COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"Enriching Lives"

JAMES A. NOYES, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: PD-6

October 23, 2003

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

PALMDALE TRANSPORTATION CENTER
CITY OF PALMDALE-COUNTY COOPERATIVE AGREEMENT
SUPERVISORIAL DISTRICT 5
3 VOTES

IT IS RECOMMENDED THAT YOUR BOARD:

1. Consider the Mitigated Negative Declaration (enclosed) and the subsequent Notice of Determination prepared for the Palmdale Transportation Center project by the City of Palmdale as lead agency, determine that the documents adequately address the environmental impacts of the proposed project, find that your Board has complied with the requirements of the California Environmental Quality Act with respect to the process for a responsible agency, and adopt by reference the City's Mitigated Negative Declaration.

2. Approve and instruct the Chair to sign the enclosed Cooperative Agreement with the City of Palmdale for the County to contribute $200,000 in County Proposition A Local Return Transit Funds toward the acquisition, design, and construction of a permanent Metrolink Station near Sixth Street East and Sierra Highway.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The City of Palmdale proposes to establish a permanent Metrolink Station as part of their Transportation Center near Sixth Street East and Sierra Highway. The total project cost is estimated to be $4 million. The majority of the project cost will be financed

through a grant obtained by the City through the Los Angeles County Metropolitan Transportation Authority's 1999 Call for Projects and City funds. This Agreement will provide the City with a one time fixed contribution of $200,000 in County Proposition A Local Return Transit Funds to assist in financing the local share of the project cost.

Implementation of Strategic Plan Goals

This action is consistent with the County's Strategic Plan Goal of Service Excellence as the Agreement provides funding for a project to establish a permanent Metrolink Station that will provide Metrolink service to the community.

FISCAL IMPACT/FINANCING

The County will provide the City with a one time fixed contribution of $200,000. The funding will be provided from the Fifth Supervisorial District's allocation of Proposition A Local Return Transit Funds.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The enclosed Cooperative Agreement was reviewed and approved as to form by County Counsel. This Agreement was executed by the City of Palmdale on September 12, 2001.

ENVIRONMENTAL DOCUMENTATION

The California Environmental Quality Act requires public agency decision makers to document and consider the environmental implications of their actions. The City of Palmdale is the lead agency for this project.

The City of Palmdale has prepared and adopted a Mitigated Negative Declaration for the project and filed a Notice of Determination with the County Clerk on April 24, 2002. As a responsible agency, the recommended findings are in accordance with the California Environmental Quality Act and are required prior to your Board's approval of this Agreement.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no negative impact on current services or projects resulting from this action.

CONCLUSION

Enclosed are two copies of the Cooperative Agreement to be signed by the Chair. Upon approval, please return the copy marked "CITY ORIGINAL" to Public Works for processing together with one approved copy of this letter. The copy marked "COUNTY ORIGINAL" is for your files.

Respectfully submitted,

JAMES A. NOYES
Director of Public Works

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Enc.

cc: Chief Administrative Office
County Counsel

COUNTY ORIGINAL

AGREEMENT

THIS AGREEMENT, made and entered into by and between the CITY OF PALMDALE, a municipal corporation in the County of Los Angeles, hereinafter referred to as "CITY," and the COUNTY OF LOS ANGELES, a political subdivision of the State of California, hereinafter referred to as "COUNTY."

WITNESSETH

WHEREAS, CITY proposes to establish a permanent Metrolink Station near Sixth Street East and Sierra Highway, including the acquisition of the property on which the permanent station is to be located and the design and construction of the permanent facility, which work is hereinafter referred to as "PROJECT"; and

WHEREAS, PROJECT is within the jurisdictional limits of the CITY; and

WHEREAS, CITY has sought and obtained a majority of PROJECT financing through the Los Angeles County Metropolitan Transportation Authority Call For Projects; and

WHEREAS, in order to provide continued Metrolink service for COUNTY residents, COUNTY has authorized the one-time fixed contribution of Two Hundred Thousand and 00/100 Dollars ($200,000.00) in COUNTY Proposition A Local Return Transit funds to assist in financing a portion of the local share of the total PROJECT cost, which is currently estimated to be Four Million and 00/100 Dollars ($4,000,000.00).

NOW, THEREFORE, in consideration of the mutual benefits to be derived by CITY and COUNTY and of the premises herein contained, it is agreed as follows:

(1) COUNTY AGREES:

a. To deposit with CITY, upon full execution of this Agreement and upon invoice by CITY, COUNTY Proposition A Local Return Transit funds in the amount of Two Hundred Thousand and 00/100 Dollars ($200,000.00) to finance a portion of PROJECT cost.

(2) CITY AGREES:

a. To acquire property, conduct preliminary and final design services, secure bids, and award construction contract consistent with the Proposition A Local Return guidelines and the CITY-Los Angeles County Metropolitan Transportation Authority Memorandum of Understanding; hererinafter referred to as "MOU."

b. Upon full execution of this Agreement, to invoice COUNTY in the amount of Two Hundred Thousand and 00/100 Dollars ($200,000.00).

c. To use the COUNTY'S one-time fixed contribution of Two Hundred Thousand and 00/100 Dollars ($200,000.00) solely for the acquisition and/or the construction of PROJECT.

d. To maintain such compliance, performance, and fiscal records necessary to comply with the CITY-Los Angeles County Metropolitan Transportation Authority Memorandum of Understanding, and shall maintain all records on file for a minimum of three years following the completion of PROJECT.

(3) IT IS MUTUALLY UNDERSTOOD AND AGREED AS FOLLOWS:

a. COUNTY'S maximum obligation under this Agreement is Two Hundred Thousand and 00/100 Dollars ($200,000.00).

b. This Agreement constitutes the entire agreement between COUNTY and CITY and may be modified only by further written agreement between the parties hereto.

c. In executing this Agreement, COUNTY is merely providing a one-time contribution to be applied toward PROJECT.

d. In the event that the project is not constructed, the City will return the COUNTY'S Two Hundred Thousand and 00/100 Dollars ($200,000.00) contribution to the COUNTY.

e. Consistent with the nature of this Agreement as strictly a funding mechanism, it is the intention of the parties hereto that neither COUNTY, nor any officer or employee of COUNTY, shall be liable for any damage, cost, or expense which relates to, arises out of, or is in anyway connected with PROJECT for which funding is herein provided as a result of this Agreement.

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective officers, duly authorized, by the COUNTY OF LOS ANGELES, on _____, 2003, and by the CITY OF PALMDALE on September 12, 2001.

COUNTY OF LOS ANGELES

By_____
Chair, Board of Supervisors

ATTEST:

VIOLET VARONA-LUKENS
Executive Officer-Clerk of
the Board of Supervisors

By_____
Deputy

APPROVED AS TO FORM:

LLOYD W. PELLMAN
County Counsel

By_____
Deputy

CITY OF PALMDALE

By_____
Mayor

APPROVED AS TO FORM:

By_____
City Clerk

By_____
City Attorney

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City of Palmdale
Planning Department

Mitigated Negative Declaration
Palmdale Transportation Center
Conditional Use Permit 01-16

City of Palmdale
Public Works Department

CITY OF PALMDALE
OFFICE OF THE
PLANNING DEPARTMENT

MEMORANDUM

TO: All Interested Parties

FROM: Planning Department

SUBJECT: REQUEST FOR REVIEW OF THE DRAFT MITIGATED NEGATIVE DECLRATION FOR CONDITIONAL USE PERMIT 01-16

DATE: March 15, 2002

The attached Mitigated Negative Declaration has been forwarded to you for review and comment. Comments will be received by the Planning Department until 5:00 p.m. on April 15, 2002. Comments should be directed to: Richard Kite, City of Palmdale Planning Department, 38250 Sierra Highway, Palmdale, California 93550 or telephone (661) 267-5200.

Copies sent to:

City of Palmdale

Case Planner
City Engineer
City Hall Counter Copy
Director of Parks and Recreation
Director of Public Works
Library
Planning Counter Copy
Traffic Engineer

State Agencies:

State Clearinghouse, Office of Planning and Research (15)

County of Los Angeles:

Los Angeles County Dept. of Public Works
Los Angeles County Fire Dept. (3 copies)
Los Angeles County Regional Planning
Los Angeles County Sanitation Districts
Los Angeles County Sheriff's Dept.

Los Angeles County Transportation Commission

School Districts:

Antelope Valley Union High School District
Palmdale School District

Federal Agencies:

Department of the Air Force (Plant 42)
U.S. Fish and Wildlife Service
U.S. Forest Service

Utilities/Services:

Antelope Valley Transit
Palmdale Water District
Union Pacific Railroad
Southern California Regional Rail Authority (Metrolink)

Other:

Antelope Valley Air Pollution Control District
Palmdale Chamber of Commerce

CITY OF PALMDALE

MITIGATED NEGATIVE DECLARATION

38250 Sierra Highway
Palmdale, California 93550

ıse Number: Conditional Use Permit 01-16

›plicant: City of Palmdale Public Works Department
Albert Soliz, Associate Engineer / Project Manager

ldress: 38250 Sierra Highway
Palmdale, CA 93550

oject Description: Conditional Use Permit 01-16 is an application by the City of Palmdale Public Works Department to construct the Palmdale Transportation Center (PTC). The PTC is a multi-modal transportation facility designed to promote the use of public transportation systems serving Palmdale and the Antelope Valley. The proposed project will include development of transportation facilities including a 510-foot long Metrolink rail station platform with 300 related parking spaces, a 3,150 square foot transit station building with clock tower, a bus transfer station to be utilized by the local Antelope Valley Transit Authority and other regional providers, a 200-space Park and Ride lot, a compressed natural gas (CNG) fueling facility, and bicycle and pedestrian accommodations. The rail station will be constructed on top of a 630-foot long box culvert storm drain improvement within Ana Verde Creek. The project will also require acquisition and construction of an off-site drainage basin site on the north side of Technology Drive. A future phase will include construction of an additional 300 parking spaces and is included in the current project proposal. An additional expansion area will remain available for future uses. The new Palmdale Transportation Center will supplement existing stations in Lancaster and Acton that provide rail service between the Antelope Valley and the Los Angeles area. The bus transfer station is being relocated from the Antelope Valley Mall to this location and will accommodate local and regional bus transfers. The proposed CNG fueling facility will be used primarily by the City's fleet of CNG fueled vehicles but will also provide for public purchase of CNG.

Primary access to the transportation center will be provided from Technology Drive to the north. A secondary access will be provided from 6th Street East to the south. An additional access will also be provided from 3rd Street East through an extension of Avenue P-12 to the east. The environmental document prepared for this project excludes any analysis or component of the proposed California high-speed rail system that is still in the conceptual design stage with no specific information as to alignment or station locations available at this time.

Project Location: The proposed site has an area of approximately 25.37 acres that is primarily undeveloped and is generally located between Technology Drive (Avenue P-8) on the north, 190 feet north of the alignment of Avenue P-14 on the south, 3rd Street East on the west, and the Union Pacific Railroad on the east.

On the basis of the Initial Study prepared for the project, it has been determined that the project has potential for a significant effect on the environment; the project has been modified to incorporate the mitigation measures listed below so that the project would not have a potentially significant effect on the environment. A copy of said Initial Study is available for review at the Palmdale Planning Department, 38250 Sierra Highway, Palmdale, California 93550. This document constitutes a Mitigated Negative Declaration.

1) All active portions of the project site during construction shall be watered to prevent excessive amounts of dust including all material to be excavated or graded. Watering with complete coverage shall occur at least twice daily, preferably in the late morning and after work concludes for the day and when winds exceed 15 miles per hour. During grading operations, water trucks or sprinklers shall be used to prevent dust from leaving the site and to crust the site after each workday is completed. All earthwork operations shall cease during periods of high winds (over 25 mph average for one hour) or during Stage 1 or Stage 2 episodes.

2) The area disturbed by clearing and grading operations shall be minimized at all times. After grading is completed, the disturbed area of the site shall be treated with a soil stabilizer to prevent dust generation. Portions of the site to remain

inactive for periods greater than three months shall be seeded and watered until cover is grown or shall be soil stabilized.

3) Trucks hauling cut/fill materials to the site and construction debris to and from the site shall be tarped.

4) Construction activities shall not interfere with peak hour traffic and shall be scheduled to minimize obstruction to adjacent roadways.

5) The construction contractor shall support and encourage ridesharing and transit incentives for construction personnel.

6) The on-site speed limit for construction vehicles shall be limited to 15 mph.

7) Construction equipment to be used on site shall be based on low emission standards factors and high-energy efficiency. All construction equipment is to be well-tuned and maintained in accordance with manufacturers specifications. All equipment shall be shut-off when not in use. The contractor shall utilize diesel or electric powered equipment in lieu of gasoline-powered equipment where feasible.

8) The applicant shall obtain all required permits and comply with all mitigation requirements required by the California Department of Fish and Game (CDFG) associated with the streambed alteration within the impacted portions of the Ana Verde Creek.

9) All mobile and fixed combustion engine construction equipment shall have properly operating and maintained mufflers consistent with manufacturers standards.

10) All noise generating stationary construction equipment and construction staging activities shall be located away from the residential property to the south.

11) During all project site construction, construction related activities shall be limited to the hours between 6:30 am and 8:00 pm Monday through Saturday with no construction permitted on Sundays or holidays.

2) Provide a stop sign control for the northbound approach and a left-turn pocket for westbound traffic inbound to the Transportation Center at the future intersection of Transportation Way and Technology Drive (Avenue P-8).

ESPONSIBLE AGENCIES: None

RUSTEE AGENCIES: California Department of Fish and Game

otice Pursuant to Section 21092.5 of the Public Resources Code:

Public Hearing will be held by the Planning Commission of the City of Palmdale in the almdale Council Chambers, 38300 Sierra Highway, Suite B, Palmdale, California on pril 18, 2002, at 6:00 p.m. to consider this project. At that time, any interested person welcome to attend and be heard on this matter.

rior to the Public Hearing, the public is invited to submit written comments on this itigated Negative Declaration to the Palmdale Planning Department no later than 5:00 .M. on April 15, 2002, Attention: Richard Kite, 38250 Sierra Highway, Palmdale, alifornia 93550; or phone (661) 267-5200. Please refer to the Case Number listed ove.

Laurie Lile
Director of Planning

3·14·02
Date

CITY OF PALMDALE

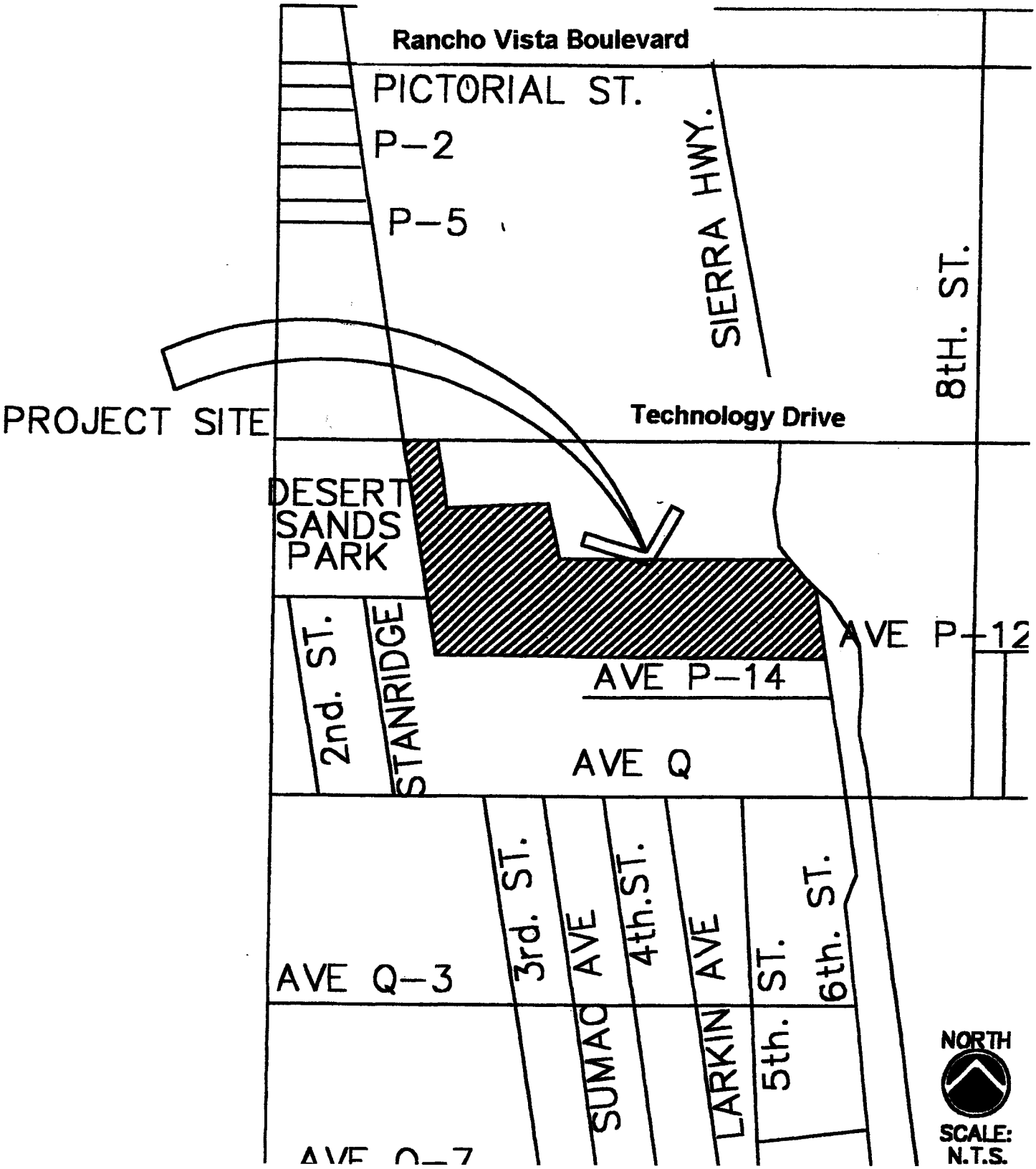
PLANNING DEPARTMENT

INITIAL STUDY

QUESTIONNAIRE

APPLICATION NO:	Conditional Use Permit 01-16
NAME OF APPLICANT:	City of Palmdale Public Works Department Albert Soliz, Associate Engineer / Project Manager
LOCATION OF PROJECT:	The proposed site has an area of approximately 25.37 acres that is primarily undeveloped and is generally located between Technology Drive (Avenue P-8) on the north, 190 feet north of the alignment of Avenue P-14 on the south, 3rd Street East on the west, and the Union Pacific Railroad on the east.
EXISTING GENERAL PLAN LAND USE DESIGNATION:	IND (Industrial)
PROPOSED GENERAL PLAN LAND USE DESIGNATION:	N/A
EXISTING ZONING:	M-1 (Light Industrial)
PROPOSED ZONING:	N/A
PRESENT LAND USE:	The majority of the project site is vacant with a portion of the southeast corner of the site being used as a general storage yard. 6th Street East, the Union Pacific Railroad tracks, the Southern California Regional Rail Authority (Metrolink) tracks and the Ana Verde Creek channel traverse the site in a north-south direction on the east boundary.

LOCATION MAP:



I. APPLICABILITY OF THE INITIAL STUDY

A. Is the proposed action a "project" as defined by CEQA? (See Section I. of the City's CEQA Guidelines. If more than one application is filed on the same site, consider them together as one project.)
☒ Yes ☐ No

1. If the project qualifies for one of the Categorical Exemptions listed in Section 6.C. of the City's CEQA Guidelines, is there a reasonable possibility that the activity will have a significant effect due to special circumstances? ☐ Yes ☐ No ☒ N/A

II. INITIAL STUDY REVIEW

A. Does the project require a 30-day State Clearinghouse review?
☒ Yes ☐ No

The project may be considered significant within the Antelope Valley area in that it provides alternative public transportation opportunities for the residents of the Antelope Valley.

III. PROJECT ASSESSMENT

A. Project Description: Conditional Use Permit 01-16 is an application by the City of Palmdale Public Works Department to construct the Palmdale Transportation Center (PTC). The PTC is a multi-modal transportation facility designed to promote the use of public transportation systems serving Palmdale and the Antelope Valley. The proposed project will include development of transportation facilities including a 510-foot long Metrolink rail station platform with 300 related parking spaces, a 3,150 square foot transit station building with clock tower, an bus transfer station to be utilized by the local Antelope Valley Transit Authority and other regional providers, a 200-space Park and Ride lot, a compressed natural gas (CNG) fueling facility, and bicycle and pedestrian accommodations. The rail station will be constructed on top of a 630-foot long box culvert storm drain improvement within Ana Verde Creek. The project will also require acquisition and construction of an off-site drainage basin site on the north side of Technology Drive. A future phase will include

construction of an additional 300 parking spaces and is included in the current project proposal. An additional expansion area will remain available for future uses. The new Palmdale Transportation Center will supplement existing stations in Lancaster and Acton that provide rail service between the Antelope Valley and the Los Angeles area. The bus transfer station is being relocated from the Antelope Valley Mall to this location and will accommodate local and regional bus transfers. The proposed CNG fueling facility will be used primarily by the City's fleet of CNG fueled vehicles but will also provide for public purchase of CNG. Primary access to the transportation center will be provided from Technology Drive to the north. A secondary access will be provided from 6th Street East to the south. An additional access will also be provided from 3rd Street East through an extension of Avenue P-12 to the east. The environmental document prepared for this project excludes any analysis or component of the proposed California high-speed rail system that is still in the conceptual design stage with no specific information as to alignment or station locations available at this time.

B. Description of the Project Site: The proposed site has an area of approximately 25.37 acres that is generally located between Technology Drive (Avenue P-8) on the north, 190 feet north of the alignment of Avenue P-14 on the south, 3rd Street East on the west, and the Union Pacific Railroad on the east. The majority of the project site is vacant with a portion of the southeast corner of the site being used as a general storage yard. 6th Street East, the Union Pacific Railroad tracks, and the Ana Verde Creek channel traverse the site in a north-south direction on the east boundary.

C. Surrounding Land Uses:

North: Existing industrial buildings, public works maintenance facility and vacant land.

East: Vacant industrial land and a self-storage facility east of the railroad tracks.

South: 39 existing single-family homes, vacant industrial land and a vacant site that may be developed as a continuation high school.

West: Public works maintenance yard, City park and vacant industrial land. Existing single family residential uses further west of the site.

D. Is the proposed project consistent with:

	Yes	No	N/A
City of Palmdale General Plan	☒	☐	☐
Applicable Specific Plan	☐	☐	☒
City of Palmdale Zoning Ordinance	☒	☐	☐
Air Quality Management Plan	☒	☐	☐
Congestion Management Plan	☒	☐	☐
Regional Comprehensive Plan	☐	☐	☒

E. Have any of the following studies been submitted?

- ☒ Geology Report
- ☒ Hydrology Report
- ☒ Soil Report
- ☒ Traffic Study
- ☒ Noise Study
- ☒ Biological Study
- ☐ Native Vegetation Preservation Plan
- ☐ Solid Waste Generation Report
- ☐ Public Services/ Infrastructure Report
- ☒ Historical Report
- ☐ Archaeological Report
- ☐ Paleontological Study
- ☐ Line of Sight Exhibits
- ☐ Visual Analysis
- ☐ Slope Map
- ☐ Fiscal Impact Analysis
- ☒ Air Quality Report
- ☒ Hazardous Materials/ Waste

(Studies may be reviewed by contacting the case planner at (661) 267-5200.)

IV. DETERMINATION

On the basis of this initial evaluation:

> I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

This initial study was prepared by:

Richard Kite, Associate Planner

3-14-02
Date

Asoka Herath
Assistant Director of Planning

3.14.02
Date

Laurie Lile
Director of Planning

V. EARLIER ANALYSIS

A. Earlier analysis

City of Palmdale General Plan FEIR 91-3, (SCH No. 87120908) prepared for the City of Palmdale by Michael Brandman Associates, and certified by the Palmdale City Council (Resolution No. 93-10) on January 25, 1993. EIR 91-3 was prepared to analyze the potential impacts from full build-out of the City's General Plan, including the provision of roadways, infrastructure and development of urban uses.

This EIR identified significant impacts to air quality, loss of open space, seismic related risks, biological resources, jobs/housing balance, traffic impacts at 11 roadway links and cumulative impacts to groundwater resources that would occur with implementation of the City's General Plan. All other impacts were found to be mitigatable to a level of insignificance through the mitigation measures imposed under the EIR and implementation measures contained within the General Plan. Despite these impacts, the General Plan represents a balance in the community for the protection of the environment and accommodation of growth pressures in the area.

Improvements analyzed in the General Plan FEIR include construction of full street improvements contained in the City's Circulation Plan, bikeways, trails and parks as shown in the City's Parks, Recreation and Trails Element, building out the planning area in accordance with the City's Land Use Element, and the provision of public services to promote public health, safety and welfare. Mitigation measures identified in the FEIR will reduce most of the impacts of future development under the proposed plan to a less than significant level. The majority of the policies and implementation programs in the General Plan serve as mitigation measures for the potential environmental impacts of build out under the plan. The EIR is available for review at the City of Palmdale Planning Department.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

VI. EVALUATION OF ENVIRONMENTAL IMPACTS

A. Earth:

Based on the geotechnical or soils study for the project, review by the City's Engineering Department, and/or the General Plan Update:

1. Soils

a. Are there any areas of potential differential settlement on the project site which could significantly impact development of the proposed project?

☐	☐	☐	☒

b. Is the site in an area of high shrink/swell (hydrocompaction) potential which could significantly impact development of the proposed project?

☐	☐	☐	☒

c. Is the site in an area of potential subsidence?

☐	☐	☐	☒

d. Will the project result in a significant increase in wind or water erosion of soils, either on- or off-site?

☐	☐	☐	☒

e. Could the project result in siltation deposition, or erosion which may modify a stream channel, or adversely affect downstream flood control facilities?

☐	☐	☐	☒

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

According to the Soil Engineering Report prepared for the project by Arrow Engineering, Geotechnical Services, dated February 24, 2000 (Appendix 1), the native soils on site consist of silty sands, clayey sands, and silts. Upper soils had a moderate tendency to hydroconsolidate while lower soils had a negligible tendency to hydroconsolidate. Upper soils displayed a low expansion index and the potential for on-site liquefaction is very low due to the groundwater depth. The upper soil levels on the site have the potential to settle; however, the soils report makes specific recommendations for grading operations for the drainage structure, platform, building pads and parking areas, including over-excavation and re-compaction of the site, which are standard practices in the construction industry. These requirements, when combined with standard City requirements for grading and building plans, will reduce impacts from soils to a level of insignificance. Therefore, shrink/swell potential, subsidence and differential settlement will not constitute the potential for a significant impact on the environment.

The project will include construction of a 630-foot long box culvert storm drain improvement within the existing Ana Verde Creek channel. These improvements will modify the stream channel but based on these improvements and other project components will not increase sediment flows or increase the potential for erosion. The project will also require acquisition and construction of an off-site drainage basin site on the north side of Technology Drive to mitigate storm flows generated by this project reducing potential impacts from erosion and sedimentation. Further discussion on potential impacts from water erosion and sedimentation is provided in Item C, Water, relating to drainage. However, given the information provided above and contained elsewhere in this report, and discussed in greater detail in Appendix 3 and 4, impacts related to erosion and sedimentation are not considered significant.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

2. Earthquakes

Based on the Alquist-Priolo Earthquake Fault Zoning Map (as amended 1994) and California Division of Mines and Geology Special Publication 42 (1997), or the geotechnical report for the project site:

a. Is the site in a fault rupture hazard zone? ☐ Yes ☒ No

If yes:

i. Is there an active or potentially active fault on the project site? ☐ Yes ☒ No

ii. Does the project include a school, emergency or public facility, day care center, nursing home, or high-rise building? ☒ Yes ☐ No

b. Is the site in a zone subject to seismic ground shaking, ground failure, or liquefaction?

☐	☐	☒	☐

Review of the Alquist-Priolo Special Studies Zone Act Maps/Fault-Rupture Hazard Zones determined that the project area is not within a fault rupture hazard zone. According to the Soil Engineering Report (see Appendix 1) prepared for the project, the potential for fault rupture occurring on the site is considered very low as the site is located two kilometers away from the San Andreas fault. The project area, and most of Southern California, would be subject to intense ground shaking during a major earthquake along the San Andreas Fault. Although the facility is a public transportation facility, it is not intended to function as an emergency facility during a seismic event and compliance with Uniform Building Code Standards will minimize potential hazards from building failure. Therefore, seismic impacts do not constitute the potential for a significant impact on the environment.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

3. Slopes

Based on the U.S.G.S. Topographic Map, the slope map submitted for the project, the geotechnical report for the project, and/or a site inspection:

a. Does the project site contain slopes of 10% or greater?

☐ ☐ ☐ ☒

b. Is any significant modification of major landforms proposed?

☐ ☐ ☐ ☒

c. Is the project in an area of landslide risk, or are landslides present on the project site?

☐ ☐ ☐ ☒

d. Will project grading create slopes, on- or off-site, that could be subject to landslides, mudslides, or erosion?

☐ ☐ ☐ ☒

Except for the drainage channel, the project site is relatively flat with a 2% gradient from the south to the north and no significant landforms exist on the site. No significant slopes are proposed as a part of this development that would be subject to landslides, mudslides, or erosion. Therefore, this does not constitute a significant impact on the environment. The Ana Verde drainage channel will be enclosed within a 630-foot long box culvert storm drain improvement. The existing slopes along the Ana Verde Creek channel within the area of the box culvert will be eliminated as a part of the channel improvements reducing the potential for any impacts from slopes in these areas.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

4. Quarry Zone

Based on a site inspection, the City's General Plan Land Use Map, and/or the Significant Gravel Resource Area Maps of the State Department of Mines and Geology:

a. Would development of the project impede the extraction of significant mineral resource deposits?

☐	☐	☐	☒

The project site is not located within a Significant Gravel Resource Area and, therefore, development and operation of the proposed project will not have a significant impact on the extraction of these resources.

B. Air:

Based on the criteria in the South Coast Air Quality Management Handbook for the Preparation of EIRs (1987), the Air Quality Study prepared for the proposed project, the South Coast Air Quality Management Plan, and EIR (1991), and/or the land use proposed:

1. Emissions

a. Will the project result in significant air emissions or deterioration of ambient air quality either from stationary or mobile sources?

☐	☒	☐	☐

b. Could the proposed project produce potentially toxic air emissions?

☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Will the project potentially result in the creation of objectionable odors?	☐	☐	☐	☒
d. Could the project result in the alteration of air movement, moisture or temperature, or any change in climate either locally or regionally?	☐	☐	☐	☒

LSA Associates has prepared an air quality analysis for the proposed project dated February 20, 2002, (Appendix 2). The study provides an assessment of potential air quality impacts for the proposed project and includes analysis of short-term construction impacts and long-term operational impacts of the project. In summary, the study concludes that air emissions associated with short-term construction related impacts would occur, such as fugitive dust from grading operations and equipment exhaust. Long-term local carbon monoxide (CO) emission levels at intersections in the project vicinity would not be significantly affected by project related traffic. Since the project is providing facilities to encourage the use of public transportation systems, regional air quality effects from the project are expected to be beneficial due to reduced mobile source emissions resulting from increased use of public transportation systems. There would be little or no stationary emissions from natural gas and electricity usage for the project.

Short-term construction emissions would exceed the daily thresholds for Particulate Matter (PM_{10}) before mitigation as identified in the study analysis as shown in Table D: Peak Grading Day Construction Emissions on Page 15 of the study. Further, the study provides that these short-term impacts would result due to fugitive dust from construction grading activities and emission from equipment exhaust. As a result, mitigation measures are required to reduce the impact of these short-term impacts to a less than significant level as follows:

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

1) All active portions of the project site shall be watered to prevent excessive amounts of dust including all material to be excavated or graded. Watering with complete coverage shall occur at least twice daily, preferably in the late morning and after work concludes for the day and when winds exceed 15 miles per hour. During grading operations, water trucks or sprinklers shall be used to prevent dust from leaving the site and to crust the site after each workday is completed. All earthwork operations shall cease during periods of high winds (over 25 mph average for one hour) or during Stage 1 or Stage 2 episodes.

2) The area disturbed by clearing and grading operations shall be minimized at all times. After grading is completed, the disturbed area of the site shall be treated with a soil stabilizer to prevent dust generation. Portions of the site to remain inactive for periods greater than three months shall be seeded and watered until cover is grown or shall be soil stabilized.

3) Trucks hauling cut/fill materials to the site and construction debris to and from the site shall be tarped.

4) Construction activities shall not interfere with peak hour traffic and shall be scheduled to minimize obstruction to adjacent roadways.

5) The construction contractor shall support and encourage ridesharing and transit incentives for construction personnel.

6) The on-site speed limit for construction vehicles shall be limited to 15 mph.

7) Construction equipment to be used on site shall be based on low emission standards factors and high-energy efficiency. All construction equipment is to be well-tuned and maintained in accordance with manufactures specifications. All equipment shall be shut-off when not in use. The contractor shall utilize diesel or electric powered equipment in lieu of gasoline powered equipment where feasible.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

With the implementation of these mitigation measures, short-term construction emissions will be reduced to less than significant levels based upon the air quality study prepared for the project. Other emissions of other criteria pollutants would remain below threshold levels as indicated. The study concludes that there are no significant long-term air quality impacts identified as a result of the proposed project.

The study also concludes that emissions from trains and buses are not considered to be significant since the Metrolink and Union Pacific railroad currently operate on these rail lines and this project in itself will not be adding to the overall train trips or emissions resulting from trains since the trains currently exist on these rail lines. The air quality study addressed air emissions from idling diesel train engines and diesel bus engines and it was demonstrated from the data based on the number of assumed bus and train trips in the study that carbon monoxide emissions are less than significant for the trains and buses and would not result in a high CO concentration.

Standard conditions of approval require that the CNG/LNG alternative fuel site be installed and operated with all necessary permits and approvals as may be required by the local Antelope Valley Air Pollution Control District (AVAPCD). The AVAPCD does not require any special permits for a CNG/LNG fueling facility due to the chemical nature of CNG/LNG and the dissipation that occurs with the gas.

During the scoping meeting conducted for the project on January 31, 2002, potential for air quality impacts resulting from this project and other air quality concerns were raised by the representative of a community organization within the City of Palmdale. The issue was raised that air quality standards are too low within the Antelope Valley and that air emissions cause birth defects and result in a number of other health related impacts on humans. With regards to these concerns, the modification of existing federal and state air quality standards for the Antelope Valley and the effects of air quality on humans is beyond the scope of this project and should be addressed at the federal and state levels. This project has been evaluated for compliance with existing air quality and emissions standards and found to be in compliance with these

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

standards after the implementation of mitigation measures as provided in the air quality study prepared for the project. There is no evidence presented that emissions from the project would result in any significant air quality impacts.

C. Water:

1. Natural Streams, Springs, and Wetlands

Based on the type of project, the U.S.G.S. Topographics Maps, the exhibits and studies submitted for the project, and/or a site inspection:

a. Does the project site contain a blue-line stream, spring, seep, or wetland?

☐	☐	☒	☐

b. Will the project include changes in the course or volume of water in a local stream or wetland which require Department of Fish and Game or Army Corps of Engineers permits?

☐	☒	☐	☐

c. Will the project result in the loss of, or changes to, significant stands of riparian vegetation?

☐	☐	☐	☒

The project site is bordered on the east boundary by the Ana Verde Creek, a blue-line stream (USGS Palmdale Quadrangle, 1974), which flows from south to north. The Ana Verde Creek channel is aligned west of the Metrolink and Union Pacific Railroad tracks and east of 6th Street East. This section of the Ana Verde Creek is an ephemeral wash, highly degraded by construction of the railroad and previous maintenance activities. This section of the Ana Verde Creek was previously

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

channelized with riprap lined banks and channel bottom; the bottom is now covered with silt deposits. The proposed project area includes approximately .38 acres of non-wetland waters associated with the Ana Verde Creek. There are no wetlands occurring in the affected section of Ana Verde Creek. Construction of the 630-foot box culvert storm drain improvement within Ana Verde Creek and related 510-foot train platform on top of the box culvert will impact .22 acres of the Ana Verde Creek channel. To compensate for the loss of .22 acres of Ana Verde Creek channel, CDFG requires mitigation at a 2:1 ratio for a total of .44 acres. The City has proposed to accomplish this mitigation through a future Ana Verde Detention Basin mitigation bank, by utilizing .44 acre of alluvial scrub credits. A mitigation measure will be applied to the project as follows to ensure compliance with CDFG requirements:

8. The applicant shall obtain all required permits and comply with all mitigation requirements required by the California Department of Fish and Game (CDFG) associated with the streambed alteration within the impacted portions of the Ana Verde Creek.

Implementation of the mitigation measure will reduce any impacts to blue-line stream, and riparian vegetation to a level of insignificance.

Based on review of studies submitted for the project and a site inspection, there are no on-site water resources that could be affected by development of this site. Therefore, with the implementation of the mitigation measure described above, impacts from the change in the course or volume of a local stream do not constitute a significant impact on the environment.

2. Other Surface Waters

Based on a site inspection, and review of the Map of Aqueduct Facilities (Dept. of Water Resources, East Branch Hydrology Palmdale Area), and/or the General Plan:

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

If the project is adjacent to or near the California Aqueduct:

a. Could the project result in a significant increase in runoff of storm or nuisance water toward the aqueduct?

☐ ☐ ☐ ☒

b. Will the project be significantly affected by storm or nuisance water runoff flowing through aqueduct culverts or pools?

☐ ☐ ☐ ☒

The project site is located approximately three and one-half miles north and downstream of the California Aqueduct and will not be impacted by this water source in the event of a failure as indicated in Exhibit S-7 of the General Plan. Therefore, to or from the California Aqueduct does not constitute a significant impact on the environment.

Based on a review of the General Plan and/or a site inspection:

c. Is the project located above Lake Palmdale where urban runoff could significantly impact the lake?

☐ ☐ ☐ ☒

d. Is the project located in an inundation area below Lake Palmdale Dams, or Littlerock Dam?

☐ ☐ ☐ ☒

The project site is not located above Lake Palmdale and is not located within an inundation area below Lake Palmdale or the Littlerock Dam according to Exhibit S-6 of the General Plan. Therefore, the project will not be significantly impacted or result in a significant impact to these water resources.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

Based on review of the FIRM Map, the Master Plan of Drainage and/or review by the Department of Public Works/Engineering:

e. Is the site in an area of flood hazard as shown on the FIRM Map, or as identified by the Engineering or Public Works Departments?

☐	☐	☒	☐

f. Will the project result in a significant increase in peak runoff that could increase flood hazard off-site?

☐	☐	☒	☐

g. Would development of the project impede the implementation of the City's Master Plan of Drainage or Drainage Management Plan?

☐	☐	☐	☒

A review of the FIRM map indicates that a large portion of the project is located in Zone AO (Depth 1 foot) flood plain as indicated on Flood Insurance Rate Map, Community Panel Number 060144 0040 D, dated March 30, 1998. The project site is bordered on the east boundary by the Ana Verde Creek, a blue-line stream (USGS Palmdale Quadrangle, 1974), which flows from south to north. The Ana Verde Creek channel is aligned west of the Metrolink and Union Pacific Railroad tracks and east of 6th Street East. Sverdrup Civil, Inc. has prepared a Hydraulic Study dated September 28, 2001 (Appendix 3), for the proposed Ana Verde Creek box culvert drain improvements and a Flood Study dated December 19, 2001, by Jacobs Sverdrup (Appendix 4), addressing on site drainage for the proposed Palmdale Transportation Center. Based upon the Flood Study prepared for the project, a stormwater detention facility is necessary on the north side of Technology Drive east of the alignment of 4th Street East to accommodate storm flows from this project as well as

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

the City of Palmdale Public Works Central Maintenance Yard. The facility will be approximately three acres in size and will require subsequent analysis prior to construction. Based on prior environmental analysis prepared for other basins within the City it is anticipated that no significant impacts would result from construction of the basin in this location which is in a flood plain and has no significant biological resources. With construction of these improvements, no increase in peak runoff is anticipated to occur as a result of this development and this project will not impede implementation of the City's Master Plan of Drainage. Further, the project will be conditioned to comply with standard conditions of approval requiring that the project shall be designed in accordance with the City's Floodplain Management Ordinance and related criteria within the Engineering Design Standards. These measures can include but are not necessarily limited to construction of drainage swales, catch basins, storm water conduits and culverts that convey storm waters through the site, increasing the height of building pads to elevate the buildings above the floodplain flood height and site grading to direct flows away from structures. Proper certification, as defined in the City's Floodplain Management Ordinance, shall be provided from the project civil engineer to the City Engineer stating that the structures will be free from the FEMA 100-Year Flood and the Los Angeles County 50-Year Capital Storm prior to certificate of occupancy. Therefore, construction and operation of the facility will not result in significant off-site drainage impacts, nor will the facility be significantly impacted by existing flood hazard conditions.

h. Will any aspect of the project result in discharge of materials into surface waters, or in any alteration of surface water quality, including but not limited to, temperature, dissolved oxygen, or turbidity?

☐ ☐ ☐ ☒

i. Will the project result in the significant alteration of the direction or rate of flow of groundwater?

☐ ☐ ☐ ☒

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

The only surface waters that are present on the project site are surface run-off occurring with times of heavy rainfall and nuisance water from irrigated landscaped areas. As described above, the project will be designed to accommodate storm flows within an off-site drainage basin and within the section of the Ana Verde Creek with the storm drain box structure. Since the project is over five acres in area, the project is required under EPA regulations to comply with National Pollution Discharge Elimination System (NPDES) requirements including preparation of a Stormwater Pollution Prevention Plan for the project that is to be approved by the State Water Quality Control Board-Lahontan Region. This plan will provide for mitigation of potential impacts during construction as well as mitigate any potential long-term impacts associated with the on-going operations of the project. It is not anticipated that any other aspect of the project will result in discharge of materials into surface waters, or in any alteration of surface water quality after compliance with EPA Water Quality regulations.

There is no grading, excavation, or drilling that would exceed 100 feet needed for construction or operation of this project; no pumping of groundwater is proposed for the project. Any wells that may be discovered on site are to be abandoned in accordance with regulations of Los Angeles County. According to the project geotechnical report, groundwater levels are anticipated to be deeper than 100 feet below the existing site grade; therefore, no alteration of groundwater is expected to occur as a result of this development.

Based on the type of project, project submittals and exhibits, and/or a site inspection:

j. Could the project result in a change in the quantity or quality of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?

☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
k. Could the project result in a substantial reduction in the amount of water otherwise available for public water supplies?	☐	☐	☐	☒

As indicated in response to Item C.2.i above, the groundwater is anticipated to be at a depth greater than 100 feet below the project surface, based on the geological study prepared for the project; therefore, no impact to groundwater supply is expected to occur as a result of this development. The proposed transportation facility will not require the commitment of significant amounts of water for construction or operations and will not result in a significant reduction in the amount of water available for public water supplies. Therefore, impact on groundwater is not significant.

D. Plant Life:

Based on a site inspection, the biological report, and/or the Native Vegetation Preservation Plan submitted for the project:

1. Is there a significant stand of desert vegetation on the site which will be adversely impacted by the project?	☐	☐	☐	☒
2. Will the project result in a reduction of the numbers of any unique, rare, or endangered species of plants?	☐	☐	☒	☐
3. Will the project result in the introduction of invasive, non-native species of plants into an area; or will the project create a barrier to the normal replenishment of existing native plant species?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Will the project result in a significant reduction in acreage of native vegetation?	☐	☐	☒	☐

A Biological Resources Evaluation was prepared for the proposed project by LSA, Associates, dated September 6, 2001 (Appendix 5). A field survey of the project area was completed on March 27, 2001, by LSA biologist Jeff Bray. The project site has been previously disturbed by agricultural activities. All habitat on site was inspected to determine if it was suitable to support any special status species. Vegetation in the project area was characterized and mapped, and an inventory was taken of all wildlife and plant species observed. On site vegetation consists primarily of disturbed/ruderal vegetation. Approximately .3 acres of disturbed Big Sagebrush Scrub exists on the northerly boundary adjacent to Technology Drive and Transportation Way. Due to the extremely disturbed conditions of the project site, no suitable habitat is present for any special status plant species. However, as addressed under Section C of this study, mitigation is required for the impacts to the Ana Verde Creek resulting from construction of the station platform to address the loss of .22 acres of the stream channel. Therefore, no significant impact on unique or rare plant species is anticipated to occur as a result of development of this site or that would create a barrier to the normal replenishment of any native plant species.

E. Animal Life:

Based on the biology report submitted for the project and/or a site inspection: Will the proposal result in:

1. Will the project result in a significant loss of biological diversity?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
2. Will the project result in the reduction of the numbers of any unique, rare, or endangered species of animals?	☐	☐	☐	☒
3. Is the project located in a Significant Ecological Area where the introduction of animals associated with urbanization could adversely affect native species; or where the project will result in a barrier to the migration or movement of animals?	☐	☐	☐	☒
4. Will the project cause significant deterioration of, or loss of, existing fish or wildlife habitat?	☐	☐	☐	☒

A Biological Resources Evaluation was prepared for the proposed project by LSA, Associates, dated September 6, 2001 (Appendix 5). A field survey of the project area was completed on March 27, 2001, by LSA biologist Jeff Bray. The project site has been previously disturbed by agricultural activities. All habitats on site were inspected to determine if they were suitable to support any special status species. Vegetation in the project area was characterized and mapped, and an inventory was taken of all wildlife and plant species observed. On-site vegetation consists primarily of disturbed/ruderal vegetation. Due to the extremely disturbed conditions of the project site, no suitable habitat is present for any special status wildlife species. Therefore, no significant impact on any unique, rare, or endangered species of animals is anticipated to occur as a result of development of this site. Therefore, this does not constitute a significant impact on animal life.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
F. Noise:				
1. If the project is residential or noise sensitive, will it expose people to severe noise levels because it is located:				
a. adjacent to the Freeway?	☐	☐	☐	☒
b. within 200 feet of the railroad?	☐	☐	☒	☐
c. adjacent to an existing or future arterial street?	☐	☐	☐	☒

The proposed project is not a residential project and is not a noise sensitive use. The proposed project will include development of transportation facilities including a rail platform with transit station building, a bus transfer station, a park and ride and up to 800 parking spaces overall. The proposed project will result in train commuters accessing the Metrolink trains from the train platform that will obviously expose them to train noise. This noise exposure is not a prolonged exposure and is not expected to result in impacts to the health or safety of humans. Based on a site noise survey, the existing ambient noise level within the project area is relatively high ranging from 67.6 dBA Leq near the railroad tracks at the residential area to the south and 69 to 76 dBA Leq on the project site. There is no significant impact from existing noise on the proposed project. Refer to the discussion in Item 3 below for further discussion on noise impacts.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
2. Is the proposed project within the Plant 42 over-flight area, or the 65 CNEL boundary?	☐	☐	☐	☒

The project site is not located within the Plant 42 frequent over-flight area or the 65 CNEL boundary. A portion of the project site is located within an Air Installation Compatible Use Zone (AICUZ) Accident Potential Zone (APZ) II that is discussed in Item H.3 below. However, as previously indicated, the project is not noise sensitive and the operation of over flying aircraft will not generate significant noise impacts relative to the proposed use. Therefore, this does not result in a significant impact on the environment from Plant 42 or any other noise source.

3. Will the project generate a noise level exceeding 65 CNEL at the project boundary after construction that could significantly impact an adjoining land use?	☐	☒	☐	☐

A Noise Impact Study was prepared for the project by LSA, Associates, dated February 20, 2002, (Appendix 6) to identify potential noise impacts on adjacent land uses resulting from the proposed Palmdale Transportation Center project. The study identified the potential for short-term construction noise impacts and long-term operational and traffic noise impacts on the adjacent properties including the residential properties located to the south of the project site. Based on a site noise survey, the existing ambient noise level within the project area is relatively high ranging from 67.6 dBA Leq near the residential area to the south and 69 to 76 dBA Leq on the project site. Short-term impacts would include noise generated by construction related traffic on adjacent roadways as well as construction grading and building construction noise. Long-term operational impacts would include noise impacts from trains decelerating to and accelerating from the train platform, noise generated by vehicle and bus movements within the parking lot, and other parking lot activities

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

such as conversations and door closing. Potential long-term traffic noise impacts on adjacent roadways were also identified.

The noise study concludes that the maximum noise level from construction activity on the site will be no higher than 91 dBA L_{max} with the maximum noise level at the adjacent properties to the south reaching a possible 79 dBA L_{max} with the separation from the site to the actual residences. Construction noise levels would exceed the existing ambient noise levels in the project area but would cease after completion of construction. Construction of the project is subject to the City of Palmdale Municipal Code which regulates hours of construction within the City. Due to the noise generated by construction activities, mitigation measures are required to reduce these short-term construction noise impacts to less than significant levels. The proposed mitigation measures are as follows:

9) All mobile and fixed combustion engine construction equipment shall have properly operating and maintained mufflers consistent with manufactures standards.

10) All noise generating stationary construction equipment and construction staging activities shall be located away from the residential property to the south.

11) During all project site construction, construction related activities shall be limited to the hours between 6:30 am and 8:00 pm Monday through Saturday with no construction permitted on Sundays or holidays.

After the implementation of these mitigation measures, impacts to adjacent properties from short-term noise generating construction activities is expected to be less than significant.

The long-term operational impacts would include noise impacts from trains decelerating and accelerating from the train platform, noise generated by vehicle and bus movements within the parking lot, and other parking lot activities such as conversation and door closing. The noise study prepared for the project concludes that long-term operational impacts would be less than significant and that the noise level at the

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

adjacent residential properties to the south would not exceed 65dBA L_{max} Based on the noise survey, the existing ambient noise level near the residential area to the south within fifty feet of the railroad tracks is relatively high at 67.6 dBA Leq. As required by City code, the project plan includes construction of a minimum six-foot high masonry wall along the southern boundary that will reduce the existing ambient noise levels and calculated project noise impacts by 5dBA due to the proposed masonry wall adjacent to these properties. The calculated noise level at the residential homes to south after construction of the project would be approximately 53dBA. The noise impacts related to the existing trains operating along Sierra Highway and noise from train horns at the Sierra Highway grade crossing are not attributable to this project since these trains are currently operating and the proposed project does not imply an increase in the number of train trips passing by this location. The study concludes that the deceleration and acceleration noise from the train will not result in an increased noise level and will be less than the noise generated by pass-by trains and therefore, is less than significant.

The study also addressed long-term traffic noise impacts that could result from increased traffic levels on the adjacent roadway system. The study concludes that the long-term impacts from traffic noise would be less than significant because the increase in traffic to the adjacent roadway system is expected to generate a maximum of a .7 dBA increase to area roadways. Therefore, the potential for impacts from long-term traffic noise is less than significant.

During the scoping meeting conducted for the project on January 31, 2002, the representative of a community organization within the City of Palmdale identified potential noise impacts resulting from this project as a concern. The concern was general in nature with no specific area of concern. The noise study prepared for the project provides analysis of all potential short-term and long-term noise impacts applicable to the project and demonstrates that long-term noise impacts are less than significant. Further, the study concludes that short-term noise impacts may be reduced to a less than significant level by implementing the mitigation measures identified and, therefore, noise impacts resulting from this project will not require the preparation of an EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

G Light or Glare:

Based on the type of project, and/or project submittals and exhibits:

1. Will the project produce significant new sources of light or glare that would disturb neighboring uses or significantly change the light environment visible from other areas of the City?

☐	☐	☒	☐

Development of this project will introduce new sources of light in the project vicinity that have the potential to impact neighboring land uses. In accordance with standard City Zoning Ordinance requirements, the City must prepare a photometric lighting plan showing compliance with the City's Zoning Ordinance which limits the height of light standards within industrial zones and requires light fixtures to possess sharp cut-off qualities at the property lines. All light fixtures located within 150' of residential uses are to be no more than 15 feet in height, limiting the impacts to adjacent properties. Therefore, impacts caused from increased light and glare do not constitute the potential for a significant impact to the environment.

H. Land Use:

1. Will the project result in a substantial alteration of the present or planned land use of an area?

☐	☐	☐	☒

2. Are adjoining or planned land uses greatly different from that of the proposed project so that a potentially substantial interface problem would be created?

☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
3. If the project is located within the Plant 42 AICUZ zone, does it conflict with the joint land use policies established for those zones?	☐	☐	☐	☒

The proposed project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a compressed natural gas (CNG) fueling facility, a box culvert storm drain, construction of an off-site detention basin, and bicycle and pedestrian accommodations. Surrounding land uses include existing residential uses to the south, industrial development and a municipal maintenance yard to the northwest, a public park and vacant planned industrial land to the west across 3rd Street East, existing railroad tracks to the east, and vacant industrial land to the southwest and to the north. The existing residential uses located on the southern boundary of the site will be separated from the facility by a minimum six-foot high masonry wall and a 10' landscaped setback. North of the landscape area is a 47-foot wide drive aisle and a parking area for the train station and park and ride facility. The southern end of the train platform will be located approximately 260' northeast of the building line of the most easterly residence in the residential area. The train station itself will be located approximately 450 feet north of the residential buildings and the bus transfer area approximately 600 feet north of the residences.

The transportation facilities proposed under this project are not anticipated to create or result in a substantial interface problem with the residential uses as a result of the distance separations between the active portions of the use. Further, the masonry wall and ten-foot landscape buffer proposed along the southern boundary of the project as required by the Palmdale Zoning Ordinance will further reduce impacts to the residential uses. The special studies prepared for the project identified short-term construction related air quality and noise impacts that could impact these adjacent residential properties. These impacts were found to be less than significant after the implementation of mitigation measures applied to the project.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

The northerly portion of the project site is located within the U. S. Air Force, Plant 42, Air Installation Compatible Use Zone (AICUZ) designated Accident Potential Zone (APZ) II. The train station, bus transfer station and majority of the parking areas are located south of the APZ II designation. The proposed project is compatible with the policies contained in the General Plan for APZ II because the proposed transit related facility use is a lower density use and is compatible with the APZ II designation. Further, the proposed use will not result in a population density exceeding 25 persons per acre per 24-hour period or the 50 persons per acre maximum criteria as established for APZ II. Additionally, the Air Force has indicated that transportation related projects are exempt from the AICUZ related requirements. Therefore, this does not constitute the potential for a significant impact to the environment.

I. Natural Resources:

1. Will the project result in a significant increase in the rate of use of any natural resources?

☐	☐	☐	☒

2. Will the project result in the substantial depletion of any non-renewable natural resources?

☐	☐	☐	☒

The proposed project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a box culvert storm drain improvement, a drainage basin, a compressed natural gas (CNG) fueling facility, and bicycle and pedestrian accommodations. Less than significant amounts of natural resources including aggregates, aggregate products, steel and lumber will be required for construction of the project and on-going operations of the use. Development of this site will not substantially deplete any natural resources. Therefore, this does not constitute a significant impact on these resources.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

J. Risk of Upset:

1. Will the project result in a risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset condition?

☐	☐	☒	☐

The proposed project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a compressed natural gas (CNG) fueling facility, and bicycle and pedestrian accommodations, and box culvert and off-site detention basins. The proposed (CNG) fueling facility has some potential risk as with all fueling facilities. These facilities are required to be constructed in accordance with all Federal, State and County regulations. Compliance with the requirements of Los Angeles County Hazardous Materials and Fire Department for fuel dispensing and fuel storage facilities will reduce the potential for explosions or fire to a level of insignificance. No other aspect of this project is anticipated to result in a risk of an explosion or the release of hazardous substances into the environment; therefore, this does not constitute a significant impact on the environment.

2. Will the project result in possible interference with any emergency response plan or emergency evacuation plan?

☐	☐	☐	☒

Development of this site will not interfere with any emergency response plans. In addition, several points of access will be provided to the proposed site allowing for emergency vehicle access. Development of the train station may assist in transportation needs after major disasters depending on the level of damage to rail infrastructure.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

3. Is the site included on any known State Hazardous Waste Site list?

☐ ☐ ☐ ☒

The subject site is not included on the State Hazardous Waste Site lists dated April 22, 1998. The Phase I and II Environmental Site Assessments were prepared for the project by Gilray Enterprises, Inc. dated April 20, 1999, (Appendix 7) did not identify any recognized environmental condition on or near the project site. Therefore, there is no potential for impacts related to hazardous waste sites.

4. Is the project within or adjacent to a high fire hazard area as shown in the General Plan, identified by the Los Angeles County Fire Department or based on a site inspection?

☐ ☐ ☐ ☒

The subject site is not located within or adjacent to a high fire hazard area as shown in the City's General Plan and is situated within an urbanized area.

K. Population:

Based on the type of project:

1. Will the project significantly alter the location, distribution, density, or growth rate of the human population of an area?

☐ ☐ ☐ ☒

The proposed project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a compressed natural gas (CNG) fueling facility, a box culvert storm drain, an off-site detention basin, and bicycle and pedestrian accommodations. The project is to be located on

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

industrially designated land; therefore, since development of future residential development is not compatible with this land use designation, no future populations will be affected. There is an existing single family residential neighborhood containing thirty-nine homes located directly south of the project site. Additionally, single family residences are located west of 3rd Street East, and south of Avenue Q, in proximity to the proposed project. A mobile home park containing approximately 30 units is also located north of Avenue Q, near the subject property. The proposed project does not include acquisition of any residential property or relocation of any existing residences. Impacts to adjacent neighbors will be minimized to the extent feasible by construction of a solid masonry wall on or near the south project boundary along with installation of landscaping to further reduce noise and visual impacts. Therefore, this project's impact on the location, distribution and density of the area's human population does not constitute a significant impact on the environment.

L. Housing:

Based on the type of project?

1. Will the project create a significant demand for additional housing?

☐	☐	☐	☒

2. Will the project result in displacement of people from existing housing on the site?

☐	☐	☐	☒

Currently, there are no homes on the project site that would result in displacement of residents, and the proposed project will not in itself generate significant employment opportunities within the City that will create new demand for housing. Therefore, development of this project will not result in a significant impact on the City's housing supply.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

M. Transportation/Circulation:

Based on review of the type of project, project exhibits, a site inspection, and/or review of the Institute of Transportation Engineers, Trip Generation or the applicant's traffic study:

1. What is the estimated number of average daily vehicle trips, and a.m. and p.m. peak hour trips, generated by the proposed project?

   2,405 ADT: 211 a.m. peak, 226 p.m. peak

2. Will the traffic generated by this project cause a reduction of Level of Service at an intersection or on a street segment?

☐	☐	☐	☒

A Traffic Study was prepared for the project by LSA Associates, Inc. dated January 8, 2002, (Appendix 8) to analyze traffic impacts from the project on the existing traffic circulation system. According to the traffic analysis, approximately 2,405 average daily vehicle trips can be anticipated as a part of this development on the adjacent City street system. The a.m. peak hour trips between 7:00 and 9:00 a.m. are expected at 211 trips and the p.m. peak hour trips between 4:00 and 6:00 p.m. are expected at 226 trips. Primary access to the transportation center will be provided from Technology Drive (Avenue P-8) to the north via Transportation Way. A secondary access will be provided via 6th Street East to the south. An additional access will also be provided from 3rd Street East via an extension of Avenue P-12 to the east.

The City of Palmdale General Plan identifies Level of Service (LOS) C as the minimum standard for intersections and roadways. All of the existing intersections and roadway segments in the project area studied in the traffic analysis are currently operating at a LOS of C or better during the peak hour. Study intersections included 3rd Street East at Technology Drive, Avenue P-12, and Avenue Q as well as Sierra Highway and Technology Drive and Transportation Way and Technology Drive. The

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

study analyzed impacts of the project with regards to these existing intersections as well as the new intersection proposed at Technology Drive and Transportation Way. Based upon the study, the LOS at all of the study intersections from project buildout would continue to operate at a LOS of C or better. Therefore, based on the traffic analysis prepared for the project, the project will not result in a reduction in the LOS of the intersections and roadways serving the project.

3. Does circulation within the project prevent the safe and orderly flow of people and vehicles, including emergency vehicles?

☐	☐	☐	☒

The site has been designed in compliance with City and Fire Department standards providing adequate access and circulation within the entire site for facility users and emergency vehicles.

4. Will the project create or experience access problems as designed, or create any obstruction to the safe flow of traffic?

☐	☐	☒	☐

Primary access to the transportation center will be provided from Technology Drive (Avenue P-8) to the north via the proposed Transportation Way. A secondary access will be provided via the existing 6th Street East to the south. An additional access will also be provided from 3rd Street East via an extension of Avenue P-12 to the east. Based upon the traffic analysis prepared for the project, the project will not create an obstruction to the safe flow of traffic based on the LOS analysis provided in the traffic study prepared for the project. Concerns were expressed about increased traffic on 3rd Street East during the scoping hearing on January 31, 2002. Based upon data contained within the traffic study, the total number of trips generated by the project on 3rd Street East during the peak P.M. period is as follows: 1) 3rd Street East and Technology Drive will increase by a total of 106 trips or a 5% increase; 2) 3rd East and P-12 will increase by 106 trips or a 16% increase; and 3) 3rd East and Avenue Q by 107 trips or a 9% increase.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

These trip volumes do not decrease the LOS at these intersections beyond the 2003 growth projection with the intersections operating at LOS B, B and C respectively. The study recommends implementation of one mitigation measure as follows:

12) Provide a stop sign control for the northbound approach and a left-turn pocket for westbound traffic inbound to the Transportation Center at the future intersection of Transportation Way and Technology Drive (Avenue P-8).

Therefore, after the implementation of the mitigation measure noted, the project will not create or experience access problems as designed, or create any obstruction to the safe flow of traffic and does not constitute the potential for a significant impact to the environment.

5. Could the project result in a significant alteration to rail or air traffic?

☐	☐	☐	☒

The proposed project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a compressed natural gas (CNG) fueling facility, a box culvert storm drain, an off-site detention basin, and bicycle and pedestrian accommodations. The project site is located west of the existing Metrolink rail lines and Union Pacific Railroad lines. The proposed project will provide a new terminal for the existing railway currently providing commuter service between Los Angeles and Lancaster. The project is intended to promote rider ship on the Metrolink line and will not result in a significant adverse alteration to rail traffic. The environmental document prepared for this project excludes any analysis or component of the proposed California high-speed rail system that is still in the conceptual design stage with no specific information as to alignment or station locations available at this time. The project is also partially located within the U. S. Air Force, Plant 42, Air Installation Compatible Use Zone (AICUZ) designated Accident Potential Zone (APZ) II. The location of the project in proximity to these facilities is not expected to result in any alteration to rail or air traffic as discussed previously in this

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

study under land use impacts. Therefore, the project does not have the potential to impact rail or air traffic.

6. Will the project create a significant shortage of parking?

☐	☐	☐	☒

The proposed project is providing a total of approximately 500 parking spaces between the Metrolink station and the proposed park and ride with additional area to expand the parking by an additional 300 spaces. The maximum parking demand calculated for the facility would be 595 vehicles. Therefore, additional parking will be available at the buildout of the project and the project itself will not create a shortage of parking within the City.

N. Public Services:

1. Fire Protection

What is the roadway distance and location of the nearest fire station: Approximately 1.5 miles to Station No. 37 at 38313 9th Street East.

a. Will the project result in a need for significant additional fire protection services?

☐	☐	☐	☒

The City of Palmdale has worked with the Los Angeles County Fire Department in identifying and securing sites for new fire facilities and has adopted a Fire Facilities Impact Fee Ordinance. Compliance with the ordinance assists in mitigating impacts to fire protection services resulting from incremental growth in the City. Further, the City will be required to provide public or private hydrants that provide the required fire flows as specified by the Los Angeles County Fire Department for the facility. Therefore, implementation of the proposed project is not expected to create a significant adverse impact to fire services.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

2. Police Protection

Are there any aspects of the project that would create a significant impact to police protection?

☐	☐	☒	☐

The proposed project is not expected to result in a significant impact on the Sheriff's Department's ability to provide police protection within the City. The City's contract with the Sheriff's Department is reviewed periodically to ensure that adequate protection is provided to City facilities. The City currently provides on-site security for all Park and Ride facilities. This facility will have on-site security from 3:00 am to 12:00 pm with the possibility of 24-hour security. The facility will also be added to the list of regular patrols for the Park Ranger and Los Angeles County Sheriff's Department as is done with all City facilities. The project is also being designed with provisions that will allow future installation of an on-site security surveillance system if necessary. To supplement security awareness, the transit building will also include office space for City, Sheriff, and CHP enforcement personnel to be used on an as needed basis. Security concerns were expressed during the scoping meeting on January 31, 2002. Based upon the standard City security procedures described above and a condition of approval applied to this project allowing review of on-site security procedures by the Sheriff's Department on an on-going basis, the potential for a significant impact to police services or site security is less than significant.

3. Schools

a. In what elementary and high school attendance area is the project? Palmdale School District and the Antelope Valley Union High School District.

b. Approximately how many students will the project generate? None

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Would the students generated by the project significantly contribute to the affected schools exceeding their designed capacity?	☐	☐	☐	☒

The proposed transportation project will provide alternative transportation and commuting options for existing residents within the Antelope Valley; it will not generate any new students within any elementary school district or the Antelope Valley Union High School District. The proposed continuation school site is not expected to be impacted by any component of this proposed project based on the information provided. Therefore, this does not constitute a significant impact on the environment.

4. Parks and Recreation

Will the proposed project result in an impact on the quality or quantity of existing parks or recreational facilities, including trails or bicycle paths?	☐	☐	☐	☒

Development of the proposed Palmdale Transportation Center (PTC) located east of the existing Desert Sands Park will include bicycle and pedestrian access routes through the center that tie into and continue the existing bicycle paths located north of the site on Sierra Highway and south of the facility on 6th Street East. The majority of the Palmdale Transportation Center is located a minimum of 660 feet east of 3rd Street East and is not expected to have any negative impact on the existing Desert Sands Park located west of the site across 3rd Street East based upon discussions with the Director of Parks and Recreation for the City of Palmdale. Primary access to the Palmdale Transportation Center will be via Transportation Way from Technology Drive. Based on the projected trip generation on 3rd Street East discussed previously in this analysis, the project will not disrupt pedestrian access to the park or vehicular access to the parking areas for the park. Adequate parking is currently available for the park patrons and the construction of additional parking at the PTC

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

may allow for larger scale weekend events at the park in the future with the availability for shared parking. Day care and children programs in Desert Sands Park provide direct supervision of children with adequate drop-off and pick-up locations provided in the park for parents. The Director of Parks and Recreation feels that child safety will not be impacted by the Palmdale Transportation Center in any manner.

Future plans call for an expansion to Desert Sands Park to the south and for a pedestrian overpass at Avenue Q and Sierra Highway crossing the UPRR and Metrolink tracks allowing for future connection of the Sierra Highway greenbelt to the Palmdale Transportation Center. The proposed transportation project is not expected to increase the City's population or create new demand for parks and recreational programs. Therefore, there is no potential for impacts to parks and recreational facilities resulting from the proposed project.

5. Public Facilities

Will the proposed project have a significant impact on maintenance of public facilities, including roads, drainage facilities, slopes, open space and trails?

☐	☐	☐	☒

The proposed project is not expected to have any significant impact on the maintenance of public facilities. The Transportation Center is intended to provide additional opportunities for Antelope Valley residents to use public transportation systems that will reduce the number of vehicle trips on local roadways thereby reducing or delaying maintenance of some local roadways. Construction of the Ana Verde Creek box culvert will reduce required maintenance of the facility for flood control purposes. Therefore, implementation of the proposed project will not create significant impacts to public facilities.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
6. Library Services				
Will the project result in a significant impact to library services due to increased population?	☐	☐	☐	☒

The proposed Palmdale Transportation Center project will not have any impact on library services and does not constitute a negative impact on the environment.

7. Other Governmental Services				
Will the project have a significant impact on a government service or agency not listed above?	☐	☐	☐	☒

There are no aspects of the proposed Palmdale Transportation Center project that will impact any other government agency not mentioned in this study. The City has been working with a variety of agencies on this project including AVTA, Cal-Trans, MTA, and the Sheriff's Department in reviewing the project. Plans have been sent to at least sixteen agencies and invited twenty agencies to the scoping meeting held on January 31, 2002. None of the agencies have expressed that the project would result in significant impacts or their agencies or services. Therefore, this does not constitute a negative impact on the environment.

O. Energy:

1. Will the project result in the use of substantial amounts of fuel or energy?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
2. Will the project result in a substantial increase in demands upon existing sources of energy, or require the development of new sources of energy?	☐	☐	☐	☒

The proposed project will further opportunities for the use of public transportation and commuters within the Antelope Valley reducing the use of motor vehicle fuels by individual commuters. All of the proposed facilities will be constructed under Title 24 energy requirements and the ultimate use of fuel and energy will be allocated by the applicable provider and is not considered significant. Therefore, implementation of this project is not expected to create significant impacts to energy sources.

P. Utilities:

Will the proposal result in a need for new systems, or substantial alterations to the following utilities:

1. Power or natural gas?	☐	☐	☐	☒
2. Communications systems?	☐	☐	☐	☒
3. Water?	☐	☐	☒	☐
4. Sanitary sewer?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
5. Solid waste disposal?	☐	☐	☐	☒

Implementation of the proposed project will require the extension and construction of all necessary utilities within and adjacent to the project site including sewer, water and drainage facilities in the Ana Verde Creek and north across Technology Drive (Avenue P-8). These service extensions will not require significant alterations to existing facilities. Water system improvements will include construction of loop systems to connect existing systems in the project vicinity and the possible relocation of existing water system facilities located within 6th Street East. Therefore, implementation of the proposed project does not constitute the potential for a significant impact to the environment.

Q. Human Health:

Based on the type of project:

1. Will the project create any health hazard or potential health hazard (excluding mental health)?	☐	☐	☐	☒
2. Will the project result in the exposure of people to potential health hazards?	☐	☐	☐	☒

Based upon the data contained within the Phase I and Phase II Environmental Site Assessments prepared for the project and the other special studies addressing traffic, air quality, and noise impacts for the project, no component of the proposed project is anticipated to create any significant potential health hazards or expose any people who live in the project vicinity or who use the adjacent Desert Sands Park to health

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

hazards. Short-term air quality and noise impacts related to construction activities will be mitigated to less than significant levels as identified in the respective studies and as discussed in the initial study. Therefore, this does not constitute an impact on the environment.

R. Aesthetics:

1. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?

☐	☐	☐	☒

Development of the proposed project will not result in the obstruction of any scenic vistas or views, or create any aesthetically offensive views. The project will include construction of a decorative masonry wall on the south property line adjacent to the existing single-family residences that are currently fenced with a variety of fencing materials. The masonry wall will upgrade the appearance of the residential properties on the south property line. The proposed transit building is small in scale and has been designed in accordance with the General Plan Community Design Element Guidelines providing an attractive Spanish design theme compatible with the recently constructed buildings in the civic center. The proposed buildings are low in profile excluding the decorative clock tower and are not expected to interrupt any scenic vistas. The clock tower is designed to be a 45-foot high ceramic dome tower and is eighteen feet wide at the base and four feet at the top. This size of structure is not expected to disrupt any vista based on its location within the project. Therefore, this does not constitute a significant impact on the environment.

S. Cultural Resources:

1. Will the proposal result in the alteration or destruction of a prehistoric or historic archaeological site, or historic structure(s)?

☐	☐	☐	☒

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

Site inspection performed by: Gerrit L. Fenenga, Ph.D.

2. Will the proposal result in potential adverse impacts on paleontological resources?

☐ ☐ ☐ ☒

The project site consists of highly disturbed vacant land surrounded by urban development. Gerrit L. Fenenga, Ph.D., Associate State Archaeologist, reviewed the information provided by the South Central Coastal Information Center on the project site and conducted a field investigation on January 3, 2001, in conjunction with a grant application associated with the Palmdale Transportation Center. The field inspection did not reveal any surface indications of any archaeological remains or evidence of any significant historical resources. Further, the records check obtained through the South Central Coastal Information Center revealed no historical or archaeological properties in the records search (see Appendix 9). Therefore, it is not anticipated that any significant archaeological or historical resources are on the site.

However, because such resources are often buried and not easily identifiable, the project will be subject to the standard condition of approval that in the event that any cultural or paleontological resources are identified during grading, grading should halt immediately in the area, and an archaeologist and/or paleontologist should be called into evaluate the find and formulate a recovery program. Therefore, this does not constitute the potential for an adverse impact to cultural resources.

T. Public Controversy:

1. Is the project or action environmentally controversial in nature or can it reasonably be expected to become controversial upon disclosure to the public?

☐ ☐ ☐ ☒

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

The proposed project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a compressed natural gas (CNG) fueling facility, a box culvert storm drain, an off-site detention basin, and bicycle and pedestrian accommodations. Some public controversy exists at this time over the project proposal. Concerns about environmental impacts relating to air quality, noise, traffic and public safety were identified by a local citizens group during the scoping meeting held on January 31, 2002. Special studies have been prepared for the project to identify and quantify the potential impacts from the project related to these issues and to identify possible mitigation measures for the project to reduce the impacts to less than significant levels when present. Based upon the information contained within the Initial Study and the studies prepared for the project, the impacts that have been identified that would be attributed to the project have been found to be mitigatable to a less than significant level. Therefore, even though the project may continue to generate public controversy, that alone would not require the preparation of an Environmental Impact Report.

VII. MANDATORY FINDINGS OF SIGNIFICANCE

A. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

☐	☐	☒	☐

Based on the analysis contained in Section VI (D), (E), and (S) of this initial study, no significant impacts to wildlife habitats, plant populations, or important cultural resources are anticipated with implementation of the proposed project because the project site has been previously disturbed and impacted by existing uses and the surrounding urbanization. No

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

significant wildlife or cultural resources were found to exist on site based on a site inspection by the consulting biologist and State Archaeologist. Therefore, the project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

B. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)

☐	☐	☐	☒

The project does not have any limited impacts that would be cumulatively considerable because as provided in Section VI of this Initial Study, mitigation measures applied to the project will reduce any potential individual impacts to less than significant levels. Further, other projects planned in the area will not contribute to cumulative impacts. The environmental analysis prepared for the maintenance yard found that traffic on 3rd Street East is not significant and traffic volumes from the proposed continuation high school project were included in the traffic analysis prepared for this project and did not result in a cumulative impact. Therefore, the proposed project will not create cumulatively considerable impacts and will not require the preparation of an Environmental Impact Report.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
C. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

The project will include development of transportation facilities including a Metrolink rail transit station and platform, a bus transfer station, a Park and Ride lot, a compressed natural gas (CNG) fueling facility, a box culvert storm drain, an off-site detention basin, and bicycle and pedestrian accommodations. As described in Section VI of this initial study, the proposed project is not expected to have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. Special studies have been prepared for the project to identify and quantify the potential impacts from the project related to these issues and to identify possible mitigation measures for the project to reduce the impacts to less than significant levels when present. Based upon the information contained within the Initial Study and the studies prepared for the project, the impacts that have been identified that would be attributed to the project have been found to be mitigatable to a less than significant level. Therefore, based upon the scope of the project and site location, implementation of the project will not have a substantial adverse impact on human beings.

