 96-011 ~~98-027~~

PDC96-11/NOC/JM/ARCADIA/207-02

Final Amendment

to the

DRAFT

ENVIRONMENTAL IMPACT REPORT

Almaden / Chynoweth Project

PDC 96-02-011

Application by

Arcadia Development Company

June 25, 1998 ~~98-027~~

96-011

CITY OF SAN JOSE

RESOLUTION NO. 98-34

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF SAN JOSE FINDING A FINAL ENVIRONMENTAL IMPACT REPORT IS COMPLETE FOR A PROJECT DESCRIBED IN APPLICATION NO. **PDC 96-02-011** FINDING THAT SAID REPORT CONFORMS TO THE REQUIREMENTS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT.

BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF SAN JOSE:

WHEREAS, pursuant to TITLE 21 of the San Jose Code, **ARCADIA DEVELOPMENT COMPANY** hereinafter referred to as "Applicant", on **February 29, 1996** filed an application for which an Environmental Impact Report (hereinafter called "EIR") was required on the proposed **Planned Development Rezoning** No. **PDC 96-02-011** concerning that certain real property hereinafter referred to as "subject property", described in Exhibit "A" attached hereto and made a part hereof by reference as though fully set forth herein; and

WHEREAS, the Director of Planning, pursuant to and in accordance with said Article has prepared and filed with this Commission a final EIR, File No. **PDC 96-02-011**, relating to said subject property; and

WHEREAS, pursuant to and in accordance with said Title 21, the Director of Planning did send a copy of said draft report to each public agency having jurisdiction by law of said proposed project, advising such agencies to review and submit written comments, if any, to this Commission in the time and manner specified in said Title 21; and

WHEREAS, pursuant to and in accordance with said Title 21, this Commission conducted a hearing on said final report, notice of which was duly given; and

WHEREAS, at said hearing, this Commission gave all persons full opportunity to be heard and to present evidence and testimony respecting said final report; and

98-027

96-011

NOW, THEREFORE:

SECTION 1. This Commission hereby finds, determines and declares the final E.I.R. for said project is complete and conforms to the requirements of the California Environmental Quality Act and represents the independent judgment of the City.

SECTION 2. Copies of the final E.I.R. shall be transmitted by the Director of Planning to the Applicant and to the decision-making body.

ADOPTED and issued this 24th day of June, 1998, by the following vote:

AYES: CHUN HOO, GARCIA, GRAYSON, RESS, WILLIAMS

NOES: NONE

ABSENT: NONE

Brian K Crozier

Chairperson

ATTEST:

James R. Derryberry, Secretary

Susan Walton

Deputy

~~96-087~~

ARCADRES.PC/JAM/ARCADIA

96-011

FINAL

ENVIRONMENTAL IMPACT REPORT

Almaden / Chynoweth Project

PDC 96-02-011

Technical Appendix

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June 25, 1998

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CITY OF SAN JOSE

ALMADEN/CHYNOWETH PROJECT

DRAFT ENVIRONMENTAL IMPACT REPORT
CONSULTANTS' REPORTS

A copy of the following consultants' reports and accessory information, which were prepared for the Almaden/Chynoweth Project, is included in this Technical Appendix, a separate document. In accordance with the State CEQA Guidelines, these reports are incorporated by reference and not reproduced in the body of the EIR in order to reduce the size and number of pages.

APPENDIX

A **Soil Engineering Study, Commercial Development, Almaden Expressway at Highway 85, San Jose, California,** Earth Systems Consultants Northern California, July 10, 1996

and

Soil Engineering Study, Proposed Multi-Family Residential Development, Almaden Expressway at Highway 85, San Jose, California, Earth Systems Consultants Northern California, July 22, 1996

B **Biotic Survey, 42.5-Acre Arcadia Property, Almaden Expressway, San Jose,** H.T. Harvey & Associates, August 7, 1995

and

Biological Assessment Update, 42.5-Acre Arcadia Property, Almaden Expressway, San Jose, H.T. Harvey & Associates, November 15, 1996

and

Arcadia Burrowing Owl Survey, H.T. Harvey & Associates, January 27, 1998

and

Burrowing Owl Response Letter, H.T. Harvey & Associates, May 28, 1998

and

Prohibited Landscape Plants on SCVWD Creeks List, Santa Clara Valley Water District

C **Tree Survey, Lands of Arcadia,** H.T. Harvey & Associates, October 14, 1997

D **Energy Conservation Measures**

E **Report of Findings of an Archaeological Field Inspection of the Arcadia Property located at Almaden Expressway and Highway 85, San Jose, Santa Clara County, California,** Holman & Associates, July 17, 1996

and

Subsurface Testing for Archaeological Resources at the Arcadia Development Project Area, Highway 85 and Almaden Expressway, San Jose, California, Holman & Associates, August, 1997

F **Historical and Architectural Evaluation for the Arcadia Property, 14520, 14540 Almaden Expressway, City of San Jose, County of Santa Clara,** Archives & Architecture, July 17, 1996

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APPENDIX

G **Traffic Analysis Report, Almaden-Chynoweth, Commercial Retail and Residential, City of San Jose**, Pang Engineers, Inc., October 23, 1996

and

Freeway Segments/Cumulative Traffic Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., September 15, 1997

and

Updated Approved Trips Inventory Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., April 9, 1998

H **Noise Assessment Study for the Proposed Commercial/Residential Mixed-Use Development, Almaden Expressway and Highway 85, San Jose**, Edward L. Pack Associates, Inc., July 30, 1996

and

Noise Assessment Study of the Proposed Continuation of Chynoweth Avenue Between Winfield Boulevard and Almaden Expressway, San Jose, Edward L. Pack Associates, Inc., November 20, 1997

I **Air Quality Impact and Mitigation Study, Almaden-Chynoweth Development Project, San Jose, CA**, Environmental Consulting Services, July 30, 1997

J **Phase I Environmental Site Assessment, Arcadia Development, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California**, Earth Systems Consultants Northern California, August 13, 1996

and

Addendum to Phase I Environmental Site Assessment, Northeast Corner Highway 85 & Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, September 19, 1997

and

Environmental Concerns Summary Letter Report, Northeast Corner of Highway 85 & Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, November 14, 1996

and

Phase II Environmental Site Assessment, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, January 10, 1997

and

Response to SCVWD Comments, Northeast Corner of Highway 85 and Almaden Expressway, San Jose, California, Earth Systems Consultants Northern California, May 11, 1998

K **Notice of Preparation Response Letters**

L (Separate) **Level of Service Calculations, Traffic Analysis Report, Almaden-Chynoweth, Commercial Retail and Residential, City of San Jose**, Pang Engineers, Inc., October 23, 1996

and

Level of Service Calculations, Freeway Segments/Cumulative Traffic Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., September 15, 1997

APPENDIX	
M	**Hydrology Study, Almaden/Chynoweth Development**, Schaaf & Wheeler, May 28, 1998
N (Separate)	**Hydrology Study, Almaden/Chynoweth Development, Technical Appendix**, Schaaf & Wheeler, May 28, 1998

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APPENDIX A

SOIL ENGINEERING STUDIES

96-011

SOIL ENGINEERING STUDY

Commercial Development
Almaden Expessway at Highway 85
San Jose, California

JULY 1996

Prepared for

Arcadia Development Company
Campbell, California 95008

Prepared by

96-011

Earth Systems Consultants
Northern California
47853 Warm Springs Boulevard
Fremont, California 94539-7400

~~98-027~~

Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

File No. NFS-3695-01
July 10, 1996

Arcadia Development Company
1500 East Hamilton Avenue, Suite 212
Campbell, California

Attention: Mr. Pete Merrill

Subject: Commercial Development on 30± Acres
Almaden Expressway at Highway 85
San Jose, California
SOIL ENGINEERING STUDY

Dear Mr. Merrill:

In response to your authorization, Earth Systems Consultants Northern California has completed a soil engineering study for the proposed 30± acre commercial development located in the northeast quadrant of the intersection of Almaden Expressway and Highway 85. It is concluded that the development is feasible from a geotechnical standpoint. The attached report presents the results of the field and laboratory studies, along with recommendations relating to the design and construction of the proposed development.

This study does not include an evaluation of soil corrosive characteristics and potential toxic or hazardous materials that may or may not be present at the site.

It has been our pleasure to be of service to you on this project. Should you have any questions regarding the attached report, please contact our office.

Very truly yours,

Earth Systems Consultants
Northern California

William R. Stevens, Senior Engineer
Geotechnical Engineer #2339

Carl W. Greenlee, Senior Project Manager
Geotechnical Engineer #355

WRS/CWG:sp Rep#73

Distribution: 6 to Addressee

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File No. NFS-3695-01
July 10, 1996

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1996 Cone Penetrometer Test Results
CPT - Cone Interpretation Graphs

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File No. NFS-3695-01
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APPENDIX B

1977 Boring Logs

APPENDIX C

1996 Laboratory Test Results

APPENDIX D

1977 Laboratory Test Results

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File No. NFS-3695-01
July 10, 1996

SOIL ENGINEERING STUDY

PROJECT: **Commercial Development on 30± Acres**
Almaden Expressway at Highway 85
San Jose, California

CLIENT: **Arcadia Development Company**
Campbell, California

INTRODUCTION

Purpose and Scope

This soil engineering study has been prepared to provide design criteria for the foundations of the proposed shopping center and to provide recommendations for site preparation, grading, drainage and paving. See Figure 2 for a detailed site plan of the proposed 30± acre commercial development. This report will provide recommendations to develop the southern 30 acre portion of an overall 45 acre parcel for a commercial development. A separate report will provide recommendations for the construction of a 15 acre residential development in the remainder of the parcel. This study included:

1. A visual site reconnaissance;
2. A review of a previous study performed for a portion of this site and other pertinent geological literature;
3. Subsurface exploration of the site with classification of the subsurface soils;
4. Laboratory testing of selected soil samples;
5. Engineering analyses based on the results of the field exploration, laboratory soil testing program and a review of the previous study;
6. Preparation of this report.

The information gathered during the procedures outlined above provided the data base for the engineering analyses. The conclusions derived from the engineering analyses served as a basis for the recommendations presented in this report. This study does not include an evaluation of

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potential toxic or hazardous materials that may or may not be present at the site nor the corrosivity of the site soils.

Site Information

The 30 acre site is located in the northeast quadrant of the intersection of Almaden Expressway and Highway 85 (see Figure 1) in San Jose, California. The lot is bounded by the existing and proposed Chynoweth Avenue to the north, Almaden Expressway to the west, Highway 85 to the south, the proposed Sanchez Drive and the Guadalupe River to the east. An existing commercial shopping center is north of the site. Much of the 30 acre commercial site, and the area northeast of the site, is currently being used to farm various types of row crops. The area is relatively flat, contains a few minor farm buildings and trees, with drainage to the north and east towards the Guadalupe River.

Chynoweth Avenue will be extended westerly to bisect the overall 45 acre site and the northern 1/3 portion north of Chynoweth Avenue will be developed into a residential subdivision. This report will provide geotechnical recommendations for the development of the 30 acre commercial site.

Project Description

The proposed development includes the construction of a single story, approximately 20-foot-tall, reinforced concrete tilt-up panel, commercial building with shallow foundations and on-grade concrete floors. The 215,000 square foot building will be located in the southern two-thirds of the 45 acre overall property. Chynoweth Avenue will be extended to the north to the Guadalupe River. A new road, Sanchez Drive, will extend southerly along the Guadalupe River from the Chynoweth Road extension and end at Highway 85. Other anticipated improvements include paved driveways and parking areas, depressed loading docks, sidewalks, and landscaping. The street level parking areas and driveways will accommodate both truck and automobile traffic. No

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basements or depressed parking garages are planned. Grading is expected to be minor, with cuts and fills to be less than about 3 feet in depth.

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PROCEDURES AND RESULTS

Geologic Literature Review

The most useful literature and maps pertinent to this study are listed in the BIBLIOGRAPHY. Most of the published information on this area is of a preliminary nature, based on reconnaissance mapping and air-photo interpretation.

The site is located near the base of the western foothills of the Hamilton-Diablo mountain range in the Coast Range Geomorphic Province of Central California. The bedrock in the site vicinity is a part of a northwest-trending belt of material that lies along the eastern side of the San Andreas fault system, which is located approximately 9 miles southwest of the site.

The regional geology has been mapped by Dibblee (1972). The referenced map shows the subject site to be underlain by Quaternary alluvium deposits described as "alluvium, gravel, sand and clay (Qa)."

Helley and Wesling (1990) mapped the site as Holocene alluvial fan deposits and they described these deposits as "brown medium dense, gravelly sand and clayey gravel that grades upward to sandy or silty clay (Qhaf)."

Dibblee mapped the inferred/concealed traces of Piercy fault, Silver Creek fault, Evergreen fault approximately 4, 6 and 7 miles to the northeast, respectively. The active trace of the Hayward fault is located nearly 8 miles to the northeast while the active trace of the Calaveras fault is located approximately 11 miles to the northeast of the subject site.

No known active faults cross the subject property and the site is not within a State-mandated Earthquake Fault Zone, formerly known as the Alquist-Priolo special Studies Zone (CDMG, 1982).

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Several damaging earthquakes of approximately Richter magnitude 6 or greater are known to have occurred in the Bay Area since 1836 (Steinbrugge, et al., 1987). Figures 3 and 4 show the estimated epicenter locations and magnitudes of these events. The 1836, 1858 and 1868 earthquakes were reportedly centered on the Hayward fault.

The likelihood of various magnitude earthquakes is discussed in the *Earthquake Planning Scenario* report (Steinbrugge, et al., 1987). Coopersmith (1982) estimated probabilities of 14% and 26% for a magnitude 7 event to occur in the next 50 years, assuming strain accumulation rates of 3mm/year and 6mm/year, respectively. Lindh (1983) estimated a 20% probability for a magnitude 6.5 to 7.0 earthquake to occur in the next 30 years.

Assessment of Seismic and Geologic Hazards

The site could be affected by an earthquake with its focus on any of the major faults in the Bay Area. At present, it is not possible to predict when or where movement will occur on these faults. It must be assumed, however, that movement along one or more of these faults will result in a moderate to major earthquake during the lifetime of any development on this site.

In the event of an earthquake, seismic risk to a structure will depend upon the distance of the structure from the epicenter and source fault, the characteristics of the earthquake, the geologic conditions, groundwater and soil conditions underlying the proposed development and its vicinity, and the nature of the construction.

Ground rupture (surface faulting) tends to occur along lines of previous faulting. Therefore, the potential for ground rupture to occur at the location of the proposed improvements is considered to be low.

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Seismically induced ground failures, such as liquefaction, lurch cracking, lateral spreading and local subsidence, are related to soil, groundwater and bedrock conditions. The occurrence of these phenomenon at the site are considered to be low.

Structural damage due to ground shaking is caused by the transmission of earthquake vibrations from the ground into a structure. The variables that determine the extent of damage are the characteristics of the underlying earth materials, the quality of materials and workmanship used in construction, the location and magnitude of the earthquake, and the duration and intensity of shaking. The most destructive effects of an earthquake are usually seen where the ground is unstable and the structures are poorly designed and constructed.

The proximity of the site to the active Hayward fault, and the subsurface conditions at the site suggest that the structures should be designed to resist ground shaking. A near-point, maximum probable event (approximate Richter magnitude 7.5) is likely to produce an effective ground acceleration of approximately 0.298g while a maximum credible event (approximate Richter magnitude 8.0) is likely to produce an effective ground acceleration of approximately 0.338g.

Preliminary estimates of ground response characteristics at this site indicate that high peak accelerations can be expected during a moderate to major earthquake on the Hayward, Evergreen, Silver Creek or Calaveras faults, or a major event on the San Andreas fault. Any of these events could cause strong ground shaking at this site. The duration of shaking and the frequency components of the vibrational waves will depend upon the magnitude and location of the earthquake.

Subsurface Exploration

Eight cone penetrometer tests were conducted on June 18, 1996, under the supervision of ESCNC personnel, four of which were located in the area of the commercial building pad. The soil was

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tested to depths between 23.0 and 40.0 feet below the existing ground surface at the approximate locations shown on Figure 2. The testing was accomplished with a truck-mounted CPT rig using a 10 ton capacity electronic cone. The friction, tip, friction ratio and pore pressure plots and the ensuing CPT interpretations for these soundings are presented in Appendix A.

The CPT is an electronic instrument that is pushed through the soil at a constant rate of approximately 3 feet per minute. The electronic cone is attached to the bottom of steel drill rods and the instrument cable goes up though the drill steel and to a computer. The electronic cone is capable of recording the side friction and tip resistance on the cone from the soil as it is being pushed through the soil. The electronic cone also measures pore pressure and temperature. The measured tip resistance and sleeve friction can be utilizes to determine the type of soil behavior characteristics of subsurface deposits. The data is interpreted to provide Standard Penetration Test (SPT) blowcounts, relative density and friction angle for cohesionless soil (sand and gravel) and the undrained shear strength and SPT blowcounts for cohesive soils (clay and silt). The cone sounding can be stopped at any depth to measure the pore pressure dissipation, which can provide an indication of the permeability of the soil and the water level at that depth.

A previous soil investigation report prepared by Applied Soil Mechanics, Inc. (ASMI) was performed on August 31, 1977 for the northern half of the combined residential/commercial site. This investigation involved drilling 12 borings, 6 of which were located in the northeastern corner of the commercial portion of the site. The borings were drilled to depths between 10 and 30 feet below the existing ground surface at the approximate locations shown on Figure 2. All drilling was accomplished with a truck-mounted drill rig, using 6-inch diameter continuous flight augers. As the borings were advanced, relatively undisturbed samples were obtained at various depths below the ground surface by forcing a 3-inch diameter (O.D.) split tube sampler into the undisturbed soil mass by means of a standard driving hammer. These samples were sealed and

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returned to the laboratory for testing. The boring logs from this investigation are provided in Appendix B.

Laboratory Testing

Laboratory tests were performed on selected samples of the near-surface soil materials encountered to determine some of the physical and engineering characteristics of the soils considered pertinent to the design of the proposed project. The tests performed were selected on the basis of the probable design requirements, the subsurface soil profile as determined by the CPT and a review of the laboratory testing performed in the 1977 ASMI study. The results of the 1996 laboratory tests are presented in the Appendix C. The results of the 1977 laboratory tests are presented in Appendix D. A short general description of the tests performed for this investigation follows.

Atterberg Limits (ASTM D424-93) - Atterberg Limits tests were conducted on selected soil samples to determine their liquid limit and plastic index values. This test provides water content values for the sample's liquid and plastic phases. The test aids in determining the expansive characteristics of the soil tested.

R-Value (ASTM D4318) - An R-value test was conducted on bulk soil samples to determine the subgrade characteristics for use in pavement design.

Subsurface Conditions

The 30 acre commercial portion of the site is underlain by alluvial soils from the Guadalupe River. The subsurface profile at the site varies, but can generally be divided into 2 different areas. The eastern half of the site in the areas of CPT soundings 6, 7 and 8 are generally underlain by a surficial clayey layer over sandy soils. The upper 12 to 16 feet in this portion of the site consists of light to dark brown, moist, stiff silty and sandy clay with minor gravel and occasional silty sand

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layers. The soils beneath this surface layer consist generally of brown, moist, medium dense to dense silty sand and poorly graded sand with layers of gravel and clayey sand.

The eastern half of the site in the areas of borings 1 through 6 and CPT sounding 5 generally overlain by silty/clayey soils to at least 40 feet in depth. These soils are brown to light brown, moist to wet, generally stiff, silty and sandy clay with some gravel.

Groundwater

Two pore water dissipation readings were taken at CPT2 and CPT3 with the electronic cone penetrometer. These readings show the groundwater table to be at a depth of about 17.5 to 18 feet below the ground surface. Standing water was not encountered in the borings from the 1977 ASMI report. In general, groundwater levels can fluctuate over time and therefore the subsurface moisture conditions encountered during our field exploration present only the current conditions at the boring locations. The Guadalupe River floods occasionally during the winter season. However, the flood waters normally recede rather rapidly, and a long term rise in the groundwater level is not expected.

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SUMMARIZED CONCLUSIONS

The following conclusions are drawn from the data acquired and evaluated during this investigation for the proposed project.

1. Site Suitability: The subject site is geotechnically suitable for the proposed commercial development provided the recommendations presented in this report are followed.

2. Soil Expansion: The surface and near surface soils exhibit a moderate to high shrink-swell (expansive) potential when subjected to fluctuations in water content. Mitigating measures include a nonexpansive, import fill for the top 12 inches of the soil building pad and increased foundation trenching depths relative to a nonexpansive site. Additionally, pre-moisturizing programs for the overall site, the foundation trenches, and soil subgrades for concrete slabs-on-grade, may be required as deemed necessary during construction.

3. Foundations: The surface and near surface native soils exhibit stiff consistencies. Therefore, once recommended clearing and site preparation operations have been completed, conventional shallow strip and spread footings may be used to support the proposed structures.

4. Settlement: It is estimated that total, static settlement of the proposed building pads will be approximately 3/4 inch with the differential settlement anticipated to be about $^1/_2$ inch in a span of about 50 feet. Most of this settlement should occur during construction. The total and differential settlement due to dynamic compaction during an earthquake is roughly estimated to be approximately 1 inch relative to the eastern side of the site to the western side. Liquefaction induced settlement should not occur due to the low liquefaction potential of the site. The estimated settlements assume the site has been properly prepared prior to the construction of the foundation system.

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5. Site Geology: No known active earthquake faults underlie the site. The site is not located within an Alquist-Priolo Special Studies Zone. The nearest seismically active fault is the Hayward fault, which is located approximately 8 miles from the site. Other active faults in the site vicinity are the Calaveras, Silver Creek, Evergreen and San Andreas faults.

6. Seismics: A moderate to major seismic event on the San Andreas or Hayward fault zones or any of the active faults in the Bay Area could cause moderate to severe ground shaking at the site. As a minimum, structures at the site should be designed to accommodate earthquake vibrations associated with Zone 4 in the latest UBC.

7. Geologic Hazards: The potential for seismically induced liquefaction, lurch cracking, local subsidence and lateral spreading to occur at the site is considered to be low. Other geologic hazards, such as ground fault rupture, landslides, tsunamis, seiches and landslides are considered to be very low.

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RECOMMENDATIONS

Grading and Site Development

1. Site clearing, placement of fill, and grading operations at the site must be conducted in accordance with the recommendations provided in this report.

2. Any existing utilities and underground irrigation lines, where known, should be located on the grading plans to assist the Geotechnical (Soil) Engineer during grading operations. The necessity of removing abandoned, underground, utility lines in their entirety will be determined by the Geotechnical (Soil) Engineer during site grading.

3. Prior to any grading operations, all areas which are to receive structural fill, foundations, pavement sections, or concrete slabs-on-grade must be stripped of surface organics across the site. The exact depth of organic soil to be removed will be determined by the Geotechnical Engineer or his representative when clearing and stripping operations are in progress. We estimate that 2 to 6 inches of stripping depth will be required. Any organically contaminated soil may either be stockpiled and later used as topsoil in landscaping areas or removed from the site.

4. Following site clearing/organic stripping operations, and prior to mass grading operations, it may be necessary to carry out a premoisturization program throughout the site if the exposed soils are deeply dried out. The premoisturization program is recommended, where required, in order to reduce the high expansive potential of the surface and near surface native clay soils at the site by "pre-expanding" the clays prior to the covering of the site with improvements. This premoisturization program would be necessary if the top several feet of the soils are found to be in a dry condition. We should be contacted at least 48 hours prior to site stripping operations so that we will have sufficient time to schedule accordingly.

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5. Any ruts or depressions resulting from the removal of existing utilities, fills, foliage and other abandoned and/or buried structures, should be properly cleaned down to firm native soil. The bottom of the resulting depressions should be scarified and cross-scarified at least eight inches and recompacted to at least 90% relative compaction. The depressions should then be backfilled with approved, compacted structural fill, as specified by other recommendations of this report. Clearing and backfilling operations should be conducted under the field observation of the Geotechnical Engineer.

6. Following site clearing operations, all loose surficial soil and fill should be removed to stiff soil. This material can be stockpiled for later use as general structural fill.

7. The soil surface at the bottom of the removal operation should be scarified and cross scarified at least eight inches, moisture conditioned as needed, and recompacted to at least 90% relative compaction. This scarification operation should be performed at all locations designated for proposed structural fill, concrete slabs-on-grade, foundations and pavement areas.

8. Structural fill is defined herein as a native or import fill material which, when properly compacted, will support foundations, pavements, and other fills without detrimental settlement. Two types of structural fill are specified as follows:

I. General Structural Fill

a. Clean native soil may be utilized, but import fill shall have a Plastic Index of less than 20;

b. Be free of debris, organics and other deleterious material;

c. Have a maximum rock size of three inches in diameter; and

d. Contain sufficient clay binder to allow for stable foundation and utility trench excavations.

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II. Select Structural Fill (Import)

a. Be essentially nonexpansive, having a Plastic Index of less than 12;

b. Be free of debris, organics and other deleterious material;

c. Have a maximum rock size of three inches in diameter; and

d. Contain sufficient clay binder to allow for stable foundation and utility trench excavations.

9. The surface and near surface native soils, which are free of deleterious materials, may be used as general structural fill only. A sample of each material proposed for import fill should be delivered to the Geotechnical (Soil) Engineer or his representative for testing and approval at least 3 working days prior to being transported to the site.

10. Compaction of all new structural fills and scarified soils should be to at least 90% relative compaction, except as specifically stated in other paragraphs in this report. Import baserock materials under asphalt pavements should be compacted to at least 95% relative compaction. Compaction criteria will be based on the laboratory test procedure ASTM D1557-91.

11. To offset the high shrink-swell potential of the surface and near-surface clay soils on the site, the building pad should be constructed in such a manner as to provide at least a 12-inch thick layer of compacted, Import Select Structural Fill. The 12" thick layer of select structural fill should be compacted to at least 90% relative compaction. The select structural fill pads should be extended at least three (3) feet horizontally beyond all perimeter foundations, and should also extend out beyond any adjacent or contiguous concrete slabs-on-grade. Our recommended six-inch thick, import, base course for the concrete slab-on-grade floor should be subsequently placed over the 12-inch select structural fill layer.

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12. The Geotechnical Engineer should be notified at least 48 hours prior to commencement of any grading operations, so he may coordinate the work in the field with the contractors.

Foundations

13. The support of the proposed commercial buildings may be provided by conventional, shallow strip and spread footings. The actual design of the foundations, including detailed reinforcing requirements, should be determined by the engineer performing the structural analysis of the buildings and the supporting foundations.

14. Perimeter footings for the proposed structures should be founded a minimum of 24 inches (trenching) depth into the lowest, adjacent, properly compacted soil building pad, as described in the previous paragraphs. The soil building pad is defined as the prepared soil subgrade not including the 6 inch import base course layer for the concrete slab-on-grade floors. All interior, shallow, strip and spread footings under concrete slabs-on-grade should be founded a minimum of 24 inches below the top of the interior, concrete floor slab. For the above conditions, the strip and isolated spread foundations may be designed for an allowable bearing pressure of 2,500 psf for dead plus live loads. This value may be increased by $^1/_3$ to include short term seismic and wind effects.

15. Due to the high expansive potential of some of the near-surface soils, the Geotechnical Engineer should inspect the foundation excavations prior to forming or placement of reinforcing steel to ascertain if the excavations need to be moisture conditioned prior to the pouring of the concrete foundations. If necessary, the excavations will be partially filled with water and allowed to soak into the soil for two to five days. It may be necessary use a wetting agent to expedite moisturizing the soils. The Geotechnical Engineer should be informed at least one week in

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advance of the planned placement of concrete, so that if presoaking is deemed necessary, it will not delay construction.

Concrete Slab-On-Grade Construction

16. For concrete slab-on-grade floors in office areas, and other interior areas where moisture sensitive floor coverings will be placed, the concrete floor slab should be underlain by a minimum of two (2) inches of clean sand over a plastic membrane at least six (6) mils thick, over four (4) inches of approved, import, angular gravel or Class 2 aggregate base. In areas without moisture sensitive floor coverings, the concrete may be underlain by 6" compacted Class 2 aggregate base only, with the plastic membrane as optional. The Class 2 baserock, if utilized, should be compacted to at least 90% relative compaction, unless otherwise recommended by the Geotechnical (Soil) Engineer, prior to the placement of the plastic membrane. The interior concrete slabs should contain reinforcing steel.

The slab should be structurally tied to the perimeter foundations. All construction joints should be adequately doweled. Note that the above described 6-inch thick base course layers should be placed directly on the recommended 12-inch thick nonexpansive fill layer, as recommended previously of this report.

17. All exterior concrete slabs-on-grade which will experience vehicular traffic, including fork-lift traffic, such as driveway aprons and trash bin aprons, should have at least six inches of compacted Class 2 baserock under the concrete slab. The baserock should be compacted to at least 95% relative compaction. Reinforcing of these exterior, traffic bearing concrete slabs-on-grade is suggested to be at least #3 bars on 24-inch centers. Construction joints in all concrete slab-on-grade units should be adequately doweled.

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18. For exterior, non-traffic bearing concrete slabs-on-grade, such as entry ways, patios and sidewalks, that are not adjacent to the buildings, the concrete slab should be underlain by a minimum of four inches of compacted granular, import base material. This base should be approved by the Geotechnical Engineer. Sidewalks adjacent to pavement curbs should be structurally tied to the curb, or as an alternate, the sidewalks and curbs can be poured monolithically. For concrete sidewalks and entry way slabs that are contiguous to the building, we recommended that the slabs be underlain by 12" select structural fill described previously plus the 4 inches of import base rock. Reinforcing of these concrete slabs-on-grade is recommended. Construction joints in all concrete slab-on-grade units should be adequately doweled.

19. Due to the high expansion potential of the surface and near surface native soils, the subgrade soils under exterior concrete slabs-on-grade may require premoisturizing prior to the placement of concrete, in order to reduce their swell potential. A representative from our firm should be contacted at least 1 week prior to the placement of the exterior concrete slabs, so that the soil subgrade conditions can be examined and a program established for proper subgrade preparation. If presoaking is deemed necessary, it will be necessary to moisture condition at least the upper 12 to 18 inches of the subgrade soil beneath the proposed exterior slabs. The presoaking would be programmed to reduce the swell potential. It may be necessary use a wetting agent to expedite moisturizing the soils.

Retaining Walls

20. Walls with horizontal backfill and free to deflect at the top should be designed for the active state. An equivalent fluid weight of 45 pcf should be utilized for design when retaining native soils or approved import fill.

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21. Walls with horizontal backfill and fixed at the top, such as loading docks, should be designed for at rest earth pressures, which is an equivalent fluid weight of 55 pcf.

22. Surcharge loads applied at the surface on the backfill should be considered to be a uniformly distributed horizontal load. This load would equal to 1/3 and 1/2 of the uniform surcharge load for active and at rest conditions, respectively.

23. Retaining walls may be supported by conventional spread footings. The conventional footings should be designed using an allowable bearing pressure of 2,500 pounds per square foot. Passive resistance of 250 pounds per cubic foot may be assumed for the footing design. A coefficient of friction of 0.30 should be assumed in the design of the spread footings. The actual design of the spread footings, including reinforcing steel requirements, should be provided by the project structural engineer.

24. All retaining wall backfill should be free draining. If the wall is not drained, an additional 65 pcf of equivalent fluid weight should be added to the design wall pressures to account for hydrostatic pressures. The wall drainage system should consist of clean, washed imported gravel (1/4-inch to 1-inch diameter) completed wrapped in a minimum 4 ounce filter fabric or Class II Permeable gravel. This gravel backfill should be at least 1 foot thick behind the wall and extend from the foundation up to within 1 foot of the finish backfill grade. Drainage can be provided by weep holes at the base of the wall or a minimum 4 inch diameter perforated pipe running along the bottom of the backfill gravel.

Utility Trench Backfill

25. For purposes of this discussion, trench backfill is defined as that portion of the backfill material placed above the import shading material. It is assumed that all utility pipes are properly

bedded and shaded at least 6 inches over the top of the pipe with an approved, imported, granular material. It is further assumed that the trenches will not exceed about 10 feet in depth.

26. All utility trenches in pavement areas and on the buildings pads should be backfilled with layers of compacted, import materials, native soils or combinations thereof.

27. The top four feet of backfill material, as measured from the finish pas elevations or pavement subgrade elevations, should be compacted to at least 90% relative compaction. All trenches excavated in the area under foundations defined by a plane radiating at a 45 degree angle downward from the bottom edge of the footing should be backfilled with material compacted to a minimum 90% relative compaction.

28. The existing native soils may be used for trench backfill if properly handled. Jetting is not recommended for compaction of backfill in utility trenches.

29. Import sand or pea gravel may be used as trench backfill rather than native soil, if so desired. The pea gravel should be clean, washed and rounded, and will not require moisturizing or mechanical compaction. Native soil and import materials, such as sand or quarry fines, will require mechanical compaction, and may require moisturizing prior to compaction operations.

30. Within the proposed building pads, sand or pea gravel may be used up to the top of the trench. In landscape areas, at least the final 24 inches of backfill should be compacted native soil, to prevent surface rain or irrigation water from rapidly penetrating down into the trench. The top 12 inches should be compacted native soil under exterior paved areas.

31. Where any opening is made under or through the perimeter foundations for items such as utility lines, the openings must be resealed so that they are water-tight to prevent possible entrance of outside irrigation or rain water into the portion of the soil beneath the structure. Utility trenches

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extending under the perimeter foundations should be either backfilled with native or fill clay soils, compacted to 90% minimum relative compaction, or be sealed by concrete poured around the pipes. This waterproofing of the utility trenches should extend at least two feet on both sides of where it passes under the perimeter foundations. Where the pipes pass through sleeves cast into the perimeter foundation stem wall, a plumber's mastic type sealant or poured concrete should be used around the pipe.

32. Where trenches pass from landscape areas to pavement areas, at least a three foot length of trench, centered on the curb line, should be backfilled with native soil to reduce the potential for lateral migration of water from the planter to the pavement area.

Surface Drainage

33. Where no exterior pavement section abuts the buildings, soil should be backfilled against the exterior footings and the final grade should result in a positive gradient away from the building, in order to provide rapid removal of rain and irrigation water away from the foundations. Downspouts from the roof of the building should discharge collected rainwater onto splash blocks, adjacent paved areas, or be tied into a water-tight drainage pipe, which would carry the collected water away from the building areas.

Asphalt Pavement Design

34. A design "R"-Value of 7 was utilized in the computations of the thicknesses for the subject asphalt pavements constructed on native soils.

35. Pavement designs for traffic indexes of 4 to 7 in 0.5 increments are provided for your use. The State of California Highway Design Manual, ASPHALT CONCRETE PAVEMENT, Section

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7-651, dated 12-1-81 was used in computing pavement sections. Alternate pavement sections are presented in Table A below.

TABLE A

RECOMMENDED ALTERNATE ON-SITE ASPHALT PAVEMENT SECTIONS

Traffic Index	AC Thickness	Class 2 Aggregate Base Thickness R=78 min.
4.0	2.5	7.5
	3.0	6.0
4.5	2.5	9.0
	3.0	8.0
5.0	2.5	10.5
	3.0	9.5
5.5	3.0	11.5
	3.5	10.5
6.0	3.5	12.5
	4.0	11.0
6.5	4.0	13.5
	4.5	12.5
7.0	4.0	15.0
	4.5	14.0

36. All soil subgrade areas in the proposed asphalt pavement areas should be scarified as recommended in other paragraphs of this report, and be compacted to at least 90% relative compaction. The soil subgrade should be moisture conditioned and compacted at over optimum water content. Caltrans specification, Class 2 Aggregate Base should be compacted to at least 95% relative compaction. All relative compaction values are based on the laboratory test procedure ASTM D1557-91.

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37. The asphalt pavement sections presented in Table A are not designed for fork lifts, especially those with hard rubber tires. Where fork lift traffic is anticipated, consideration should be given to utilizing concrete slab-on-grade pavements in those areas.

38. Design of exterior concrete pavement in vehicular travel areas should follow the guidelines in the Portland Cement Association Publications for Light, Medium, and Heavy Traffic. It is suggested that the reinforcement be a minimum of #3 reinforcing bars spaced on 24 inch centers, each way. The final design of concrete slabs should be provided by a structural engineer.

39. Where different pavement surfaces meet (e.g. AC adjacent of PCC), failure can occur in the AC pavement at that contact after several loads. It is recommended that where AC pavement stops and PCC pavement begins, the joint be underlain by a geotextile to give added support. The geotextile should be 3 to 6 inches below the bottom of the pavement and should extend 3 feet on either side of the joint for the full length of the contact.

40. It is suggested that swales in large parking areas utilized for channeling water into storm drain systems should be constructed of PCC rather than AC. PCC will have a longer design life than AC due to raveling of the granular material in AC pavement caused by running water.

Final Plan Review

41. It is recommended that ESCNC be provided the opportunity for a general review of final grading, improvement and foundation plans prior to being submitted to the City for their review. This review is to access general compliance with the grading and foundation recommendations of this report and incorporation of these recommendations into the plans and specifications.

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Observation and Soil Compaction Testing

42. It is recommended that ESCNC be retained to provide observation and soil compaction testing services during site preparation, utility trench backfill, excavation of foundations, and preparation of subgrade soils and baserock in parking areas and driveways. This is to observe compliance with the design concepts, specifications and recommendations, and to allow for possible design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

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LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, Earth Systems Consultants should be notified so that supplementary recommendations can be given.

2. This report is issued with the understanding that it is the responsibility of the owner or his representatives so the information and recommendations contained herein are called to the attention of the other members of the design team (engineer and contractor) for the project and are incorporated into the plans, and that the necessary steps are taken to see that the contractors and subcontractors carry out such recommendations.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes outside of our control. Therefore, this report is subject to review by Earth Systems Consultants after a period of three (3) years has elapsed from date of issuance of this report.

4. The body of the report specifically recommends that Earth Systems Consultants be provided the opportunity for a general review of the grading and foundation plans and specifications for this property, and that Earth Systems Consultants be retained to provide observation and testing services during construction. The validity of the recommendations of this report assumes that Earth Systems Consultants will be retained to provide these services.

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5. This report was prepared upon your request for our services, and in accordance with currently accepted geotechnical engineering practice. No warranty based on the contents of this report is intended, and none shall be inferred from the statements or opinions expressed herein.

6. The scope of our services did not include any determination of soil corrosion potential, environmental assessment of wetlands or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the soil boring logs regarding odors noted or unusual or suspicious items or condition observed, are strictly for the information of our client regarding the findings in the test boring when drilled.

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File No. NFS-3695-01
July 10, 1996

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FIGURES

Figure No. 1 - Site Location
Figure No. 2 - Site Plan
Figure No. 3 - Regional Faults
Figure No. 4 - Selected Earthquakes

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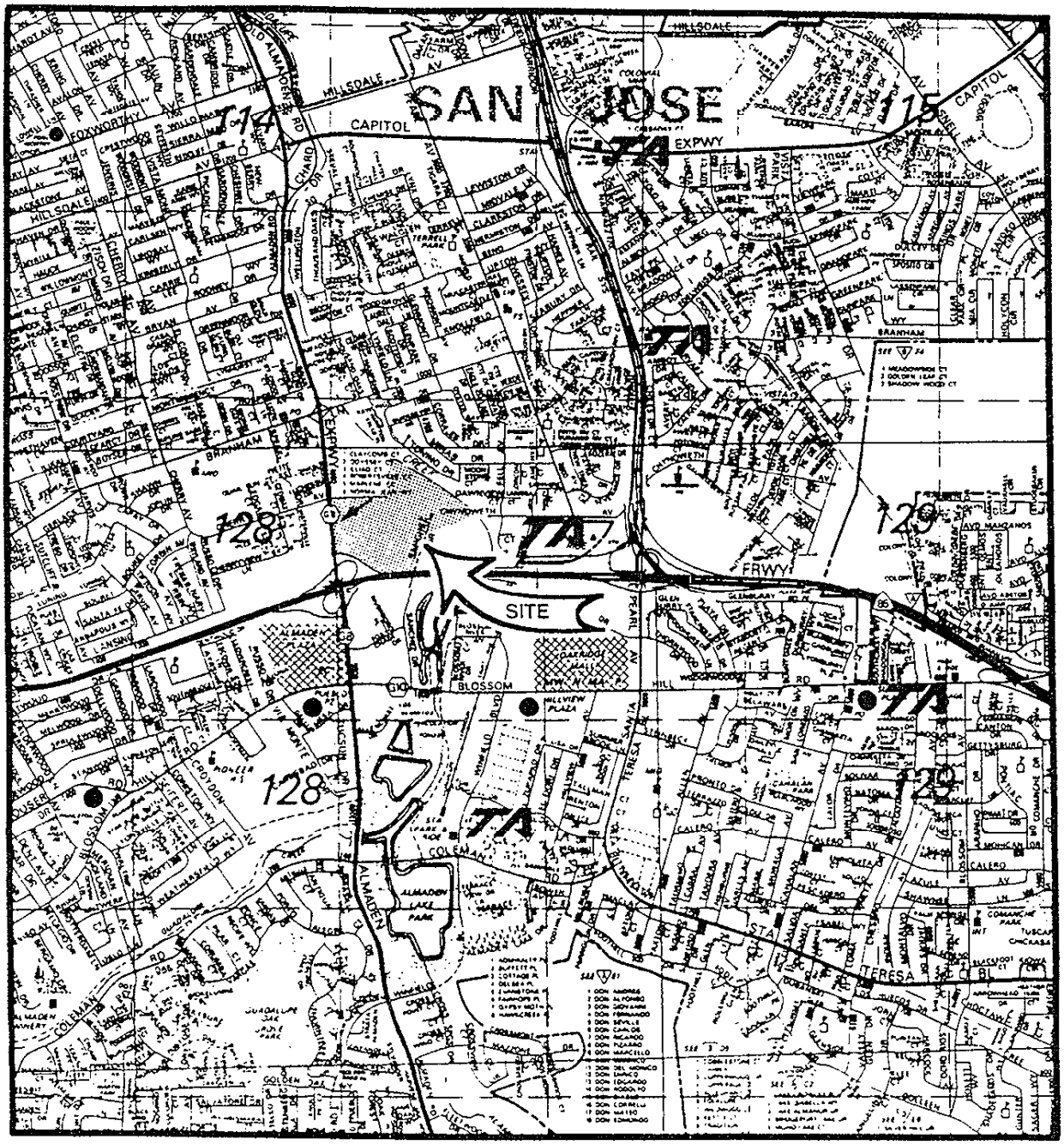

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SCALE

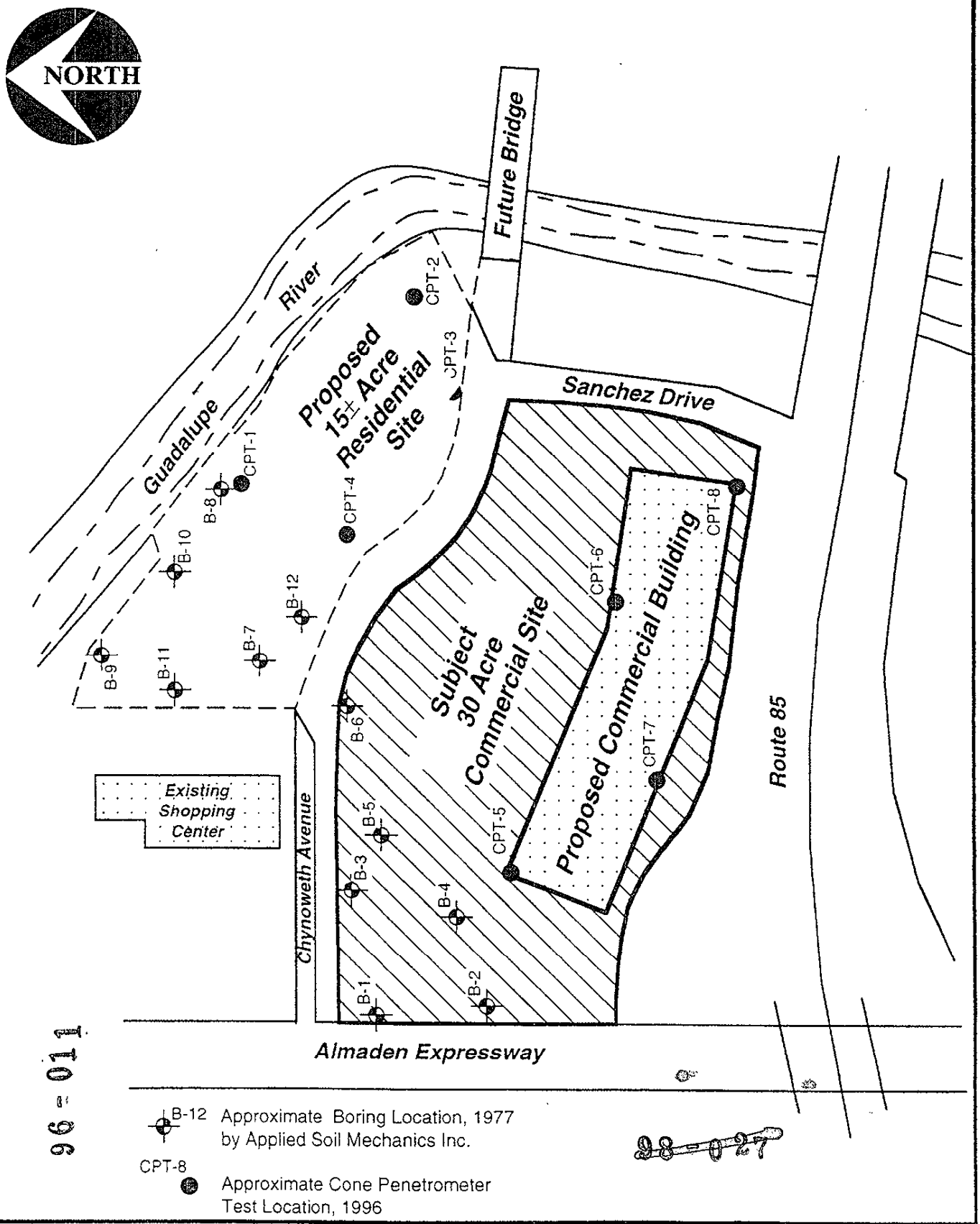
0 1 2 Miles

0 1 2 Kilometers

Base: Thomas Brothers Map

Earth Systems Consultants **Northern California**	Commercial Almaden Expressway San Jose, California	SITE LOCATION Figure No. 1

FILE NO. NFS-3695-01



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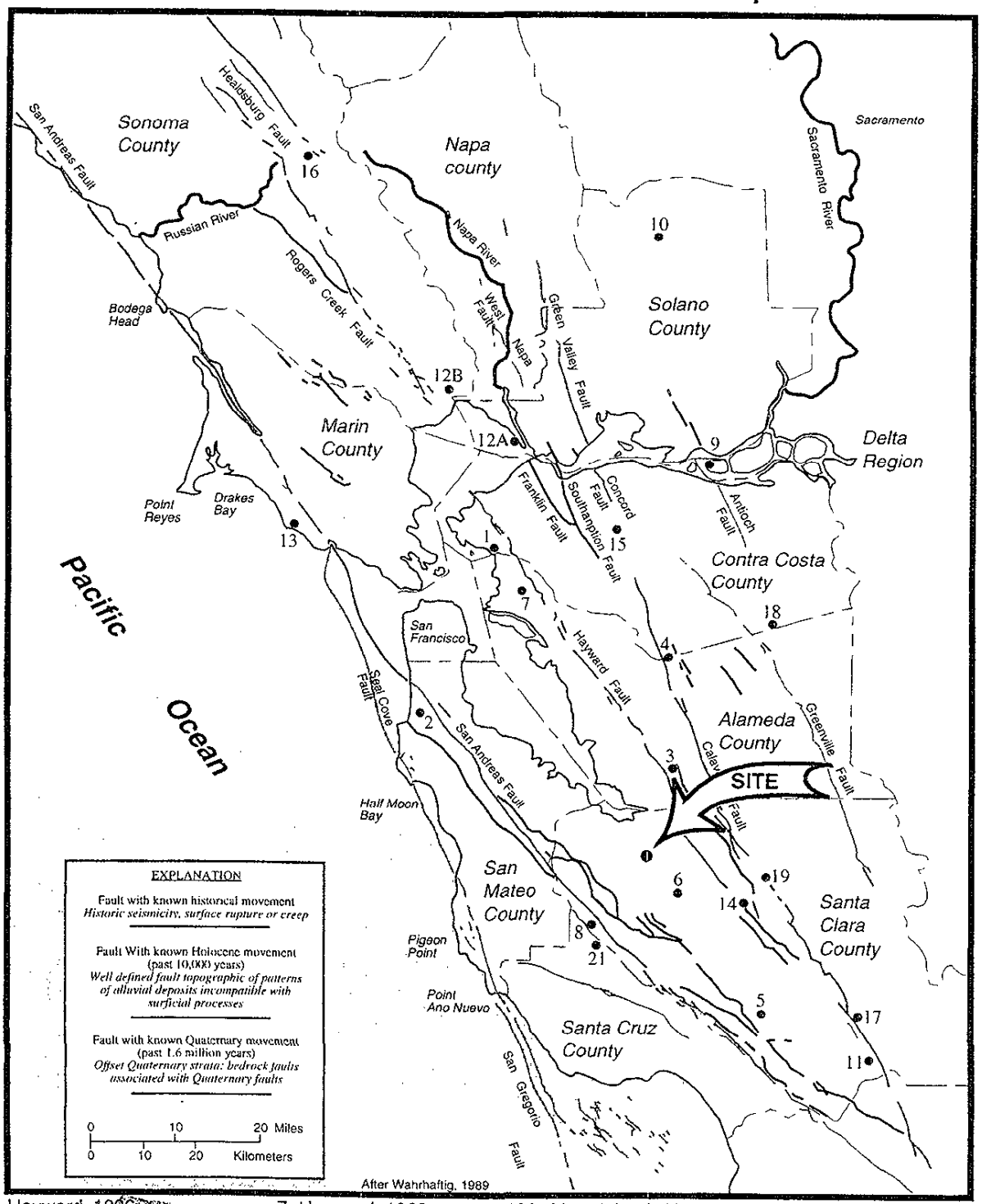
Earth Systems Consultants **Northern California**	Commercial Almaden Expressway San Jose, California	SITE PLAN Figure No. 2

FILE NO. NFS-3695-01

Regional Active Faults and Selected Earthquakes



1 Hayward, 1836
2 San Francisco, 1838
3 Hayward, 1853
4 Calaveras, 1861
5 Santa Clara Valley, 1864
6 Santa Clara, 1865
7 Hayward, 1868
8 San Andreas, 1870
9 Antioch-Collinsville, 1889 and 1965
10 Vaca-Winters, 1892
11 Calaveras, 1897
12A Mare Island, 1898
12B Mare Island, 1898
13 San Francisco, 1906
14 Morgan Hill, 1911
15 Concord, 1955
16 Santa Rosa, 1969
17 Coyote Lake, 1979
18 Greenville, 1980
19 Morgan Hill, 1984
20 Mount Lewis, 1986
21 Loma Prieta, 1989

Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	**FAULTS AND EARTHQUAKES** **Figure No. 3**

96-011

Selected San Francisco Bay Area Earthquakes

Location Number (Refer to Figure 7)	Earthquake and Year	Magnitude Reported	Reference
1	Hayward, 1836	M 6.8	Toppozada, 1981
2	San Francisco, 1838	M 7.0	Toppozada, 1981
3	Hayward, 1858	M 6.1	Toppozada, 1981
4	Calaveras-Dublin, 1861	M 5.9	Toppozada, 1981
5	Santa Clara Valley, 1864	M 5.9	Toppozada, 1981
6	Santa Clara, 1865	M 6.3	Toppozada, 1981
7	Hayward, 1868	M 6.8	Toppozada, 1981
8	San Andreas, 1870	M 5.8	Toppozada, 1981
9	Antioch-Collinsville		
	1889,	M 6.0	Toppozada, 1981
	1965	M 4.9	Toppozada, 1981
10	Vacaville-Winters, 1892	M 6.4	Toppozada, 1981
11	Calaveras, 1898	M 6.2	Toppozada, 1981
12a	Mare Island, 1898	M 6.2	Toppozada, 1981
12b	Mare Island, 1898	M 6.5	Goter, 1988
13	San Francisco, 1906	M 8.3	Toppozada, 1982
		M 8.3	Goter, 1988
		M 7.8	Abe and Noguchi, 1983b
14	Morgan Hill, 1911	M 6.5	Toppozada and Parke, 1982
15	Concord, 1955	M 5.4	Tocher, 1959
16	Santa Rosa, 1969	M 5.6	Cloud, 1970
17	Coyote Lake, 1979	M 5.9	Oppenheimer, 1990
18	Greenville, 1980	M 5.6	Hart, 1988
19	Morgan Hill, 1984	M 6.2	Oppenheimer, 1990
20	Mount Lewis, 1986	M 5.7	Oppenheimer, 1990
21	Loma Prieta, 1989	M 7.1	U.S. Geological Survey, 1989

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Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	SELECTED EARTHQUAKES Figure No. 4

APPENDIX A

1996 Cone Penetrometer Test Results
Figures A1 through A8

CPT Local Friction, Friction Ratio, Tip Resistance
and Pore Pressure Graphs

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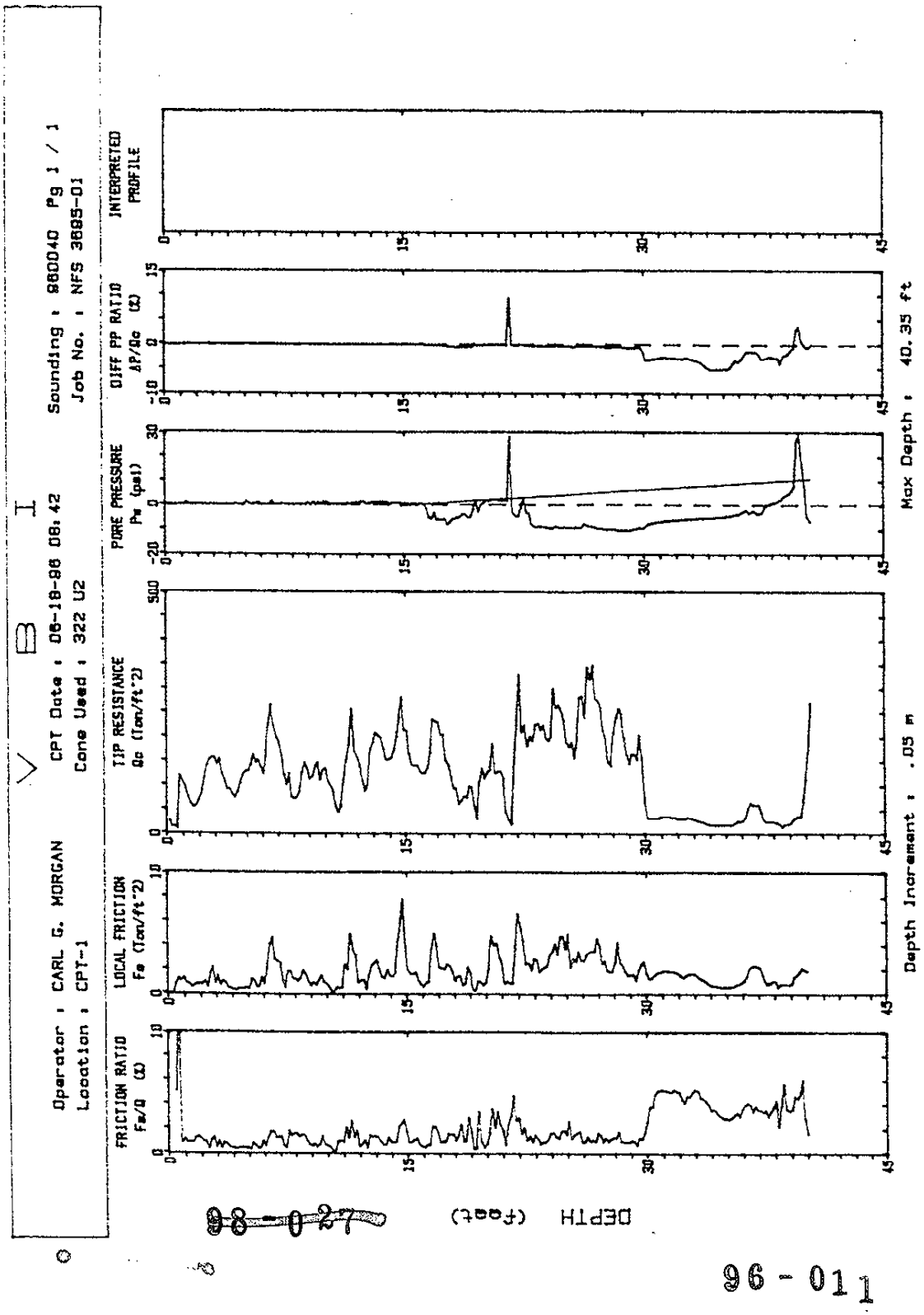
FILE NO. NFS-3695-01



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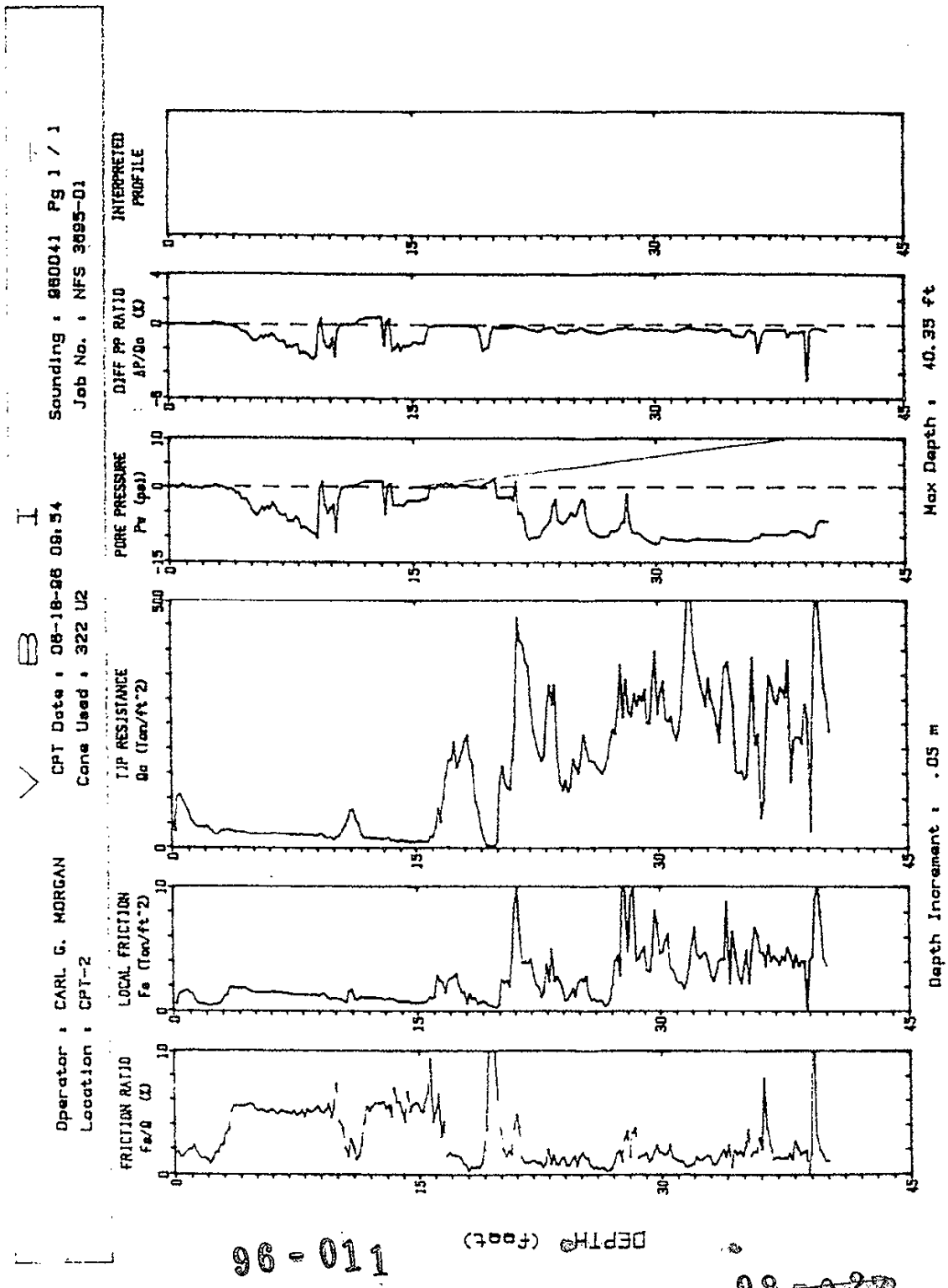
Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A1

FILE NO. NFS-3695-01



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Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A2

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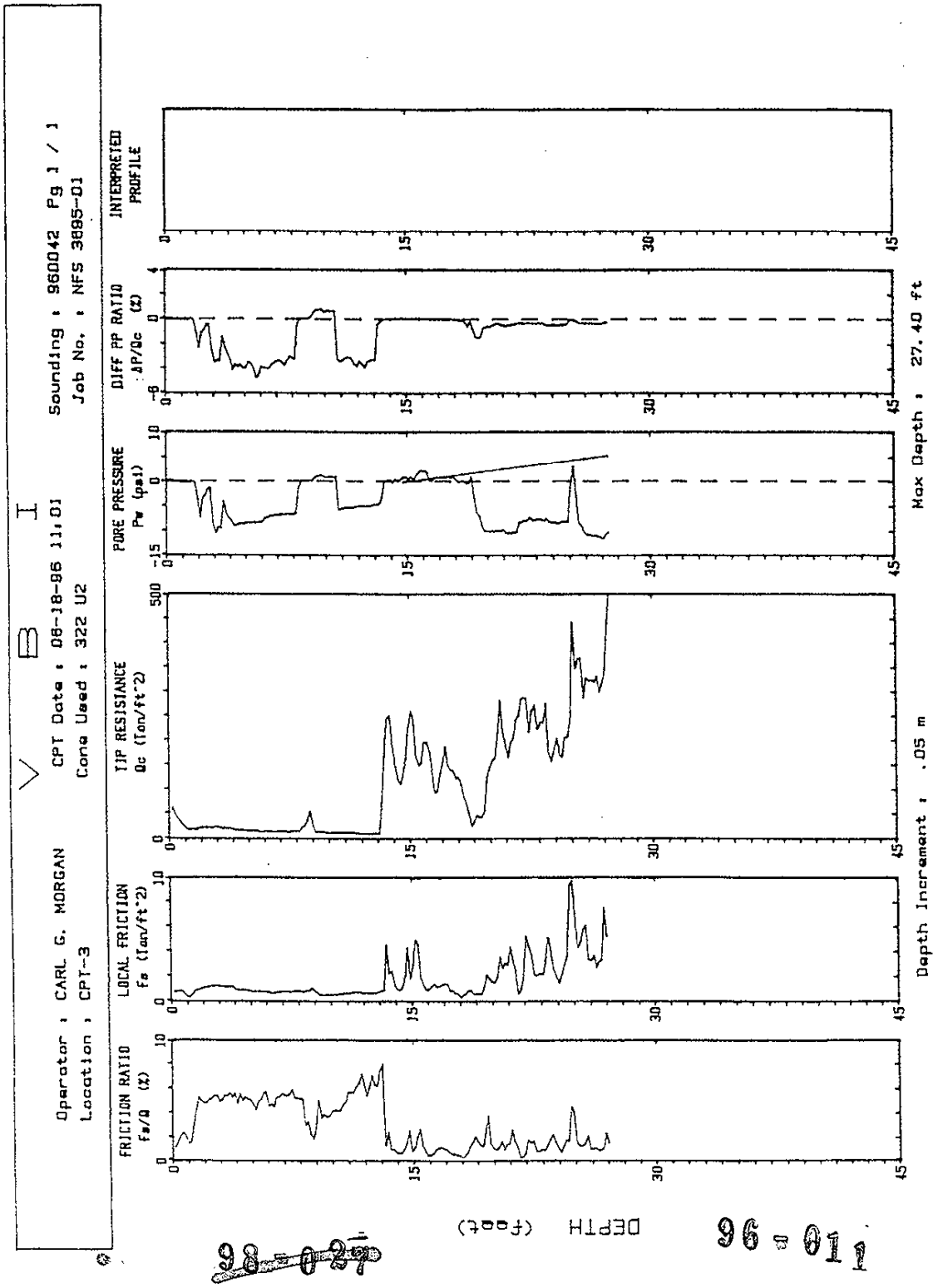

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A3

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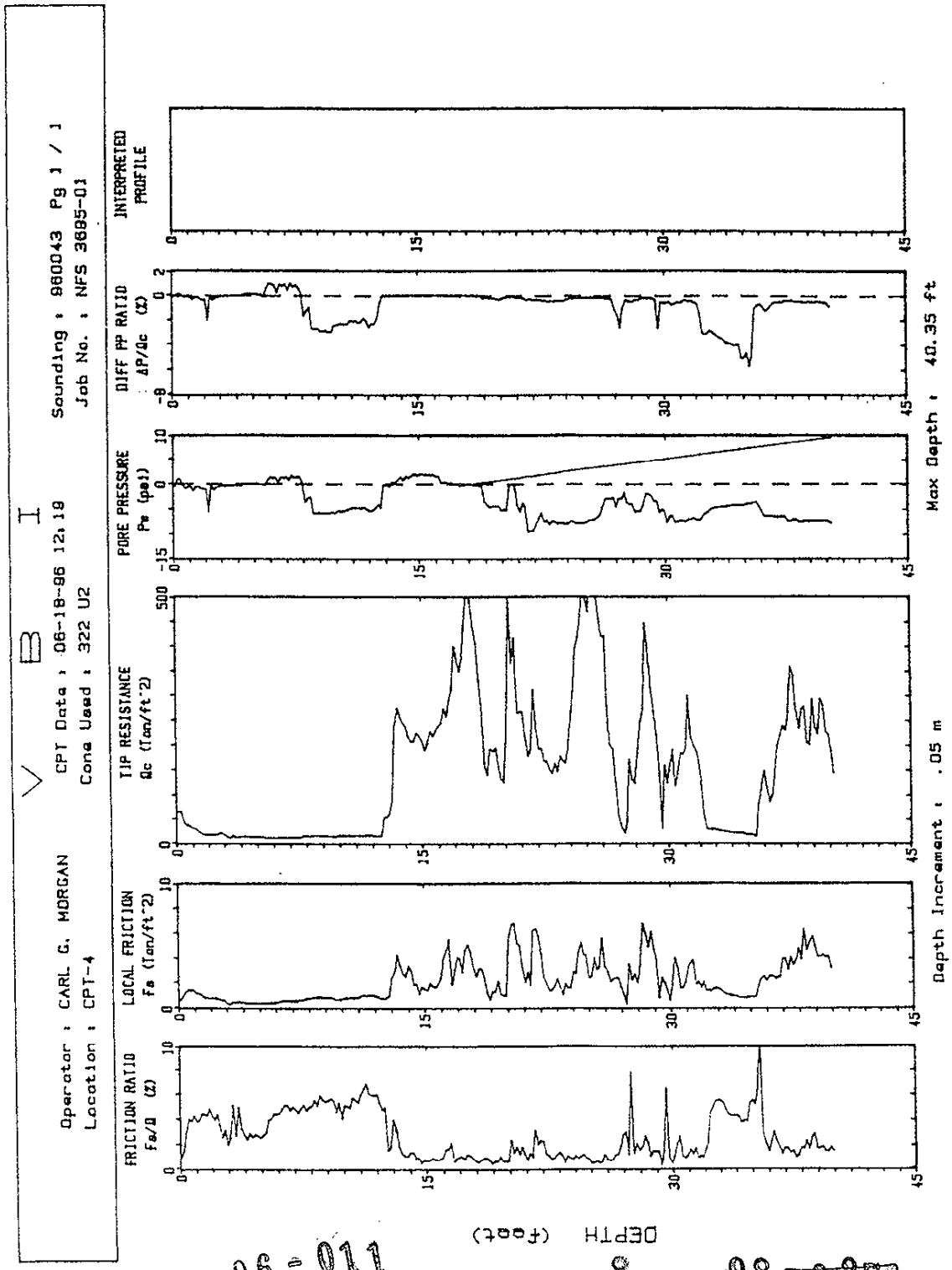

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A4

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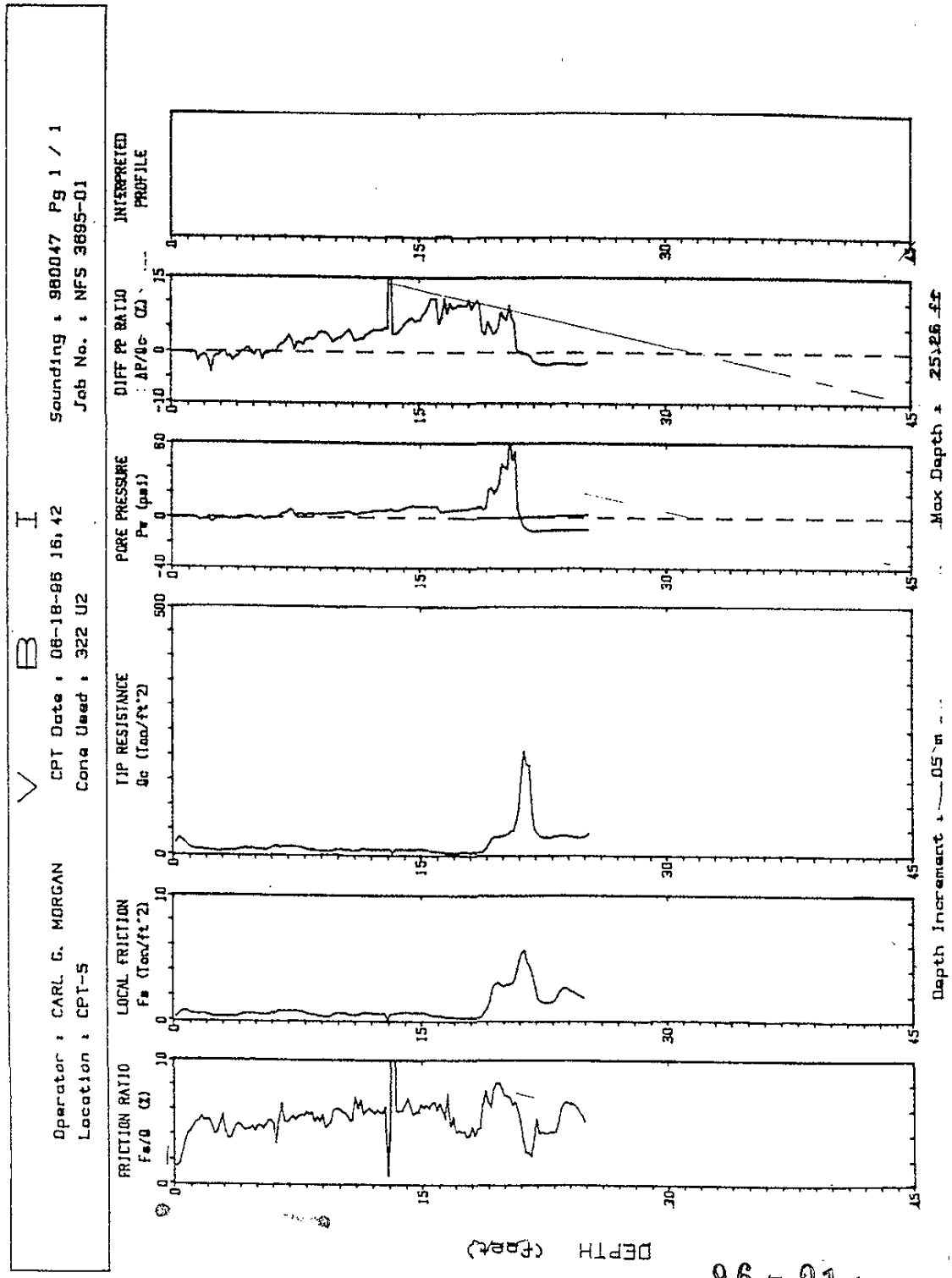

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Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A5

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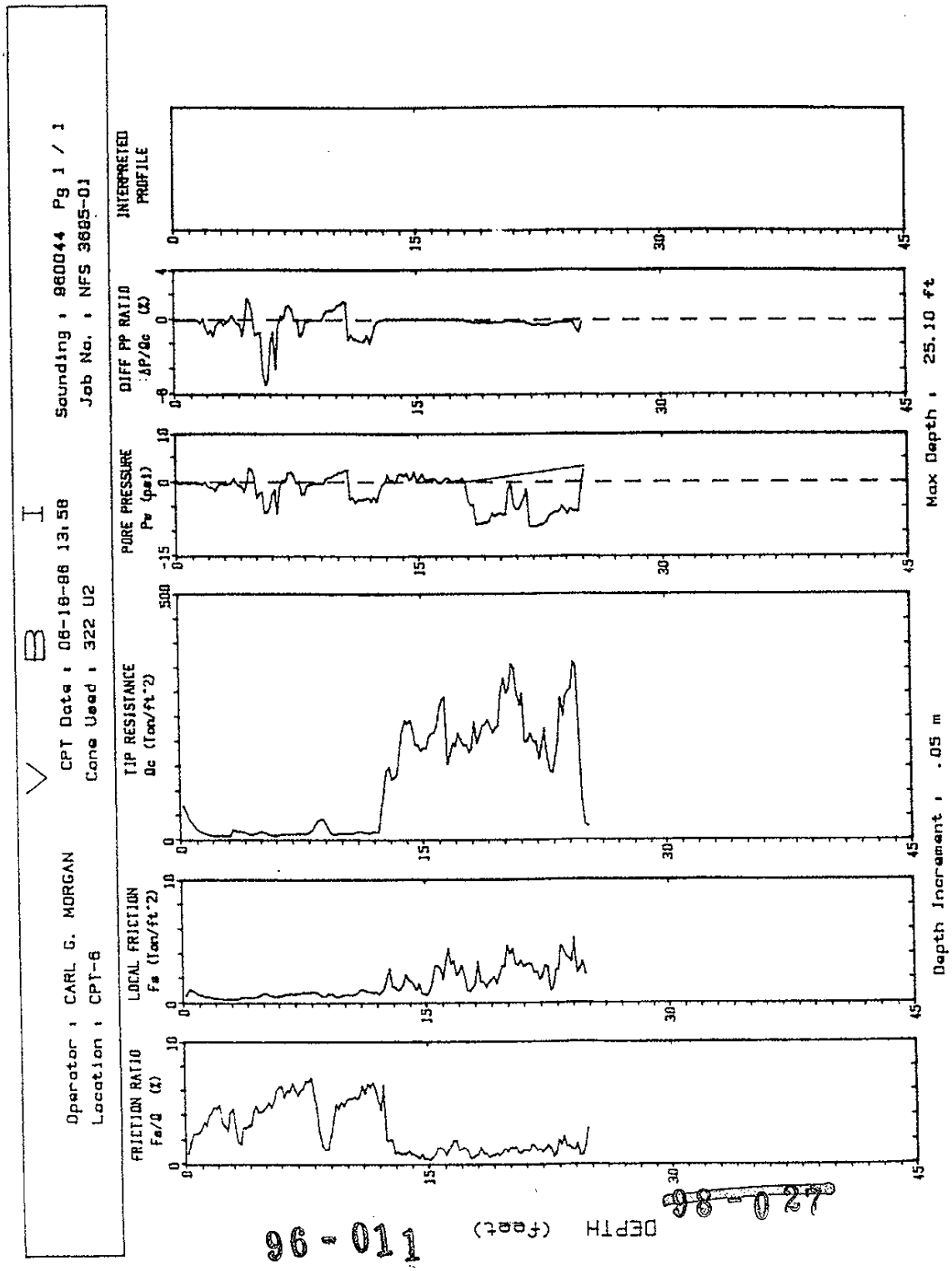

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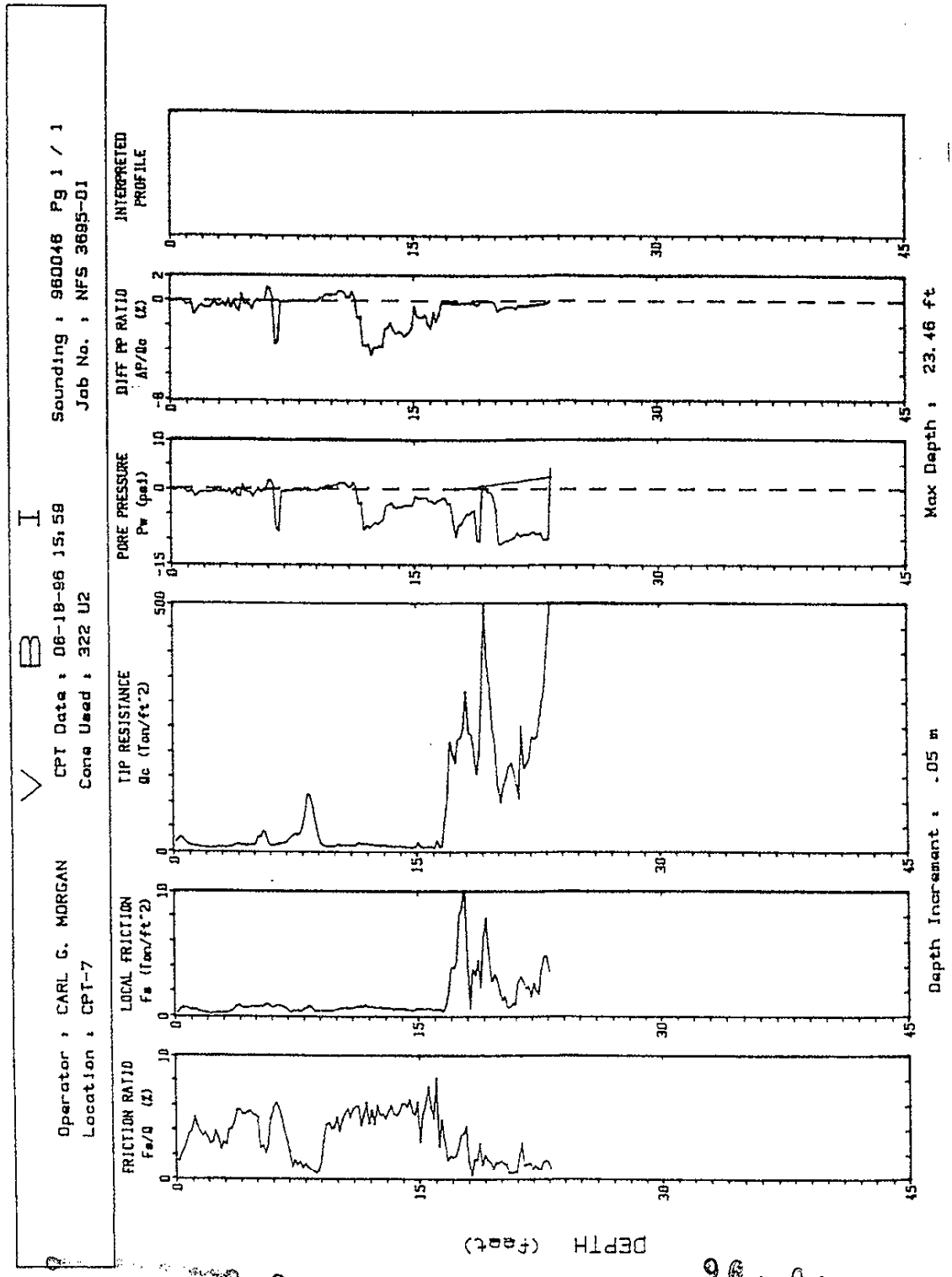
Earth Systems Consultants
Northern California

Almaden Expressway
San Jose, California

CONE PENETROMETER TEST

Figure No. A6

FILE NO. NFS-3695-01



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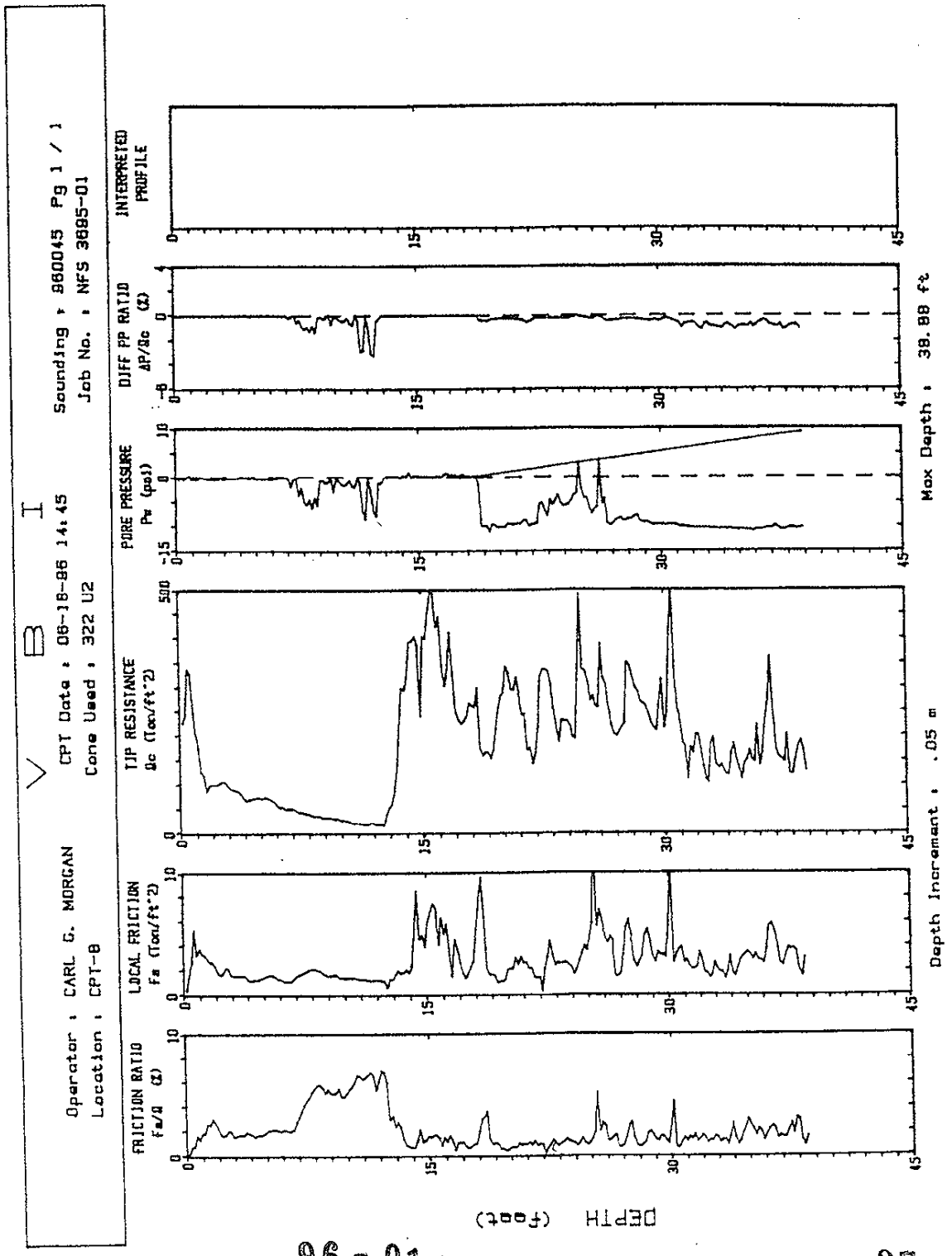
Earth Systems Consultants
Northern California

Almaden Expressway
San Jose, California

CONE PENETROMETER TEST
Figure No. A7

FILE NO. NFS-3695-01



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Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A8

Program: CPTINT - CPT Cone Interpretation Program
Version: 4.2
Written by: Dr. R. G. (DICK) Campanella, P.Eng.
Rev. Dated: June 15, 1992

Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
)epth average	Depth averaged over specified range (see menu)		All	All
?arameter Averaging	Averaged over range specified for depth. If no values exist, your choice is zero's or no value		All	All
Qc Bearing stress	measured tip force/area	#6,#8	All	All
Qt corrtd for U2	Qt = Qc + (1 - a) x U2 and a = tip area ratio Defaults to U2 if given or uses U1 or U3 times Const.	#6,#8	All	All
[Note: Input value from input file is used if defined, not calculated]				
QtN Qt Normalized)	$QtN = \frac{Qt - \sigma v}{\sigma v'}$	#9	All	All
Fs	measured sleeve force/area	#6,#8	All	All
Rf Friction Ratio if Rf>8, Rf=8)	$Rf = \frac{Fs}{Qt} \times 100\%$	#6,#8	All	All
RfN Rf Normalized)	$RfN = \frac{Fs}{(Qt - \sigma v)} \times 100\%$	#9	All	All
Gamma Total Unit Weight Soil + Water)	Based on Rf or Bq Classif. Zone Zone # Gamma = kN/m^3 1 Qt<4bar 15.70 1 Qt≥4bar 17.30 2 Rf<5% 13.36 2 Rf≥5% 11.80 2 Bq Zone 12.58 3 Qt<10bar 18.86 3 Qt≥10bar 19.65 4, 5 & 6 Qt<20bar 18.86 4, 5 & 6 Qt≥20bar 19.65 7 18.86 8 & 9 19.65 10 20.44 11 & 12 21.22		All	All

Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
U Penetration Pore Pressure	U1,measured on Face of tip U2,measured Behind Tip at shoulder (std location) U3,measured Behind Friction Sleeve		All	All
Water Table	Depth below ground surface to where pore pressure = 0 Make negative if water level is above ground		All	All
Uo Hydrostatic Pore Pressure	Uo = water depth,Hw x unit weight water, Gamma or Uo=Hw=depth-depth to water table if depth<water table,Uo = 0		All	All
dU Excess Pore Pressure	dU = U2 - Uo Defaults to U2 if given or uses U1 or U3 x const.		All	All
DPPR (Differential Pore Pressure Ratio)	$DPPR = \frac{dU}{Qt} = \frac{U - Uo}{Qt}$ Defaults to U2 if given or uses U1 or U3 x const.	#6,#8	All	All
Bq	$Bq = \frac{dU}{Qt - \sigma v}$	# 4 # 8	All	All
OS (Overburden Stress)	$OS = \sigma v = \Sigma$ (Gamma x Depth)		All	All
EOS (Effective Overburden Stress)	$EOS = \sigma v' = OS - Uo$ $= \sigma v - Uo$		All	All
Rf Zone Soil Behavior Type	Classification chart for Qc and Rf Zone # = Soil Behavior Type 1=sensitive fine grained 2=organic material 3=clay 4=silty clay to clay 5=clayey silt to silty clay 6=sandy silt to clayey silt 7=silty sand to sandy silt 8=sandy to silty sand 9=sand 10=gravelly sand to sand 11=very stiff fine grained Ø 12=sand to clayey sand Ø Ø overconsolidated or cemented.	#6 #8, Fig4.3	All	1<Qt<1000bar 0<Rf<8%

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Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Bq Zone Soil Behavior Type	Classification chart for Qc and Bq (same zone #'s as Rf above)	#8 Fig 4.3	All	0<Qt<1000bar -0.1<Bq<1.4
SPT N(60) Standard Penetration Test (Blows/foot) at 60% Energy	Qt/N ratio per zone Zone # Qt/N Zone # Qt/N 1 2 7 3 2 1 8 4 3 1 9 5 4 1.5 10 6 5 2 11 1 6 2.5 12 2	# 7 # 8 Fig 4.2	All	All
SPT N1(60) Normalized for Overburden str	SPT N1(60) = Cn x SPT N(60) where Cn = (σv')^(-0.77)	# 8	All	0.5<Cn<1.5
Dr Relative Density	Specific Sands: $Dr = \frac{100}{C2} * \ln\left[\frac{Qc}{C0\ \sigma v'^{C1}}\right]$ where: All are NC & UNAGED	# 8		
ompressibility	Sand | C0 | C1 | C2			
moderate	Ticino | 17.37 | .558 | 2.58	# 1	/	7 to 10
high	Schmertmann | 15.32 | .520 | 2.75	# 1	Sand--	0<Qt<500bar
			\	0<σv'<5bar
all	ALL SANDS: NC, OC, ALL TESTS $Dr = C3 + C4\log_{10}\left[\frac{\left[\frac{Qc}{C1}\right]}{\left[\frac{\sigma v'}{C0}\right]^{C2}}\right]$ where: C0 | C1 | C2 | C3 | C4 0.100 | 0.0981 | 0.5 | -98 | 66	# 5	Sand	7 to 10
Phi Friction Angle	Methods: 1) Robertson & Campanella 2) Durgunoglu & Mitchell 3) Janbu beta = +15 degree 4) Janbu beta = 0 degree 5) Janbu beta = -15 degree	#6, #8 # 2 #6, #8 #6, #8 #6, #8	/ Sand-- \	7 to 10 0<Qt<500bar 0<σv'<4bar 29<phi<49

Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Gmax Maximum Shear Modulus at very small strains	Clay: Gmax = alpha x Qt	# 8 Fig4.18	Clay	1 to 6
	Sand: Digitized figure of Qc vs Gmax with interpolation between σv'curves,R&Cmethod	# 6 # 8 Fig4.13	Sand	7 to 10 .25<σv'<8bar
CSR(Qc), τ/σ Liquefaction Resistance of SAND for LEVEL ground.	Seed's CSR vs N1(60) graph for specified equake Magnitude.Can include silty sand corr. for Zone 7. N1(60) from CPT correlations.	# 11 # 12	Sand	7 to 10
CSR(Eq), τ/σ Cyclic Stress Ratio applied y design quake	$CSR(Eq) = 0.65 \frac{Amax}{g} \frac{\sigma v}{\sigma vo'} rd$ Amax=max surface acceleratn including Amplification	# 12 # 3	Sand	7 to 10
[Note: Input value from input file is used if defined, not calculated]				
rd Reduction actor to find CSR(Eq)	Digitized graph to use for depth vs rd: 1) Seed's mean 2) Fraser Delta	# 12 # 3	Sand	7 to 10 0<depth<30m
FL Safety Factor gainst Liquefaction	FL = CSR(Qc)/CSR(Eq)	# 3	Sand	7 to 10
Qcr ritical Bearng equired to esist Liquefctn	Qcr backcalculated from CSR(Eq) for a specified FL. Qcr is only for the given GWT,EOS,OS,Amax/g & Eq.Mag	# 12	Sand	7 to 10
Su Undrained Shear Strength of CLAY	Methods: Nk: $Su = \frac{Qc - \sigma t}{Nk}$	# 8	Clay	1 to 6
	Nke: $Su = \frac{Qt - U2}{Nke}$		Clay	1 to 6
	Nkt: $Su = \frac{Qt - \sigma v}{Nkt}$		Clay	1 to 6
	Nc: $Su = \frac{Qt}{Nc}$		Clay	1 to 6
	NdU: $Su = \frac{dU}{NdU}$		Clay	1 to 6

Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Su/EOS	$Su/EOS = \frac{Su}{\sigma v'}$	# 8	Clay	1 to 6
Ko (NC) Normally Consolidated	$(Ko)NC = 1 - \sin(\phi)$	# 8	Sand	7 to 10
Ko (OC) Over Consolidated	$(Ko)OC = (Ko)NC \times OCR^{0.42}$	# 8	Sand	7 to 10
E25 Youngs Modulus	E25 = alpha x Qt where user input alpha	# 8 4.11&12	Sand	7 to 10 0<Qt<500bar
M Constrained Modulus	CLAY: M = alpha x Qt where user input alpha SAND: Methods: Qt: M = alpha x Qt Baldi: $\frac{M}{Qt} = C0 \times pa \left[\frac{\sigma v'}{pa}\right]^{C1} \times OCR^{C2} \times \exp(C3\ Dr)$	# 8 Tabl4.3 # 8 Fig4.10	Clay Sand Sand	1 to 6 7 to 10 7 to 10
OCR Over-Consolidation Ratio	$OCR = \left[\frac{\frac{Su}{\sigma vo'}}{\left[\frac{Su}{\sigma vo'}\right]_{NC}}\right]^{1.25}$	# 6 # 8 Fig4.19	Clay	1 to 6

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ɔut file from CPTINT - Version 4.2

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Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

ɜrpreter Name: VBI IN-SITU TESTING, INC

ɜ Number: 960040 Date: 06-18-96 08:42
ɜator: CARL G. MORGAN On Site Location: CPT-1
ɜ Type: 322 U2 Comment: NFS 3695-01

ARY SHEET

for calculating Qt:	0.800
ɜe for Water Table (in m):	5.500
id Zone Classification based on:	Rf
ɔha' for Gmax in Clay:	75.000
ɜod for calculating Su:	Nkt
ɜe of the constant Nkt:	13.000
/EOS) for normal consolidation:	0.250
d Compressibility for calc Dr:	High
ɜod for Friction Angle:	Robertson & Campanella
ɔha' for Youngs Modulus (E25):	2.500
ty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

l Behavior Type Zone Numbers
Rf Zone & Bq Zone Classification

e #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
e #2=Organic material	Zone #8 =Sandy to silty sand
e #3=Clay	Zone #9 =Sand
e #4=Silty clay to clay	Zone #10=Gravelly sand to sand
e #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
e #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

E:

soil classification, Rf values > 8 are assumed to be 8.

ote: --- means Out Of Range)

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INPUT FILE: B:960040.CPD

pth (eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	48.940	48.940	1987.439	0.715	1.462	119.968	0.000	0.003	0.000	0.000
0.425	1.394	69.638	69.642	929.201	0.715	1.027	124.994	0.000	0.288	0.000	0.000
0.675	2.215	111.984	111.985	886.683	0.954	0.852	124.994	0.000	0.076	0.000	0.000
0.925	3.035	147.872	147.873	832.365	1.238	0.837	124.994	0.000	0.072	0.000	0.000
1.175	3.855	89.790	89.791	391.568	0.456	0.508	124.994	0.000	0.070	0.000	0.000
1.425	4.675	115.282	115.287	410.720	0.446	0.387	124.994	0.000	0.376	0.000	0.000
1.675	5.495	149.190	149.199	449.343	0.949	0.636	124.994	0.000	0.606	0.000	0.000
1.925	6.316	200.424	200.430	522.881	2.872	1.433	124.994	0.000	0.410	0.000	0.000
2.175	7.136	154.832	154.837	355.871	1.712	1.106	124.994	0.000	0.324	0.000	0.000
2.425	7.956	87.452	87.455	179.644	1.314	1.502	119.968	0.000	0.202	0.000	0.000
2.675	8.776	128.574	128.579	239.612	1.219	0.948	124.994	0.000	0.354	0.000	0.000
2.925	9.596	133.824	133.838	227.520	1.008	0.753	124.994	0.000	0.952	0.001	0.001
3.175	10.417	79.854	79.864	124.384	0.368	0.461	124.994	0.000	0.696	0.001	0.001
3.425	11.237	154.018	154.028	222.798	2.672	1.735	124.994	0.000	0.664	0.000	0.000
3.675	12.057	133.062	133.080	178.952	1.333	1.002	124.994	0.000	1.250	0.001	0.001
3.925	12.877	175.414	175.429	220.832	2.233	1.273	124.994	0.000	1.030	0.000	0.000
4.175	13.697	167.858	167.874	198.350	1.485	0.885	124.994	0.000	1.090	0.000	0.000
4.425	14.518	222.552	222.565	248.412	4.790	2.152	119.968	0.000	0.876	0.000	0.000
4.675	15.338	160.712	160.720	169.504	1.579	0.982	124.994	0.000	0.536	0.000	0.000
4.925	16.158	138.082	138.068	137.915	1.410	1.022	124.994	0.000	-0.996	-0.001	-0.001
5.175	16.978	221.652	221.575	210.995	3.035	1.370	124.994	0.000	-5.370	-0.002	-0.002
5.425	17.798	119.632	119.542	108.024	1.798	1.504	124.994	0.000	-6.254	-0.004	-0.004
5.675	18.619	76.948	76.886	67.097	1.387	1.804	119.968	0.249	-4.611	-0.004	-0.004
5.925	19.439	86.090	86.069	73.581	0.653	0.758	124.994	0.605	-2.088	-0.002	-0.002
6.175	20.259	137.742	137.770	115.883	3.215	2.334	119.968	0.960	0.954	0.000	0.001
6.425	21.079	89.646	89.675	73.543	1.634	1.822	119.968	1.316	0.654	0.001	0.001
6.675	21.899	185.374	185.418	150.220	4.241	2.287	119.968	1.672	1.333	0.001	0.001
6.925	22.720	205.036	204.976	162.864	2.526	1.232	124.994	2.027	-6.225	-0.002	-0.002
7.175	23.540	211.776	211.648	164.775	2.327	1.099	124.994	2.383	-11.341	-0.004	-0.004
7.425	24.360	255.804	255.674	195.314	4.099	1.603	124.994	2.739	-11.824	-0.003	-0.003
7.675	25.180	189.180	189.047	141.289	3.280	1.735	124.994	3.095	-12.346	-0.005	-0.005
7.925	26.000	269.854	269.729	198.212	3.125	1.159	124.994	3.450	-12.154	-0.003	-0.003
8.175	26.821	295.838	295.707	213.328	3.581	1.211	124.994	3.806	-12.971	-0.003	-0.003
8.425	27.641	181.312	181.169	127.816	2.183	1.205	124.994	4.162	-14.113	-0.006	-0.006
8.675	28.461	222.162	222.014	154.051	2.453	1.105	124.994	4.517	-14.867	-0.005	-0.005
8.925	29.281	166.746	166.605	113.228	1.717	1.031	124.994	4.873	-14.715	-0.006	-0.006
9.175	30.101	63.264	63.146	41.379	1.670	2.644	124.994	5.229	-13.442	-0.015	-0.016
9.425	30.922	35.800	35.705	22.429	1.839	5.151	124.994	5.584	-12.196	-0.025	-0.026
9.675	31.742	33.880	33.795	20.773	1.671	4.945	124.994	5.940	-11.880	-0.025	-0.027
9.925	32.562	32.794	32.715	19.705	1.558	4.761	124.994	6.296	-11.785	-0.026	-0.028
10.175	33.382	25.612	25.539	14.822	1.155	4.523	124.994	6.651	-11.743	-0.033	-0.036
10.425	34.202	18.636	18.567	10.230	0.625	3.368	119.968	7.007	-11.807	-0.046	-0.052
10.675	35.023	18.874	18.812	10.202	0.555	2.948	119.968	7.363	-11.670	-0.045	-0.050
10.925	35.843	27.874	27.829	15.461	1.022	3.673	124.994	7.719	-10.884	-0.028	-0.031
11.175	36.663	60.716	60.679	34.720	2.228	3.671	124.994	8.074	-10.690	-0.013	-0.013
11.425	37.483	31.390	31.374	17.012	1.084	3.456	124.994	8.430	-9.610	-0.022	-0.024
11.675	38.303	20.914	20.945	10.716	0.799	3.817	124.994	8.786	-6.647	-0.023	-0.026
11.925	39.124	29.556	29.702	15.507	1.286	4.330	124.994	9.141	0.985	0.002	0.003
12.175	39.944	133.436	133.561	73.433	-13106.005	-9812.726	124.994	9.497	-0.829	-0.000	-0.000

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INPUT FILE: B:960040.CPD

pth (eter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.025	0.025	7	8	16	24	111	---	0.423	---	---
0.425	0.075	0.075	8	8	17	26	103	---	0.337	---	---
0.675	0.126	0.126	8	9	27	41	110	---	1.101	---	---
0.925	0.177	0.177	9	9	28	42	114	---	1.185	---	---
1.175	0.229	0.229	8	9	22	33	91	47	0.477	---	---
1.425	0.280	0.280	9	9	22	33	96	47	0.477	---	---
1.675	0.331	0.331	9	9	29	44	102	47	1.354	---	---
1.925	0.383	0.383	8	9	48	72	110	47	3.716	---	---
2.175	0.434	0.434	9	9	30	45	99	47	1.438	---	---
2.425	0.484	0.484	7	9	28	42	76	43	1.776	---	---
2.675	0.534	0.534	8	9	31	47	88	45	1.607	---	---
2.925	0.586	0.586	9	9	26	39	88	45	0.932	---	---
3.175	0.637	0.637	8	9	19	27	67	41	0.351	---	---
3.425	0.688	0.688	8	9	37	49	90	45	1.776	---	---
3.675	0.740	0.740	8	9	32	40	83	43	1.016	---	---
3.925	0.791	0.791	8	9	42	50	92	45	1.860	---	---
4.175	0.842	0.842	9	9	32	37	89	45	0.763	---	---
4.425	0.892	0.892	7	9	71	78	98	45	4.813	---	---
4.675	0.943	0.943	9	9	31	32	85	43	0.447	---	---
4.925	0.994	0.994	8	9	33	33	79	43	0.477	---	---
5.175	1.045	1.045	8	9	53	51	95	45	1.944	---	---
5.425	1.096	1.096	8	9	29	27	72	41	0.351	---	---
5.675	1.147	1.129	7	9	25	23	55	39	0.399	---	---
5.925	1.197	1.153	8	9	21	19	59	39	0.241	---	---
6.175	1.247	1.178	7	9	44	39	76	41	1.522	---	---
6.425	1.296	1.202	7	9	29	25	60	39	0.447	---	---
6.675	1.346	1.225	7	9	59	50	86	43	2.451	---	---
6.925	1.396	1.250	9	9	39	33	89	43	0.477	---	---
7.175	1.447	1.276	9	9	41	34	90	43	0.510	---	---
7.425	1.499	1.301	8	10	61	50	96	43	1.860	---	---
7.675	1.550	1.327	8	9	45	36	85	43	0.679	---	---
7.925	1.601	1.353	9	10	52	41	97	45	1.101	---	---
8.175	1.652	1.378	9	10	57	45	100	45	1.438	---	---
8.425	1.704	1.404	8	9	43	33	82	43	0.477	---	---
8.675	1.755	1.430	9	9	43	33	89	43	0.477	---	---
8.925	1.806	1.455	9	9	32	24	78	41	0.307	---	---
9.175	1.858	1.481	6	8	24	18	---	---	---	9431.491	3.183
9.425	1.909	1.507	3	7	34	25	---	---	---	5200.818	1.725
9.675	1.960	1.533	3	7	32	23	---	---	---	4898.953	1.598
9.925	2.011	1.558	3	7	31	22	---	---	---	4724.936	1.516
0.175	2.063	1.584	3	7	24	17	---	---	---	3612.716	1.140
0.425	2.113	1.609	5	6	9	6	---	---	---	2532.119	0.787
0.675	2.162	1.632	5	6	9	6	---	---	---	2562.259	0.785
0.925	2.212	1.657	5	7	13	9	---	---	---	3942.031	1.189
1.175	2.264	1.682	5	8	29	19	---	---	---	8989.288	2.671
1.425	2.315	1.708	5	7	15	10	---	---	---	4471.709	1.309
1.675	2.366	1.734	4	7	13	9	---	---	---	2859.056	0.824
1.925	2.418	1.760	4	7	19	12	---	---	---	4198.746	1.193
2.175	2.469	1.785	---	9	---	---	---	---	---	---	---

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INPUT FILE: B:960040.CPD |----------

pth (eter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	---	---	122.350
0.425	---	---	174.105
0.675	---	---	279.963
0.925	---	---	369.683
1.175	---	---	224.478
1.425	---	503.195	288.219
1.675	---	618.859	372.997
1.925	---	734.624	501.075
2.175	---	733.173	387.092
2.425	---	642.453	218.637
2.675	---	764.330	321.448
2.925	---	798.490	334.594
3.175	---	671.919	199.660
3.425	---	883.950	385.069
3.675	---	856.409	332.700
3.925	---	968.169	438.572
4.175	---	972.514	419.684
4.425	---	1028.739	556.411
4.675	---	989.914	401.799
4.925	---	945.428	345.169
5.175	---	1136.355	553.937
5.425	---	914.113	298.855
5.675	---	724.121	192.214
5.925	---	778.758	215.173
6.175	---	986.569	344.425
6.425	---	802.920	224.187
6.675	---	1130.362	463.544
6.925	---	1175.790	512.440
7.175	---	1194.334	529.119
7.425	---	1260.199	639.184
7.675	---	1163.708	472.618
7.925	---	1149.122	674.323
8.175	---	-580.994	739.266
8.425	---	1161.533	452.923
8.675	---	1255.326	555.034
8.925	---	1130.535	416.512
9.175	24.051	4735.970	---
9.425	11.186	2677.900	---
9.675	10.163	2534.625	---
9.925	9.514	2453.661	---
10.175	6.665	1915.441	---
10.425	4.192	1392.556	---
10.675	4.178	1410.937	---
10.925	7.026	2087.170	---
11.175	19.314	4550.914	---
11.425	7.917	2353.015	---
11.675	4.443	1570.897	---
11.925	7.052	2227.672	---
12.175	---	---	---

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:put file from CPTINT - Version 4.2

'UT FILE: B:960041.CPD

:ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

:erpreter Name: VBI IN-SITU TESTING, INC

.e Number: 960041 Date: 06-18-96 09:54
:rator: CARL G. MORGAN On Site Location: CPT-2
ıe Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

' for calculating Qt:	0.800
lue for Water Table (in m):	5.500
lid Zone Classification based on:	Rf
lpha' for Gmax in Clay:	75.000
thod for calculating Su:	Nkt
lue of the constant Nkt:	13.000
ı/EOS) for normal consolidation:	0.250
ıd Compressibility for calc Dr:	High
thod for Friction Angle:	Robertson & Campanella
lpha' for Youngs Modulus (E25):	2.500
lty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
r Rf Zone & Bq Zone Classification

ıe #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ıe #2=Organic material	Zone #8 =Sandy to silty sand
ıe #3=Clay	Zone #9 =Sand
ıe #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ıe #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ıe #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

r soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

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INPUT FILE: B:960041.CPD

pth eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	84.723	84.725	3441.393	1.396	1.648	119.968	0.000	0.130	0.000	0.000
0.425	1.394	47.640	47.637	644.163	0.777	1.632	119.968	0.000	-0.222	-0.000	-0.000
0.675	2.215	37.050	37.048	300.057	0.465	1.255	119.968	0.000	-0.106	-0.000	-0.000
0.925	3.035	34.874	34.876	200.227	1.188	3.406	124.994	0.000	0.142	0.000	0.000
1.175	3.855	33.642	33.630	148.729	1.859	5.527	124.994	0.000	-0.852	-0.002	-0.002
1.425	4.675	29.166	29.121	104.553	1.585	5.443	124.994	0.000	-3.124	-0.008	-0.008
1.675	5.495	29.438	29.368	88.761	1.499	5.103	124.994	0.000	-4.872	-0.012	-0.012
1.925	6.316	30.082	30.024	78.333	1.511	5.033	124.994	0.000	-3.998	-0.010	-0.010
2.175	7.136	27.552	27.465	62.910	1.352	4.923	124.994	0.000	-6.018	-0.016	-0.016
2.425	7.956	25.988	25.887	52.815	1.294	4.997	124.994	0.000	-7.024	-0.020	-0.020
2.675	8.776	25.622	25.490	46.885	1.315	5.159	124.994	0.000	-9.140	-0.026	-0.026
2.925	9.596	20.146	20.113	33.462	1.110	5.517	124.994	0.000	-2.324	-0.008	-0.009
3.175	10.417	38.072	38.031	58.901	0.995	2.615	124.994	0.000	-2.856	-0.005	-0.005
3.425	11.237	58.508	58.514	84.404	1.167	1.994	119.968	0.000	0.438	0.001	0.001
3.675	12.057	19.504	19.525	25.550	1.073	5.493	124.994	0.000	1.470	0.005	0.006
3.925	12.877	18.788	18.789	22.884	1.016	5.407	124.994	0.000	0.094	0.000	0.000
4.175	13.697	14.480	14.453	16.248	0.797	5.517	124.994	0.000	-1.850	-0.009	-0.010
4.425	14.518	12.074	12.031	12.529	0.693	5.764	124.994	0.000	-3.000	-0.018	-0.019
4.675	15.338	13.454	13.419	13.267	0.856	6.378	124.994	0.000	-2.434	-0.013	-0.014
4.925	16.158	45.872	45.867	45.245	1.967	4.289	124.994	0.000	-0.318	-0.000	-0.001
5.175	16.978	164.538	164.549	156.746	2.527	1.535	124.994	0.000	0.760	0.000	0.000
5.425	17.798	196.266	196.272	178.340	1.409	0.718	124.994	0.000	0.416	0.000	0.000
5.675	18.619	112.256	112.259	98.525	0.823	0.733	124.994	0.249	-0.059	-0.000	-0.000
5.925	19.439	6.680	6.695	4.771	0.412	6.157	119.968	0.605	0.376	0.004	0.005
6.175	20.259	112.888	112.871	94.916	1.964	1.740	119.968	0.960	-2.158	-0.001	-0.001
6.425	21.079	290.118	290.089	240.729	6.598	2.275	119.968	1.316	-3.384	-0.001	-0.001
6.675	21.899	336.296	336.177	273.484	3.440	1.023	124.994	1.672	-9.987	-0.002	-0.002
6.925	22.720	208.114	207.981	165.268	2.146	1.032	124.994	2.027	-11.281	-0.004	-0.004
7.175	23.540	253.740	253.665	197.712	2.884	1.137	124.994	2.383	-7.643	-0.002	-0.002
7.425	24.360	133.834	133.742	101.619	1.218	0.911	124.994	2.739	-9.140	-0.005	-0.005
7.675	25.180	184.464	184.406	137.792	2.296	1.245	124.994	3.095	-7.138	-0.003	-0.003
7.925	26.000	166.848	166.722	122.065	0.856	0.513	124.994	3.450	-12.260	-0.005	-0.005
8.175	26.821	190.882	190.745	137.181	1.637	0.858	124.994	3.806	-13.389	-0.005	-0.005
8.425	27.641	298.184	298.072	211.074	6.411	2.151	124.994	4.162	-12.003	-0.003	-0.003
8.675	28.461	289.890	289.787	201.452	6.502	2.244	124.994	4.517	-11.729	-0.003	-0.003
8.925	29.281	292.846	292.696	199.861	4.884	1.669	124.994	4.873	-15.301	-0.004	-0.004
9.175	30.101	316.538	316.384	212.353	5.705	1.803	124.994	5.229	-15.994	-0.004	-0.004
9.425	30.922	241.614	241.463	158.979	2.743	1.136	124.994	5.584	-16.112	-0.005	-0.005
9.675	31.742	440.422	440.269	286.007	4.034	0.916	124.994	5.940	-16.632	-0.003	-0.003
9.925	32.562	337.326	337.177	215.099	4.435	1.315	124.994	6.296	-16.683	-0.004	-0.004
0.175	33.382	277.892	277.740	174.053	3.321	1.196	124.994	6.651	-17.227	-0.004	-0.004
0.425	34.202	334.716	334.564	206.547	5.293	1.582	124.994	7.007	-17.623	-0.004	-0.004
0.675	35.023	148.680	148.525	89.561	3.118	2.100	119.968	7.363	-18.150	-0.009	-0.009
0.925	35.843	228.842	228.695	136.613	5.431	2.375	119.968	7.719	-17.964	-0.006	-0.006
1.175	36.663	259.824	259.689	153.004	4.310	1.660	124.994	8.074	-17.482	-0.005	-0.005
1.425	37.483	325.020	324.884	188.840	4.382	1.349	124.994	8.430	-17.918	-0.004	-0.004
1.675	38.303	201.628	201.502	114.852	3.957	1.964	124.994	8.786	-17.597	-0.006	-0.006
1.925	39.124	282.462	282.324	159.080	5.667	2.007	124.994	9.141	-18.771	-0.005	-0.005
2.175	39.944	352.212	352.113	195.856	-13104.019	-3721.533	124.994	9.497	-16.375	-0.003	-0.003

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INPUT FILE: B:960041.CPD

pth eter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.025	0.025	7	9	27	41	131	---	1.691	---	---
0.425	0.074	0.074	7	8	15	23	89	---	0.399	---	---
0.675	0.123	0.123	7	8	12	18	70	45	0.322	---	---
0.925	0.173	0.173	5	8	17	26	---	---	---	5340.270	15.402
1.175	0.225	0.225	3	8	32	48	---	---	---	5140.588	11.441
1.425	0.276	0.276	3	7	28	42	---	---	---	4438.868	8.043
1.675	0.327	0.327	3	7	28	42	---	---	---	4468.960	6.828
1.925	0.378	0.378	3	7	29	44	---	---	---	4562.107	6.026
2.175	0.430	0.430	3	7	26	39	---	---	---	4160.408	4.839
2.425	0.481	0.481	3	7	25	38	---	---	---	3909.609	4.063
2.675	0.532	0.532	3	7	24	36	---	---	---	3840.706	3.607
2.925	0.584	0.584	3	7	19	29	---	---	---	3005.233	2.574
3.175	0.635	0.635	6	8	15	21	---	---	---	5754.727	4.531
3.425	0.685	0.685	7	8	19	25	55	41	0.447	---	---
3.675	0.735	0.735	3	6	19	24	---	---	---	2891.484	1.965
3.925	0.787	0.787	3	6	18	22	---	---	---	2770.361	1.760
4.175	0.838	0.838	3	6	14	16	---	---	---	2095.220	1.250
4.425	0.889	0.889	3	6	12	13	---	---	---	1714.530	0.964
4.675	0.941	0.941	3	6	13	14	---	---	---	1920.254	1.021
4.925	0.992	0.992	4	8	29	29	---	---	---	6905.733	3.480
5.175	1.043	1.043	8	9	39	38	84	43	0.847	---	---
5.425	1.094	1.094	9	9	38	35	90	43	0.594	---	---
5.675	1.146	1.128	8	9	27	25	69	41	0.322	---	---
5.925	1.196	1.152	3	5	6	5	---	---	---	846.170	0.367
6.175	1.245	1.176	7	9	36	32	68	41	0.932	---	---
6.425	1.294	1.200	7	10	93	81	102	45	5.066	---	---
6.675	1.345	1.224	9	10	64	55	107	45	2.282	---	---
6.925	1.396	1.250	9	9	40	34	89	43	0.510	---	---
7.175	1.447	1.276	9	10	49	41	96	45	1.101	---	---
7.425	1.499	1.301	9	9	26	21	73	41	0.267	---	---
7.675	1.550	1.327	8	9	44	35	84	43	0.594	---	---
7.925	1.601	1.353	9	9	32	25	80	41	0.322	---	---
8.175	1.652	1.378	9	9	37	29	84	43	0.383	---	---
8.425	1.704	1.404	8	10	71	55	100	45	2.282	---	---
8.675	1.755	1.430	8	10	69	52	99	45	2.029	---	---
8.925	1.806	1.455	8	10	70	52	99	45	2.029	---	---
9.175	1.858	1.481	8	10	76	56	101	45	2.366	---	---
9.425	1.909	1.507	9	10	46	34	91	43	0.510	---	---
9.675	1.960	1.533	9	10	84	60	113	45	2.704	---	---
9.925	2.011	1.558	9	10	65	46	103	45	1.522	---	---
10.175	2.063	1.584	9	10	53	37	95	43	0.763	---	---
10.425	2.114	1.610	8	10	80	55	102	45	2.282	---	---
10.675	2.164	1.634	7	9	47	32	72	41	0.932	---	---
10.925	2.213	1.658	7	10	73	49	87	43	2.366	---	---
11.175	2.264	1.682	8	10	62	42	92	43	1.185	---	---
11.425	2.315	1.708	9	10	62	41	100	43	1.101	---	---
11.675	2.366	1.734	8	9	48	31	82	41	0.423	---	---
11.925	2.418	1.760	8	10	68	44	94	43	1.354	---	---
12.175	2.469	1.785	---	10	---	---	---	---	---	---	---

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96-011

INPUT FILE: B:960041.CPD |----------

pth eter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	---	---	211.813
0.425	---	---	119.092
0.675	---	---	92.621
0.925	172.603	2615.703	---
1.175	119.026	2522.230	---
1.425	76.615	2184.077	---
1.675	62.435	2202.589	---
1.925	53.404	2251.833	---
2.175	40.602	2059.902	---
2.425	32.628	1941.516	---
2.675	28.115	1911.781	---
2.925	18.443	1508.441	---
3.175	37.394	2852.316	---
3.425	---	578.648	146.286
3.675	13.164	1464.387	---
3.925	11.470	1409.201	---
4.175	7.476	1084.002	---
4.425	5.402	902.311	---
4.675	5.803	1006.422	---
4.925	26.891	3440.057	---
5.175	---	1030.120	411.372
5.425	---	1116.246	490.680
5.675	---	894.060	280.648
5.925	1.616	502.097	---
6.175	---	903.872	282.178
6.425	---	-353.390	725.222
6.675	---	-31150.373	840.442
6.925	---	1180.920	519.953
7.175	---	1255.863	634.162
7.425	---	997.468	334.356
7.675	---	1152.622	461.016
7.925	---	1110.029	416.804
8.175	---	1179.629	476.861
8.425	---	-852.097	745.179
8.675	---	271.175	724.467
8.925	---	50.864	731.741
9.175	---	-5308.780	790.959
9.425	---	1315.135	603.657
9.675	---	-1190994.51	100.671
9.925	---	-17334.896	842.942
10.175	---	1131.781	694.351
10.425	---	-13076.985	836.409
10.675	---	1103.739	371.313
10.925	---	1325.537	571.737
11.175	---	1370.588	649.223
11.425	---	-5061.781	812.210
11.675	---	1280.594	503.754
11.925	---	1190.030	705.810
12.175	---	---	---

96 - 011

~~98 - 027~~

:put file from CPTINT - Version 4.2

'UT FILE: B:960042.CPD

:ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

:erpreter Name: VBI IN-SITU TESTING, INC

.e Number: 960042 Date: 06-18-96 11:01
:rator: CARL G. MORGAN On Site Location: CPT-3
ye Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

' for calculating Qt:	0.800
lue for Water Table (in m):	5.500
lid Zone Classification based on:	Rf
lpha' for Gmax in Clay:	75.000
thod for calculating Su:	Nkt
lue of the constant Nkt:	13.000
J/EOS) for normal consolidation:	0.250
nd Compressibility for calc Dr:	High
thod for Friction Angle:	Robertson & Campanella
lpha' for Youngs Modulus (E25):	2.500
lty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
r Rf Zone & Bq Zone Classification

ne #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ne #2=Organic material	Zone #8 =Sandy to silty sand
ne #3=Clay	Zone #9 =Sand
ne #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ne #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ne #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

r soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

~~98-027~~

96-011

INPUT FILE: B:960042.CPD

pth eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	38.247	38.247	1490.489	0.677	1.769	124.994	0.000	-0.003	-0.000	-0.000
0.425	1.394	17.734	17.733	232.640	0.682	3.845	119.968	0.000	-0.070	-0.000	-0.000
0.675	2.215	22.236	22.184	174.850	1.132	5.103	124.994	0.000	-3.592	-0.012	-0.012
0.925	3.035	21.536	21.422	119.730	1.129	5.271	124.994	0.000	-7.888	-0.027	-0.027
1.175	3.855	18.510	18.410	79.487	1.000	5.432	124.994	0.000	-6.974	-0.027	-0.028
1.425	4.675	15.834	15.712	55.111	0.794	5.055	124.994	0.000	-8.482	-0.039	-0.040
1.675	5.495	14.498	14.381	42.407	0.736	5.118	124.994	0.000	-8.152	-0.041	-0.042
1.925	6.316	13.292	13.188	33.470	0.645	4.892	124.994	0.000	-7.228	-0.039	-0.041
2.175	7.136	13.504	13.409	29.906	0.756	5.636	124.994	0.000	-6.578	-0.035	-0.036
2.425	7.956	16.248	16.170	32.330	0.739	4.568	124.994	0.000	-5.384	-0.024	-0.025
2.675	8.776	31.406	31.410	57.552	0.813	2.590	124.994	0.000	0.280	0.001	0.001
2.925	9.596	11.776	11.792	19.063	0.447	3.794	124.994	0.000	1.102	0.007	0.007
3.175	10.417	11.982	11.976	17.742	0.536	4.472	124.994	0.000	-0.384	-0.002	-0.002
3.425	11.237	11.760	11.684	15.926	0.701	5.998	124.994	0.000	-5.270	-0.032	-0.035
3.675	12.057	9.622	9.551	11.897	0.615	6.437	119.968	0.000	-4.954	-0.037	-0.040
3.925	12.877	23.856	23.789	29.081	0.763	3.207	124.994	0.000	-4.680	-0.014	-0.015
4.175	13.697	203.518	203.510	240.668	2.263	1.112	124.994	0.000	-0.566	-0.000	-0.000
4.425	14.518	150.914	150.923	167.933	2.044	1.354	124.994	0.000	0.620	0.000	0.000
4.675	15.338	193.990	194.005	204.366	3.074	1.584	124.994	0.000	1.030	0.000	0.000
4.925	16.158	160.718	160.738	160.390	1.066	0.663	124.994	0.000	1.408	0.001	0.001
5.175	16.978	144.804	144.817	137.283	1.204	0.832	124.994	0.000	0.900	0.000	0.000
5.425	17.798	126.764	126.773	114.402	0.537	0.423	124.994	0.000	0.616	0.000	0.000
5.675	18.619	52.154	52.156	45.105	0.671	1.287	119.968	0.249	-0.139	-0.000	-0.000
5.925	19.439	63.446	63.342	53.828	1.231	1.943	119.968	0.605	-7.842	-0.009	-0.009
6.175	20.259	193.030	192.885	162.523	2.219	1.151	124.994	0.960	-11.050	-0.004	-0.004
6.425	21.079	194.042	193.895	159.854	3.208	1.655	124.994	1.316	-11.570	-0.004	-0.004
6.675	21.899	270.872	270.745	218.930	2.601	0.961	124.994	1.672	-10.533	-0.003	-0.003
6.925	22.720	241.670	241.561	191.181	2.427	1.005	124.994	2.027	-9.643	-0.003	-0.003
7.175	23.540	205.090	204.976	158.770	3.332	1.626	124.994	2.383	-10.323	-0.004	-0.004
7.425	24.360	190.642	190.524	144.674	3.918	2.056	119.968	2.739	-10.974	-0.004	-0.004
7.675	25.180	355.342	355.296	265.737	6.252	1.760	124.994	3.095	-6.302	-0.001	-0.001
7.925	26.000	315.238	315.088	231.036	3.823	1.213	124.994	3.450	-13.906	-0.003	-0.003
8.175	26.821	344.134	343.972	247.600	-6549.719	-1904.141	124.994	3.806	-15.063	-0.003	-0.003
8.425	27.641	513.700	513.554	363.470	-32768.000	-6380.631	124.994	4.162	-14.185	-0.002	-0.002

98-027

96-011

INPUT FILE: B:960042.CPD

›th :ter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
).175	0.026	0.026	6	8	15	23	---	---	---	5881.680	114.653
).425	0.076	0.076	4	6	11	17	---	---	---	2717.183	17.895
).675	0.126	0.126	3	7	21	32	---	---	---	3394.443	13.450
).925	0.177	0.177	3	7	21	32	---	---	---	3269.313	9.210
1.175	0.229	0.229	3	6	18	27	---	---	---	2797.785	6.114
1.425	0.280	0.280	3	6	15	23	---	---	---	2374.753	4.239
1.675	0.331	0.331	3	6	14	21	---	---	---	2162.000	3.262
1.925	0.383	0.383	3	6	13	20	---	---	---	1970.568	2.575
2.175	0.434	0.434	3	6	13	20	---	---	---	1996.739	2.300
2.425	0.485	0.485	3	6	15	23	---	---	---	2413.756	2.487
2.675	0.536	0.536	6	7	12	18	---	---	---	4751.019	4.427
2.925	0.588	0.588	3	6	11	17	---	---	---	1724.161	1.466
3.175	0.639	0.639	3	6	11	16	---	---	---	1744.677	1.365
3.425	0.690	0.690	3	6	11	15	---	---	---	1691.798	1.225
3.675	0.741	0.741	3	6	9	11	---	---	---	1355.756	0.915
3.925	0.791	0.791	5	7	11	13	---	---	---	3539.045	2.237
4.175	0.842	0.842	9	9	39	45	96	45	1.438	---	---
4.425	0.893	0.893	8	9	36	39	84	43	0.932	---	---
4.675	0.945	0.945	8	9	46	48	92	45	1.691	---	---
4.925	0.996	0.996	9	9	31	31	84	43	0.423	---	---
5.175	1.047	1.047	9	9	28	27	80	43	0.351	---	---
5.425	1.099	1.099	9	9	24	22	74	41	0.280	---	---
5.675	1.149	1.131	7	8	17	15	41	37	0.280	---	---
5.925	1.198	1.154	7	8	20	18	48	39	0.322	---	---
6.175	1.248	1.179	9	9	37	33	88	43	0.477	---	---
6.425	1.300	1.205	8	9	46	40	88	43	1.016	---	---
6.675	1.351	1.231	9	10	52	44	99	45	1.354	---	---
6.925	1.402	1.256	9	10	46	39	95	43	0.932	---	---
7.175	1.453	1.282	8	9	49	40	88	43	1.016	---	---
7.425	1.504	1.307	7	9	61	50	85	43	2.451	---	---
7.675	1.554	1.331	8	10	85	68	108	45	3.379	---	---
7.925	1.605	1.357	9	10	60	47	103	45	1.607	---	---
8.175	1.657	1.383	---	10	---	---	---	---	---	---	---
8.425	1.708	1.408	---	10	---	---	---	---	---	---	---

~~98-089~~

96-011

INPUT FILE: B:960042.CPD

pth (eter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	2122.299	2868.497	---
0.425	208.210	1329.974	---
0.675	145.707	1663.822	---
0.925	90.761	1606.683	---
1.175	54.390	1380.720	---
1.425	34.411	1178.392	---
1.675	24.799	1078.548	---
1.925	18.449	989.096	---
2.175	16.027	1005.698	---
2.425	17.667	1212.787	---
2.675	36.326	2355.752	---
2.925	9.128	884.390	---
3.175	8.344	898.235	---
3.425	7.291	876.310	---
3.675	5.063	716.301	---
3.925	15.476	1784.147	---
4.175	---	1039.013	508.775
4.425	---	950.147	377.307
4.675	---	1063.553	485.012
4.925	---	1006.250	401.846
5.175	---	977.543	362.042
5.425	---	937.356	316.933
5.675	---	558.471	130.390
5.925	---	639.706	158.356
6.175	---	1134.264	482.213
6.425	---	1143.205	484.737
6.675	---	1048.061	676.862
6.925	---	1244.549	603.902
7.175	---	1184.569	512.441
7.425	---	1162.116	476.310
7.675	---	-69359.453	888.241
7.925	---	-6407.274	787.720
8.175	---	---	---
8.425	---	---	---

96 - 011

~~28 - 027~~

put file from CPTINT - Version 4.2

UT FILE: B:960043.CPD

ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

:erpreter Name: VBI IN-SITU TESTING, INC

.e Number: 960043 Date: 06-18-96 12:19
:rator: CARL G. MORGAN On Site Location: CPT-4
ie Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

' for calculating Qt:	0.800
iue for Water Table (in m):	5.500
iid Zone Classification based on:	Rf
lpha' for Gmax in Clay:	75.000
thod for calculating Su:	Nkt
lue of the constant Nkt:	13.000
J/EOS) for normal consolidation:	0.250
nd Compressibility for calc Dr:	High
thod for Friction Angle:	Robertson & Campanella
lpha' for Youngs Modulus (E25):	2.500
lty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
r Rf Zone & Bq Zone Classification

ne #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ne #2=Organic material	Zone #8 =Sandy to silty sand
ne #3=Clay	Zone #9 =Sand
ne #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ne #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ne #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

ITE:

ir soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

96 - 011

~~98 - 027~~

INPUT FILE: B:960043.CPD

pth eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	47.247	47.249	1841.539	1.191	2.520	124.994	0.000	0.140	0.000	0.000
0.425	1.394	23.276	23.267	301.450	0.951	4.089	124.994	0.000	-0.596	-0.002	-0.002
0.675	2.215	18.068	18.043	140.866	0.745	4.131	119.968	0.000	-1.722	-0.007	-0.007
0.925	3.035	15.858	15.856	88.882	0.458	2.891	119.968	0.000	-0.138	-0.001	-0.001
1.175	3.855	14.288	14.287	62.321	0.433	3.032	119.968	0.000	-0.040	-0.000	-0.000
1.425	4.675	13.222	13.226	47.117	0.356	2.689	119.968	0.000	0.244	0.001	0.001
1.675	5.495	11.200	11.203	33.458	0.401	3.583	124.994	0.000	0.202	0.001	0.001
1.925	6.316	11.992	12.010	30.907	0.575	4.788	124.994	0.000	1.246	0.007	0.008
2.175	7.136	12.992	13.011	29.423	0.613	4.713	124.994	0.000	1.350	0.007	0.008
2.425	7.956	15.476	15.468	31.293	0.789	5.104	124.994	0.000	-0.584	-0.003	-0.003
2.675	8.776	15.808	15.734	28.672	0.868	5.514	124.994	0.000	-5.156	-0.024	-0.024
2.925	9.596	14.668	14.586	24.081	0.730	5.006	124.994	0.000	-5.726	-0.028	-0.029
3.175	10.417	16.140	16.065	24.386	0.846	5.265	124.994	0.000	-5.180	-0.023	-0.024
3.425	11.237	16.026	15.959	22.328	0.985	6.173	124.994	0.000	-4.640	-0.021	-0.022
3.675	12.057	16.480	16.408	21.312	0.919	5.598	124.994	0.000	-4.986	-0.022	-0.023
3.925	12.877	56.326	56.300	70.566	1.611	2.861	124.994	0.000	-1.776	-0.002	-0.002
4.175	13.697	250.934	250.947	298.467	3.263	1.300	124.994	0.000	0.892	0.000	0.000
4.425	14.518	215.812	215.837	241.714	1.881	0.871	124.994	0.000	1.758	0.001	0.001
4.675	15.338	210.162	210.191	222.476	1.605	0.763	124.994	0.000	1.994	0.001	0.001
4.925	16.158	249.992	250.009	251.066	3.769	1.508	124.994	0.000	1.196	0.000	0.000
5.175	16.978	346.716	346.719	331.384	3.094	0.892	124.994	0.000	0.176	0.000	0.000
5.425	17.798	460.222	460.223	419.125	3.994	0.868	130.019	0.000	0.040	0.000	0.000
5.675	18.619	260.734	260.720	229.743	2.093	0.803	124.994	0.249	-1.237	-0.000	-0.000
5.925	19.439	173.042	172.979	148.661	1.352	0.782	124.994	0.605	-4.998	-0.002	-0.002
6.175	20.259	329.448	329.404	277.814	5.116	1.553	124.994	0.960	-4.026	-0.001	-0.001
6.425	21.079	237.984	237.930	196.066	2.942	1.237	124.994	1.316	-5.098	-0.002	-0.002
6.675	21.899	226.742	226.620	182.917	5.015	2.213	119.968	1.672	-10.153	-0.003	-0.003
6.925	22.720	158.264	158.162	124.790	1.744	1.103	124.994	2.027	-9.143	-0.004	-0.004
7.175	23.540	171.430	171.318	132.513	1.515	0.884	124.994	2.383	-10.171	-0.004	-0.004
7.425	24.360	370.544	370.434	282.152	3.912	1.056	124.994	2.739	-10.426	-0.002	-0.002
7.675	25.180	529.518	529.412	395.615	3.240	0.612	130.019	3.095	-10.472	-0.001	-0.001
7.925	26.000	409.626	409.549	299.512	3.418	0.835	130.019	3.450	-8.824	-0.002	-0.002
8.175	26.821	119.184	119.141	84.595	1.908	1.602	124.994	3.806	-6.819	-0.004	-0.004
8.425	27.641	97.990	97.943	68.086	2.116	2.161	119.968	4.162	-7.431	-0.005	-0.006
8.675	28.461	310.846	310.784	214.892	5.445	1.752	124.994	4.517	-8.871	-0.002	-0.002
8.925	29.281	195.620	195.572	132.374	2.712	1.387	124.994	4.873	-8.255	-0.003	-0.003
9.175	30.101	150.864	150.776	99.981	2.203	1.461	124.994	5.229	-11.384	-0.005	-0.006
9.425	30.922	202.624	202.518	132.403	2.452	1.211	124.994	5.584	-12.980	-0.005	-0.005
9.675	31.742	178.940	178.840	114.796	2.294	1.283	124.994	5.940	-12.902	-0.005	-0.005
9.925	32.562	34.628	34.546	20.765	1.448	4.192	124.994	6.296	-11.999	-0.025	-0.027
10.175	33.382	24.374	24.312	13.969	1.177	4.840	124.994	6.651	-11.015	-0.033	-0.036
10.425	34.202	20.472	20.414	11.314	0.837	4.100	119.968	7.007	-11.085	-0.039	-0.044
10.675	35.023	16.956	16.901	8.974	0.882	5.217	124.994	7.363	-11.196	-0.048	-0.055
10.925	35.843	98.116	98.050	57.518	2.321	2.367	119.968	7.719	-12.314	-0.009	-0.009
11.175	36.663	150.432	150.339	87.630	2.784	1.852	119.968	8.074	-14.572	-0.007	-0.007
11.425	37.483	287.740	287.640	166.430	3.703	1.288	124.994	8.430	-15.384	-0.004	-0.004
11.675	38.303	251.640	251.535	143.194	5.022	1.996	124.994	8.786	-16.121	-0.005	-0.005
11.925	39.124	249.092	248.987	139.640	4.668	1.875	124.994	9.141	-16.463	-0.005	-0.005
12.175	39.944	210.500	210.394	116.065	-13104.911	-6228.753	124.994	9.497	-16.909	-0.006	-0.006

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~~98 - 027~~

INPUT FILE: B:960043.CPD

pth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	6	8	18	27	---	---	---	7266.974	141.657
0.425	0.077	0.077	4	7	15	23	---	---	---	3568.696	23.188
0.675	0.127	0.127	4	6	12	18	---	---	---	2757.029	10.836
0.925	0.176	0.176	5	6	8	12	---	---	---	2412.875	6.837
1.175	0.226	0.226	5	6	7	11	---	---	---	2163.915	4.794
1.425	0.275	0.275	5	6	6	9	---	---	---	1992.927	3.624
1.675	0.325	0.325	3	6	11	17	---	---	---	1673.942	2.574
1.925	0.376	0.376	3	6	12	18	---	---	---	1790.240	2.377
2.175	0.428	0.428	3	6	12	18	---	---	---	1936.465	2.263
2.425	0.479	0.479	3	6	15	23	---	---	---	2306.541	2.407
2.675	0.530	0.530	3	6	15	23	---	---	---	2339.611	2.206
2.925	0.582	0.582	3	6	14	21	---	---	---	2155.025	1.852
3.175	0.633	0.633	3	6	15	21	---	---	---	2374.863	1.876
3.425	0.684	0.684	3	6	15	20	---	---	---	2350.625	1.718
3.675	0.735	0.735	3	6	16	20	---	---	---	2411.830	1.639
3.925	0.787	0.787	6	8	22	26	---	---	---	8542.798	5.428
4.175	0.838	0.838	9	10	48	55	104	45	2.282	---	---
4.425	0.889	0.889	9	9	41	45	97	45	1.438	---	---
4.675	0.941	0.941	9	9	40	42	95	45	1.185	---	---
4.925	0.992	0.992	8	10	60	60	100	45	2.704	---	---
5.175	1.043	1.043	9	10	66	64	111	47	3.041	---	---
5.425	1.095	1.095	10	10	73	68	121	47	3.379	---	---
5.675	1.148	1.130	9	10	50	46	100	45	1.522	---	---
5.925	1.199	1.156	9	9	33	30	84	43	0.399	---	---
6.175	1.250	1.181	8	10	79	69	107	45	3.463	---	---
6.425	1.302	1.207	9	10	46	40	95	45	1.016	---	---
6.675	1.352	1.232	7	10	72	61	93	43	3.379	---	---
6.925	1.402	1.256	9	9	30	25	79	41	0.322	---	---
7.175	1.453	1.282	9	9	33	27	82	43	0.351	---	---
7.425	1.505	1.308	9	10	71	58	110	45	2.535	---	---
7.675	1.557	1.334	10	10	85	68	---	---	3.379	---	---
7.925	1.610	1.362	10	10	65	51	112	45	1.944	---	---
8.175	1.663	1.389	8	9	29	23	67	41	0.292	---	---
8.425	1.713	1.413	7	9	31	24	60	39	0.423	---	---
8.675	1.763	1.438	8	10	74	56	101	45	2.366	---	---
8.925	1.814	1.464	8	9	47	35	84	43	0.594	---	---
9.175	1.866	1.489	8	9	36	26	74	41	0.337	---	---
9.425	1.917	1.515	9	9	39	28	85	43	0.366	---	---
9.675	1.968	1.541	8	9	43	31	80	41	0.423	---	---
9.925	2.020	1.566	4	7	22	16	---	---	---	5005.421	1.597
10.175	2.071	1.592	3	7	23	16	---	---	---	3422.548	1.075
10.425	2.121	1.617	4	6	13	9	---	---	---	2814.984	0.870
10.675	2.171	1.641	3	6	16	11	---	---	---	2266.727	0.690
10.925	2.222	1.666	7	9	31	21	57	39	0.366	---	---
11.175	2.271	1.690	7	9	48	32	72	41	0.932	---	---
11.425	2.321	1.714	9	10	55	36	95	43	0.679	---	---
11.675	2.372	1.740	8	10	60	39	90	43	0.932	---	---
11.925	2.424	1.766	8	10	60	39	89	43	0.932	---	---
12.175	2.475	1.791	---	9	---	---	---	---	---	---	---

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INPUT FILE: B:960043.CPD

pth (eter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	2764.534	3543.651	---
0.425	287.849	1745.056	---
0.675	111.212	1353.241	---
0.925	62.540	1189.201	---
1.175	40.127	1071.557	---
1.425	28.289	991.913	---
1.675	18.441	840.218	---
1.925	16.700	900.745	---
2.175	15.704	975.858	---
2.425	16.961	1160.069	---
2.675	15.204	1180.033	---
2.925	12.224	1093.917	---
3.175	12.419	1204.907	---
3.425	11.123	1196.940	---
3.675	10.493	1230.617	---
3.925	46.869	4222.533	---
4.175	---	-578.333	627.367
4.425	---	1055.177	539.593
4.675	---	1081.772	525.477
4.925	---	798.423	625.023
5.175	---	-72357.898	866.796
5.425	---	-4526389.51	150.557
5.675	---	1164.060	651.801
5.925	---	1081.931	432.448
6.175	---	-22678.656	823.511
6.425	---	1222.137	594.825
6.675	---	1207.482	566.551
6.925	---	1063.988	395.405
7.175	---	1107.698	428.296
7.425	---	-142970.25	926.085
7.675	---	-18877724.	1323.531
7.925	---	-596061.31	1023.873
8.175	---	959.305	297.853
8.425	---	867.270	244.859
8.675	---	-3708.744	776.960
8.925	---	1210.124	488.930
9.175	---	1086.939	376.940
9.425	---	1237.085	506.295
9.675	---	1183.157	447.101
9.925	10.158	2590.980	---
10.175	6.189	1823.377	---
10.425	4.755	1531.036	---
10.675	3.559	1267.599	---
10.925	---	891.246	245.126
11.175	---	1118.782	375.847
11.425	---	966.775	719.101
11.675	---	1386.909	628.837
11.925	---	1389.805	622.468
12.175	---	---	---

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~~98-027~~

xut file from CPTINT - Version 4.2

JT FILE: B:960047.CPD

ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

erpreter Name: VBI IN-SITU TESTING, INC

e Number: 960047 Date: 06-18-96 16:42
rator: CARL G. MORGAN On Site Location: CPT-5
e Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

for calculating Qt:	0.800
ue for Water Table (in m):	5.500
id Zone Classification based on:	Rf
pha' for Gmax in Clay:	75.000
hod for calculating Su:	Nkt
ue of the constant Nkt:	13.000
ı/EOS) for normal consolidation:	0.250
ıd Compressibility for calc Dr:	High
:hod for Friction Angle:	Robertson & Campanella
pha' for Youngs Modulus (E25):	2.500
ty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
· Rf Zone & Bq Zone Classification

ıe #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ıe #2=Organic material	Zone #8 =Sandy to silty sand
ıe #3=Clay	Zone #9 =Sand
ıe #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ıe #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ıe #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

r soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

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INPUT FILE: B:960047.CPD

pth eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	23.582	23.582	918.614	0.646	2.739	124.994	0.000	0.015	0.000	0.000
0.425	1.394	9.916	9.903	129.471	0.504	5.094	119.968	0.000	-0.930	-0.007	-0.007
0.675	2.215	8.058	8.031	63.187	0.379	4.719	119.968	0.000	-1.858	-0.017	-0.017
0.925	3.035	7.198	7.192	40.253	0.313	4.355	119.968	0.000	-0.386	-0.004	-0.004
1.175	3.855	9.842	9.828	42.957	0.449	4.569	119.968	0.000	-1.004	-0.007	-0.008
1.425	4.675	12.842	12.849	45.923	0.577	4.492	124.994	0.000	0.480	0.003	0.003
1.675	5.495	10.334	10.329	30.870	0.501	4.849	119.968	0.000	-0.376	-0.003	-0.003
1.925	6.316	15.670	15.689	40.910	0.761	4.848	124.994	0.000	1.298	0.006	0.006
2.175	7.136	15.298	15.365	35.099	0.811	5.276	124.994	0.000	4.622	0.022	0.022
2.425	7.956	10.684	10.730	21.500	0.606	5.644	124.994	0.000	3.228	0.022	0.023
2.675	8.776	7.316	7.364	12.969	0.376	5.109	119.968	0.000	3.334	0.033	0.035
2.925	9.596	9.070	9.124	14.829	0.517	5.666	119.968	0.000	3.738	0.029	0.031
3.175	10.417	9.748	9.819	14.695	0.535	5.451	119.968	0.000	4.922	0.036	0.039
3.425	11.237	9.782	9.836	13.576	0.605	6.155	119.968	0.000	3.780	0.028	0.030
3.675	12.057	10.240	10.325	13.260	0.605	5.861	119.968	0.000	5.918	0.041	0.044
3.925	12.877	8.440	8.538	10.041	0.488	5.714	119.968	0.000	6.782	0.057	0.063
4.175	13.697	11.080	11.179	12.574	0.688	6.155	124.994	0.000	6.858	0.044	0.048
4.425	14.518	10.880	11.021	11.598	0.654	5.938	124.994	0.000	9.798	0.064	0.070
4.675	15.338	8.208	8.343	8.019	0.522	6.262	119.968	0.000	9.378	0.081	0.091
4.925	16.158	5.600	5.700	4.850	0.344	6.038	119.968	0.000	6.958	0.088	0.106
5.175	16.978	5.456	5.554	4.426	0.249	4.476	119.968	0.000	6.810	0.088	0.108
5.425	17.798	5.924	6.038	4.628	0.245	4.055	119.968	0.000	7.882	0.094	0.114
5.675	18.619	9.392	9.518	7.605	0.590	6.199	119.968	0.249	8.493	0.064	0.073
5.925	19.439	34.722	35.067	30.029	2.675	7.627	124.994	0.605	23.296	0.048	0.049
6.175	20.259	43.814	44.495	37.484	2.990	6.719	124.994	0.960	46.278	0.075	0.077
6.425	21.079	141.934	142.061	119.302	4.920	3.463	124.994	1.316	7.456	0.004	0.004
6.675	21.899	79.084	78.939	64.368	2.699	3.419	124.994	1.672	-11.791	-0.011	-0.011
6.925	22.720	34.808	34.673	27.038	1.463	4.219	124.994	2.027	-11.441	-0.024	-0.025
7.175	23.540	39.592	39.462	30.254	2.449	6.205	124.994	2.383	-11.457	-0.021	-0.022
7.425	24.360	34.942	34.813	25.984	2.125	6.105	124.994	2.739	-11.736	-0.024	-0.025
7.675	25.180	39.360	39.234	28.814	-21844.721	-55677.855	124.994	3.095	-11.802	-0.022	-0.023

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~~96 - 087~~

INPUT FILE: B:960047.CPD

)th ɜter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
).175	0.026	0.026	5	7	11	17	---	---	---	3624.980	70.663
).425	0.076	0.076	3	6	9	14	---	---	---	1512.195	9.959
).675	0.125	0.125	3	5	8	12	---	---	---	1216.644	4.861
).925	0.174	0.174	3	5	7	11	---	---	---	1079.988	3.096
1.175	0.224	0.224	3	6	9	14	---	---	---	1477.919	3.304
1.425	0.274	0.274	3	6	12	18	---	---	---	1935.131	3.533
1.675	0.324	0.324	3	6	10	15	---	---	---	1539.555	2.375
1.925	0.374	0.374	3	6	15	23	---	---	---	2356.667	3.147
2.175	0.426	0.426	3	6	15	23	---	---	---	2298.893	2.700
2.425	0.477	0.477	3	6	10	15	---	---	---	1577.881	1.654
2.675	0.527	0.527	3	5	7	11	---	---	---	1052.094	0.998
2.925	0.576	0.576	3	5	9	14	---	---	---	1315.330	1.141
3.175	0.626	0.626	3	5	9	13	---	---	---	1414.713	1.130
3.425	0.675	0.675	3	5	9	12	---	---	---	1409.840	1.044
3.675	0.724	0.724	3	5	10	13	---	---	---	1477.481	1.020
3.925	0.773	0.773	3	5	8	10	---	---	---	1194.825	0.772
4.175	0.824	0.824	3	5	11	13	---	---	---	1593.520	0.967
4.425	0.875	0.875	3	5	11	12	---	---	---	1561.364	0.892
4.675	0.925	0.925	3	4	8	8	---	---	---	1141.516	0.617
4.925	0.974	0.974	3	4	5	5	---	---	---	727.244	0.373
5.175	1.024	1.024	3	4	5	5	---	---	---	697.182	0.340
5.425	1.073	1.073	3	4	6	6	---	---	---	764.031	0.356
5.675	1.122	1.104	3	5	9	8	---	---	---	1292.087	0.585
5.925	1.172	1.129	3	7	34	31	---	---	---	5215.873	2.310
6.175	1.224	1.154	3	7	43	38	---	---	---	6658.815	2.883
6.425	1.275	1.180	6	9	54	48	---	---	---	21665.020	9.177
6.675	1.326	1.206	6	9	30	26	---	---	---	11943.528	4.951
6.925	1.377	1.231	4	7	22	19	---	---	---	5123.733	2.080
7.175	1.429	1.257	3	8	38	32	---	---	---	5852.787	2.327
7.425	1.480	1.283	3	7	33	27	---	---	---	5129.491	1.999
7.675	1.531	1.308	---	8	---	---	---	---	---	---	---

96-011

~~98-025~~

INPUT FILE: B:960047.CPD

pth (eter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	1158.943	1768.641	---
0.425	100.083	742.696	---
0.675	40.825	602.344	---
0.925	23.235	539.433	---
1.175	25.202	737.066	---
1.425	27.396	963.668	---
1.675	16.675	774.644	---
1.925	23.710	1176.652	---
2.175	19.578	1152.340	---
2.425	10.609	804.785	---
2.675	5.640	552.300	---
2.925	6.669	684.286	---
3.175	6.593	736.414	---
3.425	5.972	737.731	---
3.675	5.799	774.390	---
3.925	4.096	640.323	---
4.175	5.426	838.405	---
4.425	4.905	826.579	---
4.675	3.092	625.726	---
4.925	1.650	427.513	---
5.175	1.471	416.553	---
5.425	1.556	452.825	---
5.675	2.894	713.878	---
5.925	16.109	2629.995	---
6.175	21.254	3337.093	---
6.425	90.356	10654.561	---
6.675	41.782	5920.413	---
6.925	14.129	2600.474	---
7.175	16.260	2959.642	---
7.425	13.444	2610.973	---
7.675	---	---	---

96-011

~~88-027~~

out file from CPTINT - Version 4.2

UT FILE: B:960044.CPD

ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

erpreter Name: VBI IN-SITU TESTING, INC

e Number: 960044 Date: 06-18-96 13:58
rator: CARL G. MORGAN On Site Location: CPT-6
e Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

for calculating Qt:	0.800
ue for Water Table (in m):	5.500
id Zone Classification based on:	Rf
pha' for Gmax in Clay:	75.000
hod for calculating Su:	Nkt
ue of the constant Nkt:	13.000
/EOS) for normal consolidation:	0.250
id Compressibility for calc Dr:	High
hod for Friction Angle:	Robertson & Campanella
pha' for Youngs Modulus (E25):	2.500
ty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

l Behavior Type Zone Numbers
Rf Zone & Bq Zone Classification

ie #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ie #2=Organic material	Zone #8 =Sandy to silty sand
ie #3=Clay	Zone #9 =Sand
ie #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ie #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ie #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

96-011

INPUT FILE: B:960044.CPD

pth eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	42.468	42.466	1655.027	0.835	1.966	124.994	0.000	-0.168	-0.000	-0.000
0.425	1.394	12.576	12.573	162.441	0.474	3.768	124.994	0.000	-0.178	-0.001	-0.001
0.675	2.215	8.356	8.340	64.576	0.295	3.542	119.968	0.000	-1.090	-0.009	-0.010
0.925	3.035	12.424	12.420	69.402	0.306	2.464	119.968	0.000	-0.300	-0.002	-0.002
1.175	3.855	14.422	14.413	62.877	0.472	3.273	119.968	0.000	-0.630	-0.003	-0.003
1.425	4.675	13.818	13.826	49.114	0.617	4.460	124.994	0.000	0.546	0.003	0.003
1.675	5.495	10.522	10.461	30.973	0.555	5.309	124.994	0.000	-4.256	-0.029	-0.030
1.925	6.316	10.978	10.948	27.928	0.664	6.069	124.994	0.000	-2.080	-0.014	-0.014
2.175	7.136	12.748	12.763	28.699	0.779	6.105	124.994	0.000	1.058	0.006	0.006
2.425	7.956	17.822	17.805	36.015	0.847	4.757	124.994	0.000	-1.152	-0.005	-0.005
2.675	8.776	36.158	36.156	66.921	0.631	1.745	124.994	0.000	-0.156	-0.000	-0.000
2.925	9.596	11.776	11.793	19.207	0.576	4.886	124.994	0.000	1.188	0.007	0.008
3.175	10.417	12.858	12.873	19.276	0.699	5.430	124.994	0.000	1.066	0.006	0.006
3.425	11.237	15.256	15.205	21.159	0.964	6.339	124.994	0.000	-3.528	-0.017	-0.017
3.675	12.057	24.442	24.392	32.076	0.892	3.659	124.994	0.000	-3.446	-0.010	-0.010
3.925	12.877	127.818	127.816	161.048	1.659	1.298	124.994	0.000	-0.134	-0.000	-0.000
4.175	13.697	203.160	203.173	240.860	1.684	0.829	124.994	0.000	0.892	0.000	0.000
4.425	14.518	206.866	206.881	231.104	1.072	0.518	124.994	0.000	1.034	0.000	0.000
4.675	15.338	204.502	204.513	215.964	1.875	0.917	124.994	0.000	0.794	0.000	0.000
4.925	16.158	246.348	246.352	246.864	3.095	1.256	124.994	0.000	0.274	0.000	0.000
5.175	16.978	196.896	196.902	187.390	2.668	1.355	124.994	0.000	0.448	0.000	0.000
5.425	17.798	198.636	198.614	180.139	1.613	0.812	124.994	0.000	-1.522	-0.001	-0.001
5.675	18.619	224.114	224.005	197.247	1.598	0.714	124.994	0.249	-7.851	-0.003	-0.003
5.925	19.439	241.340	241.239	207.733	2.343	0.971	124.994	0.605	-7.684	-0.002	-0.002
6.175	20.259	328.646	328.588	277.122	3.826	1.164	124.994	0.960	-5.040	-0.001	-0.001
6.425	21.079	252.728	252.663	208.273	3.133	1.240	124.994	1.316	-5.876	-0.002	-0.002
6.675	21.899	193.956	193.849	156.175	2.378	1.227	124.994	1.672	-9.119	-0.003	-0.003
6.925	22.720	167.712	167.604	132.088	2.075	1.238	124.994	2.027	-9.601	-0.004	-0.004
7.175	23.540	267.788	267.707	207.372	3.905	1.459	124.994	2.383	-8.059	-0.002	-0.002
7.425	24.360	262.740	262.654	199.408	3.234	1.231	124.994	2.739	-8.714	-0.002	-0.002
7.675	25.180	28.405	28.412	20.111	-32768.000	-115330.15	124.994	3.095	-2.513	-0.006	-0.007

96 - 011

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INPUT FILE: B:960044.CPD

)th :ter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
).175	0.026	0.026	6	8	16	24	---	---	---	6530.971	127.310
).425	0.077	0.077	3	6	12	18	---	---	---	1923.040	12.495
).675	0.127	0.127	3	5	8	12	---	---	---	1263.886	4.967
).925	0.176	0.176	5	6	6	9	---	---	---	1884.070	5.339
1.175	0.226	0.226	4	6	9	14	---	---	---	2183.229	4.837
1.425	0.276	0.276	3	6	13	20	---	---	---	2085.153	3.778
1.675	0.327	0.327	3	6	10	15	---	---	---	1559.414	2.383
1.925	0.378	0.378	3	6	10	15	---	---	---	1626.514	2.148
2.175	0.430	0.430	3	6	12	18	---	---	---	1897.953	2.208
2.425	0.481	0.481	3	6	17	26	---	---	---	2665.983	2.770
2.675	0.532	0.532	6	8	14	21	---	---	---	5481.955	5.148
2.925	0.584	0.584	3	6	11	17	---	---	---	1724.986	1.477
3.175	0.635	0.635	3	6	12	17	---	---	---	1883.329	1.483
3.425	0.686	0.686	3	6	15	20	---	---	---	2234.278	1.628
3.675	0.737	0.737	4	7	16	20	---	---	---	3640.166	2.467
3.925	0.789	0.789	8	9	31	37	80	43	0.763	---	---
4.175	0.840	0.840	9	9	39	45	96	45	1.438	---	---
4.425	0.891	0.891	9	9	40	44	96	45	1.354	---	---
4.675	0.943	0.943	9	9	39	41	94	45	1.101	---	---
4.925	0.994	0.994	9	10	47	47	100	45	1.607	---	---
5.175	1.045	1.045	8	9	47	45	91	43	1.438	---	---
5.425	1.096	1.096	9	9	38	35	90	43	0.594	---	---
5.675	1.148	1.130	9	9	43	39	94	45	0.932	---	---
5.925	1.199	1.156	9	10	46	41	96	45	1.101	---	---
6.175	1.250	1.181	9	10	63	55	107	45	2.282	---	---
6.425	1.302	1.207	9	10	48	42	97	45	1.185	---	---
6.675	1.353	1.233	9	9	37	31	87	43	0.423	---	---
6.925	1.404	1.258	8	9	40	34	81	43	0.510	---	---
7.175	1.455	1.284	8	10	64	53	98	45	2.113	---	---
7.425	1.507	1.310	9	10	50	41	97	45	1.101	---	---
7.675	1.558	1.335	---	7	---	---	---	---	---	---	---

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INPUT FILE: B:960044.CPD

ıth ;ter)	OCR (ratio)	Qmax (TSF)	E25 (TSF)
).175	2419.090	3184.943	---
).425	132.897	943.008	---
).675	41.950	625.523	---
).925	45.905	931.476	---
1.175	40.575	1080.970	---
1.425	29.795	1036.939	---
1.675	16.744	784.555	---
1.925	14.713	821.104	---
2.175	15.222	957.242	---
2.425	20.218	1335.406	---
2.675	43.863	2711.682	---
2.925	9.215	884.483	---
3.175	9.256	965.501	---
3.425	10.400	1140.391	---
3.675	17.493	1829.429	---
3.925	---	859.640	319.540
4.175	---	1037.965	507.932
4.425	---	1061.253	517.202
4.675	---	1078.312	511.284
4.925	---	909.079	615.880
5.175	---	1102.141	492.256
5.425	---	1120.755	496.536
5.675	---	1169.667	560.013
5.925	---	1211.301	603.096
6.175	---	-21606.598	821.469
6.425	---	1234.236	631.657
6.675	---	1150.479	484.623
6.925	---	1091.868	419.009
7.175	---	1146.619	669.267
7.425	---	1224.732	656.636
7.675	---	---	---

96 - 011

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put file from CPTINT - Version 4.2

UT FILE: B:960046.CPD

ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

erpreter Name: VBI IN-SITU TESTING, INC

e Number: 960046 Date: 06-18-96 15:59
rator: CARL G. MORGAN On Site Location: CPT-7
e Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

' for calculating Qt:	0.800
lue for Water Table (in m):	5.500
lid Zone Classification based on:	Rf
lpha' for Gmax in Clay:	75.000
thod for calculating Su:	Nkt
lue of the constant Nkt:	13.000
J/EOS) for normal consolidation:	0.250
nd Compressibility for calc Dr:	High
thod for Friction Angle:	Robertson & Campanella
lpha' for Youngs Modulus (E25):	2.500
lty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
r Rf Zone & Bq Zone Classification

ne #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ne #2=Organic material	Zone #8 =Sandy to silty sand
ne #3=Clay	Zone #9 =Sand
ne #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ne #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ne #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

r soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

96 - 011

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INPUT FILE: B:960046.CPD

pth (eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	22.498	22.497	876.317	0.604	2.686	124.994	0.000	-0.075	-0.000	-0.000
0.425	1.394	10.102	10.090	131.947	0.424	4.200	119.968	0.000	-0.800	-0.006	-0.006
0.675	2.215	7.870	7.863	61.841	0.265	3.375	119.968	0.000	-0.492	-0.005	-0.005
0.925	3.035	9.840	9.834	55.403	0.329	3.350	119.968	0.000	-0.438	-0.003	-0.003
1.175	3.855	14.262	14.250	62.446	0.767	5.381	124.994	0.000	-0.814	-0.004	-0.004
1.425	4.675	14.710	14.703	52.292	0.776	5.281	124.994	0.000	-0.500	-0.002	-0.002
1.675	5.495	31.502	31.500	95.277	0.892	2.832	124.994	0.000	-0.170	-0.000	-0.000
1.925	6.316	15.322	15.286	39.389	0.815	5.334	124.994	0.000	-2.514	-0.012	-0.012
2.175	7.136	27.602	27.599	63.221	0.470	1.702	124.994	0.000	-0.204	-0.001	-0.001
2.425	7.956	63.300	63.301	130.593	0.625	0.988	124.994	0.000	0.058	0.000	0.000
2.675	8.776	61.770	61.769	115.036	0.484	0.783	124.994	0.000	-0.098	-0.000	-0.000
2.925	9.596	10.836	10.845	17.582	0.492	4.533	124.994	0.000	0.594	0.004	0.004
3.175	10.417	13.996	14.013	21.072	0.692	4.935	124.994	0.000	1.188	0.006	0.006
3.425	11.237	14.864	14.863	20.660	0.801	5.392	124.994	0.000	-0.104	-0.001	-0.001
3.675	12.057	14.532	14.438	18.578	0.777	5.382	124.994	0.000	-6.542	-0.033	-0.034
3.925	12.877	12.154	12.070	14.303	0.653	5.412	124.994	0.000	-5.814	-0.035	-0.037
4.175	13.697	10.562	10.514	11.516	0.598	5.684	124.994	0.000	-3.340	-0.023	-0.025
4.425	14.518	8.982	8.937	9.038	0.531	5.937	119.968	0.000	-3.144	-0.025	-0.028
4.675	15.338	11.906	11.883	11.634	0.611	5.138	124.994	0.000	-1.600	-0.010	-0.011
4.925	16.158	12.798	12.763	11.868	0.513	4.021	124.994	0.000	-2.414	-0.014	-0.015
5.175	16.978	154.790	154.745	147.494	3.137	2.027	119.968	0.000	-3.150	-0.001	-0.001
5.425	17.798	254.214	254.115	231.852	6.621	2.606	119.968	0.000	-6.862	-0.002	-0.002
5.675	18.619	222.366	222.266	196.791	4.099	1.844	124.994	0.249	-7.237	-0.002	-0.002
5.925	19.439	334.928	334.923	290.368	4.446	1.327	124.994	0.605	-0.980	-0.000	-0.000
6.175	20.259	135.888	135.755	114.475	1.263	0.931	124.994	0.960	-10.266	-0.005	-0.005
6.425	21.079	166.482	166.346	137.462	2.170	1.305	124.994	1.316	-10.770	-0.005	-0.005
6.675	21.899	198.376	198.250	160.556	2.152	1.086	124.994	1.672	-10.479	-0.004	-0.004
6.925	22.720	313.582	313.448	249.229	3.770	1.203	124.994	2.027	-11.369	-0.003	-0.003
7.175	23.540	588.440	588.401	459.365	-32768.000	-5568.993	124.994	2.383	-5.037	-0.001	-0.001

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~~98 - 027~~

INPUT FILE: B:960046.CPD

pth (eter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	5	7	11	17	---	---	---	3458.071	67.409
0.425	0.076	0.076	3	6	10	15	---	---	---	1541.106	10.150
0.675	0.125	0.125	3	5	8	12	---	---	---	1190.740	4.757
0.925	0.174	0.174	4	6	6	9	---	---	---	1486.440	4.262
1.175	0.225	0.225	3	6	14	21	---	---	---	2158.358	4.804
1.425	0.276	0.276	3	6	14	21	---	---	---	2220.103	4.022
1.675	0.327	0.327	6	7	12	18	---	---	---	4796.998	7.329
1.925	0.378	0.378	3	6	15	23	---	---	---	2294.035	3.030
2.175	0.430	0.430	6	7	11	17	---	---	---	4180.982	4.863
2.425	0.481	0.481	8	8	15	23	64	43	0.292	---	---
2.675	0.532	0.532	8	8	15	23	61	41	0.292	---	---
2.925	0.584	0.584	3	6	10	15	---	---	---	1579.017	1.352
3.175	0.635	0.635	3	6	13	18	---	---	---	2058.721	1.621
3.425	0.686	0.686	3	6	14	19	---	---	---	2181.540	1.589
3.675	0.737	0.737	3	6	14	18	---	---	---	2108.295	1.429
3.925	0.789	0.789	3	6	12	14	---	---	---	1736.074	1.100
4.175	0.840	0.840	3	6	10	11	---	---	---	1488.676	0.886
4.425	0.890	0.890	3	6	9	10	---	---	---	1238.236	0.695
4.675	0.941	0.941	3	6	11	12	---	---	---	1683.886	0.895
4.925	0.992	0.992	3	6	12	12	---	---	---	1811.457	0.913
5.175	1.042	1.042	7	9	49	47	82	43	2.197	---	---
5.425	1.091	1.091	7	10	81	76	99	45	4.644	---	---
5.675	1.142	1.124	8	9	53	48	94	45	1.691	---	---
5.925	1.193	1.149	9	10	64	57	108	45	2.451	---	---
6.175	1.244	1.175	9	9	26	23	75	41	0.292	---	---
6.425	1.295	1.201	8	9	40	35	82	43	0.594	---	---
6.675	1.347	1.226	9	9	38	32	88	43	0.447	---	---
6.925	1.398	1.252	9	10	60	50	104	45	1.860	---	---
7.175	1.449	1.278	---	10	---	---	---	---	---	---	---

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~~93 - 039~~

INPUT FILE: B:960046.CPD |----------

›th ›ter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
).175	1092.628	1687.294	---
).425	102.481	756.786	---
).675	39.741	589.719	---
).925	34.639	737.527	---
1.175	40.228	1068.771	---
1.425	32.225	1102.710	---
1.675	68.215	2362.467	---
1.925	22.613	1146.436	---
2.175	40.853	2069.930	---
2.425	---	561.703	158.252
2.675	---	581.810	154.421
2.925	8.250	813.341	---
3.175	10.346	1050.983	---
3.425	10.094	1114.688	---
3.675	8.839	1082.836	---
3.925	6.374	905.273	---
4.175	4.862	788.544	---
4.425	3.591	670.255	---
4.675	4.924	891.222	---
4.925	5.048	957.243	---
5.175	---	1003.343	386.862
5.425	---	1188.075	635.289
5.675	---	1164.789	555.665
5.925	---	-32679.781	837.308
6.175	---	979.853	339.386
6.425	---	1074.979	415.866
6.675	---	1157.333	495.624
6.925	---	-6981.455	783.620
7.175	---	---	---

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~~98 - 0 [illegible]~~

put file from CPTINT - Version 4.2

UT FILE: B:960045.CPD

ensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

erpreter Name: VBI IN-SITU TESTING, INC

e Number: 960045 Date: 06-18-96 14:45
rator: CARL G. MORGAN On Site Location: CPT-8
e Type: 322 U2 Comment: NFS 3695-01

MARY SHEET

for calculating Qt:	0.800
ue for Water Table (in m):	5.500
id Zone Classification based on:	Rf
.pha' for Gmax in Clay:	75.000
:hod for calculating Su:	Nkt
.ue of the constant Nkt:	13.000
ı/EOS) for normal consolidation:	0.250
ıd Compressibility for calc Dr:	High
:hod for Friction Angle:	Robertson & Campanella
.pha' for Youngs Modulus (E25):	2.500
.ty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
- Rf Zone & Bq Zone Classification

ıe #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ıe #2=Organic material	Zone #8 =Sandy to silty sand
ıe #3=Clay	Zone #9 =Sand
ıe #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ıe #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ıe #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

r soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

96-011

~~96-087~~

INPUT FILE: B:960045.CPD

pth eter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	265.638	265.638	10357.971	2.874	1.082	124.994	0.000	-0.045	-0.000	-0.000
0.425	1.394	119.632	119.630	1575.174	2.891	2.417	119.968	0.000	-0.158	-0.000	-0.000
0.675	2.215	102.316	102.310	816.675	1.917	1.873	119.968	0.000	-0.396	-0.000	-0.000
0.925	3.035	94.164	94.161	539.077	1.609	1.709	119.968	0.000	-0.186	-0.000	-0.000
1.175	3.855	75.530	75.529	336.829	1.316	1.742	119.968	0.000	-0.044	-0.000	-0.000
1.425	4.675	73.144	73.142	267.117	1.327	1.815	119.968	0.000	-0.166	-0.000	-0.000
1.675	5.495	70.006	70.000	216.378	1.473	2.104	119.968	0.000	-0.382	-0.000	-0.000
1.925	6.316	51.726	51.725	137.942	1.075	2.079	124.994	0.000	-0.072	-0.000	-0.000
2.175	7.136	45.174	45.166	105.634	1.635	3.620	124.994	0.000	-0.524	-0.001	-0.001
2.425	7.956	38.098	38.038	79.105	2.063	5.423	124.994	0.000	-4.182	-0.008	-0.008
2.675	8.776	31.942	31.893	59.616	1.664	5.216	124.994	0.000	-3.436	-0.008	-0.008
2.925	9.596	28.732	28.717	48.733	1.460	5.085	124.994	0.000	-1.038	-0.003	-0.003
3.175	10.417	22.520	22.504	34.793	1.356	6.027	124.994	0.000	-1.142	-0.004	-0.004
3.425	11.237	17.946	17.912	25.341	1.167	6.514	124.994	0.000	-2.366	-0.010	-0.010
3.675	12.057	18.498	18.422	24.191	1.140	6.188	124.994	0.000	-5.276	-0.021	-0.021
3.925	12.877	52.376	52.372	65.923	1.339	2.557	124.994	0.000	-0.282	-0.000	-0.000
4.175	13.697	253.170	253.173	302.618	1.917	0.757	124.994	0.000	0.232	0.000	0.000
4.425	14.518	362.952	362.958	409.056	5.321	1.466	124.994	0.000	0.408	0.000	0.000
4.675	15.338	449.140	449.141	478.632	6.251	1.392	124.994	0.000	0.104	0.000	0.000
4.925	16.158	370.434	370.438	374.045	4.423	1.194	124.994	0.000	0.268	0.000	0.000
5.175	16.978	289.056	289.064	277.213	2.747	0.950	124.994	0.000	0.550	0.000	0.000
5.425	17.798	251.240	251.245	229.439	4.017	1.599	124.994	0.000	0.350	0.000	0.000
5.675	18.619	192.630	192.567	170.518	4.257	2.210	119.968	0.249	-4.647	-0.002	-0.002
5.925	19.439	215.142	214.996	186.360	1.169	0.544	124.994	0.605	-10.788	-0.004	-0.004
6.175	20.259	309.570	309.427	262.742	2.363	0.764	124.994	0.960	-10.930	-0.003	-0.003
6.425	21.079	252.752	252.618	209.675	2.494	0.987	124.994	1.316	-10.654	-0.003	-0.003
6.675	21.899	204.118	203.982	165.511	1.273	0.624	124.994	1.672	-11.127	-0.004	-0.004
6.925	22.720	312.020	311.935	248.431	3.109	0.997	124.994	2.027	-7.977	-0.002	-0.002
7.175	23.540	216.946	216.874	168.871	2.467	1.138	124.994	2.383	-7.449	-0.002	-0.002
7.425	24.360	286.288	286.224	218.789	2.782	0.972	124.994	2.739	-7.242	-0.002	-0.002
7.675	25.180	305.570	305.528	229.063	6.755	2.211	124.994	3.095	-6.034	-0.001	-0.001
7.925	26.000	305.348	305.286	224.498	5.284	1.731	124.994	3.450	-7.766	-0.002	-0.002
8.175	26.821	216.766	216.646	155.972	2.463	1.137	124.994	3.806	-12.151	-0.004	-0.004
8.425	27.641	292.100	291.977	206.733	4.269	1.462	124.994	4.162	-12.721	-0.003	-0.003
8.675	28.461	275.324	275.202	191.251	4.068	1.478	124.994	4.517	-13.031	-0.003	-0.003
8.925	29.281	230.234	230.097	156.851	3.075	1.337	124.994	4.873	-14.459	-0.005	-0.005
9.175	30.101	339.018	338.878	227.541	5.078	1.498	124.994	5.229	-14.968	-0.003	-0.003
9.425	30.922	230.938	230.795	151.900	3.028	1.312	124.994	5.584	-15.554	-0.005	-0.005
9.675	31.742	170.682	170.533	109.998	2.526	1.481	124.994	5.940	-16.358	-0.007	-0.007
9.925	32.562	141.014	140.865	89.112	1.807	1.283	124.994	6.296	-16.685	-0.009	-0.009
10.175	33.382	147.122	146.968	91.488	1.760	1.197	124.994	6.651	-17.359	-0.009	-0.009
10.425	34.202	147.296	147.143	90.105	2.281	1.550	124.994	7.007	-17.679	-0.009	-0.009
10.675	35.023	141.168	141.014	84.964	3.180	2.255	119.968	7.363	-18.130	-0.009	-0.009
10.925	35.843	164.398	164.242	97.674	3.011	1.833	124.994	7.719	-18.624	-0.008	-0.008
11.175	36.663	257.784	257.633	151.595	4.632	1.798	124.994	8.074	-18.568	-0.005	-0.005
11.425	37.483	155.256	155.105	89.392	3.369	2.172	119.968	8.430	-18.960	-0.009	-0.009
11.675	38.303	162.642	162.492	92.408	-6551.637	-4031.977	119.968	8.786	-19.247	-0.009	-0.009
11.925	39.124	127.300	127.154	71.018	-32768.000	-25770.408	119.968	9.141	-19.205	-0.011	-0.011

96-011 ~~98-039~~

INPUT FILE: B:960045.CPD

pth eter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	9	10	51	77	172	---	4.138	---	---
0.425	0.076	0.076	7	9	38	57	122	---	3.041	---	---
0.675	0.125	0.125	7	9	33	50	107	---	2.451	---	---
0.925	0.174	0.174	7	9	30	45	98	---	2.029	---	---
1.175	0.224	0.224	7	9	24	36	85	47	1.269	---	---
1.425	0.273	0.273	7	8	23	35	80	45	1.185	---	---
1.675	0.322	0.322	7	8	22	33	75	45	1.016	---	---
1.925	0.372	0.372	6	8	20	30	---	---	---	7902.470	10.611
2.175	0.424	0.424	5	8	22	33	---	---	---	6885.313	8.126
2.425	0.475	0.475	3	8	36	54	---	---	---	5780.419	6.085
2.675	0.526	0.526	3	7	31	47	---	---	---	4826.855	4.586
2.925	0.577	0.577	3	7	28	42	---	---	---	4330.300	3.749
3.175	0.629	0.629	3	7	22	31	---	---	---	3366.238	2.676
3.425	0.680	0.680	3	6	17	23	---	---	---	2651.758	1.949
3.675	0.731	0.731	3	6	18	23	---	---	---	2722.364	1.861
3.925	0.783	0.783	6	8	20	24	---	---	---	7938.893	5.071
4.175	0.834	0.834	9	10	49	56	104	45	2.366	---	---
4.425	0.885	0.885	9	10	70	77	116	47	4.138	---	---
4.675	0.936	0.936	9	10	86	90	123	47	5.235	---	---
4.925	0.988	0.988	9	10	71	72	115	47	3.716	---	---
5.175	1.039	1.039	9	10	55	53	105	45	2.113	---	---
5.425	1.090	1.090	8	10	60	56	99	45	2.366	---	---
5.675	1.141	1.123	7	9	61	56	89	43	2.957	---	---
5.925	1.191	1.147	9	9	41	37	92	43	0.763	---	---
6.175	1.242	1.173	9	10	59	52	105	45	2.029	---	---
6.425	1.293	1.199	9	10	48	42	97	45	1.185	---	---
6.675	1.345	1.224	9	9	39	33	89	43	0.477	---	---
6.925	1.396	1.250	9	10	60	51	104	45	1.944	---	---
7.175	1.447	1.276	9	9	42	35	91	43	0.594	---	---
7.425	1.499	1.301	9	10	55	45	100	45	1.438	---	---
7.675	1.550	1.327	8	10	73	59	102	45	2.619	---	---
7.925	1.601	1.353	8	10	73	58	102	45	2.535	---	---
8.175	1.652	1.378	9	9	42	33	89	43	0.477	---	---
8.425	1.704	1.404	8	10	70	54	100	45	2.197	---	---
8.675	1.755	1.430	8	10	66	50	97	43	1.860	---	---
8.925	1.806	1.455	8	10	55	41	90	43	1.101	---	---
9.175	1.858	1.481	9	10	65	48	104	45	1.691	---	---
9.425	1.909	1.507	9	10	44	32	90	43	0.447	---	---
9.675	1.960	1.533	8	9	41	30	78	41	0.399	---	---
9.925	2.011	1.558	8	9	34	24	71	41	0.307	---	---
10.175	2.063	1.584	8	9	35	25	72	41	0.322	---	---
10.425	2.114	1.610	8	9	35	24	72	41	0.307	---	---
10.675	2.164	1.634	7	9	45	31	70	41	0.847	---	---
10.925	2.214	1.659	8	9	39	26	75	41	0.337	---	---
11.175	2.266	1.685	8	10	62	41	92	43	1.101	---	---
11.425	2.316	1.709	7	9	50	33	73	41	1.016	---	---
11.675	2.365	1.733	---	9	---	---	---	---	---	---	---
11.925	2.414	1.756	---	9	---	---	---	---	---	---	---

96-011

98-047

INPUT FILE: B:960045.CPD

pth (eter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	---	---	664.094
0.425	---	---	299.074
0.675	---	---	255.776
0.925	---	---	235.403
1.175	---	---	188.823
1.425	---	407.917	182.854
1.675	---	455.117	175.001
1.925	108.334	3879.373	---
2.175	77.607	3387.484	---
2.425	54.063	2852.834	---
2.675	37.962	2391.940	---
2.925	29.507	2153.779	---
3.175	19.365	1687.767	---
3.425	13.030	1343.395	---
3.675	12.295	1381.653	---
3.925	43.047	3927.896	---
4.175	---	-970.137	632.933
4.425	---	-667822.87	907.395
4.675	---	-8711327.01	122.854
4.925	---	-440099.90	926.095
5.175	---	-1161.760	722.660
5.425	---	1193.892	628.113
5.675	---	1117.846	481.418
5.925	---	1161.211	537.490
6.175	---	-5910.430	773.568
6.425	---	1231.588	631.545
6.675	---	1166.948	509.956
6.925	---	-6235.222	779.837
7.175	---	1203.167	542.184
7.425	---	316.365	715.559
7.675	---	-2998.285	763.820
7.925	---	-2735.119	763.216
8.175	---	1231.428	541.616
8.425	---	-15.239	729.943
8.675	---	1072.585	688.005
8.925	---	1278.502	575.241
9.175	---	-22660.400	847.196
9.425	---	1293.281	576.988
9.675	---	1157.221	426.331
9.925	---	1064.944	352.162
10.175	---	1090.263	367.421
10.425	---	1095.017	367.857
10.675	---	1077.255	352.534
10.925	---	1160.245	410.604
11.175	---	1373.840	644.084
11.425	---	1138.243	387.762
11.675	---	---	---
11.925	---	---	---

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APPENDIX B

1977 Boring Logs

Figures B1 through B12 - Borings 1 through 12

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 1		
0				CL - Brown Silty CLAY, dry, hard, occasional Gravel, slightly Sandy		
2	1-1		66	CL - Dark Brown Sandy CLAY with Gravel, slightly moist, hard	111.0	9.9
4						
6	1-2		56	CL - Brown Silty CLAY with occasional Gravel, slightly moist, very hard	11.3	14.3
8						
10				increasing Sand and Gravel content becoming moist		
	1-3		32		113.9	10.9
12				decreasing coarse Gravels becoming very moist		
14						
16			29			
				Boring Terminated at 16.5 Feet		

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Almaden Expressway
San Jose, California

Figure No. B1

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 2		
0				CL - Light Brown Sandy CLAY with Gravels, dry, hard		
2	2-1		56		112.3	10.4
4				CL - Brown Silty CLAY with Sand, occasional Gravel, moist, very stiff		
6	2-2		25		109.2	17.4
8				becoming very moist, Sandy		
10			26		106.1	19.2
12				becoming mottled with Grey coloration		
14						
16			24			
18						
20				Boring Terminated at 20 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B2

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 3		
0				CL - Dark Brown Sandy CLAY with occasional Gravel		
2						
4	3-1		28	CL - Brown Sandy CLAY, slightly moist, very stiff	106.1	14.5
6				becoming moist		
8	3-2		26		102.6	16.8
10				becoming very moist		
12	3-3		19		104.2	22.1
				Boring Terminated at 12.5 Feet		

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Almaden Expressway
San Jose, California

Figure No. B3

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 4		
0				CL - Dark Brown Sandy CLAY with occasional Gravel, loose, dry top 6 in. then slightly moist, very stiff		
2						
	4-1		24	CL - Brown Sandy CLAY with fine Gravel, slightly moist, very stiff	109.8	11.7
4						
6						
	4-2		30	occasional weathered sandstone fragment	96.3	21.1
8						
10						
11	4-3		27		106.9	19.0
				Boring Terminated at 11.5 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B4

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 5		
0				CL - Dark Brown Silty CLAY with Sand loose top 6 inches then slightly moist very stiff		
2	5-1				112.9	14.2
4				CL - Brown Sandy CLAY, slightly moist hard		
				becoming moist		
6	5-2				115.0	15.1
8				decreasing Sand content		
10						
11	5-3				104.0	19.1
				Boring Terminated at 11.5 Feet		

98-0-25

Almaden Expressway
San Jose, California

96-011

Figure No. B5

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE. DRY DENSITY p.c.f.	IN-PLACE. MOISTURE CONTENT % dry wt.
				Boring No. 6		
0						
2	6-1		31	CL - Dark Brown Silty CLAY with Sand, loose top 4 inches then moist, hard	100.7	20.4
4				CL - Light Brown Silty CLAY with Sand, occasional Gravel, very moist, very stiff		
6	6-2		24		102.9	21.9
8						
10			29			
12				becoming Sandy with weathered Sandstone fragments and Gravel		
14			26			
				Boring Terminated at 14.5 Feet		

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Almaden Expressway
San Jose, California

Figure No. B6

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 7		
0				ML - Dark Brown CLAY-SILT, dry loose top 10 inches, then slightly moist, hard, scattered Gravels		
2	7-1		43		104.2	11.4
4				CL - Brown Silty CLAY with Sand and occasional Gravel, slightly moist, hard		
6	7-2		56		119.6	11.6
8						
10			55	SW - Gravelly SAND with Brown Clay matrix, slightly moist, dense		
12				decreasing Clay content, increasing Gravel size		
14						
				Boring Terminated at 15 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B7

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 8		
0				ML - Light Brown Sandy SILT with Gravel, dry loose 6 in. then slightly moist		
2				SW - Brown Silty SAND with Gravel, slightly moist, medium dense to dense		
4						
6						
8				heavy Gravels		
10				4' Break in log		
14				very heavy Gravels		
16				Clay binder 16 to 19 feet, moist		
18				heavy Gravels		
20						
22						
24						
26				Clay binder, very moist to wet		
23						
30				Boring Terminated at 30 Feet		

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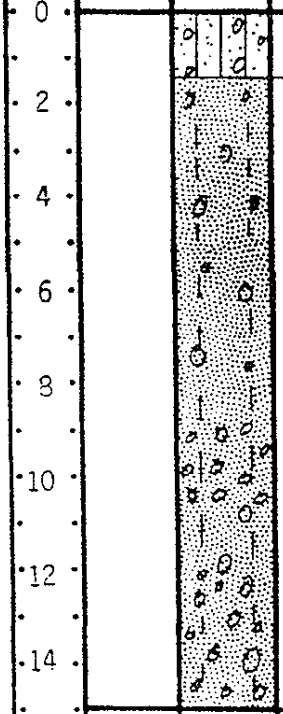
Almaden Expressway
San Jose, California

Figure No. B8

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 9		
0				ML - Brown Sandy SILT with Gravels dry loose top 10 inches then slightly moist, medium dense		
2						
4				SW - Gravelly SAND, some Silt, slightly moist, medium dense to dense		
6						
8				very heavy Gravels 9-11 feet		
10						
12				heavy Gravel 12 feet on		
14						
				Boring Terminated at 15 Feet		



96-027

96-011

Almaden Expressway
San Jose, California

Figure No. B9

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 10		
0				ML - Brown Sandy SILT with Gravel, dry loose 10 inches then damp, medium dense		
2				SW - Brown Gravelly SAND with some Silt binder, slightly moist, medium dense		
4						
6						
8						
10				heavy Gravels 11 feet on		
12						
13				Boring Terminated at 13 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B10

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 11		
0				ML - Brown Sandy SILT with Gravel, dry loose top 8 inches then dry stiff (fill)		
2	11-1		32	Natural ground ML - Dark Brown CLAY Silt, slightly moist, very stiff to hard	100.1	12.1
4						
6	11-2		61	CL - Brown Silty CLAY with Sand and fine gravels	111.5	11.0
8						
10	11-3		55	becoming Gravelly	100.1	12.1
				Boring Terminated at 11 Feet		

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96-011

Almaden Expressway
San Jose, California

Figure No. B11

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 12		
0				ML - Dark Brown CLAY Silt, dry loose 8 in. then slightly moist, very stiff becoming very Silty Clay at 1.5 feet		
2						
4				CL - Medium Brown Silty CLAY with Sand, slightly moist, very stiff		
6						
8				SW - Brown Silty SAND with Gravel, moist, medium dense		
10				Boring Terminated at 10 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B12

APPENDIX C

1996 Laboratory Test Results
Figure C1, Atterberg Limits Test Results
Figure C2, R-Value Test Results

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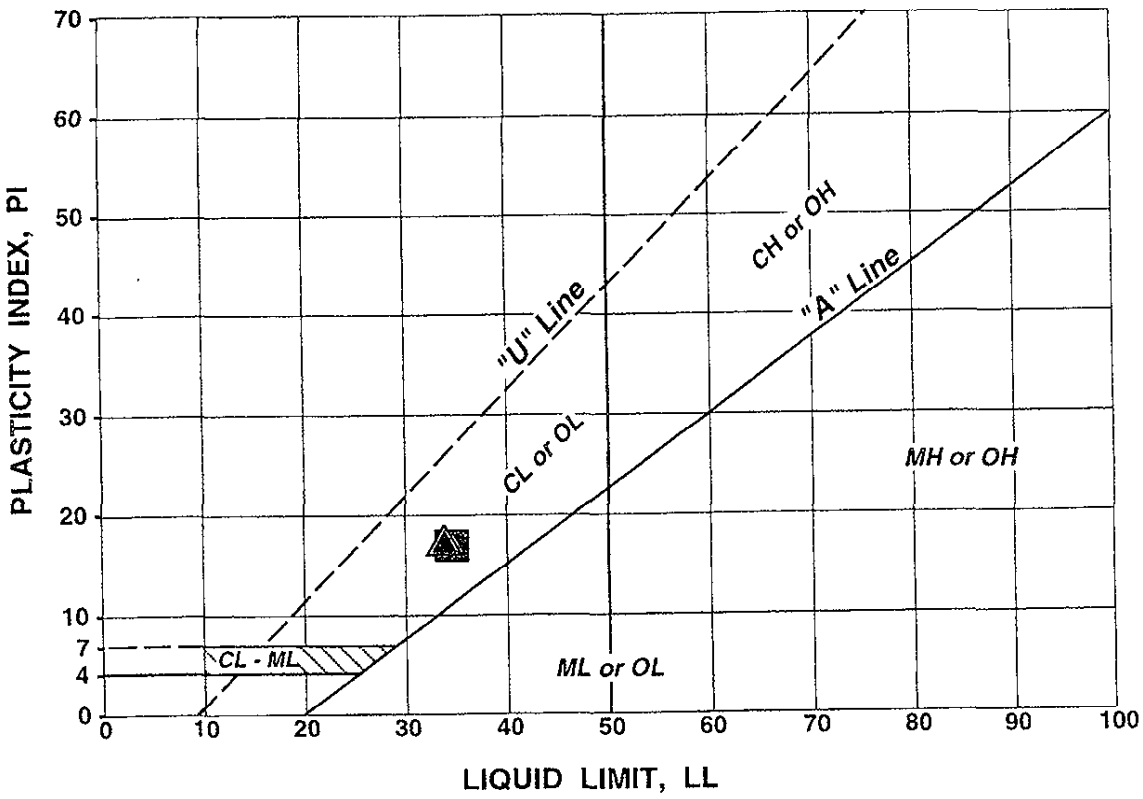
96-011

FILE NO. NFS-3695-01



▲ Sample No. Bag A

Description: [10Yr 2/2], Very Dark Brown Silty Clay with Gravel

Group Symbol: CL

Liquid Limit: 34.5%

Plastic Limit: 17.5%

Plasticity Index: 17.0

PI: 17

■ Sample No. Bag B

Description: [10Yr 3/1], Very Dark Gray Silty Clay with Gravel

Group Symbol: CL

Liquid Limit: 35.2%

Plastic Limit: 18.3%

Plasticity Index: 16.9

PI: 17

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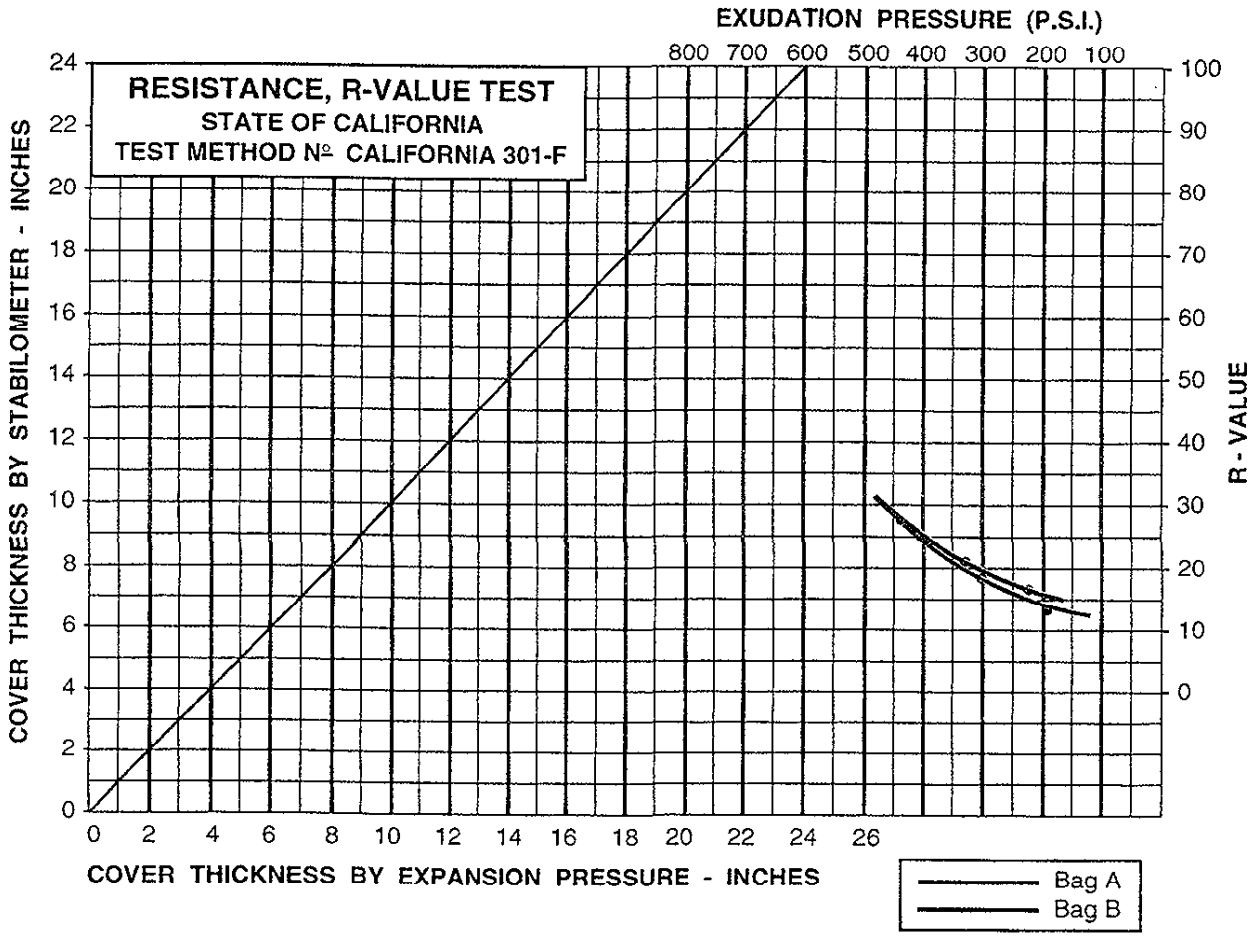
Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	PLASTICITY CHART Figure No. C1

FILE NO. NFS-3695-01



Sample: Bag A, CPT-2
Description: Dark Gray Brown Sandy Clay

Sample: Bag B, CPT-5
Description: Dark Gray Brown Clayey Silt

SPECIMEN	A	B	C	A	B	C
Exudation Pressure (P.S.I.)	235.0	340.0	446.0	204.0	309.0	414.0
Expansion Dial (.0001")	23.0	30.0	40.0	16.0	22.0	29.0
Expansion Pressure (P.S.F.)	100.0	130.0	173.0	69.0	95.0	126.0
Resistance Value, "R"	16.0	21.0	27.0	13.0	17.0	24.0
% Moisture at Test	16.0	15.4	14.5	18.2	17.5	16.8
Dry Density at Test (P.C.F.)	114.4	115.5	117.2	109.1	110.8	112.5
"R" Value at 300 P.S.I. Exudation Pressure	= (20)			= (17)		

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	R - VALUE TEST Figure No. C2

APPENDIX D

1977 Laboratory Test Results

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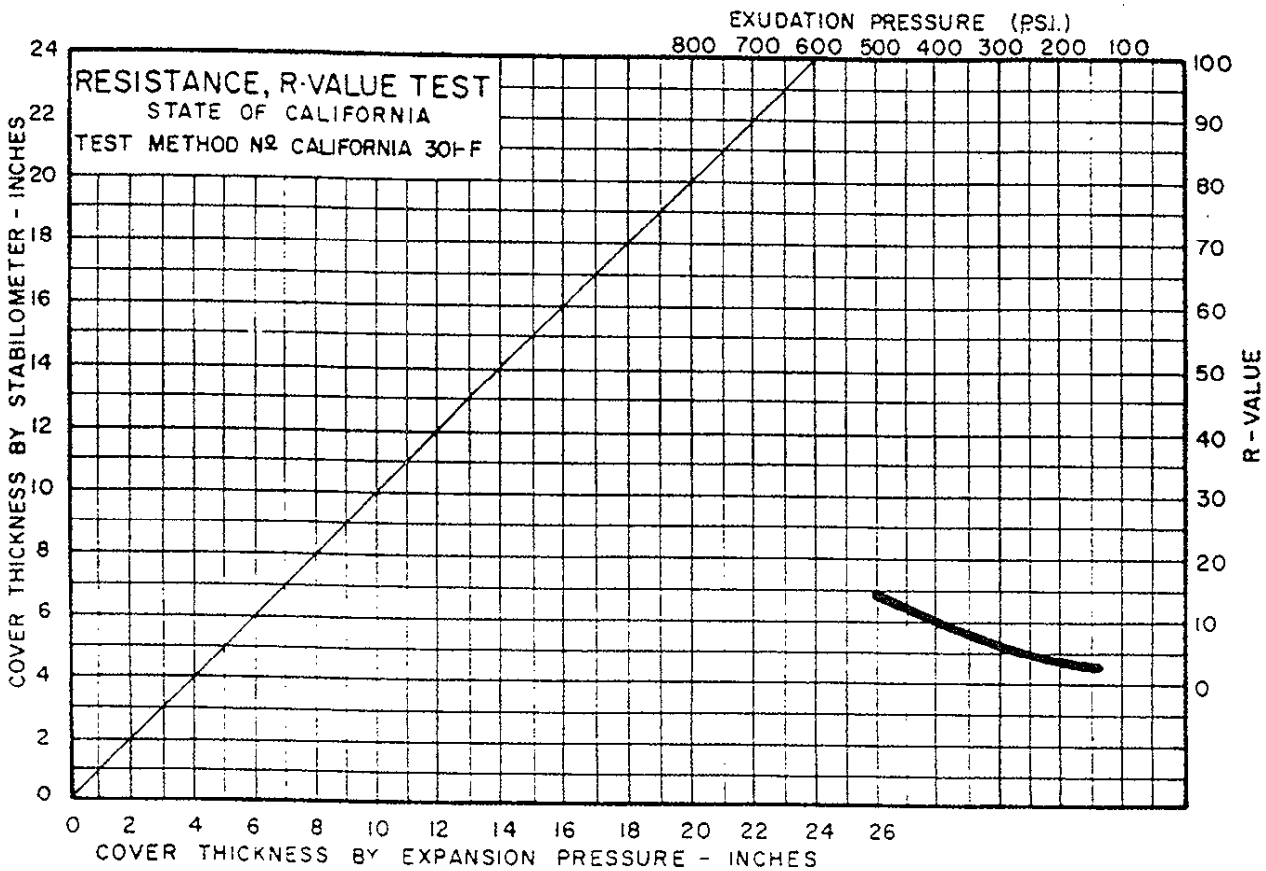
FILE NO.NFS-3695-01

August 31, 1977



SAMPLE: Bag A - Depth 6"-18"

DESCRIPTION: Native Soil - Dark Brown Silty Clay with Gravels

SPECIMEN	A	B	C
EXUDATION PRESSURE (P.S.I.)	256	356	444
EXPANSION DIAL (.0001")	9	15	23
EXPANSION PRESSURE (P.S.F.)	39	65	100
RESISTANCE VALUE, "R"	5	8	12
% MOISTURE AT TEST	18.1	17.3	16.5
DRY DENSITY AT TEST (P.C.F.)	107.8	110.0	111.3
"R" VALUE AT 300 P.S.I. EXUDATION PRESSURE	= (7)		

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Laboratory R-Value Test Results

Almaden Expressway
San Jose, California

Figure No. D1

FILE NO.NFS-3695-01

August 31, 1977

TABLE II

Summary of Laboratory Atterberg Limits Test Results

Sample	Depth	Description of Soil	Atterberg Limits	
	ft.		Liquid Limit %	Plasticity Index (P.I.)
Bag A	6"-18"	Native Soil - Dark Brown Silty CLAY	37	16
3-2	8 ft.	Native Soil - Brown Sandy CLAY	32	13

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SOIL ENGINEERING STUDY

Proposed Multi-Family
Residential Development
Almaden Expressway at Highway 85
San Jose, California

JULY 1996

Prepared for

Arcadia Development Company
Campbell, California 95008

Prepared by

Earth Systems Consultants
Northern California
47853 Warm Springs Boulevard
Fremont, California 94539-7400

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96-011

Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

File No. NFS-3695-01
July 22, 1996

Arcadia Development Company
1500 East Hamilton Avenue, Suite 212
Campbell, California 95008

Attention: Mr. Pete Merrill

Subject: Proposed 15+ Acre Multi-Family Residential Development
Almaden Expressway at Highway 85
San Jose, California
SOIL ENGINEERING STUDY

Dear Mr. Merrill:

In response to your authorization, we have completed a soil engineering study for the proposed housing project in San Jose, California. The attached report presents the results of our field and laboratory studies, along with our recommendations relating to the design and construction of the proposed development. It is concluded that the site is geotechnically suitable to accept the subject residential project.

This study does not include an evaluation of potential toxic or hazardous materials that in the soil and groundwater nor the corrosivity of the soil within the subject site.

It has been our pleasure to be of service to you on this project. Should you have any questions regarding the attached report, please contact our office.

Very truly yours,

Earth Systems Consultants
Northern California

William R. Stevens/wc
William R. Stevens, Senior Engineer
Geotechnical Engineer #2339

Carl W. Greenlee
Carl W. Greenlee, Senior Project Manager
Geotechnical Engineer #355

WRS/CWG:dh rep

Distribution: 6 to Addressee

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File No. NFS-3695-01
July 22, 1996

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File No. NFS-3695-01
July 22, 1996

SOIL ENGINEERING STUDY

PROJECT: Proposed Multi-Family Residential Development On 15+ Acres
Almaden Expressway at Highway 85
San Jose, California

CLIENT: Arcadia Development Company
Campbell, California

INTRODUCTION

Purpose and Scope

This soil engineering study has been prepared to provide design criteria for the foundations of a proposed 15+ acre residential development and to provide recommendations for site preparation, grading, drainage and paving. The soil engineering study is one of two reports that will be generated from this investigation for the site. This report will provide recommendations to develop the northeastern third of a 45 acre parcel for residential dwellings. See Figure 2 for boundaries of this 15+ acre residential site. A separate report will provide recommendations for the construction of a commercial development in the remainder of the 45 acre parcel. This study included:

1. A visual site reconnaissance;
2. A review of a previous study performed for a portion of this site and other pertinent geological literature;
3. Subsurface exploration of the site with classification of the subsurface soils;
4. Laboratory testing of selected soil samples;
5. Engineering analyses based on the results of the field exploration, laboratory soil testing program and a review of the previous study;
6. Preparation of this report.

The information gathered during the procedures outlined above provided the data base for the engineering analyses. The conclusions derived from the engineering analyses served as a basis for the recommendations presented in this report. This study does not include an evaluation of potential toxic or hazardous materials that may or may not be present at the site nor the corrosivity of the site soils.

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Site Information

The 15+ acre residential site is located in the northeast quadrant of the intersection of Almaden Expressway and Highway 85 (see Figure 1) in San Jose, California. The site is bounded by the existing and proposed Chynoweth Avenue to the north, Almaden Expressway to the west, Highway 85 to the south, the proposed Sanchez Drive and the Guadalupe River to the east. An existing commercial shopping center is north of the site. Much of the 15 acre residential site, and the area northeast of the site, is currently being used to farm various types of row crops. The area is relatively flat, with drainage to the north and east towards the Guadalupe River. The site is used primarily for agricultural farming and only minor structures or trees are located on the site.

The southern 2/3 of the 45 acre property parcel will be developed to accommodate a commercial structure. Chynoweth Avenue will be extended westerly to bisect the site and the northern 1/3 portion north of Chynoweth Avenue will be developed into a residential subdivision. This report will provide geotechnical recommendations for the development of the residential portion of the site.

Project Description

The proposed residential buildings will be located north of proposed extension of Chynoweth Avenue. Chynoweth Avenue will be extended to the north to the Guadalupe River. A new road, Sanchez Drive, will extend southerly along the Guadalupe River from the Chynoweth Road extension and end at Highway 85. The development will consist of approximately 25 to 40 housing units per acre. It is anticipated that the residential buildings will have two to three floors of living space and a below grade parking garage of unknown depth. Associated parking and driveways, sidewalks, patios and landscaping is anticipated. Grading is expected to be minor, with cuts and fills to be less than about 3 feet in depth.

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File No. NFS-3695-01
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STUDY PROCEDURES AND RESULTS

Geologic Literature Review

The most useful literature and maps pertinent to this study are listed in the BIBLIOGRAPHY. Most of the published information on this area is of a preliminary nature, based on reconnaissance mapping and air-photo interpretation.

The site is located near the base of the western foothills of the Hamilton-Diablo mountain range in the Coast Range Geomorphic Province of Central California. The bedrock in the site vicinity is a part of a northwest-trending belt of material that lies along the eastern side of the San Andreas fault system, which is located approximately 9 miles southwest of the site.

The regional geology has been mapped by Dibblee (1972). The referenced map shows the subject site to be underlain by Quaternary alluvium deposits described as "alluvium, gravel, sand and clay (Qa)."

Helley and Wesling (1990) mapped the site as Holocene alluvial fan deposits and they described these deposits as "brown medium dense, gravelly sand and clayey gravel that grades upward to sandy or silty clay (Qhaf)."

No known active faults cross the subject property and the site is not within a State-mandated Earthquake Fault Zone, formerly known as the Alquist-Priolo special Studies Zone (CDMG, 1982). Dibblee mapped the inferred/concealed traces of Piercy fault, Silver Creek fault, Evergreen fault approximately 4, 6 and 7 miles to the northeast, respectively. The active trace of the Hayward fault is located nearly 8 miles to the northeast while the active trace of the Calaveras fault is located approximately 11 miles to the northeast of the subject site.

Several damaging earthquakes of approximately Richter magnitude 6 or greater are known to have occurred in the Bay Area since 1836 (Steinbrugge, et al., 1987). Figures 3 and 4 show the estimated epicenter locations and magnitudes of these events. The 1836, 1858 and 1868 earthquakes were reportedly centered on the Hayward fault.

The likelihood of various magnitude earthquakes is discussed in the *Earthquake Planning Scenario* report (Steinbrugge, et al., 1987). Coopersmith (1982) estimated probabilities of 14% and 26% for a magnitude 7 event to occur in the next 50 years, assuming strain accumulation rates of

3mm/year and 6mm/year, respectively. Lindh (1983) estimated a 20% probability for a magnitude 6.5 to 7.0 earthquake to occur in the next 30 years.

Assessment of Seismic and Geologic Hazards

The site could be affected by an earthquake with its focus on any of the major faults in the Bay Area. At present, it is not possible to predict when or where movement will occur on these faults. It must be assumed, however, that movement along one or more of these faults will result in a moderate to major earthquake during the lifetime of any development on this site.

In the event of an earthquake, seismic risk to a structure will depend upon the distance of the structure from the epicenter and source fault, the characteristics of the earthquake, the geologic conditions, groundwater and soil conditions underlying the structure and its vicinity, and the nature of the construction.

Ground rupture (surface faulting) tends to occur along lines of previous faulting. Therefore, the potential for ground rupture to occur at this site is considered to be low.

Seismically induced ground failures, such as liquefaction, lurch cracking, lateral spreading and local subsidence, are related to soil, groundwater and bedrock conditions. The occurrence of these phenomenon at the site are considered to be low.

The proximity of the site to the active Hayward fault, and the subsurface conditions at the site suggest that the structures should be designed to resist ground shaking. A near-point, maximum probable event (approximate Richter magnitude 7.5) is likely to produce an effective ground acceleration of approximately 0.298g while a maximum credible event (approximate Richter magnitude 8.0) is likely to produce an effective ground acceleration of approximately 0.338g.

Preliminary estimates of ground response characteristics at this site indicate that high peak accelerations can be expected during a moderate to major earthquake on the Hayward, Evergreen, Silver Creek or Calaveras faults, or a major event on the San Andreas fault. Any of these events could cause strong ground shaking at this site. The duration of shaking and the frequency components of the vibrational waves will depend upon the magnitude and location of the earthquake.

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Subsurface Exploration

Eight cone penetrometer tests (CPT) were conducted on June 18, 1996 under the supervision of ESCNC personnel, four of which were located on the combined residential/commercial site. The soil was tested to depths between 23.0 and 40.0 feet below the existing ground surface at the approximate locations shown on Figure 2. The testing was accomplished with a truck-mounted CPT rig using a 10 ton capacity electronic cone. The friction, tip, friction ratio and pore pressure plots and the ensuing CPT interpretations for these soundings are presented in Appendix A.

The CPT is an electronic instrument that is pushed through the soil at a constant rate of approximately 3 feet per minute. The electronic cone is attached to the bottom of steel drill rods and the instrument cable goes up though the drill steel and to a computer. The electronic cone is capable of recording the side friction and tip resistance on the cone from the soil as it is being pushed through the soil. The electronic cone also measures pore pressure and temperature. The measured tip resistance and sleeve friction can be utilizes to determine the type of soil behavior characteristics of subsurface deposits. The data is interpreted to provide Standard Penetration Test (SPT) blowcounts, relative density and friction angle for cohesionless soil (sand and gravel) and the undrained shear strength and SPT blowcounts for cohesive soils (clay and silt). The cone sounding can be stopped at any depth to measure the pore pressure dissipation, which can provide an indication of the permeability of the soil and the water level at that depth.

A previous soil investigation report prepared by Applied Soil Mechanics, Inc. (ASMI) was performed on August 31, 1977 for the northern half of the site. This investigation involved drilling 12 borings, 6 of which were located in the eastern half of the residential portion of the site. These borings were drilled to depths between 10 and 30 feet below the existing ground surface at the approximate locations shown on Figure 2. All drilling was accomplished with a truck-mounted drill rig, using 6-inch diameter continuous flight augers. As the borings were advanced, relatively undisturbed samples were obtained at various depths below the ground surface by forcing a 3-inch diameter (O.D.) split tube sampler into the undisturbed soil mass by means of a standard driving hammer. These samples were sealed and returned to the laboratory for testing. The boring logs from this investigation are provided in Appendix B.

Laboratory Testing

Laboratory tests were performed on selected samples of the near-surface soil materials encountered to determine some of the physical and engineering characteristics of the soils considered pertinent

to the design of the proposed project. The tests performed were selected on the basis of the probable design requirements, the subsurface soil profile as determined by the CPT and a review of the laboratory testing performed in the 1977 ASMI study. The results of the 1996 laboratory tests are presented in the Appendix C. The results of the 1977 laboratory tests are presented in Appendix D. A short general description of the tests performed for this investigation follows.