MITIGATION MONITORING PROGRAM AND COMPLIANCE RECORD

CASE NO.: CUP 01-16

INITIAL STUDY PREPARED BY: Richard Kite

DATE: March 15, 2002

APPLICANT: City of Palmdale Public Works

MITIGATION MEASURE	DEPARTMENT	ACTION(S) REQUIRED	REQUIRE TIME OF COMPLIANCE	ACTION TAKEN	VERIFIED BY/DEPT	DATE	FURTHER ACTION NEEDED
1.	Public Works Inspection/ Building Inspection/ Planning	All active portions of the project site during construction shall be watered to prevent excessive amounts of dust including all material to be excavated or graded. Watering with complete coverage shall occur at least twice daily, preferably in the late morning and after work concludes for the day and when winds exceed 15 miles per hour. During grading operations, water trucks or sprinklers shall be used to prevent dust from leaving the site and to crust the site after each workday is completed. All earthwork operations shall cease during periods of high winds (over 25 mph average for one hour) or during Stage 1 or Stage 2 episodes.	On-going During Grading/Construction Operations				
2.	Public Works Inspection/ Planning	The area disturbed by clearing and grading operations shall be minimized at all times. After grading is completed, the disturbed area of the site shall be treated with a soil stabilizer to prevent dust generation. Portions of the site to remain inactive for periods greater than three months shall be seeded and watered until cover is grown or shall be soil stabilized.	On-going During Grading/Construction Operations				

Mitigation Monitoring Program and Compliance Record
Page 2

MITIGATION MEASURE	DEPARTMENT	ACTION(S) REQUIRED	REQUIRE TIME OF COMPLIANCE	ACTION TAKEN	VERIFIED BY/DEPT	DATE	FURTHER ACTION NEEDED
3.	Public Works Inspection	Trucks hauling cut/fill materials to the site and construction debris to and from the site shall be tarped.	On-going During Grading/Construction Operations				
4.	Public Works Inspection	Construction activities shall not interfere with peak hour traffic and shall be scheduled to minimize obstruction to adjacent roadways	On-going During Grading/Construction Operations				
5.	Public Works Inspection/ Building Inspection/ Planning	The construction contractor shall support and encourage ridesharing and transit incentives for construction personnel.	On-going During Grading/Construction Operations				
6.	Public Works Inspection/ Building Inspection/ Planning	The on-site speed limit for construction vehicles shall be limited to 15 mph.	On-going During Grading/Construction Operations				
7.	Public Works Inspection/ Building Inspection/ Planning	Construction equipment to be used on site shall be based on low emission standards factors and high-energy efficiency. All construction equipment is to be well tuned and maintained in accordance with manufacturers specifications. All equipment shall be shut-off when not in use. The contractor shall utilize diesel or electric powered equipment in lieu of gasoline-powered equipment where feasible.	On-going During Grading/Construction Operations				
8.	Public Works Project Management/ Planning	The applicant shall obtain all required permits and comply with all mitigation requirements required by the California Department of Fish and Game (CDFG) associated with the streambed alteration within the impacted portions of the Ana Verde Creek.	Prior to Construction Within Ana Verde Creek				

Mitigation Monitoring Program and Compliance Record
Page 3

MITIGATION MEASURE	DEPARTMENT	ACTION(S) REQUIRED	REQUIRE TIME OF COMPLIANCE	ACTION TAKEN	VERIFIED BY/DEPT	DATE	FURTHER ACTION NEEDED
9.	Public Works Inspection/ Building Inspection/ Planning	All mobile and fixed combustion engine construction equipment shall have properly operating and maintained mufflers consistent with manufacturers standards.	On-going During Grading/Construction Operations				
10.	Public Works Inspection/ Building Inspection/ Planning	All noise generating stationary construction equipment and construction staging activities shall be located away from the residential property to the south.	On-going During Grading/Construction Operations				
11.	Public Works Inspection/ Building Inspection/ Planning	During all project site construction, construction related activities shall be limited to the hours between 6:30 am and 8:00 pm Monday through Saturday with no construction permitted on Sundays or holidays.	On-going During Grading/Construction Operations				
12.	Public Works Inspection/Planning	Provide a stop sign control for the northbound approach and a left-turn pocket for westbound traffic inbound to the Transportation Center at the future intersection of Transportation Way and Technology Drive (Avenue P-8).	Prior to Occupancy				

APPENDIX 1

FEBRUARY 24, 2000 S99-549

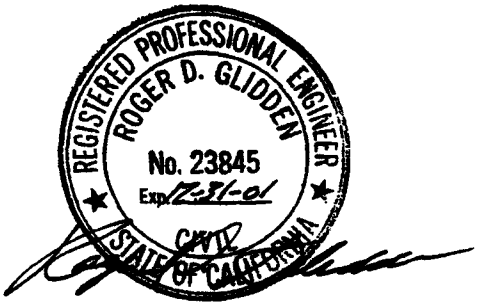
SOILS ENGINEERING REPORT

PREPARED FOR

SVERDRUP CIVIL, INC.

AT

PROPOSED MULTI-MODAL TRANSPORTATION FACILITY
SIXTH STREET EAST AND AVENUE P-12
CITY OF PALMDALE, COUNTY OF LOS ANGELES
STATE OF CALIFORNIA



ARROW ENGINEERING
GEOTECHNICAL SERVICES
42138 Tenth Street West
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1.0 INTRODUCTION

This report presents the results of the soil engineering services performed relative to the parcels described as APN 3006-006-04, 007, 008, 009, 032, 035, located at Sixth Street East and Avenue P-12, in the City of Palmdale, Los Angeles County, California.

The purpose of our services includes:

Subsurface exploration
Review of site conditions
Comments and recommendations relative to:

- Site grading
- Foundation support
- Estimates of settlement
- Support of slab-on-grade
- Pavement design
- Box culvert/cast-in-place pipe construction

Current plans call for the construction of a multi-modal transportation facility, which will include automobile parking and bus parking (asphalt and concrete pavement), a metro-link train platform, drainage structures (RCB or CIPCP) and future wood framed structures.

A conceptual site plan had been submitted to this office at the time this report was prepared. The conceptual plan shows the parking areas, metro-link platform and drainage improvements but does not show future structures. However, based on our conversations with Sverdrup Civil, Inc. it is our understanding that structures will eventually be built.

This report provides recommendations in regards to site development for all items mentioned. The recommendations provided herein for the structures is preliminary and the building plans should be reviewed by the geotechnical consultant when available. For purposes of this report, we are assuming construction of slab-on-grade floors with continuous foundations for the future structures, continuous foundations for the metro-link platform, and understand that the drainage channel improvements will be either RCB or CIPCP. Site grading is expected to be moderate.

1.1 Site Description

The subject site is located between Sixth Street East and Third Street East at Avenue P-12, within the City of Palmdale. The site is approximately 19 acres and is irregular shaped. Topography of the subject site is relatively flat with undulations. Relief across the site is approximately 2% from west to east. There is an existing drainage channel lined with large rip-rap along the railroad tracks at 6th Street East.

At the time of our investigation, the site was vacant, excluding two old structures, which will be demolished. There are a few dirt roads traversing the property. Vegetation consisted of native desert flora; sparse grasses, sagebrush and a few trees.

2.0 FIELD EXPLORATION

2.1 Subsurface Exploration

The field exploration program consisted of drilling six (6) borings utilizing a Mobile B-61drill rig. The maximum depth of the borings was thirty (30) feet below the existing ground surface. The borings were drilled on January 21, 2000.

Bulk disturbed samples of the near-surface soils were obtained during drilling for classification purposes and represent a mixture of soils within the noted depths.

Relatively undisturbed samples were obtained to test for:

- Hydroconsolidation potential
- Shear strength
- In-situ moisture density determination
- Expansion characteristics of the natural soils

A Test Location Map (Appendix A) was prepared to illustrate the approximate locations of the borings on the site. The approximate locations of the borings were determined by measurements from existing streets and based on a map provided by our client.

Boring Logs (Appendix B) represent the soil strata determined by our field technician. Samples of the material were brought to our laboratory for identification and further testing.

2.2 Laboratory Testing

Subsequent to visual classification in the field, samples were delivered to our laboratory for further evaluation. Classifications were determined in accordance with the Unified Soil Classification System and a testing program was established.

- Samples were reviewed along with field logs to assess which would be analyzed further. Samples considered as representative of soils which would be exposed and/or used in grading and those deemed within structural influence were chosen for further analysis.

- *In-situ* moisture content and dry unit weight for core samples were analyzed in accordance with ASTM D 2937.

- Consolidation tests (ASTM D 2435) were conducted on undisturbed *in-situ* samples. Loading schedules were used to develop quantitative information facilitating estimates for the magnitude of settlement.

The following classification tests were used:

Expansion Index	UBC 29-2
Maximum Density-Optimum Moisture	ASTM D 1557
Material Finer than the No. 200 Sieve	ASTM D 1140
Plasticity Index	ASTM D 4318
Sand Equivalent Value	ASTM D 2419
Soluble sulfate determination	Method 9038

Test results are presented in tabular and graphic form (Appendix C).

2.3 Groundwater

Free groundwater was not encountered at the time of drilling. Fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors. Water well data indicates the static water table in this area to be over 100 feet from a surface elevation of approximately 2661 feet above mean sea level.

2.4 Regional Geology

The San Andreas rift zone passes through the Antelope Valley extending from the Gulf of Mexico through the western portion of the State of California to a point at Cape Mendocino in northern California. The San Andreas Fault is predicted to have an event every 100-200 years based on geologic records. The San Andreas Fault has had two major eruptions in the last 150 years: 1) in the Southern California area in 1857, and 2) in San Francisco in 1906. In each event, approximately 200 miles of surface rupture has taken place as well as a horizontal displacement of approximately 30 feet. Additional faulting has occurred adjacent to the San Andreas Fault causing numerous events of similar magnitude throughout the length of the San Andreas Fault.

The San Andreas Fault is the largest fault passing through the Antelope Valley; however, the Littlerock fault, approximately 2,000 feet north of the San Andreas Fault, runs parallel to the San Andreas and is considered a subsidiary fault.

2.5 Seismic Hazard

The project site is located in an area in which active seismic occurrences are recorded on a yearly basis. Seismic studies conducted show a major break along the San Andreas Fault could be responsible for an event of approximately 8.4 on the Richter scale. A seismic event of this magnitude could cause bedrock accelerations as large as 0.5g.

Events of this magnitude are anticipated to occur approximately every 150 years. The last occurrence of this magnitude was in 1857 and can be anticipated that reoccurrence can be expected in the next 10 to 20 years.

The San Andreas Fault is considered seismic source type A per the 1997 UBC, Table 16U

Based on the "Maps of Known Active Fault Near-Source Zones in California and adjacent portions of Nevada", the subject site is within 2 kilometers from the San Andreas Fault.

2.6 Liquefaction Potential

Liquefaction of non-cohesive soils can by caused by strong, vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils with a specific range of grain size distribution, saturated by a relatively shallow groundwater table, are most susceptible to liquefaction.

In view of the relatively firm clayey sands, silts and silty sands, relative densities and evidence of cohesion, it is our opinion that the potential for on-site liquefaction or seismically induced dynamic settlement is very low. Procedures for the mitigation of the loose surficial soils are presented in Section 4.0.

3.0 CONCLUSIONS

Based on the field reconnaissance, laboratory analysis, and literature review, it is our professional opinion that the site is suitable for the proposed use. The following conclusions are based on the data collected and represent professional opinions:

- Soils conditions at the site consist of silty sands (SM), clayey sands (SC) and silts (ML). Densities increase with depth. Soils are classified as S_D per UBC Tables 16Q and 16R.

- Consolidation test results reveal that the upper five (5) to six (6) feet of soil have a moderate tendency to hydroconsolidate. The underlying strata below six (6) feet show a negligible tendency to hydroconsolidate. Refer to Section 4.1.3 for procedures to mitigate the hydroconsolidating condition.

- Soluble sulfate tests indicate that the upper soil layers have a very low sulfate content (17 mg/kg). Refer to Section 4.4 for concrete design recommendations.

- Expansion index tests (UBC 29-2) indicate that the upper soil layers have a low (30) expansion index. Refer to Section 4.5 for foundation design recommendations.

- A Soil sample was tested in accordance with EPA Method 945, results indicate a pH level of 7.2 S.U. Resistivity tests were performed in accordance with EPA Method 9050. Results indicate 1690 OHMs-cm of the native soil. Based on California Test 643, the lifetime of a 18 gage steel pipe is estimated at approximately 23 years to perforation.

- Based on the current Uniform Building Code, this site lies in Seismic Zone 4. All structures shall be designed in accordance with the UBC provisions for this zone.

- Provided the recommendations from this report are incorporated into the site grading and development, it is our opinion that the proposed addition on this property should not be subject to hazards from landslides, settlement, or slippage, and the grading will not adversely affect the stability of the site or adjacent properties. Test findings and statements of professional opinion do not constitute a guarantee or warranty, expressed or implied.

4.0 RECOMMENDATIONS

Based on the field reconnaissance, laboratory testing and other data collected, the following recommendations are provided:

4.1 Site Preparation

The grading requirements necessary to prepare the site for the proposed construction are outlined in the following paragraphs. Site grading should be in compliance with existing city, county and state building codes and as recommended in Section 4.1.3. An Arrow Engineering soil technician should observe rough site grading to ensure that field conditions are as expected and to provide additional recommendations if required.

4.1.1 Clearing and Grubbing

Prior to site grading, any existing concrete, foundations, pavements, fill and trash piles and underground utilities should be removed from the proposed building and paving areas. The top surface should be stripped of all asphalt pavements and other debris and removed to an area outside of the proposed grading.

4.1.2 Preparation of Areas to Receive Fill

In order to help minimize potential settlement problems associated with structures supported on a non-uniform thickness of compacted fill, the soil engineer should be consulted for site grading recommendations relative to backfilling large and/or deep depressions resulting from any removal referred to in Section 4.1.1. In general, all proposed construction should be supported by a uniform thickness of compacted soil.

4.1.3 Preparation of Building and Pavement Areas

To provide a more uniform bearing soil for the structural foundations and slab-on-grade, we recommend the following:

- Building Area: Soil beneath the proposed building areas, including a distance of at least five (5) feet beyond the building perimeters, should be excavated a minimum of sixty (60) inches below existing grade or finish subgrade, whichever is lower. The exposed surface should then be scarified an additional twelve (12) inches. (When available, the building plans shall be reviewed by the Geotechnical Consultant.)

- Metro-link platform: Soil beneath the proposed platform foundations, including a distance of at least five (5) feet beyond the foundation perimeters, should be excavated a minimum of sixty (60) inches below the bottom of the proposed foundation. The exposed surface should then be scarified an additional twelve (12) inches.

- Appurtenance Areas: Soil beneath the proposed appurtenances (sidewalks, porches, etc.) should be excavated twelve (12) inches and scarified six (6) inches.

- Parking lot and Street Areas: Soil beneath the proposed flexible and rigid paving areas, including the area beneath the proposed curb & gutters, should be excavated eighteen (18) inches below finish subgrade or existing grade, whichever is lower, and scarified an additional six (6) inches.

- The scarified and excavated soil should be moisture conditioned to optimum moisture content, placed in six (6) inch maximum uncompacted lifts and uniformly compacted with heavy rubber tire equipment or vibratory compaction equipment to 90% of the maximum dry density as determined by ASTM D 1557 test procedure.

- Soil shall not contain organic material, rocks, concrete, or asphalt larger than six (6) inches. Anything larger than six (6) inches shall be removed from the site.

- Site grading should be visually checked by an Arrow Engineering representative prior to placement of fill.

4.1.3 Preparation of Drainage Channel Area

Prior to grading, existing concrete, rip-rap, and debris should be removed from the channel in the area of the proposed drainage structures.

Alternate 1- Reinforced Concrete Box (RCB)

To provide a more uniform bearing soil for the reinforced concrete box slab-on-grade, we recommend the following:

- Soil beneath the proposed box invert areas, including a distance of at least three (3) feet beyond the slab perimeters, should be excavated a minimum of twenty four (24) inches below existing grade or finish subgrade, whichever is lower (additional removals may be necessary if unsuitable soils are encountered). The exposed surface should then be scarified an additional twelve (12) inches.

Alternate 2- Cast-In-Place Concrete Pipe (CIPCP)

To provide a more uniform bearing soil and proper lateral support for the cast-in-place concrete pipe, we recommend filling the existing channel with compacted fill in the area of the proposed pipe as the soil will be the "form" for the cast-in-place pipe. The following recommendations are provided:

- Subsequent to removal of all debris and rip-rap, soil beneath the proposed CIPCP areas, including a distance of at least three (3) feet beyond the pipe side-walls, should be excavated a minimum of twenty four (24) inches below the bottom of the CIPCP. The exposed surface should be scarified twelve inches, moisture conditioned to optimum and compacted to 90% relative compaction (additional removals may be necessary if unsuitable soils are encountered).

- Fill should be placed in maximum eight (8) inch lifts, moisture conditioned and compacted to 90% relative compaction as determined by ASTM D 1557 test method.

- The fill should be raised to an elevation exceeding the proposed top of the pipe. The trench for the CIPCP may now be excavated to the grade as planned, with proper lateral and bottom support.

In order to provide specific recommendations for existing site conditions, review of the drainage plans should be performed by the Geotechnical Consultant, when available.

4.1.4 General Requirements

Any import soils used to raise site grades should be equal to, or better than on-site soils in strength, expansion, and compressibility characteristics. Import soils will not be pre-qualified by the soil engineer. Acceptance of any import will be given after the material is on the project, either in place or in stockpiles of adequate quantity to complete the project.

Suitable fill soils should be moisture conditioned to optimum or slightly above optimum moisture content and mechanically compacted to 90% of the maximum dry density as determined by the ASTM D 1557 test procedure.

A shrinkage factor of approximately 15 to 20 percent will occur when using the top five (5) feet as compacted fill. Operation of grading equipment will also cause subsidence of the surface material, which is estimated to be approximately 0.10 foot in graded areas. These losses do not consider stripping of vegetation from the site or differences between actual and mapped elevations.

Final site grade should be adequate to divert all water away from structures and not allow ponding on paving sections or near structures.

All roof drainage systems for the proposed buildings should be designed to divert runoff water away from structures.

Positive drainage devices should be constructed to divert tributary drainage from buildings. Drainage immediately adjacent to structures should be constructed at 4% minimum away from the structures to an approved area.

An Arrow Engineering soil engineer should be retained to provide geotechnical services during the grading, excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that conditions change from those anticipated prior to the start of construction.

4.2 Utility Trenches

Backfill of public utilities within road right-of-ways or on the subject site should be placed in strict compliance with the requirements of the governing agency.

The provisions of this report relative to minimum compaction standards should govern utility trench backfill within the project boundary. In general, service lines extending inside the site should be backfilled with native soil and uniformly compacted to a minimum of 90% of maximum density as determined by the ASTM D 1557 test procedure. Jetting shall not be allowed.

Backfill operations should be observed and tested by a soil technician to monitor compliance with these recommendations.

4.3 Slope Stability and Grading

Slope stability calculations were not performed due to the anticipated height of less than three (3) feet for cut and fill slopes.

Slopes should not exceed a steepness of two horizontal to one vertical (2:1) unless soil test data and engineering calculations substantiate the stability of the slope and slope surface. Fill slopes should be overfilled and trimmed back to firm material.

4.4 Slab-on-Grade

Interior concrete slab-on-grade should be supported by compacted soil prepared as recommended in Section 4.1.3.

Exterior concrete (sidewalk, porches, etc.) should be poured independent of buildings (free-floating) and be supported by at least twelve (12) inches of soil, compacted as recommended in Section 4.1.3.

Based on the negligible soluble sulfate content of the subsurface soil, the maximum water-cement ratio (by weight) for structural slab-on-grade shall be 0.50 and shall conform to the local building code requirements and requirements of the structural engineer.

Reinforcement of slab-on-grade is contingent upon the structural engineer's recommendations and the expansion index of the supporting soil. Since the mixing of import soil with native soils could change the expansion index, additional tests should be conducted during rough grading to determine the expansion index of the subgrade soil.

The on-site soils are subject to low expansion. Slabs-on-grade should be a minimum of four (4) inches thick and reinforced with #3 bar at eighteen inches on center in both directions, placed slightly above the slab mid-height or 6x6-10/10 welded wire mesh. The concrete slab should be underlain by a 6-mil plastic vapor barrier with two inches of sand placed between the plastic membrane and the slab to aid in curing and to prevent puncture of the plastic membrane. The subgrade soils should be moistened to a depth of twelve (12) inches prior to placement of the vapor barrier.

The structural engineer should design the slabs for low expansive soils. Verification of the expansion index of soils underlying structural areas shall be performed during rough grading.

4.5 Building Foundations

It is recommended that any building or structure constructed on this site be designed to at least the minimum code standards for Seismic Zone 4 as designated by the latest edition of the Uniform Building Code.

Continuous exterior foundations for single story structures should be fifteen (15) inches deep and supported by a minimum forty eight (48) inch thick uniform layer of compacted soil prepared as delineated in Section 4.1.3.

Continuous exterior foundations for two story structures should be eighteen (18) inches deep and supported by a minimum forty eight (48) inch thick uniform layer of compacted soil prepared as delineated in Section 4.1.3.

- Continuous foundations may be proportioned for the following values:

  Design Values:
  1800 psf for dead and sustained live loads. This load may be increased 1/3 for total loads including wind or seismic forces.

  Foundations for single story structures should be a minimum of fifteen (15) inches below the lowest adjacent soil grade. Foundations for two story structures should be a minimum of eighteen (18) inches below the lowest adjacent soil grade. Actual depth and reinforcement requirements will be dependent on the expansion index of bearing soil (Section 4.7), applicable sections of the governing building code, and requirements of the structural engineer.

  To mitigate potential major cracking in foundations caused by differential settlement, footings should be reinforced at top and bottom and as required by the structural engineer.

- Isolated pad foundations may be proportioned for the following values:

  Design Values:
  1800 psf for dead and sustained live loads. This load may be increased 1/3 for total loads including wind or seismic forces.

  Interior foundations should be a minimum of twenty four (24) inches square in width and fifteen (15) inches below the lowest adjacent soil grade. Actual depth will be dependent on applicable sections of the governing building code and requirements of the structural engineer.

  Reinforcement as required by the structural engineer.

  It is recommended that footing/slab interface low friction joints be constructed at all perimeter walls.

- For design of retaining wall with level retaining condition, the following lateral earth pressures may be used:

Active:	35	psf per foot of depth
Passive:	350	psf per foot of depth

The pressures should be used as equivalent fluid pressures (E.F.P.). Continuous pea gravel (12" x 12" section) wrapped in drainage fabric (mirafi or equal) shall be provided behind the wall on retaining side. Drainage shall be by weep holes (through the wall) or by a minimum four (4) inch diameter perforated schedule 40 PVC pipe within the pea gravel section to an approved location.

- Coefficient of friction between mass concrete and the supporting earth is estimated to be .30 for lateral sliding. An allowable lateral bearing pressure of 200 psf per foot of depth is estimated for required depth of embedment of foundation of freestanding signs.

4.6 Settlement Considerations

Maximum anticipated post construction settlement, based on footings founded on compacted soils as specified, should be less than one-half inch. Differential settlement between exterior and interior load bearing members should be less than one-quarter inch.

Most settlement should occur during construction.

4.7 Expansion

The design of foundations should be based on the weighted expansion index (UBC Table 29-D) of the soil. As stated previously, the preliminary expansion index of the on-site soil is in the low classification. However, if the soil is thoroughly mixed with import soil during site preparation, the expansion index may change. Therefore, the expansion index should be evaluated after the site preparation has been completed, and the final foundation design adjusted accordingly.

Two story building continuous exterior foundations should be a minimum of eighteen (18) inches below lowest adjacent soil grade. Reinforcement should be as required by the structural engineer. As a minimum, we recommend one #4 rebar on top and one #4 rebar at bottom of continuous foundations. This minimum shall be verified for commercial buildings, when building plans are available.

Interior concrete slab-on-grade should be min. 4 inches thick and reinforced with #3 bars at eighteen (18) inches on center, both directions or 6x6-10/10 welded wire mesh. Reinforcement should be placed at slab mid-height by the use of "dobies" and not pulled up into place during concrete placement.

Soil below the footings should be moistened to above optimum moisture to a depth of six (6) inches prior to placing concrete.

NOTE: The above recommendations are minimums and should satisfy requirements of most conventional and government financing institutions and comply with normally accepted geotechnical practices.

4.8 Exterior Flatwork

If some cracking can be tolerated in exterior slabs-on-grade, exterior slabs may be limited to three and one half (3.5) inches net thickness of plain concrete. Doweling slabs to perimeter footings can reduce movement of slabs adjacent to structures. Doweling should consist of #4 bars bent around exterior footing reinforcement. Alternating dowels should extend at least two (2) feet into planned exterior slabs.

Doweling should be spaced not farther than 32 inches on centers. As an option to doweling, an architectural separation could be provided between the main structures and abutting appurtenant improvements. Presaturation of exterior slab areas is also desirable.

4.9 Pavement Design

Asphalt-Cement Pavement

One R-Value test was conducted on a sample of the expected parking lot subgrade soil. During grading, additional samples should be secured from exposed subgrade and evaluated for review or revision of the preliminary section designs.

Based on an R-Value of 42, the following pavement designs should be used:

5.0 (autos)	3.0	6.0
7.0 (buses)	4.0	7.0

Asphalt-concrete base coarse should be Type B (SSPWC "Greenbook"). The top 1.5 inches shall be Type C-2. Lift thickness shall not exceed 2.5".

Paving section recommendations are based on the assumption that the paving section is placed on a minimum twenty four (24) inch thick layer of non-yielding subgrade compacted to 90% of the materials maximum density.

The aggregate base underlying the asphalt concrete should be compacted to a minimum of 95% relative compaction.

PCC Concrete Pavement

Concrete pavement shall consist of six (6) inches of concrete, (minimum 3000 psi) underlain by 6 inches of Class II aggregate base. The concrete shall conform to the recommendations in Section 4.4 and as recommended by the structural engineer.

Paving section recommendations are based on the assumption that the paving section is placed on a minimum twenty four inch thick layer of non-yielding subgrade compacted to 90% of the materials maximum. The aggregate base shall be compacted to 95%.

5.0 ADDITIONAL SERVICES

The recommendations made in this report are based on the assumption that an adequate program of tests and inspections will be made during construction to verify compliance with these recommendations. Such tests and inspections should include, but not necessarily be limited to the following:

- Observation and testing during site preparation, grading and placement of fill
- Inspection of footing excavations
- Sampling and testing of concrete during placement
- Consultation as may be required during construction

The cost of these services is not included in our present fee arrangements. Budgets, which are dependent on design and construction schedules, can be provided upon request.

6.0 LIMITATIONS

The recommendations contained in this report are based on our field exploration, laboratory testing, and our understanding of the proposed construction. Conditions revealed during grading may be at variance with the preliminary findings of this surficial investigation. Therefore, if any soil conditions are encountered at this site which are different from those assumed in the preparation of this report, our firm should be notified immediately so that we may review the situation and make supplementary recommendations, if needed. Our firm should also be notified if the scope of the proposed construction, including the proposed loading or structure locations, changes from that described in this report.

This report was prepared in accordance with generally accepted standards of practice in the Southern California area at the time the report was written. No other warranty, express or implied, is made or intended.

It is the responsibility of the owner or his representative, to ensure that the information and recommendations contained herein are brought to the attention of all parties to the project.

The findings of this report are valid as of the present date. However, changes in the conditions of the property can occur with the passage of time, whether they are due to natural processes or 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.

This report has been prepared for the exclusive use of Sverdrup Civil, Inc. and their agents for specific application to the proposed development.

APPENDIX A

BORING LOCATION PLAN

1-800-345-7334

SCALE IN 1/10 OF AN INCH

3006	6

SCALE 1" = 200'

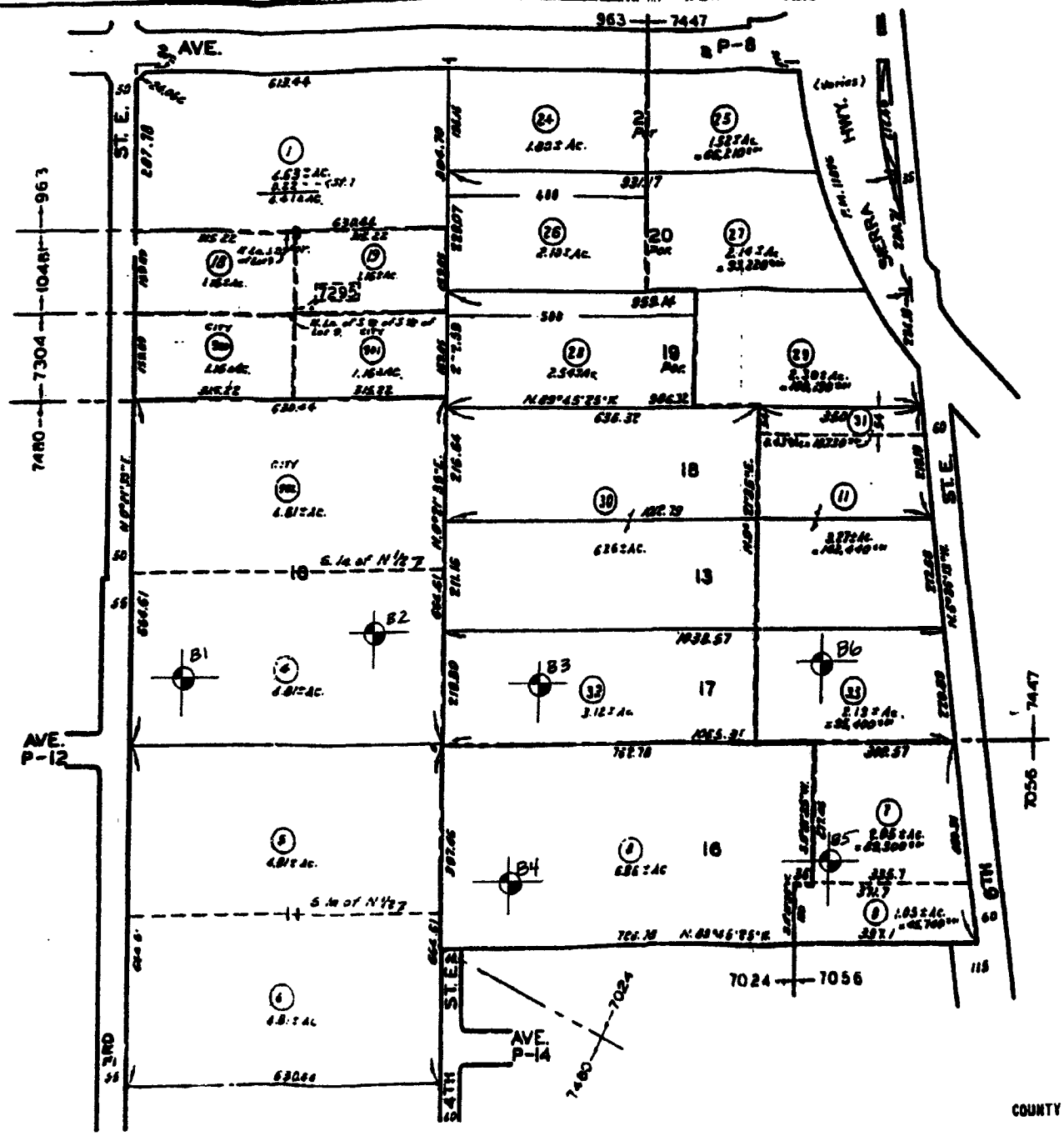
1998

LEGEND

B3 = DENOTES APPROX. BORING LOCATION

TRACT NO. 7670

M.B. 114 - 28 - 30



ASSESSOR'
COUNTY OF LOS A

Major Divisions				Typical Names
Coarse Grained Soils 50% or more larger than #200 sieve	**Gravels** More than half coarse-fraction is larger than No. 4 sieve size	Clean gravels with little or no fines	GW	Well graded gravels, gravel-sand mixtures
			GP	Poorly graded gravels, gravel-sand mixtures
		Gravel with over 12% fines	GM	Silty gravels, poorly graded gravel-sand-silt mixtures
			GC	Clayey gravels, poorly graded gravel-sand-clay mixtures
	Sands More than half coarse-fraction is smaller than No. 4 sieve size	Clean sands with little or no fines	SW	Well graded sands, gravelly sands
			SP	Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM	Silty sands, poorly graded sand-silt mixtures
			SC	Clayey sands, poorly graded sand-clay mixtures
Fine Grained Soils 50% or more smaller than #200 sieve	**Silts and Clays** Liquid limit less than 50		ML	Inorganic silts, rock flour, clayey silts
			CL	Inorganic clays of low to medium plasticity, sandy clays, silty clays
			OL	Organic clays and organic silty clays of low plasticity
	Silts and Clays Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy/silty soils, elastic silts
			CH	Inorganic clays with high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
Highly Organic Soils			Pt	Peat and other highly organic soils
Sample Locations				Designates in-situ sample
				Designates bulk sample

CLASSIFICATION SYSTEM BASED ON UNIFIED SOIL CLASSIFICATION SYSTEM

ARROW ENGINEERING
KEY TO GRAPHIC SYMBOLS

ARROW ENGINEERING
GEOTECHNICAL SERVICES
42138 Tenth Street West
Lancaster, CA 93534-7004
661.949.2525
Fax: 661.949.9775

BLOW COUNTS/FOOT	IN-PLACE DENSITY (PCF)	MOISTURE CONTENT %	DEPTH (FT.)	SAMPLE	CLASSIFICATION	
			2'			
8/10	110.6	2			SM	Moderate yellowish brown silty fine to coarse sand with #4 to 3/8" gravel, slightly dense, slightly moist
			4'			
9/9	112.3	2.1			SM	Moderate yellowish brown #4 to 1/2" gravelly fine to coarse sand with silt, slightly dense, slightly moist
			6'			
			8'			
25 50/6"	121.8	7.9			SC	Moderate brown clayey fine to coarse sand with #4 to 3/8" gravel, very dense, moist
			10'			
			12'			
			14'			
42 50/5"	123.2	5.3			SC	Light brown silty fine to medium sand with coarse sand and clay, very dense, moist
			16'			
			18'			
35 50/6"	119.0	4.5	20'		SM	Light brown silty fine to medium sand with coarse sand and clay, very dense, moist
			22'			
			24'			
			26'			
			28'			
			30'			

NO GROUNDWATER ENCOUNTERED

BORING LOG

DATE OF DRILLING: 1-21-00
DEPTH OF HOLE: 20 FEET
JOB NUMBER: S99-549

B-6

ARROW ENGINEERING
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42138 Tenth Street West
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BLOW COUNTS/FOOT	IN-PLACE DENSITY (PCF)	MOISTURE CONTENT %	DEPTH (FT.)	SAMPLE	CLASSIFICATION		
12/19	Dist.	1.9	2'			SM	Moderate yellowish brown silty fine to coarse sand with #4 to 1/2" gravel, slightly dense, slightly moist
14/13	111.9	1.7	4'			SM	Moderate yellowish brown silty fine to coarse sand with #4 to 1/2" gravel, slightly dense, slightly moist
			6'				
50/5"	123.4	8.5	8'			SC	Moderate yellowish brown clayey fine to coarse sand, very dense, moist
			10'				
24/33	116.1	9.5	12'			SM	Moderate yellowish brown silty fine sand with clay, dense, moist
			14'				
15/16	115.9	2.9				SM	Dark yellowish brown silty fine to coarse sand with silt and #4 to 1" gravel, dense, moist
			16'				
			18'				
32 / 50/5"	123.6	6.4	20'			SC	Moderate yellowish brown clayey fine to coarse sand with silt and #4 to 1" gravel, very dense, moist
			22'				
			24'				
			26'				
			28'				
20 / 50/4"	114.5	5.7	30'			SM	Moderate yellowish brown silty fine to coarse sand with slight clay, very dense, moist

NO GROUNDWATER ENCOUNTERED

BORING LOG

DATE OF DRILLING: 1-21-00
DEPTH OF HOLE: 30 FEET
JOB NUMBER: S99-549

B-5

ARROW ENGINEERING
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42138 Tenth Street West
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BLOW COUNTS/FOOT	IN-PLACE DENSITY (PCF)	MOISTURE CONTENT %	DEPTH (FT.)	SAMPLE	CLASSIFICATION	
16/22	115.0	3.4	2'		SM	Moderate yellowish brown silty fine to coarse sand with #4 gravel and slight clay, voided, slightly moist
			4'			
24/32	115.9	6.2	6'		SC	Light brown clayey fine to coarse sand, dense, moist
			8'			
			10'			
29/50	115.8	5.6	12'		SC	Light brown slightly clayey fine to coarse sand with #4 to 3/8" gravel, dense, moist
			14'			
38/50	108.8	4.4			SP	Light brown #4 gravelly fine to coarse sand with slight clay, dense, slightly moist
			16'			
			18'			
			20'			
			22'			
			24'			
			26'			
			28'			
			30'			

NO GROUNDWATER ENCOUNTERED

BORING LOG

DATE OF DRILLING: 1-21-00
DEPTH OF HOLE: 15 FEET
JOB NUMBER: S99-549

B-4

ARROW ENGINEERING
GEOTECHNICAL SERVICES
42138 Tenth Street West
Lancaster, CA 93534-7004
661.949.2525
Fax: 661.949.9775

BLOW COUNTS/FOOT	IN-PLACE DENSITY (PCF)	MOISTURE CONTENT %	DEPTH (FT.)	SAMPLE	CLASSIFICATION		
			2'				
10/13	114.8	1.8				SM	Moderate yellowish brown silty fine to medium sand with coarse sand and 3/8" gravel, dense, dry
			4'				
			6'				
9/8	Dist.	3.9				SM	Moderate yellowish brown silty fine to medium sand with coarse sand and 3/8" gravel, dense, dry
			8'				
11/13	112.9	2.5	10'			SP	Dark yellowish brown #4 to 3/8" gravelly fine to coarse sand with slight silt, dense, slightly moist
			12'				
			14'				
28 / 50/5"	114.3	7.7				SM	Light brown silty fine to coarse sand with #4 to 3/8" gravel and clay, very dense, moist
			16'				
			18'				
			20'				
			22'				
			24'				
			26'				
			28'				
			30'				

NO GROUNDWATER ENCOUNTERED

BORING LOG	DATE OF DRILLING: 1-21-00 DEPTH OF HOLE: 15 FEET JOB NUMBER: S99-549	B-3

ARROW ENGINEERING
GEOTECHNICAL SERVICES
42138 Tenth Street West
Lancaster, CA 93534-7004
661.949.2525
Fax: 661.949.9775

BLOW COUNTS/FOOT	IN-PLACE DENSITY (PCF)	MOISTURE CONTENT %	DEPTH (FT.)	SAMPLE	CLASSIFICATION		
			2'				
17/25	107.9	3.3				SC	Moderate yellowish brown clayey fine to coarse sand with #4 gravel and silt, dense, slightly moist
			4'				
26/50/5"	114.0	5.1				SC	Light brown slightly clayey fine to coarse sand with #4 gravel, very dense, slightly moist
			6'				
37/50/5"	105.5	6.7				SM	Moderate yellowish brown silty fine to coarse sand, very dense, moist
			8'				
21/50/6"	112.0	5.5				SM	Moderate yellowish brown silty fine to coarse sand with clay, very dense, slightly moist
			10'				
			12'				
			14'				
40/50/5"	110.7	7.2				SM	Moderate yellowish brown silty fine to coarse sand with clay, very dense, moist
			16'				
			18'				
30/50/3"	104.9	5.0	20'			SM	Light brown silty fine to coarse sand, very dense, slightly moist
			22'				
			24'				
			26'				
			28'				
			30'				

NO GROUNDWATER ENCOUNTERED

BORING LOG

DATE OF DRILLING: 1-21-00
DEPTH OF HOLE: 20 FEET
JOB NUMBER: S99-549

B-2

ARROW ENGINEERING
GEOTECHNICAL SERVICES
42138 Tenth Street West
Lancaster, CA 93534-7004
661.949.2525
Fax: 661.949.9775

BLOW COUNTS/FOOT	IN-PLACE DENSITY (PCF)	MOISTURE CONTENT %	DEPTH (FT.)	SAMPLE	CLASSIFICATION	
14/25	96.7	8.2	2'		ML	Moderate yellowish brown clayey silt, hard, moist
16/28	109.0	4.5	4'		SC	Light brown clayey fine to coarse sand, voided, slightly moist
30/50/4"	113.7	9.6	6'		SC	Light brown clayey fine to coarse sand, voided, slightly moist
			8'			
33/50/4"	96.0	10.0	10'		SC	Moderate yellowish brown clayey fine to coarse sand with silt, very dense, moist
24/50/5"	98.5	6.9	12'		SM	Moderate yellowish brown silty fine to medium sand with slight clay, very dense, moist
			14'			
27/50/5"	98.3	6.5			ML	Moderate yellowish brown fine sandy silt, very hard, slightly moist
			16'			
			18'			
31/50/3"	92.3	10.4	20'		ML	Moderate yellowish brown clayey silt, hard, moist
			22'			
			24'			
			26'			
			28'			
29/50/4"	100.3	7.9	30'		ML	Moderate yellowish brown fine sandy silt with clay, very hard, moist

NO GROUNDWATER ENCOUNTERED

BORING LOG

DATE OF DRILLING: 1-21-00
DEPTH OF HOLE: 30 FEET
JOB NUMBER: S99-549

B-1

APPENDIX C

SUMMARY OF LABORATORY TESTS

SUMMARY OF LABORATORY TESTS

Maximum Density-Optimum Moisture (ASTM D 1557)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	0-5'	8.5	133.5	19	SM	Moderate yellowish brown silty fine to medium sand with clay and coarse sand to ½" gravel

Expansion Index (UBC 29-2)

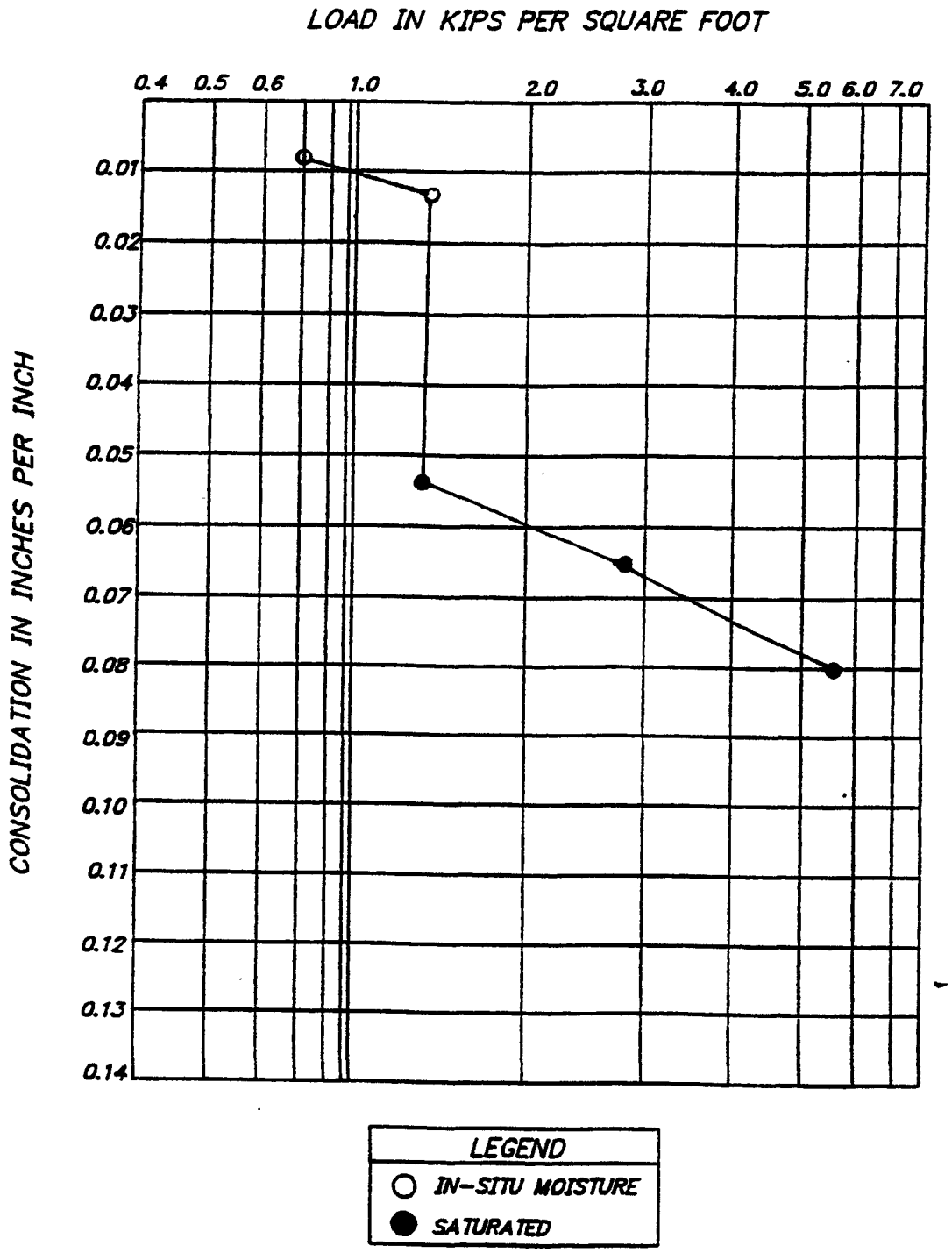
Summary of Sand equivalency Tests

[illegible]	[illegible]	[illegible]
B6	5'	44
B1	6'	9
B2	9'	23

SIEVE ANALYSIS

PERCENT PASSING INDIVIDUAL SIEVES

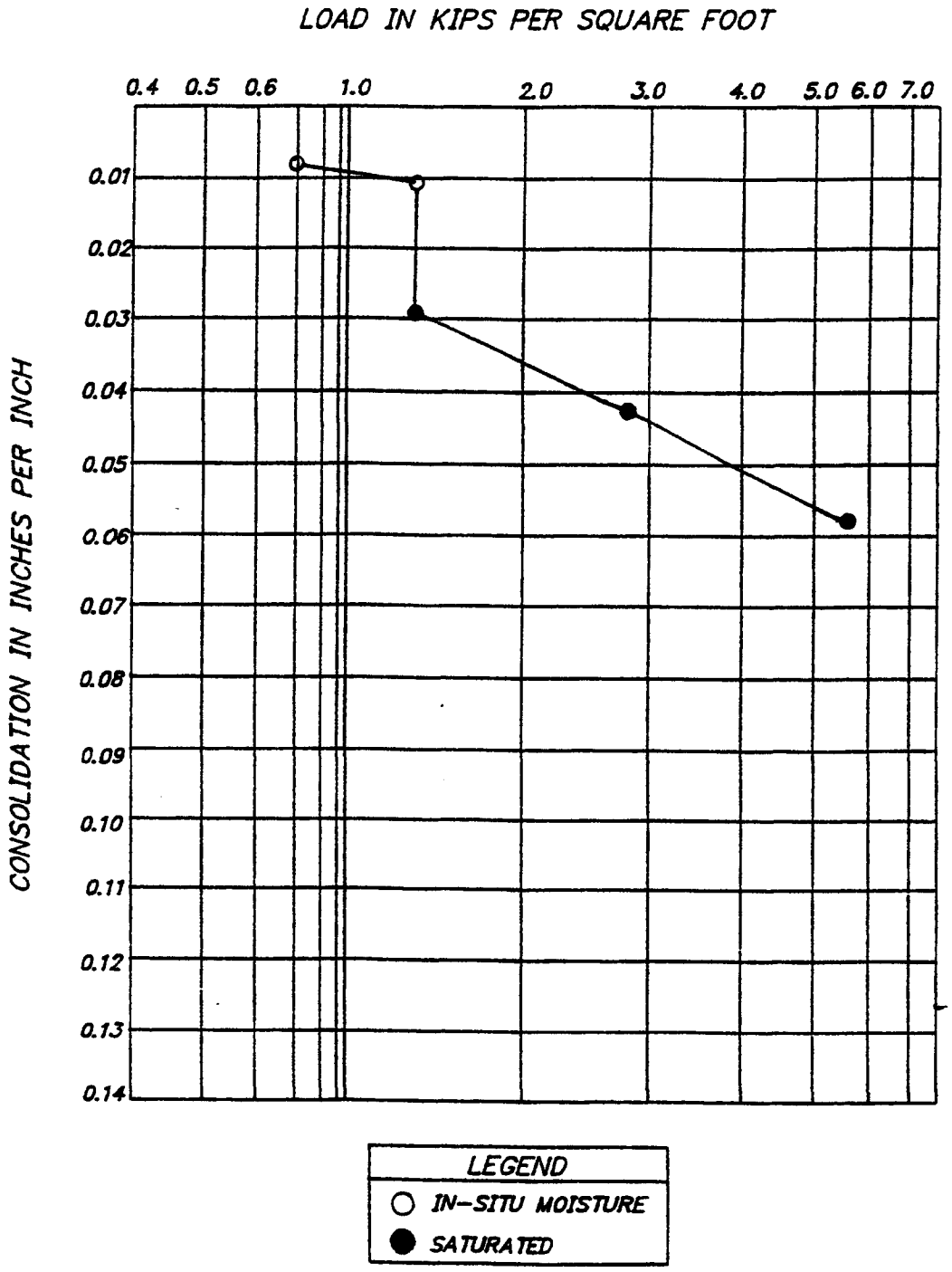
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B3 @ 3'		100	98	95	87	57	33	20
B6 @ 3'	100	97	96	89	78	42	23	17
B2 @ 7'			100	99	94	59	28	17
B3 @ 10'		100	97	86	61	18	7	4
B2 @ 15'		100	99	98	91	58	28	17



CONSOLIDATION DIAGRAM

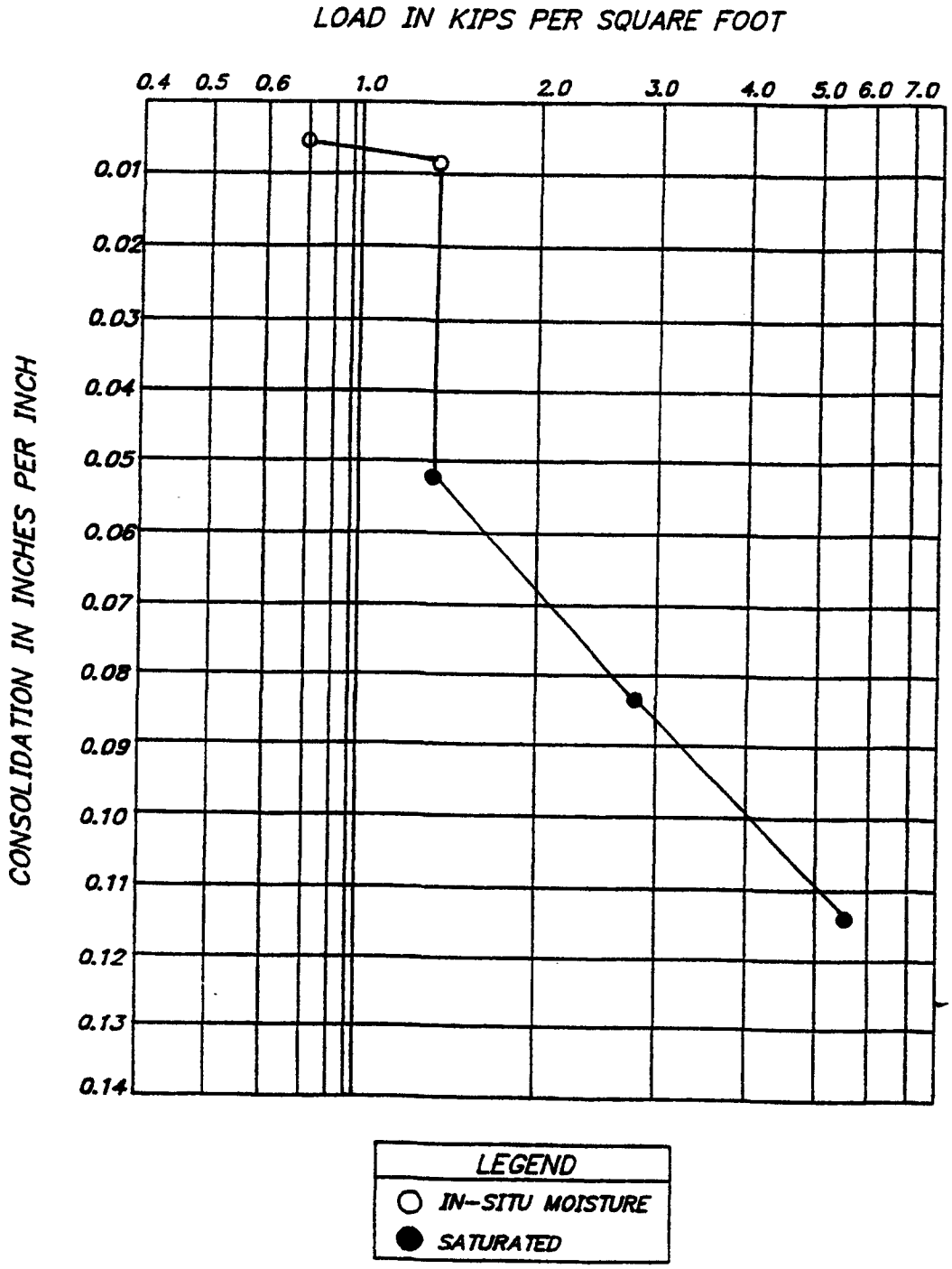
ARROW ENGINEERING

S99-549
3@3'



CONSOLIDATION DIAGRAM

ARROW ENGINEERING



CONSOLIDATION DIAGRAM

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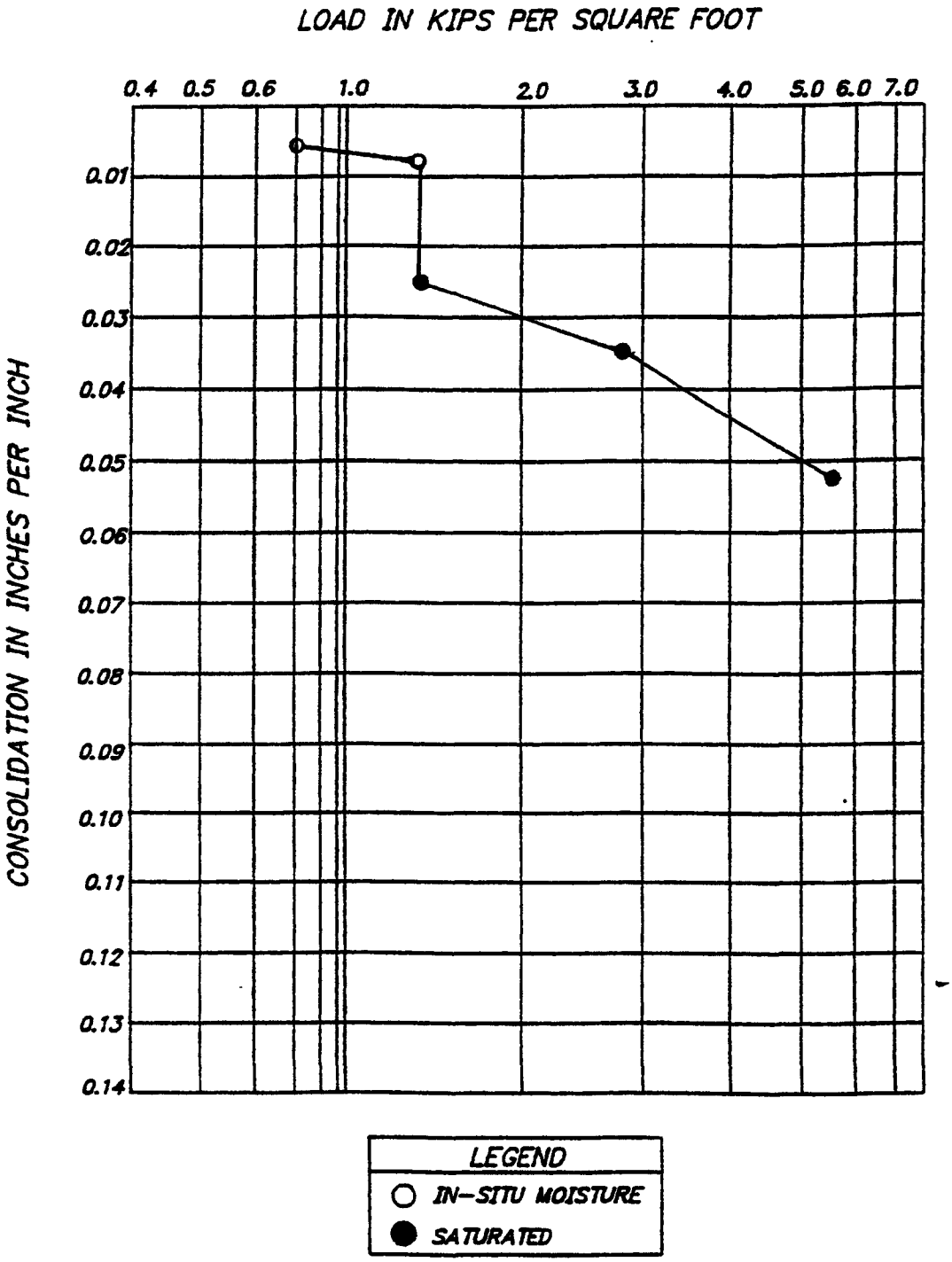

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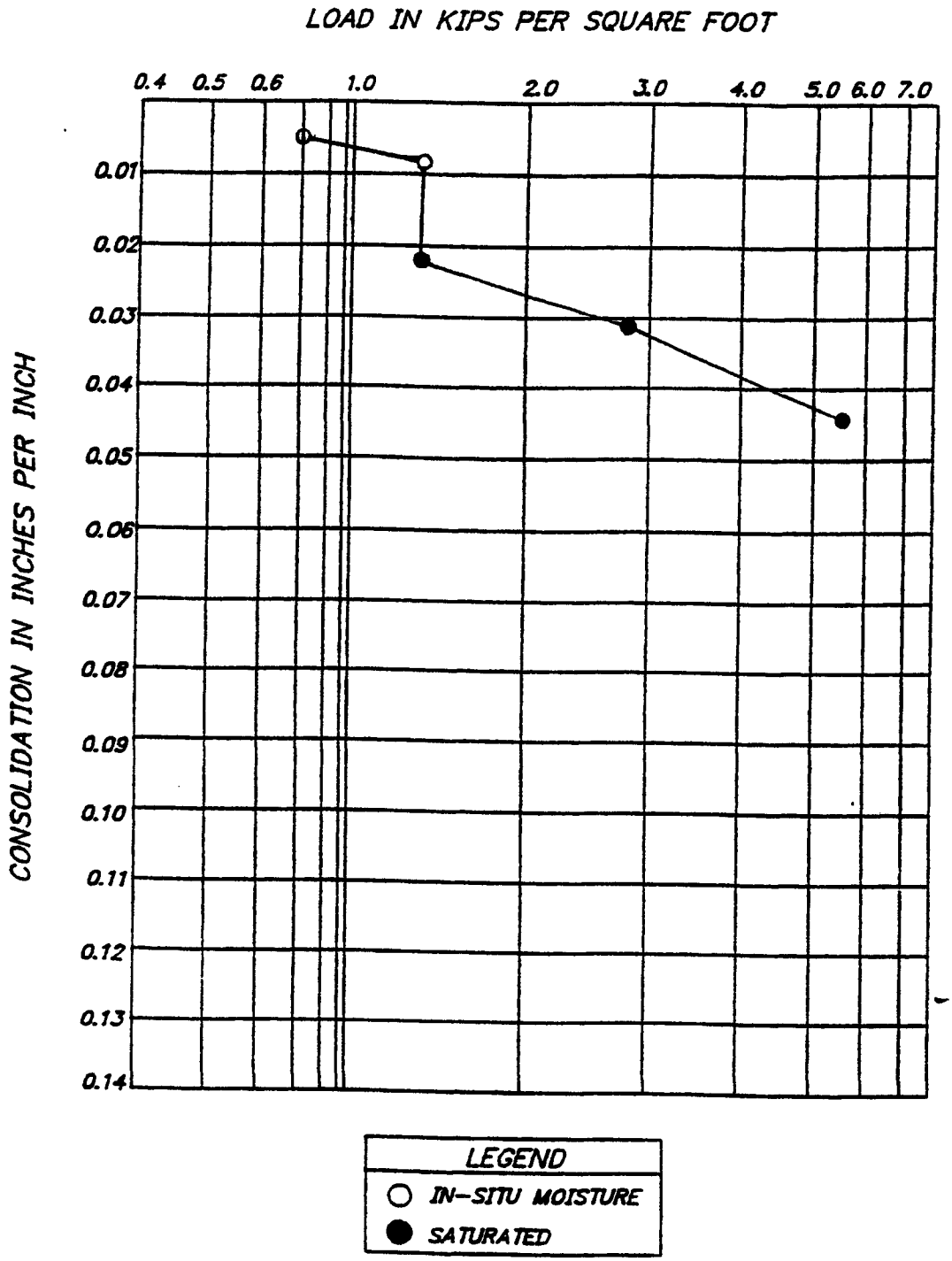
ARROW ENGINEERING



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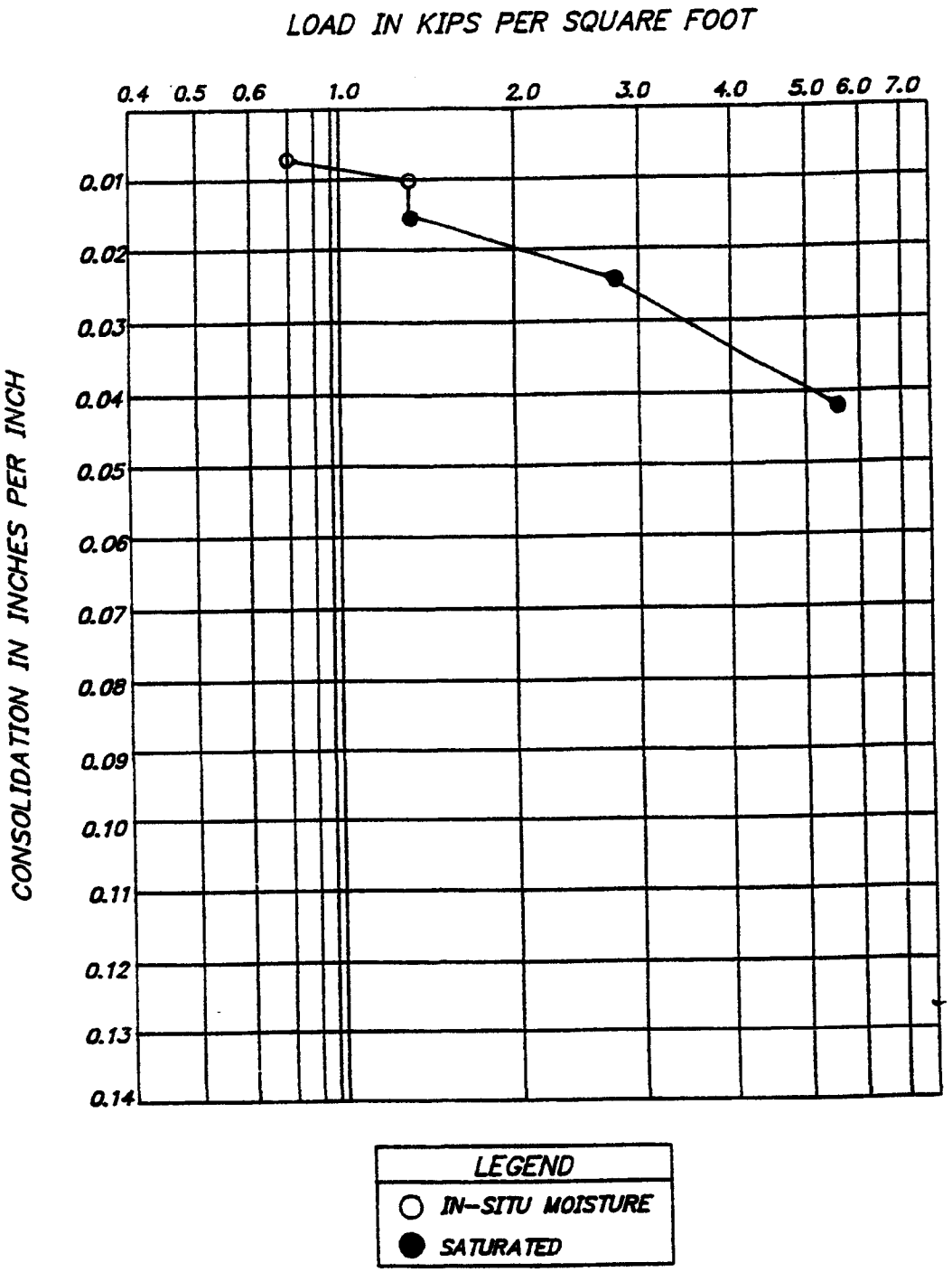

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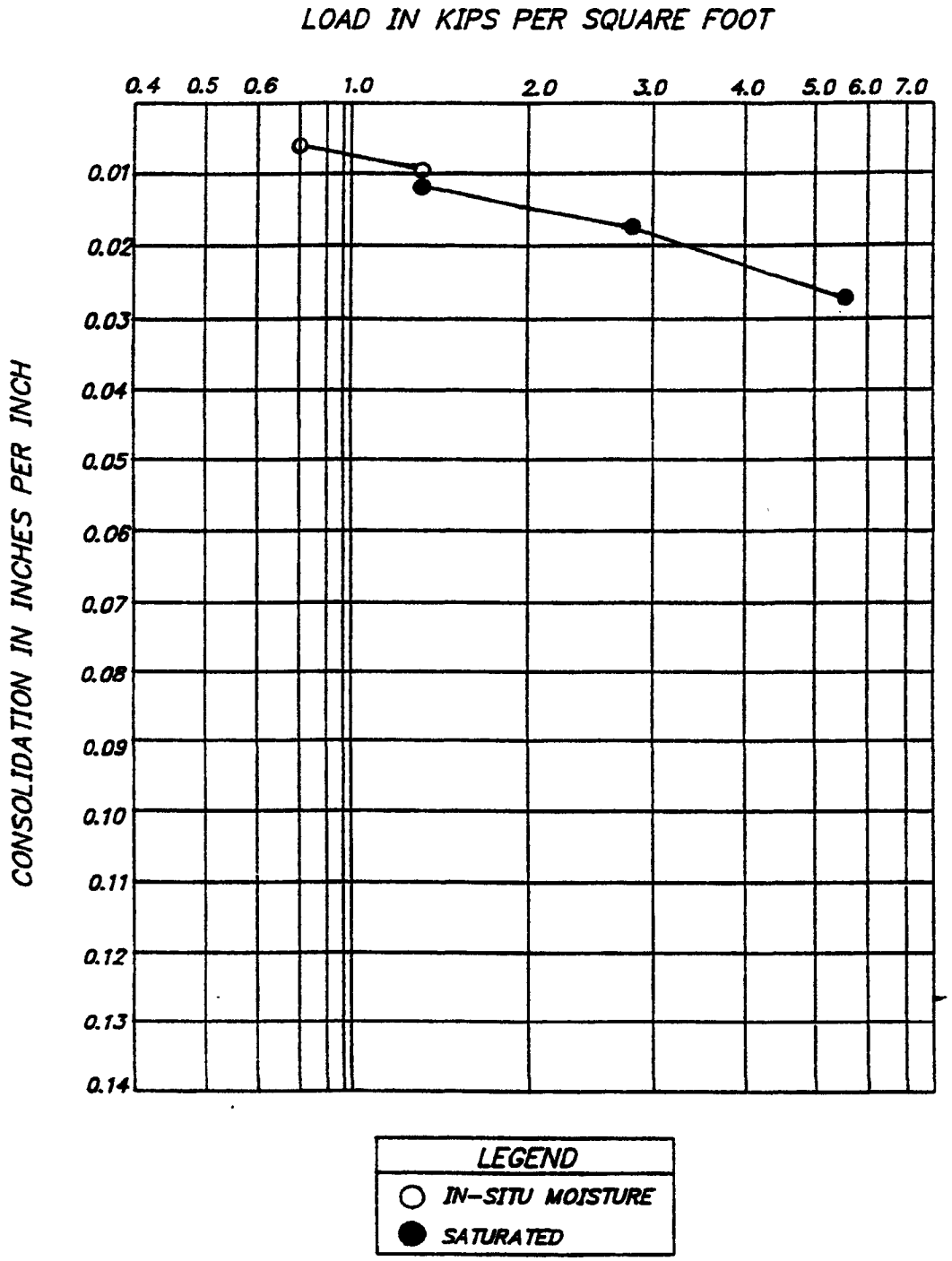

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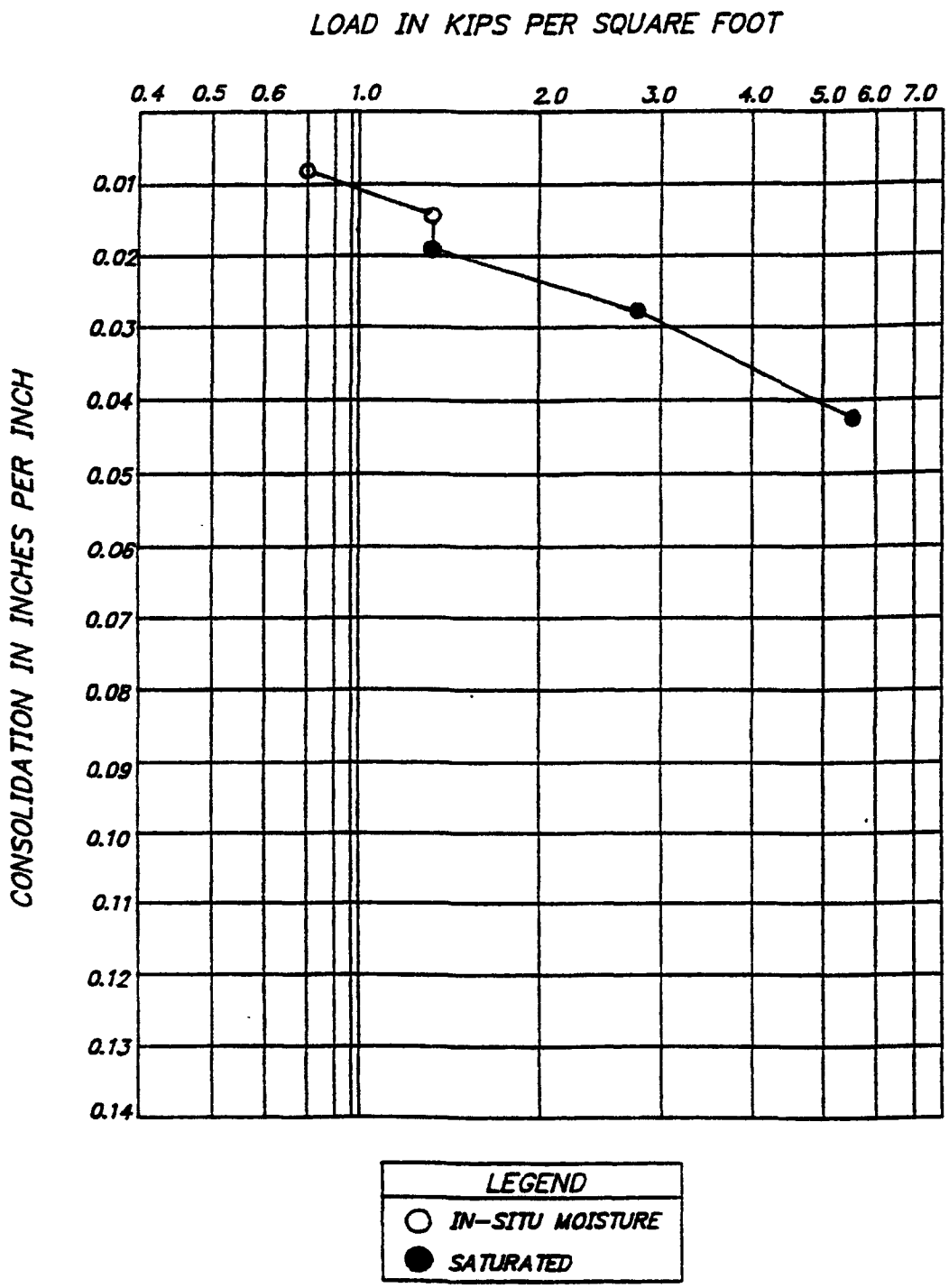
ARROW ENGINEERING



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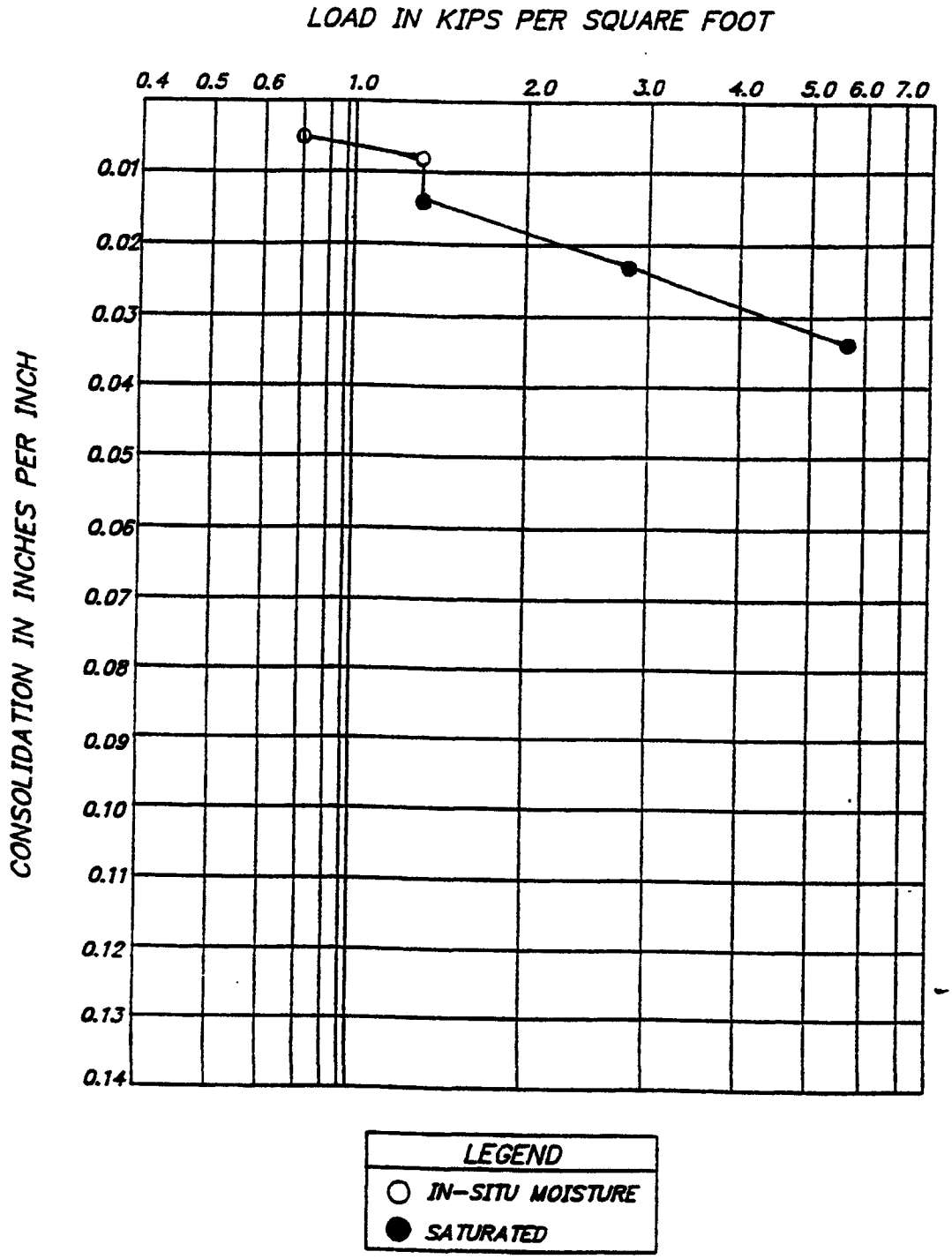
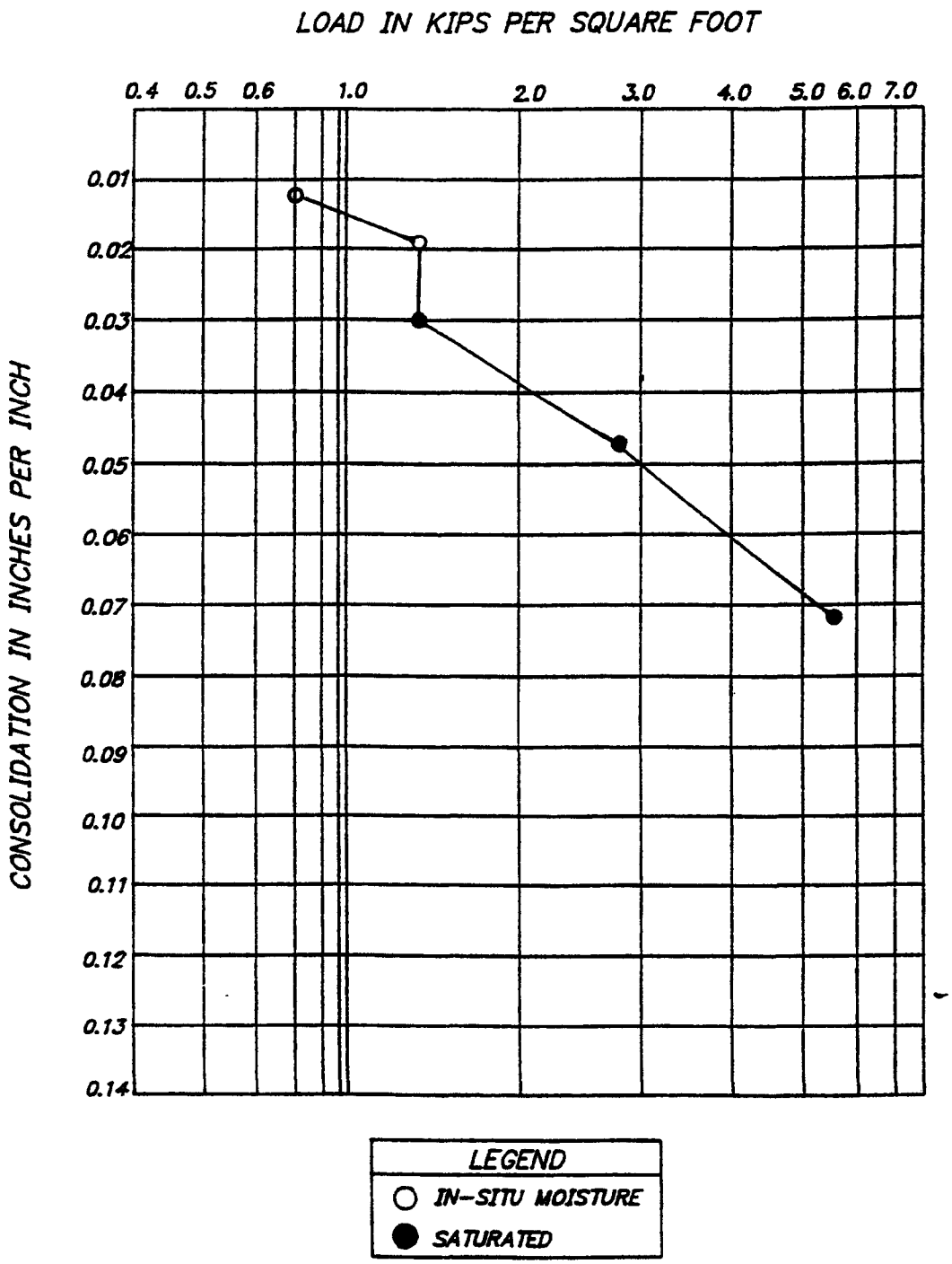
ARROW ENGINEERING



CONSOLIDATION DIAGRAM

ARROW ENGINEERING

S99-549
1@10'



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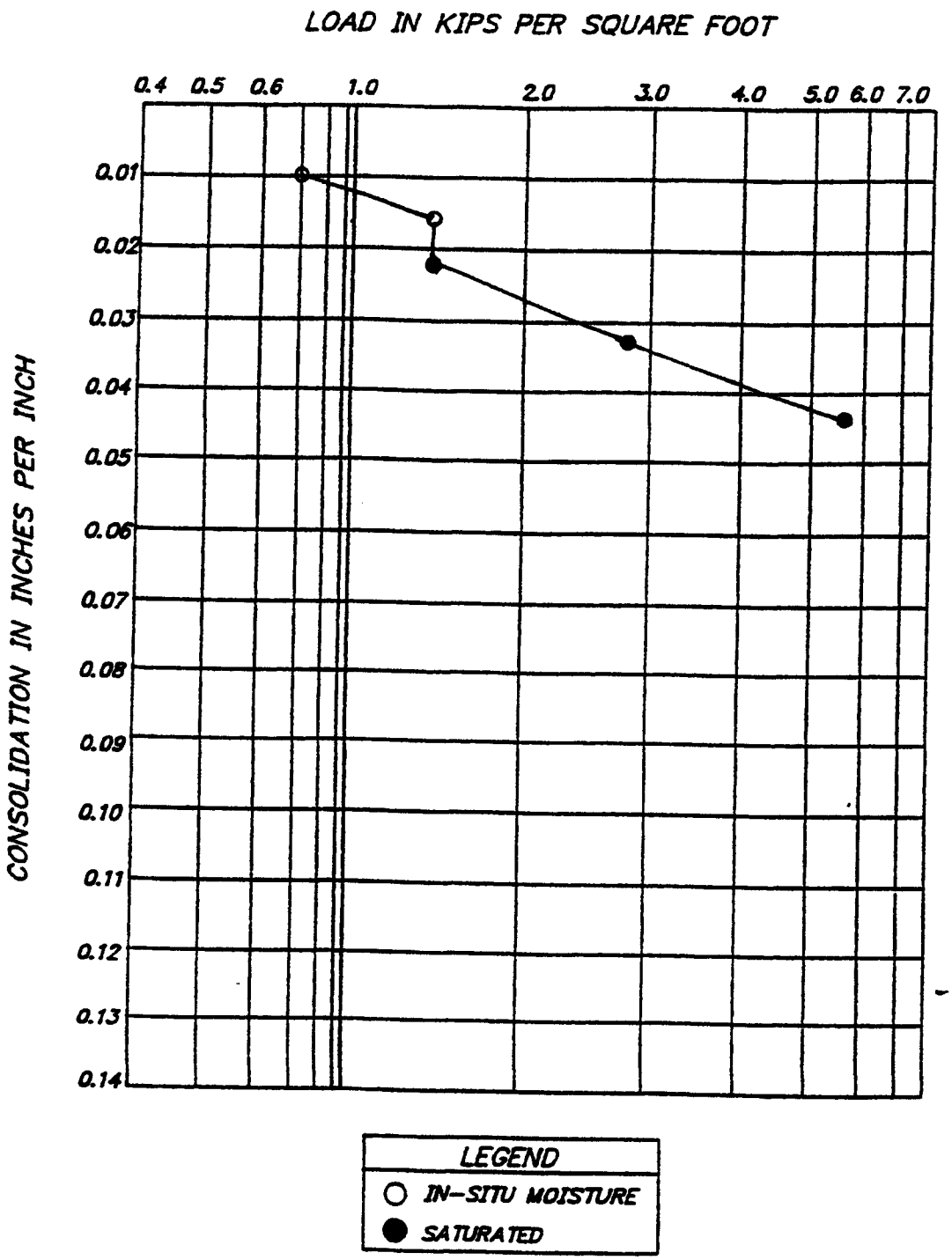
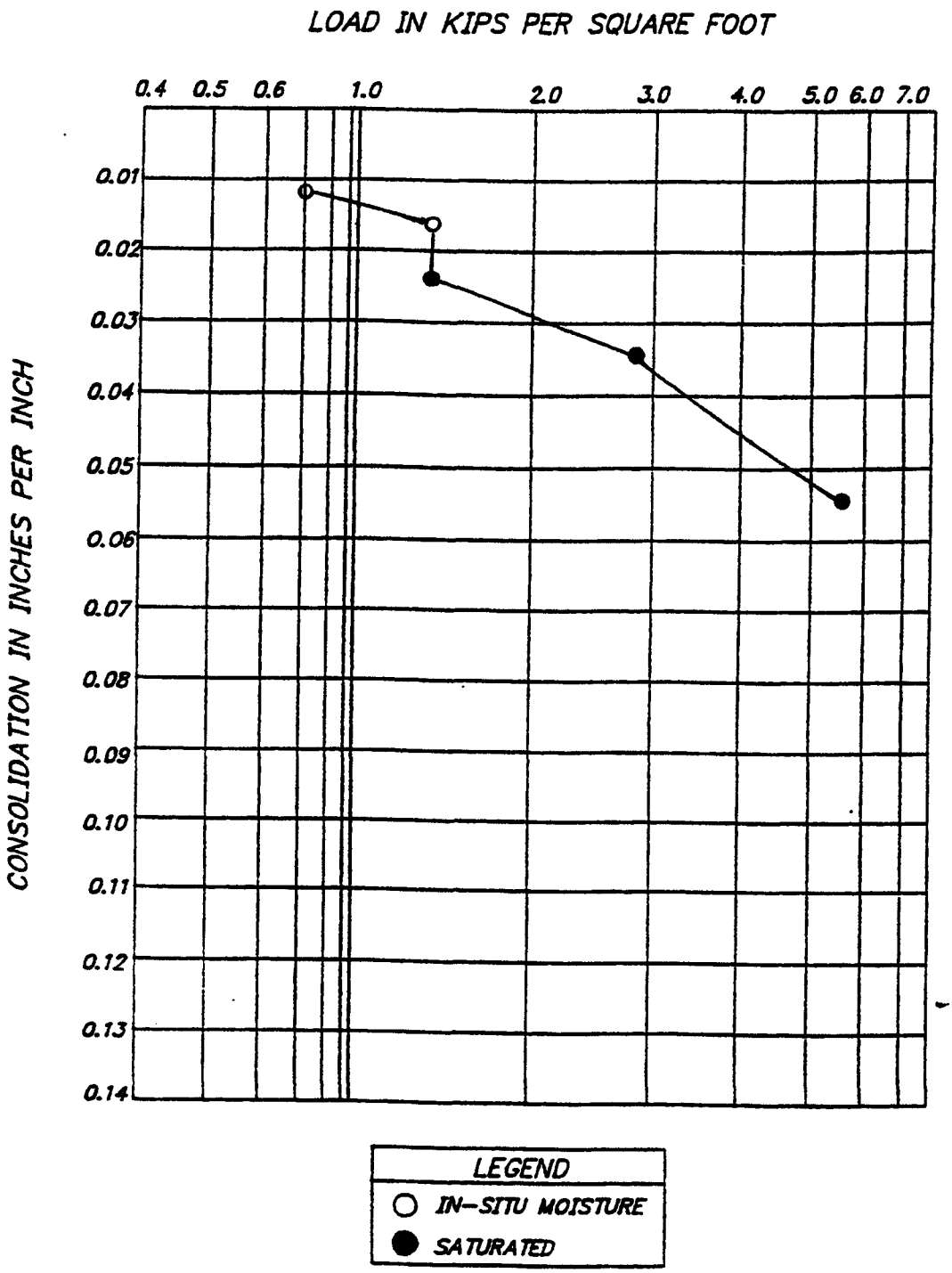
ARROW ENGINEERING



CONSOLIDATION DIAGRAM

ARROW ENGINEERING



CONSOLIDATION DIAGRAM

ARROW ENGINEERING

Job name: _____

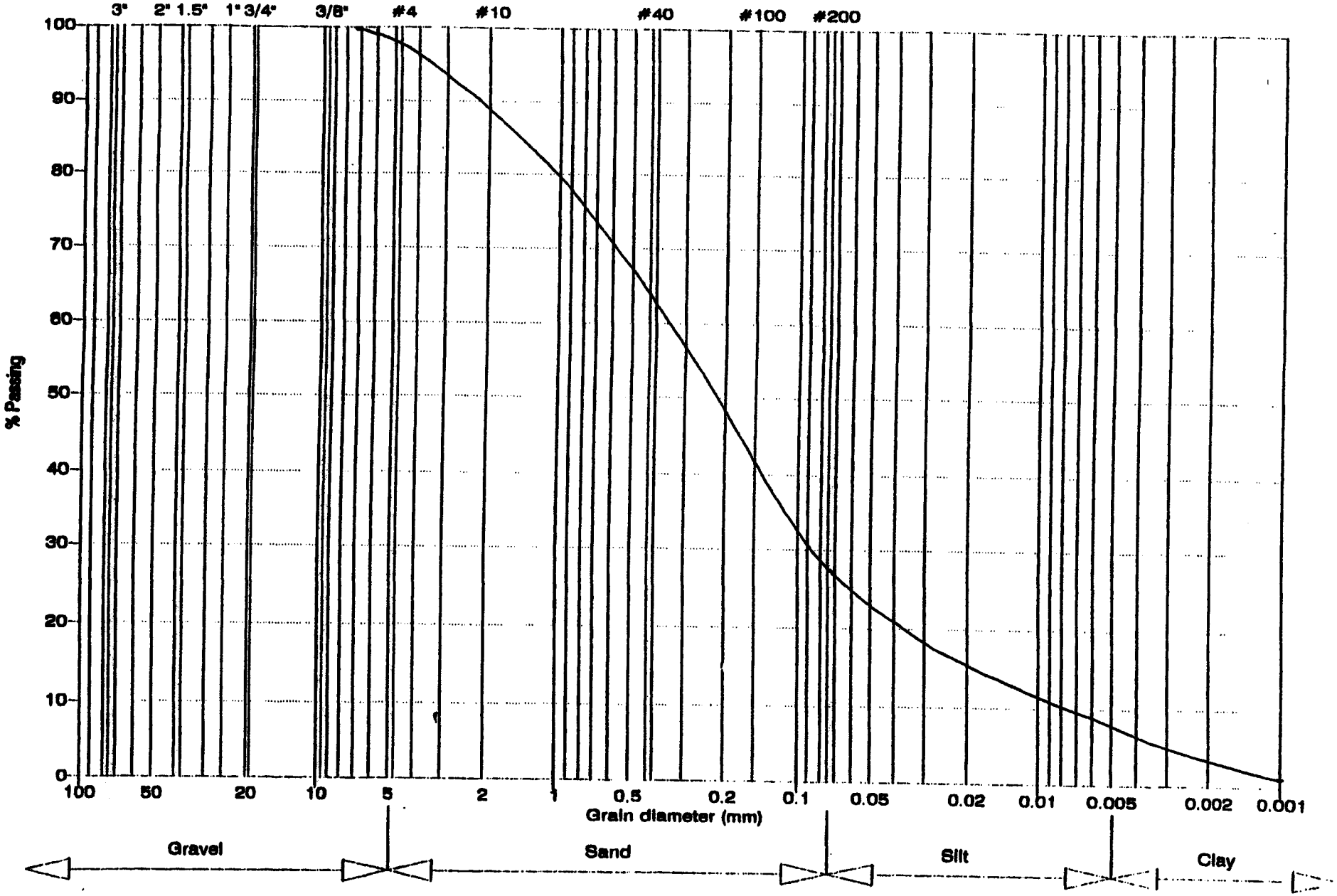
Location: _____

Arrow Engineering Geotechnical Services

Grain Size Distribution Curve

Job number: S99-549

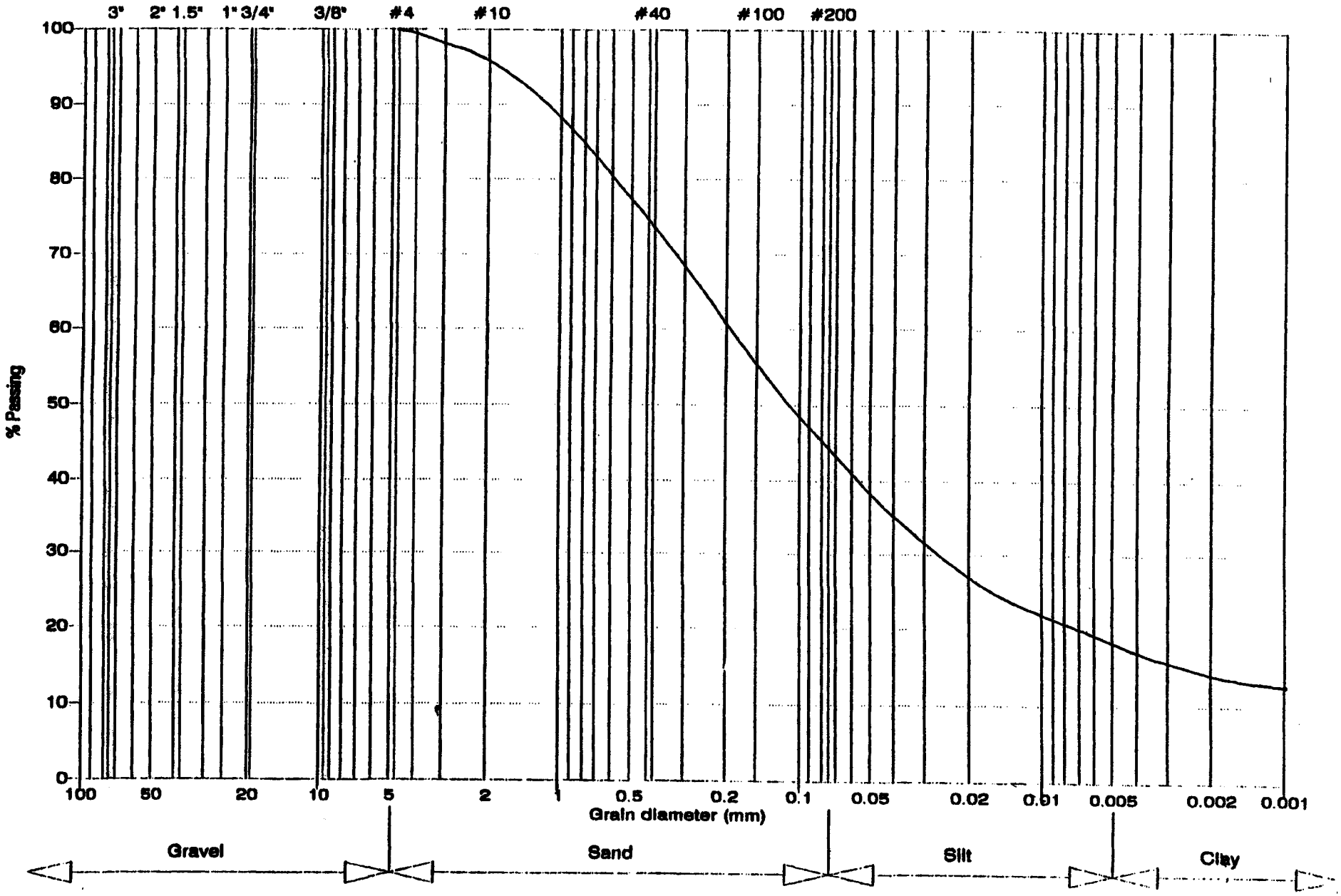
Sample number: 4@2'



Job name:
Location:

Arrow Engineering Geotechnical Services
Grain Size Distribution Curve

Job number: S99-549
Sample number: 1@4'



Job name:

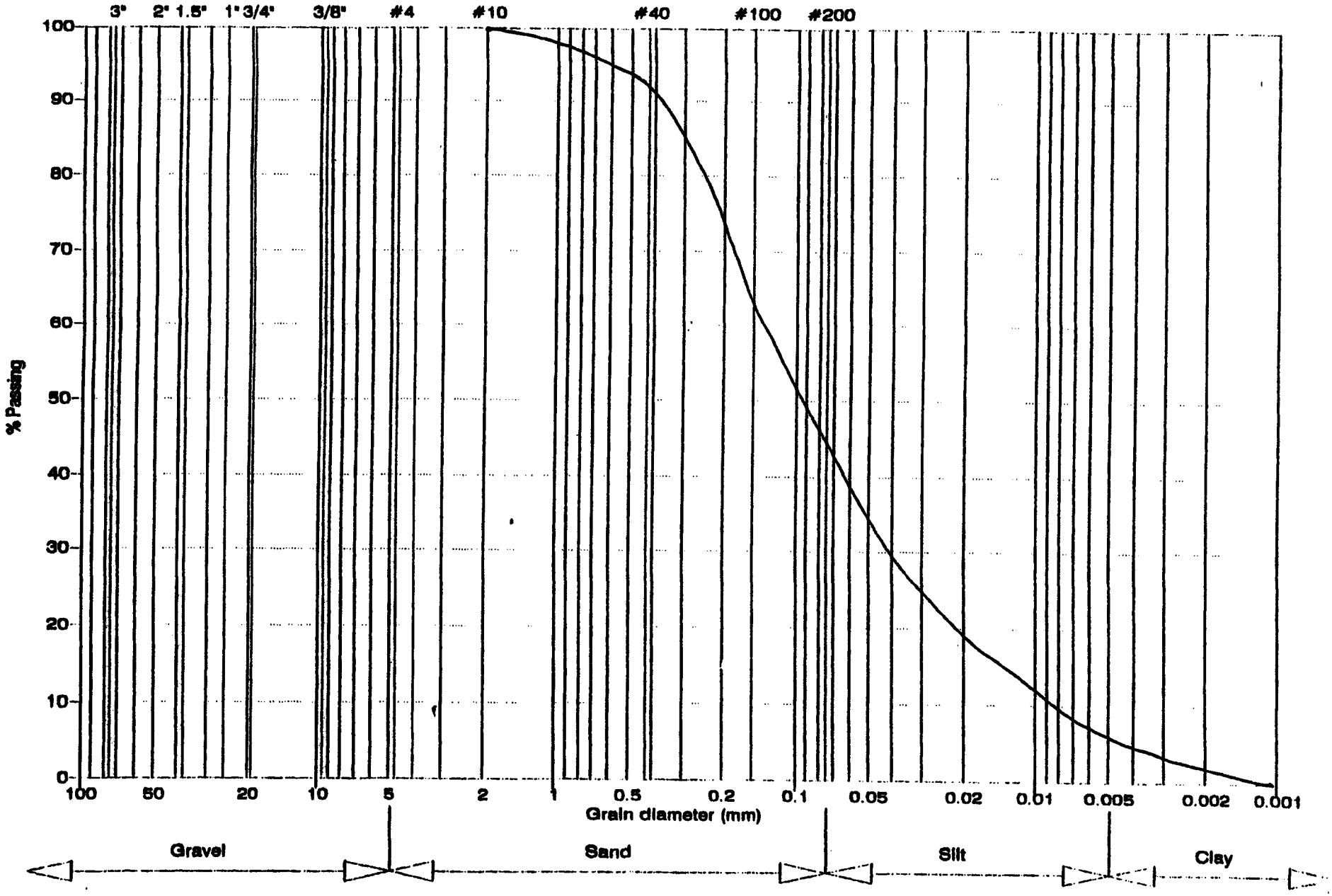
Location:

Arrow Engineering Geotechnical Services

Grain Size Distribution Curve

Job number: S99-549

Sample number: 1@12'



Job name: _____

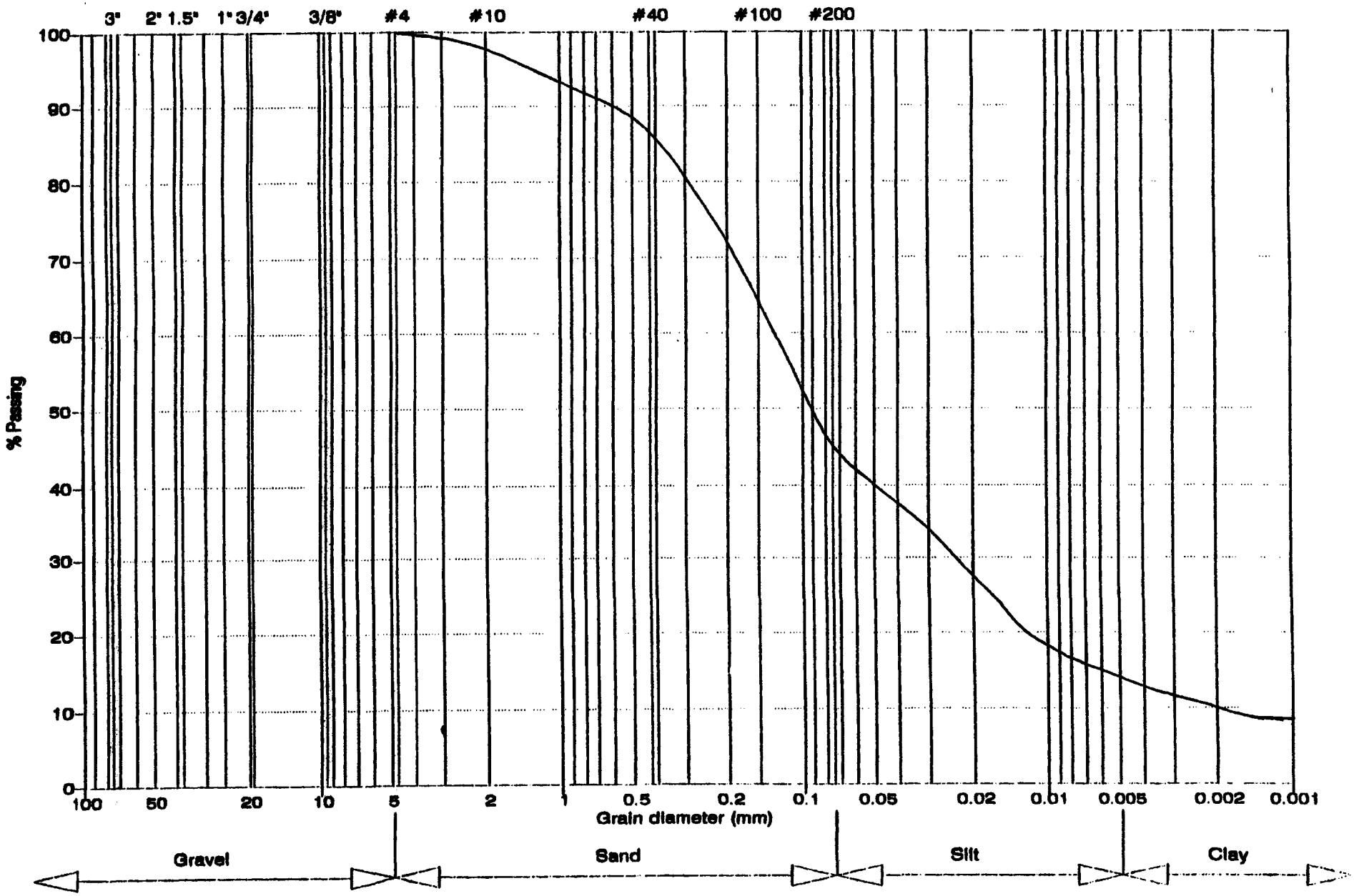
Location: _____

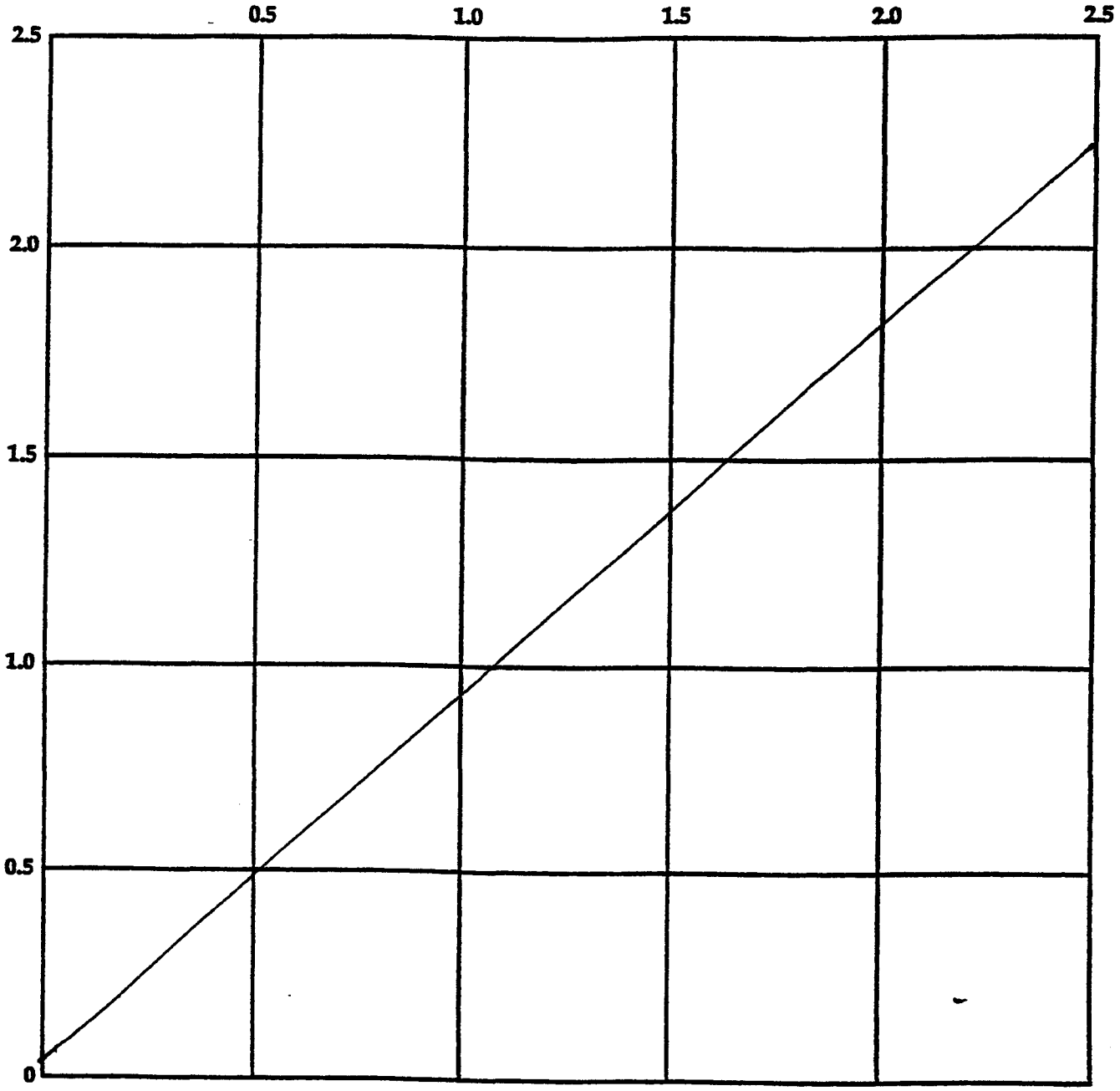
Arrow Engineering Geotechnical Services

Grain Size Distribution Curve

Job number: S99-549

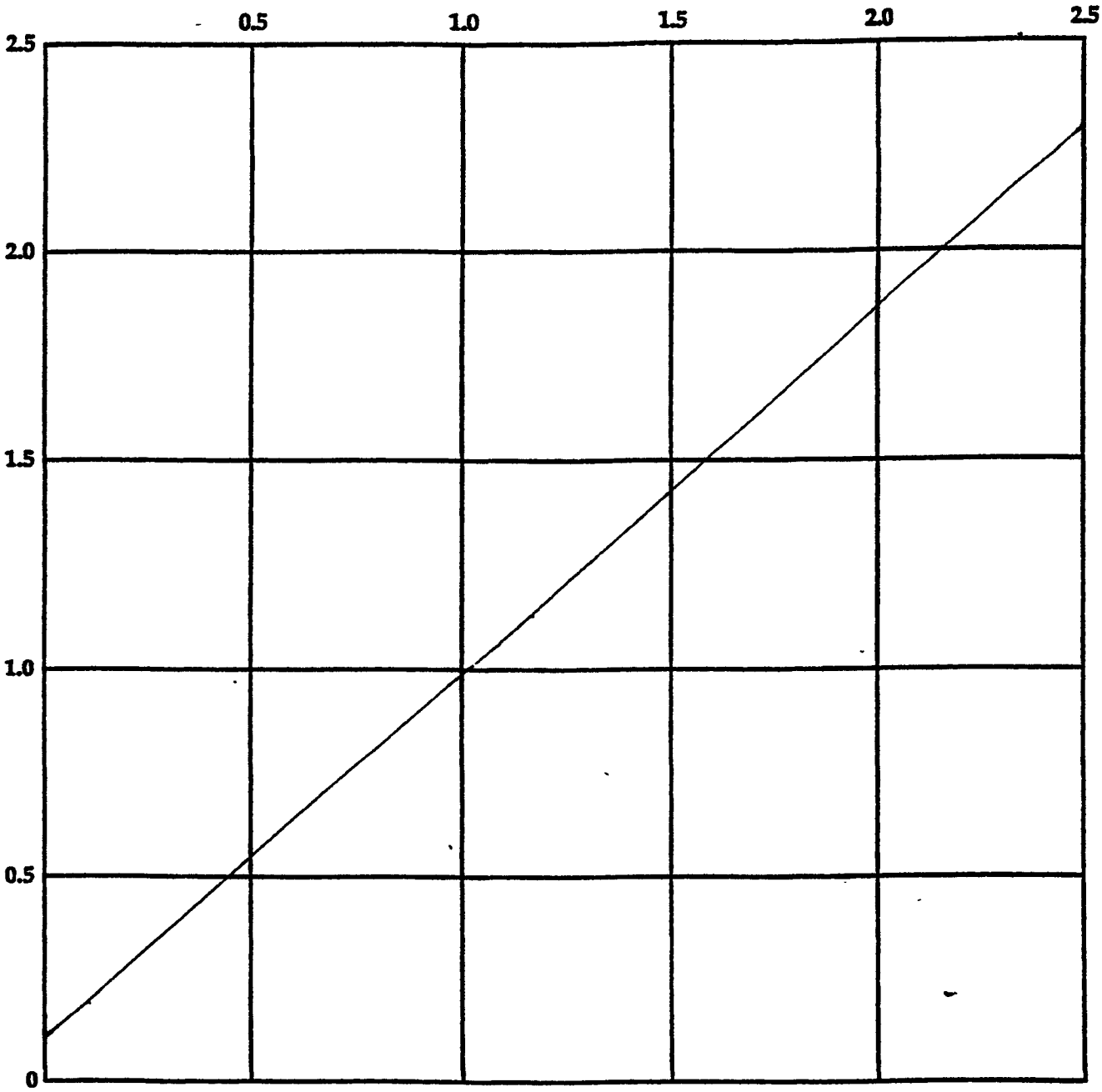
Sample number: 5@12'





DIRECT SHEAR DATA

BORING	SYMBOL	DEPTH (FT.)	DRY DENSITY (PCF)	ANGLE OF FRICTION (DEGREES)	COHESION (PSF)
2	●	3	107.9	41	50



DIRECT SHEAR DATA

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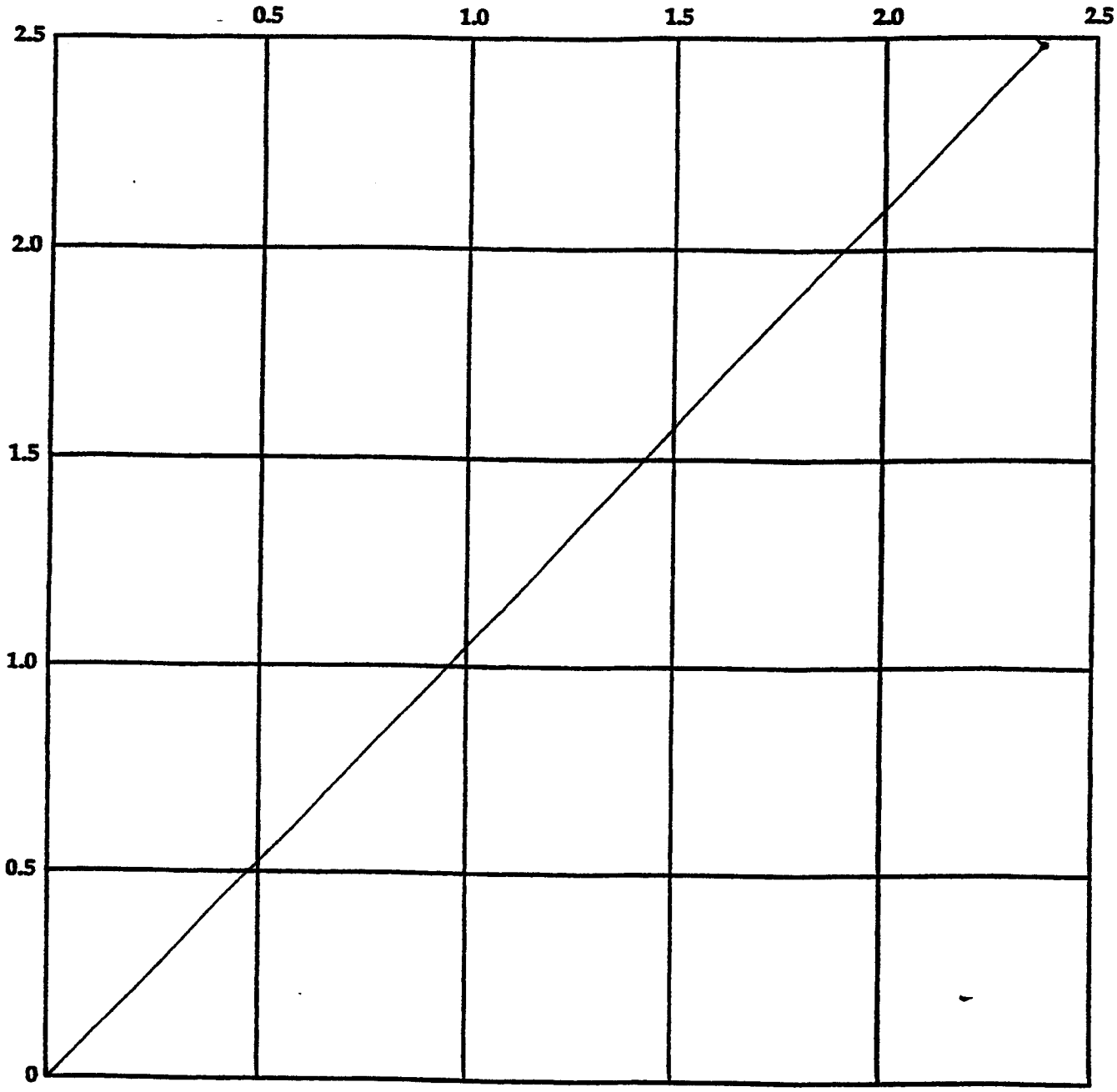
5	●	12	116.1	41	125



DIRECT SHEAR DATA

BORING	SYMBOL	DEPTH (FT.)	DRY DENSITY (PCF)	ANGLE OF FRICTION (DEGREES)	COHESION (PSF)
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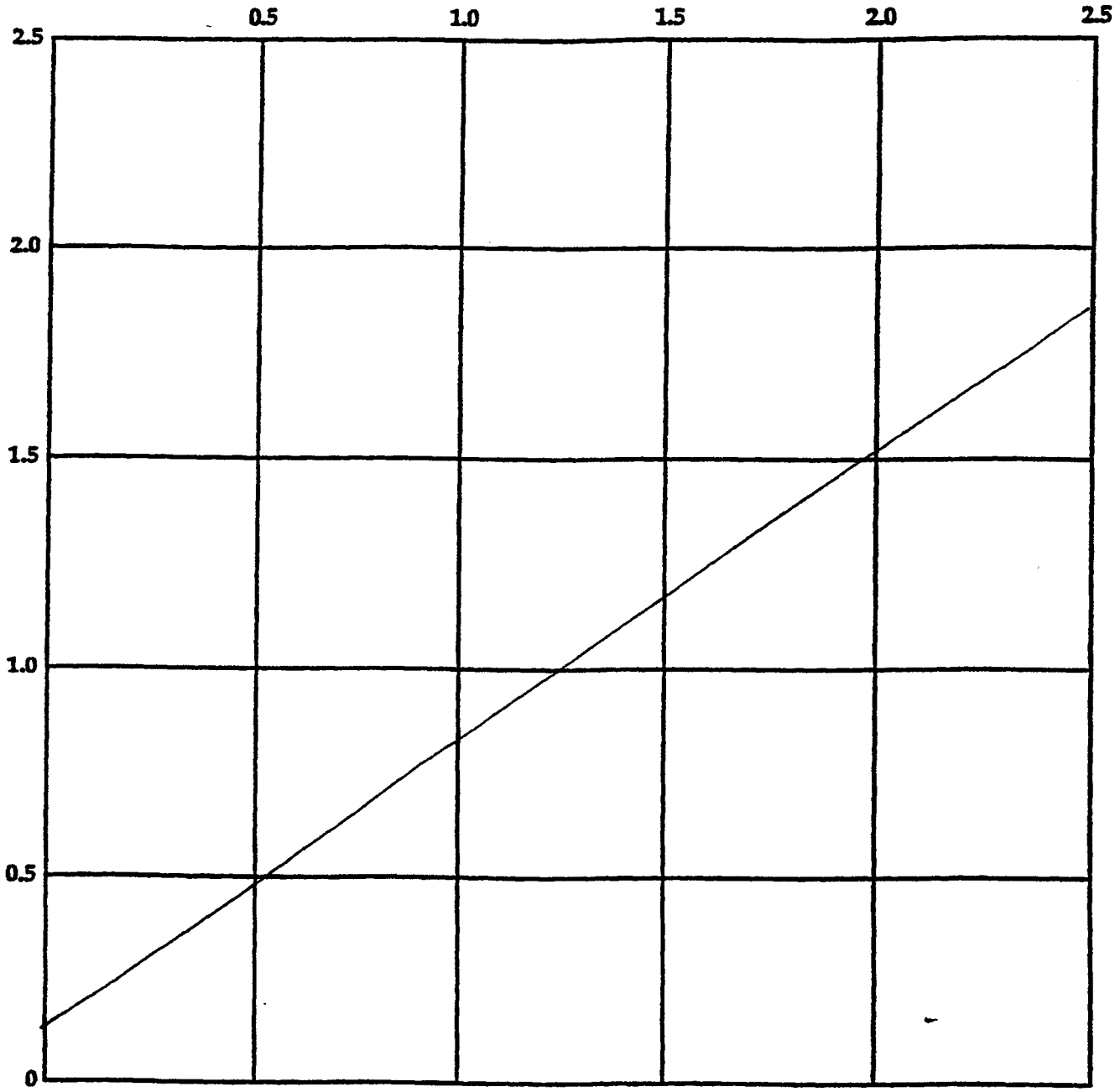
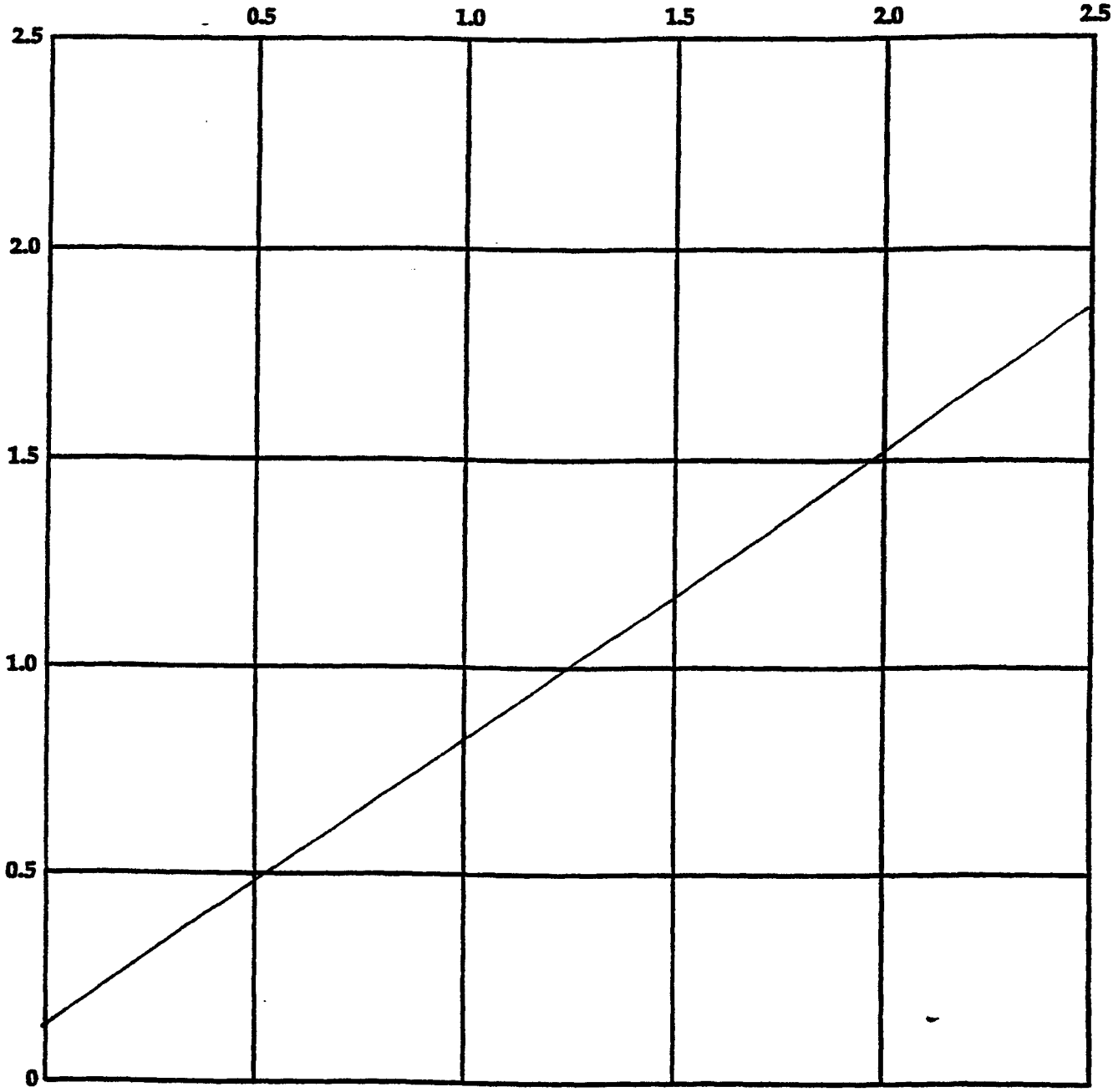


DIRECT SHEAR DATA

BORING	SYMBOL	DEPTH (FT.)	DRY DENSITY (PCF)	ANGLE OF FRICTION (DEGREES)	COHESION (PSF)
5	●	0-5	120.2	35	150

Remolded to 90% of maximum density per ASTM D1557.



DIRECT SHEAR DATA

BORING	SYMBOL	DEPTH (FT.)	DRY DENSITY (PCF)	ANGLE OF FRICTION (DEGREES)	COHESION (PSF)
5	●	0-5	120.2	35	150

Remolded to 90% of maximum density per ASTM D1557.

APPENDIX 2

AIR QUALITY ANALYSIS

PALMDALE TRANSPORTATION CENTER

PALMDALE, CALIFORNIA

Submitted to:

City of Palmdale
Public Works Department
38250 Sierra Highway
Palmdale, California 93550

Prepared by:

LSA Associates, Inc.
One Park Plaza, Suite 500
Irvine, California 92614
(949) 553-0666

LSA Project No. CIP131

LSA

February 20, 2002

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EXECUTIVE SUMMARY

LSA Associates, Inc. (LSA) was retained by the City of Palmdale (City) to prepare an air quality study for the proposed Palmdale Transportation Center project, located in the City of Palmdale, California.

The air quality study provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality. The report provides data on existing air quality, evaluates potential air quality impacts associated with the proposed project, and identifies mitigation measures recommended for potentially significant impacts. Modeled air quality levels are based upon vehicle data provided to LSA.

Historical air quality data show that existing carbon monoxide (CO) levels for the project area and the general vicinity do not exceed either the State or federal ambient air quality standards. The proposed project will help improve regional traffic flow and reduce congestion on roadway links in the project vicinity. Therefore, project related traffic is not expected to significantly affect the local CO levels. Compliance with Antelope Valley Air Pollution Control District (AVAPCD) Rules and Regulations for the Antelope Valley area of the Mojave Desert Air Basin (Basin) during construction will reduce construction related air quality impacts from fugitive dust emissions and construction equipment emissions to a level less than significant. The proposed transportation center project would not generate new regional vehicular trips. Instead, it would reduce new regional vehicular emissions by encouraging the use of public transportation, i.e., trains. The proposed project would have a beneficial effect in helping to reduce congestion on certain roadway links in the City.

Consideration of the Palmdale Transportation Center will be consistent with all of the major regional planning studies for Los Angeles County and the Antelope Valley.

Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) made a conformity determination on the Southern California Association of Governments (SCAG) 2001 Regional Transportation Plan (RTP) on June 7, 2001. The FHWA/FTA made a conformity determination on the 2001 Regional Transportation Improvement Program (RTIP) on September 25, 2001.

The proposed Palmdale Transportation Center project is included in the 2001 RTP and 2001 RTIP. The proposed Palmdale Transportation Center project is not significantly different than the project included in the 2001 RTP and 2001 RTIP. The proposed Palmdale Transportation Center project does not create any new CO violations or decreases the frequency and severity of any existing CO violations.

Therefore, it is determined that the proposed Palmdale Transportation Center project is in conformance with the State Implementation Plan (SIP) and is consistent with the requirements of the Transportation Conformity Rule.

PROJECT DESCRIPTION

Palmdale is located in northern Los Angeles County, California, at the southwest edge of the Antelope Valley. The project site is located in the City of Palmdale, and is located on the west side of 6th Street East and the Southern Pacific Railroad tracks, between Avenue P-8 and Avenue P-14. The proposed project site consists of approximately 11 acres and is currently undeveloped. Figure 1 shows the project location. Figure 2 illustrates the project site plan.

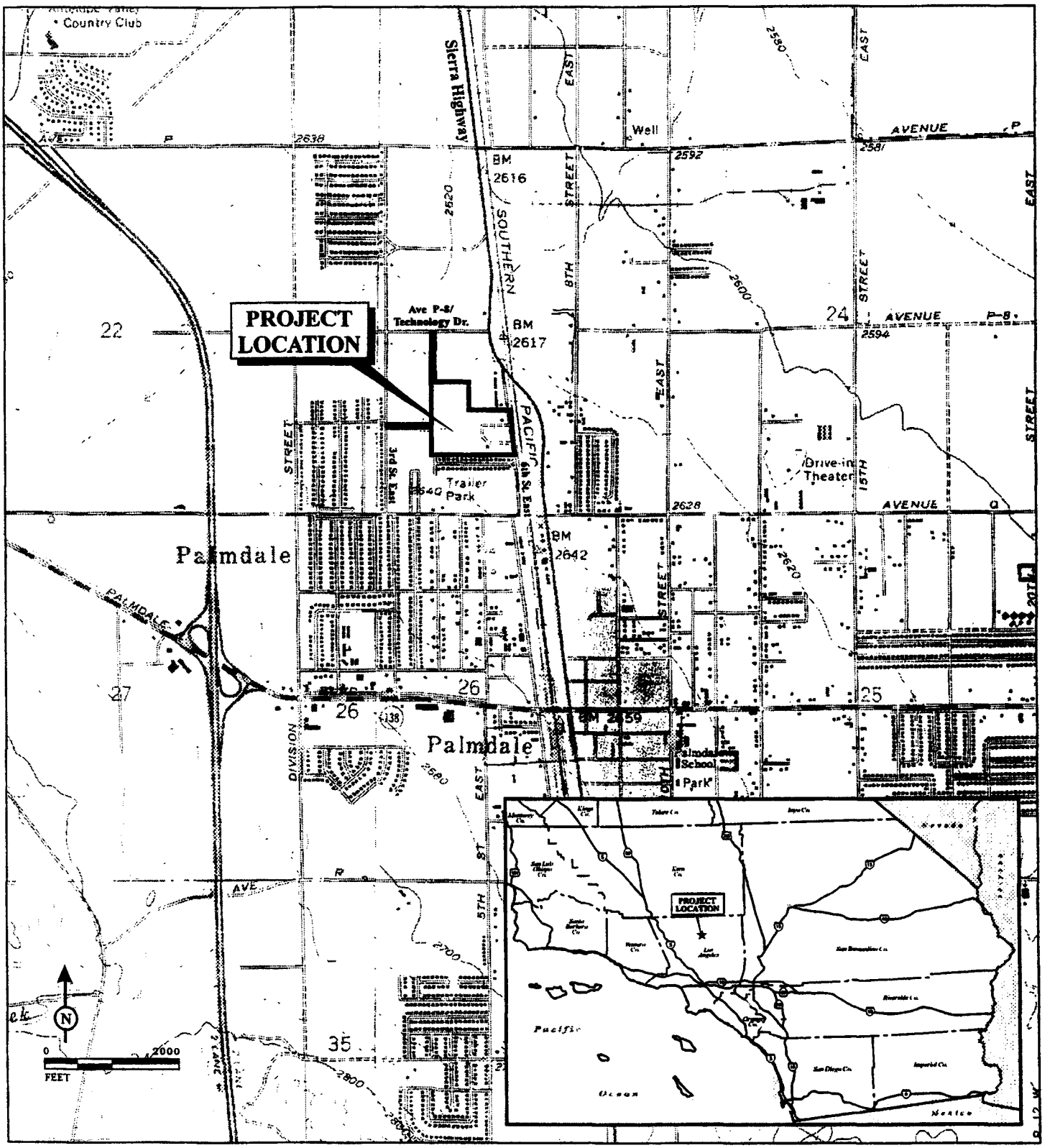
The City of Palmdale proposes to construct the Palmdale Transportation Center (PTC) to encourage the use of public transportation system alternatives. The proposed PTC will be a multi-modal transportation facility to serve Palmdale and the Antelope Valley. The project consists of near-term transportation services including a 510 foot Metrolink rail station platform with related parking (300-spaces), a 3,150 square foot transit station building, a bus transfer station to be utilized by local (Antelope Valley Transit Authority) and regional providers, a 200-space Park & Ride lot, a compressed natural gas (CNG) fueling facility, bicycle and pedestrian accommodations, and approximately 10,000 square feet of commuter serving retail uses. The rail station will be constructed on top of a 630 foot box culvert storm drain improvement within Anaverde Creek.

The new Metrolink rail station will supplement existing stations in Lancaster and Acton that provide rail service between the Antelope Valley and the Los Angeles area. The bus transfer station will accommodate local bus transfers relocated from the Antelope Valley Mall and regional bus transfers. The CNG fueling facility will be primarily used by the City's fleet of CNG fueled vehicles, although the facility will be open for purchase of CNG by the public. The 10,000 square feet of retail is anticipated to serve the commuter oriented public within the PTC site. Consequently, ancillary retailers such as dry cleaning businesses, coffee shops, convenience markets or news stands are anticipated.

Vehicular trips will be accommodated from three major points of access including a primary driveway access roadway (Transportation Way) extending south from Technology Drive (Avenue P-8) between Sierra Highway and 3rd Street East, an easterly extension of Avenue P-12 into the project site from 3rd Street East, and 6th Street East from the south via Avenue Q. It is anticipated that all busses will use the Technology Drive driveway via Sierra Highway. In the event that buses are proposed to use 6th Street East from Palmdale Boulevard, further analysis will be required.

The Avenue P-12 extension will connect with 6th Street East, providing a continuous route from the west to the southeast part of the site. This route will offset the discontinuous section of 6th Street East that will be created to construct the rail station platform. Similarly, an "S" shaped driveway will be connected between the north project boundary at Transportation Way to the south project boundary at 6th Street East. Together with the Avenue P-12 extension, a "figure 8" internal roadway system will be formed, providing access to all portions of the project.

The City of Palmdale controls an additional 15 acres of land south of Technology Drive and west of Sierra Highway, adjacent to the proposed project. However, this area is not part of the current proposal. Future development of this area will likely include additional commuter-serving retail uses and approximately 300 parking spaces. Future environmental review of this adjoining property will be required at the time that it is proposed for development.



LSA

FIGURE 1

Palmdale Transportation Center

Project Location and Regional Vicinity

SOURCE: USGS 7 5' QUADS - PALMDALE AND RITTER RIDGE, 1974

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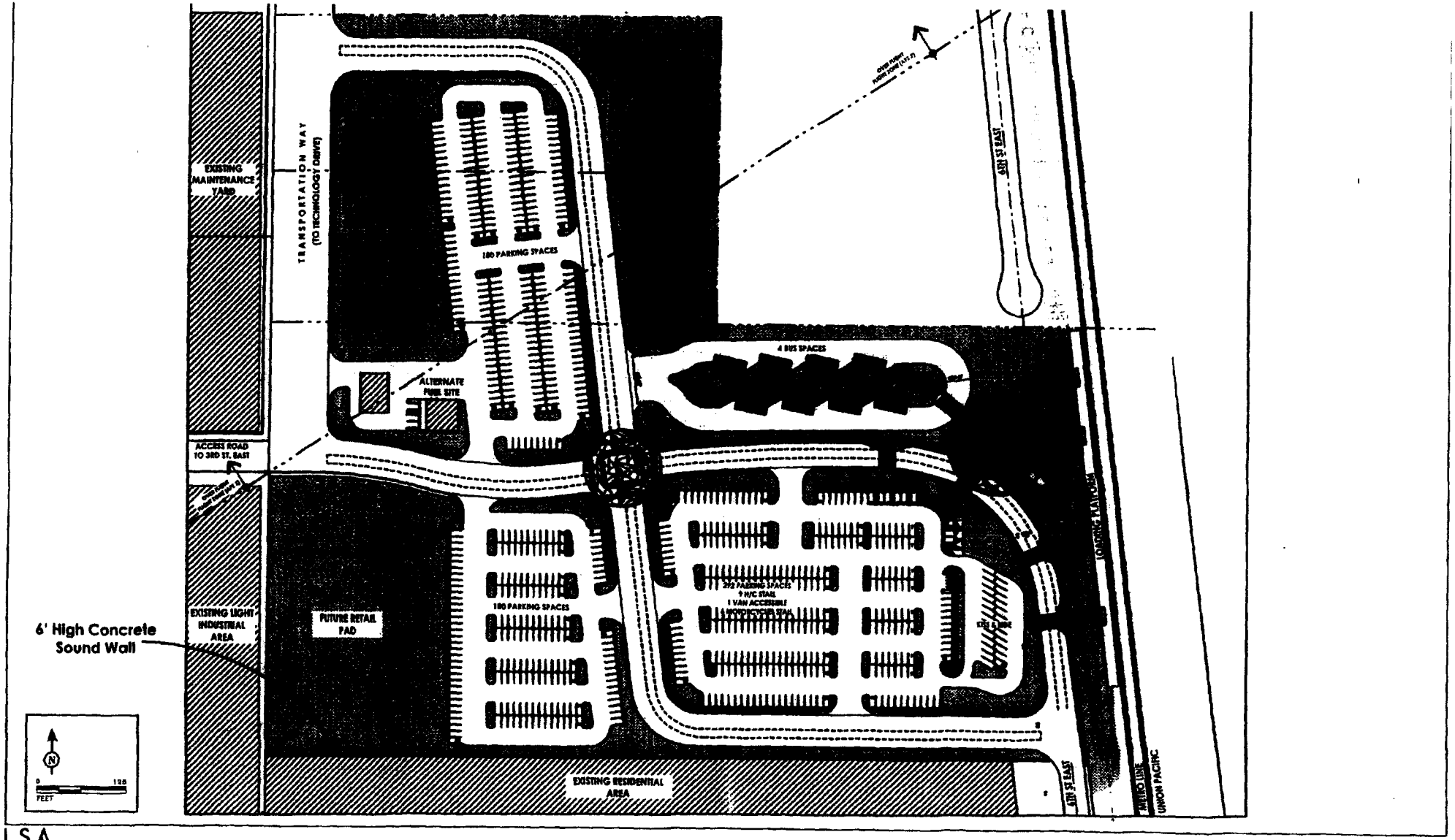

LSA

FIGURE 2

Palmdale Transportation Center
Proposed Site Plan

SOURCE: Charles Walton Associates AIA, Inc., December 2001
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SETTING

Regional Air Quality And Climate/Meteorology

The project site is located in the City of Palmdale in the Antelope Valley area of the Mojave Desert Air Basin (MDAB), which includes portions of Kern, Los Angeles, Riverside and San Bernardino counties. Although the Antelope Valley area is currently under the jurisdiction of the Antelope Valley Air Pollution Control District (AVAPCD), the AVAPCD has not adopted guidelines or emissions thresholds for determining project significance with California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). Therefore, the impact analysis contained in this section was prepared in accordance with the methodologies provided by the South Coast Air Quality Management District (SCAQMD) in its 1993 *CEQA Air Quality Handbook* for the Southeast Desert Air Basin (SEDAB) area and Caltrans Transportation Project-Level Carbon Monoxide Protocol (Caltrans, December, 1997).

Both the State and federal governments have established health based Ambient Air Quality Standards (AAQS) for six air pollutants. These pollutants are carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, lead, and suspended particulate matter. The Antelope Valley area is currently designated as non-attainment for federal (one hour) and State ozone standards, State PM_{10} standard, and transitional for federal (eight hour) ozone standard. The Antelope Valley area is unclassified for federal PM_{10} standard, federal $PM_{2.5}$ standards, State particulate sulfate, hydrogen sulfide, and visibility reducing particles standards, and is in attainment status for federal and State standards for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead.

Table A shows both federal and State standards for these criteria pollutants. Table B lists the sources, primary health effects, and status of meeting the standards of these six criteria air pollutants. These health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the federal AAQS.

The Antelope Valley area, together with the Mojave Desert area in San Bernardino County, make up the vast majority of the Mojave Desert Air Basin (MDAB). The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor.

Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and central California Valley regions by mountains (highest elevation approximately 10,000 feet), whose passes form the main channels for these air masses. The Antelope Valley is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevadas in the north by the Tehachapi Pass (3,800 feet elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet).

Table A: Ambient Air Quality Standards

Pollutant	Averaging Time	STATE	FEDERAL	
		Concentration	Primary	Secondary
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	0.12 ppm (235 µg/m³)	Same as Primary Std.
	8 Hour	-	0.08 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	-	0.053 ppm (100 µg/m³)	Same as Primary Std.
	1 Hour	0.25 ppm (470 µg/m³)	-	
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m³)	9 ppm (10 mg/m³)	-
	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	-
Suspended Particulate Matter (PM_{10})	Annual Geometric Mean	30 µg/m³	-	-
	24 Hour	50 µg/m³	150 µg/m³	Same as Primary Std.
	Annual Arithmetic Mean	-	50 µg/m³	-
Suspended Particulate Matter ($PM_{2.5}$)	24 Hour	-	15 µg/m³	-
	Annual Arithmetic Mean	-	65 µg/m³	-
Sulfur Dioxide (SO_2)	Annual Average	-	80 µg/m³ (0.03 ppm)	-
	24 Hour	0.04 ppm (105 µg/m³)	365 µg/m³ (0.14 ppm)	-
	3 Hour	-	-	1,300 µg/m³ (0.5 ppm)
	1 Hour	0.25 ppm (655 µg/m³)	-	-
Lead	30 Day Average	1.5 µg/m³	-	-
	Calendar Quarter	-	1.5 µg/m³	Same as Primary Std.
Sulfates	24 Hour	25 µg/m³	-	-
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	-	-
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m³)	-	-
Visibility Reducing Particles	8 Hour (10 am-6 pm PST)	*	-	-

Source: *California Air Resources Board (CVARB) 2000*

Notes: ppm = parts per million
mg/m³ = milligrams per cubic meter
µg/m³ = micrograms per cubic meter
*In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent. Measurement in accordance with ARB Method V.

Table B: Health Effects Summary of the Major Criteria Air Pollutants

Pollutants	Sources	Primary Effects
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon containing substances, such as motor exhaust. Natural Events, such as decomposition of organic mater.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).
Fine Particulate Mater (PM_{10})	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Soiling. Reduced visibility.
Sulfur Dioxide (SO_2)	Combustion of sulfur containing fossil fuels. Smelting of sulfur bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coatings, etc.
Lead (Pb)	Contaminated soil.	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

Source: *CARB, 1998*

During the summer the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the southwest. The MDAB averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inches of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, to indicate at least three months have maximum average temperatures over 100.4° F.

The nearest station that monitors temperature is the Lancaster station.[1] The Lancaster station monitored average monthly temperature ranging from a minimum of 75.1°F to a maximum of 75.1°F between 1974 and 2000. December and January are typically the coldest months in the MDAB.

The majority of annual rainfall in the MDAB occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers along the coastal side of the mountains. The climatological station nearest the site which monitors precipitation is the Lancaster station. Average monthly rainfall measured at the Lancaster station varied from 1.75 inches in February to less than one inch between April and November.

Local Air Quality

The AVAPCD, together with the California Air Resources Board (CARB), maintains ambient air quality monitoring stations in the Antelope Valley Area.

The closest air monitoring station from the project site is the Lancaster station, which monitors ozone[2], particulate matter (PM_{10}), carbon monoxide, and nitrogen dioxide levels. Air quality trends identified from data collected at this air monitoring station between 1996 and 2000 are listed in Table C and are discussed below. Carbon monoxide and nitrogen dioxide levels have not equaled or exceeded the relevant state and federal standards in the past five years. Ozone exceeded the State standard in each of the five years and exceeded federal standard in three of the past five years. Particulate matter finer than ten microns, or the PM_{10} level, in the areas surrounding the project site exceeded the state standard every year from 1996 to 1999 and has not exceeded federal standard from 1996 to 1999. No data was provided in 2000 for the PM_{10} level at this station.

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1 Western Regional Climate Center, wrcc@dri.edu. 5/1/1974 to 7/31/2000.

2 Air Quality Data, 1996, 1997, 1998, 1999, 2000; California Air Resource Board.

Table C: Ambient Air Quality
Lancaster Air Monitoring Station

	Carbon Monoxide				Ozone		Particulate Matter 10 micron		Nitrogen Dioxide	
	Maximum 1-Hour Conc. (PPM)	No. of Days Exceeded	Maximum 8-Hour Conc. (PPM)	No. of Days Exceeded	Maximum 1-Hour Conc. (PPM)	No. of Days Exceeded	Annual 1st High Conc. (Ug/m³)	No. of Days Exceeded	Maximum 1-Hour Conc. (PPM)	No. of Days Exceeded
State Stds.	> 20 ppm/1-Hour		≥ 9.0 ppm/8-Hour		> .09 ppm/1-Hour		50 Ug/m³		> .25 ppm/1-Hour	
2000	6.0	0	4.3	0	.14	35	ND[1]	ND	.07	0
1999	7.2	0	5.4	0	.10	1	85	2	.08	0
1998	5.4	0	3.6	0	.16	24	80	2	.08	0
1997	5.9	0	4.0	0	.12	14	54	2	.07	0
1996	6.8	0	4.7	0	.13	40	67	2	.08	0
Maximum	**7.2**		**5.4**		**.16**		**85**		**.08**	
Federal Stds.	> 35 ppm/1-Hour		≥ 9.0 ppm/8-Hour		> .12 ppm/1-Hour		150 Ug/m³		0.053 ppm, annual average	
2000	6.0	0	4.3	0	.14	2	ND	ND	0.016	0
1999	7.2	0	5.4	0	.10	0	85	0	0.018	0
1998	5.4	0	3.6	0	.16	8	80	0	0.016	0
1997	5.9	0	4.0	0	.12	0	54	0	0.014	0
1996	6.8	0	4.7	0	.13	1	67	0	0.015	0
Maximum	**7.2**		**5.4**		**.16**		**85**		**0.018**	

Source: *California Air Resources Board, Air Quality Data, 1996 to 2000.*

[1] No data provided on CARB's website.

REGULATORY SETTINGS

Federal Regulations/Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (U.S. EPA) established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

The NAAQS are two tiered: primary, to protect public health; and secondary, to prevent degradation of the environment (e.g., impairment of visibility, damage to vegetation and property, etc.). The six criteria pollutants are ozone (O_3), carbon monoxide (CO), particulates less than ten microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). In July, 1997, U.S. EPA adopted new standards for eight hour ozone and particulates less than 2.5 microns in diameter ($PM_{2.5}$).

Data collected at permanent monitoring stations are used by the U.S. EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the U.S. EPA.

The U.S. EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Antelope Valley area of the MDAB.

The U.S. EPA established new national air quality standards for ground level ozone and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the Clean Air Act, as applied in setting the new public health standards for ozone and particulate matter, was unconstitutional as an improper delegation of legislative authority to the U.S. EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the Clean Air Act. The court unanimously rejected industry arguments that the U.S. EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the U.S. EPA took too much lawmaking power from Congress when it set tougher standards for ozone and soot in 1997. Nevertheless, the court threw out the U.S. EPA's policy for implementing new ozone rules, saying the agency ignored a section of the law that restricts its decision making authority. It ordered the agency to come up with a more "reasonable" interpretation of the law.

State Regulations/Standards

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS

standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are also listed in Table A.

Originally, there were no attainment deadlines for the CAAQS. However, the California Clean Air Act (CCAA) of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans are required to achieve a minimum five percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The Basin is currently classified as a nonattainment area for three criteria pollutants.

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act helped establish the AVAPCD and other air districts throughout the State. The Federal Clean Air Act Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state. This requirement led to the local air quality planning processes in areas like the MDAB.

The California Air Resources Board (CARB) coordinates and oversees both State and federal air pollution control programs in California. CARB oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for federal Environmental Protection Agency (EPA) approval. CARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by CARB to classify air basins as "attainment" or "nonattainment" with respect to each pollutant and to monitor progress in attaining air quality standards. CARB has divided the State into 15 air basins. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans. The California Clean Air Act (CCAA) provides the AVAPCD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, CARB regulates motor vehicles and fuels for their emissions.

The AVAPCD and Southern California Association of Governments (SCAG) are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Antelope Valley area of the MDAB.

METHODOLOGY

A number of air quality modeling tools are available to assess air quality impacts of projects. In addition, certain air districts have created guidelines and requirements to conduct air quality analysis. As stated previously, SCAQMD's current guidelines for the Southeast Desert Air Basin (SEDAB) area in its CEQA Air Quality Handbook (SCAQMD, April, 1993) were adhered to in the assessment of air quality impacts for the proposed project.

The air quality assessment for the proposed project includes estimating emissions associated with short-term construction and long-term operation of the proposed project. Due to the characteristics of the proposed project, i.e., a transportation center with a train station and a park-and-ride facility, regional air quality effects would be beneficial from reduced mobile sources emissions, and there would be little or no stationary emissions from electricity and natural gas usage. Mobile emissions include vehicle trips using the park-and-ride facility. Localized air quality effects, i.e., potentially higher carbon monoxide concentrations (CO hot spots) along the roadways and intersections in the project vicinity, would potentially occur due to the proposed project.

The CALINE4 model is used to assess air quality impacts near transportation facilities. The air model estimates the CO concentration near intersections or along roadway segments based on traffic volume, roadway geometry, topography, and meteorological data. To assess the impact on local air quality resulting from the proposed project, a comparison was made between the with and without project conditions under the future year (2003) scenarios.

The results from the air quality modeling of CALINE4 are essential components in determining the level of significance and impact on local air quality from the proposed project. Output sheets from the air quality model runs are contained in Appendix A.

Threshold of Significance

A project would normally be considered to have a significant effect on air quality if the project would violate any ambient air quality standards, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

In addition to the federal and State AAQS, as listed in Table A, there are daily and quarterly emissions thresholds for construction and operation of a proposed project in the Antelope Valley area. The Antelope Valley area of the MDAB is administered by the AVAPCD, and guidelines and emissions thresholds previously established by the SCAQMD in its CEQA Air Quality Handbook (SCAQMD, April 1993) for SEDAB area are used in this analysis.

Thresholds for Construction Emissions

The following CEQA significance thresholds for construction emissions have been established for the Antelope Valley area:

- 75 pounds per day or 2.5 tons per quarter of ROC
- 100 pounds per day or 2.5 tons per quarter of NO_X
- 550 pounds per day or 24.75 tons per quarter of CO
- 150 pounds per day or 6.75 tons per quarter of PM_{10}
- 150 pounds per day or 6.75 tons per quarter of Sulfur Oxides (SO_X)

Projects in the Antelope Valley area with construction related emissions that exceed any of the emission thresholds should be considered to be significant.

Thresholds for Operational Emissions

The daily operational emissions "significance" thresholds for the Antelope Valley area are as follows.

- Regional Emissions Thresholds
  - 75 pounds per day of ROC
  - 100 pounds per day of NO_X
  - 550 pounds per day of CO
  - 150 pounds per day of PM_{10}
  - 150 pounds per day of SO_X.

Projects with operation related emissions that exceed any of the above listed emission thresholds are considered significant.

- Local Emission Standards
  - California State one hour CO standard of 20.0 ppm
  - California State eight hour CO standard of 9.0 ppm

The significance of localized project impacts depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have significant impacts if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase one hour CO concentrations by 1.0 part per million (ppm) or more or eight hour CO concentrations by 0.45 ppm or more. There are no local emission concentration standards for other criteria pollutants.

IMPACTS

Air pollutant emissions associated with the project would occur over the short term from construction activities, such as fugitive dust from site preparation and grading, and emissions from equipment exhaust. Long-term local CO emissions at intersections in the project vicinity would not be significantly affected by project related traffic. Because of the characteristics of the proposed project, i.e., a transportation center, no new regional vehicular trips would be generated as a result of the proposed project. Instead, the proposed project would reduce new regional

vehicular emissions by encouraging the use of public transportation, i.e., trains. The proposed project would have a beneficial effect in helping to reduce congestion and local air pollutant concentrations on certain roadway links in the City. There would also be no long-term stationary source emissions from energy consumption such as natural gas and electricity usage.

Construction Impacts

Air quality impacts would occur during the site preparation including grading and equipment exhaust. Major sources of emissions during grading and site preparation include exhaust emissions from construction vehicles and equipment and fugitive dust generated by construction vehicles and equipment traveling over exposed surfaces, as well as by soil disturbances from grading and filling. Implementation of mitigation measures will reduce air quality impacts below emissions thresholds to a less than significant level.

Grading and construction activities would cause combustion emissions from utility engines, heavy-duty construction vehicles, haul trucks, and vehicles transporting the construction crew. Exhaust emissions during grading and construction activities envisioned on site would vary daily as construction activity levels change. It is assumed that building construction would not begin until after grading is completed. Therefore, there would be no overlap in emissions from grading or building construction. It is anticipated that peak grading days would generate a larger amount of air pollutants than during peak building construction days.

Based on the methodology outlined in the SCAQMD CEQA Air Quality Handbook and analysis of similar projects, construction emissions associated with grading of the proposed project have been estimated and are shown in Table D.

Fugitive dust emissions are generally associated with demolition, land clearing, exposure, vehicle and equipment travel on unpaved roads, and dirt/debris pushing. Dust generated during construction activities would vary substantially depending on the level of activity, the specific operations, and weather conditions. Nearby sensitive receptors and workers may be exposed to blowing dust, depending upon prevailing wind conditions.

The SCAQMD CEQA Air Quality Handbook estimates that each acre of graded surface creates about 26.4 pounds of PM_{10} per workday during the construction phase of the project and 21.8 pounds of PM_{10} per hour from dirt/debris pushing per dozer. It is assumed that up to a maximum of one acre of land would be under active grading on any one day. It is also assumed that one dozer would be used up to eight hours a day.

It is assumed that a maximum of 0.5 acre of open stock piles would occur on the project site, which will generate 42.8 pounds per day (ppd) of PM_{10}. Therefore, approximately 252.79 pounds of PM_{10} per day would be generated from soil disturbance before mitigation during the peak construction phase. This level of dust emission would exceed the daily threshold of 150 pounds per day for construction activity.

Table D: Peak Grading Day Construction Emissions

Number and Equipment Type[1]	Hours of Operation	Pollutants				
		CO	ROC	NO_X	SO_X	PM_{10}
1 - Scraper	8	10	2.16	30.72	3.68	3.28
1 - Motor Grader	8	1.2	0.31	5.7	0.69	0.49
1 - Tracked Loader	8	1.6	0.76	6.64	0.61	0.47
1 - Tracked Dozer	8	2.8	0.96	10.08	1.12	0.89
1 - Wheeled Tractor	8	28.64	2.88	20.32	1.44	2.24
1 - Miscellaneous[2]	8	5.4	1.2	13.6	1.14	1.12
Worker Commute Exhaust[3]		6.0	1.1	1.9	0.3	0.7
Subtotal Exhaust Emission		**55.64**	**9.37**	**88.96**	**8.98**	**9.19**
Fugitive Dust Emissions						
Open Stock Pile[4]						42.8
Dirt/Debris Pushing[5]						174.4
Graded/Exposed Surface[6]						26.4
Total Grading Before Mitigation		**55.64**	**9.37**	**88.96**	**8.98**	**252.79**
Total Grading After Mitigation		**55.64**	**9.37**	**88.96**	**8.98**	**126.40**
Emission Threshold		**550**	**75**	**100**	**150**	**150**
Significant After Mitigation?		**NO**	**NO**	**NO**	**NO**	**NO**

Source: *LSA Associates, Inc., January 2002*

Notes: [1] Emission factors provided by SCAQMD, *1993 CEQA Air Quality Handbook*, Tables A9-8-A and A9-9.
[2] A water truck.
[3] Based on a commute length of 25 miles each way for 14 workers.
[4] Emissions from one-half acre of open stock piles.
[5] Emissions by one dozer operating eight hours a day.
[6] Emissions from one acre of graded/exposed surface.
[7] Assumes 50 percent effectiveness for dust suppression measures.

The project will comply with regional rules, which would assist in reducing the short-term air pollutant emissions. Fugitive dust from a construction site must be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Dust suppression techniques should be implemented to prevent fugitive dust from creating a nuisance off site. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 to 75 percent.

Assuming a mitigating efficiency of 50 percent by implementation of the standard mitigation, daily PM_{10} emissions from soil disturbance would be reduced to approximately 126 pounds. Compliance with these rules would reduce impacts on nearby sensitive receptors.

It is further assumed that on a peak grading day, a total of 14 workers would be working on the project site. Assuming an average 25 miles each way commute length for every worker, emissions from the daily 700 miles of travel by workers would generate approximately 6.0 ppd of CO, 1.1 ppd of ROC, 1.9 ppd of NO_X, 0.3 ppd of SO_X, and 0.7 ppd of PM_{10} from vehicle exhaust and tire wear.

As shown in Table D, peak grading day construction equipment emissions would be below the daily thresholds for all criteria pollutants.

Construction of a park-and-ride facility uses different types of equipment on the project site. Similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions. However, it is anticipated that emissions during structure construction and paving would be below peak grading day emissions. Therefore, mitigation implemented for the peak grading day emissions would be adequate to reduce emissions during the structure construction and paving periods.

Long-Term Project Related Emissions Impacts

Long-Term Regional Air Quality Impacts. Long-term air emission impacts are those associated with stationary sources and mobile sources related to any change in permanent usage of the project site. Because of the characteristics of the proposed project, i.e., a transportation center with a train station and a park-and-ride facility to encourage the use of public transportation system in the project area, project related stationary sources of emissions associated with the usage of electricity and natural gas from the proposed retail uses would be small.

The proposed transportation center would encourage the use of public transportation system in the project area and is not expected to result in new vehicular traffic trips. Instead, it would reduce regional vehicular emissions by encouraging the use of public transportation, i.e., trains. Two existing Metrolink stations, one in Anton and the other in Lancaster, are not far from the proposed project site. Therefore, some of the train riders would come to the proposed station due

to shorter distance or more convenient commute routes. However, as a worst case scenario, this air quality analysis, similar to the traffic analysis, assumes that all trips to the project site are new trips and emissions associated with these trips are considered project related air quality impacts.

Table E lists the vehicular emissions associated with project related trips. Emissions associated with the projected 480 daily bus transfers are part of the calculated project emissions, as well as vehicular emissions associated with the proposed Metrolink station, park and ride lot, and convenience market. In addition, emissions associated with on-site stationary (area) sources are also included in Table E. Emissions associated with train idling at the proposed Metrolink station were calculated with the assumption that all 19 Metrolink trains would make a stop at this station and idle for up to four minutes each. Each Metrolink train is assumed to have one locomotive operating with two 400 kW (536 Hp) diesel engines. Emission factors for the year 2002 average fleet mix in the EPA document, Emission Factors for Locomotives (EPA420-F-97-051, December, 1997) were used for train idling emissions at the station. Table E shows that project related regional emissions would be below the emissions thresholds and less than significant.