Atterberg Limits (ASTM D424-93) - Atterberg Limits tests were conducted on selected soil samples to determine their liquid limit and plastic index values. This test provides water content values for the sample's liquid and plastic phases. The test aids in determining the expansive characteristics of the soil tested.

R-Value (ASTM D4318) - An R-value test was conducted on bulk soil samples to determine the subgrade characteristics for use in pavement design.

Subsurface Conditions

The 15 acre residential portion of the overall 45 acre property is underlain by alluvial soils from the Guadalupe River. The underlying soils vary across the site, but can generally be divided into 2 different areas. The portion of the site along the Guadalupe River in the areas of borings 8, 9 and 10 and CPT soundings 1 and 2 are generally underlain by a surficial silty layer over sandy soils. This area covers about 1/3 of the site. The upper 2 feet consists of a brown, moist, stiff sandy silt with minor gravel and some clay binder. The soils beneath the surface layer consist generally of brown, moist, medium dense to dense silty sand and poorly graded sand with layers of gravel and clayey sand. SPT blowcounts for this material were generally over 20 above the water table and above 30 below the water table.

The remaining 2/3 of the site in the areas of borings 7, 11, and 12 and CPT soundings 3 and 4 is generally overlain by silty/clayey soils over sandy material. The near surface silty and clayey soils extend to depths of between 4 to 12 below the ground surface. This material is brown to dark brown, dry to moist, stiff, silty clay and clayey silt with some sand. The underlying soils consists of brown, moist, medium dense to dense silty sand with pockets of gravel and clay. The SPT blowcounts of the soils were generally greater than 30, with isolated pockets of about 20.

Groundwater

Two pore water dissipation readings were taken at CPT2 and CPT3 with the electronic cone penetrometer. These readings show the groundwater table to be at a depth of about 17.5 to 18 feet

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below the ground surface. Standing water was not encountered in the borings from the 1977 ASMI report. In general, groundwater levels can fluctuate over time and therefore the subsurface moisture conditions encountered during our field exploration present only the current conditions at the boring locations. The Guadalupe River floods occasionally during the winter season. However, the flood waters normally recede rather rapidly, and a long term rise in the groundwater level is not expected.

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SUMMARIZED CONCLUSIONS

The following conclusions are drawn from the data acquired and evaluated during this investigation for the proposed project.

1. Site Suitability: The subject site is geotechnically suitable for the proposed 15+ acre residential development provided the recommendations presented in this report are followed.

2. Soil Shrink/Swell Potential: The surface and near surface soils exhibit a moderate to high shrink-swell (expansive) potential when subjected to fluctuations in water content. Mitigating measures include extra reinforcing steel in concrete floor slabs and increased foundation trenching depths relative to a nonexpansive site. Additionally, pre-moisturizing programs for the overall site, the foundation trenches, and soil subgrades for concrete slabs-on-grade, may be required as deemed necessary during construction.

3. Temporary Excavations-Construction: Excavations at the site with a thick clay surface layer can be cut at steeper angles than in the areas underlain by sandy soils. The portion of the site adjacent to the Guadalupe River, which covers about 1/3 of the entire site, contains near surface sandy soils. Excavations in this area will require a cut slope inclination of at least 1H:1V or flatter due to sloughing of the cut walls during construction.

4. Foundations: The surface and near surface native soils exhibit stiff consistencies. Therefore, once recommended clearing and site preparation operations have been completed, conventional shallow strip and spread footings may be used to support the proposed structure.

5. Settlement: It is estimated that total, static settlement of the proposed residential building pads will be approximately 3/4 inch with the differential settlement anticipated to be about $^1/_2$ inch in a span of about 30 feet. Most of this settlement should occur during construction. The total and differential settlement due to dynamic compaction during an earthquake is estimated to be approximately 1.5 and 1.0 inches, respectively, relative to the riverbank portions of the site to the inland portion. Liquefaction induced settlement should not occur due to the low liquefaction potential of the site. The estimated settlements assume the site has been properly prepared prior to the construction of the foundation system.

6. Site Geology: No known active earthquake faults underlie the site. The site is not located within an Alquist-Priolo Special Studies Zone. The nearest seismically active fault is the Hayward

fault, which is located approximately 8 miles from the site. Other active faults in the site vicinity are the Calaveras, Silver Creek, Evergreen and San Andreas faults.

7. Seismics: A moderate to major seismic event on the San Andreas or Hayward fault zones or any of the active faults in the Bay Area could cause moderate to severe ground shaking at the site. As a minimum, structures at the site should be designed to accommodate earthquake vibrations associated with Zone 4 in the latest UBC.

8. Geologic Hazards: The potential for seismically induced liquefaction, lurch cracking, local subsidence and lateral spreading to occur at the site is considered to be low. Other geologic hazards, such as ground fault rupture, landslides, tsunamis, seiches and landslides are considered to be very low.

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RECOMMENDATIONS

Grading and Site Development

1. Site clearing, placement of fill, and grading operations at the site must be conducted in accordance with the recommendations provided in this report.

2. Any existing utilities and underground irrigation lines, where known, should be located on the grading plans to assist the Geotechnical (Soil) Engineer during grading operations. The necessity of removing abandoned, underground, utility lines in their entirety will be determined by the Geotechnical (Soil) Engineer during site grading.

3. Prior to any grading operations, all areas which are to receive structural fill, foundations, pavement sections, or concrete slabs-on-grade must be stripped of surface organics across the site. The exact depth of organic soil to be removed will be determined by the Geotechnical Engineer or his representative when clearing and stripping operations are in progress. We estimate that 2 to 6 inches of surface organic stripping depth will be required. Any organically contaminated soil may either be stockpiled and later used as topsoil in landscaping areas or removed from the site.

4. Following site clearing/organic stripping operations, and prior to mass grading operations, it may be necessary to carry out a premoisturization program throughout the site if the exposed soils are deeply dried out. The premoisturization program is recommended, where required, in order to reduce the high expansive potential of the surface and near surface native clay soils at the site by "pre-expanding" the clays prior to the covering of the site with improvements. This premoisturization program would be necessary if the top several feet of the soils are found to be in a dry condition. We should be contacted at least 48 hours prior to site stripping operations so that we will have sufficient time to schedule accordingly.

5. Any ruts or depressions resulting from the removal of existing utilities, fills, foliage and other abandoned and/or buried structures, should be properly cleaned down to firm native soil. The bottom of the resulting depressions should be scarified and cross-scarified at least eight inches and recompacted to at least 90% relative compaction. The depressions should then be backfilled with approved, compacted structural fill, as specified by other recommendations of this report. Clearing and backfilling operations should be conducted under the field observation of the Geotechnical Engineer.

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6. Following site clearing operations, all loose surficial soil and fill should be removed down to stiff soil. This material can be stockpiled for later use as general structural fill.

7. The soil surface at the bottom of the removal operation should be scarified and cross scarified at least eight inches, moisture conditioned as needed, and recompacted to at least 90% relative compaction. This scarification operation should be performed at all locations designated for proposed structural fill, concrete slabs-on-grade, foundations and pavement areas.

8. Structural fill is defined herein as a native or import fill material which, when properly compacted, will support foundations, pavements, and other fills without detrimental settlement.

9. Compaction of all new structural fills and scarified soils should be to at least 90% relative compaction, except as specifically stated in other paragraphs in this report. Import baserock materials under asphalt pavements should be compacted to at least 95% relative compaction. Compaction criteria will be based on the laboratory test procedure ASTM D1557-91.

10. The Geotechnical Engineer should be notified at least 48 hours prior to commencement of any grading operations, so he may coordinate the work in the field with the contractors.

Temporary Cut Slopes

11. Temporary cut slopes up to 10 feet in height may be required for the construction of the basement garage and foundations. Temporary, vertical cuts up to 3 feet in depth are expected to be stable. Cuts greater than 3 feet and less than 10 feet in height should be laid back to a 45 degree angle, which is an inclination of 1H:1V, or be shored. Excavations near the bank of the Guadalupe River are expected to encounter near surface sandy soils. The surficial clayey and silty layers thickens away from the river. Cuts made in the sandy soils may tend to slough, and required flattening of the cut slope.

12. Excavations for the subsurface parking garages may need dewatering due to a perched groundwater condition. The normal groundwater level is expected to be greater than 15 feet below the existing ground surface. Pumping of water in excavations may be required. Excavations for the subsurface parking garages, including the utility lines beneath the garage floor slab, should be limited to 12 feet in depth. A 6 inch layer of gravel may be required at the bottom of deeper excavations to provide a working surface.

13. All temporary cuts should be observed by an engineering geologist or engineer to ascertain that the condition of the material exposed in the excavation walls are as anticipated.

Foundations

14. The support of the proposed residential structures may be provided by conventional, shallow strip and spread footings. The actual design of the foundations, including detailed reinforcing requirements, should be determined by the engineer performing the structural analysis of the buildings and the supporting foundations.

15. Perimeter footings for the proposed structures should be founded a minimum of 24 inches (trenching) depth into the lowest, adjacent, properly compacted soil pad, as described in the previous paragraphs. The soil pad is defined as the prepared soil subgrade not including the 6 inch import base course layer for the concrete slab-on-grade floors. All interior, shallow, strip and spread footings under concrete slabs-on-grade should be founded a minimum of 24 inches below the top of the interior, concrete floor slab. For the above conditions, the strip and isolated spread foundations may be designed for an allowable bearing pressure of 2,500 psf for dead plus live loads. This value may be increased by $^1/_3$ to include short term seismic and wind effects.

16. Due to the moderate to high expansive potential of the near-surface soils, the Geotechnical Engineer should inspect the foundation excavations prior to forming or placement of reinforcing steel to ascertain if the excavations need to be moisture conditioned prior to the pouring of the concrete foundations. If necessary, the excavations will be partially filled with water and allowed to soak into the soil for two to five days. It may be necessary use a wetting agent to expedite moisturizing the soils. The Geotechnical Engineer should be informed at least one week in advance of the planned placement of concrete, so that if presoaking is deemed necessary, it will not delay construction.

Concrete Slab-On-Grade Construction

17. For concrete slab-on-grade floors in areas with moisture sensitive floor coverings, the concrete floor slab should be underlain by a minimum of two (2) inches of clean sand over a plastic vapor barrier at least six (6) mils thick, over four (4) inches of approved, import, angular gravel or Class 2 aggregate base. In areas without moisture sensitive floor coverings, the concrete may be underlain by 6" compacted Class 2 aggregate base only, with the plastic vapor barrier as optional. The Class 2 baserock under the interior concrete floor slabs, if utilized, should be compacted to at least 90% relative compaction, unless otherwise recommended by the Geotechnical (Soil) Engineer, prior to the placement of the plastic membrane.

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18. The interior parking basement concrete slabs should contain reinforcing steel as specified by the structural engineer. However, due to the expansive soils, the slab should be reinforced with at least #3 reinforcing bars placed on 18 inch centers. The slab should be structurally tied to the perimeter foundations. All construction joints should be adequately doweled.

19. All exterior concrete slabs-on-grade, which will experience vehicular traffic including trash trucks traffic on trash bin aprons, should have at least six inches of compacted Class 2 baserock under the concrete slab. The baserock should be compacted to at least 95% relative compaction. Reinforcing of these exterior, traffic bearing concrete slabs-on-grade is suggested to be at least #3 bars on 24-inch centers. Construction joints in all concrete slab-on-grade units should be adequately doweled.

20. For exterior, non-traffic bearing concrete slabs-on-grade, such as patios and sidewalks, that are not adjacent to the buildings, the concrete slab should be underlain by a minimum of four inches of compacted granular, import base material. This base should be approved by the Geotechnical Engineer. Sidewalks adjacent to pavement curbs should be structurally tied to the curb, or as an alternate, the sidewalks and curbs can be poured monolithically. For concrete sidewalks and entry way slabs that are contiguous to the building, we recommended that the slabs be underlain by 12" select structural fill described previously plus the 4 inches of import base rock. Reinforcing of these concrete slabs-on-grade is recommended. Construction joints in all concrete slab-on-grade units should be adequately doweled.

21. Due to the moderate to high expansion potential of the surface and near surface native soils, the subgrade soils under exterior concrete slabs-on-grade may require premoisturizing prior to the placement of concrete, in order to reduce their swell potential. A representative from our firm should be contacted at least 1 week prior to the placement of the exterior concrete slabs, so that the soil subgrade conditions can be examined and a program established for proper subgrade preparation. If presoaking is deemed necessary, it will be necessary to moisture condition at least the upper 12 to 18 inches of the subgrade soil beneath the proposed exterior slabs. The presoaking would be programmed to reduce the swell potential. It may be necessary use a wetting agent to expedite moisturizing the soils.

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Subsurface Garage Retaining Walls

22. Walls with horizontal backfill and free to deflect at the top should be designed for the "active" soil pressure condition. An equivalent fluid weight of 45 pcf should be utilized for retaining wall design when retaining a near level backfill of native soil.

23. Walls with horizontal backfill and fixed at the top, such as basement retaining walls, should be designed for "at rest" earth pressures, which is an equivalent fluid weight of 55 pcf.

24. Surcharge loads applied at the surface on the backfill should be considered to be a uniformly distributed horizontal load. This load would equal to 1/3 and 1/2 of the uniform surcharge load for active and at rest conditions, respectively.

25. Retaining walls may be supported by conventional spread footings. The conventional footings should be designed using an allowable dead plus live load bearing pressure of 2,500 pounds per square foot. Lateral "passive" resistance of 250 pounds per cubic foot may be assumed for the footing design. A coefficient of friction of 0.35 should be assumed in the design of the spread footings. The actual design of the spread footings, including reinforcing steel requirements, should be provided by the project structural engineer.

26. All retaining wall backfill should be free draining. The wall drainage system should consist of clean, washed imported gravel (1/4-inch to 1-inch diameter) completed wrapped in a minimum 4 ounce filter fabric or Class II Permeable gravel. This gravel backfill should be at least 1 foot wide behind the wall and extend from the foundation up to within 2 feet of the finish backfill grade. Drainage can be provided by weep holes at the base of the wall or a minimum 4 inch diameter perforated pipe running along the bottom of the backfill gravel.

Utility Trench Backfill

27. For purposes of this discussion, trench backfill is defined as that portion of the backfill material placed above the import shading material. It is assumed that all utility pipes are properly bedded and shaded at least 6 inches over the top of the pipe with an approved, imported, granular material. It is further assumed that the trenches will not exceed about 10 feet in depth.

28. All utility trenches in pavement areas and on the buildings pads should be backfilled with layers of compacted, import materials, native soils or combinations thereof.

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29. The top four feet of backfill material, as measured from the finish pad elevations or pavement subgrade elevations, should be compacted to at least 90% relative compaction. All trenches excavated in the area under foundations defined by a plane radiating at a 45 degree angle downward from the bottom edge of the footing should be backfilled with material compacted to a minimum 90% relative compaction.

30. The existing native soils may be used for trench backfill if properly handled. Jetting is not recommended for compaction of backfill in utility trenches.

31. Import sand or pea gravel may be used as trench backfill rather than native soil, if so desired. The pea gravel should be clean, washed and rounded, and will not require moisturizing or mechanical compaction. Native soil and import materials, such as sand or quarry fines, will require mechanical compaction, and may require moisturizing prior to compaction operations.

33. Within the proposed building pads, sand or pea gravel may be used up to the top of the trench. In landscape areas, at least the final 24 inches of backfill should be compacted native soil, to prevent surface rain or irrigation water from rapidly penetrating down into the trench. The top 12 inches should be compacted native soil under exterior paved areas.

34. Where any opening is made under or through the perimeter foundations for items such as utility lines, the openings must be resealed so that they are water-tight to prevent possible entrance of outside irrigation or rain water into the portion of the soil beneath the structure. Utility trenches extending under the perimeter foundations should be either backfilled with native or fill clay soils, compacted to 90% minimum relative compaction, or be sealed by concrete poured around the pipes. This waterproofing of the utility trenches should extend at least two feet on both sides of where it passes under the perimeter foundations. Where the pipes pass through sleeves cast into the perimeter foundation stem wall, a plumber's mastic type sealant or poured concrete should be used around the pipe.

35. Where trenches pass from landscape areas to pavement areas, at least a three foot length of trench, centered on the curb line, should be backfilled with native soil to reduce the potential for lateral migration of water from the planter to the pavement area.

Drainage

36. Where no exterior pavement section abuts the buildings, soil should be backfilled against the exterior footings and the final grade should result in a positive gradient away from the building.

in order to provide rapid removal of rain and irrigation water away from the foundations. Downspouts from the roof of the building should discharge collected rainwater onto splash blocks, adjacent paved areas, or be tied into a water-tight drainage pipe, which would carry the collected water away from the building areas.

Asphalt Pavement Design

37. A design "R"-Value of 7 was utilized in the computations of the thicknesses for the subject asphalt pavements constructed on native soils.

38. Pavement designs for traffic indexes of 4 to 7 in 0.5 increments are provided for your use. The State of California Highway Design Manual, 5th Edition dated July 1, 1995 was used in computing pavement sections. Alternate pavement sections are presented in Table A below.

TABLE A

RECOMMENDED ALTERNATE ON-SITE

ASPHALT PAVEMENT SECTIONS

Traffic Index	AC Thickness	Class 2 Aggregate Base Thickness R=78 min.
4.0	2.5	7.5
	3.0	6.0
4.5	2.5	9.0
	3.0	8.0
5.0	2.5	10.5
	3.0	9.5
5.5	3.0	11.5
	3.5	10.5
6.0	3.5	12.5
	4.0	11.0
6.5	4.0	13.5
	4.5	12.5
7.0	4.0	15.0
	4.5	14.0

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38. All soil subgrade areas in the proposed asphalt pavement areas should be scarified as recommended in other paragraphs of this report, and be compacted to at least 90% relative compaction. The soil subgrade should be moisture conditioned and compacted at over optimum water content. Caltrans specification, Class 2 Aggregate Base should be compacted to at least 95% relative compaction. All relative compaction values are based on the laboratory test procedure ASTM D1557-91.

39. Design of exterior street level concrete pavement in vehicular travel areas should follow the guidelines in the Portland Cement Association Publications for Light, Medium, and Heavy Traffic. It is suggested that the reinforcement be a minimum of #3 reinforcing bars spaced on 24 inch centers, each way. The final design of concrete slabs should be provided by a structural engineer.

40. Where different pavement surfaces meet (e.g. AC adjacent of PCC), failure can occur in the AC pavement at that contact after several loads. It is recommended that where AC pavement stops and PCC pavement begins, the joint be underlain by a geotextile to give added support. The geotextile should be 3 to 6 inches below the bottom of the pavement and should extend 3 feet on either side of the joint for the full length of the contact.

41. It is suggested that swales in large parking areas utilized for channeling water into storm drain systems should be constructed of PCC rather than AC. PCC will have a longer design life than AC due to raveling of the granular material in AC pavement caused by running water.

Plan Review

42. It is recommended that ESCNC be provided the opportunity for a general review of final grading, improvement and foundation plans. This review is to access general compliance with the grading and foundation recommendations of this report and incorporation of these recommendations into the plans and specifications.

Observation and Testing

43. It is recommended that ESCNC be retained to provide observation and soil compaction testing services during site preparation, utility trench backfill, excavation of foundations, and preparation of subgrade soils and baserock in parking areas and driveways. This is to observe compliance with the design concepts, specifications and recommendations, and to allow for possible design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

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LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, Earth Systems Consultants should be notified so that supplementary recommendations can be given.

2. This report is issued with the understanding that it is the responsibility of the owner or his representatives so the information and recommendations contained herein are called to the attention of the other members of the design team (engineer and contractor) for the project and are incorporated into the plans, and that the necessary steps are taken to see that the contractors and subcontractors carry out such recommendations.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes outside of our control. Therefore, this report is subject to review by Earth Systems Consultants after a period of three (3) years has elapsed from date of issuance of this report.

4. The body of the report specifically recommends that Earth Systems Consultants be provided the opportunity for a general review of the grading and foundation plans and specifications for this property, and that Earth Systems Consultants be retained to provide observation and testing services during construction. The validity of the recommendations of this report assumes that Earth Systems Consultants will be retained to provide these services.

5. This report was prepared upon your request for our services, and in accordance with currently accepted geotechnical engineering practice. No warranty based on the contents of this report is intended, and none shall be inferred from the statements or opinions expressed herein.

6. The scope of our services did not include any environmental assessment or investigation for the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the soil boring logs regarding odors noted or unusual or suspicious items or condition observed, are strictly for the information of our client.

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FIGURES

Figure No. 1 - Site Location
Figure No. 2 - Site Plan
Figure No. 3 - Regional Faults
Figure No. 4 - Selected Earthquakes

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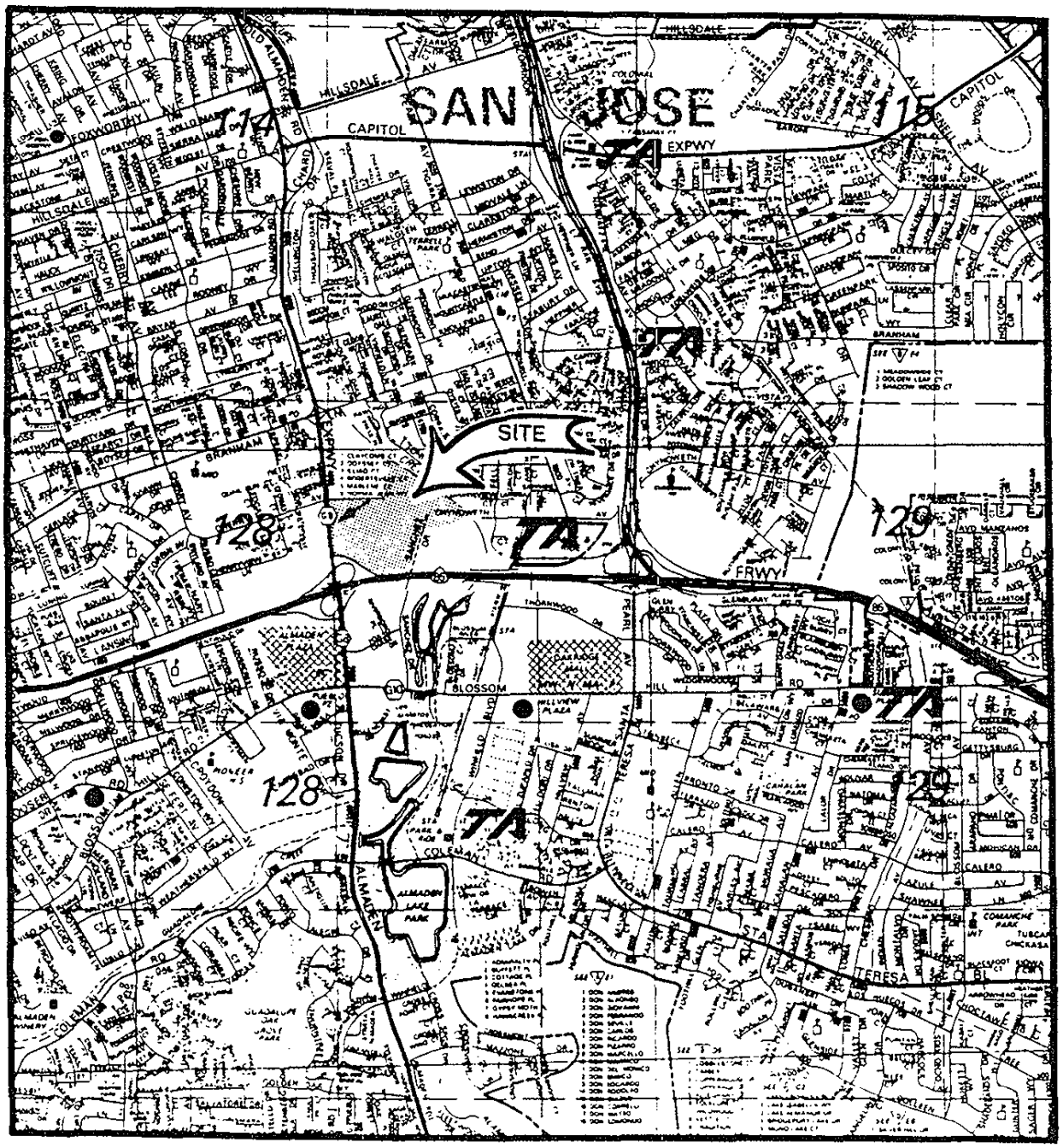
FILE NO. NFS-3695-01



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SCALE ~~98 - 025~~

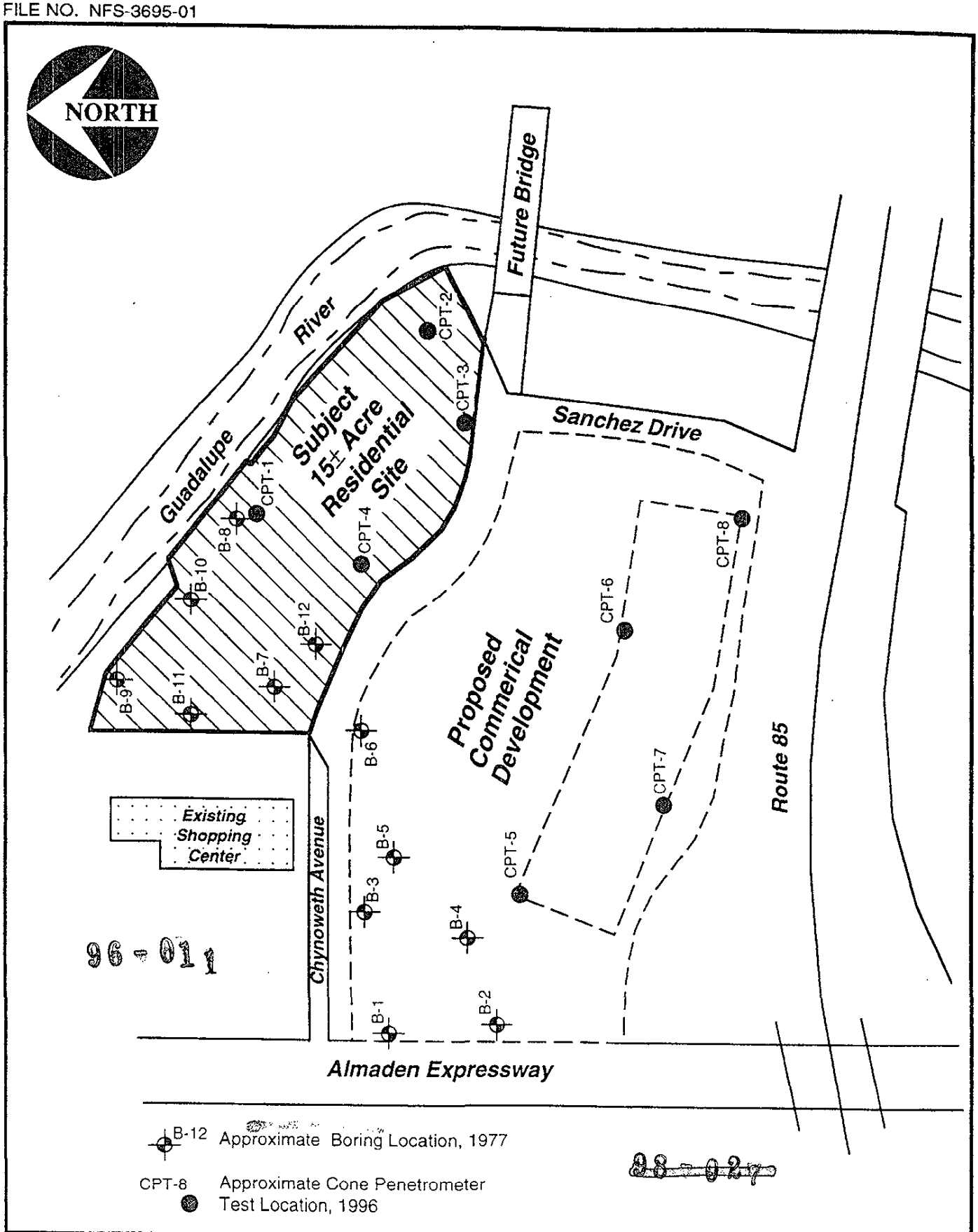
0 1 2 Miles

0 1 2 Kilometers

Base: Thomas Brothers Map

Earth Systems Consultants **Northern California**	Residential Almaden Expressway San Jose, California	SITE LOCATION Figure No. 1

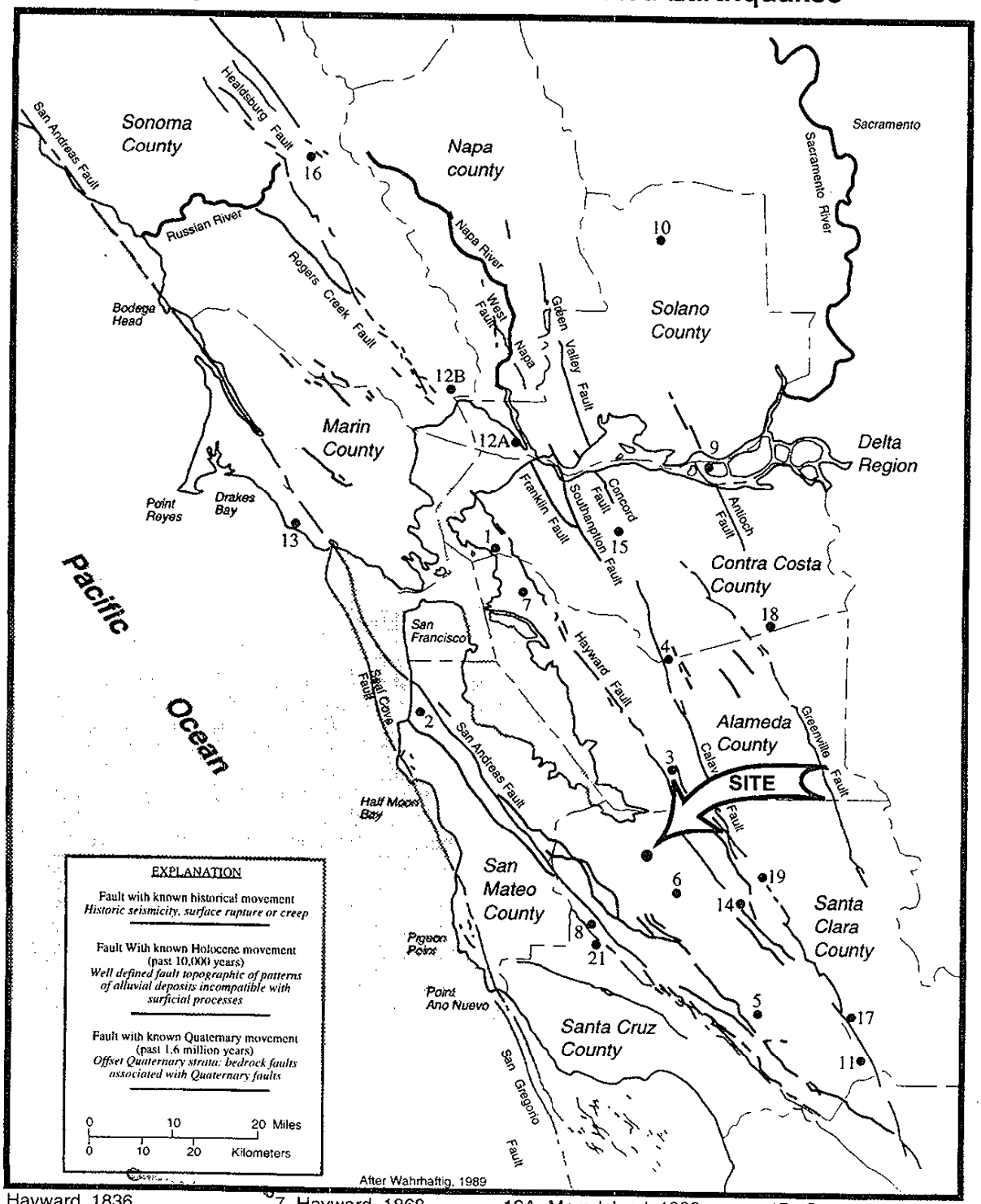
FILE NO. NFS-3695-01



Earth Systems Consultants Northern California	Residential Almaden Expressway San Jose, California	SITE PLAN Figure No. 2

FILE NO. NFS-3695-01

Regional Active Faults and Selected Earthquakes



1 Hayward, 1836
2 San Francisco, 1838
3 Hayward, 1853
4 Calaveras, 1861
5 Santa Clara Valley, 1864
6 Santa Clara, 1865
7 Hayward, 1868
8 San Andreas, 1870
9 Antioch-Collinsville, 1889 and 1965
10 Vaca-Winters, 1892
11 Calaveras, 1897
12A Mare Island, 1898
12B Mare Island, 1898
13 San Francisco, 1906
14 Morgan Hill, 1911
15 Concord, 1955
16 Santa Rosa, 1969
17 Coyote Lake, 1979
18 Greenville, 1980
19 Morgan Hill, 1984
20 Mount Lewis, 1986
21 Loma Prieta, 1989

Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	**FAULTS AND EARTHQUAKES** **Figure No. 3**

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Selected San Francisco Bay Area Earthquakes

Location Number (Refer to Figure 7)	Earthquake and Year	Magnitude Reported	Reference
1	Hayward, 1836	M 6.8	Toppozada, 1981
2	San Francisco, 1838	M 7.0	Toppozada, 1981
3	Hayward, 1858	M 6.1	Toppozada, 1981
4	Calaveras-Dublin, 1861	M 5.9	Toppozada, 1981
5	Santa Clara Valley, 1864	M 5.9	Toppozada, 1981
6	Santa Clara, 1865	M 6.3	Toppozada, 1981
7	Hayward, 1868	M 6.8	Toppozada, 1981
8	San Andreas, 1870	M 5.8	Toppozada, 1981
9	Antioch-Collinsville		
	1889,	M 6.0	Toppozada, 1981
	1965	M 4.9	Toppozada, 1981
10	Vacaville-Winters, 1892	M 6.4	Toppozada, 1981
11	Calaveras, 1898	M 6.2	Toppozada, 1981
12a	Mare Island, 1898	M 6.2	Toppozada, 1981
12b	Mare Island, 1898	M 6.5	Goter, 1988
13	San Francisco, 1906	M 8.3	Toppozada, 1982
		M 8.3	Goter, 1988
		M 7.8	Abe and Noguchi, 1983b
14	Morgan Hill, 1911	M 6.5	Toppozada and Parke, 1982
15	Concord, 1955	M 5.4	Tocher, 1959
16	Santa Rosa, 1969	M 5.6	Cloud, 1970
17	Coyote Lake, 1979	M 5.9	Oppenheimer, 1990
18	Greenville, 1980	M 5.6	Hart, 1988
19	Morgan Hill, 1984	M 6.2	Oppenheimer, 1990
20	Mount Lewis, 1986	M 5.7	Oppenheimer, 1990
21	Loma Prieta, 1989	M 7.1	U.S. Geological Survey, 1989

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Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	SELECTED EARTHQUAKES Figure No. 4

APPENDIX A

1996 Cone Penetrometer Test Results

Figures A1 through A8
CPT Local Friction, Friction Ratio, Tip Resistance and Pore Pressure Graphs

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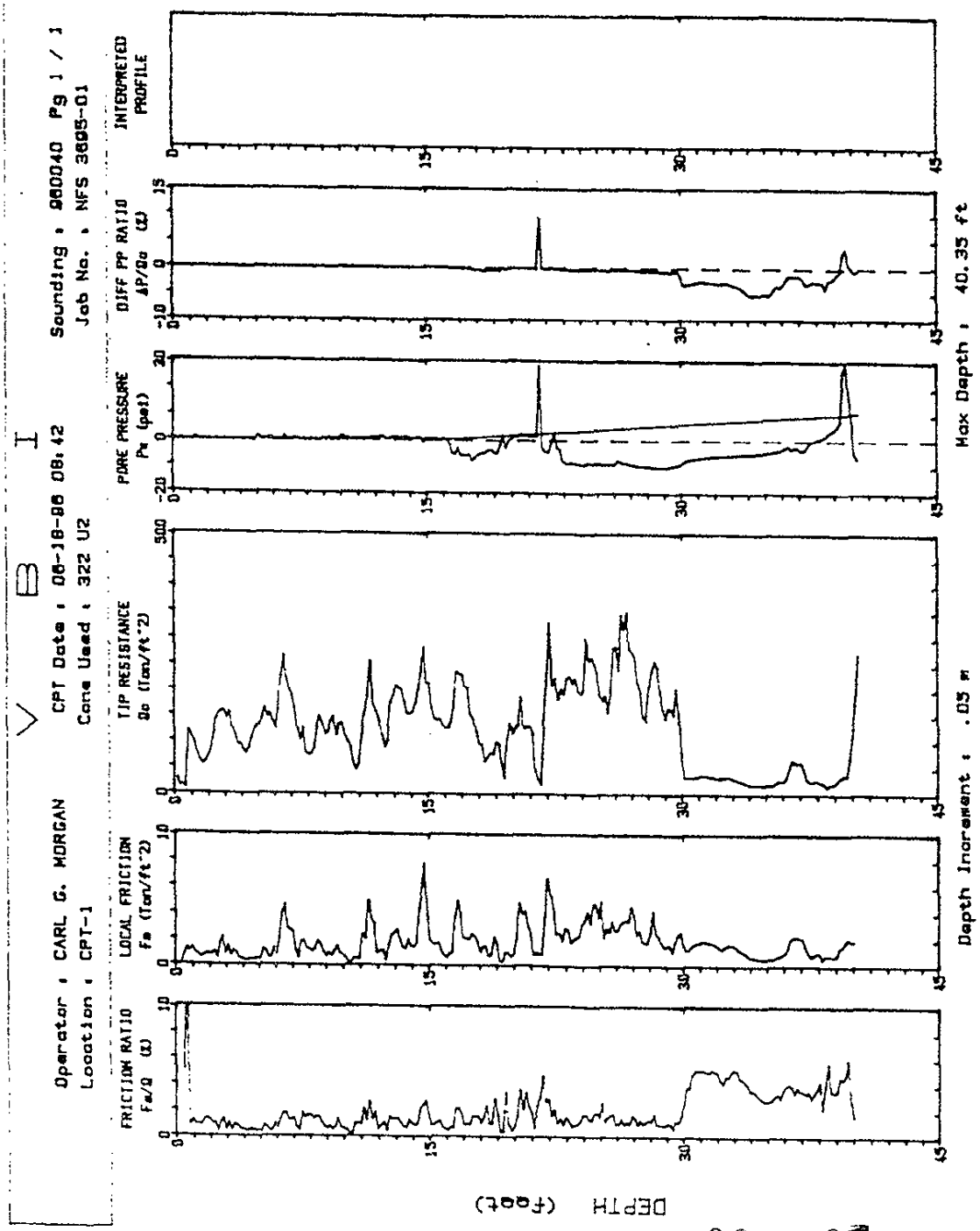
FILE NO. NFS-3695-01



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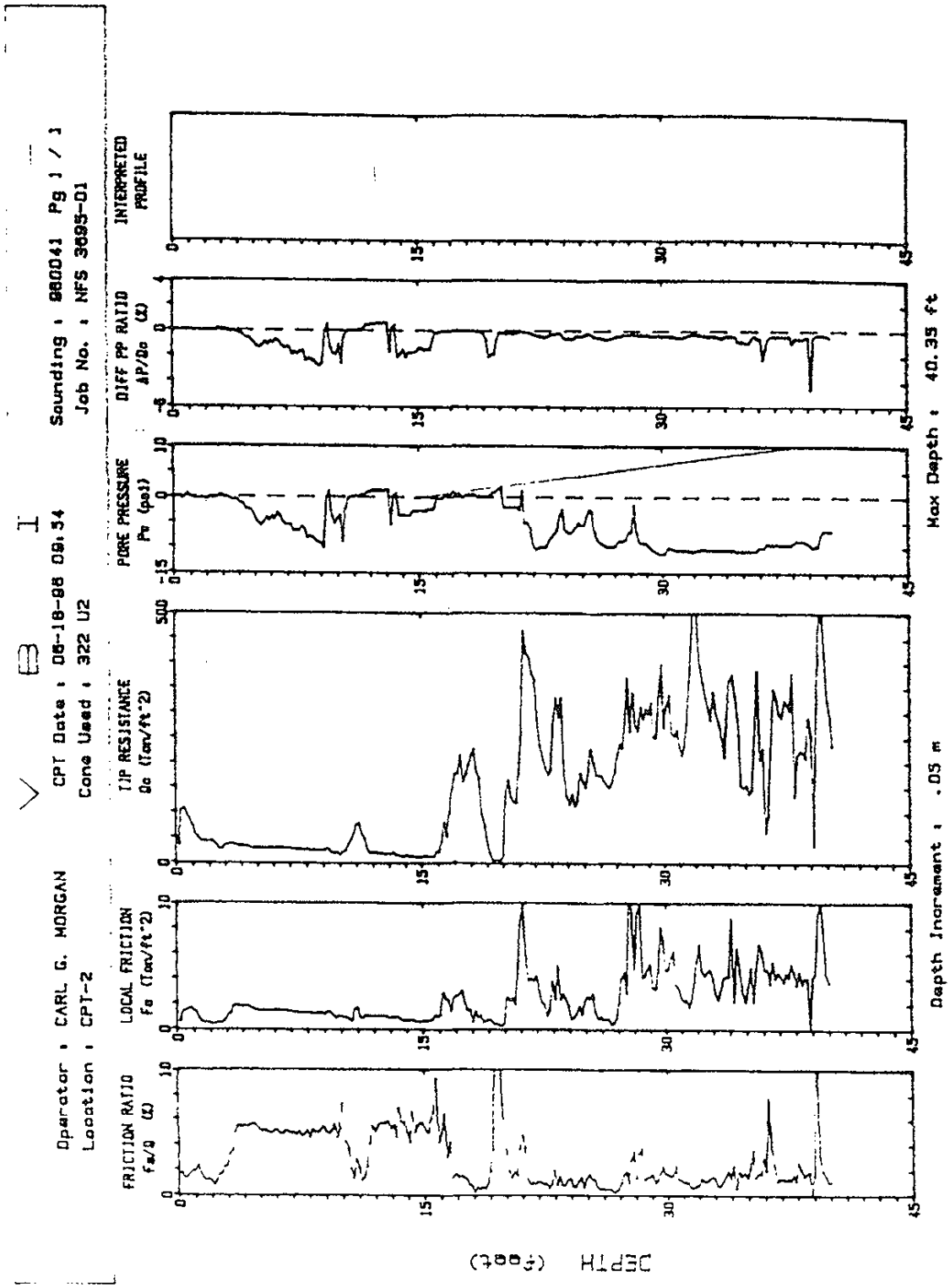
Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A1

FILE NO. NFS-3695-01



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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A2

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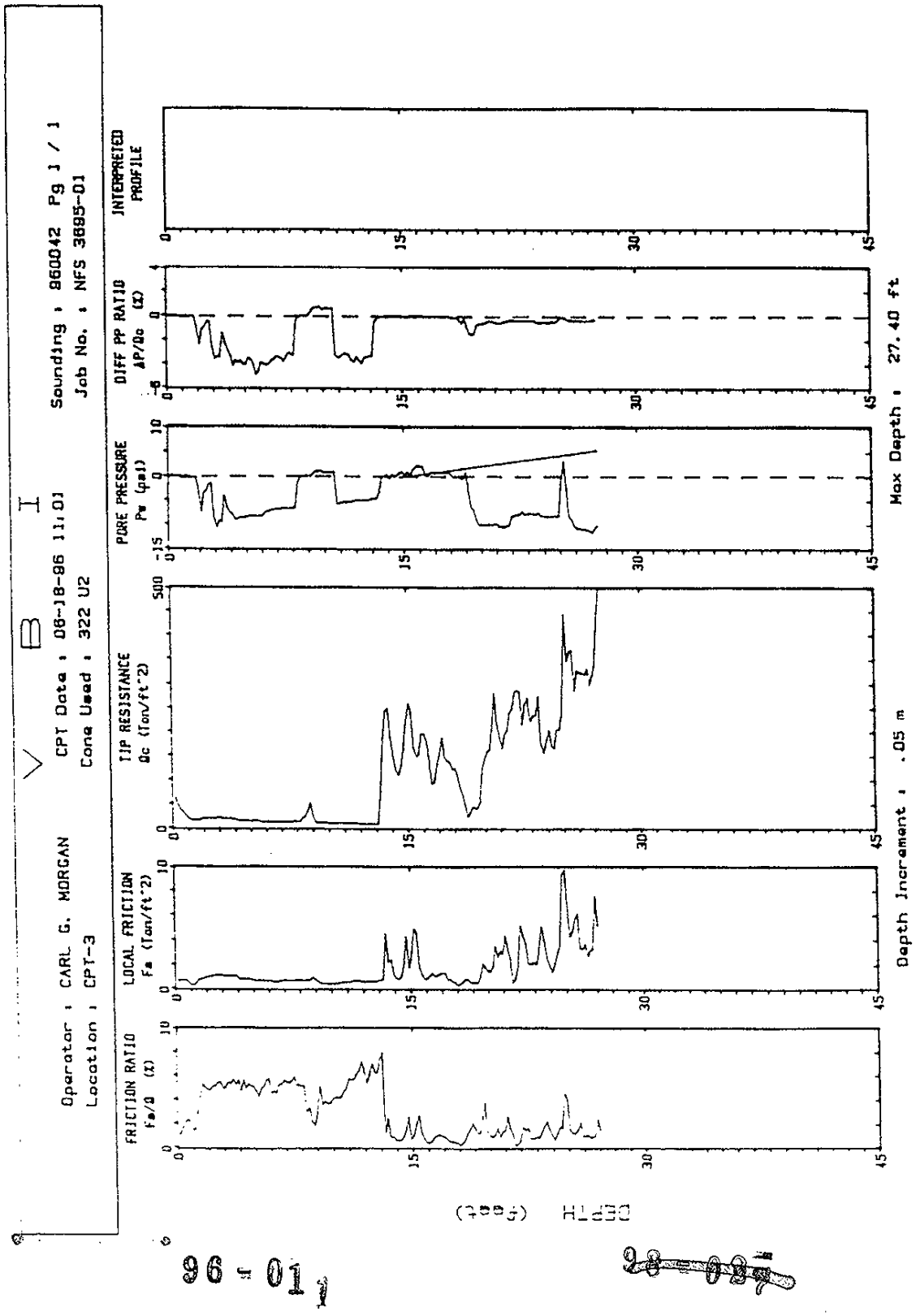

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A3

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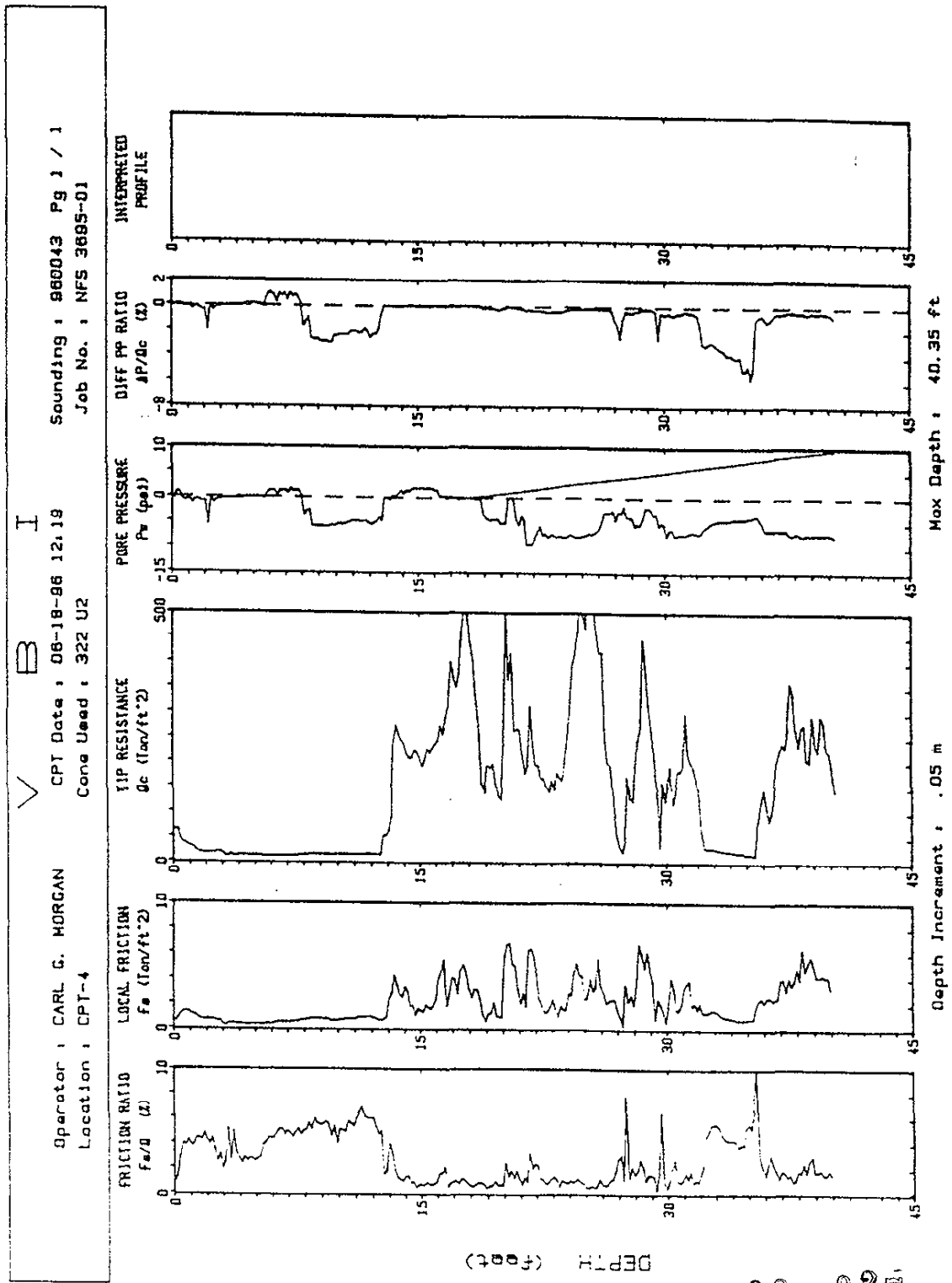

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A4

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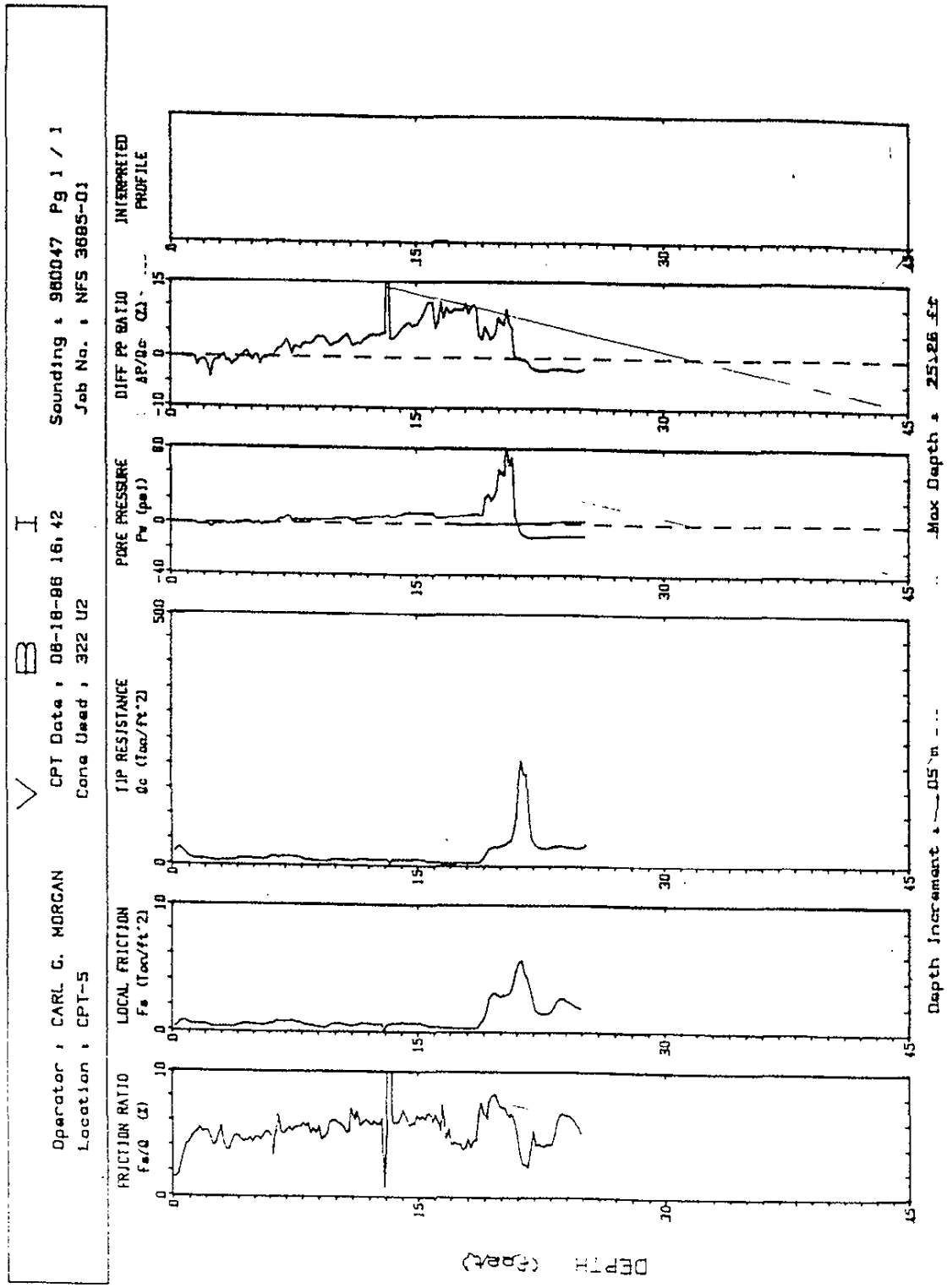

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A5

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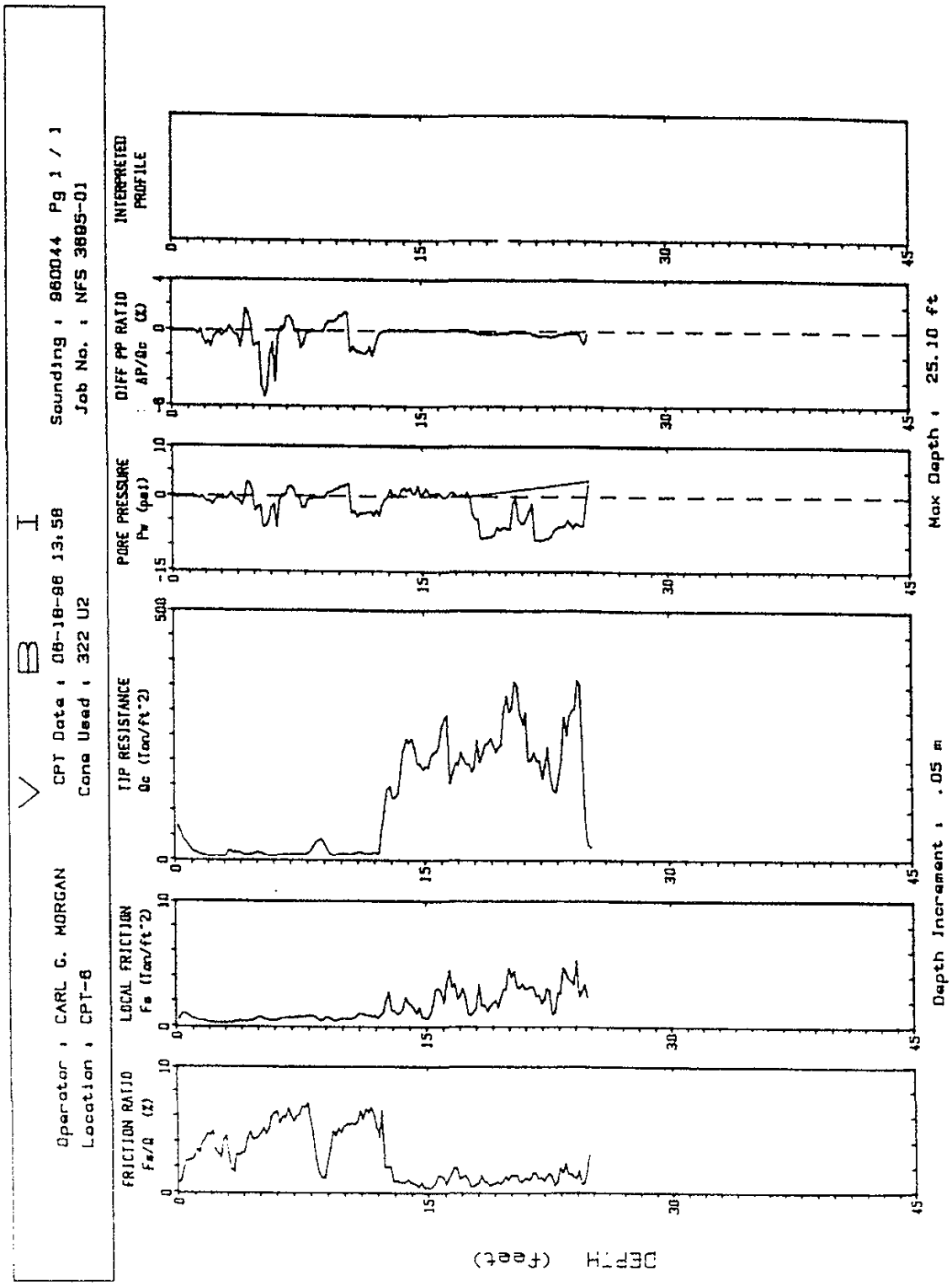

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Earth Systems Consultants Northern California	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A6

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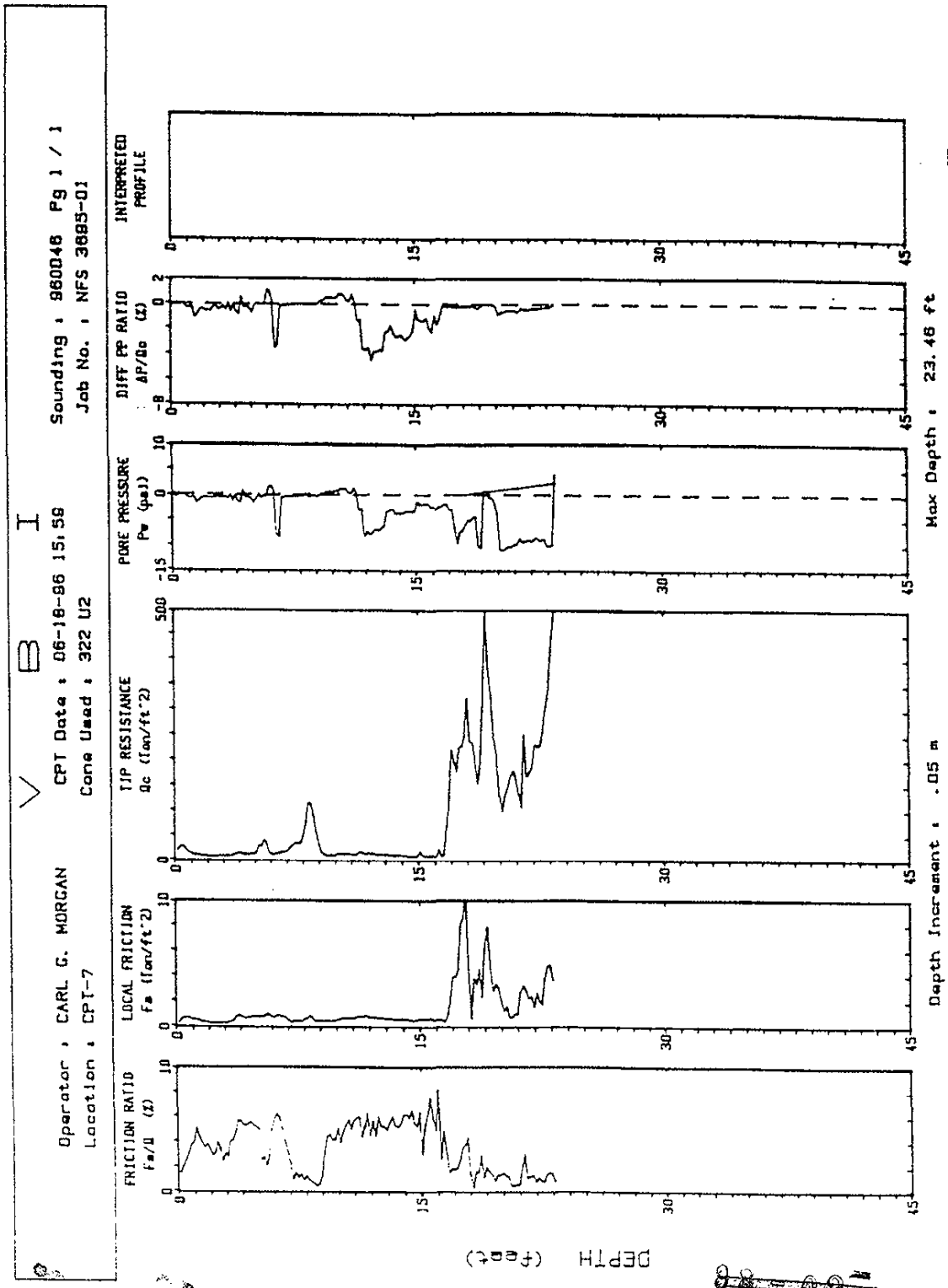

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A7

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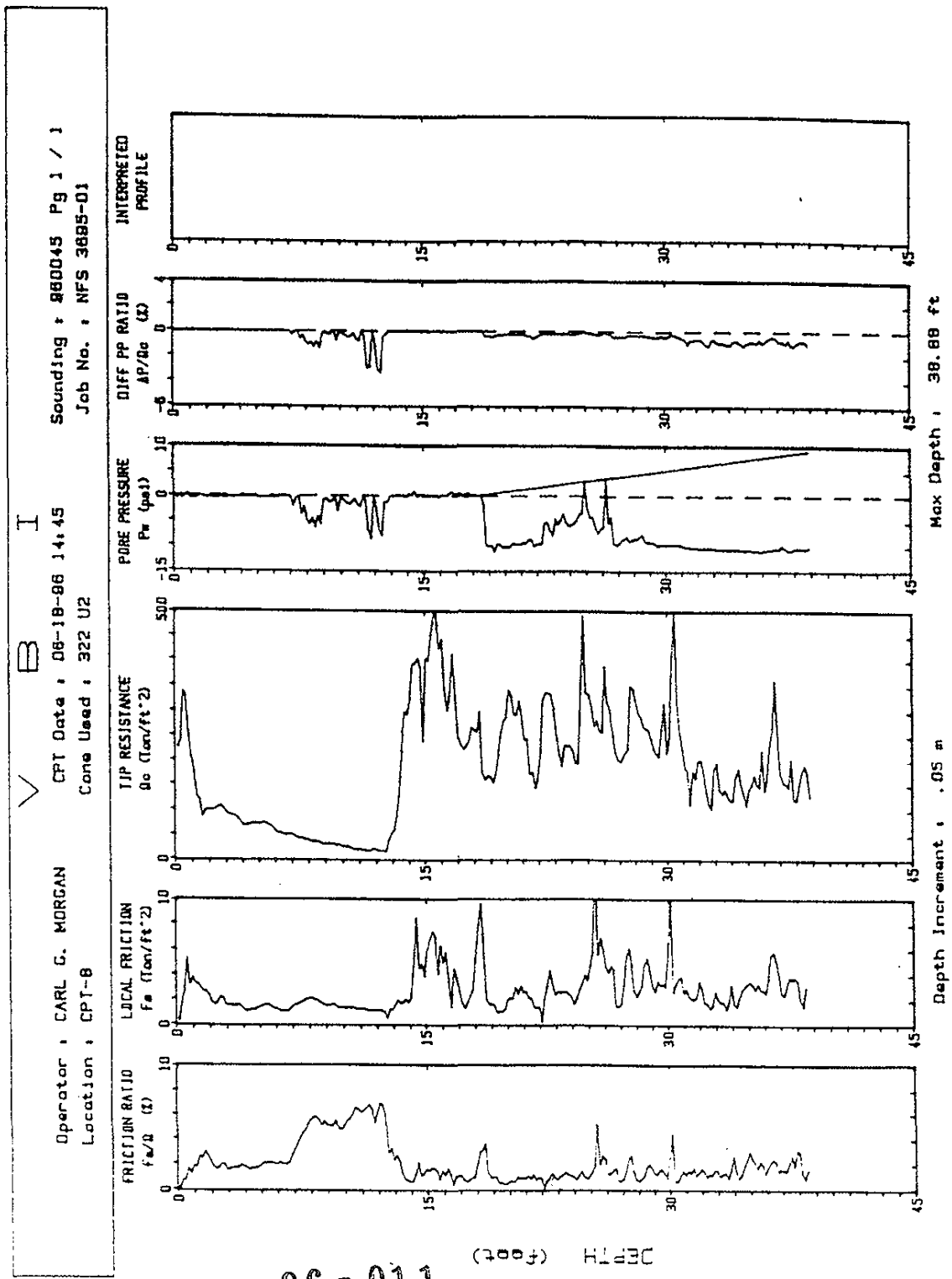

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Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	CONE PENETROMETER TEST Figure No. A8

Program: CPTINT - CPT Cone Interpretation Program
Version: 4.2
Written by: Dr. R. G. (DICK) Campanella, P.Eng.
Rev. Dated: June 15, 1992

Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Depth average	Depth averaged over specified range (see menu)		All	All
Parameter Averaging	Averaged over range specified for depth. If no values exist, your choice is zero's or no value		All	All
Qc Bearing stress	measured tip force/area	#6,#8	All	All
Qt corrtd for U2	Qt = Qc + (1 - a) x U2 and a = tip area ratio Defaults to U2 if given or uses U1 or U3 times Const.	#6,#8	All	All
[Note: Input value from input file is used if defined, not calculated]				
QtN (Qt Normalized)	$QtN = \frac{Qt - \sigma v}{\sigma v'}$	#9	All	All
Fs	measured sleeve force/area	#6,#8	All	All
Rf Friction Ratio if Rf>8, Rf=8)	$Rf = \frac{Fs}{Qt} \times 100\%$	#6,#8	All	All
RfN Rf Normalized)	$RfN = \frac{Fs}{(Qt - \sigma v)} \times 100\%$	#9	All	All
Gamma Total Unit Weight Soil + Water)	Based on Rf or Bq Classif. Zone Zone # Gamma = kN/m^3 1 Qt<4bar 15.70 1 Qt≥4bar 17.30 2 Rf<5% 13.36 2 Rf≥5% 11.80 2 Bq Zone 12.58 3 Qt<10bar 18.86 3 Qt≥10bar 19.65 4, 5 & 6 Qt<20bar 18.86 4, 5 & 6 Qt≥20bar 19.65 7 18.86 8 & 9 19.65 10 20.44 11 & 12 21.22		All	All

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Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
U Penetration Pore Pressure	U1,measured on Face of tip U2,measured Behind Tip at shoulder (std location) U3,measured Behind Friction Sleeve		All	All
Water Table	Depth below ground surface to where pore pressure = 0 Make negative if water level is above ground		All	All
Uo Hydrostatic Pore Pressure	Uo = water depth,Hw x unit weight water, Gamma or Uo=Hw=depth-depth to water table if depth<water table,Uo = 0		All	All
dU Excess Pore Pressure	dU = U2 - Uo Defaults to U2 if given or uses U1 or U3 x const.		All	All
DPPR (Differential Pore Pressure Ratio)	$DPPR = \frac{dU}{Qt} = \frac{U - Uo}{Qt}$ Defaults to U2 if given or uses U1 or U3 x const.	#6,#8	All	All
Bq	$Bq = \frac{dU}{Qt - \sigma v}$	# 4 # 8	All	All
OS (Overburden Stress)	OS = σv = Σ (Gamma x Depth)		All	All
EOS (Effective Overburden Stress)	EOS = $\sigma v'$ = OS - Uo = σv - Uo		All	All
Rf Zone Soil Behavior Type	Classification chart for Qc and Rf Zone # = Soil Behavior Type 1=sensitive fine grained 2=organic material 3=clay 4=silty clay to clay 5=clayey silt to silty clay 6=sandy silt to clayey silt 7=silty sand to sandy silt 8=sandy to silty sand 9=sand 10=gravelly sand to sand 11=very stiff fine grained Ø 12=sand to clayey sand Ø Ø overconsolidated or cemented.	#6 #8, Fig4.3	All	1<Qt<1000bar 0<Rf<8%

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Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Bq Zone Soil Behavior Type	Classification chart for Qc and Bq (same zone #'s as Rf above)	#8 Fig 4.3	All	0<Qt<1000bar -0.1<Bq<1.4
SPT N(60) Standard Penetration Test (Blows/foot) at 60% Energy	Qt/N ratio per zone Zone # Qt/N Zone # Qt/N 1 2 7 3 2 1 8 4 3 1 9 5 4 1.5 10 6 5 2 11 1 6 2.5 12 2	# 7 # 8 Fig 4.2	All	All
SPT N1(60) Normalized for Overburden str	SPT N1(60) = Cn x SPT N(60) where Cn = (σv')^(-0.77)	# 8	All	0.5<Cn<1.5
Dr Relative Density Compressibility moderate high all	Specific Sands: $Dr = \frac{100}{C2} * \ln\left[\frac{Qc}{C0\ \sigma v'^{C1}}\right]$ where: All are NC & UNAGED Sand | C0 | C1 | C2 Ticino | 17.37 | .558 | 2.58 Schmertmann | 15.32 | .520 | 2.75 ---------- ALL SANDS: NC, OC, ALL TESTS $Dr = C3 + C4 \log_{10}\left[\frac{\left[\frac{Qc}{C1}\right]}{\left[\frac{\sigma v'}{C0}\right]^{C2}}\right]$ where: C0 | C1 | C2 | C3 | C4 0.100 | 0.0981 | 0.5 | -98 | 66	# 8 # 1 # 1 # 5	Sand--	7 to 10 0<Qt<500bar 0<σv'<5bar Sand	7 to 10
Phi Friction Angle	Methods: 1) Robertson & Campanella 2) Durgunoglu & Mitchell 3) Janbu beta = +15 degree 4) Janbu beta = 0 degree 5) Janbu beta = -15 degree	#6, #8 # 2 #6, #8 #6, #8 #6, #8	Sand--	7 to 10 0<Qt<500bar 0<σv'<4bar 29<phi<49

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Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Gmax Maximum Shear Modulus at very small strains	Clay: Gmax = alpha x Qt Sand: Digitized figure of Qc vs Gmax with interpolation between σv'curves,R&Cmethod	# 8 Fig4.18 # 6 # 8 Fig4.13	Clay Sand	1 to 6 7 to 10 .25<σv'<8bar
CSR(Qc), τ/σ Liquefaction Resistance of SAND for LEVEL ground.	Seed's CSR vs N1(60) graph for specified equake Magnitude.Can include silty sand corr. for Zone 7. N1(60) from CPT correlations.	# 11 # 12	Sand	7 to 10
CSR(Eq), τ/σ Cyclic Stress Ratio applied by design quake	$CSR(Eq) = 0.65 \frac{Amax}{g} \frac{\sigma v}{\sigma vo'} rd$ Amax=max surface acceleratn including Amplification	# 12 # 3	Sand	7 to 10
[Note: Input value from input file is used if defined, not calculated]				
rd Reduction Factor to find CSR(Eq)	Digitized graph to use for depth vs rd: 1) Seed's mean 2) Fraser Delta	# 12 # 3	Sand	7 to 10 0<depth<30m
FL Safety Factor against Liquefaction	FL = CSR(Qc)/CSR(Eq)	# 3	Sand	7 to 10
Qcr Critical Bearng required to resist Liquefctn	Qcr backcalculated from CSR(Eq) for a specified FL. Qcr is only for the given GWT,EOS,OS,Amax/g & Eq.Mag	# 12	Sand	7 to 10
Su Undrained Shear Strength of CLAY	Methods: Nk: $Su = \frac{Qc - \sigma t}{Nk}$ Nke: $Su = \frac{Qt - U2}{Nke}$ Nkt: $Su = \frac{Qt - \sigma v}{Nkt}$ Nc: $Su = \frac{Qt}{Nc}$ NdU: $Su = \frac{dU}{NdU}$	# 8	Clay Clay Clay Clay Clay	1 to 6 1 to 6 1 to 6 1 to 6 1 to 6

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Parameter	Methods	Refer. Number	Valid Soil Type	Valid Zone
Su/EOS	$Su/EOS = \frac{Su}{\sigma v'}$	# 8	Clay	1 to 6
Ko (NC) Normally Consolidated	$(Ko)NC = 1 - Sin(\phi)$	# 8	Sand	7 to 10
Ko (OC) Over Consolidated	$(Ko)OC = (Ko)NC \times OCR^{0.42}$	# 8	Sand	7 to 10
E25 Youngs Modulus	E25 = alpha x Qt where user input alpha	# 8 4.11&12	Sand	7 to 10 0<Qt<500bar
M Constrained Modulus	CLAY: M = alpha x Qt where user input alpha SAND: Methods: Qt: M = alpha x Qt Baldi: $\frac{M}{Qt} = C0 \times pa \left[\frac{\sigma v'}{pa}\right]^{C1} \times OCR^{C2} \times \exp(C3\ Dr)$	# 8 Tabl4.3 # 8 Fig4.10	 Clay Sand Sand	 1 to 6 7 to 10 7 to 10
OCR Over-Consolidation Ratio	$OCR = \left[\frac{\frac{Su}{\sigma vo'}}{\left[\frac{Su}{\sigma vo'}\right]_{NC}}\right]^{1.25}$	# 6 # 8 Fig4.19	Clay	1 to 6

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96-011

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utput file from CPTINT - Version 4.2

INPUT FILE: B:960040.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

nterpreter Name: VBI IN-SITU TESTING, INC

ile Number: 960040 Date: 06-18-96 08:42
Operator: CARL G. MORGAN On Site Location: CPT-1
one Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

a' for calculating Qt:	0.800
value for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
lpha' for Gmax in Clay:	75.000
thod for calculating Su:	Nkt
Value of the constant Nkt:	13.000
u/EOS) for normal consolidation:	0.250
nd Compressibility for calc Dr:	High
Method for friction Angle:	Robertson & Campanella
lpha' for Youngs Modulus (E25):	2.500
lty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
r Rf Zone & Bq Zone Classification

ne #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ne #2=Organic material	Zone #8 =Sandy to silty sand
zone #3=Clay	Zone #9 =Sand
ne #4=Silty clay to clay	Zone #10=Gravelly sand to sand
e #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
e #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

E:

soil classification, Rf values > 8 are assumed to be 8.

(Note: --- means Out Of Range)

96 - 011

~~98 - 027~~

-| INPUT FILE: B:960040.CPD |

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	48.940	48.940	1987.439	0.715	1.462	119.968	0.000	0.003	0.000	0.000
0.425	1.394	69.638	69.642	929.201	0.715	1.027	124.994	0.000	0.288	0.000	0.000
0.675	2.215	111.984	111.985	886.683	0.954	0.852	124.994	0.000	0.076	0.000	0.000
0.925	3.035	147.872	147.873	832.365	1.238	0.837	124.994	0.000	0.072	0.000	0.000
1.175	3.855	89.790	89.791	391.568	0.456	0.508	124.994	0.000	0.070	0.000	0.000
1.425	4.675	115.282	115.287	410.720	0.446	0.387	124.994	0.000	0.376	0.000	0.000
1.675	5.495	149.190	149.199	449.343	0.949	0.636	124.994	0.000	0.606	0.000	0.000
1.925	6.316	200.424	200.430	522.881	2.872	1.433	124.994	0.000	0.410	0.000	0.000
2.175	7.136	154.832	154.837	355.871	1.712	1.106	124.994	0.000	0.324	0.000	0.000
2.425	7.956	87.452	87.455	179.644	1.314	1.502	119.968	0.000	0.202	0.000	0.000
2.675	8.776	128.574	128.579	239.612	1.219	0.948	124.994	0.000	0.354	0.000	0.000
2.925	9.596	133.824	133.838	227.520	1.008	0.753	124.994	0.000	0.952	0.001	0.001
3.175	10.417	79.854	79.864	124.384	0.368	0.461	124.994	0.000	0.696	0.001	0.001
3.425	11.237	154.018	154.028	222.798	2.672	1.735	124.994	0.000	0.664	0.000	0.000
3.675	12.057	133.062	133.080	178.952	1.333	1.002	124.994	0.000	1.250	0.001	0.001
3.925	12.877	175.414	175.429	220.832	2.233	1.273	124.994	0.000	1.030	0.000	0.000
4.175	13.697	167.858	167.874	198.350	1.485	0.885	124.994	0.000	1.090	0.000	0.000
4.425	14.518	222.552	222.565	248.412	4.790	2.152	119.968	0.000	0.876	0.000	0.000
4.675	15.338	160.712	160.720	169.504	1.579	0.982	124.994	0.000	0.536	0.000	0.000
4.925	16.158	138.082	138.068	137.915	1.410	1.022	124.994	0.000	-0.996	-0.001	-0.001
5.175	16.978	221.652	221.575	210.995	3.035	1.370	124.994	0.000	-5.370	-0.002	-0.002
5.425	17.798	119.632	119.542	108.024	1.798	1.504	124.994	0.000	-6.254	-0.004	-0.004
5.675	18.619	76.948	76.886	67.097	1.387	1.804	119.968	0.249	-4.611	-0.004	-0.004
5.925	19.439	86.090	86.069	73.581	0.653	0.758	124.994	0.605	-2.088	-0.002	-0.002
6.175	20.259	137.742	137.770	115.883	3.215	2.334	119.968	0.960	0.954	0.000	0.001
6.425	21.079	89.646	89.675	73.543	1.634	1.822	119.968	1.316	0.654	0.001	0.001
6.675	21.899	185.374	185.418	150.220	4.241	2.287	119.968	1.672	1.333	0.001	0.001
6.925	22.720	205.036	204.976	162.864	2.526	1.232	124.994	2.027	-6.225	-0.002	-0.002
7.175	23.540	211.776	211.648	164.775	2.327	1.099	124.994	2.383	-11.341	-0.004	-0.004
7.425	24.360	255.804	255.674	195.314	4.099	1.603	124.994	2.739	-11.824	-0.003	-0.003
7.675	25.180	189.180	189.047	141.289	3.280	1.735	124.994	3.095	-12.346	-0.005	-0.005
7.925	26.000	269.854	269.729	198.212	3.125	1.159	124.994	3.450	-12.154	-0.003	-0.003
8.175	26.821	295.838	295.707	213.328	3.581	1.211	124.994	3.806	-12.971	-0.003	-0.003
8.425	27.641	181.312	181.169	127.816	2.183	1.205	124.994	4.162	-14.113	-0.006	-0.006
8.675	28.461	222.162	222.014	154.051	2.453	1.105	124.994	4.517	-14.867	-0.005	-0.005
8.925	29.281	166.746	166.605	113.228	1.717	1.031	124.994	4.873	-14.715	-0.006	-0.006
9.175	30.101	63.264	63.146	41.379	1.670	2.644	124.994	5.229	-13.442	-0.015	-0.016
9.425	30.922	35.800	35.705	22.429	1.839	5.151	124.994	5.584	-12.196	-0.025	-0.026
9.675	31.742	33.880	33.795	20.773	1.671	4.945	124.994	5.940	-11.880	-0.025	-0.027
9.925	32.562	32.794	32.715	19.705	1.558	4.761	124.994	6.296	-11.785	-0.026	-0.028
10.175	33.382	25.612	25.539	14.822	1.155	4.523	124.994	6.651	-11.743	-0.033	-0.036
10.425	34.202	18.636	18.567	10.230	0.625	3.368	119.968	7.007	-11.807	-0.046	-0.052
10.675	35.023	18.874	18.812	10.202	0.555	2.948	119.968	7.363	-11.670	-0.045	-0.050
10.925	35.843	27.874	27.829	15.461	1.022	3.673	124.994	7.719	-10.884	-0.028	-0.031
11.175	36.663	60.716	60.679	34.720	2.228	3.671	124.994	8.074	-10.690	-0.013	-0.013
11.425	37.483	31.390	31.374	17.012	1.084	3.456	124.994	8.430	-9.610	-0.022	-0.024
11.675	38.303	20.914	20.945	10.716	0.799	3.817	124.994	8.786	-6.647	-0.023	-0.026
11.925	39.124	29.556	29.702	15.507	1.286	4.330	124.994	9.141	0.985	0.002	0.003
12.175	39.944	133.436	133.561	73.433	-13106.005	-9812.726	124.994	9.497	-0.829	-0.000	-0.000

96-011

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INPUT FILE: B:960040.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.025	0.025	7	8	16	24	111	---	0.423	---	---
0.425	0.075	0.075	8	8	17	26	103	---	0.337	---	---
0.675	0.126	0.126	8	9	27	41	110	---	1.101	---	---
0.925	0.177	0.177	9	9	28	42	114	---	1.185	---	---
1.175	0.229	0.229	8	9	22	33	91	47	0.477	---	---
1.425	0.280	0.280	9	9	22	33	96	47	0.477	---	---
1.675	0.331	0.331	9	9	29	44	102	47	1.354	---	---
1.925	0.383	0.383	8	9	48	72	110	47	3.716	---	---
2.175	0.434	0.434	9	9	30	45	99	47	1.438	---	---
2.425	0.484	0.484	7	9	28	42	76	43	1.776	---	---
2.675	0.534	0.534	8	9	31	47	88	45	1.607	---	---
2.925	0.586	0.586	9	9	26	39	88	45	0.932	---	---
3.175	0.637	0.637	8	9	19	27	67	41	0.351	---	---
3.425	0.688	0.688	8	9	37	49	90	45	1.776	---	---
3.675	0.740	0.740	8	9	32	40	83	43	1.016	---	---
3.925	0.791	0.791	8	9	42	50	92	45	1.860	---	---
4.175	0.842	0.842	9	9	32	37	89	45	0.763	---	---
4.425	0.892	0.892	7	9	71	78	98	45	4.813	---	---
4.675	0.943	0.943	9	9	31	32	85	43	0.447	---	---
4.925	0.994	0.994	8	9	33	33	79	43	0.477	---	---
5.175	1.045	1.045	8	9	53	51	95	45	1.944	---	---
5.425	1.096	1.096	8	9	29	27	72	41	0.351	---	---
5.675	1.147	1.129	7	9	25	23	55	39	0.399	---	---
5.925	1.197	1.153	8	9	21	19	59	39	0.241	---	---
6.175	1.247	1.178	7	9	44	39	76	41	1.522	---	---
6.425	1.296	1.202	7	9	29	25	60	39	0.447	---	---
6.675	1.346	1.225	7	9	59	50	86	43	2.451	---	---
6.925	1.396	1.250	9	9	39	33	89	43	0.477	---	---
7.175	1.447	1.276	9	9	41	34	90	43	0.510	---	---
7.425	1.499	1.301	8	10	61	50	96	43	1.860	---	---
7.675	1.550	1.327	8	9	45	36	85	43	0.679	---	---
7.925	1.601	1.353	9	10	52	41	97	45	1.101	---	---
8.175	1.652	1.378	9	10	57	45	100	45	1.438	---	---
8.425	1.704	1.404	8	9	43	33	82	43	0.477	---	---
8.675	1.755	1.430	9	9	43	33	89	43	0.477	---	---
8.925	1.806	1.455	9	9	32	24	78	41	0.307	---	---
9.175	1.858	1.481	6	8	24	18	---	---	---	9431.491	3.183
9.425	1.909	1.507	3	7	34	25	---	---	---	5200.818	1.725
9.675	1.960	1.533	3	7	32	23	---	---	---	4898.953	1.598
9.925	2.011	1.558	3	7	31	22	---	---	---	4724.936	1.516
10.175	2.063	1.584	3	7	24	17	---	---	---	3612.716	1.140
10.425	2.113	1.609	5	6	9	6	---	---	---	2532.119	0.787
10.675	2.162	1.632	5	6	9	6	---	---	---	2562.259	0.785
10.925	2.212	1.657	5	7	13	9	---	---	---	3942.031	1.189
11.175	2.264	1.682	5	8	29	19	---	---	---	8989.288	2.671
11.425	2.315	1.708	5	7	15	10	---	---	---	4471.709	1.309
11.675	2.366	1.734	4	7	13	9	---	---	---	2859.056	0.824
11.925	2.418	1.760	4	7	19	12	---	---	---	4198.746	1.193
12.175	2.469	1.785	---	9	---	---	---	---	---	---	---

96 - 011

~~98 - 025~~

INPUT FILE: B:960040.CPD

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	---	---	122.350
0.425	---	---	174.105
0.675	---	---	279.963
0.925	---	---	369.683
1.175	---	---	224.478
1.425	---	503.195	288.219
1.675	---	618.859	372.997
1.925	---	734.624	501.075
2.175	---	733.173	387.092
2.425	---	642.453	218.637
2.675	---	764.330	321.448
2.925	---	798.490	334.594
3.175	---	671.919	199.660
3.425	---	883.950	385.069
3.675	---	856.409	332.700
3.925	---	968.169	438.572
4.175	---	972.514	419.684
4.425	---	1028.739	556.411
4.675	---	989.914	401.799
4.925	---	945.428	345.169
5.175	---	1136.355	553.937
5.425	---	914.113	298.855
5.675	---	724.121	192.214
5.925	---	778.758	215.173
6.175	---	986.569	344.425
6.425	---	802.920	224.187
6.675	---	1130.362	463.544
6.925	---	1175.790	512.440
7.175	---	1194.334	529.119
7.425	---	1260.199	639.184
7.675	---	1163.708	472.618
7.925	---	1149.122	674.323
8.175	---	-580.994	739.266
8.425	---	1161.533	452.923
8.675	---	1255.326	555.034
8.925	---	1130.535	416.512
9.175	24.051	4735.970	---
9.425	11.186	2677.900	---
9.675	10.163	2534.625	---
9.925	9.514	2453.661	---
10.175	6.665	1915.441	---
10.425	4.192	1392.556	---
10.675	4.178	1410.937	---
10.925	7.026	2087.170	---
11.175	19.314	4550.914	---
11.425	7.917	2353.015	---
11.675	4.443	1570.897	---
11.925	7.052	2227.672	---
12.175	---	---	---

96-011

~~98-027~~

tput file from CPTINT - Version 4.2

INPUT FILE: B:960041.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

Interpreter Name: VBI IN-SITU TESTING, INC

le Number: 960041 Date: 06-18-96 09:54
Operator: CARL G. MORGAN On Site Location: CPT-2
ne Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

' for calculating Qt:	0.800
alue for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
lpha' for Gmax in Clay:	75.000
thod for calculating Su:	Nkt
Value of the constant Nkt:	13.000
u/EOS) for normal consolidation:	0.250
nd Compressibility for calc Dr:	High
method for Friction Angle:	Robertson & Campanella
alpha' for Youngs Modulus (E25):	2.500
lty sand correction for CSR (Qc)?	YES
magnitudes for CSR (Qc):	6.500

il Behavior Type Zone Numbers
r Rf Zone & Bq Zone Classification

ne #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
ne #2=Organic material	Zone #8 =Sandy to silty sand
one #3=Clay	Zone #9 =Sand
Zone #4=Silty clay to clay	Zone #10=Gravelly sand to sand
ne #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
ne #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

TE:

r soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

96 - 011

6 - 011

~~98 - 087~~

INPUT FILE: B:960041.CPD

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	84.723	84.725	3441.393	1.396	1.648	119.968	0.000	0.130	0.000	0.000
0.425	1.394	47.640	47.637	644.163	0.777	1.632	119.968	0.000	-0.222	-0.000	-0.000
0.675	2.215	37.050	37.048	300.057	0.465	1.255	119.968	0.000	-0.106	-0.000	-0.000
0.925	3.035	34.874	34.876	200.227	1.188	3.406	124.994	0.000	0.142	0.000	0.000
1.175	3.855	33.642	33.630	148.729	1.859	5.527	124.994	0.000	-0.852	-0.002	-0.002
1.425	4.675	29.166	29.121	104.553	1.585	5.443	124.994	0.000	-3.124	-0.008	-0.008
1.675	5.495	29.438	29.368	88.761	1.499	5.103	124.994	0.000	-4.872	-0.012	-0.012
1.925	6.316	30.082	30.024	78.333	1.511	5.033	124.994	0.000	-3.998	-0.010	-0.010
2.175	7.136	27.552	27.465	62.910	1.352	4.923	124.994	0.000	-6.018	-0.016	-0.016
2.425	7.956	25.988	25.887	52.815	1.294	4.997	124.994	0.000	-7.024	-0.020	-0.020
2.675	8.776	25.622	25.490	46.885	1.315	5.159	124.994	0.000	-9.140	-0.026	-0.026
2.925	9.596	20.146	20.113	33.462	1.110	5.517	124.994	0.000	-2.324	-0.008	-0.009
3.175	10.417	38.072	38.031	58.901	0.995	2.615	124.994	0.000	-2.856	-0.005	-0.005
3.425	11.237	58.508	58.514	84.404	1.167	1.994	119.968	0.000	0.438	0.001	0.001
3.675	12.057	19.504	19.525	25.550	1.073	5.493	124.994	0.000	1.470	0.005	0.006
3.925	12.877	18.788	18.789	22.884	1.016	5.407	124.994	0.000	0.094	0.000	0.000
4.175	13.697	14.480	14.453	16.248	0.797	5.517	124.994	0.000	-1.850	-0.009	-0.010
4.425	14.518	12.074	12.031	12.529	0.693	5.764	124.994	0.000	-3.000	-0.018	-0.019
4.675	15.338	13.454	13.419	13.267	0.856	6.378	124.994	0.000	-2.434	-0.013	-0.014
4.925	16.158	45.872	45.867	45.245	1.967	4.289	124.994	0.000	-0.318	-0.000	-0.001
5.175	16.978	164.538	164.549	156.746	2.527	1.535	124.994	0.000	0.760	0.000	0.000
5.425	17.798	196.266	196.272	178.340	1.409	0.718	124.994	0.000	0.416	0.000	0.000
5.675	18.619	112.256	112.259	98.525	0.823	0.733	124.994	0.249	-0.059	-0.000	-0.000
5.925	19.439	6.680	6.695	4.771	0.412	6.157	119.968	0.605	0.376	0.004	0.005
6.175	20.259	112.888	112.871	94.916	1.964	1.740	119.968	0.960	-2.158	-0.001	-0.001
6.425	21.079	290.118	290.089	240.729	6.598	2.275	119.968	1.316	-3.384	-0.001	-0.001
6.675	21.899	336.296	336.177	273.484	3.440	1.023	124.994	1.672	-9.987	-0.002	-0.002
6.925	22.720	208.114	207.981	165.268	2.146	1.032	124.994	2.027	-11.281	-0.004	-0.004
7.175	23.540	253.740	253.665	197.712	2.884	1.137	124.994	2.383	-7.643	-0.002	-0.002
7.425	24.360	133.834	133.742	101.619	1.218	0.911	124.994	2.739	-9.140	-0.005	-0.005
7.675	25.180	184.464	184.406	137.792	2.296	1.245	124.994	3.095	-7.138	-0.003	-0.003
7.925	26.000	166.848	166.722	122.065	0.856	0.513	124.994	3.450	-12.260	-0.005	-0.005
8.175	26.821	190.882	190.745	137.181	1.637	0.858	124.994	3.806	-13.389	-0.005	-0.005
8.425	27.641	298.184	298.072	211.074	6.411	2.151	124.994	4.162	-12.003	-0.003	-0.003
8.675	28.461	289.890	289.787	201.452	6.502	2.244	124.994	4.517	-11.729	-0.003	-0.003
8.925	29.281	292.846	292.696	199.861	4.884	1.669	124.994	4.873	-15.301	-0.004	-0.004
9.175	30.101	316.538	316.384	212.353	5.705	1.803	124.994	5.229	-15.994	-0.004	-0.004
9.425	30.922	241.614	241.463	158.979	2.743	1.136	124.994	5.584	-16.112	-0.005	-0.005
9.675	31.742	440.422	440.269	286.007	4.034	0.916	124.994	5.940	-16.632	-0.003	-0.003
9.925	32.562	337.326	337.177	215.099	4.435	1.315	124.994	6.296	-16.683	-0.004	-0.004
10.175	33.382	277.892	277.740	174.053	3.321	1.196	124.994	6.651	-17.227	-0.004	-0.004
10.425	34.202	334.716	334.564	206.547	5.293	1.582	124.994	7.007	-17.623	-0.004	-0.004
10.675	35.023	148.680	148.525	89.561	3.118	2.100	119.968	7.363	-18.150	-0.009	-0.009
10.925	35.843	228.842	228.695	136.613	5.431	2.375	119.968	7.719	-17.964	-0.006	-0.006
11.175	36.663	259.824	259.689	153.004	4.310	1.660	124.994	8.074	-17.482	-0.005	-0.005
11.425	37.483	325.020	324.884	188.840	4.382	1.349	124.994	8.430	-17.918	-0.004	-0.004
11.675	38.303	201.628	201.502	114.852	3.957	1.964	124.994	8.786	-17.597	-0.006	-0.006
11.925	39.124	282.462	282.324	159.080	5.667	2.007	124.994	9.141	-18.771	-0.005	-0.005
12.175	39.944	352.212	352.113	195.856	-13104.019	-3721.533	124.994	9.497	-16.375	-0.003	-0.003

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INPUT FILE: B:960041.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.025	0.025	7	9	27	41	131	---	1.691	---	---
0.425	0.074	0.074	7	8	15	23	89	---	0.399	---	---
0.675	0.123	0.123	7	8	12	18	70	45	0.322	---	---
0.925	0.173	0.173	5	8	17	26	---	---	---	5340.270	15.402
1.175	0.225	0.225	3	8	32	48	---	---	---	5140.588	11.441
1.425	0.276	0.276	3	7	28	42	---	---	---	4438.868	8.043
1.675	0.327	0.327	3	7	28	42	---	---	---	4468.960	6.828
1.925	0.378	0.378	3	7	29	44	---	---	---	4562.107	6.026
2.175	0.430	0.430	3	7	26	39	---	---	---	4160.408	4.839
2.425	0.481	0.481	3	7	25	38	---	---	---	3909.609	4.063
2.675	0.532	0.532	3	7	24	36	---	---	---	3840.706	3.607
2.925	0.584	0.584	3	7	19	29	---	---	---	3005.233	2.574
3.175	0.635	0.635	6	8	15	21	---	---	---	5754.727	4.531
3.425	0.685	0.685	7	8	19	25	55	41	0.447	---	---
3.675	0.735	0.735	3	6	19	24	---	---	---	2891.484	1.965
3.925	0.787	0.787	3	6	18	22	---	---	---	2770.361	1.760
4.175	0.838	0.838	3	6	14	16	---	---	---	2095.220	1.250
4.425	0.889	0.889	3	6	12	13	---	---	---	1714.530	0.964
4.675	0.941	0.941	3	6	13	14	---	---	---	1920.254	1.021
4.925	0.992	0.992	4	8	29	29	---	---	---	6905.733	3.480
5.175	1.043	1.043	8	9	39	38	84	43	0.847	---	---
5.425	1.094	1.094	9	9	38	35	90	43	0.594	---	---
5.675	1.146	1.128	8	9	27	25	69	41	0.322	---	---
5.925	1.196	1.152	3	5	6	5	---	---	---	846.170	0.367
6.175	1.245	1.176	7	9	36	32	68	41	0.932	---	---
6.425	1.294	1.200	7	10	93	81	102	45	5.066	---	---
6.675	1.345	1.224	9	10	64	55	107	45	2.282	---	---
6.925	1.396	1.250	9	9	40	34	89	43	0.510	---	---
7.175	1.447	1.276	9	10	49	41	96	45	1.101	---	---
7.425	1.499	1.301	9	9	26	21	73	41	0.267	---	---
7.675	1.550	1.327	8	9	44	35	84	43	0.594	---	---
7.925	1.601	1.353	9	9	32	25	80	41	0.322	---	---
8.175	1.652	1.378	9	9	37	29	84	43	0.383	---	---
8.425	1.704	1.404	8	10	71	55	100	45	2.282	---	---
8.675	1.755	1.430	8	10	69	52	99	45	2.029	---	---
8.925	1.806	1.455	8	10	70	52	99	45	2.029	---	---
9.175	1.858	1.481	8	10	76	56	101	45	2.366	---	---
9.425	1.909	1.507	9	10	46	34	91	43	0.510	---	---
9.675	1.960	1.533	9	10	84	60	113	45	2.704	---	---
9.925	2.011	1.558	9	10	65	46	103	45	1.522	---	---
10.175	2.063	1.584	9	10	53	37	95	43	0.763	---	---
10.425	2.114	1.610	8	10	80	55	102	45	2.282	---	---
10.675	2.164	1.634	7	9	47	32	72	41	0.932	---	---
10.925	2.213	1.658	7	10	73	49	87	43	2.366	---	---
11.175	2.264	1.682	8	10	62	42	92	43	1.185	---	---
11.425	2.315	1.708	9	10	62	41	100	43	1.101	---	---
11.675	2.366	1.734	8	9	48	31	82	41	0.423	---	---
11.925	2.418	1.760	8	10	68	44	94	43	1.354	---	---
12.175	2.469	1.785	---	10	---	---	---	---	---	---	---

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| INPUT FILE: B:960041.CPD |

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	---	---	211.813
0.425	---	---	119.092
0.675	---	---	92.621
0.925	172.603	2615.703	---
1.175	119.026	2522.230	---
1.425	76.615	2184.077	---
1.675	62.435	2202.589	---
1.925	53.404	2251.833	---
2.175	40.602	2059.902	---
2.425	32.628	1941.516	---
2.675	28.115	1911.781	---
2.925	18.443	1508.441	---
3.175	37.394	2852.316	---
3.425	---	578.648	146.286
3.675	13.164	1464.387	---
3.925	11.470	1409.201	---
4.175	7.476	1084.002	---
4.425	5.402	902.311	---
4.675	5.803	1006.422	---
4.925	26.891	3440.057	---
5.175	---	1030.120	411.372
5.425	---	1116.246	490.680
5.675	---	894.060	280.648
5.925	1.616	502.097	---
6.175	---	903.872	282.178
6.425	---	-353.390	725.222
6.675	---	-31150.373	840.442
6.925	---	1180.920	519.953
7.175	---	1255.863	634.162
7.425	---	997.468	334.356
7.675	---	1152.622	461.016
7.925	---	1110.029	416.804
8.175	---	1179.629	476.861
8.425	---	-852.097	745.179
8.675	---	271.175	724.467
8.925	---	50.864	731.741
9.175	---	-5308.780	790.959
9.425	---	1315.135	603.657
9.675	---	-1190994.5	1100.671
9.925	---	-17334.896	842.942
10.175	---	1131.781	694.351
10.425	---	-13076.985	836.409
10.675	---	1103.739	371.313
10.925	---	1325.537	571.737
11.175	---	1370.588	649.223
11.425	---	-5061.781	812.210
11.675	---	1280.594	503.754
11.925	---	1190.030	705.810
12.175	---	---	---

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utput file from CPTINT - Version 4.2

INPUT FILE: B:960042.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

Interpreter Name: VBI IN-SITU TESTING, INC

File Number: 960042 Date: 06-18-96 11:01
Operator: CARL G. MORGAN On Site Location: CPT-3
Cone Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

a' for calculating Qt:	0.800
Value for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
alpha' for Gmax in Clay:	75.000
Method for calculating Su:	Nkt
Value of the constant Nkt:	13.000
Su/EOS) for normal consolidation:	0.250
and Compressibility for calc Dr:	High
Method for Friction Angle:	Robertson & Campanella
'alpha' for Youngs Modulus (E25):	2.500
ilty sand correction for CSR (Qc)?	YES
cQ magnitudes for CSR (Qc):	6.500

Soil Behavior Type Zone Numbers
or Rf Zone & Bq Zone Classification

Zone #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
Zone #2=Organic material	Zone #8 =Sandy to silty sand
Zone #3=Clay	Zone #9 =Sand
Zone #4=Silty clay to clay	Zone #10=Gravelly sand to sand
Zone #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
Zone #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: --- means Out Of Range)

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INPUT FILE: B:960042.CPD

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	38.247	38.247	1490.489	0.677	1.769	124.994	0.000	-0.003	-0.000	-0.000
0.425	1.394	17.734	17.733	232.640	0.682	3.845	119.968	0.000	-0.070	-0.000	-0.000
0.675	2.215	22.236	22.184	174.850	1.132	5.103	124.994	0.000	-3.592	-0.012	-0.012
0.925	3.035	21.536	21.422	119.730	1.129	5.271	124.994	0.000	-7.888	-0.027	-0.027
1.175	3.855	18.510	18.410	79.487	1.000	5.432	124.994	0.000	-6.974	-0.027	-0.028
1.425	4.675	15.834	15.712	55.111	0.794	5.055	124.994	0.000	-8.482	-0.039	-0.040
1.675	5.495	14.498	14.381	42.407	0.736	5.118	124.994	0.000	-8.152	-0.041	-0.042
1.925	6.316	13.292	13.188	33.470	0.645	4.892	124.994	0.000	-7.228	-0.039	-0.041
2.175	7.136	13.504	13.409	29.906	0.756	5.636	124.994	0.000	-6.578	-0.035	-0.036
2.425	7.956	16.248	16.170	32.330	0.739	4.568	124.994	0.000	-5.384	-0.024	-0.025
2.675	8.776	31.406	31.410	57.552	0.813	2.590	124.994	0.000	0.280	0.001	0.001
2.925	9.596	11.776	11.792	19.063	0.447	3.794	124.994	0.000	1.102	0.007	0.007
3.175	10.417	11.982	11.976	17.742	0.536	4.472	124.994	0.000	-0.384	-0.002	-0.002
3.425	11.237	11.760	11.684	15.926	0.701	5.998	124.994	0.000	-5.270	-0.032	-0.035
3.675	12.057	9.622	9.551	11.897	0.615	6.437	119.968	0.000	-4.954	-0.037	-0.040
3.925	12.877	23.856	23.789	29.081	0.763	3.207	124.994	0.000	-4.680	-0.014	-0.015
4.175	13.697	203.518	203.510	240.668	2.263	1.112	124.994	0.000	-0.566	-0.000	-0.000
4.425	14.518	150.914	150.923	167.933	2.044	1.354	124.994	0.000	0.620	0.000	0.000
4.675	15.338	193.990	194.005	204.366	3.074	1.584	124.994	0.000	1.030	0.000	0.000
4.925	16.158	160.718	160.738	160.390	1.066	0.663	124.994	0.000	1.408	0.001	0.001
5.175	16.978	144.804	144.817	137.283	1.204	0.832	124.994	0.000	0.900	0.000	0.000
5.425	17.798	126.764	126.773	114.402	0.537	0.423	124.994	0.000	0.616	0.000	0.000
5.675	18.619	52.154	52.156	45.105	0.671	1.287	119.968	0.249	-0.139	-0.000	-0.000
5.925	19.439	63.446	63.342	53.828	1.231	1.943	119.968	0.605	-7.842	-0.009	-0.009
6.175	20.259	193.030	192.885	162.523	2.219	1.151	124.994	0.960	-11.050	-0.004	-0.004
6.425	21.079	194.042	193.895	159.854	3.208	1.655	124.994	1.316	-11.570	-0.004	-0.004
6.675	21.899	270.872	270.745	218.930	2.601	0.961	124.994	1.672	-10.533	-0.003	-0.003
6.925	22.720	241.670	241.561	191.181	2.427	1.005	124.994	2.027	-9.643	-0.003	-0.003
7.175	23.540	205.090	204.976	158.770	3.332	1.626	124.994	2.383	-10.323	-0.004	-0.004
7.425	24.360	190.642	190.524	144.674	3.918	2.056	119.968	2.739	-10.974	-0.004	-0.004
7.675	25.180	355.342	355.296	265.737	6.252	1.760	124.994	3.095	-6.302	-0.001	-0.001
7.925	26.000	315.238	315.088	231.036	3.823	1.213	124.994	3.450	-13.906	-0.003	-0.003
8.175	26.821	344.134	343.972	247.600	-6549.719	-1904.141	124.994	3.806	-15.063	-0.003	-0.003
8.425	27.641	513.700	513.554	363.470	-32768.000	-6380.631	124.994	4.162	-14.185	-0.002	-0.002

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INPUT FILE: B:960042.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	6	8	15	23	---	---	---	5881.680	114.653
0.425	0.076	0.076	4	6	11	17	---	---	---	2717.183	17.895
0.675	0.126	0.126	3	7	21	32	---	---	---	3394.443	13.450
0.925	0.177	0.177	3	7	21	32	---	---	---	3269.313	9.210
1.175	0.229	0.229	3	6	18	27	---	---	---	2797.785	6.114
1.425	0.280	0.280	3	6	15	23	---	---	---	2374.753	4.239
1.675	0.331	0.331	3	6	14	21	---	---	---	2162.000	3.262
1.925	0.383	0.383	3	6	13	20	---	---	---	1970.568	2.575
2.175	0.434	0.434	3	6	13	20	---	---	---	1996.739	2.300
2.425	0.485	0.485	3	6	15	23	---	---	---	2413.756	2.487
2.675	0.536	0.536	6	7	12	18	---	---	---	4751.019	4.427
2.925	0.588	0.588	3	6	11	17	---	---	---	1724.161	1.466
3.175	0.639	0.639	3	6	11	16	---	---	---	1744.677	1.365
3.425	0.690	0.690	3	6	11	15	---	---	---	1691.798	1.225
3.675	0.741	0.741	3	6	9	11	---	---	---	1355.756	0.915
3.925	0.791	0.791	5	7	11	13	---	---	---	3539.045	2.237
4.175	0.842	0.842	9	9	39	45	96	45	1.438	---	---
4.425	0.893	0.893	8	9	36	39	84	43	0.932	---	---
4.675	0.945	0.945	8	9	46	48	92	45	1.691	---	---
4.925	0.996	0.996	9	9	31	31	84	43	0.423	---	---
5.175	1.047	1.047	9	9	28	27	80	43	0.351	---	---
5.425	1.099	1.099	9	9	24	22	74	41	0.280	---	---
5.675	1.149	1.131	7	8	17	15	41	37	0.280	---	---
5.925	1.198	1.154	7	8	20	18	48	39	0.322	---	---
6.175	1.248	1.179	9	9	37	33	88	43	0.477	---	---
6.425	1.300	1.205	8	9	46	40	88	43	1.016	---	---
6.675	1.351	1.231	9	10	52	44	99	45	1.354	---	---
6.925	1.402	1.256	9	10	46	39	95	43	0.932	---	---
7.175	1.453	1.282	8	9	49	40	88	43	1.016	---	---
7.425	1.504	1.307	7	9	61	50	85	43	2.451	---	---
7.675	1.554	1.331	8	10	85	68	108	45	3.379	---	---
7.925	1.605	1.357	9	10	60	47	103	45	1.607	---	---
8.175	1.657	1.383	---	10	---	---	---	---	---	---	---
8.425	1.708	1.408	---	10	---	---	---	---	---	---	---

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~~8 - 082~~

-| INPUT FILE: B:960042.CPD |----------

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	2122.299	2868.497	---
0.425	208.210	1329.974	---
0.675	145.707	1663.822	---
0.925	90.761	1606.683	---
1.175	54.390	1380.720	---
1.425	34.411	1178.392	---
1.675	24.799	1078.548	---
1.925	18.449	989.096	---
2.175	16.027	1005.698	---
2.425	17.667	1212.787	---
2.675	36.326	2355.752	---
2.925	9.128	884.390	---
3.175	8.344	898.235	---
3.425	7.291	876.310	---
3.675	5.063	716.301	---
3.925	15.476	1784.147	---
4.175	---	1039.013	508.775
4.425	---	950.147	377.307
4.675	---	1063.553	485.012
4.925	---	1006.250	401.846
5.175	---	977.543	362.042
5.425	---	937.356	316.933
5.675	---	558.471	130.390
5.925	---	639.706	158.356
6.175	---	1134.264	482.213
6.425	---	1143.205	484.737
6.675	---	1048.061	676.862
6.925	---	1244.549	603.902
7.175	---	1184.569	512.441
7.425	---	1162.116	476.310
7.675	---	-69359.453	888.241
7.925	---	-6407.274	787.720
8.175	---	---	---
8.425	---	---	---

96-011

~~98-087~~

Output file from CPTINT - Version 4.2

INPUT FILE: B:960043.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

Interpreter Name: VBI IN-SITU TESTING, INC

File Number: 960043 Date: 06-18-96 12:19
Operator: CARL G. MORGAN On Site Location: CPT-4
Cone Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

'n' for calculating Qt:	0.800
value for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
'alpha' for Gmax in Clay:	75.000
Method for calculating Su:	Nkt
Value of the constant Nkt:	13.000
(Su/EOS) for normal consolidation:	0.250
Sand Compressibility for calc Dr:	High
Method for Friction Angle:	Robertson & Campanella
'alpha' for Youngs Modulus (E25):	2.500
Silty sand correction for CSR (Qc)?	YES
Eq magnitudes for CSR (Qc):	6.500

Soil Behavior Type Zone Numbers
for Rf Zone & Bq Zone Classification

Zone #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
Zone #2=Organic material	Zone #8 =Sandy to silty sand
Zone #3=Clay	Zone #9 =Sand
Zone #4=Silty clay to clay	Zone #10=Gravelly sand to sand
Zone #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
Zone #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: --- means Out Of Range)

96-011

~~98-0234~~

INPUT FILE: B:960043.CPD

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	47.247	47.249	1841.539	1.191	2.520	124.994	0.000	0.140	0.000	0.000
0.425	1.394	23.276	23.267	301.450	0.951	4.089	124.994	0.000	-0.596	-0.002	-0.002
0.675	2.215	18.068	18.043	140.866	0.745	4.131	119.968	0.000	-1.722	-0.007	-0.007
0.925	3.035	15.858	15.856	88.882	0.458	2.891	119.968	0.000	-0.138	-0.001	-0.001
1.175	3.855	14.288	14.287	62.321	0.433	3.032	119.968	0.000	-0.040	-0.000	-0.000
1.425	4.675	13.222	13.226	47.117	0.356	2.689	119.968	0.000	0.244	0.001	0.001
1.675	5.495	11.200	11.203	33.458	0.401	3.583	124.994	0.000	0.202	0.001	0.001
1.925	6.316	11.992	12.010	30.907	0.575	4.788	124.994	0.000	1.246	0.007	0.008
2.175	7.136	12.992	13.011	29.423	0.613	4.713	124.994	0.000	1.350	0.007	0.008
2.425	7.956	15.476	15.468	31.293	0.789	5.104	124.994	0.000	-0.584	-0.003	-0.003
2.675	8.776	15.808	15.734	28.672	0.868	5.514	124.994	0.000	-5.156	-0.024	-0.024
2.925	9.596	14.668	14.586	24.081	0.730	5.006	124.994	0.000	-5.726	-0.028	-0.029
3.175	10.417	16.140	16.065	24.386	0.846	5.265	124.994	0.000	-5.180	-0.023	-0.024
3.425	11.237	16.026	15.959	22.328	0.985	6.173	124.994	0.000	-4.640	-0.021	-0.022
3.675	12.057	16.480	16.408	21.312	0.919	5.598	124.994	0.000	-4.986	-0.022	-0.023
3.925	12.877	56.326	56.300	70.566	1.611	2.861	124.994	0.000	-1.776	-0.002	-0.002
4.175	13.697	250.934	250.947	298.467	3.263	1.300	124.994	0.000	0.892	0.000	0.000
4.425	14.518	215.812	215.837	241.714	1.881	0.871	124.994	0.000	1.758	0.001	0.001
4.675	15.338	210.162	210.191	222.476	1.605	0.763	124.994	0.000	1.994	0.001	0.001
4.925	16.158	249.992	250.009	251.066	3.769	1.508	124.994	0.000	1.196	0.000	0.000
5.175	16.978	346.716	346.719	331.384	3.094	0.892	124.994	0.000	0.176	0.000	0.000
5.425	17.798	460.222	460.223	419.125	3.994	0.868	130.019	0.000	0.040	0.000	0.000
5.675	18.619	260.734	260.720	229.743	2.093	0.803	124.994	0.249	-1.237	-0.000	-0.000
5.925	19.439	173.042	172.979	148.661	1.352	0.782	124.994	0.605	-4.998	-0.002	-0.002
6.175	20.259	329.448	329.404	277.814	5.116	1.553	124.994	0.960	-4.026	-0.001	-0.001
6.425	21.079	237.984	237.930	196.066	2.942	1.237	124.994	1.316	-5.098	-0.002	-0.002
6.675	21.899	226.742	226.620	182.917	5.015	2.213	119.968	1.672	-10.153	-0.003	-0.003
6.925	22.720	158.264	158.162	124.790	1.744	1.103	124.994	2.027	-9.143	-0.004	-0.004
7.175	23.540	171.430	171.318	132.513	1.515	0.884	124.994	2.383	-10.171	-0.004	-0.004
7.425	24.360	370.544	370.434	282.152	3.912	1.056	124.994	2.739	-10.426	-0.002	-0.002
7.675	25.180	529.518	529.412	395.615	3.240	0.612	130.019	3.095	-10.472	-0.001	-0.001
7.925	26.000	409.626	409.549	299.512	3.418	0.835	130.019	3.450	-8.824	-0.002	-0.002
8.175	26.821	119.184	119.141	84.595	1.908	1.602	124.994	3.806	-6.819	-0.004	-0.004
8.425	27.641	97.990	97.943	68.086	2.116	2.161	119.968	4.162	-7.431	-0.005	-0.006
8.675	28.461	310.846	310.784	214.892	5.445	1.752	124.994	4.517	-8.871	-0.002	-0.002
8.925	29.281	195.620	195.572	132.374	2.712	1.387	124.994	4.873	-8.255	-0.003	-0.003
9.175	30.101	150.864	150.776	99.981	2.203	1.461	124.994	5.229	-11.384	-0.005	-0.006
9.425	30.922	202.624	202.518	132.403	2.452	1.211	124.994	5.584	-12.980	-0.005	-0.005
9.675	31.742	178.940	178.840	114.796	2.294	1.283	124.994	5.940	-12.902	-0.005	-0.005
9.925	32.562	34.628	34.546	20.765	1.448	4.192	124.994	6.296	-11.999	-0.025	-0.027
10.175	33.382	24.374	24.312	13.969	1.177	4.840	124.994	6.651	-11.015	-0.033	-0.036
10.425	34.202	20.472	20.414	11.314	0.837	4.100	119.968	7.007	-11.085	-0.039	-0.044
10.675	35.023	16.956	16.901	8.974	0.882	5.217	124.994	7.363	-11.196	-0.048	-0.055
10.925	35.843	98.116	98.050	57.518	2.321	2.367	119.968	7.719	-12.314	-0.009	-0.009
11.175	36.663	150.432	150.339	87.630	2.784	1.852	119.968	8.074	-14.572	-0.007	-0.007
11.425	37.483	287.740	287.640	166.430	3.703	1.288	124.994	8.430	-15.384	-0.004	-0.004
11.675	38.303	251.640	251.535	143.194	5.022	1.996	124.994	8.786	-16.121	-0.005	-0.005
11.925	39.124	249.092	248.987	139.640	4.668	1.875	124.994	9.141	-16.463	-0.005	-0.005
12.175	39.944	210.500	210.394	116.065	-13104.911	-6228.753	124.994	9.497	-16.909	-0.006	-0.006

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~~98 - 027~~

INPUT FILE: B:960043.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	6	8	18	27	---	---	---	7266.974	141.657
0.425	0.077	0.077	4	7	15	23	---	---	---	3568.696	23.188
0.675	0.127	0.127	4	6	12	18	---	---	---	2757.029	10.836
0.925	0.176	0.176	5	6	8	12	---	---	---	2412.875	6.837
1.175	0.226	0.226	5	6	7	11	---	---	---	2163.915	4.794
1.425	0.275	0.275	5	6	6	9	---	---	---	1992.927	3.624
1.675	0.325	0.325	3	6	11	17	---	---	---	1673.942	2.574
1.925	0.376	0.376	3	6	12	18	---	---	---	1790.240	2.377
2.175	0.428	0.428	3	6	12	18	---	---	---	1936.465	2.263
2.425	0.479	0.479	3	6	15	23	---	---	---	2306.541	2.407
2.675	0.530	0.530	3	6	15	23	---	---	---	2339.611	2.206
2.925	0.582	0.582	3	6	14	21	---	---	---	2155.025	1.852
3.175	0.633	0.633	3	6	15	21	---	---	---	2374.863	1.876
3.425	0.684	0.684	3	6	15	20	---	---	---	2350.625	1.718
3.675	0.735	0.735	3	6	16	20	---	---	---	2411.830	1.639
3.925	0.787	0.787	6	8	22	26	---	---	---	8542.798	5.428
4.175	0.838	0.838	9	10	48	55	104	45	2.282	---	---
4.425	0.889	0.889	9	9	41	45	97	45	1.438	---	---
4.675	0.941	0.941	9	9	40	42	95	45	1.185	---	---
4.925	0.992	0.992	8	10	60	60	100	45	2.704	---	---
5.175	1.043	1.043	9	10	66	64	111	47	3.041	---	---
5.425	1.095	1.095	10	10	73	68	121	47	3.379	---	---
5.675	1.148	1.130	9	10	50	46	100	45	1.522	---	---
5.925	1.199	1.156	9	9	33	30	84	43	0.399	---	---
6.175	1.250	1.181	8	10	79	69	107	45	3.463	---	---
6.425	1.302	1.207	9	10	46	40	95	45	1.016	---	---
6.675	1.352	1.232	7	10	72	61	93	43	3.379	---	---
6.925	1.402	1.256	9	9	30	25	79	41	0.322	---	---
7.175	1.453	1.282	9	9	33	27	82	43	0.351	---	---
7.425	1.505	1.308	9	10	71	58	110	45	2.535	---	---
7.675	1.557	1.334	10	10	85	68	---	---	3.379	---	---
7.925	1.610	1.362	10	10	65	51	112	45	1.944	---	---
8.175	1.663	1.389	8	9	29	23	67	41	0.292	---	---
8.425	1.713	1.413	7	9	31	24	60	39	0.423	---	---
8.675	1.763	1.438	8	10	74	56	101	45	2.366	---	---
8.925	1.814	1.464	8	9	47	35	84	43	0.594	---	---
9.175	1.866	1.489	8	9	36	26	74	41	0.337	---	---
9.425	1.917	1.515	9	9	39	28	85	43	0.366	---	---
9.675	1.968	1.541	8	9	43	31	80	41	0.423	---	---
9.925	2.020	1.566	4	7	22	16	---	---	---	5005.421	1.597
10.175	2.071	1.592	3	7	23	16	---	---	---	3422.548	1.075
10.425	2.121	1.617	4	6	13	9	---	---	---	2814.984	0.870
10.675	2.171	1.641	3	6	16	11	---	---	---	2266.727	0.690
10.925	2.222	1.666	7	9	31	21	57	39	0.366	---	---
11.175	2.271	1.690	7	9	48	32	72	41	0.932	---	---
11.425	2.321	1.714	9	10	55	36	95	43	0.679	---	---
11.675	2.372	1.740	8	10	60	39	90	43	0.932	---	---
11.925	2.424	1.766	8	10	60	39	89	43	0.932	---	---
12.175	2.475	1.791	---	9	---	---	---	---	---	---	---

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~~98-025~~

INPUT FILE: B:960043.CPD

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	2764.534	3543.651	---
0.425	287.849	1745.056	---
0.675	111.212	1353.241	---
0.925	62.540	1189.201	---
1.175	40.127	1071.557	---
1.425	28.289	991.913	---
1.675	18.441	840.218	---
1.925	16.700	900.745	---
2.175	15.704	975.858	---
2.425	16.961	1160.069	---
2.675	15.204	1180.033	---
2.925	12.224	1093.917	---
3.175	12.419	1204.907	---
3.425	11.123	1196.940	---
3.675	10.493	1230.617	---
3.925	46.869	4222.533	---
4.175	---	-578.333	627.367
4.425	---	1055.177	539.593
4.675	---	1081.772	525.477
4.925	---	798.423	625.023
5.175	---	-72357.898	866.796
5.425	---	-4526389.5	1150.557
5.675	---	1164.060	651.801
5.925	---	1081.931	432.448
6.175	---	-22678.656	823.511
6.425	---	1222.137	594.825
6.675	---	1207.482	566.551
6.925	---	1063.988	395.405
7.175	---	1107.698	428.296
7.425	---	-142970.25	926.085
7.675	---	-18877724.	1323.531
7.925	---	-596061.31	1023.873
8.175	---	959.305	297.853
8.425	---	867.270	244.859
8.675	---	-3708.744	776.960
8.925	---	1210.124	488.930
9.175	---	1086.939	376.940
9.425	---	1237.085	506.295
9.675	---	1183.157	447.101
9.925	10.158	2590.980	---
10.175	6.189	1823.377	---
10.425	4.755	1531.036	---
10.675	3.559	1267.599	---
10.925	---	891.246	245.126
11.175	---	1118.782	375.847
11.425	---	966.775	719.101
11.675	---	1386.909	628.837
11.925	---	1389.805	622.468
12.175	---	---	---

96-011

~~98-037~~

utput file from CPTINT - Version 4.2

INPUT FILE: B:960047.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

Interpreter Name: VBI IN-SITU TESTING, INC

File Number: 960047 Date: 06-18-96 16:42
Operator: CARL G. MORGAN On Site Location: CPT-5
Cone Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

a' for calculating Qt:	0.800
Value for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
alpha' for Gmax in Clay:	75.000
Method for calculating Su:	Nkt
Value of the constant Nkt:	13.000
(Su/EOS) for normal consolidation:	0.250
Sand Compressibility for calc Dr:	High
Method for Friction Angle:	Robertson & Campanella
'alpha' for Youngs Modulus (E25):	2.500
Silty sand correction for CSR (Qc)?	YES
Q magnitudes for CSR (Qc):	6.500

Soil Behavior Type Zone Numbers
for Rf Zone & Bq Zone Classification

Zone #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
Zone #2=Organic material	Zone #8 =Sandy to silty sand
Zone #3=Clay	Zone #9 =Sand
Zone #4=Silty clay to clay	Zone #10=Gravelly sand to sand
Zone #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
Zone #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: --- means Out Of Range)

96-011

~~98-087~~

INPUT FILE: B:960047.CPD

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	23.582	23.582	918.614	0.646	2.739	124.994	0.000	0.015	0.000	0.000
0.425	1.394	9.916	9.903	129.471	0.504	5.094	119.968	0.000	-0.930	-0.007	-0.007
0.675	2.215	8.058	8.031	63.187	0.379	4.719	119.968	0.000	-1.858	-0.017	-0.017
0.925	3.035	7.198	7.192	40.253	0.313	4.355	119.968	0.000	-0.386	-0.004	-0.004
1.175	3.855	9.842	9.828	42.957	0.449	4.569	119.968	0.000	-1.004	-0.007	-0.008
1.425	4.675	12.842	12.849	45.923	0.577	4.492	124.994	0.000	0.480	0.003	0.003
1.675	5.495	10.334	10.329	30.870	0.501	4.849	119.968	0.000	-0.376	-0.003	-0.003
1.925	6.316	15.670	15.689	40.910	0.761	4.848	124.994	0.000	1.298	0.006	0.006
2.175	7.136	15.298	15.365	35.099	0.811	5.276	124.994	0.000	4.622	0.022	0.022
2.425	7.956	10.684	10.730	21.500	0.606	5.644	124.994	0.000	3.228	0.022	0.023
2.675	8.776	7.316	7.364	12.969	0.376	5.109	119.968	0.000	3.334	0.033	0.035
2.925	9.596	9.070	9.124	14.829	0.517	5.666	119.968	0.000	3.738	0.029	0.031
3.175	10.417	9.748	9.819	14.695	0.535	5.451	119.968	0.000	4.922	0.036	0.039
3.425	11.237	9.782	9.836	13.576	0.605	6.155	119.968	0.000	3.780	0.028	0.030
3.675	12.057	10.240	10.325	13.260	0.605	5.861	119.968	0.000	5.918	0.041	0.044
3.925	12.877	8.440	8.538	10.041	0.488	5.714	119.968	0.000	6.782	0.057	0.063
4.175	13.697	11.080	11.179	12.574	0.688	6.155	124.994	0.000	6.858	0.044	0.048
4.425	14.518	10.880	11.021	11.598	0.654	5.938	124.994	0.000	9.798	0.064	0.070
4.675	15.338	8.208	8.343	8.019	0.522	6.262	119.968	0.000	9.378	0.081	0.091
4.925	16.158	5.600	5.700	4.850	0.344	6.038	119.968	0.000	6.958	0.088	0.106
5.175	16.978	5.456	5.554	4.426	0.249	4.476	119.968	0.000	6.810	0.088	0.108
5.425	17.798	5.924	6.038	4.628	0.245	4.055	119.968	0.000	7.882	0.094	0.114
5.675	18.619	9.392	9.518	7.605	0.590	6.199	119.968	0.249	8.493	0.064	0.073
5.925	19.439	34.722	35.067	30.029	2.675	7.627	124.994	0.605	23.296	0.048	0.049
6.175	20.259	43.814	44.495	37.484	2.990	6.719	124.994	0.960	46.278	0.075	0.077
6.425	21.079	141.934	142.061	119.302	4.920	3.463	124.994	1.316	7.456	0.004	0.004
6.675	21.899	79.084	78.939	64.368	2.699	3.419	124.994	1.672	-11.791	-0.011	-0.011
6.925	22.720	34.808	34.673	27.038	1.463	4.219	124.994	2.027	-11.441	-0.024	-0.025
7.175	23.540	39.592	39.462	30.254	2.449	6.205	124.994	2.383	-11.457	-0.021	-0.022
7.425	24.360	34.942	34.813	25.984	2.125	6.105	124.994	2.739	-11.736	-0.024	-0.025
7.675	25.180	39.360	39.234	28.814	-21844.721	-55677.855	124.994	3.095	-11.802	-0.022	-0.023

90-011

~~98-087~~

INPUT FILE: B:960047.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	5	7	11	17	---	---	---	3624.980	70.663
0.425	0.076	0.076	3	6	9	14	---	---	---	1512.195	9.959
0.675	0.125	0.125	3	5	8	12	---	---	---	1216.644	4.861
0.925	0.174	0.174	3	5	7	11	---	---	---	1079.988	3.096
1.175	0.224	0.224	3	6	9	14	---	---	---	1477.919	3.304
1.425	0.274	0.274	3	6	12	18	---	---	---	1935.131	3.533
1.675	0.324	0.324	3	6	10	15	---	---	---	1539.555	2.375
1.925	0.374	0.374	3	6	15	23	---	---	---	2356.667	3.147
2.175	0.426	0.426	3	6	15	23	---	---	---	2298.893	2.700
2.425	0.477	0.477	3	6	10	15	---	---	---	1577.881	1.654
2.675	0.527	0.527	3	5	7	11	---	---	---	1052.094	0.998
2.925	0.576	0.576	3	5	9	14	---	---	---	1315.330	1.141
3.175	0.626	0.626	3	5	9	13	---	---	---	1414.713	1.130
3.425	0.675	0.675	3	5	9	12	---	---	---	1409.840	1.044
3.675	0.724	0.724	3	5	10	13	---	---	---	1477.481	1.020
3.925	0.773	0.773	3	5	8	10	---	---	---	1194.825	0.772
4.175	0.824	0.824	3	5	11	13	---	---	---	1593.520	0.967
4.425	0.875	0.875	3	5	11	12	---	---	---	1561.364	0.892
4.675	0.925	0.925	3	4	8	8	---	---	---	1141.516	0.617
4.925	0.974	0.974	3	4	5	5	---	---	---	727.244	0.373
5.175	1.024	1.024	3	4	5	5	---	---	---	697.182	0.340
5.425	1.073	1.073	3	4	6	6	---	---	---	764.031	0.356
5.675	1.122	1.104	3	5	9	8	---	---	---	1292.087	0.585
5.925	1.172	1.129	3	7	34	31	---	---	---	5215.873	2.310
6.175	1.224	1.154	3	7	43	38	---	---	---	6658.815	2.883
6.425	1.275	1.180	6	9	54	48	---	---	---	21665.020	9.177
6.675	1.326	1.206	6	9	30	26	---	---	---	11943.528	4.951
6.925	1.377	1.231	4	7	22	19	---	---	---	5123.733	2.080
7.175	1.429	1.257	3	8	38	32	---	---	---	5852.787	2.327
7.425	1.480	1.283	3	7	33	27	---	---	---	5129.491	1.999
7.675	1.531	1.308	---	8	---	---	---	---	---	---	---

~~98-027~~

96-011

INPUT FILE: B:960047.CPD

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	1158.943	1768.641	---
0.425	100.083	742.696	---
0.675	40.825	602.344	---
0.925	23.235	539.433	---
1.175	25.202	737.066	---
1.425	27.396	963.668	---
1.675	16.675	774.644	---
1.925	23.710	1176.652	---
2.175	19.578	1152.340	---
2.425	10.609	804.785	---
2.675	5.640	552.300	---
2.925	6.669	684.286	---
3.175	6.593	736.414	---
3.425	5.972	737.731	---
3.675	5.799	774.390	---
3.925	4.096	640.323	---
4.175	5.426	838.405	---
4.425	4.905	826.579	---
4.675	3.092	625.726	---
4.925	1.650	427.513	---
5.175	1.471	416.553	---
5.425	1.556	452.825	---
5.675	2.894	713.878	---
5.925	16.109	2629.995	---
6.175	21.254	3337.093	---
6.425	90.356	10654.561	---
6.675	41.782	5920.413	---
6.925	14.129	2600.474	---
7.175	16.260	2959.642	---
7.425	13.444	2610.973	---
7.675	---	---	---

~~98-027~~

96-011

utput file from CPTINT - Version 4.2

PUT FILE: B:960044.CPD

icensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

nterpreter Name: VBI IN-SITU TESTING, INC

File Number: 960044 Date: 06-18-96 13:58
erator: CARL G. MORGAN On Site Location: CPT-6
ne Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

a' for calculating Qt:	0.800
Value for Water Table (in m):	5.500
nlid Zone Classification based on:	Rf
alpha' for Gmax in Clay:	75.000
Method for calculating Su:	Nkt
Value of the constant Nkt:	13.000
Su/EOS) for normal consolidation:	0.250
Sand Compressibility for calc Dr:	High
Method for Friction Angle:	Robertson & Campanella
alpha' for Youngs Modulus (E25):	2.500
ilty sand correction for CSR (Qc)?	YES
EQ magnitudes for CSR (Qc):	6.500

oil Behavior Type Zone Numbers
For Rf Zone & Bq Zone Classification

one #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
one #2=Organic material	Zone #8 =Sandy to silty sand
Zone #3=Clay	Zone #9 =Sand
one #4=Silty clay to clay	Zone #10=Gravelly sand to sand
one #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
Zone #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

NOTE:

r soil classification, Rf values > 8 are assumed to be 8.

(Note: --- means Out Of Range)

96-01

INPUT FILE: B:960044.CPD

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	42.468	42.466	1655.027	0.835	1.966	124.994	0.000	-0.168	-0.000	-0.000
0.425	1.394	12.576	12.573	162.441	0.474	3.768	124.994	0.000	-0.178	-0.001	-0.001
0.675	2.215	8.356	8.340	64.576	0.295	3.542	119.968	0.000	-1.090	-0.009	-0.010
0.925	3.035	12.424	12.420	69.402	0.306	2.464	119.968	0.000	-0.300	-0.002	-0.002
1.175	3.855	14.422	14.413	62.877	0.472	3.273	119.968	0.000	-0.630	-0.003	-0.003
1.425	4.675	13.818	13.826	49.114	0.617	4.460	124.994	0.000	0.546	0.003	0.003
1.675	5.495	10.522	10.461	30.973	0.555	5.309	124.994	0.000	-4.256	-0.029	-0.030
1.925	6.316	10.978	10.948	27.928	0.664	6.069	124.994	0.000	-2.080	-0.014	-0.014
2.175	7.136	12.748	12.763	28.699	0.779	6.105	124.994	0.000	1.058	0.006	0.006
2.425	7.956	17.822	17.805	36.015	0.847	4.757	124.994	0.000	-1.152	-0.005	-0.005
2.675	8.776	36.158	36.156	66.921	0.631	1.745	124.994	0.000	-0.156	-0.000	-0.000
2.925	9.596	11.776	11.793	19.207	0.576	4.886	124.994	0.000	1.188	0.007	0.008
3.175	10.417	12.858	12.873	19.276	0.699	5.430	124.994	0.000	1.066	0.006	0.006
3.425	11.237	15.256	15.205	21.159	0.964	6.339	124.994	0.000	-3.528	-0.017	-0.017
3.675	12.057	24.442	24.392	32.076	0.892	3.659	124.994	0.000	-3.446	-0.010	-0.010
3.925	12.877	127.818	127.816	161.048	1.659	1.298	124.994	0.000	-0.134	-0.000	-0.000
4.175	13.697	203.160	203.173	240.860	1.684	0.829	124.994	0.000	0.892	0.000	0.000
4.425	14.518	206.866	206.881	231.104	1.072	0.518	124.994	0.000	1.034	0.000	0.000
4.675	15.338	204.502	204.513	215.964	1.875	0.917	124.994	0.000	0.794	0.000	0.000
4.925	16.158	246.348	246.352	246.864	3.095	1.256	124.994	0.000	0.274	0.000	0.000
5.175	16.978	196.896	196.902	187.390	2.668	1.355	124.994	0.000	0.448	0.000	0.000
5.425	17.798	198.636	198.614	180.139	1.613	0.812	124.994	0.000	-1.522	-0.001	-0.001
5.675	18.619	224.114	224.005	197.247	1.598	0.714	124.994	0.249	-7.851	-0.003	-0.003
5.925	19.439	241.340	241.239	207.733	2.343	0.971	124.994	0.605	-7.684	-0.002	-0.002
6.175	20.259	328.646	328.588	277.122	3.826	1.164	124.994	0.960	-5.040	-0.001	-0.001
6.425	21.079	252.728	252.663	208.273	3.133	1.240	124.994	1.316	-5.876	-0.002	-0.002
6.675	21.899	193.956	193.849	156.175	2.378	1.227	124.994	1.672	-9.119	-0.003	-0.003
6.925	22.720	167.712	167.604	132.088	2.075	1.238	124.994	2.027	-9.601	-0.004	-0.004
7.175	23.540	267.788	267.707	207.372	3.905	1.459	124.994	2.383	-8.059	-0.002	-0.002
7.425	24.360	262.740	262.654	199.408	3.234	1.231	124.994	2.739	-8.714	-0.002	-0.002
7.675	25.180	28.405	28.412	20.111	-32768.000	-115330.15	124.994	3.095	-2.513	-0.006	-0.007

~~98-027~~

96-011

INPUT FILE: B:960044.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	6	8	16	24	---	---	---	6530.971	127.310
0.425	0.077	0.077	3	6	12	18	---	---	---	1923.040	12.495
0.675	0.127	0.127	3	5	8	12	---	---	---	1263.886	4.967
0.925	0.176	0.176	5	6	6	9	---	---	---	1884.070	5.339
1.175	0.226	0.226	4	6	9	14	---	---	---	2183.229	4.837
1.425	0.276	0.276	3	6	13	20	---	---	---	2085.153	3.778
1.675	0.327	0.327	3	6	10	15	---	---	---	1559.414	2.383
1.925	0.378	0.378	3	6	10	15	---	---	---	1626.514	2.148
2.175	0.430	0.430	3	6	12	18	---	---	---	1897.953	2.208
2.425	0.481	0.481	3	6	17	26	---	---	---	2665.983	2.770
2.675	0.532	0.532	6	8	14	21	---	---	---	5481.955	5.148
2.925	0.584	0.584	3	6	11	17	---	---	---	1724.986	1.477
3.175	0.635	0.635	3	6	12	17	---	---	---	1883.329	1.483
3.425	0.686	0.686	3	6	15	20	---	---	---	2234.278	1.628
3.675	0.737	0.737	4	7	16	20	---	---	---	3640.166	2.467
3.925	0.789	0.789	8	9	31	37	80	43	0.763	---	---
4.175	0.840	0.840	9	9	39	45	96	45	1.438	---	---
4.425	0.891	0.891	9	9	40	44	96	45	1.354	---	---
4.675	0.943	0.943	9	9	39	41	94	45	1.101	---	---
4.925	0.994	0.994	9	10	47	47	100	45	1.607	---	---
5.175	1.045	1.045	8	9	47	45	91	43	1.438	---	---
5.425	1.096	1.096	9	9	38	35	90	43	0.594	---	---
5.675	1.148	1.130	9	9	43	39	94	45	0.932	---	---
5.925	1.199	1.156	9	10	46	41	96	45	1.101	---	---
6.175	1.250	1.181	9	10	63	55	107	45	2.282	---	---
6.425	1.302	1.207	9	10	48	42	97	45	1.185	---	---
6.675	1.353	1.233	9	9	37	31	87	43	0.423	---	---
6.925	1.404	1.258	8	9	40	34	81	43	0.510	---	---
7.175	1.455	1.284	8	10	64	53	98	45	2.113	---	---
7.425	1.507	1.310	9	10	50	41	97	45	1.101	---	---
7.675	1.558	1.335	---	7	---	---	---	---	---	---	---

98-027

96-011

INPUT FILE: B:960044.CPD

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	2419.090	3184.943	---
0.425	132.897	943.008	---
0.675	41.950	625.523	---
0.925	45.905	931.476	---
1.175	40.575	1080.970	---
1.425	29.795	1036.939	---
1.675	16.744	784.555	---
1.925	14.713	821.104	---
2.175	15.222	957.242	---
2.425	20.218	1335.406	---
2.675	43.863	2711.682	---
2.925	9.215	884.483	---
3.175	9.256	965.501	---
3.425	10.400	1140.391	---
3.675	17.493	1829.429	---
3.925	---	859.640	319.540
4.175	---	1037.965	507.932
4.425	---	1061.253	517.202
4.675	---	1078.312	511.284
4.925	---	909.079	615.880
5.175	---	1102.141	492.256
5.425	---	1120.755	496.536
5.675	---	1169.667	560.013
5.925	---	1211.301	603.096
6.175	---	-21606.598	821.469
6.425	---	1234.236	631.657
6.675	---	1150.479	484.623
6.925	---	1091.868	419.009
7.175	---	1146.619	669.267
7.425	---	1224.732	656.636
7.675	---	---	---

96 - 011

~~98 - 027~~

utput file from CPTINT - Version 4.2

INPUT FILE: B:960046.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

Interpreter Name: VBI IN-SITU TESTING, INC

ile Number: 960046 Date: 06-18-96 15:59
Operator: CARL G. MORGAN On Site Location: CPT-7
one Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

a' for calculating Qt:	0.800
alue for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
alpha' for Gmax in Clay:	75.000
ethod for calculating Su:	Nkt
Value of the constant Nkt:	13.000
(Su/EOS) for normal consolidation:	0.250
and Compressibility for calc Dr:	High
ethod for Friction Angle:	Robertson & Campanella
'alpha' for Youngs Modulus (E25):	2.500
ilty sand correction for CSR (Qc)?	YES
Q magnitudes for CSR (Qc):	6.500

oil Behavior Type Zone Numbers
or Rf Zone & Bq Zone Classification

Zone #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
one #2=Organic material	Zone #8 =Sandy to silty sand
one #3=Clay	Zone #9 =Sand
Zone #4=Silty clay to clay	Zone #10=Gravelly sand to sand
one #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
one #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

OTE:

For soil classification, Rf values > 8 are assumed to be 8.

Note: --- means Out Of Range)

98-027

96-011

INPUT FILE: B:960046.CPD

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	22.498	22.497	876.317	0.604	2.686	124.994	0.000	-0.075	-0.000	-0.000
0.425	1.394	10.102	10.090	131.947	0.424	4.200	119.968	0.000	-0.800	-0.006	-0.006
0.675	2.215	7.870	7.863	61.841	0.265	3.375	119.968	0.000	-0.492	-0.005	-0.005
0.925	3.035	9.840	9.834	55.403	0.329	3.350	119.968	0.000	-0.438	-0.003	-0.003
1.175	3.855	14.262	14.250	62.446	0.767	5.381	124.994	0.000	-0.814	-0.004	-0.004
1.425	4.675	14.710	14.703	52.292	0.776	5.281	124.994	0.000	-0.500	-0.002	-0.002
1.675	5.495	31.502	31.500	95.277	0.892	2.832	124.994	0.000	-0.170	-0.000	-0.000
1.925	6.316	15.322	15.286	39.389	0.815	5.334	124.994	0.000	-2.514	-0.012	-0.012
2.175	7.136	27.602	27.599	63.221	0.470	1.702	124.994	0.000	-0.204	-0.001	-0.001
2.425	7.956	63.300	63.301	130.593	0.625	0.988	124.994	0.000	0.058	0.000	0.000
2.675	8.776	61.770	61.769	115.036	0.484	0.783	124.994	0.000	-0.098	-0.000	-0.000
2.925	9.596	10.836	10.845	17.582	0.492	4.533	124.994	0.000	0.594	0.004	0.004
3.175	10.417	13.996	14.013	21.072	0.692	4.935	124.994	0.000	1.188	0.006	0.006
3.425	11.237	14.864	14.863	20.660	0.801	5.392	124.994	0.000	-0.104	-0.001	-0.001
3.675	12.057	14.532	14.438	18.578	0.777	5.382	124.994	0.000	-6.542	-0.033	-0.034
3.925	12.877	12.154	12.070	14.303	0.653	5.412	124.994	0.000	-5.814	-0.035	-0.037
4.175	13.697	10.562	10.514	11.516	0.598	5.684	124.994	0.000	-3.340	-0.023	-0.025
4.425	14.518	8.982	8.937	9.038	0.531	5.937	119.968	0.000	-3.144	-0.025	-0.028
4.675	15.338	11.906	11.883	11.634	0.611	5.138	124.994	0.000	-1.600	-0.010	-0.011
4.925	16.158	12.798	12.763	11.868	0.513	4.021	124.994	0.000	-2.414	-0.014	-0.015
5.175	16.978	154.790	154.745	147.494	3.137	2.027	119.968	0.000	-3.150	-0.001	-0.001
5.425	17.798	254.214	254.115	231.852	6.621	2.606	119.968	0.000	-6.862	-0.002	-0.002
5.675	18.619	222.366	222.266	196.791	4.099	1.844	124.994	0.249	-7.237	-0.002	-0.002
5.925	19.439	334.928	334.923	290.368	4.446	1.327	124.994	0.605	-0.980	-0.000	-0.000
6.175	20.259	135.888	135.755	114.475	1.263	0.931	124.994	0.960	-10.266	-0.005	-0.005
6.425	21.079	166.482	166.346	137.462	2.170	1.305	124.994	1.316	-10.770	-0.005	-0.005
6.675	21.899	198.376	198.250	160.556	2.152	1.086	124.994	1.672	-10.479	-0.004	-0.004
6.925	22.720	313.582	313.448	249.229	3.770	1.203	124.994	2.027	-11.369	-0.003	-0.003
7.175	23.540	588.440	588.401	459.365	-32768.000	-5568.993	124.994	2.383	-5.037	-0.001	-0.001

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INPUT FILE: B:960046.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	5	7	11	17	---	---	---	3458.071	67.409
0.425	0.076	0.076	3	6	10	15	---	---	---	1541.106	10.150
0.675	0.125	0.125	3	5	8	12	---	---	---	1190.740	4.757
0.925	0.174	0.174	4	6	6	9	---	---	---	1486.440	4.262
1.175	0.225	0.225	3	6	14	21	---	---	---	2158.358	4.804
1.425	0.276	0.276	3	6	14	21	---	---	---	2220.103	4.022
1.675	0.327	0.327	6	7	12	18	---	---	---	4796.998	7.329
1.925	0.378	0.378	3	6	15	23	---	---	---	2294.035	3.030
2.175	0.430	0.430	6	7	11	17	---	---	---	4180.982	4.863
2.425	0.481	0.481	8	8	15	23	64	43	0.292	---	---
2.675	0.532	0.532	8	8	15	23	61	41	0.292	---	---
2.925	0.584	0.584	3	6	10	15	---	---	---	1579.017	1.352
3.175	0.635	0.635	3	6	13	18	---	---	---	2058.721	1.621
3.425	0.686	0.686	3	6	14	19	---	---	---	2181.540	1.589
3.675	0.737	0.737	3	6	14	18	---	---	---	2108.295	1.429
3.925	0.789	0.789	3	6	12	14	---	---	---	1736.074	1.100
4.175	0.840	0.840	3	6	10	11	---	---	---	1488.676	0.886
4.425	0.890	0.890	3	6	9	10	---	---	---	1238.236	0.695
4.675	0.941	0.941	3	6	11	12	---	---	---	1683.886	0.895
4.925	0.992	0.992	3	6	12	12	---	---	---	1811.457	0.913
5.175	1.042	1.042	7	9	49	47	82	43	2.197	---	---
5.425	1.091	1.091	7	10	81	76	99	45	4.644	---	---
5.675	1.142	1.124	8	9	53	48	94	45	1.691	---	---
5.925	1.193	1.149	9	10	64	57	108	45	2.451	---	---
6.175	1.244	1.175	9	9	26	23	75	41	0.292	---	---
6.425	1.295	1.201	8	9	40	35	82	43	0.594	---	---
6.675	1.347	1.226	9	9	38	32	88	43	0.447	---	---
6.925	1.398	1.252	9	10	60	50	104	45	1.860	---	---
7.175	1.449	1.278	---	10	---	---	---	---	---	---	---

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-| INPUT FILE: B:960046.CPD |----------

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	1092.628	1687.294	---
0.425	102.481	756.786	---
0.675	39.741	589.719	---
0.925	34.639	737.527	---
1.175	40.228	1068.771	---
1.425	32.225	1102.710	---
1.675	68.215	2362.467	---
1.925	22.613	1146.436	---
2.175	40.853	2069.930	---
2.425	---	561.703	158.252
2.675	---	581.810	154.421
2.925	8.250	813.341	---
3.175	10.346	1050.983	---
3.425	10.094	1114.688	---
3.675	8.839	1082.836	---
3.925	6.374	905.273	---
4.175	4.862	788.544	---
4.425	3.591	670.255	---
4.675	4.924	891.222	---
4.925	5.048	957.243	---
5.175	---	1003.343	386.862
5.425	---	1188.075	635.289
5.675	---	1164.789	555.665
5.925	---	-32679.781	837.308
6.175	---	979.853	339.386
6.425	---	1074.979	415.866
6.675	---	1157.333	495.624
6.925	---	-6981.455	783.620
7.175	---	---	---

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Output file from CPTINT - Version 4.2

INPUT FILE: B:960045.CPD

Licensed to: VBI In-Situ Testing
Address: 2101 Webster St., Suite 1500
City: Oakland, California 94612, USA

Interpreter Name: VBI IN-SITU TESTING, INC

File Number: 960045 Date: 06-18-96 14:45
Operator: CARL G. MORGAN On Site Location: CPT-8
Cone Type: 322 U2 Comment: NFS 3695-01

SUMMARY SHEET

'a' for calculating Qt:	0.800
Value for Water Table (in m):	5.500
Valid Zone Classification based on:	Rf
'alpha' for Gmax in Clay:	75.000
Method for calculating Su:	Nkt
Value of the constant Nkt:	13.000
(Su/EOS) for normal consolidation:	0.250
Sand Compressibility for calc Dr:	High
Method for Friction Angle:	Robertson & Campanella
'alpha' for Youngs Modulus (E25):	2.500
Silty sand correction for CSR (Qc)?	YES
EQ magnitudes for CSR (Qc):	6.500

Soil Behavior Type Zone Numbers
for Rf Zone & Bq Zone Classification

Zone #1=Sensitive fine grained	Zone #7 =Silty sand to sandy silt
Zone #2=Organic material	Zone #8 =Sandy to silty sand
Zone #3=Clay	Zone #9 =Sand
Zone #4=Silty clay to clay	Zone #10=Gravelly sand to sand
Zone #5=Clayey silt to silty clay	Zone #11=Very stiff fine grained *
Zone #6=Sandy silt to clayey silt	Zone #12=Sand to clayey sand *

* Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: --- means Out Of Range)

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-| INPUT FILE: B:960045.CPD |

Depth (meter)	Depth (feet)	Qc(avg) (TSF)	Qt(avg) (TSF)	Qt(Norm) (ratio)	Fs(avg) (TSF)	Rf (%)	Gamma (pcf)	Uo (psi)	dU(avg) (psi)	DPPR (ratio)	Bq (ratio)
0.175	0.574	265.638	265.638	10357.971	2.874	1.082	124.994	0.000	-0.045	-0.000	-0.000
0.425	1.394	119.632	119.630	1575.174	2.891	2.417	119.968	0.000	-0.158	-0.000	-0.000
0.675	2.215	102.316	102.310	816.675	1.917	1.873	119.968	0.000	-0.396	-0.000	-0.000
0.925	3.035	94.164	94.161	539.077	1.609	1.709	119.968	0.000	-0.186	-0.000	-0.000
1.175	3.855	75.530	75.529	336.829	1.316	1.742	119.968	0.000	-0.044	-0.000	-0.000
1.425	4.675	73.144	73.142	267.117	1.327	1.815	119.968	0.000	-0.166	-0.000	-0.000
1.675	5.495	70.006	70.000	216.378	1.473	2.104	119.968	0.000	-0.382	-0.000	-0.000
1.925	6.316	51.726	51.725	137.942	1.075	2.079	124.994	0.000	-0.072	-0.000	-0.000
2.175	7.136	45.174	45.166	105.634	1.635	3.620	124.994	0.000	-0.524	-0.001	-0.001
2.425	7.956	38.098	38.038	79.105	2.063	5.423	124.994	0.000	-4.182	-0.008	-0.008
2.675	8.776	31.942	31.893	59.616	1.664	5.216	124.994	0.000	-3.436	-0.008	-0.008
2.925	9.596	28.732	28.717	48.733	1.460	5.085	124.994	0.000	-1.038	-0.003	-0.003
3.175	10.417	22.520	22.504	34.793	1.356	6.027	124.994	0.000	-1.142	-0.004	-0.004
3.425	11.237	17.946	17.912	25.341	1.167	6.514	124.994	0.000	-2.366	-0.010	-0.010
3.675	12.057	18.498	18.422	24.191	1.140	6.188	124.994	0.000	-5.276	-0.021	-0.021
3.925	12.877	52.376	52.372	65.923	1.339	2.557	124.994	0.000	-0.282	-0.000	-0.000
4.175	13.697	253.170	253.173	302.618	1.917	0.757	124.994	0.000	0.232	0.000	0.000
4.425	14.518	362.952	362.958	409.056	5.321	1.466	124.994	0.000	0.408	0.000	0.000
4.675	15.338	449.140	449.141	478.632	6.251	1.392	124.994	0.000	0.104	0.000	0.000
4.925	16.158	370.434	370.438	374.045	4.423	1.194	124.994	0.000	0.268	0.000	0.000
5.175	16.978	289.056	289.064	277.213	2.747	0.950	124.994	0.000	0.550	0.000	0.000
5.425	17.798	251.240	251.245	229.439	4.017	1.599	124.994	0.000	0.350	0.000	0.000
5.675	18.619	192.630	192.567	170.518	4.257	2.210	119.968	0.249	-4.647	-0.002	-0.002
5.925	19.439	215.142	214.996	186.360	1.169	0.544	124.994	0.605	-10.788	-0.004	-0.004
6.175	20.259	309.570	309.427	262.742	2.363	0.764	124.994	0.960	-10.930	-0.003	-0.003
6.425	21.079	252.752	252.618	209.675	2.494	0.987	124.994	1.316	-10.654	-0.003	-0.003
6.675	21.899	204.118	203.982	165.511	1.273	0.624	124.994	1.672	-11.127	-0.004	-0.004
6.925	22.720	312.020	311.935	248.431	3.109	0.997	124.994	2.027	-7.977	-0.002	-0.002
7.175	23.540	216.946	216.874	168.871	2.467	1.138	124.994	2.383	-7.449	-0.002	-0.002
7.425	24.360	286.288	286.224	218.789	2.782	0.972	124.994	2.739	-7.242	-0.002	-0.002
7.675	25.180	305.570	305.528	229.063	6.755	2.211	124.994	3.095	-6.034	-0.001	-0.001
7.925	26.000	305.348	305.286	224.498	5.284	1.731	124.994	3.450	-7.766	-0.002	-0.002
8.175	26.821	216.766	216.646	155.972	2.463	1.137	124.994	3.806	-12.151	-0.004	-0.004
8.425	27.641	292.100	291.977	206.733	4.269	1.462	124.994	4.162	-12.721	-0.003	-0.003
8.675	28.461	275.324	275.202	191.251	4.068	1.478	124.994	4.517	-13.031	-0.003	-0.003
8.925	29.281	230.234	230.097	156.851	3.075	1.337	124.994	4.873	-14.459	-0.005	-0.005
9.175	30.101	339.018	338.878	227.541	5.078	1.498	124.994	5.229	-14.968	-0.003	-0.003
9.425	30.922	230.938	230.795	151.900	3.028	1.312	124.994	5.584	-15.554	-0.005	-0.005
9.675	31.742	170.682	170.533	109.998	2.526	1.481	124.994	5.940	-16.358	-0.007	-0.007
9.925	32.562	141.014	140.865	89.112	1.807	1.283	124.994	6.296	-16.685	-0.009	-0.009
10.175	33.382	147.122	146.968	91.488	1.760	1.197	124.994	6.651	-17.359	-0.009	-0.009
10.425	34.202	147.296	147.143	90.105	2.281	1.550	124.994	7.007	-17.679	-0.009	-0.009
10.675	35.023	141.168	141.014	84.964	3.180	2.255	119.968	7.363	-18.130	-0.009	-0.009
10.925	35.843	164.398	164.242	97.674	3.011	1.833	124.994	7.719	-18.624	-0.008	-0.008
11.175	36.663	257.784	257.633	151.595	4.632	1.798	124.994	8.074	-18.568	-0.005	-0.005
11.425	37.483	155.256	155.105	89.392	3.369	2.172	119.968	8.430	-18.960	-0.009	-0.009
11.675	38.303	162.642	162.492	92.408	-6551.637	-4031.977	119.968	8.786	-19.247	-0.009	-0.009
11.925	39.124	127.300	127.154	71.018	-32768.000	-25770.408	119.968	9.141	-19.205	-0.011	-0.011

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INPUT FILE: B:960045.CPD

Depth (meter)	OS(avg) (TSF)	EOS(avg) (TSF)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Dr (%)	Phi (degree)	CSR (Qc) (ratio)	Su (psf)	Su/EOS (ratio)
0.175	0.026	0.026	9	10	51	77	172	---	4.138	---	---
0.425	0.076	0.076	7	9	38	57	122	---	3.041	---	---
0.675	0.125	0.125	7	9	33	50	107	---	2.451	---	---
0.925	0.174	0.174	7	9	30	45	98	---	2.029	---	---
1.175	0.224	0.224	7	9	24	36	85	47	1.269	---	---
1.425	0.273	0.273	7	8	23	35	80	45	1.185	---	---
1.675	0.322	0.322	7	8	22	33	75	45	1.016	---	---
1.925	0.372	0.372	6	8	20	30	---	---	---	7902.470	10.611
2.175	0.424	0.424	5	8	22	33	---	---	---	6885.313	8.126
2.425	0.475	0.475	3	8	36	54	---	---	---	5780.419	6.085
2.675	0.526	0.526	3	7	31	47	---	---	---	4826.855	4.586
2.925	0.577	0.577	3	7	28	42	---	---	---	4330.300	3.749
3.175	0.629	0.629	3	7	22	31	---	---	---	3366.238	2.676
3.425	0.680	0.680	3	6	17	23	---	---	---	2651.758	1.949
3.675	0.731	0.731	3	6	18	23	---	---	---	2722.364	1.861
3.925	0.783	0.783	6	8	20	24	---	---	---	7938.893	5.071
4.175	0.834	0.834	9	10	49	56	104	45	2.366	---	---
4.425	0.885	0.885	9	10	70	77	116	47	4.138	---	---
4.675	0.936	0.936	9	10	86	90	123	47	5.235	---	---
4.925	0.988	0.988	9	10	71	72	115	47	3.716	---	---
5.175	1.039	1.039	9	10	55	53	105	45	2.113	---	---
5.425	1.090	1.090	8	10	60	56	99	45	2.366	---	---
5.675	1.141	1.123	7	9	61	56	89	43	2.957	---	---
5.925	1.191	1.147	9	9	41	37	92	43	0.763	---	---
6.175	1.242	1.173	9	10	59	52	105	45	2.029	---	---
6.425	1.293	1.199	9	10	48	42	97	45	1.185	---	---
6.675	1.345	1.224	9	9	39	33	89	43	0.477	---	---
6.925	1.396	1.250	9	10	60	51	104	45	1.944	---	---
7.175	1.447	1.276	9	9	42	35	91	43	0.594	---	---
7.425	1.499	1.301	9	10	55	45	100	45	1.438	---	---
7.675	1.550	1.327	8	10	73	59	102	45	2.619	---	---
7.925	1.601	1.353	8	10	73	58	102	45	2.535	---	---
8.175	1.652	1.378	9	9	42	33	89	43	0.477	---	---
8.425	1.704	1.404	8	10	70	54	100	45	2.197	---	---
8.675	1.755	1.430	8	10	66	50	97	43	1.860	---	---
8.925	1.806	1.455	8	10	55	41	90	43	1.101	---	---
9.175	1.858	1.481	9	10	65	48	104	45	1.691	---	---
9.425	1.909	1.507	9	10	44	32	90	43	0.447	---	---
9.675	1.960	1.533	8	9	41	30	78	41	0.399	---	---
9.925	2.011	1.558	8	9	34	24	71	41	0.307	---	---
10.175	2.063	1.584	8	9	35	25	72	41	0.322	---	---
10.425	2.114	1.610	8	9	35	24	72	41	0.307	---	---
10.675	2.164	1.634	7	9	45	31	70	41	0.847	---	---
10.925	2.214	1.659	8	9	39	26	75	41	0.337	---	---
11.175	2.266	1.685	8	10	62	41	92	43	1.101	---	---
11.425	2.316	1.709	7	9	50	33	73	41	1.016	---	---
11.675	2.365	1.733	---	9	---	---	---	---	---	---	---
11.925	2.414	1.756	---	9	---	---	---	---	---	---	---

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-| INPUT FILE: B:960045.CPD |----------

Depth (meter)	OCR (ratio)	Gmax (TSF)	E25 (TSF)
0.175	---	---	664.094
0.425	---	---	299.074
0.675	---	---	255.776
0.925	---	---	235.403
1.175	---	---	188.823
1.425	---	407.917	182.854
1.675	---	455.117	175.001
1.925	108.334	3879.373	---
2.175	77.607	3387.484	---
2.425	54.063	2852.834	---
2.675	37.962	2391.940	---
2.925	29.507	2153.779	---
3.175	19.365	1687.767	---
3.425	13.030	1343.395	---
3.675	12.295	1381.653	---
3.925	43.047	3927.896	---
4.175	---	-970.137	632.933
4.425	---	-667822.87	907.395
4.675	---	-8711327.01	122.854
4.925	---	-440099.90	926.095
5.175	---	-1161.760	722.660
5.425	---	1193.892	628.113
5.675	---	1117.846	481.418
5.925	---	1161.211	537.490
6.175	---	-5910.430	773.568
6.425	---	1231.588	631.545
6.675	---	1166.948	509.956
6.925	---	-6235.222	779.837
7.175	---	1203.167	542.184
7.425	---	316.365	715.559
7.675	---	-2998.285	763.820
7.925	---	-2735.119	763.216
8.175	---	1231.428	541.616
8.425	---	-15.239	729.943
8.675	---	1072.585	688.005
8.925	---	1278.502	575.241
9.175	---	-22660.400	847.196
9.425	---	1293.281	576.988
9.675	---	1157.221	426.331
9.925	---	1064.944	352.162
10.175	---	1090.263	367.421
10.425	---	1095.017	367.857
10.675	---	1077.255	352.534
10.925	---	1160.245	410.604
11.175	---	1373.840	644.084
11.425	---	1138.243	387.762
11.675	---	---	---
11.925	---	---	---

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APPENDIX B

1977 Boring Logs By Applied Soil Mechanics, Inc.

Figures B1 through B12 - Borings 1 through 12

~~98-027~~

96-011

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 1		
0				CL - Brown Silty CLAY, dry, hard, occasional Gravel, slightly Sandy		
2	1-1		66	CL - Dark Brown Sandy CLAY with Gravel, slightly moist, hard	111.0	9.9
4						
6	1-2		56	CL - Brown Silty CLAY with occasional Gravel, slightly moist, very hard	11.3	14.3
8						
10				increasing Sand and Gravel content becoming moist		
	1-3		32		113.9	10.9
12				decreasing coarse Gravels becoming very moist		
14						
16			23			
				Boring Terminated at 16.5 Feet		

Almaden Expressway
San Jose California

Figure No. B1

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
0				Boring No. 2		
2	2-1		56	CL - Light Brown Sandy CLAY with Gravels, dry, hard	112.3	10.4
4				CL - Brown Silty CLAY with Sand, occasional Gravel, moist, very stiff		
6	2-2		25		109.2	17.4
8				becoming very moist, Sandy		
10			26		106.1	19.2
12				becoming mottled with Grey coloration		
14						
16			2[illegible]			
18						
20				Boring Terminated at 20 Feet		

~~98-029~~

96 - 011

Almaden Expressway
San Jose, California

Figure No. B2

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 3		
0				CL - Dark Brown Sandy CLAY with occasional Gravel		
2						
4	3-1		28	CL - Brown Sandy CLAY, slightly moist, very stiff	106.1	14.5
6				becoming moist		
8	3-2		26		102.6	16.8
10				becoming very moist		
12	3-3		19		104.2	22.1
				Boring Terminated at 12.5 Feet		

~~96-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B3

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 4		
0				CL - Dark Brown Sandy CLAY with occasional Gravel, loose, dry top 6 in. then slightly moist, very stiff		
2						
	4-1		24	CL - Brown Sandy CLAY with fine Gravel, slightly moist, very stiff	109.8	11.7
4						
6						
	4-2		30	occasional weathered sandstone fragment	96.3	21.1
8						
10						
11	4-3		27		106.9	19.0
				Boring Terminated at 11.5 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B4

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 5		
0				CL - Dark Brown Silty CLAY with Sand loose top 6 inches then slightly moist very stiff		
2	5-1				112.9	14.2
4				CL - Brown Sandy CLAY, slightly moist hard		
				becoming moist		
6	5-2				115.0	15.1
8				decreasing Sand content		
10						
11	5-3				104.0	19.1
				Boring Terminated at 11.5 Feet		

~~98-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B5

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 6		
0						
2	6-1		31	CL - Dark Brown Silty CLAY with Sand, loose top 4 inches then moist, hard	100.7	20.4
4				CL - Light Brown Silty CLAY with Sand, occasional Gravel, very moist, very stiff		
6	6-2		24		102.9	21.9
8						
10			29			
12				becoming Sandy with weathered Sandstone fragments and Gravel		
14			26			
				Boring Terminated at 14.5 Feet		

~~96-027~~

96-011

Almaden Expressway
San Jose, California

Figure No. B6

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY pcf	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 7		
0				ML - Dark Brown CLAY-SILT, dry loose top 10 inches, then slightly moist, hard, scattered Gravels		
2	7-1		43		104.2	11.4
4				CL - Brown Silty CLAY with Sand and occasional Gravel, slightly moist, hard		
6	7-2		56		119.6	11.6
8			55	SW - Gravelly SAND with Brown Clay matrix, slightly moist, dense		
10						
12				decreasing Clay content, increasing Gravel size		
14						
				Boring Terminated at 15 Feet		

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96-011

Almaden Expressway
San Jose, California

Figure No. B7

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 8		
0				ML - Light Brown Sandy SILT with Gravel, dry loose 6 in. then slightly moist		
2				SW - Brown Silty SAND with Gravel, slightly moist, medium dense to dense		
4						
6						
8				heavy Gravels		
10				4' Break in log		
14				very heavy Gravels		
16				Clay binder 16 to 19 feet, moist		
18				heavy Gravels		
20						
22						
24						
26				Clay binder very moist to wet		
28						
30				Boring Terminated at 30 Feet		

96 - 011

Almaden Expressway
San Jose, California

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Figure No. B8

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 9		
0				ML - Brown Sandy SILT with Gravels dry loose top 10 inches then slightly moist, medium dense		
2						
4				SW - Gravelly SAND, some Silt, slightly moist, medium dense to dense		
6						
8				very heavy Gravels 9-11 feet		
10						
12				heavy Gravel 12 feet on		
14						
				Boring Terminated at 15 Feet		

~~98 - 027~~

96 - 011

Almaden Expressway
San Jose, California

Figure No. B9

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 10		
0				ML - Brown Sandy SILT with Gravel, dry loose 10 inches then damp, medium dense		
2				SW - Brown Gravelly SAND with some Silt binder, slightly moist, medium dense		
4						
6						
8						
10				heavy Gravels 11 feet on		
12						
13				Soring Terminated at 13 Feet		

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96 - 011

Almaden Expressway
San Jose, California

Figure No. B10

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 11		
0				ML - Brown Sandy SILT with Gravel, dry loose top 8 inches then dry stiff (fill)		
2				Natural ground		
	11-1		32	ML - Dark Brown CLAY Silt, slightly moist, very stiff to hard	100.1	12.1
4						
6				CL - Brown Silty CLAY with Sand and fine gravels		
	11-2		61		111.5	11.0
8						
10	11-3		55	becoming Gravelly	100.1	12.1
				Boring Terminated at 11 Feet		

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Almaden Expressway
San Jose, California

Figure No. B11

FILE NO.NFS-3695-01

August 31, 1977

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Boring No. 12		
0				ML - Dark Brown CLAY Silt, dry loose 8 in. then slightly moist, very stiff becoming very Silty Clay at 1.5 feet		
2						
4				CL - Medium Brown Silty CLAY with Sand, slightly moist, very stiff		
6						
8				SW - Brown Silty SAND with Gravel, moist, medium dense		
10				Boring Terminated at 10 Feet		

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Almaden Expressway
San Jose, California

Figure No. B12

APPENDIX C

1996 Laboratory Test Results
Figure C1, Atterberg Limits Test Results
Figure C2, R-Value Test Results

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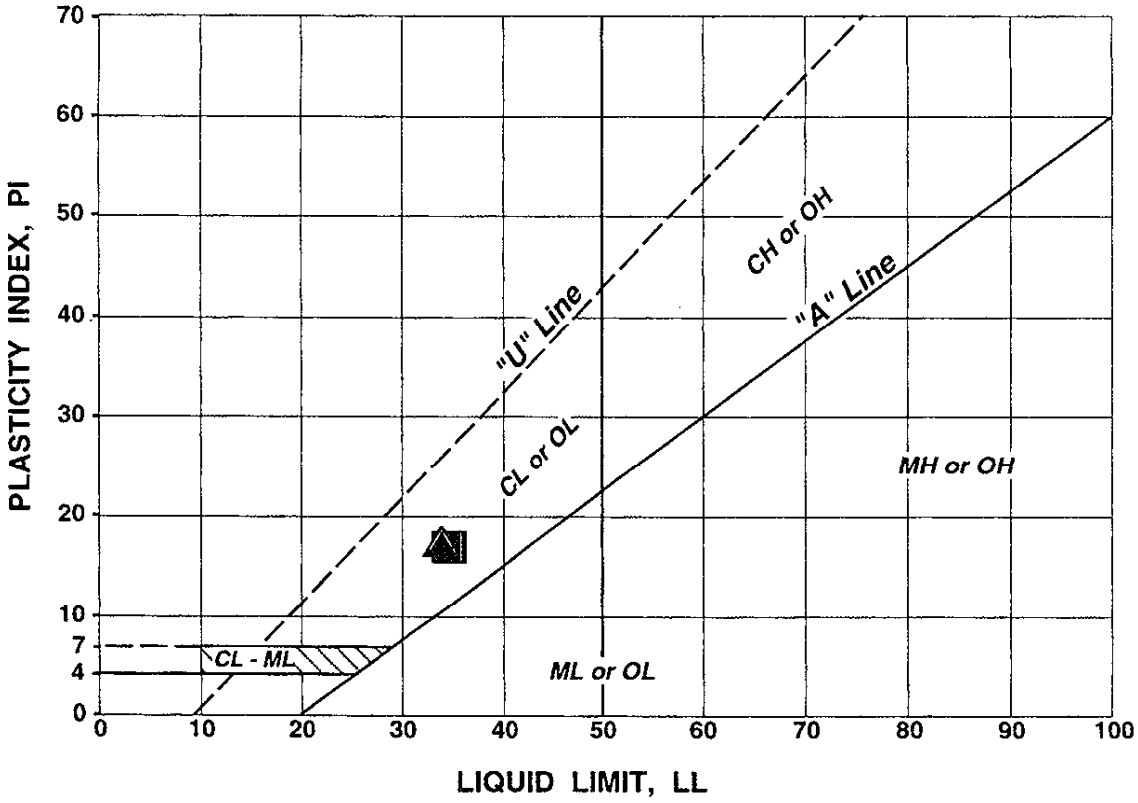
FILE NO. NFS-3695-01



▲ Sample No. Bag A

Description: [10Yr 2/2], Very Dark Brown Silty Clay with Gravel

Group Symbol: CL

Liquid Limit: 34.5%

Plastic Limit: 17.5%

Plasticity Index: 17.0

PI: 17

■ Sample No. Bag B

Description: [10Yr 3/1], Very Dark Gray Silty Clay with Gravel

Group Symbol: CL

Liquid Limit: 35.2%

Plastic Limit: 18.3%

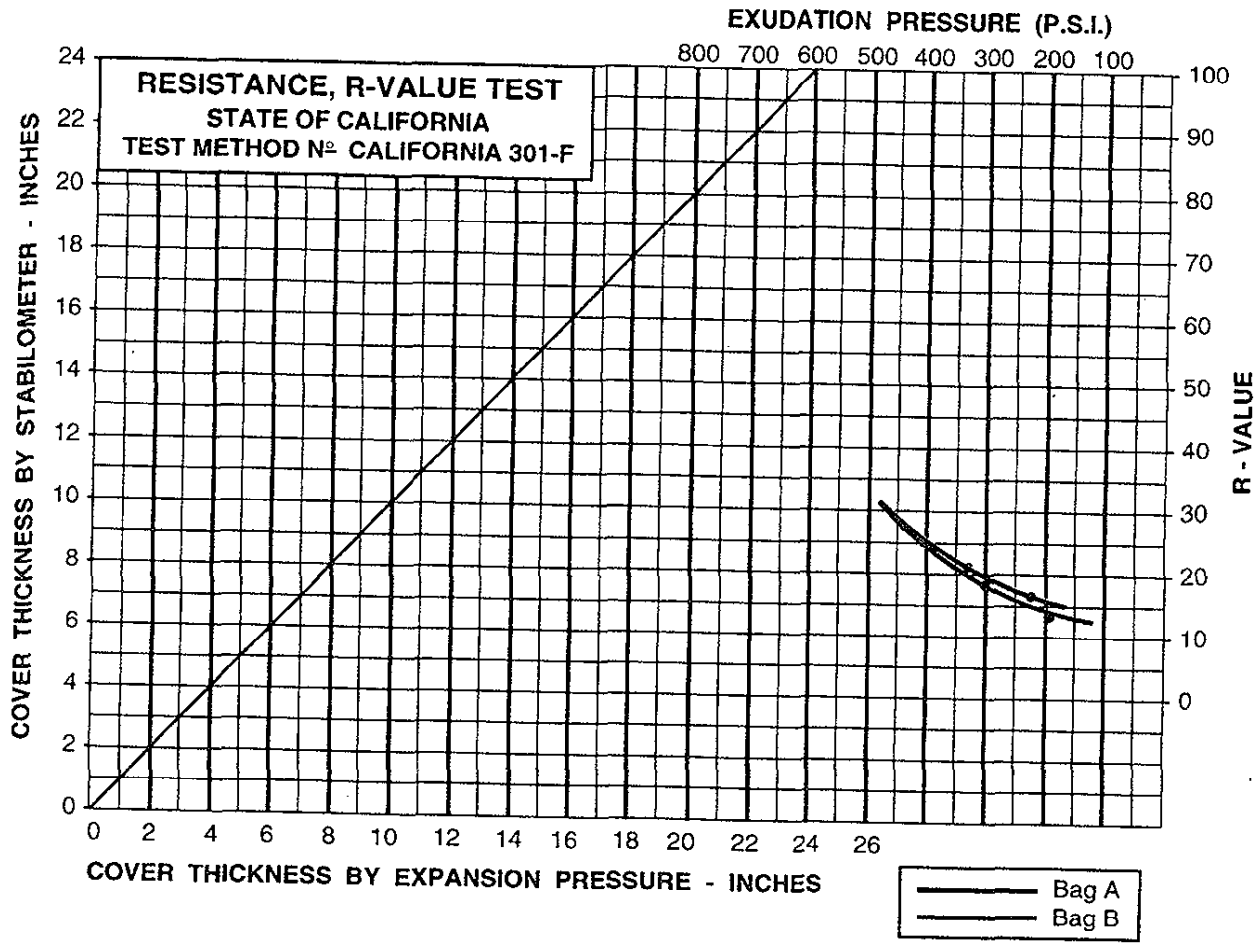
Plasticity Index: 16.9

PI: 17

96 - 011

Earth Systems Consultants **Northern California**	Almaden Expressway San Jose, California	PLASTICITY CHART Figure No. C1

FILE NO. NFS-3695-01



Sample: Bag A, CPT-2
Description: Dark Gray Brown Sandy Clay

Sample: Bag B, CPT-5
Description: Dark Gray Brown Clayey Silt

SPECIMEN	A	B	C	A	B	C
Exudation Pressure (P.S.I.)	235.0	340.0	446.0	204.0	309.0	414.0
Expansion Dial (.0001")	23.0	30.0	40.0	16.0	22.0	29.0
Expansion Pressure (P.S.F.)	100.0	130.0	173.0	69.0	95.0	126.0
Resistance Value, "R"	16.0	21.0	27.0	13.0	17.0	24.0
% Moisture at Test	16.0	15.4	14.5	18.2	17.5	16.8
Dry Density at Test (P.C.F.)	114.4	115.5	117.2	109.1	110.8	112.5
"R" Value at 300 P.S.I. Exudation Pressure	= (20)			= (17)		

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Earth Systems Consultants
Northern California

Almaden Expressway
San Jose, California

R - VALUE TEST

Figure No. C2

APPENDIX D

1977 Laboratory Test Results By Applied Soil Mechanics, Inc.

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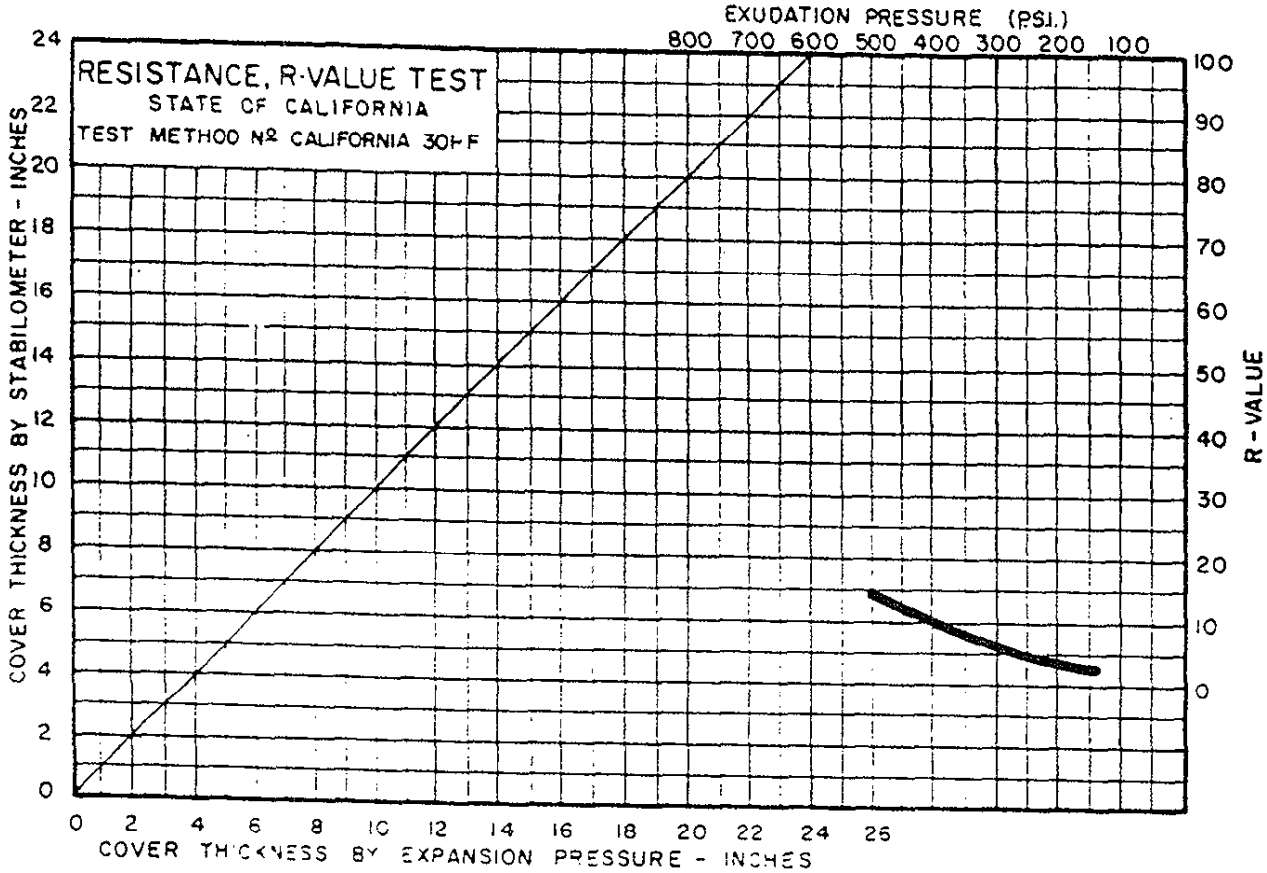
96-011

FILE NO.NFS-3695-01

August 31, 1977



SAMPLE Bag A - Depth 6"-18"

DESCRIPTION Native Soil - Dark Brown Silty Clay with Gravels

SPECIMEN	A	B	C
EXUDATION PRESSURE (P.S.I.)	256	356	444
EXPANSION DIAL (.0001")	9	15	23
EXPANSION PRESSURE (PSF)	39	65	100
RESISTANCE VALUE, "R"	5	8	12
% MOISTURE AT TEST	13.1	17.3	16.5
DRY DENSITY AT TEST (PCF)	107.8	110.0	111.3
R VALUE AT 300 PSI EXUDATION PRESSURE	(7)		

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Laboratory R-Value Test Results

Almaden Expressway
San Jose, California

Figure No. D1

FILE NO.NFS-3695-01
August 31, 1977

TABLE 1

Summary of Moisture, Density, Swell and Direct Shear Testing

Sample	Depth	In-Place Conditions		Swell Index	Direct Shear Testing	
		Moisture Content	Dry Density	% Swell ÷ % Moisture Increase with 100 p.s.f. Surcharge	Angle of Internal Friction	Unit Cohesion
No.	feet	(% dry wt)	p.c.f.		(degrees)	p.s.f.
1-1	2.5	9.9	111.0			
1-2	7.0	14.3	111.3			
1-3	11.0	10.9	118.9			
2-1	2.0	10.4	112.8			
2-2	6.0	17.4	109.2			
2-3	10.0	19.2	106.1			
3-1	4.0	14.5	106.1			
3-2	8.0	16.8	102.6			
3-3	12.0	22.1	104.2			
4-1	3.0	11.7	109.8			
4-2	7.0	21.1	96.3	0.7	31	640
4-3	11.0	19.0	106.9			
5-1	2.5	14.2	112.9			
5-2	7.0	15.1	115.0			
5-3	11.0	19.1	104.0			
6-1	2.0	20.4	100.7			
6-2	6.0	21.9	102.9			
7-1	3.0	11.4	104.2			
7-2	7.0	11.6	119.6			
11-1	3.0	12.1	100.1	0.55	36.5	250
11-2	7.0	11.0	111.5			
11-3	10.5	12.1	100.1			

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Almaden Expressway
San Jose, California

Figure No. D2

APPENDIX B

BIOLOGICAL SURVEYS

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96 - 011

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

August 7, 1995

Mr. Gerry DeYoung
Ruth & Going
P. O. Box 611600
San Jose, CA 95161

Dear Gerry:

At your request, H. T. Harvey & Associates conducted a biotic survey of the 42.5 acre Arcadia property on Almaden Expressway in San Jose. The objective of this survey was to determine the suitability of the site for special-status plant and animal species and to determine the approximate distance of the parcels north eastern boundary to the top of bank of the Guadalupe River and riparian canopy. These surveys were conducted on August 3, 1995. The project site is a 42.5 acre site located bordered by Almaden Expressway, Chenoweth Avenue, and Highway 85 in San Jose, California (Figure 1).

The site consisted primarily of agricultural row crops, including strawberries, corn, tomatoes, beans, and squash. There were some newly-planted areas with no vegetation in the central and northern portions of the site. There was also a ruderal area of non-native grassland which had been mowed in the southeast corner of the site.

There was a residence, a trailer, and various other sheds and structures in the southeast corner of the site. Several trees grew around the residence and structures, including olive, black walnut, and English walnut. Just north of the residence was a wood pile covered by blackberry vines (*Rubus* sp.)

The project site was bordered along its southern edge by a fairly steep embankment of Highway 85. Non-native weedy vegetation covered a majority of the embankment. Residential developments were located to the north and northeast of the site. A levee and percolation ponds bordered the site to the east. Commercial buildings were located adjacent to the northwest corner of the site, as well as to the west of Almaden Expressway.

Special-Status Plant and Animal Species.

The site is, which is completely surrounded by development (except for the Guadalupe River which borders its north eastern boundary), has been extensively farmed for several decades and does not support any natural habitats. Therefore, the site lacks any suitable habitat for special-status plant species that occurs in this region of Santa Clara County.

Several special-status animal species that may occur in the vicinity of the site include the California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana aurora draytonii*), White-tailed Kite (*Elanus caeruleus*), Northern Harrier (*Circus cyaneus*), and Tri-colored Blackbird (*Agelaius tricolor*). However, due to the disturbed nature of the site, and the fact that it has been farmed continuously for over 30 years, no suitable habitat exists on site for any of these species.

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Burrowing Owl

A Burrowing Owl (*Speotyto cunicularia*) survey was conducted by Penelope Delevoryas, Burrowing Owl Specialist, on the site on August 3, 1995.

The Burrowing Owl is a small, terrestrial owl that occurs in annual and perennial grasslands, deserts, and scrublands with low-growing vegetation. Suitable owl habitat may also include trees and shrubs if the canopy does not cover more than 30 percent of the ground surface. Burrows, which provide protection, shelter, and nests for Burrowing Owls, represent an essential component of this species' habitat. Burrowing Owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers (*Taxidea taxus*), however, these birds also use man-made structures, such as cement culverts; cement, asphalt, or wood piles; or openings beneath cement or asphalt paving.

Burrowing Owls use sites for breeding, wintering, foraging, or migration stopovers. Occupancy of suitable habitat is verified by observations of one or more Burrowing Owls on the site, or presence of owl feathers, cast pellets (or other prey remains), eggshell fragments, or excrement in, or near, a burrow entrance.

Burrowing Owls are protected under a variety of state and federal laws, including the amended Migratory Bird Treaty Act, (16 U.S.C. 703-711). This Act prohibits the "taking of active nests, eggs, young, or adults". "Take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, or collect" a bird. On November 15, 1994, the Western Burrowing Owl was listed as a Federal Candidate, level 2 (FC2) by the Federal government (59 FR 58990). The FC2 designation indicates that the U. S. Fish and Wildlife Service has potential information for upgrading the listing to endangered or threatened, but conclusive data on the biological vulnerability and threat are not currently available to support the proposed listing. California Department of Fish and Game (CDFG) Code 3503.5, states that it is "unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird". CDFG has listed the Burrowing Owl as a "Species of Special Concern". Species included on the list of species of special concern are those "whose breeding populations in the state have declined severely or are otherwise so low that extirpation is a real possibility". Finally, the National Audubon Society has included the Burrowing Owl on its "Blue List" for a number of years. This "early warning" list is reserved for species that "have recently or are currently giving indications of non-cyclical population declines or range contractions".

Walking transects for owls or their sign (e.g., whitewash, regurgitated pellets, and feathers) were conducted (approximately 50 feet apart) in all areas of the site that were not planted. Planted areas were visually inspected but due to recent disking they do not support ground squirrel burrows or other suitable burrows.

No Burrowing Owls nor any evidence of their presence were detected on the site. Six California ground squirrel burrows were observed on the southeast corner of the project site. The majority of the site is farmed on a continuous basis and does not contain habitat suitable for Burrowing Owls. Therefore, due to the negative results of the surveys and the lack of Burrowing Owl habitat, Burrowing Owls are not expected to occur on site.

Riparian Survey

The northeastern boundary of the site varies from 10-100 feet from the bank of the Guadalupe River. However, the majority of the site is within 10-20 feet of the top of bank. The project boundary is generally closer to the top of bank in the south and further from it in the north.

The riparian canopy varies considerable along the property boundary. Several sections of the river, especially to the north, contain little or no woody vegetation. In other sections of the river, especially in the central portion of the site, the riparian canopy extends well beyond the top of bank and approximately 15-20 feet into the parcel. The riparian canopy extends over 75 feet into the parcel along a 100-foot section in the south-central portion of the site.

The riparian vegetation adjacent to the parcel is generally degraded. There is little if any woody vegetation within the channel and lower banks of the river. However, moderate quality riparian vegetation does occur from the upper banks of the river to several feet beyond the top of bank in some areas. Approximately 50 % of the riparian vegetation along the properties boundary is of moderate quality. The remaining vegetation within the property boundary is of low quality being either bare or sparsely vegetated.

The riparian vegetation along the property boundary varies from open to moderately dense and is dominated by California sycamore (*Platanus racemosa*). Other woody species include red willow (*Salix laevigata*), Mexican elderberry (*Sambucus mexicana*), buckeye (*Aesculus californica*), black walnut (*Juglans californica*), coast live oak (*Quercus agrifolia*), coyote brush (*Baccharis pilularis*), mule fat (*Baccharis salicifolia*), Himalaya berry (*Rubus discolor*), and common snowberry (*Symphoricarpos albus var. laevigatus*). The herbaceous vegetation is a mixture of non-native grasses and forbs.

The project site would be subject to the Riparian Corridor Policy of the City of San Jose. The Guadalupe River is a riparian corridor inside the Urban Service Area. The Riparian Policy recommends a 100 foot setback from the top of bank or outside edge of riparian habitat (whichever is greater) from development. The Riparian Policy provides for a number of exceptions to this recommended setback distance. Some of these include "locations in or near Downtown San Jose, urban infill locations where most properties are already developed and parcels are generally small (one acre or less), sites adjacent to small lower order tributaries whose riparian influence does not extend to 100 feet" and so on. The determination of a suitable setback would need to be conducted when a detailed development plan is produced.

If you have any questions about our surveys or our findings please call me at your earliest convenience.

Sincerely,

Rick A. Hopkins, Ph.D.,
Project Manager

Please call me if you have any questions at (408) 263-1814.

Thank you very much.

Sincerely,

Rick A. Hopkins
Project Manager

proj. 996-01

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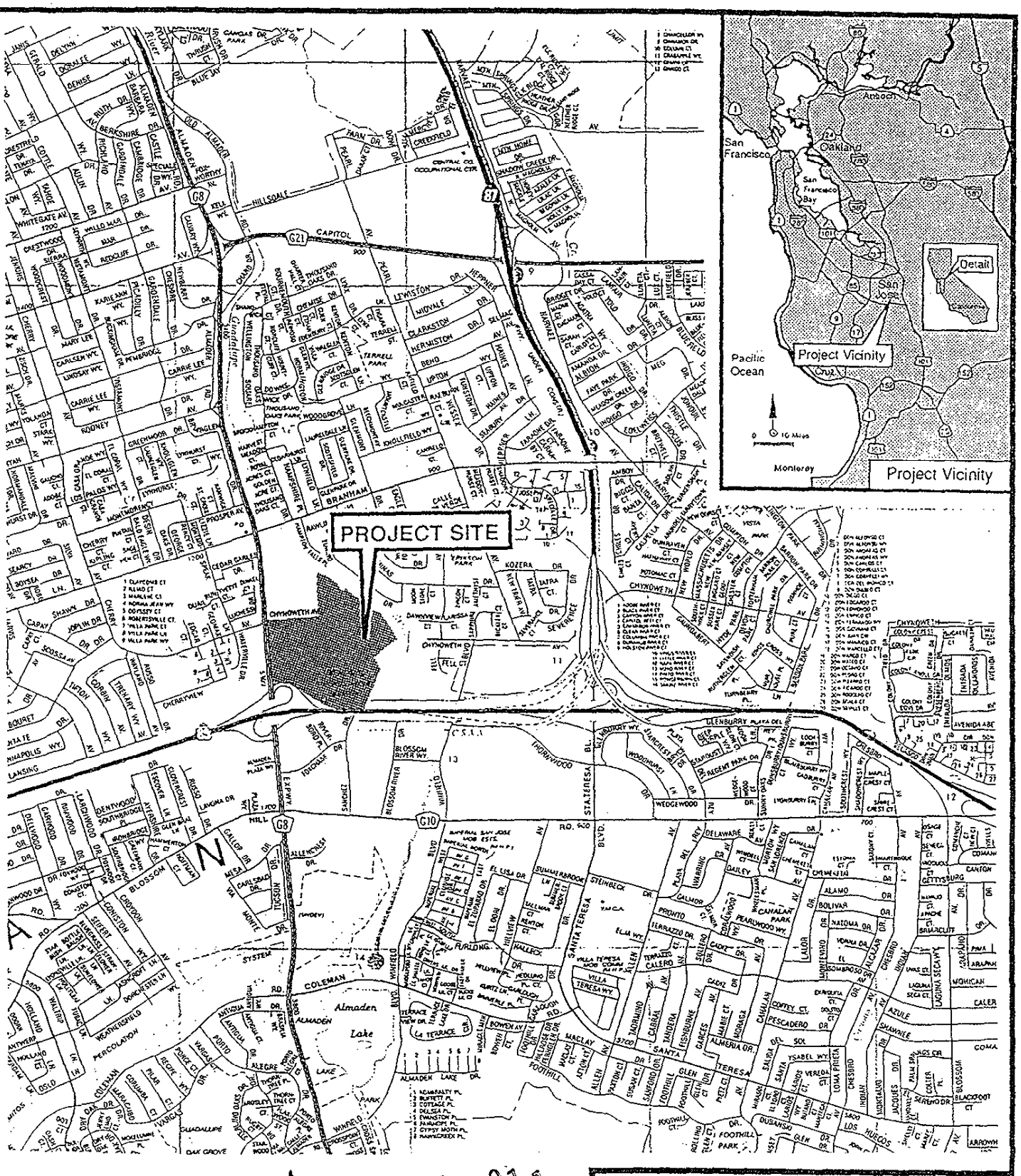

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SCALE

FEET 0 1000 2000 3000 4000 5280 FEET

MILES 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 MILES

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Arcadia Development Burrowing Owl Study:
Site/Vicinity Map

File No. 996-01	Date 8/3/95	Figure 1

98 - 027

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

November 15, 1996

Mr. Gerry De Young
Ruth and Going, Inc.
1630 Zanker Road
San Jose, CA 95112

Dear Mr. De Young:

I visited the 42.5-acre Arcadia project site on November 14, 1996 to provide an update to our Biological Assessment, dated August 7, 1995. The majority of the site is currently in agricultural use, and a small portion of the site was planted to corn and peppers. Conditions have not changed appreciably since the 1995 survey. A large portion of the site had been recently disked, including an area along the eastern edge which appeared to have been fallow and comprised weedy vegetation. Two triangular-shaped areas, along the northern and southeast edges of the site, comprised ruderal vegetation. The vegetation at the northern edge was sparse, with the exception of a few large trees. A homeless encampment was located in this area. Vegetation along the southeast corner included yellow-star thistle (*Centaurea solstitialis*) approximately three feet in height and fennel (*Foeniculum vulgare*) between five and seven feet in height, interspersed with low-growing non-native grasses.

Six active California ground squirrel (*Spermophilus californica*) burrows were observed along a fenceline at the southeast corner of the site. No evidence of occupation or use by Burrowing Owls (*Speotyto cunicularia*) was observed at any of these burrows. It is unlikely that Burrowing Owls would use these burrows, because the burrows are obscured by brushy and weedy vegetation.

Two or three eucalyptus trees located in the northeastern portion of the site may provide habitat suitable for raptors. No raptor nests were evident in the eucalyptus trees during the survey period. However, if construction is scheduled to begin before August, 1997, a raptor pre-construction survey is recommended to ensure that no raptors are nesting or attempting to nest in these trees.

Please call me if you have any questions at (408) 263-1814.

Thank you very much.

Sincerely,

Penelope Delevoryas

Penelope Delevoryas
Wildlife Biologist

96 - 011

proj. 998-02

~~98 - 089~~

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H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

January 27, 1998

Mr. Richard Mindigo
Mindigo and Associates
1984 The Alameda
San Jose, CA 95126

Subject: Arcadia Burrowing Owl Survey

Dear Richard,

Dr. David Plumpton, a Burrowing Owl (*Athene cunicularia*) specialist with H.T. Harvey & Associates, conducted a reconnaissance-level survey for Burrowing Owls and habitats at the Lands of Arcadia property on January 14, 1998. No Burrowing Owls were observed on or adjacent to the property and the site was found to be largely unsuitable for Burrowing Owls due to a general lack of small mammal burrows which could be utilized for nesting and roosting and the less than optimal foraging habitat present. The site does, however, contain debris piles which could, conceivably, provide breeding and roosting habitat for Burrowing Owls. Several California ground squirrel (*Spermophilus beecheyi)* burrows also occur immediately adjacent to the site. These squirrels could provide a source population for the Arcadia property. In addition, if Burrowing Owls where to colonize these burrows, the 250-foot radius protective barrier typically required by the California Department of Fish and Game (CDFG) would extend into the site.

The survey results are consistent with the negative results of Burrowing Owl surveys conducted at the site in 1995 and 1996. The site has changed somewhat since the 1995 and 1996 surveys in that it is no longer in active agricultural uses. The vegetation present at the time of the survey comprised sparse ruderal (weedy) vegetation.

In summary, no Burrowing Owls were observed at the Lands of Arcadia property and the site currently provides less than optimal habitat for this species. It should be noted that CDFG protocol surveys (series of four surveys) will be required for this site within 30 days of the start of construction due to the potential breeding and roosting habitat present. This four-survey protocol was adopted by the CDFG in 1995.

Sincerely,

Patrick Reynolds
Project Manager

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423 West Fallbrook, Suite 206
Fresno, CA 93711 • 209-449-1423 • Fax: 209-449-8248

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

28 May 1998

Richard Mindigo
Mindigo and Associates
Environmental Consultants
1984 The Alameda
San Jose, CA 95126

Dear Richard,

In response to your request regarding the status of the Almaden/Chynoweth Project site with respect to Burrowing Owls, I have reviewed the reports of three earlier surveys of the site and discussed the situation with Dr. David Plumpton, an expert on the species and the last individual to conduct a survey of the site.

Surveys conducted in August 1995, November 1996, and January 1998 failed to find any owls. The determination of the first two surveys (conducted by Penelope Delevoryas) was that the "majority of the site is farmed on a continuous basis and does not contain habitat suitable for Burrowing Owls" and that "Burrowing Owls are not expected to occur on site" In January of this year, David Plumpton determined that no Burrowing Owls were on the site and that this was due to a general lack of small mammal burrows.

Since the site has been extensively farmed over the years and has no history of owl occupation, the site currently does not comprise habitat. David Plumpton did recommend, however, that preconstruction surveys be conducted because of several debris piles which could conceivably provide habitat and the presence of several squirrel burrows near the site which might be occupied by owls in the future, especially if the agricultural condition of the site changes. Dr. Plumpton stressed that this provision was to avoid possible take if an owl moved onto the site in the future should conditions change, and not because the site currently comprised owl habitat.

I hope this information is sufficient for your needs. Please let me know if you require clarification or futher information.

Sincerely,

Scott Terrill, Ph.D.
Senior Ornithologist

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PROHIBITED LANDSCAPE PLANTS ON SCVWD CREEKS
Note: This short list is not all-inclusive.
Linda Spahr O:\data\weedlist.wpd
Last Updated: 11 May 98

acacia (Acacia spp.)
almond (Prunus dulcis)
bamboo, running types (Arundinaria, Chimonobambusa, Phyllostachys, etc.)
black locust (Robinia pseudoacacia)
broom, French (Genista monspessulana, previously Cytisus monspessulanus)
broom, Scotch (Cytisus scoparius)
broom, Spanish (Spartium junceum)
Cape weed (Arctotheca calendula)
cotoneaster (Cotoneaster spp.)
elm (Ulmus spp.)
eucalyptus (Eucalyptus spp.)
fig (Ficus carica)
flowering plum, fruitful varieties (Prunus spp.)
fountain grass (Pennisetum setaceum)
foxglove (Digitalis purpurea)
giant reed (Arundo donax)
glossy privet (Ligustrum lucidum)
gorse (Ulex europaea)
Himalayan blackberry (Rubus discolor)
holly oak (Quercus ilex)
iceplants (Carpobrotus edulis, C. chilensis, Mesembryanthemum spp.)
ivy, Algerian (Hedera canariensis)
ivy, Cape (Delairea odorata, previously Senecio mikanioides)
ivy, English (Hedera helix)
kikuyu grass (Pennisetum clandestinum)
lemon balm (Melissa officinalis)
Lombardy poplar (Populus nigra 'Italica')
London plane tree (Platanus acerifolia)
mint, any kind including pennyroyal, peppermint, spearmint (Mentha spp.)
Monterey pine (Pinus radiata)
myoporum (Myoporum laetum)
olive (Olea europaea) (species to be determined)
pampas grass, jubata grass (Cortaderia selloana, C. jubata)
pepper trees (Schinus spp.)
periwinkle (Vinca major)
pyracantha (Pyrancantha spp.)
tamarisk, salt cedar (Tamarix spp.)
tree of heaven (Ailanthus altissima)
walnut, English or black (Juglans regia, Juglans californica var. hindsii)

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APPENDIX C

TREE SURVEY

~~98-027~~ 96-011

H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

LANDS OF ARCADIA
TREE SURVEY

Prepared by:

H.T. Harvey & Associates

Daniel D. Stephens, Principal
Patrick H. Reynolds, M.S., Project Manager
Max J. Busnardo, M.S., Assistant Project Manager

Prepared for:

Richard Mindigo
Mindigo & Associates
1984 The Alameda
San Jose, California 95126

96-011

October 14, 1997 ~~98-027~~ Project Number 998-03

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INTRODUCTION

H.T. Harvey & Associates conducted a tree survey of the 42.5 acre Arcadia Property located on Almaden Expressway in San Jose, California (Figure 1). The survey was conducted to determine the number of trees on site which fall under the City of San Jose's Tree Ordinance or are on the City of San Jose's Heritage Tree List. The majority of the site was recently disked with the exception of a few small patches of existing trees, a residence, and a fruit stand in the northwest corner.

METHODS

A survey was conducted by Max Busnardo of H.T. Harvey & Associates on October 9, 1997. Each tree on the Arcadia Property greater than 4 inches in diameter at 2 feet above grade was mapped on a 1-inch = 100-foot scale map of the site and given an identification number. The trunk of each tree was tagged at eye level with an aluminum tag showing the date of the tree survey and the number of the tree. The location and corresponding number of each tree is shown on Figure 2 (oversized).

The diameter in inches at 2.0 feet above grade was measured for each tree with a Biltmore Stick (25 inch reach). For trees with multiple trunks at 2.0 feet above grade, a single combined diameter for multi-stemmed trees was calculated by adding the largest trunk diameter to half the diameters of the remaining trunks. This additive approach reflects the cross-sectional area of the combined trunks more accurately than adding the trunks together equally. The diameter of each trunk and the additive diameter of each tree is presented in Table 1.

Each tree was assigned a health and vigor rating based on the following scale:

0	=	Dead
1	=	Very Low Vigor
2	=	Low Vigor
3	=	Moderate Vigor
4	=	High Vigor
5	=	Very High Vigor

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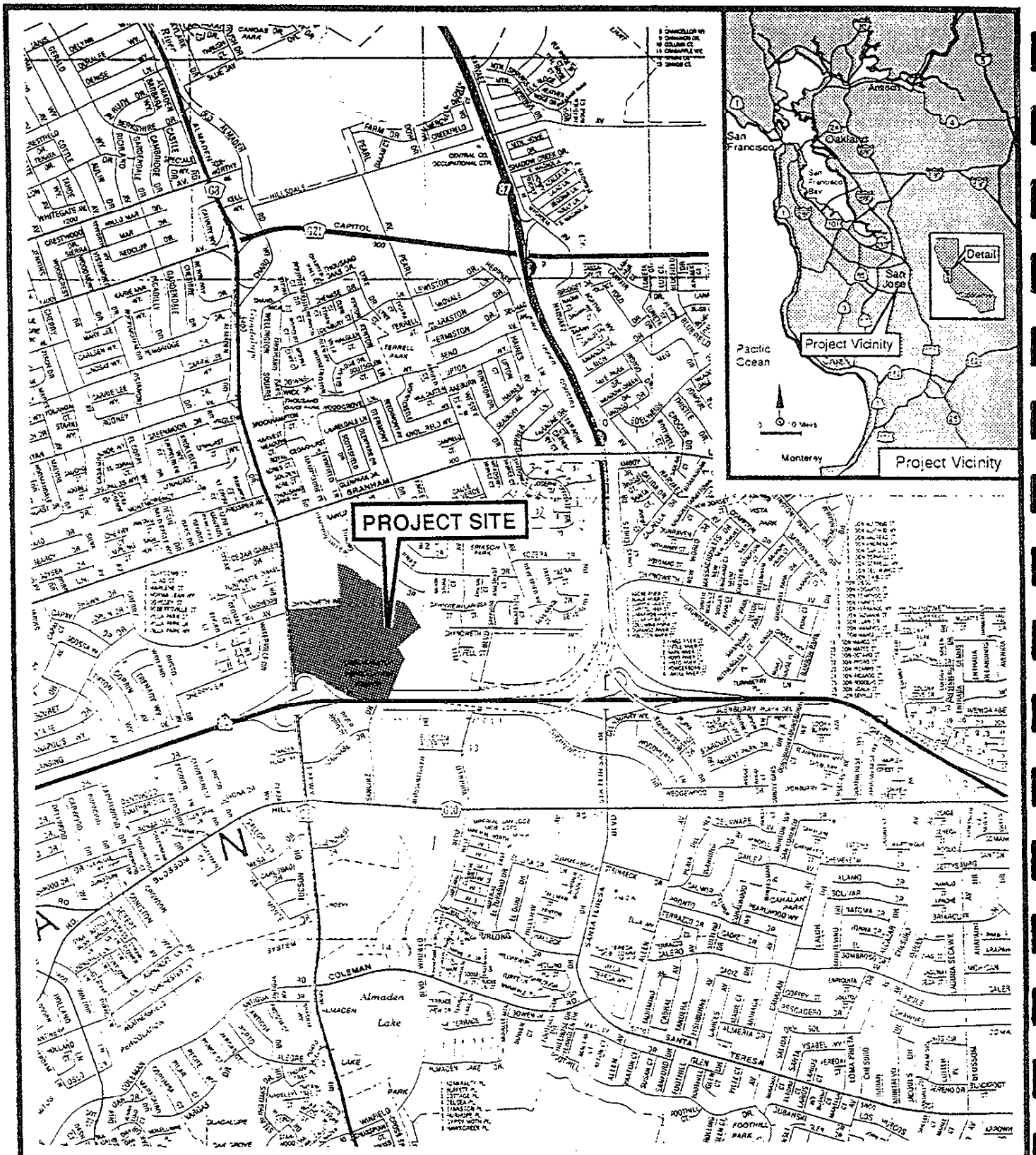

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N

SCALE

FEET 0 1000 2000 3000 4000 5280 FEET

MILES 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 MILES

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Lands of Arcadia Tree Survey:
Vicinity Map

File No. 998-03	Date 10/10/97	Figure 1

ORDINANCE AND HERITAGE TREE DETERMINATION

All trees large enough to fall under the jurisdiction of the City of San Jose Tree Ordinance are identified with an asterisk in Table 1. The City of San Jose Tree Ordinance defines an ordinance tree as "any woody perennial plant characterized by having a main stem or trunk which measures 56 inches or more in circumference (17.83 inches or more in diameter) at a height of 24-inches above natural grade slope." Therefore, ordinance status was determined by the largest trunk measured.

The City of San Jose's Heritage Tree list was reviewed to determine if any Heritage Trees occur on site.

RESULTS

A total of 33 trees were found on the Arcadia Property. The location of each tree is presented in Figure 2 (oversized). The species, diameter(s) and health and vigor of each tree are presented in Table 1. Table 1 also identifies all trees under the jurisdiction of the City of San Jose Tree Ordinance.

ORDINANCE AND HERITAGE TREES

Fourteen trees under the jurisdiction of the City of San Jose's Tree Ordinance are present on site (Table 1). No trees on the City of San Jose's Heritage Tree list occur on site.

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Table 1. Lands of Arcadia Tree Survey Results.