Table E: Project Related Operational Emissions

Source	Pollutants, lbs/day			
	CO	ROC	NOx	PM10
Energy Consumption	1.76	0.32	4.40	0.01
Vehicular Trips	223.87	26.62	35.71	10.04
Train Idling at Station	4.00	1.60	35.80	1.00
Project Total	229.63	28.54	75.91	11.05
Emission Threshold	550	75	100	150
Significant Impact?	NO	NO	NO	NO

Source: *LSA Associates, Inc., February 2002.*

Long-Term Microscale Projections. The increase in traffic volume associated with the proposed transportation center would result in a potential increase in carbon monoxide (CO) emissions at intersections in the immediate project vicinity. CO hot spot analyses were conducted for the near term (2003) conditions with and without the project. The near term (year 2003) conditions show that the project area would not have CO hot spots with the projected traffic volumes. The proposed project would not have a significant impact on local air quality for CO, and no mitigation measures would be required.

Vehicular Traffic

The primary mobile source pollutant of local concern is CO. CO is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project related impacts on localized ambient air quality requires that future ambient air quality levels be projected. The proposed project would result in redistribution of regional traffic and an increase in traffic volume at the interchange, thereby causing a potential increase in CO concentrations at adjacent receptor locations. Therefore, the future with and without project conditions were analyzed to determine the project's impact and whether a CO hot spot would occur.

Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Lancaster station, the closest station with monitored CO data, showed a highest recorded one hour concentration of 7.2 ppm (State standard is 20 ppm) and a highest eight hour concentration of 5.4 ppm (State standard is 9 ppm) during the past five years (see Table A).

The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst case analysis. Modeling of the CO hot spot analysis was based on traffic volumes generated by the project traffic study (LSA Associates, Inc., October, 2001), which identified the peak traffic levels generated in the project area with and without the proposed project for the year 2003.

The impact on local carbon monoxide levels was assessed with the CARB approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of carbon monoxide, often termed "hot spots." A brief discussion of input to the CALINE4 model follows. The analysis was performed for the worst case wind angle and wind speed condition and is based upon the following assumptions:

- Selected modeling locations represent the intersections closest to the project site, with the highest project related vehicle turning movements and the worst level of service deterioration;
- Twenty receptor locations with the possibility of extended outdoor exposure from 2 (approximately 7 feet) to 14 meters (approximately 46 feet) of the roadway centerline near intersections were modeled to determine carbon monoxide concentrations;

- The calculations assume a meteorological condition of almost no wind (0.5 meter/ second), a suburban topographical condition between the source and receptor, and a mixing height of 1,000 meters, representing a worst case scenario for CO concentrations;

- CO concentrations are calculated for the one hour averaging period and then compared to the one hour standards. CO eight hour averages are extrapolated using techniques outlined in the SCAQMD CEQA Air Quality Handbook, October 1993, and compared to the eight hour standards; a persistence factor of 0.7 was used to predict the eight hour concentration in a nonattainment area;

- Concentrations are given in ppm at each of the receptor locations;

- The "at-grade" link option with speed adjusted based on average cruise speed and number of vehicles per lane per hour was used rather than the "intersection" link selection in CALINE4 model (Caltrans has suggested that the "intersection" link should not be used due to inappropriate algorithm based on outdated vehicle distribution). Emission factors from EMFAC7F model for all vehicles based on the adjusted speed for the year 2005 were used for the vehicle fleet; and

- The highest of the second highest CO concentrations monitored at the Lancaster station in the past three years were used as background concentrations, as recommended by the EPA for an area without projected future background concentrations. The "background" concentrations are then added to the model results for future with and without the proposed project conditions. The projected CO concentrations are 6.6 ppm for the one hour CO and 4.0 ppm for the eight hour CO. No rolled back factor was applied for future scenarios for a worst case scenario.

Data in Tables F and G show the projected CO levels under the future condition with and without the proposed project. For the future condition with project traffic, there is no exceedance of either the state or federal CO standards for the one hour or the eight hour durations. The one hour CO concentration at all receptor locations near the five intersection analyzed ranges from 7.0 to 8.9 ppm. The eight hour CO concentration ranges from 4.3 to 5.6 ppm. They are all below the federal and State standards.

The increase in CO concentration as a result of the project range from 0.0 to 0.1 ppm for the one hour and eight hour, respectively, CO concentrations. Because no future CO levels would exceed the federal and State 1 hour and 8 hour standards, no CO hot spots would occur.

Train Idling at Station

As can be seen from Table E, train idling at the station would emit four pounds of carbon monoxide (CO) a day, assuming 19 trains idling four minutes each at the station. This amount of CO emissions is small compared to vehicular emissions, and would not result in any high CO concentration, or hot spot, at the station.

Table F: Year 2003 No Build CO Concentrations

Intersection	Distance to Receptor Location from Roadway Centerline	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	Exceeds State Standards 8 hr
3rd Street East & Technology Drive	8	7.4	4.6	No	No
	8	7.4	4.6		
	8	7.4	4.6		
	8	7.4	4.6		
3rd Street East & Avenue P-12	7	7.0	4.3	No	No
	7	7.0	4.3		
	7	7.0	4.3		
	7	7.0	4.3		
3rd Street East & Avenue Q	8	7.3	4.5	No	No
	8	7.3	4.5		
	8	7.3	4.5		
	8	7.2	4.4		
Transportation Way & Technology Drive	7	7.4	4.6	No	No
	8	7.3	4.5		
	12	7.3	4.5		
	12	7.3	4.5		
Sierra Highway & Technology Drive	7	8.9	5.6	No	No
	12	8.8	5.5		
	12	8.8	5.5		
	14	8.8	5.5		

Source: *LSA Associates, Inc., October 2001*

[1] Includes ambient one hour CO concentration of 6.6 ppm. The State's one hour CO standard is 20 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

[2] Includes ambient eight hour CO concentration of 4.0 ppm. The State's eight hour CO standard is 9.0 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

Table G: Year 2003 Build Conditions CO Concentrations

Intersection	Distance to Receptor Location from Roadway Centerline	1 Hour CO Concentration[1] (ppm)	8 Hour CO Concentration[2] (ppm)	Increase from No Build (1 hr/8 hr)	Exceeds Standards 1 hr	8 hr
3rd Street East & Technology Drive	8	7.4	4.6	0.0/0.0	No	No
	8	7.4	4.6	0.0/0.0		
	8	7.4	4.6	0.0/0.0		
	8	7.4	4.6	0.0/0.0		
3rd Street East & Avenue P-12	7	7.1	4.4	0.1/0.1	No	No
	7	7.1	4.4	0.1/0.1		
	7	7.1	4.4	0.1/0.1		
	7	7.1	4.4	0.1/0.1		
3rd Street East & Avenue Q	8	7.4	4.6	0.1/0.1	No	No
	8	7.4	4.6	0.1/0.1		
	8	7.3	4.5	0.0/0.0		
	8	7.3	4.5	0.1/0.1		
Transportation Way & Technology Drive	7	7.4	4.6	0.0/0.0	No	No
	8	7.4	4.6	0.1/0.1		
	12	7.4	4.6	0.1/0.1		
	12	7.4	4.6	0.1/0.1		
Sierra Highway & Technology Drive	7	8.9	5.6	0.0/0.0	No	No
	12	8.9	5.6	0.1/0.1		
	12	8.8	5.5	0.0/0.0		
	14	8.8	5.5	0.0/0.0		

Source: *LSA Associates, Inc, 2001*

[1] Includes ambient one hour CO concentration of 6.6 ppm. The State's one hour CO standard is 20 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

[2] Includes ambient eight hour CO concentration of 4.0 ppm. The State's eight hour CO standard is 9.0 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

Air Quality Conformity Analysis

Consideration of the Palmdale Transportation Center will be consistent with all of the major regional planning studies for Los Angeles County and the Antelope Valley.

Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) made a conformity determination on the Southern California Association of Governments (SCAG) 2001 Regional Transportation Plan (RTP) on June 7, 2001. The FHWA/FTA made a conformity determination on the 2001 Regional Transportation Improvement Program (RTIP) on September 25, 2001.

The proposed Palmdale Transportation Center project is included in the 2001 RTP and 2001 RTIP. The proposed Palmdale Transportation Center project is not significantly different from the project included in the 2001 RTP and 2001 RTIP. The proposed Palmdale Transportation Center project does not create any new CO violations or decrease the frequency and severity of any existing CO violations.

Therefore, it is determined that the proposed Palmdale Transportation Center project is in conformance with the State Implementation Plan (SIP) and is consistent with the requirements of the Transportation Conformity Rule.

Standard Conditions

The project will be required to comply with regional rules that assist in reducing short-term air pollutant emissions. These dust suppression techniques are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 percent or more. Compliance with these rules would reduce impacts on nearby sensitive receptors.

- Portions of the construction site to remain inactive longer than a period of three months shall be seeded and watered until grass cover is grown.
- All active portions of the construction site shall be watered to prevent excessive amounts of dust.
- On-site vehicle speed shall be limited to 15 mph.
- All on-site roads shall be paved as soon as feasible or watered periodically or chemically stabilized.
- All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day.
- All clearing, grading, earth moving, or excavation activities shall cease during periods of high winds (i.e., greater than 25 mph averaged over one hour) or during Stage 1 or Stage 2 episodes.

- All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by clearing, grading, earthmoving, or excavation operations shall be minimized at all times.

Additional Mitigation Measures

The following mitigation measures will reduce air pollutants generated during the project construction.

- The Construction Contractor shall select the construction equipment used on site based on low emission factors and high energy efficiency. The Construction Contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The Construction Contractor shall utilize electric or diesel powered equipment in lieu of gasoline powered engines where feasible.
- The Construction Contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment when not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.
- The Construction Contractor shall time the construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.
- The Construction Contractor shall support and encourage ridesharing and transit incentives for the construction crew.
- Dust generated by the development activities shall be retained on site and kept to a minimum by following the dust control measures listed below.
    - During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.
    - During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day and whenever wind exceeds 15 miles per hour.
    - Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

- Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.
- Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall be tarped from the point of origin.

Level of Significance after Mitigation

Short-term construction emissions would exceed the daily thresholds for the criteria pollutants of PM_{10} before mitigation. Short-term construction emissions would be reduced to less than significant with implementation of mitigation measures. Emissions of other criteria pollutants would be below the standards.

There are no significant long-term air quality impacts identified as a result of the proposed project.

APPENDIX A

URBEMIS7G MODEL PRINTOUTS

URBEMIS 7G: Version 3.2

File Name: palmdale.URB
Project Name: Palmdale Transportation Center
Project Location: South Coast Air Basin (Los Angeles area)

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	0.85	4.43	5.33	0.02
TOTALS (ppd, mitigated)	0.56	0.47	5.33	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	17.66	32.89	127.47	10.04
TOTALS (ppd, mitigated)	17.66	32.89	127.47	10.04

URBEMIS 7G: Version 3.2

File Name: palmdale.URB
Project Name: Palmdale Transportation Center
Project Location: South Coast Air Basin (Los Angeles area)

DETAILED REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10
Natural Gas	0.32	4.40	1.76	0.01
Wood Stoves - No summer emissions				
Fireplaces - No summer emissions				
Landscaping	0.53	0.03	3.57	0.01
Consumer Prdcts	0.00			
TOTALS (ppd, unmitigated)	0.85	4.43	5.33	0.02

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)

Source	ROG	NOx	CO	PM10
Natural Gas	0.03	0.44	1.76	0.00
Wood Stoves - No summer emissions				
Fireplaces - No summer emissions				
Landscaping	0.53	0.03	3.57	0.01
Consumer Prdcts	0.00			
TOTALS (ppd, mitigated)	0.56	0.47	5.33	0.01

Area Source Mitigation Measures

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2002 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Metrolink Station	76.80 trips / unit	10.00	768.00
Park and Ride Lot	75.00 trips / unit	10.00	750.00
Convenience market (24	40.70 trips / 1000 sq. ft.	10.00	407.00
Bus Transfer	48.00 trips / unit	10.00	480.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00			100.00
Urban Buses	2.00			100.00
Motorcycles	3.00	100.00 % all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Custome
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.
Trip Speeds (mph)	35	40	40	40	40	40
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Metrolink Station				2.0	1.0	97.
Park and Ride Lot				2.0	1.0	97.
Convenience market (24 hour)				2.0	1.0	97.
Bus Transfer				2.0	1.0	97.

UNMITIGATED EMISSIONS

	ROG	NOx	CO	PM10
Metrolink Station	6.85	15.17	53.49	4.92
Park and Ride Lot	5.50	10.41	40.18	3.19
Convenience market (24 ho	2.48	3.46	15.80	0.93
Bus Transfer	2.83	3.85	18.00	1.01
	ROG	NOx	CO	PM10
TOTAL EMISSIONS (lbs/day)	17.66	32.89	127.47	10.04

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

MITIGATED EMISSIONS

	ROG	NOx	CO	PM10
Metrolink Station	6.85	15.17	53.49	4.92
Park and Ride Lot	5.50	10.41	40.18	3.19
Convenience market (24 ho	2.48	3.46	15.80	0.93
Bus Transfer	2.83	3.85	18.00	1.01
	ROG	NOx	CO	PM10
TOTAL EMISSIONS (lbs/day)	17.66	32.89	127.47	10.04

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

ENVIRONMENTAL FACTORS APPLICABLE TO THE PROJECT

Pedestrian Environment

0 Side Walks/Paths: No Sidewalks
0 Street Trees Provide Shade: No Coverage
0 Pedestrian Circulation Access: No Destinations
0 Visually Interesting Uses: No Uses Within Walking Distance
0 Street System Enhances Safety: No Streets
0 Pedestrian Safety from Crime: No Degree of Safety
0 Visually Interesting Walking Routes: No Visual Interest

0.0 <- Pedestrian Environmental Credit
0.0 /19 = 0.00 <- Pedestrian Effectiveness Factor

Transit Service

0 Transit Service: Dial-A-Ride or No Transit Service

0.0 <- Transit Effectiveness
0.0 <- Pedestrian Factor
0.0 <-Total
0.0 /110 = 0.00 <-Transit Effectiveness Factor

Bicycle Environment

0 Interconnected Bikeways: No Bikeway Coverage
0 Bike Routes Provide Paved Shoulders: No Routes
0.0 Safe Vehicle Speed Limits: No Routes Provided
0 Safe School Routes: No Schools
0 Uses w/in Cycling Distance: No Uses w/in Cycling Distance
0 Bike Parking Ordinance: No Ordinance or Unenforceable

0.0 <- Bike Environmental Credit
0.0 /20 = 0.00 <- Bike Effectiveness Factor

MITIGATION MEASURES SELECTED FOR THIS PROJECT
(All mitigation measures are printed, even if
the selected land uses do not constitute a mixed use.)

Transit Infrastructure Measures

Trips Reduced	Measure
.5	Credit for Existing or Planned Community Transit Service
15	<- Totals

Pedestrian Enhancing Infrastructure Measures (Residential)

Trips Reduced	Measure
	Credit for Surrounding Pedestrian Environment
2	<- Totals

Pedestrian Enhancing Infrastructure Measures (Non-Residential)

Trips Reduced	Measure
	Credit for Surrounding Pedestrian Environment
2	<- Totals

icycle Enhancing Infratructure Measures (Residential)

Trips Reduced	Measure
	Credit for Surrounding Bicycle Environment
7	<- Totals

ike Enhancing Infrastructure Measures (Non-Residential)

Trips Reduced	Measure
	Credit for Surrounding Area Bike Environment
5	<- Totals

perational Measures (Applying to Commute Trips)

Trips Reduced	Measure
0	<- Totals

perational Measures (Applying to Employee Non-Commute Trips)

Trips Reduced	Measure
0	<- Totals

perational Measures (Applying to Customer Trips)

Trips Reduced	Measure
0	<- Totals

easures Reducing VMT (Non-Residential)

VMT Reduced	Measure
	Park and Ride Lots
0	<- Totals

easures Reducing VMT (Residential)

VMT Reduced	Measure
0	<- Totals

Total Percentage Trip Reduction
with Environmental Factors and Mitigation Measures

Travel Mode	Home-Work Trips	Home-Shop Trips	Home-Other Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Travel Mode	Work Trips	Employee Trips	Customer Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Other	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Changes made to the default values

The user has turned off the construction emissions default switch.

URBEMIS 7G: Version 3.2

'ile Name: palmdale.URB
'roject Name: Palmdale Transportation Center
'roject Location: South Coast Air Basin (Los Angeles area)

SUMMARY REPORT
(Pounds/Day - Winter)

ıREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	0.32	4.40	1.76	0.01
TOTALS (ppd, mitigated)	0.03	0.44	1.76	0.00

)PERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	26.62	35.71	223.87	10.04
TOTALS (ppd, mitigated)	26.62	35.71	223.87	10.04

URBEMIS 7G: Version 3.2

File Name: palmdale.URB
Project Name: Palmdale Transportation Center
Project Location: South Coast Air Basin (Los Angeles area)

DETAILED REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10
Natural Gas	0.32	4.40	1.76	0.01
Wood Stoves	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00
Landscaping - No winter emissions				
Consumer Prdcts	0.00			
TOTALS (ppd, unmitigated)	0.32	4.40	1.76	0.01

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Mitigated)

Source	ROG	NOx	CO	PM10
Natural Gas	0.03	0.44	1.76	0.00
Wood Stoves	0.00	0.00	0.00	0.00
Fireplaces	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions				
Consumer Prdcts	0.00			
TOTALS (ppd, mitigated)	0.03	0.44	1.76	0.00

Area Source Mitigation Measures

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2002 Temperature (F): 50 Season: Winter

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Metrolink Station	76.80 trips / unit	10.00	768.00
Park and Ride Lot	75.00 trips / unit	10.00	750.00
Convenience market (24	40.70 trips / 1000 sq. ft.	10.00	407.00
Bus Transfer	48.00 trips / unit	10.00	480.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00			100.00
Urban Buses	2.00			100.00
Motorcycles	3.00	100.00 % all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Custom
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35	40	40	40	40	40
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Metrolink Station				2.0	1.0	97
Park and Ride Lot				2.0	1.0	97
Convenience market (24 hour)				2.0	1.0	97
Bus Transfer				2.0	1.0	97

UNMITIGATED EMISSIONS

	ROG	NOx	CO	PM10
Metrolink Station	9.61	16.31	83.37	4.92
Park and Ride Lot	8.29	11.30	70.21	3.19
Convenience market (24 ho	4.04	3.83	32.52	0.93
Bus Transfer	4.67	4.27	37.77	1.01
	ROG	NOX	CO	PM10
TOTAL EMISSIONS (lbs/day)	26.62	35.71	223.87	10.04

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

MITIGATED EMISSIONS

	ROG	NOx	CO	PM10
Metrolink Station	9.61	16.31	83.37	4.92
Park and Ride Lot	8.29	11.30	70.21	3.19
Convenience market (24 ho	4.04	3.83	32.52	0.93
Bus Transfer	4.67	4.27	37.77	1.01
	ROG	NOX	CO	PM10
TOTAL EMISSIONS (lbs/day)	26.62	35.71	223.87	10.04

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

ENVIRONMENTAL FACTORS APPLICABLE TO THE PROJECT

Pedestrian Environment

0	Side Walks/Paths: No Sidewalks
0	Street Trees Provide Shade: No Coverage
0	Pedestrian Circulation Access: No Destinations
0	Visually Interesting Uses: No Uses Within Walking Distance
0	Street System Enhances Safety: No Streets
0	Pedestrian Safety from Crime: No Degree of Safety
0	Visually Interesting Walking Routes: No Visual Interest

0.0 <- Pedestrian Environmental Credit
0.0 /19 = 0.00 <- Pedestrian Effectiveness Factor

Transit Service

0	Transit Service: Dial-A-Ride or No Transit Service

0.0 <- Transit Effectiveness
0.0 <- Pedestrian Factor
0.0 <-Total
0.0 /110 = 0.00 <-Transit Effectiveness Factor

Bicycle Environment

0	Interconnected Bikeways: No Bikeway Coverage
0	Bike Routes Provide Paved Shoulders: No Routes
0.0	Safe Vehicle Speed Limits: No Routes Provided
0	Safe School Routes: No Schools
0	Uses w/in Cycling Distance: No Uses w/in Cycling Distance
0	Bike Parking Ordinance: No Ordinance or Unenforceable

0.0 <- Bike Environmental Credit
0.0 /20 = 0.00 <- Bike Effectiveness Factor

MITIGATION MEASURES SELECTED FOR THIS PROJECT
(All mitigation measures are printed, even if
the selected land uses do not constitute a mixed use.)

Transit Infrastructure Measures

% Trips Reduced	Measure
15	Credit for Existing or Planned Community Transit Service
15	<- Totals

Pedestrian Enhancing Infrastructure Measures (Residential)

% Trips Reduced	Measure
2	Credit for Surrounding Pedestrian Environment
2	<- Totals

Pedestrian Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
2	Credit for Surrounding Pedestrian Environment
2	<- Totals

Bicycle Enhancing Infratructure Measures (Residential)

% Trips Reduced	Measure
7	Credit for Surrounding Bicycle Environment
7	<- Totals

Bike Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
5	Credit for Surrounding Area Bike Environment
5	<- Totals

Operational Measures (Applying to Commute Trips)

% Trips Reduced	Measure
0	<- Totals

Operational Measures (Applying to Employee Non-Commute Trips)

% Trips Reduced	Measure
0	<- Totals

Operational Measures (Applying to Customer Trips)

% Trips Reduced	Measure
0	<- Totals

Measures Reducing VMT (Non-Residential)

VMT Reduced	Measure
0	Park and Ride Lots
0	<- Totals

Measures Reducing VMT (Residential)

VMT Reduced	Measure
0	<- Totals

Total Percentage Trip Reduction
with Environmental Factors and Mitigation Measures

Travel Mode	Home-Work Trips	Home-Shop Trips	Home-Other Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Travel Mode	Work Trips	Employee Trips	Customer Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Other	0.00	0.00	0.00
Totals	0.00	0.00	0.00

hanges made to the default values

he user has turned off the construction emissions default switch.

APPENDIX B

CALINE4 CO HOT SPOT MODEL PRINTOUTS

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 3rd NBA	2	-150	2	0	AG	158	6.1	.0	10.0
B. 3rd NBD	2	0	2	150	AG	165	6.1	.0	10.0
C. 3rd NBL	2	-150	0	0	AG	57	6.1	.0	10.0
D. 3rd SBA	-2	150	-2	0	AG	143	6.1	.0	10.0
E. 3rd SBD	-2	0	-2	-150	AG	244	6.1	.0	10.0
F. 3rd SBL	-2	150	0	0	AG	19	6.1	.0	10.0
G. Tech EBA	-150	-7	0	-7	AG	289	6.1	.0	10.0
H. Tech EBD	0	-7	150	-7	AG	304	6.1	.0	10.0
I. Tech EBL	-150	-5	0	0	AG	27	6.1	.0	10.0
J. Tech WBA	150	7	0	7	AG	288	6.1	.0	10.0
K. Tech WBD	0	7	-150	7	AG	357	6.1	.0	10.0
L. Tech WBL	150	5	0	0	AG	89	6.1	.0	10.0
M. 3rd NBAX	2	-750	2	-150	AG	215	6.1	.0	10.0
N. 3rd NBDX	2	150	2	750	AG	165	6.1	.0	10.0
O. 3rd SBAX	-2	750	-2	150	AG	162	6.1	.0	10.0
P. 3rd SBDX	-2	-150	-2	-750	AG	244	6.1	.0	10.0
Q. Tech EBAX	-750	-7	-150	-7	AG	316	6.1	.0	10.0
R. Tech EBDX	150	-7	750	-7	AG	304	6.1	.0	10.0
S. Tech WBAX	750	7	150	7	AG	377	6.1	.0	10.0

T. Tech WBDX * -150 7 -750 7 * AG 357 6.1 .0 10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-14	1.8
2. NW	-8	14	1.8
3. SW	-8	-14	1.8
4. NE	8	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	.8	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	174.	.8	.1	.0	.0	.0	.2	.0	.0	.0
3. SW	83.	.8	.0	.0	.0	.0	.1	.0	.0	.3
4. NE	263.	.8	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	97.	.7	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.7	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.7	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.6	.2	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	175.	.5	.0	.1	.0	.1	.0	.0	.0	.0
11. SW mdblk	6.	.6	.1	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	185.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.0	.3	.0	.0	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 3rd NBA	*	2	-150	2	0	*	AG	156	6.1	.0	10.0
B. 3rd NBD	*	2	0	2	150	*	AG	178	6.1	.0	10.0
C. 3rd NBL	*	2	-150	0	0	*	AG	1	6.1	.0	10.0
D. 3rd SBA	*	-2	150	-2	0	*	AG	181	6.1	.0	10.0
E. 3rd SBD	*	-2	0	-2	-150	*	AG	169	6.1	.0	10.0
F. 3rd SBL	*	-2	150	0	0	*	AG	0	6.1	.0	10.0
G. P-12 EBA	*	-150	0	0	0	*	AG	2	6.1	.0	10.0
H. P-12 EBD	*	0	0	150	0	*	AG	0	6.1	.0	10.0
I. P-12 EBL	*	-150	-2	0	0	*	AG	22	6.1	.0	10.0
J. P-12 WBA	*	150	0	0	0	*	AG	0	6.1	.0	10.0
K. P-12 WBD	*	0	0	-150	0	*	AG	15	6.1	.0	10.0
L. P-12 WBL	*	150	2	0	0	*	AG	0	6.1	.0	10.0
M. 3rd NBAX	*	2	-750	2	-150	*	AG	157	6.1	.0	10.0
N. 3rd NBDX	*	2	150	2	750	*	AG	178	6.1	.0	10.0
O. 3rd SBAX	*	-2	750	-2	150	*	AG	181	6.1	.0	10.0
P. 3rd SBDX	*	-2	-150	-2	-750	*	AG	169	6.1	.0	10.0
Q. P-12 EBAX	*	-750	0	-150	0	*	AG	24	6.1	.0	10.0
R. P-12 EBDX	*	150	0	750	0	*	AG	0	6.1	.0	10.0
S. P-12 WBAX	*	750	0	150	0	*	AG	0	6.1	.0	10.0

T. P-12 WBDX * -150 0 -750 0 * AG 15 6.1 .0 10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-7	1.8
2. NW	-8	7	1.8
3. SW	-8	-7	1.8
4. NE	8	7	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	7	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.4	.0	.2	.0	.1	.0	.0	.0	.0
2. NW	6.	.4	.0	.1	.0	.2	.0	.0	.0	.0
3. SW	6.	.4	.0	.1	.0	.2	.0	.0	.0	.0
4. NE	354.	.4	.0	.2	.0	.1	.0	.0	.0	.0
5. ES mdblk	271.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	269.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	355.	.4	.2	.0	.0	.0	.1	.0	.0	.0
10. NW mdblk	174.	.4	.0	.1	.0	.2	.0	.0	.0	.0
11. SW mdblk	5.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	186.	.4	.0	.2	.0	.1	.0	.0	.0	.0
13. ES blk	271.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	86.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	270.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	*	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 3rd NBA	*	2	-150	2	0	*	AG	35	7.3	.0	10.0
B. 3rd NBD	*	2	0	2	150	*	AG	157	7.3	.0	10.0
C. 3rd NBL	*	2	-150	0	0	*	AG	10	7.3	.0	10.0
D. 3rd SBA	*	-2	150	-2	0	*	AG	105	7.3	.0	10.0
E. 3rd SBD	*	-2	0	-2	-150	*	AG	68	7.3	.0	10.0
F. 3rd SBL	*	-2	150	0	0	*	AG	105	7.3	.0	10.0
G. AveQ EBA	*	-150	-5	0	-5	*	AG	124	7.3	.0	10.0
H. AveQ EBD	*	0	-5	150	-5	*	AG	233	7.3	.0	10.0
I. AveQ EBL	*	-150	-5	0	0	*	AG	25	7.3	.0	10.0
J. AveQ WBA	*	150	5	0	5	*	AG	217	7.3	.0	10.0
K. AveQ WBD	*	0	5	-150	5	*	AG	182	7.3	.0	10.0
L. AveQ WBL	*	150	5	0	0	*	AG	19	7.3	.0	10.0
M. 3rd NBAX	*	2	-750	2	-150	*	AG	45	7.3	.0	10.0
N. 3rd NBDX	*	2	150	2	750	*	AG	157	7.3	.0	10.0
O. 3rd SBAX	*	-2	750	-2	150	*	AG	210	7.3	.0	10.0
P. 3rd SBDX	*	-2	-150	-2	-750	*	AG	68	7.3	.0	10.0
Q. AveQ EBAX	*	-750	-5	-150	-5	*	AG	149	7.3	.0	10.0
R. AveQ EBDX	*	150	-5	750	-5	*	AG	233	7.3	.0	10.0
S. AveQ WBAX	*	750	5	150	5	*	AG	236	7.3	.0	10.0

T. AveQ WBDX	*	-150	5	-750	5	*	AG	182	7.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-12	1.8
2. NW	-8	12	1.8
3. SW	-8	-12	1.8
4. NE	8	12	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	12	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.7	.0	.2	.0	.0	.0	.1	.0	.1
2. NW	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.7	.0	.1	.0	.1	.0	.1	.0	.0
4. NE	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.6	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	95.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.5	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	357.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.1	.0	.1	.0	.1	.0	.0
11. SW mdblk	3.	.4	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	187.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	357.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	4.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Trans NBA	*	0	-150	0	0	*	AG	0	6.1	.0	10.0
B. Trans NBD	*	0	0	0	150	*	AG	0	6.1	.0	10.0
C. Trans NBL	*	2	-150	0	0	*	AG	0	6.1	.0	10.0
D. Trans SBA	*	0	150	0	0	*	AG	0	6.1	.0	10.0
E. Trans SBD	*	0	0	0	-150	*	AG	0	6.1	.0	10.0
F. Trans SBL	*	-2	150	0	0	*	AG	0	6.1	.0	10.0
G. Tech EBA	*	-150	-5	0	-5	*	AG	336	6.1	.0	13.5
H. Tech EBD	*	0	-5	150	-5	*	AG	336	6.1	.0	10.0
I. Tech EBL	*	-150	-2	0	0	*	AG	0	6.1	.0	10.0
J. Tech WBA	*	150	7	0	7	*	AG	417	6.1	.0	10.0
K. Tech WBD	*	0	7	-150	7	*	AG	417	6.1	.0	10.0
L. Tech WBL	*	150	5	0	0	*	AG	0	6.1	.0	10.0
M. Trans NBAX	*	0	-750	0	-150	*	AG	0	6.1	.0	10.0
N. Trans NBDX	*	0	150	0	750	*	AG	0	6.1	.0	10.0
O. Trans SBAX	*	0	750	0	150	*	AG	0	6.1	.0	10.0
P. Trans SBDX	*	0	-150	0	-750	*	AG	0	6.1	.0	10.0
Q. Tech EBAX	*	-750	-5	-150	-5	*	AG	336	6.1	.0	13.5
R. Tech EBDX	*	150	-5	750	-5	*	AG	336	6.1	.0	10.0
S. Tech WBAX	*	750	7	150	7	*	AG	417	6.1	.0	10.0

T. Tech WBDX * -150 7 -750 7 * AG 417 6.1 .0 10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-7	14	1.8
3. SW	-7	-14	1.8
4. NE	7	14	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-7	150	1.8
11. SW mdblk	-7	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	7	-600	1.8
18. NW blk	-7	600	1.8
19. SW blk	-7	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	83.	.7	.0	.0	.0	.0	.0	.0	.0	.3
2. NW	263.	.7	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	277.	.6	.0	.0	.0	.0	.0	.0	.3	.0
4. NE	97.	.7	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.6	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.7	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	291.	.1	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	111.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	69.	.1	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	248.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	321.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	141.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	39.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	219.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
2. NW	.0	.0	.4	.0	.0	.0	.0	.0	.1	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
4. NE	.0	.4	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Sierra NBA	*	7	-150	7	0	*	AG	806	7.3	.0	10.0
B. Sierra NBD	*	7	0	7	150	*	AG	872	7.3	.0	10.0
C. Sierra NBL	*	5	-150	0	0	*	AG	343	7.3	.0	10.0
D. Sierra SBA	*	-5	150	-5	0	*	AG	940	7.3	.0	13.5
E. Sierra SBD	*	-5	0	-5	-150	*	AG	1137	7.3	.0	10.0
F. Sierra SBL	*	-2	150	0	0	*	AG	0	7.3	.0	10.0
G. Tech EBA	*	-150	-5	0	-5	*	AG	270	7.3	.0	10.0
H. Tech EBD	*	0	-5	150	-5	*	AG	0	7.3	.0	10.0
I. Tech EBL	*	-150	-5	0	0	*	AG	66	7.3	.0	10.0
J. Tech WBA	*	150	0	0	0	*	AG	0	7.3	.0	10.0
K. Tech WBD	*	0	0	-150	0	*	AG	416	7.3	.0	10.0
L. Tech WBL	*	150	2	0	0	*	AG	0	7.3	.0	10.0
M. Sierra NBAX	*	7	-750	7	-150	*	AG	1149	7.3	.0	10.0
N. Sierra NBDX	*	7	150	7	750	*	AG	872	7.3	.0	10.0
O. Sierra SBAX	*	-5	750	-5	150	*	AG	940	7.3	.0	13.5
P. Sierra SBDX	*	-5	-150	-5	-750	*	AG	1137	7.3	.0	10.0
Q. Tech EBAX	*	-750	-5	-150	-5	*	AG	336	7.3	.0	10.0
R. Tech EBDX	*	150	-5	750	-5	*	AG	0	7.3	.0	10.0
S. Tech WBAX	*	750	0	150	0	*	AG	0	7.3	.0	10.0

T. Tech WBDX	*	-150	0	-750	0	*	AG	416	7.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-12	1.8
2. NW	-14	7	1.8
3. SW	-12	-12	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	187.	2.0	.9	.0	.2	.0	.3	.0	.0	.0
2. NW	172.	2.3	.2	.0	.2	.0	1.0	.0	.1	.0
3. SW	173.	2.2	.2	.0	.2	.0	1.2	.0	.0	.0
4. NE	187.	2.0	.9	.0	.2	.0	.3	.0	.0	.0
5. ES mdblk	272.	.6	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	101.	1.0	.0	.0	.0	.0	.1	.0	.2	.0
7. WS mdblk	79.	1.0	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	268.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	2.1	.9	.0	.3	.2	.3	.0	.0	.0
10. NW mdblk	174.	1.9	.2	.2	.0	.9	.2	.0	.0	.0
11. SW mdblk	7.	2.1	.2	.2	.2	.1	1.2	.0	.0	.0
12. NE mdblk	187.	2.0	.0	1.0	.0	.3	.2	.0	.0	.0
13. ES blk	270.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	268.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	2.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	2.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 No Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.2	.0	.0	.4	.0	.0	.0	.0
2. NW	.0	.0	.2	.0	.3	.0	.0	.2	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.4	.0	.0	.2	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.6
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.4
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	1.4	.0	.0	.6	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.4	1.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.6	.0	.0	1.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	1.1	.5	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 3rd NBA	2	-150	2	0	AG	178	6.1	.0	10.0
B. 3rd NBD	2	0	2	150	AG	205	6.1	.0	10.0
C. 3rd NBL	2	-150	0	0	AG	57	6.1	.0	10.0
D. 3rd SBA	-2	150	-2	0	AG	150	6.1	.0	10.0
E. 3rd SBD	-2	0	-2	-150	AG	251	6.1	.0	10.0
F. 3rd SBL	-2	150	0	0	AG	26	6.1	.0	10.0
G. Tech EBA	-150	-7	0	-7	AG	289	6.1	.0	10.0
H. Tech EBD	0	-7	150	-7	AG	311	6.1	.0	10.0
I. Tech EBL	-150	-5	0	0	AG	27	6.1	.0	10.0
J. Tech WBA	150	7	0	7	AG	308	6.1	.0	10.0
K. Tech WBD	0	7	-150	7	AG	357	6.1	.0	10.0
L. Tech WBL	150	5	0	0	AG	89	6.1	.0	10.0
M. 3rd NBAX	2	-750	2	-150	AG	235	6.1	.0	10.0
N. 3rd NBDX	2	150	2	750	AG	205	6.1	.0	10.0
O. 3rd SBAX	-2	750	-2	150	AG	176	6.1	.0	10.0
P. 3rd SBDX	-2	-150	-2	-750	AG	251	6.1	.0	10.0
Q. Tech EBAX	-750	-7	-150	-7	AG	316	6.1	.0	10.0
R. Tech EBDX	150	-7	750	-7	AG	311	6.1	.0	10.0
S. Tech WBAX	750	7	150	7	AG	397	6.1	.0	10.0

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T. Tech WBDX     *  -150      7  -750      7 *  AG     357    6.1      .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   2

     JOB: Palmdale Trans. Center 2003 w/ Project
     RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-14	1.8
2. NW	-8	14	1.8
3. SW	-8	-14	1.8
4. NE	8	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	.8	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	97.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	83.	.8	.0	.0	.0	.0	.1	.0	.0	.3
4. NE	186.	.8	.2	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.7	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.7	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.6	.2	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	175.	.6	.0	.1	.0	.2	.0	.0	.0	.0
11. SW mdblk	6.	.6	.1	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	185.	.6	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 3rd NBA	*	2	-150	2	0	*	AG	163	6.1	.0	10.0
B. 3rd NBD	*	2	0	2	150	*	AG	198	6.1	.0	10.0
C. 3rd NBL	*	2	-150	0	0	*	AG	1	6.1	.0	10.0
D. 3rd SBA	*	-2	150	-2	0	*	AG	181	6.1	.0	10.0
E. 3rd SBD	*	-2	0	-2	-150	*	AG	189	6.1	.0	10.0
F. 3rd SBL	*	-2	150	0	0	*	AG	7	6.1	.0	10.0
G. P-12 EBA	*	-150	0	0	0	*	AG	2	6.1	.0	10.0
H. P-12 EBD	*	0	0	150	0	*	AG	14	6.1	.0	10.0
I. P-12 EBL	*	-150	-2	0	0	*	AG	22	6.1	.0	10.0
J. P-12 WBA	*	150	2	0	2	*	AG	20	6.1	.0	10.0
K. P-12 WBD	*	0	2	-150	2	*	AG	15	6.1	.0	10.0
L. P-12 WBL	*	150	2	0	0	*	AG	20	6.1	.0	10.0
M. 3rd NBAX	*	2	-750	2	-150	*	AG	164	6.1	.0	10.0
N. 3rd NBDX	*	2	150	2	750	*	AG	198	6.1	.0	10.0
O. 3rd SBAX	*	-2	750	-2	150	*	AG	188	6.1	.0	10.0
P. 3rd SBDX	*	-2	-150	-2	-750	*	AG	189	6.1	.0	10.0
Q. P-12 EBAX	*	-750	0	-150	0	*	AG	24	6.1	.0	10.0
R. P-12 EBDX	*	150	0	750	0	*	AG	14	6.1	.0	10.0
S. P-12 WBAX	*	750	2	150	2	*	AG	40	6.1	.0	10.0

T. P-12 WBDX * -150 2 -750 2 * AG 15 6.1 .0 10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-7	1.8
2. NW	-8	8	1.8
3. SW	-8	-7	1.8
4. NE	8	8	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	7	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.5	.0	.2	.0	.1	.0	.0	.0	.0
2. NW	6.	.4	.0	.1	.0	.2	.0	.0	.0	.0
3. SW	6.	.5	.0	.1	.0	.2	.0	.0	.0	.0
4. NE	354.	.5	.0	.2	.0	.1	.0	.0	.0	.0
5. ES mdblk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	93.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	355.	.4	.2	.0	.0	.0	.1	.0	.0	.0
10. NW mdblk	174.	.5	.0	.1	.0	.2	.0	.0	.0	.0
11. SW mdblk	5.	.4	.1	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	186.	.5	.0	.2	.0	.1	.0	.0	.0	.0
13. ES blk	274.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	87.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 3rd NBA	*	2	-150	2	0	*	AG	35	7.3	.0	10.0
B. 3rd NBD	*	2	0	2	150	*	AG	164	7.3	.0	10.0
C. 3rd NBL	*	2	-150	0	0	*	AG	10	7.3	.0	10.0
D. 3rd SBA	*	-2	150	-2	0	*	AG	124	7.3	.0	10.0
E. 3rd SBD	*	-2	0	-2	-150	*	AG	68	7.3	.0	10.0
F. 3rd SBL	*	-2	150	0	0	*	AG	105	7.3	.0	10.0
G. AveQ EBA	*	-150	-5	0	-5	*	AG	130	7.3	.0	10.0
H. AveQ EBD	*	0	-5	150	-5	*	AG	239	7.3	.0	10.0
I. AveQ EBL	*	-150	-5	0	0	*	AG	32	7.3	.0	10.0
J. AveQ WBA	*	150	5	0	5	*	AG	237	7.3	.0	10.0
K. AveQ WBD	*	0	5	-150	5	*	AG	221	7.3	.0	10.0
L. AveQ WBL	*	150	5	0	0	*	AG	19	7.3	.0	10.0
M. 3rd NBAX	*	2	-750	2	-150	*	AG	45	7.3	.0	10.0
N. 3rd NBDX	*	2	150	2	750	*	AG	164	7.3	.0	10.0
O. 3rd SBAX	*	-2	750	-2	150	*	AG	229	7.3	.0	10.0
P. 3rd SBDX	*	-2	-150	-2	-750	*	AG	68	7.3	.0	10.0
Q. AveQ EBAX	*	-750	-5	-150	-5	*	AG	162	7.3	.0	10.0
R. AveQ EBDX	*	150	-5	750	-5	*	AG	239	7.3	.0	10.0
S. AveQ WBAX	*	750	5	150	5	*	AG	256	7.3	.0	10.0

T. AveQ WBDX	*	-150	5	-750	5	*	AG	221	7.3	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	8	-12	1.8
2. NW	*	-8	12	1.8
3. SW	*	-8	-12	1.8
4. NE	*	8	12	1.8
5. ES mdblk	*	150	-12	1.8
6. WN mdblk	*	-150	12	1.8
7. WS mdblk	*	-150	-12	1.8
8. EN mdblk	*	150	12	1.8
9. SE mdblk	*	8	-150	1.8
10. NW mdblk	*	-8	150	1.8
11. SW mdblk	*	-8	-150	1.8
12. NE mdblk	*	8	150	1.8
13. ES blk	*	600	-12	1.8
14. WN blk	*	-600	12	1.8
15. WS blk	*	-600	-12	1.8
16. EN blk	*	600	12	1.8
17. SE blk	*	8	-600	1.8
18. NW blk	*	-8	600	1.8
19. SW blk	*	-8	-600	1.8
20. NE blk	*	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	354.	.8	.0	.2	.0	.1	.0	.1	.0	.1
2. NW	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.7	.0	.1	.0	.2	.0	.1	.0	.0
4. NE	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.6	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	95.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.6	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	357.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.6	.0	.1	.0	.2	.0	.1	.0	.0
11. SW mdblk	3.	.4	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.1	.0	.1	.0	.0
13. ES blk	276.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	357.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	4.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Trans NBA	*	0	-150	0	0	*	AG	77	6.1	.0	10.0
B. Trans NBD	*	0	0	0	150	*	AG	0	6.1	.0	10.0
C. Trans NBL	*	2	-150	0	0	*	AG	20	6.1	.0	10.0
D. Trans SBA	*	0	150	0	0	*	AG	0	6.1	.0	10.0
E. Trans SBD	*	0	0	0	-150	*	AG	49	6.1	.0	10.0
F. Trans SBL	*	-2	150	0	0	*	AG	0	6.1	.0	10.0
G. Tech EBA	*	-150	-5	0	-5	*	AG	343	6.1	.0	13.5
H. Tech EBD	*	0	-5	150	-5	*	AG	413	6.1	.0	10.0
I. Tech EBL	*	-150	-2	0	0	*	AG	0	6.1	.0	10.0
J. Tech WBA	*	150	7	0	7	*	AG	417	6.1	.0	10.0
K. Tech WBD	*	0	7	-150	7	*	AG	437	6.1	.0	10.0
L. Tech WBL	*	150	5	0	0	*	AG	42	6.1	.0	10.0
M. Trans NBAX	*	0	-750	0	-150	*	AG	97	6.1	.0	10.0
N. Trans NBDX	*	0	150	0	750	*	AG	0	6.1	.0	10.0
O. Trans SBAX	*	0	750	0	150	*	AG	0	6.1	.0	10.0
P. Trans SBDX	*	0	-150	0	-750	*	AG	49	6.1	.0	10.0
Q. Tech EBAX	*	-750	-5	-150	-5	*	AG	343	6.1	.0	13.5
R. Tech EBDX	*	150	-5	750	-5	*	AG	413	6.1	.0	10.0
S. Tech WBAX	*	750	7	150	7	*	AG	459	6.1	.0	10.0

T. Tech WBDX * -150 7 -750 7 * AG 437 6.1 .0 10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-7	14	1.8
3. SW	-7	-14	1.8
4. NE	7	14	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-7	150	1.8
11. SW mdblk	-7	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	7	-600	1.8
18. NW blk	-7	600	1.8
19. SW blk	-7	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	83.	.8	.0	.0	.0	.0	.0	.0	.0	.4
2. NW	97.	.8	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	83.	.7	.0	.0	.0	.0	.0	.0	.0	.3
4. NE	97.	.8	.0	.0	.0	.0	.0	.0	.0	.1
5. ES mdblk	277.	.8	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.7	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.8	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	352.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	179.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	8.	.3	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	181.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	179.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	180.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
2. NW	.0	.4	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.4	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	811. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Sierra NBA	7	-150	7	0	AG	806	7.3	.0	10.0
B. Sierra NBD	7	0	7	150	AG	927	7.3	.0	10.0
C. Sierra NBL	5	-150	0	0	AG	353	7.3	.0	10.0
D. Sierra SBA	-5	150	-5	0	AG	973	7.3	.0	13.5
E. Sierra SBD	-5	0	-5	-150	AG	1159	7.3	.0	10.0
F. Sierra SBL	-2	150	0	0	AG	0	7.3	.0	10.0
G. Tech EBA	-150	-5	0	-5	AG	292	7.3	.0	10.0
H. Tech EBD	0	-5	150	-5	AG	0	7.3	.0	10.0
I. Tech EBL	-150	-5	0	0	AG	121	7.3	.0	10.0
J. Tech WBA	150	0	0	0	AG	0	7.3	.0	10.0
K. Tech WBD	0	0	-150	0	AG	459	7.3	.0	10.0
L. Tech WBL	150	2	0	0	AG	0	7.3	.0	10.0
M. Sierra NBAX	7	-750	7	-150	AG	1159	7.3	.0	10.0
N. Sierra NBDX	7	150	7	750	AG	927	7.3	.0	10.0
O. Sierra SBAX	-5	750	-5	150	AG	973	7.3	.0	13.5
P. Sierra SBDX	-5	-150	-5	-750	AG	1159	7.3	.0	10.0
Q. Tech EBAX	-750	-5	-150	-5	AG	413	7.3	.0	10.0
R. Tech EBDX	150	-5	750	-5	AG	0	7.3	.0	10.0
S. Tech WBAX	750	0	150	0	AG	0	7.3	.0	10.0

T. Tech WBDX * -150 0 -750 0 * AG 459 7.3 .0 10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-12	1.8
2. NW	-14	7	1.8
3. SW	-12	-12	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	187.	2.0	.9	.0	.2	.0	.3	.0	.0	.0
2. NW	172.	2.3	.2	.0	.2	.0	1.0	.0	.1	.0
3. SW	173.	2.2	.2	.0	.2	.0	1.2	.0	.0	.0
4. NE	187.	2.0	.9	.0	.2	.0	.3	.0	.0	.0
5. ES mdblk	272.	.7	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	101.	1.1	.0	.0	.0	.0	.1	.0	.2	.0
7. WS mdblk	79.	1.1	.0	.0	.0	.1	.0	.0	.4	.0
8. EN mdblk	268.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	2.1	.9	.0	.3	.2	.4	.0	.0	.0
10. NW mdblk	174.	1.9	.2	.2	.0	.9	.2	.0	.0	.0
11. SW mdblk	7.	2.2	.2	.2	.2	.1	1.2	.0	.0	.0
12. NE mdblk	187.	2.0	.0	1.0	.0	.3	.2	.0	.0	.0
13. ES blk	270.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	269.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	2.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	2.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	2.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Palmdale Trans. Center 2003 w/ Project
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.3	.0	.0	.4	.0	.0	.0	.0
2. NW	.0	.0	.2	.0	.3	.0	.0	.2	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.4	.0	.0	.3	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	.1	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.2	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.6
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.4
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	1.4	.0	.0	.6	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.4	1.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.6	.0	.0	1.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	1.2	.6	.0	.0	.0	.0	.0

APPENDIX 3

City of Plamdale

Multi-Modal Transportation Center

Anaverde Creek Improvements

September 28, 2001

RECEIVED
OCT 23 2001
PLANNING DEPT
CASE #
CUP 01-16
HYDRAULIC

REGISTERED PROFESSIONAL ENGINEER
GEORGE
No. 19830
Exp 9-30-01
CIVIL
STATE OF CALIFORNIA

Prepared by
Sverdrup Civil, Inc.
950 East Palmdale Boulevard
Palmdale, Ca 93550
(661) 265-8580

Hydraulic Analysis
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Introduction

The purpose of this project is to accomplish the vital step of enclosing the Anaverde Creek storm water channel for development of a Multi-Modal Transportation Center (MMTC) in the City of Palmdale. The MMTC development program will be accomplished in a series of several individual projects. Enclosing the storm channel in a box storm drain will provide an area for construction of a train boarding platform for the MMTC.

Multi-Phase Project Development

This project is the initial construction effort in a multi-phase program to develop the MMTC. The Anverde Channel is located adjacent to the Metrolink railroad tracks, in the area where a train boarding platform will be located. Therefore, the open channel of the Anverde Creek will have to be enclosed for construction of the platform over the top of the box culvert.

An alternative to enclosing the channel is to relocate the channel away from the area of the platform. However, the cost of relocating the channel and the disadvantages of incorporating an open channel within the MMTC facility are not beneficial. Therefore, the best alternative is to contain the storm water in an enclosed storm drain structure. The enclosure will be a double 12 X 6 feet reinforced concrete box (RCB) storm drain. The RCB will extend through the area where the platform will be located.

With construction of the proposed RCB, a length of 560 feet will be available for construction of the train boarding platform. The next phase in development of the Transportation Center will involve design and construction of the train boarding platform, parking areas and other features of the MMTC.

With the expectation that longer trains will be utilized in the future, it is anticipated that a future project will involve further lengthening of the train boarding platform to approximately 1,000 feet. When the need for longer train boarding platforms occurs, the RCB will be extended further in conjunction with that project.

Planning for the MMTC involves abandonment and removal of Sixth Street in the area of the Transportation Center. Although Sixth Street will remain open at the completion of this project, it will be closed and removed with later phases of development of the transportation center. At completion of this project, it is anticipated that Sixth Street will remain open for some time.

Channel Improvements

Significant modifications are programmed in overall development of the Anaverde Creek channel in conjunction with projects that are not directly associated with development of the MMTC. The planned improvements will affect the volume of storm water that will reach the area of the MMTC via Anaverde Creek channel. The channel modifications associated with the proposed project are directed only at providing the space necessary for construction of the train boarding platform for the MMTC facility by containing the storm water in an underground box culvert in the immediate area of the MMTC.

the primary limiting factor in the hydraulic capacity of the Anaverde Creek channel is the inadequate size of the existing box culvert where the Anaverde Creek channel passes under

Sierra Highway. The limitations on hydraulic capacity imposed by the existing box culvert at Sierra Highway creates a backwater effect that causes the storm water to backup in the channel upstream of Sierra Highway, through the area of the proposed channel improvements, and beyond. Planning is underway for future improvements to take Sierra Highway up and over the railroad tracks on a grade separated overcrossing structure. With construction of a grade separation structure at Sierra Highway, it is expected that the existing box culvert under Sierra Highway will be removed and replaced with a higher capacity open channel, removing the restricted flow downstream of the MMTC.

Hydrology and Hydraulics

The hydrology of the Anaverde Creek channel is not a clear-cut matter in the area of the MMTC. The flow rate has been set at 1,485 cfs based on analysis of the drainage basin and planning of upsteam improvements. A hydrology study has not been done for this project because the entire Anaverde Creek channel and drainage basin were the subject of a more extensive storm water study. Based on that study, the City of Palmdale intends to construct a detention basin upstream of the project site. Prior to construction of the detention basin, the flow volume generated in the upsteam drainage basin could exceed the planned volume of 1,485 cfs for an equivalent storm intensity. However, the capacity of the existing upstream channel cannot keep the design flow contained within the channel banks, let alone a larger flow.

In the existing condition, the Anavede Channel upstream of the MMTC, has limited capacity, allowing for storm water to overtop the sides of the channel. Unlike most storm channels, the tread of the Anaverde Creek channel does not follow a low-lying basin where the flood level rises to contain the full flood flow. In the case of the Anverde Channel, if the water surface in the channel exceeds the channel bank, the water will spill out to the adjoining area and follow another drainage path that deviates from the thread of the Anaverde Creek channel. In general, the water will get back to the Anaverde Creek channel, but that doesn't happen until a point further downstream of the proposed MMTC facility. Therefore, the actual volume (flow rate) of storm water in the Anaverde Creek channel will be less than the planned discharge of 1, 485 cfs until the channel is improved throughout the area upsteam and downstream of the proposed project improvements.

Review of the MMTC for FEMA flood hazard has not been done for the proposed RCB construction project. Therefore, the flood hazard study will have to be done in conjunction with the scope of the design effort for the MMTC.

Hydraulic calculations are in Appendix A. Hydraulic calculations are based on a flow rate of 1,485 cfs, existing conditions upstream and downstream of the proposed channel improvements.

HYDRAULIC ANALYSIS FOR

6TH STREET E & ANAVERDE CREEK CHANNEL

July 27, 2001

Notes:

1. The software CulvertMaster and HEC-RAS were used for the analysis.
2. The geometry data was obtained from design plans (907cpp01.dgn, 907cpp02.dgn). The DTM is exst-trn.dtm.
3. The peakflow 1,485 was used for the analysis per the drainage report, "Anaverde Creek Hydraulic Analysis for Multimodal Transportation Center, Reinforced Concrete Double Box Culvert".

Contents:

- Box Culvert Analysis, North End Existing 2-6' X 3.5' CBC
- Channel Analysis (Hec-Ras)
- E-mail log
- Disk Copy of Hec-Ras Files
- Plans

BOX CULVERT ANALYSIS
NORTH END EXISTING 2-6' X 3.5' CBC

SOFTWARE: CULVERTMASTER

Culvert Designer/Analyzer Report
2-6' x 3.5' cbc

mments: 6TH STREET E & ANAVERDE CREEK CHANNEL
)RTH END EXISTING 2-6'X3.5' CBC

nalysis Component			
:torm Event	Design	Discharge	1,485.00 cfs
eak Discharge Method: User-Specified			
ıesign Discharge	1,485.00 cfs	Check Discharge	1,485.00 cfs
ailwater properties: Trapezoidal Channel			
:lope	0.010000 ft/ft	Mannings Coefficient	0.035
ıepth	5.89 ft	Left Side Slope	2 H : V
:ight Side Slope	2 H : V	Bottom Width	13.00 ft
ailwater conditions for Design Storm.			
ıischarge	1,485.00 cfs	Bottom Elevation	19.29 ft
ıepth	5.89 ft	Velocity	10.17 ft/s

Name	Description	Discharge	HW Elev	Velocity
Culvert-1	2-6 x 3.5 ft Box	451.82 cfs	28.98 ft	10.76 ft/s
Weir	Broad Crested	1,032.94 cfs	28.98 ft	N/A
Total	————	1,484.76 cfs	28.98 ft	N/A

Culvert Designer/Analyzer Report
2-6' x 3.5' cbc

mponent:Culvert-1

ulvert Summary			
:omputed Headwater Elevation	28.98 ft	Discharge	451.82 cfs
ılet Control HW Elev	27.30 ft	Tailwater Elevation	25.18 ft
ıutlet Control HW Elev	28.98 ft	Control Type	Outlet Control
leadwater Depth/ Height	2.30		

rades			
lpstream Invert	20.94 ft	Downstream Invert	19.82 ft
ength	165.00 ft	Constructed Slope	0.006788 ft/ft

ydraulic Profile			
'rofile	Pressure	Depth, Downstream	5.36 ft
;lope Type	N/A	Normal Depth	N/A ft
'low Regime	N/A	Critical Depth	3.50 ft
'elocity Downstream	10.76 ft/s	Critical Slope	0.007751 ft/ft

ection			
;ection Shape	Box	Mannings Coefficient	0.013
;ection Material	Concrete	Span	6.00 ft
;ection Size	6 x 3.5 ft	Rise	3.50 ft
lumber Sections	2		

ıutlet Control Properties			
)utlet Control HW Elev	28.98 ft	Upstream Velocity Head	1.80 ft
;e	0.40	Entrance Loss	0.72 ft

ılet Control Properties			
nlet Control HW Elev	27.30 ft	Flow Control	Submerged
nlet Type	45 ° wingwall flare, d=0.0430	Area Full	42.0 ft²
;	0.51000	HDS 5 Chart	9
ſ	0.66700	HDS 5 Scale	1
;	0.03090	Equation Form	2
'	0.80000		

Culvert Designer/Analyzer Report
2-6' x 3.5' cbc

mponent:Weir

ydraulic Component(s): Broad Crested					
ischarge	1,032.94	cfs	Allowable HW Elevation	28.98	ft
Veir Coefficient	2.65	US	Length	100.00	ft
rest Elevation	26.50	ft	Headwater Elevation	28.98	ft

CNANNEL ANALYSIS

SOFTWARE: HEC-RAS

1. Hec-Ras Output
2. Existing Channel, without CBC
3. Existing Channel, with 2-12'x6' CBC
4. Existing Channel at upstream of CBC, Proposed Channel at downstream of CBC
5. Proposed channel with CBC

Hec-Ras Output (Three Options)
Anaverde Creek Hydraulic Calc

7/25/01

		(1) Existing Channel, w/o CBC			(2) Existing Channel, w/ CBC			(3) Ex. Chl (upstream), new chl (downstream)			(4) New chl (up & downstream)		
River Sta	Q Total	W.S. Elev	overtopping RR	overtopping 8th Street E	W.S. Elev	overtopping RR	overtopping 8th Street E	W.S. Elev	overtopping RR	overtopping 8th Street E	W.S. Elev	overtopping RR	overtopping 8th Street E
	(cfs)	(ft)			(ft)			(ft)			(ft)		
16+80	1485	2636.04	No	Yes	2636.04	No	Yes	2636.04	No	Yes	2634.06	No	No
16+00	1485	2634.80	No	Yes	2634.80	No	Yes	2634.80	No	Yes	2634.11	No	No
15+00	1485	2634.88	No	Yes	2634.88	No	Yes	2634.88	No	Yes	2634.16	No	No
14+20	1485	2634.69	No	Yes	2634.37	No	Yes	2634.37	No	Yes	2634.18	No	No
14+10	1485	2633.88	No	Yes	2634.17	No	Yes	2634.17	No	Yes	2634.20	No	No
13+65	1485	2633.85	No	Yes	2633.85	No	Yes	2633.71	No	Yes	2633.69	No	No
13+00	1485	2633.04	No	Yes	2-12'x6' CBC			2-12'x6' CBC			2-12'x6' CBC		
12+00	1485	2632.40	No	Yes	2-12'x6' CBC			2-12'x6' CBC			2-12'x6' CBC		
11+00	1485	2631.87	No	Yes	2-12'x6' CBC			2-12'x6' CBC			2-12'x6' CBC		
10+00	1485	2631.55	Yes	Yes	2-12'x6' CBC			2-12'x6' CBC			2-12'x6' CBC		
09+00	1485	2630.76	Yes	Yes	2-12'x6' CBC			2-12'x6' CBC			2-12'x6' CBC		
07+95	1485	2630.14	Yes	Yes	2629.93	Yes	Yes	2629.12	No	No	2629.00	No	No
07+30	1485	2630.15	Yes	Yes	2630.15	Yes	Yes	2629.54	No	No	2629.54	No	No
07+00	1485	2629.52	Yes	Yes	2629.52	Yes	Yes	2629.49	No	No	2629.49	No	No
06+00	1485	2629.34	Yes	Yes	2629.34	Yes	Yes	2629.32	No	No	2629.30	No	No
05+00	1485	2629.27	Yes	Yes	2629.27	Yes	Yes	2629.15	No	No	2629.12	No	No
04+00	1485	2628.98	Yes	Yes	2628.98	Yes	Yes	2628.98	No	No	2628.98	No	No

Notes:

1. If option (3) is chosen for design, make sure RR has enough freeboard at upstream of 2-12'x6' CBC.
2. New channel at downstream should have the minimum height of 7.1 feet.
3. New channel at Sta. 13+65 to Sta. 14+20 should have the minimum height of 8.0 ft.

(1) Existing Channel

(2) Existing Channel with R/C Box at MMTC.

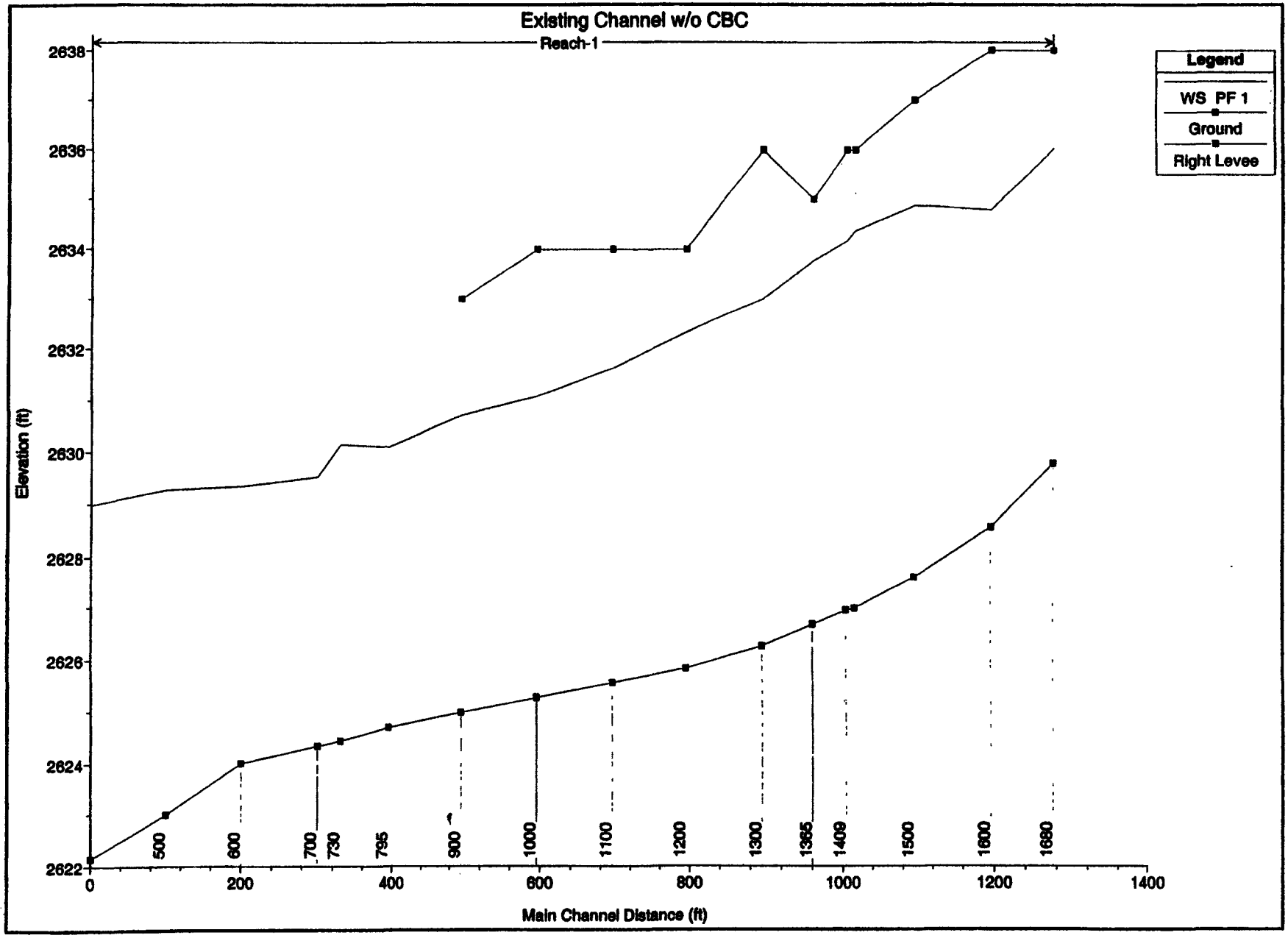
1. **Hec-Ras Output** - EXISTING CHANNEL

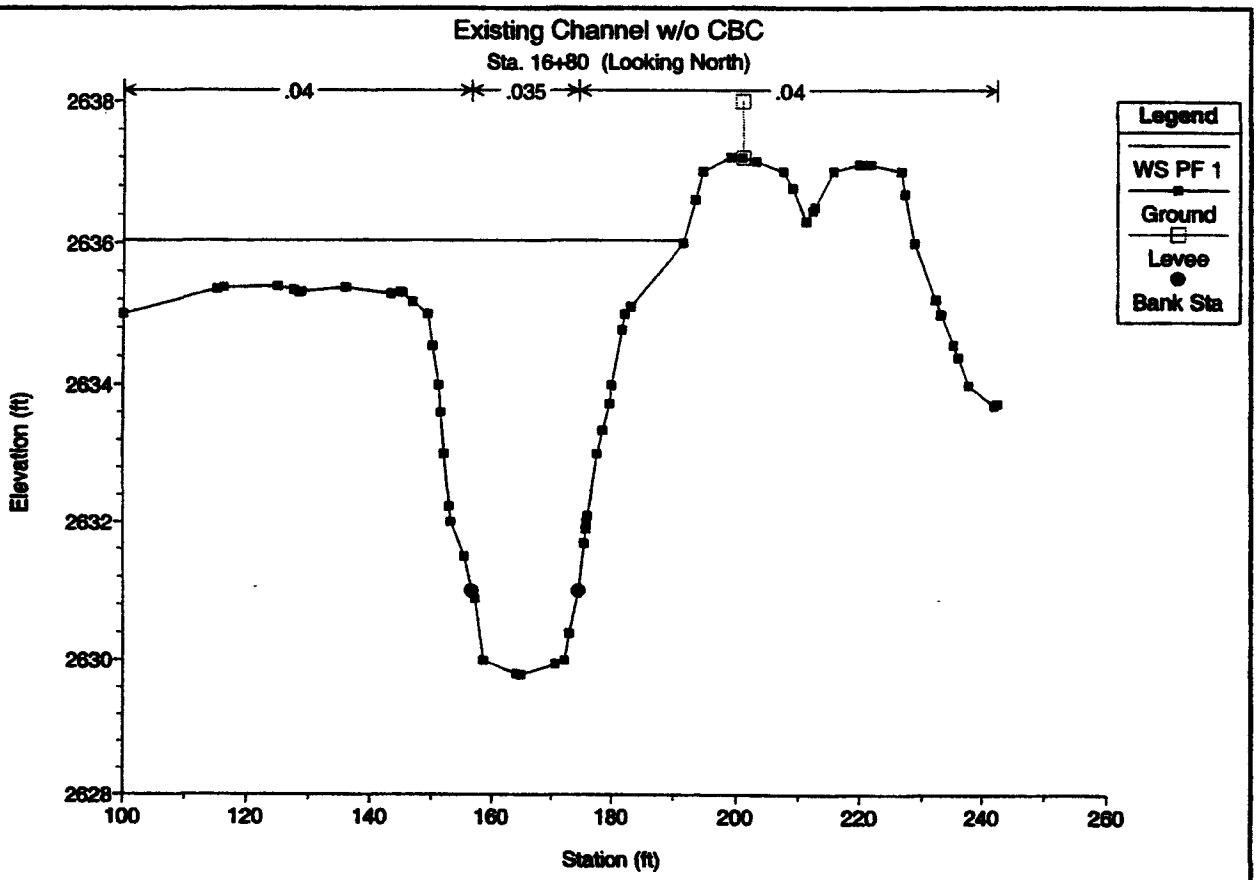
① EXISTING CHANNEL

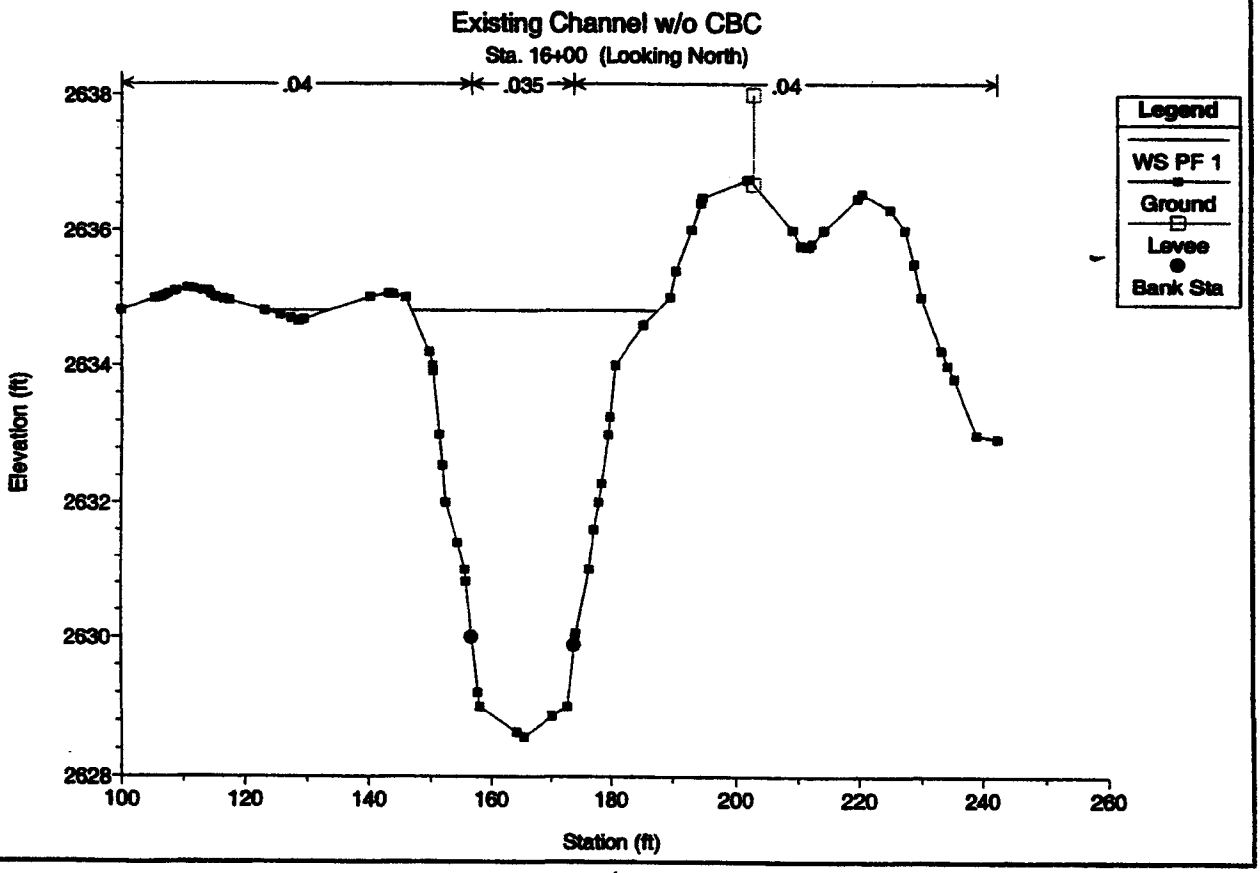
HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1

	1485.00	2629.79	2636.04	2635.03	2637.60	0.006488	11.09	196.17	91.64	0.80
	1485.00	2628.57	2634.80	2634.64	2636.94	0.008568	12.53	146.18	51.51	0.91
	1485.00	2627.61	2634.88	2634.88	2636.05	0.004471	10.03	229.18	93.74	0.68
	1485.00	2627.00	2634.69	2634.16	2635.42	0.002947	8.26	281.82	94.49	0.55
	1485.00	2626.96	2633.88	2633.18	2635.31	0.006122	11.58	214.65	92.55	0.79
	1485.00	2626.69	2633.85	2633.85	2634.99	0.004584	10.05	234.31	93.09	0.68
	1485.00	2626.28	2633.04	2633.04	2634.28	0.005170	10.28	219.71	92.19	0.72
	1485.00	2625.84	2632.40	2632.40	2633.48	0.004998	9.94	234.11	94.04	0.70
	1485.00	2625.56	2631.87	2631.66	2632.79	0.004423	9.07	246.14	93.08	0.66
	1485.00	2625.28	2631.55	2631.14	2632.33	0.003903	8.44	265.23	100.28	0.62
	1485.00	2624.99	2630.76	2630.76	2631.83	0.005880	9.78	227.23	94.43	0.75
	1485.00	2624.70	2630.14		2631.04	0.005036	8.82	266.23	142.53	0.69
	1485.00	2624.44	2630.15		2630.67	0.003073	7.23	335.43	142.53	0.55
	1485.00	2624.34	2629.52		2630.49	0.006154	9.45	255.77	142.53	0.76
	1485.00	2624.01	2629.34		2629.90	0.003631	7.30	313.94	142.53	0.58
	1485.00	2622.99	2629.27		2629.58	0.001742	5.71	409.81	142.53	0.42
	1485.00	2622.15	2628.98	2628.31	2629.38	0.002268	6.63	377.74	142.53	0.47

Exist Channel w/o CBC.


Existing Channel w/o CBC
Reach-1
Legend
WS PF 1
Ground
Right Levee
Elevation (ft)
2638
2636
2634
2632
2630
2628
2626
2624
2622
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)
500
600
700
730
795
900
1000
1100
1200
1300
1365
1409
1500
1600
1680


Existing Channel w/o CBC
Sta. 16+80 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2638
2636
2634
2632
2630
2628
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 16+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2638
2636
2634
2632
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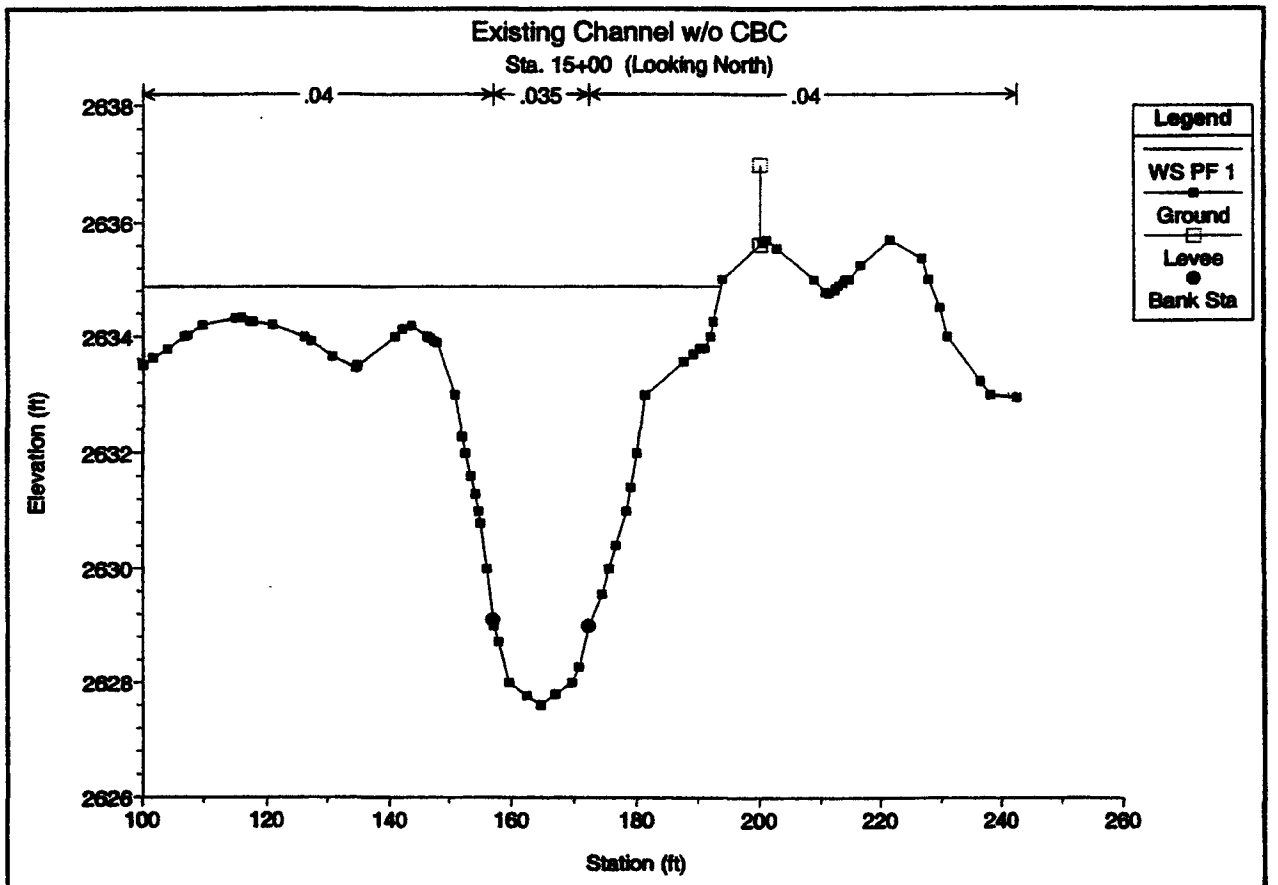
2628
100
120
140
160
180
200
220
240
260
Station (ft)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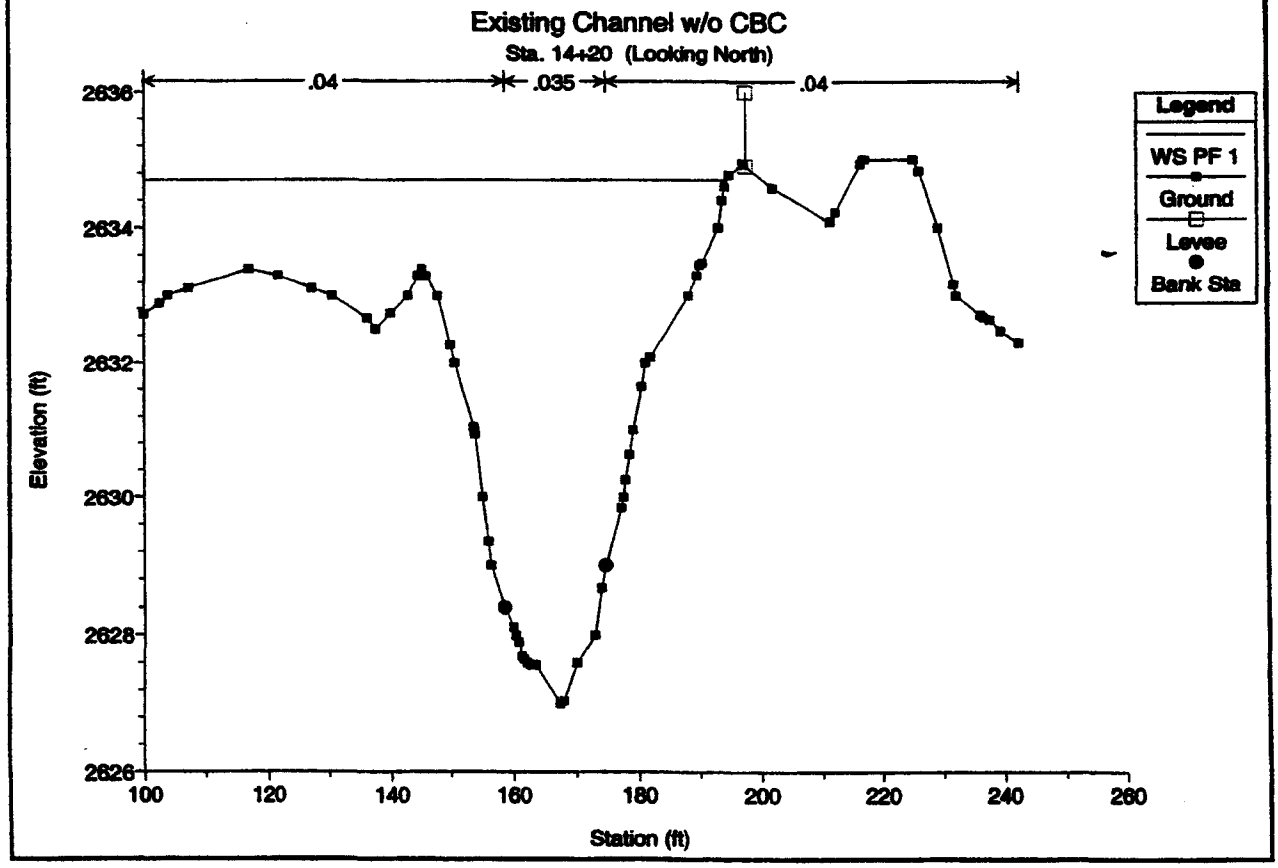
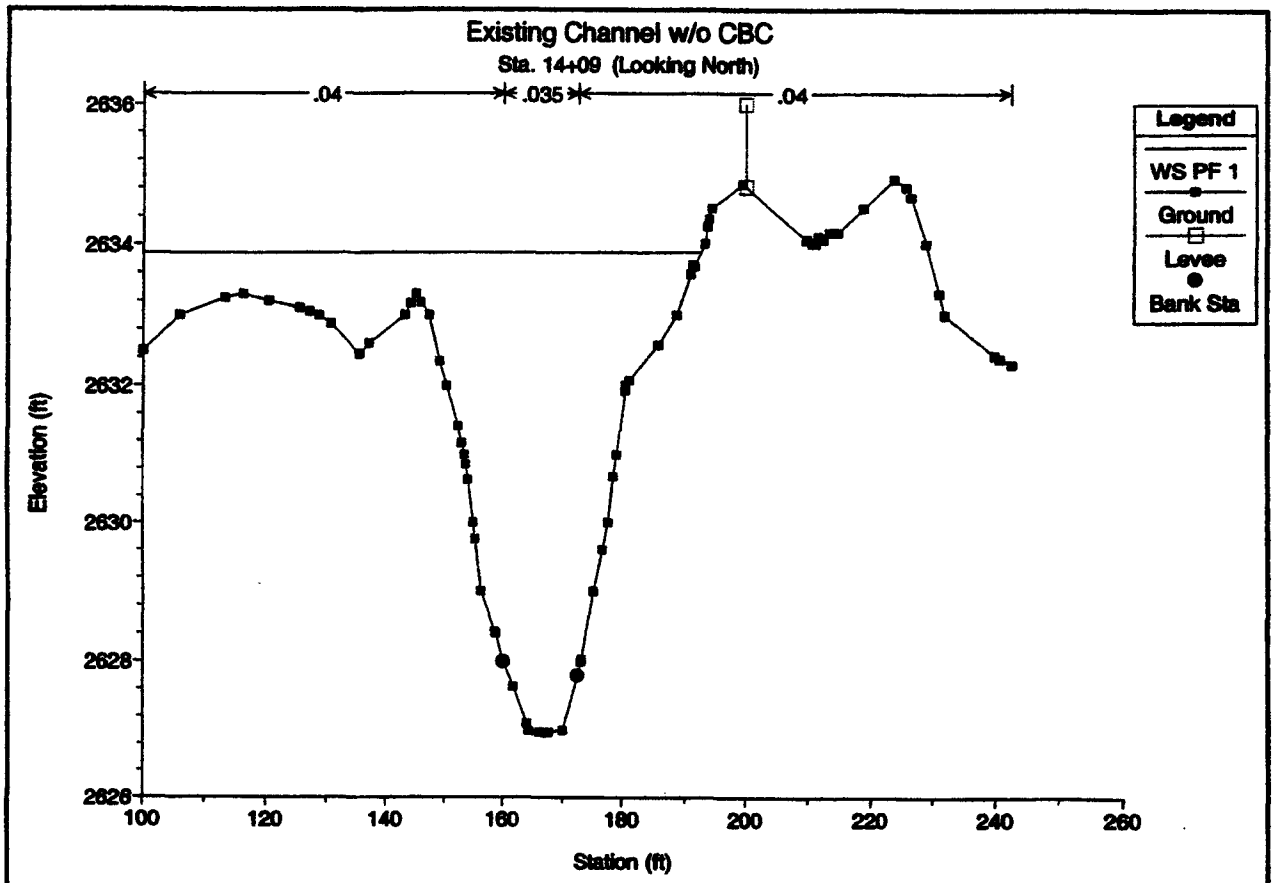
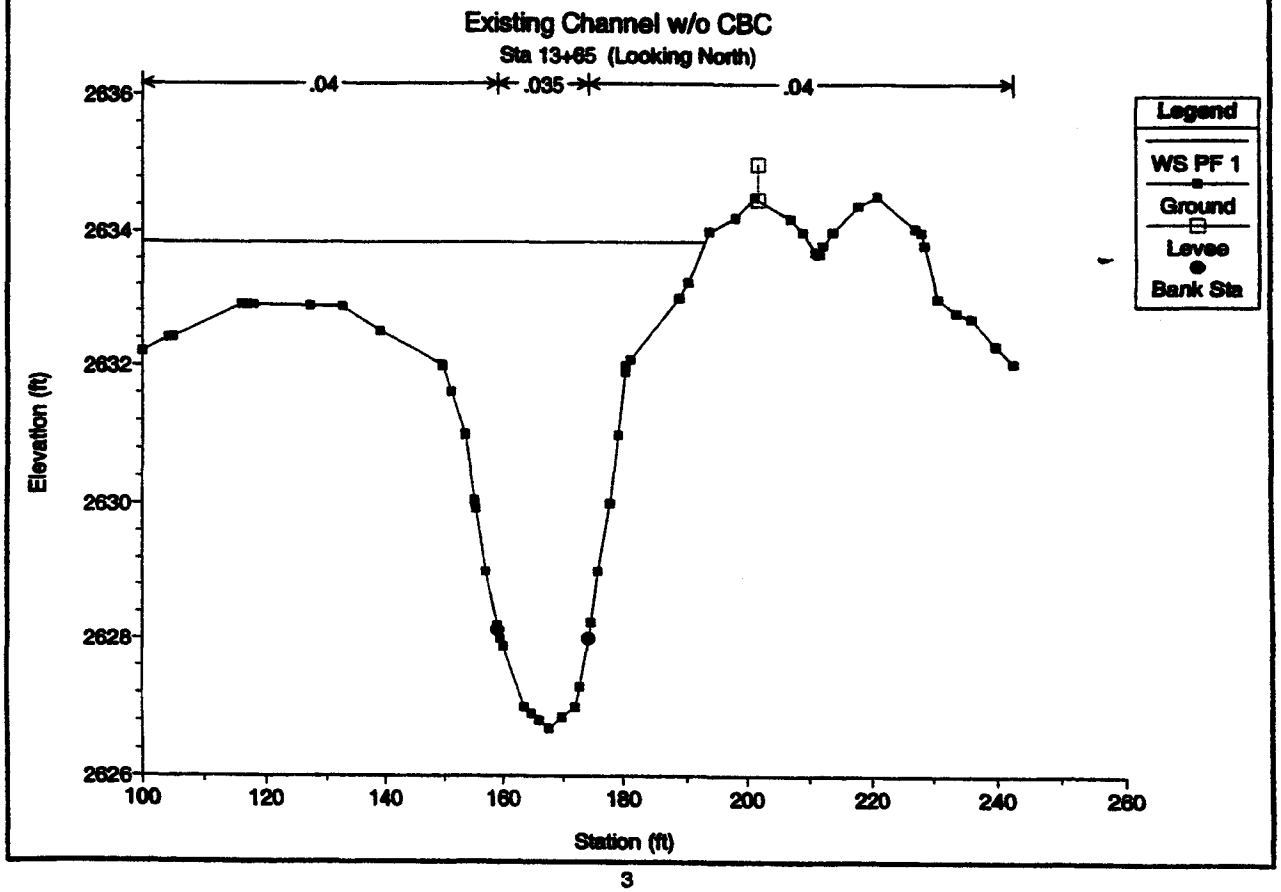
Sta. 15+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2638
2636
2634
2632
2630
2628
2626
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 14+20 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2636
2634
2632
2630
2628
2626
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 14+09 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2636
2634
2632
2630
2628
2626
100
120
140
160
180
200
220
240
260
Station (ft)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Sta 13+65 (Looking North)
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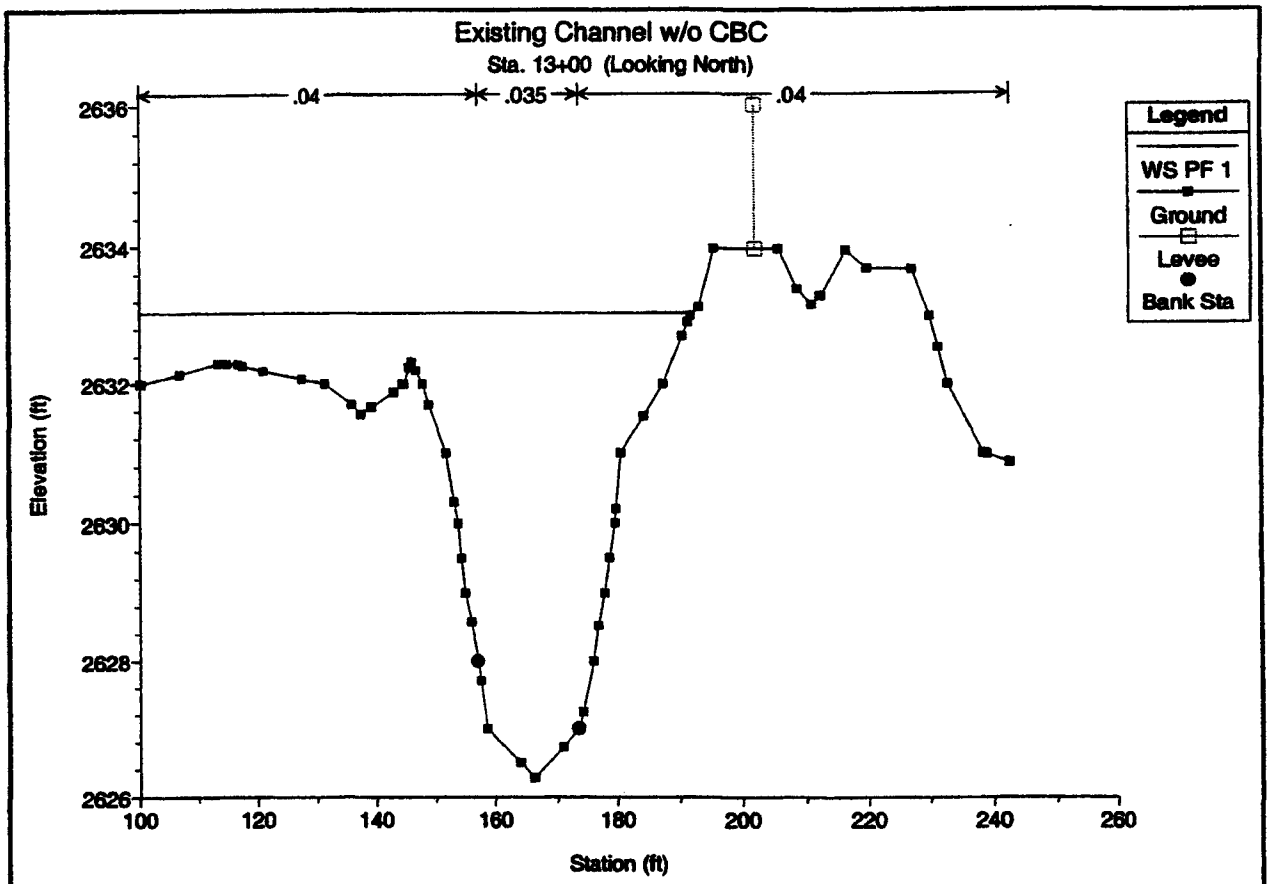
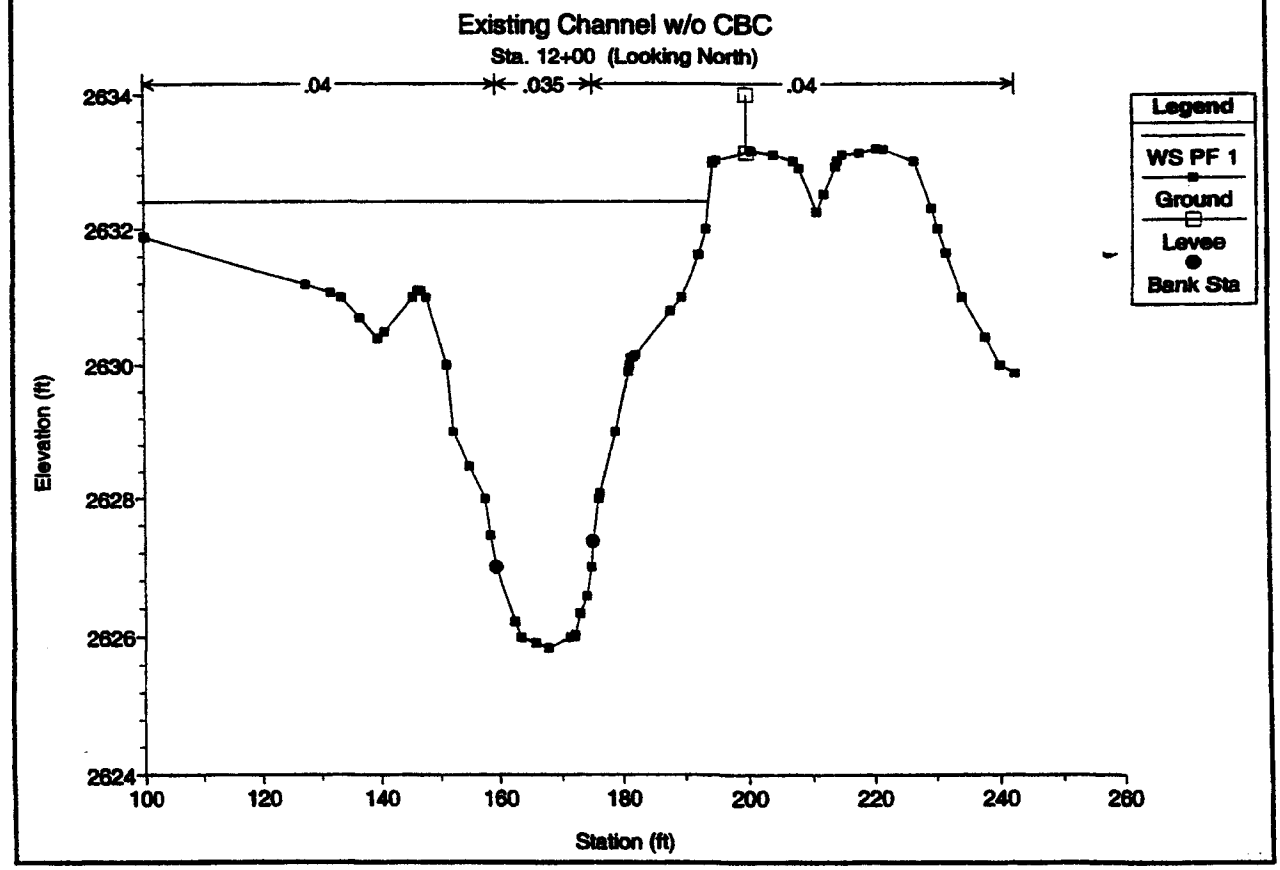
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2636
2634
2632
2630
2628
2626
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 13+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2636
2634
2632
2630
2628
2626
100
120
140
160
180
200
220
240
260
Station (ft)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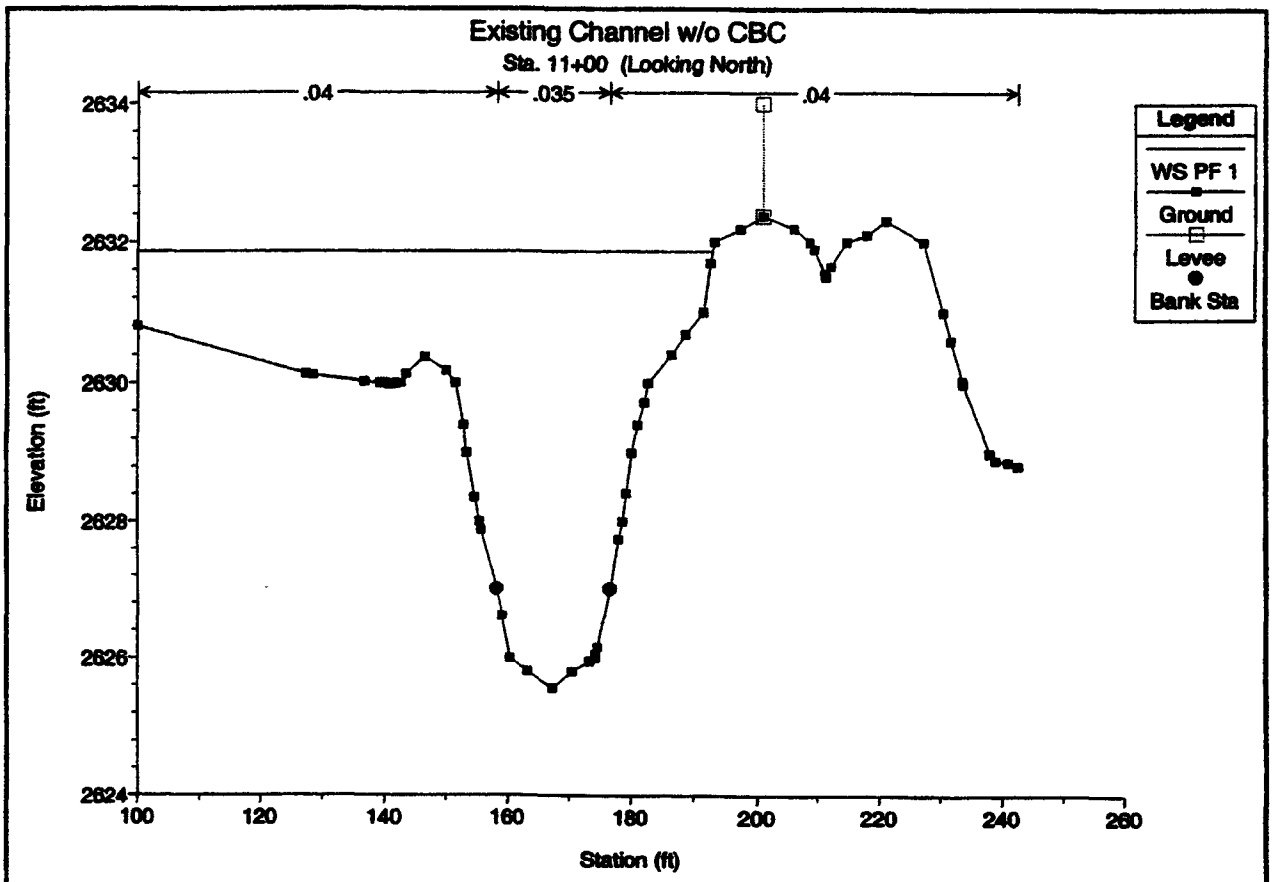
Sta. 12+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2634
2632
2630
2628
2626
2624
100
120
140
160
180
200
220
240
260
Station (ft)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Sta. 11+00 (Looking North)
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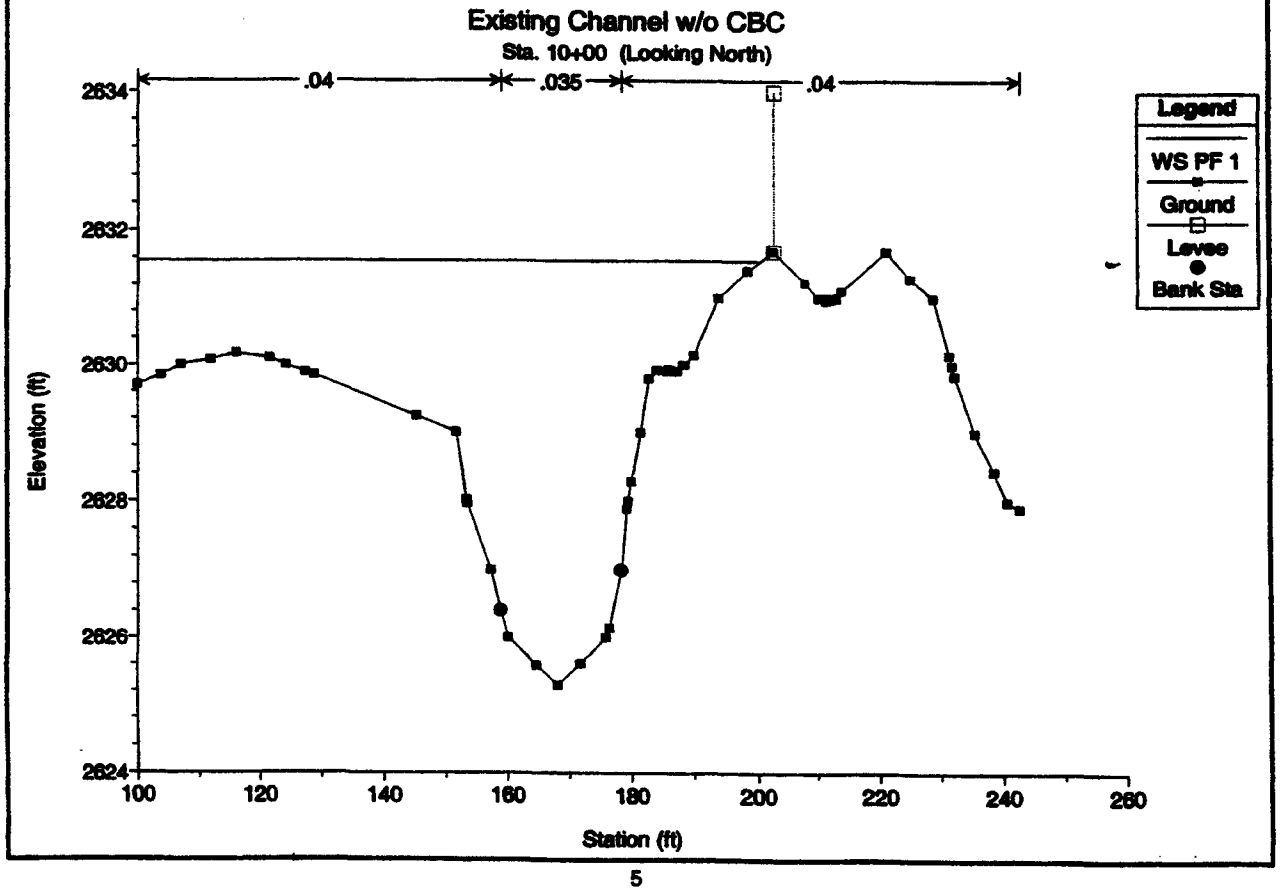
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2634
2632
2630
2628
2626
2624
100
120
140
160
180
200
220
240
260
Station (ft)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Sta. 10+00 (Looking North)
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.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
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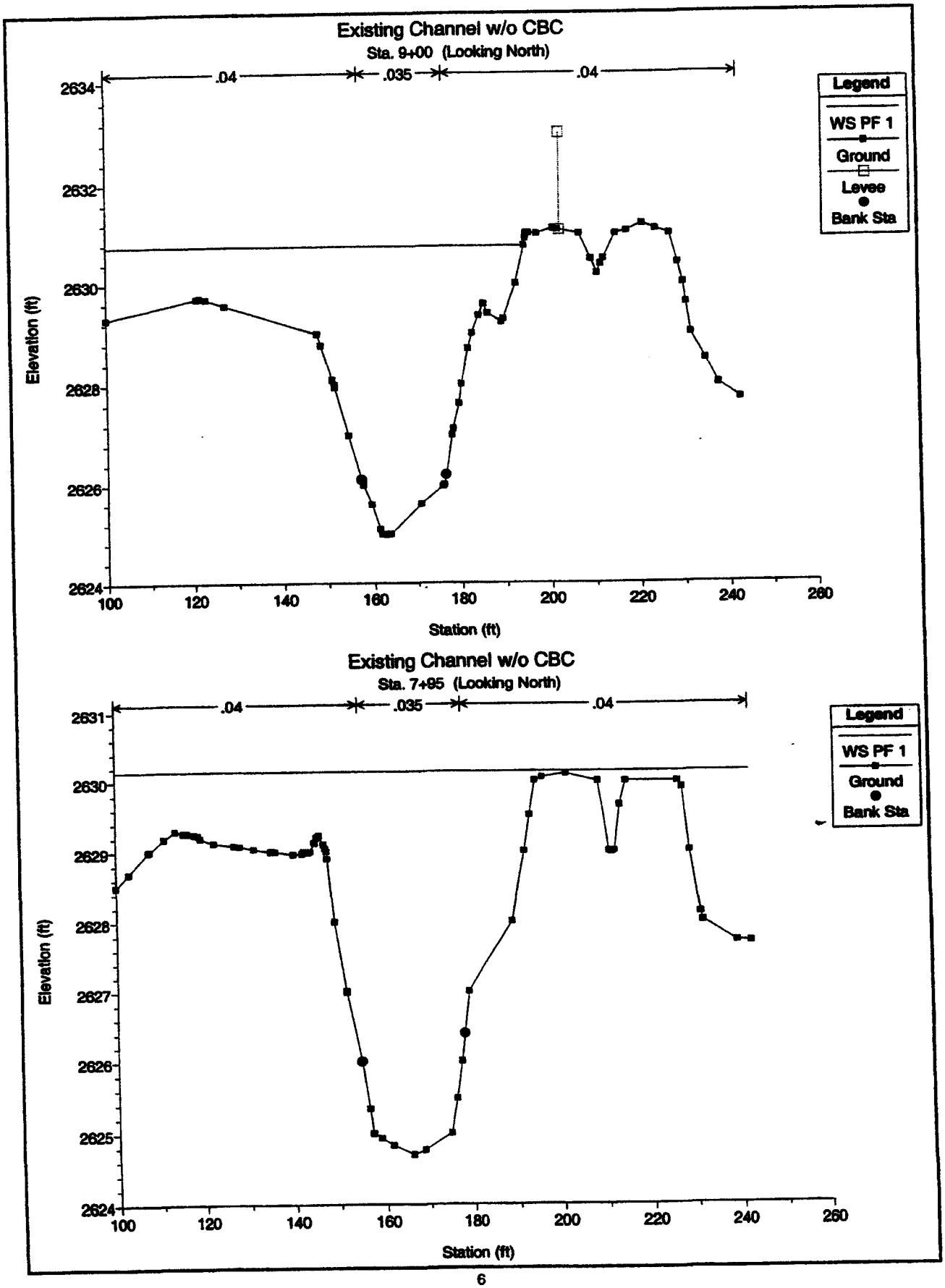
200
220
240
260
Station (ft)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Sta. 9+00 (Looking North)
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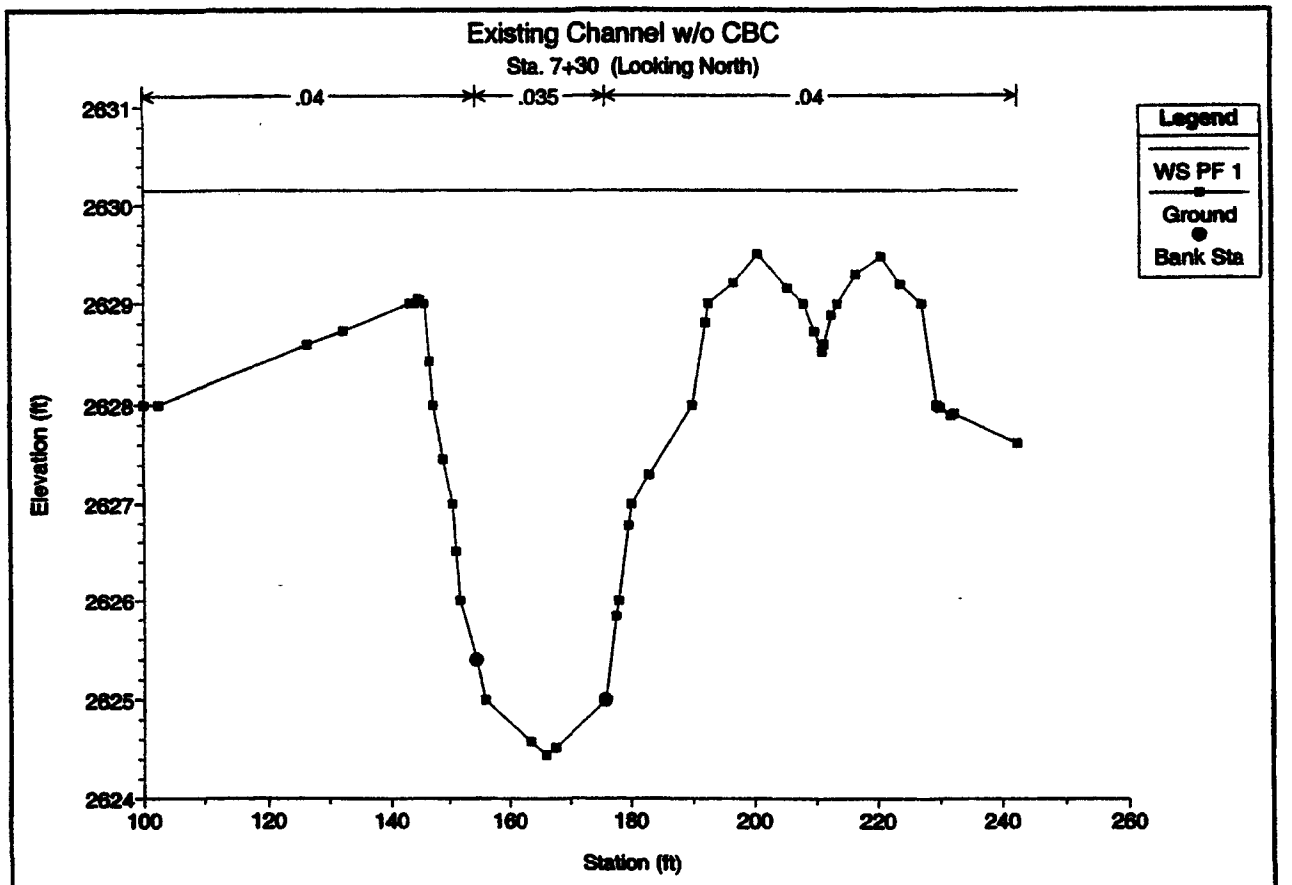
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Existing Channel w/o CBC
Sta. 7+95 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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Sta. 7+30 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
2631
2630
2629
2628
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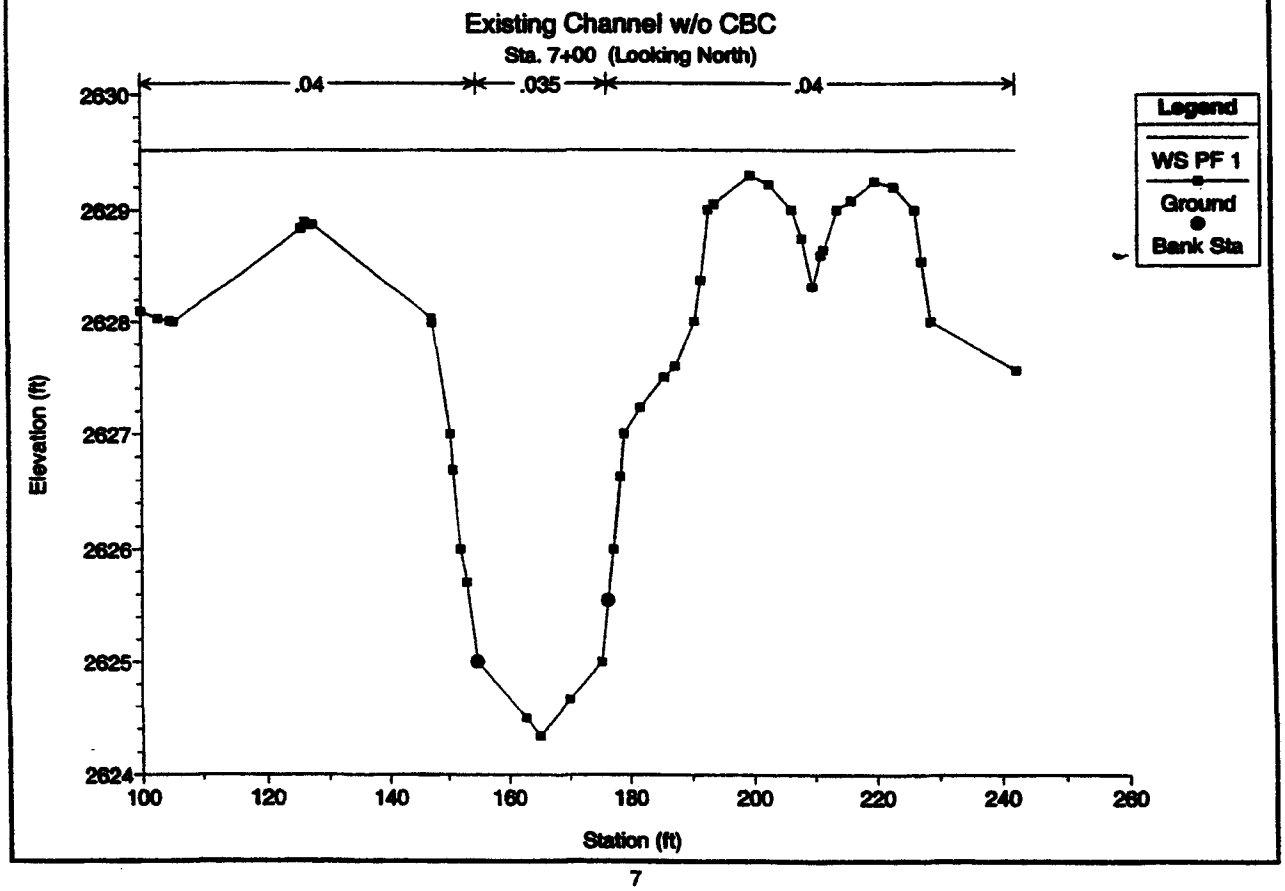
2626
2625
2624
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 7+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
2630
2629
2628
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2624
100
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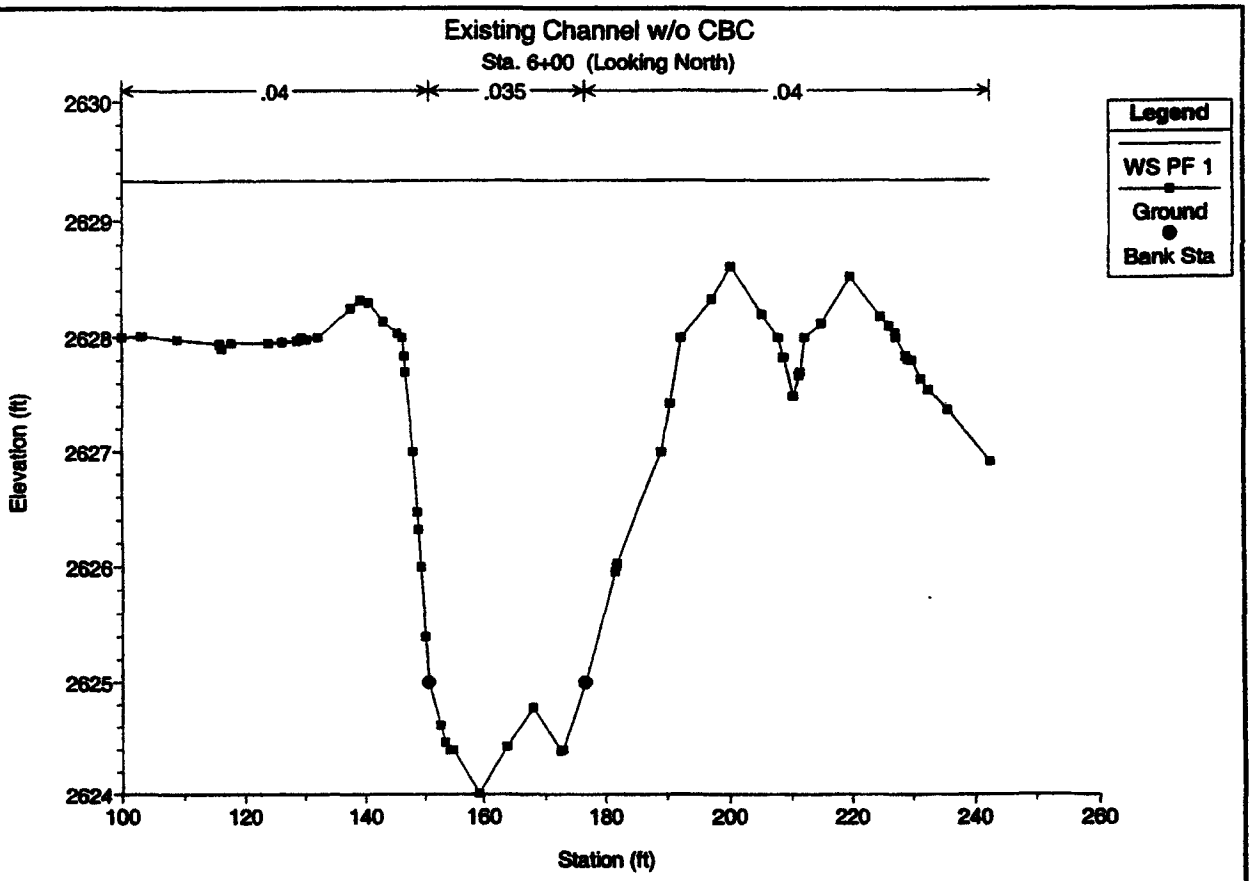
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 6+00 (Looking North)
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.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
2630
2629
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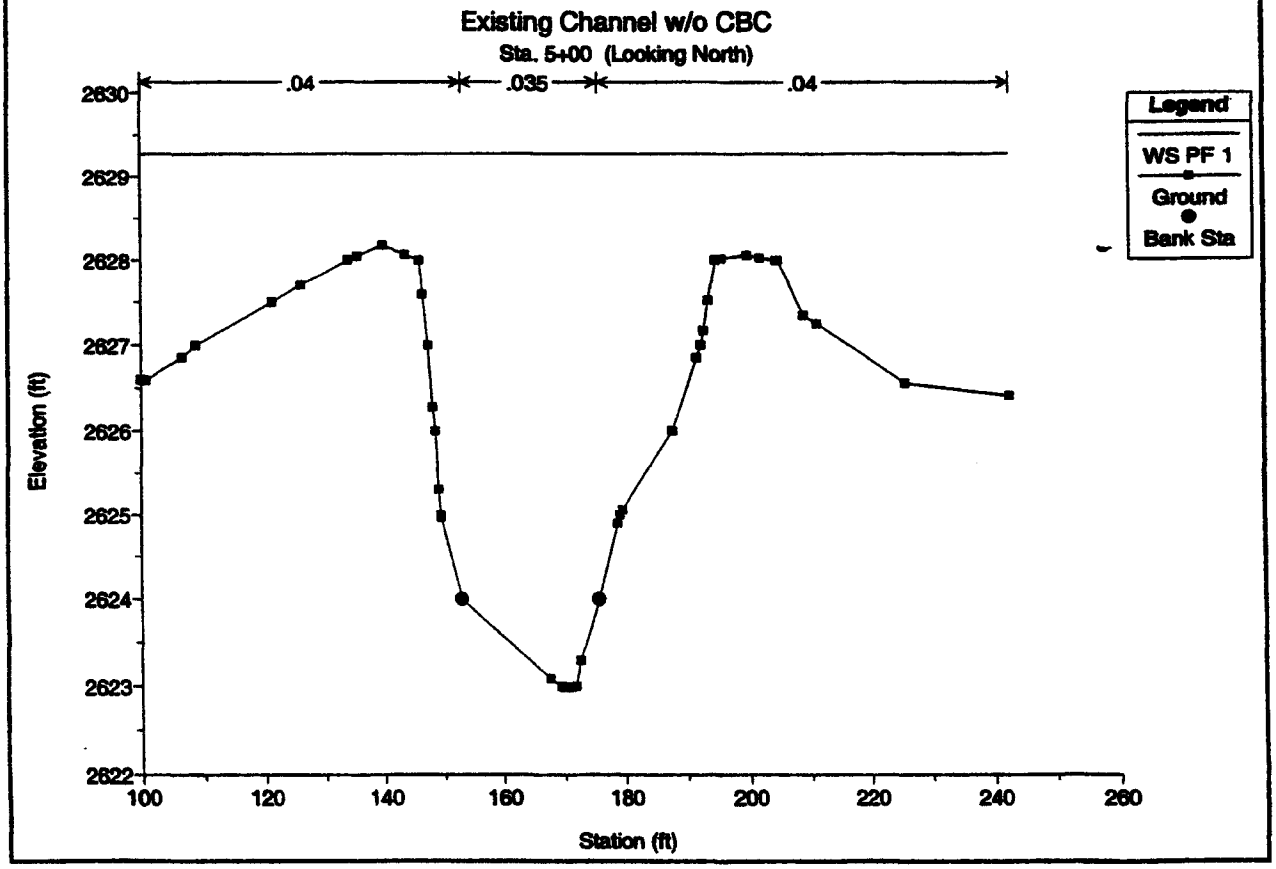
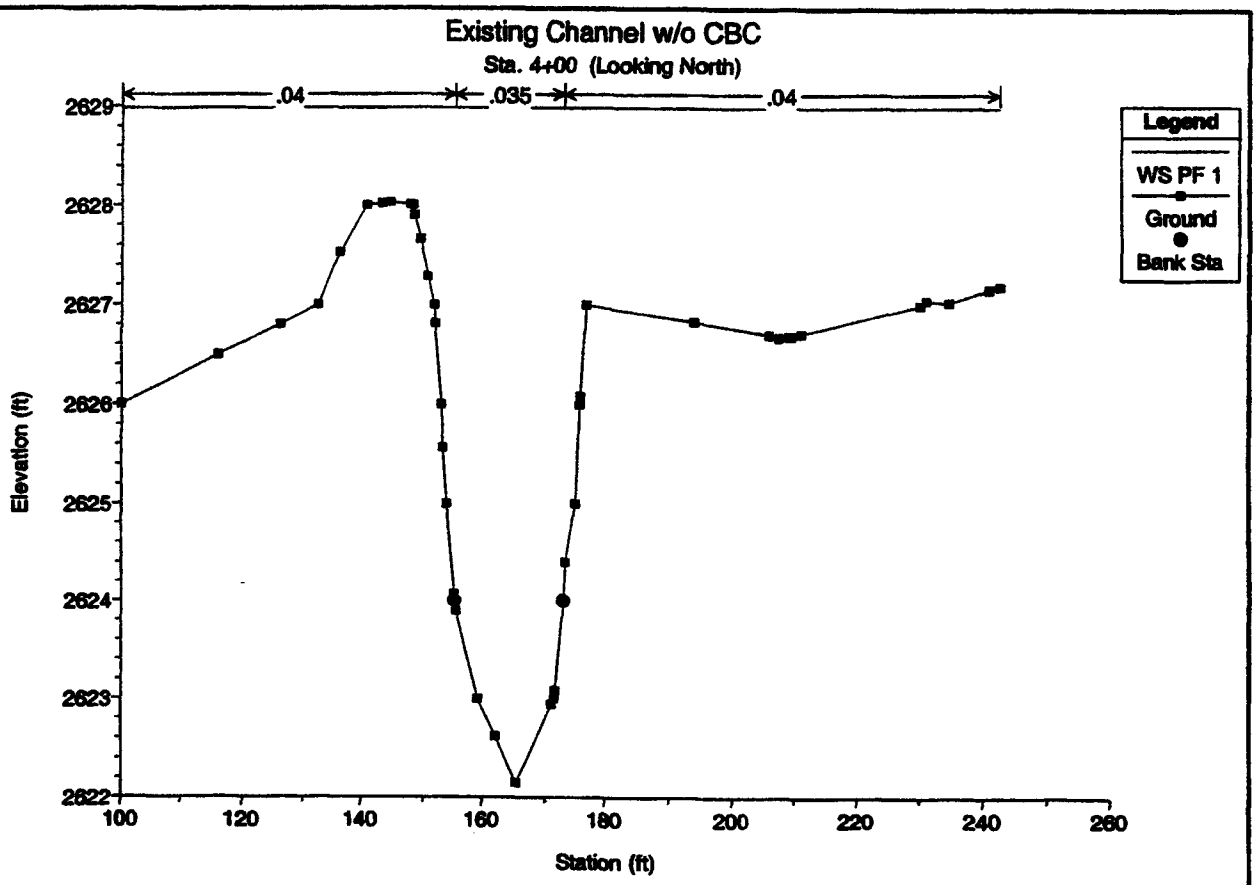
2627
2626
2625
2624
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 5+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
2630
2629
2628
2627
2626
2625
2624
2623
2622
100
120
140
160
180
200
220
240
260
Station (ft)


Existing Channel w/o CBC
Sta. 4+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
2629
2628
2627
2626
2625
2624
2623
2622
100
120
140
160
180
200
220
240
260
Station (ft)

2 Existing Channel, with 2-12'x6' CBC

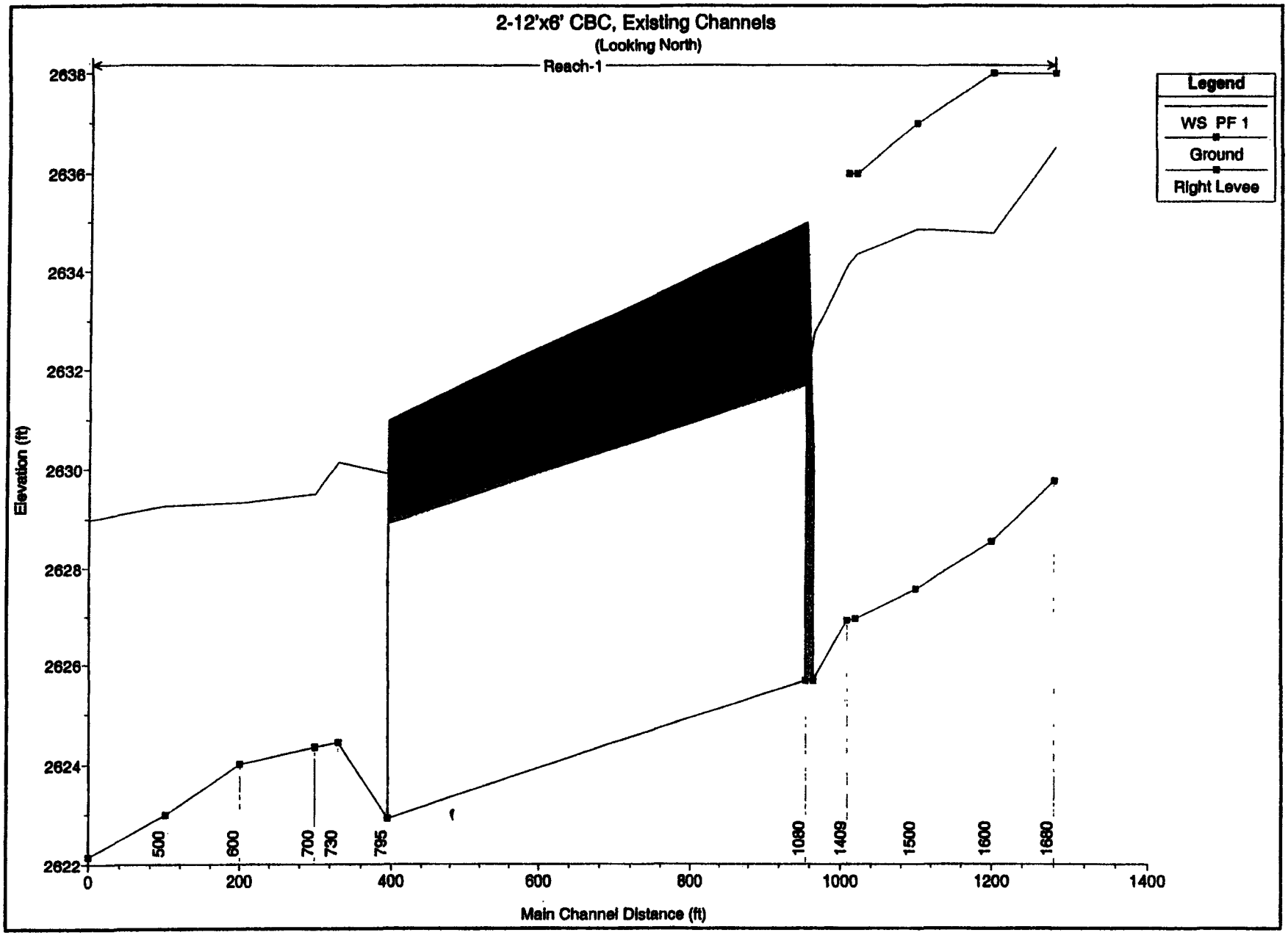
(2) EXISTING CHANNEL WITH 2- 12'X6' RCB

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1

1485.00	2629.79	2636.04	2636.03	2637.60	0.006486	11.09	196.17	91.64	0.80
1485.00	2628.57	2634.80	2634.84	2636.94	0.006568	12.53	146.18	51.51	0.91
1485.00	2627.61	2634.88	2634.88	2636.05	0.004471	10.03	229.18	93.74	0.68
1485.00	2627.00	2634.37	2634.16	2635.31	0.003885	9.20	251.88	93.65	0.63
1485.00	2626.96	2634.17	2634.17	2635.26	0.004618	10.35	241.88	93.45	0.69
1485.00	2625.72	2632.78	2630.49	2633.88	0.002896	8.41	176.57	34.38	0.56
Culvert									
1485.00	2622.92	2629.93	2627.69	2631.04	0.002972	8.48	175.20	130.00	0.56
1485.00	2624.44	2630.15		2630.67	0.003073	7.23	335.43	142.53	0.55
1485.00	2624.34	2629.52		2630.49	0.006154	9.45	255.77	142.53	0.76
1485.00	2624.01	2629.34		2629.90	0.003631	7.30	313.94	142.53	0.58
1485.00	2622.99	2629.27		2629.58	0.001742	5.71	409.81	142.53	0.42
1485.00	2622.15	2628.98	2628.31	2629.38	0.002268	6.63	377.74	142.53	0.47

ex. Chn -

existing channel w/ CBC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(Looking North)
Reach-1
Legend
WS PF 1
Ground
Right Levee
Elevation (ft)
2638
2636
2634
2632
2630
2628
2626
2624
2622
0
200
400
600
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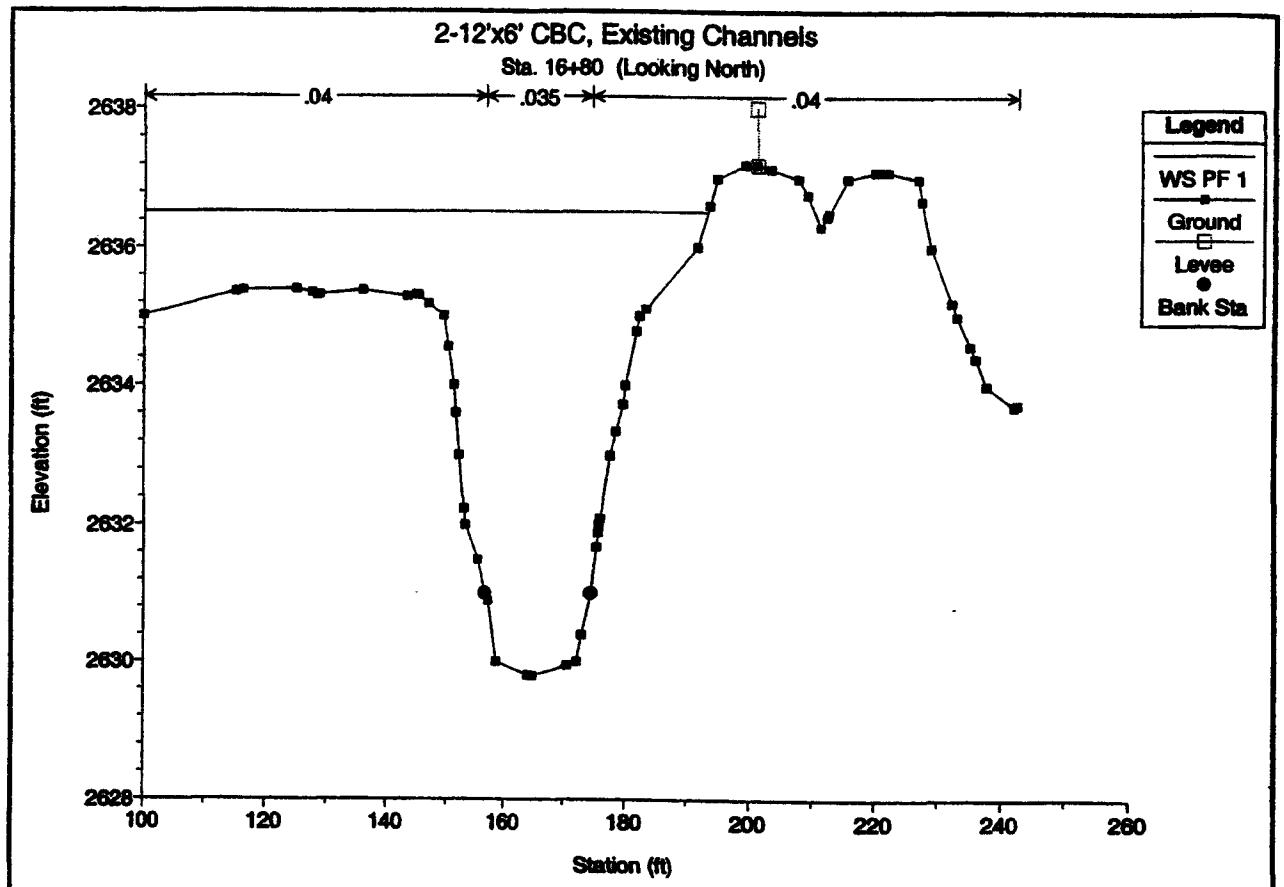
1000
1200
1400
Main Channel Distance (ft)
500
600
700
730
795
1080
1409
1500
1600
1680


2-12'x6' CBC, Existing Channels
Sta. 16+80 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
2638
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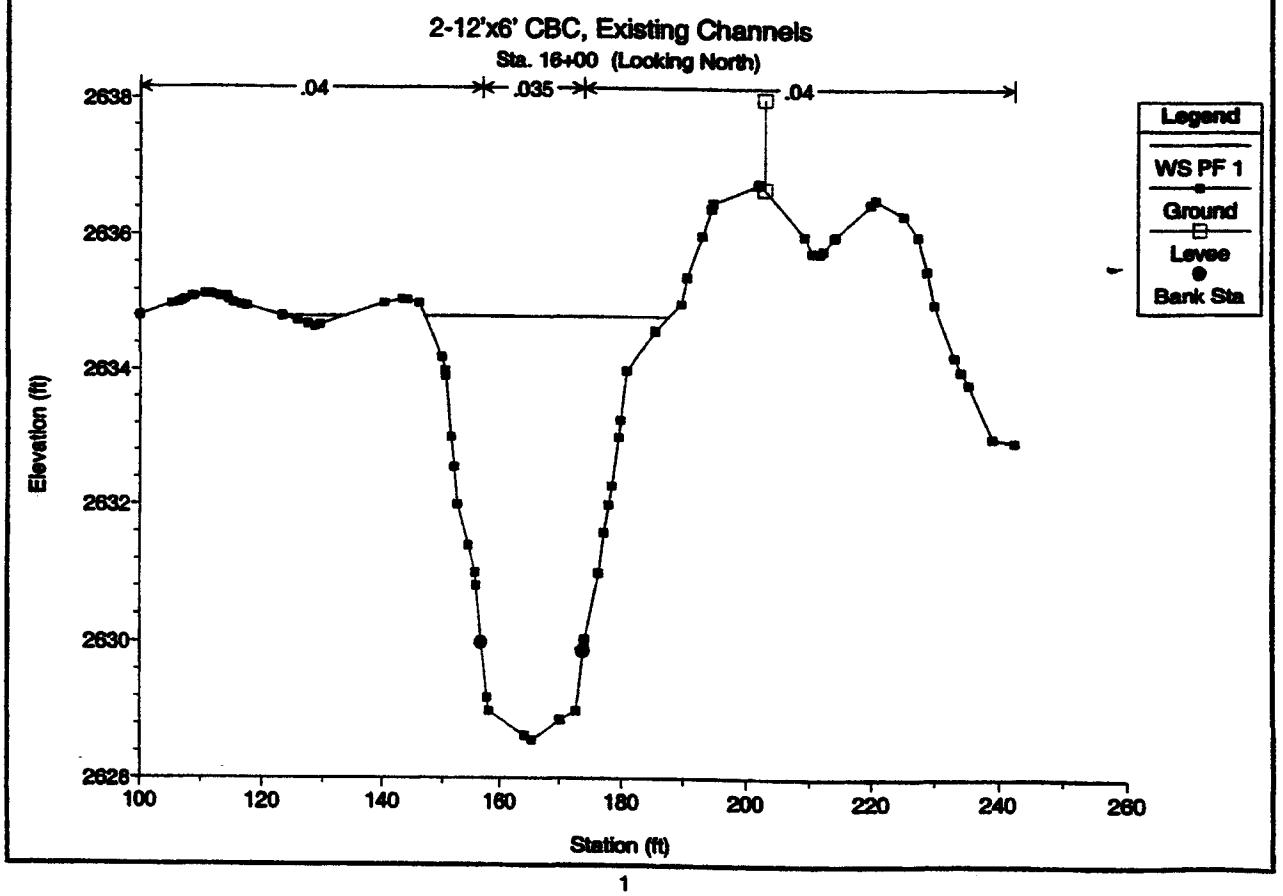
240
260
Station (ft)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Levee
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Elevation (ft)
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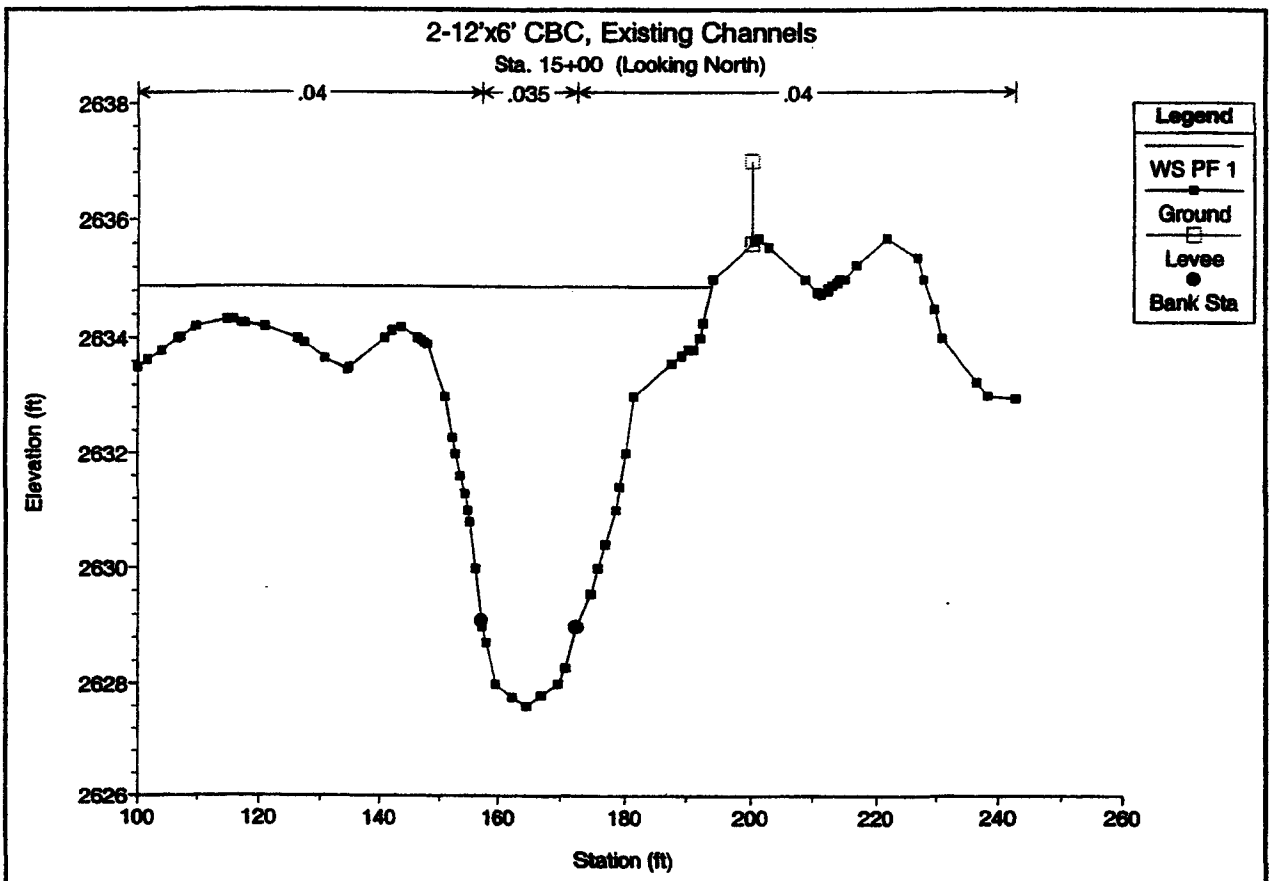
Station (ft)

12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Levee
Bank Sta
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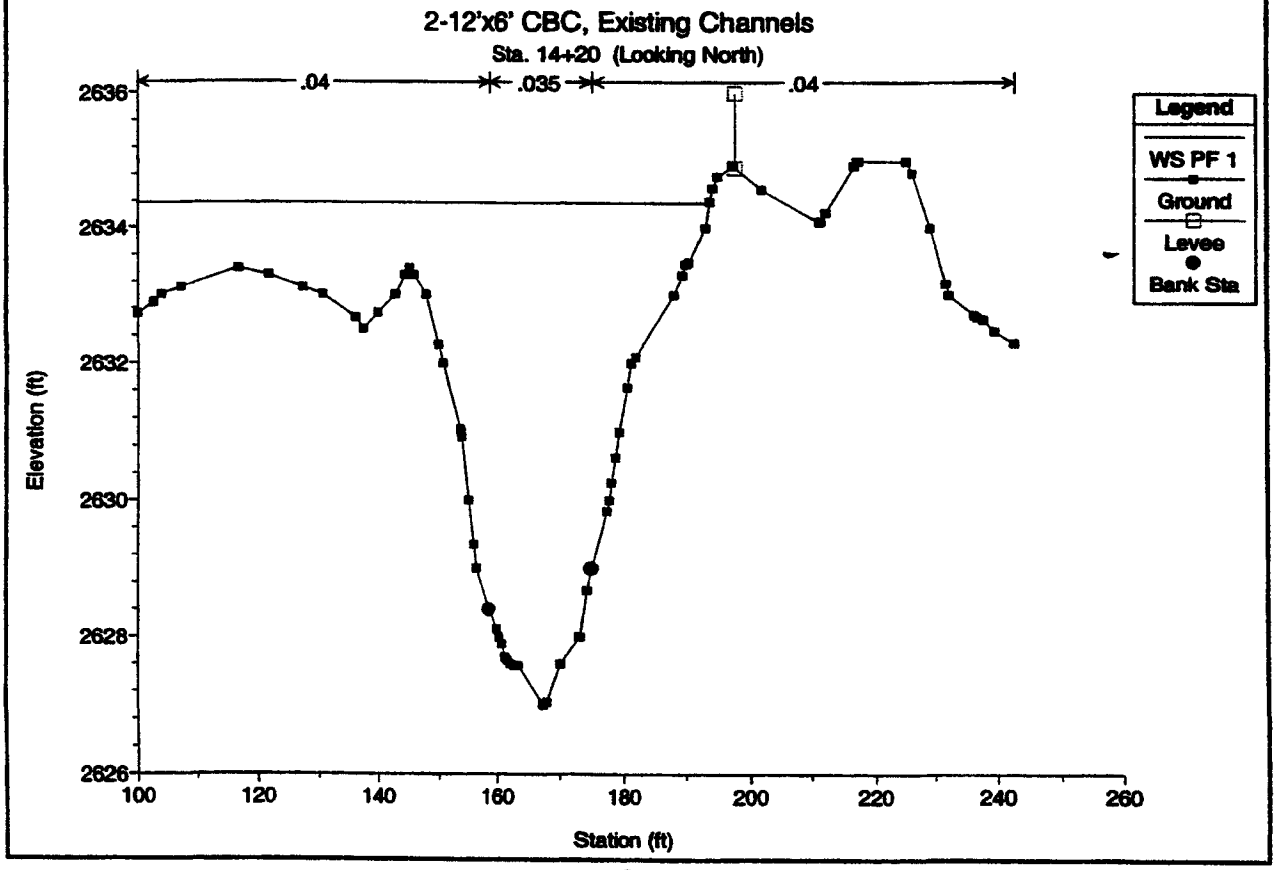
Station (ft)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Legend
WS PF 1
Ground
Levee
Bank Sta
Elevation (ft)
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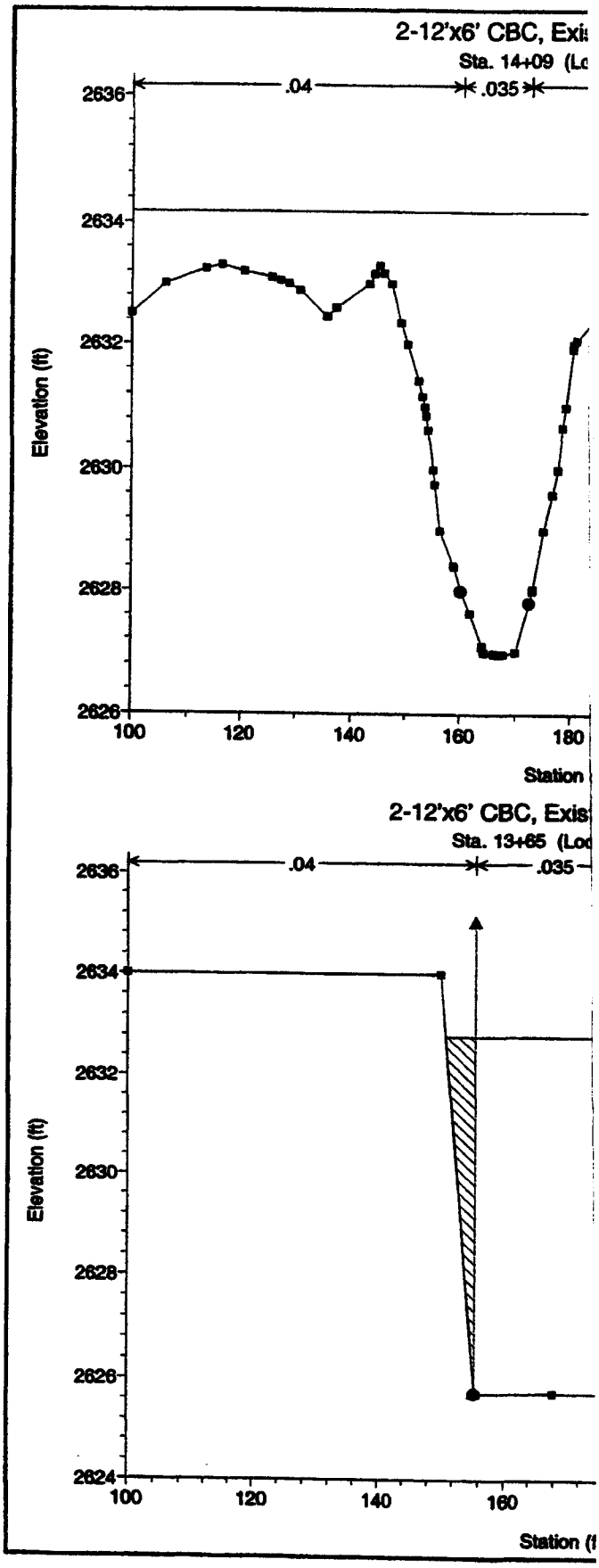
Station (ft)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Sta. 14+09 (Lo
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Sta. 13+65 (Loc
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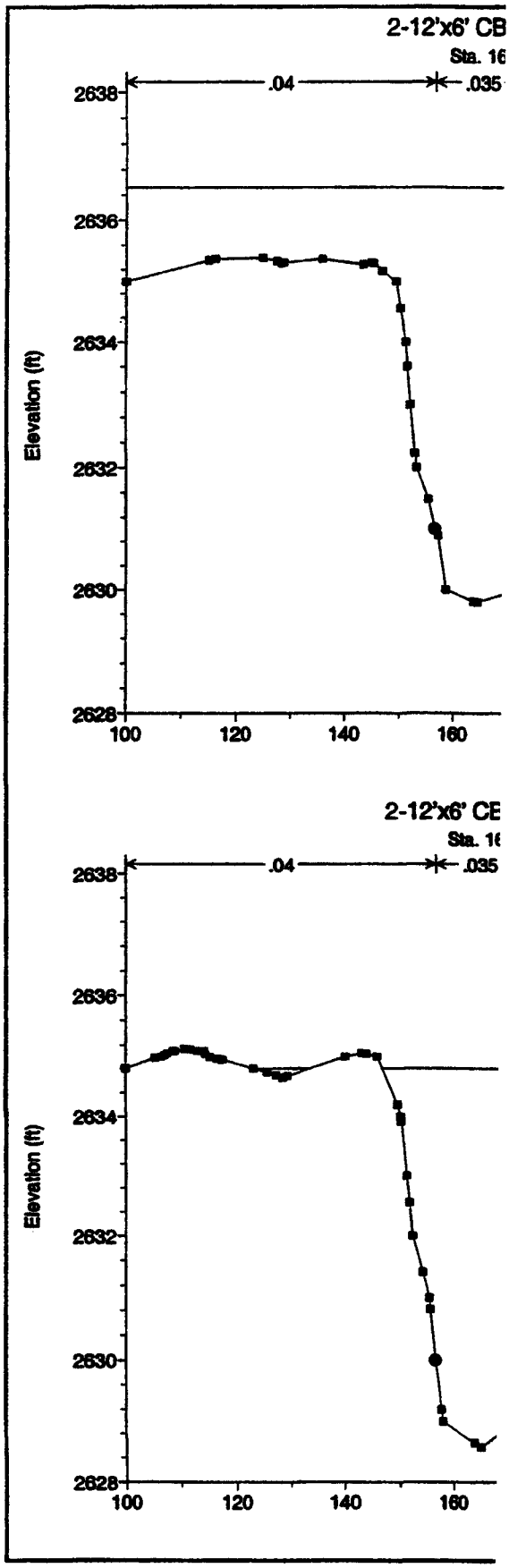
Station (f