Tree #	Common Name	Scientific Name	Diameter(s) of Each Stem at 2 feet(inches)	Additive Diameter at 2 feet (inches)	Health and Vigor Rating(0-5)
1	valley oak	*Quercus lobata*	9	9	3
2	Unidentified ornamental		(6.5,5,6.5)	12.25	4
3	California black walnut	*Juglans californica* var. *hindsii*	(11,7,5,6)	20	2
4 *	California black walnut	*Juglans californica* var. *hindsii*	(20,14,9,9, 5)	38.5	4
5 *	California sycamore	*Platanus racemosa*	26	26	4
6 *	English walnut(graft)	*Juglans regia*	20	20	1
7 *	California black walnut	*Juglans californica* var. *hindsii*	27	27	4
8	California black walnut	*Juglans californica* var. *hindsii*	(17,10,10,16, 7)	38.5	2
9	California black walnut	*Juglans californica* var. *hindsii*	(16,16,13)	31.5	3
10 *	California sycamore	*Platanus racemosa*	(38,29,23)	64	5
11 *	California sycamore	*Platanus racemosa*	(18,15,6,4,8)	34.5	3
12	California sycamore	*Platanus racemosa*	(16,15,6,4,6, 14)	38.5	4
13	California sycamore	*Platanus racemosa*	(16,12)	22	3
14 *	blue gum	*Eucalyptus globulus*	68	68	4
15 *	blue gum	*Eucalyptus globulus*	41	41	4
16	Mexican elderberry	*Sambucus mexicanus*	(7,9,7,4,5,6)	23.5	3
17 *	Mexican elderberry	*Sambucus mexicanus*	(18,15,9,8,7)	37.5	4
18	Chinese elm	*Ulmus parvifolia*	(10,10,12,7,6, 5,4,4,3,3,3)	39.5	5
19 *	California black walnut	*Juglans californica* var. *hindsii*	32.5	32.5	4
20	English walnut	*Juglans regia*	(10,9)	14.5	3
21	black locust	*Robinia pseudoacacia*	(14,11,7)	23	3
22	black locust	*Robinia pseudoacacia*	15	15	3
23 *	black locust	*Robinia pseudoacacia*	18	18	3
24	black locust	*Robinia pseudoacacia*	(13, 9)	17.5	3
25 *	black locust	*Robinia pseudoacacia*	18	18	3
26	English walnut	*Juglans regia*	(12,4,3)	15.5	3
27 *	maple	*Acer sp.*	18.5	18.5	3
28 *	olive	*Oleo europaea*	68	68	5
29	black locust	*Robinia pseudoacacia*	17	17	3
30	acacia	*Acacia* sp.	(12,10)	17	4
31	acacia	*Acacia* sp.	9	9	3
32	acacia	*Acacia* sp.	9.5	9.5	0
33	tree of heaven	*Ailanthus altissima*	(9,9,3,6,9,9,8, 8,8)	39	4

*** = Covered by the City of San Jose's Tree Ordinance**

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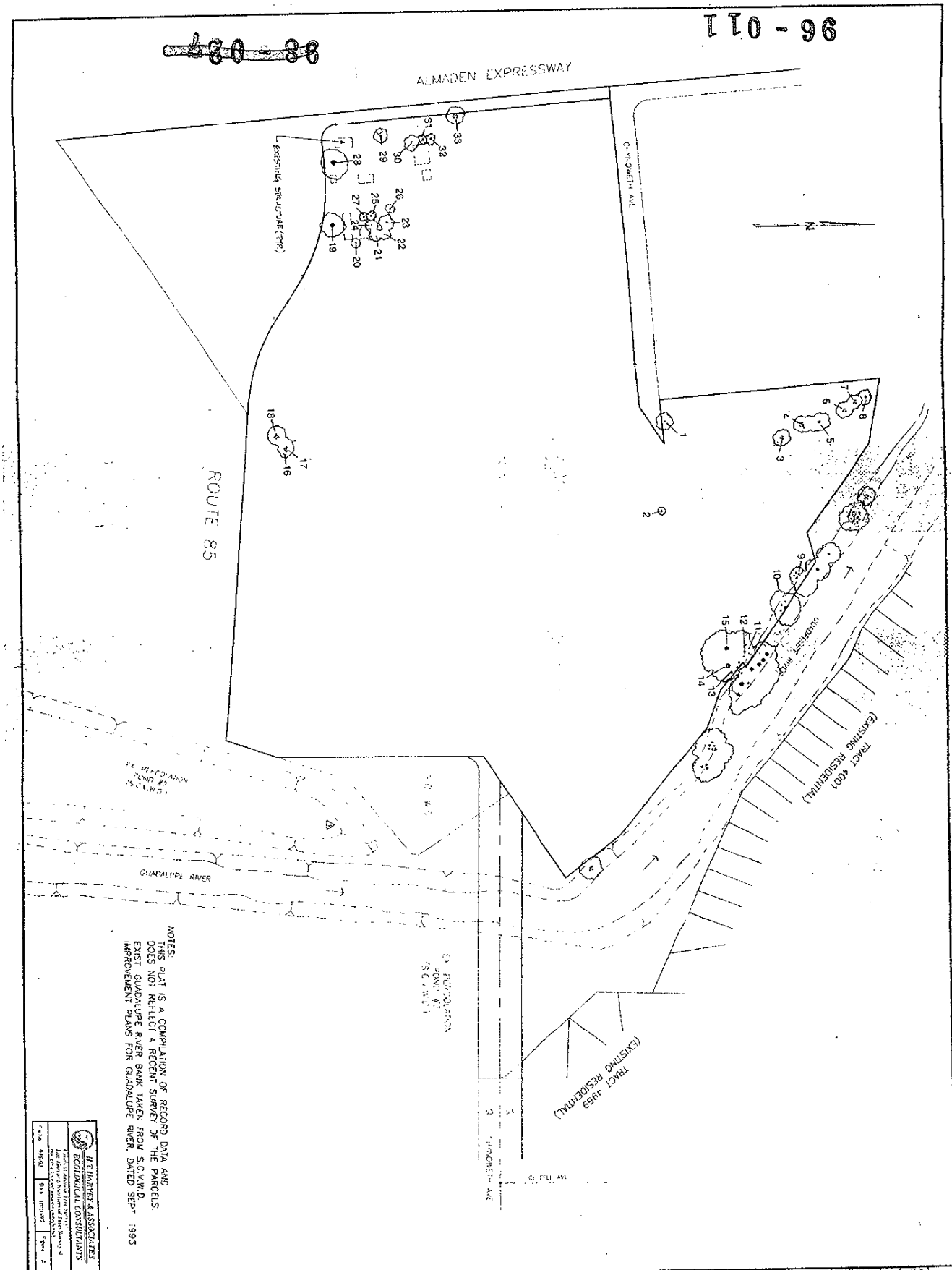

TREE SURVEY / EXISTING CONDITIONS	GENERAL DEVELOPMENT PLAN EXHIBIT C		PLANNING DEPT REVIEW 3-22-96
CHYNOWETH AVE. @ ALMADEN EXPRESSWAY LANDS OF ARCADIA	R+G RUTH AND GOING, INC. Civil Engineering Land Surveying	Designed R. Drawn Checked	Update creek info. 2-22-96
Scale 1"=100' Date 11-19-96		Copyright 1996 Ruth and Going, Inc. All Rights Reserved	Description Mark Date By Revisions
Job No 15330A Drawing CLOSE.DWG			

NOTICE

APPENDIX D

ENERGY CONSERVATION MEASURES

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ENERGY CONSERVATION MEASURES

The following is a list of energy conservation measures that would be considered in the project.

Residential

- Individual zone wall mounted thermostats
- Slab floor with moisture barrier and carpet
- Gas dryers with pilotless ignition
- Oven with light and window
- Set-back thermostat
- Conservation model water heater
- Fluorescent lighting in kitchen area
- Fluorescent lighting in bathrooms
- Shower heads with flow control devices
- Low flush toilets
- Positive fireplace damper, without gas outlet
- Thermostatic top burner
- Pilotless ignition on space heating system
- Additional insulation
- Attic ventilator
- Additional fluorescent lighting
- Dimmer controls on incandescent lighting
- Location of water heater within 15 feet of point of maximum use (kitchen sink)
- Dishwasher with switch controllable drying cycle
- Gas range with pilotless ignition
- Clogged filter indicator
- Fireplace with heat exchange
- Insulated hot water piping (through all unheated areas)
- Heat pumps
- Awnings or eave overhangs
- Weatherstripping
- Shade trees on sun-exposed areas
- Solar assisted hot water system

Commercial

- Insulation of roofs and exterior walls to minimize heat loss and gains.
- Exterior berming at ground level to provide some additional insulating value to exterior walls.
- Use of glass or skylights to enhance use of natural lighting.
- Double glazed skylights and light shafts, if used.
- Overhangs for sun shielding, as appropriate.
- Insulation of all HVAC ducting.
- Deciduous trees and bushes around the buildings.

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- Double glazed windows.
- Reflective treatments, operable exterior translucent shutters, or landscape shading on east and west-facing windows.
- Use of life-cycle costing on the design and selection of equipment.
- Exercise as little control over interior heat and humidity as possible.
- Time clocks to control HVAC operation.
- Use of economizer cycles or heat wheel recycling techniques on space conditioners.
- Use of the largest practical duct and pipe sizes.
- Warm spectrum fluorescent lights instead of incandescent bulbs for interior lighting.
- Sodium vapor lights for exterior lighting.
- Individual light switches for smaller interior areas.
- Design of lighting levels specifically for the intended function.
- Insulation of all hot water pipes.
- Temperature settings that are no hotter that is needed to serve the needs of the building.
- Use of high-efficiency equipment.
- Servicing and maintenance of all equipment according to manufacturers' recommended procedures.
- Use the most efficient, cost-effective HVAC and lighting systems available.

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The **Report of Findings of an Archaeological Field Inspection of the Arcadia Property located at Almaden Expressway and Highway 85, San Jose, Santa Clara County, California** by Holman & Associates, July 17, 1996 and the **Subsurface Testing for Archaeological Resources at the Arcadia Development Project Area, Highway 85 and Almaden Expressway, San Jose, California** by Holman & Associates, August, 1997 are on file at the City of San Jose Department of Planning, Building and Code Enforcement, where they are available for review by authorized personnel.

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APPENDIX E

ARCHAEOLOGICAL REPORTS

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APPENDIX F

HISTORICAL/ARCHITECTURAL EVALUATION

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HISTORICAL AND ARCHITECTURAL EVALUATION
FOR THE
ARCADIA PROPERTY
14520, 14540 ALMADEN EXPRESSWAY
CITY OF SAN JOSE, COUNTY OF SANTA CLARA

FOR
RUTH AND GOING, INC.
1630 ZANKER ROAD
SAN JOSE, CA 95112

BY
ARCHIVES & ARCHITECTURE
353 SURBER DRIVE
SAN JOSE, CA 95123 (408) 227-2657

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WRITTEN BY
GLORY ANNE LAFFEY AND CHARLENE DUVAL

JULY 17, 1996

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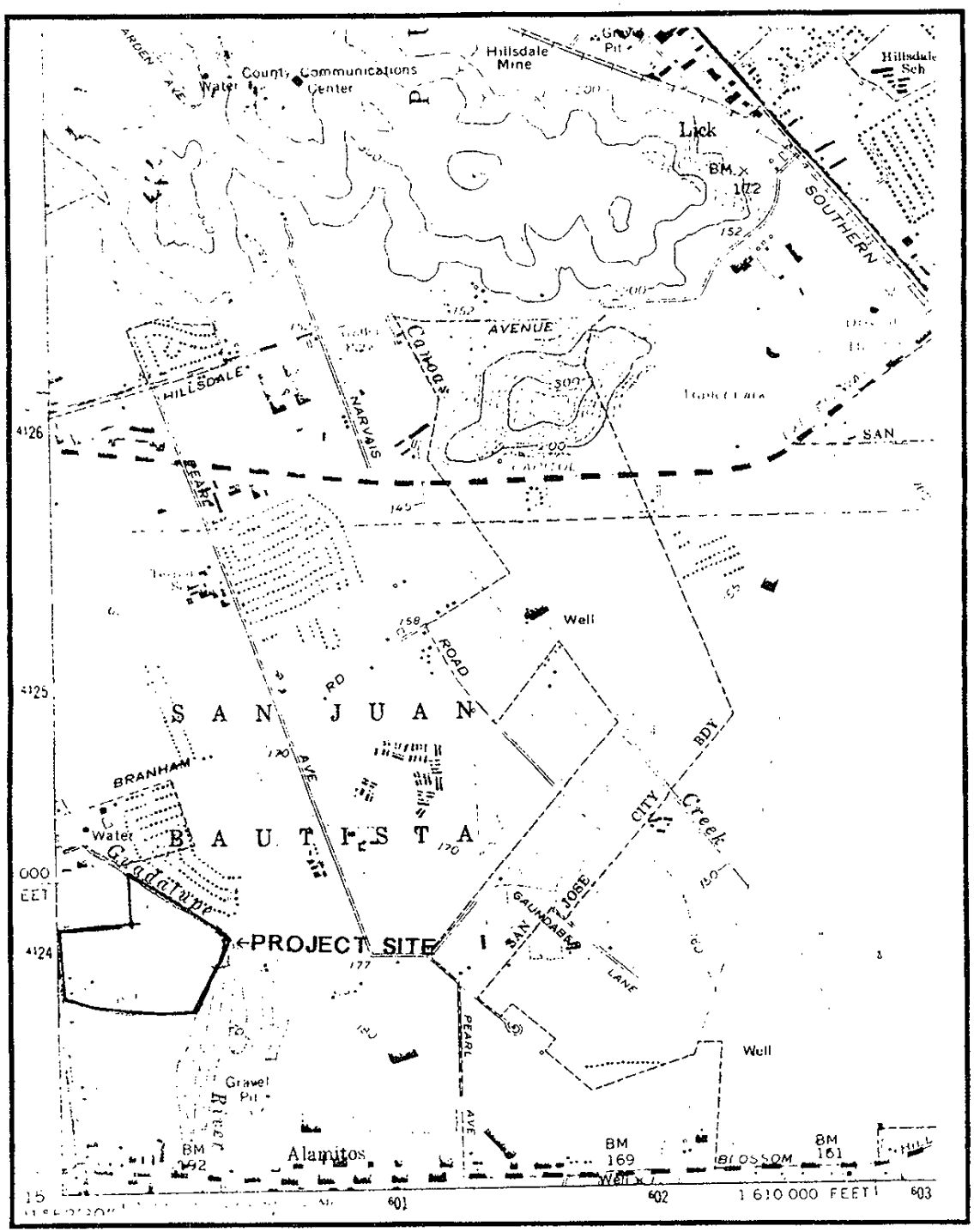
Project Location



San Jose East, Calif.
SE/4 San Jose 15' Quadrangle
N3715-W12145/7.5
1961
Photorevised 1980

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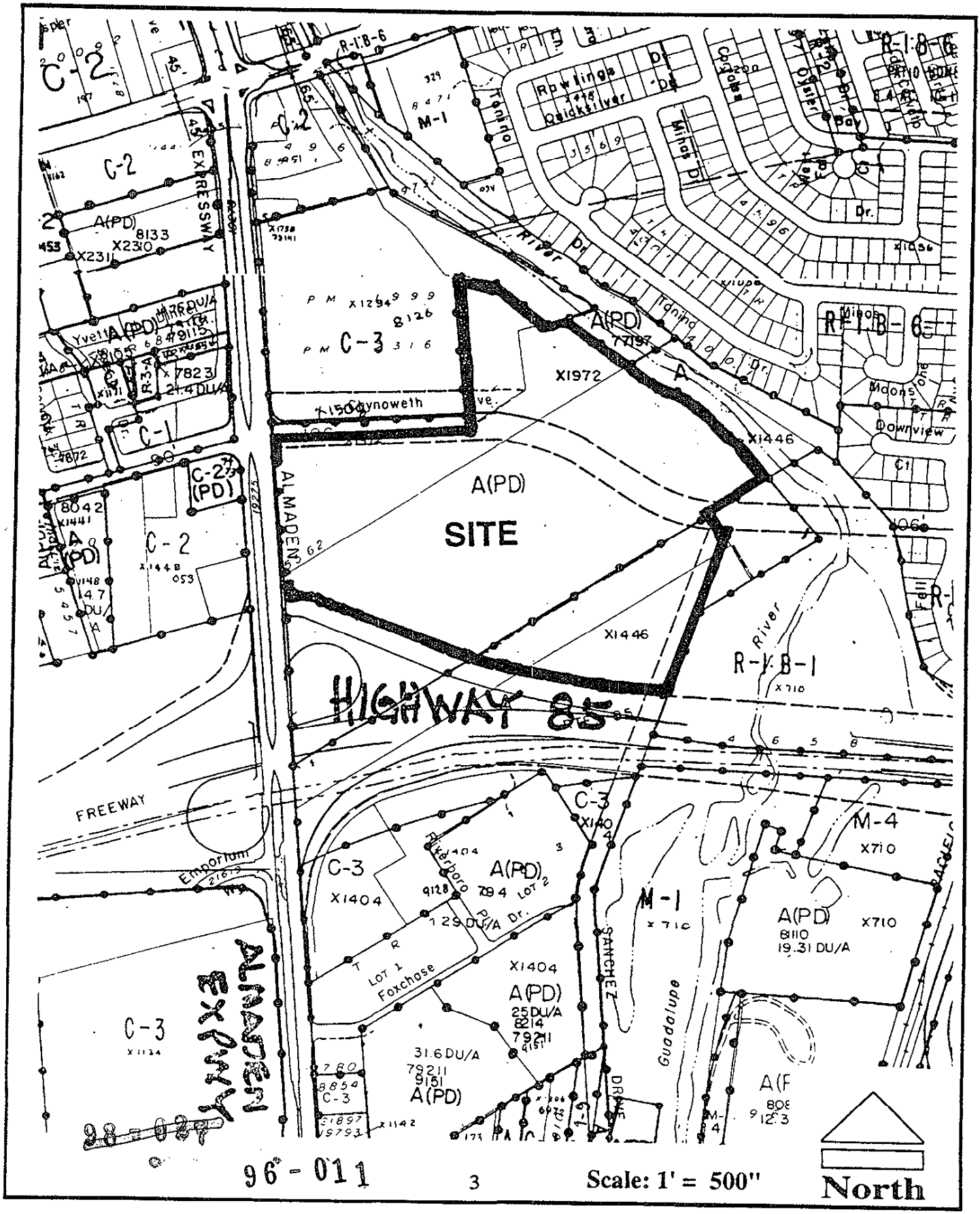
Map 2: Project Area



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INTRODUCTION

Architectural and historical research for the Arcadia property at 14520 and 14540 Almaden Expressway (APN 458-16-30, 458-17-06, 17, 18) was conducted in June 1996 by Glory Anne Laffey, principal of Archives and Architecture. Evaluation of the structures at this site was requested by Gerry De Young of Ruth and Going, Inc. on behalf of Arcadia Development Company. The proposed project calls for rezoning for commercial and residential uses of a 43.5-acre parcel fronting Almaden Expressway. The project will necessitate the widening and eastward extension of Chynoweth Avenue, and the eventual construction of a bridge over the Guadalupe River.

The subject area is located near the intersection of Almaden Expressway and Highway 85 in the City of San Jose. The property consists of a 43.5-acre parcel, bounded on the west by Almaden Expressway, on the south by Highway 85, on the north by Chynoweth Avenue, and on the east by the Guadalupe River. On the 7.5 minute San Jose West USGS quadrangle, the UTMG location is 4123830/600000.

Research was conducted by Charlene Duval under the direction of Glory Anne Laffey. Mrs. Laffey has been conducting cultural resource evaluations in Santa Clara County since 1978. She has a MA in Social Science and has been professionally certified by the California Committee for the Promotion of History. Archival research was carried out at local repositories of historical records, which included the Office of the County Surveyor, the Office of the County Recorder, the Office of the County Clerk, the San Jose Historical Museum archives, the California Room of the Martin Luther King, Jr. Public Library, the Northwest Information Center at Sonoma State University, as well as the consultant's personal library. Oral interviews were conducted with those individuals familiar with the history of the subject property, namely Palma N. Nichols and Ralph J. Cassibba, former property owners; John Giacomazzi, former resident of 14611 Almaden Expressway, and Joyce Kromer, great-granddaughter of former property owner David Greenawalt.

Portions of the subject area have been surveyed for cultural resources many times between 1977 and 1989. A 1988 study by Basin Research Associates specifically addressed the buildings in the subject area (Anastasio *et al.* 1988). At this time the entire Malech complex (14540 Almaden Expressway) was still intact. Architectural historian, Michael Corbett concluded that the Malech complex might be eligible for the National Register of Historic Places, but additional research was needed to be done to finalize determination. After being determined to be ineligible for the National Register by Caltrans and the State Office of Historic Preservation, the Malech house and barn were removed as part of the construction of the construction of Highway 85 (Melandry 1996). As part of the Basin Research Associates 1988 study, Corbett also evaluated the buildings at 14520 Almaden Expressway, erroneously concluding that the extant residence on the property was built by Amelia C. Scott in 1933. Current research provided in this report indicates that the house was moved onto the property in the early 1950s by Ralph Cassibba.

The following report is presented in four sections: a historical background, a description of the property, an evaluation of the historical significance of the property, and a discussion of the impacts of the proposed project with recommendations for mitigation, if appropriate.

HISTORICAL BACKGROUND

The Santa Clara Valley was first settled by Europeans in 1777 when Mission Santa Clara and the Pueblo of San Jose were established on the banks of the Guadalupe River. After 1822, Mexican governors authorized hundreds of huge land grants in California. The ranchos were primarily devoted to grazing large herds of cattle for the hide and tallow trade,

the basis of the Californian economy during this period. The project area was part of the 8,879-acre *Rancho San Juan Bautista,* granted to Augustin Narváez by Governor Micheltorena on March 30, 1844. This grant lies in the central part of the county, and its boundaries encompass most the Hillsdale, Robertsville, and Willow Glen areas, as well as part of the Lone Hill vineyard area (Bowman and Hendry 1940; Arbuckle 1985).

In contrast to the later American settlers, the Hispanic colonists had a rather casual attitude about boundary lines between neighboring properties. Under the Spanish and Mexican regimes, land titles were based on a rough verbal description and a hand-drawn sketch map *(diseño).* After the discovery of gold, the population of California exploded as immigrants arrived from all points on the globe. California was acquired by the United States in 1848 as the result of the war with Mexico. After Statehood was achieved in 1850, the United States government created the California Land Claims Commission to validate the Mexican titles by determining legal ownership and establishing fixed boundaries for Mexican-claimed property. The validation process was long and cumbersome for the Mexican owners, leaving land titles in abeyance for many years, often for decades. Narváez did not receive clear title to Rancho San Juan Bautista until 1865.

In 1845, quicksilver was discovered by Andres Castillero about fifteen miles south of San Jose in the foothills at the southern end of the Almaden Valley. By 1847, the mining activity was being conducted by the Barron, Forbes Company of Tepic, Mexico, under the supervision of Alexander Forbes. The mine was producing between 100 and 150 pounds of mercury a day by 1848. Quicksilver (mercury) was used primarily at this time to extract gold and silver from impure ores. By the late 1840s, the number of Americans in the *Pueblo* was rapidly rising, spurred by the discovery of gold in 1849. The advent of the Gold Rush further increased the demand for quicksilver from the New Almaden mines (Payne 1985).

In the 1850s, wagon trains of settlers arrived more and more frequently, delivering families to the Santa Clara Valley. Settlers and squatters established farms across the valley floor that had been part of the old rancho lands, including *Rancho San Juan Bautista.* Almaden Road, which bisected the rancho, was first laid out during the Mexican period to accommodate the traffic between the New Almaden Mine and the *Embarcadero de Santa Clara* (the Port of Alviso). It was traversed by a never-ending stream of wagons hauling flasks of quicksilver from the mines.

By the 1860s, agriculturists were putting the rich resources of the area south of San Jose to good use. Cattle raising was replaced by hay and grain production. In 1864, San Jose was linked by railroad to San Francisco. By 1870, San Jose was linked to the rest of the country by spurs of the newly completed Transcontinental railroad, opening new markets and changing the values of most imported and exported products.

By the 1870s, several key forces came together that raised the quality of life in the Santa Clara Valley. The growing population of the 1860s led to a significant rise in the value of land, which encouraged large landholders to subdivide their holdings into smaller farms. This effectively pushed cattle ranching out of the valley and into the foothills. Meanwhile, early agriculturists had experimented with every type fruit and vegetable, and had determined which were most suited to the local climate. Thus, many orchards had been established and fruit was grown in abundance. With the coming of the railroads, local orchardists and farmers were able to market their crops across the country and obtain high prices, especially after the technology for fruit drying and canning was perfected (Laffey 1981).

Along Almaden Road, several taverns, stores, and hotels were built to accommodate travelers, particularly teamsters, who traveled the road between the mines and sandstone quarries

in Almaden Valley and points north. A hotel was located at Almaden Road and Downer Road (now Blossom Hill), and a saloon, the Five Mile House, was located at the corner of Branham Lane and Almaden Road. This corner at one time had a total of three saloons. By 1876, the primary landowners around this intersection were Isaac Branham, J. G. Roberts, David Greenawalt, and Thomas Gault. By the late nineteenth century, the name "Robertsville" was used to describe this neighborhood, and a store was operating at the Five Mile Corner by Prosper Estrade and later by Edward H. Mullen (Sawyer 1922; Loomis 1982; Thompson & West 1876).

Until the 1960s, land along Almaden Road had little development beyond agriculture and a few subdivisions. In the early twentieth century, the large nineteenth-century land holdings were replaced by increasing numbers of smaller fruit and vegetable farms operated by a large number of Italian and Portuguese farmers, many of whom leased their farms. In the early 1950s, threatened by the loss of agricultural land, agricultural leaders appealed to the county government to provide protection from urbanization. The county agreed, passing a new zoning classification in 1954 called "exclusive agricultural" (Mandich 1975). Greenbelt zoning helped to thwart the urbanization of some of the land along Almaden Road, but since 1970, orchards have been rapidly replaced by housing tracts and commercial activity.

Historical Development of the Study Area

The subject area was part of the approximately 200-acre parcel owned by David Greenawalt between 1867 and 1888. After his death the farm was divided among his seven children in 1890. The subject area contains portions of Lot 4, inherited by George Greenawalt; Lot 5, inherited by John K. Greenawalt; and Lot 6, inherited by Amelia Greenawalt Withers. Ownership before Greenawalt is unclear. With the breakdown of the rancho system, lands comprising *Rancho San Juan Bautista* were frequently occupied by squatters, and actual title was subject to continuous debate during the land title confirmation proceedings that took place in the 1850s and 1860s.

The earliest known owner of the lands under study was Edward B. Dunn, who was noted on an 1852 survey (Lewis 1852). He, like his neighbor Isaac Branham, was a native of Kentucky, as were many of the early settlers in the Robertsville area. Dunn crossed the plains in 1850, settling in San Jose in 1851. He spent four years as a teamster, hauling quicksilver from the mines at New Almaden (Sawyer 1922). A circa 1854 survey of Almaden Road shows two structures along the Guadalupe River in the northeast portion of the subject area (White Burnt Map D-14). At this time, Almaden Road was located on the west bank of the river. According to David Greenawalt's probate, a 47-acre portion of his land had been conveyed by Edward B. Dunn to F. M. Fowler in 1860 (Greenawalt Probate Case No. 2175 ; Deed N:711). The remainder of the property was conveyed to Fowler on October 8, 1867. F. A. Fowler was assessed for 211 acres of land at this location in 1863 (Tax Assessment 1863). This property may have actually been sold by Dunn to Fowler perhaps as early as 1854, when Dunn moved to Contra Costa County (Sawyer 1922).

In 1867, David Greenawalt took up residence on the approximately 200 acres lying just south of Branham Lane and fronting both sides of the Almaden Road. The land transactions that occurred in 1867 probably cleared the title so that Fowler could legally sell the property to Greenawalt.

David Greenawalt was born in Pennsylvania in 1824. Orphaned in 1838, he moved to Wisconsin in 1846 where he spent four years in the lead mines of Iowa County (Foote 1888; Munro-Fraser 1881). It was here that he made the acquaintance of James A. Clayton, well-known early resident of San Jose. James' brother Joel had made four trips overland to California prior to 1850. In 1850, David and James joined Joel on his fifth trip to

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California. The boys were to keep the train of ten wagons supplied with fresh meat en-route, and were the only members of the party allowed to carry guns. After 87 days, the train arrived in Santa Clara County in August 1850. After their arrival David and James went to the gold fields together. Returning to San Jose, David married Eliza Booth in October 1851. Eliza was the daughter of William and May Booth who had started overland with the Donner party but had taken the more traditional route and avoided the disaster that befell the Donners. Just married, David and Eliza Greenawalt with their friend, James Clayton, embarked on a trip to Australia to explore the mining prospects in that country. After three months, they decided that they had left better prospects behind them, and "after a hazardous journey, fraught with many hardships, the most important being the lack of water for drinking," they returned to San Francisco on the *Jesse Burns* in August 1852 (Foote 1888; Sawyer 1922). On their return, David and Eliza took up stock raising with her father in the Cupertino area until 1855 (Munro-Fraser 1881). James opened a photography studio in San Jose, turning to real estate in 1867 he became one of San Jose's most prominent citizens (Sawyer 1922). The Claytons and Greenawalts remained friends throughout their lives.

In 1860, the Greenawalts were living in the hills east of the New Almaden mines with their three children, George, age 6, Mary E., 4, and Edna, 6 months. David's occupation was a stock farmer (Federal Census 1860). According to family tradition, the Greenawalts were "run off" this land by the mining company (Kromer 1996). In November 1867, the Greenawalts took possession of the Fowler property on Almaden Road. David's 1888 biography described the property as having sufficient buildings for shelter and that it was enclosed with fences (Foote 1888). On the 1876 Thompson and West map of Santa Clara County, Greenawalt's properties include the Robertsville 195-acre parcel with a house and orchard on Almaden Road, as well as the 410-acre parcel with a house off Llagas Road (now McKean Road), east of the Almaden mines.

In 1877, David Greenawalt built the eleven-room, two and one-half story Italianate house on his property on the west side of Almaden Road. In 1879-80, Greenawalt was assessed for his 190-acre Almaden Road parcel. The improvements were valued at $3,000 and included four wagons, harness, five horses, six colts, six cows, eleven cattle, twelve hogs, bee hives, grain, poultry, furniture, and machinery (Tax Assessments 1879-80). In the census of 1880, the family consisted of he and Eliza and five children (Mary, 23; Amelia, 18; William, 16; John, 12 and Thomas, 10) (Federal Census 1880). George was married in 1878 to Hattie Martin, and Edna may have been married to John McAbee by that time (Marriage Records 1878).

On October 29, 1887, Eliza Greenawalt passed away; and shortly thereafter on July 6, 1888, David Greenawalt died, leaving seven children and 624 acres of land. By this time, George, age 34, and his family were living in a house elsewhere on the property. Mary E., 32, was married to Frank Blake; Edna, 29, was married to John McAbee; Amelia M., 27, was married to Alonzo Withers; and William D., 25; John K., 20, and Thomas, 18, were unmarried and living at home. At the time of his death, David appears to have been engaged in diversified farming, raising wheat, barley, and hay. He also had five mares, seven colts, four head of stock cattle, and ten dozen chickens. As David died intestate, a lengthy probate ensued, and division of the property was not completed until 1890. Thomas received the 410-acre ranch on Llagas Road, and the remainder of the property was divided among the other six children (Greenawalt Probate Case 2175; Foote 1888). A map (see Map 3) was prepared by A.T. Herrmann in January 1890 that showed the distribution of lands and the locations of some of the houses and outbuildings on the property (Herrmann Map 845). The house and outbuildings were also located on the 1897 Herrmann map of the property (Herrmann Map 360) (See Map 4).

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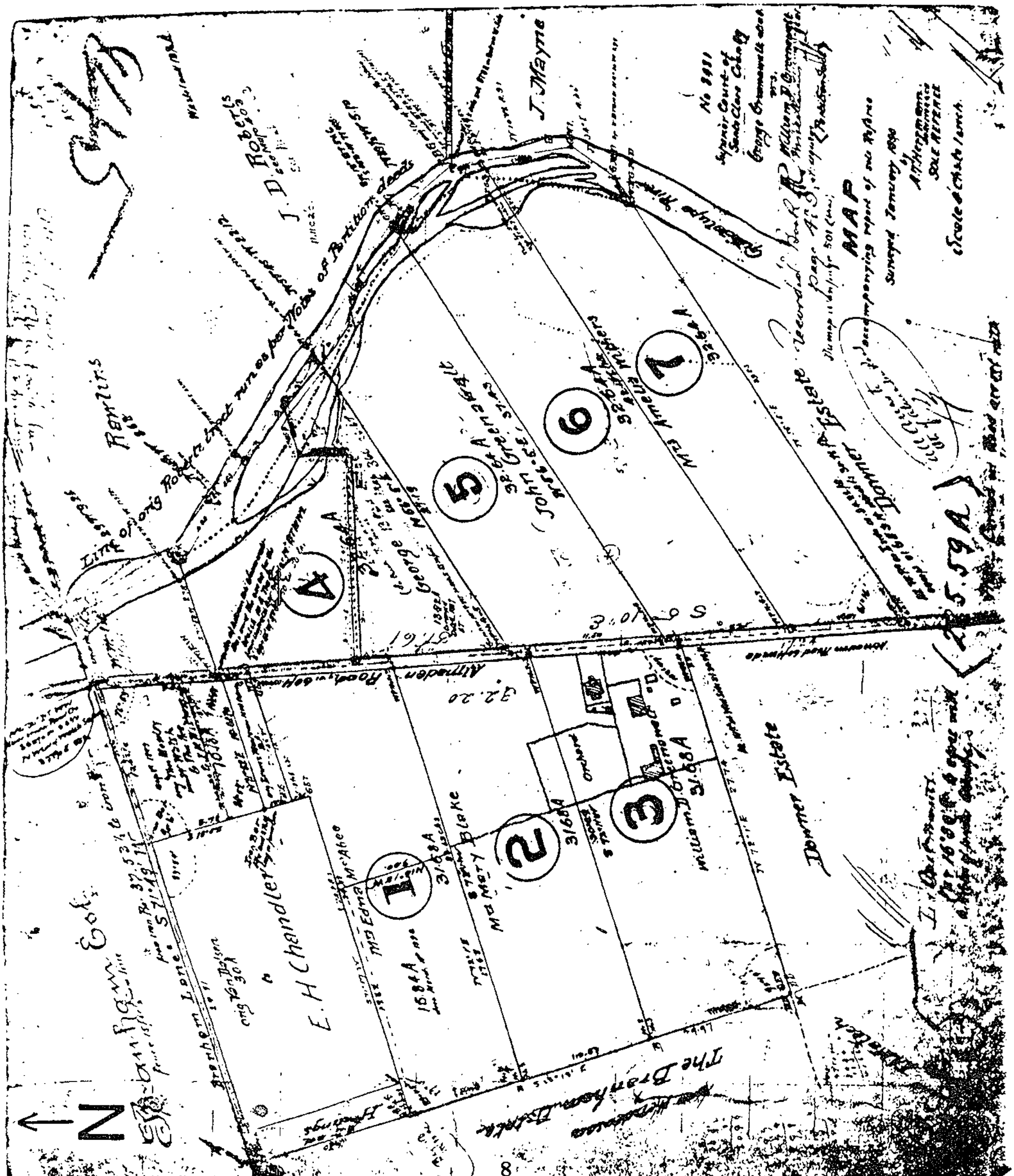
Map 3: Greenawalt Partition, 1890 (Hermann Map No. 845)



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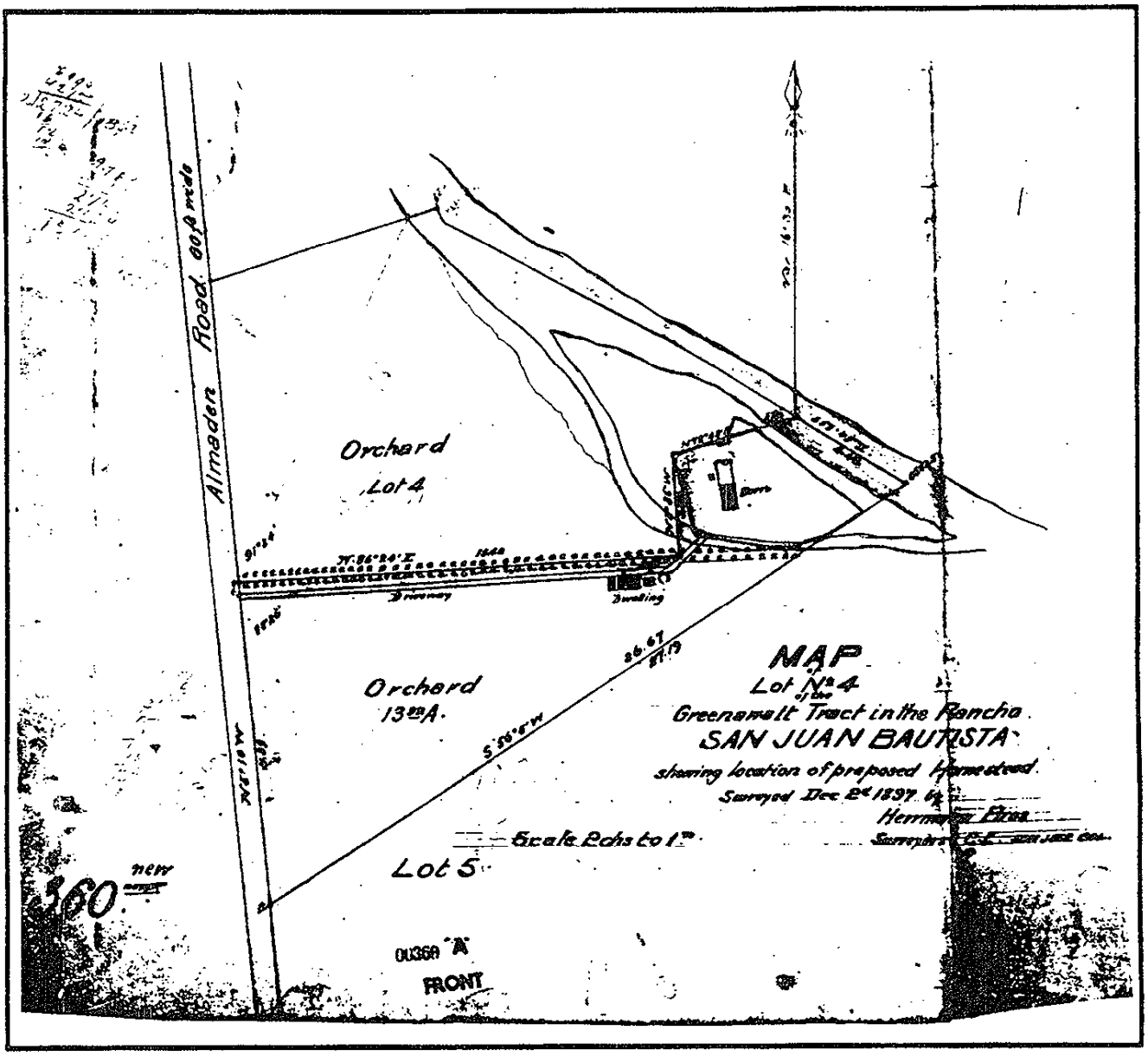
Map 4: George Greenawalt Property, 1897 (Hermann Map No. 360)



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Lot 4 (APN 458-17-06, 17)

By 1888, George Greenawalt was probably living on what became Lot 4 of the Greenawalt Partition which contained 32.64 acres of land. It is possible he was living in one of the two buildings noted on the 1854 White map of the area (White Burnt Map D-11). Before the realignment of Almaden Road in 1854, the road ran along the west bank of the Guadalupe River. Therefore, it is probable that this house fronted the old road alignment. Former resident Palma Nichols recalls that a very old house, possibly dating to the 1850s, was located along the banks of the Guadalupe in the northern portion of Lot 4 (north of the subject area). In the early twentieth century, it was owned by John Carlos and then Amelia C. Scott

George Greenawalt was born in Santa Clara County between 1854-1857. In 1878, he married Hattie M. Martin; and by 1879, he identified himself as a farmer when he registered to vote (Marriage Records 1878; *Great Register* 1879). George was not noted as living near the subject area in the 1880 Federal Census. In the 1890 *Great Register*, he listed his occupation as a butcher. It is surmised that sometime in the late 1880s or early 1890s George built the house shown on the 1897 map of the property (Herrmann Map 360) (see Map 4). According to Palma Nichols, later resident of this property, a butcher shop was part of the George Greenawalt farm complex, located just behind the house. They remember a sign on the building that identified it as such. Sometime after 1893, George passed away, leaving his family in financial difficulty. His widow filed a homestead claim in 1897, splitting off the southern portion of Lot 4 which contained 13.92 acres and the newer home and barn (APN 458-17-06). On January 1, 1900, the property was purchased at auction by David Jacks of Monterey for $2,985.69 (Deed 226:443). David Jacks was a well-known capitalist who owned thousands of acres in central California during the last half of the nineteenth century. At the time the Federal Census was taken in 1900, Hattie Greenawalt and her six children (born between 1880 and 1894), were still residing in the area, probably at the farmstead.

On the 1903 Official Map of Santa Clara County, ownership of the parcel was noted as "D.G. et al.," probably indicating David Greenawalt's heirs. In 1914, the property consisted of 21.34 acres with no owner's name noted (McMillan 1903; 1914). There is a possibility that sometime during the 1900-1920 period, the George Greenawalt house burned and was replaced with a new house (Nichols 1996).

The next known occupants of the 13.92-acre Greenawalt parcel was Joseph Cassibba and his wife Rose. Both Joseph and Rose were natives of Sicily, Italy. Their daughter, Palma Nichols, recalls that her father and mother first lived in the Santa Cruz Mountains after their arrival in 1911. Joe came first in 1911, and Rose and son, Raphael, followed in 1913. Feeling very isolated in the mountains, they considered moving back to Italy, but were convinced by friends to relocate to the Almaden Road ranch, purchasing the property in early 1922. Unfortunately, two weeks after moving in, Raphael was run over and killed by an automobile. Occupying the old Greenawalt residence, Palma described the house as being very beautiful, with spacious rooms and nice interior details. Her father dug a cellar under the house for wine and fruit storage. It was surrounded by a family orchard consisting of a variety of fruit trees and many large old roses. Mrs. Nichols does not have any pictures that clearly show the house. Based on her descriptions, it is difficult to determine whether the house they moved into in 1922 was the circa 1890 Greenawalt place or a later home. She said their house was newer than the other homes in the neighborhood. Flanking the long driveway from Almaden Road to the house, her father planted every kind of grapevine. The large hay barn to the rear of the property was "huge and very old, having square nails" (Nichols 1996). This barn may have been one of the structures noted on the

1854 map, or it may have been a hay/grain barn constructed by David Greenawalt or one of the earlier occupants of the property.

In 1924, Joe Cassibba attempted to sell the property, listing it with the James A. Clayton Real Estate Agency. The property was described as having a five room house, barn, garage, tank house, irrigation well, a small pump for irrigation purposes, [fruit] dryer, [prune] dipper, 300 boxes, 400 trays, plows, cultivator, two wagons, and horses. The orchards on the property consisted of eleven acres of French prunes and half an acre of Blenheim apricots. Two and one-half acres were described as being "dry ground." The asking price for the property was $20,000, but the property did not sell (Clayton Book 3:4600). Later, at least an acre of vineyard as well as an acre of walnut trees were added to the property (Nichols 1996).

Joe Cassibba worked as an orchardist at this location until his death on June 6, 1948, at the age of 67 (Deaths 77:574; *San Jose Mercury*, June 7, 1948). Joe and Rose raised their two children, Palma Nancy (Nichols) and Ralph Joseph on the property. After Ralph's marriage in 1951, the small white circa-1915 bungalow that is currently located at 14520 Almaden Expressway was moved onto the property in 1952. Ralph raised his two sons, Joe and Jim, at this location (Marriages 89:745; Cassibba 1996). Rose remained living in the old house until her death September 28, 1965 (Deaths 198:32; *San Jose Mercury*, September 30, 1965). Palma Cassibba Nichols and her husband, Donald, and son, Robert, lived in the old Cassibba house on the property until it was sold in 1970. After the sale, this house was demolished, and the orchards removed. Ralph stayed on the property until 1978 (Nichols and Cassibba 1996). All that remains of the Cassibba occupation of the site is the small Ralph Cassibba house and a garage to the rear of the house. The remainder of the property is used for growing row crops.

Lot 5 (APN 458-17-18)

Lot 5 of the Greenawalt Partition was inherited by John Kooser Greenawalt. John was born in 1868. Being one of David Greenawalt's younger children, he was still residing in the Greenawalt home at the time of his father's death in 1888 (Foote 1888). In 1896, he identified his occupation as an orchardist in the *Great Register of Voters*. In 1897, John Lot 5 the property to Mary J. Hatch. The 1900 Federal Census notes John still living in the vicinity of this property with his wife May L., age 25, and his daughter, Alva S., age 4. Living on the subject area was the household of Mary J. Hatch and her niece, Gertrude Welch. Mary J. Hatch who was identified as the owner of the 32.63 acre parcel on the 1903 McMillan survey of the county. Gertrude Welch was married to Gustave Malech on April 14, 1902, in the farmhouse on the property (*San Jose Mercury*, April 18, 1963). In 1904, Mary lost a court decision to Elvira Hatch of Bridgeport, Connecticut, who held a mortgage on the property. The property was sold at auction to any parties to the case and was bought by Elvira for $6,467. In 1906, Gustave and Gertrude Malech acquired title to the property for $820 (Corbett 1988).

Gustave Malech was born in Germany in 1878. He was the son of Frederick Malech who came to the county in the 1850s and had acquired property in the neighborhood by 1876 (Thompson and West 1876). In 1914, the property had a five room cottage, bath, barn, 475 trays, 200 boxes, [wind] mill , and [water] tank . The orchard consisted of eighteen acres of prunes, three acres of apricots, ten acres of peaches, five and one-half acres of red apricots, and four and one-half acres of alfalfa (Clayton Book 1:459).

The Malechs raised their four children, Earl G., Lloyd E., Elbena, and Edna on the property. Gustave died at the age of 84 on April 16, 1963 (Deaths 174:176). Gertrude died five years later on March 9, 1968, at the age of 84 (Deaths 222:335). Her obituary said she

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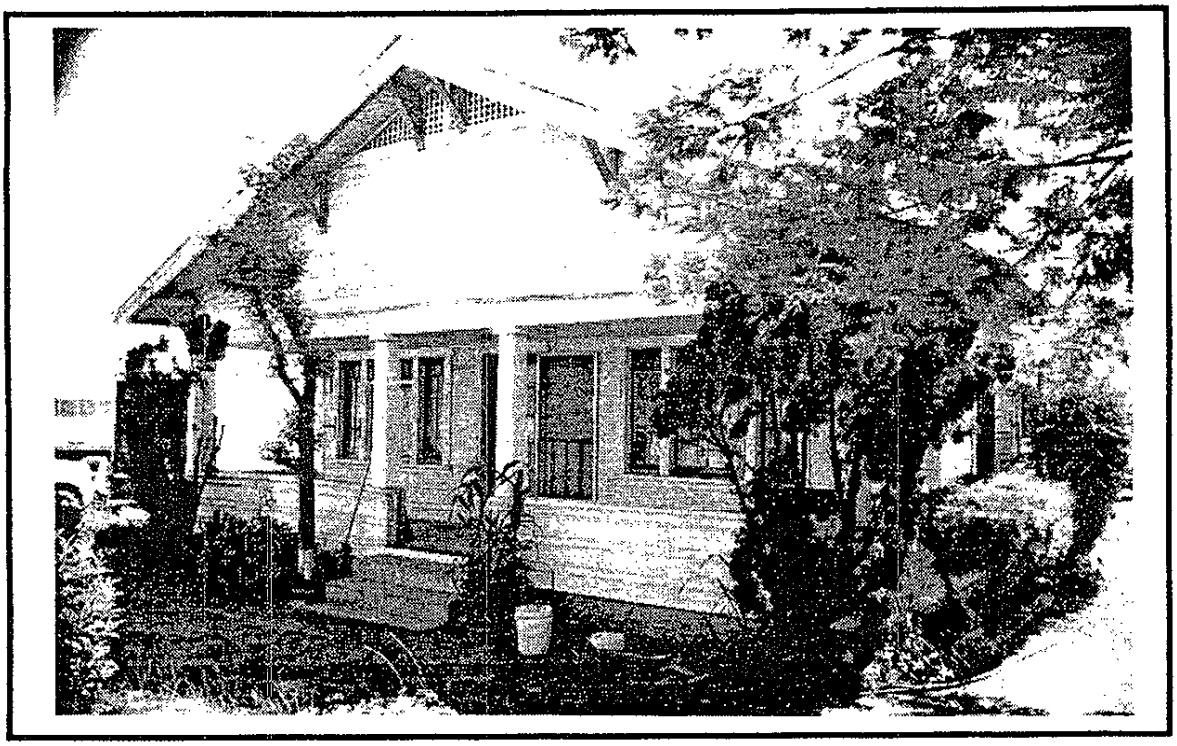
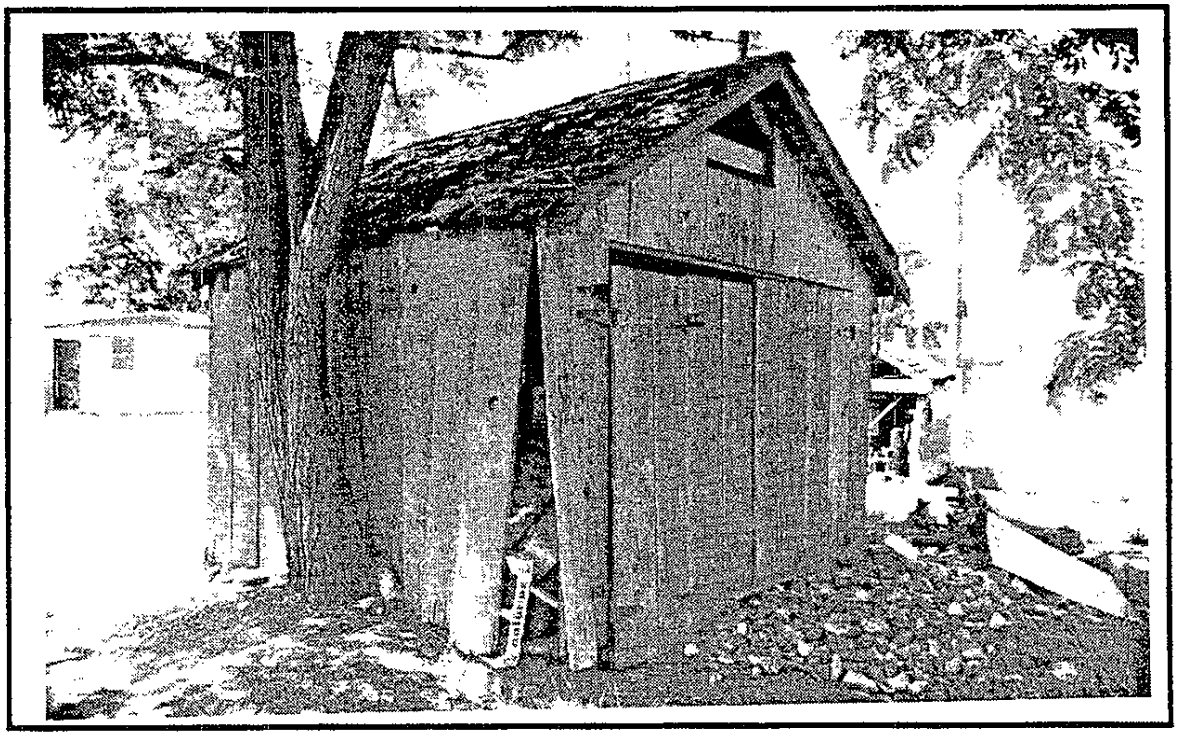


Ralph Cassibba house
Circa 1915
Moved to property 1952



Pump House

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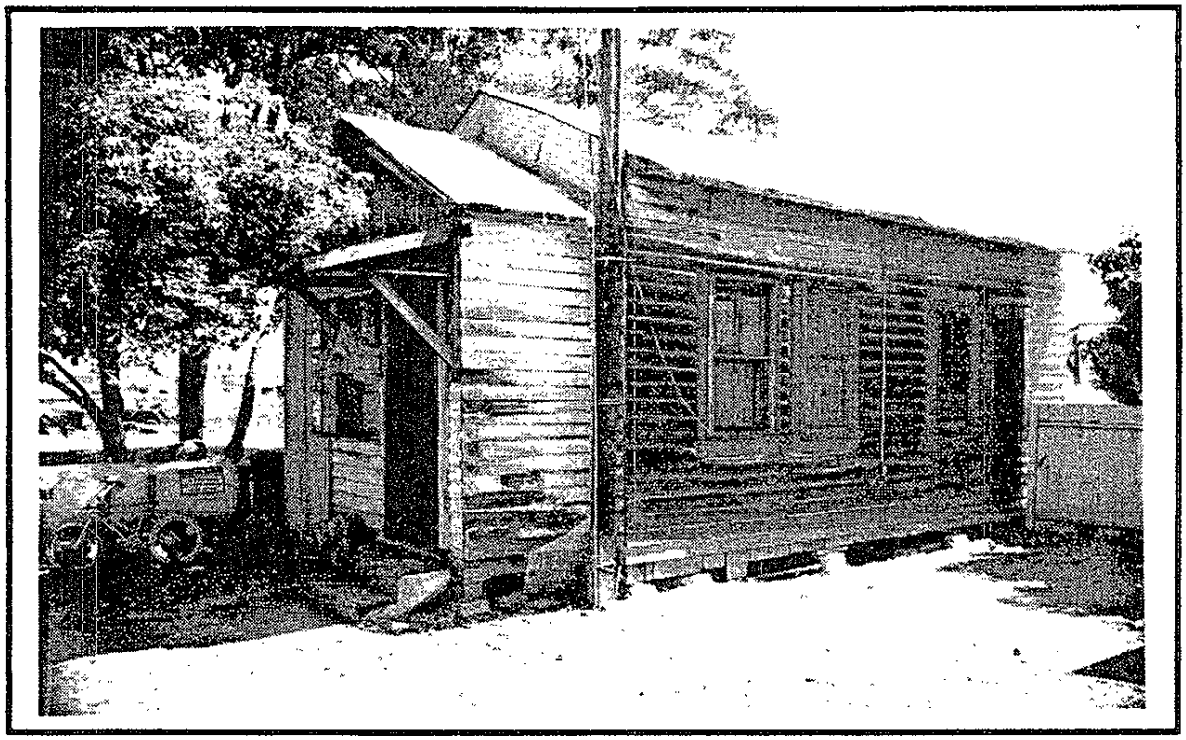
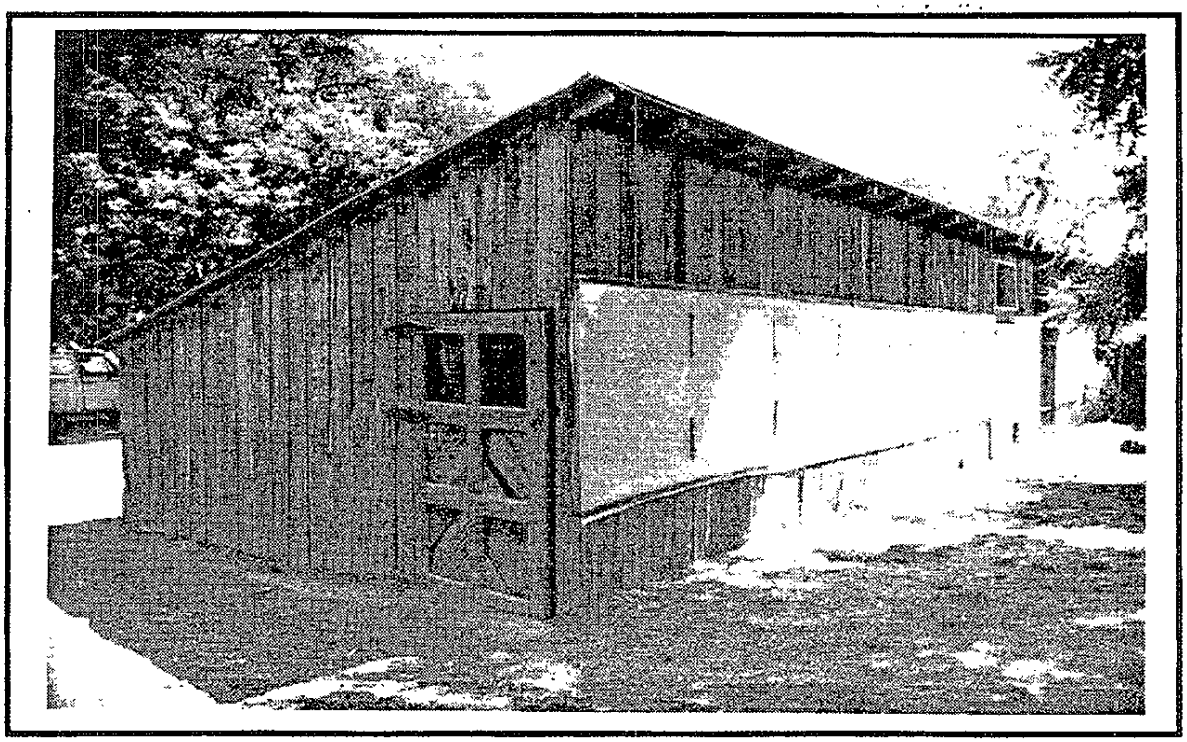


Laborer's Cottage



Malech Chicken Coop

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was a member of the Almaden Grange and the Sunsweet Growers Association (*San Jose Mercury*, March 11, 1968). The Malech house and barn stood until they were demolished during the construction of Highway 85 in the early 1990s. The older farm buildings that remain on the property relate to the Malech occupation. The fruit stand was built sometime after 1945 (Corbett 1988). The orchards from the early twentieth century have been replaced with vegetable fields.

Lot 6 (APN 548-16-32)

The south east corner of the subject area was the northeast corner of Lot 6 of the Greenawalt Partition which was inherited by Amelia Greenawalt Withers. Amelia Hannah Greenawalt was born in 1862 (Federal Census 1880). She was married on October 27, 1886, to Alonzo Withers, son of Stephen Withers of Kentucky and Elizabeth Jacks (Marriages I:30). In 1910 Alonzo, a blacksmith, was a victim of homicide at the age of 49 (Deaths H:432). Amelia resided on the property until her death in 1919 (Deaths Q:271). Her son, John W. Withers was an orchardist residing at 14800 Almaden Road until his death in 1961 (Deaths 162:525). John married Hazel E. McClellan in 1914. Hazel lived until 1981 when she died at the age of 93 (Deaths 392:206). The Withers house was outside of the subject area. There were no buildings located on the portion of the Withers property. This area is currently being used to grow vegetables.

DESCRIPTION

The subject parcel consists of a 43.5-acre parcel, bounded on the south by Highway 85, on the west by Almaden Expressway, and on the east by the Guadalupe River. Lot 4 of the Greenawalt Partition (APN 458-17-06, 17) has the potential for historic resources in the form of subsurface archeological deposits which may date to the 1850s. There is also a potential for deposits associated with the farm complex/butcher shop dating to the late 1880s/ 1890s.

Extant structures dating to the Cassibba occupation of this parcel consist of a small white, California bungalow located at 14520 Almaden Expressway (APN 458-17-18). Constructed about 1915, this building was moved from an unknown location in 1952. A garage is located to the rear of the house. An irrigation well is located at the southwest corner of the property. A small shed is located just to the east of this well and appears to date to the 1920s. Project area maps show the well and pump house located on the Cassibba property; however, Mrs. Nichols claims that this was the Malech well.

The older buildings still present on Lot 5 (APN 457-17-018) appear to date to the Malech occupation of the site. This complex of buildings includes a small, laborer's cottage with clapboard siding, a board-and-batten chicken coop, and several other agriculture-related sheds. The fruit stand dates to sometime since 1945. Recent structures on the property include a modular home.

EVALUATION FOR SIGNIFICANCE

The buildings on the Arcadia property on Almaden Expressway were evaluated according to the criteria for the National Register of Historic Places and the City of San Jose's criteria for historical significance. National Register criteria include buildings at least 50 years of age:

a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
b. that are associated with the lives of persons significant in our past; or
c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d. that have yielded, or may be likely to yield, information important in prehistory or history.

The City of San Jose's Historic Preservation Ordinance defines structures of historical value based on any of the following factors:

1. Identification or association with persons, eras or events that have contributed to local, regional, state or national history, heritage or culture in a distinctive, significant or important way;
2. Identification as, or association with, a distinctive, significant or important work or vestige:
   a. Of an architectural style, design or method of construction;
   b. Of a master architect, builder, artist or craftsman;
   c. Of high artistic merit;
   d. The totality of which comprises a distinctive, significant or important work or vestige whose component parts may lack the same attributes;
   e. That has yielded or is substantially likely to yield information of value about history, architecture, engineering, culture or aesthetics, or that provides for existing and future generations an example of the physical surroundings in which past generations lived or worked; or
   f. That the construction materials or engineering methods used in the proposed landmark are unusual or significant or uniquely effective.
3. The factor of age alone does not necessarily confer a special historical, architectural, cultural aesthetic or engineering significance, value or interest upon a structure or site, but it may have such effect if a more distinctive, significant or important example thereof no longer exists.

Based upon the above criteria the San Jose Historical Landmarks Commission has established a process by which historical resources are evaluated for significance. A numerical evaluation system has been devised that establishes the following categories of significance:

67-134 pts.	Candidate City Landmark
33-66	Structure of Merit
33-66	Contributing structure to a historic district
0-32	Non-significant

California State Historic Resource Inventory forms (DPR 523) and City evaluation forms were completed and are located in the appendix to this report.

Based on the forgoing research, the Ralph Cassibba house earned an evaluation score of 17.26 points, making it ineligible for listing on the San Jose Historic Resources Inventory. The laborer's cottage and other outbuildings associated with the Malech property earned an evaluation score of 7.25 points, also making them ineligible for listing on the San Jose Historic Resources Inventory.

The buildings in the project area do not appear to meet the criteria for the National Register of Historic Places. The property is not associated with events that have made a significant

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contribution to the broad pattern of the area's local history. Historically, the buildings were associated with the Cassibba and Malech families who were well-known members of the local agricultural community; however, they were not known to have made any significant contributions to the development of local agriculture. Criterion C addresses the architectural characteristics of the buildings. The simple California bungalow architectural style of the Ralph Cassibba house is typical of many homes that were built in San Jose during this period. The laborer's cottage and other outbuildings associated with the Malech property represent rural vernacular architecture popular during the early 1900s; however, they do not exhibit significant architectural characteristics. Criterion D addresses the potential of significant archeological deposits and features. Research suggests that the property may have been occupied since the early 1850s; however, evaluation of archaeological resources is discussed in a separate report. It is therefore concluded that the early twentieth century buildings at this site do not meet any of the criteria for the National Register of Historic Places.

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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Office of Historic Preservation
Historic Resources Inventory

Survey Ref. No. _____

Ser. No. _____

Identification and Location

National Register Status 6Z1

Local designation NS

1. Historic name Ralph Cassibba House

*2. Common name or current name none

*3. Number & street 14520 Almaden Expressway Cross-corridor _____

City San Jose Vicinity only _____ Zip 95118 County Santa Clara

4. UTM Zone _____ A _____ B _____ C _____ D _____

5. Quad map No. _____ Parcel No. APN 458-17-06 Other _____

Description

6. Property Category Building If district, number of documented resources _____

*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The Ralph Cassibba house is a circa-1915 California bungalow. It is a small, one-story, wood-frame, retangularly shaped building with a low, gabled roof which overhangs a full front porch. The roof is supported with eave brackets, many of which have been replaced. There is a lattice-work ventilator at the peak of the gable. The fascia boards have curved ends. The house is clad with horizontal, alternating narrow and wide clapboard. The recessed porch is supported by tapered retangular posts sitting on a solid balustrade. The central entry is flanked by tri-part, multi-pane windows. The fenestration at the rear of the house is one-over-one casement windows. The house appears to be in good condition. The house was moved to its current location in 1952. A small garage is located to the rear of the house.

8. Planning agency
Planning Department

9. Owner Address
Santa Clara Land and Title Co.
701 Miller St. Unit Q
San Jose, CA 95110

10. Type of Ownership
Private

11. Present Use
Residence

12. Zoning
Unknown

13. Threats
Development

Send a copy of this form to: State Office of Historic Preservation,
PO Box 942896, Sacramento, CA 94287-0001

* Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

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Survey Ref. No. _____

Historical Information

*14. Construction date(s) 1915A Original location no Datemoved 1952

15. Alterations & date none

16. Architect Unknown Builder unknown

17. Historic attributes (with number from list) 02--Farmhouse

Significance and Evaluation

18. Context for evaluation: Theme Architecture Area San Jose
Period Horticulture Property Type Residence Context formally developed? yes

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The house was moved onto the property in1952 to provide a home for the newly-wed Ralph Cassibba, the son of Italian immigrants Joseph and Rose Cassibba. The house is typical of the small bungalow-style homes that were built in abundance in the San Jose area. The property is not associated with events that have made a significant contribution to the broad pattern of the area's local history. The residence represents a style of architecture popular during the early twentieth century; however, it does not exhibit significant architectural characteristics. Historically, it is associated with the Ralph Cassibba family. Although well-known locally, they did not make any outstanding contributions to history of the community. It is therefore concluded that the buildings at this site do not meet any of the criteria for the National Register.

20. Sources:
Visual survey 6/11/96; personal communication with P. Cassibba Nichols, J. Giacomazzi 1996; Marriage Records 89:745; M. Corbett, Historic Resources Inventory for 14520 Almaden Expressway 1987 (On file at Northwest Information Center).

21. Applicable National Register criteria
n/a

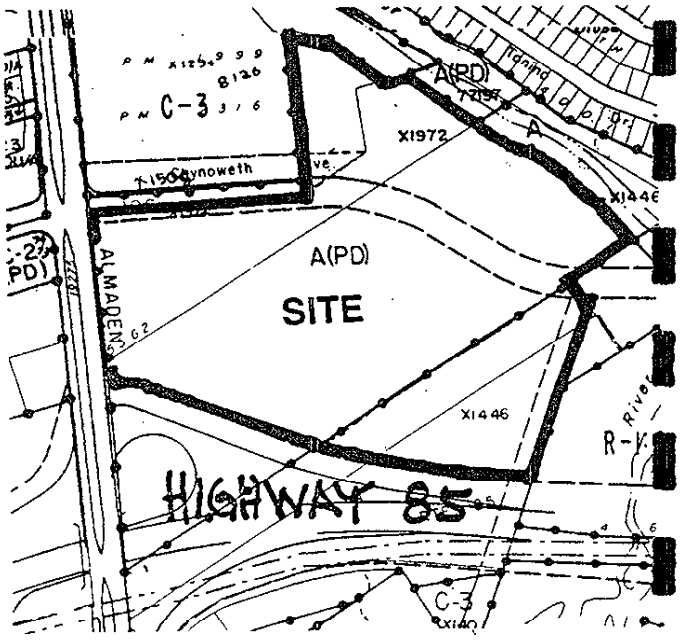
22. Other recognition _____
State Landmark No. (if applicable) _____

23. Evaluator Glory Anne Laffey
Date of evaluation July 10, 1996

24. Survey type Project Related

25. Survey name Arcadia Property

26. Year form prepared 1996
By (name) Glory Anne Laffey
Organization Archives & Architecture
Address 353 Surber Drive
City & Zip San Jose, CA 95123
Phone (408) 227-2657



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96-011

EVALUATION SHEET

HISTORIC RESOURCE NAME Ralph Cassibba House SURVEY REF. NO. _____

ADDRESS 14520 Almaden Expressway

A. VISUAL QUALITY/DESIGN					
1. EXTERIOR	E	VG	G	X	FP
2. STYLE California bungalow	E	VG	G	X	FP
3. DESIGNER	E	VG	G		FP X
4. CONSTRUCTION	E	VG	G		FP X
5. SUPPORTIVE ELEMENTS Garage	E	VG	G		FP X
B. HISTORY/ASSOCIATION					
6. PERSON/ORGANIZATION Ralph Cassibba	E	VG	G		FP X
7. EVENT None known	E	VG	G		FP X
8. PATTERNS Small family orchard home	E	VG	G	X	FP
9. AGE c1915	E	VG	G	X	FP
C. ENVIRONMENTAL/CONTEXT					
10. CONTINUITY Not located in area of importance	E	VG	G		FP X
11. SETTING Incompatible with character of the area	E	VG	G		FP X
12. FAMILIARITY	E	VG	G		FP X
D. INTEGRITY					
13. CONDITION Surface wear	E	VG X	G		FP
14. EXTERIOR ALTERATIONS	E X	VG	G		FP
15. STRUCTURAL REMOVALS None noted	E X	VG	G		FP
16. SITE relocated to present site in1952	E	VG	G		FP X
E. REVERSIBILTY					
17. EXTERIOR	E X	VG	G		FP
F. ADDITIONAL CONSIDERATIONS/BONUS POINTS					
18. INTERIOR/VISUAL	E	VG	G		FP
19. INTERIOR/HISTORY	E	VG	G		FP
20. INTERIOR ALTERATIONS	E	VG	G		FP
21. REVERSIBILITY/INTERIOR	E	VG	G		FP

REVIEWED BY Glory Anne Laffey DATE: July 1996

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EVALUATION TALLY SHEET

SURVEY REF. NO. _____

Value E	VG	G	FP		
				A. VISUAL QUALITY/DESIGN	
		6		1. Exterior	
		4		2. Style	
			0	3. Designer	
			0	4. Construction	
			0	5. Supportive Elements	
				VISUAL QUALITY/DESIGN SUB-TOTAL	10
				B. HISTORY/ASSOCIATION	
			0	6. Person/Organization	
			0	7. Event	
		5		8. Patterns	
		3		9. Age	
				HISTORY/ASSOCIATION SUB-TOTAL	8
				C. ENVIRONMENTAL/CONTEXT	
			0	10. Continuity	
			0	11. Setting	
			0	12. Familiarity	
				ENVIRONMENTAL/CONTEXT SUB-TOTAL	0
				A & C SUB-TOTAL	10
				B SUB-TOTAL	8
				PRELIMINARY TOTAL (SUM of A, B, & C)	18

Value E	VG	G	FP						
				D. INTEGRITY					
				13. Alterations					
	.03			From A, B & C Sub-Totals	18	X	.03	=	.54
				14. Exterior Alterations					
0				From A & C Sub-Totals	10	X	0	=	0
0				From B Sub-Total	8	X	0	=	0
				15. Structural Removals					
0				From A & C Sub-Totals	10	X	0	=	0
0				From B Sub-Total	8	X	0	=	0
				16. SITE					
			.40	From B Sub-Total	8	X	.4	=	3.2
				INTEGRITY DEDUCTIONS (SUB-TOTAL)			3.74		
				ADJUSTED SUB-TOTAL	18 (PRELIMINARY TOTAL)	-	3.74 (INTEGRITY DEDUCTIONS)	=	14.26
				E. REVERSIBILITY					
3				17. Exterior			3		

========== TOTAL 17.26

Value E	VG	G	FP	
				F. ADDITIONAL CONSIDERATIONS/BONUS POINTS
				18. Interior Visual Quality _____
				19. History/Association of Interior _____
				20. Interior Alterations _____
				21. Reversibility/Interior _____
				BONUS POINTS SUB-TOTAL _____
				ADJUSTED TOTAL (With Bonus Points) 17.26

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State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Office of Historic Preservation
Historic Resources Inventory

Survey Ref. No. _____

Identification and Location

Ser. No. _____
National Register Status 6Z1
Local designation NS

1. Historic name Malech Farm

*2. Common name or current name none

*3. Number & street 14540 Almaden Expressway Cross-corridor _____

City San Jose Vicinity only _____ Zip 95118 County Santa Clara

4. UTM Zone _____ A _____ B _____ C _____ D _____

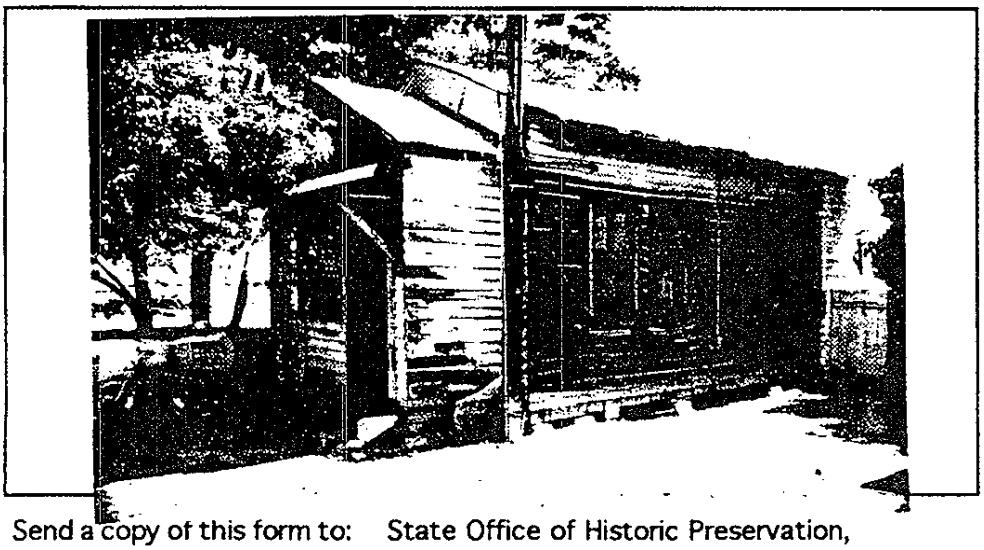
5. Quad map No. _____ Parcel No. APN 458-17-18 Other _____

Description

6. Property Category Buildings If district, number of documented resources _____

*7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style.

The former Malech property has several extant buildings including a small laborer's cottage, a chicken coop, and several other agriculture-related sheds. The laborer's cottage appears to date to the 1920s and has a gable roof and redwood clapboard siding. It has been altered significantly by additions and repairs and is in very poor condition. The chicken coop has a shed roof and redwood board-and-batten siding and is in good condition. Other sheds on the property are in poor condition.



8. Planning agency
Planning Department

9. Owner Address
Santa Clara Land and Title Co.
701 Miller St. Unit Q
San Jose, CA 95110

10. Type of Ownership
Private

11. Present Use
Residence/storage

12. Zoning
Unknown

13. Threats
Development

Send a copy of this form to: State Office of Historic Preservation,
PO Box 942896, Sacramento, CA 94287-0001

* Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

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Survey Ref. No. _____

Historical Information

*14. Construction date(s) 1920A Original location yes Date moved _____

15. Alterations & date additions and repairs

16. Architect Unknown Builder unknown

17. Historic attributes (with number from list) 33,03,04--worker's housing, farm sheds

Significance and Evaluation

18. Context for evaluation: Theme Agriculture Area San Jose
Period Horticulture Property Type Outbuildings Context formally developed? yes

*19. Briefly discuss the property's importance within the context. Use historical and architectural analysis as appropriate. Compare with similar properties.

The laborer's cottage and other outbuildings associated with the Gustave Malech orchard operation represent rural vernacular architecture popular during the early 1900s. They do not, however, exhibit significant architectural characteristics. The property is not associated with events that have made a significant contribution to the broad pattern of the area's local history. Although the Malechs were well-known in the area, they did not make any a significant contribution to history of the community. It is therefore concluded that the buildings at this site do not meet any of the criteria for the National Register.

20. Sources:
Visual survey 6/11/96; personal communication with M. Melandry 1996; San Jose Mercury, Gustave Malech Obituary; April 18, 1963; M. Corbett, Historic Resources Inventory for 14540 Almaden Expressway 1987 (On file at Northwest Information Center).

21. Applicable National Register criteria
n/a

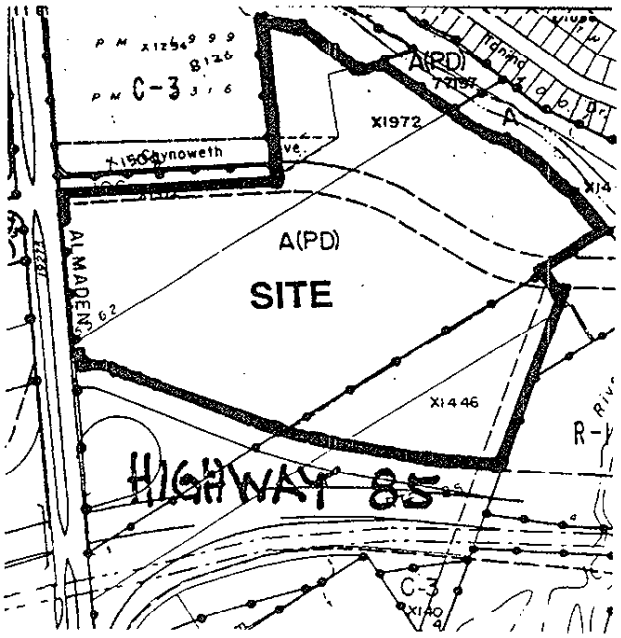
22. Other recognition _____
State Landmark No. (if applicable) _____

23. Evaluator Glory Anne Laffey
Date of evaluation July 10, 1996

24. Survey type Project Related

25. Survey name Arcadia Property

26. Year form prepared 1996
By (name) Glory Anne Laffey
Organization Archives & Architecture
Address 353 Surber Drive
City & Zip San Jose, CA 95123
Phone (408) 227-2657



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EVALUATION SHEET

HISTORIC RESOURCE NAME Malech Farm SURVEY REF. NO. _____

ADDRESS 14540 Almaden Expressway

		E	VG	G	FP
A. VISUAL QUALITY/DESIGN					
1. EXTERIOR					X
2. STYLE	Vernacular				X
3. DESIGNER					X
4. CONSTRUCTION					X
5. SUPPORTIVE ELEMENTS					X
B. HISTORY/ASSOCIATION					
6. PERSON/ORGANIZATION	Gustave Malech			X	
7. EVENT	None known				X
8. PATTERNS	Small family orchard			X	
9. AGE	c1910-1920s			X	
C. ENVIRONMENTAL/CONTEXT					
10. CONTINUITY	Not located in area of importance				X
11. SETTING	Incompatible with character of the area				X
12. FAMILIARITY	Recent fruit stand obscures views				X
D. INTEGRITY					
13. CONDITION	Surface wear on chicken coop			X	
14. EXTERIOR ALTERATIONS	Additions to laborer's cottage				X
15. STRUCTURAL REMOVALS	None noted		X		
16. SITE	Malech residence demolished in 1990s				X
E. REVERSIBILTY					
17. EXTERIOR	Chicken coop is good, cottage poor				X
F. ADDITIONAL CONSIDERATIONS/BONUS POINTS					
18. INTERIOR/VISUAL					
19. INTERIOR/HISTORY					
20. INTERIOR ALTERATIONS					
21. REVERSIBILITY/INTERIOR					

REVIEWED BY Glory Anne Laffey 96 - 011 DATE: July 1996

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EVALUATION TALLY SHEET

SURVEY REF. NO. _____

Value E	Value VG	Value G	Value FP		
				A. VISUAL QUALITY/DESIGN	
			0	1. Exterior	
			0	2. Style	
			0	3. Designer	
			0	4. Construction	
			0	5. Supportive Elements	
				VISUAL QUALITY/DESIGN SUB-TOTAL	0
				B. HISTORY/ASSOCIATION	
		7		6. Person/Organization	
			0	7. Event	
		5		8. Patterns	
		3		9. Age	
				HISTORY/ASSOCIATION SUB-TOTAL	15
				C. ENVIRONMENTAL/CONTEXT	
			0	10. Continuity	
			0	11. Setting	
			0	12. Familiarity	
				ENVIRONMENTAL/CONTEXT SUB-TOTAL	0
				A & C SUB-TOTAL	0
				B SUB-TOTAL	15
				PRELIMINARY TOTAL (SUM of A, B, & C)	15

Value E	Value VG	Value G	Value FP						
				D. INTEGRITY					
				13. Alterations					
		.05		From A, B & C Sub-Totals	15	X	.05	=	.75
				14. Exterior Alterations					
			.20	From A & C Sub-Totals	0	X	.2	=	0
			.10	From B Sub-Total	15	X	.1	=	1.5
				15. Structural Removals					
	.20			From A & C Sub-Totals	0	X	.2	=	0
	.10			From B Sub-Total	15	X	.1	=	1.5
				16. SITE					
			.40	From B Sub-Total	15	X	.4	=	6
				INTEGRITY DEDUCTIONS (SUB-TOTAL)			9.75		
				ADJUSTED SUB-TOTAL	15 (PRELIMINARY TOTAL)	-	9.75 (INTEGRITY DEDUCTIONS)	=	5.25
				E. REVERSIBILITY					
			2	17. Exterior			2		

========== TOTAL 7.25

Value E	Value VG	Value G	Value FP	
				F. ADDITIONAL CONSIDERATIONS/BONUS POINTS
				18. Interior Visual Quality _____
				19. History/Association of Interior _____
				20. Interior Alterations _____
				21. Reversibility/Interior _____
				BONUS POINTS SUB-TOTAL _____
				ADJUSTED TOTAL (With Bonus Points) 7.25

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APPENDIX G

TRAFFIC REPORTS

96-011

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TRAFFIC ANALYSIS REPORT

ALMADEN-CHYNOWETH

COMMERCIAL RETAIL
and
RESIDENTIAL

CITY OF SAN JOSE

October 23, 1996

BY

PANG ENGINEERS, INC.
Traffic and Transportation Consultants
P.O. Box 4255
Mountain View, CA 94040

96-011

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Approved Trips List
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Level of Service Calculations- Congestion Management Program
CAPSSI Worksheets

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EXECUTIVE SUMMARY

This Planned Development zoning proposes the development of approximately 31.5 acres on the south side of Chynoweth Avenue between Almaden Expressway and Sanchez Drive into a commercial retail use of about 350,000 square feet of gross floor area and up to 504 residential units on the north side of Chynoweth Avenue on approximately 12.6 acres.

This report analyzes 350,000 square feet of commercial and 400 residential apartments, with the assumption that a two lane bridge extending Chynoweth Avenue over the Guadalupe River is part of the area-wide development. During the project review process, the number of residential units varied. The 400 dwelling units was the best assumption at the time of the preparation of this traffic report. Thus, this project expects to generate about 13,436 daily trips of which 11,036 are from the commercial retail use and 2,400 from the residential apartments. About 482 (242 commercial + 240 apartment) AM peak hour trips and 1280 (1040 commercial + 240 apartment) PM peak hour trips are estimated.

Eleven intersections were analyzed for traffic impacts from this proposed project with the City of San Jose's critical movement methodology. For the commercial development only, six intersections will operate at a "D" or better level of service and satisfies the City of San Jose's level of service policy. Four intersections, namely Almaden Expressway / Branham Lane (AM & PM), Almaden Expressway / Blossom Hill Road (AM & PM), Almaden Expressway / Foxworthy Avenue (AM) and Almaden Expressway / Coleman Road (AM) will operate with an "E" - level of service respectively. However, the percent increase in critical volumes is less than 1% for those peak periods. This satisfies the City of San Jose's level of service policy. One intersection, namely Almaden Expressway / Cherry-Chynoweth Avenue (PM) is at an "E" or worse level of service for those critical peak hours with critical volume percent increases greater than 1%. However, with the street improvements and mitigation measures proposed, this intersection will operate at a "D" or better level of service. Thus, the City of San Jose's level of service policy is satisfied for the 350,000 square foot commercial development.

For the commercial + residential development, six intersections will operate at a "D" or better level of service and satisfies the City of San Jose's level of service policy. Two intersections, namely Almaden Expressway / Foxworthy Avenue (AM) and Almaden Expressway / Coleman Road (AM) will operate with an "E" - level of service respectively. However, the percent increase in critical volumes is less than 1% for those peak periods. This satisfies the City of San Jose's level of service policy. Two other intersections, namely Almaden Expressway / Branham Lane (PM) and Almaden Expressway / Blossom Hill Road (PM) are at an "E" - LOS. However, the percent increase in critical volumes is greater than 1% and no reasonable mitigation measures are available. One intersection, namely Almaden Expressway / Cherry-Chynoweth Avenue (PM) is at an "E" or worse level of service for those critical peak hours with critical volume percent increases greater than 1%. However, with the street improvements and mitigation measures proposed, this intersection will operate at a "D" or better level of service. Thus, the City of San Jose's level of service policy is satisfied for all intersections except the Almaden Expressway / Branham Lane and Almaden Expressway / Blossom Hill Road intersections. Those two intersections do however satisfy the Congestion Management Program criteria.

All six Congestion Management Program intersections will operate at an "E" or better level of service and satisfies the CMP guidelines.

The traffic analysis report concludes that there is not presently adequate capacity in the existing transportation system to develop the entire project as proposed. In order for the project to meet the City of San Jose's level of service policy the development of the site will need to be phased. The analysis indicates that there is existing capacity to immediately develop up to 350,000 square feet of commercial uses on the site. Alternately, a mixed use project combining commercial and residential could be developed as long as the impact to the transportation system does not exceed the current capacity as described in this report.

The report also concludes that the Congestion Management Program's guidelines are satisfied and that the vehicular access as proposed is adequate to serve the site.

TRAFFIC ANALYSIS REPORT

I. INTRODUCTION

The developer proposes to construct a commercial retail project on the south side of Chynoweth Avenue, between Almaden Expressway and Sanchez Drive on approximately 31.5 acres into 350,000 square feet of commercial gross floor area (GFA). Additionally, on the north side of Chynoweth Avenue a maximum of 504 residential units are anticipated on about 12.6 acres of land.

The objective of this report is to analyze the existing and future traffic conditions, provide an estimate of traffic generation for 350,000 square feet of commercial and 400[1] residential apartments, assign and distribute the trips to critical intersections, and suggest possible street improvements and / or mitigation measures if required.

II. SITE CONDITIONS

The subject property has been farmed for many years. Currently, a temporary "sales facility" is located on the south side of Chynoweth Avenue. Access to and from the site is from Almaden Express way with right turns in and out planned from an existing and future driveway, plus Chynoweth Avenue with median openings for full intersections and driveways with right turns in and out, and Sanchez Drive with median openings for full intersections and right turns in and out driveways.

---

(1) During the project review process, the number of residential units varied. The 400 dwelling units was the best assumption at the time of the preparation of this traffic report.

Almaden Expressway is a major six lane north-south expressway operated and maintained by the Santa Clara County Roads and Airports Department. Chynoweth Avenue is a two lane east-west street currently constructed from Almaden Expressway easterly. It terminates where development on the north side of Chynoweth Avenue has completed the street improvements. Sanchez Drive is a major four lane north-south arterial street from Blossom Hill Road northerly to State Route 85.

The site is bounded on the west by Almaden Expressway. Westerly of Almaden Expressway and northerly of Cherry Avenue is a medical office complex and a gas station. Southerly of Cherry Avenue is a car wash, and a shopping center with a title insurance company, retail pet shop, pizza restaurant, retail computer store, real estate firm and a restaurant. To the north is Chynoweth Avenue and northerly thereof is a gas station with a private mail facility, a supermarket, discount drug store, retail outlet and other commercial uses such as a doughnut shop, sandwich deli, and a dry cleaners. To the east is Sanchez Drive and the Guadalupe River, and to the south is State Route 85, a four lane freeway with an interchange at Almaden Expressway. (Plate 1)

III. TRAFFIC CHARACTERISTICS

A. Trip Generation

The commercial retail center of 350,000 square feet is expected to generate about 11,036 trips per day. During the AM peak hour 242 trips will occur with 152 (63%) inbound and 90 (37%) outbound. For the PM peak hour, 1040 trips are expected with 520 (50%) inbound and 520 (50%) outbound. (Table IA) The 400 residential apartments are expected to generate 2400 trips per day. About 240 trips are expected to occur in the AM and PM peak hours, with 156 inbound and 84 outbound during the PM peak hour and the reverse for the AM peak hour. (Table IB).

The combined commercial and residential project will have about 13,436 trips per day with 482 during the AM and 1280 during the PM peak hour. (Table IC).

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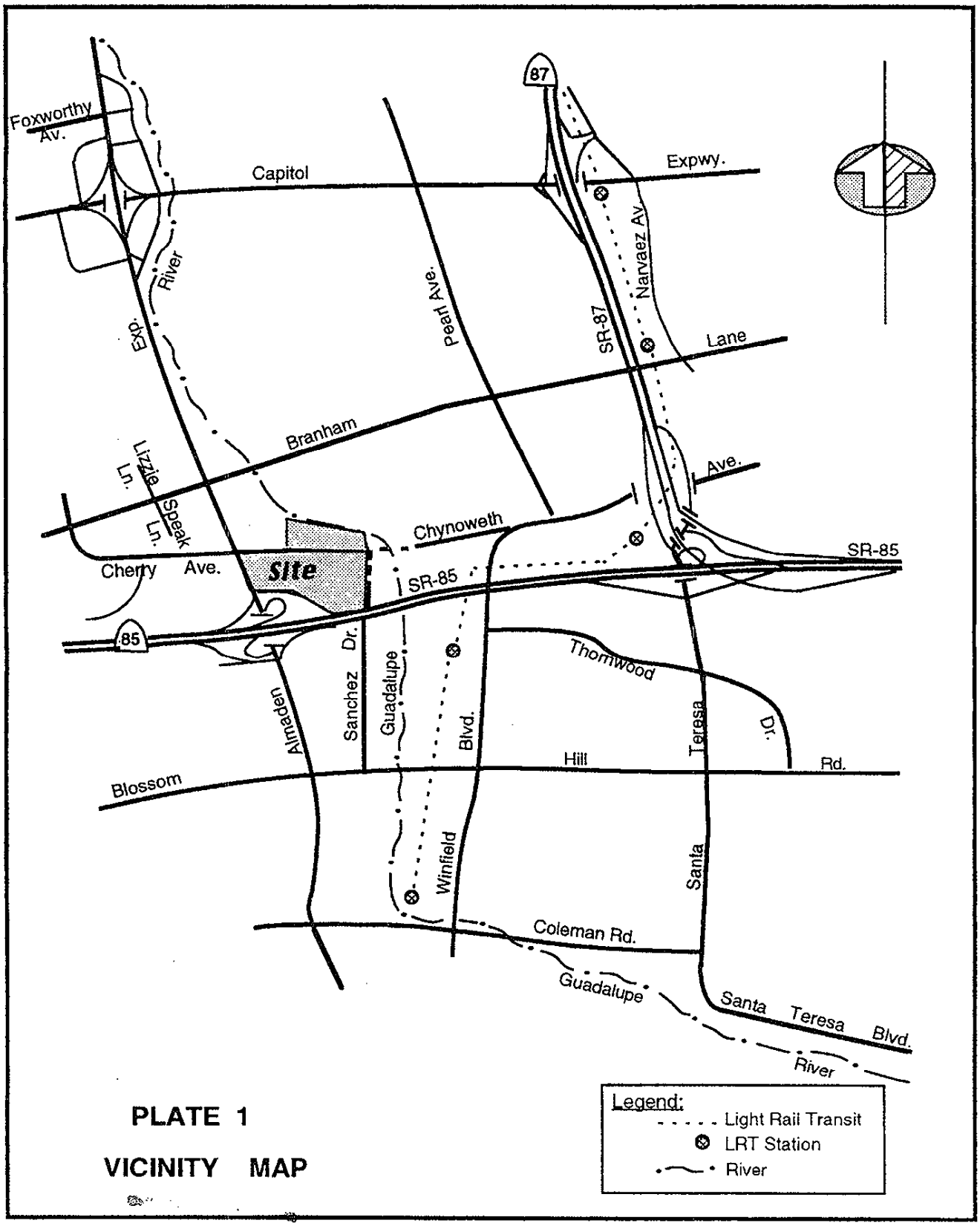

PLATE 1

VICINITY MAP

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TABLE I A

TRIP GENERATION
MALECH PROPERTY
CHYNOWETH AVENUE and ALMADEN EXPRESSWAY

LAND USE	UNIT	TRIP RATE	DAILY TRIPS	AM PEAK HOUR TRIPS		PM PEAK HOUR TRIPS	
				IN	OUT	IN	OUT
SOUTH OF CHYNOWETH AVENUE:							
Retail / Commercial Shopping Center[1]							
	350,000 sq. ft.[a] (with 29% pass by)	31.53[a]	11,036	63%	37%	50%	50%
AM	.....	0.69[b]	.....	152	90		
				242			
PM	.....	2.97[c]	.....	.....	.....	520	520
						1040	

AM = Morning peak hour
PM = Evening peak hour

(1) Source: Institute of Transportation Engineers, "Trip Generation", Fifth Edition, 1991

(a) Per 1000 square feet gross floor area per day.
(b) Per 1000 square feet gross floor area per AM peak hour.
(c) Per 1000 square feet gross floor area per PM peak hour.

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PANG ENGINEERS, INC.
TRAFFIC AND TRANSPORTATION CONSULTANTS

#9511-2
4/9/96

TABLE I B

TRIP GENERATION
MALECH PROPERTY
CHYNOWETH AVENUE and ALMADEN EXPRESSWAY

LAND USE	UNIT	TRIP RATE	DAILY TRIPS	AM PEAK HOUR TRIPS		PM PEAK HOUR TRIPS	
				IN	OUT	IN	OUT
Apartments (High Density)							
	400 D.U.	6 (a)	2,400	35%	65%	65%	35%
AM	.....	0.6 (b)	.....	84	156		
				240			
PM	.....	0.6 (c)	.....	.....	.....	156	84
						240	

AM = Morning peak hour
PM = Evening peak hour

D.U.= Dwelling Unit

Source: City of San Jose, "Trip Generation Rates", March, 1994

(a) Per dwelling unit per day.
(b) Per dwelling unit per AM peak hour.
(c) Per dwelling unit per PM peak hour.

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PANG ENGINEERS, INC.
TRAFFIC AND TRANSPORTATION CONSULTANTS

#9511-4

TABLE I C

SUMMARY
TRIP GENERATION
COMMERCIAL and RESIDENTIAL

LAND USE	UNIT	DAILY TRIPS	AM PEAK HOUR TRIPS IN	AM PEAK HOUR TRIPS OUT	PM PEAK HOUR TRIPS IN	PM PEAK HOUR TRIPS OUT
A. RETAIL/COMMERCIAL SHOPPING CENTER						
	350,000 sq. ft.	11,036				
AM	.....	.....	152	90		
			242			
PM	.....	.....	.....	.....	520	520
					1040	
B. APARTMENTS (HIGH DENSITY)						
	400 D.U.	2,400				
AM	.....	.....	84	156		
			240			
PM	.....	.....	.....	.....	156	84
					240	
TOTAL[1]		13,436	48.96%	51.04%	52.81%	47.19%
AM	.....	.....	236	246		
			482			
PM	.....	.....	.....	.....	676	604
					1280	

AM = Morning peak hour
PM = Evening peak hour
D.U.= Dwelling Unit
[1] Without credit for "internalization" of trips between the commercial and residential portion of the development.

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B. Trip Distribution and Assignment

The trips are distributed and assigned based on existing traffic volumes, other projects in the proximity of this development, and on the availability of a two lane Chynoweth Avenue bridge over the Guadalupe River. The commercial trip distribution is shown below and on Plate 2A, while the residential trip distribution is on Plate 2B.

The two lane Chynoweth Avenue bridge is an integral aspect of this project.[1] With the bridge in place, the project trips may be distributed in conjunction with the surrounding land uses. Additionally, the intent of the major roadways diagram, as shown on the City of San Jose's General Plan, is to provide east-west through street capacity. The Chynoweth Avenue bridge across the Guadalupe River will fulfill that desire.

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[1] At the time this report was written, there was no final determination of who will construct the bridge.

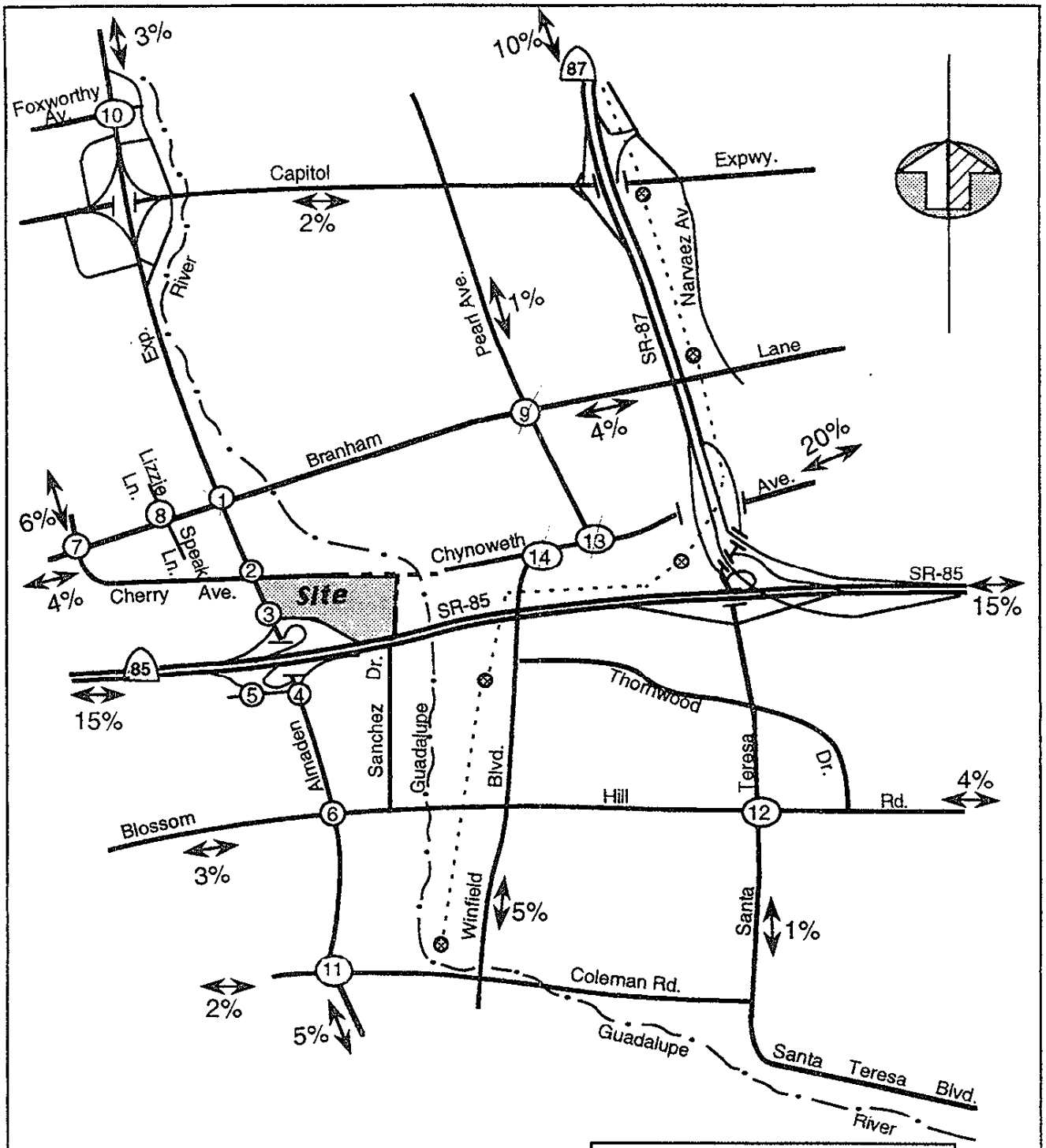

PLATE 2 A

TRIP DISTRIBUTION
COMMERCIAL

96 - 011

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TABLE III A

CONGESTION MANAGEMENT PROGRAM
LEVEL OF SERVICE
CAPSSI METHODOLOGY

INTERSECTION	EXISTING (1996) or BASE		EXISTING (1996) + ATI (1)		WITH THIS PROJECT (2)(5)		WITH GROWTH (3)		WITH IMP. (6)	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Almaden Exp. / Branham										
AM	29	D+	30	D+	30	D+	31	D	-	-
PM	35	D-	38	D-	38	D-	39	D-	-	-
3.Rt.85 / Almaden Exp. (N)										
AM	6	B+	7	B+	8	B+	8	B+	3	A
PM	24	C-	37	D-	36	D-	40	D-	17	C+
4. Rt.85 / Almaden Exp. (S)(4)										
AM	9	B+	9	B+	10	B+	10	B+	-	-
PM	12	B-	13	B-	14	B-	14	B-	-	-
6. Almaden / Blossom Hill										
AM	28	D+	31	D	31	D	32	D	-	-
PM	45	E+	48	E	49	E	51	E	-	-
11. Almaden Exp / Coleman										
AM	26	D+	28	D+	28	D+	29	D+	-	-
PM	33	D	36	D-	36	D-	36	D-	-	-
12. Blossom Hill / Santa Teresa										
AM	25	C-	25	C-	25	C-	25	C-	-	-
PM	27	D+	28	D+	28	D+	28	D+	-	-

LOS = Level of Service
ATI = Approved Trip Inventory
(1) Existing (1996) + ATI = "Background Traffic" condition.
(2) Existing (1996) + ATI + With This Project
(3) With Growth = 1.2% per annum growth of "Existing (1996) + ATI", plus Project for two years to 1998.
(4) With improvements in place on the west leg which includes two lefts, one left-thru and one right turn lane.
(5) 350,000 square foot commercial.
(6) With suggested improvements to enhance signal operation.

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TABLE III B

CONGESTION MANAGEMENT PROGRAM
LEVEL OF SERVICE
CAPSSI METHODOLOGY

INTERSECTION	EXISTING (1996) or BASE		EXISTING (1996) + ATI (1)		WITH THIS PROJECT (2)(5)		WITH GROWTH (3)		WITH IMP. (6)	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Almaden Exp. / Branham										
AM	29	D+	30	D+	30	D+	31	D	-	-
PM	35	D-	38	D-	38	D-	39	D-	-	-
3.Rt.85 / Almaden Exp. (N)										
AM	6	B+	7	B+	8	B+	8	B+	3	A
PM	24	C-	37	D-	36	D-	39	D-	17	C+
4. Rt.85 / Almaden Exp. (S) (4)										
AM	9	B+	9	B+	10	B-	10	B-	-	-
PM	12	B-	13	B-	15	C+	16	C+	-	-
6. Almaden / Blossom Hill										
AM	28	D+	31	D	31	D	32	D	-	-
PM	45	E+	48	E	49	E	51	E	-	-
11. Almaden Exp / Coleman										
AM	26	D+	28	D+	28	D+	29	D+	-	-
PM	33	D	36	D-	36	D-	36	D-	-	-
12. Blossom Hill / Santa Teresa										
AM	25	C-	25	C-	25	C-	25	C-	-	-
PM	27	D+	28	D+	28	D+	28	D+	-	-

LOS = Level of Service
ATI = Approved Trip Inventory
(1) Existing (1996) + ATI = "Background Traffic" condition.
(2) Existing (1996) + ATI + With This Project
(3) With Growth = 1.2% per annum growth of "Existing (1996) + ATI", plus Project for two years to 1998.
(4) With improvements in place on the west leg which includes two lefts, one left-thru, and one right turn lane.
(5) 350,000 square feet commercial + 400 apartments.
(6) With suggested improvements to enhance signal operation.

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TABLE II A

CITY OF SAN JOSE
LEVEL OF SERVICE

INTERSECTION		EXISTING		EXISTING + APPROVED[1]		EXISTING + APPROVED + PROJECT[4]		WITH MITIGATION		PER-CENT INC[2]
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	(%)
1. Almaden Exp. / Branham										
AM	1/31/95	0.889	D	0.940	E	0.940	E	-	-	0.13
PM	4/26/95	0.844	D	0.902	E	0.907	E	-	-	0.76
2. Almaden / Cherry-Chynoweth										
AM	1/31/95	0.749	C	0.796	C	0.826	D	0.744	C	2.10
PM	1/31/95	0.925	E	0.994	E	1.199	F	0.850	D	9.17
3.Rt.85 / Almaden Exp. (N)[3]										
AM	1/31/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
4. Rt.85 / Almaden Exp. (S)[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
5. Rt.85 SB off /Almaden Plaza[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	5/10/95	-	-	-	-	-	-	-	-	-
6. Almaden / Blossom Hill										
AM	1/19/95	0.851	D	0.927	E	0.927	E	-	-	0.26
PM	6/95	0.889	D	0.953	E	0.962	E	-	-	0.99
7. Branham / Cherry										
AM	5/2/95	0.344	A	0.356	A	0.362	A	-	-	1.44
PM	3/2/95	0.468	A	0.486	A	0.507	A	-	-	4.13
8. Branham / Lizzie										
AM	7/7/95	0.265	A	0.272	A	0.272	A	-	-	0.00
PM	7/7/95	0.575	A	0.591	A	0.591	A	-	-	0.00
9. Branham / Pearl										
AM	6/6/95	0.381	A	0.404	A	0.407	A	-	-	0.62
PM	6/6/95	0.653	B	0.687	B	0.703	C	-	-	1.33
10. Almaden / Foxworthy										
AM	5/10/95	0.912	E	0.942	E	0.941	E	-	-	0.07
PM	5/10/95	0.659	B	0.686	B	0.688	B	-	-	0.49
11. Almaden Exp / Coleman										
AM	11/15/94	0.854	D	0.920	E	0.924	E	-	-	0.33
PM	6/95	0.777	C	0.819	D	0.824	D	-	-	0.83
12. Blossom Hill / Santa Teresa										
AM	5/10/95	0.441	A	0.479	A	0.480	A	-	-	0.32
PM	10/95	0.528	A	0.561	A	0.566	A	-	-	1.03
13. Chynoweth / Pearl										
AM	10/13/95	0.322	A	0.393	A	0.413	A	-	-	4.66
PM	1/19/95	0.303	A	0.392	A	0.460	A	-	-	16.27
14.Chynoweth/Winfield/Sapphire										
AM	8/25/95	0.127	A	0.157	A	0.182	A	-	-	17.03
PM	1/18/95	0.268	A	0.293	A	0.404	A	-	-	38.60

LOS = Level of Service
V/C = Volume to Capacity Ratio
(1) Existing + Approved Projects = "Background Traffic" condition.
(2) PERCENT INCREASE refers to the increase in critical volumes with the approval of this project.
(3) Not applicable since the streets are under the jurisdiction of others.
(4) 350,000 square foot commercial.

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TABLE II B

CITY OF SAN JOSE
LEVEL OF SERVICE

INTERSECTION		EXISTING		EXISTING + APPROVED[1]		EXISTING + APPROVED + PROJECT[4]		WITH MITIGATION		PER-CENT INC[2]
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	(%)
1. Almaden Exp. / Branham										
AM	1/31/95	0.889	D	0.940	E	0.945	E	-	-	0.82
PM	4/26/95	0.844	D	0.902	E	0.913	E	-	-	1.55[5]
2. Almaden / Cherry-Chynoweth										
AM	1/31/95	0.749	C	0.796	C	0.878	D	0.751	C	5.41
PM	1/31/95	0.925	E	0.994	E	1.241	F	0.866	D	10.79
3.Rt.85 / Almaden Exp. (N)[3]										
AM	1/31/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
4. Rt.85 / Almaden Exp. (S)[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
5. Rt.85 SB off /Almaden Plaza[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	5/10/95	-	-	-	-	-	-	-	-	-
6. Almaden / Blossom Hill										
AM	1/19/95	0.851	D	0.927	E	0.929	E	-	-	0.33
PM	6/95	0.889	D	0.953	E	0.964	E	-	-	1.14[5]
7. Branham / Cherry										
AM	5/2/95	0.344	A	0.356	A	0.365	A	-	-	2.32
PM	3/2/95	0.468	A	0.486	A	0.511	A	-	-	4.69
8. Branham / Lizzie										
AM	7/7/95	0.265	A	0.272	A	0.272	A	-	-	0.00
PM	7/7/95	0.575	A	0.591	A	0.591	A	-	-	0.00
9. Branham / Pearl										
AM	6/6/95	0.381	A	0.404	A	0.408	A	-	-	0.80
PM	6/6/95	0.653	B	0.687	B	0.705	C	-	-	1.49
10. Almaden / Foxworthy										
AM	5/10/95	0.912	E	0.942	E	0.946	E	-	-	0.67
PM	5/10/95	0.659	B	0.686	B	0.692	B	-	-	1.23
11. Almaden Exp / Coleman										
AM	11/15/94	0.854	D	0.920	E	0.924	E	-	-	0.36
PM	6/95	0.777	C	0.819	D	0.825	D	-	-	0.87
12. Blossom Hill / Santa Teresa										
AM	5/10/95	0.441	A	0.479	A	0.481	A	-	-	0.43
PM	10/95	0.528	A	0.561	A	0.567	A	-	-	1.28
13. Chynoweth / Pearl										
AM	10/13/95	0.322	A	0.393	A	0.415	A	-	-	5.30
PM	1/19/95	0.303	A	0.392	A	0.464	A	-	-	17.15
14.Chynoweth/Winfield/Sapphire										
AM	8/25/95	0.127	A	0.157	A	0.202	A	-	-	29.06
PM	1/18/95	0.268	A	0.293	A	0.427	A	-	-	44.96

LOS = Level of Service
V/C = Volume to Capacity Ratio
(1) Existing + Approved Projects = "Background Traffic" condition.
(2) PERCENT INCREASE refers to the increase in critical volumes with the approval of this project.
(3) Not applicable since the streets are under the jurisdiction of others.
(4) 350,000 square feet commercial +400 apartments.
(5) No reasonable mitigation measure is available.

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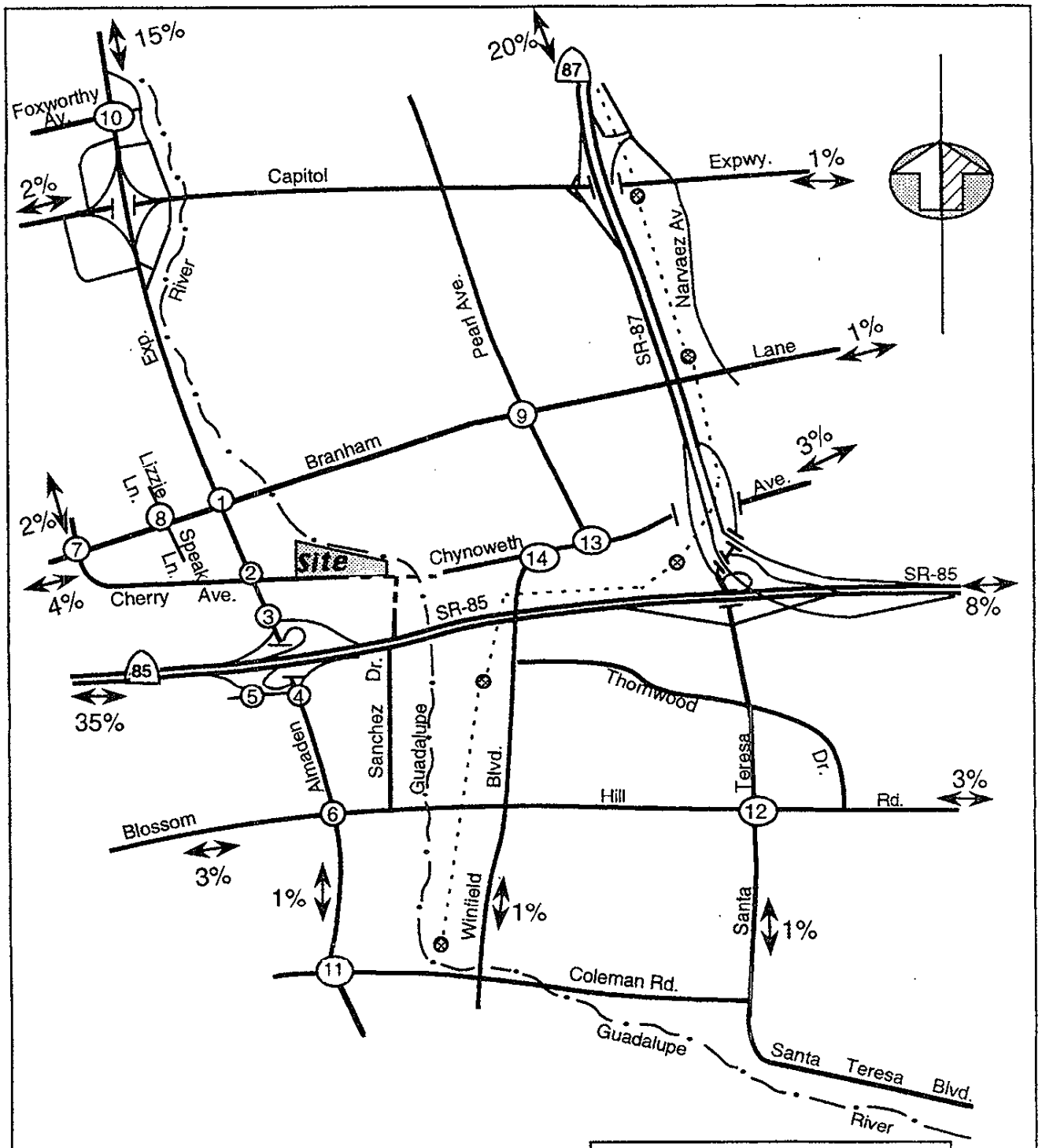

PLATE 2 B

TRIP DISTRIBUTION
RESIDENTIAL

96-011

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#9511-5

A summary of the trip distribution is as follows:

COMMERCIAL		RESIDENTIAL	
1. North (20%)		1. North (37%)	
Almaden Expressway	3%	Almaden Expressway	15%
Route 87	10%	Route 87	20%
Cherry Avenue	6%	Cherry Avenue	2%
Pearl Avenue	1%		
2. South (11%)		2. South (3%)	
Almaden Expressway	5%	Almaden Expressway	1%
Winfield Boulevard	5%	Winfield Boulevard	1%
Santa Teresa Boulevard	1%	Santa Teresa Boulevard	1%
3. West (24%)		3. West (44%)	
Branham Lane	4%	Capitol Expressway	2%
Route 85	15%	Branham Lane	4%
Blossom Hill Road	3%	Route 85	35%
Coleman Road	2%	Blossom Hill Road	3%
4. East (45%)		4. East (16%)	
Capitol Expressway	2%	Capitol Expressway	1%
Branham Lane	4%	Branham Lane	1%
Chynoweth Avenue	20%	Chynoweth Avenue	3%
Route 85	15%	Route 85	8%
Blossom Hill Road	4%	Blossom Hill Road	3%
TOTAL	100%		100%

The trips are more specifically assigned for the commercial use on Plates 3A and 3B for the AM and PM peak hours respectively. Plates 3C and 3D depict the commercial use trip assignments at the critical intersections for the AM and PM peak hours.

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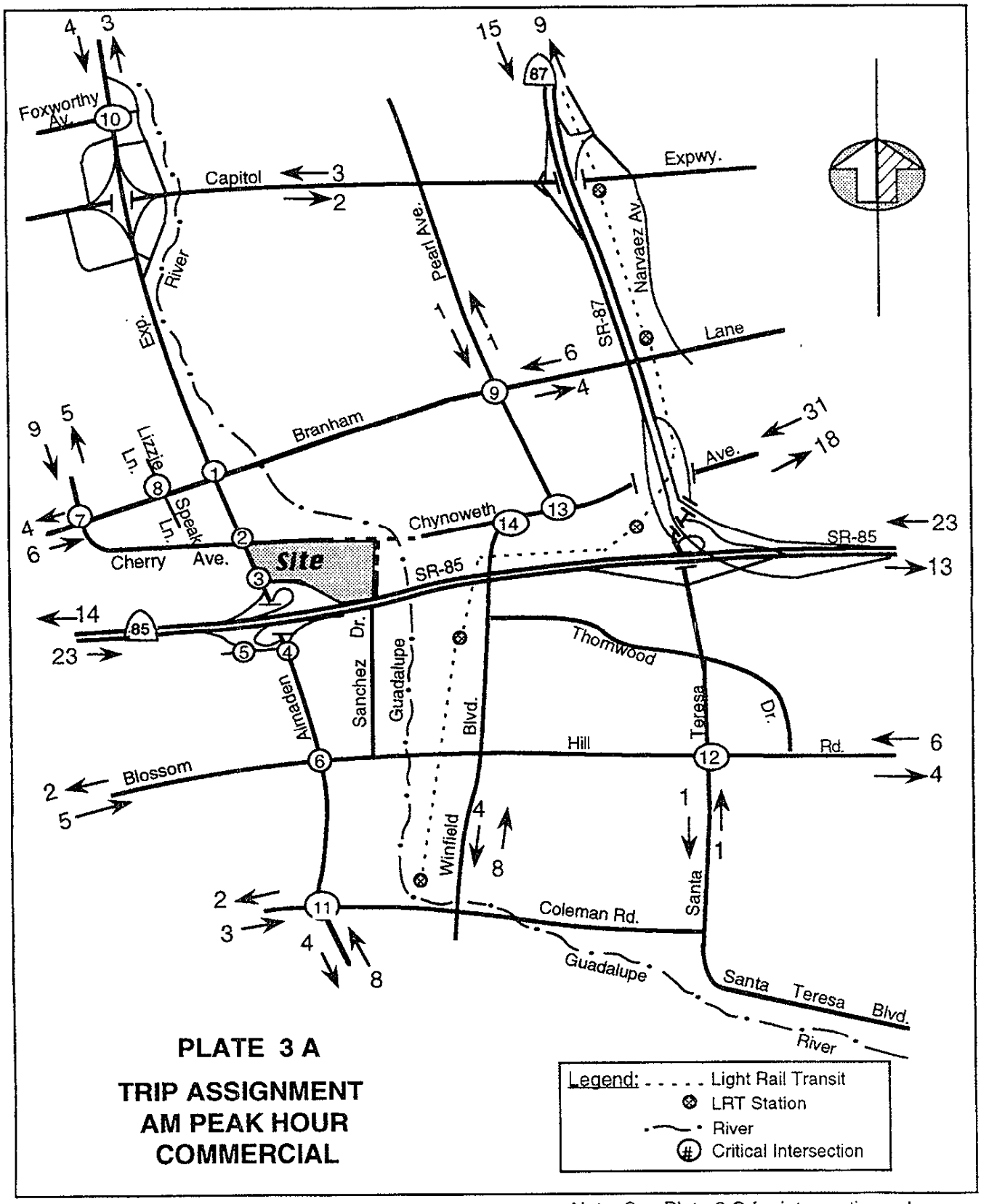

PLATE 3 A

TRIP ASSIGNMENT
AM PEAK HOUR
COMMERCIAL

Note: See Plate 3 C for intersection volumes

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#9511-5

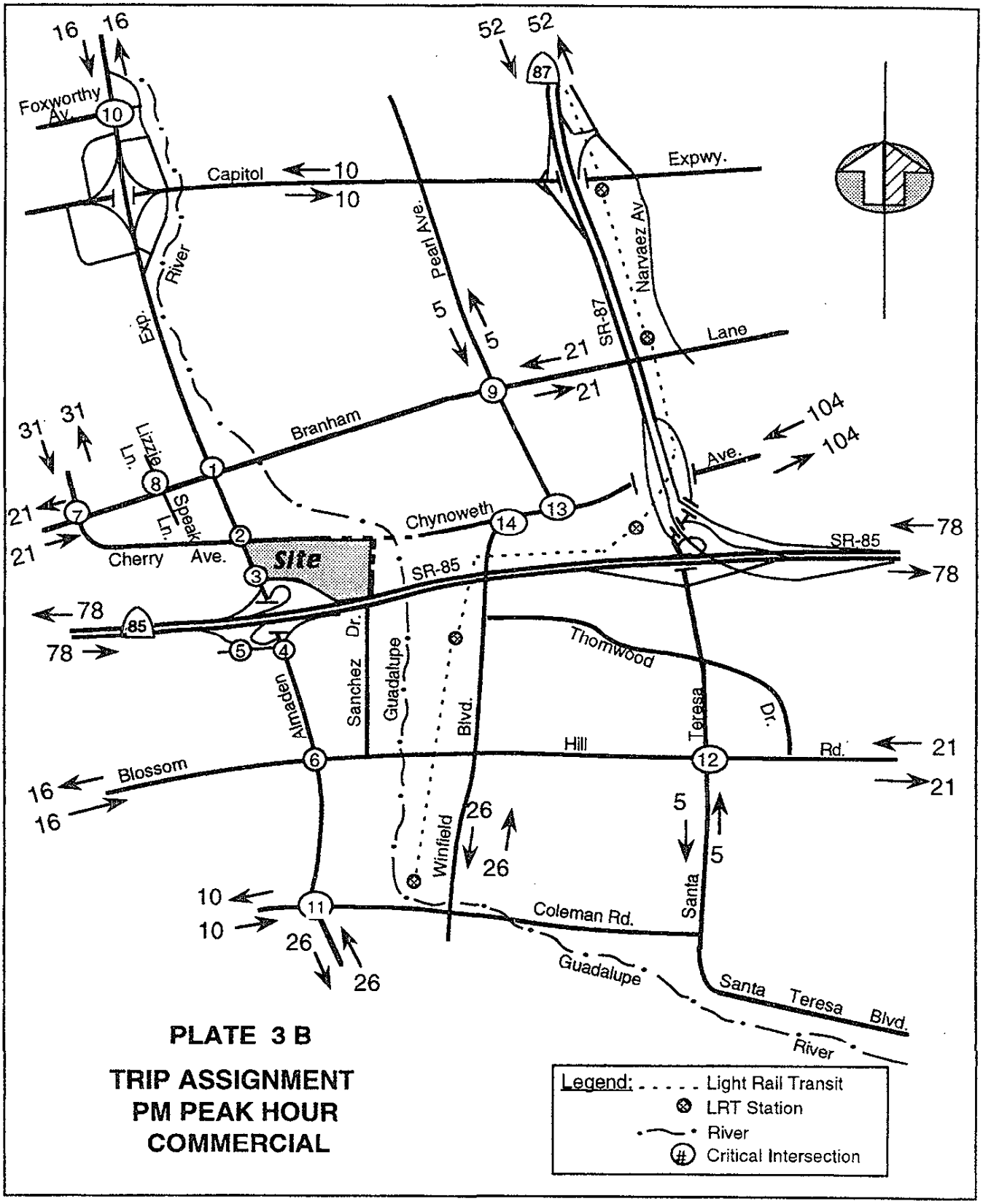

PLATE 3 B

TRIP ASSIGNMENT
PM PEAK HOUR
COMMERCIAL

Legend:
- Light Rail Transit
- LRT Station
- River
- Critical Intersection

Note: See Plate 3 D for intersection volumes

96 - 011

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#9511-5

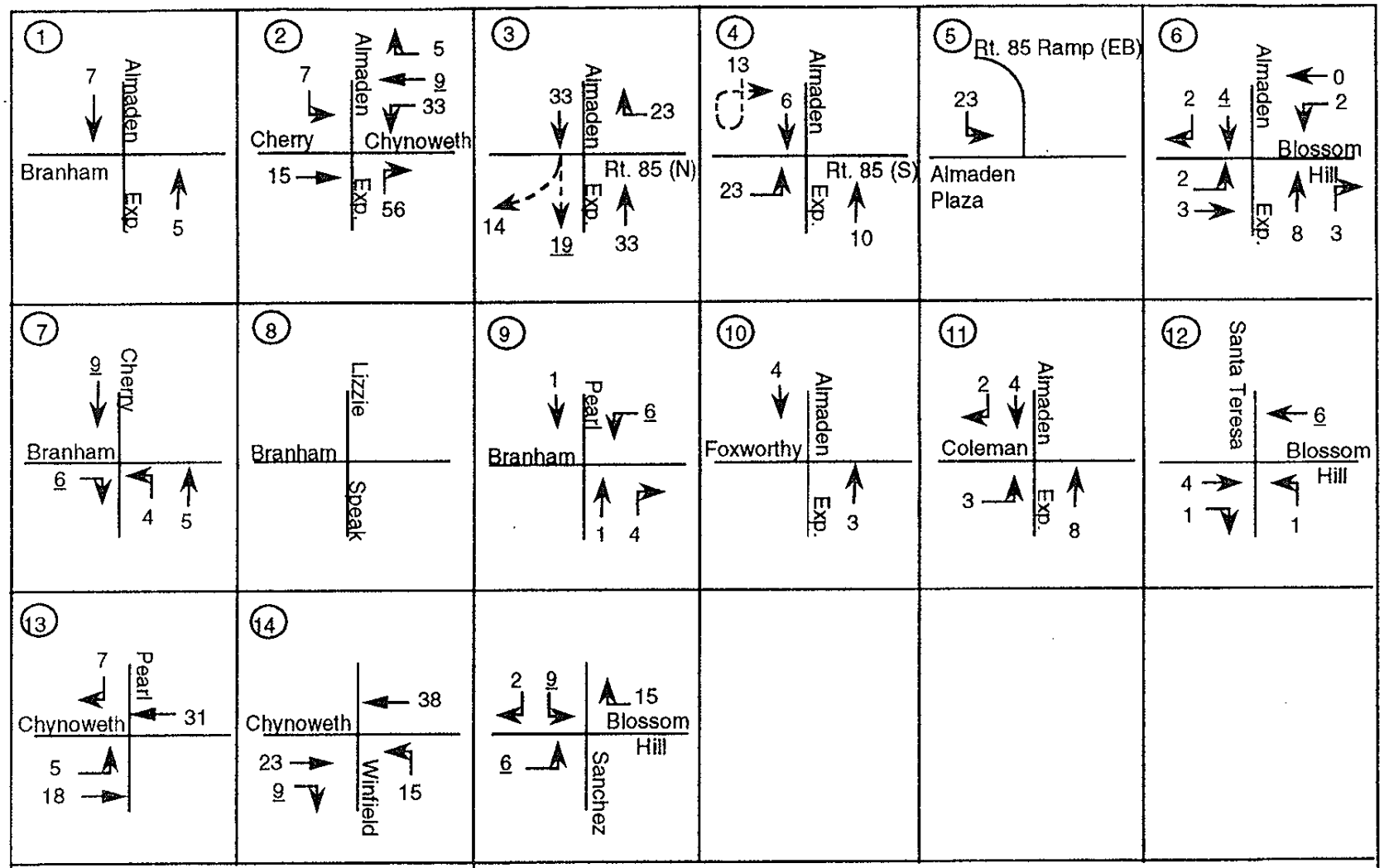

PLATE 3 C

TRIP ASSIGNMENT
AM PEAK HOUR
COMMERCIAL

Legend:

(1) Intersection Number

#9511-5

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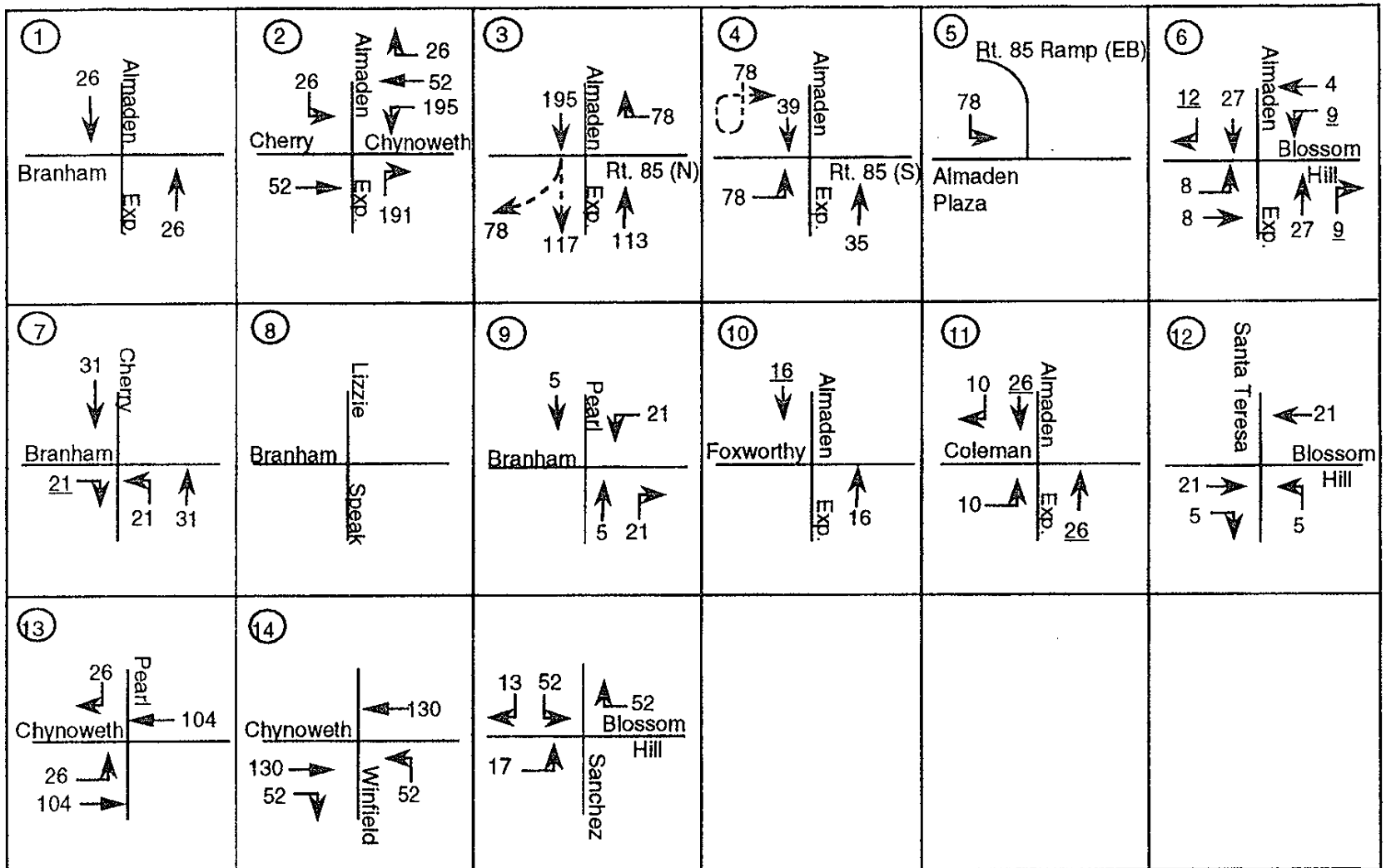

PLATE 3 D

TRIP ASSIGNMENT
PM PEAK HOUR
COMMERCIAL

Legend:

(1) Intersection Number

N

#9511-5

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Similarly, the trips are assigned for the residential apartments on Plates 3E and 3F for the AM and PM peak hours respectively. Plates 3G and 3H show the residential apartment trip assignments at the critical intersections for the AM and PM peak hours.

C. Level of Service

A maximum of fourteen[1] signalized intersections in the vicinity of the project site were initially selected by the City of San Jose's Development Services Division for level of service analyses for the AM and PM peak hours. The intersections were evaluated with the City of San Jose's critical movement methodology for several conditions:

1. Existing;
2. Existing + Approved Projects ("Background Traffic");
3. With This Project;
4. With Mitigation (if required).

Six of the initial fourteen intersections were evaluated utilizing the Congestion Management Program's CAPSSI[2] methodology.

The "Existing" calculations and list of approved projects were supplied by the City of San Jose. A 3.6% per annum growth factor per City of San Jose estimates thru April 30, 1996 was added where traffic counts were older than six months. The most recent peak hour turning movement counts were used. Thus, the "Existing + Approved" calculations include all growth factors. The volume to capacity (V/C) ratios and level of service (LOS) were calculated based on the City of San Jose's Critical Movement Methodology and shown on Table IIA for the commercial land use and on Table IIB for the combined commercial and residential apartment project.

---

(1) Reduced to eleven intersections in September 1996 by the City of San Jose since three intersections are controlled by other jurisdictions.
(2) Comprehensive Analysis Program for a Single Signalized Intersection.

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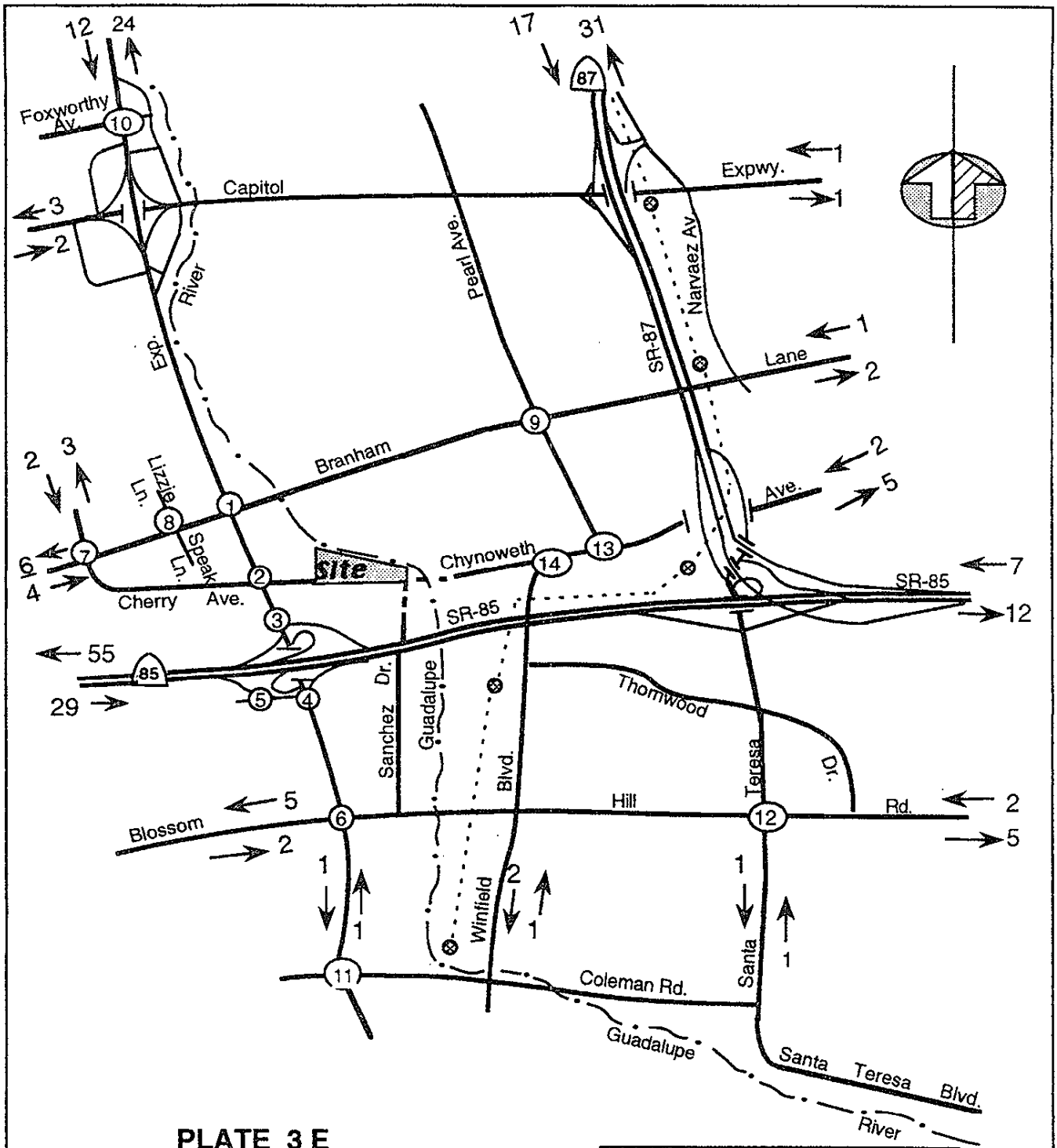

PLATE 3 E

TRIP ASSIGNMENT
AM PEAK HOUR
RESIDENTIAL

Note: See Plate 3 G for intersection volumes

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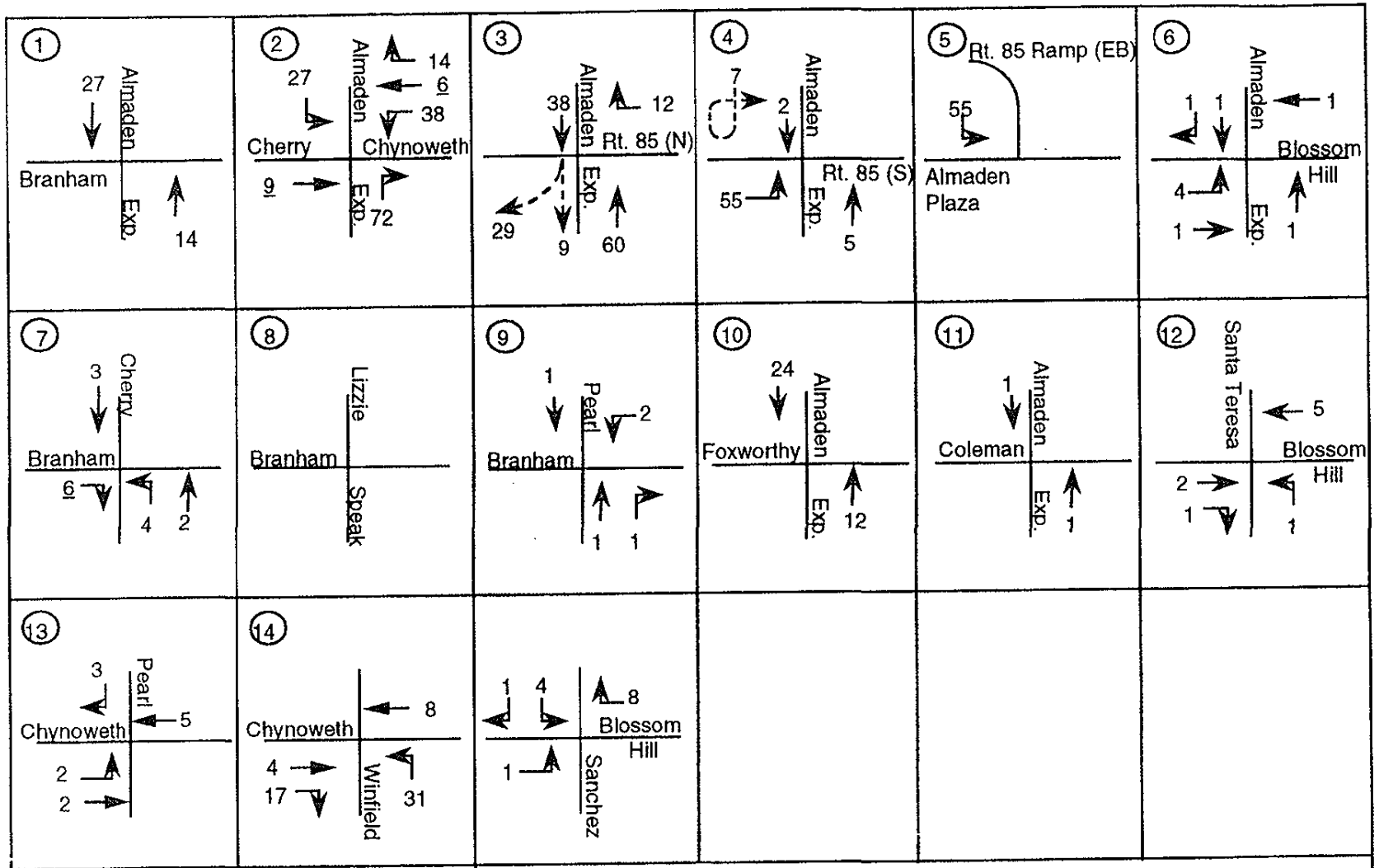

PLATE 3 H

TRIP ASSIGNMENT
PM PEAK HOUR
RESIDENTIAL

Legend:

(1) Intersection Number

N

#9511-5

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96-61

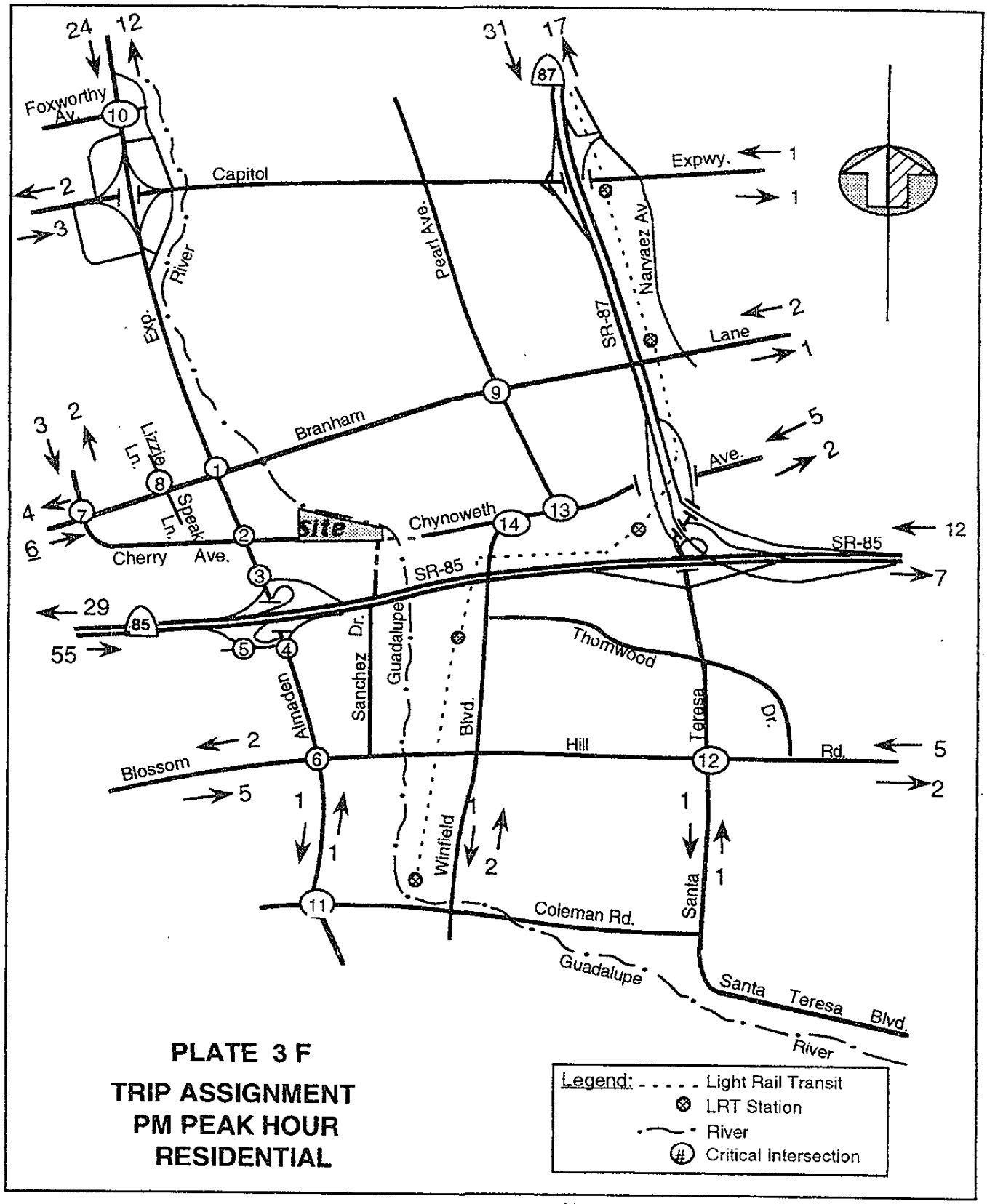

PLATE 3 F

TRIP ASSIGNMENT
PM PEAK HOUR
RESIDENTIAL

Note: See Plate 3 H for intersection volumes

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#9511-5

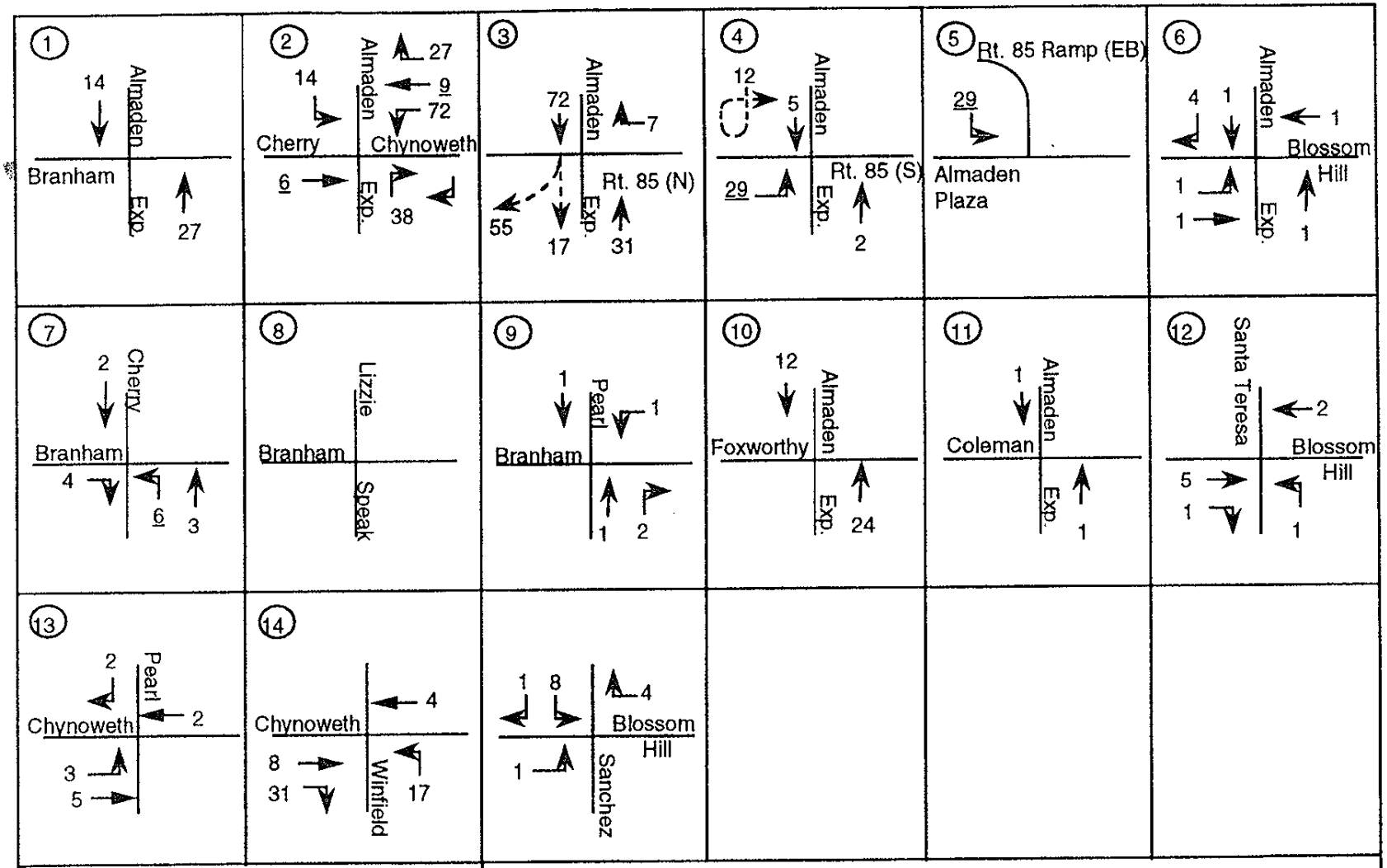

PLATE 3 G

TRIP ASSIGNMENT
AM PEAK HOUR
RESIDENTIAL

Legend:

(1) Intersection Number

#9511-5

PANG ENGINEERS, INC.
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96-011

TABLE II A

CITY OF SAN JOSE
LEVEL OF SERVICE

INTERSECTION		EXISTING		EXISTING + APPROVED[1]		EXISTING + APPROVED + PROJECT[4]		WITH MITIGATION		PER-CENT INC[2]
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	(%)
1. Almaden Exp. / Branham										
AM	1/31/95	0.889	D	0.940	E	0.940	E	-	-	0.13
PM	4/26/95	0.844	D	0.902	E	0.907	E	-	-	0.76
2. Almaden / Cherry-Chynoweth										
AM	1/31/95	0.749	C	0.796	C	0.826	D	0.744	C	2.10
PM	1/31/95	0.925	E	0.994	E	1.199	F	0.850	D	9.17
3.Rt.85 / Almaden Exp. (N)[3]										
AM	1/31/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
4. Rt.85 / Almaden Exp. (S)[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
5. Rt.85 SB off /Almaden Plaza[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	5/10/95	-	-	-	-	-	-	-	-	-
6. Almaden / Blossom Hill										
AM	1/19/95	0.851	D	0.927	E	0.927	E	-	-	0.26
PM	6/95	0.889	D	0.953	E	0.962	E	-	-	0.99
7. Branham / Cherry										
AM	5/2/95	0.344	A	0.356	A	0.362	A	-	-	1.44
PM	3/2/95	0.468	A	0.486	A	0.507	A	-	-	4.13
8. Branham / Lizzie										
AM	7/7/95	0.265	A	0.272	A	0.272	A	-	-	0.00
PM	7/7/95	0.575	A	0.591	A	0.591	A	-	-	0.00
9. Branham / Pearl										
AM	6/6/95	0.381	A	0.404	A	0.407	A	-	-	0.62
PM	6/6/95	0.653	B	0.687	B	0.703	C	-	-	1.33
10. Almaden / Foxworthy										
AM	5/10/95	0.912	E	0.942	E	0.941	E	-	-	0.07
PM	5/10/95	0.659	B	0.686	B	0.688	B	-	-	0.49
11. Almaden Exp / Coleman										
AM	11/15/94	0.854	D	0.920	E	0.924	E	-	-	0.33
PM	6/95	0.777	C	0.819	D	0.824	D	-	-	0.83
12. Blossom Hill / Santa Teresa										
AM	5/10/95	0.441	A	0.479	A	0.480	A	-	-	0.32
PM	10/95	0.528	A	0.561	A	0.566	A	-	-	1.03
13. Chynoweth / Pearl										
AM	10/13/95	0.322	A	0.393	A	0.413	A	-	-	4.66
PM	1/19/95	0.303	A	0.392	A	0.460	A	-	-	16.27
14.Chynoweth/Winfield/Sapphire										
AM	8/25/95	0.127	A	0.157	A	0.182	A	-	-	17.03
PM	1/18/95	0.268	A	0.293	A	0.404	A	-	-	38.60

LOS = Level of Service
V/C = Volume to Capacity Ratio
(1) Existing + Approved Projects = "Background Traffic" condition.
(2) PERCENT INCREASE refers to the increase in critical volumes with the approval of this project.
(3) Not applicable since the streets are under the jurisdiction of others.
(4) 350,000 square foot commercial.

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TABLE II B

CITY OF SAN JOSE
LEVEL OF SERVICE

INTERSECTION		EXISTING		EXISTING + APPROVED[1]		EXISTING + APPROVED + PROJECT[4]		WITH MITIGATION		PER-CENT INC[2]
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	(%)
1. Almaden Exp. / Branham										
AM	1/31/95	0.889	D	0.940	E	0.945	E	-	-	0.82
PM	4/26/95	0.844	D	0.902	E	0.913	E	-	-	1.55[5]
2. Almaden / Cherry-Chynoweth										
AM	1/31/95	0.749	C	0.796	C	0.878	D	0.751	C	5.41
PM	1/31/95	0.925	E	0.994	E	1.241	F	0.866	D	10.79
3.Rt.85 / Almaden Exp. (N)[3]										
AM	1/31/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
4. Rt.85 / Almaden Exp. (S)[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	6/95	-	-	-	-	-	-	-	-	-
5. Rt.85 SB off /Almaden Plaza[3]										
AM	5/10/95	-	-	-	-	-	-	-	-	-
PM	5/10/95	-	-	-	-	-	-	-	-	-
6. Almaden / Blossom Hill										
AM	1/19/95	0.851	D	0.927	E	0.929	E	-	-	0.33
PM	6/95	0.889	D	0.953	E	0.964	E	-	-	1.14[5]
7. Branham / Cherry										
AM	5/2/95	0.344	A	0.356	A	0.365	A	-	-	2.32
PM	3/2/95	0.468	A	0.486	A	0.511	A	-	-	4.69
8. Branham / Lizzie										
AM	7/7/95	0.265	A	0.272	A	0.272	A	-	-	0.00
PM	7/7/95	0.575	A	0.591	A	0.591	A	-	-	0.00
9. Branham / Pearl										
AM	6/6/95	0.381	A	0.404	A	0.408	A	-	-	0.80
PM	6/6/95	0.653	B	0.687	B	0.705	C	-	-	1.49
10. Almaden / Foxworthy										
AM	5/10/95	0.912	E	0.942	E	0.946	E	-	-	0.67
PM	5/10/95	0.659	B	0.686	B	0.692	B	-	-	1.23
11. Almaden Exp / Coleman										
AM	11/15/94	0.854	D	0.920	E	0.924	E	-	-	0.36
PM	6/95	0.777	C	0.819	D	0.825	D	-	-	0.87
12. Blossom Hill / Santa Teresa										
AM	5/10/95	0.441	A	0.479	A	0.481	A	-	-	0.43
PM	10/95	0.528	A	0.561	A	0.567	A	-	-	1.28
13. Chynoweth / Pearl										
AM	10/13/95	0.322	A	0.393	A	0.415	A	-	-	5.30
PM	1/19/95	0.303	A	0.392	A	0.464	A	-	-	17.15
14.Chynoweth/Winfield/Sapphire										
AM	8/25/95	0.127	A	0.157	A	0.202	A	-	-	29.06
PM	1/18/95	0.268	A	0.293	A	0.427	A	-	-	44.96

LOS = Level of Service
V/C = Volume to Capacity Ratio
(1) Existing + Approved Projects = "Background Traffic" condition.
(2) PERCENT INCREASE refers to the increase in critical volumes with the approval of this project.
(3) Not applicable since the streets are under the jurisdiction of others.
(4) 350,000 square feet commercial +400 apartments.
(5) No reasonable mitigation measure is available.

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COMMERCIAL ONLY PROJECT

The City of San Jose, Development Services Division is desirous of knowing the traffic impacts of the commercial portion of the project as if it were a distinct and separate development. Six of the remaining eleven critical intersections are at a "D" or better LOS for the "Existing" as well as "Existing + Approved Project" or "Background Traffic" conditions, and "With This Project" condition. Four intersections, namely Almaden Expressway / Branham Lane (AM / PM), Almaden Expressway / Blossom Hill (AM / PM), Almaden Expressway / Foxworthy Avenue (AM) and Almaden Expressway / Coleman Road (AM) are at an "E" - LOS respectively for the "Background Traffic" and "With This Project" condition. However, the percent increase in critical volumes is less than 1% for the four intersections for the respective critical peak hours.

One intersection, Almaden Expressway / Cherry-Chynoweth Avenue (PM), is at an "E" or worse LOS with critical volume percent increases greater than 1%. Thus, mitigation measures are required at that intersection. Other intersections, Route 85 northbound off-ramp / Almaden Expressway (north) (PM), and Route 85 southbound on-ramp / Almaden Expressway (south) (PM) do not require mitigation but are suggested for improvements to provide better traffic flow.

COMMERCIAL PLUS RESIDENTIAL PROJECT

For the commercial + residential apartment development, the identical intersections are impacted. For example, Almaden Expressway / Branham Lane (AM/PM), Almaden Expressway / Blossom Hill (AM / PM), Almaden Expressway / Foxworthy (AM) and Almaden Expressway / Coleman Road (AM) will be at an "E" or "F" - LOS, or worse than the "D" threshold for the "Background Traffic" and "With This Project" condition. The Almaden Expressway / Branham (PM) and Almaden Expressway / Blossom Hill (PM) intersections will have an impact greater than 1%. Thus, mitigation measures are required for those two intersections. The Almaden Expressway / Foxworthy (AM) and Almaden Expressway / Coleman (AM) intersections have increases in critical volumes of less than 1%.

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Additionally, the Almaden Expressway / Cherry-Chynoweth Avenue (PM) intersection is at an "E" or worse LOS with critical volume percent increases greater than 1%. Thus, mitigation measures are required at that intersection.

SPECIFIC INTERSECTION MITIGATION MEASURES/ STREET IMPROVEMENTS

Almaden Expressway / Cherry-Chynoweth Avenue

The Almaden Expressway / Cherry-Chynoweth Avenue intersection is the critical intersection which requires street improvements to mitigate the traffic impacts from this project. The project controls the right of way at the southeast corner of the intersection so that improvements on the south leg (Almaden Expressway) and east leg (Chynoweth Avenue) of the intersection are possible. There is also sufficient curb to curb width on the north leg (Almaden Expressway) based on a field review. The west (Cherry Avenue) leg will probably require the removal of the existing curb and gutter on the north side and perhaps even the south side to satisfy the proposed lane requirements. The existing and proposed lane patterns are as follows:

	EXISTING LANES			PROPOSED LANES		
	Left	Thru	Right	Left	Thru	Right
Almaden Expressway North Leg	1	3	1	2[b]	3	1
Chynoweth Avenue East Leg	1[a]	-	1	2[c]	2[c]	1[c]
Almaden Expressway South Leg	1	3	-	2[d]	3	1[d]
Cherry Avenue West Leg	1[a]	-	1	1[e]	2[e]	1[e]

[a] Left-thru shared lane
[b] Add second left turn lane
[c] Widen Chynoweth Avenue to provide two lefts, two thrus and a right turn lane.
[d] Widen Almaden Expressway to add a second left turn lane and a right turn lane.
[e] Widen Cherry Avenue to include a left, two thrus and a right turn lane.

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With the proposed street improvements in place the V/C ratio of 1.241 for the PM peak hour "With This Project" condition would be improved to 0.866 or from an "F" to a "D" - LOS. This proposed street improvement with signal modification substantially increases the intersection capacity for this commercial + residential apartment project and provides excess capacity reservation for the future buildout of the remaining residential portion of the project site on the north side of Chynoweth Avenue. (Plate 4A)

Almaden Expressway / Branham Lane

The Almaden Expressway / Branham Lane intersection is built out, that is, built to its ultimate condition. No reasonable mitigation measure appears to be available to improve the intersection's operating capacity.[1]

Almaden Expressway / Blossom Hill Road

The Almaden Expressway / Blossom Hill Road intersection is also built out. Again, no reasonable mitigation measure appears to be available to improve the intersection's operating capacity.[1]

Almaden Expressway / Freeway Ramps

Two intersections, namely Route 85 northbound off-ramp / Almaden Expressway (N) and Route 85 southbound on-ramp / Almaden Expressway (S) do not require a mitigation measure. Nevertheless, street improvements are suggested to enhance the operation at those intersections.

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[1] A potential mitigation measure to convert the existing free running right turns to a shared thru-right along Almaden Expressway with the appropriate traffic signal modifications was discussed with the City of San Jose and deemed infeasible.

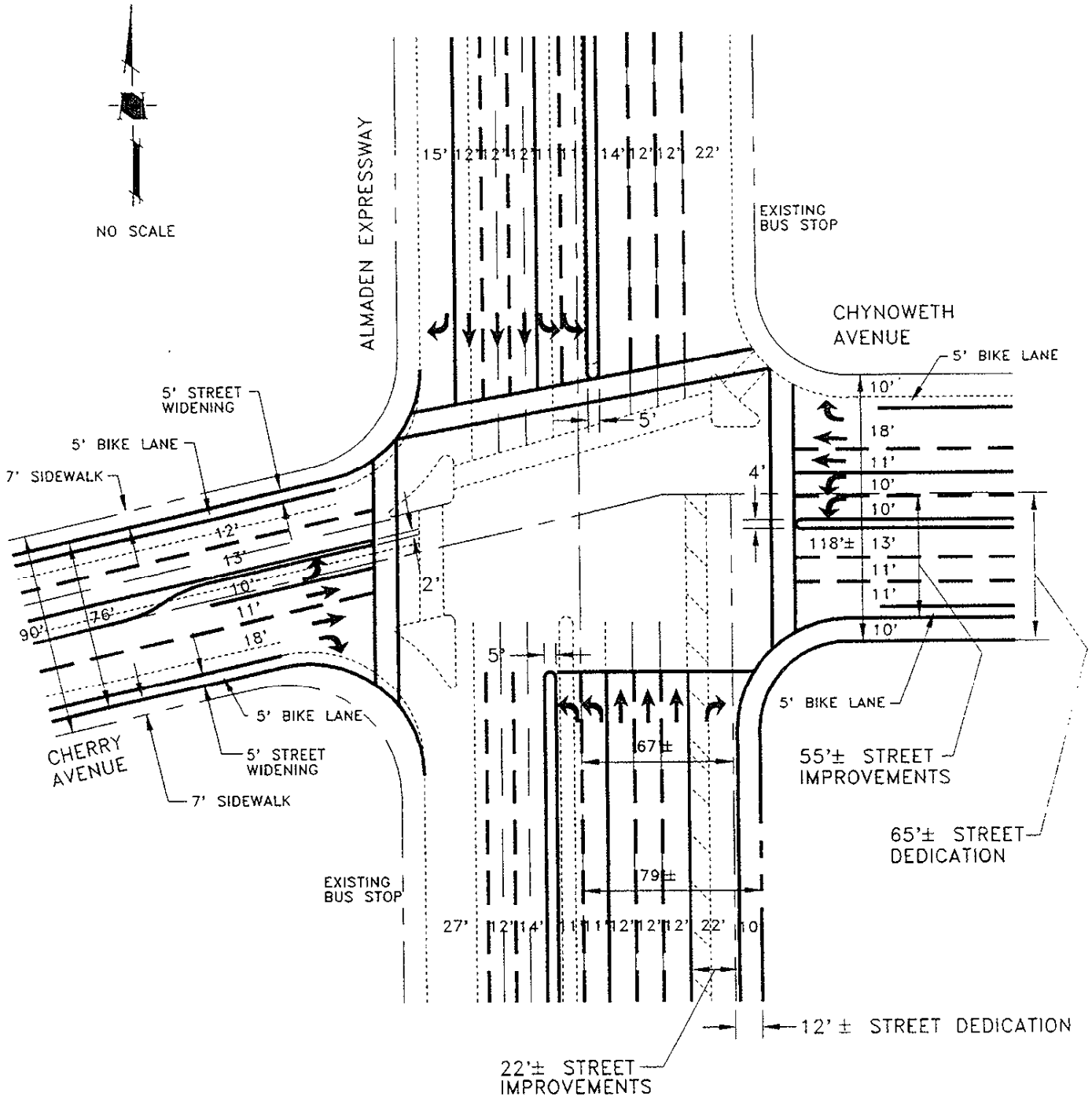

PLATE 4A

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
CHERRY AVENUE - CHYNOWETH AVENUE

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Route 85 NB off-ramp / Almaden Expressway (N)

This intersection is controlled by Santa Clara County on the Almaden Expressway legs and by CalTrans for the off-ramp. The City of San Jose is not required to improve this intersection since the City has no jurisdiction. Nevertheless, a street improvement is proposed to maximize the available street capacity . (Plate 4 B)

The existing and proposed lane patterns are as follows:

	EXISTING LANES			PROPOSED LANES		
	Left	Thru	Right	Left	Thru	Right
Almaden Expressway North Leg	-	4	-	-	4	-
Route 85 NB off-ramp East Leg	1+1[a]	-	1	2[b]	-	1
Almaden Expressway South Leg	-	3	-	-	3	-

[a] Left-right shared
[b] Convert left-right shared lane to a second left turn lane by restriping.

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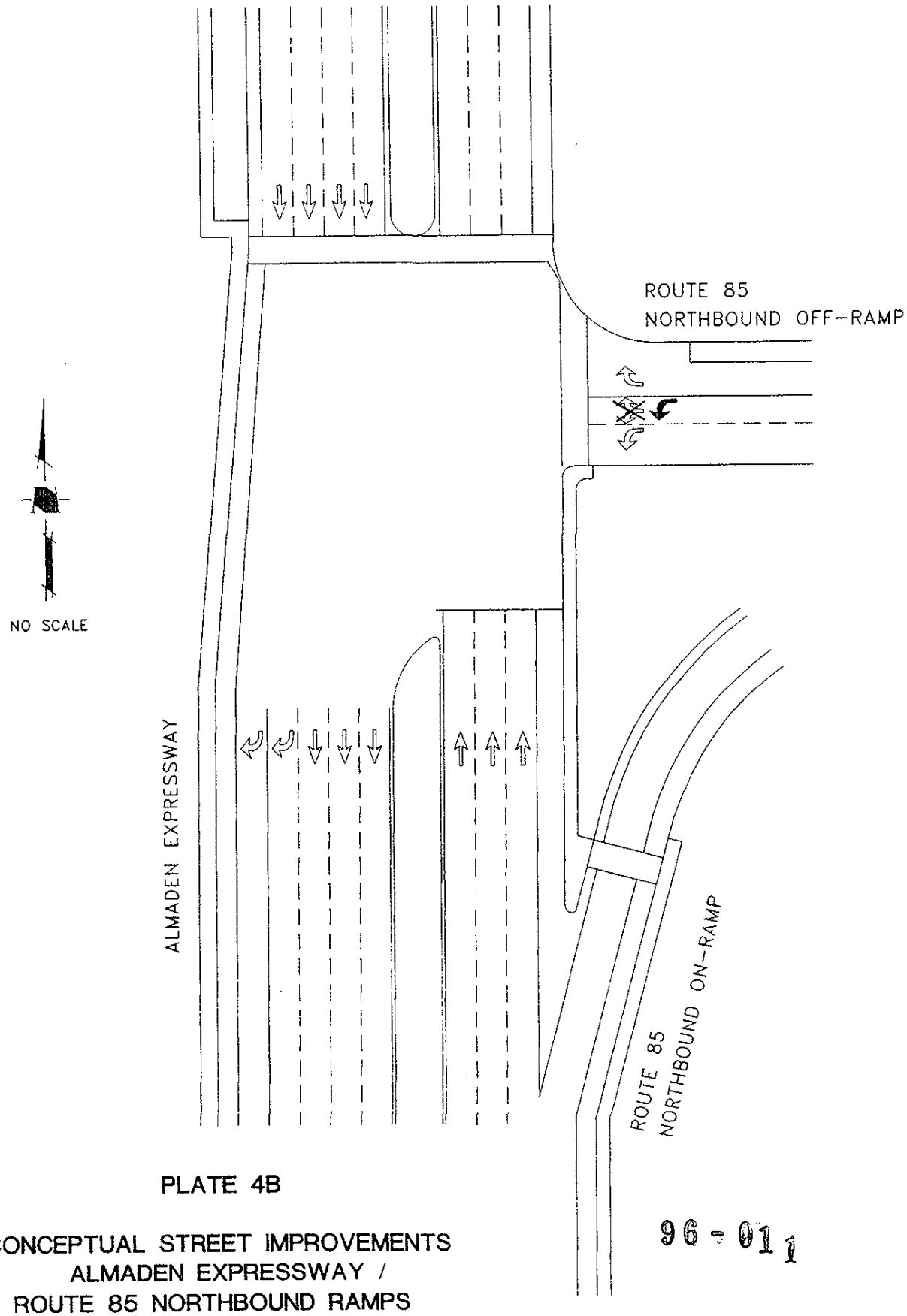

PLATE 4B

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
ROUTE 85 NORTHBOUND RAMPS

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Route 85 SB on-ramp / Almaden Expressway (S) [1]

This intersection is the complement of the Route 85 NB off-ramp / Almaden Expressway (N) intersection at the interchange of Almaden Expressway with Route 85. The intersection is also controlled by Santa Clara County on the Almaden Expressway legs and by CalTrans for the on-ramp. The City of San Jose is not required to improve this intersection since the City has no jurisdiction. Again, regardless of the lack of jurisdictional control, a street improvement is proposed to increase street capacity. (Plate 4 C)

The existing and proposed lane patterns are as follows:

	EXISTING LANES			PROPOSED LANES		
	Left	Thru	Right	Left	Thru	Right
Almaden Expressway North Leg	-	3	1	-	3	1
Route 85 SB on-ramp East Leg	-	-	-	-	-	-
Almaden Expressway South Leg	1	4	1	1	4	1
Almaden Plaza West Leg	2	1	1	2	1[a]	1

[a] Convert thru lane to a shared left-thru lane by restriping.

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[1] The improvement was implemented during the project review process and is now contained in the "Background Traffic" condition.

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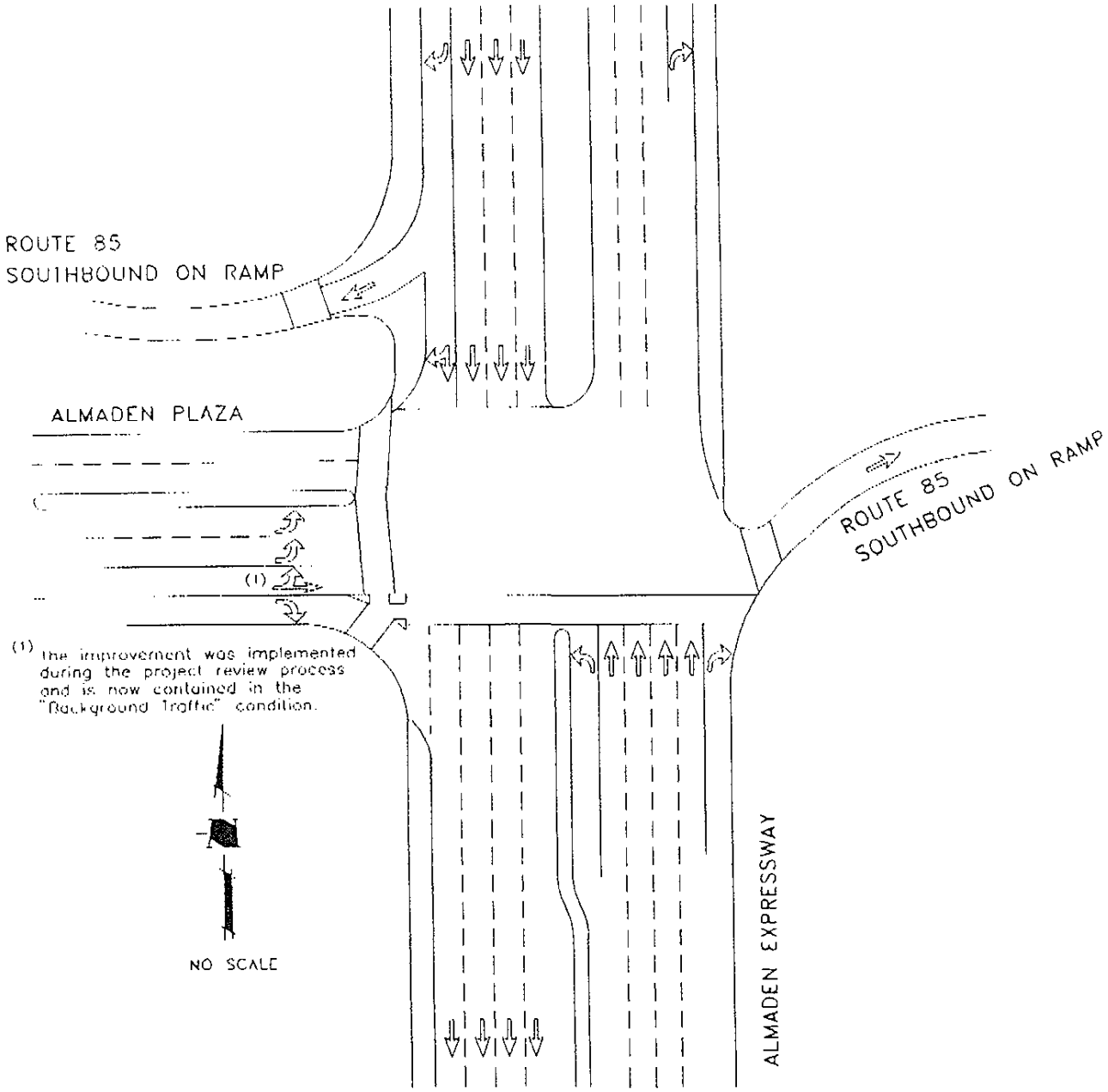

PLATE 4C

CONCEPTUAL STREET IMPROVEMENTS
ALMADEN EXPRESSWAY /
ROUTE 85 SOUTHBOUND ON RAMP

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With the improvements in place at the Almaden Expressway / Cherry-Chynoweth intersection, the 350,000 square foot commercial portion of the project conforms to the City of San Jose's policy of a "D" or better LOS, or for an "E" or worse intersection, with increases in critical volumes of less than 1%.

When 400 residential apartments are included with the 350,000 square feet of commercial development, the Almaden Expressway / Branham Lane and Almaden Expressway / Blossom Hill Road intersections do not satisfy the City of San Jose's LOS policy since no reasonable mitigation measures are available.

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D. CONGESTION MANAGEMENT PROGRAM

Additional level of service calculations were performed for several critical intersections identified by the City of San Jose Development Services Division which are on the CMP street network. The LOS - CAPSSI method (Release 11) with predetermined cycle times was utilized. The cycle times were supplied by the local agency which maintains the particular traffic signal.

Table IIIA contains a summary of the CAPSSI results for the six critical intersections identified by the City of San Jose, Development Services Division, Department of Public Works for the commercial use, while Table IIIB is for the combined commercial + residential apartments project..

One of the six intersections, Blossom Hill Road / Santa Teresa Boulevard is under the City of San Jose's jurisdiction. The other five intersections are on the County Expressway system.

Several conditions were analyzed as follows:

1. Existing;
2. Existing + Approved Projects ("Background Traffic");
3. With This Project;
4. With Growth. (1) (2)

The first three conditions are identical to those analyzed with the City of San Jose methodology. The fourth condition is an additional requirement of the CMP. For this project, the assumed 100% completion and full occupancy date is for a "worst case" condition 1998 or two years after the 1996 base year. For purposes of this analysis the expected completion and full occupancy is estimated to occur in 1998.

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(1) "With Growth" condition represents a 1.2% per annum growth to the "Existing + Approved Projects" condition, plus "This Project" to 1998.

(2) Source: City of San Jose, Development Services Division, Department of Public Works.

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TABLE III A

CONGESTION MANAGEMENT PROGRAM
LEVEL OF SERVICE
CAPSSI METHODOLOGY

INTERSECTION	EXISTING (1996) or BASE		EXISTING (1996) + ATI (1)		WITH THIS PROJECT (2)(5)		WITH GROWTH (3)		WITH IMP. (6)	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Almaden Exp. / Branham										
AM	29	D+	30	D+	30	D+	31	D	-	-
PM	35	D-	38	D-	38	D-	39	D-	-	-
3.Rt.85 / Almaden Exp. (N)										
AM	6	B+	7	B+	8	B+	8	B+	3	A
PM	24	C-	37	D-	36	D-	40	D-	17	C+
4. Rt.85 / Almaden Exp. (S)(4)										
AM	9	B+	9	B+	10	B+	10	B+	-	-
PM	12	B-	13	B-	14	B-	14	B-	-	-
6. Almaden / Blossom Hill										
AM	28	D+	31	D	31	D	32	D	-	-
PM	45	E+	48	E	49	E	51	E	-	-
11. Almaden Exp / Coleman										
AM	26	D+	28	D+	28	D+	29	D+	-	-
PM	33	D	36	D-	36	D-	36	D-	-	-
12. Blossom Hill / Santa Teresa										
AM	25	C-	25	C-	25	C-	25	C-	-	-
PM	27	D+	28	D+	28	D+	28	D+	-	-

LOS = Level of Service
ATI = Approved Trip Inventory
(1) Existing (1996) + ATI = "Background Traffic" condition.
(2) Existing (1996) + ATI + With This Project
(3) With Growth = 1.2% per annum growth of "Existing (1996) + ATI", plus Project for two years to 1998.
(4) With improvements in place on the west leg which includes two lefts, one left-thru and one right turn lane.
(5) 350,000 square foot commercial.
(6) With suggested improvements to enhance signal operation.

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TABLE III B

CONGESTION MANAGEMENT PROGRAM
LEVEL OF SERVICE
CAPSSI METHODOLOGY

INTERSECTION	EXISTING (1996) or BASE		EXISTING (1996) + ATI (1)		WITH THIS PROJECT (2)(5)		WITH GROWTH (3)		WITH IMP. (6)	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1. Almaden Exp. / Branham										
AM	29	D+	30	D+	30	D+	31	D	-	-
PM	35	D-	38	D-	38	D-	39	D-	-	-
3.Rt.85 / Almaden Exp. (N)										
AM	6	B+	7	B+	8	B+	8	B+	3	A
PM	24	C-	37	D-	36	D-	39	D-	17	C+
4. Rt.85 / Almaden Exp. (S) (4)										
AM	9	B+	9	B+	10	B-	10	B-	-	-
PM	12	B-	13	B-	15	C+	16	C+	-	-
6. Almaden / Blossom Hill										
AM	28	D+	31	D	31	D	32	D	-	-
PM	45	E+	48	E	49	E	51	E	-	-
11. Almaden Exp / Coleman										
AM	26	D+	28	D+	28	D+	29	D+	-	-
PM	33	D	36	D-	36	D-	36	D-	-	-
12. Blossom Hill / Santa Teresa										
AM	25	C-	25	C-	25	C-	25	C-	-	-
PM	27	D+	28	D+	28	D+	28	D+	-	-

LOS = Level of Service
ATI = Approved Trip Inventory
(1) Existing (1996) + ATI = "Background Traffic" condition.
(2) Existing (1996) + ATI + With This Project
(3) With Growth = 1.2% per annum growth of "Existing (1996) + ATI", plus Project for two years to 1998.
(4) With improvements in place on the west leg which includes two lefts, one left-thru, and one right turn lane.
(5) 350,000 square feet commercial + 400 apartments.
(6) With suggested improvements to enhance signal operation.

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The additional two years of growth was added as a buffer for any potential delays in the project. Thus, a 2.4% rate of growth of the "Existing + Approved Projects" volumes only were added to this condition.

A comparison was made between the "Existing + Approved" or "Background Traffic" condition and the "With This Project" condition. All six intersections have weighted average delays for the whole intersection equivalent to a "E" or better LOS.

Thus, the traffic impact analyses satisfies the CMP guidelines.

E. ACCESS AND CIRCULATION

Vehicular access to and from the project site is planned from the existing signalized intersection of Almaden Expressway / Chynoweth Avenue, several median openings on Chynoweth Avenue and Sanchez Drive and appropriate right turns in and out only driveways on Almaden Expressway, Chynoweth Avenue and Sanchez Drive. (Refer to the Site Plan in the Appendix)

All of the street improvements fronting the property along Almaden Expressway, Chynoweth Avenue and Sanchez Drive will be constructed with this project. Additionally, a two lane bridge extending Chynoweth Avenue across the Guadalupe River is assumed as part of the proposed improvements to provide access from the east. Approvals are required from the Santa Clara County Roads and Airports Department for a right turn in and out driveway on Almaden Expressway, and from CalTrans for any modifications at the Route 85 / Almaden Expressway interchange if required. Additional vehicular access and traffic signal studies may be required at the Planned Development permit stage e.g., traffic signals at the Chynoweth / Sanchez, and Chynoweth / Main commercial driveway intersections. With the suggested improvements in place, the vehicular access and circulation appears adequate to serve the commercial + residential apartments project.

F. PUBLIC TRANSIT

The Santa Clara Valley Transportation Authority (SCVTA) supplies bus service on Almaden Expressway and State Route 85 adjacent to the project site. The routes, hours of operation, and approximate headways, are as follows:

	Routes	Hours of Operation (weekday)	Headways (minutes)
Almaden Expressway	64	5:00 AM to 11:00 PM	15

The average daily bus loadings[1] as of April 1996 are as follows:

	LINE	ON	OFF	TOTAL
1. Northbound Almaden Expressway far side Chynoweth	64	38	26	64
2. Southbound Almaden Expressway far side Cherry	64	26	25	51
TOTAL		64	51	115

Additionally, Light Rail Transit (LRT) service is provided at the Ohlone-Chynoweth station at the Route 85 and 87 interchange from 5:00 AM to Midnight. The average daily LRT loadings[1] as of April 1996 are as follows:

	ON	OFF	TOTAL
1. LRT	2103	1861	3964

Refer to Plate 5 for the bus and LRT routes.

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(1) Source: Santa Clara Valley Transportation Authority, Service Development Department.

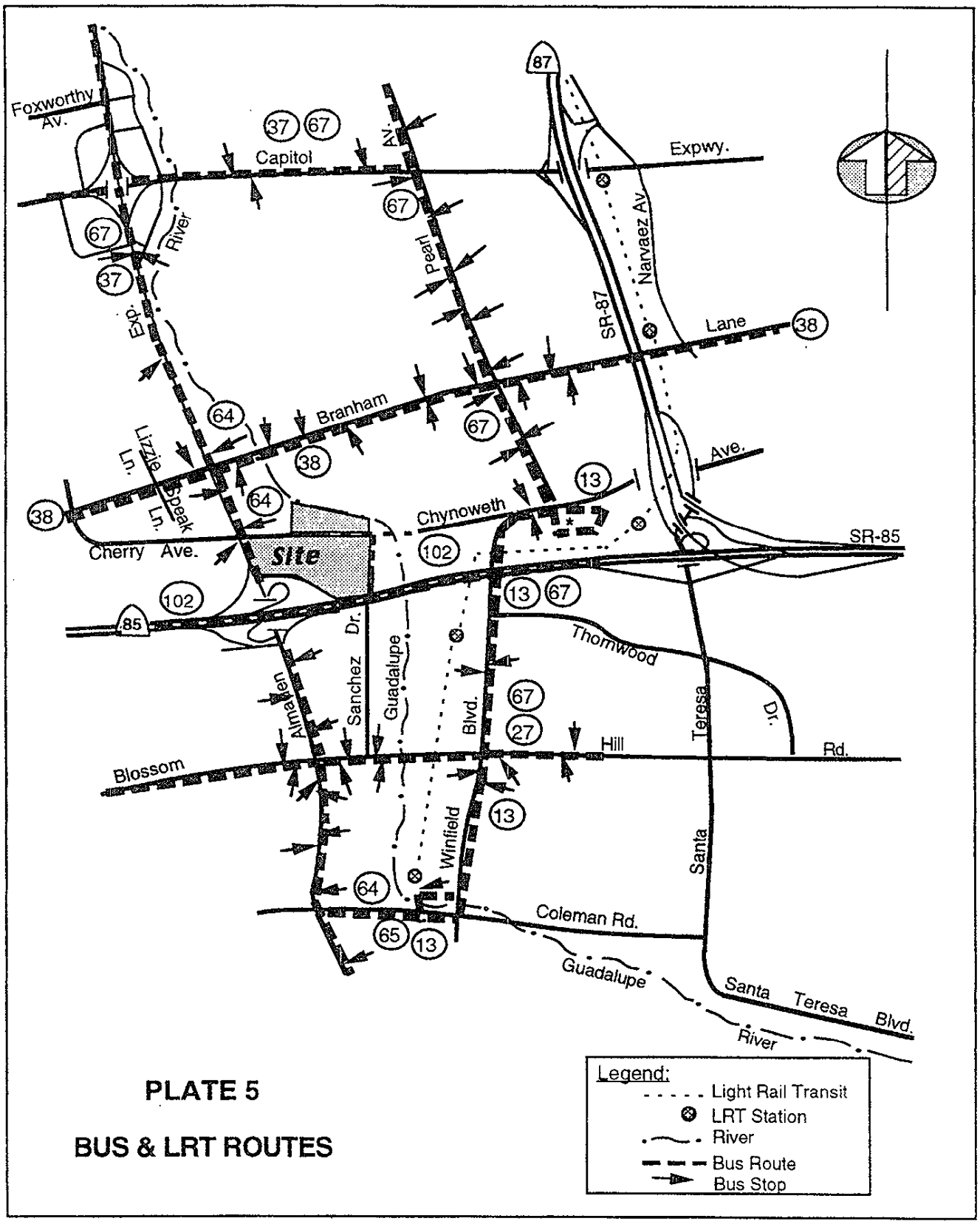

PLATE 5

BUS & LRT ROUTES

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IV. IMPROVEMENTS

The following street improvements relate to suggestions to improve access, minimize congestion and enhance the traffic carrying capability of streets in the proximity of the development.

1. Widen Almaden Expressway from Route 85 northbound off-ramp to Chynoweth Avenue to accommodate the double left turn lanes on the south leg (Almaden Expressway), provide for a right turn lane, and / or an acceleration and deceleration lane, and mitigate the Almaden Expressway / Cherry-Chynoweth Avenue intersection with street and traffic signal improvements, to the satisfaction of the Santa Clara County Roads and Airports Department and City of San Jose, Department of Public Works.

2. Widen and improve Chynoweth Avenue between Almaden Expressway and the future Guadalupe Bridge, and Sanchez Drive from Chynoweth Avenue southerly to its current terminus.

3. Construct a two lane bridge extending Chynoweth Avenue over the Guadalupe River.

4. Improve the Route 85 northbound off-ramp / Almaden Expressway (north) intersection by restriping the off-ramp (east leg) to include two left turn lanes and one right turn lane to the satisfaction of the Santa Clara County Roads and Airports Department, and CalTrans to improve traffic operations. This improvement is not a required mitigation measure.

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V. CONCLUSIONS

The peak period traffic impacts have been evaluated, with the assumption that a two lane bridge extending Chynoweth Avenue over the Guadalupe River is part of the area-wide development. Several conclusions may be extracted from this report. They are related to trip generation, circulation and access, and intersection levels of service.

1. This 350,000 square feet commercial + 400 residential apartments project is expected to generate about 13,436 trips per day or 482 AM and 1280 PM peak hour trips. Approximately 236 (48.96%) of the vehicles will be inbound and 246 (51.04%) outbound during the AM peak hour, while 676 (52.81%) will be inbound and 604 (47.19%) outbound for the PM peak hour.

2. For the commercial development only, six of the eleven critical intersections in the City of San Jose will operate with a "D" or better level of service for the "With This Project" condition. Four intersections, Almaden Expressway / Branham Lane (AM / PM), Almaden Expressway / Blossom Hill Road (AM / PM), Almaden Expressway / Foxworthy Avenue (AM) and Almaden Expressway / Coleman Road (AM) are at an "E" - LOS. However, the percent increase in critical volumes is less than 1%. One intersection, Almaden Expressway / Cherry-Chynoweth Avenue (PM), requires mitigation. With the mitigation measure in place, this intersection will operate with a "D" or better LOS. Thus, the City of San Jose's LOS policy of a "D" or better LOS, or for "E" or worse conditions with increases in critical volumes of less than 1%, is satisfied for the 350,000 square foot commercial development.

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3. For the 350,000 square feet commercial + 400 residential apartment development, six of the eleven critical intersections in the City of San Jose will operate with a "D" or better level of service for the "With This Project" condition. Two intersections, Almaden Expressway / Foxworthy Avenue (AM) and Almaden Expressway / Coleman Road (AM) are at an "E" - LOS. However, the percent increase in critical volumes is less than 1%. Two other intersections, Almaden Expressway / Branham Lane (PM) and Almaden Expressway / Blossom Hill Road (PM) are at an "E" - LOS. However, the percent increase in critical volumes is greater than 1% and no reasonable mitigation measures are available. One intersection, Almaden Expressway / Cherry-Chynoweth Avenue (PM) requires mitigation. With the mitigation measure in place, this intersection will operate with a "D" or better LOS.

   Thus, the City of San Jose's LOS policy of a "D" or better LOS, or for "E" or worse conditions with increases in critical volumes of less than 1%, is satisfied for all intersections except the Almaden Expressway / Branham Lane and Almaden Expressway / Blossom Hill Road intersection. Those two intersections do however satisfy the Congestion Management Program criteria.

4. All six Congestion Management Program intersections will operate at an "E" or better level of service with the CAPSSI methodology analysis. Thus, the CMP guidelines of an "E" or better LOS is satisfied.

5. Vehicular access and circulation as proposed on the site plan appear to be adequate with the suggested improvements in place.

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The traffic analysis report concludes that there is not presently adequate capacity in the existing transportation system to develop the entire project as proposed. In order for the project to meet the City of San Jose's level of service policy the development of the site will need to be phased. The analysis indicates that there is existing capacity to immediately develop up to 350,000 square feet of commercial uses on the site. Alternately, a mixed use project combining commercial and residential could be developed as long as the impact to the transportation system does not exceed the current capacity as described in this report.

The report also concludes that the Congestion Management Program's guidelines are satisfied and that the vehicular access as proposed is adequate to serve the site.

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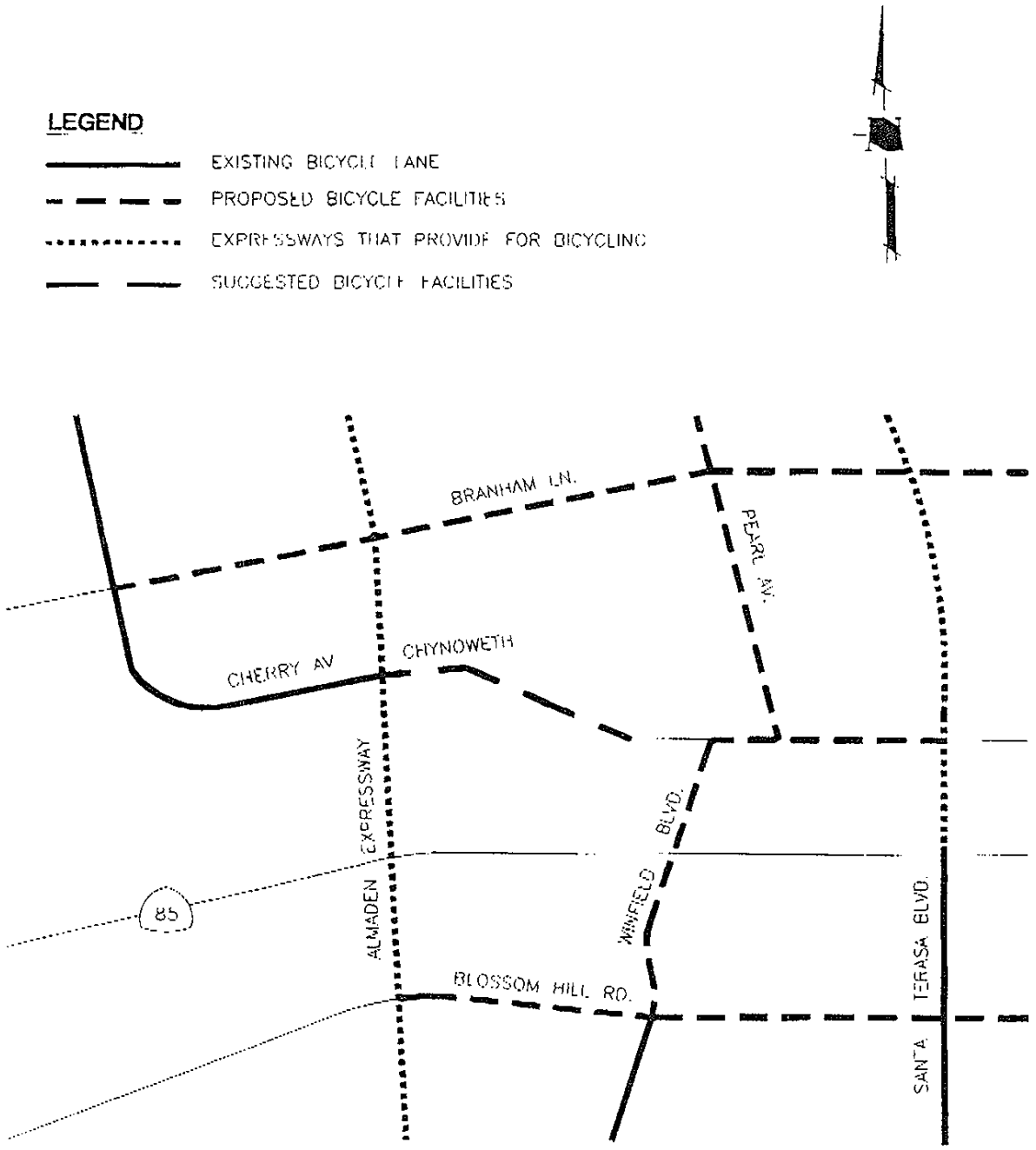

SOURCE: CITY OF SAN JOSE TRANSPORTATION BICYCLE NETWORK

PLATE 6
BICYCLE ROUTES

PANG ENGINEERS, INC
TRAFFIC AND TRANSPORTATION CONSULTANTS

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APPENDIX

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Site Plan

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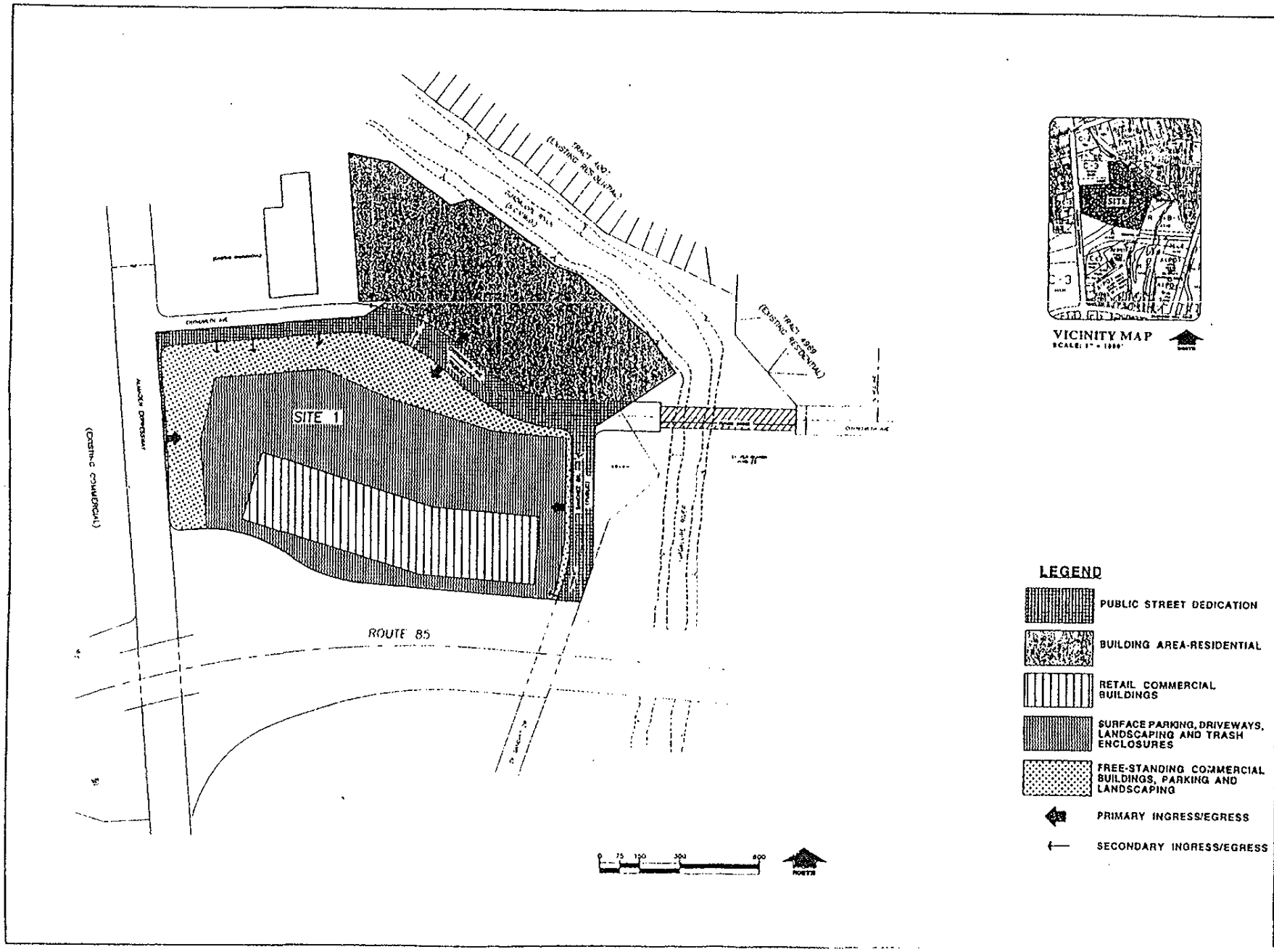

SITE 1
ROUTE 85
(EXISTING COMMERCIAL)
TRACT 4001
(EXISTING RESIDENTIAL)
TRACT 4989
(EXISTING RESIDENTIAL)
VICINITY MAP
LEGEND
PUBLIC STREET DEDICATION
BUILDING AREA-RESIDENTIAL
RETAIL COMMERCIAL BUILDINGS
SURFACE PARKING, DRIVEWAYS, LANDSCAPING AND TRASH ENCLOSURES
FREE-STANDING COMMERCIAL BUILDINGS, PARKING AND LANDSCAPING
PRIMARY INGRESS/EGRESS
SECONDARY INGRESS/EGRESS
ARCADIA DEVELOPMENT COMPANY
R+G RUTH AND GOING, INC.
GENERAL DEVELOPMENT PLAN
EXHIBIT C
LAND USE PLAN
2 of 4 Sheets

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Level of Service Descriptions

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Level of Service Descriptions

(Signalized Intersections)

LOS	Description	San Jose V/C Ratio	CMP Weighted Average Delay (Seconds)
A	Uncongested Operations; all queues clear in a single cycle.	< 0.600	0.0 - 5.0
B	Very light congestion; an occasional approach phase is fully utilized.	0.600-0.699	5.1 - 15.0
C	Light congestion; occasional back-ups on critical approaches.	0.700-0.799	15.1 - 25.0
D	Significant congestion on critical approaches but intersection functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing queues are formed.	0.800-0.899	25.1 - 40.0
E	Severe congestion with some long-standing queues on critical approaches. Blockage of the intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	0.900-0.999	40.1 - 60.0
F	Total breakdown; stop and go operation	≥ 1.00	> 60.0

Notes:

CMP: Santa Clara County Congestion Management Program
LOS: Level of Service
V/C: Volume to Capacity Ratio

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See APPENDIX L. Traffic LOS Calculations - A Separate Document for the Level of Service Calculations

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PANG ENGINEERS, INC.
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LAWRENCE PANG, C.E.,T.E.

9511-5
September 15, 1997

Mr. Richard Mindigo
MINDIGO & ASSOCIATES
1984 The Alameda
San Jose, CA 95126

RE: Arcadia-Malech Property
Almaden Expressway at Chynoweth Avenue
City of San Jose

Dear Richard:

Pursuant to your request of September 8, 1997, we are providing additional traffic information in response to the Notice of Preparation comments. The first item relates to the impacts on State Routes 85 and 87. We have prepared a Table IV FREEWAY VOLUMES for the Year 2010 for the PM peak hour. The Year 2010 volumes are from the City of San Jose's TRANPLAN model run. The project's estimated traffic is added to those future volumes, with a volume to capacity ratio calculated, and the corresponding level of service noted. The typical wording to be placed in the environmental document follows:

"The freeway segment along Route 85, east and west of Almaden Expressway, and on Route 87 northerly of Route 85 will have traffic from this project which exceeds 1% of the current peak hour directional capacity of 5500 for Route 85 and 4400 for Route 87. This capacity is based on two mixed flow lanes and one high occupancy vehicle lane on Route 85, and two mixed flow lanes on Route 87.

Table IV contains a summary of the results of the evaluation for the Year 2010. In the future year 2010, the LOS will be at "C" or better on Route 85, and "B" or better on Route 87 for the freeway segments analyzed. It is assumed that Route 87 is built out with two additional HOV lanes.

Thus, the CMP guidelines of an "E" or better LOS on freeway segments is satisfied."

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The second item focuses on the cumulative project's LOS. We have prepared a cumulative impacts table that includes the following projects:

1. Eden Housing apartments, commercial retail and a daycare center;
2. Giacommazzi commercial retail;
3. Rubino single family residential, townhomes and apartments;
4. Lands of San Jose Water Company with single family residential;
5. Arcadia Development Company with single family residential on Chynoweth Avenue.

The Almaden Expressway/Branhan Lane intersection had a newer count available for the PM peak hour from the County's monitoring system in Novenber, 1996 and that information was used for the "Rubino" project. Also, the Almaden Expressway/Chynoweth Avenue intersection shows the cumulative condition with the mitigation proposed by this project. Additonally, all other intersections which did not have a LOS calculation should have the "Existing + Approved + Project" condition duplicated for the "Cumulative", i.e. it is the SAME results.

We trust that this information will be included in the environmental document. Please call should clarification be desired on any of the above items.

Very Truly Yours,

Gay Lawrence Pang

Enclosure: Table IV
Cumulative LOS Table V

CC: Lou Tersini (w/ encl)
Gerry de Young (w/ encl)

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TABLE IV

FREEWAY VOLUMES
PM PEAK HOUR
YEAR 2010

Freeway Segment	Direction	Peak Hour Volume (1) Year 2010	Peak Hour Volume With Project	C (2)	V/C Year 2010	V/C With Project	LOS Year 2010	LOS With Project
Route 85								
West of Almaden Expressway								
PM	EB	3872	3950	5500	0.70	0.72	C	C
	WB	2593	2671	5500	0.47	0.49	A	A
East of Almaden Expressway								
PM	EB	3009	3087	5500	0.55	0.56	A	A
	WB	2260	2338	5500	0.41	0.43	A	A
Route 87								
North of Route 85								
PM	NB	2133	2185	5500	0.39	0.40	A	A
	SB	3741	3793	5500	0.68	0.69	B	B

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

C = Capacity in vehicles per hour

V/C = Volume to capacity ratio
LOS = Level of Service

(1) Source: City of San Jose, Department of Public Works, Transportation Division
(2) At 2200 vehicles per lane per hour for two mixed flow lanes and 1100 vehicles per lane per hour for the high occupancy vehicle lane.

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TABLE V

CITY OF SAN JOSE
CUMULATIVE LEVEL OF SERVICE

INTERSECTION		EXISTING		EXISTING + APPROVED(1)		EXISTING +APPROVED +PROJECT(2)		CUMULATIVE	
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1. Almaden Exp. / Branham									
AM	1/31/95	0.889	D	0.940	E	0.940	E	0.970	E
PM	4/26/95	0.844	D	0.902	E	0.887(3)	D	0.905	E
2. Almaden / Cherry-Chynoweth									
AM	1/31/95	0.749	C	0.796	C	0.826	D	0.896	D
PM	1/31/95	0.925	E	0.994	E	1.199	F	1.297	F
AM (with mitigation)						0.744	C	0.752	C
PM (with mitigation)						0.850	D	0.878	D
6. Almaden Exp. / Blossom Hill									
AM	1/19/95	0.851	D	0.927	E	0.927	E	0.927	E
PM	6/95	0.889	D	0.953	E	0.962	E	0.962	E
7. Branham / Cherry									
AM	5/2/95	0.344	A	0.356	A	0.362	A	0.362	A
PM	3/2/95	0.468	A	0.486	A	0.507	A	0.507	A
8. Branham / Lizzie									
AM	7/7/95	0.265	A	0.272	A	0.272	A	0.272	A
PM	7/7/95	0.575	A	0.591	A	0.591	A	0.591	A
9. Branham / Pearl									
AM	6/6/95	0.381	A	0.404	A	0.407	A	0.407	A
PM	6/6/95	0.653	B	0.687	B	0.703	C	0.703	C
10. Almaden Exp. / Foxworthy									
AM	5/10/95	0.912	E	0.942	E	0.941	E	0.970	E
PM	5/10/95	0.659	B	0.686	B	0.688	B	0.731	C
11. Almaden Exp. / Coleman									
AM	11/15/94	0.854	D	0.920	E	0.924	E	0.924	E
PM	6/95	0.777	C	0.819	D	0.824	D	0.824	D
12. Blossom Hill / Santa Teresa									
AM	5/10/95	0.441	A	0.479	A	0.480	A	0.480	A
PM	10/95	0.528	A	0.561	A	0.566	A	0.566	A
13. Chynoweth / Pearl									
AM	10/13/95	0.322	A	0.393	A	0.413	A	0.413	A
PM	1/19/95	0.303	A	0.392	A	0.460	A	0.460	A
14. Chynoweth/Winfield/Sapphire									
AM	8/25/95	0.127	A	0.157	A	0.182	A	0.182	A
PM	1/18/95	0.268	A	0.293	A	0.404	A	0.404	A

LOS = Level of Service
V/C = Volume to Capacity Ratio
(1) Existing + Approved Projects = "Background Traffic" condition.
(2) 350,000 square foot commercial.
(3) Using new count date 11/1/96 (Rubino Project).

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TABLE VI

CUMULATIVE TRIP GENERATION
MALECH PROPERTY
CHYNOWETH AVENUE and ALMADEN EXPRESSWAY

Land Use	No. of Units		Maximum Size (sf)	ADT
Rubino Property				
SFD Residential	496			
Townhomes/Condos	108			
Apartments	396			
	1,000			4,853 *
Eden Housing				
Apartments	206			
Retail			4,400	1,634 **
Daycare				
Giacomazzi Property				
Retail			78,000	6,051
Lands of SJ Water Co.				
SFD Residential	82			820
Almaden/Chynoweth				
Commercial and/or Residential	400 ***	or	350,000 ***	11,036

* Includes a reduction for Valley View Packing trips from the property.

** With transit reduction.

*** The project is a maximum of 350,000 square feet of commercial space, or up to a maximum of 400 units or any equivalent combination of commercial and residential uses that conforms to the City's Transportation Level of Service Policy (5-3).

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TABLE VII

FREEWAY VOLUMES
PM PEAK HOUR
EXISTING

Freeway Segment	Direction	Peak Hour Volume Existing (1)	Peak Hour Volume C	V/C Existing	LOS Existing
Route 85					
West of Almaden Expressway at Camden Avenue					
PM	EB	5710	5500 (2)	1.04	F
	WB	2822	5500	0.51	A
East of Almaden Expressway at Blossom Hill Road					
PM	EB	3606	6600 (4)	0.55	A
	WB	4656	6600	0.71	C
Route 87					
North of Route 85 at Branham Lane					
PM	NB	2629	4400 (3)	0.60	A
	SB	3992	4400	0.91	E

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

C = Capacity in vehicles per hour

V/C = Volume to capacity ratio
LOS = Level of Service

(1) Source: Santa Clara Valley Transportation Authority, 1996 Monitoring & Conformance Report.
(2) At 2200 vehicles per lane per hour for two mixed flow lanes and 1100 vehicles per lane per hour for the high occupancy vehicle lane.
(3) At 2200 vehicles per lane per hour for two mixed flow lanes.
(4) At 2200 vehicles per lane per hour for three mixed flow lanes.

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TABLE VIII

FREEWAY VOLUMES
PM PEAK HOUR
YEAR 2010

Freeway Segment	Direction	Peak Hour Volume (1) Year 2010	Peak Hour Volume (2) Year 2010
Route 85			
West of Almaden Expressway			
PM	EB	3872	4548
	WB	2593	4474
East of Almaden Expressway			
PM	EB	3009	3306
	WB	2260	3236
Route 87			
North of Route 85			
PM	NB	2133	2088
	SB	3741	3267

EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

(1) Source: City of San Jose, Department of Public Works, Transportation Division
(2) Source: Center for Urban Analysis, Santa Clara County; (Average between the Years 2005 and 2015).