2-12'x6' CB
Sta. 16
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Elevation (ft)
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2-12'x6' CE
Sta. 16
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Elevation (ft)
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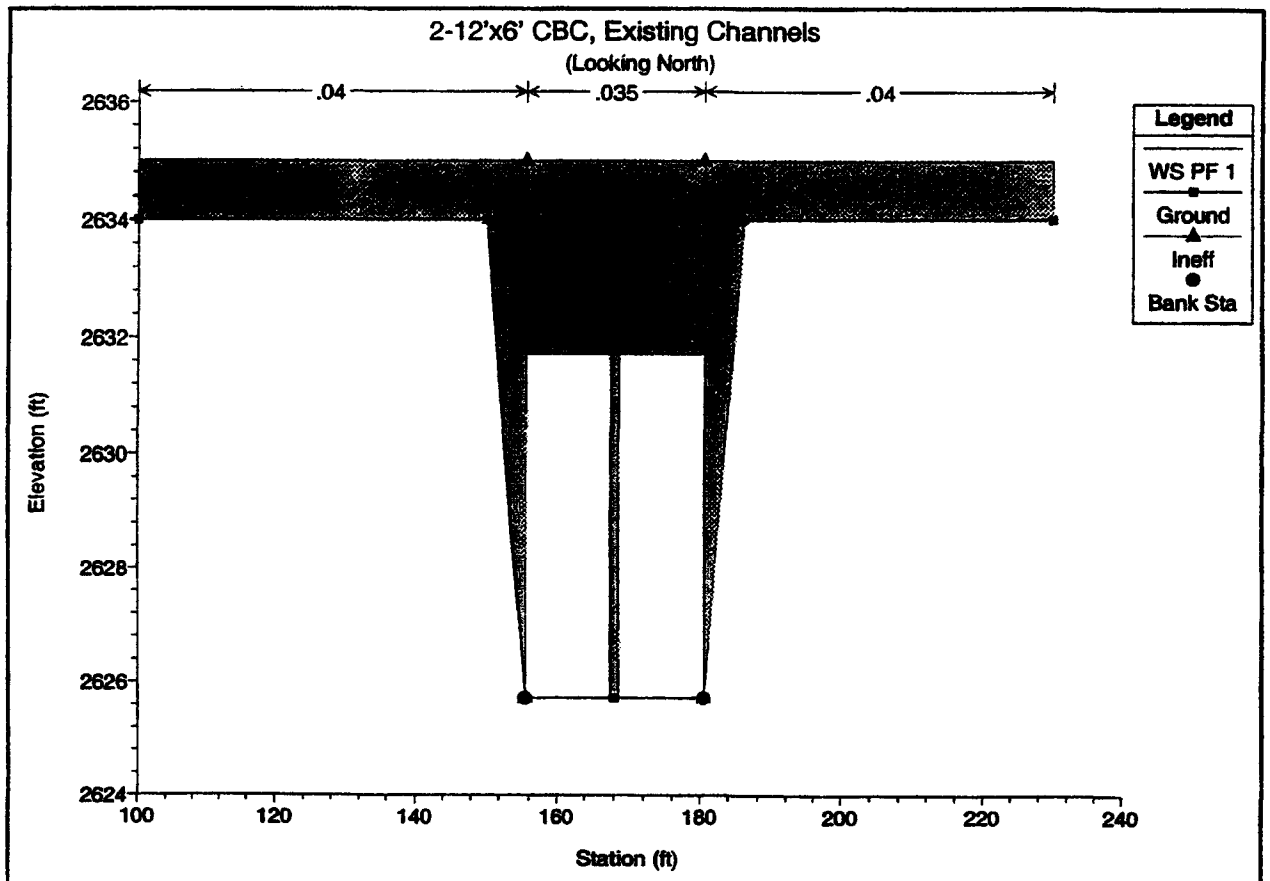
2-12'x6' CBC, Existing Channels
(Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
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Bank Sta
Elevation (ft)
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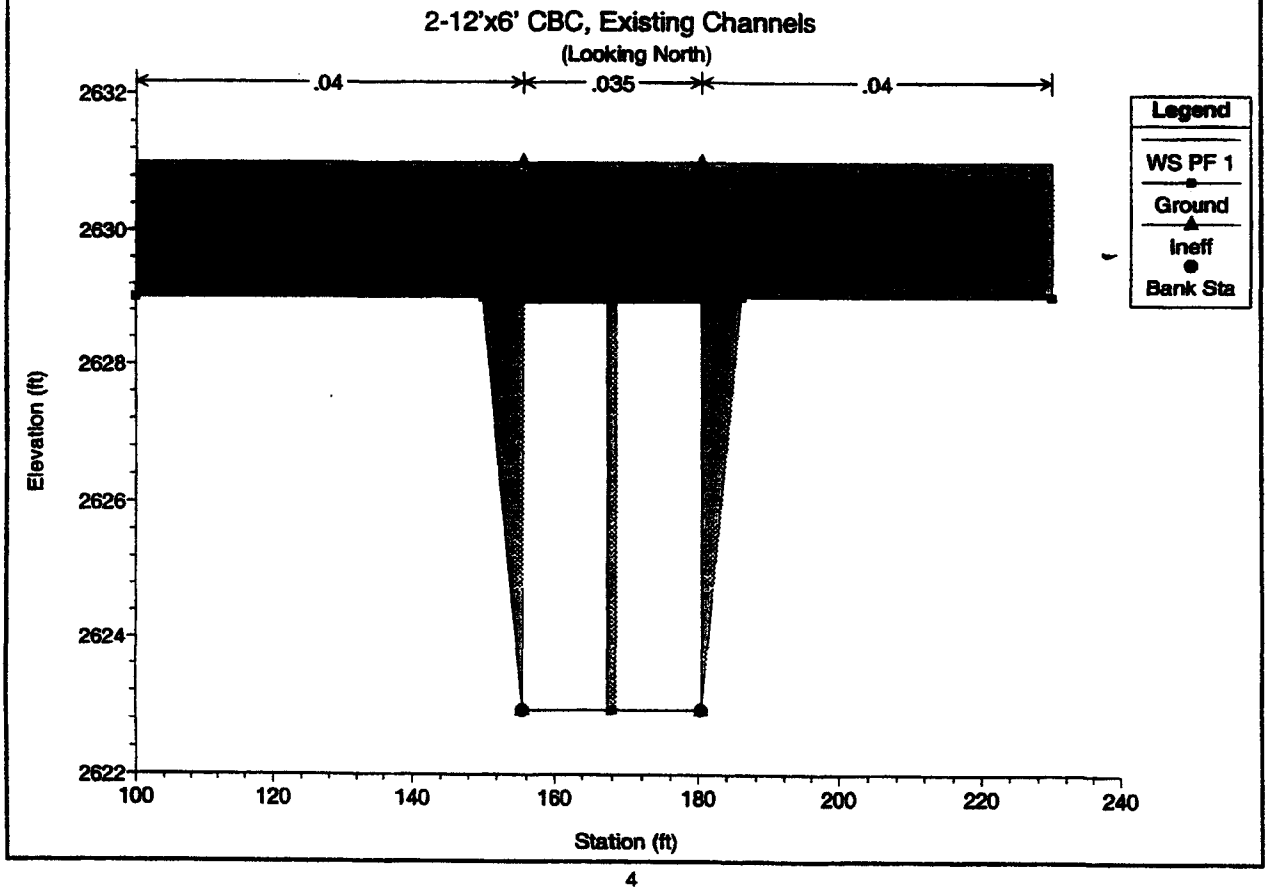
Station (ft)


2-12'x6' CBC, Existing Channels
(Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
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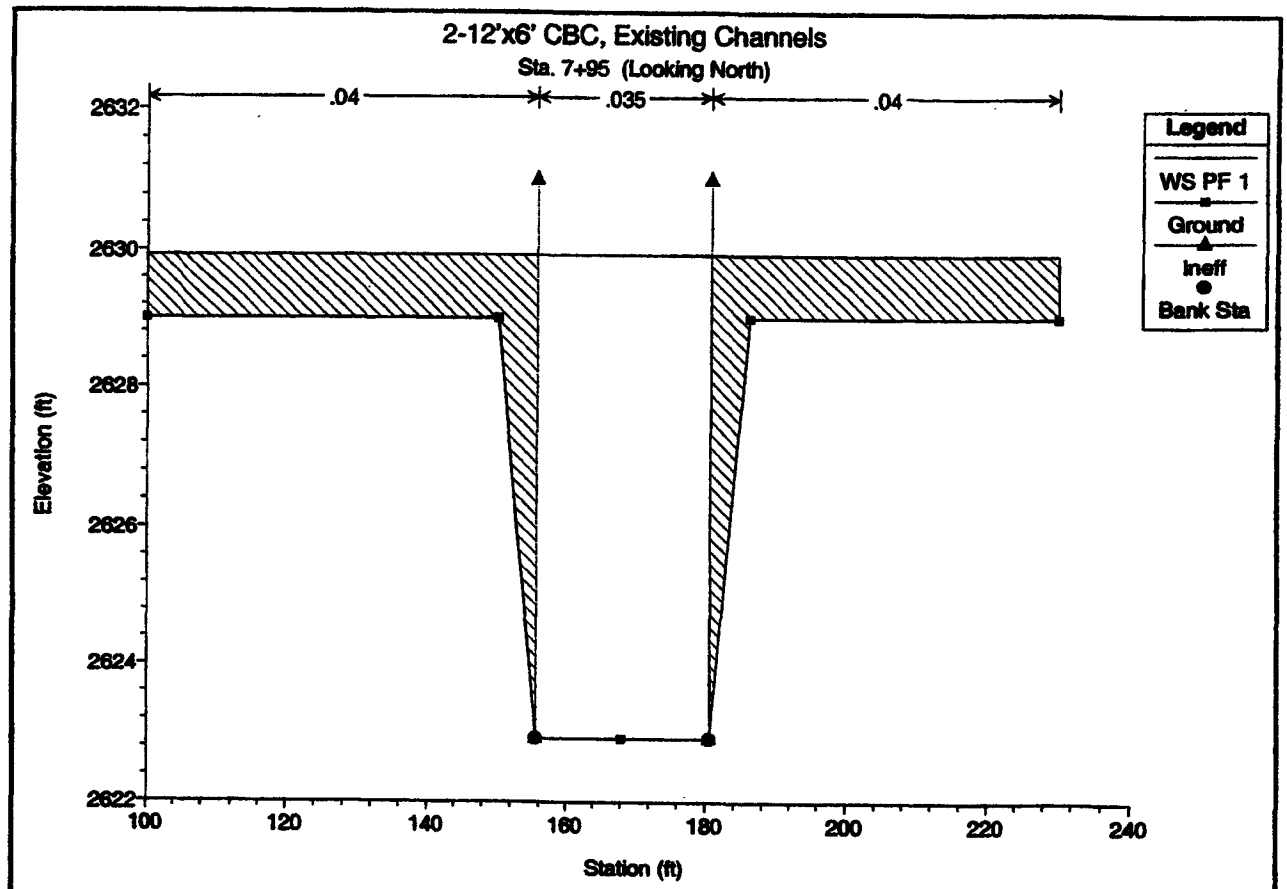
180
200
220
240
Station (ft)


2-12'x6' CBC, Existing Channels
Sta. 7+95 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Ineff
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Elevation (ft)
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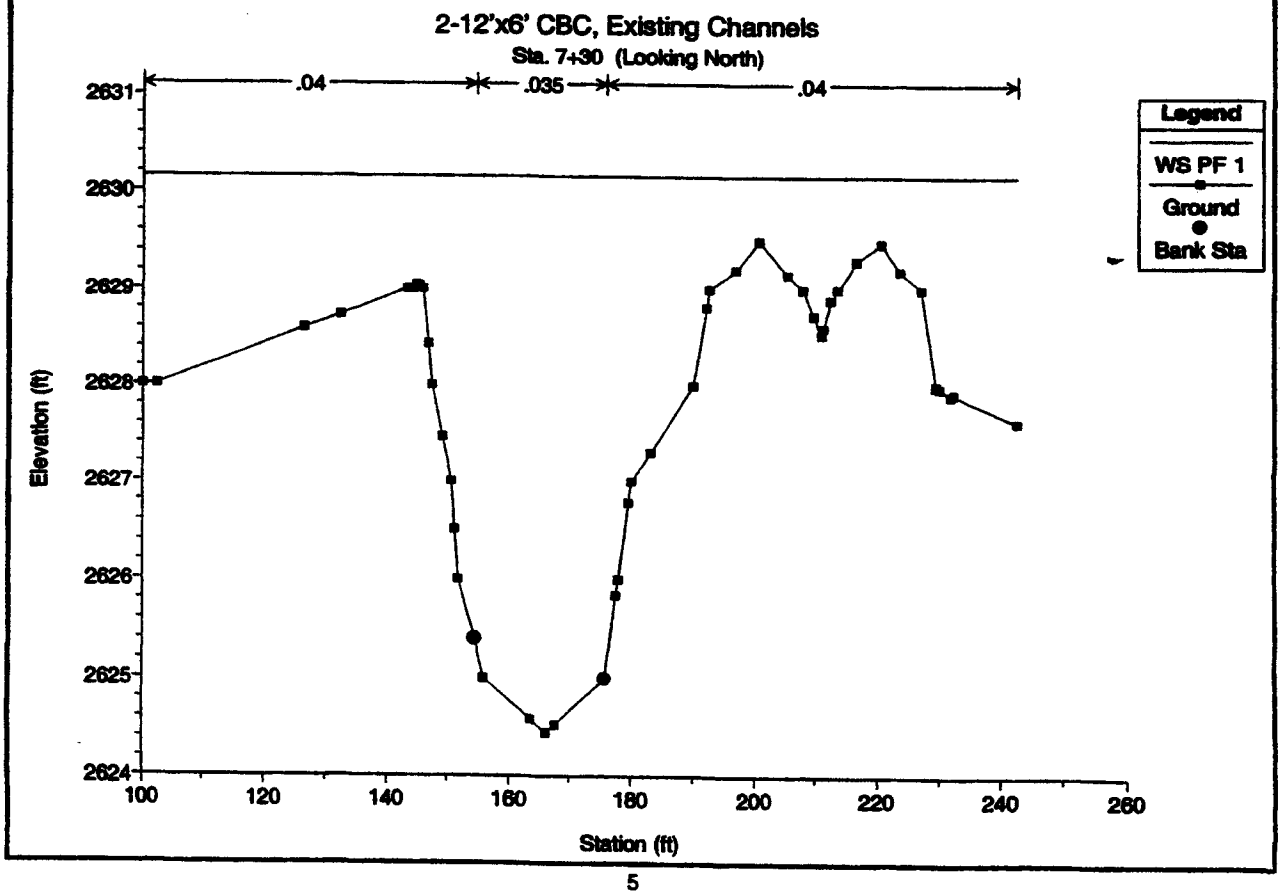
220
240
Station (ft)


2-12'x6' CBC, Existing Channels
Sta. 7+30 (Looking North)
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Legend
WS PF 1
Ground
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Elevation (ft)
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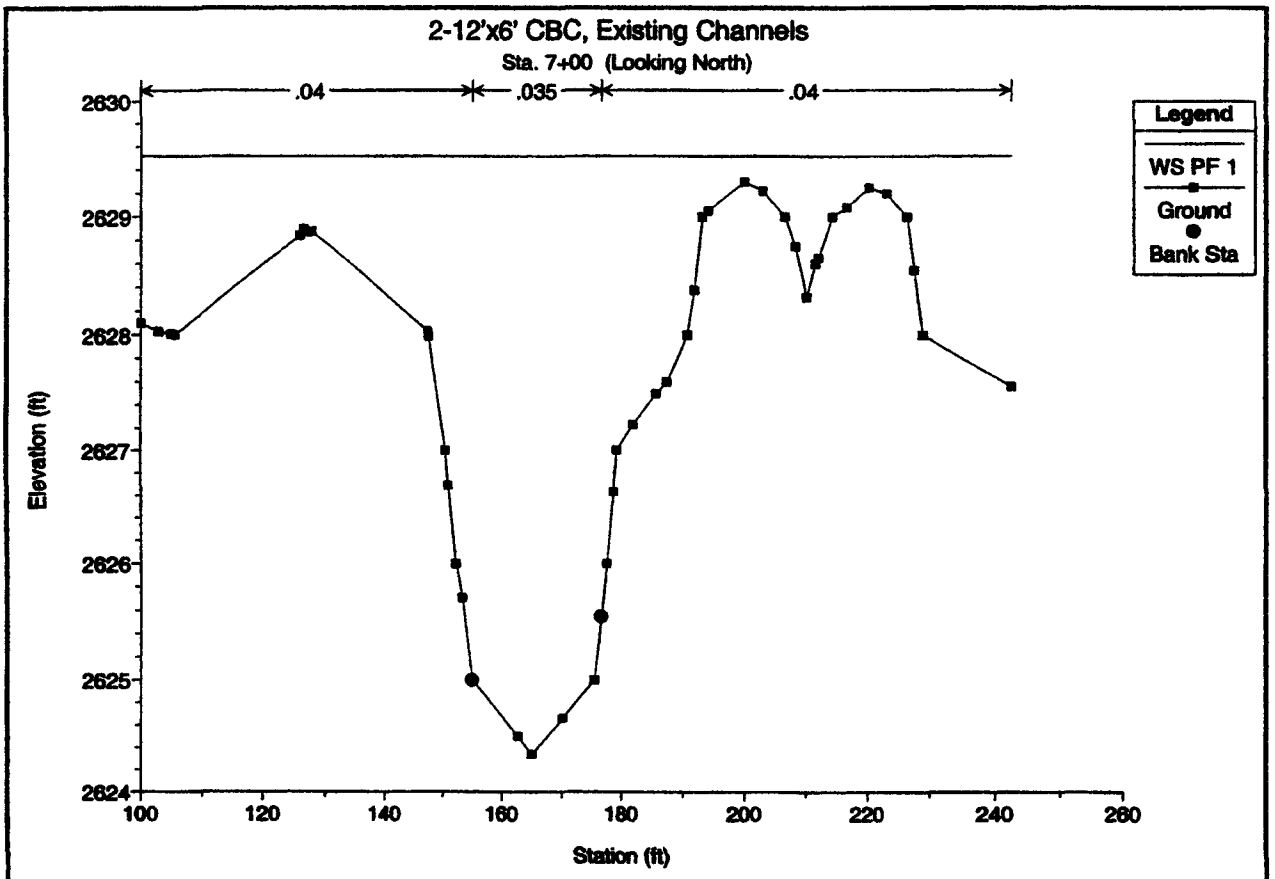
260
Station (ft)


2-12'x6' CBC, Existing Channels
Sta. 7+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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2628
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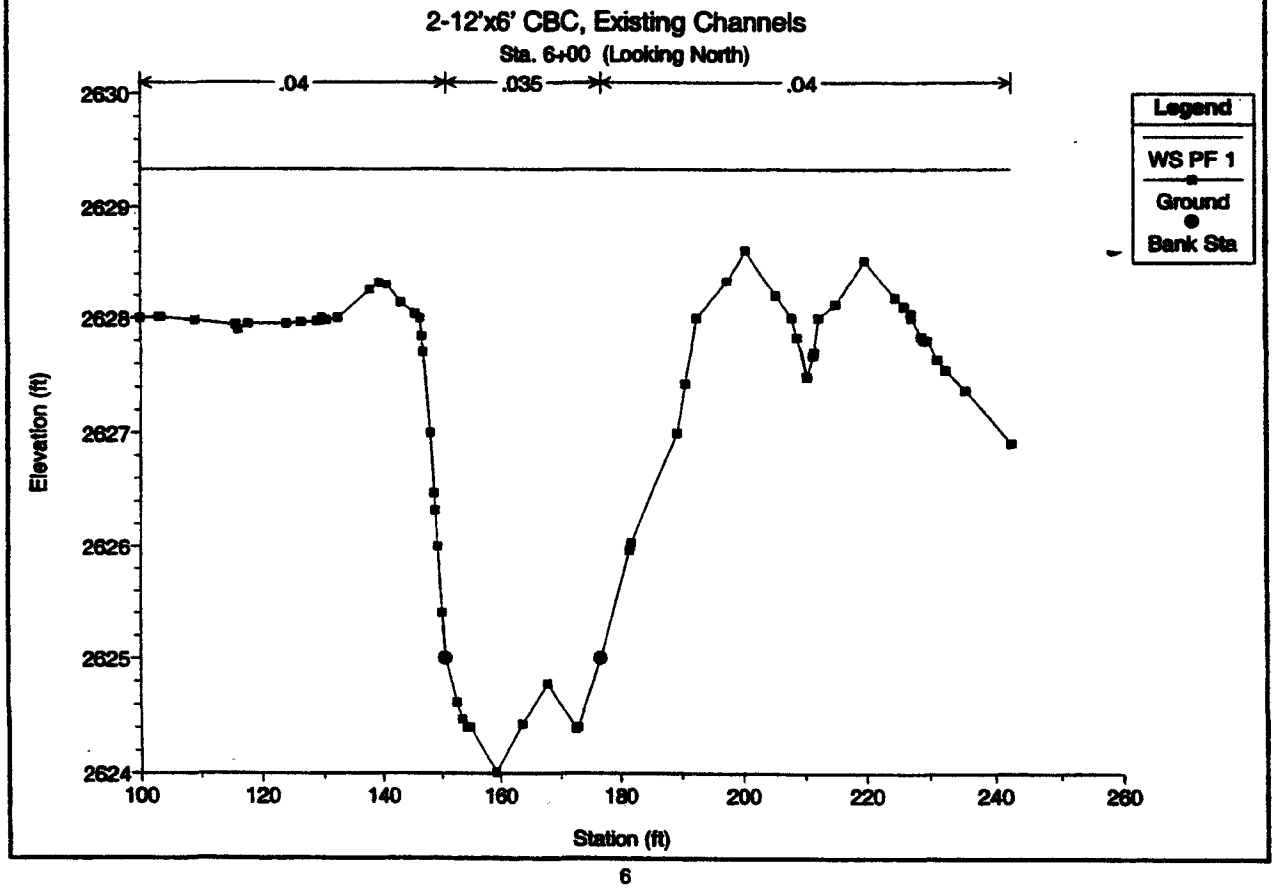
2-12'x6' CBC, Existing Channels
Sta. 6+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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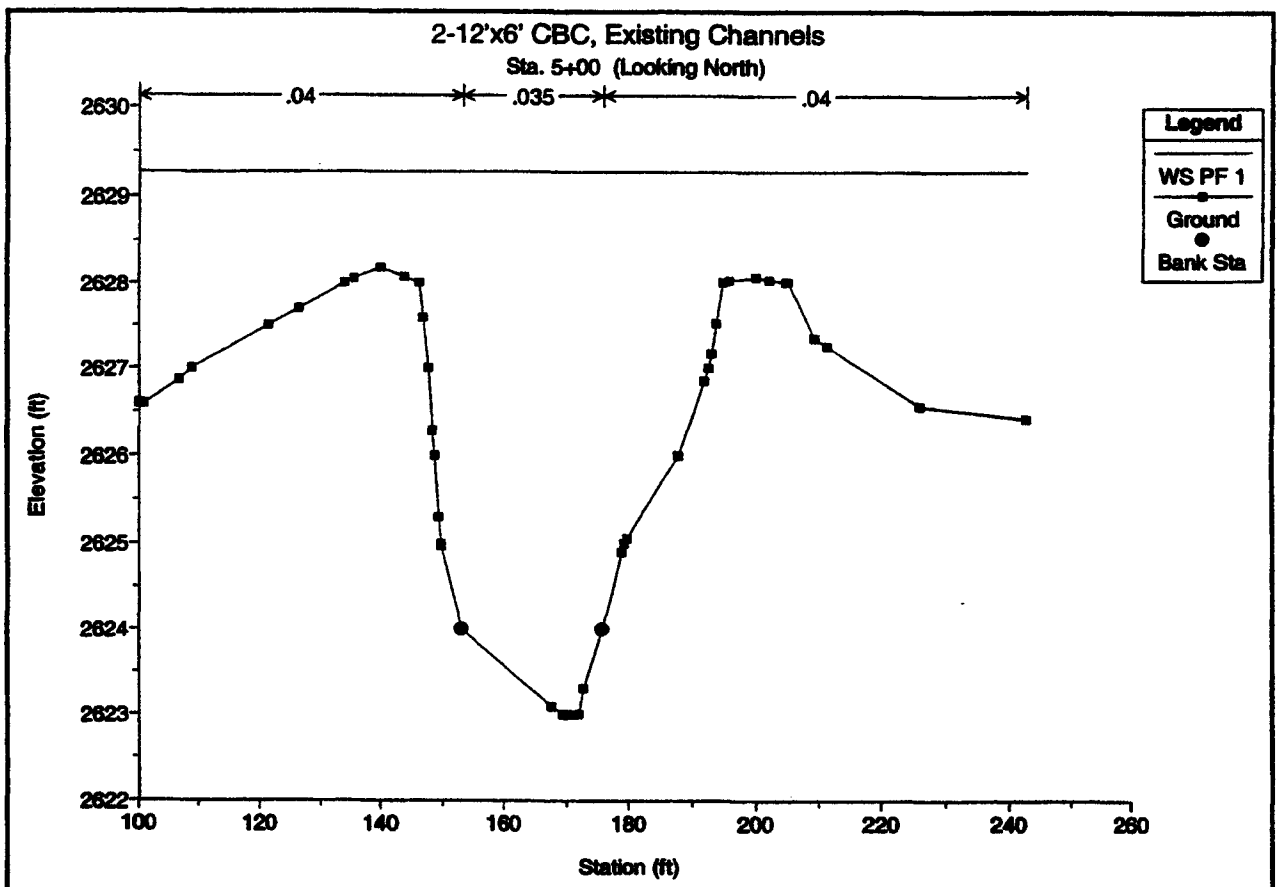
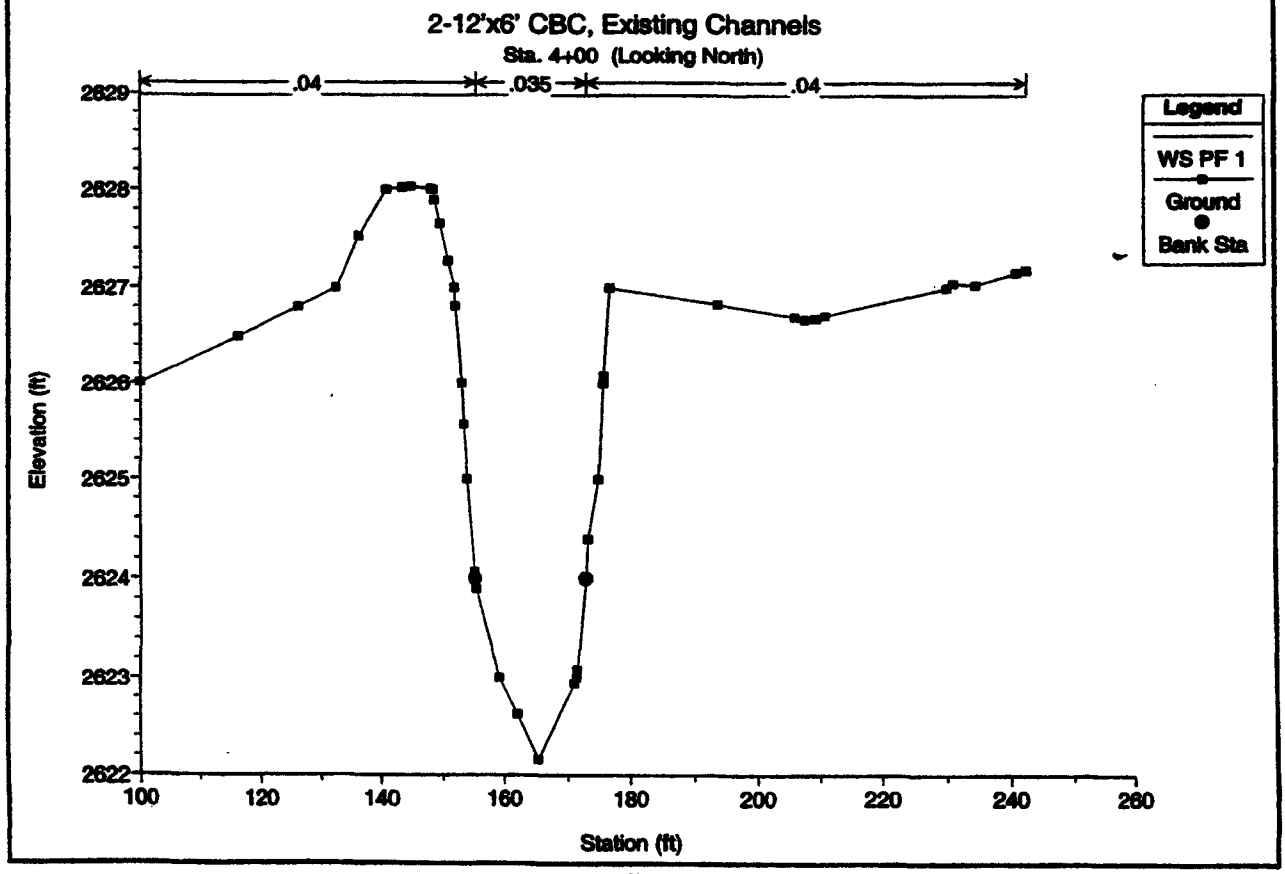

2-12'x6' CBC, Existing Channels
Sta. 5+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


2-12'x6' CBC, Existing Channels
Sta. 4+00 (Looking North)
.04
.035
.04
Legend
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

APPENDIX 4

City of Palmdale

Palmdale Transportation Center

Flood Study

December 19, 2001

REGISTERED PROFESSIONAL ENGINEER
GEORGE M. PADDISEN
12-20-01
No. 19830
Expires
9-30-05
CIVIL
STATE OF CALIFORNIA

by
Jacobs Sverdrup

950 E. Palmdale Boulevard, Suite E
Palmdale, CA 93550
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FAX (661) 265 – 9266

RECEIVED
JAN 09 2002
PLANNING DEPT
CASE #
CUP 01-16

Objective

The objective of this study is to prepare a preliminary grading plan for the Palmdale Transportation Center (PTC), develop the basic concept of the drainage plan and detention basin, and establish preliminary sizes for the storm drainage facilities and the detention basin.

Discussion

The preliminary grading plan is based on the preliminary site plan developed by Charles Walton and Associates. Drainage of the existing, undeveloped PTC site is generally to the north, flowing overland to the adjoining properties.

The major drainage channel in the area is the Anaverde Channel. The Anaverde is located adjacent to the Metrolink and UPRR railroad tracks, flowing from south to north, through the PTC facility. In the existing condition, none of the site water flows directly to the Anaverde Channel. In the existing condition, runoff from the PTC site flows overland to adjoining properties, located directly north of the site. All of the flow from the site, the Anaverde, and other surrounding areas all merge in the low area north of Technology Drive, which drains to the lower reaches of the Anaverde.

In the existing condition, the Anaverde is lined with rock riprap. A major restriction in the Anaverde exists where the Anaverde passes under Sierra Highway in a restricted double box culvert. This restriction creates a backwater effect on the Anaverde, affecting the flow capacity and hydraulic grade line on the Anaverde through the project area and beyond. In addition, the Anaverde does not have sufficient capacity for the 100-year discharge throughout its course. Consequently, in 100-year storms, the floodwaters spread out beyond the channel banks, causing flooding in the area of the project site, the surrounding area, and far beyond upstream of the PTC site.

In order to create needed space for the train-boarding platform and other supporting facilities, it will be necessary to construct a concrete box storm drain on the Anaverde to contain the flow and provide space on the surface for the proposed facilities. The box storm drain will be constructed only though the area of the PTC.

The design capacity of the box storm drain is based on a flow rate of 1,475 cfs, based on 50-year storm flow data provided by the City. The design flow rate is based on advance planning to channelize the Anaverde and development of a regional detention basin upstream of the project site, to throttle flow in the Anaverde (The regional detention basin is not associated with the PTC project).

Drainage and nuisance water from the adjoining residential properties, located southerly of the project site, flows from the their back yards to the project site. A block wall is to be constructed along the southerly property line of the PTC site, which will have to be designed to allow nuisance water and floodwaters to pass from the existing residential properties to the project site.

In addition to the PTC, the City of Palmdale will construct improvements on the City Maintenance Yard (CMY), located more-or-less on the eastern boundary of the PTC site. The effects of developing the CMY have been combined in the flood study for the PTC to develop a

combined storm drain and storm water detention basin to satisfy the requirements for both projects.

Preliminary Grading and Drainage Plan

Offsite runoff flowing north in 6th Street will be intercepted by catch basins at the southerly end of the site and discharged directly to the Anaverde.

The preliminary grading and drainage plan divides the onsite drainage into two directions. Runoff from the easterly part of the site will drain to the north, to a lined drainage ditch, located on the northerly side of the PTC, that will drain directly to the proposed concrete box storm drain on the Anaverde. Originally, the intention was to use a landscaped swale where the lined ditch is shown. However, the depth of facility and the limited space do not allow sufficient space for a landscaped swale, making it necessary to utilize a lined ditch. A buried pipe would be an alternative to the lined ditch.

The westerly area of the PTC site will drain to a proposed storm drain that will flow to the north, to a proposed detention basin. The detention basin will be located on the north side of Technology Drive. Drainage from the proposed CMY will drain to the same storm drain and detention basin.

Flood Study

The flood depth calculations are based on the 100-year flow for the Anaverde, interpolated from the FEMA Flood Data. The calculations are based on a flow of 2,130 cfs. Hec-Ras calculations were done for the undeveloped condition and for the developed condition. The developed condition was based on having block walls around the CMY and along the southerly boundary of the PTC. The proposed wall on the southerly boundary of the PTC will have to allow nuisance water and floodwater to pass from the adjoining properties to the PTC site, to maintain existing drainage patterns.

Output data from the Hec-Ras calculations are in the Appendix. The net effect of the proposed development of the PTC and the CMY sites is an improvement in the depth of flooding through the area of the PTC. This is attributed to the efficiency of the proposed box storm drain, compared to the existing riprap-lined Anaverde channel. Beyond the limits of the box storm drain construction, the depth of the floodwaters is not affected by the proposed PTC and CMY projects.

Detention Basin

The size of the detention basin is based on the requirement to detain the increase in discharge from the site due to the proposed development. The basin has been sized based on the requirement to limit the total discharge from the combined area of the PTC and the CMY to 85% of the prior, undeveloped flow rate for the 2, 10 and 25-year storms. The detention basin is sized to provide a volume of storage to throttle the discharge flowing to the basin and to provide additional throttling of the flow to compensate for the storm flow that drains directly to the Anaverde. The detention basin has to have capacity to hold 3.6 Ac-ft and drain out within 24 hours.

Summary and Conclusions

1. By setting the finish floor elevation of the main building pad on the PTC site at El 2633.5, the building will be at least 2' above the 100-year flood level, exceeding the required 1' above the 100-year flood level.

2. Note that the flood study is based on an area of limited extent. In reality, the extent of the floodplain for the Anaverde covers a more extensive area than is indicated by the calculations shown in this study. The scope of this study is limited to the area influenced by development of the PTC and the CMY and the limits of the aerial topographic mapping. The aerial topographic mapping extends from the east side of the railroad tracks to west of 3rd Street, and from approximately 300' south of the PTC site to approximately 1,000' north of Technology Drive.

3. Development of the PTC will not increase the depth of the floodwaters significantly. The PTC consists primarily parking lots and access roadways, which do not create greater impediments to the flow of floodwaters, as compared to the existing undeveloped condition. In addition, the elevation of the site will not be raised, except for the area of the main building and the area around the train-boarding platform. The only feature on the PTC site that create additional impediments to the flow of floodwaters, with respect to the undeveloped condition, is the raised elevation of the pad for the main PTC building and grading to raise the elevation of the area around the train-boarding platform. However, these obstacles are fully mitigated by the efficiency of the proposed box storm drain, as noted in Item 4, below.

4. Construction of the proposed concrete box storm drain through the area of the PTC provides a much more efficient drainage conveyance than the existing riprap lined channel. Therefore, the box storm drain will convey a greater volume of water through the box than can be conveyed in the existing channel. The box storm drain provides a mitigating effect, reducing the depth of flooding on the floodplain, offsetting the effects of developing the PTC and CMY sites. The combined effects of development of the PTC and the CMY, and construction of the box storm drain is to reduce the depth of flooding in the area of the PTC and the CMY.

5. The retaining wall along the southerly boundary of the PTC has to be designed to allow *nuisance water and floodwaters to pass.*

6. The proposed block wall around the CMY will be in the floodplain. Therefore, it should be designed to allow floodwater to pass through to eliminate the obstacle of the wall.

7. The proposed box storm drain on the Anaverde will carry approximately 1,425 cfs and the total flood flow of 2,130 cfs, and the remain flood flow of 705 cfs will continue to flow overland. Basically, due to the downstream restriction of the existing box culvert at Sierra Highway, the outlet and inlet to the proposed box storm drain will be totally submerged.

APPENDIX A

FLOODFLOW AND DETENTION BASIN CALCULATIONS

APPENDIX A

FLOODFLOW AND DETENTION BASIN CALCULATIONS

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INFLOW PIPE & BLEED-OFF PIPE	A-9
INFLOW PIPE CALCULATION	A-10
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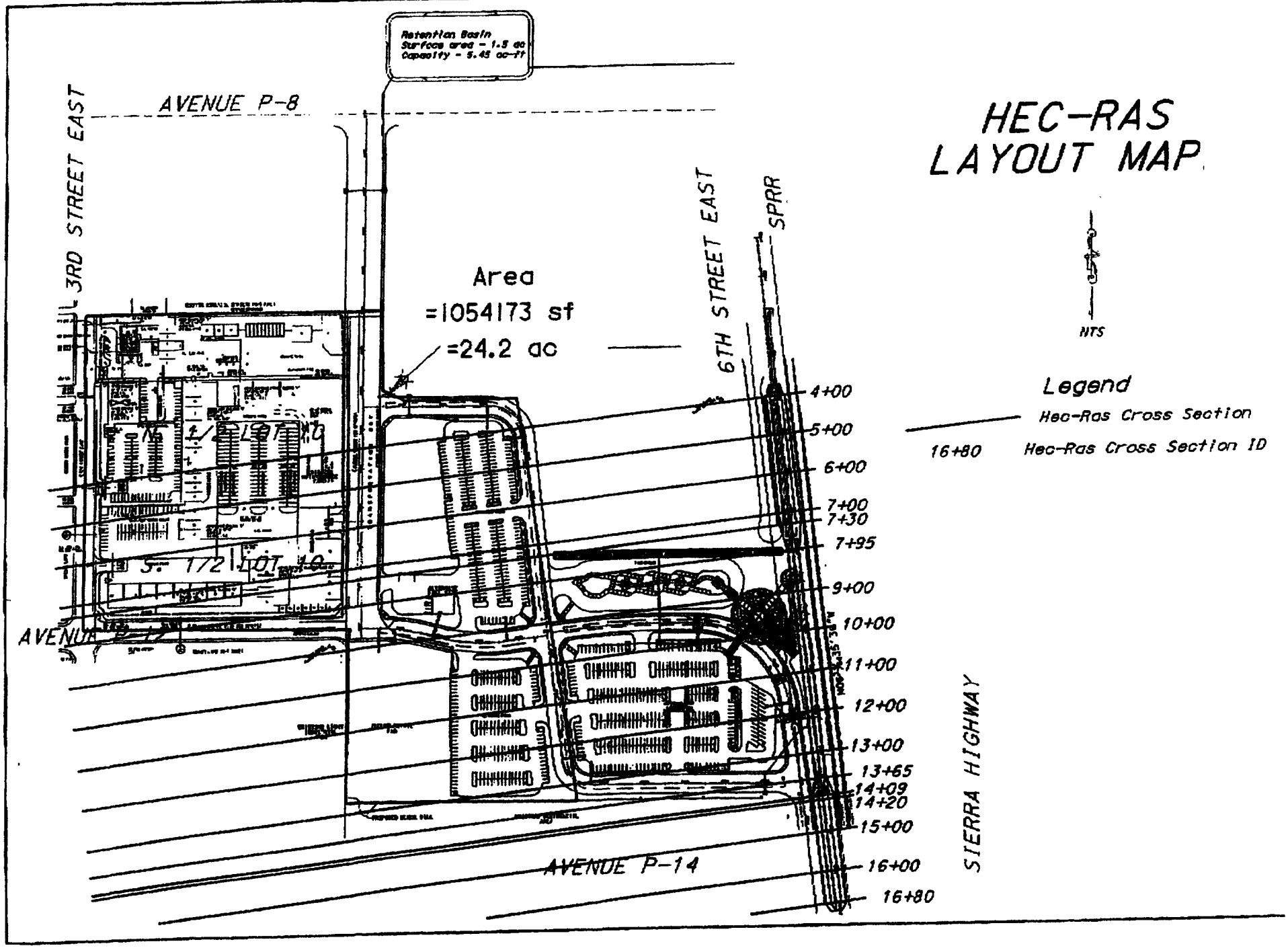
HEC-RAS LAYOUT MAP



Hydraulic Analysis, HEC-RAS OUTPUT

Transportation Center, City of Palmdale

Existing Condition

River Sta	Q Total	W.S. Elev	Top Width	Froude # Chl
	(cfs)	(ft)	(ft)	
16+80	2130	2637	241.88	0.62
16+00	2130	2635.99	290.44	0.62
15+00	2130	2635.44	330.47	0.58
14+20	2130	2634.88	311.66	0.58
13+85	2130	2634.37	258.98	0.65
13+65	2130	2634.25	268.93	0.65
13+35	2130	2634.02	288.5	0.63
13+00	2130	2633.35	255.97	0.73
12+00	2130	2633.08	258.23	0.6
11+00	2130	2632.33	287.89	0.69
10+00	2130	2632.28	472.68	0.51
09+00	2130	2630.97	227.13	0.84
08+00	2130	2630.39	295.6	0.7
07+75	2130	2630.28	369.21	0.65
07+45	2130	2630.14	423.42	0.65
07+00	2130	2629.9	611.99	0.5
06+00	2130	2629.96	639.74	0.21
05+00	2130	2629.94	634.57	0.16
04+00	2130	2629.94	1368.45	0.09

Proposed Condition

River Sta	Q Total	W.S. Elev	Notes
	(cfs)	(ft)	
16+80	2130	2636.88	
16+00	2130	2635.96	
15+00	2130	2635.38	
14+20	2130	2634.63	
13+85	2130	2634.65	
13+65	2130	2632.76	
13+35	2130	2632.99	
13+00	2130	2632.73	CBC, interpolated
12+00	2130	2632.11	CBC, interpolated
11+00	2130	2631.46	CBC, interpolated
10+00	2130	2630.81	CBC, interpolated
09+00	2130	2630.16	CBC, interpolated
08+00	2130	2629.51	CBC, interpolated
07+75	2130	2628.9	
07+45	2130	2629.04	
07+00	2130	2629.91	
06+00	2130	2629.96	
05+00	2130	2629.94	
04+00	2130	2629.94	

FLOOD DEPTH COMPARISON

Transportation Center, City of Palmdale
Q=2,130 cfs

River Sta	W.S. Elev (ft)		HW Effects	
	existing	proposed		
16+80	2637	2636.88	-0.12	
16+00	2635.99	2635.96	-0.03	
15+00	2635.44	2635.38	-0.06	
14+20	2634.88	2634.63	-0.25	
13+85	2634.37	2634.65	0.28	
13+65	2634.25	2632.76	-1.49	
13+35	2634.02	2632.99	-1.03	
13+00	2633.35	2632.73	-0.62	CBC, interpolated
12+00	2633.08	2632.11	-0.97	CBC, interpolated
11+00	2632.33	2631.46	-0.87	CBC, interpolated
10+00	2632.28	2630.81	-1.47	CBC, interpolated
09+00	2630.97	2630.16	-0.81	CBC, interpolated
08+00	2630.39	2629.51	-0.88	CBC, interpolated
07+75	2630.28	2628.9	-1.38	
07+45	2630.14	2629.04	-1.1	
07+00	2629.9	2629.91	0.01	
06+00	2629.96	2629.96	0	
05+00	2629.94	2629.94	0	
04+00	2629.94	2629.94	0	

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1

2130.00	2629.79	2637.00	2637.00	2637.78	0.003756	9.33	457.41	241.88	0.62
2130.00	2628.60	2635.99	2635.99	2636.79	0.003610	9.25	474.87	290.44	0.62
2130.00	2627.60	2635.44	2635.44	2636.15	0.003632	8.00	482.03	330.47	0.58
2130.00	2627.00	2634.88	2634.88	2635.59	0.003561	8.18	483.55	311.66	0.58
2130.00	2626.92	2634.37	2634.37	2635.19	0.004691	8.54	418.08	258.98	0.65
2130.00	2626.66	2634.25	2634.25	2635.00	0.004731	8.22	427.01	268.93	0.65
2130.00	2626.50	2634.02	2634.02	2634.76	0.004460	8.24	444.61	288.50	0.63
2130.00	2626.28	2633.35	2633.35	2634.47	0.005912	9.77	368.36	255.97	0.73
2130.00	2626.00	2633.08	2632.87	2633.72	0.003937	7.41	446.51	258.23	0.60
2130.00	2625.60	2632.33	2632.16	2633.24	0.005233	8.99	410.72	287.69	0.69
2130.00	2625.28	2632.28		2632.73	0.002802	6.89	629.76	472.68	0.51
2130.00	2625.00	2630.97	2630.97	2632.21	0.007958	10.13	307.29	227.13	0.84
2130.00	2624.99	2630.39		2631.05	0.005844	7.67	434.71	295.60	0.70
2130.00	2624.70	2630.28		2630.91	0.004782	7.72	486.28	369.21	0.65
2130.00	2624.49	2630.14	2630.14	2630.77	0.004747	7.69	492.95	423.42	0.65
2130.00	2624.34	2629.90		2630.18	0.002943	5.75	737.02	611.99	0.50
2130.00	2624.01	2629.96	2628.43	2630.01	0.000495	2.69	1406.81	639.74	0.21
2130.00	2623.00	2629.94	2628.17	2629.97	0.000272	2.05	1697.73	634.57	0.16
2130.00	2622.20	2629.94	2627.73	2629.95	0.000096	1.32	3205.95	1368.45	0.09

Hec-Ras Output

Existing Condition

HEC-RAS Plan: plan River: Channel Reach: Channel

	2130.00	2629.79	2636.68	2636.68	2637.66	0.003632	9.31	427.20	241.50	0.63
	2130.00	2628.60	2635.96	2635.96	2636.69	0.003699	8.96	464.76	288.68	0.60
	2130.00	2627.60	2635.38	2635.38	2636.06	0.003677	7.99	460.00	325.94	0.58
	2130.00	2627.00	2634.63	2632.40	2635.51	0.002156	6.36	321.72	56.68	0.53
	2130.00	2626.08	2634.65	2632.03	2635.41	0.001718	8.06	345.25	59.32	0.49
	2130.00	2625.72	2632.76	2632.44	2635.21	0.001317	13.21	182.41	31.64	0.88
	2130.00	2625.60	2632.99	2631.67	2635.05	0.000941	11.53	164.73	31.95	0.75
	Culvert									
	2130.00	2622.80	2628.90	2628.90	2631.93	0.001781	13.96	152.58	29.53	1.00
	2130.00	2622.57	2629.04	2629.04	2631.54	0.001585	13.70	222.25	49.70	0.95
	2130.00	2624.34	2629.91	2629.62	2630.16	0.002639	5.45	742.55	612.26	0.46
	2130.00	2624.01	2629.98	2628.42	2630.01	0.000452	2.57	1405.87	639.68	0.20
	2130.00	2623.00	2629.94	2628.04	2629.97	0.000262	2.01	1697.11	634.56	0.16
	2130.00	2622.20	2629.94	2627.70	2629.95	0.000085	1.24	3205.95	1368.45	0.09

Hec-Ras output

Proposed Condition

JACOBS

PROJECT: Transportation Center		JOB NO.	NO
SUBJECT: Detention basin Capacity Calc.		DESIGNED BY	CHECKED BY:
		DATE	OF

Detention basin Top area

42828 sf See drawing plan

Detention basin bottom area

35890 sf

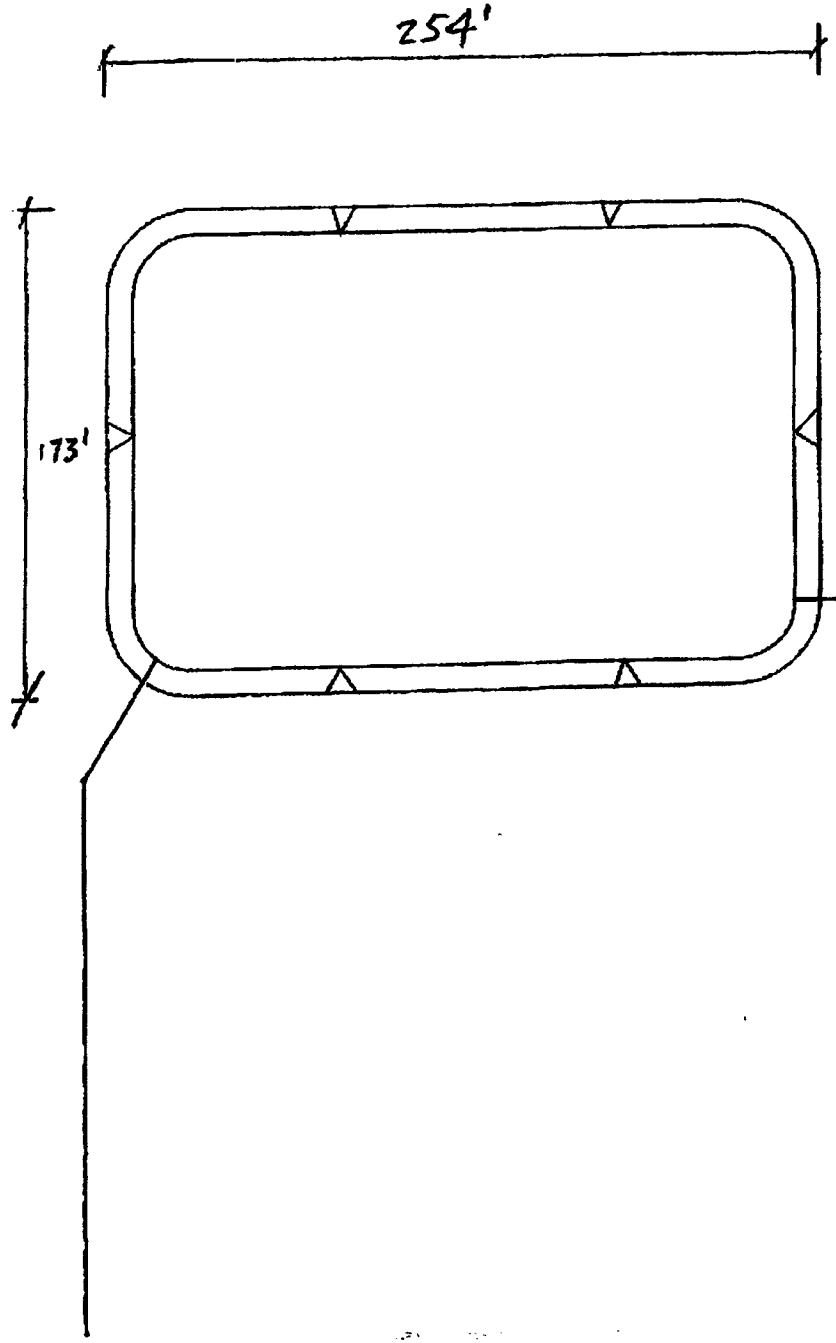
Depth of the basin 4.1 ft

Capacity of the basin

$$V = \frac{1}{3} \cdot h \cdot (A_{Top} + A_{bottom} + \sqrt{A_{Top} \times A_{bottom}})$$

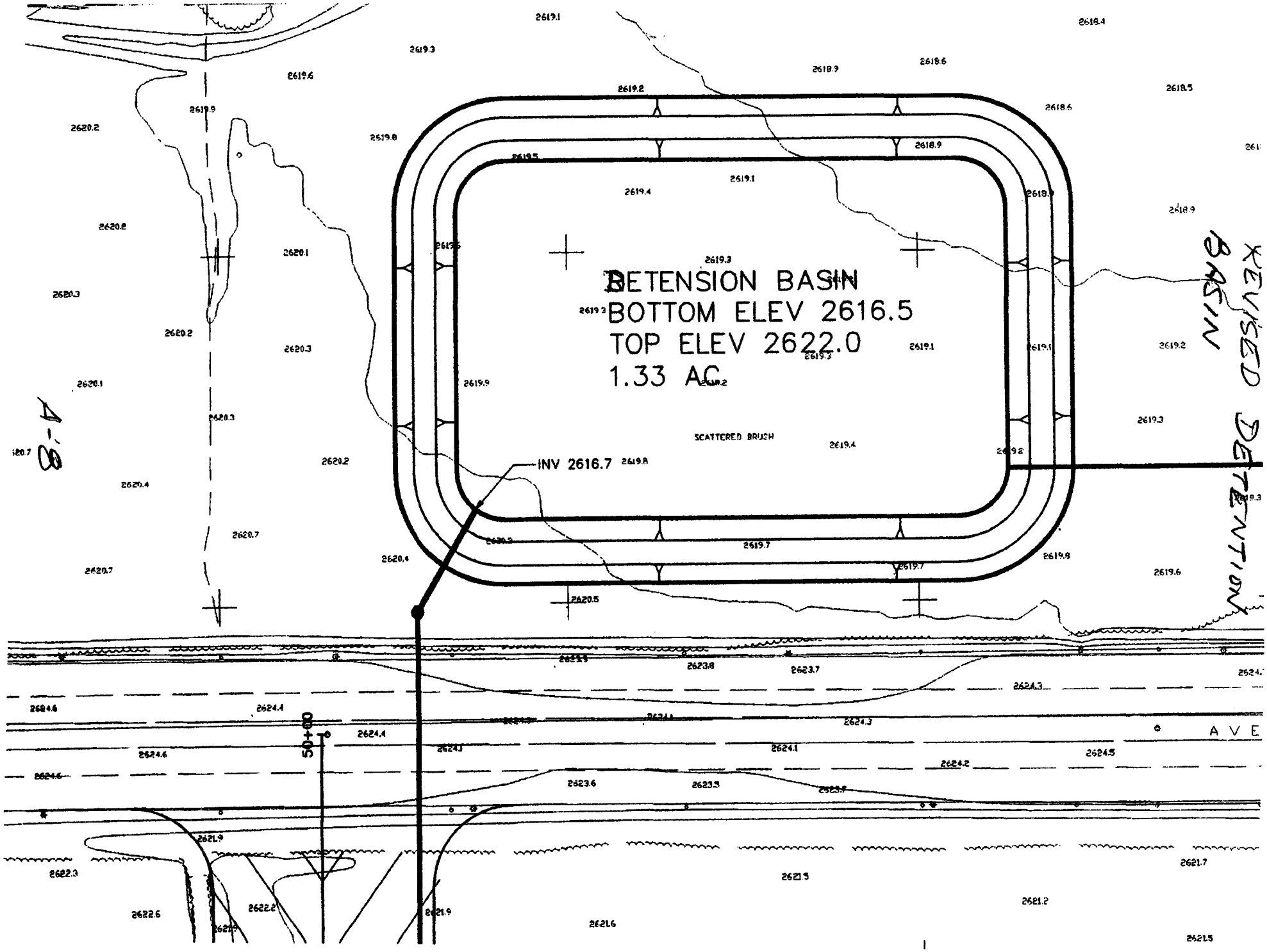
$$= \frac{1}{3} \times 4.0 \, (42828 + 35890 + \sqrt{42828 \times 35890})$$

$$= 157{,}232 \text{ cf} = 3.6 \text{ ac-ft}$$



Detention Basin
Surface area = 1.0 ac
Capacity =3.6 ac-cf

DETENTION BASIN DATA


DETENSION BASIN
BOTTOM ELEV 2616.5
TOP ELEV 2622.0
1.33 AC.
SCATTERED BRUSH
INV 2616.7
50+00
AVE
REVISED DETENTION BASIN
A-8

PROJECT	JOB NO	NO
Transportation Center		
SUBJECT: Detention Basin	DESIGNED BY	CHECK BY:
Flow-in pipe & Bleed-off pipe	DATE 10/19/01	1 OF 1

42" flow-in pipe

Capacity = 100.60 cfs see attached

24" bleed-off pipe

capacity = 16 cfs see attached

16/100.6 = 16% < 85%

The bleed-off pipe has the flow rate which is 85% or less than the flow-in rate.

Worksheet
Worksheet for Circular Channel

Project Description	
Worksheet	flow-in pipe, 42"
Flow Element	Circular Channel
Method	Manning's Formul
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Slope	0.010000	ft/ft
Depth	3.50	ft
Diameter	42	in

Results		
Discharge	100.60	cfs
Flow Area	9.6	ft²
Wetted Perimeter	11.00	ft
Top Width	1.12e-7	ft
Critical Depth	3.08	ft
Percent Full	100.0	%
Critical Slope	0.009012	ft/ft
Velocity	10.46	ft/s
Velocity Head	1.70	ft
Specific Energy	5.20	ft
Froude Number	1.98e-4	
Maximum Discharg	108.22	cfs
Discharge Full	100.60	cfs
Slope Full	0.010000	ft/ft
Flow Type	Subcritical	

Flow-in Pipe

42"

Capacity = 100.6 cfs

Worksheet
Worksheet for Circular Channel

Project Description	
Worksheet	Circular Channel - 1
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Slope	0.005000	ft/ft
Depth	2.00	ft
Diameter	24	in

Results		
Discharge	16.00	cfs
Flow Area	3.1	ft²
Wetted Perimeter	6.28	ft
Top Width	5.96e-8	ft
Critical Depth	1.44	ft
Percent Full	100.0	%
Critical Slope	0.006613	ft/ft
Velocity	5.09	ft/s
Velocity Head	0.40	ft
Specific Energy	2.40	ft
Froude Number	1.24e-4	
Maximum Discharg	17.21	cfs
Discharge Full	16.00	cfs
Slope Full	0.005000	ft/ft
Flow Type	Subcritical	

Bleed-off

24" pipe

Capacity = 16. cfs.

APPENDIX 5

BIOLOGICAL RESOURCES EVALUATION

PALMDALE TRANSPORTATION CENTER

PALMDALE, LOS ANGELES COUNTY, CALIFORNIA

Submitted to:

City of Palmdale, Planning Department
38250 Sierra Highway
Palmdale, CA 93550
661-267-5300

Prepared by:

LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, California 95677
916-630-4600

LSA Project No. SVC950

LSA

September 6, 2001

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I. INTRODUCTION

This Biological Resources Evaluation (BRE) documents the status of biological resources on the Palmdale Transportation Center (PTC) project site. This report was prepared by Jeff Bray, biologist with LSA Associates, Inc. (LSA), in support of an Initial Study/ Negative Declaration being prepared by the City of Palmdale (City) to satisfy the requirements of the California Environmental Quality Act (CEQA).

Project Description

Palmdale is located in northern Los Angeles County, California, at the southwest edge of the Antelope Valley. The PTC is situated in an urban setting in central Palmdale (see Figure 1). The 17.5-acre site is bordered by vacant land to the west and north, residential land uses to the south, and the Metrolink rail tracks to the east (see Figure 2).

The proposed PTC will be a multimodal transportation facility to serve Palmdale and the Antelope Valley. The facility will include a Metrolink station, a transit terminal/plaza area, a bus transfer station, parking areas, and bicycle and pedestrian access. Access to the site will be via 3rd Street East and Technology Drive.

The project will be completed in phases. The first phase will develop near-term transportation services including a rail station platform over Anaverde Creek, a bus transfer station, roadway access and parking, and storm drain improvements. The subsequent phase or phases will develop the remaining project components.

With the exception of the rail station platform over Anaverde Creek, the project will be developed on the lands immediately west of 6th Street East (see Figure 2). The station platform will consist of a 630-foot-long culvert crossing in Anaverde Creek to provide a foundation on which to construct a loading and unloading platform. Ungrouted riprap energy dissipaters will be constructed at each end of the culvert crossing.

II. ENVIRONMENTAL SETTING

The Antelope Valley is a high desert plain generally bounded by the San Gabriel Mountains to the south and southwest, the Tehachapi Mountains to the north and northwest, and the Mohave Desert to the east. Located on the southwest edge of the Antelope Valley, the Palmdale area lies in a transition zone between the coastally influenced sage scrub to the west and south, and the xeric, desert scrub to the north and east.

Watersheds drain out of the surrounding mountains and stream flows either collect in shallow (dry) basins or daylight into the valley floor. Drainages on the valley floor are ephemeral washes that only carry flows during and after major rain events.

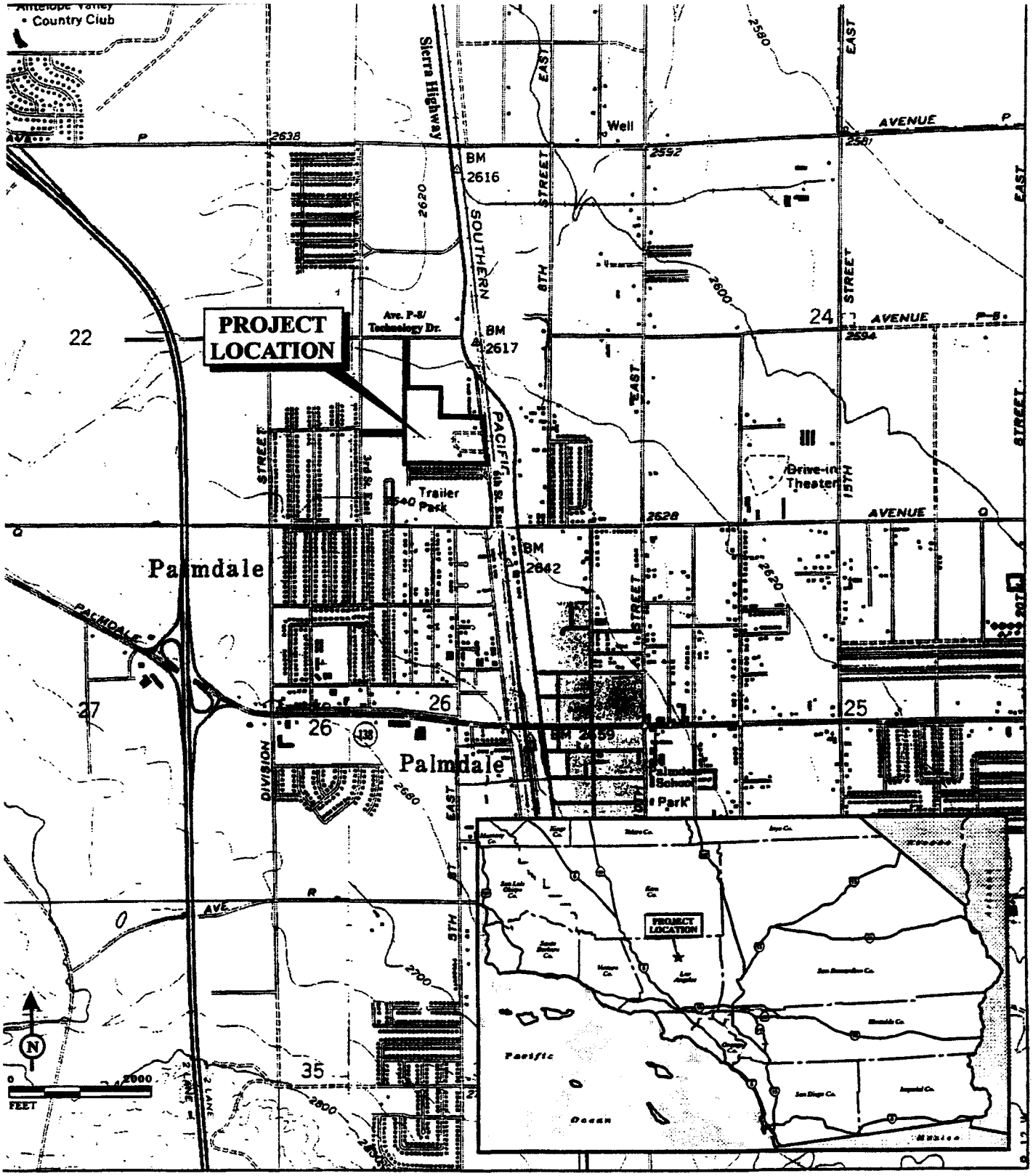

FIGURE 1

Palmdale Transportation Center

Project Location and Regional Vicinity

RCE: USGS 7.5' QUADS - PALMDALE AND RITTER RIDGE, 1974

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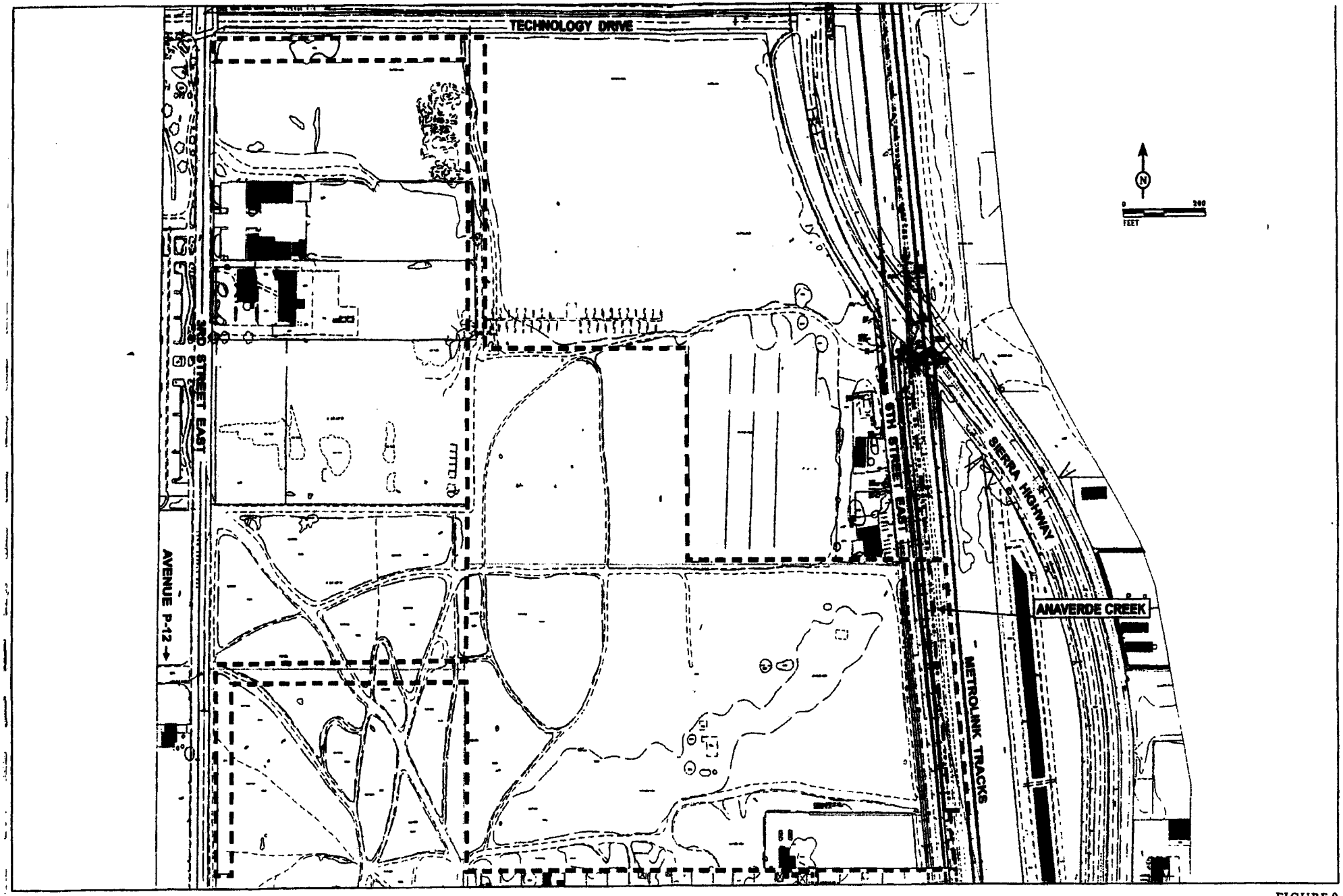

LSA

FIGURE 2

Palmdale Transportation Center

Project Features

SOURCE: CITY OF PALMDALE, 2001

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The PTC project site is located on a 17.5-acre site that is nearly flat. Elevations on the site range from approximately 2,625 feet to 2,630 feet. The site is in an urban setting and is surrounded primarily by residential land uses, but industrial and commercial land uses also occur in the vicinity of the project. The project site consists of vacant land with minimal vegetation. A review of historical aerial photographs shows that the site was used for agriculture as far back as 1953, and has been vacant since at least 1968. The site contains numerous dirt roads and trails.

III. REGULATORY BACKGROUND

Special Status Species

Special status species are those species that are listed as threatened or endangered by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (FWS), or are on formal lists as candidates for listing as threatened or endangered. Sensitive habitats are those which are of limited extent and have experienced extensive loss or degradation resulting from development and agricultural practices in recent years.

U.S. Fish and Wildlife Service. FWS has jurisdiction over formally listed threatened and endangered species, or those species that are candidates or proposed for listing, under the Federal Endangered Species Act (FESA). FESA protects listed species from harm or "take," which is broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An activity is defined as a "take" even if it is unintentional or accidental.

FWS also identifies Federal Special Concern (FSC) species, which are those species that were former Category 2 species. However, the "FSC" listing is not an active listing, but is maintained for informational purposes only.

California Department of Fish and Game. CDFG has jurisdiction over State-listed rare, threatened, and endangered species under the California Endangered Species Act (CESA). CESA prohibits take of species listed under the State act, pursuant to Section 2081 of the Fish and Game Code. Under the CESA, take means to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Informal lists maintained by the State include California Species of Special Concern (CSC) which are plant and wildlife species that are of concern and are included in the California Natural Diversity Data Base. In addition, an informal list containing special status plant species is maintained by the California Native Plant Society and recognized by the resource and regulatory agencies.

Jurisdictional Waters

Corps of Engineers. Under Section 404 of the Clean Water Act, the Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. are

those waters that have a connection to interstate commerce, either direct via a tributary system or indirect through a nexus identified in the Corps regulations. The lateral limit of jurisdiction under Section 404 extends to the ordinary high water mark (OHWM) of a waterbody or, where adjacent wetlands are present, beyond the OHWM to the limit of the wetlands.

Wetlands. Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for a life in saturated soil conditions."

Nonwetland Waters. Nonwetland waters essentially include any body of water, not otherwise exempted, that displays an OHWM.

Regional Water Quality Control Board. Under Section 401 of the Clean Water Act, the State Water Resources Control Board must certify all activities requiring a 404 permit. The Lahontan Regional Water Quality Control Board (RWQCB) regulates these activities in the local area and issues water quality certification for those activities requiring a 404 permit. In addition, the RWQCB has authority to regulate the discharge of "waste" into waters of the State pursuant to the Porter-Cologne Water Quality Control Act (P-C).

California Department of Fish and Game. CDFG, through provisions of Sections 1601-1603 of the State Fish and Game Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be substantially adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG.

CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, cottonwoods, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas. Riparian communities may not fall under Corps jurisdiction unless they are below the OHWM or classified as wetlands.

IV. METHODS

A list of special status wildlife and plant species potentially occurring within the project area was compiled by querying the California Natural Diversity Data Base (CNDDB 2001) and California Native Plant Society Electronic Inventory (CNPS 2001), referencing the Palmdale quadrangle. The individual CNDDB and CNPS lists are contained in Appendix A.

Survey Dates and Personnel

A survey of the project area was conducted on March 27, 2001, by LSA biologist Jeff Bray. During this survey, all habitat in the project area was inspected to determine if it was suitable to support any special status species. Vegetation in the project area was characterized and mapped, and an inventory was taken of all wildlife and plant species observed.

All waters of the U.S. in the project area were delineated by biologist Jeff Bray on October 12, 1999, in accordance with the 1987 Corps Wetland Delineation Manual. Areas under the jurisdiction of CDFG were also delineated.

V. BIOLOGICAL RESOURCES

Vegetation Communities[1]

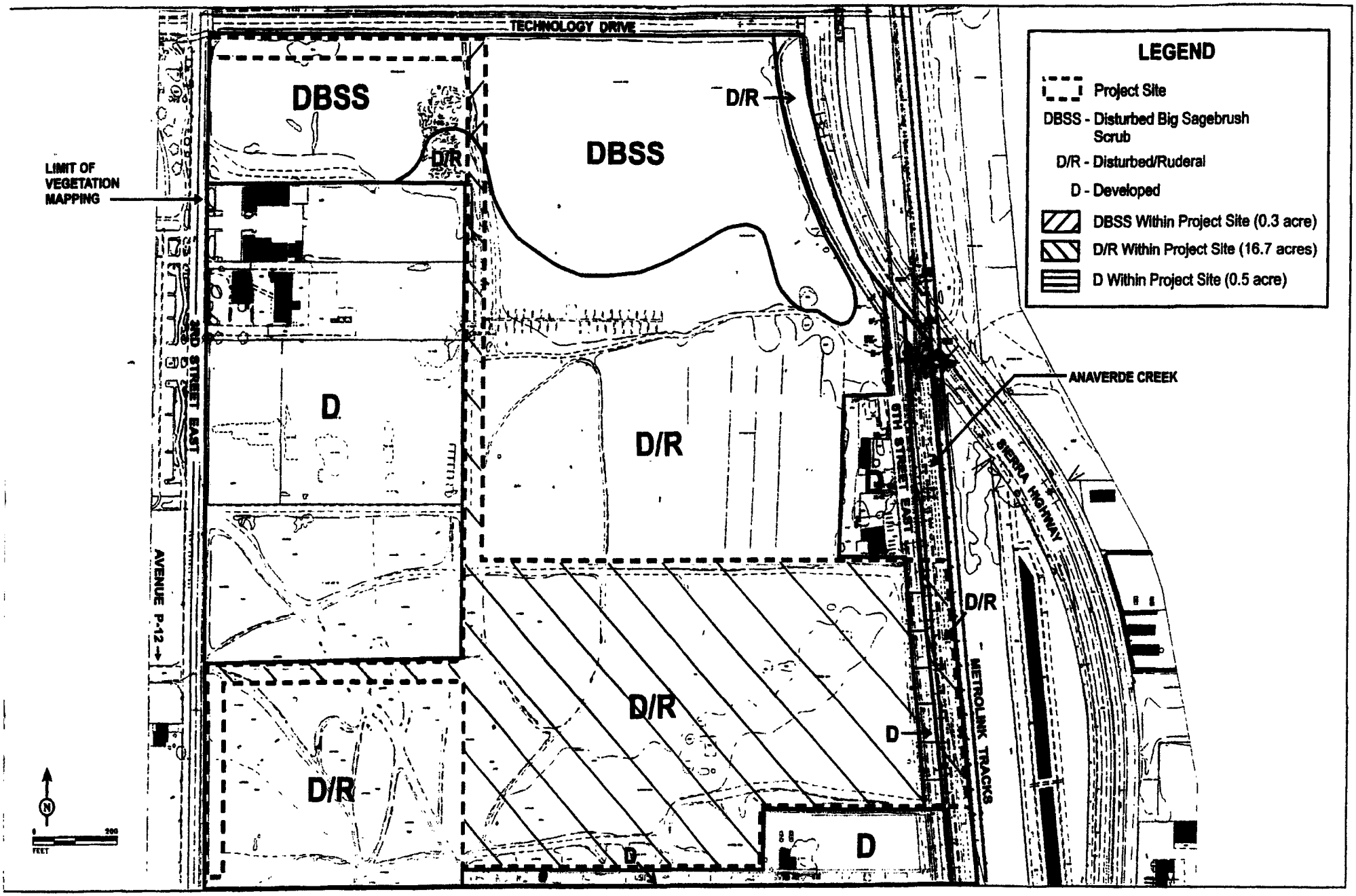
The 17.5-acre project site consists primarily of disturbed/ruderal vegetation, but also includes an area of disturbed Big Sagebrush Scrub (Holland, 1986) at the extreme northern boundary where access is proposed to Technology Drive (see Figure 3; Photos 2 and 3 in Appendix B). In order to give a better perspective of the vegetation communities in the project vicinity, the vegetation mapping in Figure 3 extends beyond the limits of the project to: 3rd Street East on the west; Technology Drive in the north; the Metrolink tracks and Sierra Highway in the east; and just north of Avenue P-14 in the south.

As mentioned in Section II, Environmental Setting, the project site has been historically disturbed through agricultural activities. Consequently, it is likely that the existing, disturbed nature of the project site is a result of those past agricultural practices.

Disturbed Big Sagebrush Scrub. The northern portion of the project site, which consists of roadway access to Technology Drive, exhibits disturbed vegetation characteristic of Big Sagebrush Scrub (Holland, 1986). The dominant species in this area is common rabbit brush,(*Chrysothamnus nauseosus hololeucus*) but scattered individuals of four-wing saltbush (*Atriplex canescens*) and great basin sage (*Artemisia tridentata*) also occur. The groundcover is similar to the ruderal forbs and grasses described below. Disturbed big sagebrush scrub comprises 0.3 acre on the project site.

---

[1] At the time of the field visit, much of the site had undergone ground disturbance during the course of the Phase I Initial Site Assessment (see Photo 1 in Appendix B) required by CEQA. Consequently, the discussion of vegetation communities was prepared by observing the "undisturbed" portions of the site, as well as relying on pre-Phase I photographs and personal observations from previous visits to the area.



LSA

FIGURE 3

Palmdale Transportation Center
Vegetation Communities

SOURCE: CITY OF PALMDALE, 2001

Disturbed/Ruderal. Disturbed/ruderal areas are lands that have been altered by human activities such that natural vegetation communities no longer exist. The majority of the project site consists of extremely disturbed lands. The site is moderately vegetated with ruderal species including filaree (*Erodium botrys*), mustard (*Brassica* sp.), Bermuda grass (*Cynodon dactylon*), soft chess (*Bromus Hordeaceus*), ripgut brome (*Bromus diandrus*), and widely scattered native species including common rabbit brush, desert tea (*Ephedra californica*), and four-wing saltbush. Disturbed/ruderal areas comprise 16.7 acres on the project site.

Developed. Developed areas consist of all artificial structures including roads, parking lots, buildings, recent/current grading, etc. Developed areas comprise 0.5 acre on the project site.

Special Status Species

Special status plants and wildlife potentially occurring in the project area were determined by querying the CNDDB and CNPS Electronic Inventory, referencing the Palmdale quadrangle. The results of those queries are summarized in Table A.

Due to the extremely disturbed conditions on the project site, no suitable habitat is present for any special status plant or wildlife species.

Table A: Special Status Species Potentially Occurring in the Project Area

Common Name	Latin Name	Status	Habitat Information	Status in Project Area
Plants				
Short-joint beavertail	*Opuntia basilaris var. brachyclada*	CNPS 1B	Sandy soils or coarse, granitic loam in chaparral, Joshua tree woodland, Mohavean desert scrub, pinyon juniper woodland, and riparian woodland habitats.	No habitat present.
Wildlife				
Cooper's hawk	*Accipiter cooperii*	CSC	Nest sites mainly in riparian growths of deciduous trees in woodland habitats (chiefly of open, interrupted or marginal type).	No habitat present.
San Joaquin pocket mouse	*Perognathus inornatus inornatus*	None	Friable soils in grassland and blue oak savanna habitats.	No habitat present.
San Diego horned lizard	*Phrynosoma coronatum blainvillei*	CSC	Friable, rocky, or shallow sandy soils in coastal sage scrub and chaparral habitats in arid and semi-arid climate conditions.	No habitat present.
Mohave ground squirrel	*Spermophilus mohavensis*	ST	Sandy to gravelly soils in open desert scrub, alkali scrub, and Joshua tree woodland habitats. Restricted to the Mohave Desert.	No habitat present. Disturbed big sagebrush scrub vegetation not suitable for this species.
Le Conte's Thrasher	*Toxostoma lecontei*	CSC	Nests in dense, spiny shrubs or densely branched cactus in desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats.	No habitat present.

Legend

California Department of Fish and Game (CDFG)
CSC = California Species of Concern

California Native Plant Society (CNPS)
CNPS 1A = Presumed extinct in California
CNPS 1B = Rare or Endangered in California and elsewhere

State
ST = State Threatened

VI. JURISDICTIONAL WATERS

The only jurisdictional waters associated with the project is Anaverde Creek, which is located along the project's eastern boundary. Anaverde Creek originates in the Sierra Pelona range to the southwest of the project site. From its headwaters, Anaverde Creek flows east through Anaverde Valley where it has a fairly steep gradient and is deeply incised. As it approaches SR-14 and the floor of the Antelope Valley, the gradient lessens and the channel width increases. Anaverde Creek ultimately daylights into the desert near Air Force Plant 42.

East of SR-14, runoff from Anaverde Creek flows in two directions. Part of this runoff crosses Rayburn Road where it is directed onto adjacent undeveloped land to the north. The rest of the runoff from Anaverde Creek is channeled to the east into a small ditch south of and parallel to Rayburn Road and through a pair of 39-inch diameter culverts which carry it beneath Division Street. From Division Street, runoff flows in open roadside ditches along Avenue R (which becomes Rayburn Road) and into a concrete channel south of the American Legion Hall. This concrete channel becomes an earthen, riprap-lined channel west of the Metrolink tracks, and continues along the eastern boundary of the project site.

The affected section of Anaverde Creek is ephemeral wash and highly degraded. This section of Anaverde Creek was previously channelized; the banks of the channel are completely lined with riprap, effectively limiting the establishment of vegetation (see photos 4 and 5 in Appendix B). The channel bottom was also armored with riprap initially, but much of the riprap has been covered with silt or washed downstream. The channel bottom supports sparse vegetation generally consisting of nonnative, ruderal species including Russian thistle (*Salsola tragus*), horseweed (*Conyza canadensis*), and Bermuda grass, but also containing several native species including thistle sage (*Salvia carducea*), wild cucumber (*Marah fabaceus*), cocklebur (*Xanthium strumarium*), and common rabbit brush. Several ornamental trees and a few mulefat plants (*Baccharis salicifolia*) occur on the edge of the channel near the Sierra Highway crossing.

Approximately 0.38 acre of nonwetland waters associated with Anaverde Creek occur on the project site. No wetlands occur in the affected section of Anaverde Creek.

VII. IMPACTS

Biological Resources

The project will result in the loss of 0.3 acre of disturbed big sagebrush scrub and 16.7 acres of disturbed/ruderal vegetation.

Special Status Species

The project will not affect any special status plant or wildlife species.

Jurisdictional Waters

The project will result in impacts to 0.22 acre of Anaverde Creek during construction of the station platform.

Anaverde Creek is an isolated water as it is not tributary to any navigable water. Considering the recent Supreme Court decision (Solid Waste Agency of Northern Cook County [SWANCC] v. U.S. Army Corps of Engineers) concerning the Corps authority to regulate isolated waters, it is likely that the Corps will not assert jurisdiction over Anaverde Creek.

Regardless of Corps jurisdiction, the RWQCB will likely regulate the affected section of Anaverde Creek, as a water of the State, and issue waste discharge requirements pursuant to P-C. In addition, CDFG will require a Streambed Alteration Agreement for project related impacts to the creek. The City has already applied to these agencies for the necessary permits; they are on hold pending final CEQA clearance.

VIII. MITIGATION

Due to the minimal impacts associated with the project, mitigation is only required for the impacts to Anaverde Creek resulting from construction of the station platform. To compensate for the loss of 0.22 acre of Anaverde Creek channel, CDFG requires mitigation at a 2:1 ratio, for a total of 0.44 acre. The City has proposed to accomplish the required mitigation at the future Anaverde Detention Basin mitigation bank, by utilizing 0.44 acre of alluvial scrub credits. This proposal is acceptable to CDFG and RWQCB.

It should be noted that the 2:1 ratio accounts for temporal impacts associated with the loss of habitat as the Anaverde Detention Basin mitigation bank is not expected to be complete until (earliest) 2002.

IX. SIGNIFICANCE

The proposed Palmdale Transportation Center will not effect any special status species, or result in adverse impacts to any sensitive habitats or nonwetland waters in Anaverde Creek.

X. LITERATURE CITED

California Department of Fish and Game, 2001. Rarefind 2 personal computer program. Sacramento, CA.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California.* Non-Game Heritage Program, California Department of Fish and Game, Sacramento, CA.

Skinner, M.W., and B.M. Pavlik, eds. 2001. Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society Special Publication No. 1 (Sixth Edition). Sacramento, CA. vi + 338pp.

APPENDIX A

CNDDB AND CNPS LISTS

Palmdale Transportation Center - Palmdale Quadrangle

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
ACCIPITER COOPERII (NESTING) *COOPER'S HAWK*	None/ None	G4/ S3		SC
OPUNTIA BASILARIS VAR BRACHYCLADA *SHORT-JOINT BEAVERTAIL*	None/ None	G5T1/ S1.2	1B/ 3-2-3	
PEROGNATHUS INORNATUS INORNATUS *SAN JOAQUIN POCKET MOUSE*	None/ None	G4T2T3 / S2S3		
PHRYNOSOMA CORONATUM BLAINVILLEI *SAN DIEGO HORNED LIZARD*	None/ None	G4T3T4 / S2S3		SC
SPERMOPHILUS MOHAVENSIS *MOHAVE GROUND SQUIRREL*	None/ Threatened	G2?/ S2?		
TOXOSTOMA LECONTEI *LE CONTE'S THRASHER*	None/ None	G4/ S3		SC

Palmdale Transportation Center - Palmdale Quadrangle

Scientific/Common Name	CNPS	R-E-D	State	Federal
OPUNTIA BASILARIS VAR. BRACHYCLADA "short-joint beavertail"	1B	3-2-3	None	SOC

APPENDIX B

SITE PHOTOS

Panoramic photo taken from southwest corner of project site, panning from west to north (left to right). Photo shows site conditions following Phase I activities.

LSA

PHOTO 1

Palmdale Transportation Center

Site Photos

SOURCE: LSA ASSOCIATES, INC., 2001

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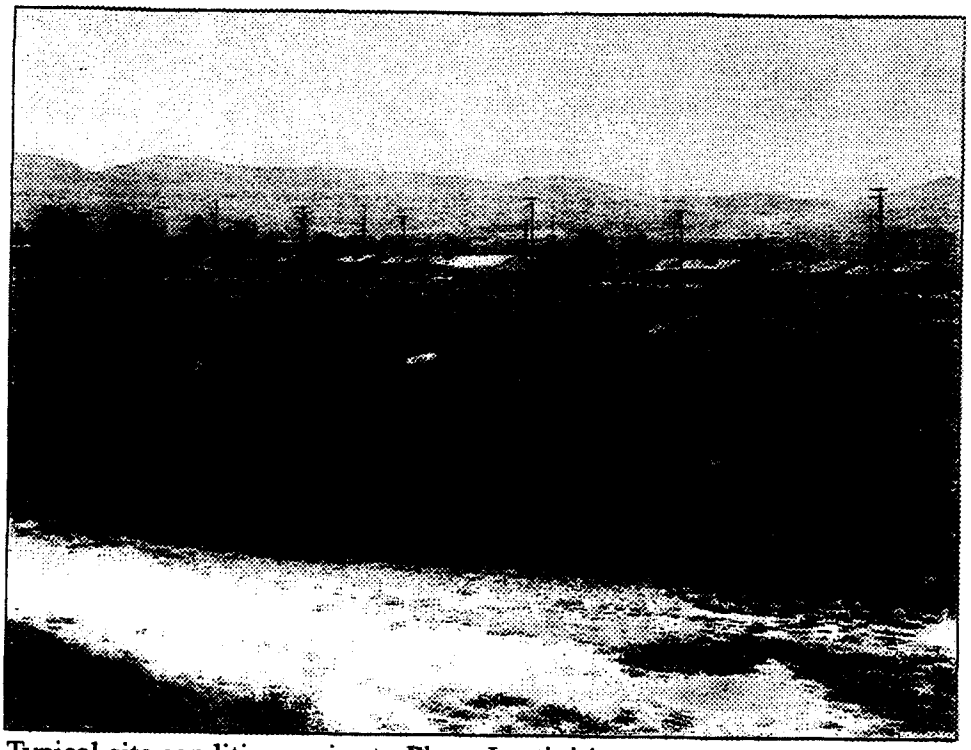

Typical site conditions prior to Phase I activities

Disturbed big sagebrush scrub at north end of project

LSA

PHOTOS 2 & 3

Palmdale Transportation Center

Site Photos

SOURCE: LSA ASSOCIATES, INC., 2001

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View of typical conditions in the channel bottom.

Looking north along Anaverde Creek and 6th Street East.

SA

PHOTOS 4 & 5

Palmdale Transportation Center

Site Photos

URCE: LSA ASSOCIATES, INC., 2001

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APPENDIX 6

NOISE IMPACT STUDY

PALMDALE TRANSPORTATION CENTER

Submitted to:

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LSA

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INTRODUCTION

This noise impact analysis has been prepared to assess the potential noise impacts associated with the proposed Palmdale Transportation Center in the City of Palmdale, California. This report is intended to satisfy the City of Palmdale requirements for a project specific noise impact analysis by examining the impacts of existing and proposed noise sensitive uses on and adjacent to the project site.

PROJECT DESCRIPTION

The City of Palmdale proposes to construct the Palmdale Transportation Center (PTC) to encourage the use of public transportation system such as trains. The project site is located in the City of Palmdale, and is located on the west side of 6th Street East and Southern Pacific Railroad tracks, between Avenue P-8 and Avenue P-14. The proposed project site consists of approximately 5 acres and is currently undeveloped. Figure 1 shows the project location. Figure 2 illustrates the project site plan.

The proposed PTC will be a multi-modal transportation facility to serve Palmdale and the Antelope Valley. The project consists of near-term transportation services including a 500 foot Metrolink rail station platform, a 3,150 square foot Metrolink office building, a bus transfer station for use by the Antelope Valley Transit Authority (AVTA), a compressed natural gas (CNG) alternative fueling facility, approximately 10,000 square feet of commuter serving retail uses, and bicycle and pedestrian accommodations. Parking will be accommodated by a 700-space parking lot. The rail station will be constructed on top of a 630 foot box culvert storm drain improvement within Anaverde Creek.

The new Metrolink rail station will supplement existing stations in Lancaster and Acton that provide rail service between the Antelope Valley and the Los Angeles area. The AVTA bus transfer station will accommodate bus transfers relocated from the Antelope Valley Mall. The CNG fueling facility will be primarily used by the City's fleet of CNG fueled vehicles, although the facility will be open for purchase of CNG by the public. The 10,000 square feet of retail is anticipated to serve the commuter oriented public within the PTC site. Consequently, ancillary retailers such as dry cleaning businesses, coffee shops, convenience markets, or news stands are anticipated.

Vehicular trips will be accommodated from three major points of access including a driveway (Transportation Way) extending south from Technology Drive (Avenue P-8) between Sierra Highway and 3rd Street East, an easterly extension of Avenue P-12 into the project site from 3rd Street East, and 6th Street East from the south via Avenue Q. In order to reduce traffic impacts to the residential areas to the west and south of the PTC, it is anticipated that all AVTA busses will be required to use the Technology Drive driveway via Sierra Highway.

The Avenue P-12 extension will connect with 6th Street East, accommodating through traffic. Similarly, an "S" shaped driveway will be connected between the north project boundary at Transportation Way to the south project boundary at 6th Street East. Together with the Avenue P-12 extension, a "figure 8" internal roadway system will be formed, providing access to all portions of the project.

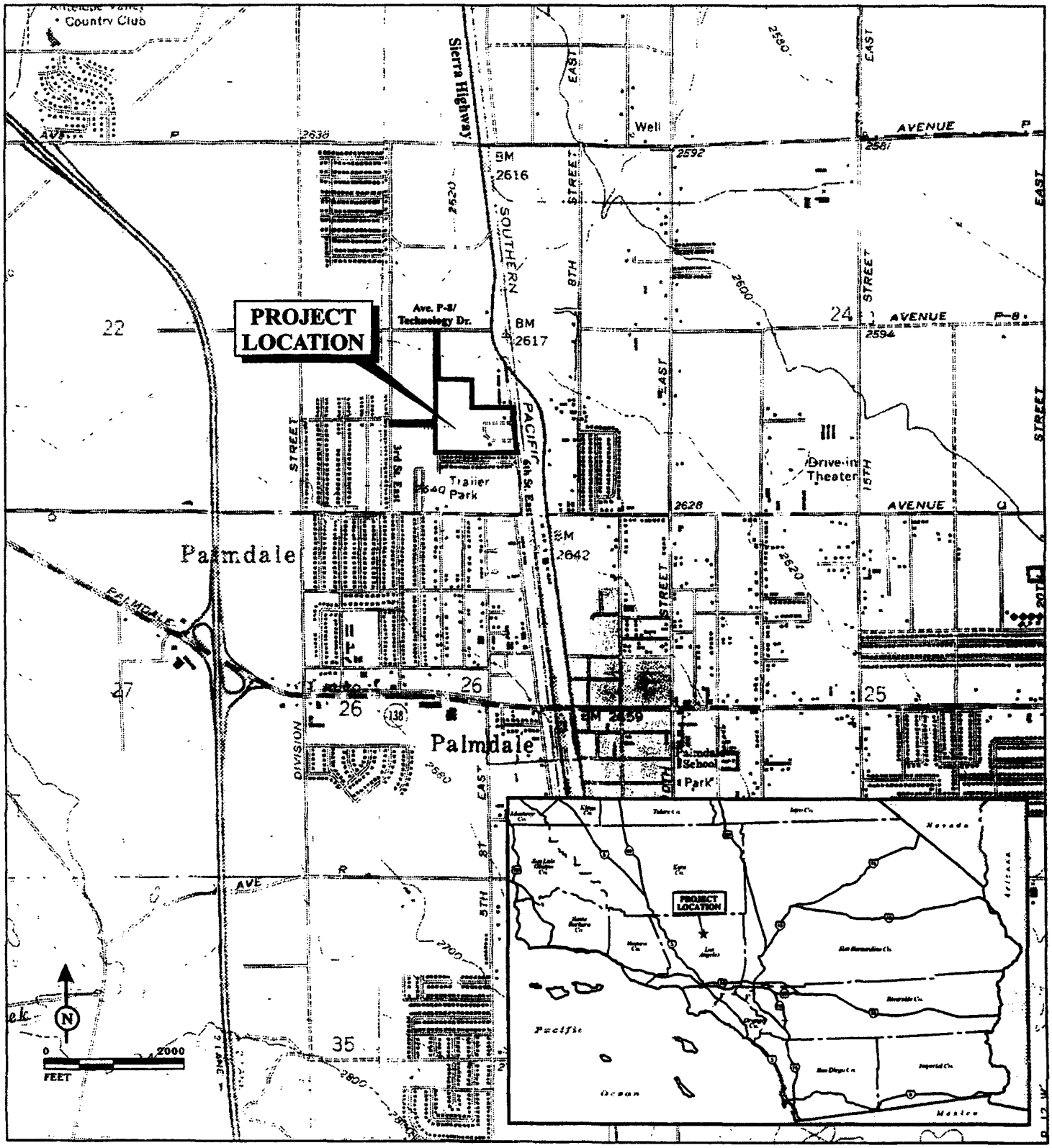

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FIGURE 1

Palmdale Transportation Center

Project Location and Regional Vicinity

SOURCE: USGS 7 5' QUADS - PALMDALE AND RITTER RIDGE, 1974

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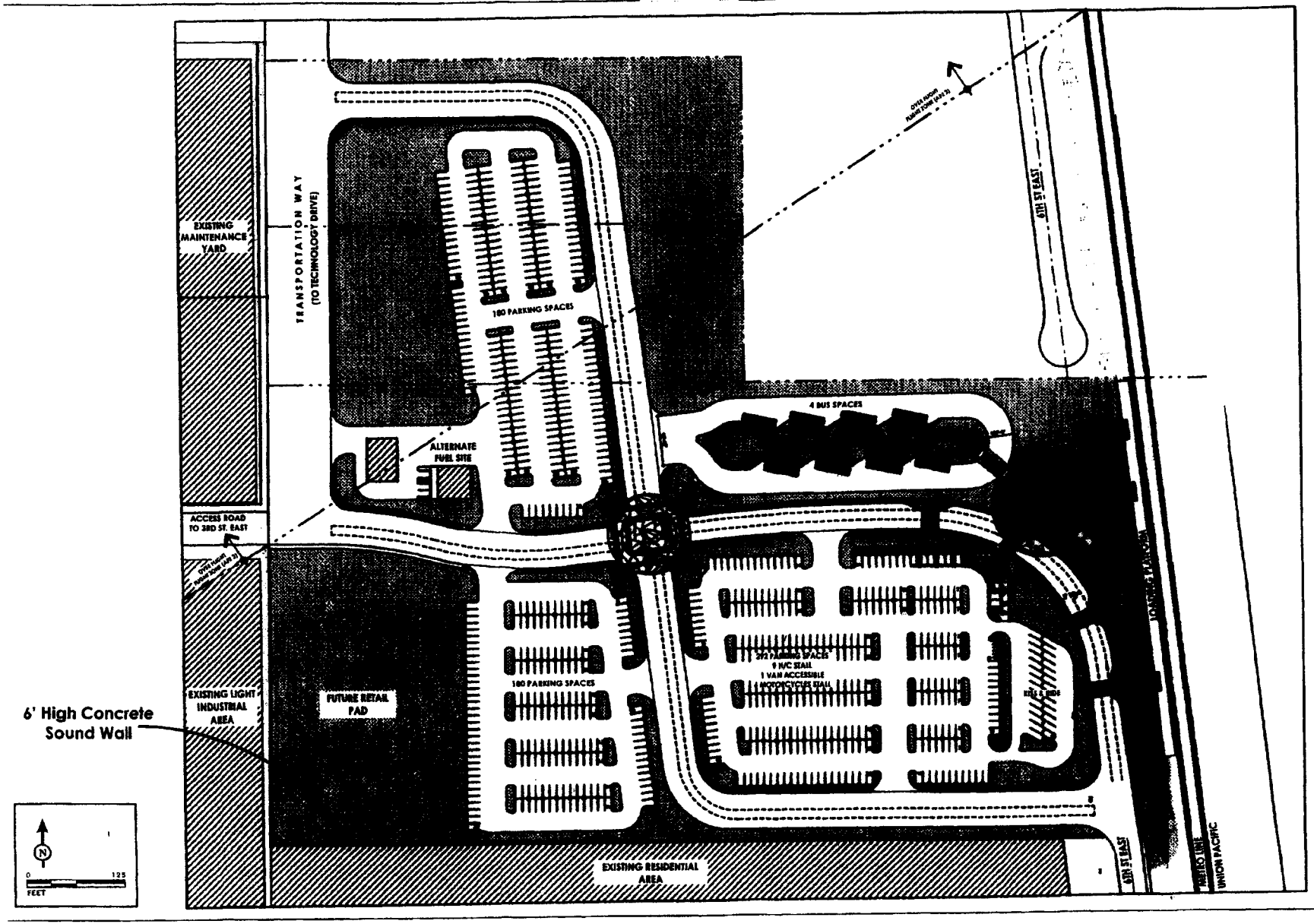

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FIGURE 2

Palmdale Transportation Center
Proposed Site Plan

URCE: Charles Walton Associates AIA, Inc., December 2001
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The City of Palmdale controls an additional 15 acres of land south of Technology Drive and west of Sierra Highway, adjacent to the proposed project. However, this area is not part of the current proposal. Future environmental review of this adjoining property will be required at the time that it is proposed for development.

METHODOLOGY RELATED TO NOISE IMPACT ASSESSMENT

Evaluation of noise impacts associated with a proposed residential project typically includes the following:

- Determine the noise impacts associated with short-term construction of the proposed project on adjacent uses;
- Determine the long-term traffic noise impacts on on-site and off-site noise sensitive uses; and
- Determine the required mitigation measures to reduce short-term and long-term noise impacts.

This noise impact analysis follows City of Palmdale guidelines on the preparation of noise studies, which include the City's Noise Element and Noise Control Ordinance.

FUNDAMENTALS OF NOISE

Characteristics of Sound

Sound is increasing to such disagreeable levels in our environment that it can threaten our quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect our ability to hear. Pitch is the number of complete vibrations or cycles per second of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves, combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's deemphasis of these frequencies. Unlike linear units

such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve.

For example, 10 decibels are 10 times more intense than one decibel, 20 decibels are 100 times more intense, and 30 decibels are 1,000 times more intense. Thirty decibels represent 1,000 times as much acoustic energy as one decibel. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than zero decibel. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 decibel increase in sound level is perceived by the human ear as only doubling of the loudness of the sound. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately six decibels for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source such as highway traffic or railroad operations, the sound decreases three decibels for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 decibels for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The predominant rating scales for human communities in the State of California are the equivalent continuous sound level (Leq) and community noise equivalent level (CNEL) or the day-night average level (Ldn), based on A-weighted decibels (dBA). Leq is the total sound energy of time varying noise over a sample period. CNEL is the time varying noise over a 24 hour period, with a 5 dBA weighting factor applied to the hourly Leq for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). Ldn is similar to the CNEL scale, but without the adjustment for events occurring during the evening hours. CNEL and Ldn are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period, and the percentile exceedance noise level (L_N), which is the sound level that is exceeded for "N" percent of the time during a specified time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, L_N, are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the noise level not to be exceeded for more than ten percent of the time during a stated period (e.g., an hour). The L_{50} noise level represent the median noise level. Half the time the noise level exceeds this level,

and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured Leq and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 decibels (dB) or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB that are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 decibels. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 decibels increasing body tensions, and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 decibels would result in permanent cell damage. When the noise level reaches 120 decibels, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 decibels, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 190 decibels will rupture the eardrum and permanently damage the inner ear.

The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas. Table A lists "Definitions of Acoustical Terms," and Table B shows "Common Sound Levels and Their Sources."

EXISTING CONDITIONS

Sensitive Land Uses in the Project Vicinity

The nearest existing residential uses are located south of the project site or south of the Avenue P-14. Because these existing homes are approximately 200 feet from the project boundary, they would be potentially affected by noise associated with the short-term construction and the long-term use of the project site.

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on the Sierra Highway, 6th Street East, Avenue P-8/Technology Drive, Avenue P-14, and trains utilizing the Southern Pacific Railroad tracks are the dominant sources of ambient noise. The project site is away from and is outside the 60 dBA CNEL noise contour impact zone of the Palmdale Airport.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is ten times the logarithm (to the base ten) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. *All sound levels in this report are A-weighted, unless reported* otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24 hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of ten decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24 hour A-weighted average sound level from midnight to midnight, obtained after the addition of ten decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control, 1991.*

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a few feet away	110	Very Loud	16 time as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Moderately Loud	
Pneumatic Drill; Vacuum Cleaner	80	Moderately Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	
Average Office	60	Quiet	½ times as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	1/4 times as loud
Large Transformer	45	Quiet	
Average Residence Without Stereo Playing	40	Faint	1/8 times as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing
	0	Very Faint	

Source: *Compiled by LSA Associates, Inc 1999.*

Occasional aircraft overflight and natural sounds, such as wind and birds, also contribute to ambient noise in the project vicinity. Table C lists the traffic noise levels in the project vicinity under existing conditions. Except for Sierra Highway, traffic noise along other roadway links in the project vicinity is low, with the 65 and 70 dBA CNEL contours confined within the roadway right of way.

A field noise survey was conducted on February 13, 2002, on the project site and in the residential community to the south of the project site. Noise was monitored in the residential area south of the project site, approximately 50 feet west of the railroad tracks, between 2:35 p.m. and 3:40 p.m. A southbound Southern Pacific freight train passed by this area at around 3:10 p.m. Noise was monitored on the project site approximately 20 feet south of Edelweiss Berman Restaurant and 25 feet west of the railroad tracks, between 3:41 p.m. and 4:30 p.m. when no train noise was captured, and between 4:30 p.m. and 5:30 p.m. during which one northbound Metrolink train passing by at around 5:20 p.m. During both train passings train horn was sounded near the at grade crossing at Sierra Highway. Metrolink train horn was observed to last longer than that of the freight train. Table D lists the noise levels measured at these two locations.

Noise monitoring data in Table D shows that existing ambient noise levels in the project vicinity are high, with the continuous equivalent noise level, Leq, ranging from 67.6 dBA in the residential community and 69.1 to 76.7 dBA on the project site. The measured peak noise reflected higher train horn noise by the freight train (125.7 dBA Lpeak) than by a Metrolink train (109.1 dBA Lpeak), even though the distance from the sound level meter to the railroad tracks for the freight train monitoring location was twice (50 feet vs. 25 feet) as far as that of Metrolink train monitoring location. Because the Metrolink train horn lasted longer than that of the freight train, the measured maximum noise level (Lmax) was higher for the monitoring period with Metrolink train than that of the freight train monitoring period. It should be noted that during a period when no train noise was captured, the ambient noise levels measured on the project site showed relatively high noise level even without the train passing by noise.

Thresholds of Significance

A project will normally have a significant effect on the environment related to noise if it will increase substantially the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community where it is located. The applicable noise standards governing the project site are the criteria in the City's Noise Element and Noise Control Ordinance.

Noise Element of the General Plan. Applicable policies and standards governing environmental noise in the City of Palmdale are set forth in the Noise Element of the General Plan. The goal of the Noise Element, compiled under the mandate of Section 65302(g) of the California Government Code and guidelines prepared by the California Department of Health Services (DHS), is to identify and control noise levels appropriate to specific areas consistent with mental and physical health and enjoyment of the environment.

Table C: Existing Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from outermost lane
3rd Street East					
North of Technology Dr.	3,040	<50[1]	<50	61	59.9
Between Technology Dr and East Avenue P-12	3,785	<50	<50	70	60.8
Between East Avenue P-12 and Avenue Q	3,205	<50	<50	63	60.1
South of Avenue Q	1,050	<50	<50	<50	55.2
Technology Drive					
West of 3rd Street East	6,240	<50	<50	99	62.1
Between 3rd Street East and Transportation Way	6,740	<50	<50	104	62.4
Between Transportation Way and Sierra Highway	6,970	<50	<50	106	62.5
Sierra Highway					
North of Technology Drive	16,780	63	127	270	68.8
South of Technology Drive	21,170	72	148	315	69.8
Avenue Q					
West of 3rd Street East	2,780	<50	<50	<50	58.1
East of 3rd Street East	4,060	<50	<50	59	59.7
East Avenue P-12					
West of 3rd Street East	360	<50	<50	<50	49.2

Source: *LSA Associates, Inc., January 2002.*

[1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table D: Noise Monitoring Results, dBA

Site	Leq	Lmax	Lmin	Lpeak	L2	L8	L25	L50	Train Noise
1[1]	67.6	93.6	42.6	125.7	73.2	69.8	61.7	52.9	Freight
2[2]	76.7	88.1	40.8	97.5	88.0	74.8	62.9	52.9	None
2	69.1	96.9	42.8	109.1	72.4	68.9	59.9	53.3	Metrolink

Source: *LSA Associates, Inc., February 2002.*

Table E lists State compatibility guidelines for various land uses. For example, a residential use is acceptable in areas with up to 60 dBA CNEL. Residential uses in a 60-70 dBA CNEL zone would be appropriate only with certain mitigation. For commercial or business office buildings, noise levels up to 70 dBA CNEL are conditionally acceptable with noise insulation. In areas with noise levels from 70 to 75 dBA CNEL, construction of commercial/business office buildings would require acoustic analysis to determine the insulation needed.

Table F presents the City of Palmdale's interior and exterior noise standards for assessing the compatibility of land uses with the noise environment. This matrix may be used to determine whether a certain type of land use is appropriate in a particular CNEL zone. Commercial uses are permitted when the interior noise is maintained at 55 dBA $Leq_{(h)}$ or lower.

The City also enforces building sound transmission loss and indoor fresh air ventilation requirements specified in Chapter 35 of the Uniform Building Code.

Noise Control Ordinance. The City's Municipal Code, Chapter 8.28, Building Construction Hours of Operation and Noise Control (adopted by City of Palmdale, May, 1986), specifies that construction activities are generally prohibited between 8:00 p.m. and 6:30 a.m. the following day from Monday through Saturday, and no construction is permitted on Sundays and federal holidays. Construction noise during the allowed construction time periods is exempt from the noise level provisions in the noise control ordinance.

[1]Site 1 is located in the residential community to the south of the project site about 50 feet west of the railroad tracks.

[2]Site 2 is located on the project site 20 feet south of a restaurant and 25 feet west of the railroad tracks.

Table E: Land Use Compatibility Standards

Land Use Category	50	55	60	65	70	75	80
Residential	a	a	b	b	c	d	d
Transient Lodging, Motels, Hotels	a	a	b	b	c	c	d
Schools, Libraries, Churches. Hospitals, Nursing Homes	a	a	b	b	c	c	d
Sports Areas, Outdoor Spectator Sports	a	a	b	b	c	d	d
Playgrounds, Neighborhood Parks	a	a	b	c	d	d	d
Golf Courses, Riding Stables, Water Recreation, Cemeteries	a	a	a	b	c	c	d
Office Buildings, Business Commercial and Professional	a	a	a	a	b	c	d
Industrial, Manufacturing, Utilities, Agriculture	a	a	a	a	b	c	c

Source: *Office of Noise Control, California Department of Health Services, 1976*

KEY:

a. Normally Acceptable - land use satisfactory, buildings need no special noise insulation.

b. Conditionally Acceptable - new construction should be undertaken only after acoustic analysis and installation of noise insulation. Conventional construction but with closed windows and fresh air supply systems or air conditioning will normally suffice.

c. Normally Unacceptable - new construction should be discouraged. If construction does proceed, acoustic analysis to determine the insulation needed is required.

d. Clearly Unacceptable - new construction should not be undertaken.

Table F: Maximum Acceptable Noise Levels City of Palmdale

Land Use Categories	Uses	Interior[1]	Exterior
Residential	Single Family, Multiple Family, Duplex	45[2] dBA CNEL	65 dBA CNEL
	Mobile Home Park	45 dBA CNEL	65 dBA CNEL
Commercial	Retail, Services, Office	55 dBA Leq(h)	—[3]
Institutional	Hospitals, Schools, Nursing Homes	45 dBA Leq(h)	—[3]
Industrial	Industrial Park, Business Park	65 dBA Leq(h)	—[4]
	Quarry	N/A	—[5]

Source: *City of Palmdale, January 25, 1993, Compiled by LSA Associates, Inc., 2000*

IMPACTS AND MITIGATION MEASURES

Short-Term Construction Related Impacts

Noise levels from grading and other construction activities for the proposed project would potentially result in noise levels reaching 79 dBA L_{max} at the nearest residences south of the project site. Other existing and planned residences located farther away from the project site would experience lower construction noise from the project site. Compliance with the City's noise ordinance construction hours requirements would reduce construction related noise impacts of the proposed project to a less than significant level.

Short-term noise impacts would be associated with excavation, grading, and erecting buildings on site during construction of the proposed project. Construction related short-term noise levels would be higher than existing ambient noise levels in the project area today, but would no longer occur once construction of the project is completed.

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1 Indoor environment excluding: bathrooms, toilets, closets, corridors.

2 Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.

3 A noise level which does not jeopardize health, safety, and welfare of visitors.

4 A noise level which does not interfere with normal business activity.

5 Maximum 65 dBA Leq(h) at the interface with residentially designed land.

Two types of short-term noise impacts would occur during construction of the project. First, construction crew commute and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single event noise exposure potential, i.e., up to 87 L_{max} dBA at 50 feet from passing trucks resulting in potential short-term intermittent annoyances, the effect in long-term ambient noise levels would be small when averaged over a longer period of time. In addition, truck traffic on public roads is regulated by federal and State governments, not local governments. Therefore, short-term construction related impacts associated with worker commute and equipment transport to the project site would be less than significant.

The second type of short-term noise impact is related to noise generated during excavation, grading, and building erection on the project site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table G lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery, such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings.

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. This equipment would be used on the project site. As seen in Table G, the maximum noise level generated by each earthmover on the proposed project site is assumed to be 88 dBA at 50 feet from the earthmover. Each bulldozer would also generate 88 dBA at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by three dBA. Assuming that each piece of construction equipment operates as individual noise sources, the worst case combined noise level at each individual residence during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from an active construction area.

Existing residences closest to the project site are located approximately 200 feet south of the project site and would receive 12 dBA or more in noise reduction compared to the noise levels at 50 feet. They are expected to be exposed to short-term noise from the project site reaching 79 dBA L_{max}, generated by construction activities on the project site. Other existing residences further away from the project site would experience much lower construction noise from the project site. The proposed project would comply with the construction hours specified in the City's Noise Control Ordinance so that construction noise would be less than significant.

Table G: Typical Construction Equipment Maximum Noise Levels (L_{max})

Type of Equipment	Range of Sound Levels Measured (dBA at 50 feet)	Suggested Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	68 to 80	77
Dozers	85 to 90	88
Tractors	77 to 82	80
Front-End Loaders	86 to 90	88
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 86	86
Trucks	81 to 87	86

Source: *Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987.*

Long-Term On-Site Operational Noise Impacts

The proposed park and ride facility would result in onsite noise from trains stopping at the station, vehicle movement in the parking lots, and other on-site activities such as door slamming and conversation. Currently, there are 19 Metrolink trains passing through this area. It is assumed that the proposed Metrolink station would result in all 19 Metrolink trains to stop for three to four minutes daily. Metrolink trains are much quieter than freight trains. The deceleration and acceleration of the Metrolink trains near the station would not generate noise levels higher than the freight trains passing through this area.

Currently, both Metrolink and freight trains blow their train horn for warning signals as they approach the at grade crossing near Sierra Highway. Such warning signals are required by the Federal Railroad Administration under federal law. The train's horn is directed mostly forward in front of the train to provide a warning signal before the train arrives. Sound generated by the freight train's horn can reach a maximum instantaneous level of 90 dBA L_{max} at a distance of 100 feet in front of the train. The sound level from a train's horn on either side of the train is typically 8-10 dBA lower at the same distance, or up to 82 dBA L_{max} at 100 feet from the train. Metrolink trains generate 77 to 87 dBA L_{max} from a horn sounding at a distance of 100 feet, slightly lower than the horn sounding from freight trains. Although train horn noise could result in annoyance in the project area,

local governments have no jurisdiction over and have no control of train related noise. The proposed project would not result in additional train horn sounding at or near the station. However, because existing and continuing train horn noise could result in annoyance in the project vicinity, mitigation measures such as a six foot free standing wall is recommended to be implemented along the southern project boundary.

Vehicle movement in the parking lots and door slamming and people talking in the parking lots would be similar to those occurring on any public streets. Vehicles cruising at slow speeds generate relatively low noise level, or less than 60 dBA L_{max} at 50 feet. At 200 feet, this noise drops to 48 dBA L_{max}. Door slamming would generate intermittently high impact noise levels up to 75 dBA L_{max} at 50 feet. At 200 feet, this noise drops to 63 dBA L_{max}. Conversation between two persons at a distance of three to five feet apart would generate a noise level of 60 dBA L_{max} at 5 feet. At 200 feet, this noise is reduced to approximately 28 dBA L_{max}. Noise generated on the project's parking lot, including vehicles cruising at slow speeds, door slamming, and people conversation, would not result in exterior noise levels at the nearest residential homes exceeding 65 dBA L_{max}. With standard exterior to interior noise attenuation provided by residential structures, this maximum noise would be reduced to 40 dBA L_{max} with windows closed and 53 dBA L_{max} with windows open. This range of noise levels is compatible with typical noise levels experienced inside residential homes from daily activities. Therefore, noise from on-site operational activities would not result in significant noise impact at the nearest residential uses south of the project site. Because the proposed park-and-ride facility is a transient use for commuters, it is not considered a noise sensitive use.

Long-Term Traffic Noise Impacts

Increases in noise levels could result from project related traffic on access roads leading to the project site. Project related long-term vehicular trip increases are anticipated to be moderate. The incremental traffic noise level increases would be less than significant. No significant traffic noise impacts on off-site sensitive uses are anticipated. The proposed on-site facility is not considered noise sensitive for purposes of the onsite commuter transient use by vehicle and train noise.

Similar to existing conditions, the FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate future highway traffic related noise conditions in the vicinity of the project site. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24 hour periods to determine the CNEL value. CNEL contours are derived through a series of computerized iterations designed to isolate the 60, 65, and 70 dBA CNEL contours associated with traffic noise generated on area roads.

LSA Associates, Inc. (LSA, January, 2002) provided peak hour traffic counts on area roadways for existing (2001) and opening year (2003) no project and opening year (2003) plus project conditions. Table H provides opening year (2003) baseline traffic noise levels adjacent to the surface roads in the project vicinity. Table I provides opening year (2003) plus project traffic noise levels adjacent to surface roads in the project vicinity. These noise levels represent the worst case scenario, which assumes that no shielding is provided between the traffic and the location where noise contours are

Table H: 2003 No Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from outermost lane	Change from Existing level (dBA)
3rd Street East						
North of Technology Dr.	3,280	<50[1]	<50	64	60.2	0.3
Between Technology Dr and East Avenue P-12	4,085	<50	<50	74	61.1	0.3
Between East Avenue P-12 and Avenue Q	3,470	<50	<50	66	60.4	0.3
South of Avenue Q	1,130	<50	<50	<50	55.6	0.4
Technology Drive						
West of 3rd Street East	6,730	<50	<50	104	62.4	0.3
Between 3rd Street East and Transportation Way	7,175	<50	<50	108	62.7	0.3
Between Transportation Way and Sierra Highway	7,530	<50	56	111	62.9	0.4
Sierra Highway						
North of Technology Drive	18,130	66	134	285	69.1	0.3
South of Technology Drive	22,860	72	148	315	69.8	0.0
Avenue Q						
West of 3rd Street East	3,300	<50	<50	52	58.8	0.7
East of 3rd Street East	4,680	<50	<50	65	60.3	0.6
East Avenue P-12						
West of 3rd Street East	390	<50	<50	<50	49.5	0.3

Source: LSA Associates, Inc., January 2002

[1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table I: 2003 Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from outermost lane	Change from No Project level (dBA)
3rd Street East						
North of Technology Dr.	3,820	<50[1]	<50	68	60.9	0.7
Between Technology Dr and East Avenue P-12	4,355	<50	<50	75	61.4	0.3
Between East Avenue P-12 and Avenue Q	3,730	<50	<50	68	60.8	0.4
South of Avenue Q	1,130	<50	<50	<50	55.6	0.0
Technology Drive						
West of 3rd Street East	6,740	<50	<50	104	62.4	0.0
Between 3rd Street East and Transportation Way	7,435	<50	<50	110	62.8	0.1
Between Transportation Way and Sierra Highway	8,720	<50	59	118	63.5	0.6
Sierra Highway						
North of Technology Drive	19,000	67	136	290	69.3	0.2
South of Technology Drive	23,180	76	156	334	70.2	0.4
Avenue Q						
West of 3rd Street East	3,840	<50	<50	55	59.5	0.7
East of 3rd Street East	4,950	<50	<50	66	60.6	0.3
East Avenue P-12						
West of 3rd Street East	390	<50	<50	<50	49.5	0.0
East of 3rd Street East	530	<50	<50	<50	50.9	N/A
Transportation Way						
South of Technology Drive	1,400	<50	<50	<50	55.1	N/A

Source: LSA Associates, Inc., January 2002.

[1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix A.

Table H shows that, under the year 2003 baseline no project condition, traffic noise along most roadway links in the project vicinity would remain low, except along Sierra Highway and Technology Drive between Transportation Way and Sierra Highway, where the 65 dBA CNEL noise contour would extend beyond the roadway right of way. The 70 dBA CNEL noise contour would be confined within the roadway right-of-way, except along Sierra Highway.

Noise Impacts on Off-Site Land Uses. Table I shows that the proposed project would add up to 0.7 dBA to the area roadways. These changes are considered less than significant. No significant traffic noise impacts on off-site land uses would occur as a result of the proposed project.

Noise Impacts on the Proposed Onsite Uses. The proposed on-site commercial uses would be potentially exposed to traffic noise between 60 and 65 dBA CNEL. With traffic being the dominant source, the 24 hour weighted average CNEL level is assumed to be almost equal to the peak hour traffic noise level in terms of $Leq_{(h)}$. Therefore, the proposed on-site commercial uses near Sierra Highway would be exposed to exterior noise up to 65 dBA $Leq_{(h)}$. Standard commercial buildings or structures in Southern California would provide 20 dBA or more exterior to interior noise reduction with windows closed and 12 dBA or more noise reduction with windows open. Therefore, the interior noise level at these commercial uses would achieve the 55 dBA $Leq_{(h)}$ interior noise standard established by the City both with windows open or closed. The proposed Metrolink Station and park-and-ride facility is not considered a noise sensitive use, with transient use only. No mitigation measures are required for future traffic noise impact.

Mitigation Measures

Construction Impacts. Construction of the proposed project would potentially result in relatively high noise levels and annoyance at the closest existing residences. The following measures, as required by the City's Noise Control Ordinance, would reduce short-term construction related noise impacts associated with the proposed project:

1. During all project site excavation and grading on site, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards.

2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.

3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction related noise sources and noise sensitive receptors nearest the project site during all project construction.

4. During all project site construction, the construction contractor shall limit all construction related activities that would result in high noise levels to between the hours of 6:30 a.m. and 8:00 p.m. Monday through Saturday. No construction shall be allowed on Sundays and public holidays.

Operational Impacts. The following mitigation measure is recommended to reduce train horn noise impacts to residents to the south of the project site.

1. A six foot sound wall shall be implemented along the southern project boundary.

Level of Significance After Mitigation. With implementation of the identified mitigation measures, potential short- and long-term noise impacts would be reduced to below the level of significance.

REFERENCES

Bolt, Beranek & Newman, Noise Control for Buildings and Manufacturing Plants, 1987.

City of Palmdale, Noise Element. January 1993.

City of Palmdale, Municipal Code (Chapter 8.28), May 1986.

Federal Highway Administration, Highway Traffic Noise Prediction Model, FHWA RD-77-108, 1977.

APPENDIX A

FHWA TRAFFIC NOISE MODEL PRINTOUTS

FHWA TRAFFIC NOISE MODEL PRINTOUTS

EXISTING CONDITIONS

TABLE PALMDALE E1
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E NORTH OF TECHNOLOGY DR
NOTES: EXISTING CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3040 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	60.7	128.8

TABLE PALMDALE E2
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E BTW TECHNOLOGY DR AND E AVE P-12
NOTES: EXISTING CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3785 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	69.9	148.9

TABLE PALMDALE E3
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E BTW E AVE P-12 AND AVE Q
NOTES: EXISTING CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3205 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	62.8	133.4

TABLE PALMDALE E4
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E SOUTH OF AVE Q
NOTES: EXISTING CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1050 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.3

TABLE PALMDALE E5
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: TECHNOLOGY DR WEST OF 3RD ST E
NOTES: EXISTING CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6240 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	99.0	208.2

TABLE PALMDALE E7
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: TECHNOLOGY DR BTW TRANSPORTATION WAY AND SIERRA HWY
NOTES: EXISTING CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6970 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	106.1	224.0

TABLE PALMDALE E6
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: TECHNOLOGY DR BTW 3RD ST E AND TRANSPORTATION WAY
NOTES: EXISTING CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6740 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	103.9	219.1

TABLE PALMDALE E8
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: SIERRA HWY NORTH OF TECHNOLOGY DR
NOTES: EXISTING CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16780 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
62.8	127.3	270.3	580.3

TABLE PALMDALE E9
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: SIERRA HWY SOUTH OF TECHNOLOGY DR
NOTES: EXISTING CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21170 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
71.9	147.9	315.2	677.4

TABLE PALMDALE E10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: AVE Q WEST OF 3RD ST E
NOTES: EXISTING CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2780 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	97.9

TABLE PALMDALE E11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: AVE Q EAST OF 3RD ST E
NOTES: EXISTING CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4060 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	59.3	125.6

TABLE PALMDALE E12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: E AVE P-12 WEST OF 3RD ST E
NOTES: EXISTING CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 360 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

FHWA TRAFFIC NOISE MODEL PRINTOUTS

YEAR 2003 NO PROJECT CONDITIONS

TABLE PALMDALE NB1
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E NORTH OF TECHNOLOGY DR
NOTES: 2003 NO PROJECT CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3280 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	63.8	135.4

TABLE PALMDALE NB2
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E BTW TECHNOLOGY DR AND E AVE P-12
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4085 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	73.5	156.6

TABLE PALMDALE NB3
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E BTW E AVE P-12 AND AVE Q
NOTES: 2003 NO PROJECT CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3470 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	66.1	140.6

TABLE PALMDALE NB4
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: 3RD ST E SOUTH OF AVE Q
NOTES: 2003 NO PROJECT CONDITIONS

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1130 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.4

TABLE PALMDALE NB5
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: TECHNOLOGY DR WEST OF 3RD ST E
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6730 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	103.8	218.9

TABLE PALMDALE NB6
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: TECHNOLOGY DR BTW 3RD ST E AND TRANSPORTATION WAY
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7175 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	108.1	228.3

TABLE PALMDALE NB7
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: TECHNOLOGY DR BTW TRANSPORTATION WAY AND SIERRA HWY
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7530 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	55.9	111.4	235.6

TABLE PALMDALE NB8
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: SIERRA HWY NORTH OF TECHNOLOGY DR
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18130 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.6	133.8	284.5	611.0

TABLE PALMDALE NB9
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: SIERRA HWY SOUTH OF TECHNOLOGY DR
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21170 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
71.9	147.9	315.2	677.4

TABLE PALMDALE NB10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: AVE Q WEST OF 3RD ST E
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3300 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.80

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	52.0	109.6

TABLE PALMDALE NB 11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: AVE Q EAST OF 3RD ST E
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4680 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	64.9	138.0

TABLE PALMDALE NB12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/30/2001
ROADWAY SEGMENT: E AVE P-12 WEST OF 3RD ST E
NOTES: 2003 NO PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 390 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

FHWA TRAFFIC NOISE MODEL PRINTOUTS

YEAR 2003 PLUS PROJECT CONDITIONS

TABLE PALMDALE P1

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: 3RD ST E NORTH OF TECHNOLOGY DR
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3820 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	70.4	149.8

TABLE PALMDALE P2
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: 3RD ST E BTW TECHNOLOGY DR AND E AVE P-12
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4355 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	76.6	163.4

TABLE PALMDALE P3
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: 3RD ST E BTW E AVE P-12 AND AVE Q
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3730 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	69.3	147.5

TABLE PALMDALE P4
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: 3RD ST E SOUTH OF AVE Q
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1130 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.4

TABLE PALMDALE P5
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: TECHNOLOGY DR WEST OF 3RD ST E
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6740 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	103.9	219.1

TABLE PALMDALE P6
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: TECHNOLOGY DR BTW 3RD ST E AND TRANSPORTATION DR
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7435 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	55.5	110.5	233.7

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: TE4CHNOLOGY DR BTW TRANSPORTATION WAY AND SIERRA HWY
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8720 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	60.7	122.4	259.6

TABLE PALMDALE P8
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: SIERRA HWY NORTH OF TECHNOLOGY DR
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.4	137.9	293.4	630.4

TABLE PALMDALE P9
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: SIERRA HWY SOUTH OF TECHNOLOGY DR
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23180 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
75.9	156.9	334.8	719.6

TABLE PALMDALE P10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: AVE Q WEST OF 3RD ST E
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3840 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	57.2	121.1

TABLE PALMDALE P11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: AVE Q EAST OF 3RD ST E
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4950 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	67.3	143.2

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: E AVE P-12 WEST OF 3RD ST E
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 390 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE PALMDALE P13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: E AVE P-12 EAST OF 3RD ST E
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 530 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE PALMDALE P14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 01/07/2002
ROADWAY SEGMENT: TRANSPORTATION WAY
NOTES: 2003 PROJECT CONDITIONS

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	62.7

APPENDIX 7

Gilray Enterprises, Inc.
211 South State College Boulevard, Suite 315, Anaheim, California 92806 (714) 533-7294 FAX (714) 956-5651

PHASE I ENVIRONMENTAL

SITE ASSESSMENT (ESA)

PREPARED FOR

CITY OF PALMDALE

PUBLIC WORKS

PERFORMED AT

PROPOSED MULTI-MODAL SITE
BETWEEN 3RD & 6TH STREETS EAST, AND, AVENUES P-8 & P14
EIGHT PARCELS
PALMDALE, CA 93550

VOLUME I – REPORT BODY

APRIL 20. 1999

Gilray Enterprises, Inc.

211 South State College Boulevard, Suite 315, Anaheim, California 92806 (714) 533-7294 FAX (714) 956-5651

April 20, 1999

Mr. Randy C. Floyd
Senior Analyst
City of Palmdale, Public Works
708 East Palmdale Boulevard
Palmdale, CA 93550

Subject: PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)
Proposed Multi-Modal Site
between 3rd & 6th Streets East, and, Avenues P-8 & P14 - eight parcels
Palmdale, CA 93550

Dear Mr. Floyd:

Submitted herewith is our report of the findings of a Phase I Environmental Site Assessment (ESA) for the above referenced property.

Please contact the undersigned if you have any questions or comments regarding this report.

Respectfully submitted,

RAY GILBERT
Project Manager
Registered Environmental Assessor

REGISTERED ENVIRONMENTAL ASSESSOR
RAY GILBERT
No. 01419
Expires 6/99
STATE OF CALIFORNIA

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0.0 PREFACE

The report for this investigation is divided into two separate volumes as follows:

VOLUME I - REPORT BODY - This portion of the report contains only the narrative text of the report.

VOLUME II - REPORT EXHIBITS - This portion of the report contains only the exhibits referenced in the narrative text portion of the report.

The combination of Volumes I & II form the entire report for this investigation.

1.0 EXECUTIVE SUMMARY

We have performed a Phase I Environmental Assessment in conformance with the scope and limitations of ASTM Practice E 1527 at the Proposed Multi-Modal Site, APN 3006-006-004, -005, -006, -007, -008, -009, -024 & -025, Palmdale, CA 93550, the subject property.

There are no known exceptions or deletions to ASTM Practice E 1527 in this assessment. This assessment has revealed no recognized environmental conditions in connection with the subject property, except as follows:

There is evidence of significant unauthorized surface dumping on the subject property. The majority of the debris is located on APN 3006-006-007 & -008. Visual inspection of that dumping indicates that it consists mainly of household refuse items including old chairs, couches, appliances, landscape trimmings, mattresses and tires. Several empty old rusty 55-gallon drums were noted. Several empty 5-gallon cans were also noted. There was no evidence of chemical dumping noted.

However, there is a potential for unidentified burial sites, unnoticed chemical spills and/or other recognized environmental conditions that might require some degree of clean up by regulatory agencies.

Also, some of the items included in the debris, such as tires and empty hazardous material containers may require special disposal by regulatory agencies.

The debris present on the subject property should be cleared from the site and disposed of according to regulatory guidelines. During the clearing process, the site should be carefully inspected for potential unidentified environmental conditions.

2.0 INTRODUCTION

2.1 PURPOSE

The purpose of this investigation is to conduct a Phase I Environmental Site Assessment in accordance with the procedures defined by the American Society for Testing and Materials (ASTM) Standard Practice designation E 1527.

The goal of this investigation is to identify recognized environmental conditions on the subject property, such as the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or a material threat of a release of said substances or products into structures on the subject property, or, into the ground, groundwater or surface water of the subject property.

2.2 SPECIAL TERMS AND CONDITIONS

A diligent and reasonable effort was made to identify environmental issues of an informational nature which were raised during the course of this investigation. No degree of environmental site assessment can fully eliminate uncertainty regarding recognized environmental conditions. This investigation is intended to reduce, but not eliminate, the potential for unidentified recognized environmental conditions in connection with the subject property.

Phase II field investigations such as surface, subsurface and/or air sampling, physical investigations of soil and/or groundwater beneath the subject property, other analytical testing, and, asbestos sampling, are specifically excluded from the scope of this investigation.

The Report produced in accordance with this investigation shall be for the sole use of the Client. It shall be the responsibility of the Client, or of his representative, to ensure proper/legal disclosures to public, private and regulatory entities.

The interpretations and recommendations of this report were based on the data collected and our present working knowledge of environmental site investigations. As such, the report is valid as of the date shown, and GEI will not be held responsible for subsequent changes in physical/chemical/environmental conditions and/or legislation over which we have no control.

2.3 EXCEPTIONS TO ASSESSMENT

The ASTM-1527 protocol requires definition of property uses from the present back to a time when the subject property was totally undeveloped, and, at least back to 1940. A search of up to eight separate Standard Historical Sources (SHS) may be required to meet this requirement. The availability of extensive historical information varies significantly from one location to another. The search of the SHS's in this investigation has successfully provided sufficient data to meet the ASTM requirements without exception.

2.4 LIMITING CONDITIONS

Certain conditions, such as cooperation of owners, tenants, federal, state and local agencies, availability of information, required time frame of investigation, and other conditions beyond the control of GEI may affect the completeness of this investigation.

3.0 SITE DESCRIPTION

3.1 PROPERTY DESCRIPTION

3.1.1 LOCATION: The subject property is located between 3rd & 6th Streets East, and, Avenues P-8 & P14, on eight parcels, in the city of Palmdale, CA 93550.

Exhibit #1 *Site Location Map, GEI, 1999*

3.1.2 ASSESSOR'S PARCEL NUMBER: The subject property is further described by the following Assessor's Parcel numbers:

APN 3006-006-004, -005, -006, -007, -008, -009, -024 and -026

Exhibit #2 *Assessor's Parcel Map, Experian, 1999*

Reference #1 *Experian*
5601 East La Palma
Anaheim, California 92807
(800) 345-7334

3.1.3 LEGAL DESCRIPTION: The subject property is legally described as follows:

Lots 11, 16, 20, 21, and the South Half of Lot 10, Tract 7670, in the County of Los Angeles, State of California, as per Map recorded in Book 114, Pages 28 to 30 inclusive, of Maps in the office of the County Recorder of said county

3.2 SITE AND VICINITY CHARACTERISTICS

3.2.1 SIZE AND SHAPE: The subject property is eight adjacent parcels comprised of approximately 27.73 acres in total size.

3.2.2 VICINITY CHARACTERISTICS: The subject property is on the northern fringe of Palmdale in a sparsely developed area. It is bordered by vacant undeveloped land to the north along Avenue P-8, residentially developed land and a park to the west along 3rd Street East, residentially developed land to the south along Avenue P-8, and, a rail road right-of-way along 6th Street East to the east.

3.3 DESCRIPTION OF STRUCTURES, ROADS & OTHER IMPROVEMENTS

3.3.1 STRUCTURES: There currently are no permanent structures on the subject property. There are numerous temporary structures located on APN 3006-006-009, consisting primarily of large roll-off containers and small sheds.

3.3.2 ROADS: The subject property is bordered by Avenue P-8 on the north, 3rd Street East on the west, and, 6th Street East on the east. There are no roads located directly on the subject property.

3.3.3 OTHER IMPROVEMENTS: There were no other improvements noted on the subject property during this investigation.

3.4 UTILITIES

Available utilities include water, natural gas, electricity, telephone and sewage disposal furnished by public utility companies.

3.5 STORM WATER

Storm water runoff appears to be conveyed via existing surface contours into the municipal storm drain system.

3.6 LIENS, SPECIALIZED KNOWLEDGE OR EXPERIENCE

No additional information was supplied to GEI by the client for background information in this investigation. There were no environmental liens, or, other items of special knowledge or experience reported to GEI by the client regarding the subject property.

3.7 CURRENT USE OF SUBJECT PROPERTY

APN 3006-006-009 is currently developed for use as a storage yard. There are numerous roll-off containers, several small sheds, several old vehicles, and a trailer located on this parcel. The balance of the subject property is vacant, undeveloped land.

3.8 HISTORICAL USES OF SUBJECT PROPERTY

It appears that the majority of the subject property has been totally undeveloped to date. There was no known development identified during this investigation on parcels APN 3006-006-004, -005, -006, -024 & -025. Parcels APN 3006-006-007, -008 & -009 appear to have been used for residential purposes during the 1950's and 1960's.

3.9 CURRENT AND PAST USES OF ADJOINING PROPERTIES

Contiguous properties are, by definition, in prime positions to environmentally impact a subject property. That impact may vary from a positive influence which provides a neutral buffer zone which insulates the subject property from potential off-site sources of contamination, to negative influences where one or more of them pose a strong threat for, or actually cause, contamination of the subject property.

Development in the general vicinity of the subject property is sparse and has been relatively static from 1953 to date. Most of the land surrounding the subject property has historically been undeveloped. The area along Avenue P-14 to the south of the subject property has been developed for use as single family residences. A small area to the north and west of the subject property along the east side of 3rd Street East has been developed for light industrial uses. Another small area along the east side of 3rd Street East to the south of the subject property has also been developed for light industrial uses. Properties along the west side of 3rd Street East have been developed for single family residential uses. Properties along the west side of 6th Street East have been developed for both residential and commercial uses. There was no visual evidence of areas of environmental impact noted on the subject property from those contiguous and adjacent properties.

4.0 RECORDS REVIEW

4.1 ENVIRONMENTAL DATABASES

An environmental record search report was obtained from Environmental Data Resources, Inc. (EDR).

Exhibit #3 *EDR Radius Map Search, EDR, 1999*

Reference #2 *Environmental Data Resources, Inc.*
3530 Post Road
Southport, Connecticut 06490
(800) 352-0050

4.1.1 SEARCH AREA: The geographical search area presented in the above report complies with the requirements of the American Society for Testing & Materials (ASTM) Standard Practice E 1527.

4.1.2 DATABASES: The information presented represents a compendium of data from numerous federal, state, regional, local and private industry database sources. Refer to the introductory text of the EDR report for more detailed descriptions of the database sources searched.

4.1.3 SITES IN STUDY AREA: All the locations listed in the EDR report are known sites of environmental interest, but, not all are necessarily sites of current environmental contamination.

EDR reports twenty (20) listings in the general vicinity of the subject property. EDR geographically analyzed the data and plotted it on several maps utilizing the address information provided by the databases. That address information was geocoded (assigned latitude and longitude coordinates) utilizing mapping information provided in the US Government Tiger Files.

4.1.4 GEOGRAPHICAL SUMMARY: Based upon that geographical analysis, it appears that there are four (4) identified sites of environmental interest listed in environmental databases that are within the ASTM minimum search radius of the subject property.

The only listing identified within ¼ mile of the subject property is a site known as "McConnell Roofing Inc." That site is listed in the RCRIS-SQG and FINDS database as a small quantity generator of hazardous wastes.

The low number of database listings in the vicinity of the subject property may indicate that development in the area of the subject property is fairly recent, relatively sparse, and/or not currently the source of any known environmental concerns.

4.1.5 DISCUSSION OF FINDINGS: The listed sites are subject to federal, state and local environmental laws and may be considered as potentially having some environmental impact on the subject property. However, the criteria for listing is that the site is subject to regulation, and, listing does not always mean that a release of a material has occurred.

SUBJECT PROPERTY: None of the above database listings appear to be located directly within the boundary of the subject property.

CONTIGUOUS PROPERTIES: None of the above database listings appear to be located on properties contiguous with the subject property.

ADJACENT PROPERTIES: None of the above database listings appear to be located on properties immediately adjacent to the subject property.

SUMMARY: There was no evidence noted in the database listings reviewed which would indicate any negative environmental impacts on the subject property from off-site sources.

4.1.6 ORPHAN SITES: A total of sixteen (16) listings in the EDR report are identified as Orphans. EDR has determined these sites to be either beyond the ASTM specified search radius from the subject property, or, have insufficient or incomplete information to accurately determine their geographical location using US Government Tiger File mapping information.

Based upon a review of those orphan listings, there were no sites noted which appear to be on or immediately adjacent to the subject property.

However, some of the sites in this group may still be of general environmental significance to the subject property. Greater details of specific site case files are available from the lead regulatory agencies. Further review of those files would be required in order to provide more insight for weighing the potential impact of any particular site on the subject property.

4.2 LOCAL ENVIRONMENTAL RECORDS

A search for Hazardous Materials (HAZMAT) records was requested from the County of Los Angeles, Fire Station 37, for all known addresses in the vicinity of the subject property.

Reference #3 *County of Los Angeles, Fire Station 37*
38318 9th Street East
Palmdale, California 93550
(805) 947-7244

There were no records on file for the subject property at the local HAZMAT agency.

4.3 PHYSICAL SETTING

4.3.1 TOPOGRAPHY: The subject property lies in the southern end of the Antelope Valley, north of the San Gabriel Mountains, east of the Sierra Madre Mountains, and south of the Tehachapi Mountains. The subject property is located in T6N R12W S23 San Bernardino Base & Meridian, of the Palmdale, California quadrangle.

Exhibit #4 *USGS Map, Palmdale California Quadrangle, 1958, Photorevised 1974*

Reference #4 *Allied Services*
966 North Main Street
Orange, California 92667
(714) 637-8824

Topographical information indicates that the subject property is essentially planar with no significant relief at an approximate average elevation of 2,620 feet above Mean Sea Level (MSL). The predominant grade in the area near the subject property slopes downward in a northeasterly direction at a rate of approximately 53 feet per mile (1.0% Grade).

4.3.2 GROUNDWATER: Historical groundwater data for the geographical area of the subject property was obtained from the Los Angeles County Department of Public Works (LACDPW).

Exhibit #5 *Well Sounding Report, LACDPW, 1978*

Reference #5 *Los Angeles County Department of Public Works*
900 South Fremont Avenue
Alhambra, California 91803
(818) 458-6120

A review of this information indicates that groundwater in the general vicinity of the subject property occurred at approximately twenty one hundred (2,100) feet above Mean Sea Level (MSL) during 1978, with a resultant surface to groundwater depth estimated at over 500 feet.

4.3.3 SOIL COMPOSITION: A Well Drillers Log for the geographical area of the subject property was obtained from LACDPW, previously cited.

Exhibit #6 *Well Drillers Logs, LACDPW, 1997*

A review of that information indicates that soil in the area is comprised basically of alluvial deposits of clays, sands, gravels and granite to a depth exceeding 600 feet.

4.4 HISTORICAL USE INFORMATION

4.4.1 AERIAL PHOTOGRAPHS: Aerial photographs of the geographical area of the subject property were obtained from EDR, previously referenced.

Exhibit #7 *Aerial Photographs, EDR, Circa 1953 - 1994*

Those aerials were reviewed to provide indicators of historical use of the subject property, development trends in the vicinity of the subject property, and, to evaluate areas of potential environmental interest both on and adjacent to the subject property.

Aerial photographs from 1953, 1968, 1989 and 1994 were obtained. A review of those aerials indicates that there was no apparent development from 1953 through 1994 on parcels APN 3006-006-004, -005, -006, -024, & -025. In the 1953 and 1968 aerial, parcels APN 3006-006-007, -008 & -009 appear to have been used for residential purposes.

4.4.2 FIRE INSURANCE MAPS: Copies of all available Sanborn Maps for the geographical area of the subject property were requested from Environmental Data Resources, Inc. (EDR), previously referenced..

There were no Sanborn Maps available for the geographical area of the subject property.

4.4.3 CRISS CROSS DIRECTORIES: Copies of reverse telephone directories, commonly known as Criss Cross Directories, were researched at the Haines Criss-Cross Directory Company for the geographical area of the subject property.

Reference #6 *Haines Criss-Cross Directory Company*
2832 East Walnut Avenue
Fullerton, California 92831
(714) 870-8151

Exhibit #8 *Criss Cross Directories, Haines, Circa 1973 - 1997*

Those Criss Cross directories were reviewed for information relevant to addresses on the subject property. There were no address listings found for the south side of Avenue P-8 between 3rd Street East and 6th Street East. A review of the address listings for 3rd Street East did not reveal any listings for the probable range of addresses on the subject property (between 38864 & 39108).

A review of the address listings for 6th Street East revealed no listings for the subject property from 1973 through 1982. During 1983 through 1984, the address of 38927 was listed as "HODGE GEORGE L" for APN 3006-006-009. From 1985 through 1998, that same address was listed merely as "XXXX", indicating that there was no telephone service associated with that address. APN 3006-006-009 is currently physically addressed as 38927.

4.4.4 BUILDING DEPARTMENT RECORDS: Copies of all readily available building permits, conditional use permits and certificates of occupancy were requested from the City of Palmdale, Building & Safety Department (PBD) for all known addresses on the subject property.

Reference #7 *City of Palmdale, Department of Building & Safety*
710 East Palmdale Boulevard
Palmdale, California 93550
(805) 267-5353

Exhibit #9 *Building Records, PBD, 1999*

Two building permits were obtained for the subject property. Both permits obtained were for the address of 38927 6th Street East. A review of those permits indicates the use as residential during 1956 & 1958 with the owner listed as "Mrs. William Chase" and "Wm Chase".

4.4.5 CHAIN OF TITLE SEARCH: A Chain of Title Search was obtained for the subject property from Nationwide Environmental Title Research (NETR).

Exhibit #10 *Chain Of Title Documents, NETR, 1999*

Reference #8 *Nationwide Environmental Title Research*
2055 East Rio Salado Parkway
Tempe, Arizona 85281
(602) 967-6752

A review of those Chain of Title documents revealed the following information:

Title to the subject property has been vested to numerous individuals and several investment/property development companies between 1939 and present. Title to parcels APN 3006-006-024 & -026 is currently vested to The Pal Group, a California Limited Partnership. Title to parcel APN 3006-006-005 is currently vested to Toru Arai, a married man as his sole and separate property. Title to parcels APN 3006-006-007 & -008 is currently vested to Freda Levy & Leon Levy, Trustees of The Levy Family. . Title to parcel APN 3006-006-004 is currently vested to Waldo Fernandez and Burton Borman. . Title to parcel APN 3006-006-009 is currently vested to The Florence L. Pickett Family Trust. . Title to parcel APN 3006-006-006 is currently vested to Eugene E Bliley and Betty Jean Bliley, husband and wife.

5.0 SITE RECONNAISSANCE

5.1 TYPICAL AREAS OF ENVIRONMENTAL INTEREST

Each separate property possesses unique environmental characteristics, and thus every physical inspection must also be uniquely adapted to suit those characteristics. The list below presents some typical areas of environmental interest which have been identified during previous inspections of other properties.

5.1.1 KEY HAZARDOUS MATERIALS/SUBSTANCES

1. Asbestos -pipe and equipment insulation, space insulation, fireproofing, and other building materials.
2. Lead Based Paint - paints, sealers
3. Polychlorinated Biphenyls (PCB's) - electrical transformers, capacitors, lamp ballasts, hydraulic fluids, cutting oils and heat transfer systems.
4. Chlorofluorocarbons - freon refrigeration equipment.

5.1.2 CHEMICAL STORAGE & USE

1. Aboveground Storage Tanks (AST's), Drums; Vats; etc.
2. Containment, spill prevention; security, Material Data Safety Sheets (MSDS's).
3. Waste stream, recovery/recycling procedures.

5.1.3 CHEMICAL RELEASES, SPILLS, LEAKS

1. Surface discoloration, strong odors.
2. Leaking storage vessels, piping, containers.

5.1.4 SUBSURFACE CONDUITS

1. Underground Storage Tanks (UST's)
2. Clarifiers, waste water piping, storm drains, etc.
3. Septic tanks, cesspools, leach lines, etc.
4. Wells and other vertical borings.
5. Surface cracks, fissures, etc.

5.1.5 SIGNIFICANT SURFACE FEATURES

1. Pits, ponds, lagoons, impoundments, landfills, etc.
2. Storm drains, irrigation canals, creeks, streams, wetlands, etc.

5.1.6 NATURAL AND ORNAMENTAL VEGETATION

1. Distressed vegetation
2. Atypically sparse or barren areas

5.1.7 NATURALLY OCCURRING HAZARDOUS SUBSTANCES

1. Radon gas

5.2 FINDINGS OF SITE RECONNAISSANCE

The following sections include observations made during the physical inspection of the subject property which pertain to its unique areas of environmental interest.

A physical inspection of the subject property was conducted on April 20, 1999. The inspection was visual and the findings are described below. An overview of the subject property was recorded on a series of still photographs that are on file with GEI. Selected photographs are included in this report.

Exhibit #11 Photographic Log, GEI, 1999

The individual topics in the following sections describe findings and observations of the physical inspection only, and, are listed by specific area of environmental interest. Additional information pertaining to some of those topics may also be presented in other sections of this report.

5.2.1 KEY HAZARDOUS MATERIALS/SUBSTANCES

VISUAL SURVEY - ASBESTOS: Asbestos has been used for thousands of years as a reinforcement and insulation fiber because of its acoustical, tensile and chemical properties. It has been used in thousands of products that are referred to as Asbestos Containing Materials (ACM's).

When asbestos is present in building materials, they are referred to as Asbestos Containing Building Materials (ACBM's). Common uses include insulation, siding, pipes, plaster and plasterboard, floor tile, roofing felts, fire retardant coatings, and, decorative ceiling coatings. Asbestos would generally not be expected to be present in building materials produced after 1987. Analytical testing is required to reliably ascertain the presence or absence of asbestos.

There currently are no permanent structures on the subject property. There was no evidence of potential sources of ACM's noted on the subject property during this inspection. Analytical testing was not conducted.

VISUAL SURVEY - LEAD BASED PAINT: Lead is a heavy, ductile, soft, gray solid metal which is toxic by ingestion and/or inhalation of dust or fumes. It is a bio-cumulative poison. Lead Based Paints (LBP's) would generally not be expected to be present in buildings constructed after 1978. Analytical testing is required to reliably ascertain the presence or absence of Lead Based Paints.

There currently are no permanent structures on the subject property. There was no evidence of potential sources of LBP's noted on the subject property during this inspection. Analytical testing was not conducted.

VISUAL SURVEY - POLYCHLORINATED BIPHENYLS: One common source of potential Polychlorinated Biphenyl (PCB) contamination on properties results from older vintage leaking electrical transformers. These highly toxic aromatic compounds were routinely used in the past as an insulator in cooling oils found in oil cooled electrical transformers. Other common potential sources of PCB's include capacitors, lamp ballasts, hydraulic fluids, cutting oils and heat transfer systems. Analytical testing is required to reliably ascertain the presence or absence of PCB's.

There was no evidence of potential sources of PCB's noted on the subject property during this inspection. Analytical testing was not conducted.

VISUAL SURVEY - CHLOROFLUOROCARBONS: Chlorofluorocarbons (CFC's) have recently come under regulation as compounds that deplete the ozone layer of the upper atmosphere. Under 1990 Amendments to the federal Clean Air Act, in 1992, the EPA adopted rules to reduce the use and emissions of these substances to their lowest achievable level, and to maximize their recapture and recycling. CFC's are widely used throughout the world as refrigerants and propellants, most commonly called freon. Analytical testing is required to reliably ascertain the presence or absence of chlorofluorocarbons.

There was no visual evidence of potential sources of CFC's noted on the subject property during this inspection. Analytical testing was not conducted.

5.2.2 CHEMICAL STORAGE & USE: There was no visual evidence of any environmentally significant chemical storage or use noted on the subject property during this inspection.

5.2.3 CHEMICAL RELEASES, SPILLS, LEAKS: There was no visual evidence of any environmentally significant chemical releases, spills or leaks noted on the subject property during this inspection.

5.2.4 SUBSURFACE CONDUITS: There was no visual evidence of any environmentally significant subsurface conduits noted on the subject property during this inspection.

5.2.5 SIGNIFICANT SURFACE FEATURES: There was visual evidence of significant unauthorized dumping on APN 3006-006-007 & -008 noted on the subject property during this inspection. The majority of the debris was located on APN 3006-006-007 & -008. The dumping observed appeared to be primarily limited to surface disposal of household refuse items including old chairs, couches, appliances, landscape trimmings, mattresses and tires. Several empty old rusty 55-gallon drums were noted. Several empty 5-gallon cans were also noted. There was no evidence of chemical dumping noted.

5.2.6 NATURAL AND ORNAMENTAL VEGETATION: The condition of vegetation on a site can provide indications for areas that bear further scrutiny. Areas which would be expected to be covered by natural vegetation that are atypically barren may be due to hidden chemical contamination. Areas which contain ornamental landscaping which is stunted in growth, atypically colored, or dead may merely be due to lack of maintenance, or may also be due to hidden chemical contamination. Vegetation on the surface area of the subject property was visually inspected for unusual/atypical conditions.

There were some remnants of ornamental landscaping noted on APN 3006-006-007, -008 & -009 of the subject property during this investigation. That landscaping consisted mainly of several medium sized trees and several small bushes.

There was extensive natural vegetation noted on the subject property during this inspection, as follows:

Natural vegetation on the subject property consisted mainly of wild weeds and grasses, with several Joshua trees and scattered desert brush, covering essentially the entire undeveloped surface area of the subject property.

Vegetation observed on the subject property during this inspection did not appear to be stressed by adverse environmental impact.

5.2.7 NATURALLY OCCURRING HAZARDOUS SUBSTANCES:

RADON GAS: Radon gas is a naturally occurring heavy, odorless and colorless radioactive gas, originating from the disintegration of Radium, which may emanate from the earth's crust anywhere in the world

Radon gas may collect inside a confined area, such as a building. Atmospheric pressure inside an enclosed structure is typically slightly lower than prevailing atmospheric pressure outside. This pressure differential provides a driving force to draw outside gases into the structure through any available passageways. Structural flaws, such as cracks, and, structural penetrations, such as plumbing openings and expansion joints, in the floor of structures provide such passageways for Radon gas to enter a building, provided that there is a source of Radon gas beneath the structure.

Every enclosed structure should be considered as having some potential for Radon gas contamination. Analytical tests are required to determine the presence of Radon gas. Analytical testing was not conducted. Since the subject property does not contain any enclosed structures, there is little potential for Radon gas contamination.

The US Environmental Protection Agency (EPA) recommends action be taken to reduce Radon when the indoor level of Radon exceeds 4 pico Curies/liter (pCi/l). A statewide radon survey conducted by the State of California, Health and Welfare Agency, Department of Health Services in 1990 found indoor levels of Radon in nine regions of the state averaged between 0.6 to 1.5 pCi/l, with approximately 2.4% of all locations projected to exceed the 4.0 pCi/l recommended action level. In Region 9, where the subject property is located, only 0.5% of all locations are projected to exceed the 4.0 pCi/l recommended action level. Thus, the potential for Radon contamination on the subject property, which exceeds the EPA action level, is considered low.

5.3 INTERVIEWS WITH OWNERS AND OCCUPANTS

5.3.1 INTERVIEW WITH OWNER: GEI was unable to contact the current owners of the subject property..

5.3.2 INTERVIEW WITH OCCUPANTS: The subject property is currently uninhabited.

6.0 FINDINGS AND CONCLUSIONS

The following findings and conclusions have been reached by GEI as a result of this investigation:

It appears that the majority of the subject property has been undeveloped to date. Parcels APN 3006-006-007, -008 & -009 appear to have been used for residential purposes prior to the late 1960's. Parcel APN 3006-006-009 is currently being used as a storage yard.

There was no visual evidence of potential sources of ACM's, LBP's, PCB's or CFC's noted on the subject property during this inspection. Analytical testing was not conducted.

There was no visual evidence of any environmentally significant chemical storage or use noted on the subject property during this inspection.

There was no visual evidence of any environmentally significant chemical releases, spills or leaks noted on the subject property during this inspection.

There was no visual evidence of any environmentally significant subsurface conduits noted on the subject property during this inspection.

There was visual evidence of significant unauthorized dumping on APN 3006-006-007 & -008 noted on the subject property during this inspection.

The probability of Radon contamination on the subject property, which exceeds the EPA action level, is considered low.

The findings of a general survey of properties contiguous with the subject property did not reveal any visual evidence of areas of environmental impact on the subject property.

The results of a search of environmental databases and local environmental records did not reveal any known sites of environmental interest which were directly on or immediately adjacent to the subject property.

7.0 RECOMMENDATIONS

1. Remove the trash and debris from the subject property in general. Inspect for any signs of items (such as tires or empty hazardous material containers) or conditions (chemical spills, burial sites, etc.) that may require special disposal or possible clean up by regulatory agencies. Dispose of any such items discovered according to regulatory guidelines. Notify regulatory authorities of any suspicious environmental conditions found.
2. Conduct a similar inspection specifically on the storage lot property, APN 3006-006-009, after the stored items and temporary structures have been removed, and the owner has vacated the site.
3. No further actions appear warranted at this time.

8.0 REPORT PREPARATION

This report presents the findings of a Phase I Environmental Site Assessment (ESA) on a parcel of real property conducted for the City of Palmdale, Public Works, 708 East Palmdale Boulevard, Palmdale, CA 93550.

Data for this report was gathered from a research of available files and information from the City of Palmdale, a research of information with various Federal, State, County and local agencies, a research of information from several private industry sources, and, a physical walk-through of the property on April 20, 1999.

This data has been collected and reported under the guidance and supervision of a qualified professional registered with the State of California as a Registered Environmental Assessor.

The conclusions and recommendations presented are the professional opinions of members of the staff of Gilray Enterprises, Inc. (GEI), based upon their academic training and practical environmental experience.

Legal interpretations of the findings of all environmental investigations should be obtained from a qualified legal advisor trained in environmental law. None of the opinions presented by GEI are intended, nor should be construed as legal advice.