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See APPENDIX L. Traffic LOS Calculations - A Separate Document for the Level of Service Calculations

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PANG ENGINEERS, INC.
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GAY LAWRENCE PANG C E TE

9511-5
April 9, 1998

Mr. Richard Mindigo
MINDIGO & ASSOCIATES
1984 The Alameda
San Jose, CA 95126

RE: Arcadia -Malech Property
Almaden Expressway at Chynoweth Avenue
City of San Jose

Dear Richard:

Pursuant to your request of March 30, 1998, we are providing additional traffic information in response to the City of San Jose Planning Department comments. In general, the concern is related to the approval of four projects in the vicinity of the proposed 350,000 square foot commercial project within the last two years. The projects are as follows:

1. Lands of Giacomazzi-78,000 square foot commercial, west side of Almaden Expressway, directly opposite of the northbound State Route 85 off-ramp;
2. Rubino residential-1,000 single family and apartment units, north of the Pearl Avenue Extension;
3. San Jose Water Company/Dow Drive-82 single family residential;
4. Eden Housing project at the Ohlone-Chynoweth Light Rail Transit station.

The intent is to add these recently approved projects to the previous "Approved Trips Inventory" of March, 1996 to bring the ATI current. Additionally, a 3.6% per annum growth factor or approximately 6.9% from the earlier May 31, 1996 analysis date, is also added to bring the "Background Traffic" condition current. The original turning movement counts for the AM and PM peak hours are utilized to maintain the same basis as the other projects.

The new ATI was extracted from the four Traffic Impact Analysis reports provided by the City of San Jose and added to the previous ATI for the AM and PM peak hours. Since this project is assuming that a two lane Chynoweth Avenue bridge will be constructed as a mitigation measure, an alternative scenario of LOS calculations were also performed at the five critical intersections with the future assumed "Travel Diversion", i.e. trips diverted from Branham Lane and Blossom Hill Road and added to the Chynoweth Avenue bridge and its adjacent intersections. The spread sheet calculations are attached for each of the five critical intersections which require an updated analysis. The critical intersections were obtained from an evaluation of Table II A, "City of San Jose, Level of Service". The intersections analyzed are at a "D" or worse level of service for at least one of the peak hours. Five intersections satisfied that criteria and are listed below with the corresponding intersection number:

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CA 94040

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FAX : (650) 941-PANG

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1. Almaden Expressway/Branham Lane;
2. Almaden Expressway/Cherry-Chynoweth Avenue;
6. Almaden Expressway/Blossom Hill Road;
10. Almaden Expressway/Foxworthy Avenue;
11. Almaden Expressway/Coleman Road.

Table II A, "City of San Jose, Level of Service, With New Approved Trip Inventory", contains the level of service calculations for the five critical intersections with the following conditions:

1. Existing;
2. Existing + New Approved Trip Inventory, or "Background Traffic";
3. "Background Traffic" + With This Project.

Four of the five intersections along Almaden Expressway at Branham, Blossom Hill, Foxworthy and Coleman are at an "E" or worse LOS for at least one peak hour. However, the increase in critical volumes is less than 1% at all four intersections. At the Almaden Expressway/Cherry-Chynoweth intersection, the proposed mitigation measure of widening the approaches on Cherry Avenue, Chynoweth Avenue and Almaden Expressway along with a traffic signal modification results in a "D" or better LOS assuming the Chynoweth Avenue bridge in place. Thus, the analysis satisfies the City of San Jose's level of service policy of a "D" or better LOS, or if at an"E" or worse LOS with the increase in critical volumes of less than 1% for the peak hours for a 350,000 square foot commercial project.

An analysis with travel diversion is shown on Table II AA. At the four intersections excluding Cherry-Chynoweth, the LOS is identical to the "With Project" condition. At the Almaden Expressway/Cherry-Chynoweth intersection, the LOS would be worsened from a high "C" to a low "D" for the AM peak hour, and from a high "D" to a high "E" for the PM peak hour.

Very Truly Yours,

Gay Lawrence Pang

Enclosure: Table II A-w/ New ATI
Table II AA-w/ Travel Diversion
LOS calcs

CC: Eli Reinhard (w/ encl)
Gerry de Young (w/ encl)

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TABLE II A

CITY OF SAN JOSE
LEVEL OF SERVICE
WITH NEW APPROVED PROJECTS

INTERSECTION		EXISTING		EXISTING + APPROVED[1]		EXISTING + APPROVED + PROJECT[3]		PER-CENT INC[2]
	Date of Count	V/C	LOS	V/C	LOS	V/C	LOS	(%)
1. Almaden Exp. / Branham								
AM	1/31/95	0.889	D	0.993	E	0.996	E	0.12
PM	4/26/95	0.844	D	0.962	E	0.966	E	0.71
2. Almaden / Cherry-Chynoweth								
AM	1/31/95	0.749	C	0.844	D	0.874	D	1.96
w/ Mitigation		-	-	-	-	0.783	C	-
PM	1/31/95	0.925	E	1.068	F	1.284	F	8.53
w/ Mitigation		-	-	-	-	0.897	D	-
6. Almaden / Blossom Hill								
AM	1/19/95	0.851	D	0.983	E	0.986	E	0.24
PM	6/95	0.889	D	1.014	F	1.025	F	0.92
10. Almaden / Foxworthy								
AM	5/10/95	0.912	E	0.994	E	0.995	E	0.07
PM	5/10/95	0.659	B	0.728	C	0.731	C	0.46
11. Almaden Exp / Coleman								
AM	11/15/94	0.854	D	0.976	E	0.980	E	0.31
PM	6/95	0.777	C	0.868	D	0.873	D	0.78

LOS = Level of Service
V/C = Volume to Capacity Ratio

(1) Existing + Approved Projects = "Background Traffic" condition.
(2) PERCENT INCREASE refers to the increase in critical volumes with the approval of this project.
(3) 350,000 square foot commercial.

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PANG ENGINEERS, INC.
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#9511-5
4/8/98

TABLE II AA

CITY OF SAN JOSE
LEVEL OF SERVICE
WITH TRAVEL DIVERSION

INTERSECTION		EXISTING + APPROVED + PROJECT(1)		WITH TRAVEL DIVERSION(2)	
	Date of Count	V/C	LOS	V/C	LOS
1. Almaden Exp. / Branham					
AM	1/31/95	0.996	E	0.976	E
PM	4/26/95	0.966	E	0.951	E
2. Almaden / Cherry-Chynoweth					
AM	1/31/95	0.874	D	-	-
w/ Mitigation		0.783	C	0.801	D
PM	1/31/95	1.284	F	-	-
w/ Mitigation		0.897	D	0.972	E
6. Almaden / Blossom Hill					
AM	1/19/95	0.986	E	0.986	E
PM	6/95	1.025	F	1.054	F
10. Almaden / Foxworthy					
AM	5/10/95	0.995	E	0.995	E
PM	5/10/95	0.731	C	0.731	C
11. Almaden Exp / Coleman					
AM	11/15/94	0.980	E	0.980	E
PM	6/95	0.873	D	0.873	D

LOS = Level of Service
V/C = Volume to Capacity Ratio

(1) 350,000 square foot commercial.
(2) Source: City of San Jose

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APPROVED TRIPS INVENTORY

NEW APPROVED PROJECTS (AM)

Giaconmazi - 78k Commercial

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	4	0	0	0	5	3	3	1	2	0	0
Almaden / Cherry-Chynoweth	0	11	0	0	0	0	0	6	4	7	0	0
Almaden / Blossom Hill	2	3	3	4	0	0	0	6	0	0	0	3
Almaden / Foxworthy	0	3	0	0	0	0	0	2	0	0	0	0
Almaden / Coleman	0	2	1	1	0	0	0	4	0	0	0	1

Rubino - 1000 DU (w/ barrier)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	38	0	0	0	0	0	0	0	0	0	0
Almaden / Cherry-Chynoweth	0	38	0	0	0	0	0	0	0	0	0	0
Almaden / Blossom Hill	0	19	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	0	28	0	38	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

San Jose Water Dow Dr. - 82 DU

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	5	0	0	0	0	0	2	0	0	0	0
Almaden / Cherry-Chynoweth	0	5	0	0	0	0	0	2	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	4	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Ohlone - Chynoweth (Eden Housing)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	1	0	0	0	0	0	10	0	0	0	0
Almaden / Cherry-Chynoweth	0	0	5	13	0	5	0	0	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Total - New Approved Projects (AM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	48	0	0	0	5	3	15	1	2	0	0
Almaden / Cherry-Chynoweth	0	54	5	13	0	5	0	8	4	7	0	0
Almaden / Blossom Hill	2	22	3	4	0	0	0	6	0	0	0	3
Almaden / Foxworthy	0	3	4	28	0	38	0	2	0	0	0	0
Almaden / Coleman	0	2	1	1	0	0	0	4	0	0	0	1

ATI (3/4/96)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	5	43	0	0	4	6	11	77	5	3	3	4
Almaden / Cherry-Chynoweth	0	45	0	0	0	0	0	92	8	2	0	0
Almaden / Blossom Hill	7	46	37	51	34	11	4	80	23	18	25	10
Almaden / Foxworthy	0	3	0	60	2	0	0	30	1	0	2	0
Almaden / Coleman	2	37	29	59	0	13	6	48	12	15	0	1

Total ATI (AM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	5	91	0	0	4	11	14	92	6	5	3	4
Almaden / Cherry-Chynoweth	0	99	5	13	0	5	0	100	12	9	0	0
Almaden / Blossom Hill	9	68	40	55	34	11	4	86	23	18	25	13
Almaden / Foxworthy	0	6	4	88	2	38	0	32	1	0	2	0
Almaden / Coleman	2	39	30	60	0	13	6	52	12	15	0	2

Travel Diversion

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	45	-45	-50	-49	-49	-44	50	0	0	-44	0
Almaden / Cherry-Chynoweth	0	-49	45	50	49	123	111	-44	0	0	44	0
Almaden / Blossom Hill	25	24	-22	-25	-25	-24	-23	23	0	0	-22	22
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Source: City of San Jose

96 - 011

~~98 - 020~~

PANG ENGINEERS, INC.
TRAFFIC AND TRANSPORTATION CONSULTANTS

APPROVED TRIPS INVENTORY

NEW APPROVED PROJECTS (PM)

Giaconmazi - 78k Commercial

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	7	0	0	0	7	7	7	3	3	0	0
Almaden / Cherry-Chynoweth	0	17	0	0	0	0	0	17	12	12	0	0
Almaden / Blossom Hill	4	10	7	7	0	0	0	10	0	0	0	4
Almaden / Foxworthy	0	4	0	0	0	0	0	4	0	0	0	0
Almaden / Coleman	1	7	2	2	0	0	0	7	0	0	0	1

Rubino - 1000 DU (w/ barrier)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	0	0	0	0	0	0	37	0	0	0	0
Almaden / Cherry-Chynoweth	0	0	0	0	0	0	0	37	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	18	0	0	0	0
Almaden / Foxworthy	0	0	55	0	0	0	37	0	0	0	18	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

San Jose Water Dow Dr. - 82 DU

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	2	0	0	0	0	0	5	0	0	0	0
Almaden / Cherry-Chynoweth	0	5	0	0	0	0	0	5	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	8	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Ohlone - Chynoweth (Eden Housing)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Cherry-Chynoweth	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Blossom Hill	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Total - New Approved Projects (PM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	9	0	0	0	7	7	49	3	3	0	0
Almaden / Cherry-Chynoweth	0	22	0	0	0	0	0	59	12	12	0	0
Almaden / Blossom Hill	4	10	7	7	0	0	0	28	0	0	0	4
Almaden / Foxworthy	0	4	63	0	0	0	37	4	0	0	18	0
Almaden / Coleman	1	7	2	2	0	0	0	7	0	0	0	1

ATI (3/4/96)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	4	96	0	0	3	16	11	62	11	13	4	5
Almaden / Cherry-Chynoweth	0	124	0	0	0	0	0	77	2	16	0	0
Almaden / Blossom Hill	10	85	56	42	52	4	11	51	28	33	61	7
Almaden / Foxworthy	0	30	60	0	2	0	0	3	0	1	2	0
Almaden / Coleman	1	59	63	33	0	6	13	48	15	12	0	2

Total ATI (PM)

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	4	105	0	0	3	23	18	111	14	16	4	5
Almaden / Cherry-Chynoweth	0	146	0	0	0	0	0	136	14	28	0	0
Almaden / Blossom Hill	14	95	63	49	52	4	11	79	28	33	61	11
Almaden / Foxworthy	0	34	123	0	2	0	37	7	0	1	20	0
Almaden / Coleman	2	66	65	35	0	6	13	55	15	12	0	3

Travel Diversion

	1	2	3	4	5	6	7	8	9	10	11	12
Almaden / Branham	0	46	-46	-33	-34	-33	-46	33	0	0	-47	0
Almaden / Cherry-Chynoweth	0	-33	46	33	34	210	298	-46	0	0	47	0
Almaden / Blossom Hill	59	59	-90	-59	-59	-59	-81	81	0	0	-81	81
Almaden / Foxworthy	0	0	0	0	0	0	0	0	0	0	0	0
Almaden / Coleman	0	0	0	0	0	0	0	0	0	0	0	0

Source: City of San Jose

96 - 011

98 - 027

Level of Service Calculations with New Approved Projects

96-011

~~98-027~~

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED

N-S	111.00	9.50
E-W	51.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	131	739	51	0	91	5	0	7	0	146	921	62
E	202010	474	434	366	11	4	0	0	0	0	539	487	408
S	203010	135	2767	284	6	92	14	0	5	0	156	3179	330
W	202010	305	196	61	4	3	5	0	0	0	344	221	73

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	131	3015	0.043	0.026	0.069	208
E	2	0 0 2 0 0 0	434	3560	0.122	0.026	0.148	527
S	3	0 0 3 0 0 0	2767	5340	0.518	0.039	0.557	2974
W	2	2 0 0 0 0 0	305	3015	0.101	0.026	0.127	383
				LT =	0.100			
TOTALS	9		3637		0.884			4092

1 - 0.884 = 0.116 / 9 = 0.013

V/C = 0.889

EXISTING LEVEL OF SERVICE = D

N	2	2 0 0 0 0 0	146	3015	0.048	0.002	0.050	151
E	2	0 0 2 0 0 0	487	3560	0.137	0.002	0.139	495
S	3	0 0 3 0 0 0	3174	5340	0.594	0.002	0.596	3183
W	2	2 0 0 0 0 0	344	3015	0.114	0.002	0.116	350
				LT =	0.100			
TOTALS	9		4151		0.993			4179

1 - 0.993 = 0.007 / 9 = 0.001

V/C = 0.993

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	146	3015	0.048	0.001	0.049	148
E	2	0 0 2 0 0 0	487	3560	0.137	0.001	0.138	491
S	3	0 0 3 0 0 0	3179	5340	0.595	0.002	0.597	3188
W	2	2 0 0 0 0 0	344	3015	0.114	0.001	0.115	347
				LT =	0.100			
TOTALS	9		4156		0.994			4174

1 - 0.994 = 0.006 / 9 = 0.001

V/C = 0.996

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

4156 - 4151)/ 4151 = 0.12 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

~~98 - 027~~

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 4/26/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 10.5

SIGNAL TYPE : FULLY ACTUATED
N-S 111.00 9.50
E-W 51.00 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	371	1924	281	0	105	4	0	26	0	410	2257	315
E	202010	359	417	124	23	3	0	0	0	0	420	464	137
S	203010	360	814	442	14	111	18	0	26	0	412	1036	506
W	202010	153	539	149	5	4	16	0	0	0	174	600	181

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1924	5340	0.360	0.050	0.410	2189
E	2	2 0 0 0 0 0	359	3015	0.119	0.034	0.153	461
S	2	2 0 0 0 0 0	360	3015	0.119	0.034	0.153	461
W	2	0 0 2 0 0 0	539	3560	0.151	0.034	0.185	659
				LT =	0.100			
TOTALS	9		3182		0.849			3770

1 - 0.849 = 0.151 / 9 = 0.017

V/C = 0.844

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2231	5340	0.418	0.012	0.430	2296
E	2	2 0 0 0 0 0	420	3015	0.139	0.008	0.147	443
S	2	2 0 0 0 0 0	412	3015	0.137	0.008	0.145	437
W	2	0 0 2 0 0 0	600	3560	0.169	0.008	0.177	630
				LT =	0.100			
TOTALS	9		3663		0.963			3806

1 - 0.963 = 0.037 / 9 = 0.004

V/C = 0.962

EXISTING + APPROVED LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2257	5340	0.423	0.011	0.434	2318
E	2	2 0 0 0 0 0	420	3015	0.139	0.007	0.146	440
S	2	2 0 0 0 0 0	412	3015	0.137	0.007	0.144	434
W	2	0 0 2 0 0 0	600	3560	0.169	0.007	0.176	627
				LT =	0.100			
TOTALS	9		3689		0.968			3819

1 - 0.968 = 0.032 / 9 = 0.004

V/C = 0.966

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3689 - 3663)/ 3663 = 0.71 PERCENT INCREASE IN CRITICAL VOLUME

~~98-027~~
96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED
N-S 115.00 8.00
E-W 25.00 4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	57	1178	53	5	99	0	7	0	0	75	1411	59
E	010010	65	7	18	5	0	13	33	9	5	110	17	38
S	103000	346	2530	0	12	100	0	0	0	56	397	2918	56
W	010010	153	16	473	0	0	9	0	15	0	170	33	536

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	57	1675	0.034	0.045	0.079	132
E	1	0 1 0 0 0 0	72	1685	0.043	0.045	0.088	148
S	3	0 0 3 0 0 0	2530	5340	0.474	0.135	0.609	3252
W	1	0 1 0 0 0 0	169	1685	0.100	0.045	0.145	244
				LT =	0.079			
TOTALS	6		2928		0.730			3776

1 - 0.730 = 0.270 / 6 = 0.045

V/C = 0.749

EXISTING LEVEL OF SERVICE = C

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	68	1675	0.041	0.029	0.070	117
E	1	0 1 0 0 0 0	85	1685	0.050	0.029	0.079	133
S	3	0 0 3 0 0 0	2918	5340	0.546	0.086	0.632	3375
W	1	0 1 0 0 0 0	188	1685	0.112	0.029	0.141	238
				LT =	0.079			
TOTALS	6		3259		0.828			3863

1 - 0.828 = 0.172 / 6 = 0.029

V/C = 0.844

EXISTING + APPROVED LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	75	1675	0.045	0.023	0.068	114
E	1	0 1 0 0 0 0	127	1689	0.075	0.023	0.098	166
S	3	0 0 3 0 0 0	2918	5340	0.546	0.068	0.614	3279
W	1	0 1 0 0 0 0	203	1692	0.120	0.023	0.143	242
				LT =	0.079			
TOTALS	6		3323		0.865			3801

1 - 0.865 = 0.135 / 6 = 0.023

V/C = 0.874

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3323 - 3259)/ 3259 = 1.96 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

~~98 - 027~~

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY CHYNOWETH

MESSAGE: W/MITIGATION (350K COMM.)

PEAK HOUR: AM

COUNT DATE: 1/31/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

```
                    N
          ----------+          +----------
                    W                    E
          ----------+          +----------
                    S
```

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

G

CYCLE LENGTH = 180

Y

LOST TIME = .094

R

96-011

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	75	1411	59	0	0	0	0	0	0	75	1411	59
E	202010	110	17	38	0	0	0	0	0	0	110	17	38
S	203010	397	2918	56	0	0	0	0	0	0	397	2918	56
W	102010	170	33	536	0	0	0	0	0	0	170	33	536

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	75	3015	0.025	0.057	0.082	247
E	2	0 0 2 0 0 0	17	3560	0.005	0.057	0.062	221
S	3	0 0 3 0 0 0	2918	5340	0.546	0.086	0.632	3375
W	1	1 0 0 0 0 0	170	1675	0.101	0.029	0.130	218
				LT =	0.094			
TOTALS	8		3180		0.771			4061

98-087

1 - 0.771 = 0.229 / 8 = 0.029

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 1/31/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	135	2288	166	0	146	0	26	0	0	176	2695	185
E	010010	140	31	24	0	0	0	195	52	26	351	87	53
S	103000	414	1560	14	14	136	0	0	0	191	475	1874	207
W	010010	106	22	477	0	0	28	0	52	0	118	77	559

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2288	5340	0.428	0.035	0.463	2472
E	1	0 1 0 0 0 0	171	1694	0.101	0.012	0.113	191
S	1	1 0 0 0 0 0	414	1675	0.247	0.012	0.259	434
W	1	0 1 0 0 0 0	128	1693	0.076	0.012	0.088	149
				LT =	0.079			
TOTALS	6		3001		0.931			3246

1 - 0.931 = 0.069 / 6 = 0.012

V/C = 0.925

EXISTING LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2695	5340	0.505	-.032	0.473	2526
E	1	0 1 0 0 0 0	191	1694	0.113	-.011	0.102	173
S	1	1 0 0 0 0 0	475	1675	0.284	-.011	0.273	457
W	1	0 1 0 0 0 0	143	1693	0.084	-.011	0.073	124
				LT =	0.079			
TOTALS	6		3504		1.065			3280

1 - 1.065 = -.065 / 6 = -.011

V/C = 1.068

EXISTING + APPROVED LEVEL OF SERVICE = F

N	3	0 0 3 0 0 0	2695	5340	0.505	-.120	0.385	2056
E	1	0 1 0 0 0 0	438	1696	0.258	-.040	0.218	370
S	1	1 0 0 0 0 0	475	1675	0.284	-.040	0.244	409
W	1	0 1 0 0 0 0	195	1716	0.114	-.040	0.074	127
				LT =	0.079			
TOTALS	6		3803		1.240			2962

1 - 1.240 = -.240 / 6 = -.040

V/C = 1.284

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = F

(3803 - 3504)/ 3504 = 8.53 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

~~98 - 029~~

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY-CHYNOWETH

MESSAGE: W/MITIGATION (350K COMM.)

PEAK HOUR: PM

COUNT DATE: 1/31/95

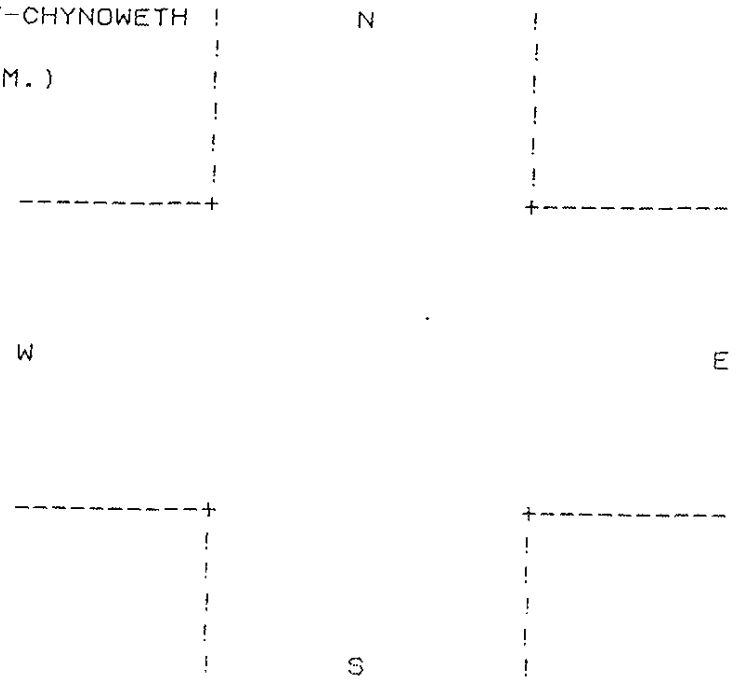
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094

G
Y
R

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	176	2695	185	0	0	0	0	0	0	176	2695	185
E	202010	351	87	53	0	0	0	0	0	0	351	87	53
S	203010	475	1874	207	0	0	0	0	0	0	475	1874	207
W	102010	118	77	559	0	0	0	0	0	0	118	77	559

LEG	# LANES	CRIT. MOVE (L L S T R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2695	5340	0.505	0.035	0.540	2884
E	2	2 0 0 0 0 0	351	3015	0.116	0.023	0.139	419
S	2	2 0 0 0 0 0	475	3015	0.158	0.023	0.181	546
W	2	0 0 2 0 0 0	77	3560	0.022	0.023	0.045	160
				LT =	-0.094			
TOTALS	9		3598		0.895			4009

~~98-067~~

96-011

1 - 0.895 = 0.105 / 9 = 0.012

V/C = TOTAL CRIT. VOL. /TOTAL CRIT.

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 7:15-8:15 AM
COUNT DATE: 1/19/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 11.4

SIGNAL TYPE : FULLY ACTUATED

N-S	103.00	9.50
E-W	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	118	684	272	40	68	9	0	4	2	171	834	314
E	203010	99	311	177	11	34	55	2	0	0	123	380	252
S	203010	114	2678	40	23	86	4	0	8	3	150	3077	52
W	203010	480	189	80	13	25	18	2	3	0	550	239	107

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	118	3015	0.039	0.029	0.068	205
E	3	0 0 3 0 0 0	311	5340	0.058	0.043	0.101	539
S	3	0 0 3 0 0 0	2678	5340	0.501	0.043	0.544	2905
W	2	2 0 0 0 0 0	480	3015	0.159	0.029	0.188	567
				LT =	0.100			
TOTALS	%10		3587		0.857			4216

1 - 0.857 = 0.143 / %10 = 0.014
V/C = 0.851

EXISTING LEVEL OF SERVICE = D

N	2	2 0 0 0 0 0	171	3015	0.057	0.003	0.060	181
E	3	0 0 3 0 0 0	380	5340	0.071	0.005	0.076	406
S	3	0 0 3 0 0 0	3069	5340	0.575	0.005	0.580	3097
W	2	2 0 0 0 0 0	548	3015	0.182	0.003	0.185	558
				LT =	0.100			
TOTALS	%10		4168		0.985			4242

1 - 0.985 = 0.015 / %10 = 0.002
V/C = 0.983

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	171	3015	0.057	0.003	0.060	181
E	3	0 0 3 0 0 0	380	5340	0.071	0.004	0.075	401
S	3	0 0 3 0 0 0	3077	5340	0.576	0.004	0.580	3097
W	2	2 0 0 0 0 0	550	3015	0.182	0.003	0.185	558
				LT =	0.100			
TOTALS	%10		4178		0.986			4237

1 - 0.986 = 0.014 / %10 = 0.001
V/C = 0.986

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4178 - 4168)/ 4168 = 0.24 PERCENT INCREASE
IN CRITICAL VOLUME

/19/88 LV

96 - 011

~~98 - 037~~

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 9.9

SIGNAL TYPE : FULLY ACTUATED

N-S	103.00	9.50
E-W	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	689	2366	406	63	95	14	0	27	12	820	2722	472
E	203010	238	559	364	4	52	49	9	4	0	275	670	449
S	203010	253	1257	232	28	79	11	0	27	9	306	1487	275
W	203010	494	675	141	11	61	33	8	8	0	562	811	188

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2366	5340	0.443	0.031	0.474	2531
E	3	0 0 3 0 0 0	559	5340	0.105	0.031	0.136	726
S	2	2 0 0 0 0 0	253	3015	0.084	0.021	0.105	317
W	2	2 0 0 0 0 0	494	3015	0.164	0.021	0.185	558
					LT = 0.100			
TOTALS	%10		3672		0.896			4132

1 - 0.896 = 0.104 / %10 = 0.010
V/C = 0.889

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2695	5340	0.505	-.004	0.501	2675
E	3	0 0 3 0 0 0	666	5340	0.125	-.004	0.121	646
S	2	2 0 0 0 0 0	306	3015	0.101	-.003	0.098	295
W	2	2 0 0 0 0 0	554	3015	0.184	-.003	0.181	546
					LT = 0.100			
TOTALS	%10		4221		1.015			4162

1 - 1.015 = -.015 / %10 = -.002
V/C = 1.014

EXISTING + APPROVED LEVEL OF SERVICE = F

N	3	0 0 3 0 0 0	2722	5340	0.510	-.007	0.503	2686
E	3	0 0 3 0 0 0	670	5340	0.125	-.007	0.118	630
S	2	2 0 0 0 0 0	306	3015	0.101	-.004	0.097	292
W	2	2 0 0 0 0 0	562	3015	0.186	-.004	0.182	549
					LT = 0.100			
TOTALS	%10		4260		1.022			4157

1 - 1.022 = -.022 / %10 = -.002
V/C = 1.025

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = F

(4260 - 4221)/ 4221 = 0.92 PERCENT INCREASE
IN CRITICAL VOLUME

98 - 027

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 5/10/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 10.2

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	121	879	43	4	6	0	0	4	0	137	979	47
E	101010	29	50	200	38	2	88	0	0	0	70	57	308
S	103010	47	3627	31	1	32	0	0	3	0	53	4032	34
W	101010	66	60	145	0	2	0	0	0	0	73	68	160

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	121	1675	0.072	0.018	0.090	151
E	1	0 0 1 0 0 0	50	1780	0.028	0.018	0.046	82
S	3	0 0 3 0 0 0	3627	5340	0.679	0.053	0.732	3909
W	1	1 0 0 0 0 0	66	1675	0.039	0.018	0.057	95
				LT =	0.077			
TOTALS	6		3864		0.895			4237

1 - 0.895 = 0.105 / 6 = 0.018

V/C = 0.912

EXISTING LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	137	1675	0.082	0.001	0.083	139
E	1	1 0 0 0 0 0	70	1675	0.042	0.001	0.043	72
S	3	0 0 3 0 0 0	4029	5340	0.754	0.004	0.758	4048
W	1	0 0 1 0 0 0	68	1780	0.038	0.001	0.039	69
				LT =	0.077			
TOTALS	6		4304		0.993			4328

1 - 0.993 = 0.007 / 6 = 0.001

V/C = 0.994

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	137	1675	0.082	0.001	0.083	139
E	1	1 0 0 0 0 0	70	1675	0.042	0.001	0.043	72
S	3	0 0 3 0 0 0	4032	5340	0.755	0.003	0.758	4048
W	1	0 0 1 0 0 0	68	1780	0.038	0.001	0.039	69
				LT =	0.077			
TOTALS	6		4307		0.994			4328

1 - 0.994 = 0.006 / 6 = 0.001

V/C = 0.995

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4307 - 4304)/ 4304 = 0.07 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

~~98 - 027~~

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 5/10/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 10.2

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	249	2665	134	123	34	0	0	16	0	397	2987	148
E	101010	43	71	65	0	2	0	0	0	0	47	80	72
S	103010	140	953	29	0	7	37	0	16	0	154	1073	69
W	101010	113	95	64	0	20	1	0	0	0	125	125	72

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	2799	7085	0.395	0.193	0.588	4166
E	1	0 0 1 0 0 0	71	1780	0.040	0.048	0.088	157
S	1	1 0 0 0 0 0	140	1675	0.084	0.048	0.132	221
W	1	1 0 0 0 0 0	113	1675	0.067	0.048	0.115	193
				LT =	0.077			
TOTALS	7		3123		0.663			4737

1 - 0.663 = 0.337 / 7 = 0.048

V/C = 0.659

EXISTING LEVEL OF SERVICE = B

N	4	0 0 3 1 0 0	3119	7085	0.440	0.155	0.595	4216
E	1	0 0 1 0 0 0	80	1780	0.045	0.039	0.084	150
S	1	1 0 0 0 0 0	154	1675	0.092	0.039	0.131	219
W	1	1 0 0 0 0 0	125	1675	0.075	0.039	0.114	191
				LT =	0.077			
TOTALS	7		3478		0.729			4776

1 - 0.729 = 0.271 / 7 = 0.039

V/C = 0.728

EXISTING + APPROVED LEVEL OF SERVICE = C

N	4	0 0 3 1 0 0	3135	7085	0.442	0.154	0.596	4223
E	1	0 0 1 0 0 0	80	1780	0.045	0.038	0.083	148
S	1	1 0 0 0 0 0	154	1675	0.092	0.038	0.130	218
W	1	1 0 0 0 0 0	125	1675	0.075	0.038	0.113	189
				LT =	0.077			
TOTALS	7		3494		0.731			4778

1 - 0.731 = 0.269 / 7 = 0.038

V/C = 0.731

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(3494 - 3478)/ 3478 = 0.46 PERCENT INCREASE
IN CRITICAL VOLUME

98-027

5/19/88 LV

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 730
COUNT DATE: 11/15/94
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 12.0

SIGNAL TYPE : FULLY ACTUATED

N-S	93.50	9.50
E-W	68.50	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	45	704	62	30	39	2	0	4	2	80	831	73
E	202010	476	258	263	13	0	60	0	0	0	546	289	355
S	203010	27	2529	655	12	52	6	0	8	0	42	2892	740
W	102010	309	195	21	2	0	15	3	0	0	351	218	39

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	45	1675	0.027	0.020	0.047	79
E	2	0 0 2 0 0 0	258	3560	0.072	0.041	0.113	402
S	3	0 0 3 0 0 0	2529	5340	0.474	0.061	0.535	2857
W	1	1 0 0 0 0 0	309	1675	0.184	0.020	0.204	342
				LT =	0.100			
TOTALS	7		3141		0.857			3680

1 - 0.857 = 0.143 / 7 = 0.020

V/C = 0.854

EXISTING LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	80	1675	0.048	0.003	0.051	85
E	2	0 0 2 0 0 0	289	3560	0.081	0.007	0.088	313
S	3	0 0 3 0 0 0	2884	5340	0.540	0.010	0.550	2937
W	1	1 0 0 0 0 0	348	1675	0.208	0.003	0.211	353
				LT =	0.100			
TOTALS	7		3601		0.977			3688

1 - 0.977 = 0.023 / 7 = 0.003

V/C = 0.976

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	80	1675	0.048	0.003	0.051	85
E	2	0 0 2 0 0 0	289	3560	0.081	0.005	0.086	306
S	3	0 0 3 0 0 0	2892	5340	0.542	0.008	0.550	2937
W	1	1 0 0 0 0 0	351	1675	0.210	0.003	0.213	357
				LT =	0.100			
TOTALS	7		3612		0.981			3685

1 - 0.981 = 0.019 / 7 = 0.003

V/C = 0.980

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3612 - 3601)/ 3601 = 0.31 PERCENT INCREASE IN CRITICAL VOLUME

5/19/88 LV

96-01 1

~~98-027~~

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 4/8/98
ANAL. INIT: GLP
GROWTH FACTOR % : 9.9

SIGNAL TYPE : FULLY ACTUATED
N-S 93.50 9.50
E-W 68.50 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	227	1933	306	65	66	2	0	26	10	314	2216	348
E	202010	720	277	123	6	0	35	0	0	0	797	304	170
S	203010	36	946	517	15	55	13	0	26	0	55	1121	581
W	102010	126	256	31	3	0	12	10	0	0	151	281	46

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1933	5340	0.362	0.072	0.434	2318
E	2	2 0 0 0 0 0	720	3015	0.239	0.048	0.287	865
S	2	2 0 0 0 0 0	36	3015	0.012	0.048	0.060	181
W	2	0 0 2 0 0 0	256	3560	0.072	0.048	0.120	427
				LT =	0.100			
TOTALS	9		2945		0.785			3791

1 - 0.785 = 0.215 / 9 = 0.024

V/C = 0.777

EXISTING LEVEL OF SERVICE = C

N	3	0 0 3 0 0 0	2190	5340	0.410	0.043	0.453	2419
E	2	2 0 0 0 0 0	797	3015	0.264	0.029	0.293	883
S	2	2 0 0 0 0 0	55	3015	0.018	0.029	0.047	142
W	2	0 0 2 0 0 0	281	3560	0.079	0.029	0.108	384
				LT =	0.100			
TOTALS	9		3323		0.871			3828

1 - 0.871 = 0.129 / 9 = 0.014

V/C = 0.868

EXISTING + APPROVED LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2216	5340	0.415	0.041	0.456	2435
E	2	2 0 0 0 0 0	797	3015	0.264	0.028	0.292	880
S	2	2 0 0 0 0 0	55	3015	0.018	0.028	0.046	139
W	2	0 0 2 0 0 0	281	3560	0.079	0.028	0.107	381
				LT =	0.100			
TOTALS	9		3349		0.876			3835

1 - 0.876 = 0.124 / 9 = 0.014

V/C = 0.873

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3349 - 3323)/ 3323 = 0.78 PERCENT INCREASE IN CRITICAL VOLUME

~~98-027~~

96-011

5/19/88 LV

Level of Service Calculations with Travel Diversion

96-011

~~98-037~~

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 1/31/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	111	9.5	
E-W	51	8.5	G
CYCLE LENGTH =	180		Y
COST TIME =	.100		R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	101	966	62	0	0	0	0	0	0	101	966	62
E	202010	490	438	358	0	0	0	0	0	0	490	438	358
S	203010	156	3229	286	0	0	0	0	0	0	156	3229	286
W	202010	344	177	73	0	0	0	0	0	0	344	177	73

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	101	3015	0.033	0.006	0.039	118
E	2	0 0 2 0 0 0	438	3560	0.123	0.006	0.129	459
S	3	0 0 3 0 0 0	3229	5340	0.605	0.008	0.613	3273
W	2	2 0 0 0 0 0	344	3015	0.114	0.006	0.120	362
				LT =	0.100			
TOTALS	9		4112		0.975			4212

1 - 0.975 = 0.025 / 9 = 0.003

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .976 LEVEL OF SERVICE = E

96-011

~~98-027~~

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 4/26/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9.5
E-W	51	8.5

CYCLE LENGTH = 180

LOST TIME = .100

G

Y

R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	364	2303	315	0	0	0	0	0	0	364	2303	315
E	202010	387	430	104	0	0	0	0	0	0	387	430	104
S	203010	412	1069	460	0	0	0	0	0	0	412	1069	460
W	202010	174	553	181	0	0	0	0	0	0	174	553	181

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2303	5340	0.431	0.016	0.447	2387
E	2	2 0 0 0 0 0	387	3015	0.128	0.011	0.139	419
S	2	2 0 0 0 0 0	412	3015	0.137	0.011	0.148	446
W	2	0 0 2 0 0 0	553	3560	0.155	0.011	0.166	591
				LT =	0.100			
TOTALS	9		3655		0.951			3843

1 - 0.951 = 0.049 / 9 = 0.005

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .951 LEVEL OF SERVICE = E

96-011

98-027

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY CHYNOWETH

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 1/31/95

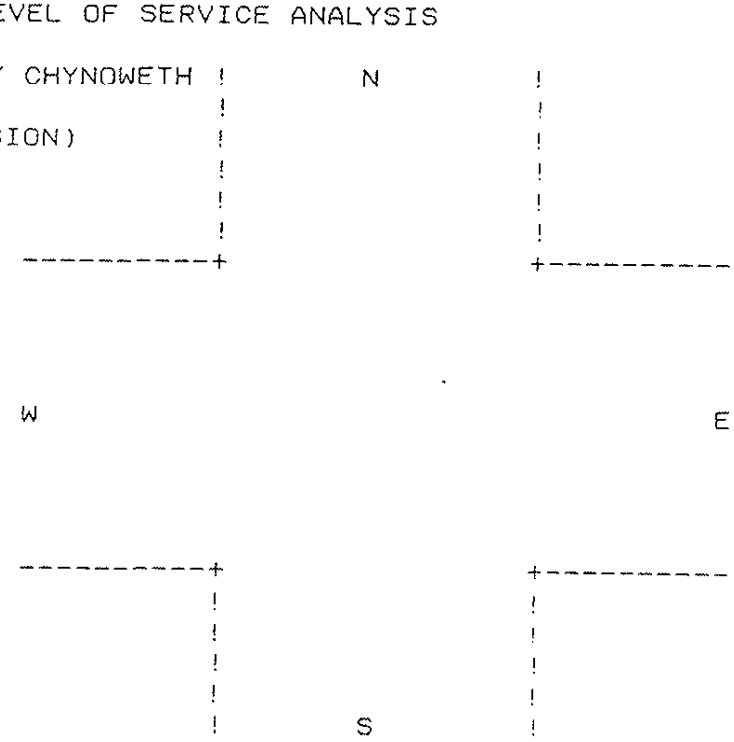
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

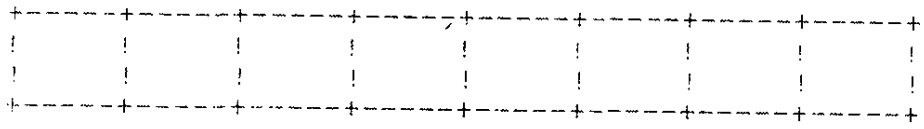


SIGNAL TYPE: FULLY ACTUATED

PEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094



PEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	120	1362	59	0	0	0	0	0	0	120	1362	59
E	202010	233	66	88	0	0	0	0	0	0	233	66	88
S	203010	397	2874	167	0	0	0	0	0	0	397	2874	167
W	102010	170	77	536	0	0	0	0	0	0	170	77	536

PEG	# LANES	CRIT. MOVE (L S T / R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	120	3015	0.040	0.052	0.092	277
E	2	0 0 2 0 0 0	66	3560	0.019	0.052	0.071	253
S	3	0 0 3 0 0 0	2874	5340	0.538	0.078	0.616	3289
W	1	1 0 0 0 0 0	170	1675	0.101	0.026	0.127	213
TOTALS	8		3230	LT =	0.094			
					0.792			4032

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1 - 0.792 = 0.208 / 8 = 0.026

V/C = TOTAL CRIT. VOL. /TOTAL CRIT. CAP. = .801 LEVEL OF SERVICE = D

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY CHYNOWETH

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 1/31/95

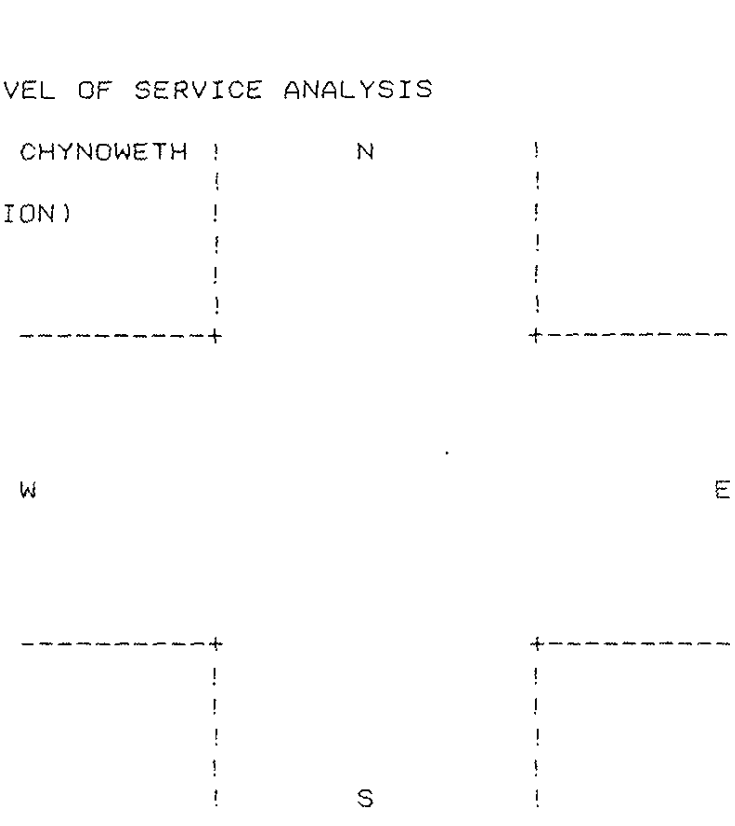
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9
E-W	52	8

CYCLE LENGTH = 180

LOST TIME = .094

G
Y
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LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	222	2662	185	0	0	0	0	0	0	222	2662	185
E	202010	561	121	86	0	0	0	0	0	0	561	121	86
S	203010	475	1828	505	0	0	0	0	0	0	475	1828	505
W	102010	118	124	559	0	0	0	0	0	0	118	124	559

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2662	5340	0.499	0.009	0.508	2713
E	2	2 0 0 0 0 0	561	3015	0.186	0.006	0.192	579
S	2	2 0 0 0 0 0	475	3015	0.158	0.006	0.164	494
W	2	0 0 2 0 0 0	124	3560	0.035	0.006	0.041	146
				LT =	0.094			
TOTALS	9		3822		0.972			3932

98-027

1 - 0.972 = 0.028 / 9 = 0.003

VC = TOTAL CRIT. VOL./TOTAL CRIT. CAP = .972 LEVEL OF SERVICE

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 1/19/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	103	9.5
E-W	59	8.5

CYCLE LENGTH = 180

LOST TIME = .100

96-011

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	149	858	339	0	0	0	0	0	0	149	858	339
E	203010	99	355	227	0	0	0	0	0	0	99	355	227
S	203010	150	3100	29	0	0	0	0	0	0	150	3100	29
W	203010	572	217	107	0	0	0	0	0	0	572	217	107

LEG	# LANES	CRIT. MOVE L S T	R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0	0 0 0	149	3015	0.049	0.003	0.052	157
E	3	0 0 3	0 0 0	355	5340	0.066	0.004	0.070	374
S	3	0 0 3	0 0 0	3100	5340	0.581	0.004	0.585	3124
W	2	2 0 0	0 0 0	572	3015	0.190	0.003	0.193	582
					LT =	0.100			
TOTALS	%10			4176		0.986			4237

1 - 0.986 = 0.014 / %10 = 0.001

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .986 LEVEL OF SERVICE = E

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LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 6/95

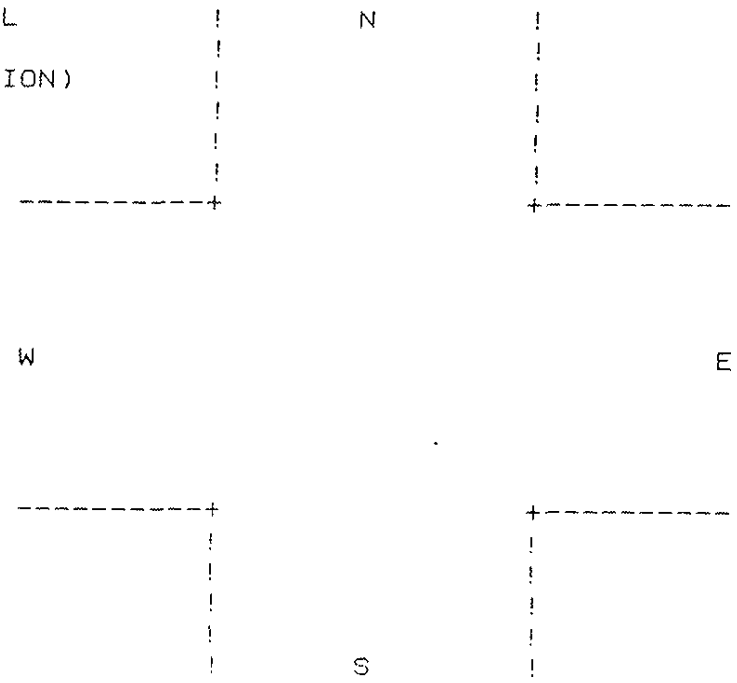
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	103	9.5
E-W	59	8.5

CYCLE LENGTH = 180

LOST TIME = .100

G

Y

R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	730	2781	531	0	0	0	0	0	0	730	2781	531
E	203010	216	611	390	0	0	0	0	0	0	216	611	390
S	203010	306	1568	194	0	0	0	0	0	0	306	1568	194
W	203010	643	730	188	0	0	0	0	0	0	643	730	188

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2781	5340	0.521	-.015	0.506	2702
E	3	0 0 3 0 0 0	611	5340	0.114	-.015	0.099	529
S	2	2 0 0 0 0 0	306	3015	0.101	-.010	0.091	274
W	2	2 0 0 0 0 0	643	3015	0.213	-.010	0.203	612
				LT =	0.100			
TOTALS	%10		4341		1.049			4117

1 - 1.049 = -.049 / %10 = -.005

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = 1.054 LEVEL OF SERVICE = F

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LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 5/10/95

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	134.5	9.5	
E-W	33.5	4.5	G
CYCLE LENGTH =	182		Y
LOST TIME =	.077		R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	137	979	47	0	0	0	0	0	0	137	979	47
E	101010	70	57	308	0	0	0	0	0	0	70	57	308
S	103010	53	4032	34	0	0	0	0	0	0	53	4032	34
W	101010	73	68	160	0	0	0	0	0	0	73	68	160

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	137	1675	0.082	0.001	0.083	139
E	1	1 0 0 0 0 0	70	1675	0.042	0.001	0.043	72
S	3	0 0 3 0 0 0	4032	5340	0.755	0.003	0.758	4048
W	1	0 0 1 0 0 0	68	1780	0.038	0.001	0.039	69
				LT =	0.077			
TOTALS	6		4307		0.994			4328

1 - 0.994 = 0.006 / 6 = 0.001

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .995 LEVEL OF SERVICE = E

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LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 5/10/95

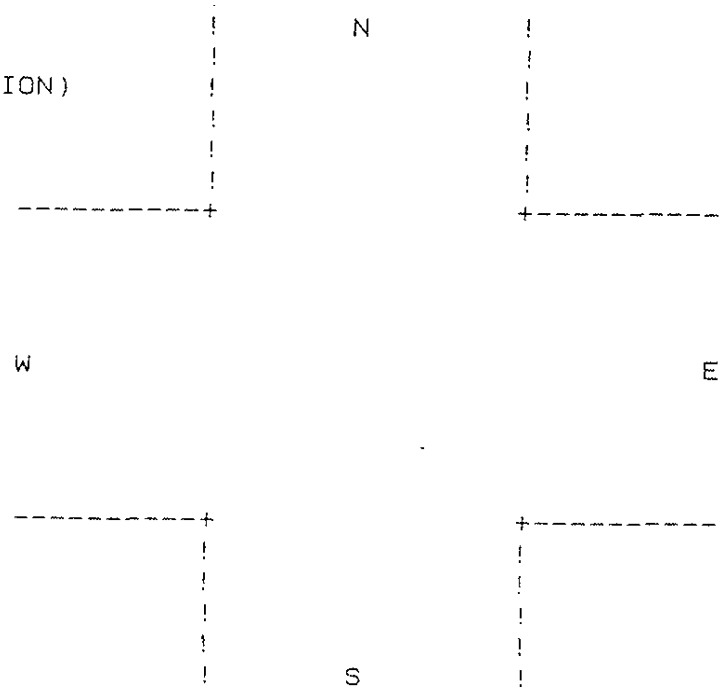
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	134.5	9.5
E-W	33.5	4.5

CYCLE LENGTH = 182

LOST TIME = .077

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LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	103100	397	2987	148	0	0	0	0	0	0	397	2987	14[illegible]
E	101010	47	80	72	0	0	0	0	0	0	47	80	72
S	103010	154	1073	69	0	0	0	0	0	0	154	1073	69
W	101010	125	125	72	0	0	0	0	0	0	125	125	[illegible]

LEG	# LANES	CRIT. MOVE (L L S T R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	3135	7085	0.442	0.154	0.596	4223
E	1	0 0 1 0 0 0	80	1780	0.045	0.038	0.083	148
S	1	1 0 0 0 0 0	154	1675	0.092	0.038	0.130	218
W	1	1 0 0 0 0 0	125	1675	0.075	0.038	0.113	189
				LT =	0.077			
TOTALS	7		3494		0.731			4778

1 - 0.731 = 0.269 / 7 = 0.038

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .731 LEVEL OF SERVICE = C

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LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: AM

COUNT DATE: 11/15/94

ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	93.5	9.5	
E-W	68.5	8.5	G
CYCLE LENGTH =	180		Y
LOST TIME =	.100		R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
	103010	80	831	73	0	0	0	0	0	0	80	831	73
E	202010	546	289	355	0	0	0	0	0	0	546	289	355
S	203010	42	2892	740	0	0	0	0	0	0	42	2892	740
	102010	351	218	39	0	0	0	0	0	0	351	218	39

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	80	1675	0.048	0.003	0.051	85
	2	0 0 2 0 0 0	289	3560	0.081	0.005	0.086	306
	3	0 0 3 0 0 0	2892	5340	0.542	0.008	0.550	2937
W	1	1 0 0 0 0 0	351	1675	0.210	0.003	0.213	357
				LT =	0.100			
TOTALS	7		3612		0.981			3685

1 - 0.981 = 0.019 / 7 = 0.003

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .98 LEVEL OF SERVICE = E

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LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN

MESSAGE: #9511-5 (TRAVEL DIVERSION)

PEAK HOUR: PM

COUNT DATE: 6/95

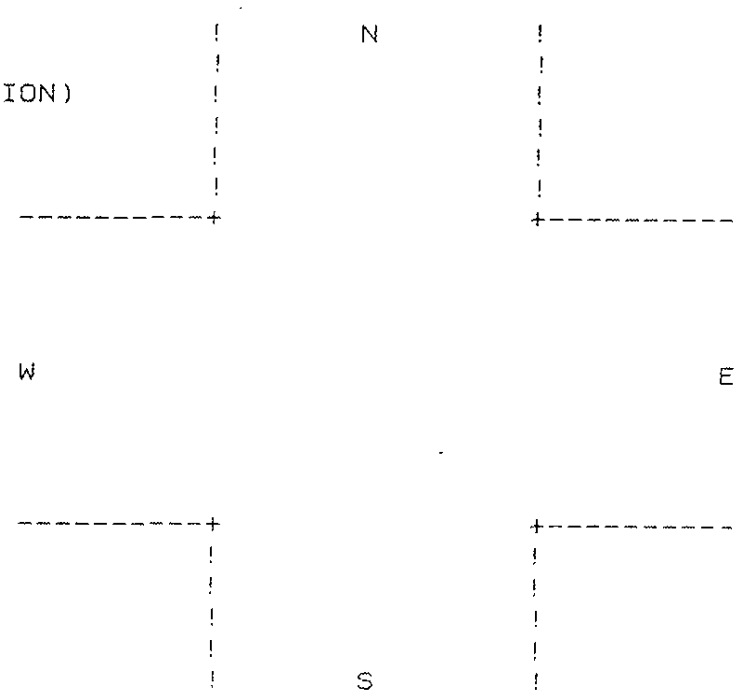
ANAL. DATE: 4/8/98

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	93.5	9.5	
E-W	68.5	8.5	G
CYCLE LENGTH =	180		Y
LOST TIME =	.100		R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	314	2216	348	0	0	0	0	0	0	314	2216	34[illegible]
E	202010	797	304	170	0	0	0	0	0	0	797	304	170
S	203010	55	1121	581	0	0	0	0	0	0	55	1121	581
W	102010	151	281	46	0	0	0	0	0	0	151	281	4[illegible]

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2216	5340	0.415	0.041	0.456	2435
E	2	2 0 0 0 0 0	797	3015	0.264	0.028	0.292	880
S	2	2 0 0 0 0 0	55	3015	0.018	0.028	0.046	139
W	2	0 0 2 0 0 0	281	3560	0.079	0.028	0.107	381
				LT =	0.100			
TOTALS	9		3349		0.876			3835

1 - 0.876 = 0.124 / 9 = 0.014

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .873 LEVEL OF SERVICE = D

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APPENDIX H

NOISE ASSESSMENTS

96-011 ~~96-027~~

EDWARD L. PACK ASSOCIATES, INC.

1030 E. DUANE AVENUE, SUITE F
SUNNYVALE, CA 94086

Acoustical Consultants

TEL: 408-730-5574
FAX: 408-730-0702

July 30, 1996
Project No. 28-057

Mr. Lou Tersini
Arcadia Development
P.O. Box 5368
San Jose, CA 95150

Subject: Noise Assessment Study for the Proposed Commercial/Residential Mixed-Use Development, Almaden Expressway and Highway 85, San Jose

Dear Mr. Tersini:

This report presents the results of a noise assessment study for a Planned Development Rezoning for the proposed commercial/residential mixed-use development at Almaden Expressway and Highway 85 in San Jose, as shown on the Conceptual Plan, Ref. (a). The noise exposures presented herein were evaluated against the standards of the City of San Jose General Plan Noise Element, Ref. (b), and the State of California Code of Regulations, Title 24, Ref. (c), which apply to all new multi-family housing. An analysis of the sound level measurements indicates that the existing noise environment at the site is due primarily to traffic on Almaden Expressway and Highway 85 and loading dock and mechanical equipment at the Pak 'n Save store. Traffic noise from the future extension of Chynoweth Avenue will add to the noise environment. The purpose of this analysis is to determine the feasibility of commercial and residential development on the site prior to plan development. The results of the study reveal that commercial and residential development is feasible although noise excesses will occur. Mitigation measures will be required.

Sections I and II of this report contain a summary of our findings and recommendations, respectively . Subsequent sections contain site, traffic and project descriptions, analyses, evaluations and conclusions. Appendices A, B and C, attached, contain the list of references, descriptions of the applicable standards, definitions of the terminology, descriptions of the acoustical instrumentation used for the field survey, ventilation requirements, general building shell controls and the on-site noise measurement data.

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I. Findings

The noise levels presented below were evaluated against the standards of the City of San Jose Noise Element, which utilizes the Day-Night Level (DNL) noise descriptor and specifies a limit of 60 dB DNL at residential and commercial uses impacted by transportation related noise sources. The Noise Element also specifies a limit of 55 dB DNL at residential uses impacted by non-transportation related noise sources, such as commercial uses, trucking, loading dock operations and mechanical equipment. The Noise Element specifies a limit of 45 dB DNL for residential and commercial interiors. However, when residential exterior noise exposures are below 60 dB DNL, interior noise exposures will be less than 45 dB DNL, assuming standard residential building construction. When commercial exteriors are below 73 dB DNL, the commercial interiors will be less than 45 dB DNL, assuming standard commercial construction. The DNL is a 24-hour time-weighted average noise descriptor commonly used to describe community noise environments.

Title 24 standards also utilize the DNL descriptor, and establish an exterior criterion of 60 dB DNL to determine the mitigation required to limit interior noise exposures to 45 dB DNL or less in living spaces.

In addition, the Title 24 standards specify minimum requirements for the sound insulation performance of common interior partitions separating different dwelling units from each other and from common spaces. These standards are described in Appendix B. However, as design details of the common interior partitions were not available at the time of this study, an assessment of the interior partitions have not been made.

The noise exposures shown below are without the application of mitigation measures and represent the noise environment for the undeveloped site.

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A. Exterior Noise Exposures

- The existing exterior noise exposure at the planned commercial setback from Almaden Expressway (75 ft. from the centerline of the road) is 73 dB DNL. Under future traffic conditions, the noise exposure will increase to 74 dB DNL. Thus, the noise exposures will be up to 14 dB in excess of the City of San Jose Noise Element standard.

- The existing exterior noise exposure at the planned commercial setback from Highway 85 (210 ft. from the centerline of the road) is 66 dB DNL at ground floor elevations. Under future traffic conditions, the noise exposure will increase to 68 dB DNL. Thus, the noise exposures will be up to 8 dB in excess of the City of San Jose Noise Element standard.

- The existing exterior noise exposure at the planned residential setback from Almaden Expressway (780 ft. from the centerline of the road) is 58 dB DNL. Under future traffic conditions, the noise exposure will increase to 59 dB DNL. Thus, the noise exposures due to Almaden Expressway traffic are within the limits of the City of San Jose Noise Element standard.

- The existing exterior noise exposure at the planned residential setback from Highway 85 (870 ft. from the centerline of the road) is 60, 60 and 65, dB DNL at first, second and third floor elevations, respectively. Under future traffic conditions, the noise exposures will increase to 62, 62, and 67 dB DNL at first, second and third floors. Thus, the noise exposures due to Highway 85 traffic will be up to 7 dB in excess of the City of San Jose Noise Element standard and the Title 24 criterion.

- The noise exposure at the planned commercial and residential setbacks from the future extension of Chynoweth Avenue (78 ft. from the centerline of the road) will be 60 dB DNL. Thus, the noise exposure from the planned Chynoweth Avenue traffic will be at the limit of the City of San Jose Noise Element standard.

- The existing noise exposure at the planned minimum residential setback from the Pak 'n Save supermarket is 70 dB DNL. The Pak 'n Save air handler and roof-mounted chillers create a significant source of noise throughout the daytime and nighttime periods. Trucks with refrigeration units were noticed to leave their engines and "reefer" units on during unloading. The loading docks are open, i.e., unloading occurs outside of the building structure. Thus, the noise exposure is 15 dB in excess of the City of San Jose Noise Element standard and 10 dB in excess of the Title 24 criterion.

- The noise exposures over the sites are and/or will be combinations of noise exposures from various sources. The future noise exposure contours for first, second and third floor elevations are shown on Figure 1. The noise contours include total noise exposures from Almaden Expressway, Highway 85, Chynoweth Avenue and the Pak 'n Save store. As shown, the noise exposures will be up to 13 dB in excess of the standards along Almaden Expressway, 5 dB in excess of the standards along Highway 85 (first floor), 4 dB in excess of the standards along Chynoweth Avenue and 15 dB in excess of the standards along the Pak 'n Save property line.

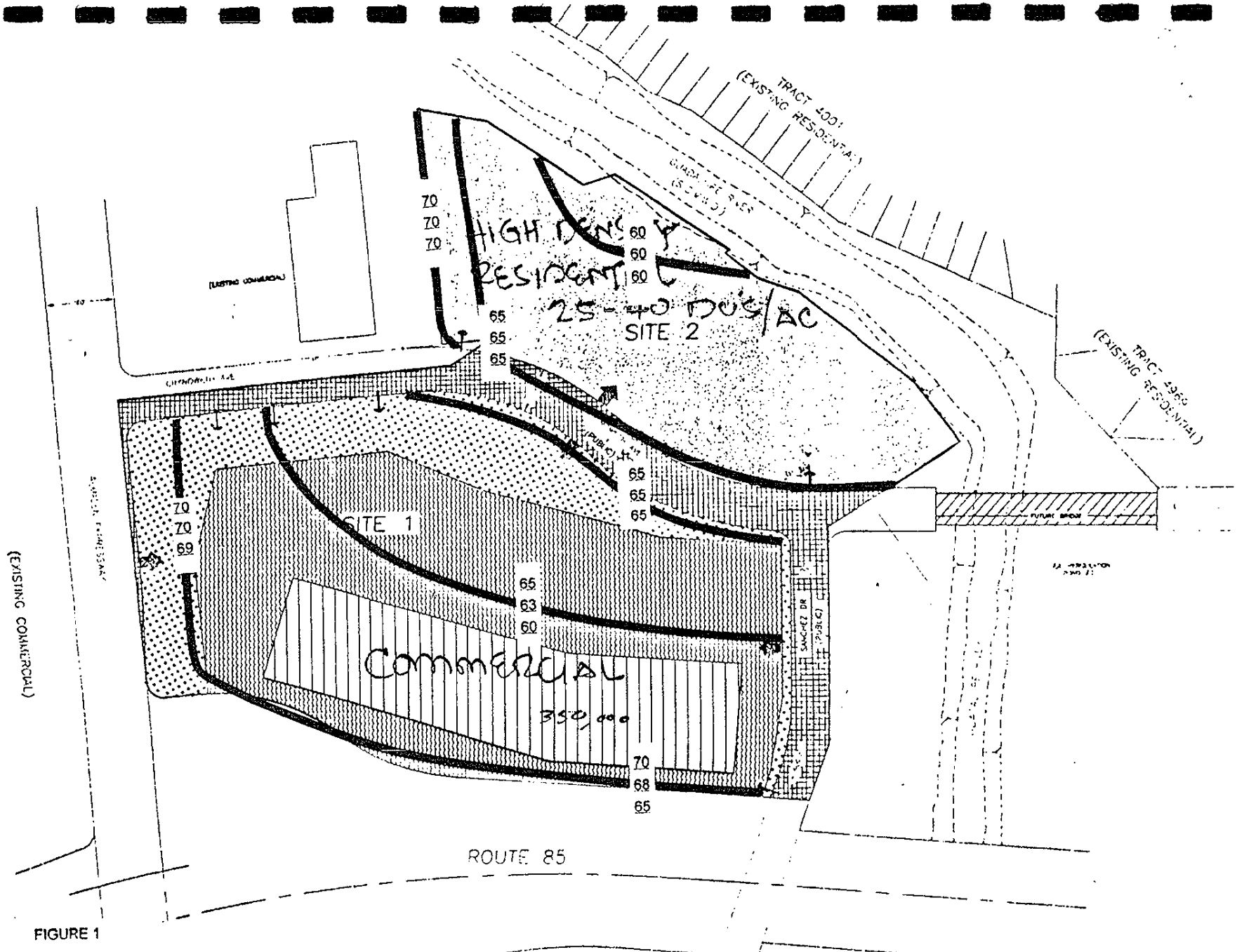

FIGURE 1

Future noise contours, dB DNL, for first, second and third floor elevations.

x = Third floor elevation

x = Second Floor Elevation

x = First floor elevation

Source: Edward L. Pack Associates, Inc. August 6, 1996

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B. Interior Noise Exposures

- The interior noise exposures at the planned commercial setback from Almaden Expressway will be 45 and 46 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be up to 1 dB in excess of the City of San Jose Noise Element standard.

- The interior noise exposures at the planned commercial setback from Highway 85 will be 38 and 40 dB DNL at ground floor elevations. Thus, the noise exposures will be within the limits of the City of San Jose Noise Element standard.

- The interior noise exposures at the planned residential setback from Almaden Expressway will be 43 and 44 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures due to Almaden Expressway traffic will be within the limits of the City of San Jose Noise Element and Title 24 standards.

- The interior noise exposure at the most impacted planned residential setback from Highway 85 and Chynoweth Avenue will be 48 and 49 dB DNL at ground, second and third floor elevations, under existing and future traffic conditions, respectively. Thus, the noise exposures due to Highway 85 and Chynoweth Avenue traffic will be up to 4 dB in excess of the City of San Jose Noise Element and Title 24 standards.

- The noise exposures within the planned commercial units from the future extension of Chynoweth Avenue will be 45 dB DNL. Thus, the noise exposure from the planned Chynoweth Avenue traffic will be at the limit of the City of San Jose Noise Element standard.

- The interior noise exposure in the most impacted living spaces of units behind the Pak 'n Save supermarket will be 55 dB DNL. Thus, the noise exposure will be up to 10 dB in excess of the City of San Jose Noise Element and Title 24 standards.

The interior noise exposures within the planned commercial and residential uses are derived from the exterior noise exposures at the building facades. A standard residential structure provides 15 dB of noise reduction. A standard commercial structure provides 28 dB of noise reduction.

B. Commercial Center Noise Impacts

As a precise site layout and development plan have not been completed, specific noise exposures due to operations at the commercial facilities cannot be determined. Therefore, noise exposures generated by other commercial centers in San Jose were used to determine the acoustical adequacy of the site.

- Typical loading docks used by lumber companies, hardware stores, of-it-yourself centers and grocery stores generate noise exposures of 55 dB DNL at a distance of 80 ft. from the truck dock utilizing a scenario of 1 truck unloading every 2 hours from 8:00 a.m. to 9:00 p.m. Grocery store loading dock noise is more readily mitigable as dock seals are often used and as long as trucks with refrigeration units can be shut off. Noise control barriers to mitigate truck noise, whether it is due to truck passbys or unloading are typically at least 15 ft. high. The primary noise source from truck operations is exhaust noise, again assuming the refrigeration units are turned off. Gas powered forklifts, if used outdoors, are also primary noise producers at loading docks.

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- Noise from mechanical equipment varies greatly depending upon the use of the site and size of the buildings. Roof-mounted equipment may have less of a noise impact for first floor neighbors, however, upper floor neighbors may have a line-of-sight to the commercial roof-tops thereby exposing the residents to undue noise. Ground mounted mechanical equipment can also be effectively mitigated for first floor neighbors using noise control barriers and equipment enclosures. Again, upper floor neighbors will usually have a line-of-sight over the barriers to the equipment.

- The noise exposures generated by the proposed project are averaged over a 24-hour period for the evaluations against the City of San Jose and Title 24 standards. The noise levels created at a loading dock consist of many types of noises including low frequency rumbles from truck passbys, backing horns of forklifts, occasional dropping of materials, and vocal orders. These types of noises may cause annoyance to some neighbors and complaints of noise are likely if careful site planning is not utilized.

- Project-generated traffic noise impacts cannot be determined at this time as project-generated traffic volumes were not available. However, traffic volume increases of at least 25% are required to increase the noise environment by 1 dB. We do not anticipated that project traffic will be in excess of 25% of Almaden Expressway traffic volumes.

- The planned commercial uses will be at least 150 ft. from the planned residential area. Therefore, noise impacts from the commercial uses to the residences should be less than significant provided that the commercial uses will be typical.

Although the exterior noise exposure impacts to the planned commercial area exceed the City of San Jose Noise Element standard of 60 dB DNL, noise sensitive exterior uses are not anticipated. Therefore, mitigation to reduce the exterior noise exposure excesses at the commercial site are not recommended. The residential uses will require mitigation. General recommendations are made herein as design guidelines as precise building layouts have not been determined. The recommended measures are described in Section II, below.

II. Recommendations

The following measures are designed to aid in the planning of the site to prevent excessive noise at the existing residential areas without having to incorporate extreme mitigation.

A. Exterior Noise Control

Chynoweth Avenue Noise Impacts

- To eliminate the use of noise control barriers (property line walls, patio fences, balcony railings) limit exterior living spaces to a minimum setback of 200 ft. from the centerline of Chynoweth Avenue. Should exterior living spaces be located within 200 ft. of the centerline, an acoustical analysis of the spaces shall be performed by a qualified acoustician.

Pak 'n Save Noise Impacts

- Noise mitigation for exterior living spaces of the residential site is not feasible for units within 165 ft. of the property line contiguous with the Pak 'n Save store. When commercial noise exposures exceed 63 dB DNL a residential properties, the mitigation applied at the residences to achieve 55 dB DNL is usually not feasible. Thus, noise mitigation should be applied to the specific noise

sources at Pak 'n Save. The air handler should be enclosed. Screens should be constructed around the roof-top equipment. Dock seals should be used. Hours of operation should be limited. Truckers should turn their engines off.

Planned Commercial Center Noise Impacts

- Although noise excesses from the planned commercial center are not anticipated due the distance between the commercial center and the residential area, careful site planning can preclude noise annoyances. Locate the loading docks on the sides of commercial center buildings facing away from the residences. Prevent direct lines-of-sight from any residential area to the loading docks. Utilize electric forklifts at the docks wherever possible, regardless of dock location. Limit loading dock hours to the daytime of hours of 7:00 a.m. to 10:00 p.m. Limit truck operations on Chynoweth Avenue.

- Locate mechanical equipment on the sides of the commercial center buildings facing away from the residences or on the roof-tops, provided that the equipment is placed in a well, is enclosed adequately and/or parapets are designed to effectively shield roof-top equipment.

- A detailed acoustical study shall be performed by a qualified acoustician upon determination of loading dock locations and operations, precise designs of mechanical equipment, and detailed designs of the building structures.

B. Interior Noise Control

To achieve compliance with the City of San Jose Noise Element and Title 24 standards, the following window controls will be required. In addition, noise control measures affecting the building shell are also recommended, as described in Appendix B.

- Maintain closed at all times all windows and sliding glass doors of living spaces within 427 ft. of the rear facade of the Pak 'n Save store and with a direct or side view of the store. Windows within 214 ft. of the store facade shall be rated minimum Sound Transmission Class (STC) 30 with Transmission Loss values no less than 20 dB. Windows between 214 ft. and 427 ft. of the store facade shall be rated minimum STC 26. Provide some type of mechanical ventilation. These window controls are made under the assumption that the noise generators at the Pak 'n Save will not be mitigated at the source.

- Maintain closed at all times all windows of living spaces within 200 ft. of the centerline of Chynoweth Avenue and with a direct or side view of the roadway. Install windows rated minimum STC 26. Provide some type of mechanical ventilation.

- As an alternative to the closed window requirement specified above, the windows may be kept open up to 50% of the time for natural ventilation, however, the STC 30 windows must be increased to STC 43 and the STC 26 windows must be increased to STC 35.

When windows are maintained closed for noise control, some type of mechanical ventilation to assure a habitable environment should be provided. The mechanical ventilation requirements specified by the Uniform Building Code (UBC) are described in Appendix B. The windows specified to be maintained closed are to be operable, as the

requirement does not imply a "fixed" condition. All other windows of the project and all bathroom windows may have any type of glazing and may be kept opened as desired unless the bathroom is an integral part of a living space without a closable door, such as is sometimes found in a master bedroom suite.

In addition to the required STC ratings, the windows and doors shall be installed in an acoustically-effective manner. To achieve an acoustically-effective window construction, the sliding window panels must form an air-tight seal when in the closed position and the window frames must be caulked to the wall opening around their entire perimeter with a non-hardening caulking compound to prevent sound infiltration. Exterior doors must seal air-tight around the full perimeter when in the closed position.

Please be aware that many dual-pane window assemblies have inherent noise reduction problems in the traffic noise frequency spectrum due to resonance that occurs within the air space between the window lites, and the noise reduction capabilities vary from manufacturer to manufacturer. Therefore, the acoustical test report of all sound rated windows and doors should be reviewed by a qualified acoustician to ensure that the chosen windows and doors will adequately reduce traffic noise to acceptable levels.

III. Site, Traffic, and Project Descriptions

The proposed project site is located on the northeast quadrant of the Almaden Expressway and Highway 85 interchange in San Jose. The site is level and is currently used as agricultural land. The site is at-grade with Almaden Expressway and Chynoweth Avenue. Highway 85 passes over Almaden Expressway at an elevation of approximately 30 ft. The northbound Almaden Expressway interchange ramp slopes down along the site to reveal at-grade as it intersects with Almaden Expressway. Surrounding land uses include an existing commercial center north of the north of the planned commercial site, west of the residential site along Almaden Expressway, a vacant parcel under development consideration is across Almaden Expressway to the west. Vacant land is adjacent to the east. Single-family residential use is across Guadalupe River to the north. Highway 85 borders the site to the south.

The primary noise sources at the site are traffic on Almaden Expressway and Highway 85, and mechanical equipment and loading operations at Pak 'n Save. Almaden Expressway carries and Average Daily Traffic (ADT) of 48,900 vehicles, Ref. (d). Highway 85 carries an ADT of 66, 900 vehicles, Ref. (e).

IV. Analyses of the Noise Levels

A. Existing Noise Levels

To determine the existing noise environment at the site, continuous recordings of the sound levels were made at three locations. Location 1 was 100 ft. from the centerline of Almaden Expressway. Location 2 was 130 ft. from the southerly boundary of the commercial site along Highway 85, 350 ft. from the centerline of the freeway. Location 3 was along the property line contiguous with the existing Pak 'n Save store, 135 ft. from the rear facade of the store. The measurements were made on August 27-29, 1996 using a Larson-Davis LDL 700 Precision Integrating Sound Level Meter at Locations 1 and 3. A Larson-Davis LDL 812 Precision Integrating Sound Level Meter was used at Location 2. The results of the measurements are shown in the data tables in Appendix C. The sound meters yield, by direct readout, a series of descriptors of the sound levels versus time. The descriptors shown in the data tables are the L_1, L_{10}, L_{50}, and L_{90}, i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. Also shown are the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measurements were made for a total period of 24 hours at each location and included recordings of the noise levels during the daytime and nighttime periods of the DNL index.

As shown in the tables, the L_{eq}'s at measurement Location 1 ranged from 65.5 to 76.5 dBA during the daytime and from 54.5 to 68.0 dBA at night. At Location 2 the L_{eq}'s ranged from 54.6 to 60.5 dBA during the day and 47.0 to 62.0 dBA at night. At Location 3 the L_{eq}'s ranged from 63.5 to 67.0 dBA during the day and 62.5 to 65.0 dBA at night.

Traffic noise dissipates at the rate of 3 to 6 dB for each doubling of distance from the source. Stationary equipment noise dissipates at the rate of 6 dB for each doubling of distance from the source. Therefore, other locations on the site at greater distances from the roadways or the Pak 'n Save store will have lower noise levels.

B. Project-Generated Noise Levels

1. Commercial Center Noise

Project-generated noise levels cannot be precisely determined without detailed information regarding trucking, loading dock and mechanical equipment operations. However, to determine potential noise impacts from commercial center activity, noise level information from a recent acoustical study for a Home Depot center, Ref. (f), and the North Park Plaza Center, Ref. (g), were reviewed. These studies revealed minimum distances required to maintain noise exposures in compliance with the City of San Jose Noise Element standards, given their specific truck volumes, loading dock hours and mechanical equipment details. In addition, the North Park Plaza study incorporated mitigation measures, as the project-generated noise exposures exceed City standards.

Loading dock operations typically consist of trucks entering the dock area, turning around to back into the dock, and unloading material. Many of the trucks used for perishable grocery items contain refrigeration equipment that is usually situated at the top of the cab. These "reefer" units are usually left on during unloading, however, they are quite noisy. Gas powered forklifts are common at outside loading docks and they are also quite noisy. Electric forklifts are barely audible at a distance of 35-40 ft. Backing horns on trucks and forklifts are required by OSHA and they must generate a specific sound level at a certain distance. Mechanical equipment typically consists of chillers, compressors and air-handlers and exhaust fans. Smaller commercial tenants may have individual air-conditioning package units. Grocery stores will also have refrigeration equipment consisting of large banks of compressors.

2. Chynoweth Avenue

Chynoweth Avenue traffic noise exposures were predicted using the Sound32 traffic noise prediction model calibrated with hard data acquired from other traffic noise studies in the Bay Area. Sound32 is a computer program developed by CalTrans from the Federal Highway Administration models and modified for California emissions (the Calveno Option). Chynoweth Avenue is planned to be a 4-lane road, 53 ft. from curb to centerline, with a minimum setback of 25 ft. from the curb. Traffic speed was assumed to be 35 mph and the peak hourly traffic volume was assumed to be 10% of the ADT or 1,040 vehicles. The model provided a peak hour L_{eq} of 59 dBA. On-site noise level measurements of Chynoweth Avenue, east of Guadalupe River, recently made for the Ohlone/Chynoweth Commons project, and on-site noise level measurements of Cottle Road for the Palmia project, Ref. (h), were used to determine the accuracy of the model.

V. Evaluation of the Noise Exposures

A. Exterior Noise Exposures

To evaluate the existing and project-generated noise levels against the City of San Jose Noise Element standards, the DNL's for the survey locations were calculated as a decibel average of the L_{eq} values for the daily time periods. Nighttime weighting factors were applied account for the increased human sensitivity to noise during these hours. The mathematical formula used to calculate the DNL is shown in Appendix B. The results of the calculations, as shown in Appendix C, indicate that the exterior noise exposure at measurement Location 1, i.e., 100 ft. from the centerline of Almaden Expressway, is 71 dB DNL. Of this 71 dB DNL, 70 dB is attributable to Almaden Expressway and 61 dB is attributable to Highway 85. Under future traffic conditions, the total noise exposure will increase to 72 dB DNL, with 71 dB being created by Almaden Expressway and 63 dB created by Highway 85.

At Location 2, the existing noise exposure is 62 dB DNL. Of this 62 dB, 60 dB is attributable to Highway 85 while 57 dB is due to Almaden Expressway. Under future traffic conditions, the noise exposure will increase to 64 dB, with 62 dB due to Highway 85 and 58 dB due to Almaden Expressway.

At Location 3, the existing noise exposure is 70 dB DNL. The noise environment in this area is created by Pak 'n Save noise.

The project-generated noise exposures will be a function of truck operations, loading dock operations, mechanical equipment locations and sizes, and most importantly, hours of operation. The DNL penalizes noise created between the hours 10:00 p.m. and 7:00 a.m. by 10 dB. Therefore, noise created at night often controls the DNL.

In reference to the noise exposures generated by the extension of Chynoweth avenue, the on-site noise measurement data of various roadways reveals that the peak hour L_{eq} is approximately 1 dB lower that the DNL. Applying this methodology to the Sound32 model, the DNL at a 25 ft. setback from Chynoweth Avenue (78 ft. from centerline) will be 60 dB, 1 dB higher that the peak hour L_{eq}.

B. <u>Interior Noise Exposures</u>

To evaluate the interior noise levels against the 45 dB DNL interior limit of the City of San Jose Noise Element and Title 24 standards, a 15 dB reduction was applied to the exterior levels to account for the attenuation provided by the residential building shells under annual-average conditions. For commercial interiors, a 28 dB reduction factor was used. The residential annual-average condition assumes that windows with single-strength glass are kept open up to 50% of the time for natural ventilation. The commercial assessment uses 3/16" fixed glass, typical of a "storefront". Thus, in the most impacted living spaces of the dwelling units facing Chynoweth Avenue/Highway 85, the interior noise exposure will be 47 and 49 dB CNEL under existing and future traffic conditions, respectively. In units facing the Pak 'n Save, the interior noise exposures will be up to 55 dB DNL. Thus, the interior noise exposures will be up to 15

dB in excess of the standards of the City of City of San Jose Noise Element and Title 24. In commercial units facing Almaden Expressway, the interior noise exposures will be up 44 and 45 dB DNL under existing and future traffic conditions, respectively. In commercial units facing Highway 85, the interior noise exposures will be 34 and 36 dB DNL at first floor elevations, but up to 39 and 41 dB DNL at third floor elevations, under existing and future traffic conditions, respectively. The interior noise exposures of the commercial development will be within the limits of the City of City of San Jose Noise Element standards.

As shown by the above evaluations, the existing noise exposures exceed the limits of the City of San Jose Noise Element standards for residential land use, particularly behind the Pak 'n Save store. Noise impacts from traffic are slightly excessive, but can be reasonably mitigated. The proposed commercial development has minimal potential for creating excessive noise (greater than 55 dB DNL) at the residential areas. Careful site planning, prudent operations and intelligent choices of equipment can result in less than significant noise impacts. Although there may be cases where a noise exposure excess will occur, implementing all reasonable measures to preclude noise excesses up front will keep the required mitigation measures at a reasonable level. Short term noise annoyances are likely at residential locations within 100 ft. of a truck access road or within 200 ft. of a loading dock.

This report presents the results of the noise assessment study for a Planned Development Rezoning for the proposed residential/commercial development at Almaden Expressway and Highway 85 in San Jose. The study findings for present conditions are based on field measurements and other data and are correct to the best of our knowledge. Project-generated noise levels were derived from field measurements of similar uses and information provided by others. Precise noise exposures shall be determined from detailed studies once a site plan is developed.

If you have any questions or would like an elaboration of this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

JKP:j

Attachments: Appendices A, B and C

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APPENDIX A

References:

(a) Conceptual Plan Provided by Ruth & Going, Inc., by Transmittal to Edward L. Pack Associates, Inc., May 30, 1996

(b) San Jose 2020 General Plan, Focus on the Future, City of San Jose, Department of City Planning and Building, August 16, 1994

(c) California Code of Regulations, Title 24, Part II, "Sound Transmission Control", September 1988

(d) Information on Almaden Expressway and Chynoweth Avenue Traffic Volumes Provided by Pang Engineers, by Transmittal to Edward L. Pack Associates, Inc., August 2, 1996

(e) Information on Highway 85 Traffic Volumes Provided by Mr. Paul Sterk, Santa Clara County Center for Urban Analysis, by Telecon to Edward L. Pack Associates, Inc., July 23, 1996

(f) "Noise Assessment Study for the 'Waterford' Project, Capitol Expressway, San Jose", by Edward L. Pack Associates, Inc., Project No. 28-011, February 28, 1996

(g) "Traffic and Commercial Noise Assessment Study for the Planned 'Northpark Plaza' Retail and Residential Project, Oakland Road and Murphy Avenue, San Jose", by Edward L. Pack Associates, Inc., Project No. 28-043, May 2, 1996

(h) "Noise Assessment Study Update for the Planned 'Palmia' Residential Development, Cottle Road, San Jose", by Edward L. Pack Associates, Inc., Project No. 25-039-5, March 27, 1996

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APPENDIX B

Noise Standards, Terminology, Instrumentation Ventilation Requierments, General Building Shell Controls

1. Noise Standards

A. City of San Jose "Noise Element" Standards

The noise section of the San Jose 2020 General Plan, Focus on the Future, adopted August 16, 1994 identifies an exterior limit of 60 dB Day-Night Level (DNL) at outdoor living or recreation areas of residential developments. This standard applies at the property line of residential areas impacted by transportation related noise sources. For off-site noise sources, such as commercial and industrial operations, an exterior limit of 55 dB DNL for residential areas is specified. A long-term goal of 55 dB DNL from transportation sources anticipates future reductions in transportation noise due to improvements in design, such as quieter engines and improved muffler systems.

At interior living spaces of residential area, the standards established an interior limit of 45 dB DNL for noise levels due to exterior sources.

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B. Title 24 Noise Standards

The California Code of Regulations, Title 24, Part II, "Sound Transmission Control" applies to all new multi-family dwellings including condominiums, townhouses, apartments, hotels and motels. The standards, which utilize the Community Noise Equivalent Level (CNEL) or the Day-Night Level (DNL) descriptor, establish an exterior reference or criterion level of 60 dB CNEL/DNL, and specify that multi-family buildings to be located within an annual CNEL/DNL zone of 60 dB or greater require an acoustical analysis. The analysis report must show that the planned buildings provide adequate attenuation to limit intruding noise from exterior sources to an annual CNEL/DNL of 45 dB or less in any habitable space.

The Title 24 standards also establish minimum sound insulation requirements for interior partitions separating different dwelling units from each other and dwelling units from common spaces such as garages, corridors, equipment rooms, etc. The common interior walls and floor/ceiling assemblies must achieve a minimum Sound Transmission Class (STC) rating of 50 for airborne noise. Common floor/ceiling assemblies must achieve an Impact Insulation Class (IIC) rating of 50 for impact noise. These ratings are based on laboratory tested partitions. Field tested partitions must achieve ratings of Noise Isolation Class (NIC) 45 and Field Impact Insulation Class (FIIC) 45.

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2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Community Noise Analyzer. Some of the statistical levels used to describe community noise are defined as follows:

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing an "average" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous-equivalent level is that level of a steady noise having the same energy as a given time-varying noise. The L_{eq} thus represents the decibel level of the time-averaged value of sound energy or sound pressure squared. The L_{eq} is the noise descriptor used to calculate the DNL and CNEL descriptors.

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B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)
L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)
24 indicates the 24-hour period
& denotes decibel addition.

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C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the precision acoustical instruments shown below. The acoustical instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters was provided by a microphone extended to a height of 5 ft. above the ground. The meter conforms to ANSI S1.4 for Type 1 instruments. The "A" weighting network and the "Fast" response setting of the meter were used in conformance with the applicable ISO and IEC standards. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis LDL 700 Precision Integrating Sound Level Meter
GenRad 1945 Community Noise Analyzer

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4. Ventilation Requirements

Ventilation requirements to be applied when windows are maintained closed for noise control are specified in the Uniform Building Code (UBC), 1985 edition, Section 1205 as follows:

- "In lieu of required exterior openings for natural ventilation, a mechanical ventilating system may be provided. Such system shall be capable of providing two air changes per hour in all guest rooms, dormitories, habitable rooms, and in public corridors. One-fifth of the air supply shall be taken from the outside".

Based on our previous experience, a "summer switch" on the furnace fan is normally considered acceptable as a ventilation system by FHA and other agencies. Air-conditioning is also an acceptable system.

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5. **Building Shell Controls**

The following additional precautionary measures are required to assure the greatest potential for exterior-to-interior noise attenuation by the recommended mitigation measures. These measures apply at those units where closed windows are required:

- Unshielded entry doors having a direct or side orientation toward the primary noise source must be 1-5/8" or 1-3/4" thick, insulated metal or solid-core wood construction with effective weather seals around the full perimeter. Mail slots should not be used in these doors or in the wall of a living space, as a significant noise leakage can occur through them.

- If any penetrations in the building shell are required for vents, piping, conduit, etc., sound leakage around these penetrations can be controlled by sealing all cracks and clearance spaces with a non-hardening caulking compound.

- Fireplaces should be provided with tight-fitting dampers.

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APPENDIX C

ON-SITE NOISE MEASUREMENT DATA AND CALCULATIONS

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ARCADIA DEVELOPMENT - FILE: 28-057.DTA - DATE: 6/27-28/1996
RESIDENTIAL/COMMERCIAL SITE - ALMADEN EXPRESSWAY/HIGHWAY 85, SAN JOSE

LOCATION 1
100 ft. from Almaden Expressway C_L

Cnt	LVL	SEL	Lmax	Lpk	Lmin	Date	Time	Dur	Ex	Pk	Ov
1	66.0	102.0	79.0	90.5	53.0	27 JUN	17:58:22	1:00 h:m	1	1	0
			L01 = 73.0		L10 = 70.0		L50 = 64.5		L90 = 59.0		
2	66.0	101.5	78.0	93.5	52.0	27 JUN	18:58:22	1:00 h:m	0	0	0
			L01 = 72.5		L10 = 69.5		L50 = 64.5		L90 = 58.5		
3	66.0	101.5	79.5	93.0	49.5	27 JUN	19:58:23	1:00 h:m	0	0	0
			L01 = 73.5		L10 = 69.5		L50 = 64.0		L90 = 57.0		
4	66.0	101.5	91.5	111.0	48.5	27 JUN	20:58:23	1:00 h:m	0	0	0
			L01 = 73.5		L10 = 69.0		L50 = 63.5		L90 = 56.0		
5	63.5	99.0	76.5	88.5	47.5	27 JUN	21:58:23	1:00 h:m	0	0	0
			L01 = 71.0		L10 = 67.5		L50 = 60.5		L90 = 52.5		
6	61.5	97.0	78.5	87.5	44.0	27 JUN	22:58:23	1:00 h:m	0	0	0
			L01 = 71.0		L10 = 65.5		L50 = 57.5		L90 = 50.0		
7	59.5	95.0	85.0	91.5	39.0	27 JUN	23:58:23	1:00 h:m	0	0	0
			L01 = 70.0		L10 = 63.0		L50 = 53.5		L90 = 45.0		
8	57.0	92.5	76.5	87.5	38.0	28 JUN	0:58:23	1:00 h:m	0	0	0
			L01 = 68.5		L10 = 61.0		L50 = 49.5		L90 = 43.5		
9	54.5	90.0	74.0	84.0	36.0	28 JUN	1:58:23	1:00 h:m	0	0	0
			L01 = 67.5		L10 = 57.5		L50 = 45.5		L90 = 40.0		
10	55.5	91.0	76.5	87.5	35.5	28 JUN	2:58:23	1:00 h:m	0	0	0
			L01 = 69.5		L10 = 57.5		L50 = 43.5		L90 = 40.0		
11	57.5	93.0	77.5	88.0	37.5	28 JUN	3:58:23	1:00 h:m	0	0	0
			L01 = 70.5		L10 = 60.5		L50 = 48.0		L90 = 41.5		
12	63.0	98.5	85.5	96.0	41.5	28 JUN	4:58:23	1:00 h:m	0	0	0
			L01 = 74.0		L10 = 67.5		L50 = 56.5		L90 = 48.5		
13	68.0	103.5	82.0	93.0	50.5	28 JUN	5:58:23	1:00 h:m	0	0	0
			L01 = 76.0		L10 = 72.5		L50 = 64.5		L90 = 56.5		
14	70.0	105.5	85.0	95.0	52.0	28 JUN	6:58:23	1:00 h:m	0	0	0
			L01 = 75.5		L10 = 73.0		L50 = 68.5		L90 = 61.0		
15	71.0	107.0	94.5	108.5	52.5	28 JUN	7:58:23	1:00 h:m	0	0	0
			L01 = 82.0		L10 = 73.5		L50 = 68.5		L90 = 61.0		

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16	76.0	111.5	102.0	113.5	50.5	28 JUN	8:58:23	1:00	h:m	0	0	0	
			L01 = 90.5		L10 = 72.0		L50 = 65.0			L90 = 58.0			
17	67.5	103.5	90.5	97.5	50.0	28 JUN	9:58:23	1:00	h:m	0	0	0	
			L01 = 79.0		L10 = 69.5		L50 = 64.0			L90 = 57.0			
18	65.5	101.5	85.5	99.5	51.5	28 JUN	10:58:23	1:00	h:m	0	0	0	
			L01 = 73.5		L10 = 69.0		L50 = 64.0			L90 = 58.0			
19	66.5	102.5	82.5	100.0	52.0	28 JUN	11:58:23	1:00	h:m	0	0	0	
			L01 = 75.5		L10 = 70.0		L50 = 64.5			L90 = 58.0			
20	67.0	102.5	93.5	103.5	51.0	28 JUN	12:58:23	1:00	h:m	0	0	0	
			L01 = 74.0		L10 = 69.5		L50 = 64.5			L90 = 57.5			
21	67.0	102.5	83.5	100.5	50.5	28 JUN	13:58:23	1:00	h:m	0	0	0	
			L01 = 78.0		L10 = 69.5		L50 = 64.5			L90 = 57.5			
22	76.5	112.0	103.0	117.0	49.5	28 JUN	14:58:23	1:00	h:m	0	0	0	
			L01 = 90.0		L10 = 71.0		L50 = 65.0			L90 = 59.0			
23	69.5	105.0	92.5	106.5	51.5	28 JUN	15:58:23	1:00	h:m	0	0	0	
			L01 = 82.5		L10 = 71.0		L50 = 64.5			L90 = 59.0			
24	67.0	102.5	87.5	96.5	53.0	28 JUN	16:58:23	1:00	h:m	0	0	0	
			L01 = 75.5		L10 = 70.0		L50 = 64.5			L90 = 59.0			

LOCATION 2

350 ft. from Highway 85 C_L

INTV	1	27Jun1996	18:00:00	Duration	1:00:00								
Leq	56.3	SEL	91.5	Min	50.4	Max	74.9	Peak	94.4	UWPk	96.7dB		
Excd's:		RMS	0	Peak	0	UWPk	0	Ovlds	0				
L 1	63.1	L 8	58.0	L10	57.8	L33	56.2	L50	55.5	L90	53.3dBA		
INTV	2	27Jun1996	19:00:00	Duration	1:00:00								
Leq	56.1	SEL	91.7	Min	49.1	Max	69.4	Peak	80.8	UWPk	97.4dB		
Excd's:		RMS	0	Peak	0	UWPk	0	Ovlds	0				
L 1	63.1	L 8	58.3	L10	57.9	L33	56.0	L50	55.2	L90	53.1dBA		
INTV	3	27Jun1996	20:00:00	Duration	1:00:00								
Leq	54.6	SEL	90.1	Min	48.8	Max	66.1	Peak	82.1	UWPk	98.6dB		
Excd's:		RMS	0	Peak	0	UWPk	0	Ovlds	0				
L 1	59.1	L 8	56.8	L10	56.6	L33	54.8	L50	54.1	L90	52.0dBA		
INTV	4	27Jun1996	21:00:00	Duration	1:00:00								
Leq	54.6	SEL	90.1	Min	46.0	Max	79.7	Peak	94.8	UWPk	96.0dB		
Excd's:		RMS	0	Peak	0	UWPk	0	Ovlds	0				
L 1	59.8	L 8	56.5	L10	56.1	L33	54.5	L50	53.7	L90	51.2dBA		

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INTV      5   27Jun1996 22:00:00  Duration  1:00:00
  Leq  52.9   SEL   88.5  Min   45.5  Max   68.7  Peak   79.9  UWPk   87.2dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  60.5   L 8   55.0  L10   54.7   L33   52.7  L50   51.7  L90   49.0dBA

INTV      6   27Jun1996 23:00:00  Duration  1:00:00
  Leq  51.3   SEL   86.9  Min   41.9  Max   66.6  Peak   75.3  UWPk   84.7dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  57.2   L 8   54.1  L10   53.8   L33   51.5  L50   50.3  L90   47.1dBA

INTV      7   28Jun1996 00:00:00  Duration  1:00:00
  Leq  49.8   SEL   85.3  Min   37.8  Max   62.4  Peak   75.7  UWPk   84.7dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  56.4   L 8   52.9  L10   52.5   L33   50.0  L50   48.6  L90   44.5dBA

INTV      8   28Jun1996 01:00:00  Duration  1:00:00
  Leq  48.1   SEL   83.6  Min   34.6  Max   62.4  Peak   77.2  UWPk   84.7dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  55.3   L 8   52.1  L10   51.6   L33   48.0  L50   46.1  L90   40.1dBA

INTV      9   28Jun1996 02:00:00  Duration  1:00:00
  Leq  47.0   SEL   82.5  Min   33.5  Max   62.7  Peak   78.4  UWPk   84.7dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  55.2   L 8   50.9  L10   50.3   L33   46.4  L50   44.5  L90   39.5dBA

INTV     10   28Jun1996 03:00:00  Duration  1:00:00
  Leq  47.0   SEL   82.6  Min   34.8  Max   63.4  Peak   75.0  UWPk   84.7dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  54.9   L 8   50.8  L10   50.3   L33   46.7  L50   44.7  L90   39.8dBA

INTV     11   28Jun1996 04:00:00  Duration  1:00:00
  Leq  50.5   SEL   86.0  Min   34.9  Max   60.7  Peak   75.6  UWPk   --- dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  57.1   L 8   54.4  L10   54.0   L33   50.8  L50   48.7  L90   42.4dBA

INTV     12   28Jun1996 05:00:00  Duration  1:00:00
  Leq  57.9   SEL   93.5  Min   43.0  Max   66.6  Peak   80.1  UWPk   89.1dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  63.9   L 8   61.6  L10   61.3   L33   58.5  L50   56.5  L90   51.1dBA

INTV     13   28Jun1996 06:00:00  Duration  1:00:00
  Leq  62.0   SEL   97.6  Min   55.9  Max   67.6  Peak   82.9  UWPk   89.1dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  65.6   L 8   64.0  L10   63.9   L33   62.5  L50   61.7  L90   59.3dBA

INTV     14   28Jun1996 07:00:00  Duration  1:00:00
  Leq  60.5   SEL   96.1  Min   53.0  Max   73.0  Peak   85.5  UWPk   96.0dB
  Excd's:     RMS    0    Peak    0   UWPk    0   Ovlds    0
  L 1  67.4   L 8   62.8  L10   62.6   L33   60.5  L50   59.6  L90   57.2dBA
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INTV    15   28Jun1996 08:00:00  Duration  1:00:00
  Leq  58.5  SEL  94.1  Min  50.3  Max  73.0  Peak  83.9  UWPk  93.2dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  65.5  L 8  60.8  L10  60.5   L33  58.6  L50  57.7  L90  54.9dBA

INTV    16   28Jun1996 09:00:00  Duration  1:00:00
  Leq  57.0  SEL  92.5  Min  47.2  Max  66.3  Peak  81.6  UWPk  92.0dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  61.4  L 8  59.4  L10  59.1   L33  57.5  L50  56.6  L90  53.4dBA

INTV    17   28Jun1996 10:00:00  Duration  1:00:00
  Leq  58.8  SEL  94.3  Min  47.8  Max  76.5  Peak  91.6  UWPk  90.7dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  68.8  L 8  60.6  L10  59.5   L33  56.8  L50  55.7  L90  52.5dBA

INTV    18   28Jun1996 11:00:00  Duration  1:00:00
  Leq  55.5  SEL  91.1  Min  46.8  Max  70.0  Peak  81.9  UWPk  90.7dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  61.3  L 8  58.1  L10  57.8   L33  55.7  L50  54.6  L90  51.7dBA

INTV    19   28Jun1996 12:00:00  Duration  1:00:00
  Leq  55.5  SEL  91.1  Min  47.3  Max  71.4  Peak  86.4  UWPk  90.7dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  61.0  L 8  58.1  L10  57.8   L33  55.8  L50  54.9  L90  51.5dBA

INTV    20   28Jun1996 13:00:00  Duration  1:00:00
  Leq  56.8  SEL  92.3  Min  47.7  Max  72.9  Peak  84.2  UWPk  94.2dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  65.2  L 8  59.4  L10  58.9   L33  56.4  L50  55.2  L90  51.9dBA

INTV    21   28Jun1996 14:00:00  Duration  1:00:00
  Leq  55.4  SEL  91.0  Min  46.9  Max  68.8  Peak  79.3  UWPk  95.1dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  60.5  L 8  58.1  L10  57.8   L33  55.8  L50  54.7  L90  51.6dBA

INTV    22   28Jun1996 15:00:00  Duration  1:00:00
  Leq  55.8  SEL  91.4  Min  47.2  Max  67.6  Peak  80.5  UWPk 100.3dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  62.0  L 8  58.4  L10  58.0   L33  56.0  L50  55.0  L90  52.2dBA

INTV    23   28Jun1996 16:00:00  Duration  1:00:00
  Leq  56.0  SEL  91.6  Min  48.8  Max  78.3  Peak  91.9  UWPk  95.6dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  61.9  L 8  57.5  L10  57.2   L33  55.5  L50  54.7  L90  52.5dBA

INTV    24   28Jun1996 17:00:00  Duration  1:00:00
  Leq  56.4  SEL  92.0  Min  50.3  Max  72.2  Peak  87.1  UWPk 100.3dB
  Excd's:    RMS   0   Peak   0   UWPk   0   Ovlds   0
  L 1  63.9  L 8  58.2  L10  57.9   L33  56.0  L50  55.3  L90  53.4dBA
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LOCATION 3

Residential Property Line behind PAK 'N SAVE
135 ft. from Loading Dock

Cnt	LVL	SEL	Lmax	Lpk	Lmin	Date	Time	Dur	Ex	Pk	Ov
1	66.5	102.0	81.0	94.0	57.5	1 AUG	9:42:54	1:00 h:m	1	1	0
			L01 = 72.0		L10 = 67.0		L50 = 66.0		L90 = 65.0		
2	67.0	102.5	89.0	100.5	61.5	1 AUG	10:42:54	1:00 h:m	0	0	0
			L01 = 74.0		L10 = 67.0		L50 = 66.0		L90 = 65.0		
3	66.0	101.5	76.0	96.5	62.5	1 AUG	11:42:54	1:00 h:m	0	0	0
			L01 = 68.5		L10 = 67.0		L50 = 65.5		L90 = 65.0		
4	66.5	102.0	79.0	91.5	63.0	1 AUG	12:42:54	1:00 h:m	0	0	0
			L01 = 69.5		L10 = 67.5		L50 = 66.5		L90 = 65.0		
5	66.5	102.0	89.5	101.5	63.0	1 AUG	13:42:54	1:00 h:m	0	0	0
			L01 = 70.0		L10 = 67.0		L50 = 66.0		L90 = 65.0		
6	66.0	101.5	77.5	88.0	61.0	1 AUG	14:42:54	1:00 h:m	0	0	0
			L01 = 68.0		L10 = 66.5		L50 = 65.5		L90 = 65.0		
7	65.5	101.0	80.0	94.5	63.0	1 AUG	15:42:54	1:00 h:m	0	0	0
			L01 = 67.0		L10 = 66.0		L50 = 65.5		L90 = 65.0		
8	65.5	101.0	73.5	91.0	63.5	1 AUG	16:42:54	1:00 h:m	0	0	0
			L01 = 67.0		L10 = 66.0		L50 = 65.5		L90 = 65.0		
9	65.5	101.0	75.0	92.0	63.0	1 AUG	17:42:54	1:00 h:m	0	0	0
			L01 = 70.0		L10 = 66.0		L50 = 65.0		L90 = 64.5		
10	65.5	101.0	72.0	83.0	62.5	1 AUG	18:42:55	1:00 h:m	0	0	0
			L01 = 67.0		L10 = 66.0		L50 = 65.5		L90 = 64.5		
11	65.0	100.5	73.0	93.5	57.0	1 AUG	19:42:55	1:00 h:m	0	0	0
			L01 = 67.5		L10 = 66.0		L50 = 65.5		L90 = 64.5		
12	64.0	99.5	72.0	92.5	56.5	1 AUG	20:42:55	1:00 h:m	0	0	0
			L01 = 66.5		L10 = 66.0		L50 = 65.0		L90 = 58.0		
13	63.5	99.0	67.5	80.5	56.5	1 AUG	21:42:55	1:00 h:m	0	0	0
			L01 = 66.5		L10 = 66.0		L50 = 65.0		L90 = 58.0		
14	63.0	98.5	70.5	83.0	56.0	1 AUG	22:42:55	1:00 h:m	0	0	0
			L01 = 66.5		L10 = 66.0		L50 = 60.0		L90 = 57.5		
15	63.0	98.5	67.5	79.5	56.0	1 AUG	23:42:55	1:00 h:m	0	0	0
			L01 = 66.0		L10 = 65.5		L50 = 64.5		L90 = 57.5		

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16	62.5	98.0	67.0	79.5	56.0	2 AUG	0:42:55	1:00	h:m	0	0	0
			L01 = 66.0		L10 = 65.5		L50 = 58.0		L90 = 57.0			
17	62.5	98.0	67.0	80.0	56.0	2 AUG	1:42:55	1:00	h:m	0	0	0
			L01 = 66.0		L10 = 65.5		L50 = 58.5		L90 = 57.5			
18	63.5	99.0	69.0	79.5	56.5	2 AUG	2:42:55	1:00	h:m	0	0	0
			L01 = 67.0		L10 = 66.0		L50 = 60.5		L90 = 58.0			
19	63.5	99.5	82.0	96.0	57.0	2 AUG	3:42:55	1:00	h:m	0	0	0
			L01 = 69.0		L10 = 66.0		L50 = 60.5		L90 = 58.5			
20	63.0	99.0	81.0	101.0	56.0	2 AUG	4:42:55	1:00	h:m	0	0	0
			L01 = 68.0		L10 = 66.0		L50 = 60.0		L90 = 58.0			
21	65.0	100.5	87.0	106.0	54.5	2 AUG	5:42:55	1:00	h:m	0	0	0
			L01 = 75.0		L10 = 67.5		L50 = 61.0		L90 = 57.5			
22	65.0	100.5	86.5	99.0	57.0	2 AUG	6:42:55	1:00	h:m	0	0	0
			L01 = 73.5		L10 = 67.5		L50 = 64.0		L90 = 59.0			
23	63.5	99.0	82.5	96.5	54.0	2 AUG	7:42:55	1:00	h:m	0	0	0
			L01 = 69.0		L10 = 65.5		L50 = 64.0		L90 = 57.0			
24	67.0	99.0	88.0	99.5	58.0	2 AUG	8:42:55	1:00	h:m	0	0	0
			L01 = 71.5		L10 = 68.0		L50 = 67.0		L90 = 63.5			

Loading Dock Noise

25	70.0	96.5	80.5	92.5	60.5	2 AUG	9:09:44	0:07	h:m	0	0	0
			L01 = 78.0		L10 = 70.0		L50 = 69.5		L90 = 67.5			

Air Handler Noise

26	65.5	76.0	66.5	78.0	65.0	2 AUG	9:17:50	0:00	h:m	0	0	0
			L01 = 66.5		L10 = 66.0		L50 = 65.5		L90 = 65.5			

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98-027

DNL CALCULATIONS

CLIENT: ARCADIA DEVELOPMENT
FILE: 28-057
PROJECT: COMMERCIAL/RESIDENTIAL
DATE: 8/1/1996
SOURCE: ALMADEN EXP./HWY 85/CHYNOWETH/ PAK 'N SAVE

LOCATION 1	Almaden Exp.			
d to Source =	100 ft.			
TIME	Leq	10^Leq/10		
7:00a.m.	70.00	10000000.00		
8:00 a.m.	71.00	12589254.12		
9:00a.m.	76.00	39810717.06		
10:00a.m.	67.50	5623413.25		
11:00 a.m.	65.50	3548133.89		
12:00noon	66.50	4466835.92		
1:00p.m.	67.00	5011872.34		
2:00 p.m.	67.00	5011872.34		
3:00 p.m.	76.50	44668359.22		
4:00 p.m.	69.50	8912509.38		
5:00 p.m.	67.00	5011872.34		
6:00 p.m.	66.00	3981071.71		
7:00 p.m.	66.00	3981071.71		
8:00 p.m.	66.00	3981071.71		
9:00 p.m.	66.00	3981071.71	SUM=	160579126.67
10:00 p.m.	63.50	2238721.14	Ld=	70.30
11:00 p.m.	61.50	1412537.54		
12:00mdnt	59.50	891250.94		
1:00 a.m.	57.00	501187.23		
2:00 a.m.	54.50	281838.29		
3:00 a.m.	55.50	354813.39		
4:00 a.m.	57.50	562341.33		
5:00 a.m.	63.00	1995262.31		
6:00 a.m.	68.00	6309573.44	SUM=	14547525.62
			Ln=	62.09
	Daytime Level=	82.10		
	Nighttime Level=	81.59		
	DNL=	**71.06**		
	24-Hour Leq=	68.63		

LOCATION 2	Highway 85			
d to Source =	350 ft.			
TIME	Leq	10^Leq/10		
7:00a.m.	60.50	1122018.45		
8:00 a.m.	58.50	707945.78		
9:00a.m.	57.00	501187.23		
10:00a.m.	58.80	758577.58		
11:00 a.m.	55.50	354813.39		
12:00noon	55.50	354813.39		
1:00p.m.	56.80	478630.09		
2:00 p.m.	55.40	346736.85		
3:00 p.m.	55.80	380189.40		
4:00 p.m.	56.00	398107.17		
5:00 p.m.	56.40	436515.83		
6:00 p.m.	56.30	426579.52		
7:00 p.m.	56.10	407380.28		
8:00 p.m.	54.60	288403.15		
9:00 p.m.	54.60	288403.15	SUM=	7250301.26
10:00 p.m.	52.90	194984.46	Ld=	56.84
11:00 p.m.	51.30	134896.29		
12:00mdnt	49.80	95499.26		
1:00 a.m.	48.10	64565.42		
2:00 a.m.	47.00	50118.72		
3:00 a.m.	47.00	50118.72		
4:00 a.m.	50.50	112201.85		
5:00 a.m.	57.90	616595.00		
6:00 a.m.	62.00	1584893.19	SUM=	2903872.92
			Ln=	55.09
	Daytime Level=	68.64		
	Nighttime Level=	74.59		
	DNL=	**61.77**		
	24-Hour Leq=	56.26		

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	DNL CALCULATIONS			
CLIENT:	**ARCADIA DEVELOPMENT**			
FILE:	**28-057**			
PROJECT:	**COMMERCIAL/RESIDENTIAL**			
DATE:	**8/1/1996**			
SOURCE:	**ALMADEN EXP./HWY 85/CHYNOWETH/ PAK 'N SAVE**			
LOCATION 3	Res. PL @ Pak 'n Save			
d to Source =	135 ft.			
TIME	Leq	10^Leq/10		
7:00a.m.	65.00	3162277.66		
8:00 a.m.	63.50	2238721.14		
9:00a.m.	67.00	5011872.34		
10:00a.m.	66.50	4466835.92		
11:00 a.m.	67.00	5011872.34		
12:00noon	66.00	3981071.71		
1:00p.m.	66.50	4466835.92		
2:00 p.m.	66.50	4466835.92		
3:00 p.m.	66.00	3981071.71		
4:00 p.m.	65.50	3548133.89		
5:00 p.m.	65.50	3548133.89		
6:00 p.m.	65.50	3548133.89		
7:00 p.m.	65.50	3548133.89		
8:00 p.m.	65.00	3162277.66		
9:00 p.m.	64.00	2511886.43	SUM=	56654094.31
10:00 p.m.	63.50	2238721.14	Ld=	65.77
11:00 p.m.	63.00	2238721.14		
12:00mdnt	63.00	1995262.31		
1:00 a.m.	62.50	1995262.31		
2:00 a.m.	62.50	1778279.41		
3:00 a.m.	63.50	2238721.14		
4:00 a.m.	63.50	2238721.14		
5:00 a.m.	63.00	1995262.31		
6:00 a.m.	65.00	3162277.66	SUM=	19881228.57
			Ln=	63.44
	Daytime Level=	77.57		
	Nighttime Level=	82.94		
	DNL=	**70.25**		
	24-Hour Leq=	65.04		

EDWARD L. PACK ASSOCIATES, INC.

13980 BLOSSOM HILL ROAD, SUITE 100
LOS GATOS, CA 95032

Acoustical Consultants

TEL: 408-723-8900
FAX: 408-723-8099

November 20, 1997
Project No. 28-057-2

Mr. Richard Mindigo
Mindigo & Associates
1984 The Alameda
San Jose, CA 95126

Subject: Noise Assessment Study of the Proposed Continuation of Chynoweth Avenue Between Winfield Boulevard and Almaden Expressway, San Jose

Dear Mr. Mindigo:

This report presents the results of a noise assessment study of the proposed continuation of Chynoweth Avenue between Winfield Boulevard and Almaden Expressway in San Jose, as shown on the Land Use Plan, Ref. (a). The noise exposures presented herein were evaluated against the standards of the City of San Jose General Plan Noise Element, Ref. (b). The purpose of this study is to address the noise impacts to the planned project on the west side of Guadalupe River and to the existing residences on the east side of the river. Included in this study is an analysis of noise generated by traffic on the proposed bridge over the Guadalupe River. This report is intended to supplement and update the original acoustical study for the site, Ref. (c). The results of the study indicate that the noise exposures created by traffic on Chynoweth Avenue will be excessive and mitigation measures will be required.

Sections I and II of this report contain a summary of our findings and recommendations, respectively. Subsequent sections contain project and traffic descriptions, analyses, evaluations and conclusions. Appendices A, B and C, attached, contain the list of references, descriptions of the applicable standards, definitions of the terminology, descriptions of the acoustical instrumentation used for the field survey, and the on-site noise measurement data and calculation tables.

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I. Findings

The noise levels presented below were evaluated against the standards of the City of San Jose Noise Element, which utilizes the Day-Night Level (DNL) noise descriptor and specifies a limit of 60 dB DNL at residential and commercial uses impacted by transportation related noise sources. The Noise Element specifies a limit of 45 dB DNL for residential and commercial interiors. However, when exterior noise exposures are below 60 dB DNL, interior noise exposures will be less than 45 dB DNL, assuming standard building construction. The DNL is a 24-hour time-weighted average noise descriptor commonly used to describe community noise environments.

A. Exterior Noise Exposures

- The existing exterior noise exposure at the existing residences along Chynoweth Avenue east of Guadalupe River is 60 dB DNL. The noise environment in this area is created primarily by traffic on Highway 85. At homes near the Winfield Boulevard intersection, traffic on Winfield Boulevard contributes to the noise environment.

- The noise exposure at the most impacted residential setback from the planned continuation of Chynoweth Avenue (75 ft. from the centerline) will be 60 dB DNL along asphalt sections of the road and 63 dB DNL near the bridge. Thus, the noise exposure from Chynoweth Avenue will be up to 3 dB in excess of the standards.

- The total noise exposure at the existing residential area east of Guadalupe River from both Highway 85 and Chynoweth Avenue will be 63 dB DNL along asphalt sections of Chynoweth Avenue and 65 dB DNL near the bridge. Thus, the total noise exposure will be up to 5 dB in excess of the standards of the City of San Jose Noise Element. The continuation of Chynoweth Avenue through the residential area will increase the noise environment by up to 5 dB. The ensuing noise environment will be approximately 20% louder than present levels.

- The noise exposure at the planned minimum setback of units on the project site from Chynoweth Avenue (90 ft. from the centerline) at the proposed development will be 64, 64 and 68 dB DNL at first, second and third floor elevations, respectively. Of the 64 dB, 62 dB will be due to Highway 85 and 59 dB will be due to Chynoweth Avenue. Of the 68 dB, 67 dB will be due to Highway 85 and 59 dB will be due to Chynoweth Avenue. Thus, the noise exposures will be up to 8 dB in excess of the City of San Jose Noise Element standards.

B. <u>Interior Noise Exposures</u>

- The existing interior noise exposure in the most impacted existing residences east of Guadalupe River is 45 dB DNL. Thus, the noise exposure is at the limit of the City of San Jose Noise Element standard.

- The interior noise exposure from the continuation of Chynoweth Avenue in the most impacted existing residences east of Guadalupe River will be 45 dB DNL in homes along the asphalt section of road and 48 dB DNL in homes within 120 ft. of the centerline of Chynoweth Avenue over the bridge. Thus, the interior noise exposure from traffic on Chynoweth Avenue will be up to 3 dB in excess of the standards.

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- The total noise exposure in the existing residences east of Guadalupe River will be 48 and 50 dB DNL in homes along the asphalt section and those within 120 ft. of the bridge, respectively. Thus, the noise exposures will be up to 5 dB in excess of the standards. The interior noise environments will increase by 5 dB.

- The interior noise exposure in the most impacted planned dwelling units of the proposed project along Chynoweth Avenue will be 49, 49 and 53 dB DNL at first, second and third floor elevations, respectively. Thus, the noise exposures will be up to 8 dB in excess of the City of San Jose Noise Element standards.

As shown above, the continuation of Chynoweth Avenue will increase the noise environment in the residential area east of Guadalupe River by up to 5 dB and will cause noise excesses in relation to City of San Jose Noise Element standards. This increase is significant. The noise exposures at the planned project site along Chynoweth Avenue will exceed the limits of the City of San Jose standards. Mitigation measures, therefore, are required. The recommended measures are described in Section II, below.

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II. Recommendations

To achieve compliance with the standards of the City of San Jose Noise Element, modifications of the existing residences east of Guadalupe River will be necessary. Mitigation measures will also need to be implemented at the planned project, although precise measures should be determined after a site plan is developed.

A. Exterior Noise Control

1. Existing Residences East of Guadalupe River

- Construct 6 ft. high acoustically-effective rear and side yard fences at all rear and side yards within 120 ft. of the centerline of Chynoweth Avenue. The fence height is in reference to the nearest building pad elevation.

Please see Figure 1 for the locations of the recommended rear and side yard fences.

2. Planned Project Dwellings

The following measures are for informational purposes only as a detailed site plan has not been developed. These measures should not be implemented until they can be applied to a specific project design.

- Construct 6 ft. high acoustically-effective barriers along the property line contiguous with Chynoweth Avenue or at patios within 150 ft. of the centerline of roadway that have a direct or side view of the road. The barrier height is in reference to the nearest building pad or patio pad elevation.

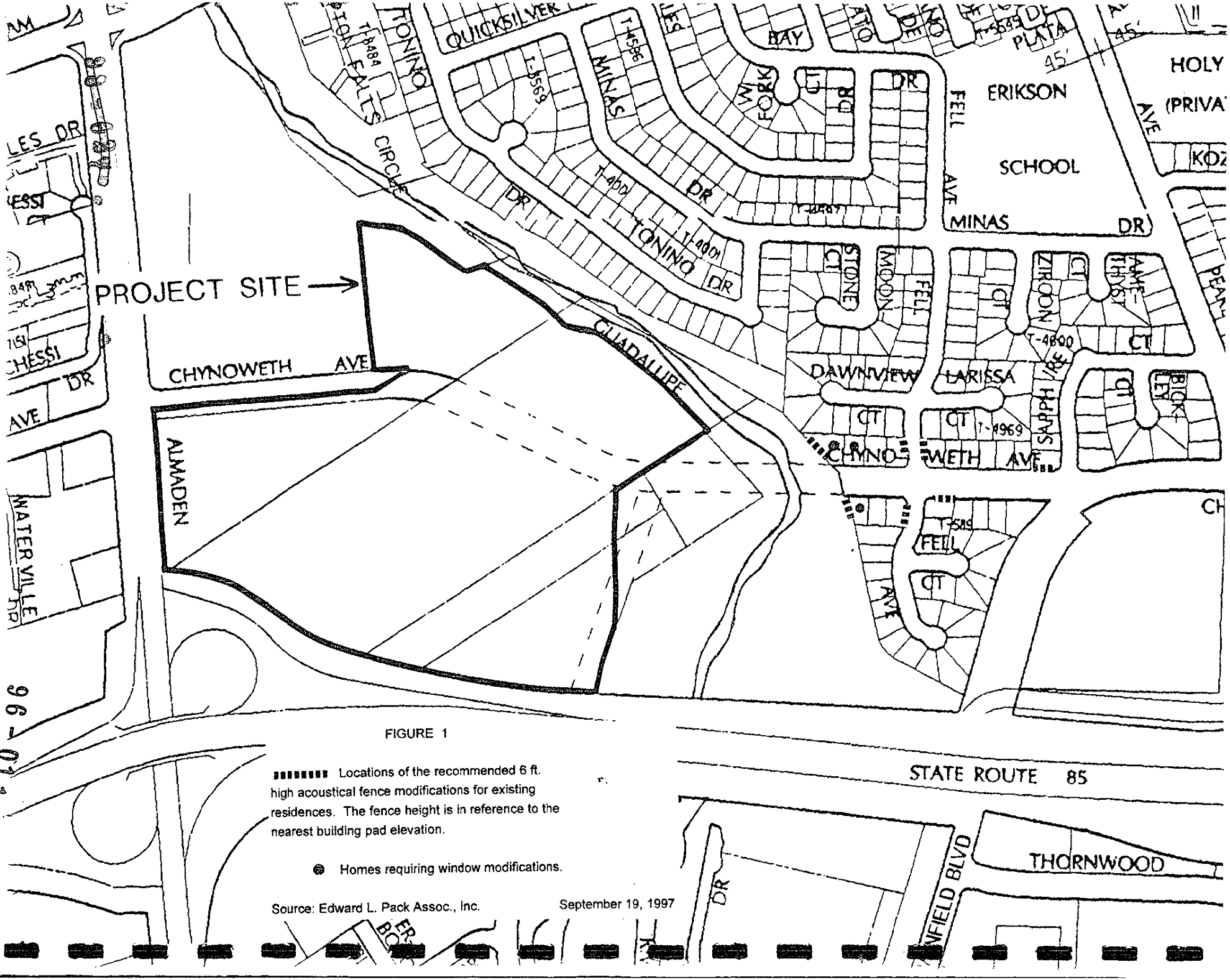

FIGURE 1

Locations of the recommended 6 ft. high acoustical fence modifications for existing residences. The fence height is in reference to the nearest building pad elevation.

Homes requiring window modifications.

Source: Edward L. Pack Assoc., Inc. September 19, 1997

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- Construct 42 in. and 66 in. high acoustically-effective balcony railings at all second and third floor balconies, respectively, within 150 ft. of the centerline of Chynoweth Avenue and that have a direct or side view of the roadway. The railing height is in reference to the nearest balcony floor elevation. Note that 42 in. high balcony railings at third floors will result in a 63 dB DNL noise exposure.

- A detailed acoustical study should be performed to precisely locate and configure noise mitigation measures once a site plan has been developed.

B. Interior Noise Control

To reduce the projected noise exposures to within 3 dB of the existing noise exposures, the following window controls will be required. Note that a 3 dB increase is just perceptible and is usually used as the threshold for the determination of noise impact significance.

1. Existing Residences East of Guadalupe River

- Install windows rated Sound Transmission Class (STC) 33 or higher in all windows within 160 ft. of the centerline of the concrete section of Chynoweth Avenue at the bridge, and that have a direct or side view of Chynoweth Avenue. These windows include those in the two homes closest to the river on the north side of Chynoweth Avenue, and the one home closest to the river on the south side of Chynoweth Avenue.

The windows recommended above do **not** need to be maintained closed at all times for noise control. Mechanical ventilation, therefore, is not required.

2. **Planned Project Dwellings**

- Window controls for the planned project dwellings should be developed after a site plan has been proposed, as the window ratings are dependent on many factors, including glazing type, size, orientation, etc.

In addition to the required STC ratings, the windows shall be installed in an acoustically-effective manner. To achieve an acoustically-effective window construction, the sliding window panels must form an air-tight seal when in the closed position and the window frames must be caulked to the wall opening around their entire perimeter with a non-hardening caulking compound to prevent sound infiltration. Exterior doors must seal air-tight around the full perimeter when in the closed position.

Please be aware that many dual-pane window assemblies have inherent noise reduction problems in the traffic noise frequency spectrum due to resonance that occurs within the air space between the window lites, and the noise reduction capabilities vary from manufacturer to manufacturer. Therefore, the acoustical test report of all sound rated windows and doors should be reviewed be a qualified acoustician to ensure that the chosen windows and doors will adequately reduce traffic noise to acceptable levels.

III. Project and Traffic Descriptions

The proposed continuation of Chynoweth Avenue will connect Chynoweth Avenue at Almaden Expressway to Winfield Boulevard east of the Guadalupe River. A bridge will cross over the river. We are assuming that Chynoweth Avenue will be paved with asphalt the entire length of the road with the exception of the section on the bridge. We are assuming that a rough concrete surface will be on the bridge. A design similar to the Hedding Street bridge over the Guadalupe River near downtown San Jose was used for this study.

The traffic volumes for Chynoweth Avenue under the future year 2010 scenario will be up to 8,250 vehicles Average Daily Traffic (ADT) between Winfield Boulevard and Sanchez Drive. The Chynoweth Avenue traffic volumes will be up to 8,812 ADT between Sanchez Drive and Almaden Expressway, as reported by the City of San Jose, Ref. (d). Previously the City had reported a volume of 10,400 vehicles during the preparation of the original acoustical study. The projected vehicle speed used in this analysis is 35 mph.

IV. Analyses of the Noise Levels

A. Existing Noise Levels

To determine the existing noise environment in the residential area east of Guadalupe River, continuous recordings of the sound levels were made at the curb of the home at 967 Chynoweth Avenue. This home is on the north side of the street at the end of Chynoweth Avenue adjacent to the river. There is no through traffic at this location, therefore, the noise environment is created primarily by traffic on Highway 85. The measurements were made on July 29-30, 1997 using a Larson-Davis LDL 700 Precision Integrating Sound Level Meter. The results of the measurements are shown in the data tables in Appendix C. The sound meter yields, by direct readout, a series of descriptors of the sound levels versus time, as described in Appendix B. The descriptors shown in the data tables are the L_1, L_{10}, L_{50}, and L_{90}, i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. Also shown are the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measurements were made for a total period of 24 hours and included recordings of the noise levels during the daytime and nighttime periods of the DNL index.

As shown in the tables, the L_{eq}'s ranged from 51.0 to 60.0 dBA during the daytime and from 44.5 to 58.0 dBA at night. Because of the large separation distance between Highway 85 and the residential area along Chynoweth Avenue, the noise environment is fairly consistent.

B. Chynoweth Avenue Noise Levels

Chynoweth Avenue traffic noise exposures were predicted from data acquired for 25 recent traffic noise surveys in the South Bay Area. The data from these were adjusted to account for an average vehicle speed of 35 mph, traffic volumes of 8,250 and 8,812 ADT, and both asphalt and concrete road surfaces. The noise levels of traffic on a concrete surfaced bridge will be 3 dB higher than the traffic noise levels on a ground based asphalt surface. A recent study of traffic noise on the Hedding Street bridge revealed the 3 dB upward adjustment for concrete surfaces. At a distance of 50 ft. from the centerline of the road, the average of the 25 noise surveys, with the adjustments, was 66 dB DNL with a concrete surface and 63 dB DNL for an asphalt surface.

The traffic and roadway parameters were also applied to the noise model used in the original report for Chynoweth Avenue. The Sound32 traffic noise prediction model originally revealed a peak hour L_{eq} of 59 dBA at 53 ft. from the centerline of the road. The traffic volume used at that time was 10,400 ADT (1,040 peak hour). The speed was 35 mph and the road surface was asphalt. As the DNL is usually 2 dB higher than the peak hour L_{eq}, is was evident that the DNL would be 61 dB. Decreasing the traffic volumes to 8,250 and 8,812, the noise exposure will decrease by 1 dB to 60 dB DNL at 53 ft. Adjusting the noise exposure for setback distances of 75 ft. and 90 ft., the DNL's will be 58 and 57 dB, respectively. The Sound32 traffic noise model is 3 dB lower than the average of 25 other similar roadways in the area. Therefore, the average of the 25 South Bay Area roadways was used for the baseline model for this study.

V. Evaluation of the Noise Exposures

A. Exterior Noise Exposures

To evaluate the existing and project-generated noise levels against the City of San Jose Noise Element standards, the DNL's for the survey locations were calculated as a decibel average of the L_{eq} values for the daily time periods. Nighttime weighting factors were applied account for the increased human sensitivity to noise during these hours. The mathematical formula used to calculate the DNL is shown in Appendix B. The results of the calculations, as shown in Appendix C, indicate that the exterior noise exposure at the residences on the east side of Guadalupe River is 60 dB DNL. This noise exposure is at the limit of the City of San Jose Noise Element standard for residential land use.

As described above, the noise exposure at 50 ft. from the centerline of Chynoweth Avenue will be 63-66 dB DNL. The residential setbacks of homes east of Guadalupe River are approximately 75 ft. The noise exposures will be 60-63 dB DNL. Adding the existing 60 dB DNL to the Chynoweth Avenue noise exposure, the total noise exposures will be 63 dB DNL at residences along asphalt sections of the road and 65 dB DNL at residences within 120 ft. of the bridge. Thus, the noise exposures will be up to 5 dB in excess of the City of San Jose Noise Element standards.

At the planned project site, the noise exposure at 90 ft. from the centerline of the road will be 59 dB DNL. Adding the 60-65 dB DNL from Highway 85, the total noise exposure will be 63-66 dB DNL under existing traffic conditions. Under future traffic conditions, the noise exposures will be 64-68 dB DNL. Thus, the noise exposures will be up to 8dB in excess of the standards.

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B. Interior Noise Exposures

To evaluate the interior noise levels against the 45 dB DNL interior limit of the City of San Jose Noise Element, a 15 dB reduction was applied to the exterior levels to account for the attenuation provided by the residential building shells under annual-average conditions. The annual-average condition assumes that windows with single-strength glass are kept open up to 50% of the time for natural ventilation. Thus, in the most impacted living spaces of the existing residences facing Chynoweth Avenue, the interior noise exposures will be 48 and 50 dB DNL along asphalt sections of the road and those within 160 ft. of the bridge, respectively. Thus, the noise exposures will be up to 5 dB in excess of the standards.

In living spaces of the planned development, the interior noise exposures will be up to 53 dB DNL. Thus, the noise exposures will be up to 8 dB in excess of the standards.

As shown by the above evaluations, the Chynoweth Avenue connection will have a significant impact on existing residences and retrofitting the fences and windows of a few homes will be necessary to maintain a non-significant noise exposure increase. Mitigation measures will also be required for the planned development on the west side of Guadalupe River.

This report presents the results of the noise assessment study of the Chynoweth Avenue connection over Guadalupe River in San Jose. The study findings for present conditions are based on field measurements and other data and are correct to the best of our knowledge. Project-generated noise levels were derived from field measurements of similar uses and information provided by the City of San Jose. Precise noise exposures shall be determined from detailed studies once a site plan is developed.

If you have any questions or would like an elaboration of this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

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Attachments: Appendices A, B and C

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APPENDIX A

References:

(a) Land Use Plan, by Ruth & Going, Inc., February 26, 1996

(b) San Jose 2020 General Plan, Focus on the Future, City of San Jose, Department of City Planning and Building, August 16, 1994

(c) "Noise Assessment Study for the Proposed Commercial/Residential Mixed-Use Development, Almaden Expressway and Highway 85, San Jose", by Edward L. Pack Associates, Inc., Project No. 28-057, July 30, 1996

(d) Information on Chynoweth Avenue Traffic Volumes Provided by Mr. Warren Winkler, City of San Jose Transportation Planning Department, by Transmittal to Edward L. Pack Associates, Inc., via Mindigo & Associates, September 19, 1997

APPENDIX B

Noise Standards, Terminology, Instrumentation
Ventilation Requirements, General Building Shell Controls

1. Noise Standards

A. City of San Jose "Noise Element" Standards

The noise section of the San Jose 2020 General Plan, Focus on the Future, adopted August 16, 1994 identifies an exterior limit of 60 dB Day-Night Level (DNL) at outdoor living or recreation areas of residential developments. This standard applies at the property line of residential areas impacted by transportation related noise sources. For off-site noise sources, such as commercial and industrial operations, an exterior limit of 55 dB DNL for residential areas is specified. A long-term goal of 55 dB DNL from transportation sources anticipates future reductions in transportation noise due to improvements in design, such as quieter engines and improved muffler systems.

At interior living spaces of residential area, the standards established an interior limit of 45 dB DNL for noise levels due to exterior sources.

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2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Community Noise Analyzer. Some of the statistical levels used to describe community noise are defined as follows:

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing an "average" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous-equivalent-energy level is that level of a steady-state noise having the same sound energy as a given time-varying noise. The L_{eq} represents the decibel level of the time-averaged value of sound energy or sound pressure squared and is used to calculate the DNL and CNEL.

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B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)
L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)
24 indicates the 24-hour period
& denotes decibel addition.

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C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the precision acoustical instruments shown below. The acoustical instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters was provided by a microphone extended to a height of 5 ft. above the ground. The meter conforms to ANSI S1.4 for Type 1 instruments. The "A" weighting network and the "Fast" response setting of the meter were used in conformance with the applicable ISO and IEC standards. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis LDL 700 Precision Integrating Sound Level Meter
GenRad 1945 Community Noise Analyzer
Larson Davis 2900 Real Time Analyzer

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APPENDIX C

On-Site Noise Measurement Data and Calculation Tables

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MINDIGO & ASSOCIATES
FILE: 28-057-2
DATE: 7/29-30/1997
CHYNOWETH AVE. CONNECTION NOISE STUDY/ARCADIA PROJECT

LOCATION: END OF CHYNOWETH AVE. EAST SIDE OF GUADALUPE RIVER

Cnt	LVL	SEL	Lmax	Lpk	Lmin	Date	Time	Dur	Ex	Pk	Ov
1	52.5	88.0	75.0	94.5	45.0	29 JUL	10:21:45	1:00 h:m	1	1	0
			L01 = 60.0		L10 = 54.0		L50 = 51.5		L90 = 49.5		
2	52.0	88.0	66.5	77.0	45.0	29 JUL	11:21:45	1:00 h:m	0	0	0
			L01 = 59.0		L10 = 54.0		L50 = 51.5		L90 = 49.5		
3	51.5	87.0	71.0	83.0	44.0	29 JUL	12:21:45	1:00 h:m	0	0	0
			L01 = 60.0		L10 = 52.5		L50 = 50.0		L90 = 47.5		
4	51.0	86.5	68.5	80.5	44.5	29 JUL	13:21:45	1:00 h:m	0	0	0
			L01 = 60.5		L10 = 52.5		L50 = 49.5		L90 = 47.5		
5	51.0	86.5	71.0	90.0	43.5	29 JUL	14:21:45	1:00 h:m	0	0	0
			L01 = 61.0		L10 = 51.5		L50 = 49.0		L90 = 47.0		
6	51.0	86.5	75.5	93.5	44.5	29 JUL	15:21:45	1:00 h:m	0	0	0
			L01 = 58.5		L10 = 52.0		L50 = 50.0		L90 = 48.0		
7	52.0	87.5	73.0	88.5	45.0	29 JUL	16:21:46	1:00 h:m	0	0	0
			L01 = 61.0		L10 = 53.0		L50 = 50.5		L90 = 48.5		
8	52.5	88.0	72.5	85.0	46.0	29 JUL	17:21:46	1:00 h:m	0	0	0
			L01 = 59.0		L10 = 54.0		L50 = 51.0		L90 = 49.5		
9	54.5	90.5	79.5	93.5	48.5	29 JUL	18:21:46	1:00 h:m	0	0	0
			L01 = 61.0		L10 = 56.0		L50 = 54.0		L90 = 52.0		
10	55.0	91.0	81.0	91.5	46.5	29 JUL	19:21:46	1:00 h:m	0	0	0
			L01 = 65.5		L10 = 56.0		L50 = 52.0		L90 = 49.5		
11	60.0	95.5	96.5	108.0	45.5	29 JUL	20:21:46	1:00 h:m	0	0	0
			L01 = 62.5		L10 = 53.5		L50 = 50.5		L90 = 48.5		
12	55.0	90.5	69.0	84.5	49.5	29 JUL	21:21:46	1:00 h:m	0	0	0
			L01 = 59.5		L10 = 57.0		L50 = 54.5		L90 = 52.5		
13	55.0	90.5	79.0	90.5	48.0	29 JUL	22:21:46	1:00 h:m	0	0	0
			L01 = 59.0		L10 = 56.5		L50 = 54.0		L90 = 51.5		
14	50.5	86.0	62.0	76.5	42.5	29 JUL	23:21:46	1:00 h:m	0	0	0
			L01 = 55.5		L10 = 52.5		L50 = 49.5		L90 = 47.0		
15	48.0	84.0	61.5	71.5	40.0	30 JUL	0:21:46	1:00 h:m	0	0	0
			L01 = 56.0		L10 = 50.5		L50 = 47.0		L90 = 44.5		

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16	46.0	81.5	56.0	68.5	38.0	30	JUL	1:21:46	1:00	h:m	0	0	0	
			L01 = 52.0		L10 = 48.5			L50 = 45.0			L90 = 42.0			
17	45.5	81.0	61.0	71.5	35.5	30	JUL	2:21:46	1:00	h:m	0	0	0	
			L01 = 55.0		L10 = 47.5			L50 = 43.5			L90 = 40.5			
18	44.5	80.5	57.5	71.0	36.0	30	JUL	3:21:46	1:00	h:m	0	0	0	
			L01 = 51.0		L10 = 47.5			L50 = 43.5			L90 = 40.5			
19	49.0	84.5	66.0	85.0	40.0	30	JUL	4:21:46	1:00	h:m	0	0	0	
			L01 = 55.0		L10 = 51.5			L50 = 48.5			L90 = 45.0			
20	55.0	90.5	78.0	96.0	46.5	30	JUL	5:21:46	1:00	h:m	0	0	0	
			L01 = 64.0		L10 = 56.0			L50 = 54.0			L90 = 51.5			
21	58.5	94.0	74.0	91.5	53.0	30	JUL	6:21:46	1:00	h:m	0	0	0	
			L01 = 67.0		L10 = 60.0			L50 = 57.5			L90 = 56.0			
22	58.5	94.0	78.5	101.5	52.5	30	JUL	7:21:46	1:00	h:m	0	0	0	
			L01 = 66.5		L10 = 60.0			L50 = 57.5			L90 = 55.5			
23	57.5	93.0	76.5	91.0	50.0	30	JUL	8:21:46	1:00	h:m	0	0	0	
			L01 = 66.0		L10 = 59.5			L50 = 56.0			L90 = 54.0			
24	56.0	91.5	73.0	88.0	46.5	30	JUL	9:21:46	1:00	h:m	0	0	0	
			L01 = 67.0		L10 = 57.0			L50 = 54.0			L90 = 51.5			

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	DNL CALCULATIONS			
CLIENT:	**ARCADIA DEVELOPMENT**			
FILE:	**28-057**			
PROJECT:	**COMMERCIAL/RESIDENTIAL**			
DATE:	**8/1/1996**			
SOURCE:	**ALMADEN EXP./HWY 85/CHYNOWETH/ PAK 'N SAVE**			
LOCATION 4	Chynoweth East Side of River			
d to Source =				
TIME	Leq	10^Leq/10		
7:00a.m.	58.50	707945.78		
8:00 a.m.	57.50	562341.33		
9:00a.m.	56.00	398107.17		
10:00a.m.	53.00	199526.23		
11:00 a.m.	52.00	158489.32		
12:00noon	51.50	141253.75		
1:00p.m.	51.00	125892.54		
2:00 p.m.	51.00	125892.54		
3:00 p.m.	51.00	125892.54		
4:00 p.m.	52.00	158489.32		
5:00 p.m.	52.50	177827.94		
6:00 p.m.	54.50	281838.29		
7:00 p.m.	55.00	316227.77		
8:00 p.m.	60.00	1000000.00		
9:00 p.m.	55.00	316227.77	SUM=	4795952.29
10:00 p.m.	55.00	316227.77	Ld=	55.05
11:00 p.m.	50.50	316227.77		
12:00mdnt	48.00	112201.85		
1:00 a.m.	46.00	63095.73		
2:00 a.m.	45.50	35481.34		
3:00 a.m.	44.50	28183.83		
4:00 a.m.	49.00	79432.82		
5:00 a.m.	55.00	316227.77		
6:00 a.m.	58.50	707945.78	SUM=	1975024.65
			Ln=	53.41
	Daytime Level=	66.85		
	Nighttime Level=	72.91		
	DNL=	**60.07**		
	24-Hour Leq=	54.50		

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APPENDIX I

AIR QUALITY REPORT

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Environmental Consulting Services

Noise
Air Quality

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AIR QUALITY IMPACT AND MITIGATION STUDY
ALMADEN-CHYNOWETH DEVELOPMENT PROJECT

San Jose, CA

July 30, 1997

Submitted to

MINDIGO & ASSOCIATES

San Jose, CA

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Prepared by

H. STANTON SHELLY

Principal Consultant

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ALMADEN-CHYNOWETH DEVELOPMENT PROJECT

AIR QUALITY STUDY

INTRODUCTION

The air quality of a particular area is dependent not only on the amount of air pollutants emitted locally and within the air basin, but also is directly related to the weather patterns of the region. The wind speed and direction, the temperature profile of the atmosphere, and the amount of humidity and sunlight determine the fate of the emitted pollutants each day, and determine the daily concentrations of air pollutants defining the air quality.

The proposed Almaden-Chynoweth project commercial and residential development is located on about 40 acres near Highway 85 and Almaden Expressway in the City of San Jose. The project is within the regional Bay Area Air Quality Management District (BAAQMD), which includes seven Bay Area counties and portions of two others. Air quality emission and control standards are established by the BAAQMD, the California Air Resources Board, and by the Environmental Protection Agency at the Federal level. These agencies are responsible for developing and enforcing regulations involving industrial and vehicular pollutant emissions, including transportation management and control mitigation measures.

This report is an update to an earlier air quality assessment of the project by ECS ("Air Quality Impact and Mitigation Study, Arcadia Development Project," April 1997) to include a Cumulative case evaluation.

I. EXISTING SETTING

A. Regional Climate

The Bay Area climate is a Mediterranean type, characterized by mild and rainy winters, and warm and nearly dry summers. There is a high percentage of sunshine, especially in the summer after the typical morning fog burns off. The temperature, humidity, wind, and precipitation throughout the year depend entirely upon the movements of marine air, the location and strength of the dominant Pacific high-pressure system, and the coastal temperature gradient.

During the summer the Pacific high pressure system typically sits near the California coast, pushing oncoming eastbound storm systems north through the northwest states and Canada. Subsidence of warm air aloft associated with this system creates the frequent summer atmospheric temperature inversion (in which the air temperature increases instead of decreases with altitude) and produces stagnated conditions. (See the Appendix for definitions of commonly used meteorological and air quality terms.) This persistent reversal of the normal atmospheric temperature profile may be several hundred to several thousand feet thick, effectively trapping pollutants emitted at ground level. Average ground-level temperatures increase as distance from the Golden Gate increases. In the South Bay average maximum temperatures during the summer are near 80 degrees F. and average evening minimums are near 50 degrees.

During the winter the Pacific high pressure system moves southward, allowing ocean-formed storms to move through the region. With the dominance of unstable low-pressure systems during the winter, and less sunshine, conditions favoring smog formation are at a minimum. However, radiation cooling during the evening hours sometimes creates thin inversions, concentrating carbon monoxide emissions at ground level. Average maximum winter temperatures in Santa Clara County are about 60 degrees F., and average evening lows are about 40 degrees.

Lying in the rain shadow of the Santa Cruz Mountains, the South Bay receives only 2/3 of the precipitation that falls on San Francisco, and a quarter of that falling in the coastal mountains.

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Little rain falls in May and October, usually near half an inch, and almost none from June through September. A majority of the rainfall comes in December, January and February, about 3.5 inches per month in normal rainfall years. The annual average rainfall in the South Bay is in the 13-15 inch range.

Wind in the South Bay is predominantly from the northwest, approximately 30% of the time during the winter, and over 50% of the time during the summer months. Winds during the summer are generally light, except for late afternoon onshore flow from differential heating between the cool ocean and the warm land mass. The northwest winds are a result of ocean-driven flow coming through the Golden Gate and toward the south bay. During mid-winter months southeasterly winds are present nearly 40% of the time due to frequent low-pressure storm fronts, and their characteristic counter-clockwise flow. Calm conditions occur nearly 15% of the time during the winter, but only 5% during the summer. Average wind speeds in the project area are less than 5 mph on an annual average basis. The highest wind speeds occur during late afternoon on-shore cooling in the summer, and during winter storms. During storms winds frequently gust to 20 to 30 mph.

B. Ambient Air Quality

Air quality in the San Jose project area is subject to the problems experienced by most of the Bay Area, and particularly the south portion. Emissions from millions of vehicle-miles of travel each day often are not mixed and diluted because of poor ventilation, but are trapped near ground level by an atmospheric temperature inversion. Prevailing air currents generally sweep from the mouth of the Bay toward the south, picking up and concentrating pollutants in the basin around San Jose and the Almaden Valley. A combination of emissions in the South Bay, the transport of pollutants from other areas, and the natural mountain barriers (the Diablo Range to the east and the Santa Cruz Range to the southwest) can produce high concentrations, which sometimes exceed ambient air quality limits established by the Bay Area Air Quality Management District (BAAQMD). Air quality data from the last four years at the primary BAAQMD monitoring station in north San Jose, and the ambient standards presently in effect, are tabulated in Exhibit 1.

Ozone, the primary oxidant "smog" component, is produced by complex reactions of reactive organic gases (ROG), nitrogen oxides and sunlight in the atmosphere. Daily ozone concentrations are heavily dependent upon the weather, and thus vary substantially from day to day and from year to year. The Federal oxidant standard of 12 pphm (parts per hundred million) has been exceeded only four times in the past ten years. However, the more stringent State standard of 9 pphm is exceeded a number of times annually, six times or less per year at the San Jose station since 1990. However, numerous severe atmospheric inversions in 1995 created 14 days of exceedances, the highest number since 1988.

Another problem pollutant in the South Bay, carbon monoxide, like oxidant also is heavily dependent upon both vehicle emissions and weather conditions. High CO concentrations in the South Bay occur mostly during winter evenings with severe temperature inversions and low wind speeds. There have been fewer than six incidents of CO concentrations above the 9 ppm 8-hour standard each year since 1989, with none in the past four years. High incidents of both CO and oxidant have been reduced significantly by improved emission controls on new automobiles in the past twenty years.

Nitrogen oxides are produced heavily by vehicles and high-temperature industrial operations, but as yet have not posed serious problems in the Bay Area. Only one exceedance has occurred in the San Jose area in the past 14 years (1980). However, the San Jose station has registered the highest annual NO_2 concentration reading in the District each year for the past 15 years.

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Exhibit 1

AMBIENT AIR QUALITY

San Jose Area

Pollutant	1992	1993	1994	1995	Standard	Meas. Units
Ozone						
Maximum	12	11	11	13	12[1], 9[2]	pphm, 1-hr ave.
Federal Exceedances	0	0	0	1	<1	days per year
State Exceedances	3	3	2	14	0	days per year
Carbon Monoxide						
Maximum 8-hour	7.5	6.6	8.1	9.0	9 [3]	ppm, 8-hr ave.
8-hour exceedances	0	0	0	0	1	days per year
Nitrogen Dioxide						
Maximum	10	12	11	12	25 [4]	pphm 1-hr ave.
Exceedances	0	0	0	0	1	days per year.
Particulate Matter [5]						
Annual average	36.2	33.5	30.9	25.8	50 [6]	$\mu g/m^3$, annual arithmetic mean
24-hour average	23	20	13	7	0.3 [7]	% of days above $50 \mu g/m^3$
Annual mean	31.7	26.9	26.6	22.0	30 [7]	$\mu g/m^3$, annual geometric mean

NOTES:
(1) Federal O_3 standard.
(2) State O_3 standard.
(3) Federal and State CO ambient standard.
(4) State NO_2 standard; Federal standard is 5 pphm annual average.
(5) "PM_{10}" - based upon particles with aerodynamic diameters of 10 micrometers or smaller.
(6) Federal Particulate Matter standard.
(7) State Particulate Matter standard. One day is considered an exceedance. Since the District does not monitor every day, the percentage of days monitored that exceed the standard are reported.
NA - Not Available: data not yet published by ARB

Source: Data from BAAQMD [3] and California ARB [4]; 4th Street monitoring station, San Jose.

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Particulate Matter concentrations, produced by vehicles, heavy industry, and soil-moving activities, have stabilized in the project area in the past several years, even with significant construction in the vicinity. The "PM_{10}" measurement methodology is based upon 10-micron aerodynamic diameter particles that are more likely to reach the lungs. Although the Federal Annual Average standard has not been exceeded in the area, the north Santa Clara County area has exceeded the California 24-hour average of 50 $\mu g/m^3$ on 5 to 25% of the days in the recent years.

Sulfur dioxide is primarily associated with chemical and refining industries, and has never approached the ambient standard in the San Jose area, nor have SO_2 standards been exceeded anywhere in the District since 1976. The superior controls required on chemical and process plants are largely responsible for this condition.

II. POTENTIAL AIR QUALITY IMPACTS OF PROJECT

A. Significance Criteria

Because there have been consistent exceedances of ambient standards in the Bay Area for many years, the District until recently was designated a Non-Attainment area by the Environmental Protection Agency for carbon monoxide and ozone. Regional improvements in basin air quality allowed the District to reach Attainment status for Federal ozone and California 8-hour CO standards in 1994. However, there have been numerous exceedances of adopted standards, particularly State standards, after 1994. The EPA has notified BAAQMD of its intention to redesignate the District as a Non-attainment area for ozone. For these reasons all significant stationary and vehicular sources in the District share the responsibility for continuing improvement in air quality in the basin. Regional and local planning agencies must follow adopted air quality plans and programs to improve and maintain the basin air quality and reduce potential impacts of proposed new projects.

Appendix G of the California CEQA Guidelines for air quality [9] describes the criteria for determining if project impacts would be considered significant, as follows:

1. violating any ambient air quality standard, contributing substantially to an existing or projected air quality violation, or exposing sensitive receptors to substantial pollutant concentrations
2. conflicting with any adopted environmental plans or goals of the approving agency
3. creating a public health hazard, or involving the use, production, or disposal of materials that pose a hazard to people, animal, or plant populations in the area
4. having a substantial demonstrable negative aesthetic effect

In addition, in Appendix I of the California CEQA Guidelines, these additional significance criteria are described:

5. creating objectionable odors
6. altering local or regional air movement, moisture, temperature, or climate

The BAAQMD recommends two additional criteria relating to project impacts [9]:

7. project vehicles generating CO emissions exceeding 550 lbs./day
8. total project emissions of ROG, NO_x, or PM_{10} pollutants exceeding 80 lbs./day

The following sections evaluate the potential impacts of the proposed Almaden-Chynoweth development project relative to these air quality criteria.

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B. Sensitive Receptor Locations

Two representative sensitive receptors for potential air quality impacts of the Almaden-Chynoweth project have been chosen for this study at (1) the residential area north of Chynoweth on the project site, and at (2) the residential area south of Chynoweth near Winfield. The extent to which these worst-case locations would be affected by the proposed project is evaluated in this study. Other sensitive receptor locations in the project area would experience similar or lower pollutant exposures.

C. Traffic-Related Emissions

a. Introduction

The proposed new project includes rezoning the site to PD General Commercial on 26.2 acres and Very High Density Residential on 12.6 acres. The application would provide for development of a maximum of 350,000 square feet of retail space. This study considers the potential air quality effects of implementation of this worst-case condition and the associated traffic.

b. Methodology and Data

Vehicles are responsible for emission of a number of pollutants—carbon monoxide (CO), organic gases, particulate matter, NO_X, and others. Under normal ventilation conditions, carbon monoxide emissions are directly related to the number of vehicle trips on nearby streets and to the average vehicle emission rate. Average emissions decrease as average speed increases. However, after the pollutants are emitted, atmospheric conditions control pollutant mixing, dispersion, and the ultimate concentrations achieved. These interrelated factors are considered in a simplified way by roadside CO modeling techniques, the most widely used method of evaluating the potential impact of project vehicular emissions at nearby sensitive receptor locations. Vehicle trips to and from the project on the major access routes—Almaden Expressway, Route 85, and from both east and west directions on Chynoweth—are the primary sources of emissions associated with the implementation of the proposed project.

The analysis includes the No Project case, the Project case that includes the full development of the site to 350,000 square feet of Commercial, and the Cumulative case that includes four other approved projects in the same vicinity. Traffic volume projections are taken from the project traffic study by Pang Engineering Inc. (Mt. View), San Jose Traffic Operations Division and CALTRANS. The resulting estimated traffic volumes on major access routes for the cases are tabulated in Exhibit 2. Total daily Almaden-Chynoweth project trips are estimated at 13,400, based on the project traffic study.

Cumulative trips for four nearby projects add an estimated 0 to 5% additional trips to each intersection in the immediate project area, based on intersection analyses by the Pang traffic report. Total Cumulative trips (from traffic data in the respective project reports) are estimated to add a daily volume of 13575 in the area.

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Exhibit 2

ESTIMATED TRAFFIC VOLUMES

Street	Traffic Case	Peak Hour Volume	Speed (Ave./Pk. hr.)
1. Almaden Expway at Chynoweth	Total (Base, Aprovd, Proj)	5300 trips	45/35 mph
	Project	495	
	Cumulative	5540	
2. Chynoweth at Almaden	Total (Base, Aprovd, Proj)	1295	35/30
	Project	710	
	Cumulative	1190	
3. Blossom Hill	Total (Base, Aprovd, Proj)	2965	40/35
	Project	35	
	Cumulative	3100	
4. Highway 85	Total (Base, Aprovd, Proj)	8800	65/60
	Project	250	
	Cumulative	9200	
5. Winfield / Pearl at Chynoweth	Total (Base, Aprovd, Proj)	1250	35/30
	Project	150	
	Cumulative	1300	

The CO modeling technique used for this study was developed by the BAAQMD [5], based upon standard Gaussian line source diffusion relationships developed by Turner [6] and others. Assumptions include very poor atmospheric conditions (wind speeds of 1 to 2 meters per second and low inversion height), which occur on numerous occasions each year in the area. An ECS-developed computer program, expanding the original BAAQMD method to compute the simultaneous effects of CO emissions from multiple roadways at each receptor location for each of 16 wind directions, was used to model the CO concentrations. The maximum receptor concentrations computed by the model are reported for each set of traffic conditions. Composite emission factors are the latest from the Air Resources Board emission factor computation program, EMFAC7F [7].

c. Analysis of Roadside CO Concentrations

The worst-case concentrations of CO at the two worst-case receptor areas, in the project residential area adjacent to Chynoweth and on Chynoweth in the existing residential area near Winfield, were modeled peak-hour and maximum eight-hour traffic conditions. Emission contributions from traffic on significant nearby streets and highways were included in the model as appropriate (see Exhibit 2 list). The resulting CO concentrations are tabulated in Exhibit 3, along with the present ambient standard concentrations and average background concentrations.

Total CO concentrations under poor conditions are the sum of local background concentrations plus the modeled concentrations from project-generated trips. Background concentrations are the combined result of vehicular emissions from all streets in an area. The background values used in Exhibit 3 are taken from data in BAAQMD CEQA Guidelines [9], Figures 2 and 3 , and a rollback factor from Figure 13. Exhibit 3 shows that direct project contributions are negligible—less than 0.4 ppm for the peak hour, and the sum of background concentrations and locally generated CO would not cause the State ambient standards to be exceeded with or without project implementation.

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In general, emissions for vehicles continue to decrease as newer and better-controlled vehicles replace older ones with less efficient emission control systems. For example, in California carbon monoxide emission factors for vehicles traveling at average speeds have decreased 25 to 35% in the past five years. This positive trend has more than offset increases in traffic volumes for a number of years.

Exhibit 3

Carbon Monoxide Concentrations (ppm)

Location	Period	Project	Total	Cumul	Backgr.	Standard
1. Project site, residential						
	Peak Hour	0.2	2.1	2.2	4.5	20.0
	8-hour Ave	0.1	0.9	0.9	3.0	9.0
2. Chynoweth near Winfield						
	Peak Hour	0.3	1.9	2.0	4.5	20.0
	8-hour Ave	0.1	0.8	0.9	3.0	9.0

However, even though the project would not be responsible for incidents exceeding adopted ambient standards, this is does not mean there would never be exceedances. Under severe atmospheric stagnation that occur a few times each year (near-zero wind speeds and very low atmospheric inversion, which cannot be modeled in a straightforward fashion), ambient standards could be exceeded with or without project implementation.

d. Total Project Vehicle Emissions

Another way of assessing potential air quality impacts is to calculate the total daily vehicular emissions from the project. The emissions associated with the typical weekday traffic generation were calculated using the manual method in the Guidelines [9], page 32. A daily project trip volume of 13,400 and an average trip length of 6.9 miles was used. The average trip length was taken from Reference 9, Table 9 for Santa Clara County. Exhibit 4 is a comparison of daily project emissions of four pollutants of concern for the Project case: Carbon Monoxide (CO), Reactive Organic Gases (ROG), Nitrogen Oxides (NOx), and Particulate Matter of 10 micron (μm) size (PM_{10}).

Exhibit 4

Daily Emissions Comparisons, Year 2000

Case	CO	ROG	NO_x	PM_{10}
Project (tons/day)	0.62	0.052	0.094	0.085
(lbs./day)	1243	103	188	170
Cumulative (tons/day)	1.25	0.11	0.190	0.18
(lbs./day)	2498	207	378	342
Criteria level (lbs./day)	550	80	80	80

The District considers any project that produces over 550 lbs./day of CO, or any project emitting more than 80 lbs./day of ROG, NOx, or PM_{10} pollutants as having a potentially significant impact. As shown in Exhibit 4, the project exceeds these four basic significance criteria. The Cumulative case has roughly double the daily trips as the project, and hence produces approximately double the daily emissions. See Section III for appropriate Mitigation Measures.

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D. Site-Related Emissions

Potential site-based sources of pollutants associated with the Almaden-Chynoweth project would include dust and particulates generated during grading, site preparation, and construction activities, as well as emissions from heating systems and other installed equipment. These sources of site emissions are discussed in the following sections

a. Site Preparation and Construction Emissions

Particulates that contribute to PM_{10} concentrations are generated both by site preparation activities such as excavation and grading and also by building construction. Although it is possible to make a rough estimate of the amount of particulates resuspended by various types of vehicular and grading operations, because of the variables involved —such as soil type, moisture, wind conditions, and vehicle speed—the estimates would have little validity except under specific and controlled conditions. However, EPA methodology estimates that approximately 51 lbs. per acre per day of PM_{10} pollutants are entrained by uncontrolled construction-related activity. In general, the entire site would not be graded or under construction at a time. Assuming that one quarter of the site would be worked on any given day, about 11 acres, the Almaden-Chynoweth project site would be responsible for a daily dust entrainment of approximately 561 lbs. if control measures are not used. See Section III, "Project Mitigation Measures," for recommended control methods.

b. Other Site-Related Emissions

Site emissions from stationary equipment, such as residential gas heating systems, mechanical equipment and air conditioning units, would be negligible. Stationary equipment emissions would not contribute measurably to the local ambient concentrations of any pollutant of interest.

E. Comparison of Potential Project Impacts vs. Significance Criteria

The following is a summary of the potential air quality impacts of the proposed Almaden-Chynoweth commercial and residential development relative to adopted District significance criteria:

1. Violating any ambient air quality standard, contributing substantially to an existing or projected air quality violation, or exposing sensitive receptors to substantial pollutant concentrations. No significant project impact.
2. Conflicting with any adopted air quality environmental plans or goals of the community in which it is located. No significant project impact.
3. Creating a public health hazard, or involving the use, production, or disposal of materials that pose a hazard to people, animals or plant populations in the area. No significant project impact.
4. Having substantial demonstrable negative aesthetic effect. No significant project impact.
5. Creating objectionable odors. No significant project impact.
6. Altering local or regional air movement, moisture, temperature, or climate. No significant project impact.
7. Project vehicles generating CO emissions exceeding 550 lbs./day. Potential significant project operational impact.
8. Total project emissions of ROG, NO_x, or PM_{10} pollutants exceeding 80 lbs./day. Potential significant project operational impact. In addition, there is potential for temporary PM_{10} impacts during the site preparation phase if dust control measures are not used.

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III. PROJECT MITIGATION MEASURES

A. Introduction

Although the proposed project would not directly cause incidents exceeding ambient standards, there are continuing air quality problems in the vicinity and in the Bay Area air basin. The District achieved Federal ambient standards for CO and ozone for the 1992 through 1994 period. However, poor air quality days still occur because of continuing increases in intensity of land development, the increasing number of residents and daily vehicle miles traveled, and sporadic adverse atmospheric conditions. The 1988 California Air Quality Act requires that each air quality management district follow adopted air quality plans for achieving and maintaining air quality standards. The plans implement air quality emission mitigation methods, including area and indirect source control programs, Transportation Control Measures, and retrofitting emission control equipment to existing stationary sources using the Best Available Control Technology, to meet ambient standards. The latest recommended plans and mitigation measures for achieving full compliance with Bay Area air quality standards are contained in the 1996 "BAAQMD CEQA Guidelines" document [9].

Since over 50% of Reactive Organic Gases (including ozone) and over 80% of CO emissions are produced by vehicles, mitigation strategies for development projects generally are focused upon reducing vehicular trips, travel time, and total miles traveled. Potential air quality impacts from projects of various sizes are described and classified in the BAAQMD Assessment Guidelines [8], Chapter IX.

Recommended air quality mitigation measures for the project are described in Table 15 of Reference 9, in the 1991 Clean Air Plan [10], and in the MTC Traffic Mitigation Reference Guide [11]. The measures are summarized in the following sections. The recommended traffic mitigations should be implemented to the extent possible through the combined efforts of the project and the City of San Jose and Santa Clara County planning and transportation agencies. The general percentages of workers who could be expected to use the travel modes described are given in parentheses, based upon Bay Area data from References 9, 10 and 11.

B. Mitigation Measures

a. Construction Emissions Reduction [9]

Basic Dust Control Measures - all construction sites

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas.
- Sweep daily (preferably with water sweepers) all paved access roads, parking areas and staging areas.
- Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets.

Enhanced Dust Control Measures - construction sites larger than four acres

- Implement all basic measures described above.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles of dirt or other light materials.
- Limit traffic speeds on unpaved roads to 15 mph.

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- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

Optional Dust Control Measures - large construction sites near sensitive receptors

- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Install windbreaks (such as trees or vegetation) on windward side of construction sites.
- Suspend excavation and grading activity when winds exceed 25 mph.
- Limit the areas subject to excavation, grading and other construction activity at the same time.

Construction Equipment Emissions Measures

- Use alternative fueled construction equipment.
- Minimize idling time.
- Maintain properly tuned equipment.
- Limit the hours of operation of heavy duty equipment.

b. Transportation Facilities Improvements

To reduce trips, increase desirability of transit, and increase the average speed of traffic.

- Bicycle (2-8% participation) and pedestrian (1-5% participation) facility improvements. Safe pedestrian sidewalks, protected bicycle route system, and secure bicycle storage facilities.
- Transit improvements and commute amenities (1-3% participation). Additional transit stops, bus turnouts and shelters, passenger amenities, special bus and carpool lanes, and community park and ride lots to assist those using ride-sharing and transit.
- Street and traffic flow improvements. Traffic engineering changes that improve traffic flow, such as more lanes, turning lanes, and demand signalization of intersections, can make significant improvements (an average vehicle speed increase of 5 mph can achieve a 20% reduction in CO and hydrocarbon emissions).

c. Transportation-Related Management Actions (Traffic Mitigation Programs)

To encourage single-occupant commuters to switch either to public transit or to multiple-passenger vehicles.

- Ride-sharing incentives by employers (1-4% participation), including providing a commute alternatives coordinator, planning and support for ride-pool matching, subsidies for ride-sharing cars and vans, limited parking spaces, parking fees.

  Benefits to employers who are successful in reducing single- occupant commute trips include reduced parking facility requirements and costs, employee morale and productivity improvement by reducing commute-related stress, improved community relations by reducing local traffic impacts.

  The average vehicle occupancy in the Bay Area is approximately 1.35 persons per vehicle, and is targeted to reach 1.5 as a result of new Transportation Control Measures
- Flexible, compressed, or staggered employee work schedules, to spread out the peak travel period (2-10% participation).
- Transit incentives, agreements, and ordinances, to improve project/transit interactions and encourage alternatives to solitary commuting, such as improved transit routes, community park and ride lots, employer-provided transit information and sales of transit tickets, better schedules to serve the project, and fare subsidies for employees.

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The number of commuters who will to change to a pollutant-reducing travel mode depends on several factors, including home-to-work distance, travel time relative to the fastest mode, convenience, and relative cost. In practice, the effectiveness of any mitigation measure is directly proportional to the actual reductions in commute-related trips, traffic congestion, and vehicular emissions, which is dependent upon the number of commuters that are willing to give up single-occupant travel and use an alternative method of getting to work. Planners must make the alternative modes more attractive to commuters — better travel time, convenience, and relative cost — in order to produce significant commute trip and emissions reductions.

More detailed coverage of vehicular emission mitigation measures and the associated benefits are presented in Section IX of the reference 8 Guidelines, in Chapter 4 of reference 9 and in the "Evaluation of Traffic Mitigation Measures for New Development" table in the Update to reference 11.

d. Land Use Planning by Local Agencies.

To implement fundamental changes in land use patterns to reduce single-occupant vehicle use.

- Mixed land uses. Includes mixing residential uses with, or close to, retail, business, and open space uses to reduce the need for vehicle travel.
- Alternative land use zoning, to avoid adverse air quality exposures.
- Growth limitations and phased development planning, to reduce traffic increases and congestion.
- Special use conditions and limitations, such as constraints on "drive-up" and other congested uses.

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AIR QUALITY REFERENCES

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APPENDIX J

HAZARDOUS MATERIALS REPORTS

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

Arcadia Development Company
Northeast Corner of Highway 85 and Almaden Expressway
San Jose, California
Assessor's Parcel Numbers: 458-17-006, 017, & 018

AUGUST 1996

Prepared for

Arcadia Development Company
1500 East Hamilton Avenue, Suite 212
Campbell, California 95150

Prepared by

96-011

EARTH SYSTEMS CONSULTANTS
Northern California
47853 Warm Springs Boulevard
Fremont, California 94539

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File No. NFA-3695-02
August 13, 1996

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Appendix B	Copy of VISTA Report

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Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

File No. NFA-3695-02
August 13, 1996

Arcadia Development Company
1500 East Hamilton Avenue, Suite 212
Campbell, California 95150

Attention: Mr. Peter Merrill

Subject: **PHASE I ENVIRONMENTAL SITE ASSESSMENT**
ARCADIA DEVELOPMENT
Northeast Corner of Highway 85 and Almaden Expressway
San Jose, California
Assessor's Parcel Numbers: 458-17-006, 017, & 018

EXECUTIVE SUMMARY

Earth Systems Consultants Northern California (ESCNC) is pleased to present the findings of this Phase I Environmental Site Assessment for the subject site located at the Northeast Corner of Highway 85 and Almaden Expressway in the City of San Jose, County of Santa Clara, California. This investigation was performed at the request of Arcadia Development Company to evaluate areas of potential environmental concern which may be a result of past or present hazardous materials usage, handling, or storage on or near the subject site. The findings of this report may be summarized as follows:

1. No areas of potential environmental concern resulting from possible past or present hazardous materials use, handling, or storage were observed on the site, with the exception of possible pesticide use on orchard and row crops and the presence of ASTs and drums on site.

2. A report was prepared by VISTA, which conducted a search of 17 governmental databases to determine possible past or present environmental violations, use and storage of hazardous materials, or reported loss of hazardous materials at the subject site and within a 1-1/4 mile radius of the subject site. VISTA identified and mapped 19 facilities within a 1-1/4 mile radius of the subject site which have reported regulatory violations and/or generate, store, or dispose of

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hazardous materials. There are 3 facilities located within 3/8 mile of the site. These facilities are considered to have a low potential for environmental impact to the subject site.

Based on the information obtained from this assessment, the potential for large-scale regulated contamination on the site appears to be low. Localized areas of hydrocarbon contamination may be present near the fuel storage areas, although significant surface staining was not observed around the tanks during the site reconnaissance.

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File No. NFA-3695-02
August 13, 1996

PHASE I ENVIRONMENTAL SITE ASSESSMENT

CLIENT: **NE Corner of Highway 85 and Almaden Expressway**
San Jose, California

PROJECT: **Arcadia Development Company**
San Jose, California

INTRODUCTION

This Phase I Site Assessment was performed at the request of Arcadia Development Company for the site located at the Northeast Corner of Highway 85 and Almaden Expressway in the City of San Jose, Santa Clara County, California (assessors parcel numbers: 458-17-006, 017, & 018). The purpose of this assessment was to evaluate areas of potential environmental concern which may be a result of past or present usage, handling, or storage of hazardous materials on or near the subject site. The work performed during this assessment included a reconnaissance of the subject property, review of past and present site use, interpretation of aerial photographs, review of geologic and hydrogeologic literature, regulatory records review, and preparation of this report. Enclosed with this report are a Site Location Map (Figure 1), Site Index (Figure 2), Site Plan (Figures 3-6), Site Photographs (Appendix A), and a copy of the VISTA Information Solutions, Inc. (VISTA) report used to assist in locating potential sources of environmental risk (Appendix B).

SITE DESCRIPTION

The subject site consists of a four parcels of undeveloped land totaling approximately 45 acres. It is located at the northeast corner of Highway 85 and Almaden Expressway in the City of San Jose, California, and is utilized primarily for the production of row crops. A vegetable stand and associated buildings are located along the southwestern edge of the property adjacent to Almaden Expressway. Chynoweth Avenue extends from Almaden Expressway east toward the center of the subject site. As Chynoweth Avenue enters the site it becomes a dirt road which "Tees" to the north and south near the Guadalupe River (please see Figure 2). The site is currently owned by the Arcadia Development Company.

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Adjacent Properties

Chynoweth Avenue, the Guadalupe River, and a strip mall are located along the northern portion of the site. Highway 85 is located south of the property, and the Guadalupe River and residential property are located to the east. Almaden Expressway and commercial property form the western boundary.

Geology and Hydrogeology

The subject site is located on nearly flat terrain, approximately 175 feet above mean sea level. It is approximately 2.25 miles north of the Shannon fault and approximately 5.5 miles west of the Silver Creek fault. Both faults have been classified as potentially active by the City of San Jose.

According to the United States Department of Agriculture Soil Survey for Santa Clara County, the site is underlain by Yolo loam. This soil type is a grayish-brown, well drained soil which forms on low level positions of alluvial plains. Slopes in the area are characterized as 0 to 2 percent with no erosion hazard. Permeability is high (0.06 to 0.20 inches per hour) with a moderate shrink-swell potential. The estimated annual rainfall is 15 to 25 inches per year.

The inferred regional groundwater flow direction for this site appears to be towards the north-northwest. This assumption is based on the area topography and the flow direction of Guadalupe River, located adjacent to the subject property on the east.

SITE RECONNAISSANCE

On June 18, 1996, an ESCNC geologist performed a reconnaissance of the subject site. The intent of the reconnaissance was to document possible sources and to note visual evidence of contamination from the use, storage or handling of hazardous materials on or adjacent to the subject site.

The subject site consist of approximately 45 acres of agricultural farming land. Strawberries were planted in the center of the property. A row of corn is planted along the eastern side of the strawberries. North of the strawberries and south of Chynoweth Avenue, tomatoes were planted. The areas to the east and west of the strawberries were freshly plowed. The portion to the north of the Chynoweth dirt road is fallow land with several oak trees in the center and along the north and northwestern edges of that portion. An approximately six-foot high chain-link fence borders the property on the south and northwest.

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In addition to the vegetable stand at the southwest portion of the property, there are several single story wood frame homes, mobile homes, and one large storage shed with adjacent tool shed. Between the southern dirt road and the property boundary are three aboveground storage tanks (ASTs). Two of the ASTs are on trailers and one is on a ground-stand.

To the east of the ASTs is a small grove of oak trees under-grown with weeds and briars. Under the trees and briars are a picnic bench, wooden pallets, irrigation pipe, a small dilapidated shed, several 55-gallon drums (one marked "diesel"), and one AST. The 55-gallon drums appear to be old and empty. The AST is empty with one corner of the tank missing. It appears to have been intentionally cut out. See Appendix A, Site Photographs.

A groundwater monitoring well is located east of the dirt road and west of Guadalupe River, just south of the property line. This well belongs to the Santa Clara valley Water District (SCVWD), and is used to monitor groundwater levels.

Transformers

No transformers were observed at this site.

Ponds, Pools, Sumps, & Lagoons

No ponds, pools, sumps, or lagoons were observed at this site. The Guadalupe River is adjacent to the northeastern site boundary.

Storage Tanks and Drums

Four ASTs were observed onsite. Three of the ASTs are located between the southern dirt road and property boundary. Two of these ASTs are mounted on trailers, and one is on a ground stand.

The fourth AST is located east of this area near a grove of oak trees. Several 55-gallon drums were also observed in this area.

Wells

Two agricultural wells were observed onsite. One well is in the center of the eastern plowed area, with the second well behind the houses (see Appendix A, Site Photographs). A SCVWD well used to monitor depth to groundwater is located just outside the property line near the east central portion of the property. According to a representative of the SCVWD, depth to groundwater in this area varies seasonally, but is generally 20 feet below ground surface.

Stressed Vegetation & Surface Staining

No stressed vegetation or surface staining was observed. Vegetation consists primarily of agricultural crops, grasses, and trees.

SITE ASSESSMENT METHODS

Aerial Photographs

ESCNC reviewed aerial photographs of the site area in order to determine past uses of the site and surrounding areas. The aerial photographs were obtained from and processed by Pacific Aerial Surveys of Oakland, California (PAS). A summary of our review of the information derived from photographs taken of the site-area are presented below. The summary is interpretive and based on preliminary investigative methods pertaining to the photographs and their dates.

February 25, 1954 (Black and White, AV 129-11-25, Scale = 1:9,600):

Land use in the site vicinity is predominantly agricultural. The Guadalupe River follows a meandering course within a wide stream channel on the north and northeast boundaries of the property. A two lane road occupies the position of the present day Almaden Expressway. Highway 85 has not yet been constructed.

Several structures, interpreted as a residence, barn, and associated out buildings, can be seen on the site at the east end of the present day Chynoweth Avenue. Similar structures can also be seen near the southwest corner of the property. Site use is agricultural, and orchard can be seen across most of the site. Row crops appear in the northeast corner of the property.

August 22, 1960 (Black and White, AV 385-09-07, Scale = 1:30,000):

Conditions on the site and in the site vicinity are similar to those described from the 1954 photograph. Some orchard has been removed and row crops are now visible in the south central portion of the site.

April 28, 1974 (Black and White, AV 1138-14-24, Scale = 1:12,000):

Substantial residential and commercial development has occurred throughout the site vicinity. Almaden Expressway is now a four lane road, and the commercial property on the north side of Chynoweth Avenue has been developed. The Guadalupe River appears to

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have been channelized. Flood control basins have been constructed on the east and west sides of the river just south of the property.

The residence, barn, and associated out-buildings formerly at the east end of Chynoweth Avenue have been removed. Row crops and grass land now appear across the southeastern portion of the site. A small area near the southeast corner of the site appears to be used for storage of crates and possibly farm equipment.

July 1, 1984 (Black and White, AV-2485-14-25, Scale = 1:12,000):
The site vicinity is now almost completely developed. On the subject site, the remaining orchard has been removed, and row crops now appear across most of the site. Additional structures can be see in the southwest corner of the property. An area south of the structures appears to be used as storage for equipment and miscellaneous debris.

July 5, 1994 (Black and White, AV-4625-28-75:
Highway 85 has been constructed. The site appears much as it did in the 1984 photograph.

Radon Gas

According to the EPA's Map of Radon Zones for California, dated September 1993, Santa Clara County is in radon zone two. Areas within radon zone two have an average predicted indoor radon screening potential between 2 picocuries per liter (pCi/L) and 4 pCi/L. Levels greater than 4pCi/L may be considered hazardous.

Potable Water Source

Based on the San Jose Water Systems Boundaries map, provided by Mr. Bob Wilson, a representative of the San Jose Public Works Department, potable water for this area is obtained from the San Jose Water Company. The San Jose Water Company obtains its water from three sources; Hetch Hetchy reservoir, Santa Clara Valley Water District (SCVWD), or 14 deep water wells in the county. The nearest water well is located approximately 1/2 mile northwest of the subject site.

Oil and Gas Wells

ESCNC staff reviewed the California Department of Conservation's Division of Oil and Gas Regional Wildcat Map #W3-10, dated April 7, 1990 for Alameda, San Mateo, Santa Cruz, and Santa Clara Counties. This review indicates that the closest oil or gas well to the subject site is a

"plugged and abandoned - dry hole" located approximately 1.6 miles to the southwest. This well was reportedly owned by Harold and Louise Bowen and was drilled to a depth of 1,000 feet. The year the well was drilled was not reported.

Zoning

According to a representative of the City of San Jose, this property is zoned "A", or Agricultural.

REGULATORY AGENCY REVIEW

To facilitate the regulatory agency review, ESCNC requested a database search from VISTA Information Solutions, Inc. (VISTA). VISTA conducted a search of 17 governmental databases in order to identify environmental violations, use and storage of hazardous materials, or reported loss of hazardous materials at the subject site and within a 1-1/4 mile radius of the subject site. Normal search parameters are to one mile of the subject site. Due to the size of this site, however, ESCNC requested inclusion of an additional 1/4 mile. The databases searched included the following:

Agency	Database	Type of Records	Radius of Search
US EPA	NPL	National Priority List	1-1/4 mile
US EPA	CORRACTS	RCRA Corrective Action	1-1/4 mile
US EPA	TSD	RCRA permitted treatment, storage, and disposal facility	1-1/4 mile
State	SPL	State equivalent priority list	1-1/4 mile
US EPA	CERCLIS	Sites under review by US EPA	3/4 mile
State	SCL	State equivalent CERCLIS list	3/4 mile
State and County	LUST	Leaking Underground Storage Tank	3/4 mile
State, Regional, and County	SWLF	Permitted as solid waste landfills, incinerators, or transfer stations	3/4 mile
State	DEED RSTR	Sites with deed restrictions	3/4 mile
Regional	South Bay	Sites on South Bay Toxics List	3/4 mile
State	CORTESE	State index of properties with hazardous waste	3/4 mile
State	Toxic Pits	Toxic Pits Cleanup facilities	3/4 mile
US EPA	RCRA Viol	RCRA violations/enforcement actions	1/2 mile
US EPA	TRIS	Toxic Release Inventory database	1/2 mile
State	UST/AST	Registered underground or aboveground storage tanks	1/2 mile
US EPA	ERNS	Emergency Response Notification System of spills	3/8 mile
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	3/8 mile

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For further information regarding the content of these databases, please see the VISTA report provided in Appendix B.

According to the VISTA report, no facilities posing a potential environmental risk were found within a 1 1/4 mile radius of the subject site on 11 of the 17 databases. Six of the databases (CERCLIS, LUST, South Bay Toxics, CORTESE, and UST/AST, and ERNS) listed facilities within their respective search parameters of the subject site which either have had reported environmental violations, use and store hazardous materials, or have reported a loss of hazardous materials. One facility was listed by CERCLIS, twelve on the LUST database, one on South Bay Toxics, eight on CORTESE, eight on UST/AST, and one on ERNS.

Some facilities appear on more than one database. The subject site did not appear on any of the above referenced databases. Of the facilities identified within a 3/8 mile radius of the subject site, there are no sites in the inferred up-gradient groundwater flow direction. The inferred groundwater flow direction at this area is generally north towards the San Francisco Bay.

Records Review

Listed below are the facilities located within a 3/8 mile radius of the subject site and identified by Vista on a regulatory database.

SITE	ADDRESS	DISTANCE FROM SITE (DIRECTION)
Robertsville Corners	**5005 Almaden Expressway**	**0.14 miles (W)**
ARCO	**4995 Almaden Expressway**	**0.15 miles (NW)**
Rotten Robbie #38	**4962 Almaden Expressway**	**0.18 miles (NW)**

As part of the Phase I Site Assessment process, ESCNC requests access to and reviews available regulatory agency files pertaining to facilities which:

- use and store hazardous materials, have had environmental violations, and/or have had a reported loss of hazardous materials at the subject site and
- are located adjacent to, up-gradient of, and within a 3/8 mile radius of the subject site.

Based on the information provided by VISTA, three facilities fitting this criteria (shown in bold type) were identified during this assessment. Access to regulatory agency files pertaining to the three selected facilities was requested from the Santa Clara Valley Water District (SCVWD).

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Access to those files was obtained on June 24, 1996. A brief description of the information obtained regarding those facilities follows.

Robertsville Corners: This facility is located opposite the site on the southwest corner of Almaden Expressway and Cherry Avenue. Robertsville Corners is listed on the UST database only. According to information provided by VISTA, three USTs are active and in use at this facility. The USTs are used for the storing gasoline, and are constructed of fiberglass with a secondary containment system. SCVWD does not maintain a file on this facility.

ARCO: This facility is located on the northwest corner of Almaden Expressway and Cherry Avenue. The VISTA report identified this facility on the LUST, CORTESE, UST, and ERNS databases. According to SCVWD files, a fuel leak was first reported at this facility in August, 1989. At the time, four steel USTs were excavated from the site and replaced by three fiberglass USTS and associated piping. Five groundwater monitoring wells were installed at this facility between 1989 and 1994. An initial concentration of 200 parts per billion (ppb) benzene and 3,800 ppb total petroleum hydrocarbons as gasoline (TPHG) was report in groundwater collected from below this site. Petroleum hydrocarbon constituents were not detected in the groundwater collected during the September 1995 quarterly monitoring and sampling. Data collected from monitoring wells at this site indicates groundwater flow direction is to the northwest and north-northwest at a gradient of approximately 0.006. Depth to groundwater has ranged from a low of 35 feet below ground surface in 1985 to a high of 18 feet below ground surface in 1995.

Rotten Robbie #38: Rotten Robbie is located at 4962 Almaden Expressway, adjacent to the northwest corner of the subject site. This facility is listed on the UST database only. According to information provided by VISTA, five steel 12,000 gallon USTs are in service at this facility. Three USTs are used for the storage of gasoline, one for diesel, and one for miscellaneous products. SCVWD does not maintain a file on this facility. During the site reconnaissance, an ESCNC representative observed construction activities which may be associated with UST removal at this facility.

CONCLUSIONS

ESCNC conducted a site reconnaissance on June 18, 1996. Potential environmental concerns resulting from possible past or present hazardous materials use, handling, or storage on the site were observed. These concerns and mitigation measures include:

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- The possible use of pesticides due to the site history as an agricultural property. Testing of near-surface soils for the presence of pesticides should be conducted in areas that have been used for crop production.

- The presence of agricultural wells. If the wells are not to be used in the future, they should be destroyed under SCVWD and State guidelines.

- The presence of ASTs, drums, and miscellaneous debris. Testing of the near surface soil for the presence of petroleum hydrocarbons should be conducted in the vicinity of the ASTs.

A report was prepared by VISTA, which conducted a search of 17 governmental databases to determine possible past or present environmental violations, use and storage of hazardous materials, or reported loss of hazardous materials at the subject site and within a 1-1/4 mile radius of the subject site.

VISTA identified and mapped 19 facilities within a 1-1/4 mile radius of the subject site which have reported regulatory violations and/or generate, store, or dispose of hazardous materials. There are 3 facilities located within 3/8 mile of the site. These facilities are considered to have a low potential for environmental impact to the subject site.

Based on the information obtained from this assessment, the potential for large-scale regulated contamination on the site appears to be low. Localized areas of hydrocarbon contamination may be present near the fuel storage areas, although significant surface staining was not observed around the tanks during the site reconnaissance.

CLOSURE

This Phase I Site Assessment was performed at the request of Arcadia Development Company for the site located at Almaden Expressway and Highway 85 in San Jose, Santa Clara County, California.

It should be noted that any level of assessment cannot ascertain that a property is completely free of chemical or toxic substances; therefore, ESCNC cannot offer the certification of a "clean" property. We believe the scope of work performed has been appropriate to allow an owner, prospective buyer or seller to make an informed business decision.

File No. NFA-3695-02
August 13, 1996

The results contained in this report are based upon the information acquired during the assessment. Also, changes in conditions found could occur at some time in the future due to contaminant migration, variations in rainfall, temperature, and/or other factors not apparent at the time of the field reconnaissance.

The services performed by ESCNC have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in this area of California. No other warranty is expressed or implied.

We appreciate this opportunity to be of service. Should you have any questions or comments regarding this report, please contact this office at 510-353-0320.

Very truly yours,

EARTH SYSTEMS CONSULTANTS
Northern California

Philip J. Mayberry
Project Geologist

Nissa L. Nack, REA# 06112
Project Geologist

PJM/NLN:sp ESE#21

Distribution: 4 to Addressee

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REFERENCES

California Department of Conservation, Division of Oil and Gas, ONSHORE OIL & GAS MAPS, Map W3-10, dated April 7, 1990 for Alameda, San Mateo, Santa Cruz, and Santa Clara Counties.

The Thomas Guild, San Francisco, Alameda, and Santa Clara Counties, Street Guide & Directory, 1992 edition.

United States Environmental Protection Agency, EPA's MAP OF RADON ZONES, CALIFORNIA, September 1993.

United States Department of Agriculture, September 1981, SOIL SURVEY OF SANTA CLARA COUNTY, CALIFORNIA.

VISTA Information Solutions, Inc. SITE ASSESSMENT PLUS REPORT for the site: ALMADEN AND HIGHWAY 85, San Jose, California. Report #107617-001, dated June 19, 1996.

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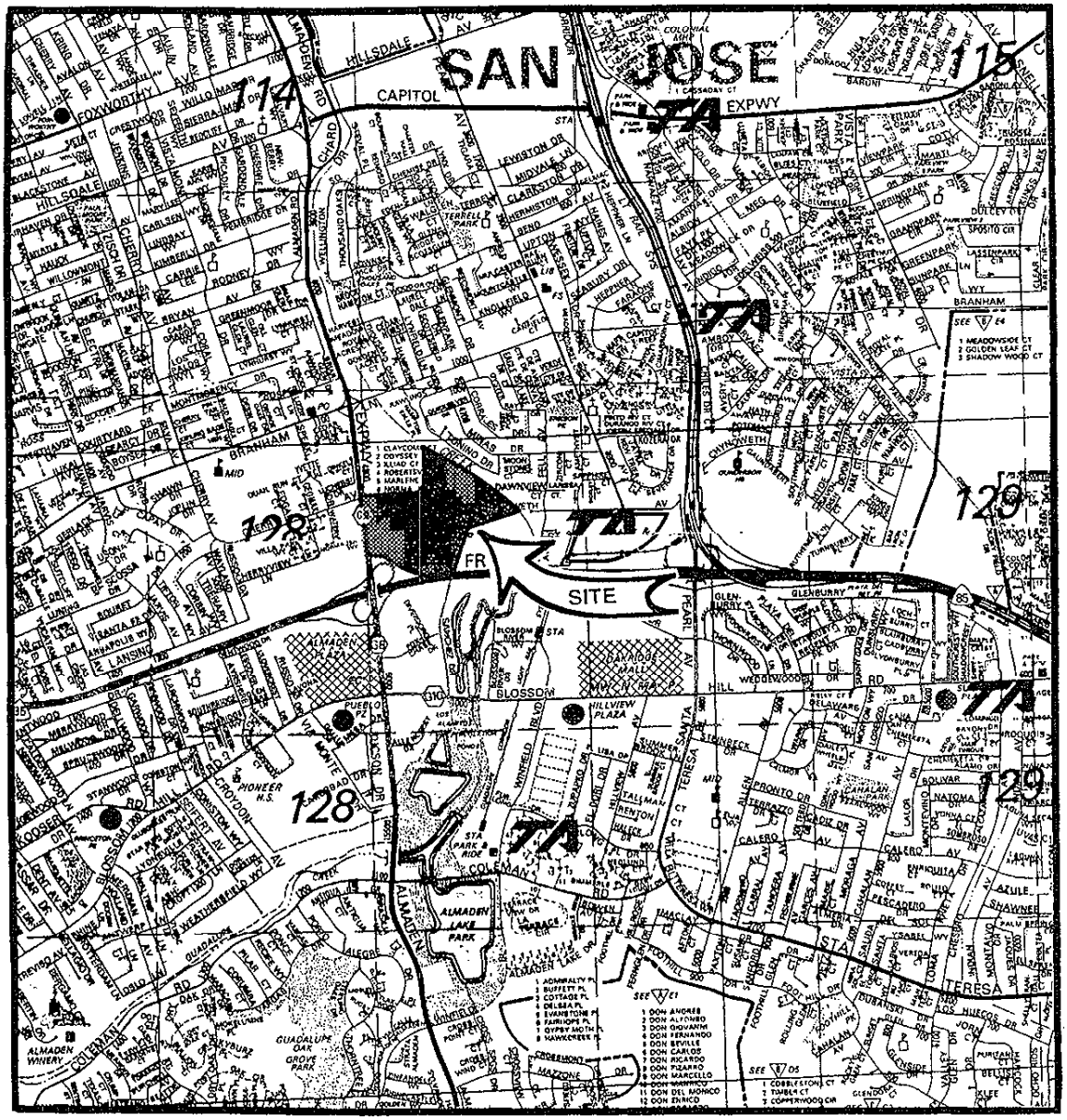
FILE NO. NFA-3695-02



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SCALE

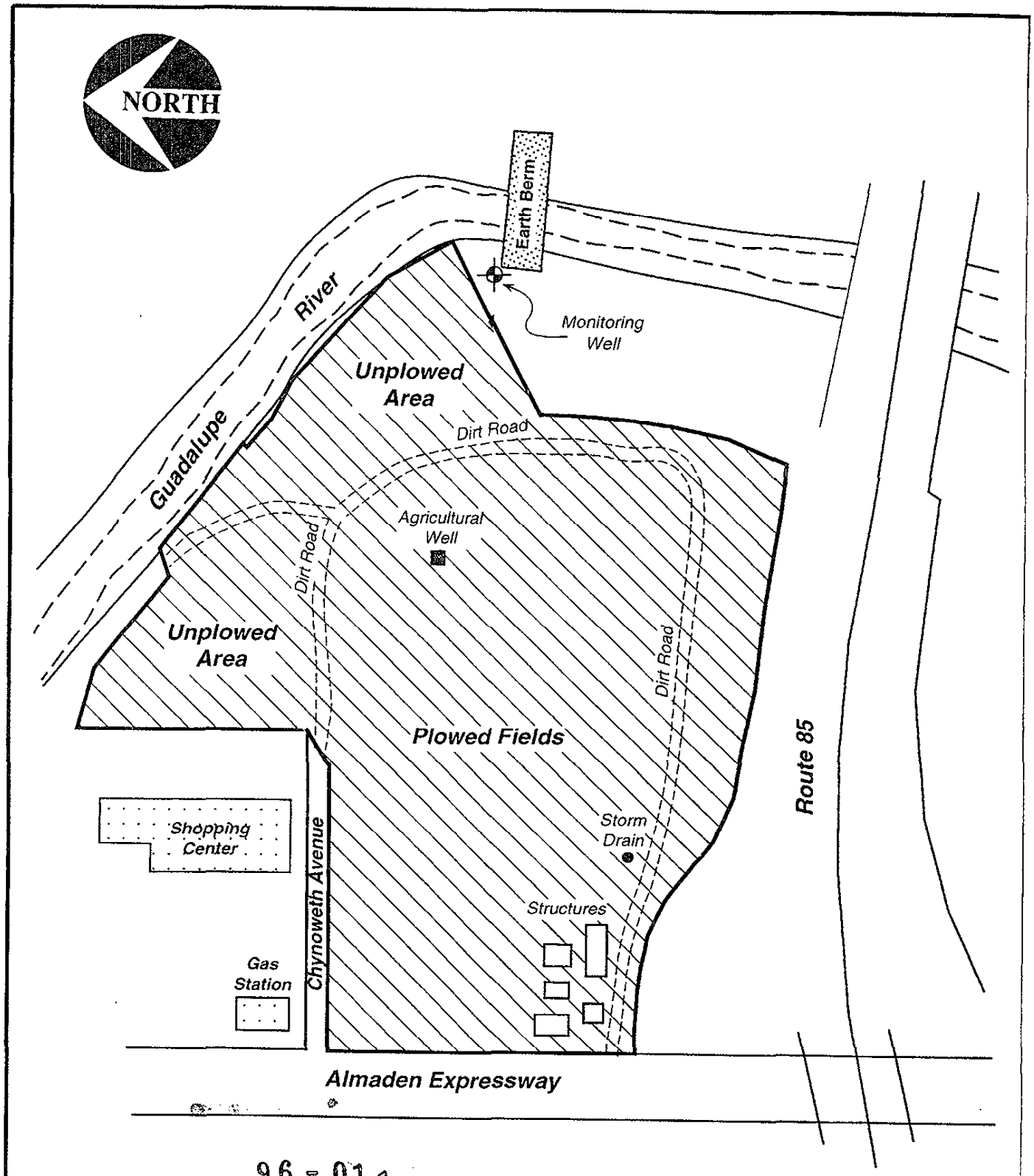
0 1 2 Miles

0 1 2 Kilometers

Base: Thomas Brothers Maps

Earth Systems Consultants **Northern California**	Almaden Expressway and Highway 85 San Jose, California	**SITE LOCATION** **Figure No. 1**

FILE NO. NFS-3695-02



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Not To Scale

Earth Systems Consultants **Northern California**	Almaden Expressway at Highway 85 San Jose, California	**SITE PLAN**
		Figure No. 2

APPENDIX A

Site Photographs

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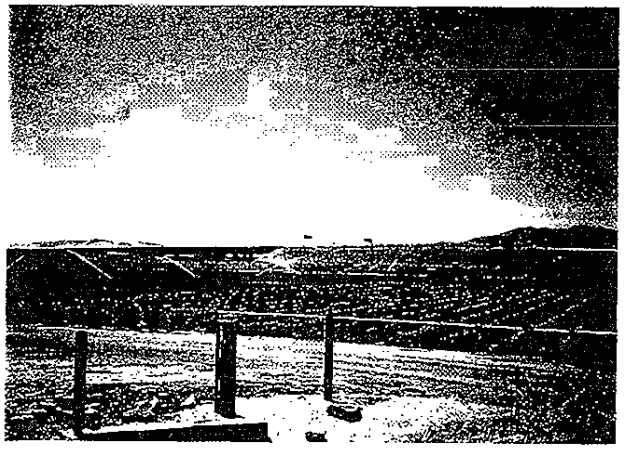
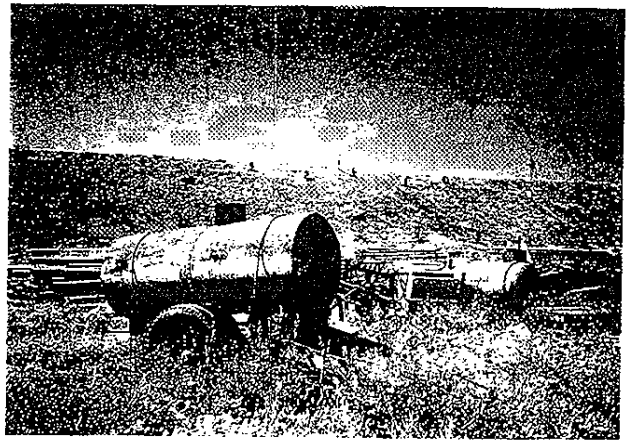


1. *The Site, Looking Southeast. Note Strawberry Crops in Foreground.*

2. *The Vegetable Stand, Looking Across Almaden Expressway.*

3. *Looking North Along the Guadalupe River.*



4. *Aboveground Storage Tanks, Looking South at Highway 85.*

Earth Systems Consultants Northern California	Almaden Expressway and Highway 85 San Jose, California	SITE PHOTOGRAPHS	
		Date: July, 1996 File No: NFA-3695-02	Appendix A

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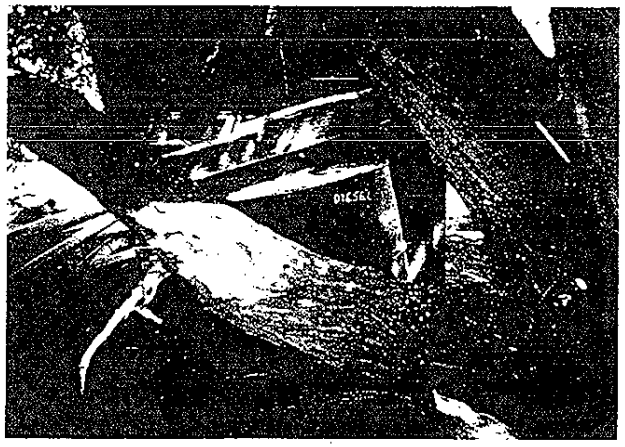
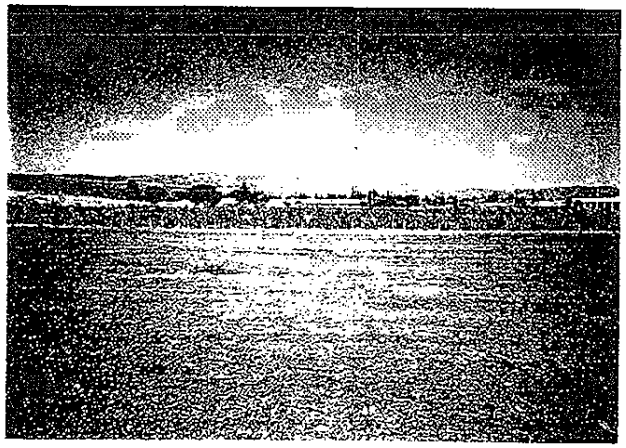


5. *55 Gallon Drum Located Under Trees. Note "Diesel" on Drum.*



6. *Looking West Across the Site. Note Agricultural Well in Center of Photo.*

7. *Looking South at Houses Behind the Vegetable Stand. Note Agricultural Well to the Left-Center of Photo.*

8. *Groundwater Monitoring Well.*

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Earth Systems Consultants Northern California	Almaden Expressway and Highway 85 San Jose, California	SITE PHOTOGRAPHS	
		Date: July, 1996	Appendix A
		File No: NFA-3695-02	

APPENDIX B

Copy of the VISTA Report

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SITE ASSESSMENT PLUS REPORT
(EXTENDED BY 1/4 MILE)

PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: NFA.3695-02 ALMADEN HWY 85 ALMADEN EXPY @ CHYNOWETH AVE HWY 85 SAN JOSE, CA 95136 Latitude/Longitude: (37.257554, 121.872031)	NISSA NACK EARTH SYSTEMS-FREMONT 47853 WARM SPRINGS BLVD FREMONT, CA 94539

Site Distribution Summary Agency / Database - Type of Records			within 3/8 mile	3/8 to 1/2 mile	1/2 to 3/4 mile	3/4 to 1 1/4 miles
A) Databases searched to 1 1/4 miles:						
US EPA	NPL	National Priority List	0	0	0	0
US EPA	CORRACTS	RCRA Corrective Actions	0	0	0	0
US EPA	TSD	RCRA permitted treatment, storage, disposal facilities	0	0	0	0
STATE	SPL	State equivalent priority list	0	0	0	0
B) Databases searched to 3/4 mile:						
US EPA	CERCLIS	Sites under review by US EPA	0	1	0	-
STATE	SCL	State equivalent CERCLIS list	0	0	0	-
STATE REG CO	LUST	Leaking Underground Storage Tanks	1	4	7	-
STATE/ REG/CO	SWLF	Permitted as solid waste landfills, incinerators, or transfer stations	0	0	0	-
STATE	DEED RSTR	Sites with deed restrictions	0	0	0	-
REGIONAL	SOUTH BAY	Sites on South Bay Toxic List	0	1	0	-
STATE	CORTESE	State index of properties with hazardous waste	1	2	5	-
STATE	TOXIC PITS	Toxic Pits cleanup facilities	0	0	0	-
C) Databases searched to 1/2 mile:						
US EPA	RCRA Viol	RCRA violations/enforcement actions	0	0	-	-
US EPA	TRIS	Toxic Release Inventory database	0	0	-	-
STATE	UST/AST	Registered underground or aboveground storage tanks	3	5	-	-

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Site Distribution Summary Agency / Database - Type of Records			within 3/8 mile	3/8 to 1/2 mile	1/2 to 3/4 mile	3/4 to 1 1/4 miles
D) Databases searched to 3/8 mile:						
US EPA	ERNS	Emergency Response Notification System of spills	1	-	-	-
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	0	-	-	-

This geographic database search meets the American Society for Testing Materials (ASTM) standards for a government records review. A (-) indicates the search distance exceeds ASTM search parameters.

LIMITATION OF LIABILITY
Customer proceeds at its own risk in choosing to rely on VISTA services, in whole or in part, prior to proceeding with any transaction. VISTA cannot be an insurer of the accuracy of the information, errors occurring in conversion of data, or for customer's use of data. VISTA and its affiliated companies, officers, agents, employees and independent contractors cannot be held liable for accuracy, storage, delivery, loss or expense suffered by customer resulting directly or indirectly from any information provided by VISTA.

NOTES

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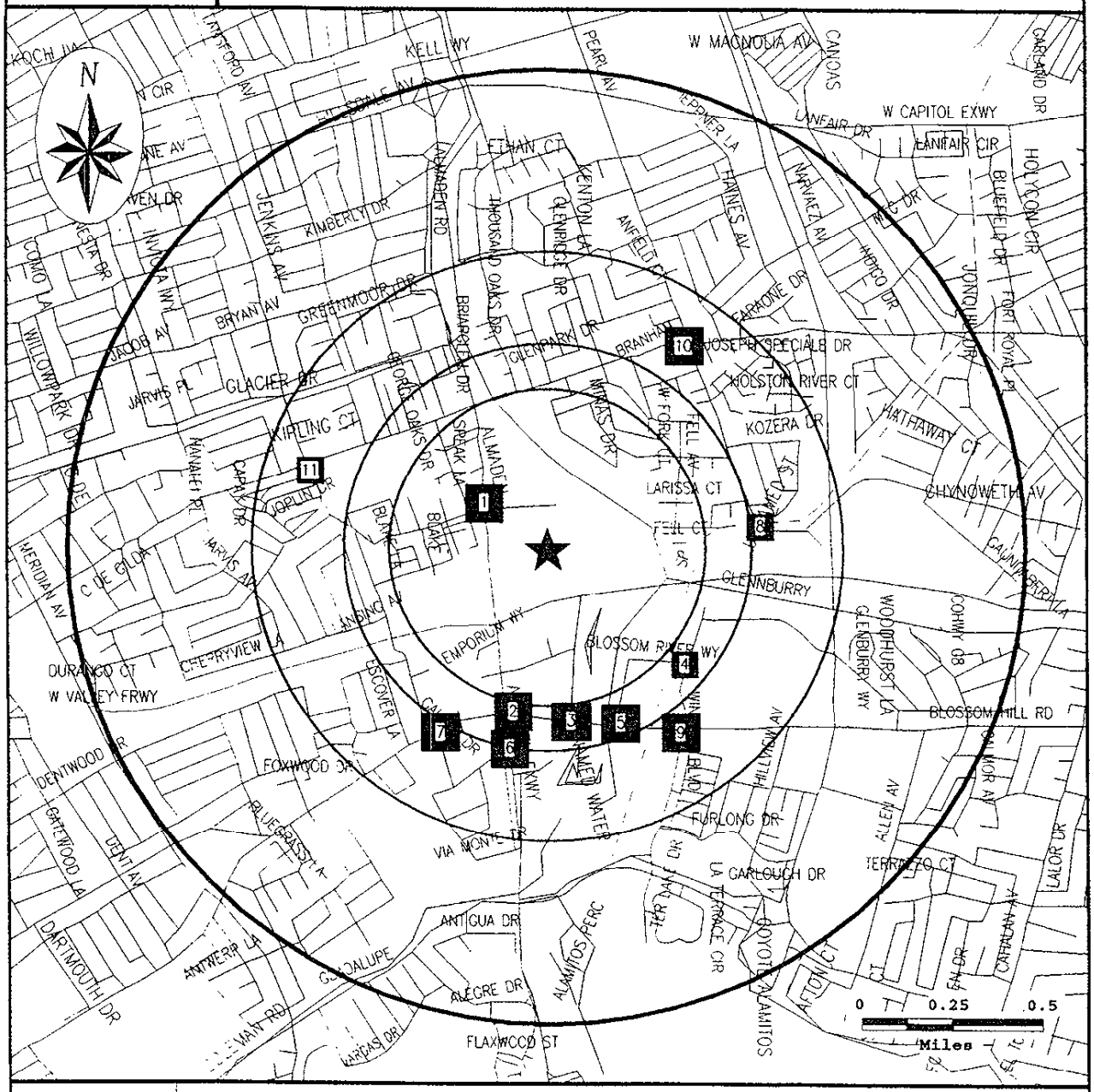
SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1/4 MILE)

Map of Sites within One and One-Quarter Miles



Subject Site	Category:	A	B	C	D
	Databases Searched to:	1 1/4 mi.	3/4 mi.	1/2 mi.	3/8 mi.
	Single Sites	◆	■	△	○
	Multiple Sites	◆	■	△	○
		NPL, SPL, SCL, TSD	CERCLIS, LUST, SWLF	UST	ERNS, GENERATORS

Roads
Highways
Railroads
Rivers or Water Bodies
Utilities

If additional databases are listed in the cover page of the report they are also displayed on this map. The map symbol used corresponds to the database category letter A,B,C,D.

For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**

Report ID: **107617-001**

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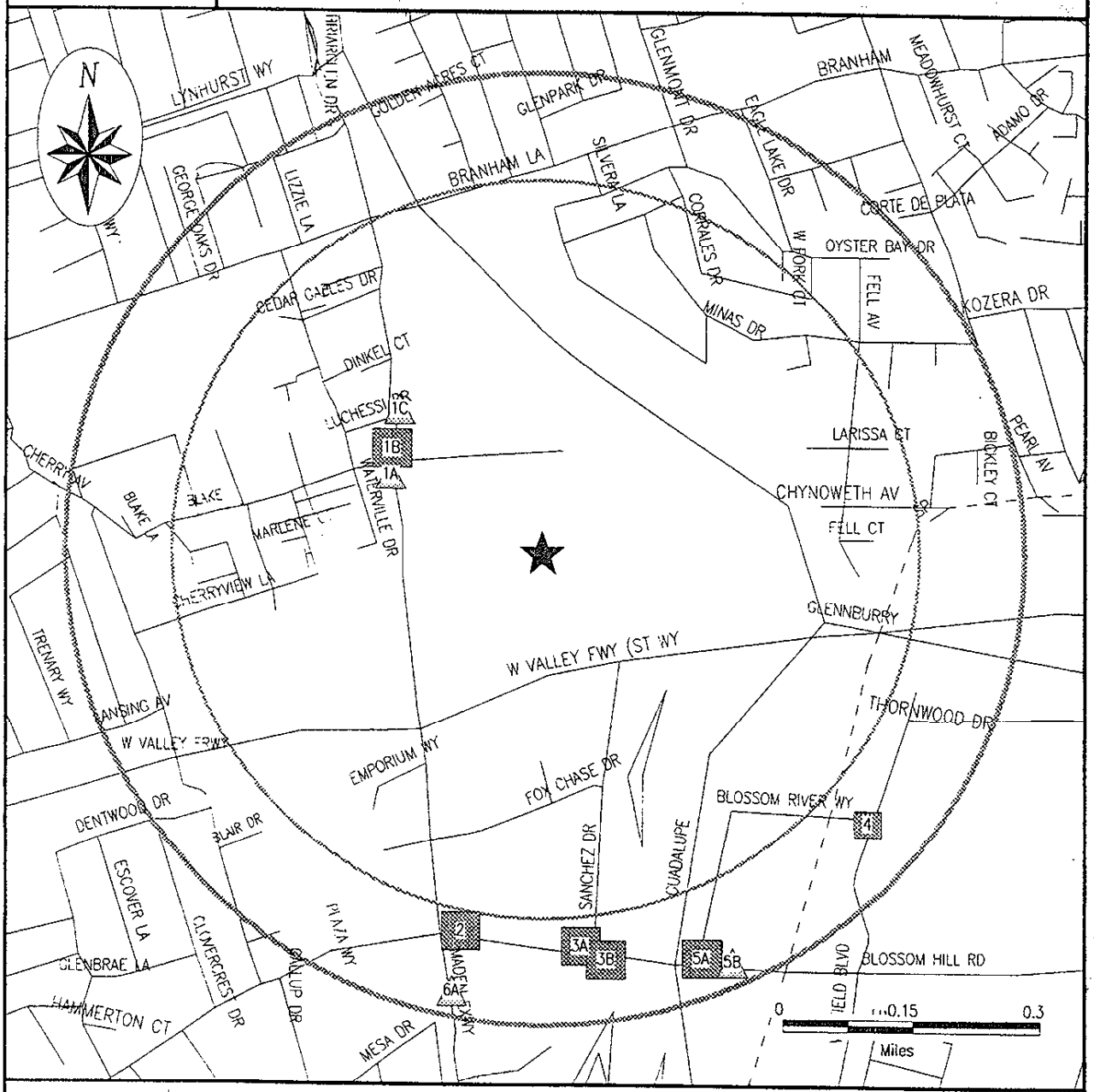
Date of Report: **June 19, 1996**

Page #3

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1/4 MILE)

Map of Sites within Half Mile



Subject Site	Category:	A	B	C	D
	Databases Searched to:	1 1/4 mi.	3/4 mi.	1/2 mi.	3/8 mi.
	Single Sites	◆	▩	△	○
	Multiple Sites	◆	▩	△	○
		NPL, SPL, SCL, TSD	CERCLIS, LUST, SWLF	UST	ERNS, GENERATORS

Roads
Highways
Railroads
Rivers or Water Bodies
Utilities

If additional databases are listed in the cover page of the report they are also displayed on this map. The map symbol used corresponds to the database category letter A,B,C,D.

For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**

Report ID: **107617-001**

Date of Report: **June 19, 1996**

96-011

027

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1/4 MILE)

Street Map

Subject Site ★

Roads, Highways, Rivers, Water Bodies

Railroads, Utilities

96 - 011

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1/4 MILE)

SITE INVENTORY

MAP ID	PROPERTY AND THE ADJACENT AREA (within 3/8 mile)	VISTA ID / DISTANCE / DIRECTION	A: NPL	A: CORRACTS	A: TSD	A: SPL	B: CERCLIS	B: SCL	B: LUST	B: SWLF	B: DEED RSTR	B: SOUTH BAY	B: CORTESE	B: TOXIC PITS	C: RCRA VIOL	C: TRIS	C: UST/AST	D: ERNS	D: GNRTR
1A	ROBERTSVILLE CORNERS 5005 ALMADEN EX SAN JOSE, CA 95118	4018028 0.14 MI W															X		
1B	ARCO 4995 ALMADEN EXPWY SAN JOSE, CA	936753 0.15 MI NW							X				X						
1B	ARCO 4995 ALMADEN RD. SAN JOSE, CA 95118	200092210 0.15 MI NW																X	
1B	EDA'S ARCO(# 2114) 4995 ALMADEN EX SAN JOSE, CA 95118	2136434 0.15 MI NW															X		
1C	ROTTEN ROBBIE #38 4962 ALMADEN EX SAN JOSE, CA 95118	4018027 0.18 MI NW															X		

MAP ID	SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile)	VISTA ID / DISTANCE / DIRECTION	A: NPL	A: CORRACTS	A: TSD	A: SPL	B: CERCLIS	B: SCL	B: LUST	B: SWLF	B: DEED RSTR	B: SOUTH BAY	B: CORTESE	B: TOXIC PITS	C: RCRA VIOL	C: TRIS	C: UST/AST	D: ERNS	D: GNRTR
2	MOBIL 1099 BLOSSOM HILL RD SAN JOSE, CA 95123	936774 0.40 MI S							X				X						
2	ALMADEN SERVICE CENTER 1099 BLOSSOM HILL SAN JOSE, CA 95123	4019865 0.40 MI S															X		
3A	BUBBLE MACHINE CAR WASH 1045 BLOSSOM HILL RD SAN JOSE, CA 95123	3766026 0.41 MI S							X										
3A	BUBBLE MACHINE #2 OF SJ 1045 BLOSSOM HILL SAN JOSE, CA 95123	4019864 0.41 MI S															X		
3B	STANDARD BRANDS STORE 1020 BLOSSOM HILL RD SAN JOSE, CA 95123	5352063 0.43 MI S											X						
3B	STANDARD BRANDS PAINT 1020 BLOSSOM HILL SAN JOSE, CA 95123	4019863 0.43 MI S															X		

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X = search criteria; • = tag-along (beyond search criteria).
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Report ID: **107617-001** Date of Report: **June 19, 1996**

MAP ID	SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile)	VISTA ID / DISTANCE / DIRECTION	A: NPL	A: CORRACTS	A: TSD	A: SPL	B: CERCLIS	B: SCL	B: LUST	B: SWLF	B: DEED RSTR	B: SOUTH BAY	B: CORTESE	B: TOXIC PITS	C: RCRA VIOL	C: TRIS	C: UST/AST	D: ERNS	D: GNRTR
3B	STANDARD BRANDS STORE 1020 BLOSSOM HILL RD SAN JOSE, CA 95123	4984514 0.43 MI S							X										
4	ATRIUM VENTURES 999 BLOSSOM RIVER DR SAN JOSE, CA	3766028 0.43 MI SE							X										
5A	KAISER DEV CO - BLOSSOM HILL ROAD SI BLOSSOM HILL RDBLOSSOM RVR DR SAN JOSE, CA 95118	223509 0.45 MI SE					X												
5A	HOLLAND PROPERTIES,LTD(KAISER DEVELO.C BLOSSOM HILLBLOSSOM RIVER RDS SAN JOSE, CA 95123	4824144 0.46 MI SE										X							
5B	JONES, PARNELLI FIRESTONE 995 BLOSSOM HILL SAN JOSE, CA 95123	4019862 0.47 MI SE															X		
6A	ALMADEN SHELL GAS STATION 5607 ALMADEN EX SAN JOSE, CA 95118	4018029 0.47 MI S															X		

MAP ID	SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile)	VISTA ID / DISTANCE / DIRECTION	A: NPL	A: CORRACTS	A: TSD	A: SPL	B: CERCLIS	B: SCL	B: LUST	B: SWLF	B: DEED RSTR	B: SOUTH BAY	B: CORTESE	B: TOXIC PITS	C: RCRA VIOL	C: TRIS	C: UST/AST	D: ERNS	D: GNRTR
6	S.C.V.W.D. CORP. YARD 5750 ALMADEN EXPWY SAN JOSE, CA	936754 0.53 MI S							X										
7	CHEVRON 1177 BLOSSOM HILL RD SAN JOSE, CA 95118	1582907 0.50 MI SW							X										
7	DIAMOND SHAMROCK 1180 BLOSSOM HILL RD SAN JOSE, CA 95118	5352065 0.54 MI SW											X						
7	DIAMOND SHAMROCK 1180 BLOSSOM HILL RD SAN JOSE, CA 95118	936775 0.54 MI SW							X										
8	CILKER ORCHARDS 5255 PEARL AVE SAN JOSE, CA 95136	936982 0.52 MI E							X										
9	SHELL 5759 WINFIELD #A BLVD SAN JOSE, CA 95123	5360085 0.53 MI SE											X						
9	BEACON 5827 WINFIELD BLVD SAN JOSE, CA 95123	5360086 0.59 MI SE											X						
10	UNOCAL 858 BRANHAM LN W SAN JOSE, CA 95136	1583147 0.60 MI NE							X										

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X = search criteria; • = tag-along (beyond search criteria).
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Version 2.4.1

MAP ID	SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile)	VISTA ID / DISTANCE / DIRECTION	A				B								C			D	
			NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
10	ARCO 4610 PEARL AVE SAN JOSE, CA 95136	1595507 0.62 MI NE							X				X				•		
11	BEACON 4604 CHERRY AVE SAN JOSE, CA 95118	2745921 0.62 MI W							X				X						

MAP ID	SITES IN THE SURROUNDING AREA (within 3/4 - 1 1/4 miles)	VISTA ID / DISTANCE / DIRECTION	A				B								C			D	
			NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
No Records Found																			

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UNMAPPED SITES	VISTA ID	A				B								C			D	
		NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
ONE HOUR CLEANERS 6477 ALMADEN EXPRESSWAY SAN JOSE, CA 95120	309763																	X
FIREHOSE #5 5520 ALMADEN EXWY SAN JOSE, CA 95118	5351211											X						
MAZZONE PROPERTY 6082 ALMADEN EXWY SAN JOSE, CA 95120	5351212											X						
WDR-MARSHLAND LANDFILL 05S01W08 SAN JOSE, CA	5428015								X									
EUROPA CLEANERS 11574 BRANHAM LA SAN JOSE, CA 95118	143438																	X
TAYLOR DEVELOPMENT WINFIELD BLSM HILL SAN JOSE, CA	5352049											X						
TEXACO 448 BLOSSOM HILL RD SAN JOSE, CA 95123	5352058											X						
UNOCAL 696 BLOSSOM HILL RD SAN JOSE, CA 95123	5352061											X						
CALTRANS BRANHM LN SAN JOSE, CA 95136	4824207							X				X						
TAYLOR DEVELOPMENT WINFIELD BLSM HILL SAN JOSE, CA	937136							X										
HILLSDALE ROCK CO 5836 WINFIELD SAN JOSE, CA 95123	1176507							X										
UNOCAL 858 BRANHAM LANE W. SAN JOSE, CA 95136	5352410											X						

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Report ID: **107617-001** Date of Report: **June 19, 1996**
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SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1/4 MILE)

DETAILS

PROPERTY AND THE ADJACENT AREA (within 3/8 mile)

VISTA Address*:	ROBERTSVILLE CORNERS 5005 ALMADEN EX SAN JOSE, CA 95118	VISTA ID#:	4018028	Map ID
		Distance/Direction:	0.14 MI / W	1A
		Plotted as:	Point	
STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A	

Agency Address:	SAME AS ABOVE
Underground Tanks:	3
Aboveground Tanks:	NOT REPORTED
Tanks Removed:	NOT REPORTED

Tank ID:	1U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	10000 (GALLONS)	Tank Material:	SEC. CONTAINMENT
Tank ID:	2U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	10000 (GALLONS)	Tank Material:	SEC. CONTAINMENT
Tank ID:	3U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	LEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	5000 (GALLONS)	Tank Material:	SEC. CONTAINMENT

VISTA Address*:	ARCO 4995 ALMADEN EXPWY SAN JOSE, CA	VISTA ID#:	936753	Map ID
		Distance/Direction:	0.15 MI / NW	1B
		Plotted as:	Point	
STATE LUST - State Leaking Underground Storage Tank / SRC# 2733		EPA/Agency ID:	N/A	

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Media Affected:	GROUNDWATER
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	UNAVAILABLE
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	PRELIMINARY ASSESSMENT
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source

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* VISTA address includes enhanced city and ZIP.
For more information call VISTA Information Solutions, Inc. at 1 - 800 - 767 - 0403.

PROPERTY AND THE ADJACENT AREA (within 3/8 mile) CONT.

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0112

Agency Address:	ARCO 4995 ALMADEN EXPWY SAN JOSE, CA 95118
Tank Status:	NOT AVAILABLE
Discovery Date:	AUGUST 25, 1988
Media Affected:	GROUNDWATER
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	STRUCTURAL FAILURE
Leak Source:	UNDERGROUND TANK
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	PRELIMINARY ASSESSMENT
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Quantity (Units)

CORTESE / SRC# 2298	EPA/Agency ID:	N/A

Agency Address:	ARCO 4995 ALMADEN EXWY SAN JOSE, CA
List Name:	LEAKING TANK
Site ID:	INV-ID43-000351

VISTA Address*:	ARCO 4995 ALMADEN RD. SAN JOSE, CA 95118	VISTA ID#:	200092210	Map ID
		Distance/Direction:	0.15 MI / NW	1B
		Plotted as:	Point	

ERNS - Emergency Response Notification System / SRC# 2885	Agency ID:	90-9696

Agency Address:	SAME AS ABOVE
Spill Date Time:	AUGUST 29, 1990 08:00:00 AM
Case Number:	90-9696
Spill Location:	4995 ALMADEN RD.
Source Agency:	E
Discharger Org:	ARCO
Material Spilled:	GASOLINE, 0.00 (UNK)
Waterway Affected:	NONE
Fields Not Reported:	Discharger Name, Discharger Phone

Air Release:	Land Release:	Water Release:	Ground Release:	Facility Release:	Other Release:
NO	YES	NO	NO	NO	NO

VISTA Address*:	EDA'S ARCO(# 2114) 4995 ALMADEN EX SAN JOSE, CA 95118	VISTA ID#:	2136434	Map ID
		Distance/Direction:	0.15 MI / NW	1B
		Plotted as:	Point	

STATE UST - State Underground Storage Tank / SRC# 1612	EPA/Agency ID:	N/A

Agency Address:	SAME AS ABOVE
Underground Tanks:	8
Aboveground Tanks:	NOT REPORTED
Tanks Removed:	NOT REPORTED

Tank ID:	1U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	6000 (GALLONS)	Tank Material:	BARE STEEL

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PROPERTY AND THE ADJACENT AREA (within 3/8 mile) CONT.

Tank ID:	2U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	6000 (GALLONS)	Tank Material:	UNKNOWN
Tank ID:	3U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	4000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	4U	Tank Status:	CLOSED REMOVED
Tank Contents:	LEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	4000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	5U	Tank Status:	CLOSED REMOVED
Tank Contents:	OIL(NOT SPECIFIED)	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	250 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	6U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	7U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	8U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	FIBERGLASS

VISTA Address*:	ROTTEN ROBBIE #38 4962 ALMADEN EX SAN JOSE, CA 95118	VISTA ID#:	4018027
		Distance/Direction:	0.18 Mi / NW
		Plotted as:	Point
STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A

Map ID **1C**

Agency Address:	SAME AS ABOVE
Underground Tanks:	5
Aboveground Tanks:	NOT REPORTED
Tanks Removed:	NOT REPORTED

Tank ID:	1U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	LEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	GALVANIZED STEEL
Tank Size (Units):	12000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	2U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	GALVANIZED STEEL
Tank Size (Units):	12000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	3U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	GALVANIZED STEEL
Tank Size (Units):	12000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	4U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	DIESEL	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	STEEL

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Report ID: **107617-001** Date of Report: **June 19, 1996**
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PROPERTY AND THE ADJACENT AREA (within 3/8 mile) CONT.

Tank ID:	5U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	MISC. CHEMICAL	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	STEEL

SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile)

VISTA Address*:	MOBIL 1099 BLOSSOM HILL RD SAN JOSE, CA 95123	VISTA ID#:	936774	Map ID
		Distance/Direction:	0.40 MI / S	2
		Plotted as:	Point	

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	Agency ID:	20M

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Media Affected:	GROUNDWATER
Substance:	WASTE OIL
Leak Cause:	UNAVAILABLE
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	CONTAMINATION ASSESSMENT
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0937

Agency Address:	MOBIL/BP 1099 BLOSSOM HILL RD SAN JOSE, CA 95123
Tank Status:	NOT AVAILABLE
Discovery Date:	JUNE 24, 1988
Media Affected:	GROUNDWATER
Substance:	WASTE OIL
Leak Cause:	STRUCTURAL FAILURE
Leak Source:	UNDERGROUND TANK
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	CONTAMINATION ASSESSMENT
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Quantity (Units)

CORTESE / SRC# 2298	EPA/Agency ID:	N/A

Agency Address:	MOBIL/BP 1099 BLOSSOM HILL RD SAN JOSE, CA 95123
List Name:	LEAKING TANK
Site ID:	INV-ID43-001016

VISTA Address*:	ALMADEN SERVICE CENTER 1099 BLOSSOM HILL SAN JOSE, CA 95123	VISTA ID#:	4019865	Map ID
		Distance/Direction:	0.40 MI / S	2
		Plotted as:	Point	

STATE UST - State Underground Storage Tank / SRC# 1612	EPA/Agency ID:	N/A

Agency Address:	SAME AS ABOVE
Underground Tanks:	8
Aboveground Tanks:	NOT REPORTED
Tanks Removed:	NOT REPORTED

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SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile) CONT.

Tank ID:	1U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	10000 (GALLONS)	Tank Material:	UNKNOWN
Tank ID:	2U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	10000 (GALLONS)	Tank Material:	UNKNOWN
Tank ID:	3U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	10000 (GALLONS)	Tank Material:	UNKNOWN
Tank ID:	4U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	5U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	6U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	7U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	8U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	OIL(NOT SPECIFIED)	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	1000 (GALLONS)	Tank Material:	FIBERGLASS

VISTA Address*:	**BUBBLE MACHINE CAR WASH** **1045 BLOSSOM HILL RD** **SAN JOSE, CA 95123**	VISTA ID#: Distance/Direction: Plotted as:	3766026 0.41 MI / S Point	Map ID **3A**
STATE LUST - State Leaking Underground Storage Tank / SRC# 2733		Agency ID:	06J	

Agency Address:	*BUBBLE MACHINE CAR WASH* *1045 BLOSSOM HILL RD* *SAN JOSE, CA*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*UNKNOWN*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

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* VISTA address includes enhanced city and ZIP.
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SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile) CONT.

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0207

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Discovery Date:	JUNE 10, 1991
Media Affected:	UNKNOWN
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	STRUCTURAL FAILURE
Leak Source:	UNDERGROUND TANK
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	CASE CLOSED/CLEANUP COMPLETE
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Quantity (Units)

VISTA Address*:	BUBBLE MACHINE #2 OF SJ 1045 BLOSSOM HILL SAN JOSE, CA 95123	VISTA ID#: 4019864 Distance/Direction: 0.41 MI / S Plotted as: Point	Map ID 3A

STATE UST - State Underground Storage Tank / SRC# 1612	EPA/Agency ID:	N/A

Agency Address:	SAME AS ABOVE
Underground Tanks:	7
Aboveground Tanks:	NOT REPORTED
Tanks Removed:	NOT REPORTED

Tank ID:	1U	Tank Status:	CLOSED REMOVED
Tank Contents:	LEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	UNKNOWN
Tank Size (Units):	10000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	2U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	GALVANIZED STEEL
Tank Size (Units):	10000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	3U	Tank Status:	CLOSED REMOVED
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	BARE STEEL
Tank Size (Units):	6000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	4U	Tank Status:	CLOSED REMOVED
Tank Contents:	LEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	BARE STEEL
Tank Size (Units):	10000 (GALLONS)	Tank Material:	BARE STEEL
Tank ID:	5U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	6U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	LEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	FIBERGLASS
Tank ID:	7U	Tank Status:	ACTIVE/IN SERVICE
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS
Tank Size (Units):	12000 (GALLONS)	Tank Material:	FIBERGLASS

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SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile) CONT.

VISTA Address*:	STANDARD BRANDS STORE 1020 BLOSSOM HILL RD SAN JOSE, CA 95123	VISTA ID#:	5352063	Map ID
		Distance/Direction:	0.43 MI / S	3B
		Plotted as:	Point	
CORTESE / SRC# 2298		EPA/Agency ID:	N/A	

Agency Address:	STANDARD BRANDS STORE 1020 BLOSSOM HILL RD SAN JOSE, CA
List Name:	LEAKING TANK
Site ID:	INV-ID43-004499

VISTA Address*:	STANDARD BRANDS PAINT 1020 BLOSSOM HILL SAN JOSE, CA 95123	VISTA ID#:	4019863	Map ID
		Distance/Direction:	0.43 MI / S	3B
		Plotted as:	Point	
STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A	

Agency Address:	STANDARD BRANDS PAINT 1020 BLOSSOM HILL SAN JOSE, CA
Underground Tanks:	1
Aboveground Tanks:	NOT REPORTED
Tanks Removed:	NOT REPORTED

Tank ID:	1U	Tank Status:	CLOSED REMOVED
Tank Contents:	MISC. CHEMICAL	Leak Monitoring:	UNKNOWN
Tank Age:	NOT REPORTED	Tank Piping:	BARE STEEL
Tank Size (Units):	10000 (GALLONS)	Tank Material:	BARE STEEL

VISTA Address*:	STANDARD BRANDS STORE 1020 BLOSSOM HILL RD SAN JOSE, CA 95123	VISTA ID#:	4984514	Map ID
		Distance/Direction:	0.43 MI / S	3B
		Plotted as:	Point	
STATE LUST - State Leaking Underground Storage Tank / SRC# 2733		EPA/Agency ID:	N/A	

Agency Address:	STANDARD BRANDS STORE 1020 BLOSSOM HILL RD SAN JOSE, CA
Tank Status:	NOT AVAILABLE
Media Affected:	UNKNOWN
Substance:	OTHER AUTO FUELS,OILS,FLUIDS
Leak Cause:	UNAVAILABLE
Remedial Action:	NO ACTION TAKEN
Remedial Status 1:	CASE CLOSED/CLEANUP COMPLETE
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-1816

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Media Affected:	UNKNOWN
Substance:	OTHER AUTO FUELS,OILS,FLUIDS
Leak Cause:	UNKNOWN
Leak Source:	REPORTED AS "UNKNOWN" BY AGENCY
Remedial Action:	NO ACTION TAKEN
Remedial Status 1:	CASE CLOSED/CLEANUP COMPLETE
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units)

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* VISTA address includes enhanced city and ZIP.
For more information call VISTA Information Solutions, Inc. at 1 - 800 - 767 - 0403.
Report ID: 107617-001 Date of Report: June 19, 1996

SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile) CONT.

VISTA Address*:	ATRIUM VENTURES 999 BLOSSOM RIVER DR SAN JOSE, CA	VISTA ID#: Distance/Direction: Plotted as:	3766028 0.43 MI / SE Point	Map ID 4

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*UNKNOWN*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0127

Agency Address:	*ATRIUM VENTURES* *999 BLOSSOM RIVER DR* *SAN JOSE, CA 95123*
Tank Status:	*NOT AVAILABLE*
Discovery Date:	*AUGUST 19, 1991*
Media Affected:	*UNKNOWN*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*STRUCTURAL FAILURE*
Leak Source:	*UNDERGROUND TANK*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Quantity (Units)*

VISTA Address*:	KAISER DEV CO - BLOSSOM HILL ROAD SI BLOSSOM HILL RDBLOSSOM RVR DR SAN JOSE, CA 95118	VISTA ID#: Distance/Direction: Plotted as:	223509 0.45 MI / SE Point	Map ID 5A

CERCLIS / SRC# 2977	EPA ID:	CAD981677164

Agency Address:	*SAME AS ABOVE*
NPL Status:	*NOT A PROPOSED, CURRENT, OR DELETED NPL SITE*
Site Ownership:	*UNKNOWN*
Lead Agency:	*NOT AVAILABLE*
Site Description:	*NOT REPORTED*

Event Type:	Lead Agency:	Event Status:	Start Date:	Completion Date:
DISCOVERY	*EPA FUND-FINANCED*	*UNKNOWN*	*NOT REPORTED*	*OCTOBER 1, 1986*
PRELIMINARY ASSESSMENT	*EPA FUND-FINANCED*	*UNKNOWN*	*NOT REPORTED*	*FEBRUARY 1, 1987*
PRELIMINARY ASSESSMENT	*STATE, FUND FINANCED*	*NO FURTER REMEDIAL ACTION PLANNED*	*NOT REPORTED*	*JUNE 1, 1988*

Regional CERCLIS / SRC# 2462	EPA ID:	CAD981677164

Agency Address:	*KAISER DEV CO - BLOSSOM HILL ROAD SITE* *BLOSSOM HILL RDBLOSSOM RVR DR* *SAN JOSE, CA 95118*

Regional Utility Description:
NEW CERCLIS SITE

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SITES IN THE SURROUNDING AREA (within 3/8 - 1/2 mile) CONT.

Regional CERCLIS / SRC# 2462		EPA ID:	CAD981677164
Agency Address:	KAISER DEV CO - BLOSSOM HILL ROAD SITE BLOSSOM HILL RDBLOSSOM RVR DR SAN JOSE, CA 95118		
Regional Utility Description:			
SOUTH BAY SITE IDENTIFIED BY RWQCB			

VISTA Address*:	HOLLAND PROPERTIES,LTD(KAISER DEVELO.CO BLOSSOM HILLBLOSSOM RIVER RDS SAN JOSE, CA 95123	VISTA ID#:	4824144	Map ID
		Distance/Direction:	0.46 MI / SE	5A
		Plotted as:	Point	
South Bay / SRC# 1719		Agency ID:	0204 HO	
Agency Address:	HOLLAND PROPERTIES,LTD(KAISER DEVELO.CO BLOSSOM HILLBLOSSOM RIVER RDS SAN JOSE, CA			
NPL Status:	NOT REPORTED			
Status:	INACTIVE			
Lead Agency:	RWQCB			

VISTA Address*:	JONES, PARNELLI FIRESTONE 995 BLOSSOM HILL SAN JOSE, CA 95123	VISTA ID#:	4019862	Map ID
		Distance/Direction:	0.47 MI / SE	5B
		Plotted as:	Point	
STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A	
Agency Address:	SAME AS ABOVE			
Underground Tanks:	1			
Aboveground Tanks:	NOT REPORTED			
Tanks Removed:	NOT REPORTED			
Tank ID:	1U	Tank Status:	ACTIVE/IN SERVICE	
Tank Contents:	OIL(NOT SPECIFIED)	Leak Monitoring:	UNKNOWN	
Tank Age:	NOT REPORTED	Tank Piping:	BARE STEEL	
Tank Size (Units):	250 (GALLONS)	Tank Material:	BARE STEEL	

VISTA Address*:	ALMADEN SHELL GAS STATION 5607 ALMADEN EX SAN JOSE, CA 95118	VISTA ID#:	4018029	Map ID
		Distance/Direction:	0.47 MI / S	6A
		Plotted as:	Point	
STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A	
Agency Address:	SAME AS ABOVE			
Underground Tanks:	3			
Aboveground Tanks:	NOT REPORTED			
Tanks Removed:	NOT REPORTED			
Tank ID:	1U	Tank Status:	ACTIVE/IN SERVICE	
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN	
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS	
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS	
Tank ID:	2U	Tank Status:	ACTIVE/IN SERVICE	
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN	
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS	
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS	
Tank ID:	3U	Tank Status:	ACTIVE/IN SERVICE	
Tank Contents:	UNLEADED GAS	Leak Monitoring:	UNKNOWN	
Tank Age:	NOT REPORTED	Tank Piping:	FIBERGLASS	
Tank Size (Units):	10000 (GALLONS)	Tank Material:	FIBERGLASS	

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* VISTA address includes enhanced city and ZIP.
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Report ID: 107617-001
Version 2.4.1
Date of Report: June 19, 1996

SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile)

VISTA Address*:	S.C.V.W.D. CORP. YARD 5750 ALMADEN EXPWY SAN JOSE, CA	VISTA ID#: Distance/Direction: Plotted as:	936754 0.53 MI / S Point	Map ID 6
STATE LUST - State Leaking Underground Storage Tank / SRC# 2733		EPA/Agency ID:	N/A	

Agency Address:	*SAME AS ABOVE*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*GROUNDWATER*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-1248

Agency Address:	*SCVWD CORP YARD* *5750 ALMADEN EXPWY* *SAN JOSE, CA 95118*
Tank Status:	*NOT AVAILABLE*
Discovery Date:	*JULY 25, 1986*
Media Affected:	*GROUNDWATER*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*STRUCTURAL FAILURE*
Leak Source:	*UNDERGROUND TANK*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Quantity (Units)*

VISTA Address*:	CHEVRON 1177 BLOSSOM HILL RD SAN JOSE, CA 95118	VISTA ID#: Distance/Direction: Plotted as:	1582907 0.50 MI / SW Point	Map ID 7
STATE LUST - State Leaking Underground Storage Tank / SRC# 2733		Agency ID:	16C	

Agency Address:	*CHEVRON* *1177 BLOSSOM HILL RD* *SAN JOSE, CA*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*GROUNDWATER*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

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SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile) CONT.

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0278

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Discovery Date:	NOVEMBER 28, 1989
Media Affected:	GROUNDWATER
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	STRUCTURAL FAILURE
Leak Source:	UNDERGROUND TANK
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	CASE CLOSED/CLEANUP COMPLETE
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Quantity (Units)

VISTA Address*:	DIAMOND SHAMROCK 1180 BLOSSOM HILL RD SAN JOSE, CA 95118	VISTA ID#: 5352065 Distance/Direction: 0.54 MI / SW Plotted as: Point	Map ID 7

CORTESE / SRC# 2298	EPA/Agency ID:	N/A

Agency Address:	DIAMOND SHAMROCK 1180 BLOSSOM HILL RD SAN JOSE, CA
List Name:	LEAKING TANK
Site ID:	INV-ID43-000636

VISTA Address*:	DIAMOND SHAMROCK 1180 BLOSSOM HILL RD SAN JOSE, CA 95118	VISTA ID#: 936775 Distance/Direction: 0.54 MI / SW Plotted as: Point	Map ID 7

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	Agency ID:	16D

Agency Address:	DIAMOND SHAMROCK 1180 BLOSSOM HILL RD SAN JOSE, CA
Tank Status:	NOT AVAILABLE
Media Affected:	GROUNDWATER
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	UNAVAILABLE
Remedial Action:	EXCAVATE TREAT
Remedial Status 1:	CONTAMINATION ASSESSMENT
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0465

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Discovery Date:	AUGUST 23, 1985
Media Affected:	GROUNDWATER
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	STRUCTURAL FAILURE
Leak Source:	UNDERGROUND TANK
Remedial Action:	EXCAVATE TREAT
Remedial Status 1:	CONTAMINATION ASSESSMENT
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Quantity (Units) 96-011

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* VISTA address includes enhanced city and ZIP.
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SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile) CONT.

VISTA Address*:	CILKER ORCHARDS 5255 PEARL AVE SAN JOSE, CA 95136	VISTA ID#:	936982	Map ID
		Distance/Direction:	0.52 MI / E	8
		Plotted as:	Point	

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	EPA/Agency ID:	N/A

Agency Address:	*CILKER ORCHARDS 5255 PEARL AVE SAN JOSE, CA*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*SOIL/SAND/LAND*
Substance:	*REGULAR GAS*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0354

Agency Address:	*SAME AS ABOVE*
Tank Status:	*NOT AVAILABLE*
Discovery Date:	*NOVEMBER 2, 1988*
Media Affected:	*SOIL/SAND/LAND*
Substance:	*REGULAR GAS*
Leak Cause:	*STRUCTURAL FAILURE*
Leak Source:	*UNDERGROUND TANK*
Remedial Action:	*EXCAVATE DISPOSE*
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Quantity (Units)*

VISTA Address*:	SHELL 5759 WINFIELD #A BLVD SAN JOSE, CA 95123	VISTA ID#:	5360085	Map ID
		Distance/Direction:	0.53 MI / SE	9
		Plotted as:	Point	

CORTESE / SRC# 2298	EPA/Agency ID:	N/A

Agency Address:	*SHELL 5759 WINFIELD #A BLVD SAN JOSE, CA 951230000*
List Name:	*LEAKING TANK*
Site ID:	*INV-ID43-007927*

VISTA Address*:	BEACON 5827 WINFIELD BLVD SAN JOSE, CA 95123	VISTA ID#:	5360086	Map ID
		Distance/Direction:	0.59 MI / SE	9
		Plotted as:	Point	

CORTESE / SRC# 2298	EPA/Agency ID:	N/A

Agency Address:	*BEACON 5827 WINFIELD BLVD SAN JOSE, CA*
List Name:	*LEAKING TANK*
Site ID:	*INV-ID43-008633*

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SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile) CONT.

VISTA Address*:	UNOCAL 858 BRANHAM LN W SAN JOSE, CA 95136	VISTA ID#: 1583147 Distance/Direction: 0.60 MI / NE Plotted as: Point	Map ID 10

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	Agency ID: 44U

Agency Address:	UNOCAL 858 BRANHAM LN W SAN JOSE, CA
Tank Status:	NOT AVAILABLE
Media Affected:	GROUNDWATER
Substance:	WASTE OIL
Leak Cause:	UNAVAILABLE
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	REM ACTION TAKEN
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID: 43-1579

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Discovery Date:	MAY 29, 1990
Media Affected:	GROUNDWATER
Substance:	WASTE OIL
Leak Cause:	STRUCTURAL FAILURE
Leak Source:	UNDERGROUND TANK
Remedial Action:	EXCAVATE DISPOSE
Remedial Status 1:	REM ACTION TAKEN
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Quantity (Units)

VISTA Address*:	ARCO 4610 PEARL AVE SAN JOSE, CA 95136	VISTA ID#: 1595507 Distance/Direction: 0.62 MI / NE Plotted as: Point	Map ID 10

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	EPA/Agency ID: N/A

Agency Address:	SAME AS ABOVE
Tank Status:	NOT AVAILABLE
Media Affected:	SOIL/SAND/LAND
Substance:	GASOLINE (UNSPECIFIED)
Leak Cause:	UNAVAILABLE
Remedial Action:	NO ACTION TAKEN
Remedial Status 1:	LEAK BEING CONFIRMED
Remedial Status 2:	NOT AVAILABLE
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source

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* VISTA address includes enhanced city and ZIP.
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SITES IN THE SURROUNDING AREA (within 1/2 - 3/4 mile) CONT.

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0111
Agency Address:	SAME AS ABOVE	
Tank Status:	NOT AVAILABLE	
Discovery Date:	NOVEMBER 2, 1990	
Media Affected:	SOIL/SAND/LAND	
Substance:	GASOLINE (UNSPECIFIED)	
Leak Cause:	STRUCTURAL FAILURE	
Leak Source:	UNDERGROUND TANK	
Remedial Action:	NO ACTION TAKEN	
Remedial Status 1:	CASE CLOSED/CLEANUP COMPLETE	
Remedial Status 2:	NOT AVAILABLE	
Fields Not Reported:	Quantity (Units)	
CORTESE / SRC# 2298	EPA/Agency ID:	N/A
Agency Address:	SAME AS ABOVE	
List Name:	LEAKING TANK	
Site ID:	INV-ID43-000350	

VISTA Address*:	BEACON 4604 CHERRY AVE SAN JOSE, CA 95118	VISTA ID#:	2745921	Map ID
		Distance/Direction:	0.62 MI / W	11
		Plotted as:	Point	

STATE LUST - State Leaking Underground Storage Tank / SRC# 2733	Agency ID:	02-022
Agency Address:	BEACON 4604 CHERRY AVE SAN JOSE, CA	
Tank Status:	NOT AVAILABLE	
Media Affected:	SOIL/SAND/LAND	
Substance:	GASOLINE (UNSPECIFIED)	
Leak Cause:	UNAVAILABLE	
Remedial Action:	NO ACTION TAKEN	
Remedial Status 1:	PRELIMINARY ASSESSMENT	
Remedial Status 2:	NOT AVAILABLE	
Fields Not Reported:	Discovery Date, Quantity (Units), Leak Source	
Regional LUST - Regional Leaking Underground Storage Tank / SRC# 2932	Agency ID:	43-0161
Agency Address:	SAME AS ABOVE	
Tank Status:	NOT AVAILABLE	
Discovery Date:	APRIL 15, 1991	
Media Affected:	SOIL/SAND/LAND	
Substance:	GASOLINE (UNSPECIFIED)	
Leak Cause:	STRUCTURAL FAILURE	
Leak Source:	UNDERGROUND TANK	
Remedial Action:	EXCAVATE DISPOSE	
Remedial Status 1:	PRELIMINARY ASSESSMENT	
Remedial Status 2:	NOT AVAILABLE	
Fields Not Reported:	Quantity (Units)	
CORTESE / SRC# 2298	EPA/Agency ID:	N/A
Agency Address:	BEACON 4604 CHERRY AVE SAN JOSE, CA	
List Name:	LEAKING TANK	
Site ID:	INV-ID43-000387	

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Report ID: 107617-001 Date of Report: June 19, 1996
Version 2.4.1

SITES IN THE SURROUNDING AREA (within 3/4 - 1 1/4 miles)

No Records Found

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UNMAPPED SITES

VISTA Address*:	WDR-MARSHLAND LANDFILL 05S01W08 SAN JOSE, CA	VISTA ID#:	5428015
WMUDS / SRC# 2463		Agency ID:	2 438042001

Agency Address:	*SAME AS ABOVE*
Solid Waste Inventory System ID:	*43-AN-0004*
Facility Type:	*SOLID WASTE SITES-CLASS III - Landfills for nonhazardous solid wastes.*
Facility In State Board Waste Discharger System:	*YES*
Chapter 15 Facility:	*YES*
Solid Waste Assessment Test Facility:	*YES*
Toxic Pits Cleanup Act Facility:	*NO*
RCRA Facility:	*NO*
Department of Defense Facility:	*NO*
Open To Public:	*NO*
Number Of Waste Management Units:	*1*
Rank:	*2*
Enforcements At Facility:	*NO*
Violations At Facility:	*NO*

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SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1/4 MILE)

DESCRIPTION OF DATABASES SEARCHED

A) DATABASES SEARCHED TO 1 1/4 MILES

NPL
SRC#: 2640

VISTA conducts a database search to identify all sites within 1.25 mile of your property.
The agency release date for NPL was September, 1995.

The National Priorities List (NPL) is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the US Dept of Health and Human Services and the US EPA in order to become an NPL site.

SPL
SRC#: 2826

VISTA conducts a database search to identify all sites within 1.25 mile of your property.
The agency release date for Calsites Database: Annual Workplan Sites was January, 1996.

This database is provided by the Cal. Environmental Protection Agency, Dept. of Toxic Substances Control. Annual Work Plan (AWP) sites and sites where Preliminary Endangerment Assessments are a high priority are included.

CORRACTS
SRC#: 2909

VISTA conducts a database search to identify all sites within 1.25 mile of your property.
The agency release date for RCRA Corrective Action Sites List was February, 1996.

The EPA maintains this database of RCRA facilities which are undergoing "corrective action". A "corrective action order" is issued pursuant to RCRA Section 3008 (h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.

RCRA-TSD
SRC#: 2909

VISTA conducts a database search to identify all sites within 1.25 mile of your property.
The agency release date for RCRIS was February, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA TSDs are facilities which treat, store and/or dispose of hazardous waste.

B) DATABASES SEARCHED TO 3/4 MILE

CERCLIS
SRC#: 2976

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for CERCLIS was March, 1996.

The CERCLIS List contains sites which are either proposed to or on the National Priorities List(NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of all pre-remedial, remedial, removal and community relations activiies or events at the site, financial funding information for the events, and unrestricted enforcement activities.

98-027

NFRAP
SRC#: 2977

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for CERCLIS-NFRAP was March, 1996.

NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

Cal Cerclis
SRC#: 2462

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Ca Cerclis w/Regional Utility Description was June, 1995.

This database is provided by the U.S. Environmental Protection Agency, Region 9. These are regional utility descriptions for California CERCLIS sites.

SCL
SRC#: 2825

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Calsites Database: All Sites except Annual Workplan Sites (incl. ASPIS) was January, 1996.

This database is provided by the Department of Toxic Substances Control. These are lower priority than the SPL sites.

SWLF
SRC#: 2882

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Ca Solid Waste Information System (SWIS) was March, 1996.

This database is provided by the Integrated Waste Management Board.

WMUDS
SRC#: 2463

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Waste Management Unit Database System (WMUDS) was June, 1995.

This database is provided by the State Water Resources Control Board. This is used for program tracking and inventory of waste management units. This system contains information from the following eight main databases: Facility, Waste Management Unit, SWAT Program Information, SWAT Report Summary Information, Chapter 15 (formerly Subchapter 15), TPCA Program Information, RCRA Program Information, and Closure Information.

LUST
SRC#: 2733

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Lust Information System (LUSTIS) was December, 1995.

This database is provided by the California Environmental Protection Agency.

LUST RG2
SRC#: 2932

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Region #2-San Francisco Bay Fuel Leaks List was March, 1996.

This database is provided by the Regional Water Quality Control Board, Region #2.

LUST RG3
SRC#: 2933

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Region #3-Central Coast Region LUST List was March, 1996.

This database is provided by the Regional Water Quality Control Board, Region #3.

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CORTESE
SRC#: 2298

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Cortese List-Hazardous Waste Substance Site List was February, 1995.

This database is provided by the Office of Environmental Protection, Office of Hazardous Materials.

Deed Restrictions
SRC#: 1703

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Deed Restriction Properties Report was April, 1994.

This database is provided by the Department of Health Services-Land Use and Air Assessment. These are voluntary deed restriction agreements with owners of property who propose building residences, schools, hospitals, or day care centers on property that is "on or within 2,000 feet of a significant disposal of hazardous waste".

Toxic Pits
SRC#: 2229

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for Summary of Toxic Pits Cleanup Facilities was February, 1995.

This database is provided by the Water Quality Control Board, Division of Loans Grants.

South Bay
SRC#: 1719

VISTA conducts a database search to identify all sites within 3/4 mile of your property.
The agency release date for South Bay Site Management System was April, 1994.

This database is provided by the San Francisco Bay Region.

C) DATABASES SEARCHED TO 1/2 MILE

RCRA-Viols/En
SRC#: 2909

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for RCRIS was February, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Violators are facilities which have been cited for RCRA Violations at least once since 1980. RCRA Enforcements are enforcement actions taken against RCRA violators.

UST's
SRC#: 1612

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Underground Storage Tank Registrations Database was January, 1994.

This database is provided by the State Water Resources Control Board, Office of Underground Storage Tanks.

AST's
SRC#: 2824

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Aboveground Storage Tank Database was February, 1996.

This database is provided by the State Water Resources Control Board.

TRIS
SRC#: 2587

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for TRIS was May, 1995.

Section 313 of the Emergency Planning and Community Right-to-Know Act (also known as SARA Title III) of 1986 requires the EPA to establish an inventory of Toxic Chemicals emissions from certain facilities(Toxic Release Inventory System). Facilities subject to this reporting are required to complete a Toxic Chemical Release Form(Form R) for specified chemicals.

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D) DATABASES SEARCHED TO 3/8 MILE

ERNS
SRC#: 2885

VISTA conducts a database search to identify all sites within .375 mile of your property.
The agency release date for ERNS was June, 1995.

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities including the EPA, the US Coast Guard, the National Response Center and the Department of transportation. A search of the database records for the period October 1986 through June 1995 revealed the following information regarding reported spills of oil or hazardous substances in the stated area.

RCRA-LgGen
SRC#: 2909

VISTA conducts a database search to identify all sites within .375 mile of your property.
The agency release date for RCRIS was February, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Large Generators are facilities which generate at least 1000 kg./month of non-acutely hazardous waste (or 1 kg./month of acutely hazardous waste).

RCRA-SmGen
SRC#: 2909

VISTA conducts a database search to identify all sites within .375 mile of your property.
The agency release date for RCRIS was February, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Small and Very Small generators are facilities which generate less than 1000 kg./month of non-acutely hazardous waste.

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End of Report

Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

Project No. NFA-3695-02
September 19, 1997

Arcadia Development Co.
P.O. Box 5368
San Jose, California 95150

Attention: Mr. Pete Merrill

Subject: Northeast Corner Highway 85 & Almaden Expressway
San Jose, California
Addendum to Phase I Environmental Site Assessment

Dear Mr. Merrill

ESCNC conducted a Phase I Environmental Site Assessment (PSA) for the site referenced above in July and August of 1996. The report; issued August 13, 1996, indicated the subject site was composed of City of San Jose Assessors Parcel Numbers 458-17-006, 017, and 018. In addition to these parcels, the site and PSA coverage included APN 458-16-032.

We apologize for any confusion this may have caused. Should you have any further questions or comments regarding the above referenced PSA, please contact this office at 510-353-0320.

Very truly yours,

EARTH SYSTEMS CONSULTANTS
NORTHERN CALIFORNIA

Nissa L. Nack
Staff Geologist

cc: Mindigo & Associates

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Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

Project No. NJA-3695-03
November 14, 1996

Arcadia Development Co.
P.O. Box 5368
San Jose, California 95150

Attention: Mr. Pete Merrill

Subject: Northeast Corner Highway 85 & Almaden Expressway
San Jose, California

Dear Mr. Merrill

At your request, Earth Systems Consultants Northern California (ESCNC) has prepared the following letter regarding the usage and disposition of the wells and above ground storage tanks (ASTs) at the site referenced above. We have also included information regarding the use of pesticides on the site. The information provided herein was obtained during a site reconnaissance and from interviews with Mr. David Jio. Mr. Jio's family has been associated with the property since 1950.

Wells

Two water wells were observed on the site. One, located near the center of the property, is capped and has not been used for a number of years. The second is located near the buildings adjacent to Almaden Expressway and is used to provide water to the crops grown on the site.

Both wells will be destroyed according to Santa Clara Valley Water District guidelines prior to development of the property.

ASTs

Four ASTs were observed on the property in June, 1996. Three of the ASTs were located between the southern dirt road and property boundary. Two of these ASTs were mounted on trailers, and one on a ground stand. The fourth AST is located near a grove of oak trees.

According to Mr. Jio, one of the trailer mounted ASTs is used is to spray water for dust control purposes. The second mounted AST is used for dilution and spraying of pesticides. The groundstand mounted AST is attached to a drip system for distribution of diluted fertilizer to the plants. The fourth AST was used at one time for the storage of water, but is no longer in use.

All the ASTs will be removed and disposed of prior to development of the property.

Pesticide Use .

As stated above, the Jio family has been associated with the subject site for almost 50 years. During that time Mr. Jio's father (Mr. E. Jio) used the land for the production of strawberries, corn, tomatoes, and other assorted row crops. Mr. E. Jio controlled pests primarily through the

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use of beneficial insects. In order to maintain the population of beneficial insects, only severe infestations were treated with a pesticide. Mr. Jio stated that the pesticide used was Malathion.

According to the Agrochemicals Handbook (The Royal Society of Chemistry, University of Nottingham, England, Second Edition), Malathion is an organic phosphate insecticide-acaricide which does not persist in the soil. Based on the limited use of this pesticide and its lack of persistence in the soil, ESCNC does not believe that testing of the soil for this compound is warranted.

We hope this provides the information you require. Should you have any questions or comments regarding this report, please contact this office at 510-353-0320.

Very truly yours,

Earth Systems Consultants
Northern California

Nissa L. Nack
Staff Geologist

Timothy Conroy
Senior Geologist
Certified Engineering Geologist 1698

NLN/TC:dh rpt

Distribution: 2 to Addressee
1-to City of San Jose, (Attn: Ms. Michele Campos)

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PHASE II
ENVIRONMENTAL SITE ASSESSMENT

Northeast Corner of Highway 85 and
Almaden Expressway
San Jose, California

JANUARY 1997

Prepared for

Arcadia Development Company
San Jose, California

Prepared by

EARTH SYSTEMS CONSULTANTS
Northern California
47853 Warm Springs Boulevard
Fremont, California 94539

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Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

Project No. NFA-3695-04
January 10, 1997

Arcadia Development Co.
P.O. Box 5368
San Jose, California 95150

Attention: Mr. Pete Merrill

Subject: **PHASE II ENVIRONMENTAL SITE ASSESSMENT**
Northeast Corner of Highway 85 and Almaden Expressway
San Jose, California

Dear Mr. Merrill:

Earth Systems Consultants Northern California (ESCNC) has prepared the following report of a Phase II Site Assessment performed at for the site located at the northeast corner of Highway 85 and Almaden Expressway in San Jose, in Santa Clara County, California (Figure 1). The work was conducted in December, 1996 in order to satisfy the requirements of the City of San Jose Environmental Services Department.

Site Description & Background

The subject site consists of four parcels of undeveloped land totaling approximately 45 acres. It is located at the northeast corner of Highway 85 and Almaden Expressway in the City of San Jose, California, and is utilized primarily for the production of row crops. A vegetable stand and associated buildings are located along the southwestern edge of the property adjacent to Almaden Expressway. Chynoweth Avenue extends from Almaden Expressway east toward the center of the subject site. As Chynoweth Avenue enters the site it becomes a dirt road which "Tees" to the north and south near the Guadalupe River (please see Figure 2). The site is currently owned by the Arcadia Development Company.

A Phase I Environmental Site Assessment was performed for this site in July and August of 1996. As a result of the assessment it was determined that the site had been used as an orchard from at least the 1950's through the 1970's. During the site reconnaissance, a number of AST's and 55-gallon drums were observed. It was later determined that the AST's and some of the drums were

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used for storage of water and mixing of pesticides. A drum located near the central portion of the central portion of the site was marked "diesel."

Purpose

This Phase II Site Assessment was conducted in order to determine whether the site had been impacted by the use of pesticides during its use as an orchard. Use of pesticides in combination with lead, mercury and arsenic was common in orchards through the 1970's.

Concerns were also raised about the possible impact of hydrocarbons in the vicinity of the 55-gallon storage drum marked "diesel."

Assessment Methods

The site was partitioned into subplots to evaluate the potential impact of pesticides across the site. One near surface soil sample was collected from the approximate center of most of the areas. The sample locations in areas A4 and A9 were positioned adjacent to an agricultural well and the ASTs, respectively. The sample in area A10 was collected adjacent to the drum, and the sample in area A12 was collected near the farm storage areas. Sample A2 was inadvertently collected from an adjoining vacant property, and is not included in this report. Sample locations are shown on Figure 2.

The samples were analyzed by a California state-certified laboratory and the results were compared to the 1995 Preliminary Remediation Goals (PRGs) for residential site uses provided by the US EPA, and to Regional Water Quality Control Board (RWQCB) Guidelines for petroleum hydrocarbons in order to assess the need for remediation any detected constituents.

Sampling Methods

Sampling equipment was washed with a non-phosphate solution (Alconox), rinsed with clean water, then allowed to air dry prior to use to minimize the possibility of cross contamination. Sample depth was between one and two feet below ground surface. The samples were collected by driving a steel core sampler containing one 4-inch long by 2-inch diameter brass sleeve into the soil with a weighted sliding hammer. The sampler was then retrieved, disassembled and the sample liner removed. Teflon™ film was placed over each end of the sample liner, covered with plastic caps and labeled with the job number, sampler, date and time of collection, and a sample number. The samples were then transported in a chilled cooler under chain-of-custody documentation to a California state-certified laboratory for analyses.

Laboratory Analysis

Each sample was analyzed for organochlorine pesticides, arsenic, lead, and mercury. The sample collected from area A10 was also analyzed for benzene, toluene, ethyl benzene and total xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPHG), and total petroleum hydrocarbons as diesel (TPHD). The samples were analyzed by Mobile Chem Labs Inc. (Mobile) using methods approved by the United States Environmental Protection Agency and the California Regional Water Quality Control Board.

Laboratory Results

Pesticides in the form of DDT and its derivatives, DDD and DDE, were detected in 13 of the 14 samples analyzed for this site. In order to properly evaluate the impact of DDT in the soil, the reported concentrations of DDT, DDD, and DDE were added together and reviewed as a sum. The highest concentration of DDT and its derivatives was reported in sample A-3 at 0.905 parts per million (ppm). One additional pesticide, Dieldrin, was detected in sample A-8 at a concentration of 0.008 ppm.

Arsenic was not detected in any of the samples collected from this site. Lead and mercury were reported in all samples collected at this site. The highest reported concentrations were 32 parts per million (ppm) lead in sample A-10, and 3.8 ppm mercury in A-1. The average concentration of lead across the site is 19.8 ppm. The average concentration of mercury across the site is 0.49 ppm. Petroleum hydrocarbons were not detected in the sample collected from area A-10.

Analytical results are summarized on Tables 1 and 2. Collection points for the analyzed samples are shown on Figure 2. Copies of the laboratory reports and chain-of-custody documents are located in Appendix A.

Conclusions and Recommendations

Petroleum hydrocarbons were not detected in the sample collected adjacent to the 55-gallon drum in area A-10. Petroleum hydrocarbons are therefore not considered to be a concern on this property.

Pesticides in the form of DDT and derivatives and Dieldrin were detected in samples collected from this site. The highest concentration of DDT and derivatives was 0.905 ppm, reported in A-2. A comparison of this value to the EPA PRGs for soil in residential areas shows that it is below the PRG for DDT of 1.3 ppm. The reported concentration of 0.008 ppm Dieldrin is also below its

PRG of 0.028 ppm. ESCNC therefore does not consider organochlorine pesticides to be a concern at this site.

Lead and mercury were detected in all samples collected at this site. The highest concentration of lead was reported in sample A-10 at 32 ppm, and the highest concentration of mercury was 3.8 ppm in Sample A-1. These concentrations are below the PRG residential values of 130 ppm for lead and 6.5 ppm for mercury. Arsenic was not detected at this site. Based on these results, ESCNC does not consider lead, arsenic or mercury to be a concern at this site.

Limitations

This report has been prepared for the exclusive use of the client. The conclusions and recommendations rendered in this report are opinions based on readily available information within the scope of the work authorized by the client. Use of or reliance on the information and opinions contained in this letter by other parties is at their own risk.

The results contained in this report are based upon the information acquired during the assessment. It is possible that variations could exist beyond or between points explored during the course of the assessment. Also, changes in conditions found could occur at some time in the future due to contaminant migration, variations in rainfall, temperature, and/or other factors not apparent at the time of field work.

The services performed by ESCNC have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in this area of California. No other warranty is expressed or implied.

We appreciate this opportunity to be of service. Should you have any questions or comments regarding this report, please contact this office at 510-353-0320.

Very truly yours,

EARTH SYSTEMS CONSULTANTS
Northern California

Nissa L. Nack, REA# 06112
Staff Geologist

Timothy Conroy, CEG 1698
Senior Geologist

PJM/NLN/TC:sp ESE#21

Distribution: 4 to Addressee

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TABLE 1
SUMMARY OF ANALYTICAL DATA
Pesticides and Metals

Sample Number	Sample Date	4,4'-DDE (ppm)	4,4'-DDD (ppm)	4,4'-DDT (ppm)	Total DDT & Derivatives (ppm)	Other Pesticides (ppm)	Arsenic (ppm)	Lead (ppm)	Mercury (ppm)
A-1	12/16/96	0.018	<0.004	<0.004	0.022	ND	<10	19	3.8
A-3	12/16/96	0.76	0.045	0.1	0.905	ND	<10	28	1.2
A-4	12/16/96	0.004	<0.004	<0.004	0.008	ND	<10	20	0.14
A-5	12/16/96	0.011	<0.004	<0.004	0.015	ND	<10	16	0.15
A-6	12/16/96	0.017	<0.004	<0.004	0.021	ND	<10	15	0.19
A-7	12/16/96	0.015	<0.004	<0.004	0.019	ND	<10	19	0.20
A-8	12/16/96	<0.004	<0.004	<0.004	ND	Dieldrin: 0.008	<10	14	0.17
A-9	12/16/96	0.12	0.011	0.041	0.172	ND	<10	20	0.14
A-10	12/16/96	0.057	0.009	0.030	0.096	ND	<10	32	0.18
A-11	12/16/96	0.091	0.009	0.024	0.124	ND	<10	24	0.15
A-12	12/16/96	0.004	<0.004	<0.004	0.008	ND	<10	15	0.11
A-13	12/16/96	0.031	<0.004	<0.004	0.035	ND	<10	16	0.094
A-14	12/16/96	0.015	<0.004	<0.004	0.019	ND	<10	17	0.14
A-15	12/16/96	0.17	0.015	0.033	0.218	ND	<10	22	0.24

TABLE 2
SUMMARY OF ANALYTICAL DATA
Petroleum Hydrocarbons

Sample Number	Sample Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	MTBE (ppm)	TPHD (ppm)
A-10	12/16/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<5.0

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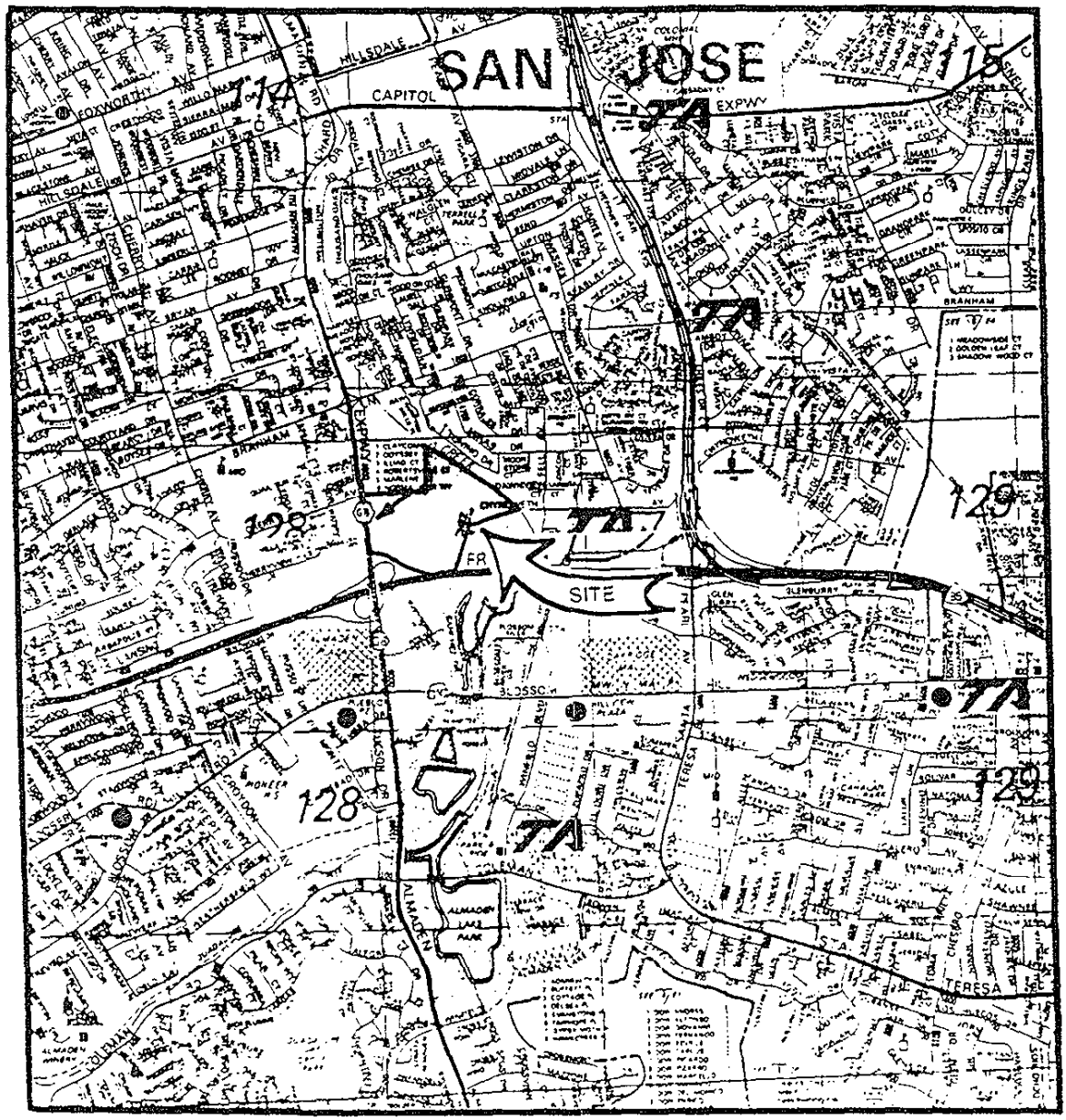
NFA-3695-04



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SCALE

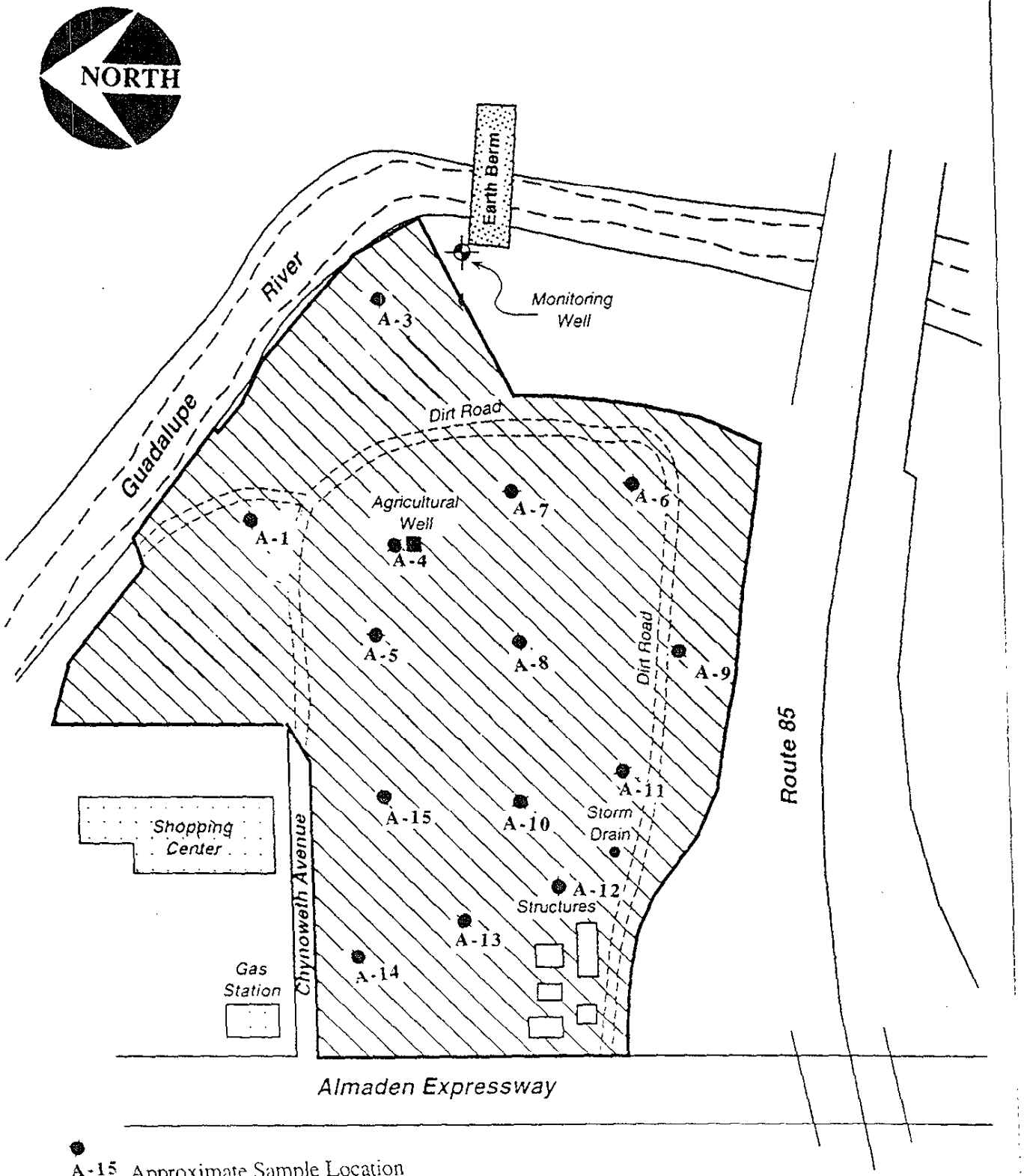
0 1 2 Miles

0 1 2 Kilometers

Base: Thomas Brothers Maps

Earth Systems Consultants Northern California	Almaden Expressway and Highway 85 San Jose, California	SITE LOCATION Figure No. 1

NFA-3695-04



A-15 Approximate Sample Location

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Not To Scale

Earth Systems Consultants Northern California	Almaden Expressway at Highway 85 San Jose, California	SITE PLAN Figure No. 2

APPENDIX A

Chain-of-Custody

and

Laboratory Reports

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MOBILE CHEM LABS INC.

1678 Reliez Valley Road • Lafayette, CA 94549
Phone (510) 945-1266 • Fax (510) 943-6884

NFS-3695-04\2162\013808

Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-26-96

Sample Number	Sample Description
B126027	Proj: NFS-3695-04 Almaden & 85 A-1 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.018	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

MOBILE CHEM LABS, INC.

Ronald G. Evans
Lab Director

96-011

~~98-027~~

MOBILE CHEM LABS INC.

1678 Reliez Valley Road • Lafayette, CA 94549
Phone (510) 945-1266 • Fax (510) 943-6884

NFS-3695-04\2162\013808

Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-26-96

Sample Number	Sample Description
B126029	Proj: NFS-3695-04 Almaden & 85 A-3 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	0.045
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	0.10
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.76	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected
Duplicate Deviation is 4.6 %
Spike Recovery is 97 %

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

MOBILE CHEM LABS, INC.

Ronald G. Evans
Lab Director

96-011

~~98-027~~

MOBILE CHEM LABS INC.

1678 Reliez Valley Road • Lafayette, CA 94549
Phone (510) 945-1266 • Fax (510) 943-6884

NFS-3695-04\2162\013808

Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-26-96

Sample Number	Sample Description
B126030	Proj: NFS-3695-04 Almaden & 85 A-4 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.004	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

MOBILE CHEM LABS, INC.

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Ronald G. Evans
Lab Director

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MOBILE CHEM LABS INC.

1678 Reliez Valley Road • Lafayette, CA 94549
Phone (510) 945-1266 • Fax (510) 943-6884

NFS-3695-04\2162\013808

Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-26-96

Sample Number	Sample Description
B126031	Proj: NFS-3695-04 Almaden & 85 A-5 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.011	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-26-96

Sample Number	Sample Description
B126032	Proj: NFS-3695-04 Almaden & 85 A-6 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.017	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-26-96

Sample Number	Sample Description
B126033	Proj: NFS-3695-04 Almaden & 85 A-7 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.015	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126034	Proj: NFS-3695-04 Almaden & 85 A-8 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	<0.003	Toxaphene	<0.050
Dieldrin	0.008	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126035	Proj: NFS-3695-04 Almaden & 85 A-9 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	0.011
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	0.041
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.12	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Lab Director

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Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126036	Proj: NFS-3695-04 Almaden & 85 A-10 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	0.009
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	0.030
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.057	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Ronald G. Evans
Lab Director

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Earth Systems Consultants
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Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126037	Proj: NFS-3695-04 Almaden & 85 A-11 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	0.009
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	0.024
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.091	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126038	Proj: NFS-3695-04 Almaden & 85 A-12 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.004	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Earth Systems Consultants
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Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126039	Proj: NFS-3695-04 Almaden & 85 A-13 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.031	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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NFS-3695-04\2162\013808

Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description
B126040	Proj: NFS-3695-04 Almaden & 85 A-14 SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	<0.004
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	<0.004
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.015	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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Lab Director

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Earth Systems Consultants
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Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Reported: 12-27-96

Sample Number	Sample Description	
B126041	Proj: NFS-3695-04 Almaden & 85	
	A-15	SOIL

EPA METHOD 8080
results in ppm

alpha-BHC	<0.002	Endrin	<0.003
gamma-BHC	<0.002	4,4'-DDD	0.015
beta-BHC	<0.003	Endosulfan II	<0.003
Heptachlor	<0.003	4,4'-DDT	0.033
delta-BHC	<0.003	Endrin Aldehyde	<0.004
Aldrin	<0.003	Endosulfan Sulfate	<0.005
Heptachlor Epoxide	<0.004	Methoxychlor	<0.025
Endosulfan I	<0.004	Chlordane	<0.020
4,4'-DDE	0.17	Toxaphene	<0.050
Dieldrin	<0.002	Endrin Ketone	<0.004

QA/QC: Blank is none detected
Duplicate Deviation is 7.2 %
Spike Recovery is 105 %

Note: Analysis was performed using EPA method 8081
(ppm) = (mg/kg)

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NFS-3695-04\2131\013808

Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Analyzed: 12-23-96

Sample Number	Sample Description
B126036	Project # NFS-3695-04 Almaden & 85 A-10 SOIL

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005
MTBE(Methyl tert-Butyl Ether)	0.005	<0.005

QA/QC: Spike Recovery is 95 %
Duplicate Deviation is 4.1 %

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTEX distinction.
(ppm) = (mg/kg)

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Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
Attn: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 12-18-96
Date Analyzed: 12-18-96

Sample Number	Sample Description	Detection Limit ppm	SOIL Total Petroleum Hydrocarbons as Diesel ppm
		Proj. # NFS-3695-04 Almaden & 85	
B126036	A-10	5.0	<5.0

QA/QC: Duplicate Deviation is 1.8 %
Spike Recovery is 69 %

Note: Analysis was performed using EPA method 3550 modified and TPH LUFT.
(ppm) = (mg/kg)

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Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
ATTN: Nissa Nack
Project Manager

Date Sampled: 12-16-96
Date Received: 05-18-96
Date Analyzed: 05-26-96

TOTAL LEAD

Sample Number	Sample Description	Detection Limit ppm	SOIL RESULTS ppm
	Project # NFS-3695-04 Almaden & 85		
B126027	A-1	0.1	19
B126029	A-3	0.1	28
B126030	A-4	0.1	20
B126031	A-5	0.1	16
B126032	A-6	0.1	15
B126033	A-7	0.1	19
B126034	A-8	0.1	14

QA/QC: Spike Recovery on B126027 is 78 %
Duplicate Deviation on B126027 is 3.0 %

Note: Analysis was performed using EPA method 7420
(ppm) = (mg/kg)

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ATTN: Nissa Nack
Project Manager

NFS-3695-04\2162\013808

Date Sampled: 12-16-96
Date Received: 05-18-96
Date Analyzed: 05-26-96

TOTAL LEAD

Sample Number	Sample Description	Detection Limit ppm	SOIL RESULTS ppm
		Project # NFS-3695-04 Almaden & 85	
B126035	A-9	0.1	20
B126036	A-10	0.1	32
B126037	A-11	0.1	24
B126038	A-12	0.1	15
B126039	A-13	0.1	16
B126040	A-14	0.1	17
B126041	A-15	0.1	22

Note: Analysis was performed using EPA method 7420
(ppm) = (mg/kg)

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Sparger Technology, Inc.
With Automation In Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7471
Mercury

Attention: Mr. Ron Evans
Mobile Chem Labs, Inc.
1678 Reliez Valley Rd.
Lafayette, CA 94549

Date Sampled: Dec 16, 1996
Date Received: Dec 19, 1996
Date Analyzed: Dec 24, 1997
Invoice# : 7292

Project #: NFS 3695-04

Project Name: MCL

Matrix: Soil

Name	Client ID	LAB ID	Concentration	Reporting Limit	Dilution	Units
Mercury (Hg)	A1	7292-001A	3.8	0.040	1:4	mg/kg
Mercury (Hg)	A3	7292-005A	1.2	0.040	1:4	mg/kg
Mercury (Hg)	A4	7292-007A	0.14	0.040	1:4	mg/kg
Mercury (Hg)	A5	7292-009A	0.15	0.040	1:4	mg/kg
Mercury (Hg)	A6	7292-011A	0.19	0.040	1:4	mg/kg
Mercury (Hg)	A7	7292-013A	0.20	0.040	1:4	mg/kg
Mercury (Hg)	A8	7292-015A	0.17	0.040	1:4	mg/kg
Mercury (Hg)	A9	7292-017A	0.14	0.040	1:4	mg/kg
Mercury (Hg)	A10	7292-019A	0.18	0.040	1:4	mg/kg
Mercury (Hg)	A11	7292-021A	0.16	0.040	1:4	mg/kg
Mercury (Hg)	A12	7292-023A	0.11	0.040	1:4	mg/kg
Mercury (Hg)	A13	7292-025A	0.094	0.040	1:4	mg/kg
Mercury (Hg)	A14	7292-027A	0.14	0.040	1:4	mg/kg
Mercury (Hg)	A15	7292-029A	0.24	0.010	1:1	mg/kg

ppm= parts per million = mg/kg = milligram per kilogram

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

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Leonora Abellanosa
L. Abellanosa, Inorganics Supervisor

Jan 2, 1997
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 1614)

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Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 6010
Arsenic

Attention: Mr. Ron Evans
Mobile Chem Labs, Inc.
1676 Reliez Valley Rd.
Lafayette, CA 94549

Date Sampled: Dec 16, 1996
Date Received: Dec 19, 1996
Date Analyzed: Dec 22, 1996
Invoice# : 7292

Project #: NFS 3695-04

Project Name: MCL

Matrix: Soil

Dilution 1: 1

Name	Client ID	LAB ID	Concentration	Reporting Limit	Units
Arsenic (As)	A1	7292-002A	ND	10	mg/kg
Arsenic (As)	A3	7292-006A	ND	10	mg/kg
Arsenic (As)	A4	7292-008A	ND	10	mg/kg
Arsenic (As)	A5	7292-010A	ND	10	mg/kg
Arsenic (As)	A6	7292-012A	ND	10	mg/kg
Arsenic (As)	A7	7292-014A	ND	10	mg/kg
Arsenic (As)	A8	7292-016A	ND	10	mg/kg
Arsenic (As)	A9	7292-018A	ND	10	mg/kg
Arsenic (As)	A10	7292-020A	ND	10	mg/kg
Arsenic (As)	A11	7292-022A	ND	10	mg/kg
Arsenic (As)	A12	7292-024A	ND	10	mg/kg
Arsenic (As)	A13	7292-026A	ND	10	mg/kg
Arsenic (As)	A14	7292-028A	ND	10	mg/kg
Arsenic (As)	A15	7292-030A	ND	10	mg/kg

ppm= parts per million = mg/kg = milligram per kilogram

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

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Leonora Abellanosa
L. Abellanosa, Inorganics Supervisor

Dec 31, 1996
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No. 1614)

AS002.XLS

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

CH[redacted]N C[redacted]CU[redacted]DD [redacted]EC[redacted]RD

PROJECT NO.	PROJECT NAME	P.O. #
NFS-3695-04	ALMADEN & 85	NFS-3695-04

SAMPLERS (Signature): Philip Mayberry

LAB: Mobile Chem

TURN AROUND TIME: NORMAL

NO.	DATE	TIME	SAMPLE DESCRIPTION	EPA 8080 PESTICIDE ONLY	MERCURY	TOTAL LEAD	ARSENIC	TPHg	TPHd		REMARKS
A1	12/16/96	1015	Soil	✓	✓	✓	✓				
A2		1040		✓	✓	✓	✓				
A3		1100		✓	✓	✓	✓				
A4		1112		✓	✓	✓	✓				
A5		1149		✓	✓	✓	✓				
A6		1215		✓	✓	✓	✓				
A7		1240		✓	✓	✓	✓				
A8		1310		✓	✓	✓	✓				
A9		1330		✓	✓	✓	✓				
A10		1355		✓	✓	✓	✓	✓	✓		
A11		1410		✓	✓	✓	✓				
A12		1440		✓	✓	✓	✓				
A13		1515		✓	✓	✓	✓				
A14		1540		✓	✓	✓	✓				
A15		1615		✓	✓	✓	✓				

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Philip Mayberry	12/18/96	1045	Bud Shears MCL				
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:

REMARKS:

REPORT TO: Philip J. Mayberry / NISSA NACK

Earth Systems Environmental, Inc.
47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320 • Fax (510) 353-0344

FORM DATED 3-27-90

~~98-027~~ 96-011

Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
FAX (510) 353-0344

File No. NFA-3695-05
May 11, 1998

Arcadia Development Co.
P.O. Box 5368
San Jose, California 95150

Attention: Mr. Pete Merrill

Subject: **RESPONSE TO SCVWD COMMENTS**
Northeast Corner of Highway 85 and Almaden Expressway
San Jose, California

Dear Mr. Merrill:

Earth Systems Consultants Northern California (ESCNC) has prepared the following response to comments from the Santa Clara Valley Water District (SCVWD) regarding reuse or disposal of soil from the the subject site.

Concentrations of chlorinated pesticides and lead detected in soil samples collected from the site in December 1996 fall below the EPA Preliminary Remedial Goals (PRG's) for residential soil. The reported concentrations also fall below the Total Threshold Limit Concentration (TTLC) and are less than ten times the Soluble Threshold Limit Concentration (STLC) values used for Hazwaste Classification. Disposal and/or reuse of the soil with respect to these constituents therefore should not be an issue.

Reported concentrations of mercury were also less than the PRG and TTLC values. The detected levels of mercury in 13 of the 14 samples analyzed, as well as the average concentration of mercury across the site, were less than ten times the STLC.

Soil collected from a location near the north central portion of the site, designated A-1, was reported to contain a concentration of mercury greater than ten times the STLC value. ESCNC collected a sample from the vicinity of A-1 on April 30, 1998 and requested analysis for soluble mercury. Sparger Technology, Inc., a state certified analitical laboratory, detected a concentration of 0.0065 milliagrams per liter (mg/l) mercury in that sample (laboratory results are attached). This

~~98-027~~

96-011

File No. NFA-3695-05
May 11, 1998

is below the STLC of mercury of 0.2 mg/l. Disposal and/or reuse of the soil from the site with respect to mercury should not be an issue.

We appreciate this opportunity to be of service. Should you have any questions or comments regarding this report, please contact this office at 510-353-0320.

Very truly yours,

EARTH SYSTEMS CONSULTANTS
Northern California

Nissa L. Nack, REA# 06102
Staff Geologist

Timothy Conroy
Project Geologist

NLN/TC:ah Ltr#6

Distribution: 1 to Addressee
3 to Mindigo & Associates

Attachments: Laboratory Results

96-011

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Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project #:	NFE-3695-04	Project Name:	Almaden & 85
Matrix:	Leachate	Dilution:	1: 1

LAB ID	Client ID	Concentration	Reporting Limit	Units
9454-001A	A1B	0.0065	0.0010	mg/l

ppm= parts per million = mg/l = milligrams per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

98-027

Leonora Abellanosa
L. Abellanosa, Inorganics Supervisor

May 8, 1998
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 1674)

96-011

STLCHg001

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury
Method Blank

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project #:	NFE-3695-04	Project Name:	Almaden & 85
Client ID:	Method Blank	LAB ID:	MB980507A
Matrix:	Leachate	Dilution:	1: 1

Name	Concentration	Reporting Limit	Units
Mercury (Hg)	ND	0.0010	mg/l

ppm= parts per million = mg/l = milligrams per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

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~~98 - 037~~

Leonora Abellanosa

L. Abellanosa, Inorganics Supervisor

May 8, 1998
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

(Certification No. 1514)

Stlcmb

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury
LCS/LCSD Recoveries

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project ID:	NFE-3695-04	Project Name:	Almaden & 85
Client ID:	LCS/LCSD	LAB ID:	980507A
Matrix:	Leachate	Dilution:	

Units : (mg/l)

Element	Spike Conc.	LCS	LCS % Recovery	LCSD	LCSD % Recovery	% RSD
Mercury (Hg)	0.00500	0.00513	103%	0.00508	102%	1.0%

ppm= parts per million = mg/l = milligrams per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

96 - 011 ~~98 - 027~~

Lorrora Abellanosa
L. Abellanosa, Inorganics Supervisor

May 8, 1998
Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No 1614)

Stlclcs

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
With Automation in Mind

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

EPA Method 7470
STLC Mercury
MS/MSD Recoveries

Attention:	Ms. Nissa L. Nack Earth Systems Consultants 47853 Warm Springs Blvd. Fremont, CA 94539-7400	Date Sampled: Date Received: Date Analyzed: Invoice #:	Apr 30, 1998 May 1, 1998 May 8, 1998 9454MAY98
Project ID:	NFE-3695-04	Project Name:	Almaden & 85
Client ID:	MS/MSD	LAB ID:	9454-001A
Matrix:	Leachate		

Units : (mg/l)

Element	Sample Conc.	Spike Conc.	MS	MS % Recovery	MSD	MSD % Recovery	% RSD
Mercury (Hg)	0.00650	0.00500	0.0111	92.0%	0.0112	94.0%	2.2%

ppm = parts per million = mg/l = milligram per liter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit.

Lorrera Abellanosa

L. Abellanosa, Inorganics Supervisor

May 8, 1998

Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

(Certification No. 1614)

Stlcms

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

9454

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Test Requested	P.O. #
NFE-3695-04	Almaden & 85		NFE-3695-04
Sampler (Signature)	Nissa L. Nack		Lab Sparger
			Turn Around Time Normal 5-day

No.	Date	Time	Sample Description	STLC Mercury							Remarks
A1-B	4/30/98	206	Soil - 4" Brass liner	/							

Relinquished By:	Date:	Time:	Received By:	Relinquished By:	Date:	Time:	Received by:
Nissa L. Nack	4/30/98	250	- for mail by UPS	-	5/1/98	10:10	[signature]
Relinquished By:	Date:	Time:	Received By:	Relinquished By:	Date:	Time:	Received By:

Remarks:

Report To: Nissa L. Nack

Earth Systems Consultants
Northern California
47853 Warm Springs Blvd.
Fremont, CA. 94539-7400
Phone (510) 353-0320
Fax (510) 353-0344

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APPENDIX K

NOP RESPONSE LETTERS

96-011

Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 265-2600
FACSIMILE (408) 266-0271

AN AFFIRMATIVE ACTION EMPLOYER

July 23, 1997

Ms. Julie Caporgno
Planning Department
City of San Jose
801 North First Street, Room 400
San Jose, CA 95110-1795

Dear Ms. Caporgno:

Subject: Notice of Preparation of a Draft Environmental Impact Report for Almaden/Chynoweth Project

The Santa Clara Valley Water District (District) has reviewed the subject document and has the following comments.

The District recently released for public review a Draft Environmental Impact Report (DEIR) for the Guadalupe River Flood Control Project between Highway 280 and Blossom Hill Road. A significant portion of the site north of the future Chynoweth Avenue has been identified for project mitigation purposes including mitigation for impacts to the District's percolation ponds resulting from the construction of Chynoweth Avenue. District staff discussed this use with the developer several years ago and with City staff during the 1995 annual general plan review. Our review of the general development plan in 1996 also reflects the need for a portion of this development site.

The DEIR should discuss the interface of the flood control project with the proposed development. We encourage the developer to work with the District toward resolution of the District's need for property for project mitigation purposes prior to the procurement of entitlements and development approvals to minimize project costs to the community.

Other issues of District concern have been identified in the Notice of Preparation for discussion in the DEIR.

I can be reached at (408) 265-2607, extension 2253.

Sincerely,

Sue A Tippets

Sue A. Tippets, P.E.
Supervising Engineer
Community Projects Review Unit

RECEIVED
JUL 25 1997
CITY OF SAN JOSE
PLANNING DEPARTMENT

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recycled pap

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

July 21, 1997

SCL-085-6.20
SCH: 97062100
SCL085102

Ms. Julie E. Caporgno
City of San Jose
801 North First Street
San Jose, CA 95110-1795

RECEIVED
JUL 24 1997
CITY OF SAN JOSE
PLANNING DEPARTMENT

Dear Ms. Caporgno:

Re: Almaden Chynoweth Project

Thank you for including the California State Department of Transportation (Caltrans) in the early stages of the environmental review process. We have reviewed the above referenced application and forward the following comments:

1. We recommend that a complete traffic study be conducted for this project, to determine impacts on SR85 and all significantly affected streets, crossroads, and controlling intersections. Traffic impacts should be analyzed in terms of:

   a. Trip generation, distribution and assignment. The methodologies used in compiling the information should be explained. Data needs to be current.

   b. Average Daily Traffic (ADT), and AM ad PM peak hour volumes for SR85 and all other significantly affected streets and roadways, including crossroads and controlling intersections, for existing and future traffic.

2. Any work or traffic control done within State right-of-way will require an encroachment permit. To apply for a Caltrans permit, the applicant should submit a completed application, environmental documentation and five sets of plans to the following address:

   G. J. Battaglini, District Office Chief
   Caltrans, District 4
   Office of Permits
   P.O. Box 23660
   Oakland, CA 94623-0660

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96-011

We appreciate the opportunity to work with you on this project. Should you require additional information or have any questions regarding this letter, please call James S. L. Jung of my staff at (510) 286-5725.

Sincerely,

HARRY Y. YAHATA
District Director

By: Phillip Badal

PHILLIP BADAL
District Branch Chief
IGR/CEQA

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SANTA CLARA
Valley Transportation Authority

July 18, 1997

City of San Jose
Department of Planning and Building
801 North First Street
San Jose, CA 95110

Attention: Julie E. Corporgno

Subject: Almaden / Chynoweth Project - Notice of Preparation for Draft EIR

Dear Ms. Corporgno:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the Notice of Preparation (NOP) for a Draft EIR on the project referenced above for rezoning to allow development of a maximum of 350,000 square feet of commercial space or up to a maximum of 400 residential units or any equivalent combination of commercial and residential uses conforming to the City's Level of Service Policy. The project site is about 43.5 acres and is located at the northeastern corner of State Route 85 and Almaden Expressway. VTA comments follow, and are separated into *Transit Service* and *Congestion Management Program* issues to reflect our dual role in reviewing the project.

Transit Service

VTA maintains a northbound bus stop on Almaden Expressway north of Chynoweth Avenue. The bus stop is located just north of the proposed project and is served by *Line 61*. The bus stop is also provided with a shelter for passenger convenience.

Because of the proximity of the project to both bus and light rail transit service, we request that a separate section entitled *Transit Service* be added to the Environmental Setting and Mitigation Measures chapter of the Draft EIR. The potential impacts to transit of proposed mitigation on intersection geometrics should be considered in this analysis. This section should also include an analysis of how the project minimizes pedestrian barriers to transit and encourages transit usage in order to reduce potential vehicle trips.

The Chynoweth Avenue Bridge is a particularly important aspect of the project in terms of providing access to transit. The NOP indicates that only the *bridge connection* and not the bridge design will be evaluated in the Draft EIR. We think it is important that the Draft EIR

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3331 North First Street · San Jose, CA 95134-1906 · Administration 408.321.5555 · Customer Service 408.321.2300

evaluate bicycle and pedestrian connections across the bridge even if specific design plans are not completed. In addition, we would like an opportunity to review the bridge design when it is available.

Congestion Management Program

If the rezoning to allow development of commercial and/or residential uses leads to a General Plan Amendment that allows development as a right, the City of San Jose is required to submit a *Transportation Impact Analysis (TIA)* to VTA's Congestion Management Program (CMP) at least 15 days before the project is approved by the Planning Commission or City Council, as appropriate.

CMP statutes require that a local jurisdiction use a computer model consistent with the designated CMA's transportation model when determining transportation impacts of land use decisions on the CMP network. Therefore, the *TIA* for the Draft EIR should use trip distribution standards and land use projections consistent with the CMP model (maintained by the Center for Urban Analysis) since the Draft EIR will address transportation impacts on the CMP's designated roadway, transit, and bicycle networks.

Specific CMP facilities that should be included in the *TIA* include: State Route 85, Almaden Expressway, and Blossom Hill Road. Because of the proposed bridge across the Guadalupe River, there also may be impacts to Santa Teresa Boulevard and State Route 87.

Thank you for the opportunity to review this project. If you have any questions, please call Roy Molseed of my staff at (408) 321-5784.

Sincerely,

Thomas Rountree
Environmental Program Manager

TDR:RM:kh

cc: Ron Conn, City of San Jose Public Works

RECEIVED
JUL 22 1997
CITY OF SAN JOSE
PLANNING DEPARTMENT

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STATE OF CALIFORNIA - THE RESOURCES AGENCY

PETE WILSON, *Governor*

DEPARTMENT OF FISH AND GAME
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

July 29, 1997
FAXED 7.30.97

RECEIVED
AUG 05 '97
CITY OF SAN JOSE
PLANNING DEPARTMENT

Ms. Julie Caporgno
City of San Jose
City Hall Annex Room 400
801 North First Street
San Jose, California 95110-1795

Dear Ms. Caporgno:

Almaden/Chynoweth Project
Notice of Preparation of Draft Environmental Impact Report
SCH # 97062100, Santa Clara County

Department of Fish and Game personnel have reviewed the Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the Almaden/Chynoweth project, located in south San Jose. The project would allow the rezoning of 43.5 acres, currently zoned for agriculture, to zoning for commercial and/or residential uses. We believe the following issues need to be addressed in the DEIR.

Wildlife species that are present or dependant upon potentially impacted habitats should be identified in the DEIR. Particular attention needs to be paid to State- and Federally-listed and candidate species, and unlisted species whose status is of regional concern. The California Natural Diversity Data Base should be consulted to identify sensitive species that have been documented in the area. Southern Santa Clara County contains a number of sites where serpentine soils and associated endemic plants occur, including coyote ceanothus (*Ceanothus ferrisae*), Mt. Hamilton thistle (*Cirsium campylon*), Santa Clara Valley dudleya (Dudleya setchellii), fragrant fritillary (*Fritillaria liliacea*), Metcalf Canyon jewelflower (*Streptanthus albidus ssp. albidus*), and uncommon jewelflower (*S. a. ssp. peramoenus*). Serpentine grasslands of southern Santa Clara County are also habitat of the threatened bay checkerspot butterfly (*Euphydryas editha bayensis*). Other sensitive species that are expected to occur in the vicinity include the, California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana aurora draytonii*), foothill yellow-legged frog (*Rana boylii*), western pond turtle (*Clemmys marmorata*),

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burrowing owl (*Speotyto cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Townsend's big-eared bat (*Plecotus townsendii*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis*), and a number of nesting raptors. Field surveys must be conducted by qualified biologists in appropriate seasons for identification of any sensitive species.

If impacts to the red-legged frog may occur, the U. S. Fish and Wildlife Service should be contacted to determine survey and avoidance or mitigation measures appropriate for this Federally-listed species.

If the project site contains suitable habitat for burrowing owls, this Department recommends that surveying for the owls be conducted over at least four consecutive evenings during the height of the nesting season, between April 15 and July 15, and over four evenings between December 1 and January 31 for winter residents. If burrowing owls are found during nesting season surveys, further survey work may be unnecessary. Details regarding recommended survey protocol may be obtained from this Department.

If impacts to burrowing owl habitat cannot be avoided, we recommend that a minimum of 6.5 acres of foraging habitat be preserved for each pair of owls or each unpaired bird impacted by the project. Where on-site mitigation cannot be provided, off-site replacement ratios, based on 6.5 acres impacted per pair of birds, are 1.5:1 when occupied habitat is being replaced by occupied habitat, 2:1 when occupied habitat is being replaced by habitat adjacent to occupied habitat, and 3:1 when occupied habitat is being replaced by unoccupied but suitable burrowing owl habitat. Deed restrictions need to be placed on identified mitigation lands to ensure permanent protection.

At least two enhanced or artificial burrow sites need to be provided for each burrow impacted. Final mitigation requirements will depend upon the number of pairs of birds or single birds that are found in the surveys. Relocation of burrowing owls from the project site without protection of compensatory habitat, or deferring habitat protection to later planning efforts is not adequate mitigation.

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Preconstruction surveys of suitable habitat should be required within 30 days of construction to preclude mortality of burrowing owls. For burrowing owls that are nesting on the property, or close enough to be impacted by the project, a buffer area of 75-meters surrounding the nest(s) needs to be flagged prior to any construction, and left undisturbed for the duration of the nesting season. Disturbance of nesting owls would be a violation of the Migratory Bird Treaty Act and the Fish and Game Code.

If California tiger salamanders are determined to be present, impacts to the breeding and estivation (upland) habitat should be avoided or minimized if feasible. If impacts cannot be avoided, loss of habitat should be compensated at a minimum, by protection of existing occupied habitat at a 1:1 ratio.

Impacts to all sensitive species and their habitats should be avoided. Sensitive habitat types (wetland, riparian, serpentine grassland) may exist within the proposed project area. These habitats should also be carefully evaluated with the goal of avoiding impacts.

It is the policy of this Department that a project should cause no net loss of either wetland acreage or wetland habitat value. We recommend impacts to creeks be avoided where possible. Impacts would include, but are not limited to, road crossings, culverts, channelization and rip rap. If improvements to creeks must be made for reasons of public health and safety, retention basins would be preferable to channelization of the entire stream. In areas which must be channelized, we recommend the channel be oversized in order to allow for vegetation along both banks. For riparian habitat, we recommend a minimum mitigation ratio of 3:1, based on creation of in-kind acreage of equal or better habitat value. Replacement of habitat acreage at a lower ratio may be appropriate if the replacement is completed prior to the destruction of the original habitat. Any revegetation plans should use native species, with seeds or cuttings collected on-site.

The Department recommends a minimum 100-foot buffer, measured outward from the top of each creekbank be established to protect the creeks and riparian vegetation, and to provide a

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travel corridor for wildlife. No roads, buildings, yards, or other development should be permitted within the buffer. Pedestrian trails should be located along the outside edge of the riparian vegetation.

The Department has direct jurisdiction under Fish and Game Code sections 1601-1603 in regard to any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any stream. We recommend early consultation since modification of the proposed project may be required to avoid impacts to fish and wildlife resources. Formal notification under Fish and Game Code Section 1603 should be made after all other permits and certifications have been obtained. Work cannot be initiated until a streambed alteration agreement is executed.

The U. S. Army Corps of Engineers also has jurisdiction over the discharge of fill to streams and wetlands under Section 404 of the Clean Water Act. We recommend that the Corps be contacted to determine if they have jurisdiction and if they require a permit.

The DEIR should discuss the amounts and effects of urban runoff and how these can be mitigated. Installation and maintenance of oil/grease separators should be required in the storm drain systems. Annual maintenance of the separators, as well as a sweeping program for parking lots should be required. Detention ponds should receive any runoff that may contain sediments, herbicides, fertilizers, or other chemicals that may be toxic to aquatic life. If these substances do reach creeks or streams, the project will be in violation of Section 5650 of the Fish and Game Code.

We recommend project applicants be required to offset development impacts by setting aside or acquiring an equal number of acres for permanent open space. The DEIR should include a map of adjacent properties showing any open space areas. Areas to be retained as open space on site should not be completely encircled by development as this decreases the value of the area for wildlife. We recommend that open space areas on and off site be connected to one another by corridors to permit wildlife passage between the areas.

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Specific measures to adequately mitigate unavoidable impacts, including cumulative ones, need to be incorporated into project design prior to certification of the EIR. A monitoring program, as required by Assembly Bill 3180, must ensure that mitigation measures are effective and must provide for corrective action if they are not effective.

We request that subsequent documents related to this project be submitted to this Department for our review. If you have any questions regarding these comments, please contact Ms. Martha Schauss, Associate Wildlife Biologist, at (408) 623-4989; or Mr. Carl Wilcox, Environmental Services Supervisor, at (707) 944-5525.

Sincerely,

Brian Hunter
Regional Manager
Region 3

cc: U. S. Fish and Wildlife Service
Sacramento

Ms. Jill Marshall
Region Water Quality Control Board
San Francisco

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A Separate Document

96 - 011

APPENDIX L

TRAFFIC LOS CALCULATIONS

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APPENDIX M

HYDROLOGY STUDY

96 - 011

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ALMADEN/CHYNOWETH DEVELOPMENT

Hydrology Study

Prepared for:
Arcadia Development Company

May 28, 1998

96 - 011

Schaaf & Wheeler

CONSULTING CIVIL ENGINEERS
100 N. Winchester Blvd., #200
Santa Clara, CA 95050
(408) 246-4848
FAX: 408-246-5624

~~98 - 027~~

ALMADEN/CHYNOWETH DEVELOPMENT

ARCADIA DEVELOPMENT COMPANY

HYDROLOGY STUDY

Introduction

The Almaden/Chynoweth project site is a 43.5 acre parcel in the City of San Jose, proposed for commercial and high density residential development. The proposed commercial development would include approximately 30.4 acres of the site. The residential development would include approximately 8.8 acres of the parcel. The site is located in the northeasterly quadrant of Almaden Expressway and State Route 85. Chynoweth Avenue forms a portion of the site's northwesterly boundary, and the Guadalupe River forms the northeasterly and easterly boundaries. The project site is shown in Figure 1.

Existing Flood Conditions

The effective City of San Jose FIRM (August 2, 1982) shows the project site located within Zone D. An area of possible but unknown flood risk. Most of the areas outside the 100-year flood plain are shown as Zone D due to the potential food risk due to levee failures. The current flood maps were prepared prior to the current FEMA levee policy and did not consider levee failures.

The existing flood insurance rate map flood plain for the project site is shown in Figure 2. The majority of the site is located above the estimated 100-year flood elevation for the Guadalupe River. A portion of the project site along the Guadalupe River extends within the stream channel and is within the Zone A, 100-year flood plain. The project site slopes toward the Guadalupe River. The average slope on the site is approximately 0.4 percent. The area of the site outside the Guadalupe River stream channel would not be subject to 100-year flooding for FEMA purposes.

The project site drains to the Guadalupe River. The Guadalupe River is a generally natural channel which has been partially improved for flood control purposes. The SCVWD and the Corps of Engineers (COE) are in the process of completing the flood control project for the Lower Guadalupe River which would provide 100-year design capacity from San Francisco Bay to Highway 280 in downtown San Jose. The project is currently scheduled for completion in 2000.

The existing Guadalupe River channel upstream of Highway 280 does not have 100-year design capacity. The area near West Virginia Street has flooded several times in the past 20 years, including 1995 and 1998. The estimated channel capacity in the channel reach near West Virginia Street is close to the estimated 10-year flood flow rate. Based on the flood insurance study information, the 100-year flood would overflow upstream of Capitol Expressway and Branham Lane and overflows would occur from lower Ross Creek and Canoas Creek due, in

part, to high water levels in the Guadalupe River. The SCVWD has proposed a flood control project for the Upper Guadalupe River to provide 100-year capacity. The projected time frame for the project is approximately 20 years.

Hydrology Methodology

The increase in impervious surfaces associated with project development would generally cause an increase in storm water runoff. The SCVWD has expressed concern that increased runoff from development on the project site may affect the existing flood conditions for flood plain areas downstream on the Guadalupe River.

The SCVWD's hydrology model was used to evaluate the potential impact of the proposed project development on the hydrology for the Guadalupe River. The SCVWD HEC-1 model includes the entire upper Guadalupe River. The project site is located in Subarea G, the local area adjacent to the Guadalupe River between Guadalupe Creek and Ross Creek. In the SCVWD design model, Subbasin G is included as an urbanized area. The SCVWD hydrology model develops separate runoff hydrographs for the pervious and impervious portions of each subarea and adds these hydrographs for the total subarea runoff hydrograph. For Subarea G, the areas were assumed to be developed with 53% impervious area and 47% pervious area.

The existing HEC-1 model uses a time interval of 30 minutes for calculation, which is sufficient for large watersheds with subareas of several square miles which have times of concentration greater than 90 minutes. For the smaller drainage area for the project site, the typical time of concentration is approximately 20 minutes, or less, and a smaller time interval was required. The project site runoff was modeled separately using a time interval of 5 minutes. The 30-minute rainfall pattern was divided into 5 minute intervals. Within the 30 minute interval of maximum rainfall, the rainfall was distributed to match the ratios of the 5- and 10- minute rainfall to the 30-minute rainfall from the San Jose Intensity-Duration-Frequency curve for a 100-year recurrence interval.

The subarea 5-minute interval model was calibrated for another project for an unurbanized condition to match the SCVWD 100-year peak flow regional regression equation. The calibration model assumed a Clark's unit hydrograph and SCS curve number loss rate function. The unit hydrograph assumed a storage coefficient based on a ratio of $R/(T_c+R)$ of 0.5 for the unurbanized condition. The calibrated peak flow rate was within 4 percent of the regression equation estimate for the 100-year flood.

For urbanized watersheds, the SCVWD model routes the runoff hydrograph through the storm drain system using the HEC-1 storage-discharge routing technique. The runoff hydrographs from the project site were not routed through storm drains systems. The site runoff was assumed to drain directly to the creek without routing through a storm drain storage relationship. Runoff which does not enter the storm drain system would flow overland to the channel with little or no ponding, unless the street grades are designed to promote ponding in the streets.

The existing and developed conditions runoff hydrographs for the project site were estimated using the SCS Curve Number (CN) methodology. The CN methodology includes model parameters to consider soil types and ground cover complexes which are not considered in the SCVWD procedure. The major difference in the procedures is the calculated loss rates for pervious areas. The loss rate represents the portion of rainfall which is assumed to infiltrate into the soil and does not runoff as surface flow. The SCVWD procedure assumes a uniform loss rate throughout the watershed and does not consider local variations in soil types and vegetation. The existing conditions on the project site are generally flat agricultural fields with deep clay-loam type soils and grass or crop type vegetation. This means that the potential losses to infiltration would be higher than for other areas with shallow soils and more clay type soils.

For the CN procedure, impervious areas were assumed to have a CN of 98 (maximum runoff). The crop land open space areas were assumed to have a CN of 85 (for Antecedent Moisture Condition II (AMC II). Lawn and open space areas after development were assumed to have a CN of 74 (AMC II). The AMC values were previously calibrated for the 10- and 100-year flood conditions to match the SCVWD design values for other natural watersheds. The calibrated AMC values were AMC II for the 10-year flood event, and AMC II½ for the 100-year flood. AMC II½ is half way between AMC II and AMC III. Based on the CN procedure, AMC II implies 1.4 to 2.1 inches of rainfall in the previous 5 days. AMC II implies more than 2.1 inches of rainfall in the previous 5 days. The 24 hour rainfall and storm pattern from the SCVWD procedure were used for the CN procedure.

Site Runoff

The existing condition and development condition runoff was estimated for the project site using the CN procedure. The local drainage area is 43.5 acres.

Table 1
Local Drainage Area Peak Flow Rates
CN Hydrology Procedure

Recurrence Interval	Existing Conditions Peak Flow (cfs)	Developed Conditions Peak Flow (cfs)
10 Year Storm	19	37
100 Year Storm	29	56

Based on the CN hydrology procedure, the 10-year peak runoff was estimated to be 19 cfs for existing conditions, and 37 cfs for development conditions, an increase of 18 cfs, or 95 percent. The 100-year peak runoff was estimated to be 29 cfs for existing conditions, and 56 cfs for development conditions, an increase of 27 cfs, or 93 percent. The 10- and 100-year runoff hydrographs are show in Figures 3 and 4.

The increased peak runoff from the project site are due to both the increased impervious area on the site and the improved storm drain collection system on the site after development. For existing conditions, runoff would flow overland to the existing storm drain, or overland directly to the river. After development, the improved storm drain system would convey the runoff to the river faster than the existing overland flow. Since the runoff would reach the river in a shorter period of time, the flow rate would be higher after development even if there were no change in impervious area.

Guadalupe River Flow Rates

Because the SCVWD has expressed concern that increased runoff from the project site may affect the flood flows and flood elevations in the Guadalupe River. The existing and developed condition runoff hydrographs were each added to the SCVWD design hydrology model for the 10- and 100-year flood events to evaluate the potential increases in the Guadalupe River. The results of the model for the Guadalupe River upstream of Ross Creek are shown below for existing conditions and developed conditions.

Table 2
Guadalupe River Peak Flow Rates
SCVWD Design Hydrology Procedure

Recurrence Interval	Existing Conditions Peak Flow (cfs)	Developed Conditions Peak Flow (cfs)
10 Year Storm	5229	5228
100 Year Storm	11775	11773

Based on the flood hydrographs from the SCVWD design hydrology for the 10- and 100-year flood events, the proposed development would have no impact on the peak flow in the Guadalupe River at the site. This is due to the difference in timing between the local site drainage and the flood flows in the Guadalupe River.

The peak runoff from the site occurs approximately 30 minutes after the peak rainfall for existing conditions, and approximately 15 minutes for the project conditions. The peak flow in the Guadalupe River occurs approximately 90 minutes after the peak rainfall. Due to the difference in timing, the peak runoff from the site enters the river before the peak flow in the Guadalupe River. Based on the rainfall pattern used in the SCVWD design hydrology, at the time of the peak flow in the Guadalupe River, the runoff from the site would be less after development than for existing conditions. This rainfall pattern was also used for the COE Guadalupe River Project, and the FEMA Flood Insurance Study.

The time of the Guadalupe River peak flow is shown on the 10- and 100-year runoff hydrographs from the site. For both events, the peak in the river occurs in the late portion of the hydrograph

when the development condition hydrograph is at or below the existing condition hydrograph. The site contribution to the Guadalupe River peak is approximately 2 cfs lower after development. However, since the 100-year peak flow rate is approximately 11,800 cfs, the potential change would not be significant.

The SCVWD design hydrology model was also used to route the additional flow from the site development downstream to the area near West Virginia Street 280 where the Guadalupe River has flooded several times in recent years. This analysis was included to evaluate whether the increased runoff from the project site before the peak flow from the upper Guadalupe River may add to other local inflows from other areas downstream of the site to increase the peak flows in the channel.

Routing the Guadalupe River hydrograph downstream with the development condition runoff hydrograph from the site shows no change in the flood peak downstream. Therefore the increased runoff from the site does not add to other local inflows downstream of the site to increase the peak flow in the river. There is no increase in the estimated Guadalupe River flows for either the 10-year or the 100-year flood events.

Storm Drainage

The SCVWD has raised the concern that the existing 27-inch and 30-inch storm drains may not be adequate for the development. Based on the existing pipe slopes, the storm drains have a combined capacity of approximately 40 cfs. The existing 27-inch storm drain has an estimated capacity of 20 cfs. The 36-inch outfall for the 30-inch storm drain system has a capacity of 47 cfs, of which approximately 27 cfs may be used by the 30-inch storm drain which serves other development areas south of Route 85. This leaves approximately 20 cfs in the 36-inch outfall available for the project site. The two storm drain systems have a combined available capacity of approximately 40 cfs. The estimated 10-year runoff is 37 cfs. Therefore, the existing storm drains should be adequate for the proposed development. However, the contribution and design flow rates in each storm drain will depend on the final project layout and grading and will require a detailed evaluation of the individual storm drains.

The runoff hydrographs for the project site assumed that the time of concentration would be the same for both the 10- and 100-year hydrographs, and that no significant ponding would occur during the 100-year event. This assumes that the storm drain excess during the 100-year flood event could flow overland along the streets to the Guadalupe River. Based on the estimated 100-year runoff hydrograph, if the storm drain excess during the 100-year flood were ponded on the site, the ponded volume could drain through the storm drain system to the Guadalupe River before the peak flow on the Guadalupe River. Therefore, even if the storm drain excess ponds on the site, the peak flow in the Guadalupe River would not be increased.

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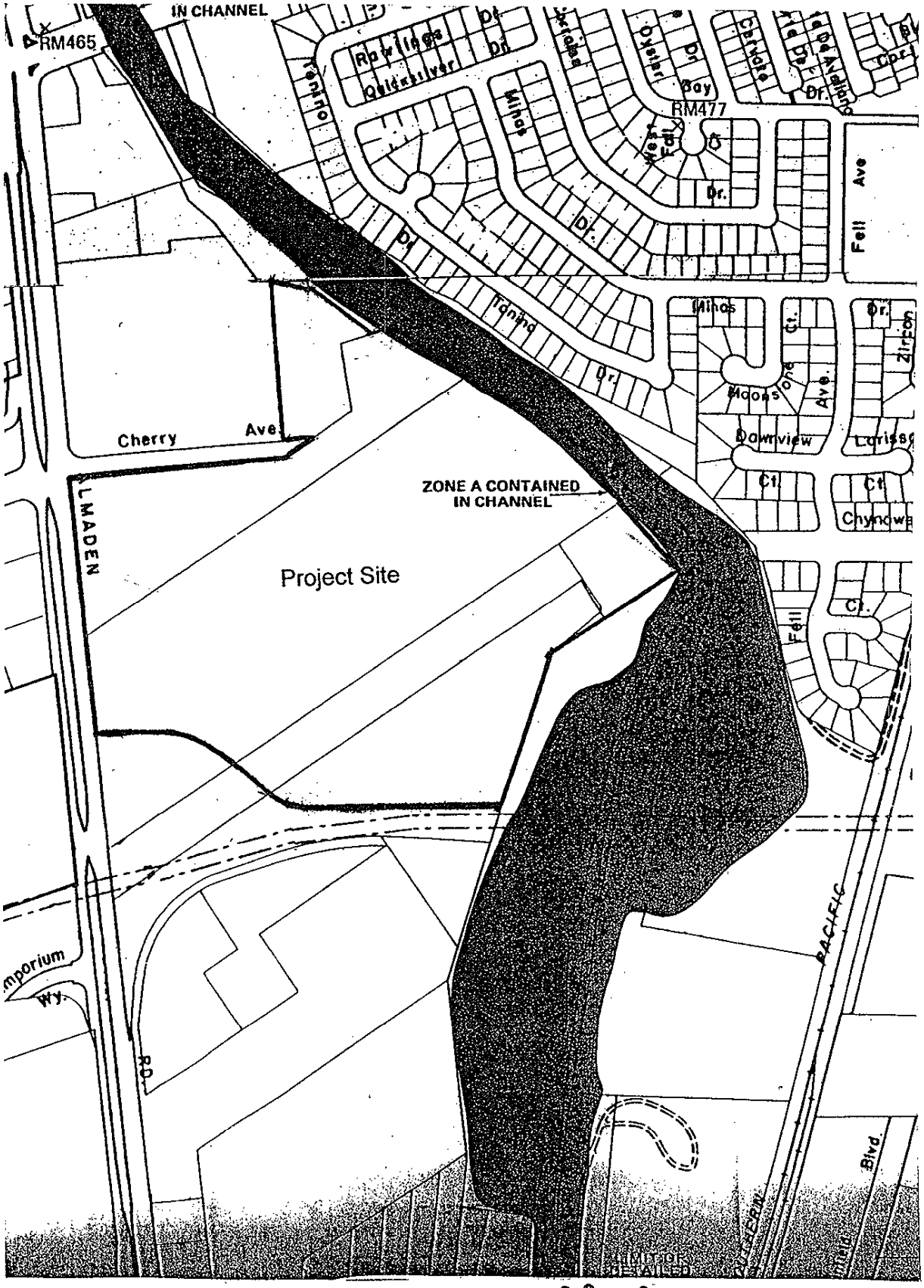
96-011

Figure 1. Aerial Photograph

July, 1996

Figure 1



96 - 011

Figure 2. FEMA 100-yr Floodplain

~~98 - 027~~

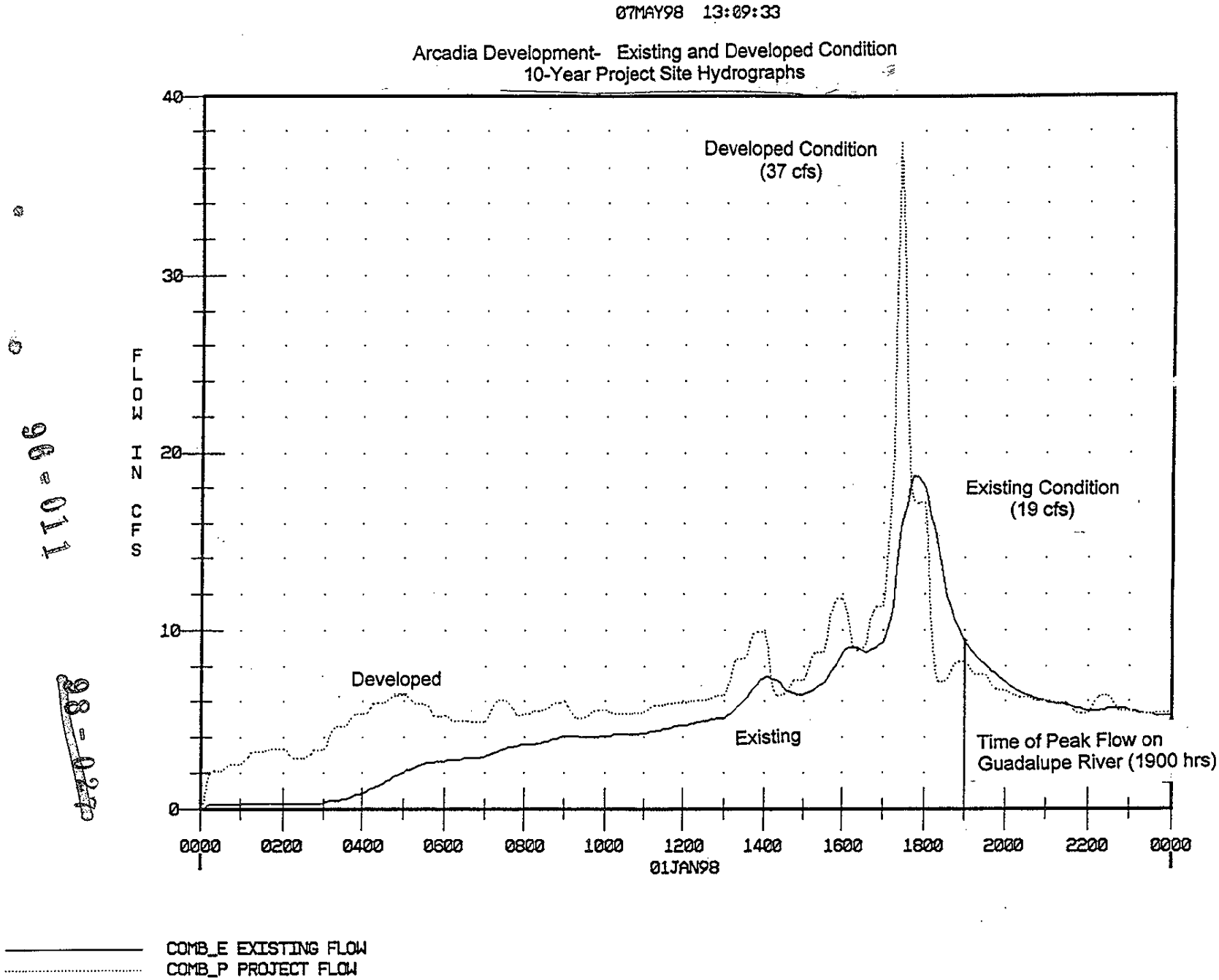


Figure 3. Arcadia Development- Existing and Developed Condition 10-Year Project Site Hydrographs

96-011
98-020

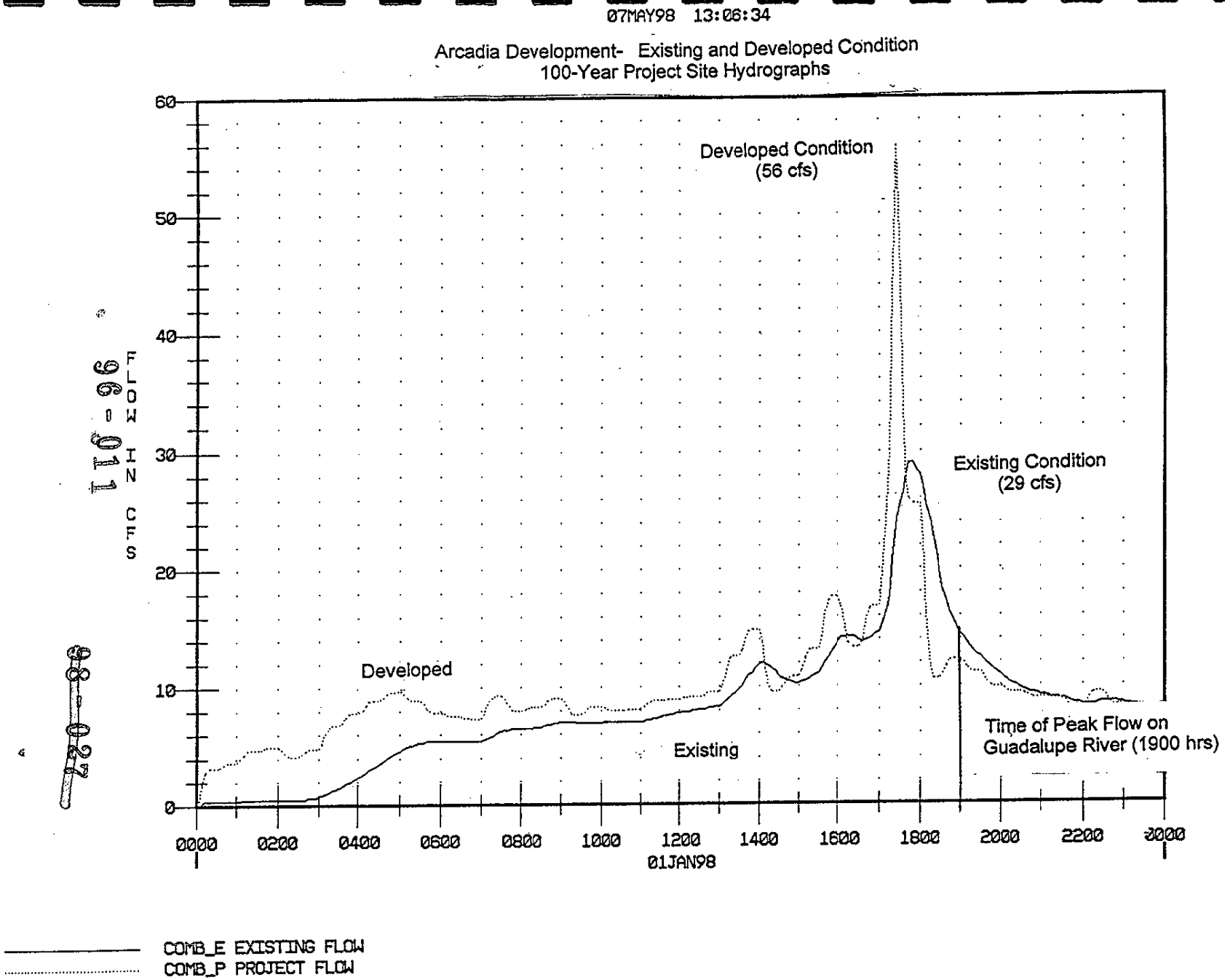


Figure 4. Arcadia Development- Existing and Developed Condition 100-Year Project Site Hydrographs

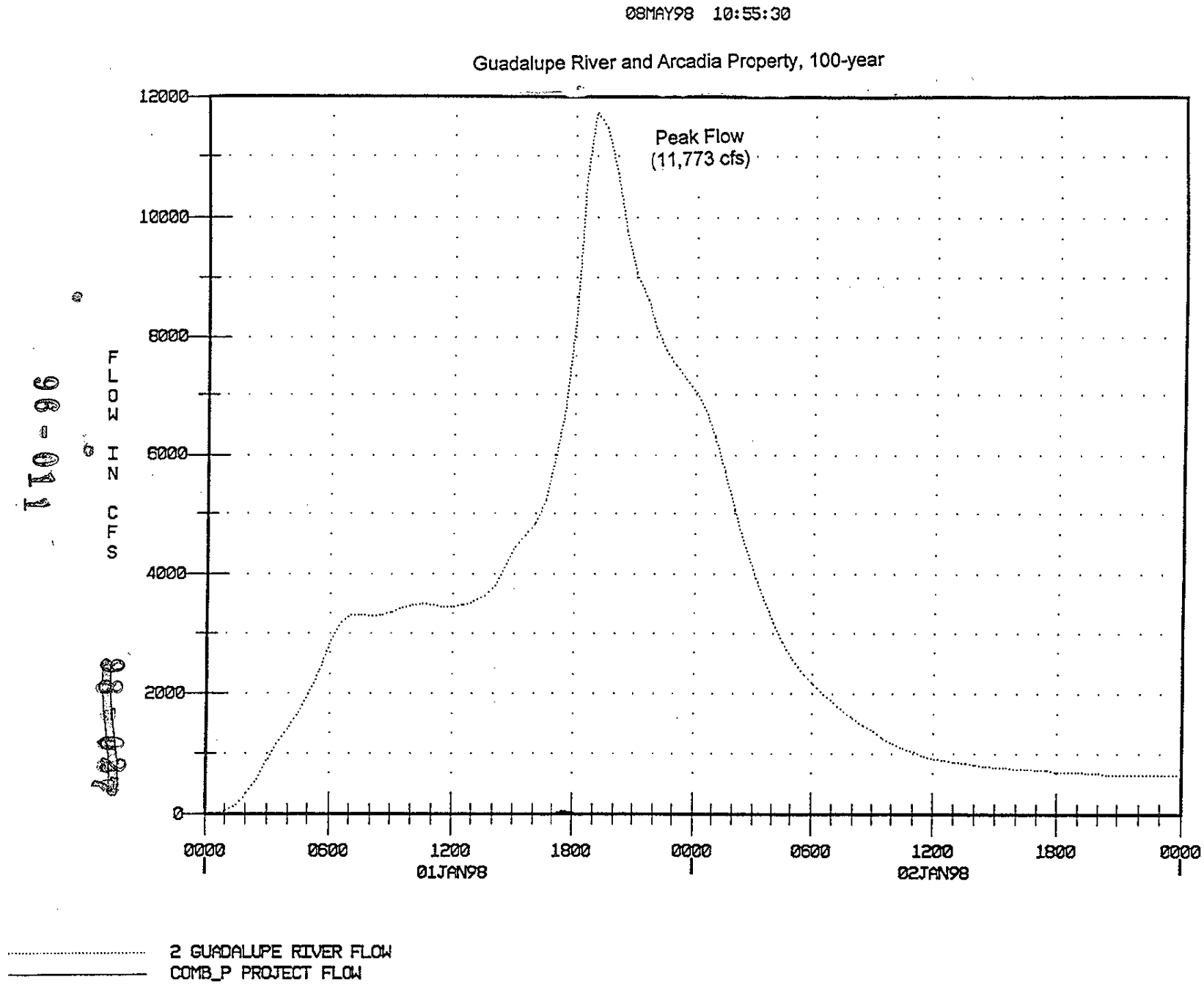


Figure 5. Guadalupe River and Arcadia Property, 100 Year Storm Event

A Separate Document

~~98-027~~

96-011

APPENDIX N

HYDROLOGY STUDY TECHNICAL APPENDIX

ENVIRONMENTAL IMPACT REPORT

Almaden / Chynoweth Project

PDC 96-02-011

Traffic Level of Service Calculations

March 3, 1998

CITY OF SAN JOSE

96-011

TRAFFIC LOS CALCULATIONS APPENDIX LIST

A copy of the following consultants' report calculations, which were prepared for the Almaden/Chynoweth Project, are included in this Traffic Level of Service Calculations Appendix, a separate document. Copies are on file at the City of San Jose Department of Planning, Building and Code Enforcement. In accordance with the State CEQA Guidelines, these calculations are incorporated by reference and not reproduced in the body of the EIR in order to reduce the size and number of pages.

APPENDIX

L **Level of Service Calculations, Traffic Analysis Report, Almaden-Chynoweth, Commercial Retail and Residential, City of San Jose**, Pang Engineers, Inc., October 23, 1996

and

Level of Service Calculations, Freeway Segments/Cumulative Traffic Letter Report, Arcadia-Malech Property, Almaden Expressway at Chynoweth Avenue, City of San Jose, Pang Engineers, Inc., September 15, 1997

APPENDIX L

TRAFFIC LOS CALCULATIONS

96 - 011

Existing Level of Service

96 - 011

(1A)

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & BRANHAM

MESSAGE: CMP Intersection
Consultant Count

PEAK HOUR: AM

COUNT DATE: 1/31/95

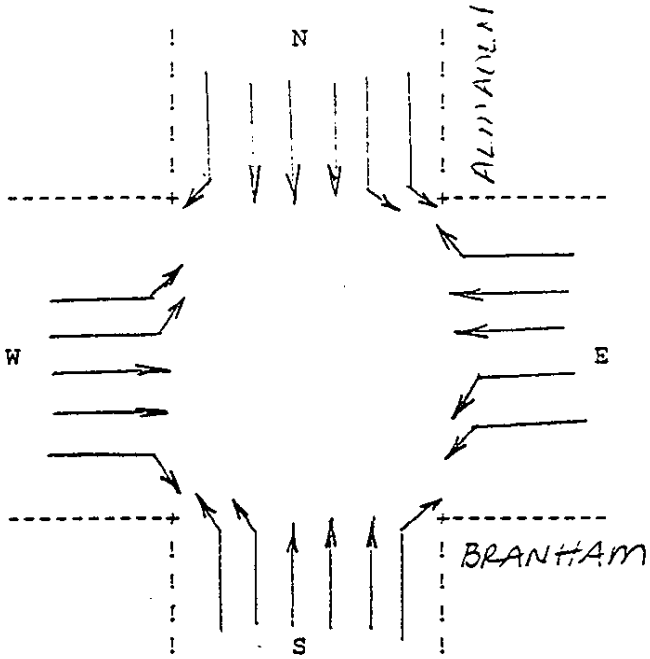
ANAL. DATE: 3/14/96

GROWTH FACTOR % : 0

PLAN AREA: CP

MAP PAGE: 114

ANAL. INIT.: CL



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9.5
E-W	51	8.5

CYCLE LENGTH = 180

LOST TIME = .100

G								
Y								
R								

LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	203010	131	739	51	0	0	0	0	0	0	131	739	51
E	202010	474	434	366	0	0	0	0	0	0	474	434	366
S	203010	135	2767	284	0	0	0	0	0	0	135	2767	284
W	202010	305	196	61	0	0	0	0	0	0	305	196	61

LEG	# LANES	CRIT. MOVE L S	T	R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0	0	0	0	0	131	3015	0.043	0.026	0.069	208
E	2	0 0	2	0	0	0	434	3560	0.122	0.026	0.148	527
S	3	0 0	3	0	0	0	2767	5340	0.518	0.039	0.557	2974
W	2	2 0	0	0	0	0	305	3015	0.101	0.026	0.127	383
								LT =	0.100			
TOTALS	9						3637		0.884			4092

1 - 0.884 = 0.116 / 9 = 0.013

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .889 LEVEL OF SERVICE = D

96-017

(1B)

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & BRANHAM LN

MESSAGE: CMP Intersection
CMP Count

PEAK HOUR: PM

COUNT DATE: 6/95

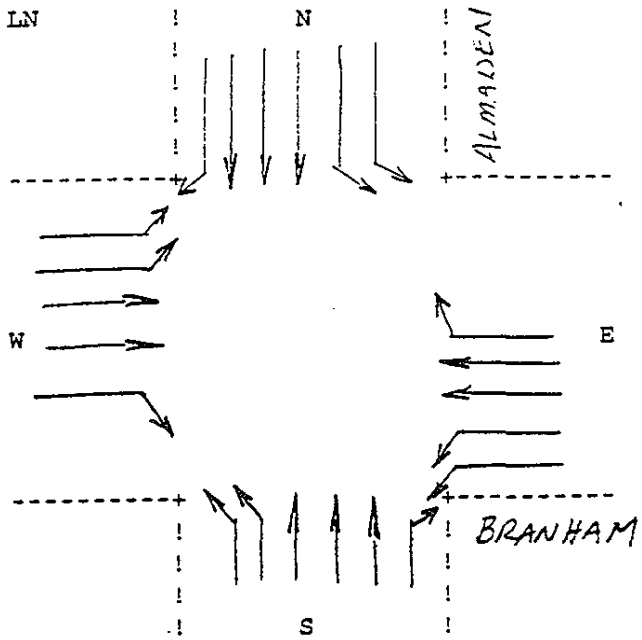
ANAL. DATE: 3/14/96

GROWTH FACTOR % : 0

PLAN AREA: CP

MAP PAGE: 114

ANAL. INIT.: CL

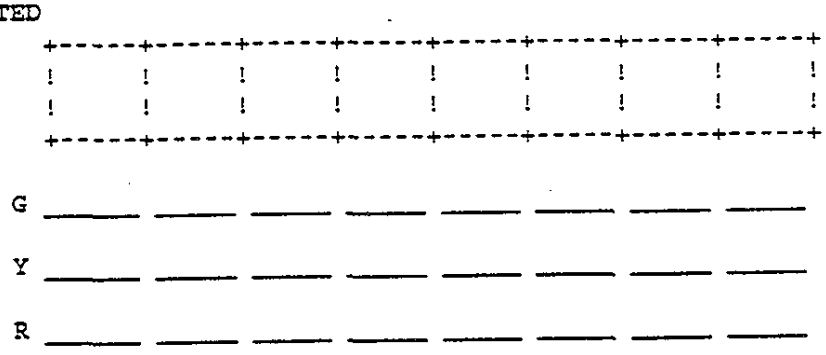


SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	111	9.5
E-W	51	8.5

CYCLE LENGTH = 180

LOST TIME = .100



LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	203010	288	1924	371	0	0	0	0	0	0	288	1924	371
E	202010	359	417	124	0	0	0	0	0	0	359	417	124
S	203010	360	814	442	0	0	0	0	0	0	360	814	442
W	202010	153	539	149	0	0	0	0	0	0	153	539	149

LEG	# LANES	CRIT. MOVE L S T	R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3	0 0 0	1924	5340	0.360	0.050	0.410	2189
E	2	2 0 0	0 0 0	359	3015	0.119	0.034	0.153	461
S	2	2 0 0	0 0 0	360	3015	0.119	0.034	0.153	461
W	2	0 0 2	0 0 0	539	3560	0.151	0.034	0.185	659
					LT =	0.100			
TOTALS	9			3182		0.849			3770

1 - 0.849 = 0.151 / 9 = 0.017

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .844 LEVEL OF SERVICE = D

5/2/88 LV -- 11/7/91 BA

96-017

2A

LEVEL OF SERVICE ANALYSIS

CATION: ALMADEN EXP & CHERRY/CHYNOWETH

ISSAGE: County Intersection
Consultant Count

EAK HOUR: AM

OUNT DATE: 1/31/95

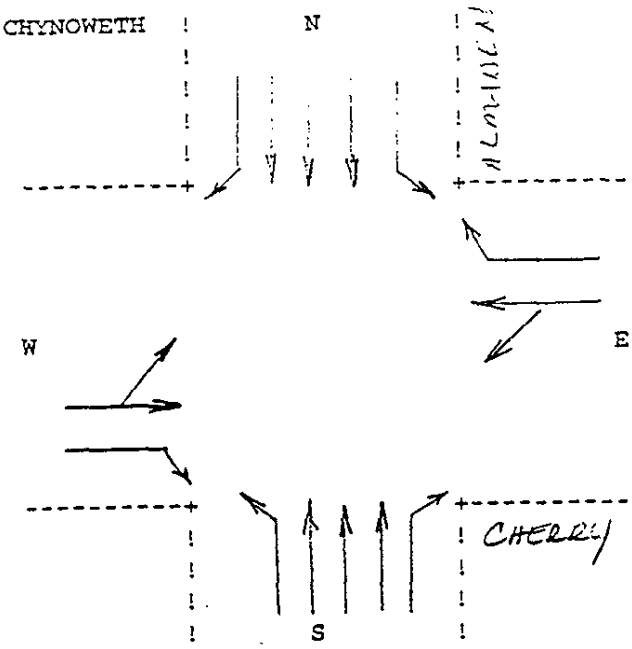
IAL. DATE: 3/14/96

ROWTH FACTOR % : 0

AN AREA: CP

AP PAGE: 128

NAL. INIT.:

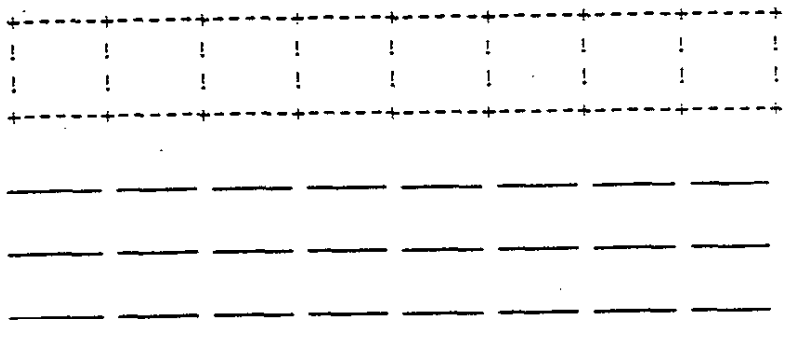


IGNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
-S	115	8
-W	25	4

YCLE LENGTH = 152

OST TIME = .079



LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	103010	57	1178	53	0	0	0	0	0	0	57	1178	53
E	010010	65	7	18	0	0	0	0	0	0	65	7	18
S	102100	346	2530	0	0	0	0	0	0	0	346	2530	0
W	010010	153	16	473	0	0	0	0	0	0	153	16	473

LEG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1	0	0	0	0	57	1675	0.034	0.045	0.079	132
E	1	0	1	0	0	0	72	1685	0.043	0.045	0.088	148
S	3	0	0	2	1	0	2530	5340	0.474	0.135	0.609	3252
W	1	0	1	0	0	0	169	1685	0.100	0.045	0.145	244
								LT =	0.079			
TOTALS	6						2828		0.730			3776

1 - 0.730 = 0.270 / 6 = 0.045

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .749 LEVEL OF SERVICE = C

96-011

(2B)

LEVEL OF SERVICE ANALYSIS

ATION: ALMADEN EXP & CHERRY/CHYNOWETH

SSAGE: County Intersection
Consultant Count

AK HOUR: PM

JNT DATE: 1/31/95

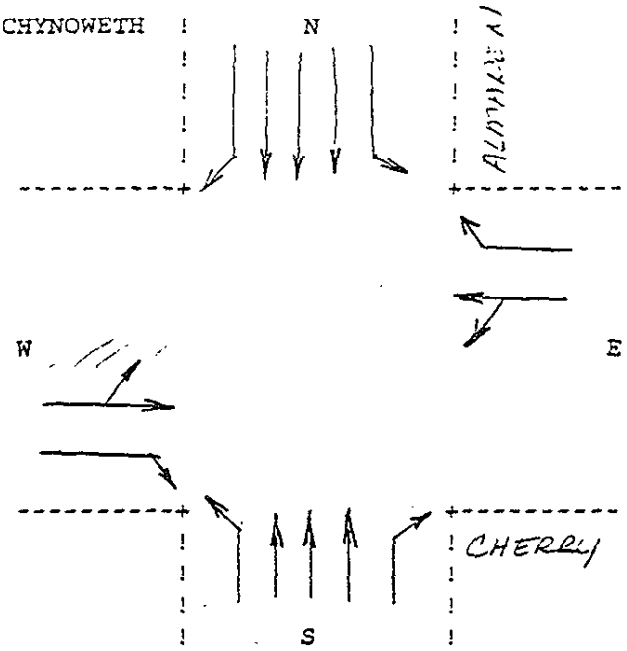
AL. DATE: 3/14/96

OWTH FACTOR % : 0

AN AREA: CP

P PAGE: 128

AL. INIT.: CL



GNAL TYPE: FULLY ACTUATED

G	GREEN	YEL+RED
S	115	8
W	25	4

YCLE LENGTH = 152

OST TIME = .079

G _____ _____ _____ _____ _____ _____ _____ _____

Y _____ _____ _____ _____ _____ _____ _____ _____

R _____ _____ _____ _____ _____ _____ _____ _____

EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	103010	135	2288	166	0	0	0	0	0	0	135	2288	166
E	010010	140	31	24	0	0	0	0	0	0	140	31	24
S	102100	414	1560	14	0	0	0	0	0	0	414	1560	14
W	010010	106	22	477	0	0	0	0	0	0	106	22	477

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2288	5340	0.428	0.035	0.463	2472
E	1	0 1 0 0 0 0	171	1694	0.101	0.012	0.113	191
S	1	1 0 0 0 0 0	414	1675	0.247	0.012	0.259	434
W	1	0 1 0 0 0 0	128	1693	0.076	0.012	0.088	149
				LT =	0.079			
OTALS	6		3001		0.931			3246

1 - 0.931 = 0.069 / 6 = 0.012

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .925 LEVEL OF SERVICE = E

96-011

(3A)

LEVEL OF SERVICE ANALYSIS

ATION: 85 & ALMADEN EXP(N)

SSAGE: CMP Intersection
Consultant Count

AK HOUR: AM

NT DATE: 1/31/95

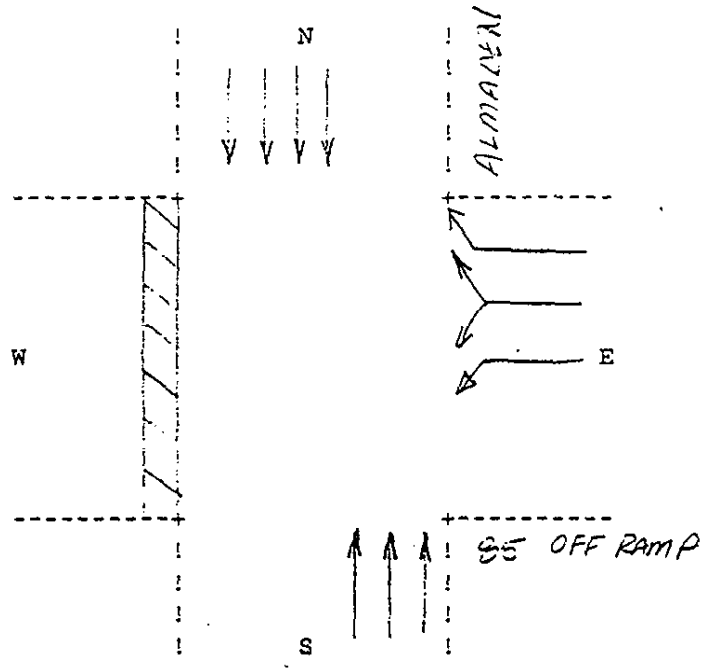
AL. DATE: 3/14/96

OWTH FACTOR % : 0

AN AREA: CP

P PAGE: 128

AL. INIT.: CL



GNAL TYPE: FULLY ACTUATED

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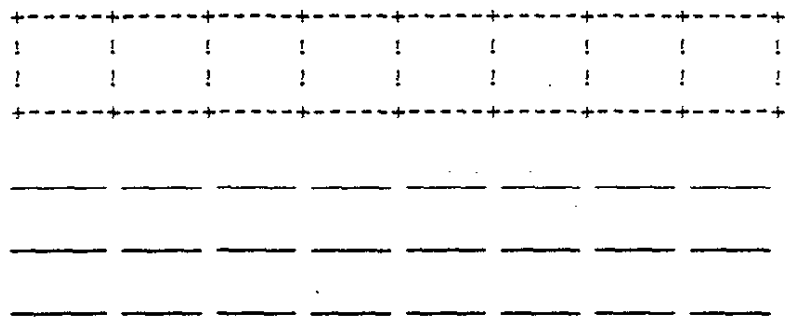
S	129	6
W	40	5

YCLE LENGTH = 180

OST TIME = .061



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	004000	0	1888	0	0	0	0	0	0	0	0	1888	0
E	100011	146	0	161	0	0	0	0	0	0	146	0	161
S	003000	0	2846	713	0	0	0	0	0	0	0	2846	713
W	000000	0	0	0	0	0	0	0	0	0	0	0	0

EG	# LANES	CRIT. MOVE L S	T	R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
E	2	1 0	0	0	0	1	307	3015	0.102	0.122	0.224	675
S	3	0 0	3	0	0	0	2846	5340	0.533	0.182	0.715	3818
W	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
								LT =	0.061			
TOTALS	5						3153		0.696			4493

1 - 0.696 = 0.304 / 5 = 0.061

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V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .702 LEVEL OF SERVICE = C

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96-011

(38)

LEVEL OF SERVICE ANALYSIS

ATION: 85 & ALMADEN(N)

SSAGE: CMP Intersection
CMP Count

AK HOUR: PM

JNT DATE: 6/95

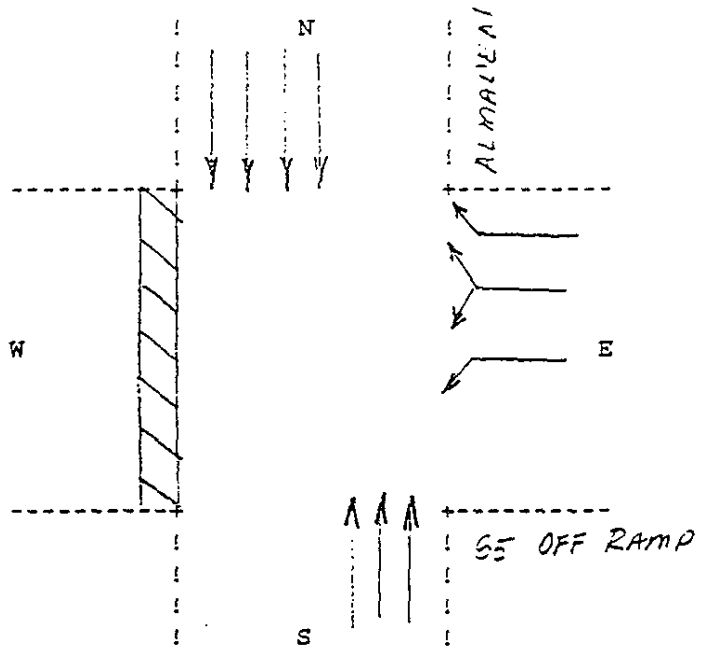
AL. DATE: 3/14/96

OWTH FACTOR % : 0

AN AREA: CP

AP PAGE: 128

AL. INIT.: CL

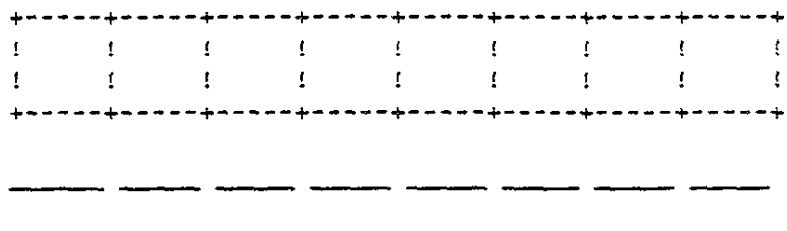


GNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
-S	129	6
-W	40	5

YCLE LENGTH = 180

OST TIME = .061



LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	004000	0	3346	0	0	0	0	0	0	0	0	3346	0
E	100011	681	0	377	0	0	0	0	0	0	681	0	377
S	003000	0	1840	0	0	0	0	0	0	0	0	1840	0
W	000000	0	0	0	0	0	0	0	0	0	0	0	0

LEG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0	4	0	0	0	3346	7120	0.470	0.079	0.549	3909
E	2	1 0	0	0	0	1	1058	3015	0.351	0.039	0.390	1176
S	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
W	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
								LT =	0.061			
TOTALS	6						4404		0.882			5085

1 - 0.882 = 0.118 / 6 = 0.020

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .866 LEVEL OF SERVICE = D

96-011

(4A)

LEVEL OF SERVICE ANALYSIS

ATION: 85 & ALMADEN EXP(S)

SAGE: CMP Intersection
Consultant Count

AK HOUR: AM

UNT DATE: 5/10/95

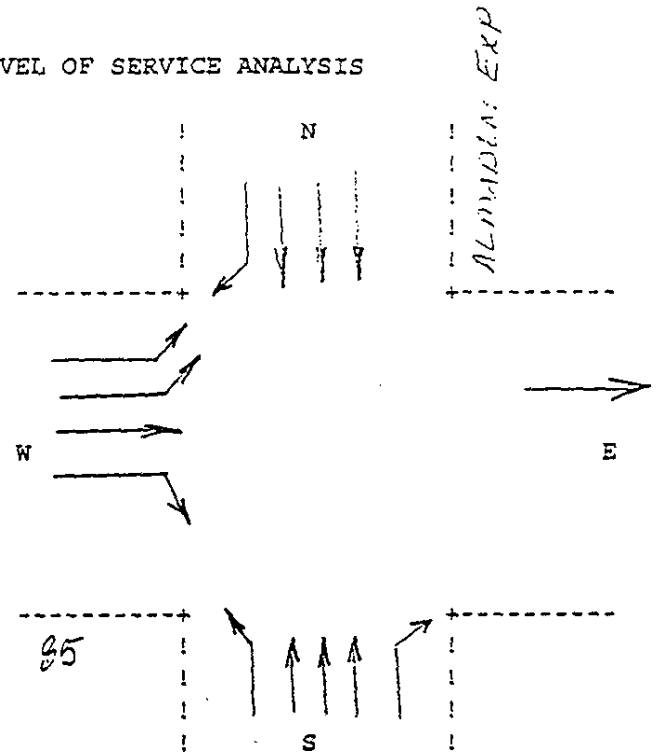
AL. DATE: 3/14/96

OWTH FACTOR % : 0

AN AREA:

P PAGE:

NAL. INIT.: CL

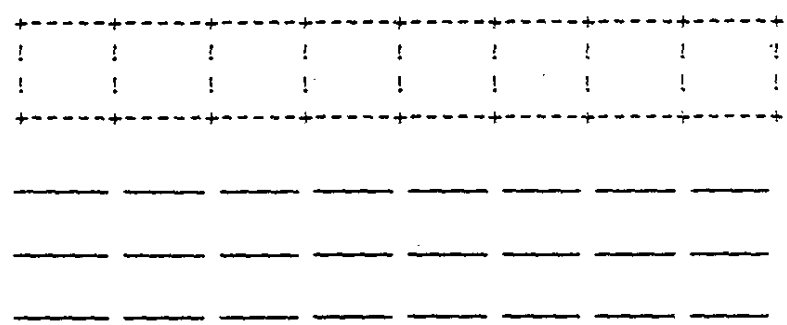


IGNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
-S	134.5	10
-W	31	9

YCLE LENGTH = 184.5

OST TIME = .103



LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	003010	0	1058	35	0	0	0	0	0	0	0	1058	35
E	000000	0	0	0	0	0	0	0	0	0	0	0	0
S	103010	9	3463	481	0	0	0	0	0	0	9	3463	481
W	201010	412	44	229	0	0	0	0	0	0	412	44	229

LEG	# LANES	CRIT. MOVE L S T	R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	0	0 0 0	0 0 0	0	0	0.000	0.000	0.000	0
E	0	0 0 0	0 0 0	0	0	0.000	0.000	0.000	0
S	3	0 0 3	0 0 0	3463	5340	0.649	0.067	0.716	3823
W	2	2 0 0	0 0 0	412	3015	0.137	0.044	0.181	546
					LT =	0.103			
TOTALS	5			3875		0.889			4369

1 - 0.889 = 0.111 / 5 = 0.022

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .887 LEVEL OF SERVICE = D

96-011

4B

LEVEL OF SERVICE ANALYSIS

'CATION: 85 & ALMADEN(S)

.SSAGE: CMP Intersection
CMP Count

.AK HOUR: PM

JNT DATE: 6/95

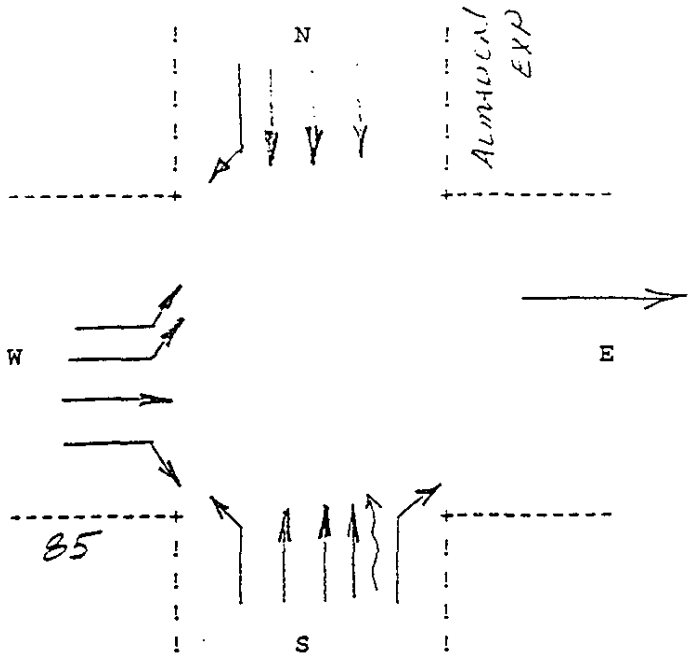
IAL. DATE: 3/14/96

OWTH FACTOR % : 0

'AN AREA:

.P PAGE:

AL. INIT.: CL

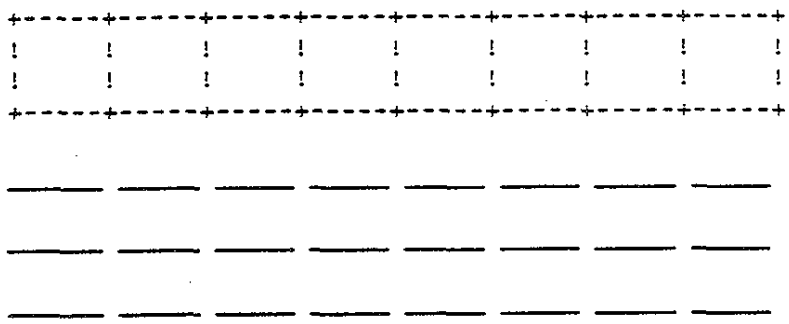


\ GNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
S	134.5	10
-W	31	9

'CLE LENGTH = 184.5

)ST TIME = .103



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	003010	0	2745	146	0	0	0	0	0	0	0	2745	146
E	000000	0	0	0	0	0	0	0	0	0	0	0	0
S	104010	30	1435	424	0	0	0	0	0	0	30	1435	424
W	201010	661	115	911	0	0	0	0	0	0	661	115	911

EG	# LANES	CRIT. MOVE L S T	R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3	0 0 0	2745	5340	0.514	0.073	0.587	3135
E	0	0 0 0	0 0 0	0	0	0.000	0.000	0.000	0
S	1	1 0 0	0 0 0	30	1675	0.018	0.024	0.042	70
W	2	2 0 0	0 0 0	661	3015	0.219	0.049	0.268	808
					LT =	0.103			
'OTALS	6			3436		0.854			4013

1 - 0.854 = 0.146 / 6 = 0.024

==========

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .856 LEVEL OF SERVICE = D

==========

'2/88 LV -- 11/7/91 BA

96-011

5A

LEVEL OF SERVICE ANALYSIS

TION: RT. 85 SB Off-Ramp & Almaden Plaza

AGE: Consultant Count

: HOUR: AM

NT DATE: 5/10/95

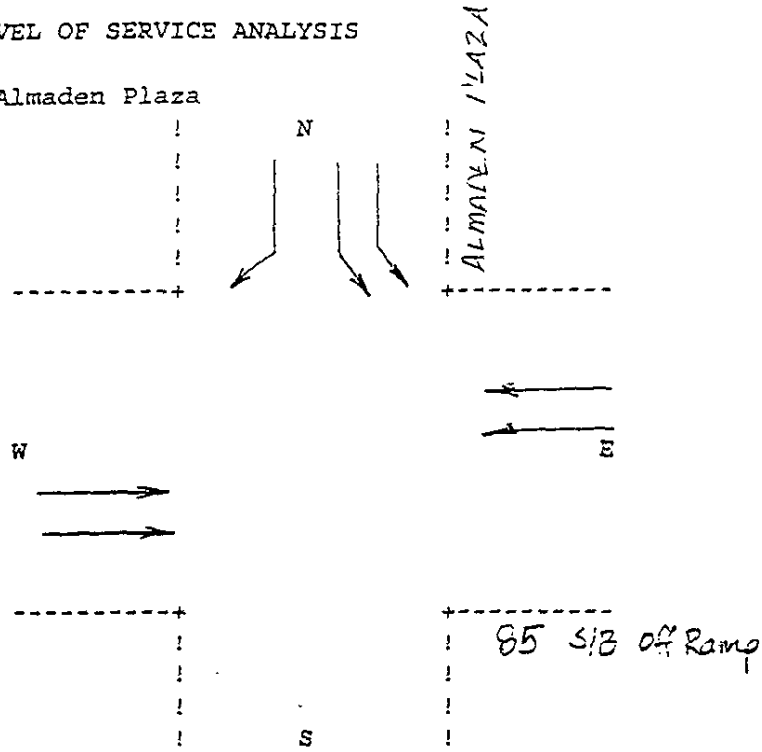
L. DATE: 3/14/96

WTH FACTOR % : 0

AN AREA:

PAGE:

L. INIT.: CL

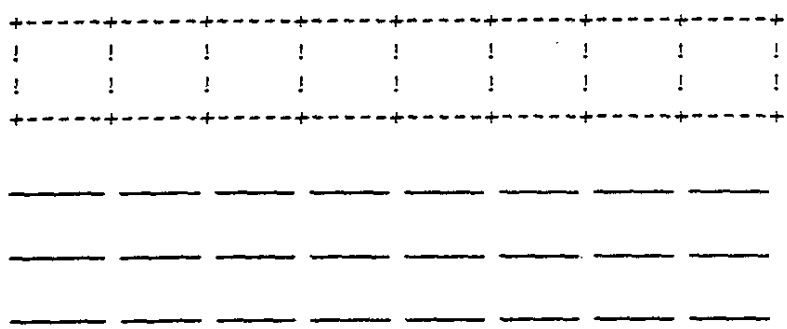


GNAL TYPE: FULLY ACTUATED

G	GREEN	YEL+RED
G	22	4
W	21	4

CLE LENGTH = 51

ST TIME = .157



G	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	200010	584	0	38	0	0	0	0	0	0	584	0	38
E	002000	0	48	0	0	0	0	0	0	0	0	48	0
S	000000	0	0	0	0	0	0	0	0	0	0	0	0
W	002000	0	63	0	0	0	0	0	0	0	0	63	0

EG	# LANES	CRIT. MOVE L S	T	R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0	0	0	0	0	584	3015	0.194	0.315	0.509	1535
E	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
S	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
W	2	0 0	2	0	0	0	63	3560	0.018	0.315	0.333	1185
								LT =	0.157			
TOTALS	4						647		0.369			2720

1 - 0.369 = 0.631 / 4 = 0.158

LEVEL OF SERVICE = A

96-011

58

LEVEL OF SERVICE ANALYSIS

CATION: Rt 85 SB Off-Ramp & Almaden Plaza

SSAGE: Consultant Count

AK HOUR: PM

OUNT DATE: 5/10/95

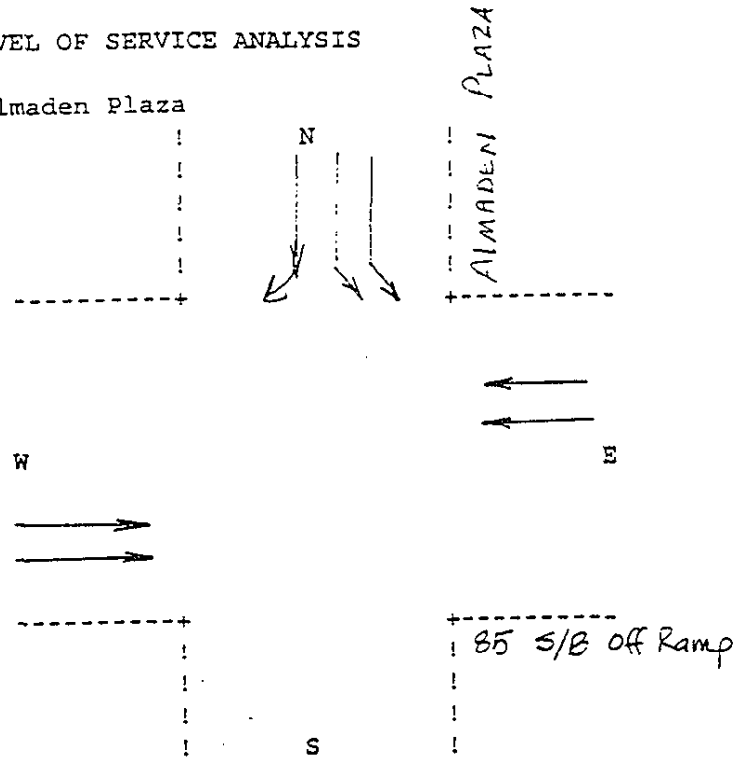
AL. DATE:

ROWTH FACTOR % : 0

LAN AREA:

AP PAGE:

NAL. INIT.: CL

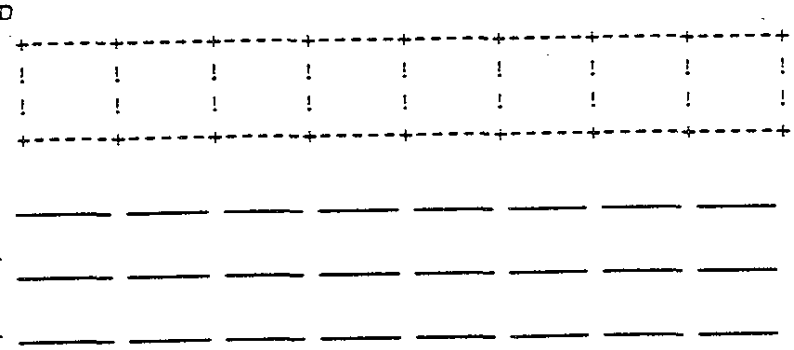


IGNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
-S	22	4
-W	21	4

YCLE LENGTH = 51

OST TIME = .157



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	200010	1309	0	143	0	0	0	0	0	0	1309	0	143
E	002000	0	194	0	0	0	0	0	0	0	0	194	0
S	000000	0	0	0	0	0	0	0	0	0	0	0	0
W	002000	0	296	0	0	0	0	0	0	0	0	296	0

EG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0	0	0	0	0	1309	3015	0.434	0.163	0.597	1800
E	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
S	0	0 0	0	0	0	0	0	0	0.000	0.000	0.000	0
W	2	0 0	2	0	0	0	296	3560	0.083	0.163	0.246	876
								LT =	0.157			
TOTALS	4						1605		0.674			2676

1 - 0.674 = 0.326 / 4 = 0.082

==========

V/C - TOTAL CRIT. VOL. /TOTAL CRIT. CAP. = .6 LEVEL OF SERVICE = B

96-011

(6A)

LEVEL OF SERVICE ANALYSIS

ATION: ALMADEN & BLOSSOM HILL

SAGE: COUNT BY B-A

HOUR: 718

T DATE: 02/10/94

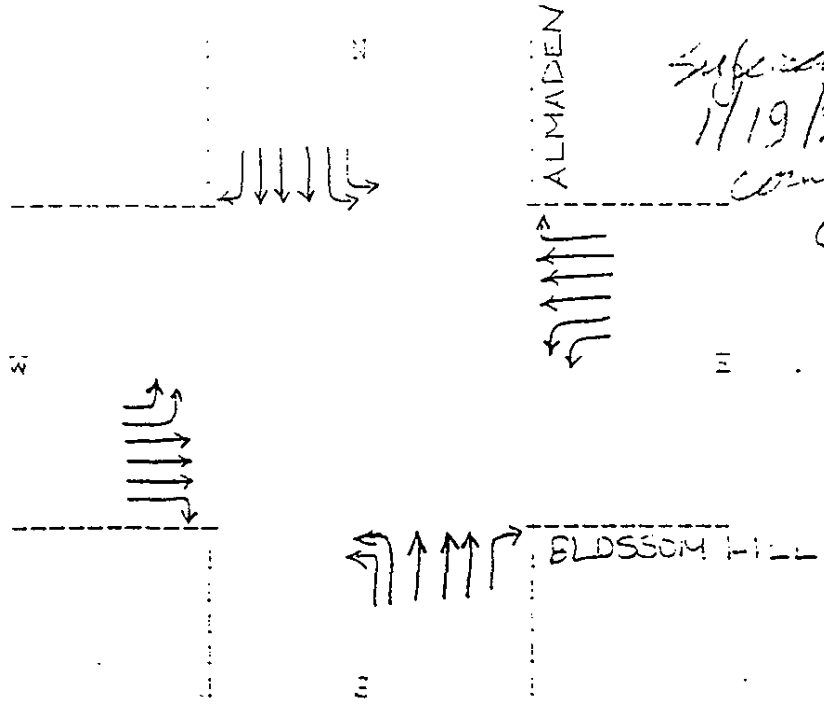
L. DATE: 02/24/94

WTH FACTOR % : 0

AN AREA: CP

PAGE: 128

L. INIT.: KDM



Superseded by 1/19/95 comp. GP

NAL TYPE: FULLY ACTUATED

	GREEN	YEL+RED
	74	9.5
	69	9.25

CLE LENGTH = 161.75

T TIME = .116

G

Y

R

PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
203010	120	748	722	0	0	0	0	0	0	120	748	722
203010	110	514	214	0	0	0	0	0	0	110	514	214
203010	91	2674	48	0	0	0	0	0	0	91	2674	48
203010	772	382	86	0	0	0	0	0	0	772	382	86

# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
2	2 0 0 0 0 0	120	3015	0.040	-.002	0.038	115
3	0 0 3 0 0 0	514	5340	0.096	-.003	0.093	497
3	0 0 3 0 0 0	2674	5340	0.501	-.003	0.498	2659
2	2 0 0 0 0 0	772	3015	0.256	-.002	0.254	766
			LT =	0.116			
TALS 10		4080		1.009			4037

1 - 1.009 = -.009 / % 10 = -.001

= TOTAL CRIT. VOL. TOTAL CRIT. CAP. = 1.011 LEVEL OF SERVICE = F

96 - 011

1.1 5/30/89

LEVEL OF SERVICE ANALYSIS

.TION: ALMADEN EXP & BLOSSOM HILL

GAGE: CMP Intersection
CMP Count

K HOUR: PM

NT DATE: 6/95

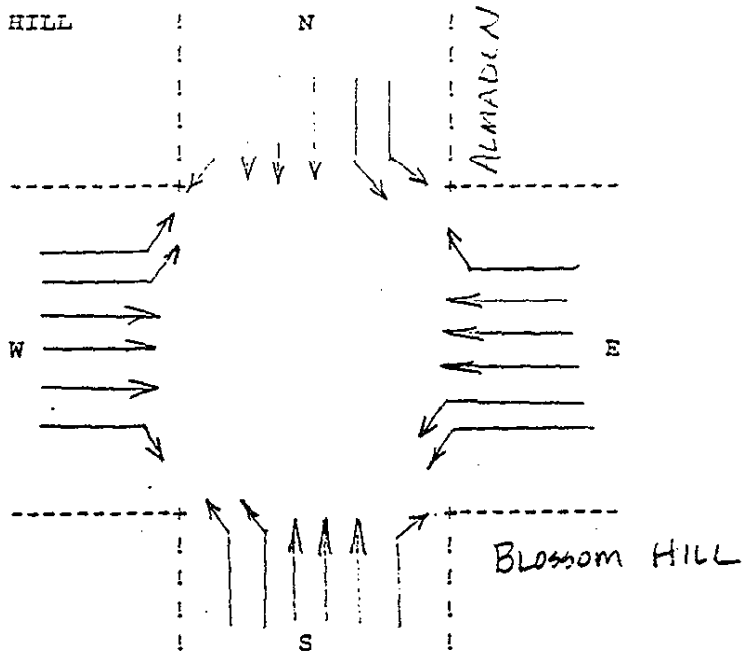
.L. DATE: 3/14/96

)WTH FACTOR % : 0

N AREA: CP

) PAGE: 128

AL. INIT.: CL

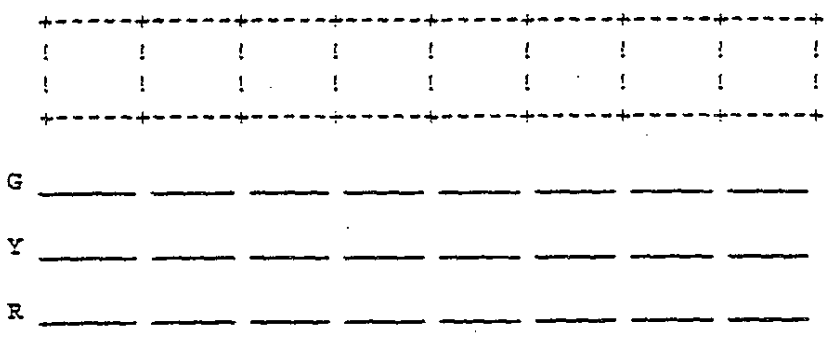


GNAL TYPE: FULLY ACTUATED

G	GREEN	YEL+RED
S	100	10
W	58.5	8.5

CLE LENGTH = 177

OST TIME = .105



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	203010	689	2366	406	0	0	0	0	0	0	689	2366	406
E	203010	238	559	364	0	0	0	0	0	0	238	559	364
S	203010	253	1257	232	0	0	0	0	0	0	253	1257	232
W	203010	494	675	141	0	0	0	0	0	0	494	675	141

EG	# LANES	CRIT. MOVE L S	T	R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0	3	0	0	0	2366	5340	0.443	0.030	0.473	2526
E	3	0 0	3	0	0	0	559	5340	0.105	0.030	0.135	721
S	2	2 0	0	0	0	0	253	3015	0.084	0.020	0.104	314
W	2	2 0	0	0	0	0	494	3015	0.164	0.020	0.184	555
								LT =	0.105			
TOTALS	10						3672		0.901			4116

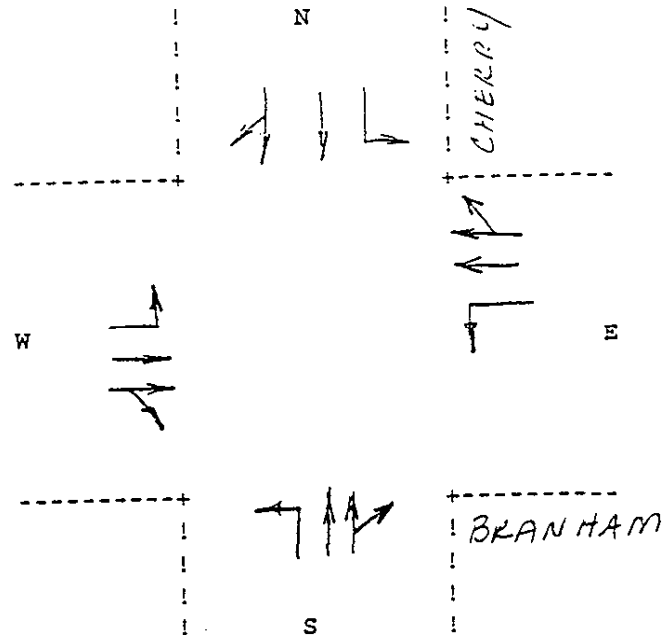
1 - 0.901 = 0.099 / 10 = 0.010

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .892 LEVEL OF SERVICE = D

96-011

(7A)

LEVEL OF SERVICE ANALYSIS



CATION: BRANHAM LN & CHERRY

SSAGE: Consultant Count

AK HOUR: AM

UNT DATE: 5/2/95

NAL. DATE: 3/14/96

OWTH FACTOR % : 0

AN AREA: CP

AP PAGE: 128

AL. INIT.: CL

GNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
-S	25	5
-W	60	8

YCLE LENGTH = 98

OST TIME = .133

G ____ ____ ____ ____ ____ ____ ____ ____

Y ____ ____ ____ ____ ____ ____ ____ ____

R ____ ____ ____ ____ ____ ____ ____ ____

EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	101100	33	150	69	0	0	0	0	0	0	33	150	69
E	101100	28	449	64	0	0	0	0	0	0	28	449	64
S	101100	83	148	72	0	0	0	0	0	0	83	148	72
W	101100	61	397	134	0	0	0	0	0	0	61	397	134

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	219	3504	0.063	0.191	0.254	890
E	2	0 0 1 1 0 0	513	3532	0.145	0.191	0.336	1187
S	1	1 0 0 0 0 0	83	1675	0.050	0.095	0.145	243
W	1	1 0 0 0 0 0	61	1675	0.036	0.095	0.131	219
				LT =	0.133			
TOTALS	6		876		0.427			2539

1 - 0.427 = 0.573 / 6 = 0.095

==========

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .345 LEVEL OF SERVICE = A

==========

/2/88 LV -- 11/7/91 BA

96-011

LEVEL OF SERVICE ANALYSIS

:ATION: BRANHAM & CHERRY

SAGE: COUNT BY ADVANCED TRAFFIC

K HOUR: 1700

JNT DATE: 10/22/92

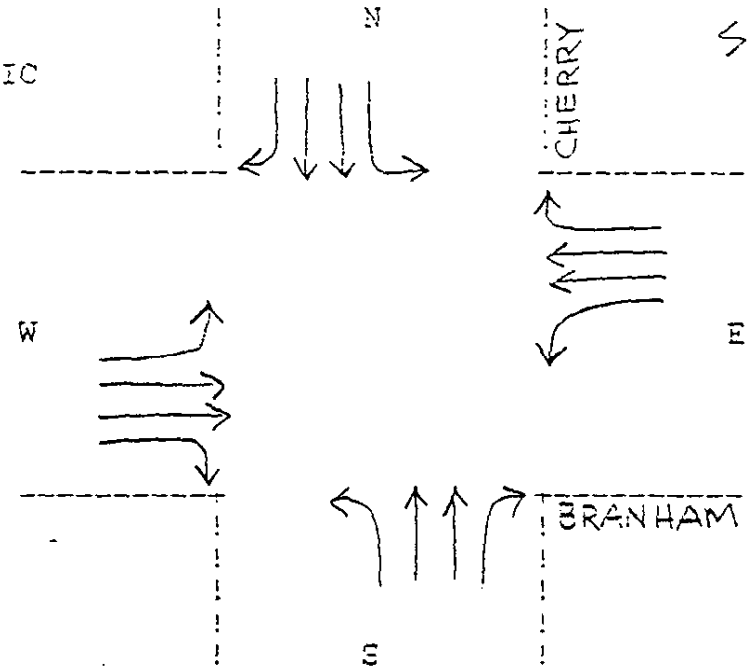
L. DATE: 04/30/93

WTH FACTOR % : 0

AN AREA: CP

PAGE: 128

AL. INIT.: MB



Superseded by 3/2/95 count

GNAL TYPE: FULLY ACTUATED

:G	GREEN	YEL+RED
S	25	5
W	60	8

:CLE LENGTH = 98

ST TIME = .133

G											
Y											
R											

EG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIP LEFT	THRU	RIGH
N	102010	101	424	93	0	0	0	0	0	0	101	424	9
E	102010	110	1032	59	0	0	0	0	0	0	110	1032	5
S	102010	176	260	42	0	0	0	0	0	0	176	260	4
W	102010	94	1075	175	0	0	0	0	0	0	94	1075	7

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	2	0 0 2 0 0 0	424	3560	0.119	0.092	0.211	75
E	1	1 0 0 0 0 0	110	1675	0.066	0.046	0.112	188
S	1	1 0 0 0 0 0	176	1675	0.105	0.046	0.151	25
W	2	0 0 2 0 0 0	1075	3560	0.302	0.092	0.394	140
				LT =	0.133			
OTALS	6		1785		0.725			2595

1 - 0.725 = 0.275 / 6 = 0.046

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .688 LEVEL OF SERVICE = B

/AX 1.1 5/30/89

96 - 011

8A

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & LIZZIE

MESSAGE:

PEAK HOUR: 730

COUNT DATE: 07/07/95

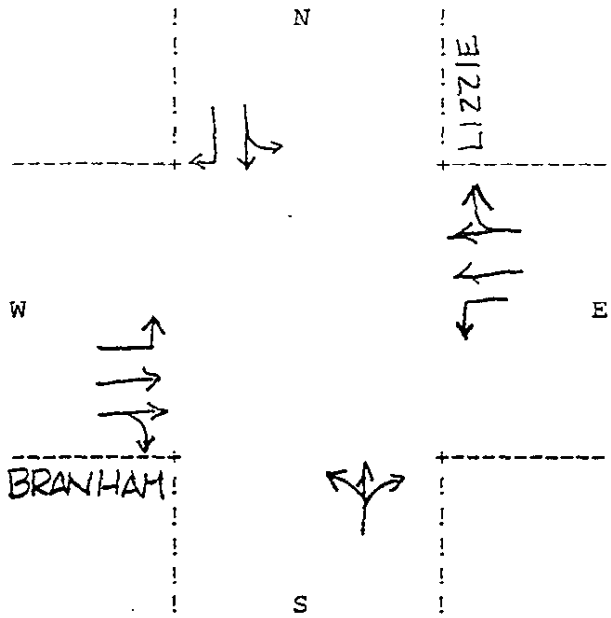
ANAL. DATE: 11/02/95

GROWTH FACTOR % : 0

PLAN AREA: cp

MAP PAGE: 114

ANAL. INIT.: KDM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	30	4
E-W	60	8

CYCLE LENGTH = 102

LOST TIME = .118

G ____ ____ ____ ____ ____ ____ ____ ____

Y ____ ____ ____ ____ ____ ____ ____ ____

R ____ ____ ____ ____ ____ ____ ____ ____

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	010010	19	10	4	0	0	0	0	0	0	19	10	4
E	101100	67	425	16	0	0	0	0	0	0	67	425	16
S	000002	29	4	51	0	0	0	0	0	0	29	4	51
W	101100	6	386	15	0	0	0	0	0	0	6	386	15

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	1	0 1 0 0 0 0	29	1711	0.017	0.132	0.149	255
E	1	1 0 0 0 0 0	67	1675	0.040	0.132	0.172	288
S	1	0 0 0 0 0 2	84	1680	0.050	0.132	0.182	306
W	2	0 0 1 1 0 0	401	3551	0.113	0.265	0.378	1342
				LT =	0.118			
TOTALS	5		581		0.338			2191

1 - 0.338 = 0.662 / 5 = 0.132

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .265 LEVEL OF SERVICE = A

VAX 1.1 5/30/89

96 - 011

8B

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & LIZZIE

MESSAGE:

PEAK HOUR: 1645

COUNT DATE: 07/07/95

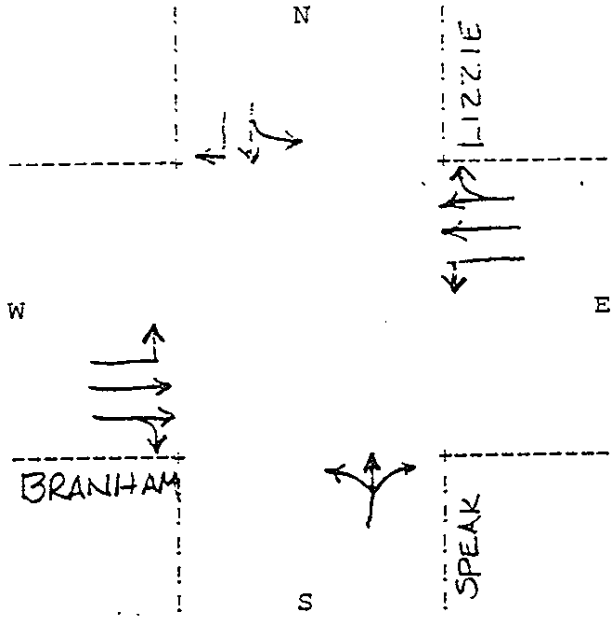
ANAL. DATE: 11/02/95

GROWTH FACTOR % : 0

PLAN AREA: cp

MAP PAGE: 114

ANAL. INIT.: KDM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	30	4
E-W	60	8

CYCLE LENGTH = 102

LOST TIME = .118

G								
Y								
R								

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	010010	65	21	23	0	0	0	0	0	0	65	21	23
E	101100	302	751	87	0	0	0	0	0	0	302	751	87
S	000002	122	18	56	0	0	0	0	0	0	122	18	56
W	101100	21	542	66	0	0	0	0	0	0	21	542	66

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	1	0 1 0 0 0 0	86	1701	0.051	0.073	0.124	211
E	1	1 0 0 0 0 0	302	1675	0.180	0.073	0.253	424
S	1	0 0 0 0 0 2	196	1685	0.116	0.073	0.189	318
W	2	0 0 1 1 0 0	608	3535	0.172	0.145	0.317	1121
				LT =	0.118			
TOTALS	5		1192		0.637			2074

1 - 0.637 = 0.363 / 5 = 0.073

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .575 LEVEL OF SERVICE = A

VAX 1.1 5/30/89

96 - 011

9A

LEVEL OF SERVICE ANALYSIS

:CATION: BRANHAM & PEARL

SSAGE:

AK HOUR: 715

CUNT DATE: 06/06/95

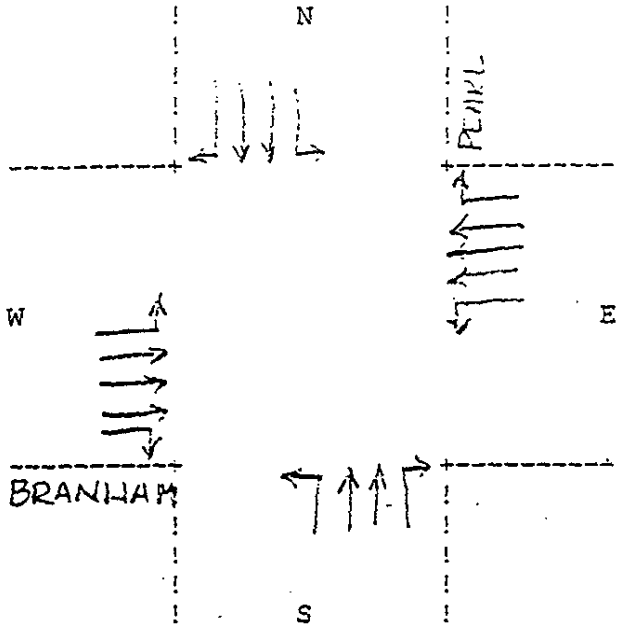
AL. DATE: 06/23/95

ROWTH FACTOR % : 0

LAN AREA: ED

AP PAGE: 114

ANAL. INIT.: KDM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	75	7.5
E-W	70	7.5

CYCLE LENGTH = 160

LOST TIME = .094

G _____ _____ _____ _____ _____ _____ _____ _____

Y _____ _____ _____ _____ _____ _____ _____ _____

R _____ _____ _____ _____ _____ _____ _____ _____

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	102010	75	263	146	0	0	0	0	0	0	75	263	146
E	103010	239	588	170	0	0	0	0	0	0	239	588	170
S	102010	306	476	129	0	0	0	0	0	0	306	476	129
W	103010	98	256	201	0	0	0	0	0	0	98	256	201

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	2	0 0 2 0 0 0	263	3560	0.074	0.131	0.205	730
E	1	1 0 0 0 0 0	239	1675	0.143	0.065	0.208	348
S	1	1 0 0 0 0 0	306	1675	0.183	0.065	0.248	415
W	3	0 0 3 0 0 0	256	5340	0.048	0.196	0.244	1303
				LT =	0.094			
TOTALS	7		1064		0.542			2796

1 - 0.542 = 0.458 / 7 = 0.065

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .381 LEVEL OF SERVICE = A

VAX 1.1 5/30/89

96 - 011

93

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & PEARL

MESSAGE:

PEAK HOUR: 1645

COUNT DATE: 06/06/95

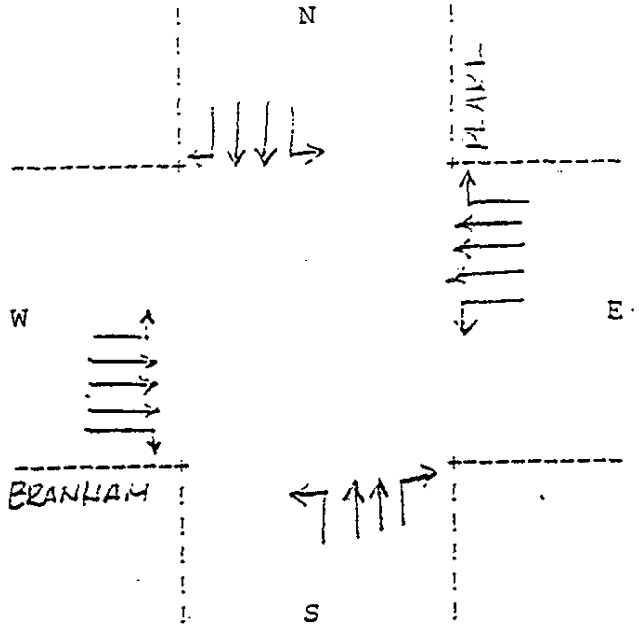
ANAL. DATE: 06/23/95

GROWTH FACTOR % : 0

PLAN AREA: ED

MAP PAGE: 114

ANAL. INIT.: KDM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	75	7.5
E-W	70	7.5

CYCLE LENGTH = 160

LOST TIME = .094

G ____ ____ ____ ____ ____ ____ ____ ____

Y ____ ____ ____ ____ ____ ____ ____ ____

R ____ ____ ____ ____ ____ ____ ____ ____

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	102010	180	512	246	0	0	0	0	0	0	180	512	246
E	103010	315	546	96	0	0	0	0	0	0	315	546	96
S	102010	288	306	255	0	0	0	0	0	0	288	306	255
W	103010	243	748	322	0	0	0	0	0	0	243	748	322

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	2	0 0 2 0 0 0	512	3560	0.144	0.075	0.219	780
E	1	1 0 0 0 0 0	315	1675	0.188	0.037	0.225	377
S	1	1 0 0 0 0 0	288	1675	0.172	0.037	0.209	350
W	3	0 0 3 0 0 0	748	5340	0.140	0.112	0.252	1346
				LT =	0.094			
TOTALS	7		1863		0.738			2853

1 - 0.738 = 0.262 / 7 = 0.037

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .653 LEVEL OF SERVICE = B

VAX 1.1 5/30/89

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALAMADEN EXP & FOXWORTHY

MESSAGE: Consultant Count

PEAK HOUR: AM

COUNT DATE: 5/10/95

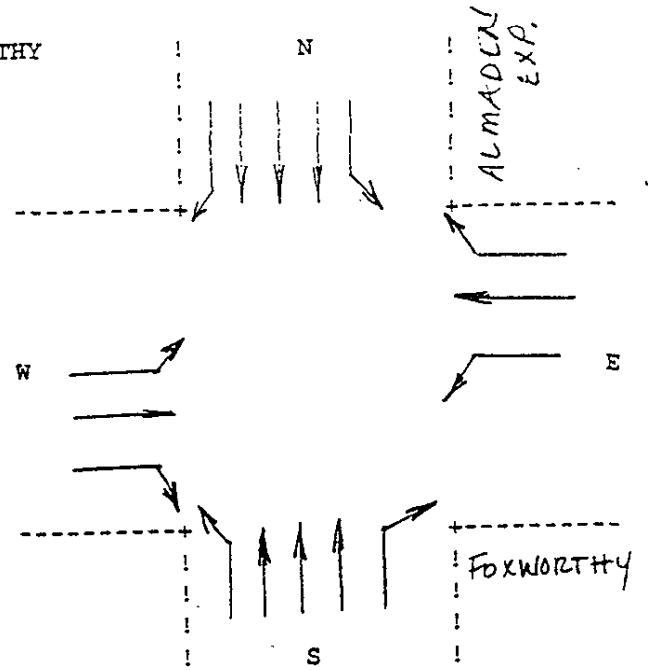
ANAL. DATE: 3/14/96

GROWTH FACTOR % : 0

PLAN AREA: WG

MAP PAGE: 114

ANAL. INIT.: CL

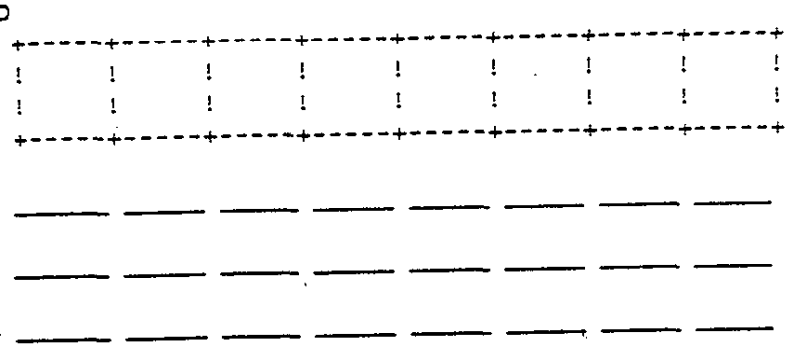


SIGNAL TYPE: FULLY ACTUATED

PHASE	GREEN	YEL+RED
N-S	134.5	9.5
E-W	33.5	4.5

CYCLE LENGTH = 182

LOST TIME = .077



LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	103000	121	879	43	0	0	0	0	0	0	121	879	43
E	101010	29	50	200	0	0	0	0	0	0	29	50	200
S	103010	47	3627	31	0	0	0	0	0	0	47	3627	31
W	101010	66	60	145	0	0	0	0	0	0	66	60	145

LEG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1	0	0	0	0	121	1675	0.072	0.018	0.090	151
E	1	0	0	1	0	0	50	1780	0.028	0.018	0.046	82
S	3	0	0	3	0	0	3627	5340	0.679	0.053	0.732	3909
W	1	1	0	0	0	0	66	1675	0.039	0.018	0.057	95
								LT =	0.077			
TOTALS	6						3864		0.895			4237

1 - 0.895 = 0.105 / 6 = 0.018

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .912 LEVEL OF SERVICE = E

LEVEL OF SERVICE ANALYSIS

CATION: ALMADEN EXP & FOXWORTHY

SAGE: Consultant Count

K HOUR: PM

UNT DATE: 5/10/95

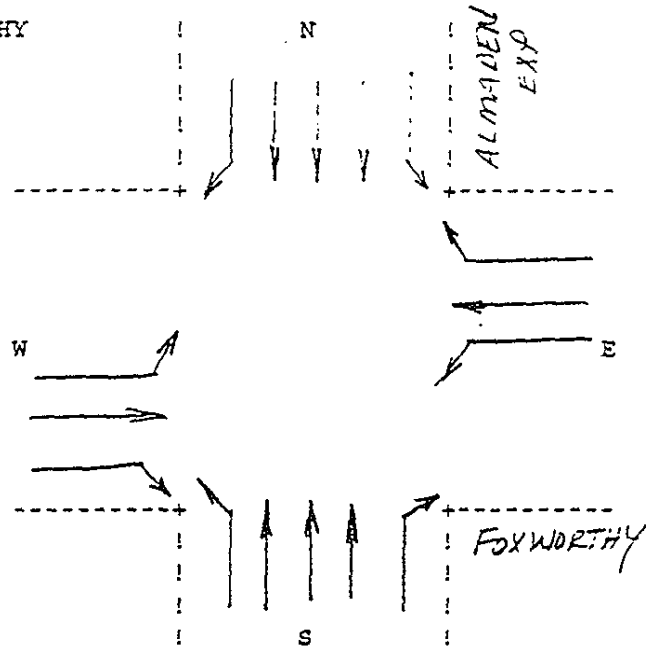
AL. DATE: 3/14/96

OWTH FACTOR % : 0

AN AREA: WG

P PAGE: 114

AL. INIT.: CL

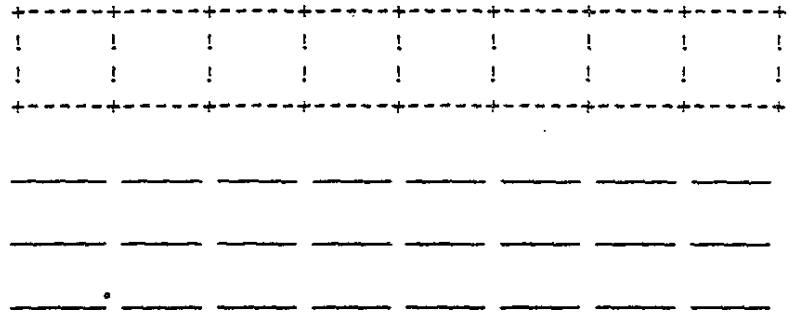


GNAL TYPE: FULLY ACTUATED

LG	GREEN	YEL+RED
S	134.5	9.5
-W	33.5	4.5

CLE LENGTH = 182

OST TIME = .077



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	103100	249	2665	134	0	0	0	0	0	0	249	2665	134
E	101010	43	71	65	0	0	0	0	0	0	43	71	65
S	103010	140	953	29	0	0	0	0	0	0	140	953	29
W	101010	113	95	64	0	0	0	0	0	0	113	95	64

EG	# LANES	CRIT. MOVE L S T	L R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3	1 0 0	2799	7085	0.395	0.193	0.588	4166
E	1	0 0 1	0 0 0	71	1780	0.040	0.048	0.088	157
S	1	1 0 0	0 0 0	140	1675	0.084	0.048	0.132	221
W	1	1 0 0	0 0 0	113	1675	0.067	0.048	0.115	193
					LT =	0.077			
TOTALS	7			3123		0.663			4737

1 - 0.663 = 0.337 / 7 = 0.048

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .659 LEVEL OF SERVICE = B

10B

110 96

(11A)

LEVEL OF SERVICE ANALYSIS

CATION: ALMADEN & COLEMAN

ESSAGE: COUNT BY B-A

AK HOUR: 730

UNT DATE: 02/10/94

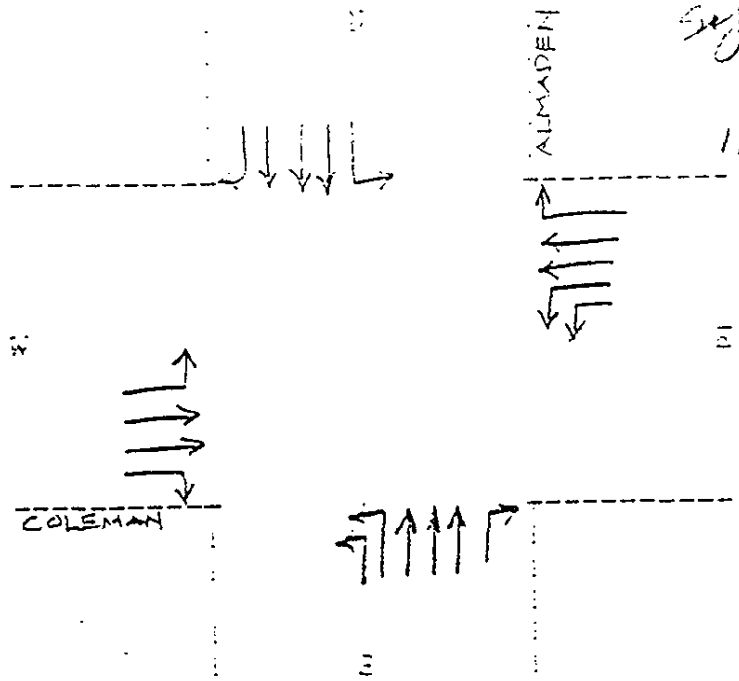
NAL. DATE: 02/24/94

ROWTH FACTOR % : 0

LAN AREA: AL

AP PAGE: 128

NAL. INIT.: KDM



Superseded by 11/15/94 com

IGNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL-RED
-S	100	8.5
-W	52	8

YCLE LENGTH = 168.5

LOST TIME = .098

G ____ ____ ____ ____ ____ ____ ____ ____

Y ____ ____ ____ ____ ____ ____ ____ ____

R ____ ____ ____ ____ ____ ____ ____ ____

EG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIG
N	103010	60	616	86	0	0	0	0	0	0	60	616	
E	202010	427	531	203	0	0	0	0	0	0	427	531	2
S	203010	31	2240	715	0	0	0	0	0	0	31	2240	7
W	102010	279	305	17	0	0	0	0	0	0	279	305	

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CA
N	1	1 0 0 0 0 0	60	1675	0.036	0.019	0.055	92
E	2	0 0 2 0 0 0	531	3560	0.149	0.037	0.186	662
S	3	0 0 3 0 0 0	2240	5340	0.419	0.056	0.475	2537
W	1	1 0 0 0 0 0	279	1675	0.167	0.019	0.186	312
					LT = 0.098			
TOTALS	7		3110		0.869			3603
					1 - 0.869 = 0.131 / 7 = 0.019			

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .863 LEVEL OF SERVICE = D

96-011

AK 1.1 5/30/89

(11B)

LEVEL OF SERVICE ANALYSIS

CATION: ALMADEN EXP & COLEMAN RD

ESSAGE: CMP Intersection
CMP Count

EAK HOUR: PM

UNT DATE: 6/95

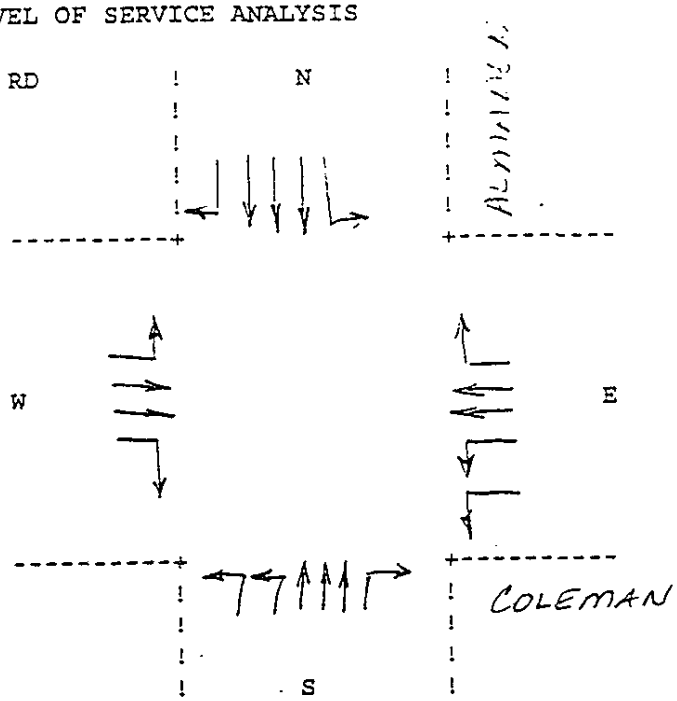
AL. DATE: 3/14/96

ROWTH FACTOR % : 0

AN AREA: AL

AP PAGE: 128

AL. INIT.: CL

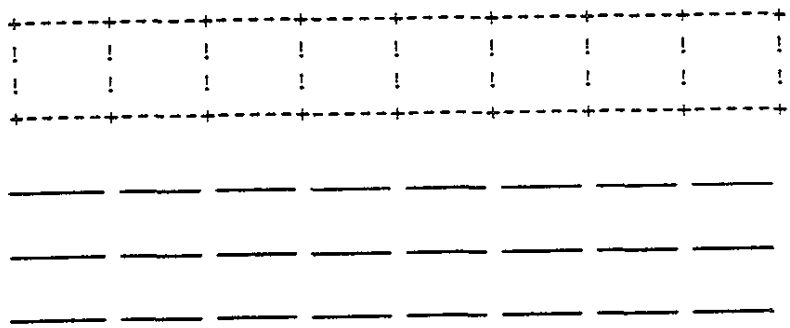


IGNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
-S	9~~1~~.5	9.5
-W	68.5	8.5

YCLE LENGTH = ~~177~~ 150

OST TIME = .100



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	103010	227	1933	306	0	0	0	0	0	0	227	1933	306
E	202010	720	277	123	0	0	0	0	0	0	720	277	123
S	203010	36	946	517	0	0	0	0	0	0	36	946	517
W	102010	126	256	31	0	0	0	0	0	0	126	256	31

EG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0	3	0	0	0	1933	5340	0.362	0.076	0.438	2339
E	2	2 0	0	0	0	0	720	3015	0.239	0.051	0.290	874
S	1	1 0	0	0	0	0	36	1675	0.021	0.025	0.046	77
W	2	0 0	2	0	0	0	256	3560	0.072	0.051	0.123	438
								LT =	0.102			
OTALS	8						2945		0.796			3728

1 - 0.796 = 0.204 / 8 = 0.025

==========

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .79 LEVEL OF SERVICE = C

==========

110-96

(12A)

LEVEL OF SERVICE ANALYSIS

ATION: BLOSSOM HILL RD & SANTA TERESA BLVD

SAGE: CMP intersection
Consultant Count

K HOUR: AM

NT DATE: 5/10/95

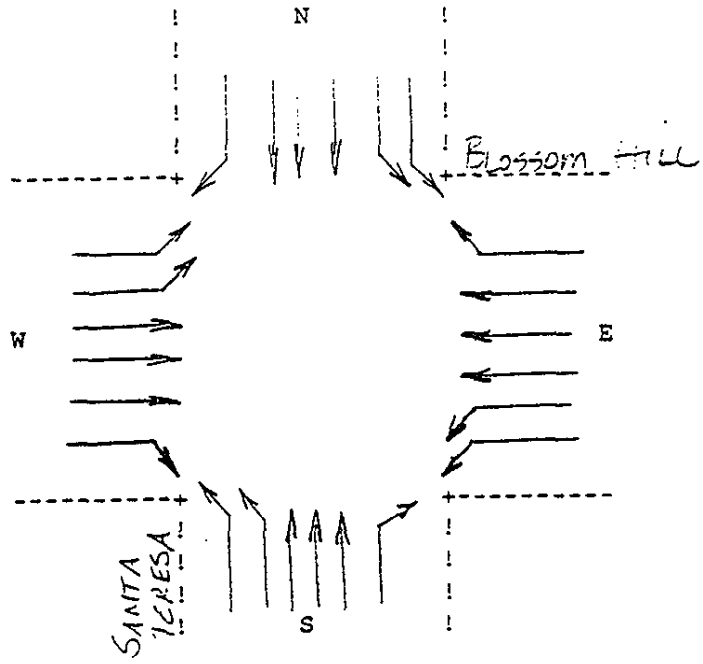
AL. DATE: 3/14/96

WTH FACTOR % : 0

AN AREA: ED

PAGE: 128

AL. INIT.: cl

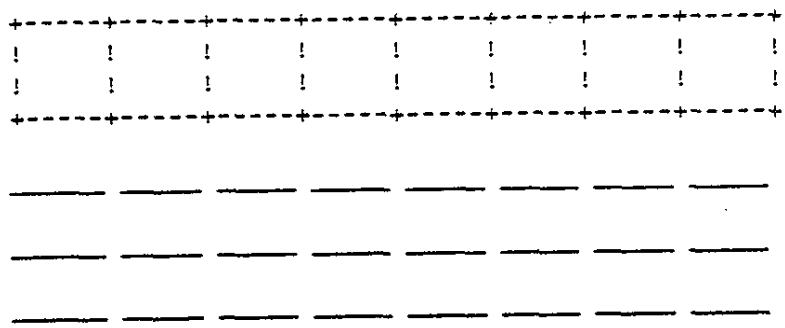


GNAL TYPE: FULLY ACTUATED

EG	GREEN	YEL+RED
S	60	8
-W	43.5	8.5

CLE LENGTH = 120

OST TIME = .138



EG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	203010	169	349	133	0	0	0	0	0	0	169	349	133
E	203010	122	558	252	0	0	0	0	0	0	122	558	252
S	203010	196	827	80	0	0	0	0	0	0	196	827	80
W	203010	164	226	64	0	0	0	0	0	0	164	226	64

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	169	3015	0.056	0.099	0.155	467
E	3	0 0 3 0 0 0	558	5340	0.104	0.148	0.252	1346
S	3	0 0 3 0 0 0	827	5340	0.155	0.148	0.303	1618
W	2	2 0 0 0 0 0	164	3015	0.054	0.099	0.153	461
				LT =	0.138			
TOTALS	10		1718		0.507			3892

1 - 0.507 = 0.493 / 10 = 0.049

96-011

LEVEL OF SERVICE ANALYSIS

OCATION: BLOSSOM HILL RD & SANTA TERESA BLVD

ESSAGE: CMP Intersection
CMP Count

EAK HOUR: PM

COUNT DATE: 10/95

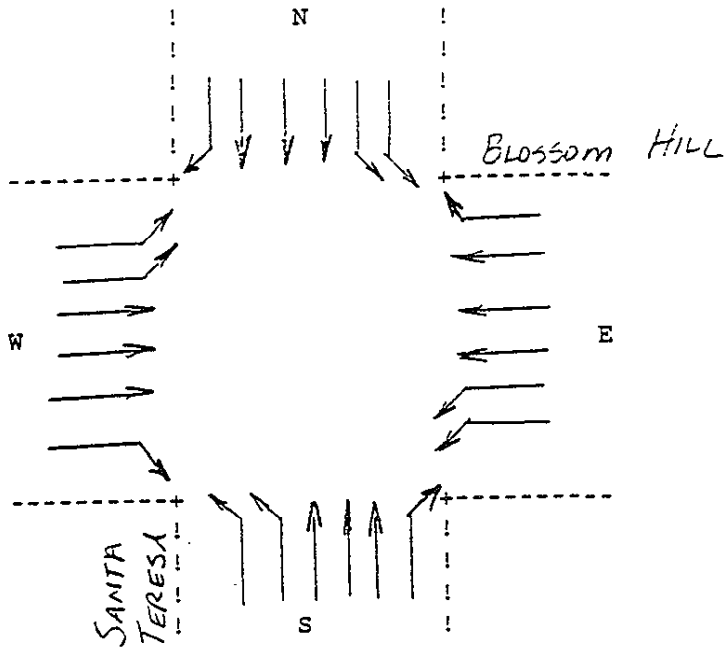
NAL. DATE: 3/14/96

ROWTH FACTOR % : 0

PLAN AREA: ED

AP PAGE: 128

ANAL. INIT.: CL

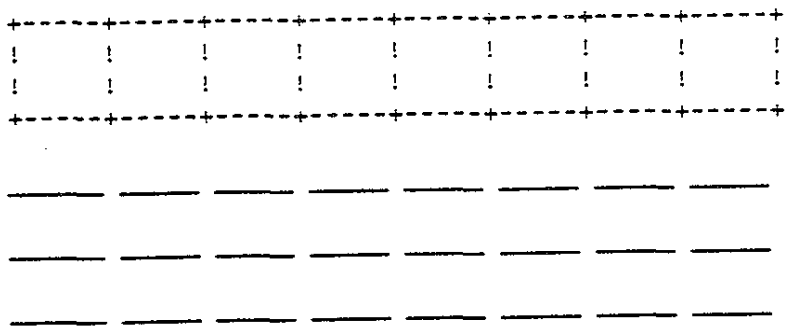


SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	60	8
E-W	43.5	8.5

CYCLE LENGTH = 120

LOST TIME = .138



LEG	PATTERN L R LSTSRO	EXISTING COUNTS LT	TH	RT	APPROVED TRIPS LT	TH	RT	PROJECT TRIPS LT	TH	RT	TOTAL TRIPS LT	TH	RT
N	203010	513	905	268	0	0	0	0	0	0	513	905	268
E	203010	176	569	143	0	0	0	0	0	0	176	569	143
S	203010	207	537	108	0	0	0	0	0	0	207	537	108
W	203010	297	677	158	0	0	0	0	0	0	297	677	158

LEG	# LANES	CRIT. MOVE L S	T	L R S	R	O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0	0	0	0	0	513	3015	0.170	0.077	0.247	745
E	3	0 0	3	0	0	0	569	5340	0.107	0.115	0.222	1185
S	3	0 0	3	0	0	0	537	5340	0.101	0.115	0.216	1153
W	2	2 0	0	0	0	0	297	3015	0.099	0.077	0.176	531
								LT =	0.138			
TOTALS	10						1916		0.615			3614

1 - 0.615 = 0.385 / 10 = 0.038

96-011

(13A)

LEVEL OF SERVICE ANALYSIS

LOCATION: CHYNOWETH & PEARL

MESSAGE:

PEAK HOUR: 700

COUNT DATE: 10/13/95

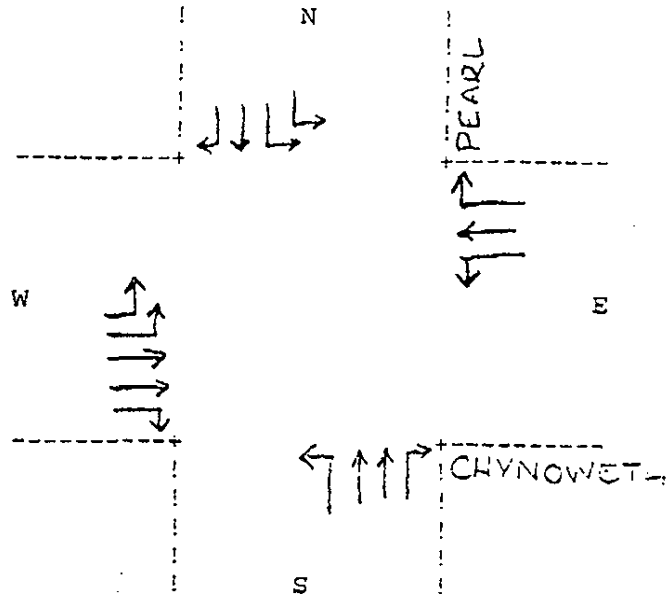
ANAL. DATE: 02/12/96

GROWTH FACTOR % : 0

PLAN AREA: ED

MAP PAGE: 128

ANAL. INIT.: KDM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	60	8
E-W	70	8

CYCLE LENGTH = 146

LOST TIME = .110

G ____ ____ ____ ____ ____ ____ ____ ____

Y ____ ____ ____ ____ ____ ____ ____ ____

R ____ ____ ____ ____ ____ ____ ____ ____

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	201010	184	14	253	0	0	0	0	0	0	184	14	253
E	101010	9	290	280	0	0	0	0	0	0	9	290	280
S	102010	18	13	0	0	0	0	0	0	0	18	13	0
W	202010	311	281	50	0	0	0	0	0	0	311	281	50

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	2	2 0 0 0 0 0	184	3015	0.061	0.160	0.221	666
E	1	0 0 1 0 0 0	290	1780	0.163	0.080	0.243	433
S	2	0 0 2 0 0 0	13	3560	0.004	0.160	0.164	584
W	2	2 0 0 0 0 0	311	3015	0.103	0.160	0.263	793
				LT =	0.110			
TOTALS	7		798		0.441			2476

1 - 0.441 = 0.559 / 7 = 0.080

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .322 LEVEL OF SERVICE = A

VAX 1.1 5/30/89

96 - 011

15B

LEVEL OF SERVICE ANALYSIS

[illegible]

MESSAGE:

PEAK HOUR: 1700

COUNT DATE: 03/02/94

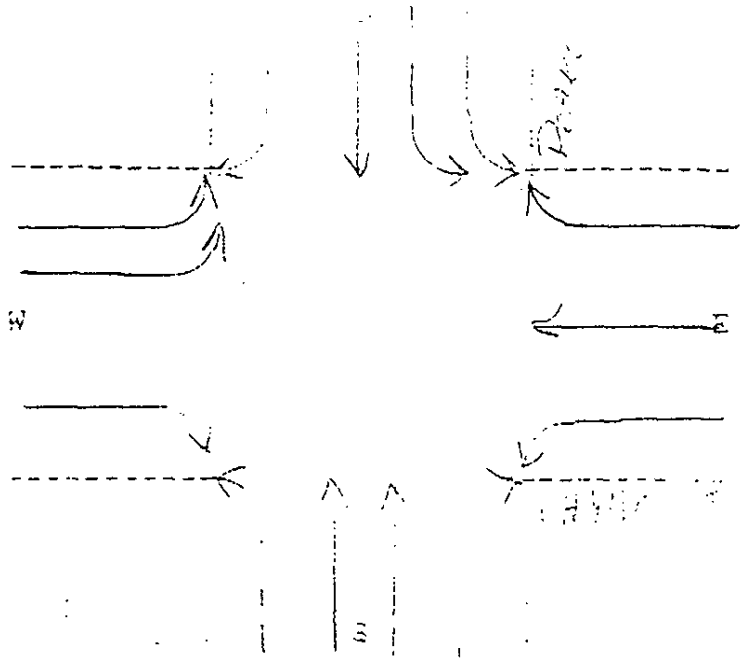
ANAL. DATE: 03/22/94

GROWTH FACTOR % : 0

PLAN AREA: ED

MAP PAGE: [illegible]

[illegible] CEM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
-S	60	8
-W	70	8

CYCLE LENGTH = 148

LOST TIME = .110

G ____ ____ ____ ____ ____ ____ ____ ____

Y ____ ____ ____ ____ ____ ____ ____ ____

R ____ ____ ____ ____ ____ ____ ____ ____

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	201010	122	5	666	0	0	0	0	0	0	122	5	666
E	101010	6	172	112	0	0	0	0	0	0	6	172	112
S	102010	22	12	3	0	0	0	0	0	0	22	12	3
W	202010	558	240	21	0	0	0	0	0	0	558	240	21

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	2	2 0 0 0 0 0	122	3015	0.040	0.161	0.201	606
E	1	0 0 1 0 0 0	172	1780	0.097	0.081	0.178	317
S	2	0 0 2 0 0 0	12	3560	0.003	0.161	0.164	584
W	2	2 0 0 0 0 0	558	3015	0.185	0.161	0.346	1043
				LT =	0.110			
OTALS	7		864		0.435			2550

1 - 0.435 = 0.565 / 7 = 0.081

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .339 LEVEL OF SERVICE = A

AX 1.1 5/30/89

96-011

(14A)

LEVEL OF SERVICE ANALYSIS

LOCATION: CHYNOWETH & WINFIELD/SAPPHIRE

MESSAGE:

PEAK HOUR: 730

COUNT DATE: 08/25/95

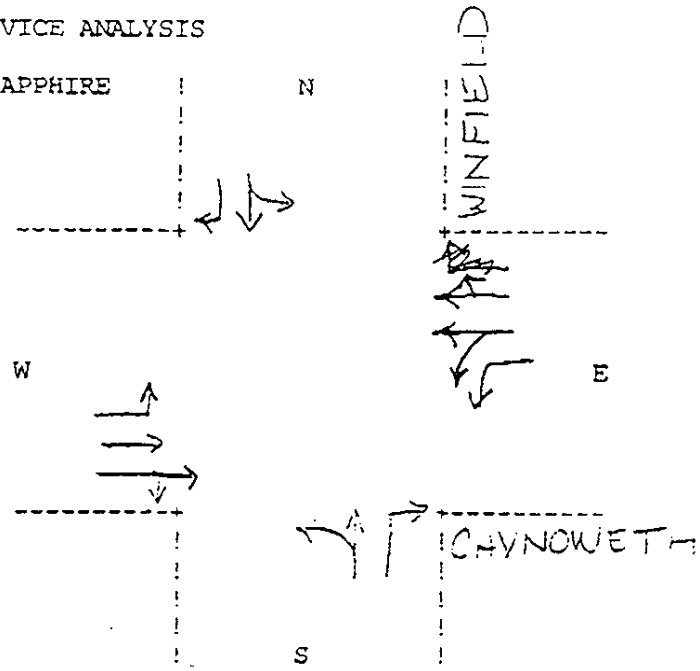
ANAL. DATE: 02/12/96

GROWTH FACTOR % : 0

PLAN AREA: ED

MAP PAGE: 128

ANAL. INIT.: KDM



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	30	4.5
E-W	70	8.5

CYCLE LENGTH = 113

LOST TIME = .115

G								
Y								
R								

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	010010	6	7	4	0	0	0	0	0	0	6	7	4
0100 E	~~110010~~	322	3	2	0	0	0	0	0	0	322	3	2
S	010010	11	2	268	0	0	0	0	0	0	11	2	268
W	~~101010~~ 101100	1	10	38	0	0	0	0	0	0	1	10	38

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP.
N	1	0 1 0 0 0 0	13	1732	0.008	0.133	0.141	244
E	3	1 1 1 0 0 0	325	4798	0.068	0.398	0.466	2236
S	1	0 1 0 0 0 0	13	1691	0.008	0.133	0.141	238
W	1	0 0 1 0 0 0	10	1780	0.006	0.133	0.139	247
				LT =	0.115			
TOTALS	6		361		0.205			2965

1 - 0.205 = 0.795 / 6 = 0.133

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .122 LEVEL OF SERVICE = A

VAX 1.1 5/30/89

96 - 011

(14B)

LEVEL OF SERVICE ANALYSIS

LOCATION: CHYNOWETH & WINFIELD

MESSAGE:

PEAK HOUR: 1800

COUNT DATE: 09/13/89

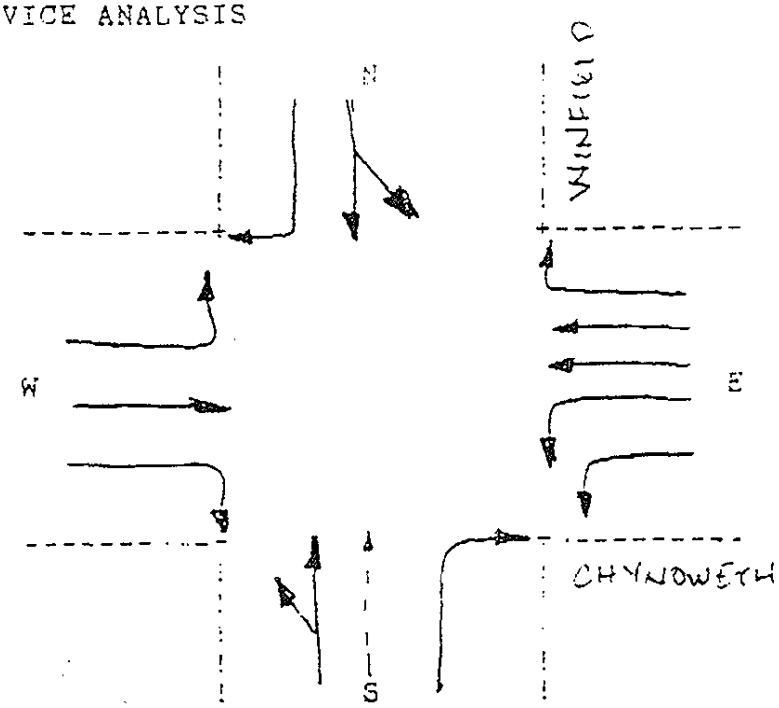
ANAL. DATE: 02/07/90

GROWTH FACTOR % : 0

PLAN AREA: ED

MAP PAGE: 128

ANAL. INIT.: DPE



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	30	4.5
E-W	70	8.5

CYCLE LENGTH = 113

LOST TIME = .115

G
Y
R

LEG	PATTERN L R LSTSRO	LANE COUNTS LEFT	THRU	RIGHT	APPROVED TRIPS LEFT	THRU	RIGHT	PROJECT TRIPS LEFT	THRU	RIGHT	TOTAL TRIPS LEFT	THRU	RIGHT
N	010010	1	2	0	0	0	0	0	0	0	1	2	
E	110100 ~~208010~~	1230	13	5	0	0	0	0	0	0	1230	13	
S	010010	41	6	764	0	0	0	0	0	0	41	6	
W	~~101010~~ 101100	2	9	12	0	0	0	0	0	0	2	9	

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ/LANE	ADJ G/C	C. CAP
N	1	0 1 0 0 0 0	3	1745	0.002	0.088	0.090	157
E	2	2 0 0 0 0 0	1230	3015	0.408	0.177	0.585	176[illegible]
S	1	0 1 0 0 0 0	47	1688	0.028	0.088	0.116	1[illegible]
W	1	0 0 1 0 0 0	9	1780	0.005	0.088	0.093	166
				LT =	0.115			
TOTALS	5		1289		0.558			22[illegible]

1 - 0.558 = 0.442 / 5 = 0.088

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .565 LEVEL OF SERVICE = A

96 - 011

VAX 1.1 5/30/89

Approved Trips List

96-011

1A

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDC85-11-109	0	3	0	0	0	2	7	12	3	2	0	0
PDC90-06-061	0	6	0	0	0	1	2	10	2	1	0	0
PDC91-08-058	0	27	0	0	0	0	0	50	0	0	0	0
PDC91-08-067	5	7	0	0	0	0	0	5	0	0	0	4
PDC91-10-076	0	0	0	0	4	3	2	0	0	0	3	0
AM TOTAL	5	43	0	0	4	6	11	77	5	3	3	4

STREET 1: ALMADEN
STREET 2: BRANHAM

	LEFT	THRU	RIGHT
NORTH	0	43	5
EAST	6	4	0
SOUTH	5	77	11
WEST	4	3	3

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

TYPO

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDC85-11-109	0	12	0	0	0	7	2	3	2	3	0	0
PDC90-06-061	0	10	0	0	0	2	1	6	1	2	0	0
PDC91-08-058	0	50	0	0	0	0	0	27	0	0	0	0
PDC91-08-067	4	5	0	0	0	0	0	7	0	0	0	5
PDC91-10-076	0	0	0	0	3	2	3	0	0	0	4	0
PDCSH93-06-022	0	19	0	0	0	5	5	19	8	8	0	0
TOTAL	4	96	0	0	3	16	11	62	11	13	4	5

1B

STREET 1: ALMADEN
STREET 2: BRANHAM

	LEFT	THRU	RIGHT
NORTH	0	96	4
EAST	16	3	0
SOUTH	11	62	11
WEST	5	4	13

96 - 011

AM APPROVED TRIPS 4-Mar-1996

2A

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	3	0	0	0	0	0	6	0	0	0	0
PDC85-11-109	0	7	0	0	0	0	0	22	7	1	0	0
PDC90-06-061	0	8	0	0	0	0	0	14	1	1	0	0
PDC91-08-058	0	27	0	0	0	0	0	50	0	0	0	0
AM TOTAL	0	45	0	0	0	0	0	92	8	2	0	0

STREET 1: ALMADEN
STREET 2: CHERRY

	LEFT	THRU	RIGHT
NORTH	0	45	0
EAST	0	0	0
SOUTH	8	92	0
WEST	0	0	2

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

DTR>

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	6	0	0	0	0	0	3	0	0	0	0
PDC85-11-109	0	22	0	0	0	0	0	7	1	7	0	0
PDC90-06-061	0	14	0	0	0	0	0	8	1	1	0	0
PDC91-08-058	0	50	0	0	0	0	0	27	0	0	0	0
PDCSH93-06-022	0	32	0	0	0	0	0	32	0	8	0	0
TOTAL	0	124	0	0	0	0	0	77	2	16	0	0

2B

STREET 1: ALMADEN
STREET 2: CHERRY

	LEFT	THRU	RIGHT
NORTH	0	124	0
EAST	0	0	0
SOUTH	2	77	0
WEST	0	0	16

96 - 011

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	3	0	0	0	0	3	6	0	0	0	0
PDC85-11-109	0	0	0	0	0	8	40	29	0	0	0	0
AM TOTAL	0	3	0	0	0	8	43	35	0	0	0	0

3A

STREET 1: 85
STREET 2: ALMADEN(N)

	LEFT	THRU	RIGHT
NORTH	0	3	0
EAST	8	0	0
SOUTH	0	35	43
WEST	0	0	0

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	6	0	0	0	3	0	3	0	0	0	0
PDC85-11-109	0	29	0	0	0	40	8	0	0	0	0	0
PDCSH93-06-022	0	32	0	0	0	25	0	32	0	0	0	0
TOTAL	0	67	0	0	0	68	8	35	0	0	0	0

3B

STREET 1: 85
STREET 2: ALMADEN(N)

	LEFT	THRU	RIGHT
NORTH	0	67	0
EAST	68	0	0
SOUTH	0	35	8
WEST	0	0	0

96-011

4B

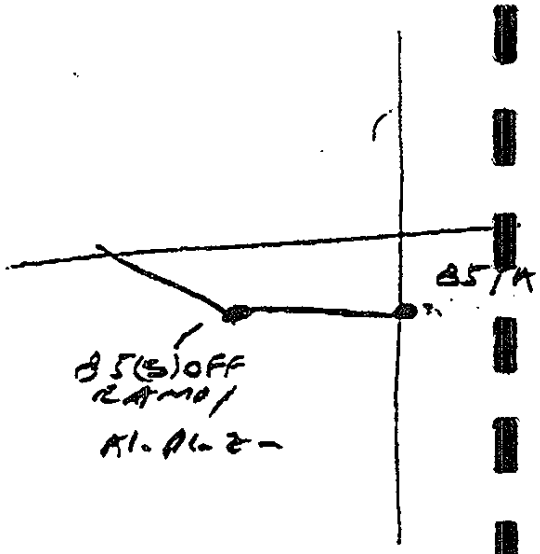
PM APPROVED TRIPS 4-Apr-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDCSH93-06-022	57	0	0	0	0	0	0	0	10	10	25	81
TOTAL	57	0	0	0	0	0	0	0	10	10	25	81

STREET 1: ALMADEN
STREET 2: ALMADEN PLAZA

85/Almaden Exp. (5)

	LEFT	THRU	RIGHT
NORTH	0	0	57
EAST	0	0	0
SOUTH	10	0	0
WEST	81	25	10



96-011

5A

AM APPROVED TRIPS 8-Apr-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	5	0	0	0	1	0	10	3	0	0	0
PDC85-11-109	0	48	0	0	0	8	0	109	40	0	0	0
AM TOTAL	0	53	0	0	0	9	0	119	43	0	0	0

STREET 1: 85 SB OFF RAMP
STREET 2: ALMADEN ~~DR~~ PLAZA

	LEFT	THRU	RIGHT
NORTH	0	53	0
EAST	9	0	0
SOUTH	43	119	0
WEST	0	0	0

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

96-011

8-Apr-1996

PM APPROVED TRIPS

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	10	0	0	0	0	1	5	0	3	0	0
PDC85-11-109	0	109	0	0	0	0	8	48	0	40	0	0
PDCSH93-06-022	49	0	0	0	67	0	0	0	0	0	116	0
TOTAL	49	119	0	0	67	0	9	53	0	43	116	0

STREET 1: 85 SB OFF RAMP
STREET 2: ALMADEN ~~(S)~~ Plaza

	LEFT	THRU	RIGHT
NORTH	0	119	49
EAST	0	67	0
SOUTH	0	53	9
WEST	0	116	43

96 - 011

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	4	0	0	0	0	0	6	1	0	0	0
PD90-06-042	0	5	5	0	0	0	0	2	2	2	2	0
PDC84-11-107	0	3	3	1	1	0	0	1	1	3	3	0
PDC85-05-043	0	2	2	0	0	0	0	0	0	0	0	0
PDC85-11-109	0	8	0	0	0	0	0	29	4	6	0	0
PDC90-06-061	0	9	0	0	0	2	0	15	3	1	0	0
PDC91-08-058	0	0	27	50	25	2	1	0	0	0	13	0
PDC94-02-008	0	15	0	0	0	0	0	27	12	6	0	0
PDCSH 95-01-001	0	0	0	0	6	7	3	0	0	0	4	0
PDCSH94-01-002	7	0	0	0	2	0	0	0	0	0	3	10
AM TOTAL	7	46	37	51	34	11	4	80	23	18	25	10

6A

STREET 1: ALMADEN
STREET 2: BLOSSOM HILL

	LEFT	THRU	RIGHT
NORTH	37	46	7
EAST	11	34	51
SOUTH	23	80	4
WEST	10	25	18

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	6	0	0	0	0	0	4	0	1	0	0
PD90-06-042	0	2	0	5	2	0	0	5	2	2	0	0
PDC84-11-107	0	1	1	3	3	0	0	3	3	1	1	0
PDC85-05-043	0	0	0	2	0	0	0	2	0	0	0	0
PDC85-11-109	0	29	0	0	0	0	0	8	6	4	0	0
PDC90-06-061	0	15	0	0	0	0	2	9	1	3	0	0
PDC91-08-058	0	0	50	27	13	1	2	0	0	0	25	0
PDC94-02-008	0	27	0	0	0	0	0	15	6	12	0	0
PDCSH 95-01-001	0	0	0	0	4	3	7	0	0	0	6	0
PDCSH93-06-022	0	5	5	5	27	0	0	5	10	10	27	0
PDCSH94-01-002	10	0	0	0	3	0	0	0	0	0	2	7
TOTAL	10	85	56	42	52	4	11	51	28	33	61	7

STREET 1: ALMADEN
STREET 2: BLOSSOM HILL

6B

	LEFT	THRU	RIGHT
NORTH	56	85	10

96 - 011

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
LC91-08-058	0	10	0	0	0	0	0	19	0	0	0	0
DC91-08-067	0	15	0	0	0	0	0	13	0	0	0	0
AM TOTAL	0	25	0	0	0	0	0	32	0	0	0	0

9A

STREET 1: BRANHAM
STREET 2: PEARL

	LEFT	THRU	RIGHT
NORTH	0	25	0
EAST	0	0	0
SOUTH	0	32	0
WEST	0	0	0

OTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDC91-08-058	0	19	0	0	0	0	0	10	0	0	0	0
PDC91-08-067	0	13	0	0	0	0	0	15	0	0	0	0
TOTAL	0	32	0	0	0	0	0	25	0	0	0	0

9B

STREET 1: BRANHAM
STREET 2: PEARL

	LEFT	THRU	RIGHT
NORTH	0	32	0
EAST	0	0	0
SOUTH	0	25	0
WEST	0	0	0

96-011

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
C85-11-109	0	3	0	0	0	0	0	7	1	0	0	0
C91-02-011	0	0	0	30	0	0	0	0	0	0	0	0
C91-08-067	0	0	0	23	2	0	0	23	0	0	2	0
C91-10-076	0	0	0	7	0	0	0	0	0	0	0	0
AM TOTAL	0	3	0	60	2	0	0	30	1	0	2	0

104

STREET 1: ALMADEN
STREET 2: FOXWORTHY

	LEFT	THRU	RIGHT
NORTH	0	3	0
EAST	0	2	60
SOUTH	1	30	0
WEST	0	2	0

OTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DELUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDC85-11-109	0	7	0	0	0	0	0	3	0	1	0	0
PDC91-02-011	0	0	30	0	0	0	0	0	0	0	0	0
PDC91-08-067	0	23	23	0	2	0	0	0	0	0	2	0
PDC91-10-076	0	0	7	0	0	0	0	0	0	0	0	0
TOTAL	0	30	60	0	2	0	0	3	0	1	2	0

10B

STREET 1: ALMADEN
STREET 2: FOXWORTHY

	LEFT	THRU	RIGHT
NORTH	60	30	0
EAST	0	2	0
SOUTH	0	3	0
WEST	0	2	1

96-011

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	4	0	0	0	0	0	7	0	0	0	0
PD90-06-042	0	7	0	0	0	2	0	5	2	2	0	0
PDC84-11-107	0	5	0	0	0	0	1	1	5	9	0	0
PDC85-05-043	0	2	0	0	0	0	0	0	2	2	0	0
PDC85-11-109	0	14	0	0	0	0	0	33	2	1	0	0
PDC90-06-061	2	3	8	20	0	0	0	1	0	0	0	1
PDC91-08-058	0	2	0	0	0	4	2	1	0	0	0	0
PDC94-02-008	0	0	21	39	0	6	3	0	0	0	0	0
AM TOTAL	2	37	29	59	0	13	6	48	12	15	0	1

11A

STREET 1: ALMADEN
STREET 2: COLEMAN

	LEFT	THRU	RIGHT
NORTH	29	37	2
EAST	13	0	59
SOUTH	12	48	6
WEST	1	0	15

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	0	7	0	0	0	0	0	4	0	0	0	0
PD90-06-042	0	5	0	0	0	0	2	7	2	2	0	0
PDC84-11-107	0	1	0	0	0	1	0	5	9	5	0	0
PDC85-05-043	0	0	0	0	0	0	0	2	2	2	0	0
PDC85-11-109	0	33	0	0	0	0	0	14	1	2	0	0
PDC90-06-061	1	1	20	8	0	0	0	3	0	0	0	2
PDC91-08-058	0	1	0	0	0	2	4	2	0	0	0	0
PDC94-02-008	0	0	39	21	0	3	6	0	0	0	0	0
PDCSH93-06-022	0	11	4	4	0	0	0	11	0	0	0	0
TOTAL	1	59	63	33	0	6	13	48	15	12	0	2

11B

STREET 1: ALMADEN
STREET 2: COLEMAN

	LEFT	THRU	RIGHT
NORTH	63	59	1
EAST	6	0	33
SOUTH	15	48	13
WEST	2	0	12

96-011

AM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	1	2	0	0	0	1	1	4	0	0	0	1
PD90-06-042	0	0	0	0	0	0	0	0	2	7	0	0
PDC84-11-107	0	0	0	0	0	0	0	0	1	6	0	0
PDC85-05-043	0	0	0	0	0	0	0	0	0	2	0	0
PDC85-11-109	3	9	0	0	0	6	15	30	0	0	0	14
PDC91-08-058	0	0	0	0	10	0	0	0	3	6	19	0
PDC94-02-008	0	19	0	0	0	3	5	36	0	0	0	0
AM TOTAL	4	30	0	0	10	10	21	70	7	21	19	15

12A

STREET 1: BLOSSOM HILL
STREET 2: SANTA TERESA

	LEFT	THRU	RIGHT
NORTH	0	30	4
EAST	10	10	0
SOUTH	7	70	21
WEST	15	19	21

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Mar-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PD89-12-096	1	4	0	0	0	1	1	2	0	0	0	1
PD90-06-042	0	0	0	0	0	0	0	0	7	2	0	0
PDC84-11-107	0	0	0	0	0	0	0	0	6	1	0	0
PDC85-05-043	0	0	0	0	0	0	0	0	2	0	0	0
PDC85-11-109	14	30	0	0	0	15	6	9	0	0	0	3
PDC91-08-058	0	0	0	0	19	0	0	0	6	3	10	0
PDC94-02-008	0	36	0	0	0	5	3	19	0	0	0	0
PDCSH93-06-022	7	0	0	0	19	0	0	0	0	0	19	7
TOTAL	22	70	0	0	38	21	10	30	21	7	29	11

12B

STREET 1: BLOSSOM HILL
STREET 2: SANTA TERESA

	LEFT	THRU	RIGHT
NORTH	0	70	22
EAST	21	38	0
SOUTH	21	30	10
WEST	11	29	7

96-011

AM APPROVED TRIPS 4-Apr-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDC91-08-058	10	0	0	0	0	0	0	0	0	0	0	19
PDCSH 95-01-001	0	21	0	0	0	0	0	36	89	47	0	0
AM TOTAL	10	21	0	0	0	0	0	36	89	47	0	19

13A

STREET 1: CHYNOWETH
STREET 2: PEARL

	LEFT	THRU	RIGHT
NORTH	0	21	10
EAST	0	0	0
SOUTH	89	36	0
WEST	19	0	47

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Apr-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDC91-08-058	19	0	0	0	0	0	0	0	0	0	0	10
PDCSH 95-01-001	0	36	0	0	0	0	0	21	47	89	0	0
TOTAL	19	36	0	0	0	0	0	21	47	89	0	10

13B

STREET 1: CHYNOWETH
STREET 2: PEARL

	LEFT	THRU	RIGHT
NORTH	0	36	19
EAST	0	0	0
SOUTH	47	21	0
WEST	10	0	89

96 - 011

AM APPROVED TRIPS 4-Apr-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDCSH 95-01-001	0	0	0	0	0	89	47	0	0	0	0	0
AM TOTAL	0	0	0	0	0	89	47	0	0	0	0	0

14A

STREET 1: CHYNOWETH
STREET 2: WINFIELD

	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	89	0	0
SOUTH	0	0	47
WEST	0	0	0

NOTE: THESE TRIPS ARE OBTAINED BY REVERSING PM TRIPS WITH RETAIL TRIPS DEDUCTED AND ARE NOT APPLICABLE TO INTERSECTIONS OF ONE-WAY STREETS AND RAMPS

PM APPROVED TRIPS 4-Apr-1996

PROJECT	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
PDCSH 95-01-001	0	0	0	0	0	47	89	0	0	0	0	0
TOTAL	0	0	0	0	0	47	89	0	0	0	0	0

14B

STREET 1: CHYNOWETH
STREET 2: WINFIELD

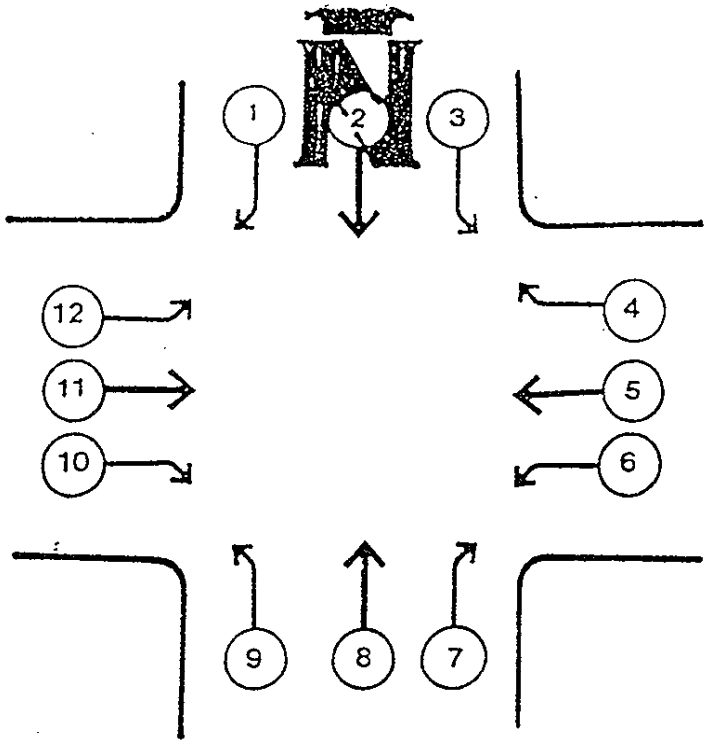
	LEFT	THRU	RIGHT
NORTH	0	0	0
EAST	47	0	0
SOUTH	0	0	89
WEST	0	0	0

96-011

Project Trips

96 - 011

9511-415
COMMERCIAL + APT
ALMADEN EXP / CHYNOWETH



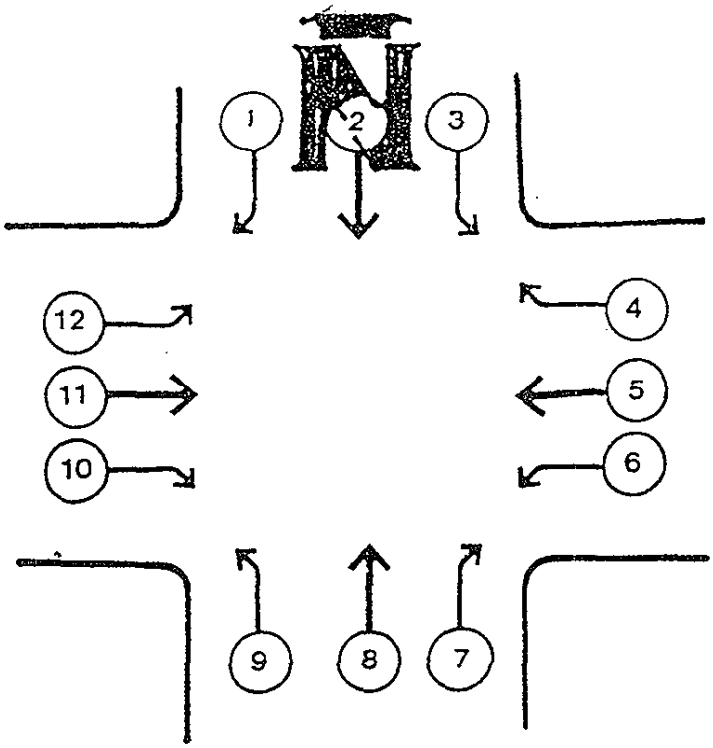
PROJECT NO.:

INITIAL: GLP

DATE: 9/25/96

#	STREET 1	STREET 2	1	2	3	4	5	6	7	8	9	10	11	12
	ALMADEN EXP	BRANHAM	–	53	–	–	–	–	–	40	–	–	–	–
1	ALMADEN EXP	CHERRY-CHYNOWETH	–	–	53	40	58	233	263	–	–	–	61	–
3	ALMADEN EXP.	RT 85 (N)	–	233	–	90	–	–	–	113	–	–	–	–
4	ALMADEN EXP	RT 85 (S)	–	41	–	–	–	–	–	40	–	–	–	13
5	ALMADEN PLAZA	RT85 EB RAMP	–	–	133	–	–	–	–	–	–	–	–	–
6	ALMADEN EXP	BLOSSOM HILL	13	28	–	–	5	9	9	28	–	–	9	12
7	BRANHAM	CHERRY	–	34	–	–	–	–	–	33	25	27	–	–
8	BRANHAM	LIZZIE-SPEAK	–	–	–	–	–	–	–	–	–	–	–	–
9	BRANHAM	PEARL	–	6	–	–	–	23	22	6	–	–	–	–
10	ALMADEN EXP	FOXWORTHY	–	40	–	–	–	–	–	28	–	–	–	–
11														
12														

96-011



9511-24
COMMERCIAL
ALMADEN EXP
CHYNOWETH

PROJECT NO.:

INITIAL: GLP

DATE: 5/31/96

#	STREET 1	STREET 2	1	2	3	4	5	6	7	8	9	10	11	1
1	ALMADEN EXP	COLEMAN	10	27	–	–	–	–	–	27	–	–	–	1
2	BLOSSOM HILL	SANTA TERESA	–	–	–	–	26	–	–	–	6	6	23	
3	CHYNOWETH	PEARL	29	–	–	–	109	–	–	–	–	–	10	2
4	CHYNOWETH	WINFIELD	–	–	–	–	138	–	–	–	83	69	13	
5	BLOSSOM HILL	SANCHEZ	14	–	56	60	–	–	–	–	–	–	–	1
6														
7														
8														
9														
10														
11														
12														

95-011

Level of Service Calculations
City of San Jose

Commercial

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: 9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED
N-S 111.00 9.50
E-W 51.00 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

DIR	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	131	739	51	0	43	5	0	7	0	137	822	58
E	202010	474	434	366	6	4	0	0	0	0	501	458	382
S	203010	135	2767	284	5	77	11	0	5	0	146	2974	308
W	202010	305	196	61	4	3	3	0	0	0	323	208	67

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	131	3015	0.043	0.026	0.069	208
E	2	0 0 2 0 0 0	434	3560	0.122	0.026	0.148	527
S	3	0 0 3 0 0 0	2767	5340	0.518	0.039	0.557	2974
W	2	2 0 0 0 0 0	305	3015	0.101	0.026	0.127	383
				LT =	0.100			
TOTALS	9		3637		0.884			4092

1 - 0.884 = 0.116 / 9 = 0.013
V/C = 0.889

EXISTING LEVEL OF SERVICE = D

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	137	3015	0.045	0.014	0.059	178
E	2	0 0 2 0 0 0	458	3560	0.129	0.014	0.143	509
S	3	0 0 3 0 0 0	2969	5340	0.556	0.021	0.577	3081
W	2	2 0 0 0 0 0	323	3015	0.107	0.014	0.121	365
				LT =	0.100			
TOTALS	9		3887		0.937			4133

1 - 0.937 = 0.063 / 9 = 0.007
V/C = 0.940

EXISTING + APPROVED LEVEL OF SERVICE = E

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	137	3015	0.045	0.014	0.059	178
E	2	0 0 2 0 0 0	458	3560	0.129	0.014	0.143	509
S	3	0 0 3 0 0 0	2974	5340	0.557	0.021	0.578	3087
W	2	2 0 0 0 0 0	323	3015	0.107	0.014	0.121	365
				LT =	0.100			
TOTALS	9		3892		0.938			4139

1 - 0.938 = 0.062 / 9 = 0.007
V/C = 0.940

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3892 - 3887)/ 3887 = 0.13 PERCENT INCREASE
IN CRITICAL VOLUME

/19/88 LV

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM.)
EAK HOUR: PM
OUNT DATE: 4/26/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
ROWTH FACTOR % : 3.6

SIGNAL TYPE : FULLY ACTUATED

N-S	111.00	9.50
E-W	51.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	371	1924	281	0	96	4	0	26	0	384	2115	295
E	202010	359	417	124	16	3	0	0	0	0	388	435	128
S	203010	360	814	442	11	62	11	0	26	0	384	931	469
W	202010	153	539	149	5	4	13	0	0	0	164	562	167

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1924	5340	0.360	0.050	0.410	2189
E	2	2 0 0 0 0 0	359	3015	0.119	0.034	0.153	461
S	2	2 0 0 0 0 0	360	3015	0.119	0.034	0.153	461
W	2	0 0 2 0 0 0	539	3560	0.151	0.034	0.185	659
				LT =	0.100			
OTALS	9		3182		0.849			3770

1 - 0.849 = 0.151 / 9 = 0.017

V/C = 0.844

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2089	5340	0.391	0.032	0.423	2259
E	2	2 0 0 0 0 0	388	3015	0.129	0.021	0.150	452
S	2	2 0 0 0 0 0	384	3015	0.127	0.021	0.148	446
W	2	0 0 2 0 0 0	562	3560	0.158	0.021	0.179	637
				LT =	0.100			
OTALS	9		3423		0.905			3794

1 - 0.905 = 0.095 / 9 = 0.011

V/C = 0.902

EXISTING + APPROVED LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2115	5340	0.396	0.030	0.426	2275
E	2	2 0 0 0 0 0	388	3015	0.129	0.020	0.149	449
S	2	2 0 0 0 0 0	384	3015	0.127	0.020	0.147	443
W	2	0 0 2 0 0 0	562	3560	0.158	0.020	0.178	634
				LT =	0.100			
TOTALS	9		3449		0.910			3801

1 - 0.910 = 0.090 / 9 = 0.010

V/C = 0.907

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3449 - 3423)/ 3423 = 0.76 PERCENT INCREASE
IN CRITICAL VOLUME

56 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

DIR	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	57	1178	53	0	45	0	7	0	0	67	1276	55
E	010010	65	7	18	0	0	0	33	9	5	101	16	24
S	103000	346	2530	0	8	92	0	0	0	56	370	2736	56
W	010010	153	16	473	0	0	2	0	15	0	160	32	496

DIR	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	57	1675	0.034	0.045	0.079	132
E	1	0 1 0 0 0 0	72	1685	0.043	0.045	0.088	148
S	3	0 0 3 0 0 0	2530	5340	0.474	0.135	0.609	3252
W	1	0 1 0 0 0 0	169	1685	0.100	0.045	0.145	244
				LT =	0.079			
TOTALS	6		2828		0.730			3776

1 - 0.730 = 0.270 / 6 = 0.045

V/C = 0.749

EXISTING LEVEL OF SERVICE = C

DIR	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	60	1675	0.036	0.037	0.073	122
E	1	0 1 0 0 0 0	75	1685	0.045	0.037	0.082	138
S	3	0 0 3 0 0 0	2736	5340	0.512	0.112	0.624	3332
W	1	0 1 0 0 0 0	177	1685	0.105	0.037	0.142	239
				LT =	0.079			
TOTALS	6		3048		0.777			3831

1 - 0.777 = 0.223 / 6 = 0.037

V/C = 0.796

EXISTING + APPROVED LEVEL OF SERVICE = C

DIR	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	67	1675	0.040	0.031	0.071	119
E	1	0 1 0 0 0 0	117	1689	0.069	0.031	0.100	169
S	3	0 0 3 0 0 0	2736	5340	0.512	0.094	0.606	3236
W	1	0 1 0 0 0 0	192	1693	0.113	0.031	0.144	244
				LT =	0.079			
TOTALS	6		3112		0.813			3768

1 - 0.813 = 0.187 / 6 = 0.031

V/C = 0.826

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3112 - 3048)/ 3048 = 2.10 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH

ESSAGE: W/MITIGATION (350K COMM.)

EAK HOUR: AM

COUNT DATE: 1/31/95

NAL. DATE: 5/31/96

ROWTH FACTOR % : 0

PLAN AREA:

AP PAGE:

ANAL. INIT.: GLP

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SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
-S	111	8	
E-W	33	8	G
YCLE LENGTH =	160		Y
LOST TIME =	.100		R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	67	1276	55	0	0	0	0	0	0	67	1276	55
E	202010	101	16	24	0	0	0	0	0	0	101	16	24
S	203010	370	2736	56	0	0	0	0	0	0	370	2736	56
W	102010	160	32	496	0	0	0	0	0	0	160	32	496

LEG	# LANES	CRIT. MOVE L S T	R S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0	0 0 0	67	3015	0.022	0.067	0.089	268
E	2	0 0 2	0 0 0	16	3560	0.004	0.067	0.071	253
S	3	0 0 3	0 0 0	2736	5340	0.512	0.100	0.612	3268
W	1	1 0 0	0 0 0	160	1675	0.096	0.033	0.129	216
					LT =	0.100			
TOTALS	8			2979		0.734			4005

1 - 0.734 = 0.266 / 8 = 0.033

==========

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .744 LEVEL OF SERVICE = C

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/19/88 LV

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 1/31/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	135	2288	166	0	124	0	26	0	0	167	2515	173
E	010010	140	31	24	0	0	0	195	52	26	341	84	51
S	103000	414	1560	14	2	77	0	0	0	191	435	1707	206
W	010010	106	22	477	0	0	16	0	52	0	111	75	514

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2288	5340	0.428	0.035	0.463	2472
E	1	0 1 0 0 0 0	171	1694	0.101	0.012	0.113	191
S	1	1 0 0 0 0 0	414	1675	0.247	0.012	0.259	434
W	1	0 1 0 0 0 0	128	1693	0.076	0.012	0.088	149
				LT =	0.079			
OTALS	6		3001		0.931			3246

1 - 0.931 = 0.069 / 6 = 0.012
V/C = 0.925

EXISTING LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2515	5340	0.471	0.003	0.474	2531
E	1	0 1 0 0 0 0	178	1694	0.105	0.001	0.106	180
S	1	1 0 0 0 0 0	435	1675	0.260	0.001	0.261	437
W	1	0 1 0 0 0 0	134	1693	0.079	0.001	0.080	135
				LT =	0.079			
OTALS	6		3262		0.994			3283

1 - 0.994 = 0.006 / 6 = 0.001
V/C = 0.994

EXISTING + APPROVED LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2515	5340	0.471	-.084	0.387	2067
E	1	0 1 0 0 0 0	425	1696	0.251	-.028	0.223	378
S	1	1 0 0 0 0 0	435	1675	0.260	-.028	0.232	389
W	1	0 1 0 0 0 0	186	1717	0.108	-.028	0.080	137
				LT =	0.079			
TOTALS	6		3561		1.169			2971

1 - 1.169 = -.169 / 6 = -.028
V/C = 1.199

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = F

(3561 - 3262)/ 3262 = 9.17 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH

ESSAGE: W/MITIGATION (350K COMM.)

EAK HOUR: PM

COUNT DATE: 1/31/95

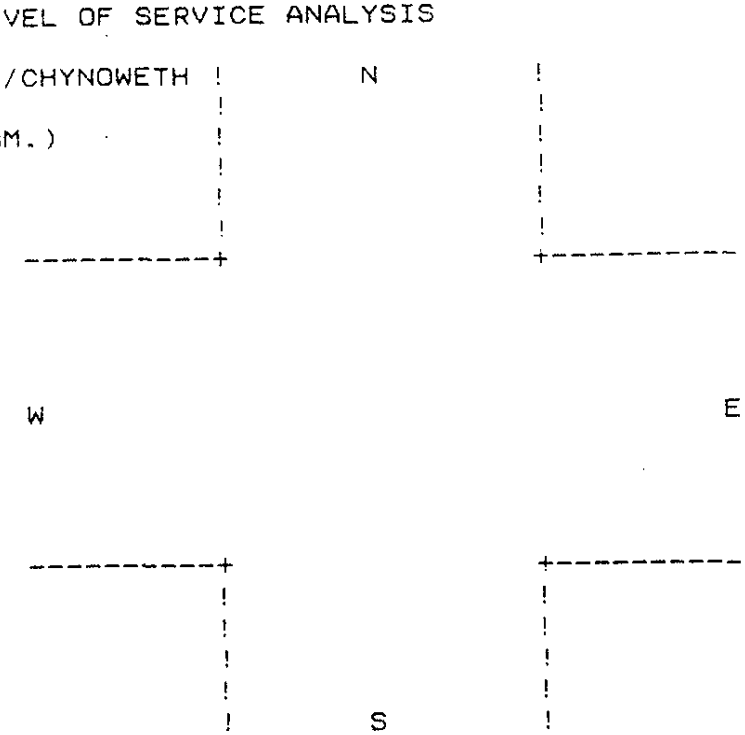
NAL. DATE: 5/31/96

ROWTH FACTOR % : 0

PLAN AREA:

AP PAGE:

ANAL. INIT.: GLP

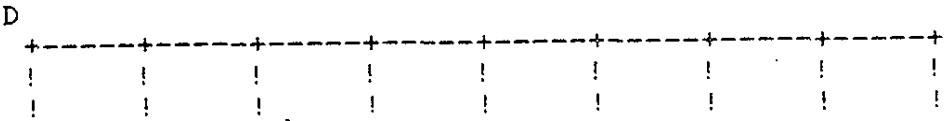


IGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
-S	111	8
E-W	33	8

YCLE LENGTH = 160

OST TIME = .100



EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	167	2515	173	0	0	0	0	0	0	167	2515	173
E	202010	341	84	51	0	0	0	0	0	0	341	84	51
S	203010	435	1707	206	0	0	0	0	0	0	435	1707	206
W	102010	111	75	514	0	0	0	0	0	0	111	75	514

LEG	# LANES	CRIT. MOVE (L S T / R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2515	5340	0.471	0.050	0.521	2782
E	2	2 0 0 0 0 0	341	3015	0.113	0.034	0.147	443
S	2	2 0 0 0 0 0	435	3015	0.144	0.034	0.178	537
W	2	0 0 2 0 0 0	75	3560	0.021	0.034	0.055	196
				LT =	0.100			
TOTALS	9		3366		0.849			3958

1 - 0.849 = 0.151 / 9 = 0.017

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .85 LEVEL OF SERVICE = D

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 7:15-8:15 AM
COUNT DATE: 1/19/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	103.00	9.50
E-W	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	118	684	272	37	46	7	0	4	2	160	765	293
E	203010	99	311	177	11	34	51	2	0	0	116	359	236
S	203010	114	2678	40	23	80	4	0	8	3	142	2887	49
W	203010	480	189	80	10	25	18	2	3	0	514	226	102

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	118	3015	0.039	0.029	0.068	205
E	3	0 0 3 0 0 0	311	5340	0.058	0.043	0.101	539
S	3	0 0 3 0 0 0	2678	5340	0.501	0.043	0.544	2905
W	2	2 0 0 0 0 0	480	3015	0.159	0.029	0.188	567
				LT =	0.100			
TOTALS	%10		3587		0.857			4216

1 - 0.857 = 0.143 / %10 = 0.014
V/C = 0.851

EXISTING LEVEL OF SERVICE = D

N	2	2 0 0 0 0 0	160	3015	0.053	0.014	0.067	202
E	3	0 0 3 0 0 0	359	5340	0.067	0.021	0.088	470
S	3	0 0 3 0 0 0	2879	5340	0.539	0.021	0.560	2990
W	2	2 0 0 0 0 0	512	3015	0.170	0.014	0.184	555
				LT =	0.100			
TOTALS	%10		3910		0.929			4217

1 - 0.929 = 0.071 / %10 = 0.007
V/C = 0.927

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	160	3015	0.053	0.014	0.067	202
E	3	0 0 3 0 0 0	359	5340	0.067	0.021	0.088	470
S	3	0 0 3 0 0 0	2887	5340	0.541	0.021	0.562	3001
W	2	2 0 0 0 0 0	514	3015	0.170	0.014	0.184	555
				LT =	0.100			
TOTALS	%10		3920		0.931			4228

1 - 0.931 = 0.069 / %10 = 0.007
V/C = 0.927

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3920 - 3910)/ 3910 = 0.26 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

1/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	103.00	9.50
E-W	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	689	2366	406	56	85	10	0	27	12	766	2549	440
E	203010	238	559	364	4	52	42	9	4	0	258	632	417
S	203010	253	1257	232	28	51	11	0	27	9	289	1373	259
W	203010	494	675	141	7	61	33	8	8	0	524	764	178

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2366	5340	0.443	0.031	0.474	2531
E	3	0 0 3 0 0 0	559	5340	0.105	0.031	0.136	726
S	2	2 0 0 0 0 0	253	3015	0.084	0.021	0.105	317
W	2	2 0 0 0 0 0	494	3015	0.164	0.021	0.185	558
				LT = 0.100				
TOTALS	%10		3672		0.896			4132

1 - 0.896 = 0.104 / %10 = 0.010
V/C = 0.889

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2522	5340	0.472	0.013	0.485	2590
E	3	0 0 3 0 0 0	628	5340	0.118	0.013	0.131	700
S	2	2 0 0 0 0 0	289	3015	0.096	0.009	0.105	317
W	2	2 0 0 0 0 0	516	3015	0.171	0.009	0.180	543
				LT = 0.100				
TOTALS	%10		3955		0.957			4150

1 - 0.957 = 0.043 / %10 = 0.004
V/C = 0.953

EXISTING + APPROVED LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2549	5340	0.477	0.011	0.488	2606
E	3	0 0 3 0 0 0	632	5340	0.118	0.011	0.129	689
S	2	2 0 0 0 0 0	289	3015	0.096	0.007	0.103	311
W	2	2 0 0 0 0 0	524	3015	0.174	0.007	0.181	546
				LT = 0.100				
TOTALS	%10		3994		0.965			4152

1 - 0.965 = 0.035 / %10 = 0.004
V/C = 0.96

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

3994 - 3955)/ 3955 = 0.99 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

F/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & CHERRY
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
COUNT DATE: 5/2/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	25.00	5.00
E-W	60.00	8.00

CYCLE LENGTH = 98
LOST TIME = 0.133

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	101100	33	150	69	0	0	0	0	9	0	34	164	71
E	101100	28	449	64	0	0	0	0	0	0	29	464	66
S	101100	83	148	72	0	0	0	4	5	0	90	158	74
W	101100	61	397	134	0	0	0	0	0	6	63	410	144

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	219	3504	0.063	0.191	0.254	890
E	2	0 0 1 1 0 0	513	3532	0.145	0.191	0.336	1187
S	1	1 0 0 0 0 0	83	1675	0.050	0.096	0.146	245
W	1	1 0 0 0 0 0	61	1675	0.036	0.096	0.132	221
				LT =	0.133			
TOTALS	6		876		0.427			2543

1 - 0.427 = 0.573 / 6 = 0.096
V/C = 0.344

EXISTING LEVEL OF SERVICE = A

N	2	0 0 1 1 0 0	226	3504	0.064	0.188	0.252	883
E	2	0 0 1 1 0 0	530	3532	0.150	0.188	0.338	1194
S	1	1 0 0 0 0 0	86	1675	0.051	0.094	0.145	243
W	1	1 0 0 0 0 0	63	1675	0.038	0.094	0.132	221
				LT =	0.133			
TOTALS	6		905		0.436			2541

1 - 0.436 = 0.564 / 6 = 0.094
V/C = 0.356

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	0 0 1 1 0 0	235	3505	0.067	0.186	0.253	887
E	2	0 0 1 1 0 0	530	3532	0.150	0.186	0.336	1187
S	1	1 0 0 0 0 0	90	1675	0.054	0.093	0.147	246
W	1	1 0 0 0 0 0	63	1675	0.038	0.093	0.131	219
				LT =	0.133			
TOTALS	6		918		0.442			2539

1 - 0.442 = 0.558 / 6 = 0.093
V/C = 0.362

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(918 - 905)/ 905 = 1.44 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & CHERRY
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 1700
COUNT DATE: 3/2/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.9

SIGNAL TYPE : FULLY ACTUATED

N-S	25.00	5.00
E-W	60.00	8.00

CYCLE LENGTH = 98
LOST TIME = 0.133

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	101100	77	210	83	0	0	0	0	31	0	80	249	86
E	101100	70	667	93	0	0	0	0	0	0	73	693	97
S	101100	88	125	67	0	0	0	21	31	0	112	161	70
W	101100	71	526	208	0	0	0	0	0	21	74	547	237

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	293	3508	0.084	0.158	0.242	849
E	2	0 0 1 1 0 0	760	3533	0.215	0.158	0.373	1318
S	1	1 0 0 0 0 0	88	1675	0.053	0.079	0.132	221
W	1	1 0 0 0 0 0	71	1675	0.042	0.079	0.121	203
				LT =	0.133			
TOTALS	6		1212		0.527			2591

1 - 0.527 = 0.473 / 6 = 0.079

V/C = 0.468

EXISTING LEVEL OF SERVICE = A

N	2	0 0 1 1 0 0	304	3508	0.087	0.153	0.240	842
E	2	0 0 1 1 0 0	790	3533	0.224	0.153	0.377	1332
S	1	1 0 0 0 0 0	91	1675	0.054	0.076	0.130	218
W	1	1 0 0 0 0 0	74	1675	0.044	0.076	0.120	201
				LT =	0.133			
TOTALS	6		1259		0.542			2593

1 - 0.542 = 0.458 / 6 = 0.076

V/C = 0.486

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	0 0 1 1 0 0	335	3511	0.095	0.146	0.241	846
E	2	0 0 1 1 0 0	790	3533	0.224	0.146	0.370	1307
S	1	1 0 0 0 0 0	112	1675	0.067	0.073	0.140	235
W	1	1 0 0 0 0 0	74	1675	0.044	0.073	0.117	196
				LT =	0.133			
TOTALS	6		1311		0.563			2584

1 - 0.563 = 0.437 / 6 = 0.073

V/C = 0.507

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1311 - 1259)/ 1259 = 4.13 PERCENT INCREASE
IN CRITICAL VOLUME

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & LIZZIE
ESSAGE: #9511-5 (350K COMM.)
EAK HOUR: 730
COUNT DATE: 7/7/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
GROWTH FACTOR % : 2.7

SIGNAL TYPE : FULLY ACTUATED

N-S	30.00	4.00
E-W	60.00	8.00

CYCLE LENGTH = 102
LOST TIME = 0.118

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	19	10	4	0	0	0	0	0	0	20	10	4
E	101100	67	425	16	0	0	0	0	0	0	69	436	16
S	000002	29	4	51	0	0	0	0	0	0	30	4	52
W	101100	6	386	15	0	0	0	0	0	0	6	396	15

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	29	1711	0.017	0.132	0.149	255
E	1	1 0 0 0 0 0	67	1675	0.040	0.132	0.172	288
S	1	0 0 0 0 0 2	84	1680	0.050	0.132	0.182	306
W	2	0 0 1 1 0 0	401	3551	0.113	0.265	0.378	1342
				LT =	0.118			
TOTALS	5		581		0.338			2191

1 - 0.338 = 0.662 / 5 = 0.132
V/C = 0.265

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	30	1710	0.018	0.131	0.149	255
E	1	1 0 0 0 0 0	69	1675	0.041	0.131	0.172	288
S	1	0 0 0 0 0 2	86	1680	0.051	0.131	0.182	306
W	2	0 0 1 1 0 0	411	3551	0.116	0.262	0.378	1342
				LT =	0.118			
TOTALS	5		596		0.344			2191

1 - 0.344 = 0.656 / 5 = 0.131
V/C = 0.272

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	30	1710	0.018	0.131	0.149	255
E	1	1 0 0 0 0 0	69	1675	0.041	0.131	0.172	288
S	1	0 0 0 0 0 2	86	1680	0.051	0.131	0.182	306
W	2	0 0 1 1 0 0	411	3551	0.116	0.262	0.378	1342
				LT =	0.118			
TOTALS	5		596		0.344			2191

1 - 0.344 = 0.656 / 5 = 0.131
V/C = 0.272

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

596 - 596)/ 596 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & LIZZIE
ESSAGE: #9511-5 (350K COMM.)
EAK HOUR: 1645
OUNT DATE: 7/7/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
ROWTH FACTOR % : 2.7

SIGNAL TYPE : FULLY ACTUATED

N-S	30.00	4.00
E-W	60.00	8.00

CYCLE LENGTH = 102
LOST TIME = 0.118

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	65	21	23	0	0	0	0	0	0	67	22	24
E	101100	302	751	87	0	0	0	0	0	0	310	771	89
S	000002	122	18	56	0	0	0	0	0	0	125	18	58
W	101100	21	542	66	0	0	0	0	0	0	22	557	68

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	86	1701	0.051	0.073	0.124	211
E	1	1 0 0 0 0 0	302	1675	0.180	0.073	0.253	424
S	1	0 0 0 0 0 2	196	1685	0.116	0.073	0.189	318
W	2	0 0 1 1 0 0	608	3535	0.172	0.145	0.317	1121
				LT =	0.118			
OTALS	5		1192		0.637			2074

1 - 0.637 = 0.363 / 5 = 0.073
V/C = 0.575

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	89	1701	0.052	0.070	0.122	208
E	1	1 0 0 0 0 0	310	1675	0.185	0.070	0.255	427
	1	0 0 0 0 0 2	201	1684	0.119	0.070	0.189	318
	2	0 0 1 1 0 0	625	3535	0.177	0.140	0.317	1121
				LT =	0.118			
OTALS	5		1225		0.651			2074

1 - 0.651 = 0.349 / 5 = 0.070
V/C = 0.591

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	89	1701	0.052	0.070	0.122	208
E	1	1 0 0 0 0 0	310	1675	0.185	0.070	0.255	427
S	1	0 0 0 0 0 2	201	1684	0.119	0.070	0.189	318
W	2	0 0 1 1 0 0	625	3535	0.177	0.140	0.317	1121
				LT =	0.118			
OTALS	5		1225		0.651			2074

1 - 0.651 = 0.349 / 5 = 0.070
V/C = 0.591

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1225 - 1225)/ 1225 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & PEARL
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 715
COUNT DATE: 6/6/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	75.00	7.50
E-W	70.00	7.50

CYCLE LENGTH = 160
LOST TIME = 0.094

DIR	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	102010	75	263	146	0	25	0	0	1	0	77	297	150
E	103010	239	588	170	0	0	0	6	0	0	252	606	175
S	102010	306	476	129	0	32	0	0	1	4	315	523	137
W	103010	98	256	201	0	0	0	0	0	0	101	264	207

DIR	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	263	3560	0.074	0.131	0.205	730
E	1	1 0 0 0 0 0	239	1675	0.143	0.065	0.208	348
S	1	1 0 0 0 0 0	306	1675	0.183	0.065	0.248	415
W	3	0 0 3 0 0 0	256	5340	0.048	0.196	0.244	1303
				LT =	0.094			
TOTALS	7		1064		0.542			2796

1 - 0.542 = 0.458 / 7 = 0.065

V/C = 0.381

EXISTING LEVEL OF SERVICE = A

DIR	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	296	3560	0.083	0.125	0.208	740
E	1	1 0 0 0 0 0	246	1675	0.147	0.063	0.210	352
S	1	1 0 0 0 0 0	315	1675	0.188	0.063	0.251	420
W	3	0 0 3 0 0 0	264	5340	0.049	0.188	0.237	1266
				LT =	0.094			
TOTALS	7		1121		0.561			2778

1 - 0.561 = 0.439 / 7 = 0.063

V/C = 0.404

EXISTING + APPROVED LEVEL OF SERVICE = A

DIR	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	297	3560	0.083	0.125	0.208	740
E	1	1 0 0 0 0 0	252	1675	0.150	0.062	0.212	355
S	1	1 0 0 0 0 0	315	1675	0.188	0.062	0.250	419
W	3	0 0 3 0 0 0	264	5340	0.049	0.187	0.236	1260
				LT =	0.094			
TOTALS	7		1128		0.564			2774

1 - 0.564 = 0.436 / 7 = 0.062

V/C = 0.407

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1128 - 1121)/ 1121 = 0.62 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

OCATION: BRANHAM & PEARL
ESSAGE: #9511-5 (350K COMM.)
EAK HOUR: 1645
COUNT DATE: 6/6/95
^NAL. DATE: 5/31/96
. NAL. INIT: GLP
ROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	75.00	7.50
E-W	70.00	7.50

CYCLE LENGTH = 160
LOST TIME = 0.094

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	102010	180	512	246	0	32	0	0	5	0	185	564	253
E	103010	315	546	96	0	0	0	21	0	0	345	562	99
S	102010	288	306	255	0	25	0	0	5	21	297	345	284
W	103010	243	748	322	0	0	0	0	0	0	250	770	332

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	512	3560	0.144	0.075	0.219	780
E	1	1 0 0 0 0 0	315	1675	0.188	0.037	0.225	377
S	1	1 0 0 0 0 0	288	1675	0.172	0.037	0.209	350
W	3	0 0 3 0 0 0	748	5340	0.140	0.112	0.252	1346
				LT =	0.094			
OTALS	7		1863		0.738			2853

1 - 0.738 = 0.262 / 7 = 0.037

V/C = 0.653

EXISTING LEVEL OF SERVICE = B

N	2	0 0 2 0 0 0	559	3560	0.157	0.067	0.224	797
E	1	1 0 0 0 0 0	324	1675	0.193	0.034	0.227	380
S	1	1 0 0 0 0 0	297	1675	0.177	0.034	0.211	353
W	3	0 0 3 0 0 0	770	5340	0.144	0.101	0.245	1308
				LT =	0.094			
TOTALS	7		1950		0.765			2838

1 - 0.765 = 0.235 / 7 = 0.034

V/C = 0.687

EXISTING + APPROVED LEVEL OF SERVICE = B

N	2	0 0 2 0 0 0	564	3560	0.158	0.063	0.221	787
E	1	1 0 0 0 0 0	345	1675	0.206	0.032	0.238	399
S	1	1 0 0 0 0 0	297	1675	0.177	0.032	0.209	350
W	3	0 0 3 0 0 0	770	5340	0.144	0.095	0.239	1276
				LT =	0.094			
TOTALS	7		1976		0.779			2812

1 - 0.779 = 0.221 / 7 = 0.032

V/C = 0.703

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(1976 - 1950)/ 1950 = 1.33 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

JCATION: ALMADEN & FOXWORTHY
ESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
OUNT DATE: 5/10/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	121	879	43	0	3	0	0	4	0	125	915	44
E	101010	29	50	200	0	2	60	0	0	0	30	54	267
S	103010	47	3627	31	1	30	0	0	3	0	50	3780	32
W	101010	66	60	145	0	2	0	0	0	0	68	64	150

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	121	1675	0.072	0.018	0.090	151
E	1	0 0 1 0 0 0	50	1780	0.028	0.018	0.046	82
S	3	0 0 3 0 0 0	3627	5340	0.679	0.053	0.732	3909
W	1	1 0 0 0 0 0	66	1675	0.039	0.018	0.057	95
				LT =	0.077			
TOTALS	6		3864		0.895			4237

1 - 0.895 = 0.105 / 6 = 0.018

V/C = 0.912

EXISTING LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	125	1675	0.075	0.012	0.087	146
E	1	0 0 1 0 0 0	54	1780	0.030	0.012	0.042	75
S	3	0 0 3 0 0 0	3777	5340	0.707	0.035	0.742	3962
W	1	1 0 0 0 0 0	68	1675	0.041	0.012	0.053	89
				LT =	0.077			
OTALS	6		4024		0.930			4272

1 - 0.930 = 0.070 / 6 = 0.012

V/C = 0.942

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	125	1675	0.075	0.012	0.087	146
E	1	0 0 1 0 0 0	54	1780	0.030	0.012	0.042	75
S	3	0 0 3 0 0 0	3780	5340	0.708	0.035	0.743	3968
W	1	1 0 0 0 0 0	68	1675	0.041	0.012	0.053	89
				LT =	0.077			
OTALS	6		4027		0.931			4278

1 - 0.931 = 0.069 / 6 = 0.012

V/C = 0.941

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

4027 - 4024)/ 4024 = 0.07 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

LEVEL OF SERVICE ANALYSIS

OCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM.)
EAK HOUR: PM
OUNT DATE: 5/10/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
ROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	249	2665	134	60	30	0	0	16	0	317	2799	138
E	101010	43	71	65	0	2	0	0	0	0	44	75	67
S	103010	140	953	29	0	3	0	0	16	0	145	1003	30
W	101010	113	95	64	0	2	1	0	0	0	117	100	67

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	2799	7085	0.395	0.193	0.588	4166
E	1	0 0 1 0 0 0	71	1780	0.040	0.048	0.088	157
S	1	1 0 0 0 0 0	140	1675	0.084	0.048	0.132	221
W	1	1 0 0 0 0 0	113	1675	0.067	0.048	0.115	193
				LT =	0.077			
OTALS	7		3123		0.663			4737

1 - 0.663 = 0.337 / 7 = 0.048

V/C = 0.659

EXISTING LEVEL OF SERVICE = B

N	4	0 0 3 1 0 0	2921	7085	0.412	0.178	0.590	4180
E	1	0 0 1 0 0 0	75	1780	0.042	0.045	0.087	155
S	1	1 0 0 0 0 0	145	1675	0.087	0.045	0.132	221
W	1	1 0 0 0 0 0	117	1675	0.070	0.045	0.115	193
				LT =	0.077			
OTALS	7		3258		0.688			4749

1 - 0.688 = 0.312 / 7 = 0.045

V/C = 0.686

EXISTING + APPROVED LEVEL OF SERVICE = B

N	4	0 0 3 1 0 0	2937	7085	0.415	0.177	0.592	4194
E	1	0 0 1 0 0 0	75	1780	0.042	0.044	0.086	153
S	1	1 0 0 0 0 0	145	1675	0.087	0.044	0.131	219
W	1	1 0 0 0 0 0	117	1675	0.070	0.044	0.114	191
				LT =	0.077			
TOTALS	7		3274		0.691			4757

1 - 0.691 = 0.309 / 7 = 0.044

V/C = 0.688

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

3274 - 3258)/ 3258 = 0.49 PERCENT INCREASE IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 730
COUNT DATE: 11/15/94
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 5.1

SIGNAL TYPE : FULLY ACTUATED

N-S	93.50	9.50
E-W	68.50	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	45	704	62	29	37	2	0	4	2	76	781	69
E	202010	476	258	263	13	0	59	0	0	0	513	271	335
S	203010	27	2529	655	12	48	6	0	8	0	40	2714	694
W	102010	309	195	21	1	0	15	3	0	0	329	205	37

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	45	1675	0.027	0.020	0.047	79
E	2	0 0 2 0 0 0	258	3560	0.072	0.041	0.113	402
S	3	0 0 3 0 0 0	2529	5340	0.474	0.061	0.535	2857
W	1	1 0 0 0 0 0	309	1675	0.184	0.020	0.204	342
				LT =	0.100			
TOTALS	7		3141		0.857			3680

1 - 0.857 = 0.143 / 7 = 0.020

V/C = 0.854

EXISTING LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	76	1675	0.045	0.011	0.056	94
E	2	0 0 2 0 0 0	271	3560	0.076	0.022	0.098	349
S	3	0 0 3 0 0 0	2706	5340	0.507	0.033	0.540	2884
W	1	1 0 0 0 0 0	326	1675	0.195	0.011	0.206	345
				LT =	0.100			
TOTALS	7		3379		0.923			3672

1 - 0.923 = 0.077 / 7 = 0.011

V/C = 0.920

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	76	1675	0.045	0.011	0.056	94
E	2	0 0 2 0 0 0	271	3560	0.076	0.021	0.097	345
S	3	0 0 3 0 0 0	2714	5340	0.508	0.032	0.540	2884
W	1	1 0 0 0 0 0	329	1675	0.196	0.011	0.207	347
				LT =	0.100			
TOTALS	7		3390		0.925			3670

1 - 0.925 = 0.075 / 7 = 0.011

V/C = 0.924

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

3390 - 3379)/ 3379 = 0.33 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

9/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	93.50	9.50
E-W	68.50	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	227	1933	306	63	59	1	0	26	10	297	2076	326
E	202010	720	277	123	6	0	33	0	0	0	748	285	160
S	203010	36	946	517	15	48	13	0	26	0	52	1048	546
W	102010	126	256	31	2	0	12	10	0	0	142	264	44

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1933	5340	0.362	0.072	0.434	2318
E	2	2 0 0 0 0 0	720	3015	0.239	0.048	0.287	865
S	2	2 0 0 0 0 0	36	3015	0.012	0.048	0.060	181
W	2	0 0 2 0 0 0	256	3560	0.072	0.048	0.120	427
				LT =	0.100			
OTALS	9		2945		0.785			3791

1 - 0.785 = 0.215 / 9 = 0.024

V/C = 0.777

EXISTING LEVEL OF SERVICE = C

N	3	0 0 3 0 0 0	2050	5340	0.384	0.059	0.443	2366
E	2	2 0 0 0 0 0	748	3015	0.248	0.039	0.287	865
S	2	2 0 0 0 0 0	52	3015	0.017	0.039	0.056	169
W	2	0 0 2 0 0 0	264	3560	0.074	0.039	0.113	402
				LT =	0.100			
OTALS	9		3114		0.823			3802

1 - 0.823 = 0.177 / 9 = 0.020

V/C = 0.819

EXISTING + APPROVED LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2076	5340	0.389	0.057	0.446	2382
E	2	2 0 0 0 0 0	748	3015	0.248	0.038	0.286	862
S	2	2 0 0 0 0 0	52	3015	0.017	0.038	0.055	166
W	2	0 0 2 0 0 0	264	3560	0.074	0.038	0.112	399
				LT =	0.100			
TOTALS	9		3140		0.828			3809

1 - 0.828 = 0.172 / 9 = 0.019

V/C = 0.824

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

3140 - 3114)/ 3114 = 0.83 PERCENT INCREASE IN CRITICAL VOLUME

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

JCATION: BLOSSOM HILL & SANTA TERESA
ESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: AM
OUNT DATE: 5/10/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	43.50	8.50

CYCLE LENGTH = 120
LOST TIME = 0.138

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	169	349	133	0	30	4	0	0	0	175	391	141
E	203010	122	558	252	10	10	0	0	6	0	136	592	260
S	203010	196	827	80	7	70	21	1	0	0	210	924	104
W	203010	164	226	64	15	19	21	0	4	1	184	256	88

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	169	3015	0.056	0.099	0.155	467
E	3	0 0 3 0 0 0	558	5340	0.104	0.148	0.252	1346
S	3	0 0 3 0 0 0	827	5340	0.155	0.148	0.303	1618
W	2	2 0 0 0 0 0	164	3015	0.054	0.099	0.153	461
				LT =	0.138			
TOTALS	%10		1718		0.507			3892

1 - 0.507 = 0.493 / %10 = 0.049
V/C = 0.441

EXISTING LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	175	3015	0.058	0.092	0.150	452
E	3	0 0 3 0 0 0	586	5340	0.110	0.138	0.248	1324
S	3	0 0 3 0 0 0	924	5340	0.173	0.138	0.311	1661
W	2	2 0 0 0 0 0	184	3015	0.061	0.092	0.153	461
				LT =	0.138			
OTALS	%10		1869		0.540			3898

1 - 0.540 = 0.460 / %10 = 0.046
V/C = 0.479

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	175	3015	0.058	0.092	0.150	452
E	3	0 0 3 0 0 0	592	5340	0.111	0.138	0.249	1330
S	3	0 0 3 0 0 0	924	5340	0.173	0.138	0.311	1661
W	2	2 0 0 0 0 0	184	3015	0.061	0.092	0.153	461
				LT =	0.138			
OTALS	%10		1875		0.541			3904

1 - 0.541 = 0.459 / %10 = 0.046
V/C = 0.480

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

1875 - 1869)/ 1869 = 0.32 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

OCATION: BLOSSOM HILL & SANTA TERESA
ESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: PM
OUNT DATE: 10/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
ROWTH FACTOR % : 1.8

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	43.50	8.50

CYCLE LENGTH = 120
LOST TIME = 0.138

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	513	905	268	0	70	22	0	0	0	522	991	295
E	203010	176	569	143	21	38	0	0	21	0	200	638	146
S	203010	207	537	108	21	30	10	5	0	0	237	577	120
W	203010	297	677	158	11	29	7	0	21	5	313	739	173

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	513	3015	0.170	0.077	0.247	745
E	3	0 0 3 0 0 0	569	5340	0.107	0.116	0.223	1191
S	3	0 0 3 0 0 0	537	5340	0.101	0.116	0.217	1159
W	2	2 0 0 0 0 0	297	3015	0.099	0.077	0.176	531
				LT =	0.138			
TOTALS	%10		1916		0.615			3626

1 - 0.615 = 0.385 / %10 = 0.039
V/C = 0.528

EXISTING LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	522	3015	0.173	0.072	0.245	739
E	3	0 0 3 0 0 0	617	5340	0.116	0.108	0.224	1196
S	3	0 0 3 0 0 0	577	5340	0.108	0.108	0.216	1153
W	2	2 0 0 0 0 0	313	3015	0.104	0.072	0.176	531
				LT =	0.138			
OTALS	%10		2029		0.639			3619

1 - 0.639 = 0.361 / %10 = 0.036
V/C = 0.561

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	522	3015	0.173	0.072	0.245	739
E	3	0 0 3 0 0 0	638	5340	0.119	0.107	0.226	1207
S	3	0 0 3 0 0 0	577	5340	0.108	0.107	0.215	1148
W	2	2 0 0 0 0 0	313	3015	0.104	0.072	0.176	531
				LT =	0.138			
OTALS	%10		2050		0.642			3625

1 - 0.642 = 0.358 / %10 = 0.036
V/C = 0.566

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

2050 - 2029)/ 2029 = 1.03 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

LEVEL OF SERVICE ANALYSIS

OCATION: CHYNOWETH & PEARL
ESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 700
OUNT DATE: 10/13/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
ROWTH FACTOR % : 1.8

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	70.00	8.00

CYCLE LENGTH = 146
LOST TIME = 0.110

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	201010	184	14	253	0	21	10	0	0	7	187	35	275
E	101010	9	290	280	0	0	0	0	31	0	9	326	285
S	102010	18	13	0	89	36	0	0	0	0	107	49	0
W	202010	311	281	50	19	0	47	5	18	0	341	304	98

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	184	3015	0.061	0.160	0.221	666
E	1	0 0 1 0 0 0	290	1780	0.163	0.080	0.243	433
S	2	0 0 2 0 0 0	13	3560	0.004	0.160	0.164	584
W	2	2 0 0 0 0 0	311	3015	0.103	0.160	0.263	793
				LT =	0.110			
TOTALS	7		798		0.441			2476

1 - 0.441 = 0.559 / 7 = 0.080
V/C = 0.322

EXISTING LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	35	1780	0.020	0.106	0.126	224
E	1	0 0 1 0 0 0	295	1780	0.166	0.106	0.272	484
S	1	1 0 0 0 0 0	107	1675	0.064	0.106	0.170	285
W	2	2 0 0 0 0 0	336	3015	0.111	0.212	0.323	974
				LT =	0.110			
OTALS	5		773		0.471			1967

1 - 0.471 = 0.529 / 5 = 0.106
V/C = 0.393

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	35	1780	0.020	0.102	0.122	217
E	1	0 0 1 0 0 0	326	1780	0.183	0.102	0.285	507
S	1	1 0 0 0 0 0	107	1675	0.064	0.102	0.166	278
W	2	2 0 0 0 0 0	341	3015	0.113	0.204	0.317	956
				LT =	0.110			
OTALS	5		809		0.490			1958

1 - 0.490 = 0.510 / 5 = 0.102
V/C = 0.413

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

809 - 773)/ 773 = 4.66 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

= 12/88 LV

LEVEL OF SERVICE ANALYSIS

OCATION: CHYNOWETH & PEARL
ESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 4:45-5:45 PM
OUNT DATE: 1/19/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
ROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	70.00	8.00

CYCLE LENGTH = 146
LOST TIME = 0.110

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	201010	108	6	500	0	36	19	0	0	26	113	42	568
E	101010	4	189	54	0	0	0	0	104	0	4	302	56
S	102010	21	14	0	47	21	0	0	0	0	69	36	0
W	202010	459	267	17	10	0	89	26	104	0	516	383	107

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	108	3015	0.036	0.169	0.205	618
E	1	0 0 1 0 0 0	189	1780	0.106	0.085	0.191	340
S	2	0 0 2 0 0 0	14	3560	0.004	0.169	0.173	616
W	2	2 0 0 0 0 0	459	3015	0.152	0.169	0.321	968
				LT =	0.110			
TOTALS	7		770		0.408			2542

1 - 0.408 = 0.592 / 7 = 0.085
V/C = 0.303

EXISTING LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	42	1780	0.024	0.110	0.134	239
E	1	0 0 1 0 0 0	198	1780	0.111	0.110	0.221	393
S	1	1 0 0 0 0 0	69	1675	0.041	0.110	0.151	253
W	2	2 0 0 0 0 0	490	3015	0.163	0.220	0.383	1155
				LT =	0.110			
OTALS	5		799		0.449			2040

1 - 0.449 = 0.551 / 5 = 0.110
V/C = 0.392

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	42	1780	0.024	0.097	0.121	215
E	1	0 0 1 0 0 0	302	1780	0.170	0.097	0.267	475
S	1	1 0 0 0 0 0	69	1675	0.041	0.097	0.138	231
W	2	2 0 0 0 0 0	516	3015	0.171	0.194	0.365	1100
				LT =	0.110			
OTALS	5		929		0.516			2021

1 - 0.516 = 0.484 / 5 = 0.097
V/C = 0.46

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

929 - 799)/ 799 = 16.27 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

LEVEL OF SERVICE ANALYSIS

OCATION: CHYNOWETH & WINFIELD
ESSAGE: #9511-5 (350K COMM.)
PEAK HOUR: 730
OUNT DATE: 8/25/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 2.4

SIGNAL TYPE : FULLY ACTUATED

N-S	30.00	4.50
E-W	70.00	8.50

CYCLE LENGTH = 113
LOST TIME = 0.115

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	6	7	4	0	0	0	0	0	0	6	7	4
E	110100	322	3	2	89	0	0	0	38	0	419	41	2
S	010010	11	2	268	0	0	47	15	0	0	26	2	321
W	101100	1	10	38	0	0	0	0	23	9	1	33	48

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	13	1732	0.008	0.112	0.120	208
E	3	1 1 0 1 0 0	327	4739	0.069	0.337	0.406	1924
S	1	0 1 0 0 0 0	13	1691	0.008	0.112	0.120	203
W	2	0 0 1 1 0 0	48	3465	0.014	0.225	0.239	828
				LT =	0.115			
TOTALS	7		401		0.214			3163

1 - 0.214 = 0.786 / 7 = 0.112
V/C = 0.127

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	13	1732	0.008	0.109	0.117	203
E	3	1 1 0 1 0 0	424	4738	0.089	0.328	0.417	1976
S	1	0 1 0 0 0 0	13	1691	0.008	0.109	0.117	198
W	2	0 0 1 1 0 0	49	3465	0.014	0.219	0.233	807
				LT =	0.115			
OTALS	7		499		0.234			3184

1 - 0.234 = 0.766 / 7 = 0.109
V/C = 0.157

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	13	1732	0.008	0.106	0.114	197
E	3	1 1 0 1 0 0	462	4817	0.096	0.318	0.414	1994
S	1	0 1 0 0 0 0	28	1683	0.017	0.106	0.123	207
W	2	0 0 1 1 0 0	81	3478	0.023	0.212	0.235	817
				LT =	0.115			
OTALS	7		584		0.259			3215

1 - 0.259 = 0.741 / 7 = 0.106
V/C = 0.182

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

584 - 499)/ 499 = 17.03 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

LEVEL OF SERVICE ANALYSIS

CATION: CHYNOWETH & WINFIELD
SSAGE: #9511-5 (350K COMM.)
AK HOUR: 5-6 PM
OUNT DATE: 1/18/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
ROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED
N-S 30.00 4.50
E-W 70.00 8.50

CYCLE LENGTH = 113
LOST TIME = 0.115

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	2	7	0	0	0	0	0	0	0	2	7	0
E	110100	704	8	7	47	0	0	0	130	0	783	138	7
S	010010	67	9	756	0	0	89	52	0	0	122	9	879
W	101100	1	8	47	0	0	0	0	130	52	1	138	101

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	9	1757	0.005	0.095	0.100	176
E	3	1 1 0 1 0 0	719	4733	0.152	0.286	0.438	2073
S	1	0 1 0 0 0 0	76	1687	0.045	0.095	0.140	236
W	2	0 0 1 1 0 0	55	3462	0.016	0.191	0.207	717
				LT =	0.115			
TOTALS	7		859		0.333			3202

1 - 0.333 = 0.667 / 7 = 0.095

V/C = 0.268

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	9	1757	0.005	0.093	0.098	172
E	3	1 1 0 1 0 0	798	4732	0.169	0.278	0.447	2115
S	1	0 1 0 0 0 0	79	1687	0.047	0.093	0.140	236
W	2	0 0 1 1 0 0	57	3461	0.016	0.185	0.201	696
				LT =	0.115			
OTALS	7		943		0.352			3219

1 - 0.352 = 0.648 / 7 = 0.093

V/C = 0.293

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	9	1757	0.005	0.077	0.082	144
E	3	1 1 0 1 0 0	928	4835	0.192	0.232	0.424	2050
S	1	0 1 0 0 0 0	131	1682	0.078	0.077	0.155	261
W	2	0 0 1 1 0 0	239	3492	0.068	0.155	0.223	779
				LT =	0.115			
OTALS	7		1307		0.458			3234

1 - 0.458 = 0.542 / 7 = 0.077

V/C = 0.404

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

1307 - 943)/ 943 = 38.60 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

Level of Service Calculations
City of San Jose

Commercial + Residential

96 - 011

LEVEL OF SERVICE ANALYSIS

OCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM+400 APTS.)

SIGNAL TYPE : FULLY ACTUATED

N-S	111.00	9.50
E-W	51.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

EAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 5/31/96
NAL. INIT: GLP
GROWTH FACTOR % : 4.5

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	131	739	51	0	43	5	0	21	0	137	836	58
E	202010	474	434	366	6	4	0	0	0	0	501	458	382
S	203010	135	2767	284	5	77	11	0	32	0	146	3001	308
W	202010	305	196	61	4	3	3	0	0	0	323	208	67

EG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	131	3015	0.043	0.026	0.069	208
E	2	0 0 2 0 0 0	434	3560	0.122	0.026	0.148	527
S	3	0 0 3 0 0 0	2767	5340	0.518	0.039	0.557	2974
W	2	2 0 0 0 0 0	305	3015	0.101	0.026	0.127	383
				LT =	0.100			
OTALS	9		3637		0.884			4092

1 - 0.884 = 0.116 / 9 = 0.013

V/C = 0.889

EXISTING LEVEL OF SERVICE = D

N	2	2 0 0 0 0 0	137	3015	0.045	0.014	0.059	178
E	2	0 0 2 0 0 0	458	3560	0.129	0.014	0.143	509
S	3	0 0 3 0 0 0	2969	5340	0.556	0.021	0.577	3081
W	2	2 0 0 0 0 0	323	3015	0.107	0.014	0.121	365
				LT =	0.100			
TOTALS	9		3887		0.937			4133

1 - 0.937 = 0.063 / 9 = 0.007

V/C = 0.940

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	137	3015	0.045	0.013	0.058	175
E	2	0 0 2 0 0 0	458	3560	0.129	0.013	0.142	506
S	3	0 0 3 0 0 0	3001	5340	0.562	0.019	0.581	3103
W	2	2 0 0 0 0 0	323	3015	0.107	0.013	0.120	362
				LT =	0.100			
TOTALS	9		3919		0.943			4146

1 - 0.943 = 0.057 / 9 = 0.006

V/C = 0.945

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3919 - 3887)/ 3887 = 0.82 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & BRANHAM
MESSAGE: #9511-5 (350K COMM+400 APTS.)
PEAK HOUR: PM
COUNT DATE: 4/26/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.6

SIGNAL TYPE : FULLY ACTUATED

N-S	111.00	9.50
E-W	51.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	371	1924	281	0	96	4	0	53	0	384	2142	295
E	202010	359	417	124	16	3	0	0	0	0	388	435	128
S	203010	360	814	442	11	62	11	0	40	0	384	945	469
W	202010	153	539	149	5	4	13	0	0	0	164	562	167

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1924	5340	0.360	0.050	0.410	2189
E	2	2 0 0 0 0 0	359	3015	0.119	0.034	0.153	461
S	2	2 0 0 0 0 0	360	3015	0.119	0.034	0.153	461
W	2	0 0 2 0 0 0	539	3560	0.151	0.034	0.185	659
				LT =	0.100			
TOTALS	9		3182		0.849			3770

1 - 0.849 = 0.151 / 9 = 0.017

V/C = 0.844

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2089	5340	0.391	0.032	0.423	2259
E	2	2 0 0 0 0 0	388	3015	0.129	0.021	0.150	452
S	2	2 0 0 0 0 0	384	3015	0.127	0.021	0.148	446
W	2	0 0 2 0 0 0	562	3560	0.158	0.021	0.179	637
				LT =	0.100			
TOTALS	9		3423		0.905			3794

1 - 0.905 = 0.095 / 9 = 0.011

V/C = 0.902

EXISTING + APPROVED LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2142	5340	0.401	0.028	0.429	2291
E	2	2 0 0 0 0 0	388	3015	0.129	0.019	0.148	446
S	2	2 0 0 0 0 0	384	3015	0.127	0.019	0.146	440
W	2	0 0 2 0 0 0	562	3560	0.158	0.019	0.177	630
				LT =	0.100			
TOTALS	9		3476		0.915			3807

1 - 0.915 = 0.085 / 9 = 0.009

V/C = 0.913

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

3476 - 3423)/ 3423 = 1.55 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: AM
COUNT DATE: 1/31/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	57	1178	53	0	45	0	21	0	0	81	1276	55
E	010010	65	7	18	0	0	0	105	18	32	173	25	51
S	103000	346	2530	0	8	92	0	0	0	94	370	2736	94
W	010010	153	16	473	0	0	2	0	21	0	160	38	496

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	57	1675	0.034	0.045	0.079	132
E	1	0 1 0 0 0 0	72	1685	0.043	0.045	0.088	148
S	3	0 0 3 0 0 0	2530	5340	0.474	0.135	0.609	3252
W	1	0 1 0 0 0 0	169	1685	0.100	0.045	0.145	244
				LT =	0.079			
TOTALS	6		2828		0.730			3776

1 - 0.730 = 0.270 / 6 = 0.045

V/C = 0.749

EXISTING LEVEL OF SERVICE = C

N	1	1 0 0 0 0 0	60	1675	0.036	0.037	0.073	122
E	1	0 1 0 0 0 0	75	1685	0.045	0.037	0.082	138
S	3	0 0 3 0 0 0	2736	5340	0.512	0.112	0.624	3332
W	1	0 1 0 0 0 0	177	1685	0.105	0.037	0.142	239
				LT =	0.079			
TOTALS	6		3048		0.777			3831

1 - 0.777 = 0.223 / 6 = 0.037

V/C = 0.796

EXISTING + APPROVED LEVEL OF SERVICE = C

N	1	1 0 0 0 0 0	81	1675	0.048	0.021	0.069	116
E	1	0 1 0 0 0 0	198	1688	0.117	0.021	0.138	233
S	3	0 0 3 0 0 0	2736	5340	0.512	0.064	0.576	3076
W	1	0 1 0 0 0 0	198	1695	0.117	0.021	0.138	234
				LT =	0.079			
TOTALS	6		3213		0.873			3659

1 - 0.873 = 0.127 / 6 = 0.021

V/C = 0.878

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

3213 - 3048)/ 3048 = 5.41 PERCENT INCREASE IN CRITICAL VOLUME

96-011

LEVEL OF SERVICE ANALYSIS

OCATION: ALMADEN EXP. & CHERRY/CHYNOWETH

MESSAGE: W/MITIGATION (350K COMM+400 APTS.)

EAK HOUR: AM

OUNT DATE: 1/31/95

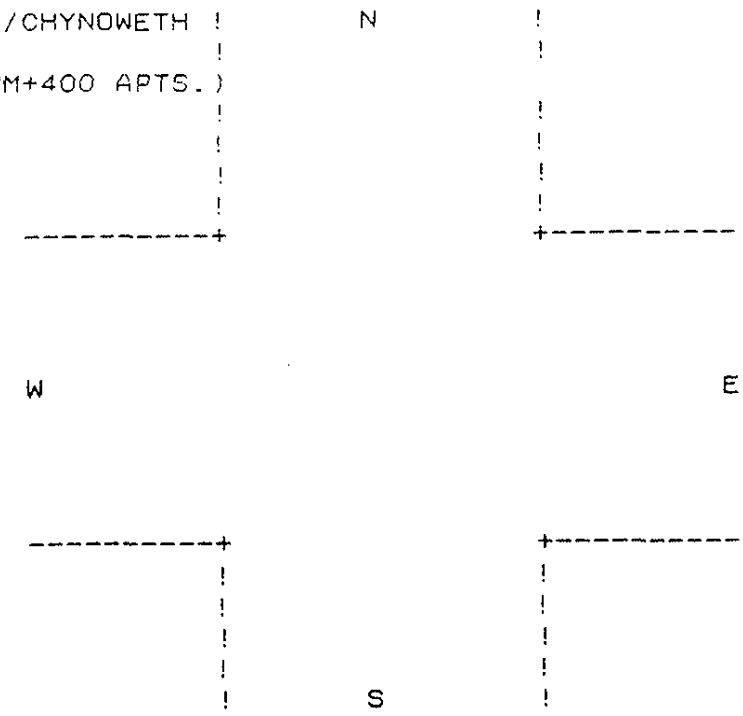
NAL. DATE: 5/31/96

ROWTH FACTOR % : 0

PLAN AREA:

AP PAGE:

ANAL. INIT.: GLP



IGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
-S	111	8	
F-W	33	8	G
YCLE LENGTH =	160		Y
OST TIME =	.100		R

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	R
N	203010	81	1276	55	0	0	0	0	0	0	81	1276	[illegible]
E	202010	173	25	51	0	0	0	0	0	0	173	25	[illegible]
S	203010	370	2736	94	0	0	0	0	0	0	370	2736	[illegible]
W	102010	160	38	496	0	0	0	0	0	0	160	38	49

LEG	# LANES	CRIT. MOVE (L S T R L R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	81	3015	0.027	0.065	0.092	277
E	2	0 0 2 0 0 0	25	3560	0.007	0.065	0.072	256
S	3	0 0 3 0 0 0	2736	5340	0.512	0.097	0.609	3252
W	1	1 0 0 0 0 0	160	1675	0.096	0.032	0.128	214
				LT =	0.100			
OTALS	8		3002		0.742			3999

96-011

1 - 0.742 = 0.258 / 8 = 0.032

/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .751 LEVEL OF SERVICE = C

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: PM
COUNT DATE: 1/31/95
FINAL. DATE: 5/31/96
FINAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	3.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	135	2288	166	0	124	0	53	0	0	194	2515	173
E	010010	140	31	24	0	0	0	233	58	40	379	90	65
S	103000	414	1560	14	2	77	0	0	0	263	435	1707	278
W	010010	106	22	477	0	0	16	0	61	0	111	84	514

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2288	5340	0.428	0.035	0.463	2472
E	1	0 1 0 0 0 0	171	1694	0.101	0.012	0.113	191
S	1	1 0 0 0 0 0	414	1675	0.247	0.012	0.259	434
W	1	0 1 0 0 0 0	128	1693	0.076	0.012	0.088	149
				LT =	0.079			
TOTALS	6		3001		0.931			3246

1 - 0.931 = 0.069 / 6 = 0.012

V/C = 0.925

EXISTING — LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2515	5340	0.471	0.003	0.474	2531
E	1	0 1 0 0 0 0	178	1694	0.105	0.001	0.106	180
S	1	1 0 0 0 0 0	435	1675	0.260	0.001	0.261	437
W	1	0 1 0 0 0 0	134	1693	0.079	0.001	0.080	135
				LT =	0.079			
TOTALS	6		3262		0.994			3283

1 - 0.994 = 0.006 / 6 = 0.001

V/C = 0.994

EXISTING + APPROVED — LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2515	5340	0.471	-.100	0.371	1981
E	1	0 1 0 0 0 0	469	1695	0.277	-.033	0.244	414
S	1	1 0 0 0 0 0	435	1675	0.260	-.033	0.227	380
W	1	0 1 0 0 0 0	195	1720	0.113	-.033	0.080	138
				LT =	0.079			
TOTALS	6		3614		1.200			2913

1 - 1.200 = -.200 / 6 = -.033

V/C = 1.241

EXISTING + APPROVED + PROJECT — LEVEL OF SERVICE = F

(3614 - 3262)/ 3262 = 10.79 PERCENT INCREASE IN CRITICAL VOLUME

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP. & CHERRY/CHYNOWETH

MESSAGE: W/MITIGATION (350K COMM+400 APTS.)

PEAK HOUR: PM

COUNT DATE: 1/31/95

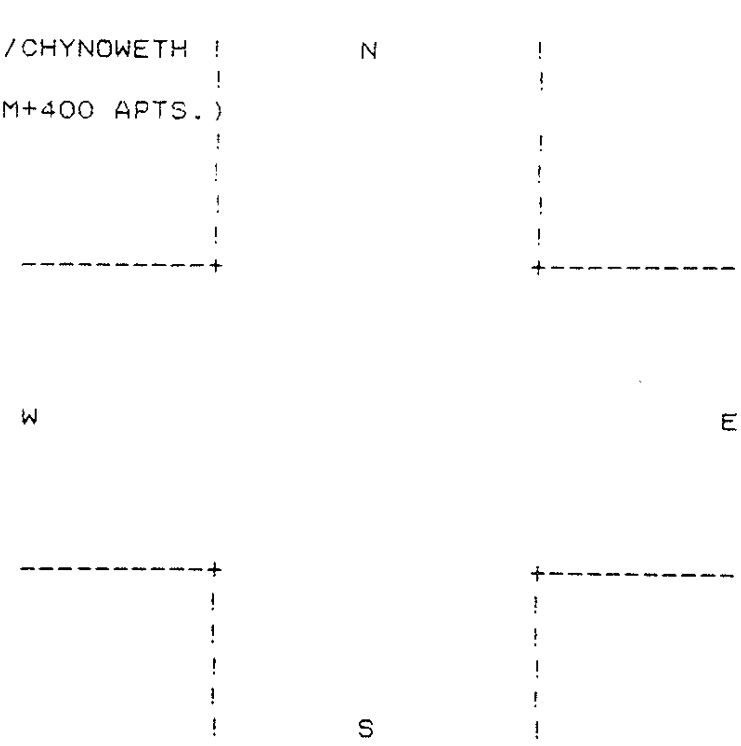
ANAL. DATE: 5/31/96

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED	
N-S	111	8	
E-W	33	8	G
CYCLE LENGTH =	160		Y
LOST TIME =	.100		R

LEG	PATTREN LSTSRO	LANE COUNTS LT	THRU	RT	APPROVED TRIPS LT	THRU	RT	PROJECT TRIPS LT	THRU	RT	TOTAL TRIPS LT	THRU	RT
N	203010	194	2515	173	0	0	0	0	0	0	194	2515	173
E	202010	379	90	65	0	0	0	0	0	0	379	90	65
S	203010	435	1707	278	0	0	0	0	0	0	435	1707	278
W	102010	111	84	514	0	0	0	0	0	0	111	84	514

LEG	# LANES	CRIT. MOVE (L L S T R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2515	5340	0.471	0.045	0.516	2755
E	2	2 0 0 0 0 0	379	3015	0.126	0.030	0.156	470
S	2	2 0 0 0 0 0	435	3015	0.144	0.030	0.174	525
W	2	0 0 2 0 0 0	84	3560	0.024	0.030	0.054	192
				LT =	0.100			
TOTALS	9		3413		0.865			3942

96 - 011

1 - 0.865 = 0.135 / 9 = 0.015

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .866 LEVEL OF SERVICE = D

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-S (350K COMM+400 APTS.)

SIGNAL TYPE : FULLY ACTUATED

PEAK HOUR: 7:15-8:15 AM
COUNT DATE: 1/19/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

	N-S	E-W
	103.00	9.50
	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	118	684	272	37	46	7	0	5	6	160	766	297
E	203010	99	311	177	11	34	51	2	1	0	116	360	236
S	203010	114	2678	40	23	80	4	0	9	3	142	2888	49
W	203010	480	189	80	10	25	18	3	4	0	515	227	102

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	118	3015	0.039	0.029	0.068	205
E	3	0 0 3 0 0 0	311	5340	0.058	0.043	0.101	539
S	3	0 0 3 0 0 0	2678	5340	0.501	0.043	0.544	2905
W	2	2 0 0 0 0 0	480	3015	0.159	0.029	0.188	567
				LT = 0.100				
TOTALS	%10		3587		0.857			4216

1 - 0.857 = 0.143 / %10 = 0.014
V/C = 0.851

EXISTING LEVEL OF SERVICE = D

N	2	2 0 0 0 0 0	160	3015	0.053	0.014	0.067	202
E	3	0 0 3 0 0 0	359	5340	0.067	0.021	0.088	470
S	3	0 0 3 0 0 0	2879	5340	0.539	0.021	0.560	2990
W	2	2 0 0 0 0 0	512	3015	0.170	0.014	0.184	555
				LT = 0.100				
TOTALS	%10		3910		0.929			4217

1 - 0.929 = 0.071 / %10 = 0.007
V/C = 0.927

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	160	3015	0.053	0.014	0.067	202
E	3	0 0 3 0 0 0	360	5340	0.067	0.020	0.087	465
S	3	0 0 3 0 0 0	2888	5340	0.541	0.020	0.561	2996
W	2	2 0 0 0 0 0	515	3015	0.171	0.014	0.185	558
				LT = 0.100				
TOTALS	%10		3923		0.932			4221

1 - 0.932 = 0.068 / %10 = 0.007
V/C = 0.929

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3923 - 3910)/ 3910 = 0.33 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & BLOSSOM HILL
MESSAGE: #9511-5 (350K COMM+400 APTS.)
PEAK HOUR: PM
COUNT DATE: 6/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	103.00	9.50
E-W	59.00	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	689	2366	406	56	85	10	0	28	13	766	2550	441
E	203010	238	559	364	4	52	42	9	5	0	258	633	417
S	203010	253	1257	232	28	51	11	0	28	9	289	1374	259
W	203010	494	675	141	7	61	33	12	9	0	528	765	178

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2366	5340	0.443	0.031	0.474	2531
E	3	0 0 3 0 0 0	559	5340	0.105	0.031	0.136	726
S	2	2 0 0 0 0 0	253	3015	0.084	0.021	0.105	317
W	2	2 0 0 0 0 0	494	3015	0.164	0.021	0.185	558
				LT =	0.100			
TOTALS	%10		3672		0.896			4132

1 - 0.896 = 0.104 / %10 = 0.010
V/C = 0.889

EXISTING LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2522	5340	0.472	0.013	0.485	2590
E	3	0 0 3 0 0 0	628	5340	0.118	0.013	0.131	700
S	2	2 0 0 0 0 0	289	3015	0.096	0.009	0.105	317
W	2	2 0 0 0 0 0	516	3015	0.171	0.009	0.180	543
				LT =	0.100			
TOTALS	%10		3955		0.957			4150

1 - 0.957 = 0.043 / %10 = 0.004
V/C = 0.953

EXISTING + APPROVED LEVEL OF SERVICE = E

N	3	0 0 3 0 0 0	2550	5340	0.478	0.010	0.488	2606
E	3	0 0 3 0 0 0	633	5340	0.119	0.010	0.129	689
S	2	2 0 0 0 0 0	289	3015	0.096	0.006	0.102	308
W	2	2 0 0 0 0 0	528	3015	0.175	0.006	0.181	546
				LT =	0.100			
TOTALS	%10		4000		0.968			4149

1 - 0.968 = 0.032 / %10 = 0.003
V/C = 0.964

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

4000 - 3955)/ 3955 = 1.14 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & CHERRY
MESSAGE: #9511-5 (350K COMM+400 APTS.)

SIGNAL TYPE : FULLY ACTUATED

PEAK HOUR:	AM	N-S	25.00 5.00
COUNT DATE:	5/2/95	E-W	60.00 8.00
ANAL. DATE:	5/31/96		
ANAL. INIT:	GLP	CYCLE LENGTH =	98
GROWTH FACTOR % :	3.3	LOST TIME =	0.133

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	101100	33	150	69	0	0	0	0	11	0	34	166	71
E	101100	28	449	64	0	0	0	0	0	0	29	464	66
S	101100	83	148	72	0	0	0	10	8	0	96	161	74
W	101100	61	397	134	0	0	0	0	0	10	63	410	148

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	219	3504	0.063	0.191	0.254	890
E	2	0 0 1 1 0 0	513	3532	0.145	0.191	0.336	1187
S	1	1 0 0 0 0 0	83	1675	0.050	0.096	0.146	245
W	1	1 0 0 0 0 0	61	1675	0.036	0.096	0.132	221
				LT =	0.133			
TOTALS	6		876		0.427			2543

1 - 0.427 = 0.573 / 6 = 0.096

V/C = 0.344

EXISTING LEVEL OF SERVICE = A

N	2	0 0 1 1 0 0	226	3504	0.064	0.188	0.252	883
E	2	0 0 1 1 0 0	530	3532	0.150	0.188	0.338	1194
S	1	1 0 0 0 0 0	86	1675	0.051	0.094	0.145	243
W	1	1 0 0 0 0 0	63	1675	0.038	0.094	0.132	221
				LT =	0.133			
TOTALS	6		905		0.436			2541

1 - 0.436 = 0.564 / 6 = 0.094

V/C = 0.356

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	0 0 1 1 0 0	237	3506	0.068	0.185	0.253	887
E	2	0 0 1 1 0 0	530	3532	0.150	0.185	0.335	1183
S	1	1 0 0 0 0 0	96	1675	0.057	0.092	0.149	250
W	1	1 0 0 0 0 0	63	1675	0.038	0.092	0.130	218
				LT =	0.133			
TOTALS	6		926		0.446			2538

1 - 0.446 = 0.554 / 6 = 0.092

V/C = 0.365

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(926 - 905)/ 905 = 2.32 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & CHERRY
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 1700
COUNT DATE: 3/2/95
FINAL. DATE: 5/31/96
FINAL. INIT: GLP
GROWTH FACTOR % : 3.9

SIGNAL TYPE : FULLY ACTUATED

N-S	25.00	5.00
E-W	60.00	8.00

CYCLE LENGTH = 98
LOST TIME = 0.133

DIR	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	101100	77	210	83	0	0	0	0	34	0	80	252	86
E	101100	70	667	93	0	0	0	0	0	0	73	693	97
S	101100	88	125	67	0	0	0	25	33	0	116	163	70
W	101100	71	526	208	0	0	0	0	0	27	74	547	243

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	293	3508	0.084	0.158	0.242	849
E	2	0 0 1 1 0 0	760	3533	0.215	0.158	0.373	1318
S	1	1 0 0 0 0 0	88	1675	0.053	0.079	0.132	221
W	1	1 0 0 0 0 0	71	1675	0.042	0.079	0.121	203
				LT =	0.133			
TOTALS	6		1212		0.527			2591

1 - 0.527 = 0.473 / 6 = 0.079

V/C = 0.468

EXISTING LEVEL OF SERVICE = A

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	304	3508	0.087	0.153	0.240	842
E	2	0 0 1 1 0 0	790	3533	0.224	0.153	0.377	1332
S	1	1 0 0 0 0 0	91	1675	0.054	0.076	0.130	218
W	1	1 0 0 0 0 0	74	1675	0.044	0.076	0.120	201
				LT =	0.133			
TOTALS	6		1259		0.542			2593

1 - 0.542 = 0.458 / 6 = 0.076

V/C = 0.486

EXISTING + APPROVED LEVEL OF SERVICE = A

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 1 1 0 0	338	3512	0.096	0.145	0.241	846
E	2	0 0 1 1 0 0	790	3533	0.224	0.145	0.369	1304
S	1	1 0 0 0 0 0	116	1675	0.069	0.072	0.141	236
W	1	1 0 0 0 0 0	74	1675	0.044	0.072	0.116	194
				LT =	0.133			
TOTALS	6		1318		0.566			2580

1 - 0.566 = 0.434 / 6 = 0.072

V/C = 0.511

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1318 - 1259)/ 1259 = 4.69 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

OCATION: BRANHAM & LIZZIE
MESSAGE: #9511-5 (350K COMM+400 APTS.)

EAK HOUR: 730
COUNT DATE: 7/7/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
ROWTH FACTOR % : 2.7

SIGNAL TYPE : FULLY ACTUATED

N-S	30.00	4.00
E-W	60.00	8.00

CYCLE LENGTH = 102
LOST TIME = 0.118

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	19	10	4	0	0	0	0	0	0	20	10	4
E	101100	67	425	16	0	0	0	0	0	0	69	436	16
S	000002	29	4	51	0	0	0	0	0	0	30	4	52
W	101100	6	386	15	0	0	0	0	0	0	6	396	15

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	29	1711	0.017	0.132	0.149	255
E	1	1 0 0 0 0 0	67	1675	0.040	0.132	0.172	288
S	1	0 0 0 0 0 2	84	1680	0.050	0.132	0.182	306
W	2	0 0 1 1 0 0	401	3551	0.113	0.265	0.378	1342
				LT =	0.118			
OTALS	5		581		0.338			2191

1 - 0.338 = 0.662 / 5 = 0.132
V/C = 0.265

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	30	1710	0.018	0.131	0.149	255
E	1	1 0 0 0 0 0	69	1675	0.041	0.131	0.172	288
S	1	0 0 0 0 0 2	86	1680	0.051	0.131	0.182	306
W	2	0 0 1 1 0 0	411	3551	0.116	0.262	0.378	1342
				LT =	0.118			
TOTALS	5		596		0.344			2191

1 - 0.344 = 0.656 / 5 = 0.131
V/C = 0.272

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	30	1710	0.018	0.131	0.149	255
E	1	1 0 0 0 0 0	69	1675	0.041	0.131	0.172	288
S	1	0 0 0 0 0 2	86	1680	0.051	0.131	0.182	306
W	2	0 0 1 1 0 0	411	3551	0.116	0.262	0.378	1342
				LT =	0.118			
OTALS	5		596		0.344			2191

1 - 0.344 = 0.656 / 5 = 0.131
V/C = 0.272

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(596 - 596)/ 596 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & LIZZIE
ESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 1645
OUNT DATE: 7/7/95
NAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 2.7

SIGNAL TYPE : FULLY ACTUATED
N-S 30.00 4.00
E-W 60.00 8.00

CYCLE LENGTH = 102
LOST TIME = 0.118

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	65	21	23	0	0	0	0	0	0	67	22	24
E	101100	302	751	87	0	0	0	0	0	0	310	771	89
S	000002	122	18	56	0	0	0	0	0	0	125	18	58
W	101100	21	542	66	0	0	0	0	0	0	22	557	68

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	86	1701	0.051	0.073	0.124	211
E	1	1 0 0 0 0 0	302	1675	0.180	0.073	0.253	424
S	1	0 0 0 0 0 2	196	1685	0.116	0.073	0.189	318
W	2	0 0 1 1 0 0	608	3535	0.172	0.145	0.317	1121
				LT =	0.118			
TOTALS	5		1192		0.637			2074

1 - 0.637 = 0.363 / 5 = 0.073

V/C = 0.575

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	89	1701	0.052	0.070	0.122	208
E	1	1 0 0 0 0 0	310	1675	0.185	0.070	0.255	427
S	1	0 0 0 0 0 2	201	1684	0.119	0.070	0.189	318
W	2	0 0 1 1 0 0	625	3535	0.177	0.140	0.317	1121
				LT =	0.118			
TOTALS	5		1225		0.651			2074

1 - 0.651 = 0.349 / 5 = 0.070

V/C = 0.591

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	89	1701	0.052	0.070	0.122	208
E	1	1 0 0 0 0 0	310	1675	0.185	0.070	0.255	427
S	1	0 0 0 0 0 2	201	1684	0.119	0.070	0.189	318
W	2	0 0 1 1 0 0	625	3535	0.177	0.140	0.317	1121
				LT =	0.118			
OTALS	5		1225		0.651			2074

1 - 0.651 = 0.349 / 5 = 0.070

V/C = 0.591

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

1225 - 1225)/ 1225 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & PEARL
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 715
COUNT DATE: 6/6/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	75.00	7.50
E-W	70.00	7.50

CYCLE LENGTH = 160
LOST TIME = 0.094

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	102010	75	263	146	0	25	0	0	2	0	77	298	150
E	103010	239	588	170	0	0	0	7	0	0	253	606	175
S	102010	306	476	129	0	32	0	0	2	6	315	524	139
W	103010	98	256	201	0	0	0	0	0	0	101	264	207

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	263	3560	0.074	0.131	0.205	730
E	1	1 0 0 0 0 0	239	1675	0.143	0.065	0.208	348
S	1	1 0 0 0 0 0	306	1675	0.183	0.065	0.248	415
W	3	0 0 3 0 0 0	256	5340	0.048	0.196	0.244	1303
				LT =	0.094			
TOTALS	7		1064		0.542			2796

1 - 0.542 = 0.458 / 7 = 0.065

V/C = 0.381

EXISTING LEVEL OF SERVICE = A

N	2	0 0 2 0 0 0	296	3560	0.083	0.125	0.208	740
E	1	1 0 0 0 0 0	246	1675	0.147	0.063	0.210	352
S	1	1 0 0 0 0 0	315	1675	0.188	0.063	0.251	420
W	3	0 0 3 0 0 0	264	5340	0.049	0.188	0.237	1266
				LT =	0.094			
TOTALS	7		1121		0.561			2778

1 - 0.561 = 0.439 / 7 = 0.063

V/C = 0.404

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	0 0 2 0 0 0	298	3560	0.084	0.124	0.208	740
E	1	1 0 0 0 0 0	253	1675	0.151	0.062	0.213	357
S	1	1 0 0 0 0 0	315	1675	0.188	0.062	0.250	419
W	3	0 0 3 0 0 0	264	5340	0.049	0.186	0.235	1255
				LT =	0.094			
TOTALS	7		1130		0.566			2771

1 - 0.566 = 0.434 / 7 = 0.062

V/C = 0.408

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1130 - 1121)/ 1121 = 0.80 PERCENT INCREASE
IN CRITICAL VOLUME

/19/88 LV

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: BRANHAM & PEARL
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 1645
COUNT DATE: 6/6/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	75.00	7.50
E-W	70.00	7.50

CYCLE LENGTH = 160
LOST TIME = 0.094

DIR	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	102010	180	512	246	0	32	0	0	6	0	185	565	253
E	103010	315	546	96	0	0	0	23	0	0	347	562	99
S	102010	288	306	255	0	25	0	0	6	22	297	346	285
W	103010	243	748	322	0	0	0	0	0	0	250	770	332

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	512	3560	0.144	0.075	0.219	780
E	1	1 0 0 0 0 0	315	1675	0.188	0.037	0.225	377
S	1	1 0 0 0 0 0	288	1675	0.172	0.037	0.209	350
W	3	0 0 3 0 0 0	748	5340	0.140	0.112	0.252	1346
				LT =	0.094			
TOTALS	7		1863		0.738			2853

1 - 0.738 = 0.262 / 7 = 0.037

V/C = 0.653

EXISTING LEVEL OF SERVICE = B

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	559	3560	0.157	0.067	0.224	797
E	1	1 0 0 0 0 0	324	1675	0.193	0.034	0.227	380
S	1	1 0 0 0 0 0	297	1675	0.177	0.034	0.211	353
W	3	0 0 3 0 0 0	770	5340	0.144	0.101	0.245	1308
				LT =	0.094			
TOTALS	7		1950		0.765			2838

1 - 0.765 = 0.235 / 7 = 0.034

V/C = 0.687

EXISTING + APPROVED LEVEL OF SERVICE = B

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	565	3560	0.159	0.063	0.222	790
E	1	1 0 0 0 0 0	347	1675	0.207	0.031	0.238	399
S	1	1 0 0 0 0 0	297	1675	0.177	0.031	0.208	348
W	3	0 0 3 0 0 0	770	5340	0.144	0.094	0.238	1271
				LT =	0.094			
TOTALS	7		1979		0.781			2808

1 - 0.781 = 0.219 / 7 = 0.031

V/C = 0.705

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(1979 - 1950)/ 1950 = 1.49 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: AM
COUNT DATE: 5/10/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	121	879	43	0	3	0	0	16	0	125	927	44
E	101010	29	50	200	0	2	60	0	0	0	30	54	267
S	103010	47	3627	31	1	30	0	0	27	0	50	3804	32
W	101010	66	60	145	0	2	0	0	0	0	68	64	150

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	121	1675	0.072	0.018	0.090	151
E	1	0 0 1 0 0 0	50	1780	0.028	0.018	0.046	82
S	3	0 0 3 0 0 0	3627	5340	0.679	0.053	0.732	3909
W	1	1 0 0 0 0 0	66	1675	0.039	0.018	0.057	95
				LT =	0.077			
TOTALS	6		3864		0.895			4237

1 - 0.895 = 0.105 / 6 = 0.018

V/C = 0.912

EXISTING LEVEL OF SERVICE = E

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	125	1675	0.075	0.012	0.087	146
E	1	0 0 1 0 0 0	54	1780	0.030	0.012	0.042	75
S	3	0 0 3 0 0 0	3777	5340	0.707	0.035	0.742	3962
W	1	1 0 0 0 0 0	68	1675	0.041	0.012	0.053	89
				LT =	0.077			
TOTALS	6		4024		0.930			4272

1 - 0.930 = 0.070 / 6 = 0.012

V/C = 0.942

EXISTING + APPROVED LEVEL OF SERVICE = E

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	125	1675	0.075	0.011	0.086	144
E	1	0 0 1 0 0 0	54	1780	0.030	0.011	0.041	73
S	3	0 0 3 0 0 0	3804	5340	0.712	0.033	0.745	3978
W	1	1 0 0 0 0 0	68	1675	0.041	0.011	0.052	87
				LT =	0.077			
TOTALS	6		4051		0.935			4282

1 - 0.935 = 0.065 / 6 = 0.011

V/C = 0.946

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4051 - 4024)/ 4024 = 0.67 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & FOXWORTHY
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: PM
COUNT DATE: 5/10/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	249	2665	134	60	30	0	0	40	0	317	2823	138
E	101010	43	71	65	0	2	0	0	0	0	44	75	67
S	103010	140	953	29	0	3	0	0	28	0	145	1015	30
W	101010	113	95	64	0	2	1	0	0	0	117	100	67

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	2799	7085	0.395	0.193	0.588	4166
E	1	0 0 1 0 0 0	71	1780	0.040	0.048	0.088	157
S	1	1 0 0 0 0 0	140	1675	0.084	0.048	0.132	221
W	1	1 0 0 0 0 0	113	1675	0.067	0.048	0.115	193
				LT =	0.077			
TOTALS	7		3123		0.663			4737
				1 - 0.663 =	0.337 / 7 =	0.048		
							V/C =	0.659

EXISTING LEVEL OF SERVICE = B

N	4	0 0 3 1 0 0	2921	7085	0.412	0.178	0.590	4180
E	1	0 0 1 0 0 0	75	1780	0.042	0.045	0.087	155
S	1	1 0 0 0 0 0	145	1675	0.087	0.045	0.132	221
W	1	1 0 0 0 0 0	117	1675	0.070	0.045	0.115	193
				LT =	0.077			
TOTALS	7		3258		0.688			4749
				1 - 0.688 =	0.312 / 7 =	0.045		
							V/C =	0.686

EXISTING + APPROVED LEVEL OF SERVICE = B

N	4	0 0 3 1 0 0	2961	7086	0.418	0.175	0.593	4202
E	1	0 0 1 0 0 0	75	1780	0.042	0.044	0.086	153
S	1	1 0 0 0 0 0	145	1675	0.087	0.044	0.131	219
W	1	1 0 0 0 0 0	117	1675	0.070	0.044	0.114	191
				LT =	0.077			
TOTALS	7		3298		0.694			4765
				1 - 0.694 =	0.306 / 7 =	0.044		
							V/C =	0.692

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(3298 - 3258)/ 3258 = 1.23 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 730
COUNT DATE: 11/15/94
FINAL. DATE: 5/31/96
FINAL. INIT: GLP
GROWTH FACTOR % : 5.1

SIGNAL TYPE : FULLY ACTUATED

N-S	93.50	9.50
E-W	68.50	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	45	704	62	29	37	2	0	5	2	76	782	69
E	202010	476	258	263	13	0	59	0	0	0	513	271	335
S	203010	27	2529	655	12	48	6	0	9	0	40	2715	694
W	102010	309	195	21	1	0	15	3	0	0	329	205	37

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	45	1675	0.027	0.020	0.047	79
E	2	0 0 2 0 0 0	258	3560	0.072	0.041	0.113	402
S	3	0 0 3 0 0 0	2529	5340	0.474	0.061	0.535	2857
W	1	1 0 0 0 0 0	309	1675	0.184	0.020	0.204	342
				LT =	0.100			
OTALS	7		3141		0.857			3680

1 - 0.857 = 0.143 / 7 = 0.020

V/C = 0.854

EXISTING LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	76	1675	0.045	0.011	0.056	94
E	2	0 0 2 0 0 0	271	3560	0.076	0.022	0.098	349
S	3	0 0 3 0 0 0	2706	5340	0.507	0.033	0.540	2884
W	1	1 0 0 0 0 0	326	1675	0.195	0.011	0.206	345
				LT =	0.100			
TOTALS	7		3379		0.923			3672

1 - 0.923 = 0.077 / 7 = 0.011

V/C = 0.920

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	76	1675	0.045	0.011	0.056	94
E	2	0 0 2 0 0 0	271	3560	0.076	0.021	0.097	345
S	3	0 0 3 0 0 0	2715	5340	0.508	0.032	0.540	2884
W	1	1 0 0 0 0 0	329	1675	0.196	0.011	0.207	347
				LT =	0.100			
OTALS	7		3391		0.925			3670

1 - 0.925 = 0.075 / 7 = 0.011

V/C = 0.924

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3391 - 3379)/ 3379 = 0.36 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & COLEMAN
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: PM
COUNT DATE: 6/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.0

SIGNAL TYPE : FULLY ACTUATED

N-S	93.50	9.50
E-W	68.50	8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	227	1933	306	63	59	1	0	27	10	297	2077	326
E	202010	720	277	123	6	0	33	0	0	0	748	285	160
S	203010	36	946	517	15	48	13	0	27	0	52	1049	546
W	102010	126	256	31	2	0	12	10	0	0	142	264	44

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	1933	5340	0.362	0.072	0.434	2318
E	2	2 0 0 0 0 0	720	3015	0.239	0.048	0.287	865
S	2	2 0 0 0 0 0	36	3015	0.012	0.048	0.060	181
W	2	0 0 2 0 0 0	256	3560	0.072	0.048	0.120	427
				LT =	0.100			
TOTALS	9		2945		0.785			3791

1 - 0.785 = 0.215 / 9 = 0.024

V/C = 0.777

EXISTING LEVEL OF SERVICE = C

N	3	0 0 3 0 0 0	2050	5340	0.384	0.059	0.443	2366
E	2	2 0 0 0 0 0	748	3015	0.248	0.039	0.287	865
S	2	2 0 0 0 0 0	52	3015	0.017	0.039	0.056	169
W	2	0 0 2 0 0 0	264	3560	0.074	0.039	0.113	402
				LT =	0.100			
TOTALS	9		3114		0.823			3802

1 - 0.823 = 0.177 / 9 = 0.020

V/C = 0.819

EXISTING + APPROVED LEVEL OF SERVICE = D

N	3	0 0 3 0 0 0	2077	5340	0.389	0.057	0.446	2382
E	2	2 0 0 0 0 0	748	3015	0.248	0.038	0.286	862
S	2	2 0 0 0 0 0	52	3015	0.017	0.038	0.055	166
W	2	0 0 2 0 0 0	264	3560	0.074	0.038	0.112	399
				LT =	0.100			
TOTALS	9		3141		0.828			3809

1 - 0.828 = 0.172 / 9 = 0.019

V/C = 0.825

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3141 - 3114)/ 3114 = 0.87 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: BLOSSOM HILL & SANTA TERESA
MESSAGE: #9511-5 (350K COMM+400 APTS.)
PEAK HOUR: AM
COUNT DATE: 5/10/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 3.3

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	43.50	8.50

CYCLE LENGTH = 120
LOST TIME = 0.138

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	169	349	133	0	30	4	0	0	0	175	391	141
E	203010	122	558	252	10	10	0	0	8	0	136	594	260
S	203010	196	827	80	7	70	21	2	0	0	211	924	104
W	203010	164	226	64	15	19	21	0	9	2	184	261	89

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	169	3015	0.056	0.099	0.155	467
E	3	0 0 3 0 0 0	558	5340	0.104	0.148	0.252	1346
S	3	0 0 3 0 0 0	827	5340	0.155	0.148	0.303	1618
W	2	2 0 0 0 0 0	164	3015	0.054	0.099	0.153	461
				LT =	0.138			
TOTALS	%10		1718		0.507			3892

1 - 0.507 = 0.493 / %10 = 0.049
V/C = 0.441

EXISTING LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	175	3015	0.058	0.092	0.150	452
E	3	0 0 3 0 0 0	586	5340	0.110	0.138	0.248	1324
S	3	0 0 3 0 0 0	924	5340	0.173	0.138	0.311	1661
W	2	2 0 0 0 0 0	184	3015	0.061	0.092	0.153	461
				LT =	0.138			
TOTALS	%10		1869		0.540			3898

1 - 0.540 = 0.460 / %10 = 0.046
V/C = 0.479

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	175	3015	0.058	0.092	0.150	452
E	3	0 0 3 0 0 0	594	5340	0.111	0.138	0.249	1330
S	3	0 0 3 0 0 0	924	5340	0.173	0.138	0.311	1661
W	2	2 0 0 0 0 0	184	3015	0.061	0.092	0.153	461
				LT =	0.138			
TOTALS	%10		1877		0.541			3904

1 - 0.541 = 0.459 / %10 = 0.046
V/C = 0.481

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1877 - 1869)/ 1869 = 0.43 PERCENT INCREASE
IN CRITICAL VOLUME

/19/88 LV

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: BLOSSOM HILL & SANTA TERESA
MESSAGE: #9511-5 (350K COMM+400 APTS.)
PEAK HOUR: PM
COUNT DATE: 10/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 1.8

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	43.50	8.50

CYCLE LENGTH = 120
LOST TIME = 0.138

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	513	905	268	0	70	22	0	0	0	522	991	295
E	203010	176	569	143	21	38	0	0	26	0	200	643	146
S	203010	207	537	108	21	30	10	6	0	0	238	577	120
W	203010	297	677	158	11	29	7	0	23	6	313	741	174

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	513	3015	0.170	0.077	0.247	745
E	3	0 0 3 0 0 0	569	5340	0.107	0.116	0.223	1191
S	3	0 0 3 0 0 0	537	5340	0.101	0.116	0.217	1159
W	2	2 0 0 0 0 0	297	3015	0.099	0.077	0.176	531
				LT =	0.138			
TOTALS	%10		1916		0.615			3626

1 - 0.615 = 0.385 / %10 = 0.039
V/C = 0.528

EXISTING LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	522	3015	0.173	0.072	0.245	739
E	3	0 0 3 0 0 0	617	5340	0.116	0.108	0.224	1196
S	3	0 0 3 0 0 0	577	5340	0.108	0.108	0.216	1153
W	2	2 0 0 0 0 0	313	3015	0.104	0.072	0.176	531
				LT =	0.138			
TOTALS	%10		2029		0.639			3619

1 - 0.639 = 0.361 / %10 = 0.036
V/C = 0.561

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	2 0 0 0 0 0	522	3015	0.173	0.071	0.244	736
E	3	0 0 3 0 0 0	643	5340	0.120	0.107	0.227	1212
S	3	0 0 3 0 0 0	577	5340	0.108	0.107	0.215	1148
W	2	2 0 0 0 0 0	313	3015	0.104	0.071	0.175	528
				LT =	0.138			
TOTALS	%10		2055		0.643			3624

1 - 0.643 = 0.357 / %10 = 0.036
V/C = 0.567

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(2055 - 2029)/ 2029 = 1.28 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

OCATION: CHYNOWETH & PEARL
MESSAGE: #9511-5 (350K COMM+400 APTS.)

EAK HOUR: 700
OUNT DATE: 10/13/95
ANAL. DATE: 5/31/96
NAL. INIT: GLP
ROWTH FACTOR % : 1.8

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	70.00	8.00

CYCLE LENGTH = 146
LOST TIME = 0.110

EG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	201010	184	14	253	0	21	10	0	0	9	187	35	277
E	101010	9	290	280	0	0	0	0	33	0	9	328	285
S	102010	18	13	0	89	36	0	0	0	0	107	49	0
W	202010	311	281	50	19	0	47	8	23	0	344	309	98

EG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	184	3015	0.061	0.160	0.221	666
E	1	0 0 1 0 0 0	290	1780	0.163	0.080	0.243	433
S	2	0 0 2 0 0 0	13	3560	0.004	0.160	0.164	584
W	2	2 0 0 0 0 0	311	3015	0.103	0.160	0.263	793
				LT =	0.110			
OTALS	7		798		0.441			2476

1 - 0.441 = 0.559 / 7 = 0.080
V/C = 0.322

EXISTING LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	35	1780	0.020	0.106	0.126	224
E	1	0 0 1 0 0 0	295	1780	0.166	0.106	0.272	484
S	1	1 0 0 0 0 0	107	1675	0.064	0.106	0.170	285
W	2	2 0 0 0 0 0	336	3015	0.111	0.212	0.323	974
				LT =	0.110			
TOTALS	5		773		0.471			1967

1 - 0.471 = 0.529 / 5 = 0.106
V/C = 0.393

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	35	1780	0.020	0.102	0.122	217
E	1	0 0 1 0 0 0	328	1780	0.184	0.102	0.286	509
S	1	1 0 0 0 0 0	107	1675	0.064	0.102	0.166	278
W	2	2 0 0 0 0 0	344	3015	0.114	0.203	0.317	956
				LT =	0.110			
TOTALS	5		814		0.492			1960

1 - 0.492 = 0.508 / 5 = 0.102
V/C = 0.415

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(814 - 773)/ 773 = 5.30 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CHYNOWETH & PEARL
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 4:45-5:45 PM
COUNT DATE: 1/19/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	60.00	8.00
E-W	70.00	8.00

CYCLE LENGTH = 146
LOST TIME = 0.110

DIR	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	201010	108	6	500	0	36	19	0	0	29	113	42	571
E	101010	4	189	54	0	0	0	0	109	0	4	307	56
S	102010	21	14	0	47	21	0	0	0	0	69	36	0
W	202010	459	267	17	10	0	89	28	106	0	518	385	107

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	108	3015	0.036	0.169	0.205	618
E	1	0 0 1 0 0 0	189	1780	0.106	0.085	0.191	340
S	2	0 0 2 0 0 0	14	3560	0.004	0.169	0.173	616
W	2	2 0 0 0 0 0	459	3015	0.152	0.169	0.321	968
				LT =	0.110			
TOTALS	7		770		0.408			2542

1 - 0.408 = 0.592 / 7 = 0.085

V/C = 0.303

EXISTING LEVEL OF SERVICE = A

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 0 1 0 0 0	42	1780	0.024	0.110	0.134	239
E	1	0 0 1 0 0 0	198	1780	0.111	0.110	0.221	393
S	1	1 0 0 0 0 0	69	1675	0.041	0.110	0.151	253
W	2	2 0 0 0 0 0	490	3015	0.163	0.220	0.383	1155
				LT =	0.110			
TOTALS	5		799		0.449			2040

1 - 0.449 = 0.551 / 5 = 0.110

V/C = 0.392

EXISTING + APPROVED LEVEL OF SERVICE = A

DIR	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 0 1 0 0 0	42	1780	0.024	0.096	0.120	214
E	1	0 0 1 0 0 0	307	1780	0.172	0.096	0.268	477
S	1	1 0 0 0 0 0	69	1675	0.041	0.096	0.137	229
W	2	2 0 0 0 0 0	518	3015	0.172	0.192	0.364	1097
				LT =	0.110			
TOTALS	5		936		0.519			2017

1 - 0.519 = 0.481 / 5 = 0.096

V/C = 0.464

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(936 - 799)/ 799 = 17.15 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CHYNOWETH & WINFIELD
MESSAGE: #9511-5 (350K COMM+400 APTS.)

PEAK HOUR: 730
COUNT DATE: 8/25/95
ANAL. DATE: 5/31/96
ANAL. INIT: GLP
GROWTH FACTOR % : 2.4

SIGNAL TYPE : FULLY ACTUATED

N-S	30.00	4.50
E-W	70.00	8.50

CYCLE LENGTH = 113
LOST TIME = 0.115

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	6	7	4	0	0	0	0	0	0	6	7	4
E	110100	322	3	2	89	0	0	0	42	0	419	45	2
S	010010	11	2	268	0	0	47	32	0	0	43	2	321
W	101100	1	10	38	0	0	0	0	31	40	1	41	79

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	13	1732	0.008	0.112	0.120	208
E	3	1 1 0 1 0 0	327	4739	0.069	0.337	0.406	1924
S	1	0 1 0 0 0 0	13	1691	0.008	0.112	0.120	203
W	2	0 0 1 1 0 0	48	3465	0.014	0.225	0.239	828
				LT =	0.115			
TOTALS	7		401		0.214			3163

1 - 0.214 = 0.786 / 7 = 0.112
V/C = 0.127

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	13	1732	0.008	0.109	0.117	203
E	3	1 1 0 1 0 0	424	4738	0.089	0.328	0.417	1976
S	1	0 1 0 0 0 0	13	1691	0.008	0.109	0.117	198
W	2	0 0 1 1 0 0	49	3465	0.014	0.219	0.233	807
				LT =	0.115			
TOTALS	7		499		0.234			3184

1 - 0.234 = 0.766 / 7 = 0.109
V/C = 0.157

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	13	1732	0.008	0.103	0.111	192
E	3	1 1 0 1 0 0	466	4819	0.097	0.308	0.405	1952
S	1	0 1 0 0 0 0	45	1680	0.027	0.103	0.130	218
W	2	0 0 1 1 0 0	120	3473	0.035	0.205	0.240	834
				LT =	0.115			
TOTALS	7		644		0.282			3196

1 - 0.282 = 0.718 / 7 = 0.103
V/C = 0.202

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

644 - 499)/ 499 = 29.06 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

-/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CHYNOWETH & WINFIELD
MESSAGE: #9511-5 (350K COMM+400 APTS.)

EAK HOUR: 5-6 PM
COUNT DATE: 1/18/95
NAL. DATE: 5/31/96
NAL. INIT: GLP
GROWTH FACTOR % : 4.5

SIGNAL TYPE : FULLY ACTUATED

N-S	30.00	4.50
E-W	70.00	8.50

CYCLE LENGTH = 113
LOST TIME = 0.115

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	010010	2	7	0	0	0	0	0	0	0	2	7	0
E	110100	704	8	7	47	0	0	0	138	0	783	146	7
S	010010	67	9	756	0	0	89	83	0	0	153	9	879
W	101100	1	8	47	0	0	0	0	134	69	1	142	118

EG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 1 0 0 0 0	9	1757	0.005	0.095	0.100	176
E	3	1 1 0 1 0 0	719	4733	0.152	0.286	0.438	2073
S	1	0 1 0 0 0 0	76	1687	0.045	0.095	0.140	236
W	2	0 0 1 1 0 0	55	3462	0.016	0.191	0.207	717
				LT =	0.115			
TOTALS	7		859		0.333			3202

1 - 0.333 = 0.667 / 7 = 0.095

V/C = 0.268

EXISTING LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	9	1757	0.005	0.093	0.098	172
E	3	1 1 0 1 0 0	798	4732	0.169	0.278	0.447	2115
S	1	0 1 0 0 0 0	79	1687	0.047	0.093	0.140	236
W	2	0 0 1 1 0 0	57	3461	0.016	0.185	0.201	696
				LT =	0.115			
TOTALS	7		943		0.352			3219

1 - 0.352 = 0.648 / 7 = 0.093

V/C = 0.293

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 1 0 0 0 0	9	1757	0.005	0.074	0.079	139
E	3	1 1 0 1 0 0	936	4838	0.193	0.221	0.414	2003
S	1	0 1 0 0 0 0	162	1681	0.096	0.074	0.170	286
W	2	0 0 1 1 0 0	260	3489	0.075	0.147	0.222	775
				LT =	0.115			
OTALS	7		1367		0.484			3203

1 - 0.484 = 0.516 / 7 = 0.074

V/C = 0.427

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1367 - 943)/ 943 = 44.96 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

/19/88 LV

Level of Service Calculations
Congestion Management Program

Commercial

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96
COMMERICAL

Pang Engineers Inc
Existing (Date: 1/31/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBRa5c

Almaden / Branham — A.M Peak Hour — Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 26 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	196	305	61	739	131	51	434	474	366	2767	135	284
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.71	0.76	0.14	0.21	0.75	0.04	0.79	0.73	0.25	0.78	0.64	0.18
Effective Gr-sec	13	24	64	110	10	136	26	37	150	112	12	166
Move Time -sec	15	26	66	112	12	138	28	39	152	114	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	68	63	30	12	74	4	62	54	2	20	67	0
Level of Service	F	F	D+	B-	F	A	F	E	A	C+	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	9	9	3	17	3	1
Veh Stopping %	98	96	68	45	99	25	97	94	21	73	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 29 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 30 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.78

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

A.M Peak Hour

FLN:ALBRa5c
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 25 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	208	323	67	815	137	58	458	501	382	2969	146	308
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.75	0.84	0.16	0.23	0.87	0.04	0.83	0.79	0.26	0.83	0.69	0.19
Effective Gr-sec	13	23	62	110	9	135	26	36	149	113	12	166
Move Time -sec	15	25	64	112	11	137	28	38	151	115	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	69	68	31	12	89	4	64	56	2	21	68	0
Level of Service	F	F	D	B-	F	A	F	E-	A	C-	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	10	10	3	18	3	1
Veh Stopping %	98	98	69	45	99	25	97	95	21	77	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 30 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 32 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.83

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

09-25-96

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBRa5c
Scenario 3

Almaden / Branham

A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 25 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	208	323	67	822	137	58	458	501	382	2974	146	308
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.75	0.84	0.16	0.23	0.87	0.04	0.83	0.79	0.26	0.83	0.69	0.19
Effective Gr-sec	13	23	62	110	9	135	26	36	149	113	12	166
Move Time -sec	15	25	64	112	11	137	28	38	151	115	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	69	68	31	12	89	4	64	56	2	21	68	0
Level of Service	F	F	D	B-	F	A	F	E-	A	C-	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	10	10	3	18	3	1
Veh Stopping %	98	98	69	45	99	25	97	95	21	77	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 30 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 32 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.83

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

A.M Peak Hour

FLN:ALBRa[illegible]
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 25 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	213	330	68	842	140	60	469	513	392	3045	150	3[illegible]
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0[illegible]
Relative Sat 'X'	0.77	0.86	0.16	0.24	0.88	0.05	0.85	0.81	0.27	0.85	0.71	0.1[illegible]
Effective Gr-sec	13	23	62	110	9	135	26	36	149	113	12	166
Move Time -sec	15	25	64	112	11	137	28	38	151	115	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2[illegible]
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0[illegible]
AvDelay/veh -sec	71	70	31	12	92	4	65	57	2	21	69	0
Level of Service	F	F	D	B-	F	A	F	E-	A	C-	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	10	10	3	19	3	[illegible]
Veh Stopping %	98	98	69	45	99	25	98	95	22	79	98	[illegible]
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 31 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.85

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96 - 011

C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 4/26/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBRp5c
Scenario 1

Almaden / Branham

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 87 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	539	153	149	1924	371	288	417	359	124	814	360	442
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.70	0.90	0.26	0.68	0.83	0.29	0.40	0.88	0.17	0.30	0.92	0.30
Effective Gr-sec	36	10	85	88	25	100	49	23	73	85	22	148
Move Time -sec	38	12	87	90	27	102	51	25	75	87	24	150
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	58	93	21	20	65	15	47	71	25	21	77	2
Level of Service	E-	F	C-	C+	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	12	4	4	12	8	6	9	8	4	7	8	4
Veh Stopping %	100	99	59	58	97	52	96	98	63	61	99	22
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 35 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 39 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.74

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM

FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc

Existing + Approved

SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

P.M Peak Hour

FLN:ALBRp5c

Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 88 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	562	164	167	2089	384	302	435	388	128	905	384	469
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.73	0.97	0.29	0.74	0.90	0.31	0.41	0.95	0.18	0.33	0.98	0.32
Effective Gr-sec	36	10	85	88	24	100	49	23	73	86	22	149
Move Time -sec	38	12	87	90	26	102	51	25	75	88	24	151
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	59	107	21	21	72	15	47	81	25	21	89	2
Level of Service	E-	F	C-	C-	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	12	4	4	13	8	6	9	8	4	8	8	4
Veh Stopping %	100	100	60	60	98	53	96	99	63	61	100	22
Do Veh Clear ?	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 38 Level of Service = D-

Critical Movements - Weighted Av Delay (sec) = 42 Level of Service = E+

'' '' - Intersection Capacity Utilization (ICU) = 0.80

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBRp5c
Scenario 3

Almaden / Branham

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 88 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	562	164	167	2115	384	302	435	388	128	931	384	469
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.73	0.97	0.29	0.75	0.90	0.31	0.41	0.95	0.18	0.34	0.98	0.32
Effective Gr-sec	36	10	85	88	24	100	49	23	73	86	22	149
Move Time -sec	38	12	87	90	26	102	51	25	75	88	24	151
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	59	107	21	21	72	15	47	81	25	21	89	2
Level of Service	E-	F	C-	C-	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	12	4	4	13	8	6	9	8	4	8	8	4
Veh Stopping %	100	100	60	61	98	53	96	99	63	61	100	22
Do Veh Clear ?	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 38 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 42 Level of Service = E+
'' '' - Intersection Capacity Utilization (ICU) = 0.80

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

P.M Peak Hour

FLN:ALBRp5c
Scenario

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	[illegible]
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	[illegible]
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	[illegible]
Phase 5 - 2 secs	.	.	.	X	X	X	.	.	.	.	.	[illegible]
Phase 6 - 88 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	576	167	171	2165	394	310	445	397	132	953	393	480
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	175[illegible]
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.[illegible]
Relative Sat 'X'	0.75	0.99	0.30	0.76	0.92	0.31	0.42	0.97	0.18	0.34	1.00	0.33
Effective Gr-sec	36	10	85	88	24	100	49	23	73	86	22	149
Move Time -sec	38	12	87	90	26	102	51	25	75	88	24	15[illegible]
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	[illegible]
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	60	112	21	22	76	16	47	85	25	21	95	[illegible]
Level of Service	E-	F	C-	C-	F	C+	E	F	D+	C-	F	[illegible]
Av.'Q'/ lane veh	13	4	4	14	8	7	9	9	4	8	9	[illegible]
Veh Stopping %	100	100	61	62	99	53	97	100	64	62	100	22
Do Veh Clear ?	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	YE[illegible]

Whole Intersection - Weighted Av Delay (sec) = 39 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 43 Level of Service = E+
" " - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 1/31/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N) A.M Peak Hour FLN:AL85Na5c Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 21 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 159 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****	****
Peak 15 Vol -vph		1888	146	161	2846
Saturation -vph		7600	2625	2625	5700
Lost time -sec		2.00	2.00	2.00	2.00
Relative Sat 'X'		0.28	0.53	0.58	0.57
Effective Gr-sec		157	19	19	157
Move Time -sec		159	21	21	159
Min/Ped Time-sec		20	10	10	20
Prog Factor PAF		1.00	1.00	1.00	1.00
AvDelay/veh -sec		1	59	61	2
Level of Service		A	E-	F	A
Av.'Q'/ lane veh		3	3	4	6
Veh Stopping %		17	95	95	26
Do Veh Clear ?		YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 6 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 5 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.57

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Na5c

Almaden / Route 85 (N) A.M Peak Hour Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 27 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 153 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****	****
Peak 15 Vol -vph	2054	153	225	2984
Saturation -vph	7600	2625	2625	5700
Lost time -sec	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.32	0.42	0.62	0.62
Effective Gr-sec	151	25	25	151
Move Time -sec	153	27	27	153
Min/Ped Time-sec	20	10	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00
AvDelay/veh -sec	2	54	58	4
Level of Service	A	E	E-	A
Av.'Q'/ lane veh	4	3	5	8
Veh Stopping %	22	91	94	34
Do Veh Clear ?	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 7 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 8 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.62

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Na5c
Scenario 3

Almaden / Route 85 (N)

A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 29 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 151 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**									****	****		
Peak 15 Vol -vph				2087				153	248	3017		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.33				0.39	0.63	0.64		
Effective Gr-sec				149				27	27	149		
Move Time -sec				151				29	29	151		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				1.00				1.00	1.00	1.00		
AvDelay/veh -sec				3				53	57	5		
Level of Service				A				E	E-	A		
Av.'Q'/ lane veh				4				3	5	9		
Veh Stopping %				24				90	94	37		
Do Veh Clear ?				YES				YES	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 8 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 8 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.64

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

A.M Peak Hour

FLN:AL85Na5c
Scenario

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 29 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 151 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**										****	****	
Peak 15 Vol -vph				2136				153	254	3089		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.34				0.39	0.65	0.65		
Effective Gr-sec				149				27	27	149		
Move Time -sec				151				29	29	151		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				1.00				1.00	1.00	1.00		
AvDelay/veh -sec				3				53	57	5		
Level of Service				A				E	E-	A		
Av.'Q'/ lane veh				5				3	5	9		
Veh Stopping %				24				90	94	38		
Do Veh Clear ?				YES				YES	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 8 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 9 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.65

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Improvements
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Na5c
Scenario 5

Almaden / Route 85 (N)

A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 163 secs	.	.	.	X	.	.	.	.	X	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****		****
Peak 15 Vol -vph			2087	153	248	3017
Saturation -vph			7600	3150	1750	5700
Lost time -sec			2.00	2.00	0.00	2.00
Relative Sat 'X'			0.31	0.58	0.14	0.59
Effective Gr-sec			161	15	180	161
Move Time -sec			163	17	182	163
Min/Ped Time-sec			20	10	10	20
Prog Factor PAF			1.00	1.00	1.00	1.00
AvDelay/veh -sec			1	63	0	2
Level of Service			A	F	A	A
Av.'Q'/ lane veh			3	4	0	5
Veh Stopping %			15	96	0	22
Do Veh Clear ?			YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 3 Level of Service = A
Critical Movements - Weighted Av Delay (sec) = 5 Level of Service = A
'' '' - Intersection Capacity Utilization (ICU) = 0.59

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

P.M Peak Hour

FLN:AL85Np5c
Scenario

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****				****				
Peak 15 Vol -vph				3346				681	377	1840		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.59				1.13	0.62	0.43		
Effective Gr-sec				133				41	41	133		
Move Time -sec				135				43	43	135		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				0.72				1.12	1.00	1.00		
AvDelay/veh -sec				6				144	48	6		
Level of Service				B+				F	E	B+		
Av.'Q'/ lane veh				8				16	7	8		
Veh Stopping %				33				100	90	37		
Do Veh Clear ?				YES				NO	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 24 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 29 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.72

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Np5c
Scenario 2

Almaden / Route 85 (N)

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**			****		****	
Peak 15 Vol -vph			3513		769	388	1976
Saturation -vph			7600		2625	2625	5700
Lost time -sec			2.00		2.00	2.00	2.00
Relative Sat 'X'			0.62		1.27	0.64	0.46
Effective Gr-sec			133		41	41	133
Move Time -sec			135		43	43	135
Min/Ped Time-sec			20		10	10	20
Prog Factor PAF			0.72		1.12	1.00	1.00
AvDelay/veh -sec			6		251	49	7
Level of Service			B+		F	E	B+
Av.'Q'/ lane veh			8		21	7	8
Veh Stopping %			34		100	90	39
Do Veh Clear ?			YES		NO	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 37 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 50 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.77

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Np5c

Almaden / Route 85 (N) P.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****				****				
Peak 15 Vol -vph				3708				769	466	2089		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.65				1.27	0.77	0.49		
Effective Gr-sec				133				41	41	133		
Move Time -sec				135				43	43	135		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				0.72				1.12	1.00	1.00		
AvDelay/veh -sec				6				251	53	7		
Level of Service				B+				F	E	B+		
Av.'Q'/ lane veh				8				21	9	9		
Veh Stopping %				36				100	94	40		
Do Veh Clear ?				YES				NO	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 48 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.80

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Np5c
Scenario 4

Almaden / Route 85 (N)

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**		****		****		
Peak 15 Vol -vph		3793		788	476	2137
Saturation -vph		7600		2625	2625	5700
Lost time -sec		2.00		2.00	2.00	2.00
Relative Sat 'X'		0.67		1.30	0.79	0.50
Effective Gr-sec		133		41	41	133
Move Time -sec		135		43	43	135
Min/Ped Time-sec		20		10	10	20
Prog Factor PAF		0.72		1.12	1.00	1.00
AvDelay/veh -sec		6		281	54	7
Level of Service		B+		F	E	B+
Av.'Q'/ lane veh		9		22	9	9
Veh Stopping %		36		100	94	40
Do Veh Clear ?		YES		NO	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 40 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 54 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Improvements
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

P.M Peak Hour

FLN:AL85N[illegible]c
Scenario 5

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	X	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****				****				
Peak 15 Vol -vph				3708				769	466	2089		
Saturation -vph				7600				3150	1750	5700		
Lost time -sec				2.00				2.00	0.00	2.00		
Relative Sat 'X'				0.65				1.06	0.27	0.49		
Effective Gr-sec				133				41	178	133		
Move Time -sec				135				43	180	135		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				0.72				1.12	1.00	1.00		
AvDelay/veh -sec				6				108	0	7		
Level of Service				B+				F	A	B+		
Av.'Q'/ lane veh				8				17	0	9		
Veh Stopping %				36				100	0	40		
Do Veh Clear ?				YES				NO	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 17 Level of Service = C+
Critical Movements - Weighted Av Delay (sec) = 24 Level of Service = C-
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 5/10/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sa5c

Almaden / Route 85 (S) — A.M Peak Hour — Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 34 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 143 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	44	412	229	1058		35				3463	10	481
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.26	0.58	0.13	0.24		0.03				0.58	0.52	0.35
Effective Gr-sec	32	32	181	141		141				141	2	141
Move Time -sec	34	34	183	143		143				143	4	143
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.00
AvDelay/veh -sec	49	53	0	4		3				6	83	5
Level of Service	E	E	A	A		A				B+	F	A
Av.'Q'/ lane veh	2	6	0	4		0				10	0	5
Veh Stopping %	86	92	0	27		23				41	99	30
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 9 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 11 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.58

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S) — A.M Peak Hour — FLN:AL85Sa[illegible]c Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 33 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 143 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	45	426	245	1093		36				3597	10	56
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.28	0.61	0.14	0.24		0.03				0.60	0.51	0.4[illegible]
Effective Gr-sec	31	31	180	141		141				141	2	141
Move Time -sec	33	33	182	143		143				143	4	143
Min/Ped Time-sec	10	10	10	20		20				20	10	2[illegible]
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.0[illegible]
AvDelay/veh -sec	49	54	0	4		3				6	82	5
Level of Service	E	E	A	A		A				B+	F	A
Av.'Q'/ lane veh	2	6	0	4		0				10	0	[illegible]
Veh Stopping %	87	93	0	27		22				41	99	32
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 9 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 11 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.61

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sa5c

Almaden / Route 85 (S) A.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 35 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 142 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	45	449	245	1099		36				3607	10	565
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.26	0.61	0.14	0.25		0.03				0.61	0.52	0.42
Effective Gr-sec	33	33	181	140		140				140	2	140
Move Time -sec	35	35	183	142		142				142	4	142
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.00
AvDelay/veh -sec	48	53	0	4		4				7	83	5
Level of Service	E	E	A	A		A				B+	F	B+
Av.'Q'/ lane veh	2	6	0	4		0				10	0	6
Veh Stopping %	86	92	0	28		23				43	99	33
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 10 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 12 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.61

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S)

A.M Peak Hour

FLN:AL85Sa5C
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 35 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 142 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	47	459	250	1125		37				3694	10	578
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.27	0.63	0.14	0.26		0.03				0.63	0.52	0.43
Effective Gr-sec	33	33	181	140		140				140	2	140
Move Time -sec	35	35	183	142		142				142	4	142
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.00
AvDelay/veh -sec	49	53	0	4		4				7	83	5
Level of Service	E	E	A	A		A				B+	F	B+
Av.'Q'/ lane veh	2	6	0	4		0				11	0	7
Veh Stopping %	86	92	0	28		23				44	99	34
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 10 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 12 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.63

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96 - 011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S)

P.M Peak Hour

FLN:AL85Sp5c
Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	115	661	911	2745		146				1435	30	424
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.53	0.72	0.52	0.70		0.12				0.27	0.38	0.35
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.00
AvDelay/veh -sec	71	50	0	6		7				8	65	9
Level of Service	F	E	A	B+		B+				B+	F	B+
Av.'Q'/ lane veh	7	8	0	7		2				5	1	6
Veh Stopping %	100	92	0	28		34				38	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 12 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 15 Level of Service = C+
'' '' - Intersection Capacity Utilization (ICU) = 0.69

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S)

P.M Peak Hour

FLN:AL85Sp
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	118	762	948	2905		150				1486	31	43
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.0
Relative Sat 'X'	0.54	0.83	0.54	0.74		0.12				0.28	0.40	0.3
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	2
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.0
AvDelay/veh -sec	71	54	0	6		7				8	65	9
Level of Service	F	E	A	B+		B+				B+	F	B
Av.'Q'/ lane veh	7	10	0	7		2				6	1	
Veh Stopping %	100	95	0	29		34				38	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 13 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 17 Level of Service = C+
'' '' - Intersection Capacity Utilization (ICU) = 0.74

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sp5c

Almaden / Route 85 (S) P.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	118	840	948	2944		150				1521	31	437
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.54	0.91	0.54	0.75		0.12				0.29	0.40	0.36
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.00
AvDelay/veh -sec	71	60	0	7		7				8	65	9
Level of Service	F	F	A	B+		B+				B+	F	B+
Av.'Q'/ lane veh	7	11	0	7		2				6	1	7
Veh Stopping %	100	97	0	30		34				38	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 14 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 19 Level of Service = C+
'' '' - Intersection Capacity Utilization (ICU) = 0.77

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S)

P.M Peak Hour

FLN:AL85Sp5c
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	121	858	971	3014		154				1557	32	447
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.56	0.93	0.55	0.76		0.13				0.30	0.41	0.37
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.00
AvDelay/veh -sec	72	63	0	7		7				8	65	9
Level of Service	F	F	A	B+		B+				B+	F	B+
Av.'Q'/ lane veh	7	11	0	7		2				6	2	7
Veh Stopping %	100	98	0	31		34				39	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 14 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 19 Level of Service = C+
'' '' - Intersection Capacity Utilization (ICU) = 0.79

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 1/19/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLa5c

Almaden / Blossom Hill — A.M Peak Hour — Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 29 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 0 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 115 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	189	480	80	684	118	272	311	99	177	2678	114	40
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.14	0.74	0.19	0.19	0.75	0.18	0.76	0.71	0.29	0.75	0.72	0.03
Effective Gr-sec	42	37	63	113	9	152	13	8	63	113	9	123
Move Time -sec	44	39	65	115	11	154	15	10	65	115	11	125
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	42	54	31	11	76	2	68	74	32	19	74	7
Level of Service	E+	E	D	B-	F	A	F	F	D	C+	F	B+
Av.'Q'/ lane veh	2	10	3	4	3	2	5	2	6	17	3	1
Veh Stopping %	79	94	70	42	99	18	98	99	72	70	99	32
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 29 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Blossom Hill

A.M Peak Hour

FLN:ALBLa5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 28 secs	X	X	X	.	.	X	.	.	X	.	.	[illegible]
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 1 secs	.	.	.	X	X	X	.	.	X	.	.	[illegible]
Phase 6 - 113 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	223	512	102	761	160	291	359	114	236	2879	142	4[illegible]
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0[illegible]
Relative Sat 'X'	0.17	0.81	0.24	0.21	0.83	0.20	0.81	0.81	0.37	0.82	0.81	0.0[illegible]
Effective Gr-sec	42	36	64	112	11	150	14	8	65	111	10	121
Move Time -sec	44	38	66	114	13	152	16	10	67	113	12	123
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2[illegible]
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0[illegible]
AvDelay/veh -sec	42	58	31	11	81	2	70	84	32	21	80	8
Level of Service	E+	E-	D	B-	F	A	F	F	D	C-	F	B[illegible]
Av.'Q'/ lane veh	3	10	3	5	4	2	6	3	8	18	3	[illegible]
Veh Stopping %	80	96	70	44	99	20	98	99	74	77	99	34
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 31 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLa5c
Almaden / Blossom Hill A.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 28 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 1 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 113 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	226	514	102	765	160	293	359	116	236	2887	142	49
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.17	0.82	0.24	0.22	0.83	0.20	0.81	0.83	0.37	0.82	0.81	0.04
Effective Gr-sec	42	36	64	112	11	150	14	8	65	111	10	121
Move Time -sec	44	38	66	114	13	152	16	10	67	113	12	123
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	42	58	31	11	81	2	70	86	32	22	80	8
Level of Service	E+	E-	D	B-	F	A	F	F	D	C-	F	B+
Av.'Q'/ lane veh	3	10	3	5	4	2	6	3	8	18	3	1
Veh Stopping %	80	96	70	44	99	20	98	99	74	78	99	34
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 31 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Blossom Hill

A.M Peak Hour

FLN:ALBLa5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 28 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 1 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 113 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	231	526	104	783	164	300	368	119	242	2956	146	5
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.17	0.83	0.24	0.22	0.85	0.21	0.83	0.85	0.38	0.84	0.83	0.0
Effective Gr-sec	42	36	64	112	11	150	14	8	65	111	10	12
Move Time -sec	44	38	66	114	13	152	16	10	67	113	12	123
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	42	59	31	11	83	2	71	89	33	22	83	8
Level of Service	E+	E-	D	B-	F	A	F	F	D	C-	F	B+
Av.'Q'/ lane veh	3	11	3	5	4	3	6	3	8	19	3	
Veh Stopping %	80	96	71	44	99	20	99	99	74	80	99	3
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 32 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 34 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.84

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLp5c

Almaden / Blossom Hill P.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 16 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 30 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 56 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	675	494	141	2366	689	406	559	238	364	1257	253	232
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.41	0.94	0.23	0.88	0.77	0.36	0.49	0.97	0.31	0.73	0.68	0.34
Effective Gr-sec	52	30	91	84	51	116	36	14	121	54	21	70
Move Time -sec	54	32	93	86	53	118	38	16	123	56	23	72
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	46	73	19	43	47	11	57	98	9	44	61	29
Level of Service	E	F	C+	E+	E	B-	E-	F	B+	E+	F	D+
Av.'Q'/ lane veh	9	10	3	25	12	7	9	6	6	15	6	7
Veh Stopping %	95	99	56	100	92	46	100	100	41	90	96	70
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 45 Level of Service = E+
Critical Movements - Weighted Av Delay (sec) = 50 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.79

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Blossom Hill

P.M Peak Hour

FLN:ALBLp5c
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 16 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 31 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 55 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	756	516	178	2522	766	428	628	249	417	1346	289	250
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.46	0.98	0.29	0.94	0.84	0.38	0.55	1.01	0.35	0.80	0.78	0.37
Effective Gr-sec	52	30	91	84	52	116	36	14	122	53	21	69
Move Time -sec	54	32	93	86	54	118	38	16	124	55	23	71
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	47	81	19	48	50	11	58	110	9	46	65	30
Level of Service	E	F	C+	E	E	B-	E-	F	B+	E	F	D
Av.'Q'/ lane veh	10	11	4	27	14	7	10	6	7	16	6	8
Veh Stopping %	97	100	58	100	94	47	100	100	42	92	97	72
Do Veh Clear ?	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 48 Level of Service = E
Critical Movements - Weighted Av Delay (sec) = 55 Level of Service = E-
'' '' - Intersection Capacity Utilization (ICU) = 0.85

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLp5c

Almaden / Blossom Hill P.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 15 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 30 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 56 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	764	524	178	2549	766	440	632	258	417	1373	289	259
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.47	0.99	0.29	0.95	0.85	0.39	0.55	0.98	0.35	0.80	0.78	0.37
Effective Gr-sec	51	30	91	84	51	116	36	15	121	54	21	71
Move Time -sec	53	32	93	86	53	118	38	17	123	56	23	73
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	48	85	19	49	52	11	58	99	9	46	65	29
Level of Service	E	F	C+	E	E	B-	E-	F	B+	E	F	D+
Av.'Q'/ lane veh	11	11	4	27	14	8	10	6	7	16	6	8
Veh Stopping %	97	100	58	100	94	47	100	100	43	92	97	71
Do Veh Clear ?	YES	NO	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 49 Level of Service = E
Critical Movements - Weighted Av Delay (sec) = 57 Level of Service = E-
'' '' - Intersection Capacity Utilization (ICU) = 0.85

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Blossom Hill

P.M Peak Hour

FLN:ALBLp5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 15 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 30 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 56 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	782	536	183	2610	784	450	647	264	427	1405	296	26
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.48	1.02	0.30	0.98	0.87	0.40	0.56	1.00	0.36	0.82	0.80	0.3
Effective Gr-sec	51	30	91	84	51	116	36	15	121	54	21	7
Move Time -sec	53	32	93	86	53	118	38	17	123	56	23	73
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	48	91	19	53	53	11	58	105	10	46	67	29
Level of Service	E	F	C+	E	E	B-	E-	F	B+	E	F	D+
Av.'Q'/ lane veh	11	11	4	28	14	8	10	6	7	16	6	
Veh Stopping %	98	100	58	100	95	47	100	100	43	93	97	7
Do Veh Clear ?	YES	NO	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 51 Level of Service = E
Critical Movements - Weighted Av Delay (sec) = 60 Level of Service = F
'' '' - Intersection Capacity Utilization (ICU) = 0.87

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing (Date: 11/15/94)
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

A.M Peak Hour

FLN:ALCOa5c
Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 45 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 4 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 4 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 109 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	195	309	21	704	45	62	258	476	263	2529	27	655
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.73	0.74	-	0.20	0.77	0.05	0.76	0.60	0.31	0.75	0.77	0.44
Effective Gr-sec	14	43	-	111	6	156	16	45	129	107	2	154
Move Time -sec	16	45	-	113	8	158	18	47	131	109	4	156
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	68	53	-	11	95	1	68	46	7	21	109	2
Level of Service	F	E	-	B-	F	A	F	E	B+	C-	F	A
Av.'Q'/ lane veh	5	12	-	4	2	0	6	9	4	17	1	5
Veh Stopping %	98	92	-	44	99	14	98	88	36	73	100	23
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 26 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 29 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

A.M Peak Hour

FLN:ALCOa5c
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 5 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 7 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 107 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	205	326	37	777	76	67	271	513	335	2706	40	694
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.82	0.82	-	0.22	0.78	0.05	0.80	0.68	0.39	0.81	0.76	0.48
Effective Gr-sec	14	41	-	112	10	155	16	43	128	105	3	150
Move Time -sec	16	43	-	114	12	157	18	45	130	107	5	152
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	73	59	-	11	85	1	70	49	8	24	97	3
Level of Service	F	E-	-	B-	F	A	F	E	B+	C-	F	A
Av.'Q'/ lane veh	6	13	-	5	4	0	6	10	5	19	1	6
Veh Stopping %	98	95	-	44	99	15	98	91	40	79	100	28
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 32 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.81

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALCOa5c

Almaden / Coleman — A.M Peak Hour — Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 44 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 5 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 7 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 107 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	205	329	37	781	76	69	271	513	335	2714	40	694
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.82	0.81	-	0.22	0.79	0.05	0.81	0.67	0.39	0.82	0.77	0.48
Effective Gr-sec	14	42	-	112	10	156	16	44	128	105	3	151
Move Time -sec	16	44	-	114	12	158	18	46	130	107	5	153
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	74	58	-	12	86	1	71	49	8	24	98	3
Level of Service	F	E-	-	B-	F	A	F	E	B+	C-	F	A
Av.'Q'/ lane veh	6	13	-	5	4	0	6	10	5	19	1	6
Veh Stopping %	99	95	-	44	99	14	98	90	41	80	100	27
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.81

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

A.M Peak Hour

FLN:ALCOa5c
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 44 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 5 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 7 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 107 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	210	337	38	800	78	71	278	526	343	2779	41	711
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.84	0.83	-	0.23	0.81	0.05	0.83	0.69	0.40	0.84	0.79	0.49
Effective Gr-sec	14	42	-	112	10	156	16	44	128	105	3	151
Move Time -sec	16	44	-	114	12	158	18	46	130	107	5	153
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	76	60	-	12	89	1	72	49	8	25	102	3
Level of Service	F	E-	-	B-	F	A	F	E	B+	D+	F	A
Av.'Q'/ lane veh	6	13	-	5	4	0	6	10	5	20	1	6
Veh Stopping %	99	95	-	44	99	14	98	91	41	82	100	28
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 29 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 34 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.83

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALCOp5c

Almaden / Coleman P.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 29 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 26 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 34 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 59 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	256	126	31	1933	227	306	277	720	123	946	36	517
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.55	0.90	-	0.65	0.53	0.33	0.24	0.93	0.34	0.51	0.22	0.51
Effective Gr-sec	24	14	-	91	43	107	53	43	53	57	9	102
Move Time -sec	26	16	-	93	45	109	55	45	55	59	11	104
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	64	94	-	18	44	13	41	62	36	36	61	17
Level of Service	F	F	-	C+	E+	B-	E+	F	D-	D-	F	C+
Av.'Q'/ lane veh	7	6	-	11	8	6	6	13	4	10	1	10
Veh Stopping %	100	99	-	54	87	49	89	98	78	81	96	59
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 33 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.69

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

P.M Peak Hour

FLN:ALCOp5c
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 29 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 26 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 41 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 52 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	264	132	44	2050	297	316	285	748	160	1022	52	546
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.59	0.94	-	0.69	0.59	0.34	0.25	0.97	0.44	0.63	0.32	0.57
Effective Gr-sec	24	14	-	91	50	107	53	43	53	50	9	95
Move Time -sec	26	16	-	93	52	109	55	45	55	52	11	97
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	65	103	-	18	42	13	41	68	38	42	61	21
Level of Service	F	F	-	C+	E+	B-	E+	F	D-	E+	F	C-
Av.'Q'/ lane veh	8	6	-	12	10	6	6	14	5	12	1	12
Veh Stopping %	100	100	-	56	86	49	89	99	80	87	96	66
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 35 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.73

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALCOp5c
Almaden / Coleman P.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 45 secs	.	X	.	.	.	.	.	X	.	.	.	X
Phase 2 - 2 secs	X	X	X	.	.	.	.	.	.	.	.	X
Phase 3 - 24 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 40 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 53 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	264	142	44	2076	297	326	285	748	160	1048	52	546
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.59	0.32	-	0.70	0.61	0.42	0.60	0.97	0.27	0.63	0.32	0.56
Effective Gr-sec	24	45	-	91	49	91	22	43	86	51	9	98
Move Time -sec	26	47	-	93	51	93	24	45	88	53	11	100
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	65	40	-	18	43	20	67	68	20	41	61	19
Level of Service	F	E+	-	C+	E+	C+	F	F	C+	E+	F	C+
Av.'Q'/ lane veh	8	5	-	12	10	8	7	14	4	12	1	12
Veh Stopping %	100	81	-	57	87	61	100	99	59	87	96	64
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 35 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.73

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

P.M Peak Hour

FLN:ALCOp5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 45 secs	.	X	.	.	.	.	.	X	.	.	.	X
Phase 2 - 2 secs	X	X	X	.	.	.	.	.	.	.	.	X
Phase 3 - 24 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 40 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 53 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	270	145	45	2125	304	334	292	766	164	1073	53	55
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.60	0.32	-	0.72	0.62	0.43	0.61	0.99	0.28	0.65	0.33	0.5
Effective Gr-sec	24	45	-	91	49	91	22	43	86	51	9	9
Move Time -sec	26	47	-	93	51	93	24	45	88	53	11	100
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	65	40	-	19	43	20	67	73	20	42	61	20
Level of Service	F	E+	-	C+	E+	C+	F	F	C+	E+	F	C+
Av.'Q'/ lane veh	8	5	-	12	11	8	7	14	4	12	1	1
Veh Stopping %	100	81	-	57	87	62	100	100	59	87	96	6
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 37 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 5/10/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAa5c

Blossom Hill / Santa Teresa A.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 33 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 19 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 44 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	226	164	64	349	169	133	558	122	252	827	196	80
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.14	0.37	0.13	0.17	0.38	0.22	0.38	0.36	0.35	0.37	0.34	0.12
Effective Gr-sec	35	17	35	42	17	42	31	13	50	47	22	47
Move Time -sec	37	19	37	44	19	44	33	15	52	49	24	49
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	24	36	24	21	36	21	28	38	18	20	33	18
Level of Service	C-	D-	C-	C-	D-	C-	D+	D-	C+	C+	D	C+
Av.'Q'/ lane veh	2	2	2	3	2	3	5	2	5	6	3	2
Veh Stopping %	74	91	74	69	91	70	82	93	68	71	87	64
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 26 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.37

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Blossom Hill / Santa Teresa

A.M Peak Hour

FLN:BLSAa5c
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 32 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 45 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	252	184	87	391	175	141	586	136	260	924	209	104
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.15	0.41	0.17	0.19	0.41	0.22	0.41	0.40	0.37	0.40	0.38	0.15
Effective Gr-sec	34	17	34	43	16	43	30	13	48	48	21	48
Move Time -sec	36	19	36	45	18	45	32	15	50	50	23	50
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	24	36	24	20	36	20	28	38	19	19	33	17
Level of Service	C-	D-	C-	C+	D-	C-	D+	D-	C+	C+	D	C+
Av.'Q'/ lane veh	2	3	2	3	3	3	5	2	5	6	3	2
Veh Stopping %	75	91	75	69	92	69	83	93	70	71	88	63
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 25 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.41

Predetermined Cycle Length is 119 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAa5c

Blossom Hill / Santa Teresa A.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 33 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 45 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	256	184	88	391	175	141	592	136	260	924	210	104
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.15	0.41	0.17	0.19	0.42	0.22	0.40	0.40	0.36	0.41	0.38	0.15
Effective Gr-sec	35	17	35	43	16	43	31	13	49	48	21	48
Move Time -sec	37	19	37	45	18	45	33	15	51	50	23	50
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	24	36	24	20	37	20	28	38	19	20	33	17
Level of Service	C-	D-	C-	C-	D-	C-	D+	D-	C+	C+	D	C+
Av.'Q'/ lane veh	2	3	2	3	3	3	5	2	5	6	3	2
Veh Stopping %	74	91	75	69	92	70	83	93	69	72	88	64
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 26 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.41

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAa5

Blossom Hill / Santa Teresa A.M Peak Hour Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 33 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 45 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	263	189	90	400	179	145	606	139	267	946	215	10
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.16	0.42	0.18	0.20	0.43	0.23	0.41	0.41	0.37	0.41	0.39	0.1
Effective Gr-sec	35	17	35	43	16	43	31	13	49	48	21	48
Move Time -sec	37	19	37	45	18	45	33	15	51	50	23	50
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	24	36	24	20	37	21	28	38	19	20	34	17
Level of Service	C-	D-	C-	C-	D-	C-	D+	D-	C+	C+	D	C
Av.'Q'/ lane veh	2	3	2	3	3	3	5	2	5	6	3	
Veh Stopping %	74	91	75	69	92	70	83	93	70	72	89	6
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 26 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.42

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 10/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAp5c

Blossom Hill / Santa Teresa P.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 9 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 27 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 24 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 25 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	677	297	158	905	513	268	569	176	143	537	207	108
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.42	0.49	0.32	0.40	0.48	0.39	0.48	0.47	0.39	0.49	0.49	0.32
Effective Gr-sec	34	23	34	47	40	47	25	14	25	23	16	23
Move Time -sec	36	25	36	49	42	49	27	16	27	25	18	25
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	26	33	25	20	24	20	32	38	31	33	37	32
Level of Service	D+	D	D+	C+	C-	C+	D	D-	D	D	D-	D
Av.'Q'/ lane veh	5	4	4	6	6	5	5	3	4	5	3	3
Veh Stopping %	81	89	79	72	79	71	88	93	86	89	93	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 27 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 30 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.48

Predetermined Cycle Length is 119 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Blossom Hill / Santa Teresa

P.M Peak Hour

FLN:BLSAp5c
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 19 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 22 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	718	313	168	991	522	295	617	200	146	577	232	120
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.44	0.52	0.34	0.45	0.51	0.44	0.50	0.51	0.39	0.51	0.52	0.34
Effective Gr-sec	34	23	34	46	39	46	26	15	26	24	17	24
Move Time -sec	36	25	36	48	41	48	28	17	28	26	19	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	27	34	26	21	25	21	32	38	31	33	37	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	5	3	4	5	3	3
Veh Stopping %	82	90	79	75	81	74	88	93	85	89	93	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.51

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

09-26-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAp5c

Blossom Hill / Santa Teresa — P.M Peak Hour — Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 20 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 21 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	739	313	173	991	522	295	638	200	146	577	237	120
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.46	0.52	0.35	0.46	0.51	0.45	0.52	0.51	0.39	0.51	0.50	0.34
Effective Gr-sec	34	23	34	45	39	45	26	15	26	24	18	24
Move Time -sec	36	25	36	47	41	47	28	17	28	26	20	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	27	34	26	22	25	22	32	38	31	33	36	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	6	3	4	5	3	3
Veh Stopping %	82	90	80	76	81	75	88	93	85	89	92	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.51

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-26-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Blossom Hill / Santa Teresa

P.M Peak Hour

FLN:BLSAp5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 20 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 21 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	756	321	177	1015	535	302	653	205	149	591	242	12
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0
Relative Sat 'X'	0.47	0.53	0.36	0.47	0.52	0.46	0.53	0.52	0.39	0.52	0.51	0.3
Effective Gr-sec	34	23	34	45	39	45	26	15	26	24	18	24
Move Time -sec	36	25	36	47	41	47	28	17	28	26	20	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	27	34	26	22	25	22	32	38	31	33	36	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	6	3	4	5	3	
Veh Stopping %	83	90	80	76	81	76	88	94	86	89	92	8
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.52

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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Level of Service Calculations
Congestion Management Program

Commercial + Residential

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96
Comm + Res

Pang Engineers Inc
Existing (Date: 1/31/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBRa5

Almaden / Branham — A.M Peak Hour — Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 26 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	196	305	61	739	131	51	434	474	366	2767	135	284
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.71	0.76	0.14	0.21	0.75	0.04	0.79	0.73	0.25	0.78	0.64	0.18
Effective Gr-sec	13	24	64	110	10	136	26	37	150	112	12	166
Move Time -sec	15	26	66	112	12	138	28	39	152	114	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	68	63	30	12	74	4	62	54	2	20	67	0
Level of Service	F	F	D+	B-	F	A	F	E	A	C+	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	9	9	3	17	3	1
Veh Stopping %	98	96	68	45	99	25	97	94	21	73	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 29 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 30 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.78

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

A.M Peak Hour

FLN:ALBRa5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 25 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	208	323	67	815	137	58	458	501	382	2969	146	30
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0
Relative Sat 'X'	0.75	0.84	0.16	0.23	0.87	0.04	0.83	0.79	0.26	0.83	0.69	0.1
Effective Gr-sec	13	23	62	110	9	135	26	36	149	113	12	166
Move Time -sec	15	25	64	112	11	137	28	38	151	115	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	69	68	31	12	89	4	64	56	2	21	68	0
Level of Service	F	F	D	B-	F	A	F	E-	A	C-	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	10	10	3	18	3	
Veh Stopping %	98	98	69	45	99	25	97	95	21	77	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 30 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 32 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.83

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96 - 011

C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

A.M Peak Hour

FLN:ALBRa5
Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 25 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	208	323	67	836	137	58	458	501	382	3001	146	308
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.75	0.84	0.16	0.24	0.87	0.04	0.83	0.79	0.26	0.83	0.69	0.19
Effective Gr-sec	13	23	62	110	9	135	26	36	149	113	12	166
Move Time -sec	15	25	64	112	11	137	28	38	151	115	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	69	68	31	12	89	4	64	56	2	21	68	0
Level of Service	F	F	D	B-	F	A	F	E-	A	C-	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	10	10	3	18	3	1
Veh Stopping %	98	98	69	45	99	25	97	95	21	78	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 30 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 32 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.84

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96 - 011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

A.M Peak Hour

FLN:ALBRa5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 25 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 112 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	213	330	68	856	140	60	469	513	392	3072	150	31
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0
Relative Sat 'X'	0.77	0.86	0.16	0.24	0.88	0.05	0.85	0.81	0.27	0.85	0.71	0.1
Effective Gr-sec	13	23	62	110	9	135	26	36	149	113	12	166
Move Time -sec	15	25	64	112	11	137	28	38	151	115	14	168
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	71	70	31	12	92	4	65	57	2	22	69	0
Level of Service	F	F	D	B-	F	A	F	E-	A	C-	F	A
Av.'Q'/ lane veh	5	7	2	5	3	1	10	10	3	19	3	
Veh Stopping %	98	98	69	45	99	25	98	95	22	80	98	9
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 31 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.86

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 4/26/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBRp5

Almaden / Branham P.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 3 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 87 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	539	153	149	1924	371	288	417	359	124	814	360	442
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.70	0.90	0.26	0.68	0.83	0.29	0.40	0.88	0.17	0.30	0.92	0.30
Effective Gr-sec	36	10	85	88	25	100	49	23	73	85	22	148
Move Time -sec	38	12	87	90	27	102	51	25	75	87	24	150
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	58	93	21	20	65	15	47	71	25	21	77	2
Level of Service	E-	F	C-	C+	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	12	4	4	12	8	6	9	8	4	7	8	4
Veh Stopping %	100	99	59	58	97	52	96	98	63	61	99	22
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 35 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 39 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.74

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

P.M Peak Hour

FLN:ALBRp5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 88 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	562	164	167	2089	384	302	435	388	128	905	384	46
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.73	0.97	0.29	0.74	0.90	0.31	0.41	0.95	0.18	0.33	0.98	0.3
Effective Gr-sec	36	10	85	88	24	100	49	23	73	86	22	149
Move Time -sec	38	12	87	90	26	102	51	25	75	88	24	151
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	59	107	21	21	72	15	47	81	25	21	89	2
Level of Service	E-	F	C-	C-	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	12	4	4	13	8	6	9	8	4	8	8	
Veh Stopping %	100	100	60	60	98	53	96	99	63	61	100	2
Do Veh Clear ?	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 38 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 42 Level of Service = E+
'' '' - Intersection Capacity Utilization (ICU) = 0.80

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96 - 011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

P.M Peak Hour

FLN:ALBRp5
Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 88 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	562	164	167	2142	384	302	435	388	128	945	384	469
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.73	0.97	0.29	0.76	0.90	0.31	0.41	0.95	0.18	0.34	0.98	0.32
Effective Gr-sec	36	10	85	88	24	100	49	23	73	86	22	149
Move Time -sec	38	12	87	90	26	102	51	25	75	88	24	151
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	59	107	21	21	72	15	47	81	25	21	89	2
Level of Service	E-	F	C-	C-	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	12	4	4	13	8	6	9	8	4	8	8	4
Veh Stopping %	100	100	60	61	98	53	96	99	63	62	100	22
Do Veh Clear ?	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 38 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 42 Level of Service = E+
'' '' - Intersection Capacity Utilization (ICU) = 0.81

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Branham

P.M Peak Hour

FLN:ALBRp5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 12 secs	.	X	X	.	.	X	.	X	.	.	.	X
Phase 2 - 13 secs	.	.	X	.	.	.	X	X	X	.	.	X
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	X
Phase 4 - 24 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 2 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 88 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	576	167	171	2192	394	310	445	397	132	967	393	48
Saturation -vph	3800	3000	1200	5700	3150	1750	3800	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0
Relative Sat 'X'	0.75	0.99	0.30	0.77	0.92	0.31	0.42	0.97	0.18	0.35	1.00	0.3
Effective Gr-sec	36	10	85	88	24	100	49	23	73	86	22	149
Move Time -sec	38	12	87	90	26	102	51	25	75	88	24	151
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.13	1.00	1.00	0.76	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	60	112	21	22	76	16	47	85	25	21	95	2
Level of Service	E-	F	C-	C-	F	C+	E	F	D+	C-	F	A
Av.'Q'/ lane veh	13	4	4	14	8	7	9	9	4	8	9	
Veh Stopping %	100	100	61	62	99	53	97	100	64	62	100	22
Do Veh Clear ?	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES

Whole Intersection - Weighted Av Delay (sec) = 39 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 43 Level of Service = E+
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 177 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I

09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 1/31/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Na5

Almaden / Route 85 (N) A.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 21 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 159 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****	****
Peak 15 Vol -vph	1888		146	161	2846
Saturation -vph	7600		2625	2625	5700
Lost time -sec	2.00		2.00	2.00	2.00
Relative Sat 'X'	0.28		0.53	0.58	0.57
Effective Gr-sec	157		19	19	157
Move Time -sec	159		21	21	159
Min/Ped Time-sec	20		10	10	20
Prog Factor PAF	1.00		1.00	1.00	1.00
AvDelay/veh -sec	1		59	61	2
Level of Service	A		E-	F	A
Av.'Q'/ lane veh	3		3	4	6
Veh Stopping %	17		95	95	26
Do Veh Clear ?	YES		YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 6 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 5 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.57

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

96-011

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

A.M Peak Hour

FLN:AL85Na5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 27 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 153 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**									****	****		
Peak 15 Vol -vph				2054				153	225	2984		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.32				0.42	0.62	0.62		
Effective Gr-sec				151				25	25	151		
Move Time -sec				153				27	27	153		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				1.00				1.00	1.00	1.00		
AvDelay/veh -sec				2				54	58	4		
Level of Service				A				E	E-	A		
Av.'Q'/ lane veh				4				3	5	8		
Veh Stopping %				22				91	94	34		
Do Veh Clear ?				YES				YES	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 7 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 8 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.62

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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09-25-96

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Na5
Scenario 3

Almaden / Route 85 (N) A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 29 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 151 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**									****	****		
Peak 15 Vol -vph				2159				153	255	3048		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.34				0.39	0.65	0.65		
Effective Gr-sec				149				27	27	149		
Move Time -sec				151				29	29	151		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				1.00				1.00	1.00	1.00		
AvDelay/veh -sec				3				53	57	5		
Level of Service				A				E	E-	A		
Av.'Q'/ lane veh				5				3	5	9		
Veh Stopping %				24				90	94	37		
Do Veh Clear ?				YES				YES	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 8 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 9 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.65

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

A.M Peak Hour

FLN:AL85Na5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 29 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 151 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**									****	****		
Peak 15 Vol -vph				2208				156	261	3120		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.35				0.40	0.66	0.66		
Effective Gr-sec				149				27	27	149		
Move Time -sec				151				29	29	151		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				1.00				1.00	1.00	1.00		
AvDelay/veh -sec				3				53	58	5		
Level of Service				A				E	E-	A		
Av.'Q'/ lane veh				5				3	6	9		
Veh Stopping %				24				90	94	38		
Do Veh Clear ?				YES				YES	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 8 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 9 Level of Service = B+
'' '' - Intersection Capacity Utilization (ICU) = 0.66

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
With Improvements
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Na5

Almaden / Route 85 (N) A.M Peak Hour Scenario 5

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 163 secs	.	.	.	X	.	.	.	.	X	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**			****		****
Peak 15 Vol -vph	2159		153	255	3048
Saturation -vph	7600		3150	1750	5700
Lost time -sec	2.00		2.00	0.00	2.00
Relative Sat 'X'	0.32		0.58	0.15	0.60
Effective Gr-sec	161		15	180	161
Move Time -sec	163		17	182	163
Min/Ped Time-sec	20		10	10	20
Prog Factor PAF	1.00		1.00	1.00	1.00
AvDelay/veh -sec	1		63	0	2
Level of Service	A		F	A	A
Av.'Q'/ lane veh	3		4	0	5
Veh Stopping %	15		96	0	23
Do Veh Clear ?	YES		YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 3 Level of Service = A
Critical Movements - Weighted Av Delay (sec) = 5 Level of Service = A
'' '' - Intersection Capacity Utilization (ICU) = 0.60

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

P.M Peak Hour

FLN:AL85Np
Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****				****				
Peak 15 Vol -vph				3346				681	377	1840		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.59				1.13	0.62	0.43		
Effective Gr-sec				133				41	41	133		
Move Time -sec				135				43	43	135		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				0.72				1.12	1.00	1.00		
AvDelay/veh -sec				6				144	48	6		
Level of Service				B+				F	E	B+		
Av.'Q'/ lane veh				8				16	7	8		
Veh Stopping %				33				100	90	37		
Do Veh Clear ?				YES				NO	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 24 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 29 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.72

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Np5
Almaden / Route 85 (N) P.M Peak Hour Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**	****	****	
Peak 15 Vol -vph	3513	769 388	1976
Saturation -vph	7600	2625 2625	5700
Lost time -sec	2.00	2.00 2.00	2.00
Relative Sat 'X'	0.62	1.27 0.64	0.46
Effective Gr-sec	133	41 41	133
Move Time -sec	135	43 43	135
Min/Ped Time-sec	20	10 10	20
Prog Factor PAF	0.72	1.12 1.00	1.00
AvDelay/veh -sec	6	251 49	7
Level of Service	B+	F E	B+
Av.'Q'/ lane veh	8	21 7	8
Veh Stopping %	34	100 90	39
Do Veh Clear ?	YES	NO YES	YES

Whole Intersection - Weighted Av Delay (sec) = 37 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 50 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.77

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Np
Scenario 3

Almaden / Route 85 (N)

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****				****				
Peak 15 Vol -vph				3746				769	478	2149		
Saturation -vph				7600				2625	2625	5700		
Lost time -sec				2.00				2.00	2.00	2.00		
Relative Sat 'X'				0.66				1.27	0.79	0.50		
Effective Gr-sec				133				41	41	133		
Move Time -sec				135				43	43	135		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				0.72				1.12	1.00	1.00		
AvDelay/veh -sec				6				251	54	7		
Level of Service				B+				F	E	B+		
Av.'Q'/ lane veh				8				21	9	9		
Veh Stopping %				36				100	94	41		
Do Veh Clear ?				YES				NO	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 48 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.80

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Np5

Almaden / Route 85 (N) P.M Peak Hour Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	.	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**		****		****	
Peak 15 Vol -vph		3831		788 488	2197
Saturation -vph		7600		2625 2625	5700
Lost time -sec		2.00		2.00 2.00	2.00
Relative Sat 'X'		0.67		1.30 0.81	0.52
Effective Gr-sec		133		41 41	133
Move Time -sec		135		43 43	135
Min/Ped Time-sec		20		10 10	20
Prog Factor PAF		0.72		1.12 1.00	1.00
AvDelay/veh -sec		6		281 55	7
Level of Service		B+		F E	B+
Av.'Q'/ lane veh		9		22 9	9
Veh Stopping %		37		100 95	41
Do Veh Clear ?		YES		NO YES	YES

Whole Intersection - Weighted Av Delay (sec) = 39 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 53 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Improvements
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (N)

P.M Peak Hour

FLN:AL85Np5
Scenario 5

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	.	.	.	.	.	.	X	X	.	.	.
Phase 2 - 135 secs	.	.	.	X	.	.	.	.	X	X	.	.
Phase 3 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.

Critical Mvmt-**				****				****				
Peak 15 Vol -vph				3746				769	478	2149		
Saturation -vph				7600				3150	1750	5700		
Lost time -sec				2.00				2.00	0.00	2.00		
Relative Sat 'X'				0.66				1.06	0.27	0.50		
Effective Gr-sec				133				41	178	133		
Move Time -sec				135				43	180	135		
Min/Ped Time-sec				20				10	10	20		
Prog Factor PAF				0.72				1.12	1.00	1.00		
AvDelay/veh -sec				6				108	0	7		
Level of Service				B+				F	A	B+		
Av.'Q'/ lane veh				8				17	0	9		
Veh Stopping %				36				100	0	41		
Do Veh Clear ?				YES				NO	YES	YES		

Whole Intersection - Weighted Av Delay (sec) = 17 Level of Service = C+
Critical Movements - Weighted Av Delay (sec) = 24 Level of Service = C-
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 178 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 5/10/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sa5
Scenario 1

Almaden / Route 85 (S) A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 34 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 143 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	44	412	229	1058		35				3463	10	481
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.26	0.58	0.13	0.24		0.03				0.58	0.52	0.35
Effective Gr-sec	32	32	181	141		141				141	2	141
Move Time -sec	34	34	183	143		143				143	4	143
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.00
AvDelay/veh -sec	49	53	0	4		3				6	83	5
Level of Service	E	E	A	A		A				B+	F	A
Av.'Q'/ lane veh	2	6	0	4		0				10	0	5
Veh Stopping %	86	92	0	27		23				41	99	30
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 9 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 11 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.58

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sa

Almaden / Route 85 (S) A.M Peak Hour Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 33 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 143 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	45	426	245	1093		36				3597	10	56
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.0
Relative Sat 'X'	0.28	0.61	0.14	0.24		0.03				0.60	0.51	0.4
Effective Gr-sec	31	31	180	141		141				141	2	141
Move Time -sec	33	33	182	143		143				143	4	143
Min/Ped Time-sec	10	10	10	20		20				20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.0
AvDelay/veh -sec	49	54	0	4		3				6	82	5
Level of Service	E	E	A	A		A				B+	F	A
Av.'Q'/ lane veh	2	6	0	4		0				10	0	
Veh Stopping %	87	93	0	27		22				41	99	32
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 9 Level of Service = B+
Critical Movements - Weighted Av Delay (sec) = 11 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.61

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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09-25-96

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sa5
Scenario 3

Almaden / Route 85 (S) A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 36 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 140 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	45	478	245	1104		36				3609	10	565
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.25	0.63	0.14	0.25		0.03				0.62	0.51	0.42
Effective Gr-sec	34	34	180	138		138				138	2	138
Move Time -sec	36	36	182	140		140				140	4	140
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.00
AvDelay/veh -sec	47	52	0	5		4				7	82	6
Level of Service	E	E	A	A		A				B+	F	B+
Av.'Q'/ lane veh	2	6	0	4		0				11	0	7
Veh Stopping %	85	92	0	29		24				44	99	34
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 10 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 13 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.62

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sa5

Almaden / Route 85 (S) A.M Peak Hour Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 36 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 4 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 140 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****								****	****	
Peak 15 Vol -vph	47	488	250	1130		37				3696	10	578
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.26	0.64	0.14	0.26		0.03				0.63	0.51	0.43
Effective Gr-sec	34	34	180	138		138				138	2	138
Move Time -sec	36	36	182	140		140				140	4	140
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00		1.00				1.00	1.00	1.00
AvDelay/veh -sec	48	53	0	5		4				7	82	6
Level of Service	E	E	A	A		A				B+	F	B+
Av.'Q'/ lane veh	2	7	0	4		0				11	0	7
Veh Stopping %	85	92	0	29		24				45	99	35
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 10 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 13 Level of Service = B-
'' '' - Intersection Capacity Utilization (ICU) = 0.63

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sp5
Scenario 1

Almaden / Route 85 (S) P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	115	661	911	2745		146				1435	30	424
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.53	0.72	0.52	0.70		0.12				0.27	0.38	0.35
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.00
AvDelay/veh -sec	71	50	0	6		7				8	65	9
Level of Service	F	E	A	B+		B+				B+	F	B+
Av.'Q'/ lane veh	7	8	0	7		2				5	1	6
Veh Stopping %	100	92	0	28		34				38	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 12 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 15 Level of Service = C+
'' '' - Intersection Capacity Utilization (ICU) = 0.69

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S)

P.M Peak Hour

FLN:AL85Sp
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	118	762	948	2905		150				1486	31	43
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.0
Relative Sat 'X'	0.54	0.83	0.54	0.74		0.12				0.28	0.40	0.3
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	2
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.0
AvDelay/veh -sec	71	54	0	6		7				8	65	9
Level of Service	F	E	A	B+		B+				B+	F	B
Av.'Q'/ lane veh	7	10	0	7		2				6	1	
Veh Stopping %	100	95	0	29		34				38	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 13 Level of Service = B-
Critical Movements - Weighted Av Delay (sec) = 17 Level of Service = C+
'' '' - Intersection Capacity Utilization (ICU) = 0.74

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:AL85Sp5
Scenario 3

Almaden / Route 85 (S) P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	118	895	948	2946		150				1526	31	437
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.54	0.97	0.54	0.75		0.12				0.29	0.40	0.36
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	20
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.00
AvDelay/veh -sec	71	69	0	7		7				8	65	9
Level of Service	F	F	A	B+		B+				B+	F	B+
Av.'Q'/ lane veh	7	11	0	7		2				6	1	7
Veh Stopping %	100	99	0	30		34				38	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 15 Level of Service = C+
Critical Movements - Weighted Av Delay (sec) = 21 Level of Service = C-
'' '' - Intersection Capacity Utilization (ICU) = 0.78

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Route 85 (S)

P.M Peak Hour

FLN:AL85Sp
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 2 - 10 secs	.	.	X	.	.	.	.	.	.	.	X	.
Phase 3 - 126 secs	.	.	X	X	.	X	.	.	.	X	.	X
Phase 4 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 5 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Phase 6 - 0 secs	.	.	.	.	.	.	.	.	.	.	.	.
Critical Mvmt-**		****		****							****	
Peak 15 Vol -vph	121	913	971	3016		154				1562	32	44
Saturation -vph	950	4025	1750	5700		1750				7600	1750	1750
Lost time -sec	2.00	2.00	0.00	2.00		2.00				2.00	2.00	2.00
Relative Sat 'X'	0.56	0.99	0.55	0.76		0.13				0.30	0.41	0.3
Effective Gr-sec	41	41	179	124		124				124	8	124
Move Time -sec	43	43	181	126		126				126	10	126
Min/Ped Time-sec	10	10	10	20		20				20	10	2
Prog Factor PAF	1.48	1.00	1.00	0.47		1.00				1.00	1.00	1.0
AvDelay/veh -sec	72	73	0	7		7				8	65	9
Level of Service	F	F	A	B+		B+				B+	F	B
Av.'Q'/ lane veh	7	12	0	7		2				6	2	
Veh Stopping %	100	100	0	31		34				39	97	41
Do Veh Clear ?	YES	YES	YES	YES		YES				YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 16 Level of Service = C+
Critical Movements - Weighted Av Delay (sec) = 22 Level of Service = C-
'' '' - Intersection Capacity Utilization (ICU) = 0.80

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 1/19/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLa5
Scenario 1

Almaden / Blossom Hill

A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 29 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 15 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 0 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 115 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	189	480	80	684	118	272	311	99	177	2678	114	40
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.14	0.74	0.19	0.19	0.75	0.18	0.76	0.71	0.29	0.75	0.72	0.03
Effective Gr-sec	42	37	63	113	9	152	13	8	63	113	9	123
Move Time -sec	44	39	65	115	11	154	15	10	65	115	11	125
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	42	54	31	11	76	2	68	74	32	19	74	7
Level of Service	E+	E	D	B-	F	A	F	F	D	C+	F	B+
Av.'Q'/ lane veh	2	10	3	4	3	2	5	2	6	17	3	1
Veh Stopping %	79	94	70	42	99	18	98	99	72	70	99	32
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 29 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM

FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc

Existing + Approved

SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLa5

Almaden / Blossom Hill — A.M Peak Hour — Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 28 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 1 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 113 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	223	512	102	761	160	291	359	114	236	2879	142	4
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.17	0.81	0.24	0.21	0.83	0.20	0.81	0.81	0.37	0.82	0.81	0.0
Effective Gr-sec	42	36	64	112	11	150	14	8	65	111	10	121
Move Time -sec	44	38	66	114	13	152	16	10	67	113	12	123
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	42	58	31	11	81	2	70	84	32	21	80	8
Level of Service	E+	E-	D	B-	F	A	F	F	D	C-	F	B
Av.'Q'/ lane veh	3	10	3	5	4	2	6	3	8	18	3	
Veh Stopping %	80	96	70	44	99	20	98	99	74	77	99	3
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 31 Level of Service = D

Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D

'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLa5
Scenario 3

Almaden / Blossom Hill

A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 28 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 1 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 113 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	227	515	102	766	160	297	360	116	236	2888	142	49
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.17	0.82	0.24	0.22	0.83	0.20	0.81	0.83	0.37	0.82	0.81	0.04
Effective Gr-sec	42	36	64	112	11	150	14	8	65	111	10	121
Move Time -sec	44	38	66	114	13	152	16	10	67	113	12	123
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	42	58	31	11	81	2	70	86	32	22	80	8
Level of Service	E+	E-	D	B-	F	A	F	F	D	C-	F	B+
Av.'Q'/ lane veh	3	10	3	5	4	2	6	3	8	18	3	1
Veh Stopping %	80	96	70	44	99	20	98	99	74	78	99	34
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 31 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Blossom Hill

A.M Peak Hour

FLN:ALBLa5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 10 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 28 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 12 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 1 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 113 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	232	527	104	784	164	304	369	119	242	2957	146	5
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.17	0.84	0.24	0.22	0.85	0.21	0.83	0.85	0.38	0.84	0.83	0.0
Effective Gr-sec	42	36	64	112	11	150	14	8	65	111	10	121
Move Time -sec	44	38	66	114	13	152	16	10	67	113	12	123
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	42	59	31	11	83	2	71	89	33	22	83	8
Level of Service	E+	E-	D	B-	F	A	F	F	D	C-	F	B
Av.'Q'/ lane veh	3	11	3	5	4	3	6	3	8	19	3	
Veh Stopping %	80	96	71	44	99	20	99	99	74	80	99	34
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 32 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 34 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.84

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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09-25-96

C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLp5
Scenario 1

Almaden / Blossom Hill — P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 16 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 30 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 56 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	675	494	141	2366	689	406	559	238	364	1257	253	232
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.41	0.94	0.23	0.88	0.77	0.36	0.49	0.97	0.31	0.73	0.68	0.34
Effective Gr-sec	52	30	91	84	51	116	36	14	121	54	21	70
Move Time -sec	54	32	93	86	53	118	38	16	123	56	23	72
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	46	73	19	43	47	11	57	98	9	44	61	29
Level of Service	E	F	C+	E+	E	B-	E-	F	B+	E+	F	D+
Av.'Q'/ lane veh	9	10	3	25	12	7	9	6	6	15	6	7
Veh Stopping %	95	99	56	100	92	46	100	100	41	90	96	70
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 45 Level of Service = E+
Critical Movements - Weighted Av Delay (sec) = 50 Level of Service = E
'' '' - Intersection Capacity Utilization (ICU) = 0.79

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLp5

Almaden / Blossom Hill — P.M Peak Hour — Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 16 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 31 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 55 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	756	516	178	2522	766	428	628	249	417	1346	289	25[illegible]
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0[illegible]
Relative Sat 'X'	0.46	0.98	0.29	0.94	0.84	0.38	0.55	1.01	0.35	0.80	0.78	0.3[illegible]
Effective Gr-sec	52	30	91	84	52	116	36	14	122	53	21	69
Move Time -sec	54	32	93	86	54	118	38	16	124	55	23	71
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2[illegible]
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0[illegible]
AvDelay/veh -sec	47	81	19	48	50	11	58	110	9	46	65	30
Level of Service	E	F	C+	E	E	B-	E-	F	B+	E	F	D[illegible]
Av.'Q'/ lane veh	10	11	4	27	14	7	10	6	7	16	6	[illegible]
Veh Stopping %	97	100	58	100	94	47	100	100	42	92	97	72
Do Veh Clear ?	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 48 Level of Service = E
Critical Movements - Weighted Av Delay (sec) = 55 Level of Service = E-
'' '' - Intersection Capacity Utilization (ICU) = 0.85

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALBLp5

Almaden / Blossom Hill P.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 15 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 30 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 56 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	765	528	178	2550	766	441	633	258	417	1374	289	259
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.47	1.00	0.29	0.95	0.85	0.39	0.55	0.98	0.35	0.80	0.78	0.37
Effective Gr-sec	51	30	91	84	51	116	36	15	121	54	21	71
Move Time -sec	53	32	93	86	53	118	38	17	123	56	23	73
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	48	87	19	50	52	11	58	99	9	46	65	29
Level of Service	E	F	C+	E	E	B-	E-	F	B+	E	F	D+
Av.'Q'/ lane veh	11	11	4	27	14	8	10	6	7	16	6	8
Veh Stopping %	97	100	58	100	94	47	100	100	43	92	97	71
Do Veh Clear ?	YES	NO	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 49 Level of Service = E
Critical Movements - Weighted Av Delay (sec) = 57 Level of Service = E-
'' '' - Intersection Capacity Utilization (ICU) = 0.86

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Blossom Hill

P.M Peak Hour

FLN:ALBLp5
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	X	.	.	X	.	X	X	.	.	X
Phase 2 - 15 secs	X	X	X	.	.	X	.	.	X	.	.	.
Phase 3 - 38 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 23 secs	.	.	X	.	X	.	.	.	X	.	X	.
Phase 5 - 30 secs	.	.	.	X	X	X	.	.	X	.	.	.
Phase 6 - 56 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****		****			****				****	
Peak 15 Vol -vph	783	540	183	2611	784	451	648	264	427	1406	296	26[illegible]
Saturation -vph	5700	3150	1200	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0[illegible]
Relative Sat 'X'	0.48	1.02	0.30	0.98	0.87	0.40	0.57	1.00	0.36	0.82	0.80	0.3[illegible]
Effective Gr-sec	51	30	91	84	51	116	36	15	121	54	21	71
Move Time -sec	53	32	93	86	53	118	38	17	123	56	23	73
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2[illegible]
Prog Factor PAF	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0[illegible]
AvDelay/veh -sec	48	93	19	54	53	11	58	105	10	46	67	29
Level of Service	E	F	C+	E	E	B-	E-	F	B+	E	F	D[illegible]
Av.'Q'/ lane veh	11	12	4	28	14	8	10	6	7	16	6	[illegible]
Veh Stopping %	98	100	58	100	95	47	100	100	43	93	97	71
Do Veh Clear ?	YES	NO	YES	NO	YES	YES	YES	NO	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 51 Level of Service = E
Critical Movements - Weighted Av Delay (sec) = 60 Level of Service = F
'' '' - Intersection Capacity Utilization (ICU) = 0.88

Predetermined Cycle Length is 179 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 11/15/94)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALCOa5

Almaden / Coleman A.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 45 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 4 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 4 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 109 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	195	309	21	704	45	62	258	476	263	2529	27	655
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.73	0.74	-	0.20	0.77	0.05	0.76	0.60	0.31	0.75	0.77	0.44
Effective Gr-sec	14	43	-	111	6	156	16	45	129	107	2	154
Move Time -sec	16	45	-	113	8	158	18	47	131	109	4	156
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	68	53	-	11	95	1	68	46	7	21	109	2
Level of Service	F	E	-	B-	F	A	F	E	B+	C-	F	A
Av.'Q'/ lane veh	5	12	-	4	2	0	6	9	4	17	1	5
Veh Stopping %	98	92	-	44	99	14	98	88	36	73	100	23
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 26 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 29 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

A.M Peak Hour

FLN:ALC0a5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 43 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 5 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 7 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 107 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	205	326	37	777	76	67	271	513	335	2706	40	694
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.82	0.82	-	0.22	0.78	0.05	0.80	0.68	0.39	0.81	0.76	0.48
Effective Gr-sec	14	41	-	112	10	155	16	43	128	105	3	150
Move Time -sec	16	43	-	114	12	157	18	45	130	107	5	152
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	73	59	-	11	85	1	70	49	8	24	97	3
Level of Service	F	E-	-	B-	F	A	F	E	B+	C-	F	A
Av.'Q'/ lane veh	6	13	-	5	4	0	6	10	5	19	1	6
Veh Stopping %	98	95	-	44	99	15	98	91	40	79	100	28
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 32 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.81

Predetermined Cycle Length is 180 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

A.M Peak Hour

FLN:ALCOa5
Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 44 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 5 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 7 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 107 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	205	329	37	782	76	69	271	513	335	2715	40	694
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.82	0.81	-	0.22	0.79	0.05	0.81	0.67	0.39	0.82	0.77	0.48
Effective Gr-sec	14	42	-	112	10	156	16	44	128	105	3	151
Move Time -sec	16	44	-	114	12	158	18	46	130	107	5	153
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	74	58	-	12	86	1	71	49	8	24	98	3
Level of Service	F	E-	-	B-	F	A	F	E	B+	C-	F	A
Av.'Q'/ lane veh	6	13	-	5	4	0	6	10	5	19	1	6
Veh Stopping %	99	95	-	44	99	14	98	90	41	80	100	27
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.82

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:ALCOa9

Almaden / Coleman — A.M Peak Hour — Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 44 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 2 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 16 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 5 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 7 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 107 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	210	337	38	801	78	71	278	526	343	2780	41	71
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.84	0.83	-	0.23	0.81	0.05	0.83	0.69	0.40	0.84	0.79	0.4
Effective Gr-sec	14	42	-	112	10	156	16	44	128	105	3	151
Move Time -sec	16	44	-	114	12	158	18	46	130	107	5	153
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	76	60	-	12	89	1	72	49	8	25	102	3
Level of Service	F	E-	-	B-	F	A	F	E	B+	D+	F	A
Av.'Q'/ lane veh	6	13	-	5	4	0	6	10	5	20	1	
Veh Stopping %	99	95	-	44	99	14	98	91	41	82	100	28
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 29 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 34 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.83

Predetermined Cycle Length is 181 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 6/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

P.M Peak Hour

FLN:ALCOp5
Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 29 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 26 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 34 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 59 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	256	126	31	1933	227	306	277	720	123	946	36	517
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.55	0.90	-	0.65	0.53	0.33	0.24	0.93	0.34	0.51	0.22	0.51
Effective Gr-sec	24	14	-	91	43	107	53	43	53	57	9	102
Move Time -sec	26	16	-	93	45	109	55	45	55	59	11	104
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	64	94	-	18	44	13	41	62	36	36	61	17
Level of Service	F	F	-	C+	E+	B-	E+	F	D-	D-	F	C+
Av.'Q'/ lane veh	7	6	-	11	8	6	6	13	4	10	1	10
Veh Stopping %	100	99	-	54	87	49	89	98	78	81	96	59
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 33 Level of Service = D
Critical Movements - Weighted Av Delay (sec) = 33 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.69

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

P.M Peak Hour

FLN:ALCOp5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	.	.	.	X	.	X	.	.	.	X
Phase 2 - 29 secs	.	.	.	.	.	.	X	X	X	.	.	X
Phase 3 - 26 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 41 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 52 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	264	132	44	2050	297	316	285	748	160	1022	52	546
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.59	0.94	-	0.69	0.59	0.34	0.25	0.97	0.44	0.63	0.32	0.57
Effective Gr-sec	24	14	-	91	50	107	53	43	53	50	9	95
Move Time -sec	26	16	-	93	52	109	55	45	55	52	11	97
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	65	103	-	18	42	13	41	68	38	42	61	21
Level of Service	F	F	-	C+	E+	B-	E+	F	D-	E+	F	C-
Av.'Q'/ lane veh	8	6	-	12	10	6	6	14	5	12	1	12
Veh Stopping %	100	100	-	56	86	49	89	99	80	87	96	66
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 35 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.73

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

P.M Peak Hour

FLN:ALCOp5
Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 45 secs	.	X	.	.	.	.	.	X	.	.	.	X
Phase 2 - 2 secs	X	X	X	.	.	.	.	.	.	.	.	X
Phase 3 - 24 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 40 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 53 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	264	142	44	2077	297	326	285	748	160	1049	52	546
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.59	0.32	-	0.70	0.61	0.42	0.60	0.97	0.27	0.63	0.32	0.56
Effective Gr-sec	24	45	-	91	49	91	22	43	86	51	9	98
Move Time -sec	26	47	-	93	51	93	24	45	88	53	11	100
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	65	40	-	18	43	20	67	68	20	41	61	19
Level of Service	F	E+	-	C+	E+	C+	F	F	C+	E+	F	C+
Av.'Q'/ lane veh	8	5	-	12	10	8	7	14	4	12	1	12
Veh Stopping %	100	81	-	57	87	61	100	99	59	87	96	64
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 35 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.73

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Almaden / Coleman

P.M Peak Hour

FLN:ALCOp9
Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 45 secs	.	X	.	.	.	.	.	X	.	.	.	X
Phase 2 - 2 secs	X	X	X	.	.	.	.	.	.	.	.	X
Phase 3 - 24 secs	X	.	X	.	.	.	X	.	X	.	.	
Phase 4 - 11 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 40 secs	.	.	.	X	X	X	.	.	.	.	.	
Phase 6 - 53 secs	.	.	.	X	.	X	.	.	X	X	.	X
Critical Mvmt-**	****			****				****			****	
Peak 15 Vol -vph	270	145	45	2126	304	334	292	766	164	1074	53	55
Saturation -vph	3800	1750	Shrd	5700	1750	1500	3800	3150	1200	5700	3150	1750
Lost time -sec	2.00	2.00	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.60	0.32	-	0.72	0.62	0.43	0.61	0.99	0.28	0.65	0.33	0.5
Effective Gr-sec	24	45	-	91	49	91	22	43	86	51	9	98
Move Time -sec	26	47	-	93	51	93	24	45	88	53	11	100
Min/Ped Time-sec	20	10	-	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.18	1.00	-	0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	65	40	-	19	43	20	67	73	20	42	61	20
Level of Service	F	E+	-	C+	E+	C+	F	F	C+	E+	F	C
Av.'Q'/ lane veh	8	5	-	12	11	8	7	14	4	12	1	1
Veh Stopping %	100	81	-	57	87	62	100	100	59	87	96	65
Do Veh Clear ?	YES	YES	-	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 36 Level of Service = D-
Critical Movements - Weighted Av Delay (sec) = 37 Level of Service = D-
'' '' - Intersection Capacity Utilization (ICU) = 0.75

Predetermined Cycle Length is 175 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing (Date: 5/10/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAa5
Scenario 1

Blossom Hill / Santa Teresa

A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 33 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 19 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 44 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	226	164	64	349	169	133	558	122	252	827	196	80
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.14	0.37	0.13	0.17	0.38	0.22	0.38	0.36	0.35	0.37	0.34	0.12
Effective Gr-sec	35	17	35	42	17	42	31	13	50	47	22	47
Move Time -sec	37	19	37	44	19	44	33	15	52	49	24	49
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	24	36	24	21	36	21	28	38	18	20	33	18
Level of Service	C-	D-	C-	C-	D-	C-	D+	D-	C+	C+	D	C+
Av.'Q'/ lane veh	2	2	2	3	2	3	5	2	5	6	3	2
Veh Stopping %	74	91	74	69	91	70	82	93	68	71	87	64
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 26 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.37

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Blossom Hill / Santa Teresa — A.M Peak Hour — FLN:BLSAa5 Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 32 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 45 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	252	184	87	391	175	141	586	136	260	924	209	104
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.15	0.41	0.17	0.19	0.41	0.22	0.41	0.40	0.37	0.40	0.38	0.15
Effective Gr-sec	34	17	34	43	16	43	30	13	48	48	21	48
Move Time -sec	36	19	36	45	18	45	32	15	50	50	23	50
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	24	36	24	20	36	20	28	38	19	19	33	17
Level of Service	C-	D-	C-	C+	D-	C-	D+	D-	C+	C+	D	C+
Av.'Q'/ lane veh	2	3	2	3	3	3	5	2	5	6	3	2
Veh Stopping %	75	91	75	69	92	69	83	93	70	71	88	63
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 25 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.41

Predetermined Cycle Length is 119 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAa5
Scenario 3

Blossom Hill / Santa Teresa — A.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 33 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 45 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	261	184	89	391	175	141	594	136	260	924	211	104
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.16	0.41	0.17	0.19	0.42	0.22	0.40	0.40	0.36	0.41	0.38	0.15
Effective Gr-sec	35	17	35	43	16	43	31	13	49	48	21	48
Move Time -sec	37	19	37	45	18	45	33	15	51	50	23	50
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	24	36	24	20	37	20	28	38	19	20	33	17
Level of Service	C-	D-	C-	C-	D-	C-	D+	D-	C+	C+	D	C+
Av.'Q'/ lane veh	2	3	2	3	3	3	5	2	5	6	3	2
Veh Stopping %	74	91	75	69	92	70	83	93	69	72	88	64
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 26 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.41

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

Blossom Hill / Santa Teresa — A.M Peak Hour — FLN:BLSAa5 Scenario 4

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 15 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 4 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 33 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	X	.	X	.
Phase 5 - 5 secs	.	.	.	.	.	.	.	.	.	X	X	X
Phase 6 - 45 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	268	189	91	400	179	145	608	139	267	946	216	10
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0
Relative Sat 'X'	0.16	0.42	0.18	0.20	0.43	0.23	0.41	0.41	0.37	0.41	0.39	0.1
Effective Gr-sec	35	17	35	43	16	43	31	13	49	48	21	48
Move Time -sec	37	19	37	45	18	45	33	15	51	50	23	50
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	24	36	24	20	37	21	28	38	19	20	34	17
Level of Service	C-	D-	C-	C-	D-	C-	D+	D-	C+	C+	D	C
Av.'Q'/ lane veh	2	3	2	3	3	3	5	2	5	6	3	
Veh Stopping %	74	91	75	69	92	70	83	93	70	72	89	64
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 25 Level of Service = C-
Critical Movements - Weighted Av Delay (sec) = 26 Level of Service = D+
'' '' - Intersection Capacity Utilization (ICU) = 0.42

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
Existing (Date: 10/95)
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAp5

Blossom Hill / Santa Teresa P.M Peak Hour Scenario 1

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 16 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 9 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 27 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 18 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 24 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 25 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	677	297	158	905	513	268	569	176	143	537	207	108
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.42	0.49	0.32	0.40	0.48	0.39	0.48	0.47	0.39	0.49	0.49	0.32
Effective Gr-sec	34	23	34	47	40	47	25	14	25	23	16	23
Move Time -sec	36	25	36	49	42	49	27	16	27	25	18	25
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	26	33	25	20	24	20	32	38	31	33	37	32
Level of Service	D+	D	D+	C+	C-	C+	D	D-	D	D	D-	D
Av.'Q'/ lane veh	5	4	4	6	6	5	5	3	4	5	3	3
Veh Stopping %	81	89	79	72	79	71	88	93	86	89	93	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 27 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 30 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.48

Predetermined Cycle Length is 119 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
Existing + Approved
SOLUTION USING PREDETERMINED CYCLE TIMES

Blossom Hill / Santa Teresa

P.M Peak Hour

FLN:BLSAp5
Scenario 2

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 19 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 22 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	718	313	168	991	522	295	617	200	146	577	232	120
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.44	0.52	0.34	0.45	0.51	0.44	0.50	0.51	0.39	0.51	0.52	0.34
Effective Gr-sec	34	23	34	46	39	46	26	15	26	24	17	24
Move Time -sec	36	25	36	48	41	48	28	17	28	26	19	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	27	34	26	21	25	21	32	38	31	33	37	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	5	3	4	5	3	3
Veh Stopping %	82	90	79	75	81	74	88	93	85	89	93	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.51

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I 09-25-96

COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAp5
Blossom Hill / Santa Teresa P.M Peak Hour Scenario 3

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 20 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 21 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	741	313	174	991	522	295	643	200	146	577	238	120
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.46	0.52	0.35	0.46	0.51	0.45	0.52	0.51	0.39	0.51	0.50	0.34
Effective Gr-sec	34	23	34	45	39	45	26	15	26	24	18	24
Move Time -sec	36	25	36	47	41	47	28	17	28	26	20	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	27	34	26	22	25	22	32	38	31	33	36	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	6	3	4	5	3	3
Veh Stopping %	82	90	80	76	81	75	88	93	85	89	92	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.51

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
EX + Approved + Project
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAp5
Scenario 3

Blossom Hill / Santa Teresa

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 20 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 21 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	741	313	174	991	522	295	643	200	146	577	238	12
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.0
Relative Sat 'X'	0.46	0.52	0.35	0.46	0.51	0.45	0.52	0.51	0.39	0.51	0.50	0.3
Effective Gr-sec	34	23	34	45	39	45	26	15	26	24	18	24
Move Time -sec	36	25	36	47	41	47	28	17	28	26	20	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	2
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
AvDelay/veh -sec	27	34	26	22	25	22	32	38	31	33	36	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	6	3	4	5	3	
Veh Stopping %	82	90	80	76	81	75	88	93	85	89	92	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.51

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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C A P S S I
COMPREHENSIVE ANALYSIS PROGRAM
FOR A SINGLE SIGNALIZED INTERSECTION *

09-25-96

Pang Engineers Inc
With Growth
SOLUTION USING PREDETERMINED CYCLE TIMES

FLN:BLSAp5
Scenario 4

Blossom Hill / Santa Teresa

P.M Peak Hour

Movement	EBT	EBL	EBR	SBT	SBL	SBR	WBT	WBL	WBR	NBT	NBL	NBR
Phase 1 - 17 secs	.	X	.	.	.	.	.	X	.	.	.	.
Phase 2 - 8 secs	X	X	X	.	.	.	.	.	.	.	.	.
Phase 3 - 28 secs	X	.	X	.	.	.	X	.	X	.	.	.
Phase 4 - 20 secs	.	.	.	.	X	.	.	.	.	.	X	.
Phase 5 - 21 secs	.	.	.	X	X	X	.	.	.	.	.	.
Phase 6 - 26 secs	.	.	.	X	.	X	.	.	.	X	.	X
Critical Mvmt-**		****			****		****			****		
Peak 15 Vol -vph	758	321	178	1015	535	302	658	205	149	591	243	123
Saturation -vph	5700	3150	1750	5700	3150	1750	5700	3150	1750	5700	3150	1750
Lost time -sec	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Relative Sat 'X'	0.47	0.53	0.36	0.47	0.52	0.46	0.53	0.52	0.39	0.52	0.51	0.35
Effective Gr-sec	34	23	34	45	39	45	26	15	26	24	18	24
Move Time -sec	36	25	36	47	41	47	28	17	28	26	20	26
Min/Ped Time-sec	20	10	20	20	10	20	20	10	20	20	10	20
Prog Factor PAF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AvDelay/veh -sec	27	34	26	22	25	22	32	38	31	33	37	32
Level of Service	D+	D	D+	C-	D+	C-	D	D-	D	D	D-	D
Av.'Q'/ lane veh	6	4	4	7	6	6	6	3	4	5	3	3
Veh Stopping %	83	90	80	76	81	76	89	94	86	89	92	86
Do Veh Clear ?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Whole Intersection - Weighted Av Delay (sec) = 28 Level of Service = D+
Critical Movements - Weighted Av Delay (sec) = 31 Level of Service = D
'' '' - Intersection Capacity Utilization (ICU) = 0.53

Predetermined Cycle Length is 120 seconds (Min. times may not be satisfied)

* CAPSSI (Release 11) - Based on Delay Methodology Per 1985 Highway Capacity Manual

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CAPSSI Worksheets

Commercial + Residential

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CAPSSI 11 WORKSHEET

Intersection: **Almaden / Branham**

Agency:

Condition: **AM** *Filename:* ALBRa5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X	X			X		X				X
2			X				X	X	X			X
3	X		X				X		X			X
4			X		X				X		X	
5										X	X	X
6				X		X			X	X		X
Number of Lanes	***2***	***2***	***1***	***3***	***2***	***1***	***2***	***2***	***1***	***3***	***2***	***1***

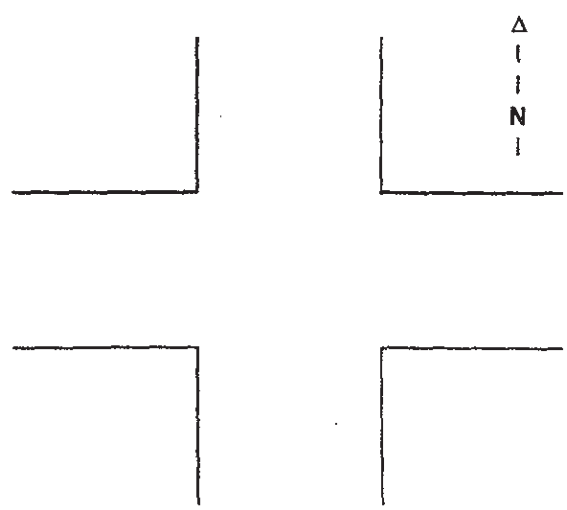
Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	196	305	61	739	131	51	434	474	366	2767	135	284
Scenario 2: E+G+A	208	323	67	815	137	58	458	501	382	2969	146	308
Scenario 3: E+A+G+P	208	323	67	836	137	58	458	501	382	3001	146	308
Scenario 4: E+G+P+FG	213	330	68	856	140	60	469	513	392	3072	150	315

Saturation Flow Rate (VPH)	**3800**	**3000**	**1200**	**5700**	**3150**	**1750**	**3800**	**3150**	**1750**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** 180
◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		15
Lost Time (Seconds)		2
Minimum Time (Seconds)		10
Sat. Flow - 1 Left Lane (VPHG)		1750
Sat. Flow - 2 Left Lane (VPHG)		3150
Sat. Flow - 1 Thru. Lane (VPHG)		1900
Sat. Flow - 1 Right Lane (VPHG)		1750

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Branham**

Agency:

Condition: **PM** *Filename:* ALBRp5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X	X			X		X				X
2			X				X	X	X			X
3	X		X				X		X			X
4			X		X				X		X	
5				X	X	X						
6				X		X				X		X
Number of Lanes	2	2	1	3	2	1	2	2	1	3	2	1

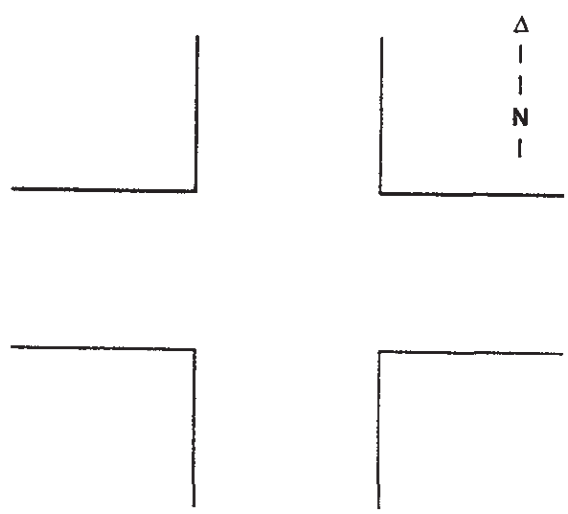
Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	539	153	149	1924	371	288	417	359	124	814	360	442
Scenario 2: E+G+A	562	164	167	2089	384	302	435	388	128	905	384	469
Scenario 3: E+A+G+P	562	164	167	2142	384	302	435	388	128	945	384	469
Scenario 4: E+G+P+FG	576	167	171	2192	394	310	445	397	132	967	393	480

Saturation Flow Rate (VPH)	**3800**	**3000**	**1200**	**5700**	**3150**	**1750**	**3800**	**3150**	**1750**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** **180**
◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

PANG ENGINEERS, INC. J#9511-5

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CAPSSI 11 WORKSHEET

Intersection: **Almaden / Route 85 (N)**

Agency:

Condition: **AM** *Filename:* AL85Na5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1								X	X			
2				X						X		
3												
4												
5												
6												
Number of Lanes				*4*				*2*	*2*	*3*		

Traffic Volumes (VPH): ***E= EXISTING*** ***A= APPROVED*** ***P= PROJECT*** ***FG= FUTURE GROWTH***

Scenario1: E	0	0	0	1888	0	0	0	146	161	2846	0	0
Scenario 2: E+G+A	0	0	0	2054	0	0	0	153	225	2984	0	0
Scenario 3: E+A+G+P	0	0	0	2159	0	0	0	153	255	3048	0	0
Scenario 4: E+G+P+FG	0	0	0	2208	0	0	0	156	261	3120	0	0
Saturation Flow Rate (VPH)				**7600**				**2625**	**2625**	**5700**		
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

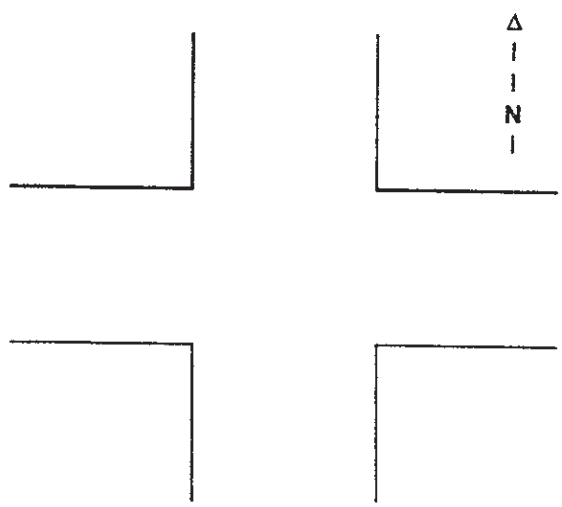
◊ ***OPTIMUM CYCLE TIME:*** _____

◊ ***REQUIRED CYCLE TIME:*** _____

◊ ***PREDETERMINED CYCLE TIME:*** **180**

◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

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PANG ENGINEERS, INC. J#9511-5

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Route 85 (N)**

Agency:

Condition: **PM** *Filename:* AL85Np5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1								X	X			
2				X						X		
3												
4												
5												
6												
Number of Lanes				*4*				*2*	*2*	*3*		

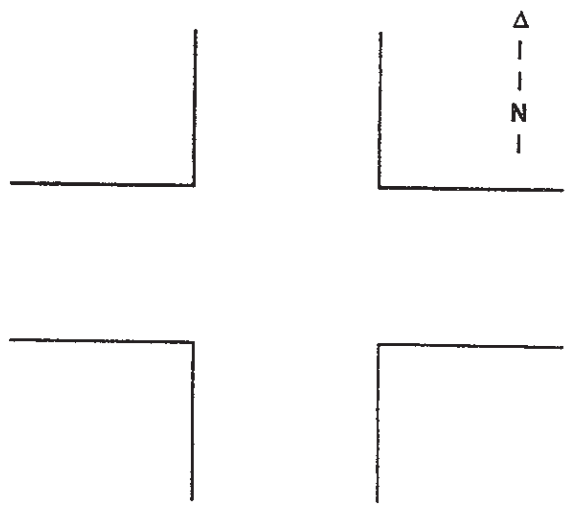
Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	0	0	0	3346	0	0	0	681	377	1840	0	0
Scenario 2: E+G+A	0	0	0	3513	0	0	0	769	388	1976	0	0
Scenario 3: E+A+G+P	0	0	0	3746	0	0	0	769	478	2149	0	0
Scenario 4: E+G+P+FG	0	0	0	3831	0	0	0	788	488	2197	0	0

Saturation Flow Rate (VPH)				**7600**				**2625**	**2625**	**5700**		
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	0.72	1.00	1.00	1.00	1.12	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** **180**
◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Route 85 (S)**

Agency:

Condition: **AM** *Filename:* AL85Sa5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1	X	X	X									
2			X								X	
3			X	X		X				X		X
4												
5												
6												
Number of Lanes	*1*	*3*	*1*	*3*		*1*				*4*	*1*	*1*

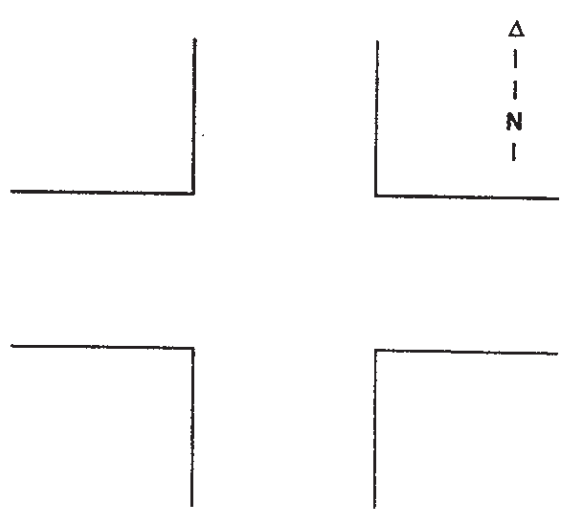
Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	44	412	229	1058	0	35	0	0	0	3463	9	481
Scenario 2: E+G+A	45	426	245	1093	0	36	0	0	0	3597	9	565
Scenario 3: E+A+G+P	45	478	245	1104	0	36	0	0	0	3609	9	565
Scenario 4: E+G+P+FG	47	488	250	1130	0	37	0	0	0	3696	10	578

Saturation Flow Rate (VPH)	**950**	**4025**	**1750**	**5700**		**1750**				**7600**	**1750**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** **180**
◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Route 85 (S)**

Agency:

Condition: **PM** *Filename:* AL85Sp5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1	X	X	X									
2			X								X	
3			X	X		X				X		X
4												
5												
6												
Number of Lanes	*1*	*3*	*1*	*3*		*1*				*4*	*1*	*1*

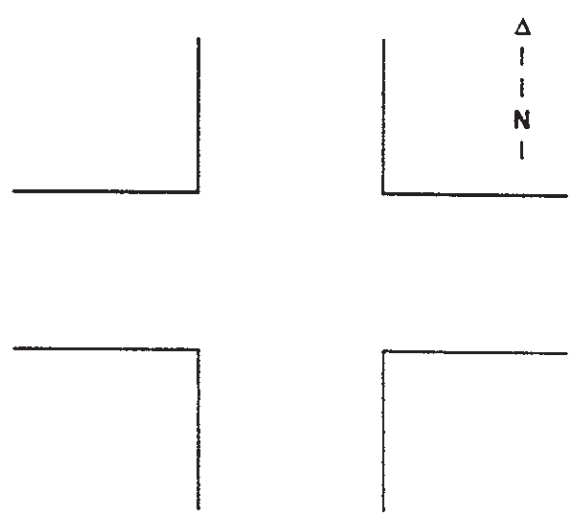
Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	115	661	911	2745	0	146	0	0	0	1435	30	424
Scenario 2: E+G+A	118	762	948	2905	0	150	0	0	0	1486	31	437
Scenario 3: E+A+G+P	118	895	948	2946	0	150	0	0	0	1526	31	437
Scenario 4: E+G+P+FG	121	913	971	3016	0	154	0	0	0	1562	32	447

Saturation Flow Rate (VPH)	**950**	**4025**	**1750**	**5700**		**1750**				**7600**	**1750**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.48	1.00	1.00	0.47	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** **180**
◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Blossom Hill**

Agency:

Condition: **AM** *Filename:* ALBLa5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X	X			X		X	X			X
2	X	X	X			X			X			
3	X		X				X		X			
4			X		X				X		X	
5				X	X	X			X			
6				X		X				X		X
Number of Lanes	3	2	1	3	2	1	3	2	1	3	2	1

Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	189	480	80	684	118	272	311	99	177	2678	114	40
Scenario 2: E+G+A	223	512	102	761	160	291	359	114	236	2879	142	46
Scenario 3: E+A+G+P	227	515	102	766	160	297	360	116	236	2888	142	49
Scenario 4: E+G+P+FG	232	527	104	784	164	304	369	119	242	2957	146	50
Saturation Flow Rate (VPH)	**5700**	**3150**	**1200**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

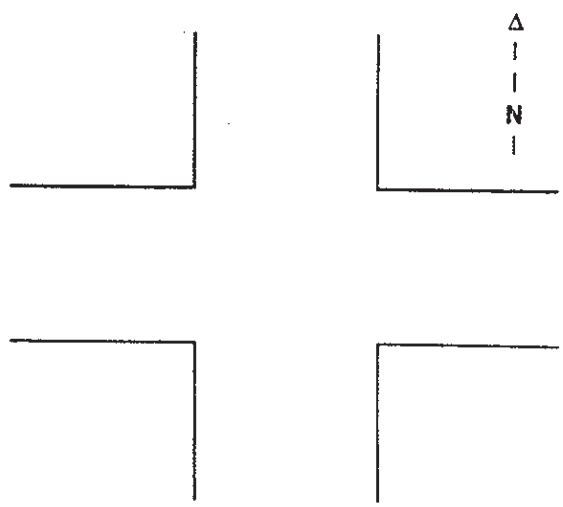
◊ ***OPTIMUM CYCLE TIME:*** _____

◊ ***REQUIRED CYCLE TIME:*** _____

◊ ***PREDETERMINED CYCLE TIME:*** 180

◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		15
Lost Time (Seconds)		2
Minimum Time (Seconds)		10
Sat. Flow - 1 Left Lane (VPHG)		1750
Sat. Flow - 2 Left Lane (VPHG)		3150
Sat. Flow - 1 Thru. Lane (VPHG)		1900
Sat. Flow - 1 Right Lane (VPHG)		1750

PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Blossom Hill**

Agency:

Condition: **PM** *Filename:* ALBLp5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X	X			X		X	X			X
2	X	X	X			X			X			
3	X		X				X		X			
4			X		X				X		X	
5				X	X	X			X			
6				X		X				X		X
Number of Lanes	3	2	1	3	2	1	3	2	1	3	2	1

Traffic Volumes (VPH): ***E= EXISTING*** ***A= APPROVED*** ***P= PROJECT*** ***FG= FUTURE GROWTH***

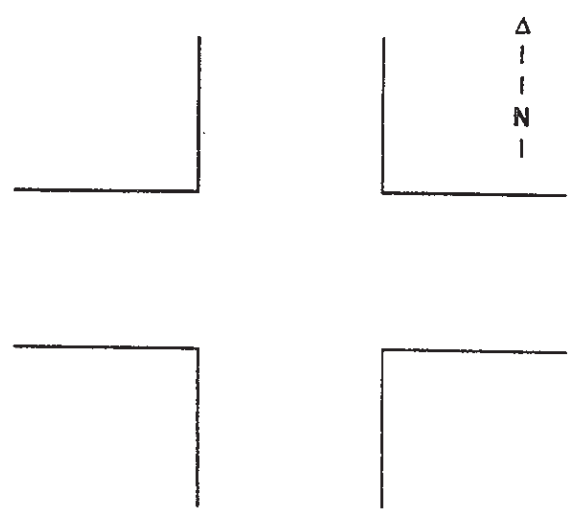
Scenario1: E	675	494	141	2366	689	406	559	238	364	1257	253	232
Scenario 2: E+G+A	756	516	178	2522	766	428	628	249	417	1346	289	250
Scenario 3: E+A+G+P	765	528	178	2550	766	441	633	258	417	1374	289	259
Scenario 4: E+G+P+FG	783	540	183	2611	784	451	648	264	427	1406	296	265

Saturation Flow Rate (VPH)	**5700**	**3150**	**1200**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.18	1.00	1.00	1.20	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** **180**
◊ ***ALL***

Remarks:

Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**



PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Coleman**

Agency:

Condition: **AM** *Filename:* ALCOa5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X				X		X				X
2							X	X	X			X
3	X		X				X		X			
4					X						X	
5				X	X	X						
6				X		X				X		X
Number of Lanes	*2*	*1*	*S*	*3*	*1*	*1*	*2*	*2*	*1*	*3*	*2*	*1*

Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	195	309	21	704	45	62	258	476	263	2529	27	655
Scenario 2: E+G+A	205	326	37	777	76	67	271	513	335	2706	40	694
Scenario 3: E+A+G+P	205	329	37	782	76	69	271	513	335	2715	40	694
Scenario 4: E+G+P+FG	210	337	38	801	78	71	278	526	343	2780	41	711

Saturation Flow Rate (VPH)	**3800**	**1750**	**SHR**	**5700**	**1750**	**1500**	**3800**	**3150**	**1200**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

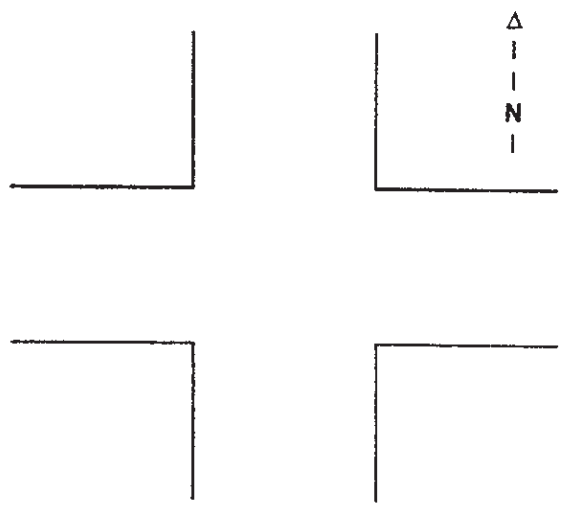
◊ ***OPTIMUM CYCLE TIME:*** _____

◊ ***REQUIRED CYCLE TIME:*** _____

◊ ***PREDETERMINED CYCLE TIME:*** **180**

◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Almaden / Coleman**

Agency:

Condition: **PM** *Filename:* ALCOp5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X				X		X				X
2							X	X	X			X
3	X		X				X		X			
4					X						X	
5				X	X	X						
6				X		X				X		X
Number of Lanes	*2*	*1*	*S*	*3*	*1*	*1*	*2*	*2*	*1*	*3*	*2*	*1*

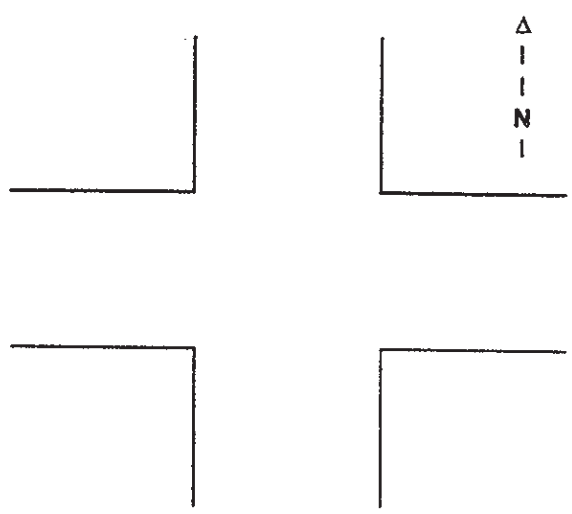
Traffic Volumes (VPH): E= EXISTING A= APPROVED P= PROJECT FG= FUTURE GROWTH

Scenario1: E	256	126	31	1933	227	306	277	720	123	946	36	517
Scenario 2: E+G+A	264	132	44	2050	297	316	285	748	160	1022	52	546
Scenario 3: E+A+G+P	264	142	44	2077	297	326	285	748	160	1049	52	546
Scenario 4: E+G+P+FG	270	145	45	2126	304	334	292	766	164	1074	53	559

Saturation Flow Rate (VPH)	**3800**	**1750**	**SHR**	**5700**	**1750**	**1500**	**3800**	**3150**	**1200**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2		2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10		20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.18	1.00		0.75	1.00	1.00	1.18	1.00	1.00	1.00	1.00	1.00

◊ ***OPTIMUM CYCLE TIME:***
◊ ***REQUIRED CYCLE TIME:***
◊ ***PREDETERMINED CYCLE TIME:*** **180**
◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

CAPSSI 11 WORKSHEET

Intersection: **Blossom Hill / Santa Teresa**

Agency:

Condition: **AM** *Filename:* BLSAa5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X						X				
2	X	X	X									
3	X		X				X		X			
4					X				X		X	
5										X	X	X
6				X		X				X		X
Number of Lanes	*3*	*2*	*1*	*3*	*2*	*1*	*3*	*2*	*1*	*3*	*2*	*1*

Traffic Volumes (VPH): ***E= EXISTING*** ***A= APPROVED*** ***P= PROJECT*** ***FG= FUTURE GROWTH***

Scenario1: E	226	164	64	349	169	133	558	122	252	827	196	80
Scenario 2: E+G+A	252	184	87	391	175	141	586	136	260	924	209	104
Scenario 3: E+A+G+P	261	184	89	391	175	141	594	136	260	924	211	104
Scenario 4: E+G+P+FG	268	189	91	400	179	145	608	139	267	946	216	106

Saturation Flow Rate (VPH)	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

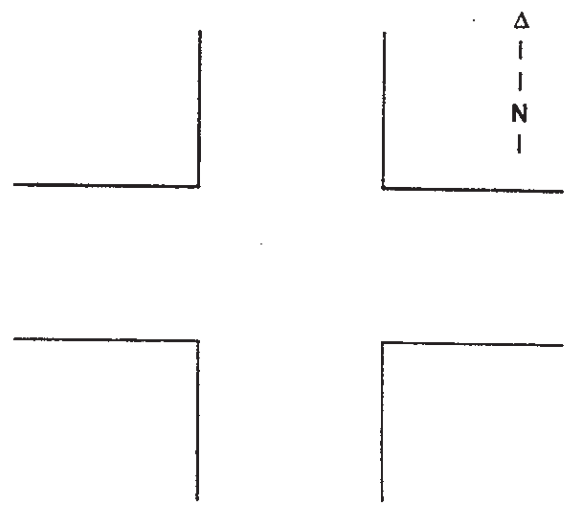
◊ ***OPTIMUM CYCLE TIME:*** _____

◊ ***REQUIRED CYCLE TIME:*** _____

◊ ***PREDETERMINED CYCLE TIME:*** 120

◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		15
Lost Time (Seconds)		2
Minimum Time (Seconds)		10
Sat. Flow - 1 Left Lane (VPHG)		1750
Sat. Flow - 2 Left Lane (VPHG)		3150
Sat. Flow - 1 Thru. Lane (VPHG)		1900
Sat. Flow - 1 Right Lane (VPHG)		1750

PANG ENGINEERS, INC. J#9511-5

96 - 011

CAPSSI 11 WORKSHEET

Intersection: **Blossom Hill / Santa Teresa**

Agency:

Condition: **PM** *Filename:* BLSAp5

	EASTBOUND			SOUTHBOUND			WESTBOUND			NORTHBOUND		
	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right	Thru.	Left	Right
Phasing Sequence												
1		X						X				
2	X	X	X									
3	X		X				X		X			
4					X						X	
5				X	X	X						
6				X		X				X		X
Number of Lanes	*3*	*2*	*1*	*3*	*2*	*1*	*3*	*2*	*1*	*3*	*2*	*1*

Traffic Volumes (VPH): ***E= EXISTING*** ***A= APPROVED*** ***P= PROJECT*** ***FG= FUTURE GROWTH***

Scenario1: E	677	297	158	905	513	268	569	176	143	537	207	108
Scenario 2: E+G+A	718	313	168	991	522	295	617	200	146	577	232	120
Scenario 3: E+A+G+P	741	313	174	991	522	295	643	200	146	577	238	120
Scenario 4: E+G+P+FG	758	321	178	1015	535	302	658	205	149	591	243	123

Saturation Flow Rate (VPH)	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**	**5700**	**3150**	**1750**
Lost Time (Seconds)	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Time (Seconds)	20	10	20	20	10	20	20	10	20	20	10	20
Progress. Adjust. Factor (PAF)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

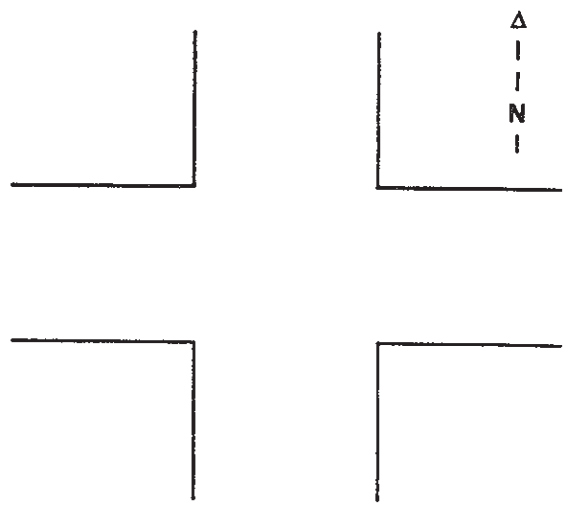
◊ ***OPTIMUM CYCLE TIME:*** _____

◊ ***REQUIRED CYCLE TIME:*** _____

◊ ***PREDETERMINED CYCLE TIME:*** **120**

◊ ***ALL***

Remarks:



Miscellaneous/Default Values	*Chosen*	*Suggest.*
Duration of Peak Period (Minutes)		**15**
Lost Time (Seconds)		**2**
Minimum Time (Seconds)		**10**
Sat. Flow - 1 Left Lane (VPHG)		**1750**
Sat. Flow - 2 Left Lane (VPHG)		**3150**
Sat. Flow - 1 Thru. Lane (VPHG)		**1900**
Sat. Flow - 1 Right Lane (VPHG)		**1750**

PANG ENGINEERS, INC. J#9511-5

96 - 011

Level of Service Calculations
City of San Jose

Cumulative

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & IRONWOOD
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	10.00
E-W	45.00	10.00

CYCLE LENGTH = 180
LOST TIME = 0.111

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	58	603	6	0	0	0	0	0	0	58	603	6
E	010010	74	64	167	0	0	0	0	0	0	74	64	167
S	203010	214	3596	107	0	0	0	0	0	0	214	3596	107
W	010010	10	67	97	0	0	0	0	0	0	10	67	97

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	58	1675	0.035	0.010	0.045	75
E	1	0 1 0 0 0 0	138	1724	0.080	0.010	0.090	155
S	3	0 0 3 0 0 0	3596	5340	0.673	0.029	0.702	3749
W	1	0 1 0 0 0 0	77	1766	0.044	0.010	0.054	95
				LT =	0.111			
TOTALS	6		3869		0.943			4074

1 - 0.943 = 0.057 / 6 = 0.010
V/C = 0.950

EXISTING LEVEL OF SERVICE = E

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	58	1675	0.035	0.010	0.045	75
E	1	0 1 0 0 0 0	138	1724	0.080	0.010	0.090	155
S	3	0 0 3 0 0 0	3596	5340	0.673	0.029	0.702	3749
W	1	0 1 0 0 0 0	77	1766	0.044	0.010	0.054	95
				LT =	0.111			
TOTALS	6		3869		0.943			4074

1 - 0.943 = 0.057 / 6 = 0.010
V/C = 0.950

EXISTING + APPROVED LEVEL OF SERVICE = E

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	58	1675	0.035	0.010	0.045	75
E	1	0 1 0 0 0 0	138	1724	0.080	0.010	0.090	155
S	3	0 0 3 0 0 0	3596	5340	0.673	0.029	0.702	3749
W	1	0 1 0 0 0 0	77	1766	0.044	0.010	0.054	95
				LT =	0.111			
TOTALS	6		3869		0.943			4074

1 - 0.943 = 0.057 / 6 = 0.010
V/C = 0.950

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3869 - 3869)/ 3869 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN & IRONWOOD
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 115.00 10.00
E-W 45.00 10.00

CYCLE LENGTH = 180
LOST TIME = 0.111

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	148	2103	7	0	0	0	0	0	0	148	2103	7
E	010010	64	46	70	0	0	0	0	0	0	64	46	70
S	203010	185	739	42	0	0	0	0	0	0	185	739	42
W	010010	14	137	288	0	0	0	0	0	0	14	137	288

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2103	5340	0.394	0.122	0.516	2755
E	1	0 1 0 0 0 0	110	1719	0.064	0.041	0.105	180
S	2	2 0 0 0 0 0	185	3015	0.061	0.081	0.142	428
W	1	0 1 0 0 0 0	151	1770	0.085	0.041	0.126	223
				LT =	0.111			
TOTALS	7		2549		0.715			3586

1 - 0.715 = 0.285 / 7 = 0.041

V/C = 0.71

EXISTING LEVEL OF SERVICE = C

N	3	0 0 3 0 0 0	2103	5340	0.394	0.122	0.516	2755
E	1	0 1 0 0 0 0	110	1719	0.064	0.041	0.105	180
S	2	2 0 0 0 0 0	185	3015	0.061	0.081	0.142	428
W	1	0 1 0 0 0 0	151	1770	0.085	0.041	0.126	223
				LT =	0.111			
TOTALS	7		2549		0.715			3586

1 - 0.715 = 0.285 / 7 = 0.041

V/C = 0.71

EXISTING + APPROVED LEVEL OF SERVICE = C

N	3	0 0 3 0 0 0	2103	5340	0.394	0.122	0.516	2755
E	1	0 1 0 0 0 0	110	1719	0.064	0.041	0.105	180
S	2	2 0 0 0 0 0	185	3015	0.061	0.081	0.142	428
W	1	0 1 0 0 0 0	151	1770	0.085	0.041	0.126	223
				LT =	0.111			
TOTALS	7		2549		0.715			3586

1 - 0.715 = 0.285 / 7 = 0.041

V/C = 0.711

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(2549 - 2549)/ 2549 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & KOCH LN
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	152.00	9.50
E-W	14.00	4.50

CYCLE LENGTH = 180
LOST TIME = 0.078

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	1	1096	41	0	0	0	0	0	0	1	1096	41
E	000000	0	0	0	0	0	0	0	0	0	0	0	0
S	104000	27	4969	0	0	0	0	0	0	0	27	4969	0
W	100001	103	0	35	0	0	0	0	0	0	103	0	35

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	1	1675	0.001	0.025	0.026	44
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	4	0 0 4 0 0 0	4969	7120	0.698	0.101	0.799	5689
W	2	1 0 0 0 0 1	138	3015	0.046	0.051	0.097	292
				LT =	0.078			
TOTALS	7		5108		0.823			6025

1 - 0.823 = 0.177 / 7 = 0.025

V/C = 0.848

EXISTING LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	1	1675	0.001	0.025	0.026	44
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	4	0 0 4 0 0 0	4969	7120	0.698	0.101	0.799	5689
W	2	1 0 0 0 0 1	138	3015	0.046	0.051	0.097	292
				LT =	0.078			
TOTALS	7		5108		0.823			6025

1 - 0.823 = 0.177 / 7 = 0.025

V/C = 0.848

EXISTING + APPROVED LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	1	1675	0.001	0.025	0.026	44
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	4	0 0 4 0 0 0	4969	7120	0.698	0.101	0.799	5689
W	2	1 0 0 0 0 1	138	3015	0.046	0.051	0.097	292
				LT =	0.078			
TOTALS	7		5108		0.823			6025

1 - 0.823 = 0.177 / 7 = 0.025

V/C = 0.848

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(5108 - 5108)/ 5108 = 0.00 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & KOCH LN
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	152.00	9.50
E-W	14.00	4.50

CYCLE LENGTH = 180
LOST TIME = 0.078

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	10	3461	144	0	0	0	0	0	0	10	3461	144
E	000000	0	0	0	0	0	0	0	0	0	0	0	0
S	104000	50	1162	0	0	0	0	0	0	0	50	1162	0
W	100001	61	0	69	0	0	0	0	0	0	61	0	69

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	3605	7089	0.509	0.194	0.703	4984
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	1	1 0 0 0 0 0	50	1675	0.030	0.049	0.079	132
W	2	1 0 0 0 0 1	130	3015	0.043	0.097	0.140	422
				LT =	0.078			
TOTALS	7		3785		0.660			5538

1 - 0.660 = 0.340 / 7 = 0.049

V/C = 0.683

EXISTING LEVEL OF SERVICE = B

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	3605	7089	0.509	0.194	0.703	4984
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	1	1 0 0 0 0 0	50	1675	0.030	0.049	0.079	132
W	2	1 0 0 0 0 1	130	3015	0.043	0.097	0.140	422
				LT =	0.078			
TOTALS	7		3785		0.660			5538

1 - 0.660 = 0.340 / 7 = 0.049

V/C = 0.683

EXISTING + APPROVED LEVEL OF SERVICE = B

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	3605	7089	0.509	0.194	0.703	4984
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	1	1 0 0 0 0 0	50	1675	0.030	0.049	0.079	132
W	2	1 0 0 0 0 1	130	3015	0.043	0.097	0.140	422
				LT =	0.078			
TOTALS	7		3785		0.660			5538

1 - 0.660 = 0.340 / 7 = 0.049

V/C = 0.683

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(3785 - 3785)/ 3785 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & FOXWORTHY
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 134.50 9.50
E-W 33.50 4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	129	937	46	0	0	0	0	19	0	129	956	46
E	100010	69	0	295	0	0	0	0	0	0	69	0	295
S	103010	105	3880	33	0	0	0	0	29	0	105	3909	33
W	101010	70	65	154	0	0	0	0	0	0	70	65	154

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	129	1675	0.077	0.007	0.084	141
E	1	1 0 0 0 0 0	69	1675	0.041	0.007	0.048	80
S	3	0 0 3 0 0 0	3880	5340	0.727	0.021	0.748	3994
W	1	0 0 1 0 0 0	65	1780	0.037	0.007	0.044	78
				LT =	0.077			
TOTALS	6		4143		0.959			4293

1 - 0.959 = 0.041 / 6 = 0.007

V/C = 0.965

EXISTING LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	129	1675	0.077	0.007	0.084	141
E	1	1 0 0 0 0 0	69	1675	0.041	0.007	0.048	80
S	3	0 0 3 0 0 0	3880	5340	0.727	0.021	0.748	3994
W	1	0 0 1 0 0 0	65	1780	0.037	0.007	0.044	78
				LT =	0.077			
TOTALS	6		4143		0.959			4293

1 - 0.959 = 0.041 / 6 = 0.007

V/C = 0.965

EXISTING + APPROVED LEVEL OF SERVICE = E

N	1	1 0 0 0 0 0	129	1675	0.077	0.006	0.083	139
E	1	1 0 0 0 0 0	69	1675	0.041	0.006	0.047	79
S	3	0 0 3 0 0 0	3909	5340	0.732	0.018	0.750	4005
W	1	0 0 1 0 0 0	65	1780	0.037	0.006	0.043	77
				LT =	0.077			
TOTALS	6		4172		0.964			4300

1 - 0.964 = 0.036 / 6 = 0.006

V/C = 0.970

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4172 - 4143)/ 4143 = 0.70 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & FOXWORTHY
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	134.50	9.50
E-W	33.50	4.50

CYCLE LENGTH = 182
LOST TIME = 0.077

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103100	374	2861	142	0	0	0	0	44	0	374	2905	142
E	100010	46	0	69	0	0	0	0	0	0	46	0	69
S	103010	225	1020	68	0	0	0	0	32	0	225	1052	68
W	101010	120	120	69	0	0	0	0	0	0	120	120	69

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	4	0 0 3 1 0 0	3003	7085	0.424	0.155	0.579	4102
E	1	1 0 0 0 0 0	46	1675	0.027	0.039	0.066	111
S	1	1 0 0 0 0 0	225	1675	0.134	0.039	0.173	290
W	1	0 0 1 0 0 0	120	1780	0.067	0.039	0.106	189
				LT =	0.077			
TOTALS	7		3394		0.729			4692

1 - 0.729 = 0.271 / 7 = 0.039

V/C = 0.723

EXISTING LEVEL OF SERVICE = C

N	4	0 0 3 1 0 0	3003	7085	0.424	0.155	0.579	4102
E	1	1 0 0 0 0 0	46	1675	0.027	0.039	0.066	111
S	1	1 0 0 0 0 0	225	1675	0.134	0.039	0.173	290
W	1	0 0 1 0 0 0	120	1780	0.067	0.039	0.106	189
				LT =	0.077			
TOTALS	7		3394		0.729			4692

1 - 0.729 = 0.271 / 7 = 0.039

V/C = 0.723

EXISTING + APPROVED LEVEL OF SERVICE = C

N	4	0 0 3 1 0 0	3047	7086	0.430	0.151	0.581	4117
E	1	1 0 0 0 0 0	46	1675	0.027	0.038	0.065	109
S	1	1 0 0 0 0 0	225	1675	0.134	0.038	0.172	288
W	1	0 0 1 0 0 0	120	1780	0.067	0.038	0.105	187
				LT =	0.077			
TOTALS	7		3438		0.735			4701

1 - 0.735 = 0.265 / 7 = 0.038

V/C = 0.731

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(3438 - 3394)/ 3394 = 1.30 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & BRANHAM
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 111.00 9.50
E-W 51.00 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	140	871	59	0	0	0	3	25	0	143	896	59
E	202010	521	479	392	0	0	0	10	0	13	531	479	405
S	203010	150	3042	322	0	0	0	1	35	3	151	3077	325
W	202010	330	224	68	0	0	0	0	3	2	330	227	70

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	140	3015	0.046	0.009	0.055	166
E	2	0 0 2 0 0 0	479	3560	0.135	0.009	0.144	513
S	3	0 0 3 0 0 0	3042	5340	0.570	0.013	0.583	3113
W	2	2 0 0 0 0 0	330	3015	0.109	0.009	0.118	356
				LT =	0.100			
TOTALS	9		3991		0.960			4148

1 - 0.960 = 0.040 / 9 = 0.004
V/C = 0.962

EXISTING LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	140	3015	0.046	0.009	0.055	166
E	2	0 0 2 0 0 0	479	3560	0.135	0.009	0.144	513
S	3	0 0 3 0 0 0	3042	5340	0.570	0.013	0.583	3113
W	2	2 0 0 0 0 0	330	3015	0.109	0.009	0.118	356
				LT =	0.100			
TOTALS	9		3991		0.960			4148

1 - 0.960 = 0.040 / 9 = 0.004
V/C = 0.962

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	2 0 0 0 0 0	143	3015	0.047	0.007	0.054	163
E	2	0 0 2 0 0 0	479	3560	0.135	0.007	0.142	506
S	3	0 0 3 0 0 0	3077	5340	0.576	0.011	0.587	3135
W	2	2 0 0 0 0 0	330	3015	0.109	0.007	0.116	350
				LT =	0.100			
TOTALS	9		4029		0.967			4154

1 - 0.967 = 0.033 / 9 = 0.004
V/C = 0.970

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(4029 - 3991)/ 3991 = 0.95 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & BRANHAM
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 111.00 9.50
E-W 51.00 8.50

CYCLE LENGTH = 180
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	361	2213	352	0	0	0	15	60	0	376	2273	352
E	202010	381	395	89	0	0	0	11	0	6	392	395	95
S	203010	320	899	579	0	0	0	3	47	7	323	946	586
W	202010	173	508	159	0	0	0	0	6	3	173	514	162

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2213	5340	0.414	0.037	0.451	2408
E	2	2 0 0 0 0 0	381	3015	0.126	0.025	0.151	455
S	2	2 0 0 0 0 0	320	3015	0.106	0.025	0.131	395
W	2	0 0 2 0 0 0	508	3560	0.143	0.025	0.168	598
				LT =	0.100			
TOTALS	9		3422		0.889			3856

1 - 0.889 = 0.111 / 9 = 0.012

V/C = 0.88

EXISTING LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2213	5340	0.414	0.037	0.451	2408
E	2	2 0 0 0 0 0	381	3015	0.126	0.025	0.151	455
S	2	2 0 0 0 0 0	320	3015	0.106	0.025	0.131	395
W	2	0 0 2 0 0 0	508	3560	0.143	0.025	0.168	598
				LT =	0.100			
TOTALS	9		3422		0.889			3856

1 - 0.889 = 0.111 / 9 = 0.012

V/C = 0.88

EXISTING + APPROVED LEVEL OF SERVICE = D

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2273	5340	0.426	0.031	0.457	2440
E	2	2 0 0 0 0 0	392	3015	0.130	0.021	0.151	455
S	2	2 0 0 0 0 0	323	3015	0.107	0.021	0.128	386
W	2	0 0 2 0 0 0	514	3560	0.144	0.021	0.165	587
				LT =	0.100			
TOTALS	9		3502		0.907			3868

1 - 0.907 = 0.093 / 9 = 0.010

V/C = 0.905

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

(3502 - 3422)/ 3422 = 2.34 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & CHERRY/CHYNOWETH
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	61	1343	57	0	0	0	21	11	0	82	1354	57
E	010010	70	8	19	0	0	0	105	18	32	175	26	51
S	103000	379	2798	0	0	0	0	4	6	94	383	2804	94
W	010010	164	17	509	0	0	0	0	21	7	164	38	516

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	61	1675	0.036	0.035	0.071	119
E	1	0 1 0 0 0 0	78	1686	0.046	0.035	0.081	137
S	3	0 0 3 0 0 0	2798	5340	0.524	0.104	0.628	3354
W	1	0 1 0 0 0 0	181	1685	0.107	0.035	0.142	239
				LT =	0.079			
TOTALS	6		3118		0.792			3849

1 - 0.792 = 0.208 / 6 = 0.035

V/C = 0.810

EXISTING LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	61	1675	0.036	0.035	0.071	119
E	1	0 1 0 0 0 0	78	1686	0.046	0.035	0.081	137
S	3	0 0 3 0 0 0	2798	5340	0.524	0.104	0.628	3354
W	1	0 1 0 0 0 0	181	1685	0.107	0.035	0.142	239
				LT =	0.079			
TOTALS	6		3118		0.792			3849

1 - 0.792 = 0.208 / 6 = 0.035

V/C = 0.810

EXISTING + APPROVED LEVEL OF SERVICE = D

N	1	1 0 0 0 0 0	82	1675	0.049	0.018	0.067	112
E	1	0 1 0 0 0 0	201	1689	0.119	0.018	0.137	231
S	3	0 0 3 0 0 0	2804	5340	0.525	0.055	0.580	3097
W	1	0 1 0 0 0 0	202	1695	0.119	0.018	0.137	232
				LT =	0.079			
TOTALS	6		3289		0.891			3672

1 - 0.891 = 0.109 / 6 = 0.018

V/C = 0.896

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3289 - 3118)/ 3118 = 5.48 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & CHERRY/CHYNOWETH
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	115.00	8.00
E-W	25.00	4.00

CYCLE LENGTH = 152
LOST TIME = 0.079

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	103010	145	2588	178	0	0	0	53	17	0	198	2605	178
E	010010	150	33	26	0	0	0	233	58	40	383	91	66
S	103000	458	1800	15	0	0	0	12	17	263	470	1817	278
W	010010	114	24	539	0	0	0	0	61	12	114	85	551

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2588	5340	0.485	-.014	0.471	2515
E	1	0 1 0 0 0 0	183	1694	0.108	-.004	0.104	176
S	1	1 0 0 0 0 0	458	1675	0.273	-.004	0.269	451
W	1	0 1 0 0 0 0	138	1693	0.082	-.004	0.078	132
				LT =	0.079			
TOTALS	6		3367		1.027			3274

1 - 1.027 = -.027 / 6 = -.005

V/C = 1.028

EXISTING LEVEL OF SERVICE = F

N	3	0 0 3 0 0 0	2588	5340	0.485	-.014	0.471	2515
E	1	0 1 0 0 0 0	183	1694	0.108	-.004	0.104	176
S	1	1 0 0 0 0 0	458	1675	0.273	-.004	0.269	451
W	1	0 1 0 0 0 0	138	1693	0.082	-.004	0.078	132
				LT =	0.079			
TOTALS	6		3367		1.027			3274

1 - 1.027 = -.027 / 6 = -.005

V/C = 1.028

EXISTING + APPROVED LEVEL OF SERVICE = F

N	3	0 0 3 0 0 0	2605	5340	0.488	-.122	0.366	1954
E	1	0 1 0 0 0 0	474	1695	0.280	-.041	0.239	405
S	1	1 0 0 0 0 0	470	1675	0.281	-.041	0.240	402
W	1	0 1 0 0 0 0	199	1720	0.116	-.041	0.075	129
				LT =	0.079			
TOTALS	6		3748		1.244			2890

1 - 1.244 = -.244 / 6 = -.041

V/C = 1.297

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = F

(3748 - 3367)/ 3367 = 11.32 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & CHERRY/CHYNOWETH

MESSAGE: #9618-2 w/ MIT

PEAK HOUR: PM

COUNT DATE: 1/31/95

ANAL. DATE: 1/31/97

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

```
                    N
          ----------+          +----------
                    !          !
                    !          !
                    !          !
                    !          !
                    !          !
                    !          !
W                                          E
          ----------+          +----------
                    !          !
                    !          !
                    !          !
                    !          !
                    !          !
                    !    S     !
```

SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	115	8
E-W	25	4

CYCLE LENGTH = 152

LOST TIME = .079

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+-----+-----+-----+-----+-----+-----+-----+-----+
!     !     !     !     !     !     !     !     !
!     !     !     !     !     !     !     !     !
+-----+-----+-----+-----+-----+-----+-----+-----+
G
Y
R
```

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	145	2588	178	0	0	0	0	0	0	145	2588	178
E	202010	150	33	26	0	0	0	0	0	0	150	33	26
S	203010	458	1800	15	0	0	0	0	0	0	458	1800	15
W	102010	114	24	539	0	0	0	0	0	0	114	24	539

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2588	5340	0.485	0.078	0.563	3006
E	2	0 0 2 0 0 0	33	3560	0.009	0.052	0.061	217
S	2	2 0 0 0 0 0	458	3015	0.152	0.052	0.204	615
W	1	1 0 0 0 0 0	114	1675	0.068	0.026	0.094	157
				LT =	0.079			
TOTALS	8		3193		0.793			3995

1 - 0.793 = 0.207 / 8 = 0.026

==========

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .799 LEVEL OF SERVICE = C

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5/19/88 LV

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & CHERRY/CHYNOWETH

MESSAGE: #9618-2 w/ MIT

PEAK HOUR: AM

COUNT DATE: 1/31/95

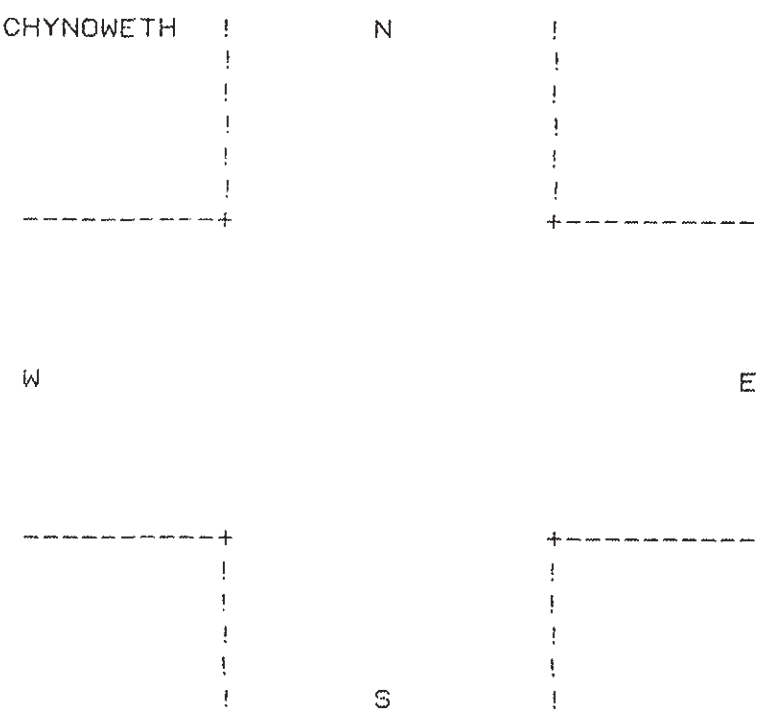
ANAL. DATE: 1/31/97

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP

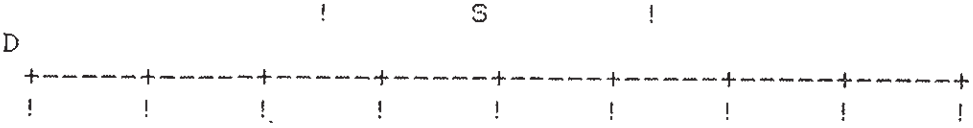


SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	115	8
E-W	25	4

CYCLE LENGTH = 152

LOST TIME = .079



LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	61	1343	57	0	0	0	0	0	0	61	1343	57
E	202010	70	8	19	0	0	0	0	0	0	70	8	19
S	203010	379	2798	0	0	0	0	0	0	0	379	2798	0
W	102010	164	17	509	0	0	0	0	0	0	164	17	509

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	61	3015	0.020	0.069	0.089	268
E	2	0 0 2 0 0 0	8	3560	0.002	0.069	0.071	253
S	3	0 0 3 0 0 0	2798	5340	0.524	0.104	0.628	3354
W	1	1 0 0 0 0 0	164	1675	0.098	0.035	0.133	223
				LT =	0.079			
TOTALS	8		3031		0.723			4098

1 - 0.723 = 0.277 / 8 = 0.035

==========

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .74 LEVEL OF SERVICE = C

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96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALMADEN EXP & CHERRY/CHYNOWETH

MESSAGE: #9618-2 w/ MIT (CUMULATIVE)

PEAK HOUR: PM

COUNT DATE:

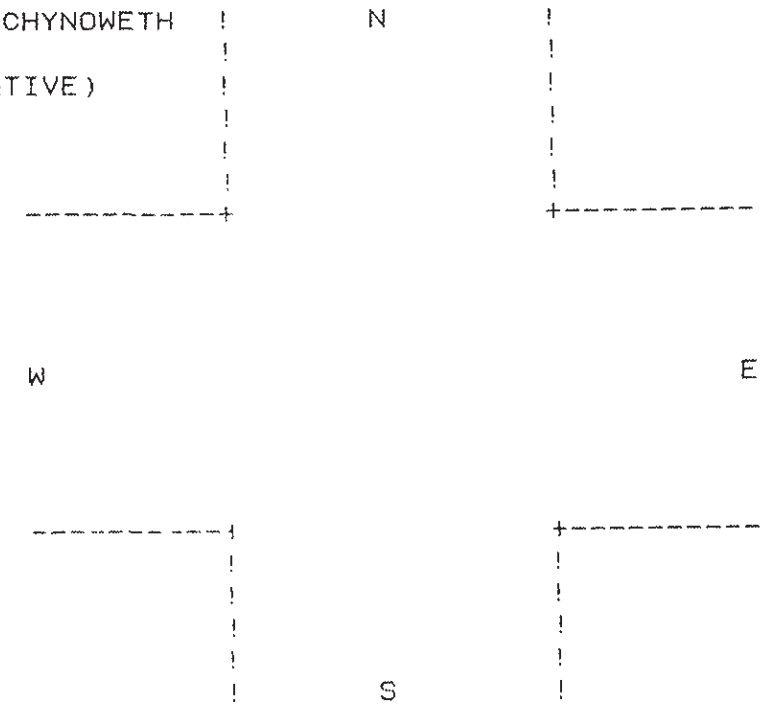
ANAL. DATE: 4/18/97

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	115	8
E-W	25	4

CYCLE LENGTH = 152

LOST TIME = .079

G

Y

R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	198	2605	178	0	0	0	0	0	0	198	2605	178
E	202010	383	91	66	0	0	0	0	0	0	383	91	66
S	203010	470	1817	278	0	0	0	0	0	0	470	1817	278
W	102010	114	85	551	0	0	0	0	0	0	114	85	551

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	0 0 3 0 0 0	2605	5340	0.488	0.042	0.530	2830
E	2	2 0 0 0 0 0	383	3015	0.127	0.028	0.155	467
S	2	2 0 0 0 0 0	470	3015	0.156	0.028	0.184	555
W	2	0 0 2 0 0 0	85	3560	0.024	0.028	0.052	185
				LT =	0.079			
TOTALS	9		3543		0.874			4037

1 - 0.874 = 0.126 / 9 = 0.014

==========

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .878 LEVEL OF SERVICE = D

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96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: ALAMDEN EXP & CHERRY/CHYNOWETH

MESSAGE: #9618-2 w/ MIT (CUMULATIVE)

PEAK HOUR: AM

COUNT DATE:

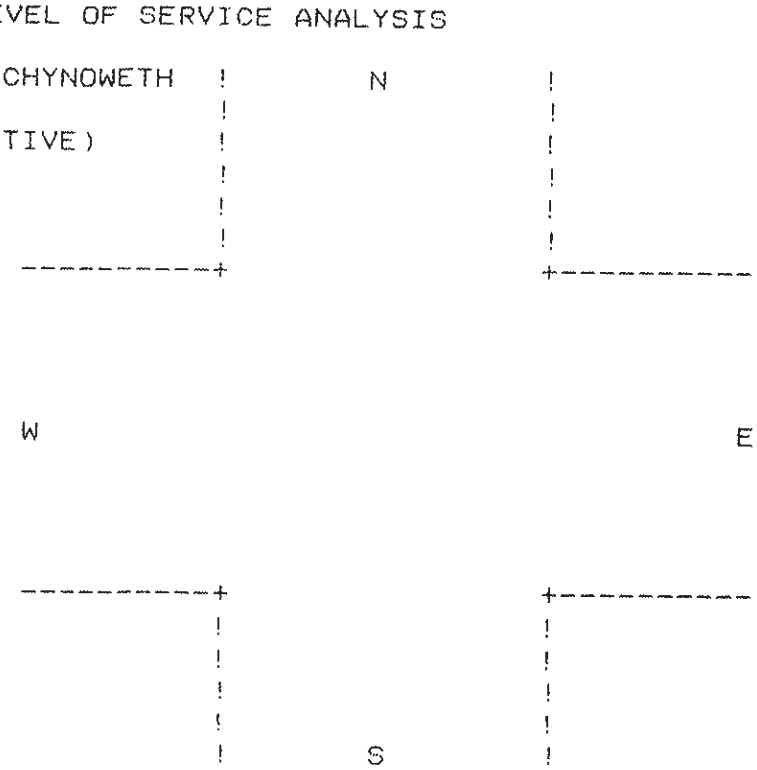
ANAL. DATE: 4/18/97

GROWTH FACTOR % : 0

PLAN AREA:

MAP PAGE:

ANAL. INIT.: GLP



SIGNAL TYPE: FULLY ACTUATED

LEG	GREEN	YEL+RED
N-S	115	8
E-W	25	4

CYCLE LENGTH = 152

LOST TIME = .079

G
Y
R

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	203010	82	1354	57	0	0	0	0	0	0	82	1354	57
E	202010	175	26	51	0	0	0	0	0	0	175	26	51
S	203010	383	2804	94	0	0	0	0	0	0	383	2804	94
W	102010	164	38	516	0	0	0	0	0	0	164	38	516

LEG	# LANES	CRIT. MOVE (L S T L R S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	82	3015	0.027	0.066	0.093	280
E	2	0 0 2 0 0 0	26	3560	0.007	0.066	0.073	260
S	3	0 0 3 0 0 0	2804	5340	0.525	0.099	0.624	3332
W	1	1 0 0 0 0 0	164	1675	0.098	0.033	0.131	219
				LT =	0.079			
TOTALS	8		3076		0.736			4091

1 - 0.736 = 0.264 / 8 = 0.033

V/C = TOTAL CRIT. VOL./TOTAL CRIT. CAP. = .752 LEVEL OF SERVICE = C

5/19/88 LV

96-011

LEVEL OF SERVICE ANALYSIS

LOCATION: FOXWORTHY & MERIDIAN
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 90.00 6.50
E-W 70.00 3.00

CYCLE LENGTH = 169.5
LOST TIME = 0.056

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	102010	30	329	46	0	0	0	0	0	0	30	329	46
E	100100	34	192	59	0	0	0	0	0	0	34	192	59
S	102010	47	1360	39	0	0	0	0	0	0	47	1360	39
W	100100	81	100	24	0	0	0	0	0	0	81	100	24

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	30	1675	0.018	0.071	0.089	149
E	1	0 0 0 1 0 0	251	1755	0.143	0.071	0.214	376
S	2	0 0 2 0 0 0	1360	3560	0.382	0.141	0.523	1862
W	1	1 0 0 0 0 0	81	1675	0.048	0.071	0.119	199
				LT =	0.056			
TOTALS	5		1722		0.647			2586

1 - 0.647 = 0.353 / 5 = 0.071
V/C = 0.666

EXISTING LEVEL OF SERVICE = B

N	1	1 0 0 0 0 0	30	1675	0.018	0.071	0.089	149
E	1	0 0 0 1 0 0	251	1755	0.143	0.071	0.214	376
S	2	0 0 2 0 0 0	1360	3560	0.382	0.141	0.523	1862
W	1	1 0 0 0 0 0	81	1675	0.048	0.071	0.119	199
				LT =	0.056			
TOTALS	5		1722		0.647			2586

1 - 0.647 = 0.353 / 5 = 0.071
V/C = 0.666

EXISTING + APPROVED LEVEL OF SERVICE = B

N	1	1 0 0 0 0 0	30	1675	0.018	0.071	0.089	149
E	1	0 0 0 1 0 0	251	1755	0.143	0.071	0.214	376
S	2	0 0 2 0 0 0	1360	3560	0.382	0.141	0.523	1862
W	1	1 0 0 0 0 0	81	1675	0.048	0.071	0.119	199
				LT =	0.056			
TOTALS	5		1722		0.647			2586

1 - 0.647 = 0.353 / 5 = 0.071
V/C = 0.666

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(1722 - 1722)/ 1722 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: FOXWORTHY & MERIDIAN
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	90.00	6.50
E-W	70.00	3.00

CYCLE LENGTH = 169.5
LOST TIME = 0.056

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	102010	76	1243	59	0	0	0	0	0	0	76	1243	59
E	100100	60	193	42	0	0	0	0	0	0	60	193	42
S	102010	69	541	39	0	0	0	0	0	0	69	541	39
W	100100	101	253	71	0	0	0	0	0	0	101	253	71

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	1243	3560	0.349	0.134	0.483	1719
E	1	1 0 0 0 0 0	60	1675	0.036	0.067	0.103	173
S	1	1 0 0 0 0 0	69	1675	0.041	0.067	0.108	181
W	1	0 0 0 1 0 0	324	1757	0.184	0.067	0.251	441
				LT =	0.056			
TOTALS	5		1696		0.666			2514

1 - 0.666 = 0.334 / 5 = 0.067

V/C = 0.675

EXISTING LEVEL OF SERVICE = B

N	2	0 0 2 0 0 0	1243	3560	0.349	0.134	0.483	1719
E	1	1 0 0 0 0 0	60	1675	0.036	0.067	0.103	173
S	1	1 0 0 0 0 0	69	1675	0.041	0.067	0.108	181
W	1	0 0 0 1 0 0	324	1757	0.184	0.067	0.251	441
				LT =	0.056			
TOTALS	5		1696		0.666			2514

1 - 0.666 = 0.334 / 5 = 0.067

V/C = 0.675

EXISTING + APPROVED LEVEL OF SERVICE = B

N	2	0 0 2 0 0 0	1243	3560	0.349	0.134	0.483	1719
E	1	1 0 0 0 0 0	60	1675	0.036	0.067	0.103	173
S	1	1 0 0 0 0 0	69	1675	0.041	0.067	0.108	181
W	1	0 0 0 1 0 0	324	1757	0.184	0.067	0.251	441
				LT =	0.056			
TOTALS	5		1696		0.666			2514

1 - 0.666 = 0.334 / 5 = 0.067

V/C = 0.675

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(1696 - 1696)/ 1696 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CHERRY & FOXWORTHY
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 40.00 4.50
E-W 40.00 4.50

CYCLE LENGTH = 89
LOST TIME = 0.101

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	011010	34	115	25	0	0	0	0	0	0	34	115	25
E	010010	9	122	42	0	0	0	0	0	0	9	122	42
S	011010	53	317	29	0	0	0	0	0	0	53	317	29
W	010010	24	123	42	0	0	0	0	0	0	24	123	42

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 1 1 0 0 0	149	3512	0.042	0.198	0.240	843
E	1	0 1 0 0 0 0	131	1773	0.074	0.099	0.173	307
S	2	0 1 1 0 0 0	370	3526	0.105	0.198	0.303	1068
W	1	0 1 0 0 0 0	147	1763	0.083	0.099	0.182	321
				LT =	0.101			
TOTALS	6		797		0.405			2539

1 - 0.405 = 0.595 / 6 = 0.099
V/C = 0.314

EXISTING LEVEL OF SERVICE = A

N	2	0 1 1 0 0 0	149	3512	0.042	0.198	0.240	843
E	1	0 1 0 0 0 0	131	1773	0.074	0.099	0.173	307
S	2	0 1 1 0 0 0	370	3526	0.105	0.198	0.303	1068
W	1	0 1 0 0 0 0	147	1763	0.083	0.099	0.182	321
				LT =	0.101			
TOTALS	6		797		0.405			2539

1 - 0.405 = 0.595 / 6 = 0.099
V/C = 0.314

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	0 1 1 0 0 0	149	3512	0.042	0.198	0.240	843
E	1	0 1 0 0 0 0	131	1773	0.074	0.099	0.173	307
S	2	0 1 1 0 0 0	370	3526	0.105	0.198	0.303	1068
W	1	0 1 0 0 0 0	147	1763	0.083	0.099	0.182	321
				LT =	0.101			
TOTALS	6		797		0.405			2539

1 - 0.405 = 0.595 / 6 = 0.099
V/C = 0.314

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(797 - 797)/ 797 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CHERRY & FOXWORTHY
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	40.00	4.50
E-W	40.00	4.50

CYCLE LENGTH = 89
LOST TIME = 0.101

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	011010	42	312	45	0	0	0	0	0	0	42	312	45
E	010010	22	235	38	0	0	0	0	0	0	22	235	38
S	011010	69	194	20	0	0	0	0	0	0	69	194	20
W	010010	50	239	86	0	0	0	0	0	0	50	239	86

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 1 1 0 0 0	354	3531	0.100	0.138	0.238	840
E	1	0 1 0 0 0 0	257	1771	0.145	0.069	0.214	379
S	2	0 1 1 0 0 0	263	3507	0.075	0.138	0.213	747
W	1	0 1 0 0 0 0	289	1762	0.164	0.069	0.233	411
				LT =	0.101			
TOTALS	6		1163		0.585			2377

1 - 0.585 = 0.415 / 6 = 0.069

V/C = 0.489

EXISTING LEVEL OF SERVICE = A

N	2	0 1 1 0 0 0	354	3531	0.100	0.138	0.238	840
E	1	0 1 0 0 0 0	257	1771	0.145	0.069	0.214	379
S	2	0 1 1 0 0 0	263	3507	0.075	0.138	0.213	747
W	1	0 1 0 0 0 0	289	1762	0.164	0.069	0.233	411
				LT =	0.101			
TOTALS	6		1163		0.585			2377

1 - 0.585 = 0.415 / 6 = 0.069

V/C = 0.489

EXISTING + APPROVED LEVEL OF SERVICE = A

N	2	0 1 1 0 0 0	354	3531	0.100	0.138	0.238	840
E	1	0 1 0 0 0 0	257	1771	0.145	0.069	0.214	379
S	2	0 1 1 0 0 0	263	3507	0.075	0.138	0.213	747
W	1	0 1 0 0 0 0	289	1762	0.164	0.069	0.233	411
				LT =	0.101			
TOTALS	6		1163		0.585			2377

1 - 0.585 = 0.415 / 6 = 0.069

V/C = 0.489

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1163 - 1163)/ 1163 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: HILLSDALE & MERIDIAN
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 87.00 8.00
E-W 57.00 8.00

CYCLE LENGTH = 160
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	101100	102	254	64	0	0	0	0	0	0	102	254	64
E	102100	66	1130	247	0	0	0	0	0	0	66	1130	247
S	101100	176	1021	40	0	0	0	0	0	0	176	1021	40
W	102100	104	504	24	0	0	0	0	0	0	104	504	24

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	102	1675	0.061	0.031	0.092	154
E	3	0 0 2 1 0 0	1377	5285	0.261	0.093	0.354	1871
S	2	0 0 1 1 0 0	1061	3551	0.299	0.062	0.361	1282
W	1	1 0 0 0 0 0	104	1675	0.062	0.031	0.093	156
				LT =	0.100			
TOTALS	7		2644		0.783			3463
				1 - 0.783 =	0.217 / 7 =	0.031		
							V/C =	0.763

EXISTING LEVEL OF SERVICE = C

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	102	1675	0.061	0.031	0.092	154
E	3	0 0 2 1 0 0	1377	5285	0.261	0.093	0.354	1871
S	2	0 0 1 1 0 0	1061	3551	0.299	0.062	0.361	1282
W	1	1 0 0 0 0 0	104	1675	0.062	0.031	0.093	156
				LT =	0.100			
TOTALS	7		2644		0.783			3463
				1 - 0.783 =	0.217 / 7 =	0.031		
							V/C =	0.763

EXISTING + APPROVED LEVEL OF SERVICE = C

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	102	1675	0.061	0.031	0.092	154
E	3	0 0 2 1 0 0	1377	5285	0.261	0.093	0.354	1871
S	2	0 0 1 1 0 0	1061	3551	0.299	0.062	0.361	1282
W	1	1 0 0 0 0 0	104	1675	0.062	0.031	0.093	156
				LT =	0.100			
TOTALS	7		2644		0.783			3463
				1 - 0.783 =	0.217 / 7 =	0.031		
							V/C =	0.763

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(2644 - 2644)/ 2644 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: HILLSDALE & MERIDIAN
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	87.00	8.00
E-W	57.00	8.00

CYCLE LENGTH = 160
LOST TIME = 0.100

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	101100	324	877	107	0	0	0	0	0	0	324	877	107
E	102100	91	588	68	0	0	0	0	0	0	91	588	68
S	101100	97	442	67	0	0	0	0	0	0	97	442	67
W	102100	136	925	121	0	0	0	0	0	0	136	925	121

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	1 0 0 0 0 0	324	1675	0.193	0.045	0.238	399
E	1	1 0 0 0 0 0	91	1675	0.054	0.045	0.099	166
S	2	0 0 1 1 0 0	509	3531	0.144	0.089	0.233	823
W	3	0 0 2 1 0 0	1046	5298	0.197	0.134	0.331	1754
				LT =	0.100			
TOTALS	7		1970		0.688			3142

1 - 0.688 = 0.312 / 7 = 0.045

V/C = 0.627

EXISTING LEVEL OF SERVICE = B

N	1	1 0 0 0 0 0	324	1675	0.193	0.045	0.238	399
E	1	1 0 0 0 0 0	91	1675	0.054	0.045	0.099	166
S	2	0 0 1 1 0 0	509	3531	0.144	0.089	0.233	823
W	3	0 0 2 1 0 0	1046	5298	0.197	0.134	0.331	1754
				LT =	0.100			
TOTALS	7		1970		0.688			3142

1 - 0.688 = 0.312 / 7 = 0.045

V/C = 0.627

EXISTING + APPROVED LEVEL OF SERVICE = B

N	1	1 0 0 0 0 0	324	1675	0.193	0.045	0.238	399
E	1	1 0 0 0 0 0	91	1675	0.054	0.045	0.099	166
S	2	0 0 1 1 0 0	509	3531	0.144	0.089	0.233	823
W	3	0 0 2 1 0 0	1046	5298	0.197	0.134	0.331	1754
				LT =	0.100			
TOTALS	7		1970		0.688			3142

1 - 0.688 = 0.312 / 7 = 0.045

V/C = 0.627

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(1970 - 1970)/ 1970 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPITOL & PEARL
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 38.00 10.00
E-W 102.50 9.50

CYCLE LENGTH = 160
LOST TIME = 0.122

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	202010	172	138	139	0	0	0	5	3	13	177	141	152
E	203010	295	1974	287	0	0	0	0	0	8	295	1974	295
S	202010	687	187	333	0	0	0	0	1	0	687	188	333
W	103010	165	903	175	0	0	0	6	0	0	171	903	175

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	138	3560	0.039	0.036	0.075	267
E	3	0 0 3 0 0 0	1974	5340	0.370	0.053	0.423	2259
S	2	2 0 0 0 0 0	687	3015	0.228	0.036	0.264	796
W	1	1 0 0 0 0 0	165	1675	0.099	0.018	0.117	196
				LT =	0.122			
TOTALS	8		2964		0.858			3518

1 - 0.858 = 0.142 / 8 = 0.018
V/C = 0.843

EXISTING LEVEL OF SERVICE = D

N	2	0 0 2 0 0 0	138	3560	0.039	0.036	0.075	267
E	3	0 0 3 0 0 0	1974	5340	0.370	0.053	0.423	2259
S	2	2 0 0 0 0 0	687	3015	0.228	0.036	0.264	796
W	1	1 0 0 0 0 0	165	1675	0.099	0.018	0.117	196
				LT =	0.122			
TOTALS	8		2964		0.858			3518

1 - 0.858 = 0.142 / 8 = 0.018
V/C = 0.843

EXISTING + APPROVED LEVEL OF SERVICE = D

N	2	0 0 2 0 0 0	141	3560	0.040	0.035	0.075	267
E	3	0 0 3 0 0 0	1974	5340	0.370	0.052	0.422	2253
S	2	2 0 0 0 0 0	687	3015	0.228	0.035	0.263	793
W	1	1 0 0 0 0 0	171	1675	0.102	0.017	0.119	199
				LT =	0.122			
TOTALS	8		2973		0.862			3512

1 - 0.862 = 0.138 / 8 = 0.017
V/C = 0.847

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(2973 - 2964)/ 2964 = 0.30 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPITOL & PEARL
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 38.00 10.00
E-W 102.50 9.50

CYCLE LENGTH = 160
LOST TIME = 0.122

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	202010	175	139	118	0	0	0	2	1	6	177	140	124
E	203010	569	1069	330	0	0	0	0	0	16	569	1069	346
S	202010	133	103	282	0	0	0	0	3	0	133	106	282
W	103010	188	1540	401	0	0	0	13	0	0	201	1540	401

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	2 0 0 0 0 0	175	3015	0.058	0.070	0.128	386
E	2	2 0 0 0 0 0	569	3015	0.189	0.070	0.259	781
S	2	0 0 2 0 0 0	103	3560	0.029	0.070	0.099	352
W	3	0 0 3 0 0 0	1540	5340	0.288	0.105	0.393	2099
				LT =	0.122			
TOTALS	9		2387		0.686			3618

1 - 0.686 = 0.314 / 9 = 0.035

V/C = 0.660

EXISTING LEVEL OF SERVICE = B

N	2	2 0 0 0 0 0	175	3015	0.058	0.070	0.128	386
E	2	2 0 0 0 0 0	569	3015	0.189	0.070	0.259	781
S	2	0 0 2 0 0 0	103	3560	0.029	0.070	0.099	352
W	3	0 0 3 0 0 0	1540	5340	0.288	0.105	0.393	2099
				LT =	0.122			
TOTALS	9		2387		0.686			3618

1 - 0.686 = 0.314 / 9 = 0.035

V/C = 0.66

EXISTING + APPROVED LEVEL OF SERVICE = B

N	2	2 0 0 0 0 0	177	3015	0.059	0.069	0.128	386
E	2	2 0 0 0 0 0	569	3015	0.189	0.069	0.258	778
S	2	0 0 2 0 0 0	106	3560	0.030	0.069	0.099	352
W	3	0 0 3 0 0 0	1540	5340	0.288	0.104	0.392	2093
				LT =	0.122			
TOTALS	9		2392		0.688			3609

1 - 0.688 = 0.312 / 9 = 0.035

V/C = 0.66

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(2392 - 2387)/ 2387 = 0.21 PERCENT INCREASE IN CRITICAL VOLUME

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPITOL EXPWY & RT. 87
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 40.00 5.00
E-W 105.50 9.50

CYCLE LENGTH = 160
LOST TIME = 0.091

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	110010	501	1	394	0	0	0	0	0	8	501	1	402
E	203000	511	2166	0	0	0	0	0	0	0	511	2166	0
S	000000	0	0	0	0	0	0	0	0	0	0	0	0
W	004010	0	1136	306	0	0	0	0	0	5	0	1136	311

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	1 1 0 0 0 0	502	3017	0.166	0.135	0.301	908
E	3	0 0 3 0 0 0	2166	5340	0.406	0.202	0.608	3247
S	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
W	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
				LT =	0.091			
TOTALS	5		2668		0.663			4155

1 - 0.663 = 0.337 / 5 = 0.067

V/C = 0.642

EXISTING LEVEL OF SERVICE = B

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	1 1 0 0 0 0	502	3017	0.166	0.135	0.301	908
E	3	0 0 3 0 0 0	2166	5340	0.406	0.202	0.608	3247
S	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
W	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
				LT =	0.091			
TOTALS	5		2668		0.663			4155

1 - 0.663 = 0.337 / 5 = 0.067

V/C = 0.642

EXISTING + APPROVED LEVEL OF SERVICE = B

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	1 1 0 0 0 0	502	3017	0.166	0.135	0.301	908
E	3	0 0 3 0 0 0	2166	5340	0.406	0.202	0.608	3247
S	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
W	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
				LT =	0.091			
TOTALS	5		2668		0.663			4155

1 - 0.663 = 0.337 / 5 = 0.067

V/C = 0.642

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = B

(2668 - 2668)/ 2668 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPITOL EXPWY & RT. 87
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	40.00	5.00
E-W	105.50	9.50

CYCLE LENGTH = 160
LOST TIME = 0.091

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	110010	1081	10	612	0	0	0	0	0	16	1081	10	628
E	203000	390	1714	0	0	0	0	0	0	0	390	1714	0
S	000000	0	0	0	0	0	0	0	0	0	0	0	0
W	004010	0	1937	358	0	0	0	0	0	2	0	1937	360

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	1 1 0 0 0 0	1091	3022	0.361	0.037	0.398	1203
E	2	2 0 0 0 0 0	390	3015	0.129	0.037	0.166	500
S	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
W	4	0 0 4 0 0 0	1937	7120	0.272	0.074	0.346	2464
				LT =	0.091			
TOTALS	8		3418		0.853			4167

1 - 0.853 = 0.147 / 8 = 0.018
V/C = 0.820

EXISTING LEVEL OF SERVICE = D

N	2	1 1 0 0 0 0	1091	3022	0.361	0.037	0.398	1203
E	2	2 0 0 0 0 0	390	3015	0.129	0.037	0.166	500
S	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
W	4	0 0 4 0 0 0	1937	7120	0.272	0.074	0.346	2464
				LT =	0.091			
TOTALS	8		3418		0.853			4167

1 - 0.853 = 0.147 / 8 = 0.018
V/C = 0.820

EXISTING + APPROVED LEVEL OF SERVICE = D

N	2	1 1 0 0 0 0	1091	3022	0.361	0.037	0.398	1203
E	2	2 0 0 0 0 0	390	3015	0.129	0.037	0.166	500
S	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
W	4	0 0 4 0 0 0	1937	7120	0.272	0.074	0.346	2464
				LT =	0.091			
TOTALS	8		3418		0.853			4167

1 - 0.853 = 0.147 / 8 = 0.018
V/C = 0.820

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(3418 - 3418)/ 3418 = 0.00 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: RT. 87 & NARVAEZ
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	50.00	8.50
E-W	16.00	4.00

CYCLE LENGTH = 78.5
LOST TIME = 0.159

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	001010	0	109	258	0	0	0	0	3	16	0	112	274
E	000000	0	0	0	0	0	0	0	0	0	0	0	0
S	201000	1035	163	0	0	0	0	0	2	0	1035	165	0
W	100010	21	0	312	0	0	0	2	0	0	23	0	312

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 0 1 0 0 0	109	1780	0.061	0.106	0.167	297
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	2	2 0 0 0 0 0	1035	3015	0.343	0.212	0.555	1673
W	1	1 0 0 0 0 0	21	1675	0.013	0.106	0.119	199
				LT =	0.159			
TOTALS	4		1165		0.576			2169

1 - 0.576 = 0.424 / 4 = 0.106
V/C = 0.537

EXISTING LEVEL OF SERVICE = A

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 0 1 0 0 0	109	1780	0.061	0.106	0.167	297
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	2	2 0 0 0 0 0	1035	3015	0.343	0.212	0.555	1673
W	1	1 0 0 0 0 0	21	1675	0.013	0.106	0.119	199
				LT =	0.159			
TOTALS	4		1165		0.576			2169

1 - 0.576 = 0.424 / 4 = 0.106
V/C = 0.537

EXISTING + APPROVED LEVEL OF SERVICE = A

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 0 1 0 0 0	112	1780	0.063	0.105	0.168	299
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	2	2 0 0 0 0 0	1035	3015	0.343	0.211	0.554	1670
W	1	1 0 0 0 0 0	23	1675	0.014	0.105	0.119	199
				LT =	0.159			
TOTALS	4		1170		0.579			2168

1 - 0.579 = 0.421 / 4 = 0.105
V/C = 0.540

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(1170 - 1165)/ 1165 = 0.43 PERCENT INCREASE
IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: RT. 87 & NARVAEZ
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	50.00	8.50
E-W	16.00	4.00

CYCLE LENGTH = 78.5
LOST TIME = 0.159

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	001010	0	223	225	0	0	0	0	2	8	0	225	233
E	000000	0	0	0	0	0	0	0	0	0	0	0	0
S	201000	558	332	0	0	0	0	0	4	0	558	336	0
W	100010	197	0	733	0	0	0	5	0	0	202	0	733

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	1	0 0 1 0 0 0	223	1780	0.125	0.103	0.228	406
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	2	2 0 0 0 0 0	558	3015	0.185	0.207	0.392	1182
W	1	1 0 0 0 0 0	197	1675	0.118	0.103	0.221	370
				LT =	0.159			
TOTALS	4		978		0.587			1958

1 - 0.587 = 0.413 / 4 = 0.103

V/C = 0.499

EXISTING LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	223	1780	0.125	0.103	0.228	406
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	2	2 0 0 0 0 0	558	3015	0.185	0.207	0.392	1182
W	1	1 0 0 0 0 0	197	1675	0.118	0.103	0.221	370
				LT =	0.159			
TOTALS	4		978		0.587			1958

1 - 0.587 = 0.413 / 4 = 0.103

V/C = 0.499

EXISTING + APPROVED LEVEL OF SERVICE = A

N	1	0 0 1 0 0 0	225	1780	0.126	0.102	0.228	406
E	0	0 0 0 0 0 0	0	0	0.000	0.000	0.000	0
S	2	2 0 0 0 0 0	558	3015	0.185	0.205	0.390	1176
W	1	1 0 0 0 0 0	202	1675	0.121	0.102	0.223	374
				LT =	0.159			
TOTALS	4		985		0.591			1956

1 - 0.591 = 0.409 / 4 = 0.102

V/C = 0.504

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = A

(985 - 978)/ 978 = 0.72 PERCENT INCREASE
IN CRITICAL VOLUME

5/19/88 LV

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPITOL & NARVAEZ
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: AM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	47.00	10.00
E-W	93.50	9.50

CYCLE LENGTH = 160
LOST TIME = 0.122

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	110100	150	29	214	0	0	0	4	0	0	154	29	214
E	203010	52	2104	752	0	0	0	0	0	2	52	2104	754
S	111010	188	196	54	0	0	0	0	0	0	188	196	54
W	203010	300	1212	103	0	0	0	0	0	0	300	1212	103

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	1 1 0 1 0 0	393	4751	0.083	0.061	0.144	684
E	3	0 0 3 0 0 0	2104	5340	0.394	0.061	0.455	2430
S	3	1 1 1 0 0 0	384	4926	0.078	0.061	0.139	685
W	2	2 0 0 0 0 0	300	3015	0.100	0.041	0.141	425
				LT = 0.122				
TOTALS	%11		3181		0.777			4224

1 - 0.777 = 0.223 / %11 = 0.020
V/C = 0.753

EXISTING LEVEL OF SERVICE = C

N	3	1 1 0 1 0 0	393	4751	0.083	0.061	0.144	684
E	3	0 0 3 0 0 0	2104	5340	0.394	0.061	0.455	2430
S	3	1 1 1 0 0 0	384	4926	0.078	0.061	0.139	685
W	2	2 0 0 0 0 0	300	3015	0.100	0.041	0.141	425
				LT = 0.122				
TOTALS	%11		3181		0.777			4224

1 - 0.777 = 0.223 / %11 = 0.020
V/C = 0.753

EXISTING + APPROVED LEVEL OF SERVICE = C

N	3	1 1 0 1 0 0	397	4750	0.084	0.061	0.145	689
E	3	0 0 3 0 0 0	2104	5340	0.394	0.061	0.455	2430
S	3	1 1 1 0 0 0	384	4926	0.078	0.061	0.139	685
W	2	2 0 0 0 0 0	300	3015	0.100	0.040	0.140	422
				LT = 0.122				
TOTALS	%11		3185		0.778			4226

1 - 0.778 = 0.222 / %11 = 0.020
V/C = 0.754

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(3185 - 3181)/ 3181 = 0.13 PERCENT INCREASE IN CRITICAL VOLUME

96 - 011

5/19/88 LV

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPITOL & NARVAEZ
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED
N-S 47.00 10.00
E-W 93.50 9.50

CYCLE LENGTH = 160
LOST TIME = 0.122

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	110100	552	42	108	0	0	0	2	0	0	554	42	108
E	203010	66	1416	551	0	0	0	0	0	4	66	1416	555
S	111010	58	108	51	0	0	0	0	0	0	58	108	51
W	203010	571	2445	225	0	0	0	0	0	0	571	2445	225

LEG	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	3	1 1 0 1 0 0	702	4732	0.148	0.059	0.207	980
E	2	2 0 0 0 0 0	66	3015	0.022	0.039	0.061	184
S	3	1 1 1 0 0 0	166	4965	0.033	0.059	0.092	457
W	3	0 0 3 0 0 0	2445	5340	0.458	0.059	0.517	2761
				LT =	0.122			
TOTALS	%11		3379		0.783			4382

1 - 0.783 = 0.217 / %11 = 0.020

V/C = 0.771

EXISTING LEVEL OF SERVICE = C

N	3	1 1 0 1 0 0	702	4732	0.148	0.059	0.207	980
E	2	2 0 0 0 0 0	66	3015	0.022	0.039	0.061	184
S	3	1 1 1 0 0 0	166	4965	0.033	0.059	0.092	457
W	3	0 0 3 0 0 0	2445	5340	0.458	0.059	0.517	2761
				LT =	0.122			
TOTALS	%11		3379		0.783			4382

1 - 0.783 = 0.217 / %11 = 0.020

V/C = 0.771

EXISTING + APPROVED LEVEL OF SERVICE = C

N	3	1 1 0 1 0 0	704	4732	0.149	0.059	0.208	984
E	2	2 0 0 0 0 0	66	3015	0.022	0.039	0.061	184
S	3	1 1 1 0 0 0	166	4965	0.033	0.059	0.092	457
W	3	0 0 3 0 0 0	2445	5340	0.458	0.059	0.517	2761
				LT =	0.122			
TOTALS	%11		3381		0.784			4386

1 - 0.784 = 0.216 / %11 = 0.020

V/C = 0.771

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = C

(3381 - 3379)/ 3379 = 0.06 PERCENT INCREASE IN CRITICAL VOLUME

96-011

5/19/88 LV

SSAGE: #9618-2 (CUMULATIVE)
A HOUR: AM
T DATE:
AL. DATE: 4/18/97
AL. INIT: GLP
TH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	43.00	9.00
E-W	99.50	9.50

CYCLE LENGTH = 161
LOST TIME = 0.115

PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N 202010	319	171	55	0	0	0	2	1	0	321	172	55
E 203010	336	1672	709	0	0	0	0	0	2	336	1672	711
S 202010	1195	471	549	0	0	0	1	0	0	1196	471	549
W 203010	128	1452	343	0	0	0	0	1	1	128	1453	344

	# LANES	CRIT. MOVE L S T S R O	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	171	3560	0.048	0.013	0.061	217
E	2	2 0 0 0 0 0	336	3015	0.111	0.013	0.124	374
S	2	2 0 0 0 0 0	1195	3015	0.396	0.013	0.409	1233
W	3	0 0 3 0 0 0	1452	5340	0.272	0.019	0.291	1554
				LT =	0.115			
TALS	9		3154		0.942			3378

1 - 0.942 = 0.058 / 9 = 0.006

V/C = 0.934

EXISTING LEVEL OF SERVICE = E

N	2	0 0 2 0 0 0	171	3560	0.048	0.013	0.061	217
E	2	2 0 0 0 0 0	336	3015	0.111	0.013	0.124	374
S	2	2 0 0 0 0 0	1195	3015	0.396	0.013	0.409	1233
W	3	0 0 3 0 0 0	1452	5340	0.272	0.019	0.291	1554
				LT =	0.115			
TALS	9		3154		0.942			3378

1 - 0.942 = 0.058 / 9 = 0.006

V/C = 0.934

EXISTING + APPROVED LEVEL OF SERVICE = E

N	2	0 0 2 0 0 0	172	3560	0.048	0.013	0.061	217
E	2	2 0 0 0 0 0	336	3015	0.111	0.013	0.124	374
S	2	2 0 0 0 0 0	1196	3015	0.397	0.013	0.410	1236
W	3	0 0 3 0 0 0	1453	5340	0.272	0.019	0.291	1554
				LT =	0.115			
TALS	9		3157		0.943			3381

1 - 0.943 = 0.057 / 9 = 0.006

V/C = 0.934

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = E

3157 - 3154)/ 3154 = 0.10 PERCENT INCREASE
IN CRITICAL VOLUME

/88 LV

96 - 011

LEVEL OF SERVICE ANALYSIS

LOCATION: CAPTIOL EXPWY & SNELL
MESSAGE: #9618-2 (CUMULATIVE)
PEAK HOUR: PM
COUNT DATE:
ANAL. DATE: 4/18/97
ANAL. INIT: GLP
GROWTH FACTOR % : 0.0

SIGNAL TYPE : FULLY ACTUATED

N-S	43.00	9.00
E-W	99.50	9.50

CYCLE LENGTH = 161
LOST TIME = 0.115

LEG	PATTREN	LANE COUNTS			APPROVED TRIPS			PROJECT TRIPS			TOTAL TRIPS		
	LSTSRO	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT
N	202010	387	238	65	0	0	0	2	0	0	389	238	65
E	203010	739	1408	384	0	0	0	0	1	2	739	1409	386
S	202010	462	207	413	0	0	0	1	1	0	463	208	413
W	203010	122	1326	773	0	0	0	0	0	1	122	1326	774

LEG	# LANES	CRIT. MOVE (L S T S R O)	C. VOL.	T. CAP.	G/C	ADJ./ LANE	ADJ. G/C	C. CAP.
N	2	0 0 2 0 0 0	238	3560	0.067	0.038	0.105	374
E	2	2 0 0 0 0 0	739	3015	0.245	0.038	0.283	853
S	2	2 0 0 0 0 0	462	3015	0.153	0.038	0.191	576
W	3	0 0 3 0 0 0	1326	5340	0.248	0.057	0.305	1629
				LT =	0.115			
TOTALS	9		2765		0.828			3432

1 - 0.828 = 0.172 / 9 = 0.019

V/C = 0.806

EXISTING LEVEL OF SERVICE = D

N	2	0 0 2 0 0 0	238	3560	0.067	0.038	0.105	374
E	2	2 0 0 0 0 0	739	3015	0.245	0.038	0.283	853
S	2	2 0 0 0 0 0	462	3015	0.153	0.038	0.191	576
W	3	0 0 3 0 0 0	1326	5340	0.248	0.057	0.305	1629
				LT =	0.115			
TOTALS	9		2765		0.828			3432

1 - 0.828 = 0.172 / 9 = 0.019

V/C = 0.806

EXISTING + APPROVED LEVEL OF SERVICE = D

N	2	0 0 2 0 0 0	238	3560	0.067	0.038	0.105	374
E	2	2 0 0 0 0 0	739	3015	0.245	0.038	0.283	853
S	2	2 0 0 0 0 0	463	3015	0.154	0.038	0.192	579
W	3	0 0 3 0 0 0	1326	5340	0.248	0.057	0.305	1629
				LT =	0.115			
TOTALS	9		2766		0.829			3435

1 - 0.829 = 0.171 / 9 = 0.019

V/C = 0.805

EXISTING + APPROVED + PROJECT LEVEL OF SERVICE = D

(2766 - 2765)/ 2765 = 0.04 PERCENT INCREASE
IN CRITICAL VOLUME

96-011

5/19/88 LV

ALMADEN/CHYNOWETH DEVELOPMENT

Hydrology Study

TECHNICAL APPENDIX

Prepared for:
Arcadia Development Company

May 28, 1998

96 - 011

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS
100 N. Winchester Blvd., #200
Santa Clara, CA 95050
(408) 246-4848
FAX: 408-246-5624

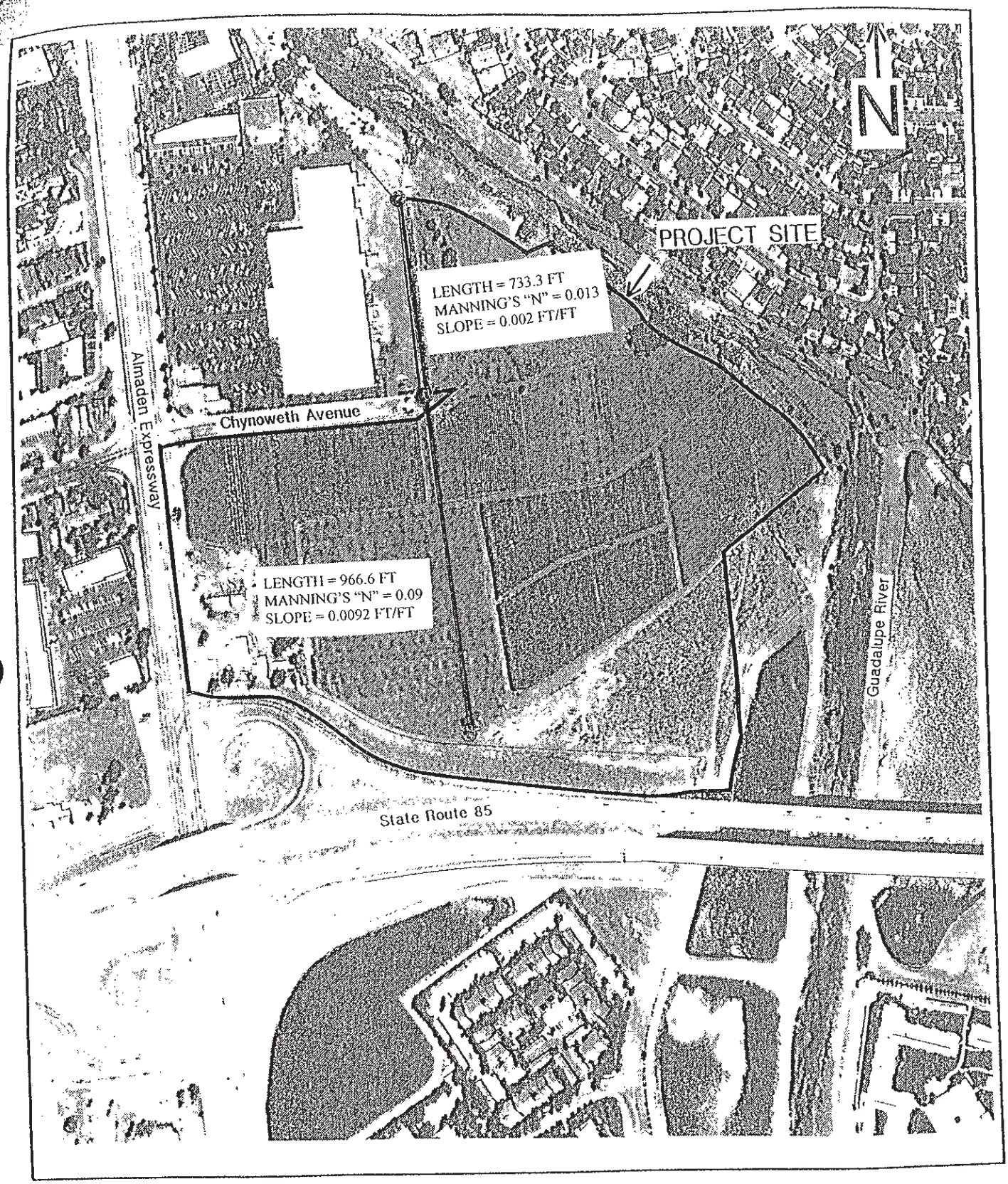
ATTACHMENT 1

Arcadia Property
Existing and Project Conditions
Time of Concentration & Curve Number Calculations

96-011

Existing Conditions

EXISTING CONDITIONS



96 - 011

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

JOB NAME: ARCADIA
SHEET NO. 1 OF 2
CALCULATED BY: KNB DATE: 5/6/98
CHECKED BY: DATE:
JOB NUMBER:

Existing Condition

Time of Concentration

$T_c = T_1 + T_2$

T_1 = Time of Concentration of pipe flow {27"}
T_2 = Time of Concentration

$T_1 = 0.01377 (L^{0.47} * n^{0.47} * S^{-.235})$

$L = 733.3$ ft
$n = 0.013$
$S = \frac{(174.5 - 173)ft}{733.3 ft} = 0.002$ ft/ft

$T_1 = 0.17$ hrs

$T_2 = 0.01377 (L^{0.47} * n^{0.47} * S^{-.235})$

$L = 966.57'$
$n = 0.09$
$S = 0.0092$ ft/ft

$T_2 = 0.34$ hrs

$T_c = 0.17 + 0.34 = 0.51$ hrs

96-011

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

JOB NAME: ARCADIA
SHEET NO. 2 OF 2
CALCULATED BY: KWB DATE: 5/5/98
CHECKED BY: DATE:
JOB NUMBER:

Existing Conditions

Curve Number Calcs

note: Soil type for entire site equals "1/A". 1/A soil type has a hydrologic soil condition of type "C"

Cover	% of total Area	AMC II CN	CN by Soil Type A	B	C	D
Range	10.3	70			70	
Bare Soil	15.6	91			91	
Row Crops	68.5	85			85	
Urban	5.6	82			82	

AMC II, CN = (.103)(70) + .156(91) + .685(85) + .056(82)
= 84

AMC II.5, CN = 89

AMC III, CN = 93

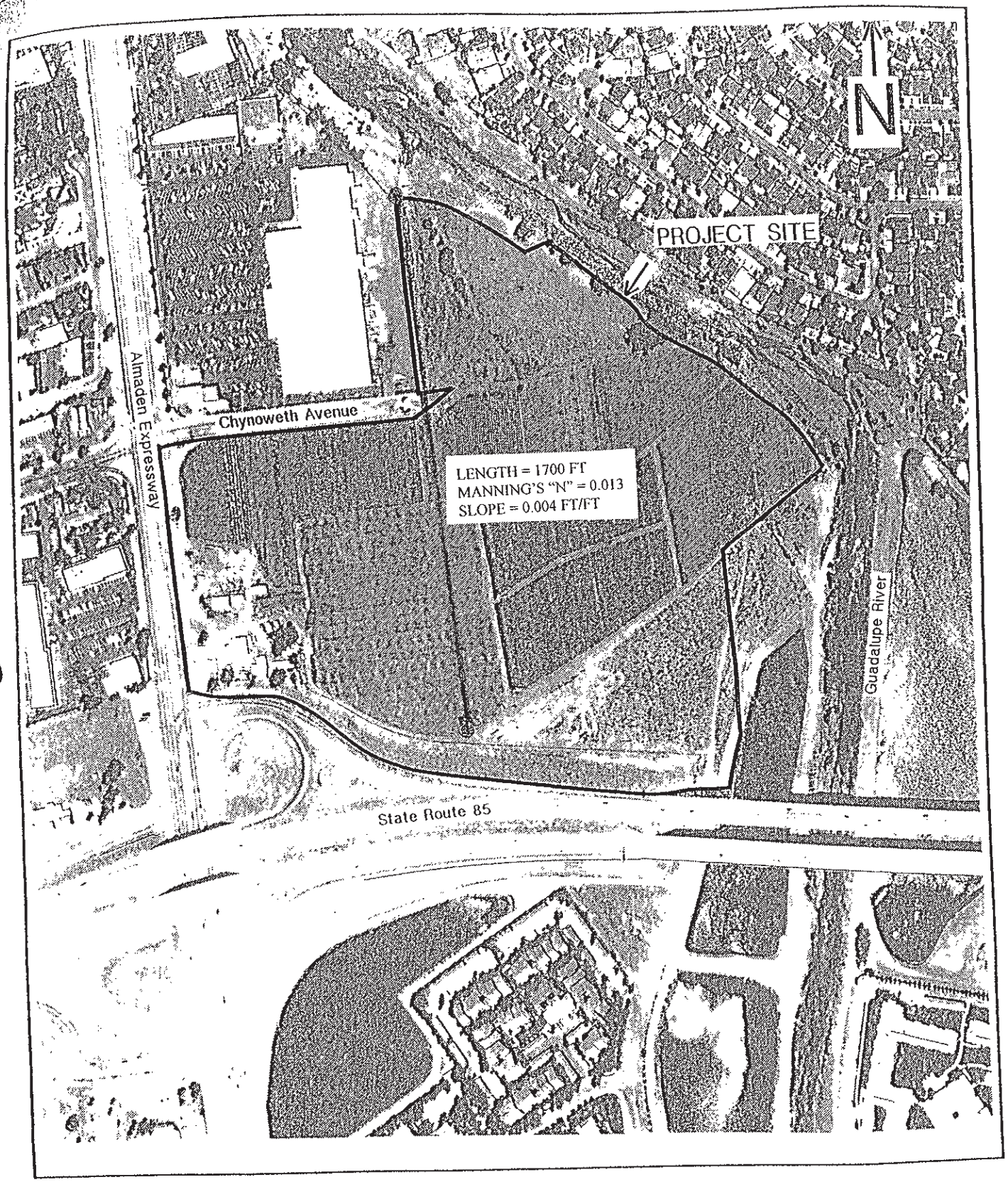
For Roads, CN = 98

96-011

Project Conditions

96 - 011

PROJECT CONDITIONS



96 - 011

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

JOB NAME: ALCADIA
SHEET NO. 2 OF 2
CALCULATED BY: KNB DATE: 5/9/98
CHECKED BY: DATE:
JOB NUMBER:

Project Conditions

Curve Number Calculations

Imp

Cover	% of Total	AMC II CN	CN by Soil Group A	B	C	D
Commercial	69.4	94	89	92	94	95
Housing	20.2	90	77	85	90	92
Roads	10.4	98	98	98	98	98

AMC II, $CN_I = (.694)(94) + (.202)(90) + (.104)(98)$

$CN_I = 94$

AMC II.5, CN = 96

AMC III, CN = 98

Perv

Cover	% of total	AMC II CN	CN by Soil Group A	B	C	D
Commercial (good Cond)	73%	74	39	61	74	80
Housing (good Cond)	20.6%	74	39	61	74	80
Roads (Row) (poor Cond)	6.4%	86	68	79	86	89

AMC II, $CN_P = (.73)(74) + (.206)(74) + .064(86)$
$= 75$

AMC II.5 = 82

AMC III, CN = 88

96-011

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

JOB NAME: ARCADIA Property
SHEET NO. 1 OF 1
CALCULATED BY: KNB DATE: 5/9/98
CHECKED BY: DATE:
JOB NUMBER:

Project Conditions

Time of Concentration

$$T_c = 0.01377\left(L^{0.47} * n^{0.47} S^{-0.05}\right)$$

$L = 1700$ ft
$n = .013$
$S = 0.004$ ft/ft

$T_c = 0.22$ hrs

Time of Concentration for pervious areas set equal to .05 hrs

96-011

ATTACHMENT 2

Arcadia Property
10-yr Existing and Project Conditions
HEC-1 Run

96-011

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/29/1998  TIME  15:50:34 *
*                                      *
****************************************
```

```
*********************************
*                               *
*   U.S. ARMY CORPS OF ENGINEERS
*   HYDROLOGIC ENGINEERING CENTER
*         609 SECOND STREET
*      DAVIS, CALIFORNIA 95616
*          (916) 756-1104
*                               *
*********************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X               X
XXXXXXX  XXXX    X       XXXXX   X
X     X  X       X               X
X     X  X       X     X         X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

96-011

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   ARCADIA DEVELOPMENT, EXISTING AND PROJECT CONDITIONS
  2           ID   10 YR EVENT
  3           ID   SCHAAF & WHEELER
  4           IT       5 01JAN98    0000     300
  5           IO       5       0
              *

  6           KK       1
  7           KM   EXISTING CONDITIONS
  8           BA  0.0613     .00     .00
  9           PB    3.95
 10           IN       5
 11           PI    .750    .750    .750    .750    .750    .750   .8800   .8800   .8800   .8800
 12           PI   .8800   .8800  1.1200  1.1200  1.1200  1.1200  1.1200  1.1200  1.1700  1.1700
 13           PI  1.1700  1.1700  1.1700  1.1700   .9800   .9800   .9800   .9800   .9800   .9800
 14           PI  1.1500  1.1500  1.1500  1.1500  1.1500  1.1500  1.6000  1.6000  1.6000  1.6000
 15           PI  1.6000  1.6000  1.8400  1.8400  1.8400  1.8400  1.8400  1.8400  2.0600  2.0600
 16           PI  2.0600  2.0600  2.0600  2.0600  2.2000  2.2000  2.2000  2.2000  2.2000  2.2000
 17           PI   2.000   2.000   2.000   2.000   2.000   2.000  1.7600  1.7600  1.7600  1.7600
 18           PI  1.7600  1.7600  1.6600  1.6600  1.6600  1.6600  1.6600  1.6600  1.6100  1.6100
 19           PI  1.6100  1.6100  1.6100  1.6100  2.0200  2.0200  2.0200  2.0200  2.0200  2.0200
 20           PI  1.7400  1.7400  1.7400  1.7400  1.7400  1.7400  1.8100  1.8100  1.8100  1.8100
 21           PI  1.8100  1.8100  1.9500  1.9500  1.9500  1.9500  1.9500  1.9500  1.6500  1.6500
 22           PI  1.6500  1.6500  1.6500  1.6500  1.7900  1.7900  1.7900  1.7900  1.7900  1.7900
 23           PI   1.710   1.710   1.710   1.710   1.710   1.710  1.7300  1.7300  1.7300  1.7300
 24           PI  1.7300  1.7300  1.8600  1.8600  1.8600  1.8600  1.8600  1.8600  1.9000  1.9000
 25           PI  1.9000  1.9000  1.9000  1.9000  1.9300  1.9300  1.9300  1.9300  1.9300  1.9300
 26           PI  2.0000  2.0000  2.0000  2.0000  2.0000  2.0000  2.6300  2.6300  2.6300  2.6300
 27           PI  2.6300  2.6300  3.1000  3.1000  3.1000  3.1000  3.1000  3.1000  2.0000  2.0000
 28           PI  2.0000  2.0000  2.0000  2.0000  2.2600  2.2600  2.2600  2.2600  2.2600  2.2600
 29           PI   2.740   2.740   2.740   2.740   2.740   2.740  3.6500  3.6500  3.6500  3.6500
 30           PI  3.6500  3.6500  2.7500  2.7500  2.7500  2.7500  2.7500  2.7500  3.4700  3.4700
 31           PI  3.4700  3.4700  3.4700  3.4700  6.2300  6.2300  6.9800 17.9400  6.2300  6.2300
 32           PI  5.2300  5.2300  5.2300  5.2300  5.2300  5.2300  2.1700  2.1700  2.1700  2.1700
 33           PI  2.1700  2.1700  2.5100  2.5100  2.5100  2.5100  2.5100  2.5100  2.2900  2.2900
 34           PI  2.2900  2.2900  2.2900  2.2900  2.0300  2.0300  2.0300  2.0300  2.0300  2.0300
 35           PI   1.920   1.920   1.920   1.920   1.920   1.920  1.8400  1.8400  1.8400  1.8400
 36           PI  1.8400  1.8400  1.8100  1.8100  1.8100  1.8100  1.8100  1.8100  1.6300  1.6300
 37           PI  1.6300  1.6300  1.6300  1.6300  1.9200  1.9200  1.9200  1.9200  1.9200  1.9200
 38           PI  1.6800  1.6800  1.6800  1.6800  1.6800  1.6800  1.6200  1.6200  1.6200  1.6200
 39           PI  1.6200  1.6200  1.6500  1.6500  1.6500  1.6500  1.6500  1.6500   .0000   .0000
 40           LS              89
 41           UC    0.51    0.51
              *

 42           KK       2
 43           KM   EXISTING CONDITIONS, IMPV AREA (ROADS) (AI=0.0067 SQ MI) AT=.068 SQ MI
 44           BA  0.0067
 45           PB    3.95
 46           LS              98     100
 47           UC     .16    .032
              *
```

96 - 011

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 48           KK  COMB_E
 49           ZW   A=ARCADIA C=FLOW F=EXISTING
 50           KM   COMBINE EXISTING CONDITIONS
 51           HC       2
              *
              *
              *   PROJECT CONDITIONS
              *

 52           KK       3
 53           KM   ARCADIA DEVELOPMNET PERV AREA (AREA= 0.0098 MI^2) (TOTAL AREA = 0.068 SQ MI)
 54           BA   .0098     .00     .00
 55           PB    3.95
 56           LS              82       0
 57           UC     .05     .05
              *

 58           KK       4
 59           KM   ARCADIA DEVELOPMENT IMPV AREA (AI=0.0581 SQ MI) AT=.068 SQ MI)
 60           BA  0.0581
 61           PB    3.95
 62           LS              96     100
 63           UC    0.22     .04
              *
              *

 64           KK  COMB_P
 65           ZW   A=ARCADIA C=FLOW F=PROJECT
 66           KM   COMBINE PROJECT CONDITIONS
 67           HC       2
              *
 68           ZZ
```

96 - 011

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/29/1998  TIME  15:50:34 *
*                                      *
****************************************
```

```
***********************************
*                                 *
*   U.S. ARMY CORPS OF ENGINEERS  *
*   HYDROLOGIC ENGINEERING CENTER *
*         609 SECOND STREET       *
*      DAVIS, CALIFORNIA 95616    *
*          (916) 756-1104         *
*                                 *
***********************************
```

```
                    ARCADIA DEVELOPMENT, EXISTING AND PROJECT CONDITIONS
                    10 YR EVENT
                    SCHAAF & WHEELER

  5 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT        HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1JAN98  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2JAN98  ENDING DATE
                   NDTIME       0055  ENDING TIME
                    ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL     .08 HOURS
                   TOTAL TIME BASE   24.92 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT
  -----DSS---ZOPEN:  Version: 6-EA;  Existing File Opened
                   Unit:  71,  File: ARCA10.DSS
-----DSS---ZWRITE Unit  71; Vers.    2:  /ARCADIA/COMB_E/FLOW/31DEC1997/5MIN/EXISTING/
-----DSS---ZWRITE Unit  71; Vers.    2:  /ARCADIA/COMB_E/FLOW/01JAN1998/5MIN/EXISTING/
-----DSS---ZWRITE Unit  71; Vers.    2:  /ARCADIA/COMB_E/FLOW/02JAN1998/5MIN/EXISTING/
-----DSS---ZWRITE Unit  71; Vers.    2:  /ARCADIA/COMB_P/FLOW/31DEC1997/5MIN/PROJECT/
-----DSS---ZWRITE Unit  71; Vers.    2:  /ARCADIA/COMB_P/FLOW/01JAN1998/5MIN/PROJECT/
-----DSS---ZWRITE Unit  71; Vers.    2:  /ARCADIA/COMB_P/FLOW/02JAN1998/5MIN/PROJECT/
```

96 - 011

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1	17.	17.83	9.	5.	4.	.06		
HYDROGRAPH AT	2	4.	17.42	1.	1.	1.	.01		
Existing Condition → 2 COMBINED AT	COMB_E	19.	17.83	10.	5.	5.	.07		
HYDROGRAPH AT	3	4.	17.42	1.	1.	1.	.01		
HYDROGRAPH AT	4	33.	17.42	10.	6.	6.	.06		
2 COMBINED AT	COMB_P	37.	17.42	11.	7.	6.	.07		

Project Conditions

*** NORMAL END OF HEC-1 ***

```
-----DSS---ZCLOSE Unit:  71,   File: ARCA10.DSS
          Pointer Utilization:   .25
          Number of Records:      6
          File Size:     18.8  Kbytes
          Percent Inactive:   .00
```

96 - 011

ATTACHMENT 3

Arcadia Property
100-yr Existing and Project Conditions
HEC-1 Run

96 - 011

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/29/1998  TIME  15:49:09 *
*                                      *
****************************************
```

```
***********************************
*                                 *
*   U.S. ARMY CORPS OF ENGINEERS  *
*   HYDROLOGIC ENGINEERING CENTER *
*         609 SECOND STREET       *
*      DAVIS, CALIFORNIA 95616    *
*          (916) 756-1104         *
*                                 *
***********************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X               X
XXXXXXX  XXXX    X       XXXXX   X
X     X  X       X               X
X     X  X       X     X         X
X     X  XXXXXXX   XXXXX        XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

96 - 011

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   ARCADIA DEVELOPMENT, EXISTING AND PROJECT CONDITIONS
  2           ID   100 YR EVENT
  3           ID   SCHAAF & WHEELER
  4           IT       5 01JAN98    0000     300
  5           IO       5       0
              *

  6           KK       1
  7           KM   EXISTING CONDITIONS
  8           BA  0.0613     .00     .00
  9           PB    5.81
 10           IN       5
 11           PI    .750    .750    .750    .750    .750    .750   .8800   .8800   .8800   .8800
 12           PI   .8800   .8800  1.1200  1.1200  1.1200  1.1200  1.1200  1.1200  1.1700  1.1700
 13           PI  1.1700  1.1700  1.1700  1.1700   .9800   .9800   .9800   .9800   .9800   .9800
 14           PI  1.1500  1.1500  1.1500  1.1500  1.1500  1.1500  1.6000  1.6000  1.6000  1.6000
 15           PI  1.6000  1.6000  1.8400  1.8400  1.8400  1.8400  1.8400  1.8400  2.0600  2.0600
 16           PI  2.0600  2.0600  2.0600  2.0600  2.2000  2.2000  2.2000  2.2000  2.2000  2.2000
 17           PI   2.000   2.000   2.000   2.000   2.000   2.000  1.7600  1.7600  1.7600  1.7600
 18           PI  1.7600  1.7600  1.6600  1.6600  1.6600  1.6600  1.6600  1.6600  1.6100  1.6100
 19           PI  1.6100  1.6100  1.6100  1.6100  2.0200  2.0200  2.0200  2.0200  2.0200  2.0200
 20           PI  1.7400  1.7400  1.7400  1.7400  1.7400  1.7400  1.8100  1.8100  1.8100  1.8100
 21           PI  1.8100  1.8100  1.9500  1.9500  1.9500  1.9500  1.9500  1.9500  1.6500  1.6500
 22           PI  1.6500  1.6500  1.6500  1.6500  1.7900  1.7900  1.7900  1.7900  1.7900  1.7900
 23           PI   1.710   1.710   1.710   1.710   1.710   1.710  1.7300  1.7300  1.7300  1.7300
 24           PI  1.7300  1.7300  1.8600  1.8600  1.8600  1.8600  1.8600  1.8600  1.9000  1.9000
 25           PI  1.9000  1.9000  1.9000  1.9000  1.9300  1.9300  1.9300  1.9300  1.9300  1.9300
 26           PI  2.0000  2.0000  2.0000  2.0000  2.0000  2.0000  2.6300  2.6300  2.6300  2.6300
 27           PI  2.6300  2.6300  3.1000  3.1000  3.1000  3.1000  3.1000  3.1000  2.0000  2.0000
 28           PI  2.0000  2.0000  2.0000  2.0000  2.2600  2.2600  2.2600  2.2600  2.2600  2.2600
 29           PI   2.740   2.740   2.740   2.740   2.740   2.740  3.6500  3.6500  3.6500  3.6500
 30           PI  3.6500  3.6500  2.7500  2.7500  2.7500  2.7500  2.7500  2.7500  3.4700  3.4700
 31           PI  3.4700  3.4700  3.4700  3.4700  6.2300  6.2300  6.9800 17.9400  6.2300  6.2300
 32           PI  5.2300  5.2300  5.2300  5.2300  5.2300  5.2300  2.1700  2.1700  2.1700  2.1700
 33           PI  2.1700  2.1700  2.5100  2.5100  2.5100  2.5100  2.5100  2.5100  2.2900  2.2900
 34           PI  2.2900  2.2900  2.2900  2.2900  2.0300  2.0300  2.0300  2.0300  2.0300  2.0300
 35           PI   1.920   1.920   1.920   1.920   1.920   1.920  1.8400  1.8400  1.8400  1.8400
 36           PI  1.8400  1.8400  1.8100  1.8100  1.8100  1.8100  1.8100  1.8100  1.6300  1.6300
 37           PI  1.6300  1.6300  1.6300  1.6300  1.9200  1.9200  1.9200  1.9200  1.9200  1.9200
 38           PI  1.6800  1.6800  1.6800  1.6800  1.6800  1.6800  1.6200  1.6200  1.6200  1.6200
 39           PI  1.6200  1.6200  1.6500  1.6500  1.6500  1.6500  1.6500  1.6500   .0000   .0000
 40           LS              89
 41           UC    0.51    0.51
              *

 42           KK       2
 43           KM   EXISTING CONDITIONS, IMPV AREA (ROADS) (AI=0.0067 SQ MI) AT=.068 SQ MI
 44           BA  0.0067
 45           PB    5.81
 46           LS              98     100
 47           UC     .16    .032
              *
```

96 - 011

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  48          KK  COMB_E
  49          ZW   A=ARCADIA C=FLOW F=EXISTING
  50          KM   COMBINE EXISTING CONDITIONS
  51          HC       2
              *
              *
              *   PROJECT CONDITIONS
              *

  52          KK       3
  53          KM   ARCADIA DEVELOPMNET PERV AREA (AREA= 0.0098 MI^2) (TOTAL AREA = 0.068 SQ MI)
  54          BA   .0098     .00     .00
  55          PB    5.81
  56          LS              82       0
  57          UC     .05     .05
              *

  58          KK       4
  59          KM   ARCADIA DEVELOPMENT IMPV AREA (AI=0.0581 SQ MI) AT=.068 SQ MI)
  60          BA  0.0581
  61          PB    5.81
  62          LS              96     100
  63          UC    0.22     .04
              *
              *

  64          KK  COMB_P
  65          ZW   A=ARCADIA C=FLOW F=PROJECT
  66          KM   COMBINE PROJECT CONDITIONS
  67          HC       2
              *
  68          ZZ
```

96-011

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            SEPTEMBER 1990             *
*             VERSION 4.0               *
*                                       *
*  RUN DATE  05/29/1998  TIME  15:49:09 *
*                                       *
*****************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

```
                        ARCADIA DEVELOPMENT, EXISTING AND PROJECT CONDITIONS
                        100 YR EVENT
                        SCHAAF & WHEELER

  5 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1JAN98  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2JAN98  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL     .08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT
   -----DSS---ZOPEN:  Version: 6-EA;  Existing File Opened
                      Unit:  71,  File: ARCA100.DSS
-----DSS---ZWRITE Unit  71; Vers.    8:  /ARCADIA/COMB_E/FLOW/31DEC1997/5MIN/EXISTING/
-----DSS---ZWRITE Unit  71; Vers.    8:  /ARCADIA/COMB_E/FLOW/01JAN1998/5MIN/EXISTING/
-----DSS---ZWRITE Unit  71; Vers.    8:  /ARCADIA/COMB_E/FLOW/02JAN1998/5MIN/EXISTING/
-----DSS---ZWRITE Unit  71; Vers.    8:  /ARCADIA/COMB_P/FLOW/31DEC1997/5MIN/PROJECT/
-----DSS---ZWRITE Unit  71; Vers.    8:  /ARCADIA/COMB_P/FLOW/01JAN1998/5MIN/PROJECT/
-----DSS---ZWRITE Unit  71; Vers.    8:  /ARCADIA/COMB_P/FLOW/02JAN1998/5MIN/PROJECT/
```

96-011

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
	HYDROGRAPH AT	1	26.	17.83	14.	7.	7.	.06		
	HYDROGRAPH AT	2	6.	17.42	2.	1.	1.	.01		
Existing Conditions →	2 COMBINED AT	COMB_E	29.	17.83	16.	8.	8.	.07		
	HYDROGRAPH AT	3	7.	17.42	2.	1.	1.	.01		
	HYDROGRAPH AT	4	48.	17.42	14.	9.	9.	.06		
Project Condition →	2 COMBINED AT	COMB_P	56.	17.42	17.	10.	10.	.07		

*** NORMAL END OF HEC-1 ***

```
-----DSS---ZCLOSE Unit:  71,   File: ARCA100.DSS
          Pointer Utilization:   .25
          Number of Records:      6
          File Size:     18.9  Kbytes
          Percent Inactive:   .00
```

96-011

ATTACHMENT 4

Arcadia Property & Guadalupe River
10-yr Existing and Project Conditions
HEC-1 Run

96 - 011

Existing Conditions

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/08/1998  TIME  08:28:00 *
*                                      *
****************************************
```

```
*********************************
*                               *
*   U.S. ARMY CORPS OF ENGINEERS
*   HYDROLOGIC ENGINEERING CENTER
*         609 SECOND STREET
*      DAVIS, CALIFORNIA 95616
*          (916) 756-1104
*                               *
*********************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

96 - 011

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   UPPER GUADALUPE  10% FLOOD - W/COINCIDENTAL FREQUENCY ON RESERVOIRS
  2           ID   LOSS RATE IS ASSUMED TO BE 50% CONSTANT,DISTRIBUTION BY C.OF E. STANDARD STOR
  3           ID   BALANCING HYDROGRAPHS :IRGUKB 76 S.C.V.W.D. REGRESSION EQUATIONS. FILE:IRGUKB
  4           IT      30 01JAN98    0000     300
  5           IO       5       0

  6           KK       1
  7           KM   INFLOW HYDROGRAPH FOR CALERO RESERVOIR (SUB-AREA A-1)
  8           BA    6.99     .00     .00
  9           PB    5.44
 10           PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 11           PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 12           PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 13           PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
 14           PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 15           LU    .000    .113    .000
 16           UC   2.090   1.850
 17           BF      0.      0.  1.0000

 18           KK       1
 19           KM   BALANCED HYDROGRAPH FOR INFLOW TO CALERO RESERVOIR (SUB-AREA A-1)
 20           HB       1   1171.      48  21552.       0      0.       0      0.       0      0.

 21           KK  CALERO
 22           KM   ROUTED FLOW THROUGH CALERO RESERVOIR - INITIAL STORAGE = 9300 AC-FT
 23           RL      0.     .00
 24           RS       0    STOR   9300.     .00
 25           SV       0     700    5000    9200   10160   10682   11500   12200   12600       0
 26           SQ       0     111     163     182     185     687    2089    3991    5092       0

 27           KK       2
 28           KM   ROUTED FLOW FROM CALERO DAM TO POINT 2
 29           RL      0.     .00
 30           RS       0    STOR      0.     .00
 31           SV       0      63     138     223     430       0       0       0       0       0
 32           SQ       0     900    2980    6110   15620       0       0       0       0       0

 33           KK       2
 34           KM   RUNOFF HYDROGRAPH FOR ARROYO-CALERO CREEK (SUB-AREA B) AT POINT 2.
 35           BA    2.65     .00     .00
 36           PB    4.45
 37           LU    .000    .093    .000
 38           UC   1.250   1.175
 39           BF      0.      0.  1.0000

 40           KK       2
 41           KM   BALANCED HYDROGRAPH FOR SUB-AREA B AT POINT 2
 42           HB       1    474.      48   7104.       0      0.       0      0.       0      0.

 43           KK       2
 44           KO       5       1       0       0       0
 45           RL      0.     .00
 46           RT       1       1       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK      2
  48          KM   COMBINED RUNOFF HYDROGRAPHS OF  SUB-AREA B AND CALERO CREEK AT POINT 2
  49          HC      2

  50          KK      2
  51          KM   RUNOFF HYDROGRAPH FOR SANTA TERESA CREEK (SUB-AREA C)
  52          BA   1.99     .00     .00
  53          PB   4.29
  54          LU   .000    .089    .000
  55          UC   .905    .895
  56          BF     0.      0.  1.0000

  57          KK      2
  58          KM   BALANCED HYDROGRAPH FOR SUB-AREA C AT POINT 2  (SANTA TERESA CREEK)
  59          HB      1    360.      48   5136.       0      0.       0      0.       0      0.

  60          KK      2
  61          KO      5       1       0       0       0
  62          RL     0.     .00
  63          RT      1       1       0

  64          KK      2
  65          KM   COMBINED RUNOFF HYDROGRAPHS OF SANTA TERESA CREEK AND CALERO CREEK AT POINT 2
  66          HC      2

  67          KK      4
  68          KM   ROUTED FLOW FROM POINT 2 TO POINT 4
  69          RL     0.     .00
  70          RS      0    STOR      0.     .00
  71          SV      0      15      32      52      99       0       0       0       0       0
  72          SQ      0     900    2980    6110   15600       0       0       0       0       0

  73          KK      4
  74          KM   RUNOFF HYDROGRAPH FOR SUB-AREA D (ARROYO-CALERO AND SANTA TERESA CONFLUENCE)@
  75          BA    .76     .00     .00
  76          PB   4.29
  77          LU   .000    .089    .000
  78          UC   .410    .600
  79          BF     0.      0.  1.0000

  80          KK      4
  81          KM   BALANCED HYDROGRAPH FOR SUB-AREA D AT POINT 4
  82          HB      1    167.      48   2112.       0      0.       0      0.       0      0.

  83          KK      4
  84          KO      5       1       0       0       0
  85          RL     0.     .00
  86          RT      1       1       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 87         KK      4
 88         KM   COMBINED RUNOFF HYDROGRAPHS OF SUB-AREA D AND CALERO CREEK AT POINT 4
 89         HC      2

 90         KK      3
 91         KM   INFLOW HYDROGRAPH FOR ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
 92         BA  12.00     .00     .00
 93         PB   7.17
 94         PI    .780   .8300  1.1900  1.2300  1.0200  1.0800  1.7700  1.6200  2.2300  1.8600
 95         PI   1.440  2.2700  1.6800  1.5500  2.0500  1.6600  1.7400  2.1300  1.7700  1.6200
 96         PI   1.600  1.7900  1.8400  1.8700  1.8800  1.9900  2.6600  2.9800  1.9000  2.2900
 97         PI   3.380  3.2300  2.8700  3.4500  6.0000  5.7700  2.2100  2.4600  2.3600  2.0000
 98         PI   1.930  1.7800  2.0700  1.3200  1.8300  1.7200  1.6300  1.6000   .0000   .0000
 99         LU    .000    .149    .000
100         UC    .685   3.800
101         BF      0.      0.  1.0000

102         KK      3
103         KM   BALANCED HYDROGRAPH FOR INFLOW TO ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
104         HB      1   2277.      48  46608.       0      0.       0      0.       0      0.

105         KK  ALMADE
106         KM   ROUTED FLOW THROUGH ALMADEN RESERVOIR WITH INITIAL STORAGE = 900 AC-FT
107         RL      0.     .00
108         RS      0    STOR    900.     .00
109         SV      0     120     900    1700    1800    1930    2000    2060    2130    2340
110         SQ      0     173     219     244     246    1449    2450    3701    5027    9531

111         KK      4
112         KM   ROUTED FLOW FROM ALMADEN RESERVOIR DAM (POINT 3) TO POINT 4
113         RL      0.     .00
114         RS      0    STOR      0.     .00
115         SV      0      79     162     389     892       0       0       0       0       0
116         SQ      0     960    3040    6750   24660       0       0       0       0       0

117         KK      4
118         KM   RUNOFF HYDROGRAPH FOR SUB-AREA F
119         BA   4.24     .00     .00
120         PB   4.92
121         PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
122         PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
123         PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
124         PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
125         PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
126         LU    .000    .103    .000
127         UC   1.670   1.420
128         BF      0.      0.  1.0000

129         KK      4
130         KM   BALANCED HYDROGRAPH FOR SUB-AREA F AT POINT 4
131         HB      1    743.      48  12288.       0      0.       0      0.       0      0.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 132          KK      4
 133          KO      5       1       0       0       0
 134          RL     0.     .00
 135          RT      1       1       0

 136          KK      4
 137          KM   COMBINED HYDROGRAPH FOR SUB-AREA F AND ALAMITOS CREEK AT POINT 4
 138          HC      2

 139          KK      4
 140          KM   COMBINED HYDROGRAPH FOR CALERO CREEK AND ALAMITOS CREEK AT POINT 4
 141          HC      2

 142          KK      5
 143          KM   ROUTED FLOW FROM POINT 4 TO POINT 5 (ALAMITOS CREEK)
 144          RL     0.     .00
 145          RS      0    STOR      0.     .00
 146          SV      0      17      35      87     198       0       0       0       0       0
 147          SQ      0    1050    3340    7630   28400       0       0       0       0       0

 148          KK      5
 149          KM   RUNOFF HYDROGRAPH FOR SUB-AREA G
 150          BA    .74     .00     .00
 151          PB   4.21
 152          LU   .000    .088    .000
 153          UC   .280    .700
 154          BF     0.      0.  1.0000

 155          KK      5
 156          KM   BALANCED HYDROGRAPH FOR SUB-AREA G AT POINT 5
 157          HB      1    153.      48   1920.       0      0.       0      0.       0      0.

 158          KK      5
 159          KO      5       1       0       0       0
 160          RL     0.     .00
 161          RT      1       1       0

 162          KK      5
 163          KM   COMBINED HYDROGRAPH FOR SUB-AREA G AND ALAMITOS CREEK AT POINT 5
 164          HC      2

 165          KK      5
 166          KM   RUNOFF HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 167          BA   2.28     .00     .00
 168          PB   4.61
 169          LU   .000    .096    .000
 170          UC   .700   1.000
 171          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK       5
 173          KM   BALANCED HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 174          HB       1    412.      48   6192.       0      0.       0      0.       0      0.

 175          KK       5
 176          KO       5       1       0       0       0
 177          RL      0.     .00
 178          RT       1       1       0

 179          KK       5
 180          KM   COMBINED HYDROGRAPH FOR RANDOL CREEK AND ALAMITOS CREEK AT POINT 5
 181          HC       2

 182          KK       6
 183          KM   ROUTED FLOW FOR ALAMITOS CREEK FROM POINT 5 TO POINT 6
 184          RL      0.     .00
 185          RS       0    STOR      0.     .00
 186          SV       0      11      23      64     157     292       0       0       0       0
 187          SQ       0     520    1650    3540   14500   37400       0       0       0       0

 188          KK       6
 189          KM   RUNOFF HYDROGRAPH FOR SUB-AREA H
 190          BA     .77     .00     .00
 191          PB    4.29
 192          LU    .000    .089    .000
 193          UC    .410    .820
 194          BF      0.      0.  1.0000

 195          KK       6
 196          KM   BALANCED HYDROGRAPH FOR SUB-AREA H AT POINT 6
 197          HB       1    156.      48   2016.       0      0.       0      0.       0      0.

 198          KK       6
 199          KO       5       1       0       0       0
 200          RL      0.     .00
 201          RT       1       1       0

 202          KK       6
 203          KM   COMBINED HYDROGRAPH FOR SUB-AREA H AND ALAMITOS CREEK AT POINT 6
 204          HC       2

 205          KK       6
 206          KM   RUNOFF HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 207          BA    1.38     .00     .00
 208          PB    4.45
 209          LU    .000    .093    .000
 210          UC    .700    .710
 211          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK       6
 213          KM   BALANCED HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 214          HB       1    280.      48   3840.       0      0.       0      0.       0      0.

 215          KK       6
 216          KO       5       1       0       0       0
 217          RL      0.     .00
 218          RT       1       1       0

 219          KK       6
 220          KM   COMBINED HYDROGRAPH FOR GREYSTONE CREEK AND ALAMITOS CREEK AT POINT 6
 221          HC       2

 222          KK       7
 223          KM   ROUTED FLOW FROM POINT 6 TO POINT 7
 224          RL      0.     .00
 225          RS       0    STOR      0.     .00
 226          SV       0      12      25      60     137     250       0       0       0       0
 227          SQ       0     303     975    2275    8200   20000       0       0       0       0

 228          KK       7
 229          KM   RUNOFF HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 230          BA    3.08     .00     .00
 231          PB    4.45
 232          LU    .000    .093    .000
 233          UC   1.070   1.260
 234          BF      0.      0.  1.0000

 235          KK       7
 236          KM   BALANCED HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 237          HB       1    503.      48   7776.       0      0.       0      0.       0      0.

 238          KK       7
 239          KO       5       1       0       0       0
 240          RL      0.     .00
 241          RT       1       1       0

 242          KK       7
 243          KM   COMBINED HYDROGRAPH FOR GOLF CREEK AND ALAMITOS CREEK AT POINT 7
 244          HC       2

 245          KK       7
 246          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 247          BA     .53     .00     .00
 248          PB    4.21
 249          LU    .000    .088    .000
 250          UC    .650    .820
 251          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK       7
 253          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 254          HB       1    130.      48   1536.       0      0.       0      0.       0      0.

 255          KK       7
 256          KO       5       1       0       0       0
 257          RL      0.     .00
 258          RT       1       1       0

 259          KK       7
 260          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10 AND ALAMITOS CREEK AT POINT 7
 261          HC       2

 262          KK      10
 263          KM   ROUTED FLOW FROM POINT 7 TO POINT 10
 264          RL      0.     .00
 265          RS       0    STOR      0.     .00
 266          SV       0      23      49      78     145     246       0       0       0       0
 267          SQ       0     527    1721    3500    8700   18500       0       0       0       0

 268          KK      10
 269          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 270          BA     .55     .00     .00
 271          PB    4.12
 272          LU    .000    .086    .000
 273          UC    .610    .925
 274          BF      0.      0.  1.0000

 275          KK      10
 276          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 277          HB       1    131.      48   1536.       0      0.       0      0.       0      0.

 278          KK      10
 279          KO       5       1       0       0       0
 280          RL      0.     .00
 281          RT       1       1       0

 282          KK      10
 283          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10A AND ALAMITOS CREEK AT POINT 10
 284          HC       2

 285          KK       8
 286          KM   INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR (SUB-AREA M-12) AT POINT 8
 287          BA    5.96     .00     .00
 288          PB    6.34
 289          PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 290          PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 291          PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 292          PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 293          PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 294          LU    .000    .132    .000
 295          UC    .680   1.960
 296          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 297          KK       8
 298          KM   BALANCED INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR WITH 1976 REGRESSION EQTS.
 299          HB       1   1175.      48  21312.       0      0.       0      0.       0      0.

 300          KK  GUADAL
 301          KM   ROUTED FLOW THROUGH GUADALUPE RESERVOIR - INITIAL STORAGE=3150 AC-FT
 302          RL      0.     .00
 303          RS       0    STOR   3150.     .00
 304          SV       0     240    1800    3300    3740    3960    4200    4400    4700       0
 305          SQ       0     150     208     231     237    1788    4810    7469   10614       0

 306          KK       9
 307          KM   ROUTED FLOW FOR GUADALUPE CREEK FROM DAM (POINT 8 TO POINT 9)
 308          RL      0.     .00
 309          RS       0    STOR      0.     .00
 310          SV       0      48      99     237     544       0       0       0       0       0
 311          SQ       0     960    3000    6700   24000       0       0       0       0       0

 312          KK       9
 313          KM   RUNOFF HYDROGRAPH FOR PHEASANT CREEK AND GUADALUPE CREEK (SUB-AREA N-13) AT 9
 314          BA    6.75     .00     .00
 315          PB    5.93
 316          LU    .000    .124    .000
 317          UC    .660   2.650
 318          BF      0.      0.  1.0000

 319          KK       9
 320          KM   BALANCED HYDROGRAPH FOR SUB-AREA N-13 WITH 1976 REGRESSION EQUATIONS
 321          HB       1   1219.      48  20928.       0      0.       0      0.       0      0.

 322          KK       9
 323          KO       5       1       0       0       0
 324          RL      0.     .00
 325          RT       1       1       0

 326          KK       9
 327          KM   COMBINE LOCAL RUNOFF WITH GUADALUPE HYDROGRAPH AT POINT 9
 328          HC       2

 329          KK      10
 330          KM   ROUTE FROM POINT 9 TO POINT 10 (CONFLUENCE WITH ALAMITOS CREEK)
 331          RL      0.     .00
 332          RS       0    STOR      0.     .00
 333          SV       0      92     197     310     585     995       0       0       0       0
 334          SQ       0     527    1720    3500    8700   18500       0       0       0       0

 335          KK      10
 336          KM   RUNOFF HYDROGRAPH FOR SUB-AREA O-13A (GUADALUPE CREEK)
 337          BA    2.53     .00     .00
 338          PB    4.45
 339          PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 340          PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 341          PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 342          PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 343          PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 344          LU    .000    .093    .000
 345          UC   1.730    .895
 346          BF      0.      0.  1.0000

 347          KK      10
 348          KM   BALANCED HYDROGRAPH FOR SUB-AREA O-13A AT POINT 10
 349          HB       1    464.      48   6864.       0      0.       0      0.       0      0.

 350          KK      10
 351          KO       5       1       0       0       0
 352          RL      0.     .00
 353          RT       1       1       0

 354          KK      10
 355          KM   COMBINE LOCAL RUNOFF FROM SUB-AREA O-13A WITH GUADALUPE CREEK AT POINT 10
 356          HC       2

 357          KK      10
 358          KO       1       0       0       0       0
 359          KM   COMBINED HYDROGRAPH FOR GUADALUPE AND ALAMITOS CONFLUENCE AT POINT 10
 360          HC       2
              * ******************************************************************************
              * ID LOWER GUADALUPE 10% HYDROGRAPHS. INCIDENTAL RESERVOIRS STORAGES. AUG 1977.
              * ID LOSS RATES ASSUMED CONSTANT: 50%-PRVS, 10%-IMPRVS. C.OF E. STORM DISTRIBUTI
              * ID SCVWD 1976 REGIONAL EQUATIONS AND URBAN METHODOLOGY USED.
              * IT    30       0       0     101
              * IO     5       0
              * KK     1
              * KM  10 YEAR HYDROGRAPH FROM UPPER GUADALUPE AND ALAMITOS CREEKS AT BELOW CONFL
              * BA 53.20     .00     .00
              * QI116.00  116.00  190.00  265.00  343.00  436.00  529.00  609.00  694.00  825.
              * QI  1063    1298    1484    1583    1609    1599    1602    1641    1698    17
              * QI  1757    1744    1719    1692    1682    1694    1724    1793    1967    22
              * QI  2383    2512    2702    2990    3265    3616    4223    5000    5309    50
              * QI  4471    3950    3523    3169    2967    2913    2923    2948    2956    29
              * QI  2746    2513    2249    2018    1821    1667    1539    1427    1315    12
              * QI  1116    1033     958     891     834     797     766     739     718     7
              * QI692.00  684.00  679.00  674.00  671.00  669.00  667.00  665.00  663.00  662.
              * QI661.00  660.00  660.00  659.00  658.00  657.00  657.00  656.00  656.00  655.
              * QI655.00  654.00  654.00  653.00  653.00  652.00  652.00  651.00  651.00  650.
              * QI650.00     .00     .00     .00     .00     .00     .00     .00     .00     .

 361          KK       2
 362          KM   ROUTE FLOW FROM GUADALUPE-ALAMITOS CONFL. DOWN TO ROSS CREEK CONFL.
 363          RL      0.     .00
 364          RS       1    STOR      0.     .00
 365          SV       0      77     116     193     308       0       0       0       0       0
 366          SQ       0    2300    4100    9000   18000       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 367        KK       2
 368        KO       1
 369        KM   ARCADIA PROPERTY LOCAL AREA EXISTING CONDITIONS
 370        ZR    =QI A=ARCADIA B=COMB_E C=FLOW E=5MIN F=EXISTING
            *

 371        KK  COMB_E
 372        KO       1
 373        KM   COMBINE ACRADIA LOCAL PROPERTY WITH GUADALUPE RIVER
 374        HC       2
            *

 375        KK       2
 376        KM   RUNOFF HYDROGRAPH AREA G (AI=1.00, TOTAL=2.09) AT POINT 2
 377        BA    1.00     .00     .00
 378        PB    4.04
 379        PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 380        PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 381        PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 382        PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
 383        PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 384        LU    .000    .017    .000
 385        UC   1.500    .500
 386        BF      0.      0.  1.0000

 387        KK       2
 388        KM   RUNOFF HYDROGRAPH AREA G (AP=1.09, TOTAL=2.09) AT POINT 2
 389        BA    1.09     .00     .00
 390        PB    4.04
 391        LU    .000    .084    .000
 392        UC   3.500    .500
 393        BF      0.      0.  1.0000

 394        KK       2
 395        KM   COMBINE IMPRVE & PRVS HYDROGRAPHS FROM AREA G AT POINT 2.(ROSS CREEK CONFL.)
 396        HC       2

 397        KK       2
 398        KM  ROUTE RUNOFF HYDROGRAPH FROM AREA G THRU STORMDRAINS AT ROSS CREEK CONFL  PT.2
 399        RL      0.     .00
 400        RS       1    STOR      0.     .00
 401        SV       0      21     105     209     836    2090       0       0       0       0
 402        SQ       0     217     228     242     325     493       0       0       0       0

 403        KK       2
 404        KM   COMBINE ROUTED URBAN FLOW AREA G WITH GUADALUPE R. AT POINT 2 ABOVE ROSS CRK
 405        HC       2

 406        KK    ROSS
 407        KM    10 YEAR HYDROGRAPH FROM ROSS CREEK AT CONFLUENCE WITH GUADALUPE RIVER  PT.2
 408        BA    9.96     .00     .00
 409        QI    6.00    6.00   13.00   24.00   38.00   54.00   72.00  144.00  197.00  245.00
 410        QI  311.00  398.00  516.00  563.00  576.00  565.00  563.00  575.00  595.00  610.00
 411        QI  611.00  601.00  587.00  573.00  566.00  569.00  579.00  608.00  684.00  789.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 412          QI  862.00  900.00  945.00  999.00 1041.00 1082.00 1174.00 1265.00 1291.00 1263.00
 413          QI    1226    1164    1109    1070    1024     988     961     939     917     898
 414          QI  878.00  843.00  708.00  521.00  357.00  271.00  185.00  124.00   84.00   60.00
 415          QI   50.00   48.00   45.00   42.00   38.00   35.00   31.00   28.00   25.00   22.00
 416          QI   20.00   18.00   16.00   14.00   13.00   12.00   11.00   10.00    9.00    8.00
 417          QI    7.00    6.00    6.00    5.00    5.00    4.00    4.00    3.00    3.00    3.00
 418          QI    2.00    2.00    2.00    2.00    1.00    1.00    1.00    1.00    1.00    1.00
 419          QI    1.00     .00     .00     .00     .00     .00     .00     .00     .00     .00

 420          KK  GU+ROS
 421          KO       2
 422          KM   COMBINE ROSS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH   POINT 2
 423          HC       2

 424          KK       3
 425          KM  ROUTE GUADALUPE RIVER FROM ROSS CREEK DOWN TO CONFLUENCE WITH CANOAS CRK  PT.3
 426          RL      0.     .00
 427          RS       1    STOR      0.     .00
 428          SV       0      84     127     211     338       0       0       0       0       0
 429          SQ       0    2300    4100    9000   18000       0       0       0       0       0

 430          KK       3
 431          KM   RUNOFF HYDROGRAPH AREA H (AI=2.84,TOTAL=4.73) AT POINT 3.
 432          BA    2.84     .00     .00
 433          PB    4.04
 434          LU    .000    .017    .000
 435          UC   1.750    .970
 436          BF      0.      0.  1.0000

 437          KK       3
 438          KM   RUNOFF HYDROGRAPH AREA H (AP=1.89,TOTAL=4.73) AT POINT 3.
 439          BA    1.89     .00     .00
 440          PB    4.04
 441          LU    .000    .084    .000
 442          UC   3.750    .640
 443          BF      0.      0.  1.0000

 444          KK       3
 445          KM  COMBINE IMPRVS : PRVS HYDROGRAPHS FROM AREA H AT CANOAS CREEK CONFL. POINT 3
 446          HC       2

 447          KK       3
 448          KM  ROUTE HYDROGRAPH FROM AREA H THRU STORMDRAINS AT  POINT 3  JUST ABOVE CANOAS C
 449          RL      0.     .00
 450          RS       1    STOR      0.     .00
 451          SV       0      47     237     473    1892    4730       0       0       0       0
 452          SQ       0     490     516     547     736    1115       0       0       0       0

 453          KK       3
 454          KM   COMBINE ROUTED URBAN FLOW AREA H WITH GUADALUPE R. AT PT.3 ABOVE CANOAS CREEK
 455          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 456          KK       4
 457          KM   CANOAS CREEK - AREA A (AI=1.91,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
 458          BA    1.91     .00     .00
 459          PB    4.12
 460          LU    .000    .017    .000
 461          UC   1.000   1.200
 462          BF      0.      0.  1.0000

 463          KK       4
 464          KM   CANOAS CREEK - AREA A (AP=2.65,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
 465          BA    2.65     .00     .00
 466          PB    4.12
 467          LU    .000    .086    .000
 468          UC   3.000   1.700
 469          BF      0.      0.  1.0000

 470          KK       4
 471          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA A AT POINT 4 (COTTLE ROAD).
 472          HC       2

 473          KK       4
 474          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA A THRU STORMDRAINS AT PT.4  COTTLE RD
 475          RL      0.     .00
 476          RS       1    STOR      0.     .00
 477          SV       0      46     228     456    1824    4560       0       0       0       0
 478          SQ       0     473     497     527     710    1075       0       0       0       0

 479          KK       5
 480          KM  CANOAS CREEK--ROUTE FLOW FROM COTTLE RD DOWN TO SANTA TERESA  POINT 5
 481          RL      0.     .00
 482          RS       1    STOR      0.     .00
 483          SV       0       7      18      32      71     190       0       0       0       0
 484          SQ       0      72     255     563    1622    6000       0       0       0       0

 485          KK       5
 486          KM   CANOAS CREEK - AREA B (AI=0.87,TOTAL=2.85) AT POINT 5.(SANTA TERESA)
 487          BA     .87     .00     .00
 488          PB    4.12
 489          LU    .000    .017    .000
 490          UC   1.000    .550
 491          BF      0.      0.  1.0000

 492          KK       5
 493          KM   CANOAS CREEK - AREA B (AP=1.98,TOTAL=2.85) AT POINT 5.(SANTA TERESA).
 494          BA    1.98     .00     .00
 495          PB    4.12
 496          LU    .000    .086    .000
 497          UC   3.000   1.200
 498          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  499         KK       5
  500         KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA B AT POINT 5 (SANTA TERESA).
  501         HC       2

  502         KK       5
  503         KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA B THRU STORMDRAINS AT PT.5 SANTA TERESA
  504         RL      0.     .00
  505         RS       1    STOR      0.     .00
  506         SV       0      29     143     285    1140    2850       0       0       0       0
  507         SQ       0     295     311     330     444     672       0       0       0       0

  508         KK       5
  509         KM  CANOAS CREEK--COMBINE ROUTED URBAN AREA B WITH  CHANNEL FLOW AT PT.5 SNTA TRSA
  510         HC       2

  511         KK       6
  512         KM  ROUTE CANOAS CREEK FROM PT.5 SANTA TERESA TO PT.6  BLOSSOM HILL
  513         RL      0.     .00
  514         RS       1    STOR      0.     .00
  515         SV       0       3       7      13      29      76       0       0       0       0
  516         SQ       0      72     255     563    1622    6000       0       0       0       0

  517         KK       6
  518         KM   CANOAS CREEK - AREA C (AI=2.05,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
  519         BA    2.05     .00     .00
  520         PB    4.04
  521         LU    .000    .017    .000
  522         UC   1.200   1.200
  523         BF      0.      0.  1.0000

  524         KK       6
  525         KM   CANOAS CREEK - AREA C (AP=1.36,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
  526         BA    1.36     .00     .00
  527         PB    4.04
  528         LU    .000    .084    .000
  529         UC   3.200    .800
  530         BF      0.      0.  1.0000

  531         KK       6
  532         KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA C AT POINT 6 (BLOSSOM HILL).
  533         HC       2

  534         KK       6
  535         KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA C THRU STORMDRAINS AT PT.6  BLOSSOM HILL
  536         RL      0.     .00
  537         RS       1    STOR      0.     .00
  538         SV       0      34     171     341    1364    3410       0       0       0       0
  539         SQ       0     354     372     394     531     804       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 540          KK      6
 541          KM   CANOAS CREEK - AREA D (AI=0.83,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
 542          BA    .83     .00     .00
 543          PB   4.04
 544          LU   .000    .017    .000
 545          UC   .800    .800
 546          BF     0.      0.  1.0000

 547          KK      6
 548          KM   CANOAS CREEK - AREA D (AP=0.86,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
 549          BA    .86     .00     .00
 550          PB   4.04
 551          LU   .000    .084    .000
 552          UC  2.800    .800
 553          BF     0.      0.  1.0000

 554          KK      6
 555          KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA D AT POINT 6 (BLOSSOM HILL).
 556          HC      2

 557          KK      6
 558          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA D THRU STORMDRAINS AT PT.6  BLOSSOM HILL
 559          RL     0.     .00
 560          RS      1    STOR      0.     .00
 561          SV      0      17      85     169     676    1690       0       0       0       0
 562          SQ      0     175     184     195     263     398       0       0       0       0

 563          KK      6
 564          KM  COMBINE ROUTED URBAN AREAS C&D WITH CANOAS CREEK AT POINT 6  BLOSSOM HILL RD.
 565          HC      3

 566          KK      7
 567          KM  ROUTE CANOAS CREEK FROM PT.6 BLOSSOM HILL TO PT.7  CAPITOL EXPWY
 568          RL     0.     .00
 569          RS      1    STOR      0.     .00
 570          SV      0       6      16      28      61     162       0       0       0       0
 571          SQ      0      72     255     563    1622    6000       0       0       0       0

 572          KK      7
 573          KM   CANOAS CREEK - AREA E (AI=3.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 574          BA   3.02     .00     .00
 575          PB   3.95
 576          LU   .000    .016    .000
 577          UC  1.300   1.500
 578          BF     0.      0.  1.0000

 579          KK      7
 580          KM   CANOAS CREEK - AREA E (AP=2.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 581          BA   2.02     .00     .00
 582          PB   3.95
 583          LU   .000    .082    .000
 584          UC  3.300   1.000
 585          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 586          KK       7
 587          KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA E AT POINT 7 (CAPITOL EXPRESSWAY
 588          HC       2

 589          KK       7
 590          KM  CANOAS CREEK--ROUTE HYDRGRPH FROM AREA E THRU STRMDRANS AT PT.7 CAPITOL EXPWY
 591          RL      0.     .00
 592          RS       1    STOR      0.     .00
 593          SV       0      50     252     504    2016    5040       0       0       0       0
 594          SQ       0     522     549     583     785    1188       0       0       0       0

 595          KK       7
 596          KM  COMBINE ROUTED URBAN AREA E WITH CANOAS CREEK AT POINT 7 CAPITOL  EXPWY
 597          HC       2

 598          KK       3
 599          KM  ROUTE CANOAS CREEK FROM PT.7 CAPITOL EXPWY TO PT.3  GUADALUPE RIVER CONFLUENCE
 600          RL      0.     .00
 601          RS       1    STOR      0.     .00
 602          SV       0       6      16      28      61     162       0       0       0       0
 603          SQ       0      72     255     563    1622    6000       0       0       0       0

 604          KK       3
 605          KM   CANOAS CREEK - AREA F (A=1.07 RURAL) AT GUADALUPE RIVER CONFLUENCE).
 606          BA    1.07     .00     .00
 607          PB    3.95
 608          LU    .000    .082    .000
 609          UC   2.000    .760
 610          BF      0.      0.  1.0000

 611          KK       3
 612          HB       1    199.      48   2832.       0      0.       0      0.       0      0.

 613          KK       3
 614          RL      0.     .00
 615          RT       1       1       0

 616          KK       3
 617          KM  COMBINE HYDROGRAPH FROM AREA F WITH CANOAS CREEK AT PT.3 CONFL. WITH GUADALUPE
 618          HC       2

 619          KK  GU+CAN
 620          KO       2
 621          KM  COMBINE CANOAS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH  AT POINT 3
 622          HC       2

 623          KK       8
 624          KM  ROUTE GUADALUPE RIVER FROM CONFL. WITH CANOAS CRK TO MINNESOTA-ALMA PT.8
 625          RL      0.     .00
 626          RS       1    STOR      0.     .00
 627          SV       0      37     110     183     294     367       0       0       0       0
 628          SQ       0     800    3600    7400   14000   16000       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 629          KK       8
 630          KM   RUNOFF HYDROGRAPH FOR AREA I (AI=2.42,TOTAL=3.46) AT POINT 8.
 631          BA    2.42     .00     .00
 632          PB    3.87
 633          LU    .000    .016    .000
 634          UC   1.400   1.050
 635          BF      0.      0.  1.0000

 636          KK       8
 637          KM   RUNOFF HYDROGRAPH FOR AREA I (AP=1.04,TOTAL=3.46) AT POINT 8.
 638          BA    1.04     .00     .00
 639          PB    3.87
 640          LU    .000    .081    .000
 641          UC   3.400    .500
 642          BF      0.      0.  1.0000

 643          KK       8
 644          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA I AT PT.8  MINNESOTA-ALMA AVE.
 645          HC       2

 646          KK       8
 647          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA I THRU STORMDRAINS AT PT.8 MINNESOTA-ALMA
 648          RL      0.     .00
 649          RS       1    STOR      0.     .00
 650          SV       0      35     173     346    1384    3460       0       0       0       0
 651          SQ       0     359     377     400     539     815       0       0       0       0

 652          KK       8
 653          KM  COMBINE ROUTED URBAN FLOW AREA I WITH GUADALUPE R. AT PT.8  MINNESOTA-ALMA
 654          HC       2

 655          KK       9
 656          KM  ROUTE GUADALUPE RIVER FROM PT.8 MINNESOTA-ALMA  TO CONFL. WITH LOS GATOS PT.9
 657          RL      0.     .00
 658          RS       1    STOR      0.     .00
 659          SV       0      47     140     234     374     468       0       0       0       0
 660          SQ       0     800    3600    7400   14000   16000       0       0       0       0

 661          KK       9
 662          KM   RUNOFF HYDROGRAPH FOR AREA J (AI=2.59,TOTAL=3.24) AT POINT 9.
 663          BA    2.59     .00     .00
 664          PB    3.69
 665          LU    .000    .015    .000
 666          UC   1.700    .920
 667          BF      0.      0.  1.0000

 668          KK       9
 669          KM   RUNOFF HYDROGRAPH FOR AREA J (AP=0.65,TOTAL=3.24) AT POINT 9.
 670          BA     .65     .00     .00
 671          PB    3.69
 672          LU    .000    .077    .000
 673          UC   3.700    .500
 674          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

675           KK       9
676           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA J AT PT.9 CONFL. WITH LOS GATOS
677           HC       2

678           KK       9
679           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA J THRU STORMDRAINS AT PT.9 LOS GATOS  CONFL.
680           RL      0.     .00
681           RS       1    STOR      0.     .00
682           SV       0      32     162     324    1296    3240       0       0       0       0
683           SQ       0     336     353     375     504     764       0       0       0       0

684           KK       9
685           KM  COMBINE ROUTED URBAN FLOW AREA J WITH GUADALUPE R. AT PT.9 CONFL WITH LOS GATO
686           HC       2
              * ******************************************************************************
              * IDLOS GATOS CREEK  WATERSHED TEN YEAR FLOOD HYDROGRAPHS  C.OF E. STORM DIST.
              * IDURBAN METHODOLOGY STORMDRAIN STORAGE-DISCHARGE CURVE LOSS RATES 50%PERV10%IM
              * IDELSMAN,VASONA ARE FULL LEXINGTON COIN. FREQ. 15000     FILE: ENGDAT/IRLGKB
              * IT    60       0       0      51
              * IO     5       0

687           KK       1
688           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LAKE ELSMAN  POINT 1    (AREA  A)
689           BA    9.91     .00     .00
690           PB    8.66
              * PI 1.630  2.2900  2.1300  3.4400  4.2600  3.7600  3.2700  3.7600  3.7600  3.44
              * PI 3.440  3.7600  3.9300  5.7300  4.2600  6.3900  6.2200 11.4600  4.5800  4.42
              * PI 3.760  3.4400  3.6000  3.2700   .0000   .0000   .0000   .0000   .0000   .00
691           PI     .75     .88    1.12    1.17     .98    1.15     1.6    1.84    2.06     2.2
692           PI       2    1.76    1.66    1.61    2.02    1.74    1.81    1.95    1.65    1.79
693           PI    1.71    1.73    1.86    1.90    1.93       2    2.63    3.10       2    2.26
694           PI    2.74    3.65    2.75    3.47    6.23    5.23    2.17    2.51    2.29    2.03
695           PI    1.92    1.84    1.81    1.63    1.92    1.68    1.62    1.65
696           LU    .000    .180    .000
697           UC   1.100   2.150
698           UA    .150   2.650   7.660   9.910    .000    .000    .000    .000    .000     .0
699           BF      0.      0.  1.0000

700           KK       1
701           KM  BALANCED HYDROGRAPH INFLOW TO LAKE ELSMAN  AREA A
702           HB       1   2365.      48   55354       0      0.       0      0.       0      0.

703           KK  ELSMAN
704           KM  ROUTE FLOW THRU LAKE ELSMAN  POINT 1    FULL CONDITION
705           RL      0.     .00
706           RS       0    STOR   6150.     .00
707           SV       0    6150    6250    6440    6640    6825    7020    7210    7405    7500
708           SQ       0       0     196    1017    2174    3577    5174    6939    8850    9856
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 709          KK       2
 710          KM  ROUTE LAKE ELSMAN OUTFLOW DOWN TO LEXINGTON DAM  POINT 2
 711          RL      0.     .00
 712          RS       1    STOR      0.     .00
 713          SV       0      51     101     152     253     379     505       0       0       0
 714          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 715          KK       2
 716          KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM  POINT 2  (AREA B)
 717          BA   27.61     .00     .00
 718          PB    7.61
              * PI 1.610  2.4200  2.1000  3.3900  4.1900  3.7100  3.2300  3.7100  3.8700  3.39
              * PI 3.390  3.7100  3.8700  5.6400  4.1900  6.6100  6.2900 11.7700  4.6700  4.36
              * PI 3.710  3.3900  3.5500  3.2300   .0000   .0000   .0000   .0000   .0000   .00
 719          PI     .78     .83    1.19    1.23    1.02    1.08    1.77    1.62    2.23    1.86
 720          PI    1.44    2.27    1.68    1.55    2.05    1.66    1.74    2.13    1.77    1.62
 721          PI     1.6    1.79    1.84    1.87    1.88    1.99    2.66    2.98     1.9    2.29
 722          PI    3.38    3.23    2.87    3.45       6    5.77    2.21    2.46    2.36       2
 723          PI    1.93    1.78    2.07    1.32    1.83    1.72    1.63     1.6
 724          LU    .000    .160    .000
 725          UC   2.600   5.400
 726          UA    .670   1.300   4.880  10.620  17.470  23.260  27.610    .000    .000    .000
 727          BF      0.      0.  1.0000

 728          KK       2
 729          KM  BALANCED HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM   AREA B
 730          HB       1   4196.      48  108004       0      0.       0      0.       0      0.

 731          KK       2
 732          KO       5       1       0       0       0
 733          RL      0.     .00
 734          RT       1       1       0

 735          KK       2
 736          KM  COMBINE LOCAL INFLOW TO LEXINGTON WITH ROUTED FLOW FROM ELSMAN AT POINT 2
 737          HC       2

 738          KK  LEXING
 739          KM  ROUTE COMBINED FLOW THRU LEXINGTON RESERVOIR          COIN. FREQ. 15000
 740          RL      0.     .00
 741          RS       0    STOR  15000.     .00
 742          SV       0   20251   21069   21904   22758   23630   24521   26365       0       0
 743          SQ       0       0    1500    4300    8000   12200   17200   28800       0       0

 744          KK       3
 745          KM  ROUTE LEXINGTON OUTFLOW DOWN TO VASONA DAM  POINT 3
 746          RL      0.     .00
 747          RS       1    STOR      0.     .00
 748          SV       0      83     165     248     413     620     826       0       0       0
 749          SQ       0     500    1500    2500    6500   13000   22000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 750          KK       3
 751          KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO VASONA RES.   AREA C  AT POINT 3
 752          BA    6.46     .00     .00
 753          PB    6.07
              * PI 1.590  2.3800  2.2300  3.1800  4.2800  3.6600  3.1800  3.6600  3.8200  3.34
              * PI 3.340  3.6600  3.8200  5.7200  4.1300  6.6800  6.5200 12.0800  4.6100  4.28
              * PI 3.660  3.5000  3.5000  3.1800   .0000   .0000   .0000   .0000   .0000   .00
 754          PI     .75     .84    1.16    1.22    1.13     1.1     1.4    1.78    2.02    2.26
 755          PI    2.14    1.52    1.78     1.4    1.85    1.81    1.84    1.98    1.67    1.73
 756          PI    1.63    1.71    2.04    1.72    1.93    1.89    2.61    3.11    1.74    2.39
 757          PI    2.91    3.77    3.03    3.49    6.61    5.67    2.43    2.18    2.12    2.16
 758          PI       2    1.66    1.68    1.82    1.88    1.67    1.58     1.6
 759          LU    .000    .130   3.000
 760          UC   1.500   1.670
 761          BF      0.      0.  1.0000

 762          KK       3
 763          KM  BALANCED HYDROGRAPH LOCAL INFLOW TO VASONA RES.  AREA C   POINT 3
 764          HB       1   1190.      48   22710       0      0.       0      0.       0      0.

 765          KK       3
 766          KO       5       1       0       0       0
 767          RL      0.     .00
 768          RT       1       1       0

 769          KK       3
 770          KM  COMBINE LOCAL INFLOW TO VASONA WITH ROUTED FLOW FROM LEXINGTON  AT POINT 3
 771          HC       2

 772          KK  VASONA
 773          KM  ROUTE COMBINED FLOW THRU VASONA RES.   AT POINT 3  FULL CONDITION
 774          RL      0.     .00
 775          RS       0    STOR    410.     .00
 776          SV       0     410     475     538     607     678     750     840    1000       0
 777          SQ       0       0    1000    2000    4000    6000    8000   11000   17000       0

 778          KK       4
 779          KM  ROUTE VASONA OUTFLOW DOWN TO CAMDEN AVE  POINT 4
 780          RL      0.     .00
 781          RS       1    STOR      0.     .00
 782          SV       0      51     101     152     253     379     505       0       0       0
 783          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 784          KK       4
 785          KM  RUNOFF HYDROGRAPH LOCAL AT CAMDEN   AREA D  AT POINT 4
 786          BA    2.17     .00     .00
 787          PB    4.45
              * PI 1.570  2.3500  2.1900  3.1400  4.2300  3.6000  3.1400  3.7600  3.7600  3.29
              * PI 3.290  3.6000  3.7600  5.6500  4.2300  6.7400  6.5900 12.3900  4.7000  4.23
              * PI 3.600  3.4500  3.4500  3.2900   .0000   .0000   .0000   .0000   .0000   .00
 788          PI     .75     .82    1.13    1.22    1.12    1.07    1.49    1.65    1.98    2.25
 789          PI    1.72    1.78     1.6    1.54    1.85    1.91    1.89    1.87    1.64    1.65
 790          PI    1.75    1.54    1.79    1.81    1.69    2.07    2.51     3.2    1.75    2.48
 791          PI    3.12    3.62    2.79     3.8    5.78    6.61    2.55    2.15    2.17    2.06
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 792          PI    1.82    1.88    1.56    1.91    1.72    1.73    1.51    1.78
 793          LU    .000    .090   4.000
 794          UC   1.100    .820
 795          BF      0.      0.  1.0000

 796          KK       4
 797          KM  BALANCED LOCAL RUNOFF HYDROGRAPH  AREA D  AT CAMDEN AVE  POINT 4
 798          HB       1    378.      48    5568       0      0.       0      0.       0      0.

 799          KK       4
 800          KO       5       1       0       0       0
 801          RL      0.     .00
 802          RT       1       1       0

 803          KK       4
 804          KM  COMBINE LOCAL FLOW AREA D WITH ROUTED FLOW FROM VASONA AT CAMDEN AVE  POINT 4
 805          HC       2

 806          KK       5
 807          KM  ROUTE CHANNEL FLOW FROM CAMDEN AVE TO HWY 17  POINT 5
 808          RL      0.     .00
 809          RS       1    STOR      0.     .00
 810          SV       0      37      74     110     184     275     367       0       0       0
 811          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 812          KK       5
 813          KM  RUNOFF HYDROGRAPH  AREA E  (IMPERVIOUS 60% AI=1.58) AT HWY 17 POINT 5
 814          BA    1.58     .00     .00
 815          PB    4.04
 816          LU    .000    .020    .000
 817          UC   1.250   1.640
 818          BF      0.      0.  1.0000

 819          KK       5
 820          KM  RUNOFF HYDROGRAPH  AREA E  (PERVIOUS  40% AP=1.06) AT HWY 17 POINT 5
 821          BA    1.06     .00     .00
 822          PB    4.04
 823          LU    .000    .080    .000
 824          UC   3.250    .550
 825          BF      0.      0.  1.0000

 826          KK       5
 827          KM  COMBINE IMPERVIOUS & PERVIOUS HYDROGRAPHS FROM AREA E  AT HWY 17  POINT 5
 828          HC       2

 829          KK       5
 830          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA E THRU STORMDRAIN SYSTEM AT HWY 17 POINT 5
 831          RL      0.     .00
 832          RS       0    STOR      0.     .00
 833          SV       0      16     264    1056    2640       0       0       0       0       0
 834          SQ       0     264     333     541     964       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 835        KK       5
 836        KM  COMBINE LOCAL RUNOFF FROM AREA E WITH FLOW ROUTED FROM CAMDEN AT HWY 17  PT.5
 837        HC       2

 838        KK       6
 839        KM  ROUTE CHANNEL FLOW FROM HWY 17 TO MERIDIAN AVE  POINT 6
 840        RL      0.      .00
 841        RS       1    STOR      0.      .00
 842        SV       0      46      92     138     230     344     459       0       0       0
 843        SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 844        KK       6
 845        KM  RUNOFF HYDROGRAPH AREA F  (IMPERVIOUS 60% AI=1.47) AT MERIDIAN AVE  POINT 6
 846        BA    1.47     .00     .00
 847        PB    3.95
 848        LU    .000    .020    .000
 849        UC    .920   2.400
 850        BF      0.      0.  1.0000

 851        KK       6
 852        KM  RUNOFF HYDROGRAPH AREA F  (PERVIOUS 40% AP=.98) AT MERIDIAN AVE POINT 6
 853        BA     .98     .00     .00
 854        PB    3.95
 855        LU    .000    .080    .000
 856        UC   2.900    .800
 857        BF      0.      0.  1.0000

 858        KK       6
 859        KM  COMBINE IMPRVS & PERVIOUS HYDGRPHS FROM AREA F AT MERIDIAN AVE  POINT 6
 860        HC       2

 861        KK       6
 862        KM  ROUTE RUNOFF HYDRGRPH FROM AREA F THRU STORMDRAIN SYSTEM AT MERIDIAN  POINT 6
 863        RL      0.      .00
 864        RS       0    STOR      0.      .00
 865        SV       0      15     245     980    2450       0       0       0       0       0
 866        SQ       0     245     309     502     894       0       0       0       0       0

 867        KK       6
 868        KM  COMBINE LOCAL RUNOFF FROM AREA F WITH FLOW ROUTED FROM HWY 17 AT MERIDIAN PT 6
 869        HC       2

 870        KK       7
 871        KM  ROUTE CHANNEL FLOW FROM MERIDIAN AVE TO GUADALUPE RIVER CONFLUENCE  POINT 7
 872        RL      0.      .00
 873        RS       1    STOR      0.      .00
 874        SV       0      25      50      76     126     190     252       0       0       0
 875        SQ       0     500    1500    2500    6500   13000   22000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 876          KK       7
 877          KM  RUNOFF HYDROGRAPH AREA G  (IMPERVIOUS 60% AI=2.15) AT GUADALUPE CONFL. POINT 7
 878          BA    2.15     .00     .00
 879          PB    3.78
              * PI 1.570  2.3500  2.1900  3.1400  4.2300  3.6000  3.1400  3.7600  3.7600  3.29
              * PI 3.290  3.6000  3.7600  5.6500  4.2300  6.7400  6.5900 12.3900  4.7000  4.23
              * PI 3.600  3.4500  3.4500  3.2900   .0000   .0000   .0000   .0000   .0000   .00
 880          LU    .000    .020    .000
 881          UC   1.330   2.100
 882          BF      0.      0.  1.0000

 883          KK       7
 884          KM  RUNOFF HYDROGRAPH AREA G  (PERVIOUS 40% AP=1.44) AT GUADALUPE CONFL. POINT 7
 885          BA    1.44     .00     .00
 886          PB    3.78
 887          LU    .000    .080    .000
 888          UC   3.300    .700
 889          BF      0.      0.  1.0000

 890          KK       7
 891          KM  COMBINE IMPRVS & PERVIOUS HYDRGRPHS FROM AREA G AT GUADALUPE CONFL.  POINT 7
 892          HC       2

 893          KK       7
 894          KM  ROUTE RUNOFF HYDRGRPH FROM AREA G THRU STORMDRAIN  AT GUADALUPE CONFL.  PT. 7
 895          RL      0.     .00
 896          RS       0    STOR      0.     .00
 897          SV       0      22     359    1436    3590       0       0       0       0       0
 898          SQ       0     359     452     736    1310       0       0       0       0       0

 899          KK       7
 900          KO       1       0       0       0       0
 901          KM  COMBINE RUNOFF FROM AREA G WITH FLOW ROUTED FROM MERIDIAN AT GUADALUPE RIV PT
 902          HC       2
              * ******************************************************************************
              * KK     9
              * KM 10 YEAR HYDROGRAPH FROM LOS GATOS CREEK AT CONFLUENCE WITH GUADALUPE RIVER
              * BA 54.83     .00     .00
              * QI  2.00    2.00    5.00   13.00   28.00   49.00   75.00  104.00  136.00  173.
              * QI220.00  280.00  349.00  422.00  493.00  557.00  613.00  664.00  720.00  777.
              * QI815.00  846.00  873.00  891.00  897.00  900.00  903.00  912.00  935.00  979.
              * QI  1041    1111    1192    1291    1406    1527    1627    1749    1888    20
              * QI  2114    2166    2175    2148    2090    2007    1911    1810    1713    16
              * QI  1547    1478    1345    1192    1033     868     739     673     687     7
              * QI890.00 1019.00 1143.00 1253.00 1345.00 1417.00 1469.00 1502.00 1518.00 1519.
              * QI  1509    1489    1463    1431    1395    1355    1313    1270    1225    11
              * QI  1133    1087    1041     995     951     907     864     822     781     7
              * QI703.00  667.00  631.00  598.00  567.00  540.00  517.00  502.00  495.00  486.
              * QI475.00     .00     .00     .00     .00     .00     .00     .00     .00     .
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

903           KK  D/S LG
904           KM  COMBINE LOS GATOS CREEK WITH GUADALUPE RIVER
905           HC       2

906           KK      10
907           KM  ROUTE  GUADALUPE RIVER FROM CONFL. WITH LOS GATOS TO  HEDDING ST  PT.10
908           RL      0.     .00
909           RS       1    STOR      0.     .00
910           SV       0      64     157     260     374     482     585       0       0       0
911           SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

912           KK      10
913           KM   RUNOFF HYDROGRAPH FOR AREA K (AI=2.80,TOTAL=3.99) AT POINT 10.
914           BA    2.80     .00     .00
915           PB    3.60
916           LU    .000    .015    .000
917           UC   1.600   1.100
918           BF      0.      0.  1.0000

919           KK      10
920           KM   RUNOFF HYDROGRAPH FOR AREA K (AP=1.19,TOTAL=3.99) AT POINT 10.
921           BA    1.19     .00     .00
922           PB    3.60
923           LU    .000    .075    .000
924           UC   3.600    .500
925           BF      0.      0.  1.0000

926           KK      10
927           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA K AT PT.10  HEDDING ST.
928           HC       2

929           KK      10
930           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA K THRU STORMDRAINS AT PT.10 HEDDING ST.
931           RL      0.     .00
932           RS       1    STOR      0.     .00
933           SV       0      40     200     399    1596    3990       0       0       0       0
934           SQ       0     414     435     462     621     940       0       0       0       0

935           KK   HWY17
936           KM  COMBINE ROUTED URBAN FLOW AREA K WITH GUADALUPE RIVER  AT PT.10 HEDDING ST.
937           HC       2

938           KK      11
939           KM  ROUTE GUADALUPE RIVER FROM PT.10 HEDDING ST. TO PT.11 BAYSHORE HWY
940           RL      0.     .00
941           RS       1    STOR      0.     .00
942           SV       0     102     250     415     598     771     937       0       0       0
943           SQ       0    1155    4670   10400   18300   27000   40000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 944          KK      11
 945          KM   RUNOFF HYDROGRAPH FOR AREA L (AI=4.30,TOTAL=6.13) AT POINT 11.
 946          BA    4.30     .00     .00
 947          PB    3.51
 948          LU    .000    .015    .000
 949          UC   2.100   1.200
 950          BF      0.      0.  1.0000

 951          KK      11
 952          KM   RUNOFF HYDROGRAPH FOR AREA L (AP=1.83,TOTAL=6.13) AT POINT 11.
 953          BA    1.83     .00     .00
 954          PB    3.51
 955          LU    .000    .073    .000
 956          UC   4.100    .500
 957          BF      0.      0.  1.0000

 958          KK      11
 959          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA L AT PT.11 BAYSHORE HWY
 960          HC       2

 961          KK      11
 962          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA L THRU STORMDRAINS AT PT.11 BAYSHORE HWY
 963          RL      0.     .00
 964          RS       1    STOR      0.     .00
 965          SV       0      61     307     613    2452    6130       0       0       0       0
 966          SQ       0     635     668     709     954    1445       0       0       0       0

 967          KK  HWY101
 968          KM  COMBINE ROUTED URBAN FLOW AREA L WITH GUADALUPE RIVER AT PT.11 BAYSHORE HWY
 969          HC       2

 970          KK      12
 971          KM  ROUTE GUADALUPE RIVER FROM PT.11 BAYSHORE HWY TO  POINT 12  HWY 237  ALVISO
 972          RL      0.     .00
 973          RS       1    STOR      0.     .00
 974          SV       0     178     439     728    1046    1350    1639       0       0       0
 975          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

 976          KK      12
 977          KM   RUNOFF HYDROGRAPH FOR AREA M (AI=5.00,TOTAL=10.39) AT POINT 12.
 978          BA    5.00     .00     .00
 979          PB    3.42
 980          LU    .000    .014    .000
 981          UC   2.700   1.100
 982          BF      0.      0.  1.0000

 983          KK      12
 984          KM   RUNOFF HYDROGRAPH FOR AREA M (AP=5.39,TOTAL=10.39) AT POINT 12.
 985          BA    5.39     .00     .00
 986          PB    3.42
 987          LU    .000    .071    .000
 988          UC   4.700   1.100
 989          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 990          KK      12
 991          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA M AT PT.12  HWY 237  ALVISO
 992          HC       2

 993          KK      12
 994          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA M  THRU STORMDRAINS AT PT.12   HWY 237 ALVIS
 995          RL      0.     .00
 996          RS       1    STOR      0.     .00
 997          SV       0     104     520    1039    4156   10390       0       0       0       0
 998          SQ       0    1077    1133    1202    1617    2449       0       0       0       0

 999          KK  HWY237
1000          KM  COMBINE ROUTED URBAN FLOW AREA M WITH GUADALUPE RIVER AT PT.12  HWY 237 ALVISO
1001          HC       2
1002          ZZ
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1	1376.	19.00	1011.	509.	172.	6.99		
HYDROGRAPH AT	1	1174.	19.00	888.	449.	152.	6.99		
ROUTED TO	CALERO	184.	26.00	184.	184.	183.	6.99		
ROUTED TO	2	184.	27.00	184.	184.	183.	6.99		
HYDROGRAPH AT	2	516.	18.50	329.	158.	53.	2.65		
HYDROGRAPH AT	2	474.	18.50	307.	148.	50.	2.65		
ROUTED TO	2	474.	18.50	307.	148.	50.	2.65		
2 COMBINED AT	2	657.	18.50	490.	331.	232.	9.64		
HYDROGRAPH AT	2	414.	18.50	244.	116.	39.	1.99		
HYDROGRAPH AT	2	360.	18.50	225.	107.	36.	1.99		
ROUTED TO	2	360.	18.50	225.	107.	36.	1.99		
2 COMBINED AT	2	1017.	18.50	714.	437.	268.	11.63		
ROUTED TO	4	1017.	18.50	713.	437.	268.	11.63		
HYDROGRAPH AT	4	181.	18.00	95.	44.	15.	.76		
HYDROGRAPH AT	4	167.	18.00	94.	44.	15.	.76		
ROUTED TO	4	167.	18.00	94.	44.	15.	.76		
2 COMBINED AT	4	1179.	18.50	805.	481.	283.	12.39		
HYDROGRAPH AT	3	2420.	18.50	1959.	1099.	388.	12.00		
HYDROGRAPH AT	3	2277.	18.50	1738.	971.	343.	12.00		
ROUTED TO	ALMADE	1255.	23.00	1073.	496.	318.	12.00		
ROUTED TO	4	1222.	24.00	1026.	496.	318.	12.00		
HYDROGRAPH AT	4	845.	19.00	570.	278.	94.	4.24		
HYDROGRAPH AT	4	743.	19.00	523.	256.	86.	4.24		
ROUTED TO	4	743.	19.00	523.	256.	86.	4.24		
2 COMBINED AT	4	1430.	23.50	1186.	722.	404.	16.24		
2 COMBINED AT	4	2152.	18.50	1704.	1191.	686.	28.63		

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ROUTED TO	5	2104.	19.00	1704.	1190.	686.	28.63
HYDROGRAPH AT	5	166.	18.00	90.	42.	14.	.74
HYDROGRAPH AT	5	153.	18.00	86.	40.	13.	.74
ROUTED TO	5	153.	18.00	86.	40.	13.	.74
2 COMBINED AT	5	2250.	18.50	1760.	1228.	699.	29.37
HYDROGRAPH AT	5	495.	18.50	297.	142.	47.	2.28
HYDROGRAPH AT	5	414.	18.50	268.	129.	43.	2.28
ROUTED TO	5	414.	18.50	268.	129.	43.	2.28
2 COMBINED AT	5	2664.	18.50	1977.	1353.	742.	31.65
ROUTED TO	6	2610.	19.00	1974.	1353.	742.	31.65
HYDROGRAPH AT	6	168.	18.00	95.	45.	15.	.77
HYDROGRAPH AT	6	156.	18.00	89.	42.	14.	.77
ROUTED TO	6	156.	18.00	89.	42.	14.	.77
2 COMBINED AT	6	2715.	19.00	2044.	1393.	756.	32.42
HYDROGRAPH AT	6	307.	18.50	177.	83.	28.	1.38
HYDROGRAPH AT	6	281.	18.50	170.	80.	27.	1.38
ROUTED TO	6	281.	18.50	170.	80.	27.	1.38
2 COMBINED AT	6	2940.	18.50	2187.	1470.	783.	33.80
ROUTED TO	7	2952.	19.00	2186.	1470.	783.	33.80
HYDROGRAPH AT	7	604.	18.50	380.	184.	62.	3.08
HYDROGRAPH AT	7	503.	18.50	334.	162.	54.	3.08
ROUTED TO	7	503.	18.50	334.	162.	54.	3.08
2 COMBINED AT	7	3442.	19.00	2507.	1628.	837.	36.88
HYDROGRAPH AT	7	109.	18.50	64.	30.	10.	.53
HYDROGRAPH AT	7	130.	18.50	69.	32.	11.	.53
ROUTED TO	7	130.	18.50	69.	32.	11.	.53
2 COMBINED AT	7	3527.	19.00	2573.	1659.	848.	37.41
ROUTED TO	10	3542.	19.00	2571.	1659.	848.	37.41
HYDROGRAPH AT	10	108.	18.50	64.	30.	10.	.55
HYDROGRAPH AT	10	131.	18.50	68.	32.	11.	.55

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ROUTED TO	10	131.	18.50	68.	32.	11.	.55
2 COMBINED AT	10	3626.	19.00	2634.	1689.	858.	37.96
HYDROGRAPH AT	8	1428.	18.50	987.	504.	170.	5.96
HYDROGRAPH AT	8	1177.	18.50	864.	444.	150.	5.96
ROUTED TO	GUADAL	234.	25.00	234.	233.	229.	5.96
ROUTED TO	9	234.	25.50	234.	233.	228.	5.96
HYDROGRAPH AT	9	1354.	18.50	996.	525.	180.	6.75
HYDROGRAPH AT	9	1219.	18.50	831.	436.	149.	6.75
ROUTED TO	9	1219.	18.50	831.	436.	149.	6.75
2 COMBINED AT	9	1450.	18.50	1062.	666.	378.	12.71
ROUTED TO	10	1220.	19.50	1041.	656.	376.	12.71
HYDROGRAPH AT	10	501.	19.00	319.	151.	51.	2.53
HYDROGRAPH AT	10	464.	19.00	301.	143.	48.	2.53
ROUTED TO	10	464.	19.00	301.	143.	48.	2.53
2 COMBINED AT	10	1683.	19.00	1322.	794.	424.	15.24
2 COMBINED AT	10	5309.	19.00	3955.	2484.	1282.	53.20
ROUTED TO	2	5220.	19.00	3951.	2481.	1282.	53.20
Existing Condition → HYDROGRAPH AT	2	18.	18.00	10.	5.	2.	2.53
2 COMBINED AT	COMB_E	5229.	19.00	3960.	2486.	1283.	55.73
HYDROGRAPH AT	2	251.	18.50	161.	96.	32.	1.00
HYDROGRAPH AT	2	176.	19.50	126.	59.	20.	1.09
2 COMBINED AT	2	407.	18.50	284.	155.	52.	2.09
ROUTED TO	2	221.	21.00	220.	153.	52.	2.09
2 COMBINED AT	2	5449.	19.00	4178.	2635.	1335.	57.82
HYDROGRAPH AT	ROSS	1291.	19.00	1142.	762.	264.	9.96
2 COMBINED AT	GU+ROS	6740.	19.00	5320.	3386.	1596.	67.78
ROUTED TO	3	6711.	19.50	5316.	3383.	1596.	67.78
HYDROGRAPH AT	3	627.	19.00	447.	272.	92.	2.84
HYDROGRAPH AT	3	294.	19.50	217.	103.	35.	1.89
2 COMBINED AT	3	908.	19.00	661.	374.	127.	4.73

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ROUTED TO	3	501.	21.50	499.	367.	127.	4.73
2 COMBINED AT	3	7208.	19.50	5812.	3747.	1721.	72.51
HYDROGRAPH AT	4	439.	18.50	304.	186.	63.	1.91
HYDROGRAPH AT	4	381.	19.50	291.	146.	49.	2.65
2 COMBINED AT	4	759.	19.00	588.	329.	112.	4.56
ROUTED TO	4	480.	21.50	479.	325.	112.	4.56
ROUTED TO	5	480.	22.00	478.	324.	112.	4.56
HYDROGRAPH AT	5	229.	18.50	143.	86.	29.	.87
HYDROGRAPH AT	5	308.	19.50	225.	109.	37.	1.98
2 COMBINED AT	5	492.	18.50	361.	193.	66.	2.85
ROUTED TO	5	300.	21.00	298.	191.	66.	2.85
2 COMBINED AT	5	779.	21.50	775.	514.	178.	7.41
ROUTED TO	6	779.	22.00	775.	514.	178.	7.41
HYDROGRAPH AT	6	452.	18.50	319.	195.	66.	2.05
HYDROGRAPH AT	6	217.	19.50	156.	74.	25.	1.36
2 COMBINED AT	6	641.	19.00	474.	269.	91.	3.41
ROUTED TO	6	361.	21.00	360.	264.	91.	3.41
HYDROGRAPH AT	6	201.	18.50	132.	80.	27.	.83
HYDROGRAPH AT	6	141.	19.50	99.	47.	16.	.86
2 COMBINED AT	6	328.	18.50	229.	126.	43.	1.69
ROUTED TO	6	178.	21.00	178.	124.	43.	1.69
3 COMBINED AT	6	1319.	21.50	1313.	900.	312.	12.51
ROUTED TO	7	1319.	22.00	1312.	898.	312.	12.51
HYDROGRAPH AT	7	609.	18.50	455.	281.	96.	3.02
HYDROGRAPH AT	7	303.	19.50	223.	108.	36.	2.02
2 COMBINED AT	7	894.	19.00	677.	388.	132.	5.04
ROUTED TO	7	532.	21.50	530.	382.	132.	5.04
2 COMBINED AT	7	1850.	22.00	1841.	1280.	444.	17.55
ROUTED TO	3	1850.	22.00	1841.	1278.	444.	17.55
HYDROGRAPH AT	3	191.	19.00	121.	57.	19.	1.07

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HYDROGRAPH AT	3	199.	19.00	125.	59.	20.	1.07
ROUTED TO	3	199.	19.00	125.	59.	20.	1.07
2 COMBINED AT	3	1992.	19.50	1924.	1335.	464.	18.62
2 COMBINED AT	GU+CAN	9200.	19.50	7704.	5082.	2184.	91.13
ROUTED TO	8	9143.	19.50	7705.	5078.	2183.	91.13
HYDROGRAPH AT	8	514.	18.50	364.	222.	75.	2.42
HYDROGRAPH AT	8	162.	19.50	115.	54.	18.	1.04
2 COMBINED AT	8	664.	19.00	479.	275.	93.	3.46
ROUTED TO	8	366.	21.00	365.	271.	93.	3.46
2 COMBINED AT	8	9508.	19.50	8069.	5343.	2275.	94.59
ROUTED TO	9	9436.	20.00	8055.	5339.	2274.	94.59
HYDROGRAPH AT	9	527.	19.00	374.	227.	77.	2.59
HYDROGRAPH AT	9	94.	19.50	68.	32.	11.	.65
2 COMBINED AT	9	619.	19.00	442.	259.	88.	3.24
ROUTED TO	9	343.	21.00	341.	255.	88.	3.24
2 COMBINED AT	9	9778.	20.00	8396.	5586.	2360.	97.83
HYDROGRAPH AT	1	2903.	18.50	2135.	1143.	388.	9.91
HYDROGRAPH AT	1	2381.	19.50	2072.	1153.	391.	9.91
ROUTED TO	ELSMAN	2132.	20.50	1909.	1094.	391.	9.91
ROUTED TO	2	2095.	21.00	1895.	1088.	391.	9.91
HYDROGRAPH AT	2	4824.	20.00	4264.	2523.	938.	27.61
HYDROGRAPH AT	2	4200.	20.00	3792.	2249.	837.	27.61
ROUTED TO	2	4200.	20.00	3792.	2249.	837.	27.61
2 COMBINED AT	2	6275.	21.00	5683.	3337.	1227.	37.52
ROUTED TO	LEXING	1607.	30.50	1510.	951.	345.	37.52
ROUTED TO	3	1564.	31.50	1479.	933.	345.	37.52
HYDROGRAPH AT	3	1496.	19.00	1044.	526.	177.	6.46
HYDROGRAPH AT	3	1192.	19.00	924.	473.	160.	6.46
ROUTED TO	3	1192.	19.00	924.	473.	160.	6.46
2 COMBINED AT	3	1568.	31.50	1484.	1018.	503.	43.98

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ROUTED TO	VASONA	1545.	32.00	1468.	1014.	503.	43.98
ROUTED TO	4	1533.	33.00	1459.	1012.	503.	43.98
HYDROGRAPH AT	4	484.	18.50	285.	138.	46.	2.17
HYDROGRAPH AT	4	378.	18.50	238.	116.	39.	2.17
ROUTED TO	4	378.	18.50	238.	116.	39.	2.17
2 COMBINED AT	4	1533.	33.00	1459.	1063.	542.	46.15
ROUTED TO	5	1527.	33.50	1454.	1062.	542.	46.15
HYDROGRAPH AT	5	316.	18.50	238.	146.	50.	1.58
HYDROGRAPH AT	5	176.	19.50	125.	60.	20.	1.06
2 COMBINED AT	5	488.	19.00	363.	207.	70.	2.64
ROUTED TO	5	277.	21.50	274.	205.	70.	2.64
2 COMBINED AT	5	1583.	20.00	1455.	1177.	612.	48.79
ROUTED TO	6	1559.	20.50	1447.	1175.	612.	48.79
HYDROGRAPH AT	6	265.	18.50	208.	130.	46.	1.47
HYDROGRAPH AT	6	158.	19.50	111.	53.	18.	.98
2 COMBINED AT	6	414.	19.00	319.	184.	63.	2.45
ROUTED TO	6	255.	21.50	253.	183.	63.	2.45
2 COMBINED AT	6	1813.	20.50	1615.	1286.	675.	51.24
ROUTED TO	7	1805.	21.00	1611.	1285.	675.	51.24
HYDROGRAPH AT	7	377.	19.00	294.	183.	63.	2.15
HYDROGRAPH AT	7	215.	19.50	153.	72.	24.	1.44
2 COMBINED AT	7	586.	19.00	447.	255.	88.	3.59
ROUTED TO	7	371.	21.50	368.	254.	88.	3.59
2 COMBINED AT	7	2175.	21.00	1979.	1447.	762.	54.83
2 COMBINED AT	D/S LG	11892.	20.00	10375.	6815.	3121.	152.66
ROUTED TO	10	11829.	20.00	10369.	6811.	3120.	152.66
HYDROGRAPH AT	10	543.	19.00	391.	238.	81.	2.80
HYDROGRAPH AT	10	170.	19.50	122.	58.	19.	1.19
2 COMBINED AT	10	709.	19.00	513.	296.	100.	3.99
ROUTED TO	10	420.	21.00	419.	292.	100.	3.99

2 COMBINED AT	HWY17	12248.	20.00	10787.	7092.	3218.	156.65
ROUTED TO	11	12193.	20.50	10771.	7083.	3216.	156.65
HYDROGRAPH AT	11	777.	19.00	579.	355.	121.	4.30
HYDROGRAPH AT	11	243.	19.50	182.	87.	29.	1.83
2 COMBINED AT	11	1010.	19.00	762.	441.	150.	6.13
ROUTED TO	11	644.	21.00	641.	436.	150.	6.13
2 COMBINED AT	HWY101	12836.	20.50	11412.	7499.	3362.	162.78
ROUTED TO	12	12625.	21.00	11358.	7468.	3355.	162.78
HYDROGRAPH AT	12	857.	19.50	660.	404.	138.	5.00
HYDROGRAPH AT	12	622.	20.50	502.	248.	83.	5.39
2 COMBINED AT	12	1451.	19.50	1153.	649.	221.	10.39
ROUTED TO	12	1084.	21.50	1067.	643.	221.	10.39
2 COMBINED AT	HWY237	13709.	21.00	12406.	8078.	3571.	173.17

*** NORMAL END OF HEC-1 ***

```
-----DSS---ZCLOSE Unit:  71,   File: EXI10.DSS
           Pointer Utilization:   .25
           Number of Records:      6
           File Size:     18.9  Kbytes
           Percent Inactive:   .00
```

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Project Conditions

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/29/1998  TIME  16:47:45 *
*                                      *
****************************************
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*********************************
*                               *
*   U.S. ARMY CORPS OF ENGINEERS
*   HYDROLOGIC ENGINEERING CENTER
*         609 SECOND STREET
*      DAVIS, CALIFORNIA 95616
*         (916) 756-1104
*                               *
*********************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X       XXXXX   X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   UPPER GUADALUPE  10% FLOOD - W/COINCIDENTAL FREQUENCY ON RESERVOIRS
  2           ID   LOSS RATE IS ASSUMED TO BE 50% CONSTANT,DISTRIBUTION BY C.OF E. STANDARD STOR
  3           ID   BALANCING HYDROGRAPHS :IRGUKB 76 S.C.V.W.D. REGRESSION EQUATIONS. FILE:IRGUKB
  4           IT      30 01JAN98    0000     300
  5           IO       5       0

  6           KK       1
  7           KM   INFLOW HYDROGRAPH FOR CALERO RESERVOIR (SUB-AREA A-1)
  8           BA    6.99     .00     .00
  9           PB    5.44
 10           PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 11           PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 12           PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 13           PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
 14           PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 15           LU    .000    .113    .000
 16           UC   2.090   1.850
 17           BF      0.      0.  1.0000

 18           KK       1
 19           KM   BALANCED HYDROGRAPH FOR INFLOW TO CALERO RESERVOIR (SUB-AREA A-1)
 20           HB       1   1171.      48  21552.       0      0.       0      0.       0      0.

 21           KK  CALERO
 22           KM   ROUTED FLOW THROUGH CALERO RESERVOIR - INITIAL STORAGE = 9300 AC-FT
 23           RL      0.     .00
 24           RS       0    STOR   9300.     .00
 25           SV       0     700    5000    9200   10160   10682   11500   12200   12600       0
 26           SQ       0     111     163     182     185     687    2089    3991    5092       0

 27           KK       2
 28           KM   ROUTED FLOW FROM CALERO DAM TO POINT 2
 29           RL      0.     .00
 30           RS       0    STOR      0.     .00
 31           SV       0      63     138     223     430       0       0       0       0       0
 32           SQ       0     900    2980    6110   15620       0       0       0       0       0

 33           KK       2
 34           KM   RUNOFF HYDROGRAPH FOR ARROYO-CALERO CREEK (SUB-AREA B) AT POINT 2.
 35           BA    2.65     .00     .00
 36           PB    4.45
 37           LU    .000    .093    .000
 38           UC   1.250   1.175
 39           BF      0.      0.  1.0000

 40           KK       2
 41           KM   BALANCED HYDROGRAPH FOR SUB-AREA B AT POINT 2
 42           HB       1    474.      48   7104.       0      0.       0      0.       0      0.

 43           KK       2
 44           KO       5       1       0       0       0
 45           RL      0.     .00
 46           RT       1       1       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK       2
  48          KM   COMBINED RUNOFF HYDROGRAPHS OF  SUB-AREA B AND CALERO CREEK AT POINT 2
  49          HC       2

  50          KK       2
  51          KM   RUNOFF HYDROGRAPH FOR SANTA TERESA CREEK (SUB-AREA C)
  52          BA    1.99     .00     .00
  53          PB    4.29
  54          LU    .000    .089    .000
  55          UC    .905    .895
  56          BF      0.      0.  1.0000

  57          KK       2
  58          KM   BALANCED HYDROGRAPH FOR SUB-AREA C AT POINT 2  (SANTA TERESA CREEK)
  59          HB       1    360.      48   5136.       0      0.       0      0.       0      0.

  60          KK       2
  61          KO       5       1       0       0       0
  62          RL      0.     .00
  63          RT       1       1       0

  64          KK       2
  65          KM   COMBINED RUNOFF HYDROGRAPHS OF SANTA TERESA CREEK AND CALERO CREEK AT POINT 2
  66          HC       2

  67          KK       4
  68          KM   ROUTED FLOW FROM POINT 2 TO POINT 4
  69          RL      0.     .00
  70          RS       0    STOR      0.     .00
  71          SV       0      15      32      52      99       0       0       0       0       0
  72          SQ       0     900    2980    6110   15600       0       0       0       0       0

  73          KK       4
  74          KM   RUNOFF HYDROGRAPH FOR SUB-AREA D (ARROYO-CALERO AND SANTA TERESA CONFLUENCE)@
  75          BA     .76     .00     .00
  76          PB    4.29
  77          LU    .000    .089    .000
  78          UC    .410    .600
  79          BF      0.      0.  1.0000

  80          KK       4
  81          KM   BALANCED HYDROGRAPH FOR SUB-AREA D AT POINT 4
  82          HB       1    167.      48   2112.       0      0.       0      0.       0      0.

  83          KK       4
  84          KO       5       1       0       0       0
  85          RL      0.     .00
  86          RT       1       1       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 87           KK      4
 88           KM   COMBINED RUNOFF HYDROGRAPHS OF SUB-AREA D AND CALERO CREEK AT POINT 4
 89           HC      2

 90           KK      3
 91           KM   INFLOW HYDROGRAPH FOR ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
 92           BA  12.00     .00     .00
 93           PB   7.17
 94           PI    .780   .8300  1.1900  1.2300  1.0200  1.0800  1.7700  1.6200  2.2300  1.8600
 95           PI   1.440  2.2700  1.6800  1.5500  2.0500  1.6600  1.7400  2.1300  1.7700  1.6200
 96           PI   1.600  1.7900  1.8400  1.8700  1.8800  1.9900  2.6600  2.9800  1.9000  2.2900
 97           PI   3.380  3.2300  2.8700  3.4500  6.0000  5.7700  2.2100  2.4600  2.3600  2.0000
 98           PI   1.930  1.7800  2.0700  1.3200  1.8300  1.7200  1.6300  1.6000   .0000   .0000
 99           LU    .000    .149    .000
100           UC    .685   3.800
101           BF      0.      0.  1.0000

102           KK      3
103           KM   BALANCED HYDROGRAPH FOR INFLOW TO ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
104           HB      1   2277.      48  46608.       0      0.       0      0.       0      0.

105           KK  ALMADE
106           KM   ROUTED FLOW THROUGH ALMADEN RESERVOIR WITH INITIAL STORAGE = 900 AC-FT
107           RL      0.     .00
108           RS      0    STOR    900.     .00
109           SV      0     120     900    1700    1800    1930    2000    2060    2130    2340
110           SQ      0     173     219     244     246    1449    2450    3701    5027    9531

111           KK      4
112           KM   ROUTED FLOW FROM ALMADEN RESERVOIR DAM (POINT 3) TO POINT 4
113           RL      0.     .00
114           RS      0    STOR      0.     .00
115           SV      0      79     162     389     892       0       0       0       0       0
116           SQ      0     960    3040    6750   24660       0       0       0       0       0

117           KK      4
118           KM   RUNOFF HYDROGRAPH FOR SUB-AREA F
119           BA   4.24     .00     .00
120           PB   4.92
121           PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
122           PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
123           PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
124           PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
125           PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
126           LU    .000    .103    .000
127           UC   1.670   1.420
128           BF      0.      0.  1.0000

129           KK      4
130           KM   BALANCED HYDROGRAPH FOR SUB-AREA F AT POINT 4
131           HB      1    743.      48  12288.       0      0.       0      0.       0      0.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 132          KK      4
 133          KO      5       1       0       0       0
 134          RL     0.     .00
 135          RT      1       1       0

 136          KK      4
 137          KM   COMBINED HYDROGRAPH FOR SUB-AREA F AND ALAMITOS CREEK AT POINT 4
 138          HC      2

 139          KK      4
 140          KM   COMBINED HYDROGRAPH FOR CALERO CREEK AND ALAMITOS CREEK AT POINT 4
 141          HC      2

 142          KK      5
 143          KM   ROUTED FLOW FROM POINT 4 TO POINT 5 (ALAMITOS CREEK)
 144          RL     0.     .00
 145          RS      0    STOR      0.     .00
 146          SV      0      17      35      87     198       0       0       0       0       0
 147          SQ      0    1050    3340    7630   28400       0       0       0       0       0

 148          KK      5
 149          KM   RUNOFF HYDROGRAPH FOR SUB-AREA G
 150          BA    .74     .00     .00
 151          PB   4.21
 152          LU   .000    .088    .000
 153          UC   .280    .700
 154          BF     0.      0.  1.0000

 155          KK      5
 156          KM   BALANCED HYDROGRAPH FOR SUB-AREA G AT POINT 5
 157          HB      1    153.      48   1920.       0      0.       0      0.       0      0.

 158          KK      5
 159          KO      5       1       0       0       0
 160          RL     0.     .00
 161          RT      1       1       0

 162          KK      5
 163          KM   COMBINED HYDROGRAPH FOR SUB-AREA G AND ALAMITOS CREEK AT POINT 5
 164          HC      2

 165          KK      5
 166          KM   RUNOFF HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 167          BA   2.28     .00     .00
 168          PB   4.61
 169          LU   .000    .096    .000
 170          UC   .700   1.000
 171          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK      5
 173          KM   BALANCED HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 174          HB      1    412.      48   6192.       0      0.       0      0.       0      0.

 175          KK      5
 176          KO      5       1       0       0       0
 177          RL     0.     .00
 178          RT      1       1       0

 179          KK      5
 180          KM   COMBINED HYDROGRAPH FOR RANDOL CREEK AND ALAMITOS CREEK AT POINT 5
 181          HC      2

 182          KK      6
 183          KM   ROUTED FLOW FOR ALAMITOS CREEK FROM POINT 5 TO POINT 6
 184          RL     0.     .00
 185          RS      0    STOR      0.     .00
 186          SV      0      11      23      64     157     292       0       0       0       0
 187          SQ      0     520    1650    3540   14500   37400       0       0       0       0

 188          KK      6
 189          KM   RUNOFF HYDROGRAPH FOR SUB-AREA H
 190          BA    .77     .00     .00
 191          PB   4.29
 192          LU   .000    .089    .000
 193          UC   .410    .820
 194          BF     0.      0.  1.0000

 195          KK      6
 196          KM   BALANCED HYDROGRAPH FOR SUB-AREA H AT POINT 6
 197          HB      1    156.      48   2016.       0      0.       0      0.       0      0.

 198          KK      6
 199          KO      5       1       0       0       0
 200          RL     0.     .00
 201          RT      1       1       0

 202          KK      6
 203          KM   COMBINED HYDROGRAPH FOR SUB-AREA H AND ALAMITOS CREEK AT POINT 6
 204          HC      2

 205          KK      6
 206          KM   RUNOFF HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 207          BA   1.38     .00     .00
 208          PB   4.45
 209          LU   .000    .093    .000
 210          UC   .700    .710
 211          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK      6
 213          KM   BALANCED HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 214          HB      1    280.      48   3840.       0      0.       0      0.       0      0.

 215          KK      6
 216          KO      5       1       0       0       0
 217          RL     0.     .00
 218          RT      1       1       0

 219          KK      6
 220          KM   COMBINED HYDROGRAPH FOR GREYSTONE CREEK AND ALAMITOS CREEK AT POINT 6
 221          HC      2

 222          KK      7
 223          KM   ROUTED FLOW FROM POINT 6 TO POINT 7
 224          RL     0.     .00
 225          RS      0    STOR      0.     .00
 226          SV      0      12      25      60     137     250       0       0       0       0
 227          SQ      0     303     975    2275    8200   20000       0       0       0       0

 228          KK      7
 229          KM   RUNOFF HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 230          BA   3.08     .00     .00
 231          PB   4.45
 232          LU   .000    .093    .000
 233          UC  1.070   1.260
 234          BF     0.      0.  1.0000

 235          KK      7
 236          KM   BALANCED HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 237          HB      1    503.      48   7776.       0      0.       0      0.       0      0.

 238          KK      7
 239          KO      5       1       0       0       0
 240          RL     0.     .00
 241          RT      1       1       0

 242          KK      7
 243          KM   COMBINED HYDROGRAPH FOR GOLF CREEK AND ALAMITOS CREEK AT POINT 7
 244          HC      2

 245          KK      7
 246          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 247          BA    .53     .00     .00
 248          PB   4.21
 249          LU   .000    .088    .000
 250          UC   .650    .820
 251          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK      7
 253          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 254          HB      1    130.      48   1536.       0      0.       0      0.       0      0.

 255          KK      7
 256          KO      5       1       0       0       0
 257          RL     0.     .00
 258          RT      1       1       0

 259          KK      7
 260          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10 AND ALAMITOS CREEK AT POINT 7
 261          HC      2

 262          KK     10
 263          KM   ROUTED FLOW FROM POINT 7 TO POINT 10
 264          RL     0.     .00
 265          RS      0    STOR      0.     .00
 266          SV      0      23      49      78     145     246       0       0       0       0
 267          SQ      0     527    1721    3500    8700   18500       0       0       0       0

 268          KK     10
 269          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 270          BA    .55     .00     .00
 271          PB   4.12
 272          LU   .000    .086    .000
 273          UC   .610    .925
 274          BF     0.      0.  1.0000

 275          KK     10
 276          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 277          HB      1    131.      48   1536.       0      0.       0      0.       0      0.

 278          KK     10
 279          KO      5       1       0       0       0
 280          RL     0.     .00
 281          RT      1       1       0

 282          KK     10
 283          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10A AND ALAMITOS CREEK AT POINT 10
 284          HC      2

 285          KK      8
 286          KM   INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR (SUB-AREA M-12) AT POINT 8
 287          BA   5.96     .00     .00
 288          PB   6.34
 289          PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 290          PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 291          PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 292          PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 293          PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 294          LU    .000    .132    .000
 295          UC    .680   1.960
 296          BF     0.      0.  1.0000
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 297        KK      8
 298        KM   BALANCED INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR WITH 1976 REGRESSION EQTS.
 299        HB      1   1175.      48  21312.       0      0.       0      0.       0      0.

 300        KK  GUADAL
 301        KM   ROUTED FLOW THROUGH GUADALUPE RESERVOIR - INITIAL STORAGE=3150 AC-FT
 302        RL     0.     .00
 303        RS      0    STOR   3150.     .00
 304        SV      0     240    1800    3300    3740    3960    4200    4400    4700       0
 305        SQ      0     150     208     231     237    1788    4810    7469   10614       0

 306        KK      9
 307        KM   ROUTED FLOW FOR GUADALUPE CREEK FROM DAM (POINT 8 TO POINT 9)
 308        RL     0.     .00
 309        RS      0    STOR      0.     .00
 310        SV      0      48      99     237     544       0       0       0       0       0
 311        SQ      0     960    3000    6700   24000       0       0       0       0       0

 312        KK      9
 313        KM   RUNOFF HYDROGRAPH FOR PHEASANT CREEK AND GUADALUPE CREEK (SUB-AREA N-13) AT 9
 314        BA   6.75     .00     .00
 315        PB   5.93
 316        LU   .000    .124    .000
 317        UC   .660   2.650
 318        BF     0.      0.  1.0000

 319        KK      9
 320        KM   BALANCED HYDROGRAPH FOR SUB-AREA N-13 WITH 1976 REGRESSION EQUATIONS
 321        HB      1   1219.      48  20928.       0      0.       0      0.       0      0.

 322        KK      9
 323        KO      5       1       0       0       0
 324        RL     0.     .00
 325        RT      1       1       0

 326        KK      9
 327        KM   COMBINE LOCAL RUNOFF WITH GUADALUPE HYDROGRAPH AT POINT 9
 328        HC      2

 329        KK     10
 330        KM   ROUTE FROM POINT 9 TO POINT 10 (CONFLUENCE WITH ALAMITOS CREEK)
 331        RL     0.     .00
 332        RS      0    STOR      0.     .00
 333        SV      0      92     197     310     585     995       0       0       0       0
 334        SQ      0     527    1720    3500    8700   18500       0       0       0       0

 335        KK     10
 336        KM   RUNOFF HYDROGRAPH FOR SUB-AREA O-13A (GUADALUPE CREEK)
 337        BA   2.53     .00     .00
 338        PB   4.45
 339        PI   .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 340        PI  1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 341        PI  1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 342        PI  3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 343          PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 344          LU    .000    .093    .000
 345          UC   1.730    .895
 346          BF      0.      0.  1.0000

 347          KK      10
 348          KM   BALANCED HYDROGRAPH FOR SUB-AREA O-13A AT POINT 10
 349          HB       1    464.      48   6864.       0      0.       0      0.       0      0.

 350          KK      10
 351          KO       5       1       0       0       0
 352          RL      0.     .00
 353          RT       1       1       0

 354          KK      10
 355          KM   COMBINE LOCAL RUNOFF FROM SUB-AREA O-13A WITH GUADALUPE CREEK AT POINT 10
 356          HC       2

 357          KK      10
 358          KO       1       0       0       0       0
 359          KM   COMBINED HYDROGRAPH FOR GUADALUPE AND ALAMITOS CONFLUENCE AT POINT 10
 360          HC       2
              * ******************************************************************************
              * ID LOWER GUADALUPE 10% HYDROGRAPHS. INCIDENTAL RESERVOIRS STORAGES. AUG 1977.
              * ID LOSS RATES ASSUMED CONSTANT: 50%-PRVS, 10%-IMPRVS. C.OF E. STORM DISTRIBUTI
              * ID SCVWD 1976 REGIONAL EQUATIONS AND URBAN METHODOLOGY USED.
              * IT    30       0       0     101
              * IO     5       0
              * KK     1
              * KM  10 YEAR HYDROGRAPH FROM UPPER GUADALUPE AND ALAMITOS CREEKS AT BELOW CONFL
              * BA 53.20     .00     .00
              * QI116.00  116.00  190.00  265.00  343.00  436.00  529.00  609.00  694.00  825.
              * QI  1063    1298    1484    1583    1609    1599    1602    1641    1698    17
              * QI  1757    1744    1719    1692    1682    1694    1724    1793    1967    22
              * QI  2383    2512    2702    2990    3265    3616    4223    5000    5309    50
              * QI  4471    3950    3523    3169    2967    2913    2923    2948    2956    29
              * QI  2746    2513    2249    2018    1821    1667    1539    1427    1315    12
              * QI  1116    1033     958     891     834     797     766     739     718     7
              * QI692.00  684.00  679.00  674.00  671.00  669.00  667.00  665.00  663.00  662.
              * QI661.00  660.00  660.00  659.00  658.00  657.00  657.00  656.00  656.00  655.
              * QI655.00  654.00  654.00  653.00  653.00  652.00  652.00  651.00  651.00  650.
              * QI650.00     .00     .00     .00     .00     .00     .00     .00     .00     .

 361          KK       2
 362          ZW    A=GUADALUPE RIVER C=FLOW F=GUADALUPE RIVER
 363          KM   ROUTE FLOW FROM GUADALUPE-ALAMITOS CONFL. DOWN TO ROSS CREEK CONFL.
 364          RL      0.     .00
 365          RS       1    STOR      0.     .00
 366          SV       0      77     116     193     308       0       0       0       0       0
 367          SQ       0    2300    4100    9000   18000       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 368          KK       2
 369          ZW    A=ARCADIA PROPERTY C=FLOW F=ARCADIA PROPERTY
 370          KO       1
 371          KM   ARCADIA PROPERTY LOCAL AREA PROJECT CONDITIONS
 372          ZR    =QI A=ARCADIA B=COMB_P C=FLOW E=5MIN F=PROJECT
              *

 373          KK  COMB_P
 374          KO       1
 375          KM   COMBINE ACRADIA LOCAL PROPERTY WITH GUADALUPE RIVER
 376          HC       2
              *

 377          KK       2
 378          KM   RUNOFF HYDROGRAPH AREA G (AI=1.00, TOTAL=2.09) AT POINT 2
 379          BA    1.00     .00     .00
 380          PB    4.04
 381          PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 382          PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 383          PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 384          PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
 385          PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 386          LU    .000    .017    .000
 387          UC   1.500    .500
 388          BF      0.      0.  1.0000

 389          KK       2
 390          KM   RUNOFF HYDROGRAPH AREA G (AP=1.09, TOTAL=2.09) AT POINT 2
 391          BA    1.09     .00     .00
 392          PB    4.04
 393          LU    .000    .084    .000
 394          UC   3.500    .500
 395          BF      0.      0.  1.0000

 396          KK       2
 397          KM   COMBINE IMPRVE & PRVS HYDROGRAPHS FROM AREA G AT POINT 2.(ROSS CREEK CONFL.)
 398          HC       2

 399          KK       2
 400          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA G THRU STORMDRAINS AT ROSS CREEK CONFL  PT.2
 401          RL      0.     .00
 402          RS       1    STOR      0.     .00
 403          SV       0      21     105     209     836    2090       0       0       0       0
 404          SQ       0     217     228     242     325     493       0       0       0       0

 405          KK       2
 406          KM   COMBINE ROUTED URBAN FLOW AREA G WITH GUADALUPE R. AT POINT 2 ABOVE ROSS CRK
 407          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 408          KK    ROSS
 409          KM    10 YEAR HYDROGRAPH FROM ROSS CREEK AT CONFLUENCE WITH GUADALUPE RIVER  PT.2
 410          BA    9.96     .00     .00
 411          QI    6.00    6.00   13.00   24.00   38.00   54.00   72.00  144.00  197.00  245.00
 412          QI  311.00  398.00  516.00  563.00  576.00  565.00  563.00  575.00  595.00  610.00
 413          QI  611.00  601.00  587.00  573.00  566.00  569.00  579.00  608.00  684.00  789.00
 414          QI  862.00  900.00  945.00  999.00 1041.00 1082.00 1174.00 1265.00 1291.00 1263.00
 415          QI    1226    1164    1109    1070    1024     988     961     939     917     898
 416          QI  878.00  843.00  708.00  521.00  357.00  271.00  185.00  124.00   84.00   60.00
 417          QI   50.00   48.00   45.00   42.00   38.00   35.00   31.00   28.00   25.00   22.00
 418          QI   20.00   18.00   16.00   14.00   13.00   12.00   11.00   10.00    9.00    8.00
 419          QI    7.00    6.00    6.00    5.00    5.00    4.00    4.00    3.00    3.00    3.00
 420          QI    2.00    2.00    2.00    2.00    1.00    1.00    1.00    1.00    1.00    1.00
 421          QI    1.00     .00     .00     .00     .00     .00     .00     .00     .00     .00

 422          KK  GU+ROS
 423          KO      2
 424          KM   COMBINE ROSS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH   POINT 2
 425          HC      2

 426          KK      3
 427          KM  ROUTE GUADALUPE RIVER FROM ROSS CREEK DOWN TO CONFLUENCE WITH CANOAS CRK  PT.3
 428          RL     0.     .00
 429          RS      1    STOR      0.     .00
 430          SV      0      84     127     211     338       0       0       0       0       0
 431          SQ      0    2300    4100    9000   18000       0       0       0       0       0

 432          KK      3
 433          KM   RUNOFF HYDROGRAPH AREA H (AI=2.84,TOTAL=4.73) AT POINT 3.
 434          BA   2.84     .00     .00
 435          PB   4.04
 436          LU   .000    .017    .000
 437          UC  1.750    .970
 438          BF     0.      0.  1.0000

 439          KK      3
 440          KM   RUNOFF HYDROGRAPH AREA H (AP=1.89,TOTAL=4.73) AT POINT 3.
 441          BA   1.89     .00     .00
 442          PB   4.04
 443          LU   .000    .084    .000
 444          UC  3.750    .640
 445          BF     0.      0.  1.0000

 446          KK      3
 447          KM  COMBINE IMPRVS : PRVS HYDROGRAPHS FROM AREA H AT CANOAS CREEK CONFL. POINT 3
 448          HC      2

 449          KK      3
 450          KM  ROUTE HYDROGRAPH FROM AREA H THRU STORMDRAINS AT  POINT 3  JUST ABOVE CANOAS C
 451          RL     0.     .00
 452          RS      1    STOR      0.     .00
 453          SV      0      47     237     473    1892    4730       0       0       0       0
 454          SQ      0     490     516     547     736    1115       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

455           KK       3
456           KM   COMBINE ROUTED URBAN FLOW AREA H WITH GUADALUPE R. AT PT.3 ABOVE CANOAS CREEK
457           HC       2

458           KK       4
459           KM   CANOAS CREEK - AREA A (AI=1.91,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
460           BA    1.91     .00     .00
461           PB    4.12
462           LU    .000    .017    .000
463           UC   1.000   1.200
464           BF      0.      0.  1.0000

465           KK       4
466           KM   CANOAS CREEK - AREA A (AP=2.65,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
467           BA    2.65     .00     .00
468           PB    4.12
469           LU    .000    .086    .000
470           UC   3.000   1.700
471           BF      0.      0.  1.0000

472           KK       4
473           KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA A AT POINT 4 (COTTLE ROAD).
474           HC       2

475           KK       4
476           KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA A THRU STORMDRAINS AT PT.4  COTTLE RD
477           RL      0.     .00
478           RS       1    STOR      0.     .00
479           SV       0      46     228     456    1824    4560       0       0       0       0
480           SQ       0     473     497     527     710    1075       0       0       0       0

481           KK       5
482           KM  CANOAS CREEK--ROUTE FLOW FROM COTTLE RD DOWN TO SANTA TERESA  POINT 5
483           RL      0.     .00
484           RS       1    STOR      0.     .00
485           SV       0       7      18      32      71     190       0       0       0       0
486           SQ       0      72     255     563    1622    6000       0       0       0       0

487           KK       5
488           KM   CANOAS CREEK - AREA B (AI=0.87,TOTAL=2.85) AT POINT 5.(SANTA TERESA)
489           BA     .87     .00     .00
490           PB    4.12
491           LU    .000    .017    .000
492           UC   1.000    .550
493           BF      0.      0.  1.0000

494           KK       5
495           KM   CANOAS CREEK - AREA B (AP=1.98,TOTAL=2.85) AT POINT 5.(SANTA TERESA).
496           BA    1.98     .00     .00
497           PB    4.12
498           LU    .000    .086    .000
499           UC   3.000   1.200
500           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 501          KK       5
 502          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA B AT POINT 5 (SANTA TERESA).
 503          HC       2

 504          KK       5
 505          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA B THRU STORMDRAINS AT PT.5 SANTA TERESA
 506          RL      0.     .00
 507          RS       1    STOR      0.     .00
 508          SV       0      29     143     285    1140    2850       0       0       0       0
 509          SQ       0     295     311     330     444     672       0       0       0       0

 510          KK       5
 511          KM  CANOAS CREEK--COMBINE ROUTED URBAN AREA B WITH  CHANNEL FLOW AT PT.5 SNTA TRSA
 512          HC       2

 513          KK       6
 514          KM  ROUTE CANOAS CREEK FROM PT.5 SANTA TERESA TO PT.6  BLOSSOM HILL
 515          RL      0.     .00
 516          RS       1    STOR      0.     .00
 517          SV       0       3       7      13      29      76       0       0       0       0
 518          SQ       0      72     255     563    1622    6000       0       0       0       0

 519          KK       6
 520          KM   CANOAS CREEK - AREA C (AI=2.05,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
 521          BA    2.05     .00     .00
 522          PB    4.04
 523          LU    .000    .017    .000
 524          UC   1.200   1.200
 525          BF      0.      0.  1.0000

 526          KK       6
 527          KM   CANOAS CREEK - AREA C (AP=1.36,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
 528          BA    1.36     .00     .00
 529          PB    4.04
 530          LU    .000    .084    .000
 531          UC   3.200    .800
 532          BF      0.      0.  1.0000

 533          KK       6
 534          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA C AT POINT 6 (BLOSSOM HILL).
 535          HC       2

 536          KK       6
 537          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA C THRU STORMDRAINS AT PT.6  BLOSSOM HILL
 538          RL      0.     .00
 539          RS       1    STOR      0.     .00
 540          SV       0      34     171     341    1364    3410       0       0       0       0
 541          SQ       0     354     372     394     531     804       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 542          KK      6
 543          KM   CANOAS CREEK - AREA D (AI=0.83,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
 544          BA    .83     .00     .00
 545          PB   4.04
 546          LU   .000    .017    .000
 547          UC   .800    .800
 548          BF     0.      0.  1.0000

 549          KK      6
 550          KM   CANOAS CREEK - AREA D (AP=0.86,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
 551          BA    .86     .00     .00
 552          PB   4.04
 553          LU   .000    .084    .000
 554          UC  2.800    .800
 555          BF     0.      0.  1.0000

 556          KK      6
 557          KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA D AT POINT 6 (BLOSSOM HILL).
 558          HC      2

 559          KK      6
 560          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA D THRU STORMDRAINS AT PT.6  BLOSSOM HILL
 561          RL     0.     .00
 562          RS      1    STOR      0.     .00
 563          SV      0      17      85     169     676    1690       0       0       0       0
 564          SQ      0     175     184     195     263     398       0       0       0       0

 565          KK      6
 566          KM  COMBINE ROUTED URBAN AREAS C&D WITH CANOAS CREEK AT POINT 6  BLOSSOM HILL RD.
 567          HC      3

 568          KK      7
 569          KM  ROUTE CANOAS CREEK FROM PT.6 BLOSSOM HILL TO PT.7  CAPITOL EXPWY
 570          RL     0.     .00
 571          RS      1    STOR      0.     .00
 572          SV      0       6      16      28      61     162       0       0       0       0
 573          SQ      0      72     255     563    1622    6000       0       0       0       0

 574          KK      7
 575          KM   CANOAS CREEK - AREA E (AI=3.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 576          BA   3.02     .00     .00
 577          PB   3.95
 578          LU   .000    .016    .000
 579          UC  1.300   1.500
 580          BF     0.      0.  1.0000

 581          KK      7
 582          KM   CANOAS CREEK - AREA E (AP=2.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 583          BA   2.02     .00     .00
 584          PB   3.95
 585          LU   .000    .082    .000
 586          UC  3.300   1.000
 587          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 588          KK       7
 589          KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA E AT POINT 7 (CAPITOL EXPRESSWAY
 590          HC       2

 591          KK       7
 592          KM  CANOAS CREEK--ROUTE HYDRGRPH FROM AREA E THRU STRMDRANS AT PT.7 CAPITOL EXPWY
 593          RL      0.     .00
 594          RS       1    STOR      0.     .00
 595          SV       0      50     252     504    2016    5040       0       0       0       0
 596          SQ       0     522     549     583     785    1188       0       0       0       0

 597          KK       7
 598          KM  COMBINE ROUTED URBAN AREA E WITH CANOAS CREEK AT POINT 7 CAPITOL  EXPWY
 599          HC       2

 600          KK       3
 601          KM  ROUTE CANOAS CREEK FROM PT.7 CAPITOL EXPWY TO PT.3  GUADALUPE RIVER CONFLUENCE
 602          RL      0.     .00
 603          RS       1    STOR      0.     .00
 604          SV       0       6      16      28      61     162       0       0       0       0
 605          SQ       0      72     255     563    1622    6000       0       0       0       0

 606          KK       3
 607          KM   CANOAS CREEK - AREA F (A=1.07 RURAL) AT GUADALUPE RIVER CONFLUENCE).
 608          BA    1.07     .00     .00
 609          PB    3.95
 610          LU    .000    .082    .000
 611          UC   2.000    .760
 612          BF      0.      0.  1.0000

 613          KK       3
 614          HB       1    199.      48   2832.       0      0.       0      0.       0      0.

 615          KK       3
 616          RL      0.     .00
 617          RT       1       1       0

 618          KK       3
 619          KM  COMBINE HYDROGRAPH FROM AREA F WITH CANOAS CREEK AT PT.3 CONFL. WITH GUADALUPE
 620          HC       2

 621          KK  GU+CAN
 622          KO       2
 623          KM  COMBINE CANOAS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH  AT POINT 3
 624          HC       2

 625          KK       8
 626          KM  ROUTE GUADALUPE RIVER FROM CONFL. WITH CANOAS CRK TO MINNESOTA-ALMA PT.8
 627          RL      0.     .00
 628          RS       1    STOR      0.     .00
 629          SV       0      37     110     183     294     367       0       0       0       0
 630          SQ       0     800    3600    7400   14000   16000       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 631          KK      8
 632          KM   RUNOFF HYDROGRAPH FOR AREA I (AI=2.42,TOTAL=3.46) AT POINT 8.
 633          BA    2.42     .00     .00
 634          PB    3.87
 635          LU    .000    .016    .000
 636          UC   1.400   1.050
 637          BF      0.      0.  1.0000

 638          KK      8
 639          KM   RUNOFF HYDROGRAPH FOR AREA I (AP=1.04,TOTAL=3.46) AT POINT 8.
 640          BA    1.04     .00     .00
 641          PB    3.87
 642          LU    .000    .081    .000
 643          UC   3.400    .500
 644          BF      0.      0.  1.0000

 645          KK      8
 646          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA I AT PT.8  MINNESOTA-ALMA AVE.
 647          HC      2

 648          KK      8
 649          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA I THRU STORMDRAINS AT PT.8 MINNESOTA-ALMA
 650          RL      0.     .00
 651          RS      1    STOR      0.     .00
 652          SV      0      35     173     346    1384    3460       0       0       0       0
 653          SQ      0     359     377     400     539     815       0       0       0       0

 654          KK      8
 655          KM  COMBINE ROUTED URBAN FLOW AREA I WITH GUADALUPE R. AT PT.8  MINNESOTA-ALMA
 656          HC      2

 657          KK      9
 658          KM  ROUTE GUADALUPE RIVER FROM PT.8 MINNESOTA-ALMA  TO CONFL. WITH LOS GATOS PT.9
 659          RL      0.     .00
 660          RS      1    STOR      0.     .00
 661          SV      0      47     140     234     374     468       0       0       0       0
 662          SQ      0     800    3600    7400   14000   16000       0       0       0       0

 663          KK      9
 664          KM   RUNOFF HYDROGRAPH FOR AREA J (AI=2.59,TOTAL=3.24) AT POINT 9.
 665          BA    2.59     .00     .00
 666          PB    3.69
 667          LU    .000    .015    .000
 668          UC   1.700    .920
 669          BF      0.      0.  1.0000

 670          KK      9
 671          KM   RUNOFF HYDROGRAPH FOR AREA J (AP=0.65,TOTAL=3.24) AT POINT 9.
 672          BA     .65     .00     .00
 673          PB    3.69
 674          LU    .000    .077    .000
 675          UC   3.700    .500
 676          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

677           KK       9
678           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA J AT PT.9 CONFL. WITH LOS GATOS
679           HC       2

680           KK       9
681           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA J THRU STORMDRAINS AT PT.9 LOS GATOS  CONFL.
682           RL      0.     .00
683           RS       1    STOR      0.     .00
684           SV       0      32     162     324    1296    3240       0       0       0       0
685           SQ       0     336     353     375     504     764       0       0       0       0

686           KK       9
687           KM  COMBINE ROUTED URBAN FLOW AREA J WITH GUADALUPE R. AT PT.9 CONFL WITH LOS GATO
688           HC       2
              * ******************************************************************************
              * IDLOS GATOS CREEK  WATERSHED TEN YEAR FLOOD HYDROGRAPHS  C.OF E. STORM DIST.
              * IDURBAN METHODOLOGY STORMDRAIN STORAGE-DISCHARGE CURVE LOSS RATES 50%PERV10%IM
              * IDELSMAN,VASONA ARE FULL LEXINGTON COIN. FREQ. 15000     FILE: ENGDAT/IRLGKB
              * IT    60       0       0      51
              * IO     5       0

689           KK       1
690           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LAKE ELSMAN  POINT 1    (AREA  A)
691           BA    9.91     .00     .00
692           PB    8.66
              * PI 1.630  2.2900  2.1300  3.4400  4.2600  3.7600  3.2700  3.7600  3.7600  3.44
              * PI 3.440  3.7600  3.9300  5.7300  4.2600  6.3900  6.2200 11.4600  4.5800  4.42
              * PI 3.760  3.4400  3.6000  3.2700   .0000   .0000   .0000   .0000   .0000   .00
693           PI     .75     .88    1.12    1.17     .98    1.15     1.6    1.84    2.06     2.2
694           PI       2    1.76    1.66    1.61    2.02    1.74    1.81    1.95    1.65    1.79
695           PI    1.71    1.73    1.86    1.90    1.93       2    2.63    3.10       2    2.26
696           PI    2.74    3.65    2.75    3.47    6.23    5.23    2.17    2.51    2.29    2.03
697           PI    1.92    1.84    1.81    1.63    1.92    1.68    1.62    1.65
698           LU    .000    .180    .000
699           UC   1.100   2.150
700           UA    .150   2.650   7.660   9.910    .000    .000    .000    .000    .000    .0
701           BF      0.      0.  1.0000

702           KK       1
703           KM  BALANCED HYDROGRAPH INFLOW TO LAKE ELSMAN  AREA A
704           HB       1   2365.      48   55354       0      0.       0      0.       0      0.

705           KK  ELSMAN
706           KM  ROUTE FLOW THRU LAKE ELSMAN  POINT 1    FULL CONDITION
707           RL      0.     .00
708           RS       0    STOR   6150.     .00
709           SV       0    6150    6250    6440    6640    6825    7020    7210    7405    7500
710           SQ       0       0     196    1017    2174    3577    5174    6939    8850    9856
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

711           KK       2
712           KM  ROUTE LAKE ELSMAN OUTFLOW DOWN TO LEXINGTON DAM  POINT 2
713           RL      0.     .00
714           RS       1    STOR      0.     .00
715           SV       0      51     101     152     253     379     505       0       0       0
716           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

717           KK       2
718           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM  POINT 2  (AREA B)
719           BA   27.61     .00     .00
720           PB    7.61
              * PI 1.610  2.4200  2.1000  3.3900  4.1900  3.7100  3.2300  3.7100  3.8700  3.39
              * PI 3.390  3.7100  3.8700  5.6400  4.1900  6.6100  6.2900 11.7700  4.6700  4.36
              * PI 3.710  3.3900  3.5500  3.2300   .0000   .0000   .0000   .0000   .0000   .00
721           PI     .78     .83    1.19    1.23    1.02    1.08    1.77    1.62    2.23    1.86
722           PI    1.44    2.27    1.68    1.55    2.05    1.66    1.74    2.13    1.77    1.62
723           PI     1.6    1.79    1.84    1.87    1.88    1.99    2.66    2.98     1.9    2.29
724           PI    3.38    3.23    2.87    3.45       6    5.77    2.21    2.46    2.36       2
725           PI    1.93    1.78    2.07    1.32    1.83    1.72    1.63     1.6
726           LU    .000    .160    .000
727           UC   2.600   5.400
728           UA    .670   1.300   4.880  10.620  17.470  23.260  27.610    .000    .000    .000
729           BF      0.      0.  1.0000

730           KK       2
731           KM  BALANCED HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM   AREA B
732           HB       1   4196.      48  108004       0      0.       0      0.       0      0.

733           KK       2
734           KO       5       1       0       0       0
735           RL      0.     .00
736           RT       1       1       0

737           KK       2
738           KM  COMBINE LOCAL INFLOW TO LEXINGTON WITH ROUTED FLOW FROM ELSMAN AT POINT 2
739           HC       2

740           KK  LEXING
741           KM  ROUTE COMBINED FLOW THRU LEXINGTON RESERVOIR          COIN. FREQ. 15000
742           RL      0.     .00
743           RS       0    STOR  15000.     .00
744           SV       0   20251   21069   21904   22758   23630   24521   26365       0       0
745           SQ       0       0    1500    4300    8000   12200   17200   28800       0       0

746           KK       3
747           KM  ROUTE LEXINGTON OUTFLOW DOWN TO VASONA DAM  POINT 3
748           RL      0.     .00
749           RS       1    STOR      0.     .00
750           SV       0      83     165     248     413     620     826       0       0       0
751           SQ       0     500    1500    2500    6500   13000   22000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

752           KK       3
753           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO VASONA RES.   AREA C  AT POINT 3
754           BA    6.46     .00     .00
755           PB    6.07
              * PI 1.590  2.3800  2.2300  3.1800  4.2800  3.6600  3.1800  3.6600  3.8200  3.34
              * PI 3.340  3.6600  3.8200  5.7200  4.1300  6.6800  6.5200 12.0800  4.6100  4.28
              * PI 3.660  3.5000  3.5000  3.1800   .0000   .0000   .0000   .0000   .0000   .00
756           PI     .75     .84    1.16    1.22    1.13     1.1     1.4    1.78    2.02    2.26
757           PI    2.14    1.52    1.78     1.4    1.85    1.81    1.84    1.98    1.67    1.73
758           PI    1.63    1.71    2.04    1.72    1.93    1.89    2.61    3.11    1.74    2.39
759           PI    2.91    3.77    3.03    3.49    6.61    5.67    2.43    2.18    2.12    2.16
760           PI       2    1.66    1.68    1.82    1.88    1.67    1.58     1.6
761           LU    .000    .130   3.000
762           UC   1.500   1.670
763           BF      0.      0.  1.0000

764           KK       3
765           KM  BALANCED HYDROGRAPH LOCAL INFLOW TO VASONA RES.  AREA C   POINT 3
766           HB       1   1190.      48   22710       0      0.       0      0.       0      0.

767           KK       3
768           KO       5       1       0       0       0
769           RL      0.     .00
770           RT       1       1       0

771           KK       3
772           KM  COMBINE LOCAL INFLOW TO VASONA WITH ROUTED FLOW FROM LEXINGTON  AT POINT 3
773           HC       2

774           KK  VASONA
775           KM  ROUTE COMBINED FLOW THRU VASONA RES.   AT POINT 3  FULL CONDITION
776           RL      0.     .00
777           RS       0    STOR    410.     .00
778           SV       0     410     475     538     607     678     750     840    1000       0
779           SQ       0       0    1000    2000    4000    6000    8000   11000   17000       0

780           KK       4
781           KM  ROUTE VASONA OUTFLOW DOWN TO CAMDEN AVE  POINT 4
782           RL      0.     .00
783           RS       1    STOR      0.     .00
784           SV       0      51     101     152     253     379     505       0       0       0
785           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

786           KK       4
787           KM  RUNOFF HYDROGRAPH LOCAL AT CAMDEN   AREA D  AT POINT 4
788           BA    2.17     .00     .00
789           PB    4.45
              * PI 1.570  2.3500  2.1900  3.1400  4.2300  3.6000  3.1400  3.7600  3.7600  3.29
              * PI 3.290  3.6000  3.7600  5.6500  4.2300  6.7400  6.5900 12.3900  4.7000  4.23
              * PI 3.600  3.4500  3.4500  3.2900   .0000   .0000   .0000   .0000   .0000   .00
790           PI     .75     .82    1.13    1.22    1.12    1.07    1.49    1.65    1.98    2.25
791           PI    1.72    1.78     1.6    1.54    1.85    1.91    1.89    1.87    1.64    1.65
792           PI    1.75    1.54    1.79    1.81    1.69    2.07    2.51     3.2    1.75    2.48
793           PI    3.12    3.62    2.79     3.8    5.78    6.61    2.55    2.15    2.17    2.06
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 794          PI    1.82    1.88    1.56    1.91    1.72    1.73    1.51    1.78
 795          LU    .000    .090   4.000
 796          UC   1.100    .820
 797          BF      0.      0.  1.0000

 798          KK       4
 799          KM  BALANCED LOCAL RUNOFF HYDROGRAPH  AREA D  AT CAMDEN AVE  POINT 4
 800          HB       1    378.      48    5568       0      0.       0      0.       0      0.

 801          KK       4
 802          KO       5       1       0       0       0
 803          RL      0.     .00
 804          RT       1       1       0

 805          KK       4
 806          KM  COMBINE LOCAL FLOW AREA D WITH ROUTED FLOW FROM VASONA AT CAMDEN AVE  POINT 4
 807          HC       2

 808          KK       5
 809          KM  ROUTE CHANNEL FLOW FROM CAMDEN AVE TO HWY 17  POINT 5
 810          RL      0.     .00
 811          RS       1    STOR      0.     .00
 812          SV       0      37      74     110     184     275     367       0       0       0
 813          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 814          KK       5
 815          KM  RUNOFF HYDROGRAPH  AREA E  (IMPERVIOUS 60% AI=1.58) AT HWY 17 POINT 5
 816          BA    1.58     .00     .00
 817          PB    4.04
 818          LU    .000    .020    .000
 819          UC   1.250   1.640
 820          BF      0.      0.  1.0000

 821          KK       5
 822          KM  RUNOFF HYDROGRAPH  AREA E  (PERVIOUS  40% AP=1.06) AT HWY 17 POINT 5
 823          BA    1.06     .00     .00
 824          PB    4.04
 825          LU    .000    .080    .000
 826          UC   3.250    .550
 827          BF      0.      0.  1.0000

 828          KK       5
 829          KM  COMBINE IMPERVIOUS & PERVIOUS HYDROGRAPHS FROM AREA E  AT HWY 17  POINT 5
 830          HC       2

 831          KK       5
 832          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA E THRU STORMDRAIN SYSTEM AT HWY 17 POINT 5
 833          RL      0.     .00
 834          RS       0    STOR      0.     .00
 835          SV       0      16     264    1056    2640       0       0       0       0       0
 836          SQ       0     264     333     541     964       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 837          KK       5
 838          KM  COMBINE LOCAL RUNOFF FROM AREA E WITH FLOW ROUTED FROM CAMDEN AT HWY 17  PT.5
 839          HC       2

 840          KK       6
 841          KM  ROUTE CHANNEL FLOW FROM HWY 17 TO MERIDIAN AVE  POINT 6
 842          RL      0.     .00
 843          RS       1    STOR      0.     .00
 844          SV       0      46      92     138     230     344     459       0       0       0
 845          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 846          KK       6
 847          KM  RUNOFF HYDROGRAPH AREA F  (IMPERVIOUS 60% AI=1.47) AT MERIDIAN AVE  POINT 6
 848          BA    1.47     .00     .00
 849          PB    3.95
 850          LU    .000    .020    .000
 851          UC    .920   2.400
 852          BF      0.      0.  1.0000

 853          KK       6
 854          KM  RUNOFF HYDROGRAPH AREA F  (PERVIOUS 40% AP=.98) AT MERIDIAN AVE POINT 6
 855          BA     .98     .00     .00
 856          PB    3.95
 857          LU    .000    .080    .000
 858          UC   2.900    .800
 859          BF      0.      0.  1.0000

 860          KK       6
 861          KM  COMBINE IMPRVS & PERVIOUS HYDGRPHS FROM AREA F AT MERIDIAN AVE  POINT 6
 862          HC       2

 863          KK       6
 864          KM  ROUTE RUNOFF HYDRGRPH FROM AREA F THRU STORMDRAIN SYSTEM AT MERIDIAN  POINT 6
 865          RL      0.     .00
 866          RS       0    STOR      0.     .00
 867          SV       0      15     245     980    2450       0       0       0       0       0
 868          SQ       0     245     309     502     894       0       0       0       0       0

 869          KK       6
 870          KM  COMBINE LOCAL RUNOFF FROM AREA F WITH FLOW ROUTED FROM HWY 17 AT MERIDIAN PT 6
 871          HC       2

 872          KK       7
 873          KM  ROUTE CHANNEL FLOW FROM MERIDIAN AVE TO GUADALUPE RIVER CONFLUENCE  POINT 7
 874          RL      0.     .00
 875          RS       1    STOR      0.     .00
 876          SV       0      25      50      76     126     190     252       0       0       0
 877          SQ       0     500    1500    2500    6500   13000   22000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 878          KK       7
 879          KM  RUNOFF HYDROGRAPH AREA G  (IMPERVIOUS 60% AI=2.15) AT GUADALUPE CONFL. POINT 7
 880          BA    2.15     .00     .00
 881          PB    3.78
              * PI 1.570  2.3500  2.1900  3.1400  4.2300  3.6000  3.1400  3.7600  3.7600  3.29
              * PI 3.290  3.6000  3.7600  5.6500  4.2300  6.7400  6.5900 12.3900  4.7000  4.23
              * PI 3.600  3.4500  3.4500  3.2900   .0000   .0000   .0000   .0000   .0000   .00
 882          LU    .000    .020    .000
 883          UC   1.330   2.100
 884          BF      0.      0.  1.0000

 885          KK       7
 886          KM  RUNOFF HYDROGRAPH AREA G  (PERVIOUS 40% AP=1.44) AT GUADALUPE CONFL. POINT 7
 887          BA    1.44     .00     .00
 888          PB    3.78
 889          LU    .000    .080    .000
 890          UC   3.300    .700
 891          BF      0.      0.  1.0000

 892          KK       7
 893          KM  COMBINE IMPRVS & PERVIOUS HYDRGRPHS FROM AREA G AT GUADALUPE CONFL.  POINT 7
 894          HC       2

 895          KK       7
 896          KM  ROUTE RUNOFF HYDRGRPH FROM AREA G THRU STORMDRAIN  AT GUADALUPE CONFL.  PT. 7
 897          RL      0.     .00
 898          RS       0    STOR      0.     .00
 899          SV       0      22     359    1436    3590       0       0       0       0       0
 900          SQ       0     359     452     736    1310       0       0       0       0       0

 901          KK       7
 902          KO       1       0       0       0       0
 903          KM  COMBINE RUNOFF FROM AREA G WITH FLOW ROUTED FROM MERIDIAN AT GUADALUPE RIV PT
 904          HC       2
              * ******************************************************************************
              * KK     9
              * KM 10 YEAR HYDROGRAPH FROM LOS GATOS CREEK AT CONFLUENCE WITH GUADALUPE RIVER
              * BA 54.83     .00     .00
              * QI  2.00    2.00    5.00   13.00   28.00   49.00   75.00  104.00  136.00  173.
              * QI220.00  280.00  349.00  422.00  493.00  557.00  613.00  664.00  720.00  777.
              * QI815.00  846.00  873.00  891.00  897.00  900.00  903.00  912.00  935.00  979.
              * QI  1041    1111    1192    1291    1406    1527    1627    1749    1888    20
              * QI  2114    2166    2175    2148    2090    2007    1911    1810    1713    16
              * QI  1547    1478    1345    1192    1033     868     739     673     687     7
              * QI890.00 1019.00 1143.00 1253.00 1345.00 1417.00 1469.00 1502.00 1518.00 1519.
              * QI  1509    1489    1463    1431    1395    1355    1313    1270    1225    11
              * QI  1133    1087    1041     995     951     907     864     822     781     7
              * QI703.00  667.00  631.00  598.00  567.00  540.00  517.00  502.00  495.00  486.
              * QI475.00     .00     .00     .00     .00     .00     .00     .00     .00     .
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 905          KK  D/S LG
 906          KM  COMBINE LOS GATOS CREEK WITH GUADALUPE RIVER
 907          HC       2

 908          KK      10
 909          KM  ROUTE  GUADALUPE RIVER FROM CONFL. WITH LOS GATOS TO  HEDDING ST  PT.10
 910          RL      0.     .00
 911          RS       1    STOR      0.     .00
 912          SV       0      64     157     260     374     482     585       0       0       0
 913          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

 914          KK      10
 915          KM   RUNOFF HYDROGRAPH FOR AREA K (AI=2.80,TOTAL=3.99) AT POINT 10.
 916          BA    2.80     .00     .00
 917          PB    3.60
 918          LU    .000    .015    .000
 919          UC   1.600   1.100
 920          BF      0.      0.  1.0000

 921          KK      10
 922          KM   RUNOFF HYDROGRAPH FOR AREA K (AP=1.19,TOTAL=3.99) AT POINT 10.
 923          BA    1.19     .00     .00
 924          PB    3.60
 925          LU    .000    .075    .000
 926          UC   3.600    .500
 927          BF      0.      0.  1.0000

 928          KK      10
 929          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA K AT PT.10  HEDDING ST.
 930          HC       2

 931          KK      10
 932          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA K THRU STORMDRAINS AT PT.10 HEDDING ST.
 933          RL      0.     .00
 934          RS       1    STOR      0.     .00
 935          SV       0      40     200     399    1596    3990       0       0       0       0
 936          SQ       0     414     435     462     621     940       0       0       0       0

 937          KK   HWY17
 938          KM  COMBINE ROUTED URBAN FLOW AREA K WITH GUADALUPE RIVER  AT PT.10 HEDDING ST.
 939          HC       2

 940          KK      11
 941          KM  ROUTE GUADALUPE RIVER FROM PT.10 HEDDING ST. TO PT.11 BAYSHORE HWY
 942          RL      0.     .00
 943          RS       1    STOR      0.     .00
 944          SV       0     102     250     415     598     771     937       0       0       0
 945          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

946           KK      11
947           KM   RUNOFF HYDROGRAPH FOR AREA L (AI=4.30,TOTAL=6.13) AT POINT 11.
948           BA    4.30     .00     .00
949           PB    3.51
950           LU    .000    .015    .000
951           UC   2.100   1.200
952           BF      0.      0.  1.0000

953           KK      11
954           KM   RUNOFF HYDROGRAPH FOR AREA L (AP=1.83,TOTAL=6.13) AT POINT 11.
955           BA    1.83     .00     .00
956           PB    3.51
957           LU    .000    .073    .000
958           UC   4.100    .500
959           BF      0.      0.  1.0000

960           KK      11
961           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA L AT PT.11 BAYSHORE HWY
962           HC       2

963           KK      11
964           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA L THRU STORMDRAINS AT PT.11 BAYSHORE HWY
965           RL      0.     .00
966           RS       1    STOR      0.     .00
967           SV       0      61     307     613    2452    6130       0       0       0       0
968           SQ       0     635     668     709     954    1445       0       0       0       0

969           KK  HWY101
970           KM  COMBINE ROUTED URBAN FLOW AREA L WITH GUADALUPE RIVER AT PT.11 BAYSHORE HWY
971           HC       2

972           KK      12
973           KM  ROUTE GUADALUPE RIVER FROM PT.11 BAYSHORE HWY TO  POINT 12  HWY 237  ALVISO
974           RL      0.     .00
975           RS       1    STOR      0.     .00
976           SV       0     178     439     728    1046    1350    1639       0       0       0
977           SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

978           KK      12
979           KM   RUNOFF HYDROGRAPH FOR AREA M (AI=5.00,TOTAL=10.39) AT POINT 12.
980           BA    5.00     .00     .00
981           PB    3.42
982           LU    .000    .014    .000
983           UC   2.700   1.100
984           BF      0.      0.  1.0000

985           KK      12
986           KM   RUNOFF HYDROGRAPH FOR AREA M (AP=5.39,TOTAL=10.39) AT POINT 12.
987           BA    5.39     .00     .00
988           PB    3.42
989           LU    .000    .071    .000
990           UC   4.700   1.100
991           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 992          KK      12
 993          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA M AT PT.12  HWY 237  ALVISO
 994          HC       2

 995          KK      12
 996          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA M  THRU STORMDRAINS AT PT.12   HWY 237 ALVIS
 997          RL      0.     .00
 998          RS       1    STOR      0.     .00
 999          SV       0     104     520    1039    4156   10390       0       0       0       0
1000          SQ       0    1077    1133    1202    1617    2449       0       0       0       0

1001          KK  HWY237
1002          KM  COMBINE ROUTED URBAN FLOW AREA M WITH GUADALUPE RIVER AT PT.12  HWY 237 ALVISO
1003          HC       2
1004          ZZ
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1	1376.	19.00	1011.	509.	172.	6.99		
HYDROGRAPH AT	1	1174.	19.00	888.	449.	152.	6.99		
ROUTED TO	CALERO	184.	26.00	184.	184.	183.	6.99		
ROUTED TO	2	184.	27.00	184.	184.	183.	6.99		
HYDROGRAPH AT	2	516.	18.50	329.	158.	53.	2.65		
HYDROGRAPH AT	2	474.	18.50	307.	148.	50.	2.65		
ROUTED TO	2	474.	18.50	307.	148.	50.	2.65		
2 COMBINED AT	2	657.	18.50	490.	331.	232.	9.64		
HYDROGRAPH AT	2	414.	18.50	244.	116.	39.	1.99		
HYDROGRAPH AT	2	360.	18.50	225.	107.	36.	1.99		
ROUTED TO	2	360.	18.50	225.	107.	36.	1.99		
2 COMBINED AT	2	1017.	18.50	714.	437.	268.	11.63		
ROUTED TO	4	1017.	18.50	713.	437.	268.	11.63		
HYDROGRAPH AT	4	181.	18.00	95.	44.	15.	.76		
HYDROGRAPH AT	4	167.	18.00	94.	44.	15.	.76		
ROUTED TO	4	167.	18.00	94.	44.	15.	.76		
2 COMBINED AT	4	1179.	18.50	805.	481.	283.	12.39		
HYDROGRAPH AT	3	2420.	18.50	1959.	1099.	388.	12.00		
HYDROGRAPH AT	3	2277.	18.50	1738.	971.	343.	12.00		
ROUTED TO	ALMADE	1255.	23.00	1073.	496.	318.	12.00		
ROUTED TO	4	1222.	24.00	1026.	496.	318.	12.00		
HYDROGRAPH AT	4	845.	19.00	570.	278.	94.	4.24		
HYDROGRAPH AT	4	743.	19.00	523.	256.	86.	4.24		
ROUTED TO	4	743.	19.00	523.	256.	86.	4.24		
2 COMBINED AT	4	1430.	23.50	1186.	722.	404.	16.24		
2 COMBINED AT	4	2152.	18.50	1704.	1191.	686.	28.63		

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ROUTED TO	5	2104.	19.00	1704.	1190.	686.	28.63
HYDROGRAPH AT	5	166.	18.00	90.	42.	14.	.74
HYDROGRAPH AT	5	153.	18.00	86.	40.	13.	.74
ROUTED TO	5	153.	18.00	86.	40.	13.	.74
2 COMBINED AT	5	2250.	18.50	1760.	1228.	699.	29.37
HYDROGRAPH AT	5	495.	18.50	297.	142.	47.	2.28
HYDROGRAPH AT	5	414.	18.50	268.	129.	43.	2.28
ROUTED TO	5	414.	18.50	268.	129.	43.	2.28
2 COMBINED AT	5	2664.	18.50	1977.	1353.	742.	31.65
ROUTED TO	6	2610.	19.00	1974.	1353.	742.	31.65
HYDROGRAPH AT	6	168.	18.00	95.	45.	15.	.77
HYDROGRAPH AT	6	156.	18.00	89.	42.	14.	.77
ROUTED TO	6	156.	18.00	89.	42.	14.	.77
2 COMBINED AT	6	2715.	19.00	2044.	1393.	756.	32.42
HYDROGRAPH AT	6	307.	18.50	177.	83.	28.	1.38
HYDROGRAPH AT	6	281.	18.50	170.	80.	27.	1.38
ROUTED TO	6	281.	18.50	170.	80.	27.	1.38
2 COMBINED AT	6	2940.	18.50	2187.	1470.	783.	33.80
ROUTED TO	7	2952.	19.00	2186.	1470.	783.	33.80
HYDROGRAPH AT	7	604.	18.50	380.	184.	62.	3.08
HYDROGRAPH AT	7	503.	18.50	334.	162.	54.	3.08
ROUTED TO	7	503.	18.50	334.	162.	54.	3.08
2 COMBINED AT	7	3442.	19.00	2507.	1628.	837.	36.88
HYDROGRAPH AT	7	109.	18.50	64.	30.	10.	.53
HYDROGRAPH AT	7	130.	18.50	69.	32.	11.	.53
ROUTED TO	7	130.	18.50	69.	32.	11.	.53
2 COMBINED AT	7	3527.	19.00	2573.	1659.	848.	37.41
ROUTED TO	10	3542.	19.00	2571.	1659.	848.	37.41
HYDROGRAPH AT	10	108.	18.50	64.	30.	10.	.55
HYDROGRAPH AT	10	131.	18.50	68.	32.	11.	.55

ROUTED TO	10	131.	18.50	68.	32.	11.	.55
2 COMBINED AT	10	3626.	19.00	2634.	1689.	858.	37.96
HYDROGRAPH AT	8	1428.	18.50	987.	504.	170.	5.96
HYDROGRAPH AT	8	1177.	18.50	864.	444.	150.	5.96
ROUTED TO	GUADAL	234.	25.00	234.	233.	229.	5.96
ROUTED TO	9	234.	25.50	234.	233.	228.	5.96
HYDROGRAPH AT	9	1354.	18.50	996.	525.	180.	6.75
HYDROGRAPH AT	9	1219.	18.50	831.	436.	149.	6.75
ROUTED TO	9	1219.	18.50	831.	436.	149.	6.75
2 COMBINED AT	9	1450.	18.50	1062.	666.	378.	12.71
ROUTED TO	10	1220.	19.50	1041.	656.	376.	12.71
HYDROGRAPH AT	10	501.	19.00	319.	151.	51.	2.53
HYDROGRAPH AT	10	464.	19.00	301.	143.	48.	2.53
ROUTED TO	10	464.	19.00	301.	143.	48.	2.53
2 COMBINED AT	10	1683.	19.00	1322.	794.	424.	15.24
2 COMBINED AT	10	5309.	19.00	3955.	2484.	1282.	53.20
ROUTED TO	2	5220.	19.00	3951.	2481.	1282.	53.20
Project Condition → HYDROGRAPH AT	2	32.	17.50	11.	7.	2.	2.53
2 COMBINED AT	COMB_P	5228.	19.00	3961.	2487.	1284.	55.73
HYDROGRAPH AT	2	251.	18.50	161.	96.	32.	1.00
HYDROGRAPH AT	2	176.	19.50	126.	59.	20.	1.09
2 COMBINED AT	2	407.	18.50	284.	155.	52.	2.09
ROUTED TO	2	221.	21.00	220.	153.	52.	2.09
2 COMBINED AT	2	5448.	19.00	4179.	2636.	1335.	57.82
HYDROGRAPH AT	ROSS	1291.	19.00	1142.	762.	264.	9.96
2 COMBINED AT	GU+ROS	6739.	19.00	5320.	3387.	1597.	67.78
ROUTED TO	3	6710.	19.50	5317.	3384.	1596.	67.78
HYDROGRAPH AT	3	627.	19.00	447.	272.	92.	2.84
HYDROGRAPH AT	3	294.	19.50	217.	103.	35.	1.89
2 COMBINED AT	3	908.	19.00	661.	374.	127.	4.73

ROUTED TO	3	501.	21.50	499.	367.	127.	4.73
2 COMBINED AT	3	7208.	19.50	5813.	3748.	1722.	72.51
HYDROGRAPH AT	4	439.	18.50	304.	186.	63.	1.91
HYDROGRAPH AT	4	381.	19.50	291.	146.	49.	2.65
2 COMBINED AT	4	759.	19.00	588.	329.	112.	4.56
ROUTED TO	4	480.	21.50	479.	325.	112.	4.56
ROUTED TO	5	480.	22.00	478.	324.	112.	4.56
HYDROGRAPH AT	5	229.	18.50	143.	86.	29.	.87
HYDROGRAPH AT	5	308.	19.50	225.	109.	37.	1.98
2 COMBINED AT	5	492.	18.50	361.	193.	66.	2.85
ROUTED TO	5	300.	21.00	298.	191.	66.	2.85
2 COMBINED AT	5	779.	21.50	775.	514.	178.	7.41
ROUTED TO	6	779.	22.00	775.	514.	178.	7.41
HYDROGRAPH AT	6	452.	18.50	319.	195.	66.	2.05
HYDROGRAPH AT	6	217.	19.50	156.	74.	25.	1.36
2 COMBINED AT	6	641.	19.00	474.	269.	91.	3.41
ROUTED TO	6	361.	21.00	360.	264.	91.	3.41
HYDROGRAPH AT	6	201.	18.50	132.	80.	27.	.83
HYDROGRAPH AT	6	141.	19.50	99.	47.	16.	.86
2 COMBINED AT	6	328.	18.50	229.	126.	43.	1.69
ROUTED TO	6	178.	21.00	178.	124.	43.	1.69
3 COMBINED AT	6	1319.	21.50	1313.	900.	312.	12.51
ROUTED TO	7	1319.	22.00	1312.	898.	312.	12.51
HYDROGRAPH AT	7	609.	18.50	455.	281.	96.	3.02
HYDROGRAPH AT	7	303.	19.50	223.	108.	36.	2.02
2 COMBINED AT	7	894.	19.00	677.	388.	132.	5.04
ROUTED TO	7	532.	21.50	530.	382.	132.	5.04
2 COMBINED AT	7	1850.	22.00	1841.	1280.	444.	17.55
ROUTED TO	3	1850.	22.00	1841.	1278.	444.	17.55
HYDROGRAPH AT	3	191.	19.00	121.	57.	19.	1.07

HYDROGRAPH AT	3	199.	19.00	125.	59.	20.	1.07
ROUTED TO	3	199.	19.00	125.	59.	20.	1.07
2 COMBINED AT	3	1992.	19.50	1924.	1335.	464.	18.62
2 COMBINED AT	GU+CAN	9199.	19.50	7705.	5083.	2184.	91.13
ROUTED TO	8	9141.	19.50	7705.	5079.	2184.	91.13
HYDROGRAPH AT	8	514.	18.50	364.	222.	75.	2.42
HYDROGRAPH AT	8	162.	19.50	115.	54.	18.	1.04
2 COMBINED AT	8	664.	19.00	479.	275.	93.	3.46
ROUTED TO	8	366.	21.00	365.	271.	93.	3.46
2 COMBINED AT	8	9506.	19.50	8069.	5344.	2276.	94.59
ROUTED TO	9	9434.	20.00	8055.	5340.	2274.	94.59
HYDROGRAPH AT	9	527.	19.00	374.	227.	77.	2.59
HYDROGRAPH AT	9	94.	19.50	68.	32.	11.	.65
2 COMBINED AT	9	619.	19.00	442.	259.	88.	3.24
ROUTED TO	9	343.	21.00	341.	255.	88.	3.24
2 COMBINED AT	9	9776.	20.00	8396.	5587.	2361.	97.83
HYDROGRAPH AT	1	2903.	18.50	2135.	1143.	388.	9.91
HYDROGRAPH AT	1	2381.	19.50	2072.	1153.	391.	9.91
ROUTED TO	ELSMAN	2132.	20.50	1909.	1094.	391.	9.91
ROUTED TO	2	2095.	21.00	1895.	1088.	391.	9.91
HYDROGRAPH AT	2	4824.	20.00	4264.	2523.	938.	27.61
HYDROGRAPH AT	2	4200.	20.00	3792.	2249.	837.	27.61
ROUTED TO	2	4200.	20.00	3792.	2249.	837.	27.61
2 COMBINED AT	2	6275.	21.00	5683.	3337.	1227.	37.52
ROUTED TO	LEXING	1607.	30.50	1510.	951.	345.	37.52
ROUTED TO	3	1564.	31.50	1479.	933.	345.	37.52
HYDROGRAPH AT	3	1496.	19.00	1044.	526.	177.	6.46
HYDROGRAPH AT	3	1192.	19.00	924.	473.	160.	6.46
ROUTED TO	3	1192.	19.00	924.	473.	160.	6.46
2 COMBINED AT	3	1568.	31.50	1484.	1018.	503.	43.98

ROUTED TO	VASONA	1545.	32.00	1468.	1014.	503.	43.98
ROUTED TO	4	1533.	33.00	1459.	1012.	503.	43.98
HYDROGRAPH AT	4	484.	18.50	285.	138.	46.	2.17
HYDROGRAPH AT	4	378.	18.50	238.	116.	39.	2.17
ROUTED TO	4	378.	18.50	238.	116.	39.	2.17
2 COMBINED AT	4	1533.	33.00	1459.	1063.	542.	46.15
ROUTED TO	5	1527.	33.50	1454.	1062.	542.	46.15
HYDROGRAPH AT	5	316.	18.50	238.	146.	50.	1.58
HYDROGRAPH AT	5	176.	19.50	125.	60.	20.	1.06
2 COMBINED AT	5	488.	19.00	363.	207.	70.	2.64
ROUTED TO	5	277.	21.50	274.	205.	70.	2.64
2 COMBINED AT	5	1583.	20.00	1455.	1177.	612.	48.79
ROUTED TO	6	1559.	20.50	1447.	1175.	612.	48.79
HYDROGRAPH AT	6	265.	18.50	208.	130.	46.	1.47
HYDROGRAPH AT	6	158.	19.50	111.	53.	18.	.98
2 COMBINED AT	6	414.	19.00	319.	184.	63.	2.45
ROUTED TO	6	255.	21.50	253.	183.	63.	2.45
2 COMBINED AT	6	1813.	20.50	1615.	1286.	675.	51.24
ROUTED TO	7	1805.	21.00	1611.	1285.	675.	51.24
HYDROGRAPH AT	7	377.	19.00	294.	183.	63.	2.15
HYDROGRAPH AT	7	215.	19.50	153.	72.	24.	1.44
2 COMBINED AT	7	586.	19.00	447.	255.	88.	3.59
ROUTED TO	7	371.	21.50	368.	254.	88.	3.59
2 COMBINED AT	7	2175.	21.00	1979.	1447.	762.	54.83
2 COMBINED AT	D/S LG	11891.	20.00	10375.	6816.	3122.	152.66
ROUTED TO	10	11827.	20.00	10369.	6812.	3120.	152.66
HYDROGRAPH AT	10	543.	19.00	391.	238.	81.	2.80
HYDROGRAPH AT	10	170.	19.50	122.	58.	19.	1.19
2 COMBINED AT	10	709.	19.00	513.	296.	100.	3.99
ROUTED TO	10	420.	21.00	419.	292.	100.	3.99

2 COMBINED AT	HWY17	12246.	20.00	10788.	7093.	3219.	156.65
ROUTED TO	11	12192.	20.50	10771.	7084.	3216.	156.65
HYDROGRAPH AT	11	777.	19.00	579.	355.	121.	4.30
HYDROGRAPH AT	11	243.	19.50	182.	87.	29.	1.83
2 COMBINED AT	11	1010.	19.00	762.	441.	150.	6.13
ROUTED TO	11	644.	21.00	641.	436.	150.	6.13
2 COMBINED AT	HWY101	12835.	20.50	11412.	7500.	3362.	162.78
ROUTED TO	12	12624.	21.00	11358.	7469.	3356.	162.78
HYDROGRAPH AT	12	857.	19.50	660.	404.	138.	5.00
HYDROGRAPH AT	12	622.	20.50	502.	248.	83.	5.39
2 COMBINED AT	12	1451.	19.50	1153.	649.	221.	10.39
ROUTED TO	12	1084.	21.50	1067.	643.	221.	10.39
2 COMBINED AT	HWY237	13708.	21.00	12407.	8079.	3571.	173.17

*** NORMAL END OF HEC-1 ***

```
-----DSS---ZCLOSE Unit:  71,   File: PROJ10.DSS
          Pointer Utilization:   .25
          Number of Records:     22
          File Size:     33.8  Kbytes
          Percent Inactive:   .00
```

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ATTACHMENT 5

Arcadia Property & Guadalupe River
100-yr Existing and Project Conditions
HEC-1 Run

96 - 011

Existing Conditions

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/29/1998  TIME  16:11:23 *
*                                      *
****************************************
```

```
*********************************
*                               *
*   U.S. ARMY CORPS OF ENGINEERS
*   HYDROLOGIC ENGINEERING CENTER
*         609 SECOND STREET
*      DAVIS, CALIFORNIA 95616
*          (916) 756-1104
*                               *
*********************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X       XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   UPPER GUADALUPE 1% HYDROGRAPHS W/ CALERO FULL CONDITION.    JULY 1977.
  2           ID   LOSS RATE IS ASSUMED TO BE 30% CONSTANT,DISTRIBUTION BY C.OF E. STANDARD STOR
  3           ID   BALANCING HYDROGRAPHS :IRGUKA 76 S.C.V.W.D. REGRESSION EQUATIONS. FILE:IRGUKA
  4           IT     30 01JAN98    0000     300
  5           IO      5       0

  6           KK      1
  7           KM   INFLOW HYDROGRAPH FOR CALERO RESERVOIR (SUB-AREA A-1)
  8           BA   6.99     .00     .00
  9           PB   8.00
 10           PI    .780   .8300  1.1900  1.2300  1.0200  1.0800  1.7700  1.6200  2.2300  1.8600
 11           PI   1.440  2.2700  1.6800  1.5500  2.0500  1.6600  1.7400  2.1300  1.7700  1.6200
 12           PI   1.600  1.7900  1.8400  1.8700  1.8800  1.9900  2.6600  2.9800  1.9000  2.2900
 13           PI   3.380  3.2300  2.8700  3.4500  6.0000  5.7700  2.2100  2.4600  2.3600  2.0000
 14           PI   1.930  1.7800  2.0700  1.3200  1.8300  1.7200  1.6300  1.6000   .0000   .0000
 15           LU    .000    .100    .000
 16           UC   2.090   1.850
 17           BF      0.      0.  1.0000

 18           KK      1
 19           KM   BALANCED HYDROGRAPH FOR INFLOW TO CALERO RESERVOIR (SUB-AREA A-1)
 20           HB      1   2594.      48  46704.       0      0.       0      0.       0      0.

 21           KK      1
 22           KM   ROUTED FLOW THROUGH CALERO RESERVOIR WITH STORAGE=9300AC-FT.
 23           RL     0.     .00
 24           RS      0    STOR   9300.     .00
 25           SV      0     700    5000    9200   10160   10682   11500   12200   12600       0
 26           SQ      0     111     163     182     185     687    2089    3991    5092       0

 27           KK      2
 28           KM   ROUTED FLOW FROM CALERO DAM TO POINT 2
 29           RL     0.     .00
 30           RS      0    STOR      0.     .00
 31           SV      0      63     138     223     430       0       0       0       0       0
 32           SQ      0     900    2980    6110   15620       0       0       0       0       0

 33           KK      2
 34           KM   RUNOFF HYDROGRAPH FOR ARROYO-CALERO CREEK (SUB-AREA B) AT POINT 2.
 35           BA   2.65     .00     .00
 36           PB   6.55
 37           PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 38           PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 39           PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 40           PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 41           PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 42           LU    .000    .082    .000
 43           UC   1.250   1.175
 44           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  45          KK       2
  46          KM   BALANCED HYDROGRAPH FOR SUB-AREA B AT POINT 2
  47          HB       1   1137.      48  16752.       0      0.       0      0.       0      0.

  48          KK       2
  49          RL      0.     .00
  50          RT       1       1       0

  51          KK       2
  52          KM   COMBINED RUNOFF HYDROGRAPHS OF  SUB-AREA B AND CALERO CREEK AT POINT 2
  53          HC       2

  54          KK       2
  55          KM   RUNOFF HYDROGRAPH FOR SANTA TERESA CREEK (SUB-AREA C)
  56          BA    1.99     .00     .00
  57          PB    6.31
  58          LU    .000    .079    .000
  59          UC    .905    .895
  60          BF      0.      0.  1.0000

  61          KK       2
  62          KM   BALANCED HYDROGRAPH FOR SUB-AREA C AT POINT 2  (SANTA TERESA CREEK)
  63          HB       1    859.      48  12144.       0      0.       0      0.       0      0.

  64          KK       2
  65          RL      0.     .00
  66          RT       1       1       0

  67          KK       2
  68          KM   COMBINED RUNOFF HYDROGRAPHS OF SANTA TERESA CREEK AND CALERO CREEK AT POINT 2
  69          HC       2

  70          KK       4
  71          KM   ROUTED FLOW FROM POINT 2 TO POINT 4
  72          RL      0.     .00
  73          RS       0    STOR      0.     .00
  74          SV       0      15      32      52      99       0       0       0       0       0
  75          SQ       0     900    2980    6110   15600       0       0       0       0       0

  76          KK       4
  77          KM   RUNOFF HYDROGRAPH FOR SUB-AREA D (ARROYO-CALERO AND SANTA TERESA CONFLUENCE)@
  78          BA     .76     .00     .00
  79          PB    6.31
  80          LU    .000    .079    .000
  81          UC    .410    .600
  82          BF      0.      0.  1.0000

  83          KK       4
  84          KM   BALANCED HYDROGRAPH FOR SUB-AREA D AT POINT 4
  85          HB       1    375.      48   4752.       0      0.       0      0.       0      0.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 86           KK      4
 87           RL     0.     .00
 88           RT      1       1       0

 89           KK      4
 90           KM   COMBINED RUNOFF HYDROGRAPHS OF SUB-AREA D AND CALERO CREEK AT POINT 4
 91           HC      2

 92           KK      3
 93           KM   INFLOW HYDROGRAPH FOR ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
 94           BA  12.00     .00     .00
 95           PB  10.55
 96           PI   .650  1.0300  1.3000  1.0600  1.1900   .8300  2.0300  1.5100  2.1500  2.0700
 97           PI  1.860  1.8500  1.5400  1.8300  2.0600  1.8200  2.0500  1.6600  1.7500  1.7900
 98           PI  1.870  1.6700  1.8500  2.0300  2.4300  1.6200  2.9600  2.9400  1.8800  2.1700
 99           PI  3.660  2.5800  3.3500  2.7200  5.9100  5.9100  2.4400  2.1900  2.6400  1.9200
100           PI  1.980  1.9000  2.3300  1.6100  2.0700  1.4500  1.5500  1.8200   .0000   .0000
101           LU   .000    .132    .000
102           UC   .685   3.800
103           BF     0.      0.  1.0000

104           KK      3
105           KM   BALANCED HYDROGRAPH FOR INFLOW TO ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
106           HB      1   4417.      48  84672.       0      0.       0      0.       0      0.

107           KK      3
108           KM   ROUTED FLOW THROUGH ALMADEN RESERVOIR WITH INITIAL STORAGE = 800 AC-FT.
109           RL     0.     .00
110           RS      0    STOR    800.     .00
111           SV      0     120     900    1700    1800    1930    2000    2060    2130    2340
112           SQ      0     173     219     244     246    1449    2450    3701    5027    9531

113           KK      4
114           KM   ROUTED FLOW FROM ALMADEN RESERVOIR DAM (POINT 3) TO POINT 4
115           RL     0.     .00
116           RS      0    STOR      0.     .00
117           SV      0      79     162     389     892       0       0       0       0       0
118           SQ      0     960    3040    6750   24660       0       0       0       0       0

119           KK      4
120           KM   RUNOFF HYDROGRAPH FOR SUB-AREA F
121           BA   4.24     .00     .00
122           PB   7.24
123           PI   .780   .8300  1.1900  1.2300  1.0200  1.0800  1.7700  1.6200  2.2300  1.8600
124           PI  1.440  2.2700  1.6800  1.5500  2.0500  1.6600  1.7400  2.1300  1.7700  1.6200
125           PI  1.600  1.7900  1.8400  1.8700  1.8800  1.9900  2.6600  2.9800  1.9000  2.2900
126           PI  3.380  3.2300  2.8700  3.4500  6.0000  5.7700  2.2100  2.4600  2.3600  2.0000
127           PI  1.930  1.7800  2.0700  1.3200  1.8300  1.7200  1.6300  1.6000   .0000   .0000
128           LU   .000    .090    .000
129           UC  1.670   1.420
130           BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  131         KK       4
  132         KM   BALANCED HYDROGRAPH FOR SUB-AREA F AT POINT 4
  133         HB       1   1720.      48  27840.       0      0.       0      0.       0      0.

  134         KK       4
  135         KO       5       1       0       0       0
  136         RL      0.     .00
  137         RT       1       1       0

  138         KK       4
  139         KM   COMBINED HYDROGRAPH FOR SUB-AREA F AND ALAMITOS CREEK AT POINT 4
  140         HC       2

  141         KK       4
  142         KM   COMBINED HYDROGRAPH FOR CALERO CREEK AND ALAMITOS CREEK AT POINT 4
  143         HC       2

  144         KK       5
  145         KM   ROUTED FLOW FROM POINT 4 TO POINT 5 (ALAMITOS CREEK)
  146         RL      0.     .00
  147         RS       0    STOR      0.     .00
  148         SV       0      17      35      87     198       0       0       0       0       0
  149         SQ       0    1050    3340    7630   28400       0       0       0       0       0

  150         KK       5
  151         KM   RUNOFF HYDROGRAPH FOR SUB-AREA G
  152         BA     .74     .00     .00
  153         PB    6.19
  154         PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
  155         PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
  156         PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
  157         PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
  158         PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
  159         LU    .000    .077    .000
  160         UC    .280    .700
  161         BF      0.      0.  1.0000

  162         KK       5
  163         KM   BALANCED HYDROGRAPH FOR SUB-AREA G AT POINT 5
  164         HB       1    338.      48   4272.       0      0.       0      0.       0      0.

  165         KK       5
  166         KO       5       1       0       0       0
  167         RL      0.     .00
  168         RT       1       1       0

  169         KK       5
  170         KM   COMBINED HYDROGRAPH FOR SUB-AREA G AND ALAMITOS CREEK AT POINT 5
  171         HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK       5
 173          KM   RUNOFF HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 174          BA    2.28     .00     .00
 175          PB    6.78
 176          LU    .000    .085   1.000
 177          UC    .700   1.000
 178          BF      0.      0.  1.0000

 179          KK       5
 180          KM   BALANCED HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 181          HB       1    932.      48  13872.       0      0.       0      0.       0      0.

 182          KK       5
 183          KO       5       1       0       0       0
 184          RL      0.     .00
 185          RT       1       1       0

 186          KK       5
 187          KM   COMBINED HYDROGRAPH FOR RANDOL CREEK AND ALAMITOS CREEK AT POINT 5
 188          HC       2

 189          KK       6
 190          KM   ROUTED FLOW FOR ALAMITOS CREEK FROM POINT 5 TO POINT 6
 191          RL      0.     .00
 192          RS       0    STOR      0.     .00
 193          SV       0      11      23      64     157     292       0       0       0       0
 194          SQ       0     520    1650    3540   14500   37400       0       0       0       0

 195          KK       6
 196          KM   RUNOFF HYDROGRAPH FOR SUB-AREA H
 197          BA     .77     .00     .00
 198          PB    6.31
 199          LU    .000    .079   3.000
 200          UC    .410    .820
 201          BF      0.      0.  1.0000

 202          KK       6
 203          KM   BALANCED HYDROGRAPH FOR SUB-AREA H AT POINT 6
 204          HB       1    334.      48   4320.       0      0.       0      0.       0      0.

 205          KK       6
 206          KO       5       1       0       0       0
 207          RL      0.     .00
 208          RT       1       1       0

 209          KK       6
 210          KM   COMBINED HYDROGRAPH FOR SUB-AREA H AND ALAMITOS CREEK AT POINT 6
 211          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK      6
 213          KM   RUNOFF HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 214          BA    1.38     .00     .00
 215          PB    6.55
 216          LU    .000    .082   2.000
 217          UC    .700    .710
 218          BF      0.      0.  1.0000

 219          KK      6
 220          KM   BALANCED HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 221          HB      1   640.      48   8784.       0      0.       0      0.       0      0.

 222          KK      6
 223          KO      5       1       0       0       0
 224          RL     0.     .00
 225          RT      1       1       0

 226          KK      6
 227          KM   COMBINED HYDROGRAPH FOR GREYSTONE CREEK AND ALAMITOS CREEK AT POINT 6
 228          HC      2

 229          KK      7
 230          KM   ROUTED FLOW FROM POINT 6 TO POINT 7
 231          RL     0.     .00
 232          RS      0    STOR      0.     .00
 233          SV      0      12      25      60     137     250       0       0       0       0
 234          SQ      0     303     975    2275    8200   20000       0       0       0       0

 235          KK      7
 236          KM   RUNOFF HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 237          BA    3.08     .00     .00
 238          PB    6.55
 239          LU    .000    .082   9.000
 240          UC   1.070   1.260
 241          BF      0.      0.  1.0000

 242          KK      7
 243          KM   BALANCED HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 244          HB      1  1177.      48  18000.       0      0.       0      0.       0      0.

 245          KK      7
 246          KO      5       1       0       0       0
 247          RL     0.     .00
 248          RT      1       1       0

 249          KK      7
 250          KM   COMBINED HYDROGRAPH FOR GOLF CREEK AND ALAMITOS CREEK AT POINT 7
 251          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK      7
 253          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 254          BA    .53     .00     .00
 255          PB   6.19
 256          LU   .000    .077  75.000
 257          UC   .650    .820
 258          BF     0.      0.  1.0000

 259          KK      7
 260          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 261          HB      1   296.      48   3504.       0      0.       0      0.       0      0.

 262          KK      7
 263          KO      5       1       0       0       0
 264          RL     0.     .00
 265          RT      1       1       0

 266          KK      7
 267          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10 AND ALAMITOS CREEK AT POINT 7
 268          HC      2

 269          KK     10
 270          KM   ROUTED FLOW FROM POINT 7 TO POINT 10
 271          RL     0.     .00
 272          RS      0    STOR      0.     .00
 273          SV      0      23      49      78     145     246       0       0       0       0
 274          SQ      0     527    1721    3500    8700   18500       0       0       0       0

 275          KK     10
 276          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 277          BA    .55     .00     .00
 278          PB   6.06
 279          LU   .000    .076  15.000
 280          UC   .610    .925
 281          BF     0.      0.  1.0000

 282          KK     10
 283          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 284          HB      1   301.      48   3552.       0      0.       0      0.       0      0.

 285          KK     10
 286          KO      5       1       0       0       0
 287          RL     0.     .00
 288          RT      1       1       0

 289          KK     10
 290          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10A AND ALAMITOS CREEK AT POINT 10
 291          HC      2
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 292          KK      8
 293          KM   INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR (SUB-AREA M-12) AT POINT 8
 294          BA   5.96     .00     .00
 295          PB   9.32
 296          PI    .640  1.0200  1.0500  1.2700  1.0200  1.1400  1.6100  1.8800  2.0700  2.2500
 297          PI   1.960  1.7000  1.6200  1.7000  1.7400  2.0800  1.9700  1.8500  1.8200  1.6700
 298          PI   1.740  1.7500  2.0300  1.7900  1.8000  2.1700  3.0800  2.7400  2.1700  1.9900
 299          PI   3.430  3.0300  3.0200  3.1300  5.1200  5.8400  2.5500  2.1000  2.3500  2.1200
 300          PI   1.910  1.9100  1.7700  1.7200  1.6400  1.8500  1.5400  1.7800   .0000   .0000
 301          LU    .000    .117    .000
 302          UC    .680   1.960
 303          BF      0.      0.  1.0000

 304          KK      8
 305          KM   BALANCED INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR WITH 1976 REGRESSION EQTS.
 306          HB      1   2349.      48  40512.       0      0.       0      0.       0      0.

 307          KK      8
 308          KM   ROUTED FLOW THROUGH GUADALUPE RESERVOIR - INITIAL STORAGE=2900 AC-FT
 309          RL     0.     .00
 310          RS      0    STOR   2900.     .00
 311          SV      0     240    1800    3300    3740    3960    4200    4400    4700       0
 312          SQ      0     150     208     231     237    1788    4810    7469   10614       0

 313          KK      9
 314          KM   ROUTED FLOW FOR GUADALUPE CREEK FROM DAM (POINT 8 TO POINT 9)
 315          RL     0.     .00
 316          RS      0    STOR      0.     .00
 317          SV      0      48      99     237     544       0       0       0       0       0
 318          SQ      0     960    3000    6700   24000       0       0       0       0       0

 319          KK      9
 320          KM   RUNOFF HYDROGRAPH FOR PHEASANT CREEK AND GUADALUPE CREEK (SUB-AREA N-13) AT 9
 321          BA   6.75     .00     .00
 322          PB   8.72
 323          PI    .750   .8800  1.1200  1.1700   .9800  1.1500  1.6000  1.8400  2.0600  2.2000
 324          PI   2.000  1.7600  1.6600  1.6100  2.0200  1.7400  1.8100  1.9500  1.6500  1.7900
 325          PI   1.710  1.7300  1.8600  1.9000  1.9300  2.0000  2.6300  3.1000  2.0000  2.2600
 326          PI   2.740  3.6500  2.7500  3.4700  6.2300  5.2300  2.1700  2.5100  2.2900  2.0300
 327          PI   1.920  1.8400  1.8100  1.6300  1.9200  1.6800  1.6200  1.6500   .0000   .0000
 328          LU    .000    .109    .000
 329          UC    .660   2.650
 330          BF      0.      0.  1.0000

 331          KK      9
 332          KM   BALANCED HYDROGRAPH FOR SUB-AREA N-13 WITH 1976 REGRESSION EQUATIONS
 333          HB      1   2547.      48  40512.       0      0.       0      0.       0      0.

 334          KK      9
 335          KO      5       1       0       0       0
 336          RL     0.     .00
 337          RT      1       1       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 338          KK      9
 339          KM   COMBINE LOCAL RUNOFF WITH GUADALUPE HYDROGRAPH AT POINT 9
 340          HC      2

 341          KK     10
 342          KM   ROUTE FROM POINT 9 TO POINT 10 (CONFLUENCE WITH ALAMITOS CREEK)
 343          RL     0.     .00
 344          RS      0    STOR      0.     .00
 345          SV      0      92     197     310     585     995       0       0       0       0
 346          SQ      0     527    1720    3500    8700   18500       0       0       0       0
              *

 347          KK     10
 348          KM   RUNOFF HYDROGRAPH FOR SUB-AREA O-13A (GUADALUPE CREEK)
 349          BA   2.53     .00     .00
 350          PB   6.55
 351          PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 352          PI   2.140  1.5800  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 353          PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 354          PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 355          PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 356          LU    .000    .082  15.000
 357          UC   1.730    .895
 358          BF     0.      0.  1.0000

 359          KK     10
 360          KM   BALANCED HYDROGRAPH FOR SUB-AREA O-13A AT POINT 10
 361          HB      1   1120.      48  16320.       0      0.       0      0.       0      0.

 362          KK     10
 363          KO      5       1       0       0       0
 364          RL     0.     .00
 365          RT      1       1       0

 366          KK     10
 367          KM   COMBINE LOCAL RUNOFF FROM SUB-AREA O-13A WITH GUADALUPE CREEK AT POINT 10
 368          HC      2

 369          KK     10
 370          KO      1       0       0       0       0
 371          KM   COMBINED HYDROGRAPH FOR GUADALUPE AND ALAMITOS CONFLUENCE AT POINT 10
 372          HC      2
              * ID LOWER GUADALUPE 1% HYDROGRAPHS. INCIDENTAL RESERVOIRS STORAGES. AUG 1977
              * ID LOSS RATES: 30%-PERVIOUS,5%-IMPERVIOUS. C.OF E. STORM DISTRIBUTION.
              * ID URBAN HYDROLOGY USING THE SCVWD URBAN METHODOLOGY.
              * IT    30       0       0     101
              * IO     5       0
              * KK     1
              * KM 100 YEAR HYDROGRAPH FROM UPPER GUADALUPE AND ALAMITOS CREEKS AT BELOW CONFL
              * BA 53.20     .00     .00
              * QI129.00  129.00  234.00  376.00  581.00  863.00 1215.00 1421.00 1619.00 1890.
              * QI  2259    2712    3090    3301    3344    3321    3312    3346    3415    34
              * QI  3527    3521    3486    3463    3481    3526    3580    3683    3926    42
              * QI  4560    4702    4953    5464    6122    7100    9023   11275   11778   113
              * QI 10466    9513    8937    8471    8008    7680    7446    7221    6969    66
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* QI	6118	5474	4868	4320	3796	3365	3033	2739	2455	22
* QI	2034	1887	1757	1630	1512	1406	1308	1212	1126	10
* QI	992.00	945.00	908.00	878.00	854.00	833.00	815.00	799.00	783.00	770.
* QI	761.00	751.00	741.00	730.00	720.00	710.00	700.00	691.00	682.00	675.
* QI	670.00	666.00	663.00	661.00	660.00	659.00	659.00	658.00	658.00	657.
* QI	657.00	.00	.00	.00	.00	.00	.00	.00	.00	.

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 373          KK       2
 374          KO       1
 375          KM   ROUTE FLOW FROM GUADALUPE-ALAMITOS CONFL. DOWN TO ROSS CREEK CONFL.
 376          RL      0.     .00
 377          RS       1    STOR      0.     .00
 378          SV       0      77     116     193     308       0       0       0       0       0
 379          SQ       0    2300    4100    9000   18000       0       0       0       0       0
              *

 380          KK       2
 381          KO       1
 382          KM   ARCADIA PROPERTY LOCAL AREA EXISTING CONDITIONS
 383          ZR    =QI A=ARCADIA B=COMB_E C=FLOW E=5MIN F=EXISTING
              *

 384          KK  COMB_E
 385          KO       1
 386          KM   COMBINE ACRADIA LOCAL PROPERTY WITH GUADALUPE RIVER
 387          HC       2
              *

 388          KK       2
 389          KO       5
 390          KM   RUNOFF HYDROGRAPH AREA G (AI=1.00, TOTAL=2.09) AT POINT 2
 391          BA    1.00     .00     .00
 392          PB    5.94
 393          PI    .750    .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 394          PI   2.140   1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 395          PI   1.630   1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 396          PI   2.910   3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 397          PI   2.000   1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 398          LU    .000    .012    .000
 399          UC   1.500    .500
 400          BF      0.      0.  1.0000

 401          KK       2
 402          KM   RUNOFF HYDROGRAPH AREA G (AP=1.09, TOTAL=2.09) AT POINT 2
 403          BA    1.09     .00     .00
 404          PB    5.94
 405          LU    .000    .074    .000
 406          UC   3.500    .500
 407          BF      0.      0.  1.0000

 408          KK       2
 409          KM   COMBINE IMPRVE & PRVS HYDROGRAPHS FROM AREA G AT POINT 2.(ROSS CREEK CONFL.)
 410          HC       2

 411          KK       2
 412          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA G THRU STORMDRAINS AT ROSS CREEK CONFL  PT.2
 413          RL      0.     .00
 414          RS       1    STOR      0.     .00
 415          SV       0      21     105     209     836    2090       0       0       0       0
 416          SQ       0     217     228     242     325     493       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 417          KK       2
 418          KM   COMBINE ROUTED URBAN FLOW AREA G WITH GUADALUPE R. AT POINT 2 ABOVE ROSS CRK
 419          HC       2

 420          KK    ROSS
 421          KM   100 YEAR HYDROGRAPH FROM ROSS CREEK AT CONFLUENCE WITH GUADALUPE RIVER  PT.2
 422          BA    9.96     .00     .00
 423          QI   11.00   11.00   24.00   44.00   73.00  181.00  333.00  437.00  552.00  677.00
 424          QI  846.00  976.00 1048.00 1081.00 1089.00 1086.00 1088.00 1097.00 1107.00 1111.00
 425          QI    1116    1113    1109    1108    1110    1118    1130    1147    1187    1248
 426          QI    1293    1298    1333    1407    1472    1557    1734    1927    1934    1791
 427          QI    1698    1636    1550    1489    1434    1391    1360    1329    1302    1272
 428          QI    1218    1138    1070    1011     967     928     892     860     835     815
 429          QI  799.00  783.00  768.00  756.00  745.00  708.00  616.00  517.00  422.00  326.00
 430          QI  247.00  168.00  111.00   75.00   55.00   49.00   47.00   44.00   40.00   36.00
 431          QI   32.00   28.00   25.00   22.00   20.00   17.00   16.00   14.00   12.00   11.00
 432          QI   10.00    8.00    7.00    7.00    6.00    5.00    4.00    4.00    3.00    3.00
 433          QI    2.00     .00     .00     .00     .00     .00     .00     .00     .00     .00

 434          KK  GU+ROS
 435          KO       2
 436          KM   COMBINE ROSS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH   POINT 2
 437          HC       2

 438          KK       3
 439          KM  ROUTE GUADALUPE RIVER FROM ROSS CREEK DOWN TO CONFLUENCE WITH CANOAS CRK  PT.3
 440          RL      0.     .00
 441          RS       1    STOR      0.     .00
 442          SV       0      84     127     211     338       0       0       0       0       0
 443          SQ       0    2300    4100    9000   18000       0       0       0       0       0

 444          KK       3
 445          KM   RUNOFF HYDROGRAPH AREA H (AI=2.84,TOTAL=4.73) AT POINT 3.
 446          BA    2.84     .00     .00
 447          PB    5.94
 448          LU    .000    .012    .000
 449          UC   1.750    .970
 450          BF      0.      0.  1.0000

 451          KK       3
 452          KM   RUNOFF HYDROGRAPH AREA H (AP=1.89,TOTAL=4.73) AT POINT 3.
 453          BA    1.89     .00     .00
 454          PB    5.94
 455          LU    .000    .074    .000
 456          UC   3.750    .640
 457          BF      0.      0.  1.0000

 458          KK       3
 459          KM  COMBINE IMPRVS : PRVS HYDROGRAPHS FROM AREA H AT CANOAS CREEK CONFL. POINT 3
 460          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

461           KK       3
462           KM  ROUTE HYDROGRAPH FROM AREA H THRU STORMDRAINS AT  POINT 3  JUST ABOVE CANOAS C
463           RL      0.     .00
464           RS       1    STOR      0.     .00
465           SV       0      47     237     473    1892    4730       0       0       0       0
466           SQ       0     490     516     547     736    1115       0       0       0       0

467           KK       3
468           KM   COMBINE ROUTED URBAN FLOW AREA H WITH GUADALUPE R. AT PT.3 ABOVE CANOAS CREEK
469           HC       2

470           KK       4
471           KM   CANOAS CREEK - AREA A (AI=1.91,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
472           BA    1.91     .00     .00
473           PB    6.06
474           LU    .000    .013    .000
475           UC   1.000   1.200
476           BF      0.      0.  1.0000

477           KK       4
478           KM   CANOAS CREEK - AREA A (AP=2.65,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
479           BA    2.65     .00     .00
480           PB    6.06
481           LU    .000    .076    .000
482           UC   3.000   1.700
483           BF      0.      0.  1.0000

484           KK       4
485           KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA A AT POINT 4 (COTTLE ROAD).
486           HC       2

487           KK       4
488           KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA A THRU STORMDRAINS AT PT.4  COTTLE RD
489           RL      0.     .00
490           RS       1    STOR      0.     .00
491           SV       0      46     228     456    1824    4560       0       0       0       0
492           SQ       0     473     497     527     710    1075       0       0       0       0

493           KK       5
494           KM  CANOAS CREEK--ROUTE FLOW FROM COTTLE RD DOWN TO SANTA TERESA  POINT 5
495           RL      0.     .00
496           RS       1    STOR      0.     .00
497           SV       0       7      18      32      71     190       0       0       0       0
498           SQ       0      72     255     563    1622    6000       0       0       0       0

499           KK       5
500           KM   CANOAS CREEK - AREA B (AI=0.87,TOTAL=2.85) AT POINT 5.(SANTA TERESA)
501           BA     .87     .00     .00
502           PB    6.06
503           LU    .000    .013    .000
504           UC   1.000    .550
505           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 506          KK       5
 507          KM   CANOAS CREEK - AREA B (AP=1.98,TOTAL=2.85) AT POINT 5.(SANTA TERESA).
 508          BA    1.98     .00     .00
 509          PB    6.06
 510          LU    .000    .076    .000
 511          UC   3.000   1.200
 512          BF      0.      0.  1.0000

 513          KK       5
 514          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA B AT POINT 5 (SANTA TERESA).
 515          HC       2

 516          KK       5
 517          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA B THRU STORMDRAINS AT PT.5 SANTA TERESA
 518          RL      0.     .00
 519          RS       1    STOR      0.     .00
 520          SV       0      29     143     285    1140    2850       0       0       0       0
 521          SQ       0     295     311     330     444     672       0       0       0       0

 522          KK       5
 523          KM  CANOAS CREEK--COMBINE ROUTED URBAN AREA B WITH  CHANNEL FLOW AT PT.5 SNTA TRSA
 524          HC       2

 525          KK       6
 526          KM  ROUTE CANOAS CREEK FROM PT.5 SANTA TERESA TO PT.6  BLOSSOM HILL
 527          RL      0.     .00
 528          RS       1    STOR      0.     .00
 529          SV       0       3       7      13      29      76       0       0       0       0
 530          SQ       0      72     255     563    1622    6000       0       0       0       0

 531          KK       6
 532          KM   CANOAS CREEK - AREA C (AI=2.05,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
 533          BA    2.05     .00     .00
 534          PB    5.94
 535          LU    .000    .012    .000
 536          UC   1.200   1.200
 537          BF      0.      0.  1.0000

 538          KK       6
 539          KM   CANOAS CREEK - AREA C (AP=1.36,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
 540          BA    1.36     .00     .00
 541          PB    5.94
 542          LU    .000    .074    .000
 543          UC   3.200    .800
 544          BF      0.      0.  1.0000

 545          KK       6
 546          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA C AT POINT 6 (BLOSSOM HILL).
 547          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

548           KK       6
549           KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA C THRU STORMDRAINS AT PT.6  BLOSSOM HILL
550           RL      0.     .00
551           RS       1    STOR      0.     .00
552           SV       0      34     171     341    1364    3410       0       0       0       0
553           SQ       0     354     372     394     531     804       0       0       0       0

554           KK       6
555           KM   CANOAS CREEK - AREA D (AI=0.83,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
556           BA     .83     .00     .00
557           PB    5.94
558           LU    .000    .012    .000
559           UC    .800    .800
560           BF      0.      0.  1.0000

561           KK       6
562           KM   CANOAS CREEK - AREA D (AP=0.86,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
563           BA     .86     .00     .00
564           PB    5.94
565           LU    .000    .074    .000
566           UC   2.800    .800
567           BF      0.      0.  1.0000

568           KK       6
569           KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA D AT POINT 6 (BLOSSOM HILL).
570           HC       2

571           KK       6
572           KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA D THRU STORMDRAINS AT PT.6  BLOSSOM HILL
573           RL      0.     .00
574           RS       1    STOR      0.     .00
575           SV       0      17      85     169     676    1690       0       0       0       0
576           SQ       0     175     184     195     263     398       0       0       0       0

577           KK       6
578           KM  COMBINE ROUTED URBAN AREAS C&D WITH CANOAS CREEK AT POINT 6  BLOSSOM HILL RD.
579           HC       3

580           KK       7
581           KM  ROUTE CANOAS CREEK FROM PT.6 BLOSSOM HILL TO PT.7  CAPITOL EXPWY
582           RL      0.     .00
583           RS       1    STOR      0.     .00
584           SV       0       6      16      28      61     162       0       0       0       0
585           SQ       0      72     255     563    1622    6000       0       0       0       0

586           KK       7
587           KM   CANOAS CREEK - AREA E (AI=3.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
588           BA    3.02     .00     .00
589           PB    5.81
590           LU    .000    .012    .000
591           UC   1.300   1.500
592           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 593          KK       7
 594          KM   CANOAS CREEK - AREA E (AP=2.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 595          BA    2.02     .00     .00
 596          PB    5.81
 597          LU    .000    .073    .000
 598          UC   3.300   1.000
 599          BF      0.      0.  1.0000

 600          KK       7
 601          KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA E AT POINT 7 (CAPITOL EXPRESSWAY
 602          HC       2

 603          KK       7
 604          KM  CANOAS CREEK--ROUTE HYDRGRPH FROM AREA E THRU STRMDRANS AT PT.7 CAPITOL EXPWY
 605          RL      0.     .00
 606          RS       1    STOR      0.     .00
 607          SV       0      50     252     504    2016    5040       0       0       0       0
 608          SQ       0     522     549     583     785    1188       0       0       0       0

 609          KK       7
 610          KO       1
 611          KM  COMBINE ROUTED URBAN AREA E WITH CANOAS CREEK AT POINT 7 CAPITOL  EXPWY
 612          HC       2

 613          KK       3
 614          KM  ROUTE CANOAS CREEK FROM PT.7 CAPITOL EXPWY TO PT.3  GUADALUPE RIVER CONFLUENCE
 615          RL      0.     .00
 616          RS       1    STOR      0.     .00
 617          SV       0       6      16      28      61     162       0       0       0       0
 618          SQ       0      72     255     563    1622    6000       0       0       0       0

 619          KK       3
 620          KM   CANOAS CREEK - AREA F (A=1.07 RURAL) AT GUADALUPE RIVER CONFLUENCE).
 621          BA    1.07     .00     .00
 622          PB    5.81
 623          LU    .000    .073    .000
 624          UC   2.000    .760
 625          BF      0.      0.  1.0000

 626          KK       3
 627          KM   BALANCED HYDROGRAPH FOR CANOAS CREEK AT GUADALUPE CONFL. (F) - POINT 3.
 628          HB       1    470.      48   7200.       0      0.       0      0.       0      0.

 629          KK       3
 630          RL      0.     .00
 631          RT       1       1       0

 632          KK       3
 633          KM  COMBINE HYDROGRAPH FROM AREA F WITH CANOAS CREEK AT PT.3 CONFL. WITH GUADALUPE
 634          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 635          KK  GU+CAN
 636          KO       2
 637          KM  COMBINE CANOAS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH  AT POINT 3
 638          HC       2

 639          KK       8
 640          KM  ROUTE GUADALUPE RIVER FROM CONFL. WITH CANOAS CRK TO MINNESOTA-ALMA PT.8
 641          RL      0.     .00
 642          RS       1    STOR      0.     .00
 643          SV       0      37     110     183     294     367       0       0       0       0
 644          SQ       0     800    3600    7400   14000   16000       0       0       0       0

 645          KK       8
 646          KM   RUNOFF HYDROGRAPH FOR AREA I (AI=2.42,TOTAL=3.46) AT POINT 8.
 647          BA    2.42     .00     .00
 648          PB    5.69
 649          PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 650          PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 651          PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 652          PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
 653          PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 654          LU    .000    .012    .000
 655          UC   1.400   1.050
 656          BF      0.      0.  1.0000

 657          KK       8
 658          KM   RUNOFF HYDROGRAPH FOR AREA I (AP=1.04,TOTAL=3.46) AT POINT 8.
 659          BA    1.04     .00     .00
 660          PB    5.69
 661          LU    .000    .071    .000
 662          UC   3.400    .500
 663          BF      0.      0.  1.0000

 664          KK       8
 665          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA I AT PT.8  MINNESOTA-ALMA AVE.
 666          HC       2

 667          KK       8
 668          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA I THRU STORMDRAINS AT PT.8 MINNESOTA-ALMA
 669          RL      0.     .00
 670          RS       1    STOR      0.     .00
 671          SV       0      35     173     346    1384    3460       0       0       0       0
 672          SQ       0     359     377     400     539     815       0       0       0       0

 673          KK       8
 674          KM  COMBINE ROUTED URBAN FLOW AREA I WITH GUADALUPE R. AT PT.8  MINNESOTA-ALMA
 675          HC       2

 676          KK       9
 677          KM  ROUTE GUADALUPE RIVER FROM PT.8 MINNESOTA-ALMA  TO CONFL. WITH LOS GATOS PT.9
 678          RL      0.     .00
 679          RS       1    STOR      0.     .00
 680          SV       0      47     140     234     374     468       0       0       0       0
 681          SQ       0     800    3600    7400   14000   16000       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

682           KK       9
683           KM   RUNOFF HYDROGRAPH FOR AREA J (AI=2.59,TOTAL=3.24) AT POINT 9.
684           BA    2.59     .00     .00
685           PB    5.43
686           LU    .000    .011    .000
687           UC   1.700    .920
688           BF      0.      0.  1.0000

689           KK       9
690           KM   RUNOFF HYDROGRAPH FOR AREA J (AP=0.65,TOTAL=3.24) AT POINT 9.
691           BA     .65     .00     .00
692           PB    5.43
693           LU    .000    .068    .000
694           UC   3.700    .500
695           BF      0.      0.  1.0000

696           KK       9
697           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA J AT PT.9 CONFL. WITH LOS GATOS
698           HC       2

699           KK       9
700           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA J THRU STORMDRAINS AT PT.9 LOS GATOS  CONFL.
701           RL      0.     .00
702           RS       1    STOR      0.     .00
703           SV       0      32     162     324    1296    3240       0       0       0       0
704           SQ       0     336     353     375     504     764       0       0       0       0

705           KK       9
706           KM  COMBINE ROUTED URBAN FLOW AREA J WITH GUADALUPE R. AT PT.9 CONFL WITH LOS GATO
707           HC       2
              * ****************************************************************************
              * IDLOS GATOS CREEK  WATERSHED 100 YEAR FLOOD HYDROGRAPHS  C.OF E. STORM DIST.
              * IDURBAN METHODOLOGY STORMDRAIN STORAGE-DISCHARGE CURVE LOSS RATES 30%PERV 5%IM
              * IDELSMAN, VASONA ARE FULL LEXINGTON COIN. FREQ.  14000    FILE: ENGDAT/IRLGKA
              * IT    60       0       0      51
              * IO     5       0

708           KK       1
709           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LAKE ELSMAN  POINT 1    (AREA  A)
710           BA    9.91     .00     .00
711           PB   12.73
              * PI 1.740  2.4300  2.0900  3.3000  4.3500  3.6500  3.3000  4.0000  3.8300  3.65
              * PI 3.650  4.0000  4.1800  5.7400  4.1800  6.0800  5.9100  9.7400  4.7000  4.70
              * PI 4.000  3.6500  3.6500  3.4800   .0000   .0000   .0000   .0000   .0000   .00
712           PI     .92     .82    1.31    1.12    1.21     .88    1.79     1.5    1.64    2.71
713           PI    1.82    1.81    1.54    1.76    1.74    2.26    1.96    1.87    1.91    1.84
714           PI    1.66    1.99    1.96    2.04     1.9    2.28    2.61    3.13    1.95    2.23
715           PI    2.09    2.99    2.75    3.16    3.46    6.28     2.3    2.34    2.65    2.05
716           PI    2.23    1.77     1.8    1.85    1.78    1.85    1.88     1.6
717           LU    .000    .160    .000
718           UC   1.100   2.150
719           UA    .150   2.650   7.660   9.910    .000    .000    .000    .000    .000     .0
720           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 721          KK       1
 722          KM  BALANCED HYDROGRAPH INFLOW TO LAKE ELSMAN  AREA A
 723          HB       1   4125.      48  94900.       0      0.       0      0.       0      0.

 724          KK       1
 725          KM  ROUTE FLOW THRU LAKE ELSMAN  POINT 1    FULL CONDITION
 726          RL      0.     .00
 727          RS       0    STOR   6150.     .00
 728          SV       0    6150    6250    6440    6640    6825    7020    7210    7405    7500
 729          SQ       0       0     196    1017    2174    3577    5174    6939    8850    9856

 730          KK       2
 731          KM  ROUTE LAKE ELSMAN OUTFLOW DOWN TO LEXINGTON DAM  POINT 2
 732          RL      0.     .00
 733          RS       1    STOR      0.     .00
 734          SV       0      51     101     152     253     379     505       0       0       0
 735          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 736          KK       2
 737          KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM  POINT 2  (AREA B)
 738          BA   27.61     .00     .00
 739          PB   11.19
              * PI 1.680  2.3600  2.0200  3.5400  4.2200  3.7100  3.3700  3.8800  3.7100  3.54
              * PI 3.540  3.8800  4.0500  5.9000  4.0500  6.2400  6.0700 10.6200  4.7300  4.56
              * PI 3.880  3.5400  3.5400  3.3700   .0000   .0000   .0000   .0000   .0000   .00
 740          PI     .65    1.03     1.3    1.06    1.19     .83    2.03    1.51    2.15    2.07
 741          PI    1.86    1.85    1.54    1.83    2.06    1.82    2.05    1.66    1.75    1.79
 742          PI    1.87    1.67    1.85    2.03    2.43    1.62    2.96    2.94    1.88    2.17
 743          PI    3.66    2.58    3.35    2.72    5.91    5.91    2.44    2.19    2.64    1.92
 744          PI    1.98    1.90    2.33    1.61    2.07    1.45    1.55    1.82
 745          LU    .000    .140    .000
 746          UC   2.600   5.400
 747          UA    .670   1.300   4.880  10.620  17.470  23.260  27.610    .000    .000    .000
 748          BF      0.      0.  1.0000

 749          KK       2
 750          KM  BALANCED HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM   AREA B
 751          HB       1   7830.      48  197836       0      0.       0      0.       0      0.

 752          KK       2
 753          KO       5       1       0       0       0
 754          RL      0.     .00
 755          RT       1       1       0

 756          KK       2
 757          KM  COMBINE LOCAL INFLOW TO LEXINGTON WITH ROUTED FLOW FROM ELSMAN AT POINT 2
 758          HC       2

 759          KK       2
 760          KM  ROUTE COMBINED FLOW THRU LEXINGTON RESERVOIR AT POINT2 COINCIDENT FREQ 14000
 761          RL      0.     .00
 762          RS       0    STOR  14000.     .00
 763          SV       0   20251   21069   21904   22758   23630   24521   26365       0       0
 764          SQ       0       0    1500    4300    8000   12200   17200   28800       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

765           KK       3
766           KM  ROUTE LEXINGTON OUTFLOW DOWN TO VASONA DAM  POINT 3
767           RL      0.     .00
768           RS       1    STOR      0.     .00
769           SV       0      83     165     248     413     620     826       0       0       0
770           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

771           KK       3
772           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO VASONA RES.   AREA C  AT POINT 3
773           BA    6.46     .00     .00
774           PB    8.92
              * PI 1.630  2.2900  2.1300  3.4400  4.2600  3.7600  3.2700  3.7600  3.7600  3.44
              * PI 3.440  3.7600  3.9300  5.7300  4.2600  6.3900  6.2200 11.4600  4.5800  4.42
              * PI 3.760  3.4400  3.6000  3.2700   .0000   .0000   .0000   .0000   .0000   .00
775           PI     .75     .88    1.12    1.17     .98    1.15     1.6    1.84    2.06     2.2
776           PI       2    1.76    1.66    1.61    2.02    1.74    1.81    1.95    1.65    1.79
777           PI    1.71    1.73    1.86     1.9    1.93       2    2.63     3.1       2    2.26
778           PI    2.74    3.65    2.75    3.47    6.23    5.23    2.17    2.51    2.29    2.03
779           PI    1.92    1.84    1.81    1.63    1.92    1.68    1.62    1.65
780           LU    .000    .110   3.000
781           UC   1.500   1.670
782           BF      0.      0.  1.0000

783           KK       3
784           KM  BALANCED HYDROGRAPH LOCAL INFLOW TO VASONA RES.  AREA C   POINT 3
785           HB       1   2431.      48   45668       0      0.       0      0.       0      0.

786           KK       3
787           KO       5       1       0       0       0
788           RL      0.     .00
789           RT       1       1       0

790           KK       3
791           KM  COMBINE LOCAL INFLOW TO VASONA WITH ROUTED FLOW FROM LEXINGTON  AT POINT 3
792           HC       2

793           KK       3
794           KM  ROUTE COMBINED FLOW THRU VASONA RES.   AT POINT 3  FULL CONDITION
795           RL      0.     .00
796           RS       0    STOR    410.     .00
797           SV       0     410     475     538     607     678     750     840    1000       0
798           SQ       0       0    1000    2000    4000    6000    8000   11000   17000       0

799           KK       4
800           KM  ROUTE VASONA OUTFLOW DOWN TO CAMDEN AVE  POINT 4
801           RL      0.     .00
802           RS       1    STOR      0.     .00
803           SV       0      51     101     152     253     379     505       0       0       0
804           SQ       0     500    1500    2500    6500   13000   22000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 805          KK       4
 806          KM  RUNOFF HYDROGRAPH LOCAL AT CAMDEN   AREA D  AT POINT 4
 807          BA    2.17      .00      .00
 808          PB    6.55
              * PI 1.590  2.3800  2.2300  3.1800  4.2800  3.6600  3.1800  3.6600  3.8200  3.34
              * PI 3.340  3.6600  3.8200  5.7200  4.1300  6.6800  6.5200 12.0800  4.6100  4.28
              * PI 3.660  3.5000  3.5000  3.1800   .0000   .0000   .0000   .0000   .0000   .00
 809          PI     .75     .84    1.16    1.22    1.13     1.1     1.4    1.78    2.02    2.26
 810          PI    2.14    1.52    1.78     1.4    1.85    1.81    1.84    1.98    1.67    1.73
 811          PI    1.63    1.71    2.04    1.72    1.93    1.89    2.61    3.11    1.74    2.39
 812          PI    2.91    3.77    3.03    3.49    6.61    5.67    2.43    2.18    2.12    2.16
 813          PI       2    1.66    1.68    1.82    1.88    1.67    1.58     1.6
 814          LU    .000    .080   4.000
 815          UC   1.100    .820
 816          BF      0.      0.  1.0000

 817          KK       4
 818          KM  BALANCED LOCAL RUNOFF HYDROGRAPH  AREA D  AT CAMDEN AVE  POINT 4
 819          HB       1    859.      48   12634       0      0.       0      0.       0      0.

 820          KK       4
 821          KO       5       1       0       0       0
 822          RL      0.     .00
 823          RT       1       1       0

 824          KK       4
 825          KM  COMBINE LOCAL FLOW AREA D WITH ROUTED FLOW FROM VASONA AT CAMDEN AVE  POINT 4
 826          HC       2

 827          KK       5
 828          KM  ROUTE CHANNEL FLOW FROM CAMDEN AVE TO HWY 17  POINT 5
 829          RL      0.     .00
 830          RS       1    STOR      0.     .00
 831          SV       0      37      74     110     184     275     367       0       0       0
 832          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 833          KK       5
 834          KM  RUNOFF HYDROGRAPH  AREA E  (IMPERVIOUS 60% AI=1.58) AT HWY 17 POINT 5
 835          BA    1.58      .00      .00
 836          PB    5.94
 837          LU    .000     .010     .000
 838          UC   1.250    1.640
 839          BF      0.      0.  1.0000

 840          KK       5
 841          KM  RUNOFF HYDROGRAPH  AREA E  (PERVIOUS  40% AP=1.06) AT HWY 17 POINT 5
 842          BA    1.06      .00      .00
 843          PB    5.94
 844          LU    .000     .070     .000
 845          UC   3.250     .550
 846          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

847           KK       5
848           KM  COMBINE IMPERVIOUS & PERVIOUS HYDROGRAPHS FROM AREA E  AT HWY 17  POINT 5
849           HC       2

850           KK       5
851           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA E THRU STORMDRAIN SYSTEM AT HWY 17 POINT 5
852           RL      0.     .00
853           RS       0    STOR      0.     .00
854           SV       0      16     264    1056    2640       0       0       0       0       0
855           SQ       0     264     333     541     964       0       0       0       0       0

856           KK       5
857           KM  COMBINE LOCAL RUNOFF FROM AREA E WITH FLOW ROUTED FROM CAMDEN AT HWY 17  PT.5
858           HC       2

859           KK       6
860           KM  ROUTE CHANNEL FLOW FROM HWY 17 TO MERIDIAN AVE  POINT 6
861           RL      0.     .00
862           RS       1    STOR      0.     .00
863           SV       0      46      92     138     230     344     459       0       0       0
864           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

865           KK       6
866           KM  RUNOFF HYDROGRAPH AREA F  (IMPERVIOUS 60% AI=1.47) AT MERIDIAN AVE  POINT 6
867           BA    1.47     .00     .00
868           PB    5.81
869           LU    .000    .010    .000
870           UC    .920   2.400
871           BF      0.      0.  1.0000

872           KK       6
873           KM  RUNOFF HYDROGRAPH AREA F  (PERVIOUS 40% AP=.98) AT MERIDIAN AVE POINT 6
874           BA     .98     .00     .00
875           PB    5.81
876           LU    .000    .070    .000
877           UC   2.900    .800
878           BF      0.      0.  1.0000

879           KK       6
880           KM  COMBINE IMPRVS & PERVIOUS HYDGRPHS FROM AREA F AT MERIDIAN AVE  POINT 6
881           HC       2

882           KK       6
883           KM  ROUTE RUNOFF HYDRGRPH FROM AREA F THRU STORMDRAIN SYSTEM AT MERIDIAN  POINT 6
884           RL      0.     .00
885           RS       0    STOR      0.     .00
886           SV       0      15     245     980    2450       0       0       0       0       0
887           SQ       0     245     309     502     894       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

888         KK       6
889         KM  COMBINE LOCAL RUNOFF FROM AREA F WITH FLOW ROUTED FROM HWY 17 AT MERIDIAN PT 6
890         HC       2

891         KK       7
892         KM  ROUTE CHANNEL FLOW FROM MERIDIAN AVE TO GUADALUPE RIVER CONFLUENCE  POINT 7
893         RL      0.     .00
894         RS       1    STOR      0.     .00
895         SV       0      25      50      76     126     190     252       0       0       0
896         SQ       0     500    1500    2500    6500   13000   22000       0       0       0

897         KK       7
898         KM  RUNOFF HYDROGRAPH AREA G  (IMPERVIOUS 60% AI=2.15) AT GUADALUPE CONFL. POINT 7
899         BA    2.15     .00     .00
900         PB    5.56
            * PI 1.570  2.3500  2.1900  3.1400  4.2300  3.6000  3.1400  3.7600  3.7600  3.29
            * PI 3.290  3.6000  3.7600  5.6500  4.2300  6.7400  6.5900 12.3900  4.7000  4.23
            * PI 3.600  3.4500  3.4500  3.2900   .0000   .0000   .0000   .0000   .0000   .00
901         PI     .75     .82    1.13    1.22    1.12    1.07    1.49    1.65    1.98    2.25
902         PI    1.72    1.78     1.6    1.54    1.85    1.91    1.89    1.87    1.64    1.65
903         PI    1.75    1.54    1.79    1.81    1.69    2.07    2.51     3.2    1.75    2.48
904         PI    3.12    3.62    2.79     3.8    5.78    6.61    2.55    2.15    2.17    2.06
905         PI    1.82    1.88    1.56    1.91    1.72    1.73    1.51    1.78
906         LU    .000    .010    .000
907         UC   1.330   2.100
908         BF      0.      0.  1.0000

909         KK       7
910         KM  RUNOFF HYDROGRAPH AREA G  (PERVIOUS 40% AP=1.44) AT GUADALUPE CONFL. POINT 7
911         BA    1.44     .00     .00
912         PB    5.56
913         LU    .000    .070    .000
914         UC   3.300    .700
915         BF      0.      0.  1.0000

916         KK       7
917         KM  COMBINE IMPRVS & PERVIOUS HYDRGRPHS FROM AREA G AT GUADALUPE CONFL.  POINT 7
918         HC       2

919         KK       7
920         KM  ROUTE RUNOFF HYDRGRPH FROM AREA G THRU STORMDRAIN  AT GUADALUPE CONFL.  PT. 7
921         RL      0.     .00
922         RS       0    STOR      0.     .00
923         SV       0      22     359    1436    3590       0       0       0       0       0
924         SQ       0     359     452     736    1310       0       0       0       0       0

925         KK       7
926         KO       1       0       0       0       0
927         KM  COMBINE RUNOFF FROM AREA G WITH FLOW ROUTED FROM MERIDIAN AT GUADALUPE RIV PT
928         HC       2
            * ******************************************************************************
            * KK     9
            * KM100 YEAR HYDROGRAPH FROM LOS GATOS CREEK AT CONFLUENCE WITH GUADALUPE RIVER
            * BA 54.83     .00     .00
            * QI  4.00    4.00   10.00   28.00   62.00  112.00  176.00  250.00  332.00  424.
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* QI	532.00	658.00	816.00	1039.00	1243.00	1412.00	1537.00	1632.00	1705.00	1758.
* QI	1795	1820	1835	1841	1844	1847	1852	1858	1872	19
* QI	1947	2004	2066	2139	2228	2333	2461	2635	2851	31
* QI	3270	3330	3283	3205	3146	3156	3423	4156	5180	61
* QI	6875	7488	7825	7965	7976	7911	7778	7593	7383	71
* QI	6891	6611	6277	5947	5621	5311	4893	4496	4070	36
* QI	3296	3027	2799	2615	2498	2442	2359	2256	2143	20
* QI	1919	1811	1708	1612	1522	1438	1360	1289	1221	11
* QI	1097	1040	985	933	883	834	788	744	701	6
* QI	622.00	.00	.00	.00	.00	.00	.00	.00	.00	.

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 929          KK       9
 930          KM  COMBINE LOS GATOS CREEK WITH GUADALUPE RIVER
 931          HC       2

 932          KK      10
 933          KM  ROUTE  GUADALUPE RIVER FROM CONFL. WITH LOS GATOS TO  HEDDING ST  PT.10
 934          RL      0.     .00
 935          RS       1    STOR      0.     .00
 936          SV       0      64     157     260     374     482     585       0       0       0
 937          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

 938          KK      10
 939          KM   RUNOFF HYDROGRAPH FOR AREA K (AI=2.80,TOTAL=3.99) AT POINT 10.
 940          BA    2.80     .00     .00
 941          PB    5.30
 942          LU    .000    .011    .000
 943          UC   1.600   1.100
 944          BF      0.      0.  1.0000

 945          KK      10
 946          KM   RUNOFF HYDROGRAPH FOR AREA K (AP=1.19,TOTAL=3.99) AT POINT 10.
 947          BA    1.19     .00     .00
 948          PB    5.30
 949          LU    .000    .066    .000
 950          UC   3.600    .500
 951          BF      0.      0.  1.0000

 952          KK      10
 953          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA K AT PT.10  HEDDING ST.
 954          HC       2

 955          KK      10
 956          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA K THRU STORMDRAINS AT PT.10 HEDDING ST.
 957          RL      0.     .00
 958          RS       1    STOR      0.     .00
 959          SV       0      40     200     399    1596    3990       0       0       0       0
 960          SQ       0     414     435     462     621     940       0       0       0       0

 961          KK      10
 962          KM  COMBINE ROUTED URBAN FLOW AREA K WITH GUADALUPE RIVER  AT PT.10 HEDDING ST.
 963          HC       2

 964          KK      11
 965          KM  ROUTE GUADALUPE RIVER FROM PT.10 HEDDING ST. TO PT.11 BAYSHORE HWY
 966          RL      0.     .00
 967          RS       1    STOR      0.     .00
 968          SV       0     102     250     415     598     771     937       0       0       0
 969          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  970         KK      11
  971         KM   RUNOFF HYDROGRAPH FOR AREA L (AI=4.30,TOTAL=6.13) AT POINT 11.
  972         BA    4.30     .00     .00
  973         PB    5.16
  974         LU    .000    .011    .000
  975         UC   2.100   1.200
  976         BF      0.      0.  1.0000

  977         KK      11
  978         KM   RUNOFF HYDROGRAPH FOR AREA L (AP=1.83,TOTAL=6.13) AT POINT 11.
  979         BA    1.83     .00     .00
  980         PB    5.16
  981         LU    .000    .064    .000
  982         UC   4.100    .500
  983         BF      0.      0.  1.0000

  984         KK      11
  985         KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA L AT PT.11 BAYSHORE HWY
  986         HC       2

  987         KK      11
  988         KM  ROUTE RUNOFF HYDROGRAPH FROM AREA L THRU STORMDRAINS AT PT.11 BAYSHORE HWY
  989         RL      0.     .00
  990         RS       1    STOR      0.     .00
  991         SV       0      61     307     613    2452    6130       0       0       0       0
  992         SQ       0     635     668     709     954    1445       0       0       0       0

  993         KK      11
  994         KM  COMBINE ROUTED URBAN FLOW AREA L WITH GUADALUPE RIVER AT PT.11 BAYSHORE HWY
  995         HC       2

  996         KK      12
  997         KM  ROUTE GUADALUPE RIVER FROM PT.11 BAYSHORE HWY TO  POINT 12  HWY 237  ALVISO
  998         RL      0.     .00
  999         RS       1    STOR      0.     .00
 1000         SV       0     178     439     728    1046    1350    1639       0       0       0
 1001         SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

 1002         KK      12
 1003         KM   RUNOFF HYDROGRAPH FOR AREA M (AI=5.00,TOTAL=10.39) AT POINT 12.
 1004         BA    5.00     .00     .00
 1005         PB    5.03
 1006         LU    .000    .010    .000
 1007         UC   2.700   1.100
 1008         BF      0.      0.  1.0000

 1009         KK      12
 1010         KM   RUNOFF HYDROGRAPH FOR AREA M (AP=5.39,TOTAL=10.39) AT POINT 12.
 1011         BA    5.39     .00     .00
 1012         PB    5.03
 1013         LU    .000    .063    .000
 1014         UC   4.700   1.100
 1015         BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1016          KK      12
1017          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA M AT PT.12  HWY 237  ALVISO
1018          HC       2

1019          KK      12
1020          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA M  THRU STORMDRAINS AT PT.12   HWY 237 ALVIS
1021          RL      0.     .00
1022          RS       1    STOR      0.     .00
1023          SV       0     104     520    1039    4156   10390       0       0       0       0
1024          SQ       0    1077    1133    1202    1617    2449       0       0       0       0

1025          KK      12
1026          KM  COMBINE ROUTED URBAN FLOW AREA M WITH GUADALUPE RIVER AT PT.12  HWY 237 ALVISO
1027          HC       2
1028          ZZ
```

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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1	2214.	19.00	1736.	1020.	349.	6.99		
HYDROGRAPH AT	1	2594.	19.00	1680.	973.	333.	6.99		
ROUTED TO	1	633.	25.50	607.	421.	263.	6.99		
ROUTED TO	2	626.	26.50	602.	421.	263.	6.99		
HYDROGRAPH AT	2	845.	18.50	569.	320.	108.	2.65		
HYDROGRAPH AT	2	1137.	18.50	630.	349.	118.	2.65		
ROUTED TO	2	1137.	18.50	630.	349.	118.	2.65		
2 COMBINED AT	2	1321.	18.50	905.	664.	380.	9.64		
HYDROGRAPH AT	2	657.	18.50	418.	233.	78.	1.99		
HYDROGRAPH AT	2	859.	18.50	460.	253.	85.	1.99		
ROUTED TO	2	859.	18.50	460.	253.	85.	1.99		
2 COMBINED AT	2	2180.	18.50	1327.	896.	465.	11.63		
ROUTED TO	4	2063.	18.50	1327.	896.	465.	11.63		
HYDROGRAPH AT	4	293.	18.00	162.	89.	30.	.76		
HYDROGRAPH AT	4	375.	18.00	182.	99.	33.	.76		
ROUTED TO	4	375.	18.00	182.	99.	33.	.76		
2 COMBINED AT	4	2330.	18.50	1497.	989.	498.	12.39		
HYDROGRAPH AT	3	4109.	18.50	3481.	2199.	790.	12.00		
HYDROGRAPH AT	3	4385.	18.50	2848.	1764.	633.	12.00		
ROUTED TO	3	3508.	19.00	2785.	1291.	585.	12.00		
ROUTED TO	4	3213.	19.50	2758.	1291.	585.	12.00		
HYDROGRAPH AT	4	1331.	19.00	979.	566.	192.	4.24		
HYDROGRAPH AT	4	1720.	19.00	1020.	580.	197.	4.24		
ROUTED TO	4	1720.	19.00	1020.	580.	197.	4.24		
2 COMBINED AT	4	4748.	19.00	3665.	1788.	781.	16.24		
2 COMBINED AT	4	6750.	19.00	5098.	2766.	1279.	28.63		

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ROUTED TO	5	6583.	19.00	5087.	2766.	1279.	28.63
HYDROGRAPH AT	5	270.	18.00	155.	85.	29.	.74
HYDROGRAPH AT	5	338.	18.00	164.	89.	30.	.74
ROUTED TO	5	338.	18.00	164.	89.	30.	.74
2 COMBINED AT	5	6750.	19.00	5219.	2846.	1308.	29.37
HYDROGRAPH AT	5	789.	18.00	513.	288.	97.	2.28
HYDROGRAPH AT	5	932.	18.00	522.	289.	97.	2.28
ROUTED TO	5	932.	18.00	522.	289.	97.	2.28
2 COMBINED AT	5	7377.	19.00	5667.	3117.	1406.	31.65
ROUTED TO	6	7251.	19.00	5664.	3118.	1405.	31.65
HYDROGRAPH AT	6	276.	18.00	163.	91.	31.	.77
HYDROGRAPH AT	6	334.	18.00	164.	90.	30.	.77
ROUTED TO	6	334.	18.00	164.	90.	30.	.77
2 COMBINED AT	6	7426.	19.00	5800.	3201.	1435.	32.42
HYDROGRAPH AT	6	506.	18.00	305.	170.	57.	1.38
HYDROGRAPH AT	6	640.	18.00	334.	183.	61.	1.38
ROUTED TO	6	640.	18.00	334.	183.	61.	1.38
2 COMBINED AT	6	7803.	19.00	6075.	3373.	1497.	33.80
ROUTED TO	7	7687.	19.00	6071.	3371.	1496.	33.80
HYDROGRAPH AT	7	997.	18.50	674.	386.	131.	3.08
HYDROGRAPH AT	7	1171.	18.50	664.	375.	127.	3.08
ROUTED TO	7	1171.	18.50	664.	375.	127.	3.08
2 COMBINED AT	7	8552.	19.00	6671.	3730.	1623.	36.88
HYDROGRAPH AT	7	199.	18.00	130.	80.	27.	.53
HYDROGRAPH AT	7	296.	18.00	124.	73.	25.	.53
ROUTED TO	7	296.	18.00	124.	73.	25.	.53
2 COMBINED AT	7	8682.	19.00	6778.	3798.	1647.	37.41
ROUTED TO	10	8710.	19.00	6776.	3796.	1646.	37.41
HYDROGRAPH AT	10	182.	18.00	115.	66.	22.	.55
HYDROGRAPH AT	10	300.	18.00	134.	74.	25.	.55

ROUTED TO	10	300.	18.00	134.	74.	25.	.55
2 COMBINED AT	10	8857.	19.00	6891.	3866.	1671.	37.96
HYDROGRAPH AT	8	2206.	18.50	1663.	1011.	346.	5.96
HYDROGRAPH AT	8	2349.	18.50	1415.	844.	289.	5.96
ROUTED TO	8	921.	22.50	805.	399.	286.	5.96
ROUTED TO	9	903.	23.00	791.	399.	286.	5.96
HYDROGRAPH AT	9	2189.	18.50	1733.	1057.	368.	6.75
HYDROGRAPH AT	9	2547.	18.50	1424.	844.	293.	6.75
ROUTED TO	9	2547.	18.50	1424.	844.	293.	6.75
2 COMBINED AT	9	2781.	18.50	1898.	1233.	578.	12.71
ROUTED TO	10	2077.	19.00	1857.	1218.	576.	12.71
HYDROGRAPH AT	10	826.	18.50	570.	327.	110.	2.53
HYDROGRAPH AT	10	1120.	18.50	606.	340.	115.	2.53
ROUTED TO	10	1120.	18.50	606.	340.	115.	2.53
2 COMBINED AT	10	2967.	18.50	2366.	1541.	689.	15.24
2 COMBINED AT	10	11777.	19.00	9256.	5406.	2360.	53.20
ROUTED TO	2	11760.	19.00	9237.	5404.	2360.	53.20
Existing Condition → HYDROGRAPH AT	2	28.	18.00	16.	8.	3.	2.53
2 COMBINED AT	COMB_E	11775.	19.00	9250.	5412.	2362.	55.73
HYDROGRAPH AT	2	373.	18.50	241.	150.	50.	1.00
HYDROGRAPH AT	2	289.	19.50	216.	120.	41.	1.09
2 COMBINED AT	2	638.	18.50	454.	269.	91.	2.09
ROUTED TO	2	234.	23.00	234.	225.	91.	2.09
2 COMBINED AT	2	12003.	19.00	9481.	5634.	2453.	57.82
HYDROGRAPH AT	ROSS	1934.	19.00	1635.	1254.	499.	9.96
2 COMBINED AT	GU+ROS	13937.	19.00	11097.	6887.	2950.	67.78
ROUTED TO	3	13760.	19.50	11069.	6882.	2949.	67.78
HYDROGRAPH AT	3	925.	19.00	672.	422.	143.	2.84
HYDROGRAPH AT	3	486.	19.50	373.	208.	70.	1.89
2 COMBINED AT	3	1396.	19.00	1042.	629.	214.	4.73

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ROUTED TO	3	534.	24.00	532.	511.	214.	4.73
2 COMBINED AT	3	14280.	19.50	11595.	7389.	3162.	72.51
HYDROGRAPH AT	4	649.	18.50	456.	288.	98.	1.91
HYDROGRAPH AT	4	639.	19.50	507.	293.	100.	2.65
2 COMBINED AT	4	1203.	18.50	955.	577.	198.	4.56
ROUTED TO	4	509.	24.00	508.	489.	198.	4.56
ROUTED TO	5	509.	24.50	507.	488.	198.	4.56
HYDROGRAPH AT	5	333.	18.50	214.	133.	45.	.87
HYDROGRAPH AT	5	511.	19.50	390.	221.	75.	1.98
2 COMBINED AT	5	784.	18.50	595.	351.	120.	2.85
ROUTED TO	5	318.	23.50	316.	302.	120.	2.85
2 COMBINED AT	5	826.	24.50	823.	789.	318.	7.41
ROUTED TO	6	826.	24.50	823.	789.	318.	7.41
HYDROGRAPH AT	6	675.	18.50	481.	304.	103.	2.05
HYDROGRAPH AT	6	357.	19.50	268.	150.	51.	1.36
2 COMBINED AT	6	996.	18.50	748.	452.	154.	3.41
ROUTED TO	6	384.	24.00	383.	368.	154.	3.41
HYDROGRAPH AT	6	294.	18.00	198.	124.	42.	.83
HYDROGRAPH AT	6	232.	19.00	170.	95.	32.	.86
2 COMBINED AT	6	508.	18.50	366.	218.	74.	1.69
ROUTED TO	6	189.	23.00	189.	181.	74.	1.69
3 COMBINED AT	6	1399.	24.00	1395.	1339.	546.	12.51
ROUTED TO	7	1399.	24.50	1394.	1338.	546.	12.51
HYDROGRAPH AT	7	913.	18.50	683.	434.	149.	3.02
HYDROGRAPH AT	7	502.	19.50	384.	216.	73.	2.02
2 COMBINED AT	7	1373.	19.00	1067.	650.	222.	5.04
ROUTED TO	7	564.	24.00	562.	541.	222.	5.04
2 COMBINED AT	7	1963.	24.50	1957.	1879.	768.	17.55
ROUTED TO	3	1963.	24.50	1957.	1879.	768.	17.55
HYDROGRAPH AT	3	307.	19.00	208.	115.	39.	1.07

HYDROGRAPH AT	3	470.	19.00	273.	150.	50.	1.07
ROUTED TO	3	470.	19.00	273.	150.	50.	1.07
2 COMBINED AT	3	2351.	19.00	2161.	2004.	818.	18.62
2 COMBINED AT	GU+CAN	16521.	19.50	13750.	9358.	3980.	91.13
ROUTED TO	8	16118.	19.50	13754.	9357.	3978.	91.13
HYDROGRAPH AT	8	774.	18.50	553.	343.	117.	2.42
HYDROGRAPH AT	8	270.	19.50	201.	110.	37.	1.04
2 COMBINED AT	8	1026.	19.00	754.	453.	154.	3.46
ROUTED TO	8	388.	23.50	387.	373.	154.	3.46
2 COMBINED AT	8	16498.	19.50	14138.	9729.	4131.	94.59
ROUTED TO	9	16127.	20.50	14112.	9723.	4129.	94.59
HYDROGRAPH AT	9	795.	19.00	569.	352.	119.	2.59
HYDROGRAPH AT	9	157.	19.50	120.	65.	22.	.65
2 COMBINED AT	9	948.	19.00	687.	417.	142.	3.24
ROUTED TO	9	362.	23.50	361.	348.	142.	3.24
2 COMBINED AT	9	16486.	20.50	14469.	10071.	4269.	97.83
HYDROGRAPH AT	1	4343.	19.00	3515.	2275.	786.	9.91
HYDROGRAPH AT	1	4125.	19.00	3072.	1977.	683.	9.91
ROUTED TO	1	3334.	20.00	2966.	1904.	683.	9.91
ROUTED TO	2	3317.	20.50	2955.	1897.	683.	9.91
HYDROGRAPH AT	2	8513.	20.50	7792.	5096.	1929.	27.61
HYDROGRAPH AT	2	7830.	20.50	6352.	4121.	1560.	27.61
ROUTED TO	2	7830.	20.50	6352.	4121.	1560.	27.61
2 COMBINED AT	2	11147.	20.50	9303.	6018.	2242.	37.52
ROUTED TO	2	6690.	26.00	6179.	3330.	1192.	37.52
ROUTED TO	3	6654.	26.50	6137.	3297.	1192.	37.52
HYDROGRAPH AT	3	2383.	19.00	1803.	1075.	367.	6.46
HYDROGRAPH AT	3	2431.	19.00	1612.	951.	325.	6.46
ROUTED TO	3	2431.	19.00	1612.	951.	325.	6.46
2 COMBINED AT	3	7018.	26.00	6507.	3638.	1515.	43.98

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ROUTED TO	3	6984.	26.00	6470.	3634.	1515.	43.98
ROUTED TO	4	6982.	26.50	6452.	3632.	1514.	43.98
HYDROGRAPH AT	4	767.	18.50	482.	271.	91.	2.17
HYDROGRAPH AT	4	859.	18.50	473.	263.	89.	2.17
ROUTED TO	4	859.	18.50	473.	263.	89.	2.17
2 COMBINED AT	4	6999.	26.50	6494.	3752.	1602.	46.15
ROUTED TO	5	6996.	26.50	6480.	3751.	1602.	46.15
HYDROGRAPH AT	5	482.	18.50	365.	234.	80.	1.58
HYDROGRAPH AT	5	287.	19.00	213.	120.	40.	1.06
2 COMBINED AT	5	756.	19.00	579.	353.	121.	2.64
ROUTED TO	5	315.	24.00	313.	290.	121.	2.64
2 COMBINED AT	5	7306.	26.50	6783.	3970.	1723.	48.79
ROUTED TO	6	7292.	26.50	6774.	3968.	1723.	48.79
HYDROGRAPH AT	6	403.	18.50	321.	209.	73.	1.47
HYDROGRAPH AT	6	257.	19.50	190.	107.	36.	.98
2 COMBINED AT	6	646.	19.00	512.	316.	109.	2.45
ROUTED TO	6	288.	24.00	286.	266.	109.	2.45
2 COMBINED AT	6	7575.	26.50	7052.	4168.	1832.	51.24
ROUTED TO	7	7576.	27.00	7039.	4167.	1831.	51.24
HYDROGRAPH AT	7	581.	19.00	459.	294.	102.	2.15
HYDROGRAPH AT	7	360.	19.50	270.	148.	50.	1.44
2 COMBINED AT	7	932.	19.00	729.	442.	152.	3.59
ROUTED TO	7	414.	24.00	411.	383.	152.	3.59
2 COMBINED AT	7	7980.	27.00	7438.	4451.	1983.	54.83
2 COMBINED AT	9	19814.	20.50	18151.	14093.	6251.	152.66
ROUTED TO	10	19821.	20.50	18145.	14089.	6249.	152.66
HYDROGRAPH AT	10	819.	19.00	595.	370.	126.	2.80
HYDROGRAPH AT	10	284.	19.50	214.	117.	39.	1.19
2 COMBINED AT	10	1097.	19.00	809.	486.	165.	3.99
ROUTED TO	10	442.	23.00	440.	422.	165.	3.99

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2 COMBINED AT	10	20259.	20.50	18585.	14497.	6413.	156.65
ROUTED TO	11	20103.	21.00	18571.	14492.	6409.	156.65
HYDROGRAPH AT	11	1173.	19.00	882.	551.	188.	4.30
HYDROGRAPH AT	11	408.	19.50	319.	175.	59.	1.83
2 COMBINED AT	11	1566.	19.00	1201.	725.	247.	6.13
ROUTED TO	11	675.	23.00	673.	641.	247.	6.13
2 COMBINED AT	11	20774.	21.00	19243.	15105.	6653.	162.78
ROUTED TO	12	20574.	21.00	19201.	15093.	6645.	162.78
HYDROGRAPH AT	12	1294.	19.50	1005.	626.	214.	5.00
HYDROGRAPH AT	12	1059.	20.50	882.	498.	169.	5.39
2 COMBINED AT	12	2311.	19.50	1874.	1120.	383.	10.39
ROUTED TO	12	1132.	23.50	1128.	1034.	383.	10.39
2 COMBINED AT	12	21695.	21.00	20329.	16066.	7022.	173.17

*** NORMAL END OF HEC-1 ***

```
-----DSS---ZCLOSE Unit:  71,   File: EXI100.DSS
           Pointer Utilization:   .25
           Number of Records:      6
           File Size:     18.9  Kbytes
           Percent Inactive:   .00
```

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Project Conditions

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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*            SEPTEMBER 1990            *
*             VERSION 4.0              *
*                                      *
*  RUN DATE  05/08/1998  TIME  10:52:00 *
*                                      *
****************************************
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***********************************
*
*   U.S. ARMY CORPS OF ENGINEERS
*   HYDROLOGIC ENGINEERING CENTER
*         609 SECOND STREET
*      DAVIS, CALIFORNIA 95616
*          (916) 756-1104
*
***********************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1           ID   UPPER GUADALUPE 1% HYDROGRAPHS W/ CALERO FULL CONDITION.    JULY 1977.
  2           ID   LOSS RATE IS ASSUMED TO BE 30% CONSTANT,DISTRIBUTION BY C.OF E. STANDARD STOR
  3           ID   BALANCING HYDROGRAPHS :IRGUKA 76 S.C.V.W.D. REGRESSION EQUATIONS. FILE:IRGUKA
  4           IT      30 01JAN98    0000     300
  5           IO       5       0

  6           KK       1
  7           KM   INFLOW HYDROGRAPH FOR CALERO RESERVOIR (SUB-AREA A-1)
  8           BA    6.99     .00     .00
  9           PB    8.00
 10           PI    .780   .8300  1.1900  1.2300  1.0200  1.0800  1.7700  1.6200  2.2300  1.8600
 11           PI   1.440  2.2700  1.6800  1.5500  2.0500  1.6600  1.7400  2.1300  1.7700  1.6200
 12           PI   1.600  1.7900  1.8400  1.8700  1.8800  1.9900  2.6600  2.9800  1.9000  2.2900
 13           PI   3.380  3.2300  2.8700  3.4500  6.0000  5.7700  2.2100  2.4600  2.3600  2.0000
 14           PI   1.930  1.7800  2.0700  1.3200  1.8300  1.7200  1.6300  1.6000   .0000   .0000
 15           LU    .000    .100    .000
 16           UC   2.090   1.850
 17           BF      0.      0.  1.0000

 18           KK       1
 19           KM   BALANCED HYDROGRAPH FOR INFLOW TO CALERO RESERVOIR (SUB-AREA A-1)
 20           HB       1   2594.      48  46704.       0      0.       0      0.       0      0.

 21           KK       1
 22           KM   ROUTED FLOW THROUGH CALERO RESERVOIR WITH STORAGE=9300AC-FT.
 23           RL      0.     .00
 24           RS       0    STOR   9300.     .00
 25           SV       0     700    5000    9200   10160   10682   11500   12200   12600       0
 26           SQ       0     111     163     182     185     687    2089    3991    5092       0

 27           KK       2
 28           KM   ROUTED FLOW FROM CALERO DAM TO POINT 2
 29           RL      0.     .00
 30           RS       0    STOR      0.     .00
 31           SV       0      63     138     223     430       0       0       0       0       0
 32           SQ       0     900    2980    6110   15620       0       0       0       0       0

 33           KK       2
 34           KM   RUNOFF HYDROGRAPH FOR ARROYO-CALERO CREEK (SUB-AREA B) AT POINT 2.
 35           BA    2.65     .00     .00
 36           PB    6.55
 37           PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 38           PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 39           PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 40           PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 41           PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 42           LU    .000    .082    .000
 43           UC   1.250   1.175
 44           BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  45          KK      2
  46          KM   BALANCED HYDROGRAPH FOR SUB-AREA B AT POINT 2
  47          HB      1   1137.      48  16752.       0      0.       0      0.       0      0.

  48          KK      2
  49          RL     0.     .00
  50          RT      1       1       0

  51          KK      2
  52          KM   COMBINED RUNOFF HYDROGRAPHS OF  SUB-AREA B AND CALERO CREEK AT POINT 2
  53          HC      2

  54          KK      2
  55          KM   RUNOFF HYDROGRAPH FOR SANTA TERESA CREEK (SUB-AREA C)
  56          BA   1.99     .00     .00
  57          PB   6.31
  58          LU   .000    .079    .000
  59          UC   .905    .895
  60          BF     0.      0.  1.0000

  61          KK      2
  62          KM   BALANCED HYDROGRAPH FOR SUB-AREA C AT POINT 2  (SANTA TERESA CREEK)
  63          HB      1    859.      48  12144.       0      0.       0      0.       0      0.

  64          KK      2
  65          RL     0.     .00
  66          RT      1       1       0

  67          KK      2
  68          KM   COMBINED RUNOFF HYDROGRAPHS OF SANTA TERESA CREEK AND CALERO CREEK AT POINT 2
  69          HC      2

  70          KK      4
  71          KM   ROUTED FLOW FROM POINT 2 TO POINT 4
  72          RL     0.     .00
  73          RS      0    STOR      0.     .00
  74          SV      0      15      32      52      99       0       0       0       0       0
  75          SQ      0     900    2980    6110   15600       0       0       0       0       0

  76          KK      4
  77          KM   RUNOFF HYDROGRAPH FOR SUB-AREA D (ARROYO-CALERO AND SANTA TERESA CONFLUENCE)@
  78          BA    .76     .00     .00
  79          PB   6.31
  80          LU   .000    .079    .000
  81          UC   .410    .600
  82          BF     0.      0.  1.0000

  83          KK      4
  84          KM   BALANCED HYDROGRAPH FOR SUB-AREA D AT POINT 4
  85          HB      1    375.      48   4752.       0      0.       0      0.       0      0.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 86           KK      4
 87           RL     0.     .00
 88           RT      1       1       0

 89           KK      4
 90           KM   COMBINED RUNOFF HYDROGRAPHS OF SUB-AREA D AND CALERO CREEK AT POINT 4
 91           HC      2

 92           KK      3
 93           KM   INFLOW HYDROGRAPH FOR ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
 94           BA  12.00     .00     .00
 95           PB  10.55
 96           PI   .650  1.0300  1.3000  1.0600  1.1900   .8300  2.0300  1.5100  2.1500  2.0700
 97           PI  1.860  1.8500  1.5400  1.8300  2.0600  1.8200  2.0500  1.6600  1.7500  1.7900
 98           PI  1.870  1.6700  1.8500  2.0300  2.4300  1.6200  2.9600  2.9400  1.8800  2.1700
 99           PI  3.660  2.5800  3.3500  2.7200  5.9100  5.9100  2.4400  2.1900  2.6400  1.9200
100           PI  1.980  1.9000  2.3300  1.6100  2.0700  1.4500  1.5500  1.8200   .0000   .0000
101           LU   .000    .132    .000
102           UC   .685   3.800
103           BF     0.      0.  1.0000

104           KK      3
105           KM   BALANCED HYDROGRAPH FOR INFLOW TO ALMADEN RESERVOIR (SUB-AREA E) AT POINT 3
106           HB      1   4417.      48  84672.       0      0.       0      0.       0      0.

107           KK      3
108           KM   ROUTED FLOW THROUGH ALMADEN RESERVOIR WITH INITIAL STORAGE = 800 AC-FT.
109           RL     0.     .00
110           RS      0    STOR    800.     .00
111           SV      0     120     900    1700    1800    1930    2000    2060    2130    2340
112           SQ      0     173     219     244     246    1449    2450    3701    5027    9531

113           KK      4
114           KM   ROUTED FLOW FROM ALMADEN RESERVOIR DAM (POINT 3) TO POINT 4
115           RL     0.     .00
116           RS      0    STOR      0.     .00
117           SV      0      79     162     389     892       0       0       0       0       0
118           SQ      0     960    3040    6750   24660       0       0       0       0       0

119           KK      4
120           KM   RUNOFF HYDROGRAPH FOR SUB-AREA F
121           BA   4.24     .00     .00
122           PB   7.24
123           PI   .780   .8300  1.1900  1.2300  1.0200  1.0800  1.7700  1.6200  2.2300  1.8600
124           PI  1.440  2.2700  1.6800  1.5500  2.0500  1.6600  1.7400  2.1300  1.7700  1.6200
125           PI  1.600  1.7900  1.8400  1.8700  1.8800  1.9900  2.6600  2.9800  1.9000  2.2900
126           PI  3.380  3.2300  2.8700  3.4500  6.0000  5.7700  2.2100  2.4600  2.3600  2.0000
127           PI  1.930  1.7800  2.0700  1.3200  1.8300  1.7200  1.6300  1.6000   .0000   .0000
128           LU   .000    .090    .000
129           UC  1.670   1.420
130           BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 131          KK      4
 132          KM   BALANCED HYDROGRAPH FOR SUB-AREA F AT POINT 4
 133          HB      1   1720.      48  27840.       0      0.       0      0.       0      0.

 134          KK      4
 135          KO      5       1       0       0       0
 136          RL     0.     .00
 137          RT      1       1       0

 138          KK      4
 139          KM   COMBINED HYDROGRAPH FOR SUB-AREA F AND ALAMITOS CREEK AT POINT 4
 140          HC      2

 141          KK      4
 142          KM   COMBINED HYDROGRAPH FOR CALERO CREEK AND ALAMITOS CREEK AT POINT 4
 143          HC      2

 144          KK      5
 145          KM   ROUTED FLOW FROM POINT 4 TO POINT 5 (ALAMITOS CREEK)
 146          RL     0.     .00
 147          RS      0    STOR      0.     .00
 148          SV      0      17      35      87     198       0       0       0       0       0
 149          SQ      0    1050    3340    7630   28400       0       0       0       0       0

 150          KK      5
 151          KM   RUNOFF HYDROGRAPH FOR SUB-AREA G
 152          BA    .74     .00     .00
 153          PB   6.19
 154          PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 155          PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 156          PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 157          PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 158          PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 159          LU    .000    .077    .000
 160          UC    .280    .700
 161          BF     0.      0.  1.0000

 162          KK      5
 163          KM   BALANCED HYDROGRAPH FOR SUB-AREA G AT POINT 5
 164          HB      1    338.      48   4272.       0      0.       0      0.       0      0.

 165          KK      5
 166          KO      5       1       0       0       0
 167          RL     0.     .00
 168          RT      1       1       0

 169          KK      5
 170          KM   COMBINED HYDROGRAPH FOR SUB-AREA G AND ALAMITOS CREEK AT POINT 5
 171          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 172          KK      5
 173          KM   RUNOFF HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 174          BA    2.28     .00     .00
 175          PB    6.78
 176          LU    .000    .085   1.000
 177          UC    .700   1.000
 178          BF      0.      0.  1.0000

 179          KK      5
 180          KM   BALANCED HYDROGRAPH FOR RANDOL CREEK (SUB-AREA I) AT POINT 5
 181          HB      1    932.      48  13872.       0      0.       0      0.       0      0.

 182          KK      5
 183          KO      5       1       0       0       0
 184          RL     0.     .00
 185          RT      1       1       0

 186          KK      5
 187          KM   COMBINED HYDROGRAPH FOR RANDOL CREEK AND ALAMITOS CREEK AT POINT 5
 188          HC      2

 189          KK      6
 190          KM   ROUTED FLOW FOR ALAMITOS CREEK FROM POINT 5 TO POINT 6
 191          RL     0.     .00
 192          RS      0    STOR      0.     .00
 193          SV      0      11      23      64     157     292       0       0       0       0
 194          SQ      0     520    1650    3540   14500   37400       0       0       0       0

 195          KK      6
 196          KM   RUNOFF HYDROGRAPH FOR SUB-AREA H
 197          BA    .77     .00     .00
 198          PB   6.31
 199          LU   .000    .079   3.000
 200          UC   .410    .820
 201          BF     0.      0.  1.0000

 202          KK      6
 203          KM   BALANCED HYDROGRAPH FOR SUB-AREA H AT POINT 6
 204          HB      1    334.      48   4320.       0      0.       0      0.       0      0.

 205          KK      6
 206          KO      5       1       0       0       0
 207          RL     0.     .00
 208          RT      1       1       0

 209          KK      6
 210          KM   COMBINED HYDROGRAPH FOR SUB-AREA H AND ALAMITOS CREEK AT POINT 6
 211          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 212          KK      6
 213          KM   RUNOFF HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 214          BA    1.38     .00     .00
 215          PB    6.55
 216          LU    .000    .082   2.000
 217          UC    .700    .710
 218          BF      0.      0.  1.0000

 219          KK      6
 220          KM   BALANCED HYDROGRAPH FOR GREYSTONE CREEK (SUB-AREA J) AT POINT 6
 221          HB      1    640.      48   8784.       0      0.       0      0.       0      0.

 222          KK      6
 223          KO      5       1       0       0       0
 224          RL     0.     .00
 225          RT      1       1       0

 226          KK      6
 227          KM   COMBINED HYDROGRAPH FOR GREYSTONE CREEK AND ALAMITOS CREEK AT POINT 6
 228          HC      2

 229          KK      7
 230          KM   ROUTED FLOW FROM POINT 6 TO POINT 7
 231          RL     0.     .00
 232          RS      0    STOR      0.     .00
 233          SV      0      12      25      60     137     250       0       0       0       0
 234          SQ      0     303     975    2275    8200   20000       0       0       0       0

 235          KK      7
 236          KM   RUNOFF HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 237          BA    3.08     .00     .00
 238          PB    6.55
 239          LU    .000    .082   9.000
 240          UC   1.070   1.260
 241          BF      0.      0.  1.0000

 242          KK      7
 243          KM   BALANCED HYDROGRAPH FOR GOLF CREEK (SUB-AREA L) AT POINT 7
 244          HB      1   1177.      48  18000.       0      0.       0      0.       0      0.

 245          KK      7
 246          KO      5       1       0       0       0
 247          RL     0.     .00
 248          RT      1       1       0

 249          KK      7
 250          KM   COMBINED HYDROGRAPH FOR GOLF CREEK AND ALAMITOS CREEK AT POINT 7
 251          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK      7
 253          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 254          BA    .53     .00     .00
 255          PB   6.19
 256          LU   .000    .077  75.000
 257          UC   .650    .820
 258          BF     0.      0.  1.0000

 259          KK      7
 260          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10 AT POINT 7
 261          HB      1    296.      48   3504.       0      0.       0      0.       0      0.

 262          KK      7
 263          KO      5       1       0       0       0
 264          RL     0.     .00
 265          RT      1       1       0

 266          KK      7
 267          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10 AND ALAMITOS CREEK AT POINT 7
 268          HC      2

 269          KK     10
 270          KM   ROUTED FLOW FROM POINT 7 TO POINT 10
 271          RL     0.     .00
 272          RS      0    STOR      0.     .00
 273          SV      0      23      49      78     145     246       0       0       0       0
 274          SQ      0     527    1721    3500    8700   18500       0       0       0       0

 275          KK     10
 276          KM   RUNOFF HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 277          BA    .55     .00     .00
 278          PB   6.06
 279          LU   .000    .076  15.000
 280          UC   .610    .925
 281          BF     0.      0.  1.0000

 282          KK     10
 283          KM   BALANCED HYDROGRAPH FOR SUB-AREA K-10A AT POINT 10
 284          HB      1    301.      48   3552.       0      0.       0      0.       0      0.

 285          KK     10
 286          KO      5       1       0       0       0
 287          RL     0.     .00
 288          RT      1       1       0

 289          KK     10
 290          KM   COMBINED HYDROGRAPH FOR SUB-AREA K-10A AND ALAMITOS CREEK AT POINT 10
 291          HC      2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 292          KK      8
 293          KM   INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR (SUB-AREA M-12) AT POINT 8
 294          BA   5.96     .00     .00
 295          PB   9.32
 296          PI    .640  1.0200  1.0500  1.2700  1.0200  1.1400  1.6100  1.8800  2.0700  2.2500
 297          PI   1.960  1.7000  1.6200  1.7000  1.7400  2.0800  1.9700  1.8500  1.8200  1.6700
 298          PI   1.740  1.7500  2.0300  1.7900  1.8000  2.1700  3.0800  2.7400  2.1700  1.9900
 299          PI   3.430  3.0300  3.0200  3.1300  5.1200  5.8400  2.5500  2.1000  2.3500  2.1200
 300          PI   1.910  1.9100  1.7700  1.7200  1.6400  1.8500  1.5400  1.7800   .0000   .0000
 301          LU    .000    .117    .000
 302          UC    .680   1.960
 303          BF      0.      0.  1.0000

 304          KK      8
 305          KM   BALANCED INFLOW HYDROGRAPH FOR GUADALUPE RESERVOIR WITH 1976 REGRESSION EQTS.
 306          HB      1   2349.      48  40512.       0      0.       0      0.       0      0.

 307          KK      8
 308          KM   ROUTED FLOW THROUGH GUADALUPE RESERVOIR - INITIAL STORAGE=2900 AC-FT
 309          RL     0.     .00
 310          RS      0    STOR   2900.     .00
 311          SV      0     240    1800    3300    3740    3960    4200    4400    4700       0
 312          SQ      0     150     208     231     237    1788    4810    7469   10614       0

 313          KK      9
 314          KM   ROUTED FLOW FOR GUADALUPE CREEK FROM DAM (POINT 8 TO POINT 9)
 315          RL     0.     .00
 316          RS      0    STOR      0.     .00
 317          SV      0      48      99     237     544       0       0       0       0       0
 318          SQ      0     960    3000    6700   24000       0       0       0       0       0

 319          KK      9
 320          KM   RUNOFF HYDROGRAPH FOR PHEASANT CREEK AND GUADALUPE CREEK (SUB-AREA N-13) AT 9
 321          BA   6.75     .00     .00
 322          PB   8.72
 323          PI    .750   .8800  1.1200  1.1700   .9800  1.1500  1.6000  1.8400  2.0600  2.2000
 324          PI   2.000  1.7600  1.6600  1.6100  2.0200  1.7400  1.8100  1.9500  1.6500  1.7900
 325          PI   1.710  1.7300  1.8600  1.9000  1.9300  2.0000  2.6300  3.1000  2.0000  2.2600
 326          PI   2.740  3.6500  2.7500  3.4700  6.2300  5.2300  2.1700  2.5100  2.2900  2.0300
 327          PI   1.920  1.8400  1.8100  1.6300  1.9200  1.6800  1.6200  1.6500   .0000   .0000
 328          LU    .000    .109    .000
 329          UC    .660   2.650
 330          BF      0.      0.  1.0000

 331          KK      9
 332          KM   BALANCED HYDROGRAPH FOR SUB-AREA N-13 WITH 1976 REGRESSION EQUATIONS
 333          HB      1   2547.      48  40512.       0      0.       0      0.       0      0.

 334          KK      9
 335          KO      5       1       0       0       0
 336          RL     0.     .00
 337          RT      1       1       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 338          KK       9
 339          KM   COMBINE LOCAL RUNOFF WITH GUADALUPE HYDROGRAPH AT POINT 9
 340          HC       2

 341          KK      10
 342          KM   ROUTE FROM POINT 9 TO POINT 10 (CONFLUENCE WITH ALAMITOS CREEK)
 343          RL      0.     .00
 344          RS       0    STOR      0.     .00
 345          SV       0      92     197     310     585     995       0       0       0       0
 346          SQ       0     527    1720    3500    8700   18500       0       0       0       0
              *

 347          KK      10
 348          KM   RUNOFF HYDROGRAPH FOR SUB-AREA O-13A (GUADALUPE CREEK)
 349          BA    2.53     .00     .00
 350          PB    6.55
 351          PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 352          PI   2.140  1.5800  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 353          PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 354          PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 355          PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 356          LU    .000    .082  15.000
 357          UC   1.730    .895
 358          BF      0.      0.  1.0000

 359          KK      10
 360          KM   BALANCED HYDROGRAPH FOR SUB-AREA O-13A AT POINT 10
 361          HB       1   1120.      48  16320.       0      0.       0      0.       0      0.

 362          KK      10
 363          KO       5       1       0       0       0
 364          RL      0.     .00
 365          RT       1       1       0

 366          KK      10
 367          KM   COMBINE LOCAL RUNOFF FROM SUB-AREA O-13A WITH GUADALUPE CREEK AT POINT 10
 368          HC       2

 369          KK      10
 370          KO       1       0       0       0       0
 371          KM   COMBINED HYDROGRAPH FOR GUADALUPE AND ALAMITOS CONFLUENCE AT POINT 10
 372          HC       2
              * ID LOWER GUADALUPE 1% HYDROGRAPHS. INCIDENTAL RESERVOIRS STORAGES. AUG 1977
              * ID LOSS RATES: 30%-PERVIOUS,5%-IMPERVIOUS. C.OF E. STORM DISTRIBUTION.
              * ID URBAN HYDROLOGY USING THE SCVWD URBAN METHODOLOGY.
              * IT    30       0       0     101
              * IO     5       0
              * KK     1
              * KM 100 YEAR HYDROGRAPH FROM UPPER GUADALUPE AND ALAMITOS CREEKS AT BELOW CONFL
              * BA 53.20     .00     .00
              * QI129.00  129.00  234.00  376.00  581.00  863.00 1215.00 1421.00 1619.00 1890.
              * QI  2259    2712    3090    3301    3344    3321    3312    3346    3415    34
              * QI  3527    3521    3486    3463    3481    3526    3580    3683    3926    42
              * QI  4560    4702    4953    5464    6122    7100    9023   11275   11778   113
              * QI 10466    9513    8937    8471    8008    7680    7446    7221    6969    66
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* QI	6118	5474	4868	4320	3796	3365	3033	2739	2455	22
* QI	2034	1887	1757	1630	1512	1406	1308	1212	1126	10
* QI	992.00	945.00	908.00	878.00	854.00	833.00	815.00	799.00	783.00	770.
* QI	761.00	751.00	741.00	730.00	720.00	710.00	700.00	691.00	682.00	675.
* QI	670.00	666.00	663.00	661.00	660.00	659.00	659.00	658.00	658.00	657.
* QI	657.00	.00	.00	.00	.00	.00	.00	.00	.00	.

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 373          KK       2
 374          ZW   A=GUADALUPE RIVER C=FLOW F=GUADALUPE RIVER
 375          KO       1
 376          KM   ROUTE FLOW FROM GUADALUPE-ALAMITOS CONFL. DOWN TO ROSS CREEK CONFL.
 377          RL      0.     .00
 378          RS       1    STOR      0.     .00
 379          SV       0      77     116     193     308       0       0       0       0       0
 380          SQ       0    2300    4100    9000   18000       0       0       0       0       0
              *

 381          KK       2
 382          ZW    A=LOCAL C=FLOW F=ARCADIA PROPERTY
 383          KO       1
 384          KM   ARCADIA PROPERTY LOCAL AREA EXISTING CONDITIONS
 385          ZR    =QI A=ARCADIA B=COMB_P C=FLOW E=5MIN F=PROJECT
              *

 386          KK  COMB_P
 387          KO       1
 388          KM   COMBINE ACRADIA LOCAL PROPERTY WITH GUADALUPE RIVER
 389          HC       2
              *

 390          KK       2
 391          KO       5
 392          KM   RUNOFF HYDROGRAPH AREA G (AI=1.00, TOTAL=2.09) AT POINT 2
 393          BA    1.00     .00     .00
 394          PB    5.94
 395          PI    .750   .8400  1.1600  1.2200  1.1300  1.1000  1.4000  1.7800  2.0200  2.2600
 396          PI   2.140  1.5200  1.7800  1.4000  1.8500  1.8100  1.8400  1.9800  1.6700  1.7300
 397          PI   1.630  1.7100  2.0400  1.7200  1.9300  1.8900  2.6100  3.1100  1.7400  2.3900
 398          PI   2.910  3.7700  3.0300  3.4900  6.6100  5.6700  2.4300  2.1800  2.1200  2.1600
 399          PI   2.000  1.6600  1.6800  1.8200  1.8800  1.6700  1.5800  1.6000   .0000   .0000
 400          LU    .000    .012    .000
 401          UC   1.500    .500
 402          BF      0.      0.  1.0000

 403          KK       2
 404          KM   RUNOFF HYDROGRAPH AREA G (AP=1.09, TOTAL=2.09) AT POINT 2
 405          BA    1.09     .00     .00
 406          PB    5.94
 407          LU    .000    .074    .000
 408          UC   3.500    .500
 409          BF      0.      0.  1.0000

 410          KK       2
 411          KM   COMBINE IMPRVE & PRVS HYDROGRAPHS FROM AREA G AT POINT 2.(ROSS CREEK CONFL.)
 412          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 413          KK       2
 414          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA G THRU STORMDRAINS AT ROSS CREEK CONFL  PT.2
 415          RL      0.     .00
 416          RS       1    STOR      0.     .00
 417          SV       0      21     105     209     836    2090       0       0       0       0
 418          SQ       0     217     228     242     325     493       0       0       0       0

 419          KK       2
 420          KM   COMBINE ROUTED URBAN FLOW AREA G WITH GUADALUPE R. AT POINT 2 ABOVE ROSS CRK
 421          HC       2

 422          KK    ROSS
 423          KM   100 YEAR HYDROGRAPH FROM ROSS CREEK AT CONFLUENCE WITH GUADALUPE RIVER  PT.2
 424          BA    9.96     .00     .00
 425          QI   11.00   11.00   24.00   44.00   73.00  181.00  333.00  437.00  552.00  677.00
 426          QI  846.00  976.00 1048.00 1081.00 1089.00 1086.00 1088.00 1097.00 1107.00 1111.00
 427          QI    1116    1113    1109    1108    1110    1118    1130    1147    1187    1248
 428          QI    1293    1298    1333    1407    1472    1557    1734    1927    1934    1791
 429          QI    1698    1636    1550    1489    1434    1391    1360    1329    1302    1272
 430          QI    1218    1138    1070    1011     967     928     892     860     835     815
 431          QI  799.00  783.00  768.00  756.00  745.00  708.00  616.00  517.00  422.00  326.00
 432          QI  247.00  168.00  111.00   75.00   55.00   49.00   47.00   44.00   40.00   36.00
 433          QI   32.00   28.00   25.00   22.00   20.00   17.00   16.00   14.00   12.00   11.00
 434          QI   10.00    8.00    7.00    7.00    6.00    5.00    4.00    4.00    3.00    3.00
 435          QI    2.00     .00     .00     .00     .00     .00     .00     .00     .00     .00

 436          KK  GU+ROS
 437          KO       2
 438          KM   COMBINE ROSS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH   POINT 2
 439          HC       2

 440          KK       3
 441          KM  ROUTE GUADALUPE RIVER FROM ROSS CREEK DOWN TO CONFLUENCE WITH CANOAS CRK  PT.3
 442          RL      0.     .00
 443          RS       1    STOR      0.     .00
 444          SV       0      84     127     211     338       0       0       0       0       0
 445          SQ       0    2300    4100    9000   18000       0       0       0       0       0

 446          KK       3
 447          KM   RUNOFF HYDROGRAPH AREA H (AI=2.84,TOTAL=4.73) AT POINT 3.
 448          BA    2.84     .00     .00
 449          PB    5.94
 450          LU    .000    .012    .000
 451          UC   1.750    .970
 452          BF      0.      0.  1.0000

 453          KK       3
 454          KM   RUNOFF HYDROGRAPH AREA H (AP=1.89,TOTAL=4.73) AT POINT 3.
 455          BA    1.89     .00     .00
 456          PB    5.94
 457          LU    .000    .074    .000
 458          UC   3.750    .640
 459          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 460          KK       3
 461          KM  COMBINE IMPRVS : PRVS HYDROGRAPHS FROM AREA H AT CANOAS CREEK CONFL. POINT 3
 462          HC       2

 463          KK       3
 464          KM  ROUTE HYDROGRAPH FROM AREA H THRU STORMDRAINS AT  POINT 3  JUST ABOVE CANOAS C
 465          RL      0.     .00
 466          RS       1    STOR      0.     .00
 467          SV       0      47     237     473    1892    4730       0       0       0       0
 468          SQ       0     490     516     547     736    1115       0       0       0       0

 469          KK       3
 470          KM   COMBINE ROUTED URBAN FLOW AREA H WITH GUADALUPE R. AT PT.3 ABOVE CANOAS CREEK
 471          HC       2

 472          KK       4
 473          KM   CANOAS CREEK - AREA A (AI=1.91,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
 474          BA    1.91     .00     .00
 475          PB    6.06
 476          LU    .000    .013    .000
 477          UC   1.000   1.200
 478          BF      0.      0.  1.0000

 479          KK       4
 480          KM   CANOAS CREEK - AREA A (AP=2.65,TOTAL=4.56) AT POINT 4.(COTTLE ROAD).
 481          BA    2.65     .00     .00
 482          PB    6.06
 483          LU    .000    .076    .000
 484          UC   3.000   1.700
 485          BF      0.      0.  1.0000

 486          KK       4
 487          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA A AT POINT 4 (COTTLE ROAD).
 488          HC       2

 489          KK       4
 490          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA A THRU STORMDRAINS AT PT.4  COTTLE RD
 491          RL      0.     .00
 492          RS       1    STOR      0.     .00
 493          SV       0      46     228     456    1824    4560       0       0       0       0
 494          SQ       0     473     497     527     710    1075       0       0       0       0

 495          KK       5
 496          KM  CANOAS CREEK--ROUTE FLOW FROM COTTLE RD DOWN TO SANTA TERESA  POINT 5
 497          RL      0.     .00
 498          RS       1    STOR      0.     .00
 499          SV       0       7      18      32      71     190       0       0       0       0
 500          SQ       0      72     255     563    1622    6000       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 501          KK      5
 502          KM   CANOAS CREEK - AREA B (AI=0.87,TOTAL=2.85) AT POINT 5.(SANTA TERESA)
 503          BA    .87     .00     .00
 504          PB   6.06
 505          LU   .000    .013    .000
 506          UC  1.000    .550
 507          BF     0.      0.  1.0000

 508          KK      5
 509          KM   CANOAS CREEK - AREA B (AP=1.98,TOTAL=2.85) AT POINT 5.(SANTA TERESA).
 510          BA   1.98     .00     .00
 511          PB   6.06
 512          LU   .000    .076    .000
 513          UC  3.000   1.200
 514          BF     0.      0.  1.0000

 515          KK      5
 516          KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA B AT POINT 5 (SANTA TERESA).
 517          HC      2

 518          KK      5
 519          KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA B THRU STORMDRAINS AT PT.5 SANTA TERESA
 520          RL     0.     .00
 521          RS      1    STOR      0.     .00
 522          SV      0      29     143     285    1140    2850       0       0       0       0
 523          SQ      0     295     311     330     444     672       0       0       0       0

 524          KK      5
 525          KM  CANOAS CREEK--COMBINE ROUTED URBAN AREA B WITH  CHANNEL FLOW AT PT.5 SNTA TRSA
 526          HC      2

 527          KK      6
 528          KM  ROUTE CANOAS CREEK FROM PT.5 SANTA TERESA TO PT.6  BLOSSOM HILL
 529          RL     0.     .00
 530          RS      1    STOR      0.     .00
 531          SV      0       3       7      13      29      76       0       0       0       0
 532          SQ      0      72     255     563    1622    6000       0       0       0       0

 533          KK      6
 534          KM   CANOAS CREEK - AREA C (AI=2.05,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
 535          BA   2.05     .00     .00
 536          PB   5.94
 537          LU   .000    .012    .000
 538          UC  1.200   1.200
 539          BF     0.      0.  1.0000

 540          KK      6
 541          KM   CANOAS CREEK - AREA C (AP=1.36,TOTAL=3.41) AT POINT 6 (BLOSSOM HILL).
 542          BA   1.36     .00     .00
 543          PB   5.94
 544          LU   .000    .074    .000
 545          UC  3.200    .800
 546          BF     0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

547           KK       6
548           KM   CANOAS CREEK - COMBINED HYDROGRAPH FOR AREA C AT POINT 6 (BLOSSOM HILL).
549           HC       2

550           KK       6
551           KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA C THRU STORMDRAINS AT PT.6  BLOSSOM HILL
552           RL      0.     .00
553           RS       1    STOR      0.     .00
554           SV       0      34     171     341    1364    3410       0       0       0       0
555           SQ       0     354     372     394     531     804       0       0       0       0

556           KK       6
557           KM   CANOAS CREEK - AREA D (A1=0.83,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
558           BA     .83     .00     .00
559           PB    5.94
560           LU    .000    .012    .000
561           UC    .800    .800
562           BF      0.      0.  1.0000

563           KK       6
564           KM   CANOAS CREEK - AREA D (AP=0.86,TOTAL=1.69) AT POINT 6 (BLOSSOM HILL).
565           BA     .86     .00     .00
566           PB    5.94
567           LU    .000    .074    .000
568           UC   2.800    .800
569           BF      0.      0.  1.0000

570           KK       6
571           KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA D AT POINT 6 (BLOSSOM HILL).
572           HC       2

573           KK       6
574           KM  CANOAS CREEK--ROUTE HYDGRPH FROM AREA D THRU STORMDRAINS AT PT.6  BLOSSOM HILL
575           RL      0.     .00
576           RS       1    STOR      0.     .00
577           SV       0      17      85     169     676    1690       0       0       0       0
578           SQ       0     175     184     195     263     398       0       0       0       0

579           KK       6
580           KM  COMBINE ROUTED URBAN AREAS C&D WITH CANOAS CREEK AT POINT 6  BLOSSOM HILL RD.
581           HC       3

582           KK       7
583           KM  ROUTE CANOAS CREEK FROM PT.6 BLOSSOM HILL TO PT.7  CAPITOL EXPWY
584           RL      0.     .00
585           RS       1    STOR      0.     .00
586           SV       0       6      16      28      61     162       0       0       0       0
587           SQ       0      72     255     563    1622    6000       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 588          KK       7
 589          KM   CANOAS CREEK - AREA E (AI=3.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 590          BA    3.02     .00     .00
 591          PB    5.81
 592          LU    .000    .012    .000
 593          UC   1.300   1.500
 594          BF      0.      0.  1.0000

 595          KK       7
 596          KM   CANOAS CREEK - AREA E (AP=2.02,TOTAL=5.04) AT POINT 7 (CAPITOL EXPRESSWAY).
 597          BA    2.02     .00     .00
 598          PB    5.81
 599          LU    .000    .073    .000
 600          UC   3.300   1.000
 601          BF      0.      0.  1.0000

 602          KK       7
 603          KM   CANOAS CREEK - COMBINED HYDROGRAPH FROM AREA E AT POINT 7 (CAPITOL EXPRESSWAY
 604          HC       2

 605          KK       7
 606          KM  CANOAS CREEK--ROUTE HYDRGRPH FROM AREA E THRU STRMDRANS AT PT.7 CAPITOL EXPWY
 607          RL      0.     .00
 608          RS       1    STOR      0.     .00
 609          SV       0      50     252     504    2016    5040       0       0       0       0
 610          SQ       0     522     549     583     785    1188       0       0       0       0

 611          KK       7
 612          KO       1
 613          KM  COMBINE ROUTED URBAN AREA E WITH CANOAS CREEK AT POINT 7 CAPITOL  EXPWY
 614          HC       2

 615          KK       3
 616          KM  ROUTE CANOAS CREEK FROM PT.7 CAPITOL EXPWY TO PT.3  GUADALUPE RIVER CONFLUENCE
 617          RL      0.     .00
 618          RS       1    STOR      0.     .00
 619          SV       0       6      16      28      61     162       0       0       0       0
 620          SQ       0      72     255     563    1622    6000       0       0       0       0

 621          KK       3
 622          KM   CANOAS CREEK - AREA F (A=1.07 RURAL) AT GUADALUPE RIVER CONFLUENCE).
 623          BA    1.07     .00     .00
 624          PB    5.81
 625          LU    .000    .073    .000
 626          UC   2.000    .760
 627          BF      0.      0.  1.0000

 628          KK       3
 629          KM   BALANCED HYDROGRAPH FOR CANOAS CREEK AT GUADALUPE CONFL. (F) - POINT 3.
 630          HB       1    470.      48   7200.       0      0.       0      0.       0      0.
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 631          KK       3
 632          RL      0.     .00
 633          RT       1       1       0

 634          KK       3
 635          KM  COMBINE HYDROGRAPH FROM AREA F WITH CANOAS CREEK AT PT.3 CONFL. WITH GUADALUPE
 636          HC       2

 637          KK  GU+CAN
 638          KO       2
 639          KM  COMBINE CANOAS CREEK HYDROGRAPH WITH GUADALUPE RIVER HYDROGRAPH  AT POINT 3
 640          HC       2

 641          KK       8
 642          KM  ROUTE GUADALUPE RIVER FROM CONFL. WITH CANOAS CRK TO MINNESOTA-ALMA PT.8
 643          RL      0.     .00
 644          RS       1    STOR      0.     .00
 645          SV       0      37     110     183     294     367       0       0       0       0
 646          SQ       0     800    3600    7400   14000   16000       0       0       0       0

 647          KK       8
 648          KM   RUNOFF HYDROGRAPH FOR AREA I (AI=2.42,TOTAL=3.46) AT POINT 8.
 649          BA    2.42     .00     .00
 650          PB    5.69
 651          PI    .750   .8200  1.1300  1.2200  1.1200  1.0700  1.4900  1.6500  1.9800  2.2500
 652          PI   1.720  1.7800  1.6000  1.5400  1.8500  1.9100  1.8900  1.8700  1.6400  1.6500
 653          PI   1.750  1.5400  1.7900  1.8100  1.6900  2.0700  2.5100  3.2000  1.7500  2.4800
 654          PI   3.120  3.6200  2.7900  3.8000  5.7800  6.6100  2.5500  2.1500  2.1700  2.0600
 655          PI   1.820  1.8800  1.5600  1.9100  1.7200  1.7300  1.5100  1.7800   .0000   .0000
 656          LU    .000    .012    .000
 657          UC   1.400   1.050
 658          BF      0.      0.  1.0000

 659          KK       8
 660          KM   RUNOFF HYDROGRAPH FOR AREA I (AP=1.04,TOTAL=3.46) AT POINT 8.
 661          BA    1.04     .00     .00
 662          PB    5.69
 663          LU    .000    .071    .000
 664          UC   3.400    .500
 665          BF      0.      0.  1.0000

 666          KK       8
 667          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA I AT PT.8  MINNESOTA-ALMA AVE.
 668          HC       2

 669          KK       8
 670          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA I THRU STORMDRAINS AT PT.8 MINNESOTA-ALMA
 671          RL      0.     .00
 672          RS       1    STOR      0.     .00
 673          SV       0      35     173     346    1384    3460       0       0       0       0
 674          SQ       0     359     377     400     539     815       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

675           KK       8
676           KM  COMBINE ROUTED URBAN FLOW AREA I WITH GUADALUPE R. AT PT.8  MINNESOTA-ALMA
677           HC       2

678           KK       9
679           KM  ROUTE GUADALUPE RIVER FROM PT.8 MINNESOTA-ALMA  TO CONFL. WITH LOS GATOS PT.9
680           RL      0.     .00
681           RS       1    STOR      0.     .00
682           SV       0      47     140     234     374     468       0       0       0       0
683           SQ       0     800    3600    7400   14000   16000       0       0       0       0

684           KK       9
685           KM   RUNOFF HYDROGRAPH FOR AREA J (AI=2.59,TOTAL=3.24) AT POINT 9.
686           BA    2.59     .00     .00
687           PB    5.43
688           LU    .000    .011    .000
689           UC   1.700    .920
690           BF      0.      0.  1.0000

691           KK       9
692           KM   RUNOFF HYDROGRAPH FOR AREA J (AP=0.65,TOTAL=3.24) AT POINT 9.
693           BA     .65     .00     .00
694           PB    5.43
695           LU    .000    .068    .000
696           UC   3.700    .500
697           BF      0.      0.  1.0000

698           KK       9
699           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA J AT PT.9 CONFL. WITH LOS GATOS
700           HC       2

701           KK       9
702           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA J THRU STORMDRAINS AT PT.9 LOS GATOS  CONFL.
703           RL      0.     .00
704           RS       1    STOR      0.     .00
705           SV       0      32     162     324    1296    3240       0       0       0       0
706           SQ       0     336     353     375     504     764       0       0       0       0

707           KK       9
708           KM  COMBINE ROUTED URBAN FLOW AREA J WITH GUADALUPE R. AT PT.9 CONFL WITH LOS GATO
709           HC       2
              * ******************************************************************************
              * IDLOS GATOS CREEK  WATERSHED 100 YEAR FLOOD HYDROGRAPHS  C.OF E. STORM DIST.
              * IDURBAN METHODOLOGY STORMDRAIN STORAGE-DISCHARGE CURVE LOSS RATES 30%PERV 5%IM
              * IDELSMAN, VASONA ARE FULL LEXINGTON COIN. FREQ.  14000    FILE: ENGDAT/IRLGKA
              * IT    60       0       0      51
              * IO     5       0

710           KK       1
711           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LAKE ELSMAN  POINT 1    (AREA  A)
712           BA    9.91     .00     .00
713           PB   12.73
              * PI 1.740  2.4300  2.0900  3.3000  4.3500  3.6500  3.3000  4.0000  3.8300  3.65
              * PI 3.650  4.0000  4.1800  5.7400  4.1800  6.0800  5.9100  9.7400  4.7000  4.70
              * PI 4.000  3.6500  3.6500  3.4800   .0000   .0000   .0000   .0000   .0000   .00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

714           PI     .92     .82    1.31    1.12    1.21     .88    1.79     1.5    1.64    2.71
715           PI    1.82    1.81    1.54    1.76    1.74    2.26    1.96    1.87    1.91    1.84
716           PI    1.66    1.99    1.96    2.04     1.9    2.28    2.61    3.13    1.95    2.23
717           PI    2.09    2.99    2.75    3.16    3.46    6.28     2.3    2.34    2.65    2.05
718           PI    2.23    1.77     1.8    1.85    1.78    1.85    1.88     1.6
719           LU    .000    .160    .000
720           UC   1.100   2.150
721           UA    .150   2.650   7.660   9.910    .000    .000    .000    .000    .000      .0
722           BF      0.      0.  1.0000

723           KK       1
724           KM  BALANCED HYDROGRAPH INFLOW TO LAKE ELSMAN  AREA A
725           HB       1   4125.      48  94900.       0      0.       0      0.       0      0.

726           KK       1
727           KM  ROUTE FLOW THRU LAKE ELSMAN  POINT 1    FULL CONDITION
728           RL      0.     .00
729           RS       0    STOR   6150.     .00
730           SV       0    6150    6250    6440    6640    6825    7020    7210    7405    7500
731           SQ       0       0     196    1017    2174    3577    5174    6939    8850    9856

732           KK       2
733           KM  ROUTE LAKE ELSMAN OUTFLOW DOWN TO LEXINGTON DAM  POINT 2
734           RL      0.     .00
735           RS       1    STOR      0.     .00
736           SV       0      51     101     152     253     379     505       0       0       0
737           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

738           KK       2
739           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM  POINT 2  (AREA B)
740           BA   27.61     .00     .00
741           PB   11.19
              * PI 1.680  2.3600  2.0200  3.5400  4.2200  3.7100  3.3700  3.8800  3.7100  3.54
              * PI 3.540  3.8800  4.0500  5.9000  4.0500  6.2400  6.0700 10.6200  4.7300  4.56
              * PI 3.880  3.5400  3.5400  3.3700   .0000   .0000   .0000   .0000   .0000   .00
742           PI     .65    1.03     1.3    1.06    1.19     .83    2.03    1.51    2.15    2.07
743           PI    1.86    1.85    1.54    1.83    2.06    1.82    2.05    1.66    1.75    1.79
744           PI    1.87    1.67    1.85    2.03    2.43    1.62    2.96    2.94    1.88    2.17
745           PI    3.66    2.58    3.35    2.72    5.91    5.91    2.44    2.19    2.64    1.92
746           PI    1.98    1.90    2.33    1.61    2.07    1.45    1.55    1.82
747           LU    .000    .140    .000
748           UC   2.600   5.400
749           UA    .670   1.300   4.880  10.620  17.470  23.260  27.610    .000    .000    .000
750           BF      0.      0.  1.0000

751           KK       2
752           KM  BALANCED HYDROGRAPH LOCAL INFLOW TO LEXINGTON DAM   AREA B
753           HB       1   7830.      48  197836       0      0.       0      0.       0      0.

754           KK       2
755           KO       5       1       0       0       0
756           RL      0.     .00
757           RT       1       1       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

758           KK       2
759           KM  COMBINE LOCAL INFLOW TO LEXINGTON WITH ROUTED FLOW FROM ELSMAN AT POINT 2
760           HC       2

761           KK       2
762           KM  ROUTE COMBINED FLOW THRU LEXINGTON RESERVOIR AT POINT2 COINCIDENT FREQ 14000
763           RL      0.     .00
764           RS       0    STOR  14000.     .00
765           SV       0   20251   21069   21904   22758   23630   24521   26365       0       0
766           SQ       0       0    1500    4300    8000   12200   17200   28800       0       0

767           KK       3
768           KM  ROUTE LEXINGTON OUTFLOW DOWN TO VASONA DAM  POINT 3
769           RL      0.     .00
770           RS       1    STOR      0.     .00
771           SV       0      83     165     248     413     620     826       0       0       0
772           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

773           KK       3
774           KM  RUNOFF HYDROGRAPH LOCAL INFLOW TO VASONA RES.   AREA C  AT POINT 3
775           BA    6.46     .00     .00
776           PB    8.92
              * PI 1.630  2.2900  2.1300  3.4400  4.2600  3.7600  3.2700  3.7600  3.7600  3.44
              * PI 3.440  3.7600  3.9300  5.7300  4.2600  6.3900  6.2200 11.4600  4.5800  4.42
              * PI 3.760  3.4400  3.6000  3.2700   .0000   .0000   .0000   .0000   .0000   .00
777           PI     .75     .88    1.12    1.17     .98    1.15     1.6    1.84    2.06     2.2
778           PI       2    1.76    1.66    1.61    2.02    1.74    1.81    1.95    1.65    1.79
779           PI    1.71    1.73    1.86     1.9    1.93       2    2.63     3.1       2    2.26
780           PI    2.74    3.65    2.75    3.47    6.23    5.23    2.17    2.51    2.29    2.03
781           PI    1.92    1.84    1.81    1.63    1.92    1.68    1.62    1.65
782           LU    .000    .110   3.000
783           UC   1.500   1.670
784           BF      0.      0.  1.0000

785           KK       3
786           KM  BALANCED HYDROGRAPH LOCAL INFLOW TO VASONA RES.  AREA C   POINT 3
787           HB       1   2431.      48   45668       0      0.       0      0.       0      0.

788           KK       3
789           KO       5       1       0       0       0
790           RL      0.     .00
791           RT       1       1       0

792           KK       3
793           KM  COMBINE LOCAL INFLOW TO VASONA WITH ROUTED FLOW FROM LEXINGTON  AT POINT 3
794           HC       2

795           KK       3
796           KM  ROUTE COMBINED FLOW THRU VASONA RES.   AT POINT 3  FULL CONDITION
797           RL      0.     .00
798           RS       0    STOR    410.     .00
799           SV       0     410     475     538     607     678     750     840    1000       0
800           SQ       0       0    1000    2000    4000    6000    8000   11000   17000       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 801          KK       4
 802          KM  ROUTE VASONA OUTFLOW DOWN TO CAMDEN AVE  POINT 4
 803          RL      0.     .00
 804          RS       1    STOR      0.     .00
 805          SV       0      51     101     152     253     379     505       0       0       0
 806          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 807          KK       4
 808          KM  RUNOFF HYDROGRAPH LOCAL AT CAMDEN   AREA D  AT POINT 4
 809          BA    2.17     .00     .00
 810          PB    6.55
              * PI 1.590  2.3800  2.2300  3.1800  4.2800  3.6600  3.1800  3.6600  3.8200  3.34
              * PI 3.340  3.6600  3.8200  5.7200  4.1300  6.6800  6.5200 12.0800  4.6100  4.28
              * PI 3.660  3.5000  3.5000  3.1800   .0000   .0000   .0000   .0000   .0000   .00
 811          PI     .75     .84    1.16    1.22    1.13     1.1     1.4    1.78    2.02    2.26
 812          PI    2.14    1.52    1.78     1.4    1.85    1.81    1.84    1.98    1.67    1.73
 813          PI    1.63    1.71    2.04    1.72    1.93    1.89    2.61    3.11    1.74    2.39
 814          PI    2.91    3.77    3.03    3.49    6.61    5.67    2.43    2.18    2.12    2.16
 815          PI       2    1.66    1.68    1.82    1.88    1.67    1.58     1.6
 816          LU    .000    .080   4.000
 817          UC   1.100    .820
 818          BF      0.      0.  1.0000

 819          KK       4
 820          KM  BALANCED LOCAL RUNOFF HYDROGRAPH  AREA D  AT CAMDEN AVE  POINT 4
 821          HB       1    859.      48   12634       0      0.       0      0.       0      0.

 822          KK       4
 823          KO       5       1       0       0       0
 824          RL      0.     .00
 825          RT       1       1       0

 826          KK       4
 827          KM  COMBINE LOCAL FLOW AREA D WITH ROUTED FLOW FROM VASONA AT CAMDEN AVE  POINT 4
 828          HC       2

 829          KK       5
 830          KM  ROUTE CHANNEL FLOW FROM CAMDEN AVE TO HWY 17  POINT 5
 831          RL      0.     .00
 832          RS       1    STOR      0.     .00
 833          SV       0      37      74     110     184     275     367       0       0       0
 834          SQ       0     500    1500    2500    6500   13000   22000       0       0       0

 835          KK       5
 836          KM  RUNOFF HYDROGRAPH  AREA E  (IMPERVIOUS 60% AI=1.58) AT HWY 17 POINT 5
 837          BA    1.58     .00     .00
 838          PB    5.94
 839          LU    .000    .010    .000
 840          UC   1.250   1.640
 841          BF      0.      0.  1.0000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

842           KK       5
843           KM  RUNOFF HYDROGRAPH  AREA E  (PERVIOUS  40% AP=1.06) AT HWY 17 POINT 5
844           BA    1.06     .00     .00
845           PB    5.94
846           LU    .000    .070    .000
847           UC   3.250    .550
848           BF      0.      0.  1.0000

849           KK       5
850           KM  COMBINE IMPERVIOUS & PERVIOUS HYDROGRAPHS FROM AREA E  AT HWY 17  POINT 5
851           HC       2

852           KK       5
853           KM  ROUTE RUNOFF HYDROGRAPH FROM AREA E THRU STORMDRAIN SYSTEM AT HWY 17 POINT 5
854           RL      0.     .00
855           RS       0    STOR      0.     .00
856           SV       0      16     264    1056    2640       0       0       0       0       0
857           SQ       0     264     333     541     964       0       0       0       0       0

858           KK       5
859           KM  COMBINE LOCAL RUNOFF FROM AREA E WITH FLOW ROUTED FROM CAMDEN AT HWY 17  PT.5
860           HC       2

861           KK       6
862           KM  ROUTE CHANNEL FLOW FROM HWY 17 TO MERIDIAN AVE  POINT 6
863           RL      0.     .00
864           RS       1    STOR      0.     .00
865           SV       0      46      92     138     230     344     459       0       0       0
866           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

867           KK       6
868           KM  RUNOFF HYDROGRAPH AREA F  (IMPERVIOUS 60% AI=1.47) AT MERIDIAN AVE  POINT 6
869           BA    1.47     .00     .00
870           PB    5.81
871           LU    .000    .010    .000
872           UC    .920   2.400
873           BF      0.      0.  1.0000

874           KK       6
875           KM  RUNOFF HYDROGRAPH AREA F  (PERVIOUS 40% AP=.98) AT MERIDIAN AVE POINT 6
876           BA     .98     .00     .00
877           PB    5.81
878           LU    .000    .070    .000
879           UC   2.900    .800
880           BF      0.      0.  1.0000

881           KK       6
882           KM  COMBINE IMPRVS & PERVIOUS HYDGRPHS FROM AREA F AT MERIDIAN AVE  POINT 6
883           HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

884           KK       6
885           KM  ROUTE RUNOFF HYDRGRPH FROM AREA F THRU STORMDRAIN SYSTEM AT MERIDIAN  POINT 6
886           RL      0.     .00
887           RS       0    STOR      0.     .00
888           SV       0      15     245     980    2450       0       0       0       0       0
889           SQ       0     245     309     502     894       0       0       0       0       0

890           KK       6
891           KM  COMBINE LOCAL RUNOFF FROM AREA F WITH FLOW ROUTED FROM HWY 17 AT MERIDIAN PT 6
892           HC       2

893           KK       7
894           KM  ROUTE CHANNEL FLOW FROM MERIDIAN AVE TO GUADALUPE RIVER CONFLUENCE  POINT 7
895           RL      0.     .00
896           RS       1    STOR      0.     .00
897           SV       0      25      50      76     126     190     252       0       0       0
898           SQ       0     500    1500    2500    6500   13000   22000       0       0       0

899           KK       7
900           KM  RUNOFF HYDROGRAPH AREA G  (IMPERVIOUS 60% AI=2.15) AT GUADALUPE CONFL. POINT 7
901           BA    2.15     .00     .00
902           PB    5.56
              * PI 1.570  2.3500  2.1900  3.1400  4.2300  3.6000  3.1400  3.7600  3.7600  3.29
              * PI 3.290  3.6000  3.7600  5.6500  4.2300  6.7400  6.5900 12.3900  4.7000  4.23
              * PI 3.600  3.4500  3.4500  3.2900   .0000   .0000   .0000   .0000   .0000   .00
903           PI     .75     .82    1.13    1.22    1.12    1.07    1.49    1.65    1.98    2.25
904           PI    1.72    1.78     1.6    1.54    1.85    1.91    1.89    1.87    1.64    1.65
905           PI    1.75    1.54    1.79    1.81    1.69    2.07    2.51     3.2    1.75    2.48
906           PI    3.12    3.62    2.79     3.8    5.78    6.61    2.55    2.15    2.17    2.06
907           PI    1.82    1.88    1.56    1.91    1.72    1.73    1.51    1.78
908           LU    .000    .010    .000
909           UC   1.330   2.100
910           BF      0.      0.  1.0000

911           KK       7
912           KM  RUNOFF HYDROGRAPH AREA G  (PERVIOUS 40% AP=1.44) AT GUADALUPE CONFL. POINT 7
913           BA    1.44     .00     .00
914           PB    5.56
915           LU    .000    .070    .000
916           UC   3.300    .700
917           BF      0.      0.  1.0000

918           KK       7
919           KM  COMBINE IMPRVS & PERVIOUS HYDRGRPHS FROM AREA G AT GUADALUPE CONFL.  POINT 7
920           HC       2

921           KK       7
922           KM  ROUTE RUNOFF HYDRGRPH FROM AREA G THRU STORMDRAIN  AT GUADALUPE CONFL.  PT. 7
923           RL      0.     .00
924           RS       0    STOR      0.     .00
925           SV       0      22     359    1436    3590       0       0       0       0       0
926           SQ       0     359     452     736    1310       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

927           KK       7
928           KO       1       0       0       0       0
929           KM  COMBINE RUNOFF FROM AREA G WITH FLOW ROUTED FROM MERIDIAN AT GUADALUPE RIV PT
930           HC       2
              * ***************************************************************************
              * KK     9
              * KM100 YEAR HYDROGRAPH FROM LOS GATOS CREEK AT CONFLUENCE WITH GUADALUPE RIVER
              * BA 54.83     .00     .00
              * QI  4.00    4.00   10.00   28.00   62.00  112.00  176.00  250.00  332.00  424.
              * QI532.00  658.00  816.00 1039.00 1243.00 1412.00 1537.00 1632.00 1705.00 1758.
              * QI  1795    1820    1835    1841    1844    1847    1852    1858    1872    19
              * QI  1947    2004    2066    2139    2228    2333    2461    2635    2851    31
              * QI  3270    3330    3283    3205    3146    3156    3423    4156    5180    61
              * QI  6875    7488    7825    7965    7976    7911    7778    7593    7383    71
              * QI  6891    6611    6277    5947    5621    5311    4893    4496    4070    36
              * QI  3296    3027    2799    2615    2498    2442    2359    2256    2143    20
              * QI  1919    1811    1708    1612    1522    1438    1360    1289    1221    11
              * QI  1097    1040     985     933     883     834     788     744     701     6
              * QI622.00     .00     .00     .00     .00     .00     .00     .00     .00     .

931           KK       9
932           KM  COMBINE LOS GATOS CREEK WITH GUADALUPE RIVER
933           HC       2

934           KK      10
935           KM  ROUTE  GUADALUPE RIVER FROM CONFL. WITH LOS GATOS TO  HEDDING ST  PT.10
936           RL      0.     .00
937           RS       1    STOR      0.     .00
938           SV       0      64     157     260     374     482     585       0       0       0
939           SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

940           KK      10
941           KM   RUNOFF HYDROGRAPH FOR AREA K (AI=2.80,TOTAL=3.99) AT POINT 10.
942           BA    2.80     .00     .00
943           PB    5.30
944           LU    .000    .011    .000
945           UC   1.600   1.100
946           BF      0.      0.  1.0000

947           KK      10
948           KM   RUNOFF HYDROGRAPH FOR AREA K (AP=1.19,TOTAL=3.99) AT POINT 10.
949           BA    1.19     .00     .00
950           PB    5.30
951           LU    .000    .066    .000
952           UC   3.600    .500
953           BF      0.      0.  1.0000

954           KK      10
955           KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA K AT PT.10  HEDDING ST.
956           HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 957          KK      10
 958          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA K THRU STORMDRAINS AT PT.10 HEDDING ST.
 959          RL      0.     .00
 960          RS       1    STOR      0.     .00
 961          SV       0      40     200     399    1596    3990       0       0       0       0
 962          SQ       0     414     435     462     621     940       0       0       0       0

 963          KK      10
 964          KM  COMBINE ROUTED URBAN FLOW AREA K WITH GUADALUPE RIVER  AT PT.10 HEDDING ST.
 965          HC       2

 966          KK      11
 967          KM  ROUTE GUADALUPE RIVER FROM PT.10 HEDDING ST. TO PT.11 BAYSHORE HWY
 968          RL      0.     .00
 969          RS       1    STOR      0.     .00
 970          SV       0     102     250     415     598     771     937       0       0       0
 971          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

 972          KK      11
 973          KM   RUNOFF HYDROGRAPH FOR AREA L (AI=4.30,TOTAL=6.13) AT POINT 11.
 974          BA    4.30     .00     .00
 975          PB    5.16
 976          LU    .000    .011    .000
 977          UC   2.100   1.200
 978          BF      0.      0.  1.0000

 979          KK      11
 980          KM   RUNOFF HYDROGRAPH FOR AREA L (AP=1.83,TOTAL=6.13) AT POINT 11.
 981          BA    1.83     .00     .00
 982          PB    5.16
 983          LU    .000    .064    .000
 984          UC   4.100    .500
 985          BF      0.      0.  1.0000

 986          KK      11
 987          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA L AT PT.11 BAYSHORE HWY
 988          HC       2

 989          KK      11
 990          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA L THRU STORMDRAINS AT PT.11 BAYSHORE HWY
 991          RL      0.     .00
 992          RS       1    STOR      0.     .00
 993          SV       0      61     307     613    2452    6130       0       0       0       0
 994          SQ       0     635     668     709     954    1445       0       0       0       0

 995          KK      11
 996          KM  COMBINE ROUTED URBAN FLOW AREA L WITH GUADALUPE RIVER AT PT.11 BAYSHORE HWY
 997          HC       2
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 998          KK      12
 999          KM  ROUTE GUADALUPE RIVER FROM PT.11 BAYSHORE HWY TO  POINT 12  HWY 237  ALVISO
1000          RL      0.     .00
1001          RS       1    STOR      0.     .00
1002          SV       0     178     439     728    1046    1350    1639       0       0       0
1003          SQ       0    1155    4670   10400   18300   27000   40000       0       0       0

1004          KK      12
1005          KM   RUNOFF HYDROGRAPH FOR AREA M (AI=5.00,TOTAL=10.39) AT POINT 12.
1006          BA    5.00     .00     .00
1007          PB    5.03
1008          LU    .000    .010    .000
1009          UC   2.700   1.100
1010          BF      0.      0.  1.0000

1011          KK      12
1012          KM   RUNOFF HYDROGRAPH FOR AREA M (AP=5.39,TOTAL=10.39) AT POINT 12.
1013          BA    5.39     .00     .00
1014          PB    5.03
1015          LU    .000    .063    .000
1016          UC   4.700   1.100
1017          BF      0.      0.  1.0000

1018          KK      12
1019          KM  COMBINE IMPRVS & PRVS HYDROGRAPHS FROM AREA M AT PT.12  HWY 237  ALVISO
1020          HC       2

1021          KK      12
1022          KM  ROUTE RUNOFF HYDROGRAPH FROM AREA M  THRU STORMDRAINS AT PT.12   HWY 237 ALVIS
1023          RL      0.     .00
1024          RS       1    STOR      0.     .00
1025          SV       0     104     520    1039    4156   10390       0       0       0       0
1026          SQ       0    1077    1133    1202    1617    2449       0       0       0       0

1027          KK      12
1028          KM  COMBINE ROUTED URBAN FLOW AREA M WITH GUADALUPE RIVER AT PT.12  HWY 237 ALVISO
1029          HC       2
1030          ZZ
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	1	2214.	19.00	1736.	1020.	349.	6.99		
HYDROGRAPH AT	1	2594.	19.00	1680.	973.	333.	6.99		
ROUTED TO	1	633.	25.50	607.	421.	263.	6.99		
ROUTED TO	2	626.	26.50	602.	421.	263.	6.99		
HYDROGRAPH AT	2	845.	18.50	569.	320.	108.	2.65		
HYDROGRAPH AT	2	1137.	18.50	630.	349.	118.	2.65		
ROUTED TO	2	1137.	18.50	630.	349.	118.	2.65		
2 COMBINED AT	2	1321.	18.50	905.	664.	380.	9.64		
HYDROGRAPH AT	2	657.	18.50	418.	233.	78.	1.99		
HYDROGRAPH AT	2	859.	18.50	460.	253.	85.	1.99		
ROUTED TO	2	859.	18.50	460.	253.	85.	1.99		
2 COMBINED AT	2	2180.	18.50	1327.	896.	465.	11.63		
ROUTED TO	4	2063.	18.50	1327.	896.	465.	11.63		
HYDROGRAPH AT	4	293.	18.00	162.	89.	30.	.76		
HYDROGRAPH AT	4	375.	18.00	182.	99.	33.	.76		
ROUTED TO	4	375.	18.00	182.	99.	33.	.76		
2 COMBINED AT	4	2330.	18.50	1497.	989.	498.	12.39		
HYDROGRAPH AT	3	4109.	18.50	3481.	2199.	790.	12.00		
HYDROGRAPH AT	3	4385.	18.50	2848.	1764.	633.	12.00		
ROUTED TO	3	3508.	19.00	2785.	1291.	585.	12.00		
ROUTED TO	4	3213.	19.50	2758.	1291.	585.	12.00		
HYDROGRAPH AT	4	1331.	19.00	979.	566.	192.	4.24		
HYDROGRAPH AT	4	1720.	19.00	1020.	580.	197.	4.24		
ROUTED TO	4	1720.	19.00	1020.	580.	197.	4.24		
2 COMBINED AT	4	4748.	19.00	3665.	1788.	781.	16.24		
2 COMBINED AT	4	6750.	19.00	5098.	2766.	1279.	28.63		

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ROUTED TO	5	6583.	19.00	5087.	2766.	1279.	28.63
HYDROGRAPH AT	5	270.	18.00	155.	85.	29.	.74
HYDROGRAPH AT	5	338.	18.00	164.	89.	30.	.74
ROUTED TO	5	338.	18.00	164.	89.	30.	.74
2 COMBINED AT	5	6750.	19.00	5219.	2846.	1308.	29.37
HYDROGRAPH AT	5	789.	18.00	513.	288.	97.	2.28
HYDROGRAPH AT	5	932.	18.00	522.	289.	97.	2.28
ROUTED TO	5	932.	18.00	522.	289.	97.	2.28
2 COMBINED AT	5	7377.	19.00	5667.	3117.	1406.	31.65
ROUTED TO	6	7251.	19.00	5664.	3118.	1405.	31.65
HYDROGRAPH AT	6	276.	18.00	163.	91.	31.	.77
HYDROGRAPH AT	6	334.	18.00	164.	90.	30.	.77
ROUTED TO	6	334.	18.00	164.	90.	30.	.77
2 COMBINED AT	6	7426.	19.00	5800.	3201.	1435.	32.42
HYDROGRAPH AT	6	506.	18.00	305.	170.	57.	1.38
HYDROGRAPH AT	6	640.	18.00	334.	183.	61.	1.38
ROUTED TO	6	640.	18.00	334.	183.	61.	1.38
2 COMBINED AT	6	7803.	19.00	6075.	3373.	1497.	33.80
ROUTED TO	7	7687.	19.00	6071.	3371.	1496.	33.80
HYDROGRAPH AT	7	997.	18.50	674.	386.	131.	3.08
HYDROGRAPH AT	7	1171.	18.50	664.	375.	127.	3.08
ROUTED TO	7	1171.	18.50	664.	375.	127.	3.08
2 COMBINED AT	7	8552.	19.00	6671.	3730.	1623.	36.88
HYDROGRAPH AT	7	199.	18.00	130.	80.	27.	.53
HYDROGRAPH AT	7	296.	18.00	124.	73.	25.	.53
ROUTED TO	7	296.	18.00	124.	73.	25.	.53
2 COMBINED AT	7	8682.	19.00	6778.	3798.	1647.	37.41
ROUTED TO	10	8710.	19.00	6776.	3796.	1646.	37.41
HYDROGRAPH AT	10	182.	18.00	115.	66.	22.	.55
HYDROGRAPH AT	10	300.	18.00	134.	74.	25.	.55

ROUTED TO	10	300.	18.00	134.	74.	25.	.55
2 COMBINED AT	10	8857.	19.00	6891.	3866.	1671.	37.96
HYDROGRAPH AT	8	2206.	18.50	1663.	1011.	346.	5.96
HYDROGRAPH AT	8	2349.	18.50	1415.	844.	289.	5.96
ROUTED TO	8	921.	22.50	805.	399.	286.	5.96
ROUTED TO	9	903.	23.00	791.	399.	286.	5.96
HYDROGRAPH AT	9	2189.	18.50	1733.	1057.	368.	6.75
HYDROGRAPH AT	9	2547.	18.50	1424.	844.	293.	6.75
ROUTED TO	9	2547.	18.50	1424.	844.	293.	6.75
2 COMBINED AT	9	2781.	18.50	1898.	1233.	578.	12.71
ROUTED TO	10	2077.	19.00	1857.	1218.	576.	12.71
HYDROGRAPH AT	10	826.	18.50	570.	327.	110.	2.53
HYDROGRAPH AT	10	1120.	18.50	606.	340.	115.	2.53
ROUTED TO	10	1120.	18.50	606.	340.	115.	2.53
2 COMBINED AT	10	2967.	18.50	2366.	1541.	689.	15.24
2 COMBINED AT	10	11777.	19.00	9256.	5406.	2360.	53.20
ROUTED TO	2	11760.	19.00	9237.	5404.	2360.	53.20
Project Conditions → HYDROGRAPH AT	2	48.	17.50	17.	10.	3.	2.53
2 COMBINED AT	COMB_P	11773.	19.00	9250.	5413.	2363.	55.73
HYDROGRAPH AT	2	373.	18.50	241.	150.	50.	1.00
HYDROGRAPH AT	2	289.	19.50	216.	120.	41.	1.09
2 COMBINED AT	2	638.	18.50	454.	269.	91.	2.09
ROUTED TO	2	234.	23.00	234.	225.	91.	2.09
2 COMBINED AT	2	12001.	19.00	9481.	5635.	2453.	57.82
HYDROGRAPH AT	ROSS	1934.	19.00	1635.	1254.	499.	9.96
2 COMBINED AT	GU+ROS	13935.	19.00	11096.	6887.	2951.	67.78
ROUTED TO	3	13759.	19.50	11068.	6883.	2950.	67.78
HYDROGRAPH AT	3	925.	19.00	672.	422.	143.	2.84
HYDROGRAPH AT	3	486.	19.50	373.	208.	70.	1.89
2 COMBINED AT	3	1396.	19.00	1042.	629.	214.	4.73

ROUTED TO	3	534.	24.00	532.	511.	214.	4.73
2 COMBINED AT	3	14279.	19.50	11594.	7389.	3163.	72.51
HYDROGRAPH AT	4	649.	18.50	456.	288.	98.	1.91
HYDROGRAPH AT	4	639.	19.50	507.	293.	100.	2.65
2 COMBINED AT	4	1203.	18.50	955.	577.	198.	4.56
ROUTED TO	4	509.	24.00	508.	489.	198.	4.56
ROUTED TO	5	509.	24.50	507.	488.	198.	4.56
HYDROGRAPH AT	5	333.	18.50	214.	133.	45.	.87
HYDROGRAPH AT	5	511.	19.50	390.	221.	75.	1.98
2 COMBINED AT	5	784.	18.50	595.	351.	120.	2.85
ROUTED TO	5	318.	23.50	316.	302.	120.	2.85
2 COMBINED AT	5	826.	24.50	823.	789.	318.	7.41
ROUTED TO	6	826.	24.50	823.	789.	318.	7.41
HYDROGRAPH AT	6	675.	18.50	481.	304.	103.	2.05
HYDROGRAPH AT	6	357.	19.50	268.	150.	51.	1.36
2 COMBINED AT	6	996.	18.50	748.	452.	154.	3.41
ROUTED TO	6	384.	24.00	383.	368.	154.	3.41
HYDROGRAPH AT	6	294.	18.00	198.	124.	42.	.83
HYDROGRAPH AT	6	232.	19.00	170.	95.	32.	.86
2 COMBINED AT	6	508.	18.50	366.	218.	74.	1.69
ROUTED TO	6	189.	23.00	189.	181.	74.	1.69
3 COMBINED AT	6	1399.	24.00	1395.	1339.	546.	12.51
ROUTED TO	7	1399.	24.50	1394.	1338.	546.	12.51
HYDROGRAPH AT	7	913.	18.50	683.	434.	149.	3.02
HYDROGRAPH AT	7	502.	19.50	384.	216.	73.	2.02
2 COMBINED AT	7	1373.	19.00	1067.	650.	222.	5.04
ROUTED TO	7	564.	24.00	562.	541.	222.	5.04
2 COMBINED AT	7	1963.	24.50	1957.	1879.	768.	17.55
ROUTED TO	3	1963.	24.50	1957.	1879.	768.	17.55
HYDROGRAPH AT	3	307.	19.00	208.	115.	39.	1.07

HYDROGRAPH AT	3	470.	19.00	273.	150.	50.	1.07
ROUTED TO	3	470.	19.00	273.	150.	50.	1.07
2 COMBINED AT	3	2351.	19.00	2161.	2004.	818.	18.62
2 COMBINED AT	GU+CAN	16520.	19.50	13750.	9359.	3980.	91.13
ROUTED TO	8	16114.	19.50	13753.	9358.	3979.	91.13
HYDROGRAPH AT	8	774.	18.50	553.	343.	117.	2.42
HYDROGRAPH AT	8	270.	19.50	201.	110.	37.	1.04
2 COMBINED AT	8	1026.	19.00	754.	453.	154.	3.46
ROUTED TO	8	388.	23.50	387.	373.	154.	3.46
2 COMBINED AT	8	16494.	19.50	14137.	9729.	4131.	94.59
ROUTED TO	9	16125.	20.50	14111.	9724.	4129.	94.59
HYDROGRAPH AT	9	795.	19.00	569.	352.	119.	2.59
HYDROGRAPH AT	9	157.	19.50	120.	65.	22.	.65
2 COMBINED AT	9	948.	19.00	687.	417.	142.	3.24
ROUTED TO	9	362.	23.50	361.	348.	142.	3.24
2 COMBINED AT	9	16484.	20.50	14469.	10072.	4270.	97.83
HYDROGRAPH AT	1	4343.	19.00	3515.	2275.	786.	9.91
HYDROGRAPH AT	1	4125.	19.00	3072.	1977.	683.	9.91
ROUTED TO	1	3334.	20.00	2966.	1904.	683.	9.91
ROUTED TO	2	3317.	20.50	2955.	1897.	683.	9.91
HYDROGRAPH AT	2	8513.	20.50	7792.	5096.	1929.	27.61
HYDROGRAPH AT	2	7830.	20.50	6352.	4121.	1560.	27.61
ROUTED TO	2	7830.	20.50	6352.	4121.	1560.	27.61
2 COMBINED AT	2	11147.	20.50	9303.	6018.	2242.	37.52
ROUTED TO	2	6690.	26.00	6179.	3330.	1192.	37.52
ROUTED TO	3	6654.	26.50	6137.	3297.	1192.	37.52
HYDROGRAPH AT	3	2383.	19.00	1803.	1075.	367.	6.46
HYDROGRAPH AT	3	2431.	19.00	1612.	951.	325.	6.46
ROUTED TO	3	2431.	19.00	1612.	951.	325.	6.46
2 COMBINED AT	3	7018.	26.00	6507.	3638.	1515.	43.98

ROUTED TO	3	6984.	26.00	6470.	3634.	1515.	43.98
ROUTED TO	4	6982.	26.50	6452.	3632.	1514.	43.98
HYDROGRAPH AT	4	767.	18.50	482.	271.	91.	2.17
HYDROGRAPH AT	4	859.	18.50	473.	263.	89.	2.17
ROUTED TO	4	859.	18.50	473.	263.	89.	2.17
2 COMBINED AT	4	6999.	26.50	6494.	3752.	1602.	46.15
ROUTED TO	5	6996.	26.50	6480.	3751.	1602.	46.15
HYDROGRAPH AT	5	482.	18.50	365.	234.	80.	1.58
HYDROGRAPH AT	5	287.	19.00	213.	120.	40.	1.06
2 COMBINED AT	5	756.	19.00	579.	353.	121.	2.64
ROUTED TO	5	315.	24.00	313.	290.	121.	2.64
2 COMBINED AT	5	7306.	26.50	6783.	3970.	1723.	48.79
ROUTED TO	6	7292.	26.50	6774.	3968.	1723.	48.79
HYDROGRAPH AT	6	403.	18.50	321.	209.	73.	1.47
HYDROGRAPH AT	6	257.	19.50	190.	107.	36.	.98
2 COMBINED AT	6	646.	19.00	512.	316.	109.	2.45
ROUTED TO	6	288.	24.00	286.	266.	109.	2.45
2 COMBINED AT	6	7575.	26.50	7052.	4168.	1832.	51.24
ROUTED TO	7	7576.	27.00	7039.	4167.	1831.	51.24
HYDROGRAPH AT	7	581.	19.00	459.	294.	102.	2.15
HYDROGRAPH AT	7	360.	19.50	270.	148.	50.	1.44
2 COMBINED AT	7	932.	19.00	729.	442.	152.	3.59
ROUTED TO	7	414.	24.00	411.	383.	152.	3.59
2 COMBINED AT	7	7980.	27.00	7438.	4451.	1983.	54.83
2 COMBINED AT	9	19812.	20.50	18150.	14093.	6252.	152.66
ROUTED TO	10	19818.	20.50	18144.	14089.	6250.	152.66
HYDROGRAPH AT	10	819.	19.00	595.	370.	126.	2.80
HYDROGRAPH AT	10	284.	19.50	214.	117.	39.	1.19
2 COMBINED AT	10	1097.	19.00	809.	486.	165.	3.99
ROUTED TO	10	442.	23.00	440.	422.	165.	3.99

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2 COMBINED AT	10	20257.	20.50	18584.	14497.	6413.	156.65
ROUTED TO	11	20101.	21.00	18570.	14492.	6410.	156.65
HYDROGRAPH AT	11	1173.	19.00	882.	551.	188.	4.30
HYDROGRAPH AT	11	408.	19.50	319.	175.	59.	1.83
2 COMBINED AT	11	1566.	19.00	1201.	725.	247.	6.13
ROUTED TO	11	675.	23.00	673.	641.	247.	6.13
2 COMBINED AT	11	20772.	21.00	19242.	15106.	6654.	162.78
ROUTED TO	12	20571.	21.00	19200.	15094.	6645.	162.78
HYDROGRAPH AT	12	1294.	19.50	1005.	626.	214.	5.00
HYDROGRAPH AT	12	1059.	20.50	882.	498.	169.	5.39
2 COMBINED AT	12	2311.	19.50	1874.	1120.	383.	10.39
ROUTED TO	12	1132.	23.50	1128.	1034.	383.	10.39
2 COMBINED AT	12	21692.	21.00	20328.	16067.	7023.	173.17

*** NORMAL END OF HEC-1 ***

```
-----DSS---ZCLOSE Unit:  71,   File: PROJ100.DSS
           Pointer Utilization:   .25
           Number of Records:     22
           File Size:     33.8  Kbytes
           Percent Inactive:   .00
```

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