Report prepared and submitted by,

RAY GILBERT
Project Manager
Registered Environmental Assessor

9.0 REFERENCES

REFERENCE #1 EXPERIAN 6
REFERENCE #2 ENVIRONMENTAL DATA RESOURCES, INC. 8
REFERENCE #3 COUNTY OF LOS ANGELES, FIRE STATION 37 10
REFERENCE #4 ALLIED SERVICES 10
REFERENCE #5 LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS 10
REFERENCE #6 HAINES CRISS-CROSS DIRECTORY COMPANY 11
REFERENCE #7 CITY OF PALMDALE, DEPARTMENT OF BUILDING & SAFETY 12
REFERENCE #8 NATIONWIDE ENVIRONMENTAL TITLE RESEARCH 12

10.0 EXHIBITS

EXHIBIT #1 SITE LOCATION MAP, GEI, 1999 6
EXHIBIT #2 ASSESSOR'S PARCEL MAP, EXPERIAN, 1999 6
EXHIBIT #3 EDR RADIUS MAP SEARCH, EDR, 1999 8
EXHIBIT #4 USGS MAP, PALMDALE CALIFORNIA QUADRANGLE, 1958, PHOTOREVISED 1974 10
EXHIBIT #5 WELL SOUNDING REPORT, LACDPW, 1978 10
EXHIBIT #6 WELL DRILLERS LOGS, LACDPW, 1997 11
EXHIBIT #7 AERIAL PHOTOGRAPHS, EDR, CIRCA 1953 - 1994 11
EXHIBIT #8 CRISS CROSS DIRECTORIES, HAINES, CIRCA 1973 - 1997 11
EXHIBIT #9 BUILDING RECORDS, PBD, 1999 12
EXHIBIT #10 CHAIN OF TITLE DOCUMENTS, NETR, 1999 12
EXHIBIT #11 PHOTOGRAPHIC LOG, GEI, 1999 14

Gilray Enterprises, Inc.

211 South State College Boulevard, Suite 315, Anaheim, California 92806 (714) 533-7294 FAX (714) 956-5651

PHASE II ENVIRONMENTAL INVESTIGATION

COPY

PREPARED FOR

CITY OF PALMDALE

PUBLIC WORKS
38250 SIERRA HIGHWAY
PALMDALE, CALIFORNIA 93550

PERFORMED AT

FUTURE PALMDALE TRANSPORTATION CENTER
BETWEEN 3RD STREET EAST AND 6TH STREET EAST
NORTH OF AVENUE P-14 AND SOUTH OF TECHNOLOGY DRIVE
APN 3006 006-004, -007, 008, 032 & -033
PALMDALE, CALIFORNIA 93550

VOLUME I – REPORT BODY
NOVEMBER 30, 2000

Gilray Enterprises, Inc.

211 South State College Boulevard, Suite 315, Anaheim, California 92806 (714) 533-7294 FAX (714) 956-5651

November 30, 2000

Mr. Leon Swain
Deputy Director of Public Works
City of Palmdale, Public Works
38250 Sierra Highway
Palmdale, California 93550

Subject: PHASE II ENVIRONMENTAL INVESTIGATION
Future Palmdale Transportation Center
Located between 3rd Street East and 6th Street East
North of Avenue P-14 and South of Technology Drive
APN 3006-006-004, -007, -008, -032 & -033
Palmdale, California 93550

Dear Mr. Swain:

Submitted herewith is our report of the findings of a Phase II Environmental Investigation for the above referenced property.

Please contact the undersigned if you have any questions or comments regarding this report.

Respectfully submitted,

RAY GILBERT
No. 01419
Expires 6/04
STATE OF CALIFORNIA

RAY GILBERT
Project Manager
Registered Environmental Assessor

0.0 PREFACE

The report for this investigation is divided into multiple volumes as follows:

VOLUME I - REPORT BODY - This portion of the report contains only the narrative text of the report.

VOLUME II - REPORT EXHIBITS - This portion of the report contains only the exhibits referenced in the narrative text portion of the report.

VOLUME III – SITE PHOTOGRAPHS - This portion of the report contains a supplemental photographic log and photographs taken during the field investigation.

VOLUME IV – SITE VIDEOTAPE – This portion of the report contains a supplemental video log and videotape recorded during the filed investigation.

The combination of Volumes I through IV constitutes the entire report for this investigation.

GEI, 211 SOUTH STATE COLLEGE BOULEVARD, SUITE 315, ANAHEIM, CALIFORNIA 92806 (714) 533-7292 FAX (714) 956-5651

1.0 EXECUTIVE SUMMARY

We have performed a Phase II Environmental Investigation at the Future Palmdale Transportation Center, Palmdale, California 93550, the subject property.

The purpose of this investigation was to complete the environmental due diligence process by addressing certain issues raised by a Phase I Environmental Assessment of the subject property. The scope and magnitude of this investigation exceeds the level required by usual and customary practice to address those issues.

This investigation was voluntarily expanded by the City of Palmdale to include certain specific environmental concerns regarding the subject property that were raised by a few City residents.

The findings of this investigation are as follows:

1. No hazardous materials or other items requiring special disposal by regulatory agencies were identified on the surface or in the subsurface soils of the subject property.
2. No environmentally significant hidden burial sites were identified on the subject property.
3. No environmentally significant chemical spills were identified on the subject property.
4. No actionable levels of volatile organic compounds were identified on the subject property.
5. No detectable levels of DDT or other pesticides were identified on the subject property.
6. No other significant recognized environmental conditions were identified on the subject property.

Based upon those findings, no further action appears warranted at this time.

GEI, 211 SOUTH STATE COLLEGE BOULEVARD, SUITE 315, ANAHEIM, CALIFORNIA 92806 (714) 533-7292 FAX (714) 956-5651

2.0 INTRODUCTION

2.1 SUBJECT PROPERTY

The subject property for this investigation is comprised of five (5) contiguous parcels of land, located between 3rd Street East and 6th Street East, north of Avenue P-14 and south of Technology Drive (former Avenue P-8), in the city of Palmdale, California 93550.

Exhibit #1 *Site Location Map, GEI, 2000*

It is currently vacant undeveloped land and is approximately 19.03 acres in size. The subject property is commonly referred to as the future Palmdale Transportation Center project by the city of Palmdale. The Assessor's Parcel Numbers for the subject property are as follows:

APN 3006-006-004, -007, -008, -032 & -033

Exhibit #2 *Assessor's Parcel Map, FARS, 2000*

Reference #1 *First American Real Estate Solutions*
5601 E. La Palma Avenue, 4th Floor
Anaheim, California 92807
(800) 345-7334

2.2 BACKGROUND

Two previous Phase I Environmental Site Assessments (ESA) have been conducted on parcels included within this investigation. They were conducted by Gilray Enterprises, Inc. (GEI) in January and April 1999. A brief synopsis of those ESA's is included below. Refer to those previous reports for more detail.

The previous ESA investigations were conducted in conformance with the scope and limitations of ASTM Standard Practice E 1527. They included review of the following Environmental Database and Standard Historical Sources, as required by that standard:

1. Thirty-nine (39) federal, state and local environmental databases
2. Local agency environmental records
3. Current and historical aerial photographs
4. Historical fire insurance maps
5. Current and historical criss-cross directories
6. Current and historical building department records

The previous ESA investigations produced the following findings:

1. It appears that the majority of the subject property has been undeveloped to date. Parcels APN 3006-006-007 & -008 appear to have been used for residential purposes prior to the late 1960's. Parcel APN 3006-006-033 appears to have been used for residential purposes prior to the early 1970's.
2. There was no visual evidence of potential sources of asbestos containing materials, lead based paints, polychlorinated bi-phenyls or chlorofluorocarbons noted on the subject property during this inspection.
3. There was no visual evidence of any environmentally significant chemical storage or use noted on the subject property during this inspection.
4. There was no visual evidence of any environmentally significant chemical releases, spills or leaks noted on the subject property during this inspection.
5. There was no visual evidence of any environmentally significant subsurface conduits noted on the subject property during this inspection.
6. The review of environmental databases and local agency environmental records did not reveal any known sites of environmental interest that were directly on or immediately adjacent to the subject property.

The previous ESA investigations identified the following recognized environmental conditions on the subject property:

1. Significant unauthorized surface dumping was noted on the subject property. The majority of the debris is located on APN 3006-006-007 & -008. Visual inspection of that dumping indicates that it consists mainly of household refuse items including old chairs, couches, appliances, landscape trimmings, mattresses and tires. Several empty old rusty 55-gallon drums were noted. Several empty 5-gallon cans were also noted. There was no evidence of chemical dumping noted.
2. There is a potential for unidentified burial sites, unnoticed chemical spills and/or other recognized environmental conditions that might require some degree of clean up by regulatory agencies.
3. Some of the items included in the debris, such as tires and empty hazardous material containers may require special disposal by regulatory agencies.

It was recommended that the debris present on the subject property should be cleared from the site and disposed of according to regulatory guidelines. During the clearing process, the site should be carefully inspected for potential unidentified environmental conditions.

In addition, a physical inspection of the subject property revealed the presence of irrigation culverts and remnants of furrows, indicating past use of the subject property for agricultural purposes. Such use invokes environmental interest regarding a potential for surface contamination from DDT or other residual pesticides.

2.3 OBJECTIVES

The objectives of this investigation are as follows:

2.3.1 OBJECTIVE 1: Evaluate the nature of surface debris on the subject property during the initial clearing process (commonly referred to as "Clean and Grub") and issue recommendations for disposal.

1. Identify any items included in the debris, such as tires and empty hazardous material containers that may require special disposal by regulatory agencies;
2. Collect and analyze samples of any potentially hazardous materials identified;
3. Profile and dispose of such materials according to regulatory guidelines.

2.3.2 OBJECTIVE 2: Evaluate the potential presence/absence of hidden burial sites, chemical spills and/or other recognized environmental conditions on subject property.

1) Conduct a physical inspection of the surface area of the subject property before/after clearing.
   a) Stained or atypically colored soils;
   b) Unusual odors;
   c) Randomly screen for volatile organic compounds (VOC's) with a portable field instrument.
2) Conduct a subsurface trenching investigation to evaluate the potential for hidden burial sites
   a) Evaluate all surface mounds;
   b) Evaluate all depressions;
   c) Trench across the entire property in a grid pattern to evaluate subsurface soil conditions;
   d) Excavate random and selected areas with test pits to evaluate subsurface soil conditions;
   e) Randomly screen excavations for VOC's with a portable field instrument.

2.3.3 OBJECTIVE 3: Evaluate presence/absence of pesticides on the subject property

1. Conduct a general evaluation of the surface area of the subject property before clearing for the presence/absence of insect life;
2. Collect random surface samples across the entire surface area of the subject property.

2.4 LIMITATIONS

A diligent and reasonable effort was made to identify environmental conditions on the subject property during the course of this investigation. No degree of environmental site assessment can fully eliminate uncertainty regarding recognized environmental conditions. This investigation is intended to reduce, but not eliminate, the potential for unidentified recognized environmental conditions in connection with the subject property.

The Report produced in accordance with this investigation shall be for the sole use of the Client. It shall be the responsibility of the Client, or of his representative, to ensure proper/legal disclosures to public, private and regulatory entities.

The interpretations and recommendations of this report were based on the data collected and our present working knowledge of environmental site investigations. As such, the report is valid as of the date shown, and GEI will not be held responsible for subsequent changes in physical/chemical/environmental conditions and/or legislation over which we have no control.

Certain conditions, such as cooperation of owners, tenants, federal, state and local agencies, availability of information, required time frame of investigation, and other conditions beyond the control of GEI may affect the completeness of this investigation.

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3.0 SURFACE EVALUATION

3.1 STUDY AREA

A base grid pattern with one hundred (100) foot intervals was established across the surface of the subject property. The X-axis of that grid was positioned on the approximate southern border of APN 3006-006-004 aligned with the centerline of Avenue P-12. The Y-axis of that grid was positioned approximately on the western border of that same parcel aligned with 3rd Street East. The various locations of samples, trenches, potholes and test pits identified in this investigation are referenced to that grid by their X & Y coordinates, as follows:

(X-axis coordinate, Y-axis coordinate)

For example, a location identified with a location of (1200, -150) would be 1,200 feet east of the western border of APN 3006-006-004, and, 150 feet south of the southern border of that same parcel.

A diagram of the subject property was prepared with a superimposed 100' grid pattern and symbols identifying the location of all samples, trenches, potholes and test pits included in this investigation.

Exhibit #3 Site Diagram, GEI, 2000

3.2 SURFACE DEBRIS

Visual inspection of the subject property indicated that the primary concentration of surface debris was located on the southern half of APN 3006-006-008. Only scattered pockets of surface debris were noted across the remaining surface area of the subject property.

The surface debris on that parcel was consolidated into several piles by field personnel from the City of Palmdale, Department of Public Works (PDPW).

Scattered surface debris on the balance of the subject property was either collected by work crews (PAC – Partners Against Crime) provided by the Los Angeles County Sheriff's Department, or was consolidated into several piles by PDPW during the clean & grub process.

GEI visually evaluated that debris in order to identify any hazardous materials or items, such as tires and empty hazardous material containers that may require special disposal by regulatory agencies. The debris piles were measured in numerous random locations using a portable field Photo-Ionization Detector (PID). Approximately eight (8) debris piles were evaluated and approximately 100 soil gas readings were measured.

All PID readings in the debris piles were below detection limits of the instrument (<0.1PPM). There were no significant items identified in that debris that would likely require special disposal. GEI recommended Class III disposal of the debris.

During the course of this investigation, those debris piles were periodically transferred into dump trucks for disposal at the local Class III landfill.

3.3 SURFACE INSPECTION

A drive-through with periodic walkabouts was conducted on the subject property to identify surface mounds, depressions, areas of stained soil, unusual odors, and to generally inspect for the presence of insect life.

Several surface mounds and depressions were identified and marked with red traffic cones for later pothole excavation. Several areas blackened by burning were also noted. Those areas were also marked with red traffic cones for later pothole excavation. No areas exhibiting unusual odors were identified.

Approximately 100 surface soil gas readings were measured at random locations throughout the inspection. All PID readings on the surface were below detection limits of the instrument (<0.1PPM).

There were numerous colonies of ants, several varieties of beetles and other insects noted that appeared to be randomly scattered across the surface of the subject property. There were no atypical areas of insect life noted.

3.2.1 SAMPLE RETRIEVAL

Twelve (12) samples of surface soil were collected from random locations across the surface area of the subject property. The samples were collected in 4-ounce glass jars sealed with Teflon film and a metal closure. The samples were labeled with the prefix "RP" followed by a sequential numerical designation of "01" through "12". The grid coordinates of those samples were as follows:

RP-01 @ (1490, -80), RP-02 @ (1360,150), RP-03 @ (1270, -160), RP-04 @ (1020, 60), RP-05 @ (950, -380), RP-06 @ (840, -90), RP-07 @ (770, 130), RP-08 @ (730, -300), RP-09 @ (500, 40), RP-10 @ (400, 290), RP-11 @ (250, 90), and, RP-12 @ (140, 210)

3.2.2 CHAIN OF CUSTODY

A chain of custody form was prepared for the samples, and, twelve (12) discrete samples were transported to Calscience Environmental Laboratories, Inc. (CEL), an EPA Certified laboratory, for analysis. All twelve (12) of the samples were discretely analyzed for Pesticides by EPA Method 8081A.

Exhibit #4 *Chain of Custody (CEL), GEI, 2000*

Reference #2 *Calscience Environmental Laboratories, Inc.*
7440 Lincoln Way
Garden Grove, California 92641-1432
(714) 895-5494

3.2.3 ANALYTICAL RESULTS

The results for the twelve (12) discrete soil samples analyzed for Pesticides per EPA Method 8081A were "ND" (None Detected at the indicated reporting limit) for all analytes measured.

Exhibit #5 *Laboratory Report, CEL, 2000*

4.0 SUBSURFACE EVALUATION

4.1 STUDY AREA

All five (5) parcels of the subject property were included in the study area for the subsurface investigation portion of this investigation.

4.2 TRENCH EXCAVATION

A series of seven (7) trenches, approximately three (3) feet wide, were excavated, utilizing a motor grader and/or a track excavator operated by field personnel from PDPW under the direction of GEI personnel. Terminal depth varied from approximately three (3) to five (5) feet below grade surface.

The trenches across the site were spaced approximately one hundred (100) feet apart north to south. The trenches were positioned to roughly coincide with Y-axis coordinates of +300', +200', +100', 0', -100', -200', and, -300' above/below the X-axis. The trenches approximately spanned the entire width of the subject property's parcel boundaries in an east/west direction. The trenches were identified with the prefix "WR" and a sequential numerical designation of "1" through "7" from north to south. Refer to the Site Diagram exhibit for a visual representation of the location of those trenches. The trenches totaled approximately 7,628 lineal feet in length.

A State of California Professional Engineer and Registered Geologist walked the entire length of all trenches, and visually inspected soils in the sidewalls and floor of those trenches for anomalies and conducted physical inspections at approximate twenty (20) foot intervals. Approximately five (5) readings of soil gases were measured at each inspection interval using a field Photo-Ionization Detector (PID). Approximately 400 locations along the course of those trenches were evaluated and approximately 2,000 soil gas readings were measured.

A concrete slab was encountered in trench WR3 @ approximately (1520,100). Subsurface soils in that trench contained loose gravel and sandy fill mixed with native soils. Excavation of that exploratory trench was expanded into a test pit labeled "TP1" on the site diagram. The test pit was expanded both horizontally and vertically until native soils were encountered in the walls and floor, ultimately encompassing 800 to 1,000 square feet at a terminal depth between six (6) to eight (8) feet below grade surface. There was a significant amount of buried construction debris excavated at that location which included wood, concrete, tin roofing material, abandoned iron piping, abandoned clay and cast iron sewer piping, etc. There also was some domestic debris in that location which included glass, cans, ashes, and an old shoe. More than fifty (50) soil gas readings were measured inside the test pit and around the spoils pile using a field Photo-Ionization Detector (PID).

No other major subsurface anomalies were identified. Soils in the trenches and test pit were generally classified as primarily loose dry native soils to terminal depth, mixed with some scattered fill from surface to 6", also containing some scattered general refuse primarily on the surface, but extending as far as two (2) feet below grade surface in several trench locations and six (6) feet below grade surface in the test pit.

All PID readings in the trenches WR1 through WR7 and test pit TP1were below detection limits of the instrument (<0.1PPM), with one exception. A soil gas reading of 0.4 PPM was detected in trench WR2 @ (1,280,200) at two (2) feet below grade surface.

4.2.1 SAMPLE RETRIEVAL

A discrete sample was retrieved in a 1-1/2" x 6" pre-cleaned stainless steel tube at approximately two (2) feet below existing grade @ (1,280,200). The ends of the tubes were covered with Teflon film, capped with polyethylene caps and labeled "WR2-01-02".

4.2.2 PRESERVATION

The sample was then placed inside a double zip-lock bag and placed in an ice bath in an insulated container for preservation.

4.2.3 CHAIN OF CUSTODY

A chain of custody form was prepared for the sample, and it was transported to Calscience Environmental Laboratories, Inc. (CEL), an EPA Certified laboratory, for analysis. The sample was discretely analyzed for Volatile Organic Compounds by EPA Method 8260B.

Exhibit #6 Chain of Custody (CEL), GEI, 2000

4.2.4 ANALYTICAL RESULTS

The results for the discrete soil sample analyzed for Volatile Organic Compounds by EPA Method 8260B were "ND" (None Detected at the indicated reporting limit) for all analytes measured.

Exhibit #7 Laboratory Report, CEL, 2000

4.3 POTHOLE EXCAVTION

Fifty-five (55) potholes were dug with a loader operated by field personnel from PDPW under the direction of GEI personnel. Terminal depth varied from approximately three (3) to five (5) feet below grade surface. The potholes were approximately eight (8) feet wide by eight (8) feet long. The majority of the pothole excavation was in areas identified as surface mounds, depressions, or, discolored soil. The remaining locations were chosen at random.

A State of California Professional Engineer and Registered Geologist inspected soils in the sidewalls and floor of each of those potholes for anomalies and physically inspected approximately five (5) random locations. Approximately five (5) readings of soil gases were measured in each pothole using a field Photo-Ionization Detector (PID). Approximately 275 inspection points in those potholes were evaluated and approximately 275 soil gas readings were measured.

No major subsurface anomalies were identified. Soils in the potholes were generally classified as primarily loose dry native soils to terminal depth, mixed with some scattered fill from surface to 6", also containing some scattered general refuse primarily on the surface, but extending as far as 1.5' below grade surface in one location. All PID readings were below detection limits of the instrument (<0.1PPM), with one exception. A soil gas reading of 0.3 PPM was detected in pothole PH20 @ (1,200, -195) at two (2) feet below grade surface.

4.3.1 SAMPLE RETRIEVAL

A discrete sample was retrieved in a 1-1/2" x 6" pre-cleaned stainless steel tube at approximately two (2) feet below existing grade @ (1,200, -195). The ends of the tubes were covered with Teflon film, capped with polyethylene caps and labeled "PH20-01-02".

4.3.2 PRESERVATION

The sample was then placed inside a double zip-lock bag and placed in an ice bath in an insulated container for preservation.

4.3.3 CHAIN OF CUSTODY

The soil sample from the pothole was included on the chain of custody form submitted for the exploratory trench sample "WR2-01-02" previously cited. The sample was discretely analyzed for Volatile Organic Compounds by EPA Method 8260B.

4.2.5 ANALYTICAL RESULTS

The results for the discrete soil sample analyzed for Volatile Organic Compounds by EPA Method 8260B were "ND" (None Detected at the indicated reporting limit) for all analytes measured. The results for sample PH2-01-02 are reported in the same laboratory report as the exploratory trench sample "WR2-01-02" previously cited.

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5.0 SUMMARY & CONCLUSIONS

5.1 OVERVIEW

During this investigation, the entire surface area of the subject property was screened for areas of potential environmental interest. Seven trenches, fifty-five potholes and one test pit were excavated, representing approximately 27,500 square feet in surface area and 4,000 cubic yards of soil. Over 1,000 inspection points were evaluated and over 2,500 soil gas measurements for volatile organic compounds were made with a portable field instrument. Fourteen soil samples were retrieved and analyzed. The results of this investigation did not reveal the presence of any recognized environmental conditions on the subject property.

5.2 SURFACE EVALUATION

The results of the surface evaluation of the subject property revealed concentrated surface debris on the southern half of APN 3006-006-008 and scattered pockets of surface debris across the remaining surface area of the subject property. That surface debris was consolidated into debris piles. The contents of those debris piles were visually examined and physically measured for volatile organic compounds with a portable field instrument. There were no significant items identified in that debris that would likely require special disposal. The surface debris was consolidated on the subject property, loaded into dump trucks, removed and transported to the local Class III landfill for disposal.

Numerous surface mounds, depressions and areas blackened by burning were identified for pothole excavation. No areas exhibiting unusual odors or other items of environmental stress were identified.

5.3 RESIDUAL PESTICIDE EVALUATION

The results of the surface evaluation did not reveal any atypical areas of insect life. Samples of surface soil were collected from random locations across the surface area of the subject property and analyzed for pesticides. The results of those analyses did not reveal any evidence of DDT or other residual pesticides on the surface area of the subject property.

5.4 SUBSURFACE EVALUATION

The results of the subsurface evaluation did not reveal any environmentally significant burial sites, chemical spills or other recognized environmental conditions on the subject property. Seven trenches (7,628 lineal feet), fifty-five potholes and one test pit were excavated across the surface area of the subject property. Only one subsurface anomaly was identified that warranted further exploration. That anomaly was near a former building slab on APN 3007-006-33. There was a significant amount of buried construction debris and domestic debris excavated at that location. All PID readings in the trenches, potholes and test pit near the building slab were below detection limits of the instrument (<0.1PPM), with two exceptions. A soil gas reading of 0.4 PPM was detected in one trench location, and a soil gas reading of 0.3 PPM was detected in one pothole location. Samples retrieved from those two locations were analyzed for Volatile Organic Compounds (VOC's). The results of those analyses did not reveal any evidence of VOC's in subsurface soils on the subject property.

6.0 RECOMMENDATIONS

No further action appears warranted at this time.

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7.0 REPORT PREPARATION

This report presents the findings of a Phase II Investigation conducted for the City of Palmdale, Public Works, 38250 Sierra Highway, Palmdale, California 93550.

Data for this report was gathered from a physical inspection, limited sampling and limited subsurface exploration of the subject property conducted on November 27th through 30th, 2000.

This data was collected and reported under the guidance and supervision of a qualified professional registered with the State of California as a Registered Environmental Assessor. Soil data was collected and logged by a State of California Professional Engineer and Registered Geologist.

The conclusions and recommendations presented are the professional opinions of members of the staff of Gilray Enterprises, Inc. (GEI), based upon their academic training and practical environmental experience.

Legal interpretations of the findings of all environmental investigations should be obtained from a qualified legal advisor trained in environmental law. None of the opinions presented by GEI are intended, nor should be construed as legal advice.

Report prepared and submitted by,

RAY GILBERT
Project Manager
Registered Environmental Assessor

Soil data colleted and logged by,

GREG DICKINSON
Project Geologist
Professional Engineer & Registered Geologist

8.0 REFERENCES

REFERENCE #1 FIRST AMERICAN REAL ESTATE SOLUTIONS 3
REFERENCE #2 CALSCIENCE ENVIRONMENTAL LABORATORIES, INC. 8

9.0 EXHIBITS

EXHIBIT #1 SITE LOCATION MAP, GEI, 2000 3
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EXHIBIT #3 SITE DIAGRAM, GEI, 2000 7
EXHIBIT #4 CHAIN OF CUSTODY (CEL), GEI, 2000 8
EXHIBIT #5 LABORATORY REPORT, CEL, 2000 8
EXHIBIT #6 CHAIN OF CUSTODY (CEL), GEI, 2000 10
EXHIBIT #7 LABORATORY REPORT, CEL, 2000 10

Supplemental Exhibits:

VOLUME III SITE PHOTOGRAPHS
VOLUME IV SITE VIDEOTAPE

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APPENDIX 8

TRAFFIC STUDY

PALMDALE TRANSPORTATION CENTER

PALMDALE, CALIFORNIA

Prepared for:

City of Palmdale
Public Works Department
38250 Sierra Highway
Palmdale, California 93550

Prepared by:

LSA Associates, Inc.
1650 Spruce Street, Suite 500
Riverside, California 92507
(909) 781-9310

LSA Project No. CIP131

LSA

January 8, 2002

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INTRODUCTION

This report presents the results of a traffic study performed for the proposed Palmdale Transportation Center (PTC). This traffic study examines the project's effect on near-term (2003) traffic conditions in the vicinity of the project site. Existing a.m. and p.m. peak hour intersection counts in the project vicinity were collected by LSA Associates, Inc. (LSA) for this project. This analysis examines in detail the following three weekday traffic scenarios:

- Existing conditions
- Near-term (2003) without project traffic conditions
- Near-term (2003) plus project conditions.

For each scenario that was examined, a.m. and p.m. peak hour conditions were assessed. The a.m. peak hour is the highest one hour occurring between 7:00 and 9:00 a.m. The p.m. peak hour is the highest one hour occurring between 4:00 and 6:00 p.m.

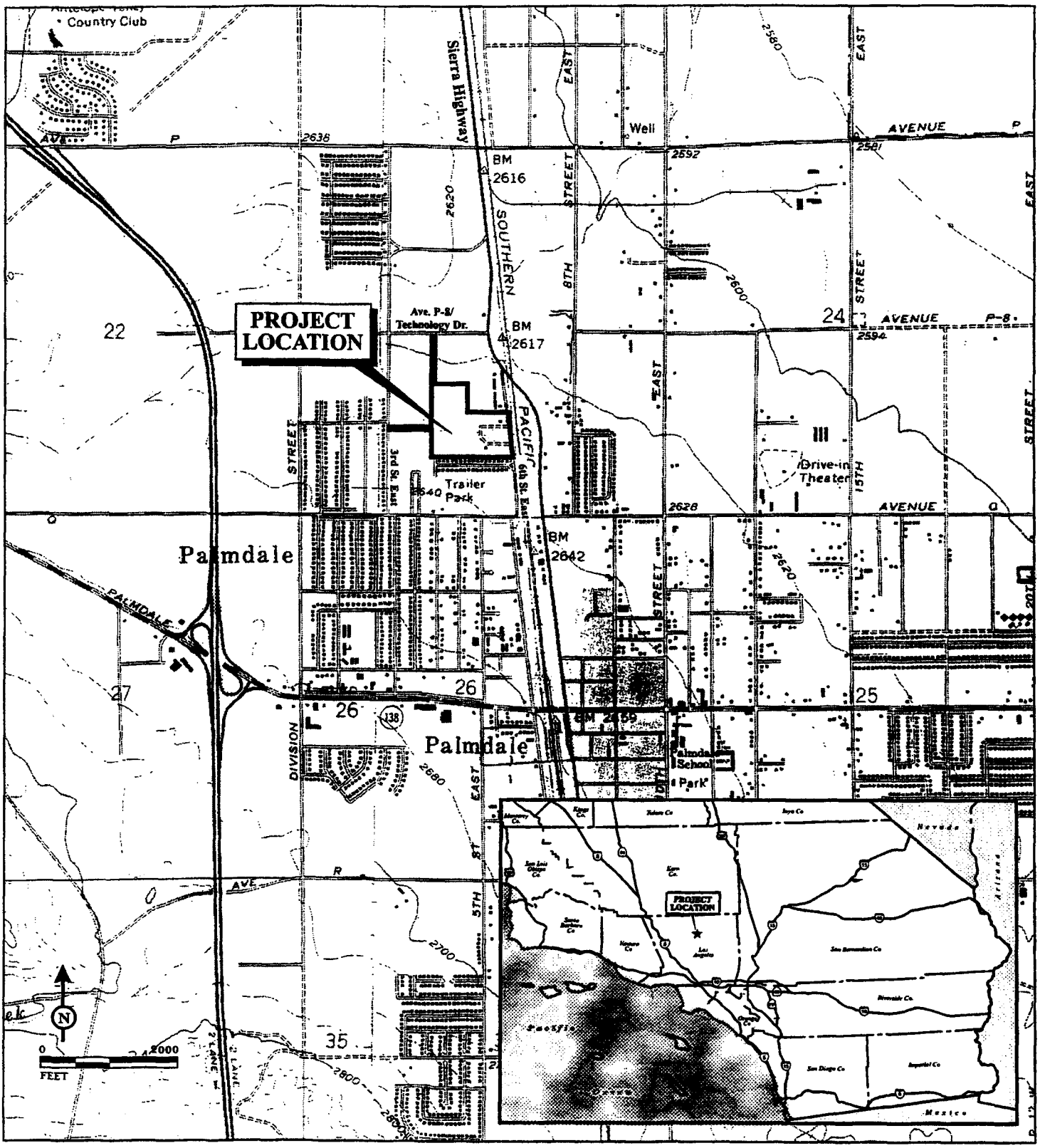
PROJECT LOCATION

Palmdale is located in northern Los Angeles County, California, at the southwest edge of the Antelope Valley. The project site is located in the City of Palmdale, on the west side of 6th Street East and the Southern Pacific Railroad tracks, between Avenue P-8 and Avenue P-14. The proposed project site consists of approximately 11 acres and is currently undeveloped. Figure 1 shows the project location. Figure 2 illustrates the project site plan.

PROJECT DESCRIPTION

The City of Palmdale proposes to construct the PTC to encourage the use of public transportation system alternatives. The proposed PTC will be a multi-modal transportation facility to serve Palmdale and the Antelope Valley. The project consists of near-term transportation services including a 510-foot Metrolink rail station platform with related parking (300 spaces), a 3,150-square foot transit station building, a bus transfer station to be utilized by local (Antelope Valley Transit Authority, or ATVA) and regional providers, a 200-space Park & Ride lot, a compressed natural gas (CNG) fueling facility, bicycle and pedestrian accommodations, and approximately 10,000 square feet of commuter-serving retail uses. The rail station will be constructed on top of a 630-foot box culvert storm drain improvement within Anaverde Creek. A six-foot high concrete sound wall will be constructed along the entire southern boundary of the project site.

The new Metrolink rail station will supplement existing stations in Lancaster and Acton that provide rail service between the Antelope Valley and the Los Angeles area. The bus transfer station will accommodate local bus transfers relocated from the Antelope Valley Mall and regional bus transfers. The CNG fueling facility will be primarily used by the City's fleet of CNG-fueled vehicles, although the facility will be open for purchase of CNG by the public. The 10,000 square feet of retail is anticipated to serve the commuter-oriented public within the PTC site. Consequently, ancillary



LSA

FIGURE 1

Palmdale Transportation Center

Project Location and Regional Vicinity

SOURCE: USGS 7 5' QUADS - PALMDALE AND RITTER RIDGE, 1974

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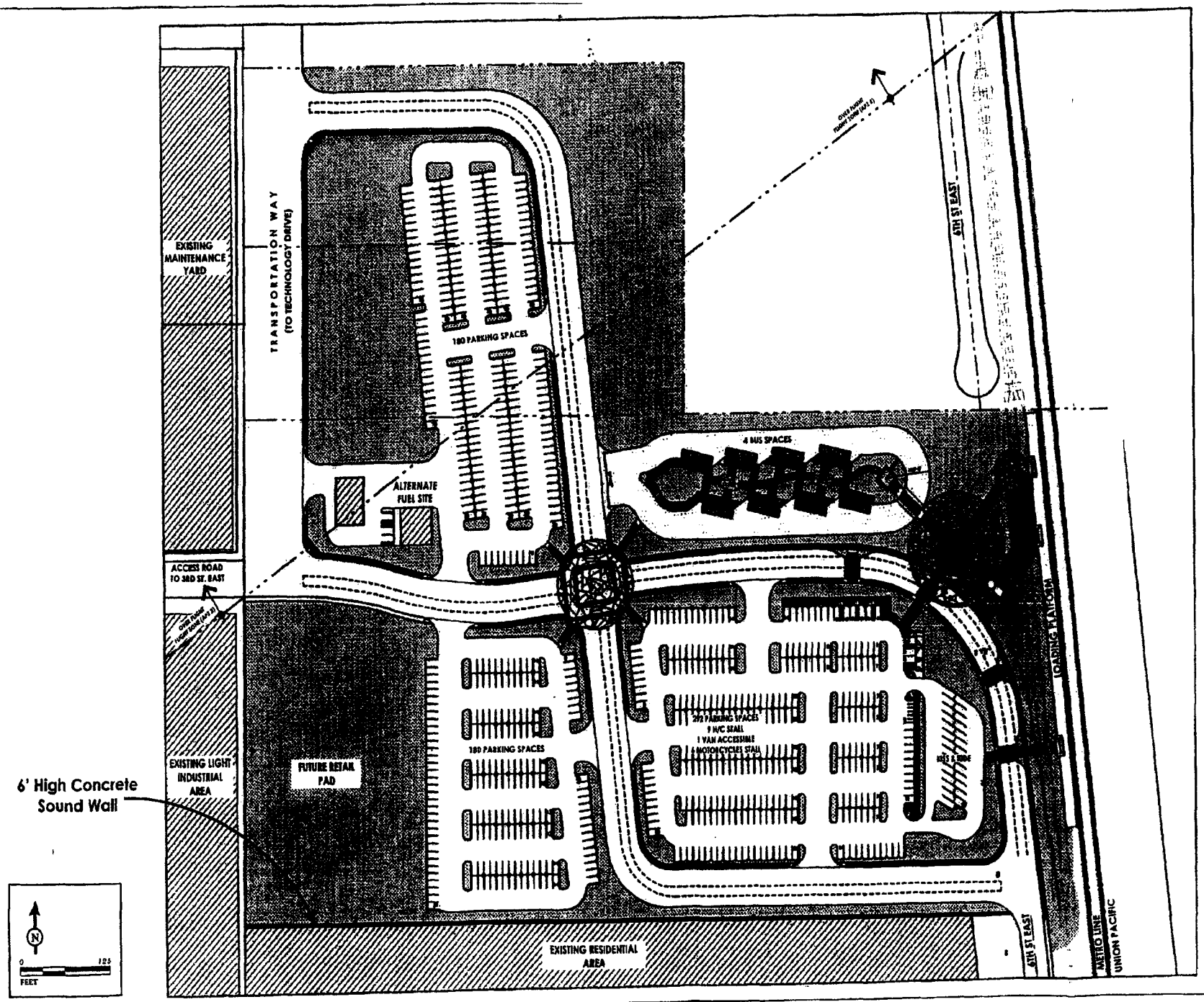


LSA

FIGURE

Palmdale Transportation Cent

Project Site Pla

SOURCE: Charles Walton Associates AIA, Inc., December 2001

retailers such as dry cleaning businesses, coffee shops, convenience markets, and newsstands are anticipated.

Vehicular trips will be accommodated from three major points of access, including a primary driveway access roadway (Transportation Way) extending south from Technology Drive (Avenue P-8) between Sierra Highway and 3rd Street East; an easterly extension of Avenue P-12 into the project site from 3rd Street East; and 6th Street East from the south via Avenue Q. It is anticipated that all buses will use the Technology Drive driveway will serve as the primary bus access.

The Avenue P-12 extension will connect with 6th Street East, providing a continuous route from the west to the southeast part of the site. This route will offset the discontinuous section of 6th Street East that will be created to construct the rail station platform. Similarly, an S-shaped driveway will be connected between the north project boundary at Transportation Way to the south project boundary at 6th Street East. Together with the Avenue P-12 extension, a "figure-8" internal roadway system will be formed, providing access to all portions of the project.

The City of Palmdale controls an additional 15 acres of land south of Technology Drive and west of Sierra Highway, adjacent to the proposed project. However, this area is not part of the current proposal. Future development of this area will likely include additional commuter-serving retail uses and approximately 300 parking spaces. Future environmental review of this adjoining property will be required at the time that it is proposed for development.

EXISTING TRAFFIC CONDITIONS

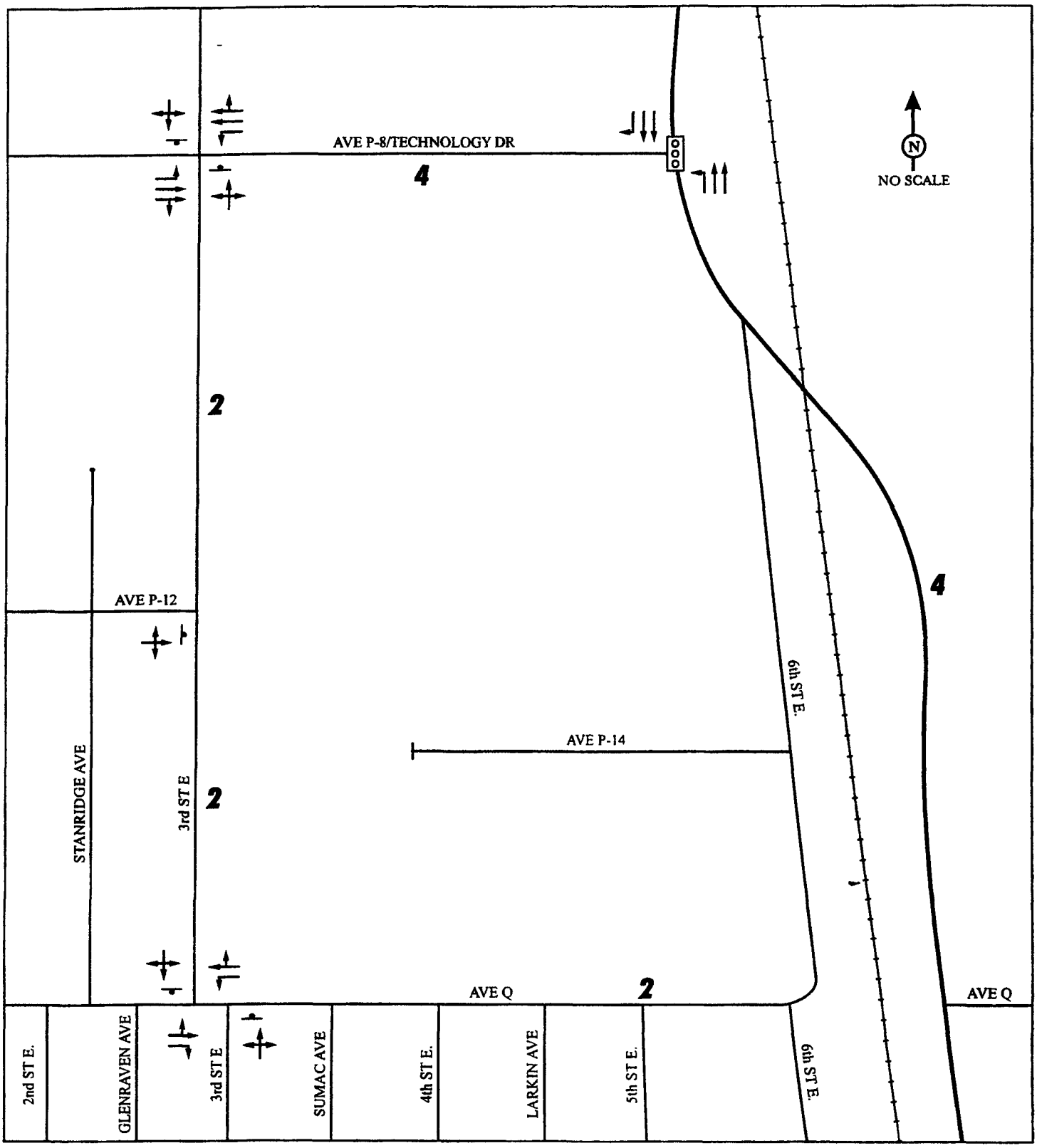
Roadways

Figure 3 illustrates the existing circulation system in the vicinity of the project site. Key east-west roadways in the vicinity of the project are Technology Drive (Avenue P-8), Avenue P-12, and Avenue Q. Key north-south roadways in the vicinity of the project are 3rd Street East, and Sierra Highway. The existing number of through lanes for each of these roadways is shown in Figure 3.

Intersections

For purposes of this study, four existing intersections were selected for analysis, as shown in Figure 4. Previously referenced Figure 3 illustrates the existing turn lane geometrics and intersection control for the four existing study intersections. The four existing study intersections include the following:

- 3rd Street East/Technology Drive
- 3rd Street East/Avenue P-12
- 3rd Street East/Avenue Q
- Sierra Highway/Technology Drive



LSA

FIGURE 3

INTERSECTION APPROACH LANE

4 NUMBER OF THROUGH LANES

STOP SIGN

TRAFFIC SIGNAL

Palmdale Transportation Center

Existing Circulation System

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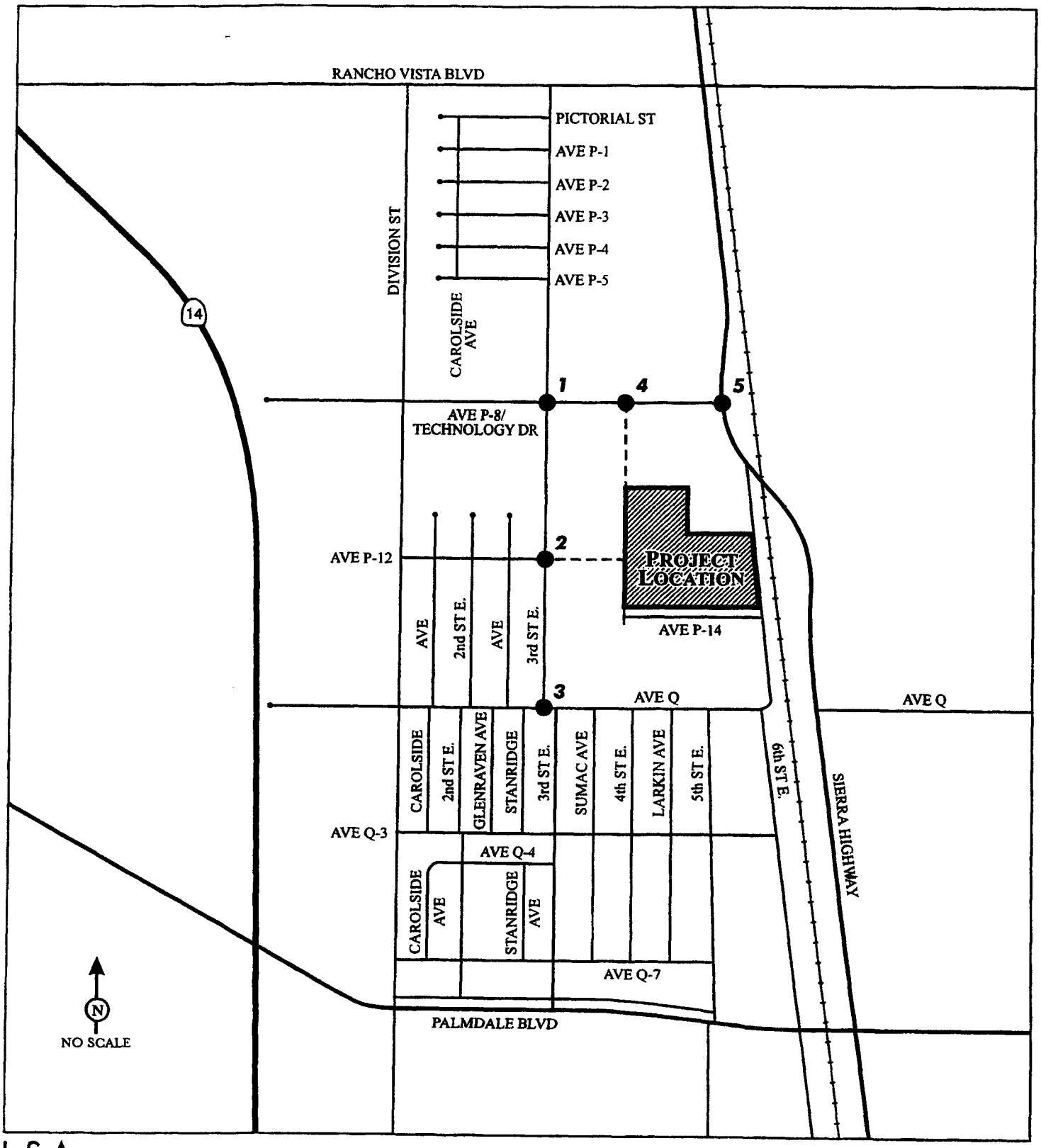

LSA

FIGURE 4

Palmdale Transportation Center

Study Area Locations

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Existing a.m. and p.m. peak period turning movement counts were collected in October 2001, for this study. The traffic counts are included in Appendix A. The existing a.m. and p.m. peak hour turn volumes for the analysis intersections are illustrated in Figure 5.

Roadway operations are typically determined through examination of intersection levels of service. The key measure of a circulation system's performance is the level of service (LOS) at the intersection of its roadways. The procedures contained in the *Highway Capacity Manual* 2000 are used to calculate LOS for both signalized and unsignalized intersections.

A LOS analysis was performed to determine existing a.m. and p.m. peak hour operations at the analysis intersections. In order to account for the hourly peaking of traffic, the existing peak hour factor (PHF) from the traffic counts was applied to the intersection volumes. The results of the LOS analysis are summarized in Table A. The LOS calculations are contained in Appendix B. The raw and peak hour factored volumes are contained in Appendix C.

Table A - Existing Peak Hour Intersection Levels of Service

	Intersection	A.M. Peak Hour		P.M. Peak Hour	
Intersection	Control	Delay[1]	LOS	Delay[1]	LOS
3rd Street East/Technology Drive	all-way stop[1]	9.0	A	11.4	B
3rd Street East/Avenue P-12	minor stop[2]	9.4	A	10.8	B
3rd Street East/Avenue Q	minor stop[2]	11.2	B	13.8	B
Sierra Highway/Technology Drive	signal	17.1	B	21.1	C

Notes: [1] Delay for all-way stop unsignalized intersections is the average delay (in seconds per vehicle) for all stopped or delayed movements.
[2] Minor stop indicates a stop sign on the minor street and no traffic control on the major street.

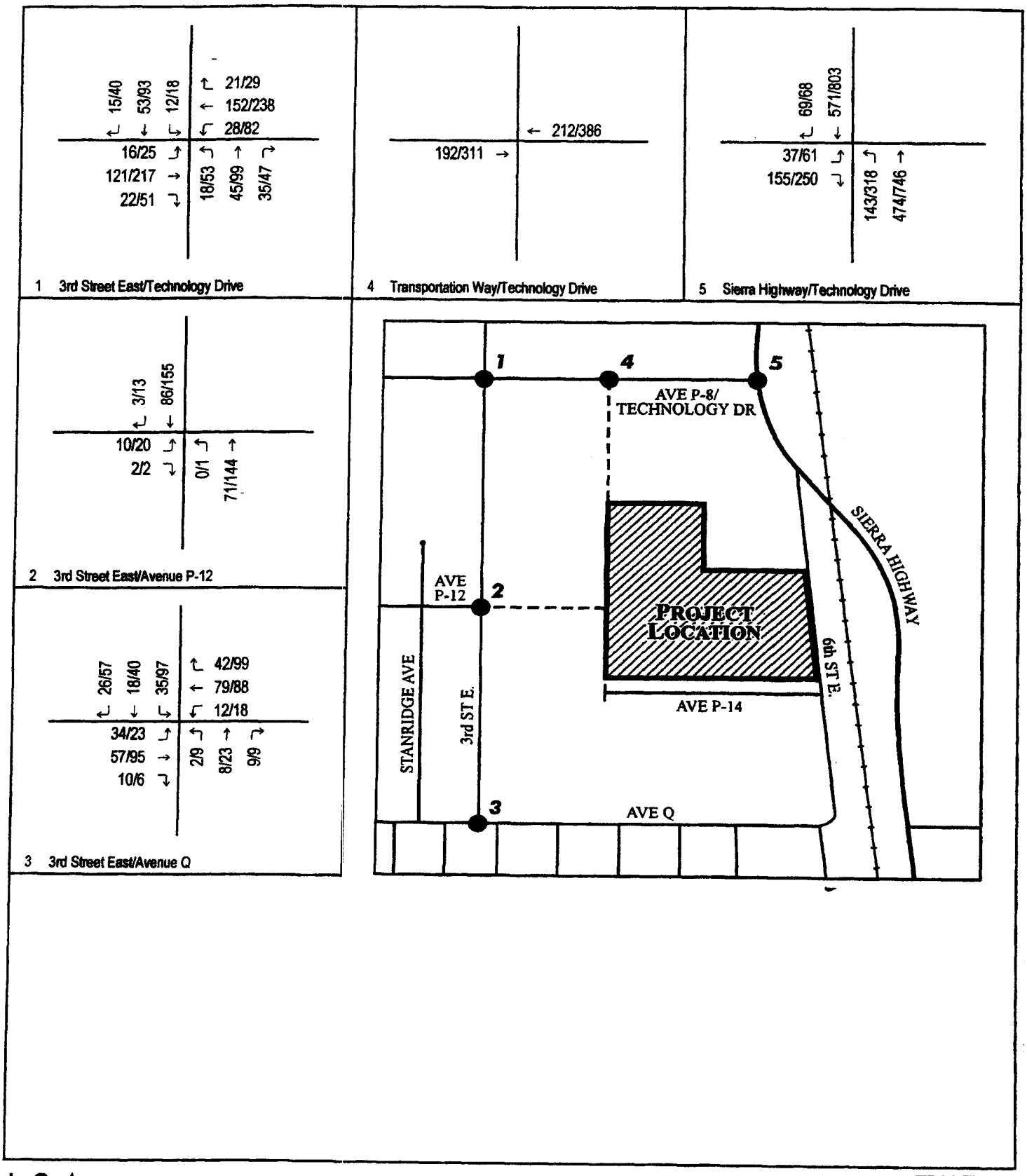
As Table A shows, all four existing study intersections are currently operating at LOS C or better, which is within the City's LOS C standard for intersection operations.

IMPACT CRITERIA

The City of Palmdale General Plan identifies LOS C as the minimum standard for LOS for intersections and roadways. However, the General Plan also indicates that LOS D operations can be considered acceptable for limited periods of time, such as peak commute periods. Therefore, intersection operations in excess of LOS D during a peak hour is considered to be less than the City's standard.

Based on this intersection LOS standard, a project creates a significant traffic impact if one or both of the following occurs:

- The project causes a decrease from a standard LOS (A, B, or C) to a less than standard LOS (D, E or F) at a study intersection based on a peak hour analysis.



LSA

FIGURE 5

12/34 AM/PM Volumes

Palmdale Transportation Center

Existing (2001) Peak Hour Turn Volumes

- The project adds a significant quantity of trips to an intersection that is currently or projected to be at less than standard LOS (D, E or F) and is a study area intersection. For the purposes of this study, the Los Angeles County Congestion Management Program definition of a significant impact has been used (project traffic volume increase of two percent of capacity).

YEAR 2003 NEAR-TERM BACKGROUND CONDITIONS

The City of Palmdale approved a Continuation High School to be located at the northwest corner of 6th Street East and Avenue Q. This project will add 275 a.m. peak hour trips and 275 p.m. peak hour trips to the road network. Since this traffic is not included in the existing traffic counts, it has been added to the near-term background conditions to represent opening day conditions for the proposed project.

To simulate additional traffic growth on the study area roadway system attributable to other development projects that may come on-line within the near-term time horizon (two years), existing traffic was multiplied by a growth factor of 1.08 to represent two years of growth at an annual rate of four percent (simple). The added volumes from the Continuation High School were added to the existing plus four percent volumes to obtain the near-term background volumes. Figure 6 illustrates the near-term background (without project) a.m and p.m. peak hour turn volumes for the study intersections for the year 2003. Detailed calculation sheets showing the development of the near-term traffic volumes are included in Appendix C.

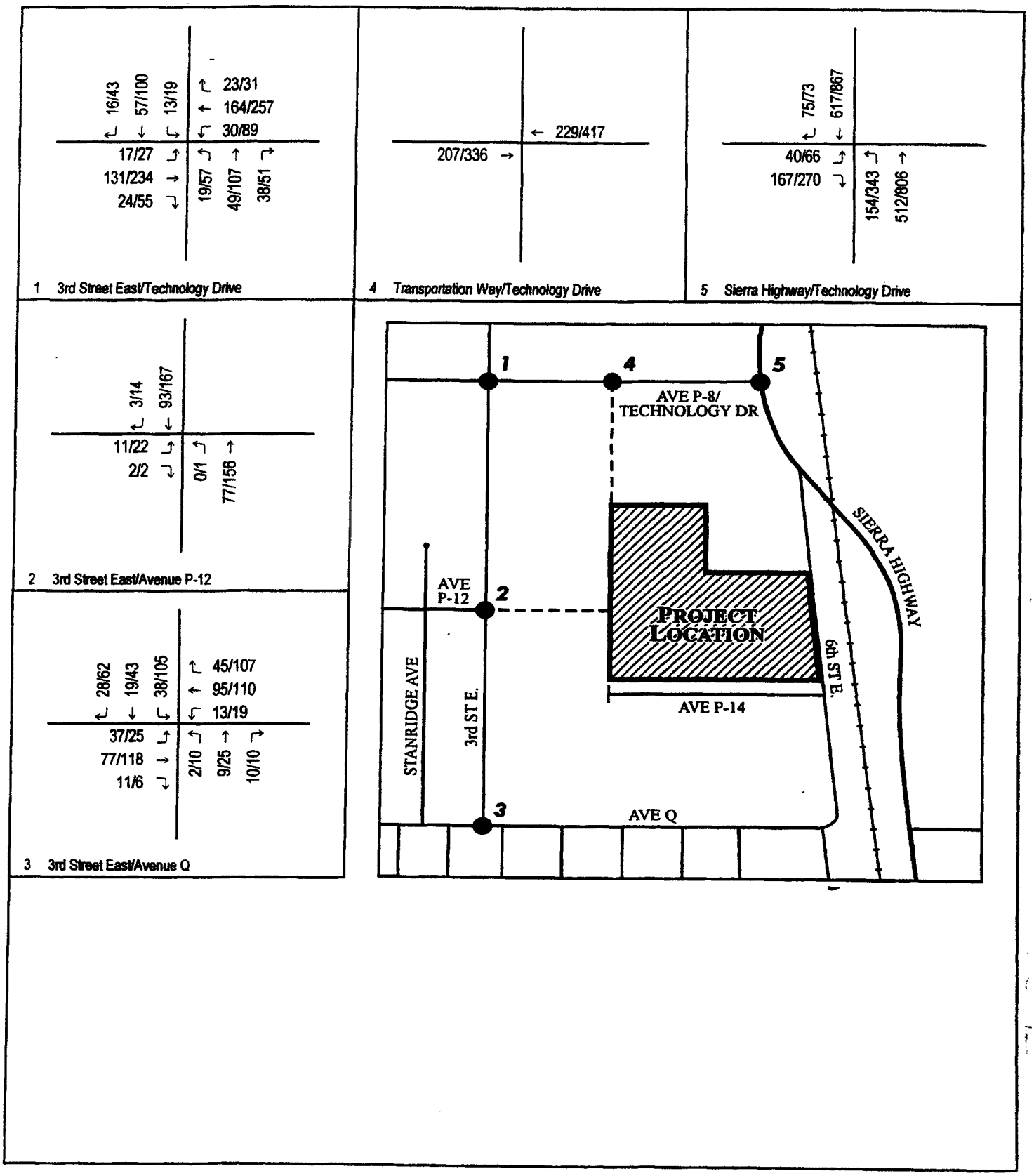
An analysis of near-term background levels of service was conducted for the off-site analysis intersections, with existing intersection geometries and control. Table B summarizes the results of the opening day background peak hour LOS analysis. Appendix B contains the LOS calculations.

Table B - Year 2003 Near-Term Background Peak Hour Intersection Levels of Service

Intersection	Intersection Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS
3rd Street East/Technology Drive	all-way stop[1]	9.2	A	12.1	B
3rd Street East/Avenue P-12	minor stop[2]	9.5	A	11.0	B
3rd Street East/Avenue Q	minor stop[2]	11.9	B	15.6	C
Sierra Highway/Technology Drive	signal	17.3	B	21.9	C

Notes: [1] Delay for all-way stop unsignalized intersections is the average delay (in seconds per vehicle) for all stopped or delayed movements.
[2] Minor stop indicates a stop sign on the minor street and no traffic control on the major street.

As Table B shows, with the addition of ambient traffic volume growth and estimated traffic volumes from the approved Continuation High School to existing volumes in the study area, all study intersections are forecast to operate within the City's LOS C standard during the a.m. and p.m. peak hours.



LSA

FIGURE 6

12/34 AM/PM Volumes

Palmdale Transportation Center

Near-Term (2003) Peak Hour Turn Volumes

based on size (the Avenue S site is approximately 30 acres, the PTC site is 11 acres). The estimated carpool/vanpool trip generation was obtained by then reducing the factored trip generation by 75 percent. This reduction was applied to reflect the superior location that the Avenue S site provides for carpooling and vanpooling relative to the PTC site. Table C-6 also shows the trip generation for the Park & Ride lot adjusted to reflect a PHF of 0.50, which was used in the intersection LOS analysis. A PHF of 0.50 indicates that one-half of the hourly volume occurs within one fifteen-minute period.

Table C summarizes the trip generation for the PTC. As shown in Table C, the project is estimated to generate 2,405 daily trips, with 211 trips occurring during the a.m. peak hour and 226 trips occurring during the p.m. peak hour.

Table C - Palmdale Transportation Center Trip Generation

		A.M. Peak Hour			P.M. Peak Hour		
Generator	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Local/Commuter Buses	480	26	26	52	24	24	48
Metrolink Station	768	63	14	77	14	63	77
Park & Ride Lot							
carpools/vanpools	290	22	7	29	7	22	29
commuter buses	460	33	13	46	13	33	46
Retail	407	4	3	7	11	15	26
Net New Trips	**2,405**	**148**	**63**	**211**	**69**	**156**	**226**

As indicated previously, trips associated with the Metrolink Station and the Park & Ride lot have been adjusted with a PHF, to account for the uneven arrival and departure patterns of trips within the peak hour. This characteristic is typical of time-sensitive operations such as bus schedules and carpool/vanpool schedules. Trip generation for these uses was also calculated with appropriate peak hour factors for use in the intersection LOS analysis.

Trip Distribution and Assignment

Trip distribution patterns for private vehicles associated with the Metrolink station and retail trips were developed based on the relative location of the PTC to the City and regional serving road system. Based on the location of the PTC project, the following general trip distribution percentages for the Metrolink station, Park & Ride lot, and retail trips were developed:

- SR-14 North (via Rancho Vista Boulevard and 3rd Street East) 25%
- SR-14 South (via Palmdale Boulevard and Avenue Q) 25%
- Sierra Highway North (via Technology Drive) 15%
- Sierra Highway South (via Technology Drive) 15%
- Palmdale Boulevard East (via Sierra Highway South to Technology Drive) 5%

- Palmdale Boulevard West (via Avenue Q) 5%
- Rancho Vista Boulevard East (via Sierra Highway to Technology Drive) 5%
- Rancho Vista Boulevard West (via Sierra Highway to Technology Drive) 5%

Bus trips were distributed to the study area intersections by redirecting them from their current routes to the PTC. It is anticipated that a majority of the buses will access the site via Sierra Highway to Technology Drive.

The project trip assignment is the product of the project trip generation multiplied by the trip distribution percentages. Figure 7 illustrates the total project trip assignment patterns at the study area intersections. Figure 8 provides a summary of assigned project trips at the key study intersections.

Near-Term Plus Project Impacts

Traffic generated by the proposed project was added to year 2003 near-term background traffic volumes. Approach and departure volumes at the west leg of the Sierra Highway/Technology Drive intersection were used as estimates of background westbound and eastbound through volumes at the project driveway (Transportation Way) on Technology Drive. Figure 9 illustrates the resulting near-term background plus project peak hour turn volumes for the study intersections.

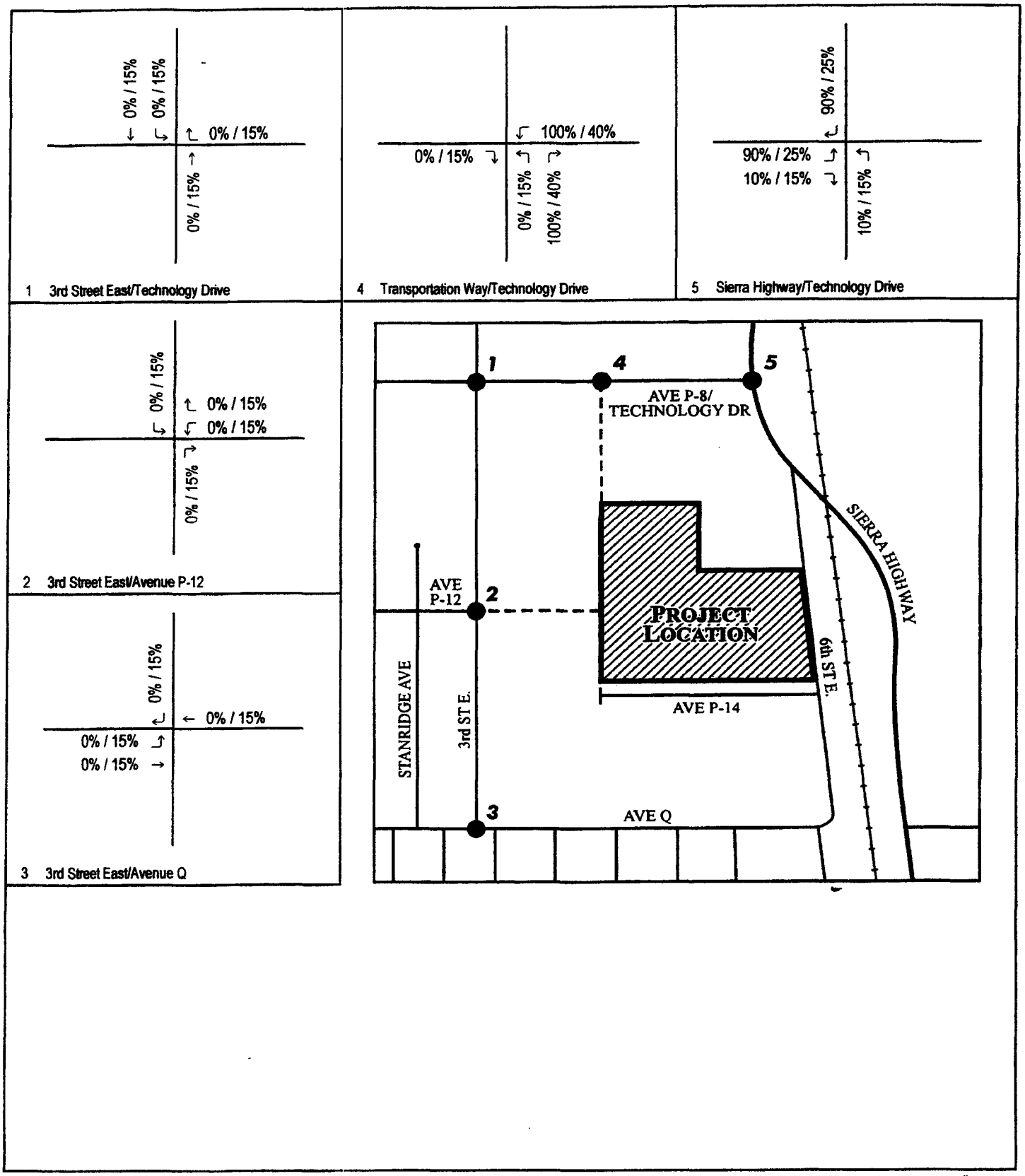
Table D summarizes the results of the year 2003 near-term background plus project peak hour LOS analysis. This analysis assumes existing intersection geometrics and control (i.e., no additional off-site improvements to roadways and intersections in the vicinity of the project site). The new Transportation Way/Technology Drive intersection was analyzed with stop sign control on the northbound approach and the addition of a westbound left turn lane to accommodate project traffic.

Table D - Near-Term Plus Project Intersection Levels of Service

	Intersection	A.M. Peak Hour		P.M. Peak Hour	
Intersection	Control	Delay[1]	LOS	Delay[1]	LOS
3rd Street East/Technology Drive	all-way stop[1]	9 5	A	13.3	B
3rd Street East/Avenue P-12	minor stop[2]	10.4	B	12.4	B
3rd Street East/Avenue Q	minor stop[2]	13.2	B	18.0	C
Transportation Way/Technology Drive	minor stop[2]	10.4	B	12.8	B
Sierra Highway/Technology Drive	signal	18.8	B	23.5	C

Notes [1] Delay for all-way stop unsignalized intersections is the average delay (in seconds per vehicle) for all stopped or delayed movements

[2] Minor stop indicates a stop sign on the minor street and no traffic control on the major street.



LSA

FIGURE 7

12% / 34% Bus % / Metrolink, Park & Ride, Retail %

Palmdale Transportation Center

Project Trip Distribution Patterns

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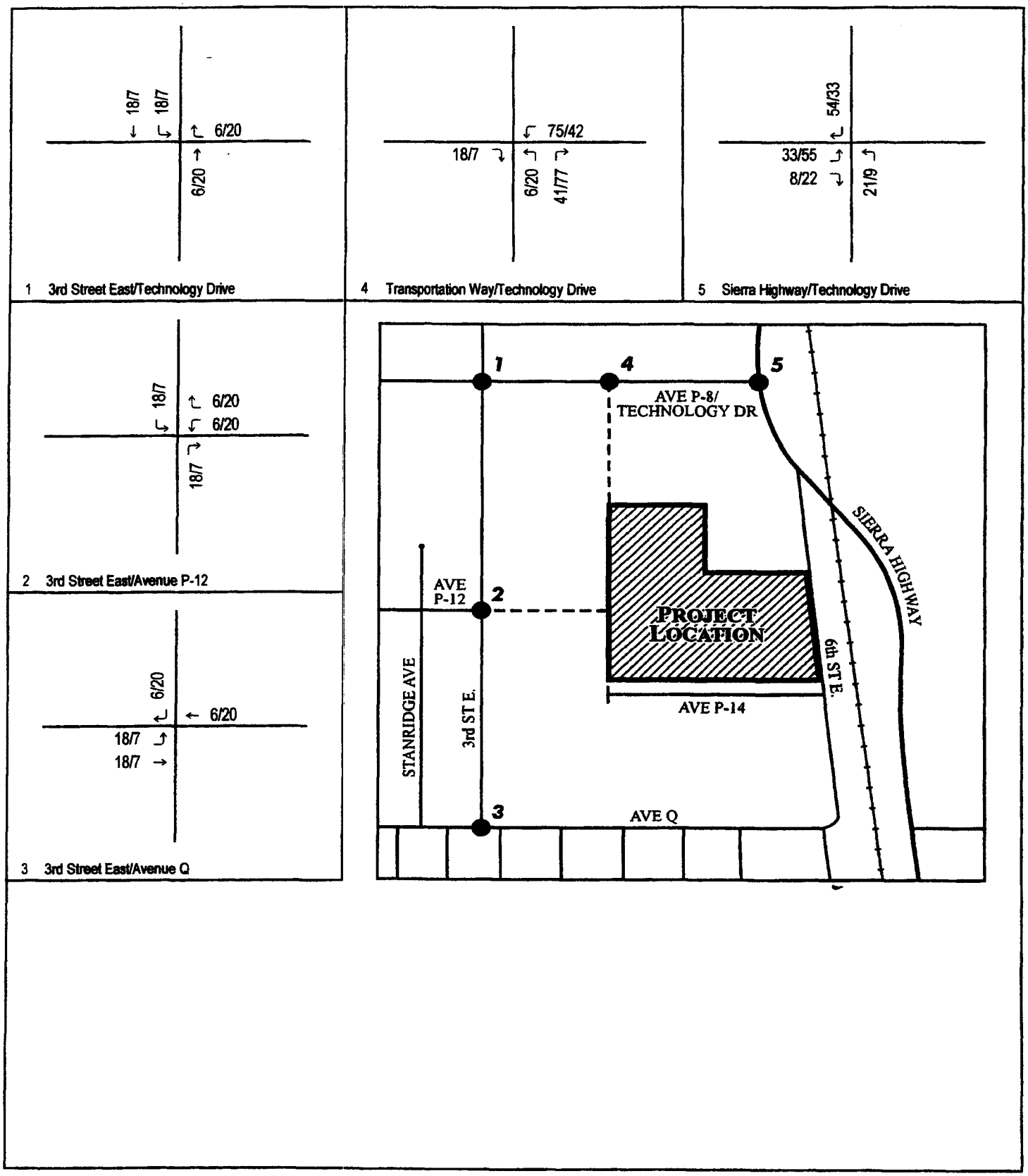

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FIGURE 8

12/34 AM/PM Volumes

Palmdale Transportation Center

Assigned Project Trips

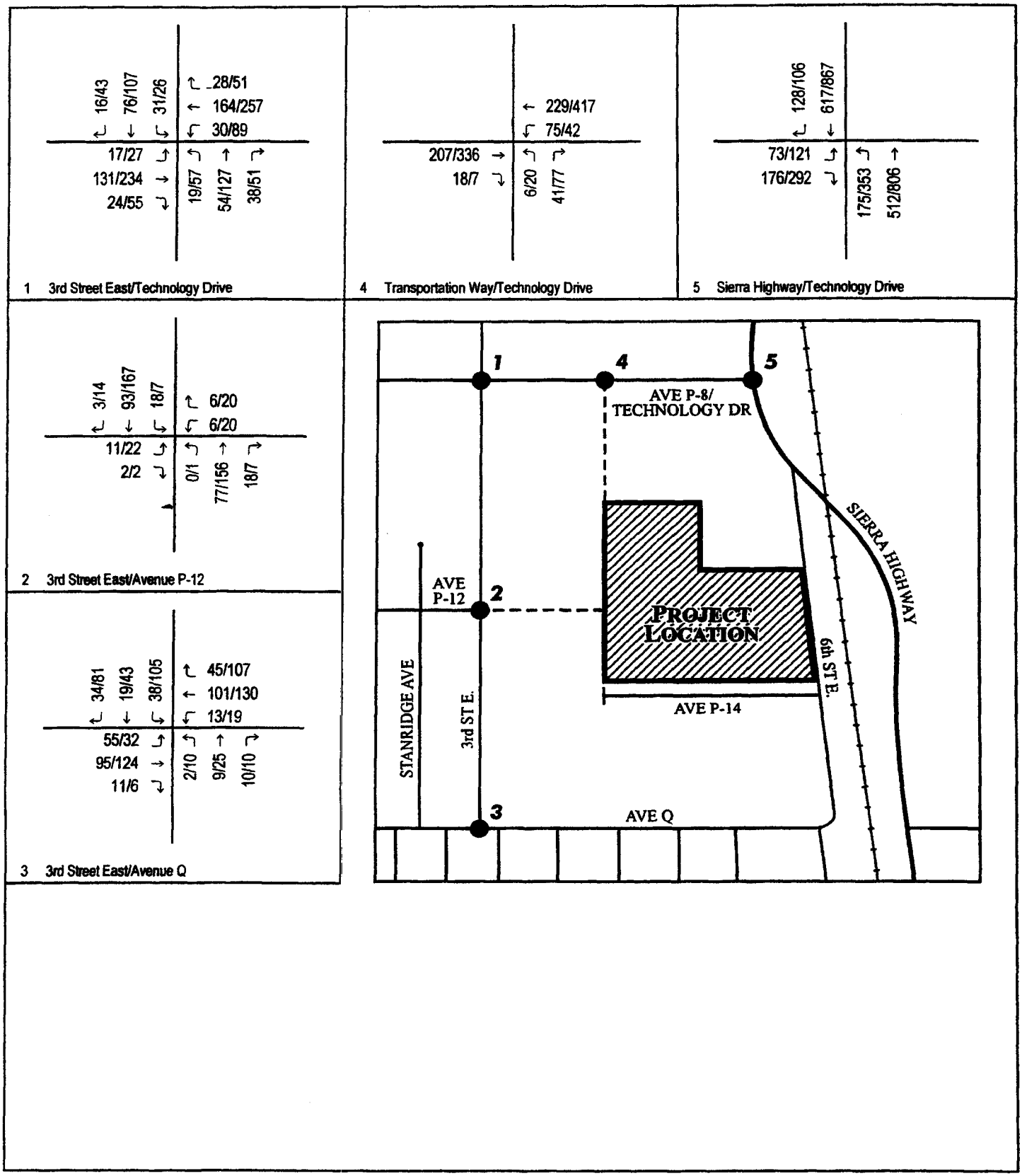

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FIGURE 9

12/34 AM/PM Volumes

Palmdale Transportation Center

Near-Term (2003) Plus Project Traffic Volumes

As shown in Table D, all of the study intersections are forecast to operate within the City's LOS C standard, including the new intersection that will be created at Transportation Way and Technology Drive.

Access, On-Site Circulation and Parking

Access. As discussed previously and shown in the project site plan (Figure 2), the project will be adequately served by a total of three major accesses. These accesses include Transportation Way off of Technology Drive, the extension of Avenue P-12 east of 3rd Street East, and 6th Street East.

The Transportation Way access will form a new intersection with Technology Drive. With stop sign control on the northbound Transportation Way approach and construction of a left turn pocket for westbound traffic inbound to the PTC site, traffic volumes will be adequately served. The extension of Avenue P-12 will form the fourth leg of the current T-intersection, and will be adequately served with proper stop signs on the westbound Avenue P-12 approach. Sixth (6th) Street East will curve to the west and connect with the extension of Avenue P-12, with no additional access control required.

Bus access will be adequately served by rerouting the AVTA and commuter buses to the PTC site using the vicinity roadways. Based on the level of service analysis discussed previously, the addition of a stop sign and a westbound left turn lane at the Transportation Way/Technology Drive intersection will accommodate project traffic at a good (LOS B) level of service.

On-Site Circulation. As described previously, the internal roadways form a "figure-8," providing access to the major parking areas. The internal roadway system, including the drive aisles within the parking lot, will provide for adequate internal circulation through the site. A major internal road has been designed from the main driveway to the front of the major retail buildings.

Parking. A total of approximately 650 on-site parking spaces has been proposed for the PTC project. Based on the 2,405 daily trips estimated for the project, less the 480 daily trips associated with buses, approximately 1,925 daily trips are estimated from passenger vehicles. With a peak of 75 percent of these vehicles parked at the same time, a worst-case parking demand of 595 vehicles would result (1925 two-way daily trips minus 340 two-way "pick-up" trips, divided by two, times 0.75 equals 595 vehicles). Consequently, the 650 parking spaces will meet the peak parking demand estimated for the PTC project.

Residential Neighborhood Impacts. As shown in Table D, the study intersections located within the adjacent residential neighborhood are forecast to operate at LOS A or B during peak hours with the addition of project traffic. Due to the small amount of trips added by the project, only one of the intersections shows a change in LOS with the addition of project traffic. In all other locations, the LOS remains unchanged.

Similarly, the volume of traffic estimated along the adjacent residential streets will not be significantly affected by the project. Although traffic volumes will increase slightly, they will not measurably increase to a point were roadway operations are affected.

Drop-off/Pick-up Areas. Based on the project trip generation shown in Table C, approximately 34 drop-offs will occur during the a.m. peak hour, with 34 pick-ups occurring during the p.m. peak hour. The PTC site is currently designed with approximately 500 feet of curb parking space on the rail station side of 6th Street East-Avenue P-12. This curb parking space, in combination with the 27-space Kiss & Ride parking provided at the southeast corner of the site, will accommodate private vehicle drop-offs and pick-ups.

Mitigation Measures

The following improvements will be implemented as part of the PTC:

Transportation Way/Technology Drive Intersection. Provide stop sign control for the northbound approach and a left-turn pocket for westbound traffic inbound to the PTC site.

APPENDIX C

TRAFFIC VOLUME DATA

APPENDIX A

EXISTING PEAK PERIOD TURNING MOVEMENT COUNTS

counts unlimited

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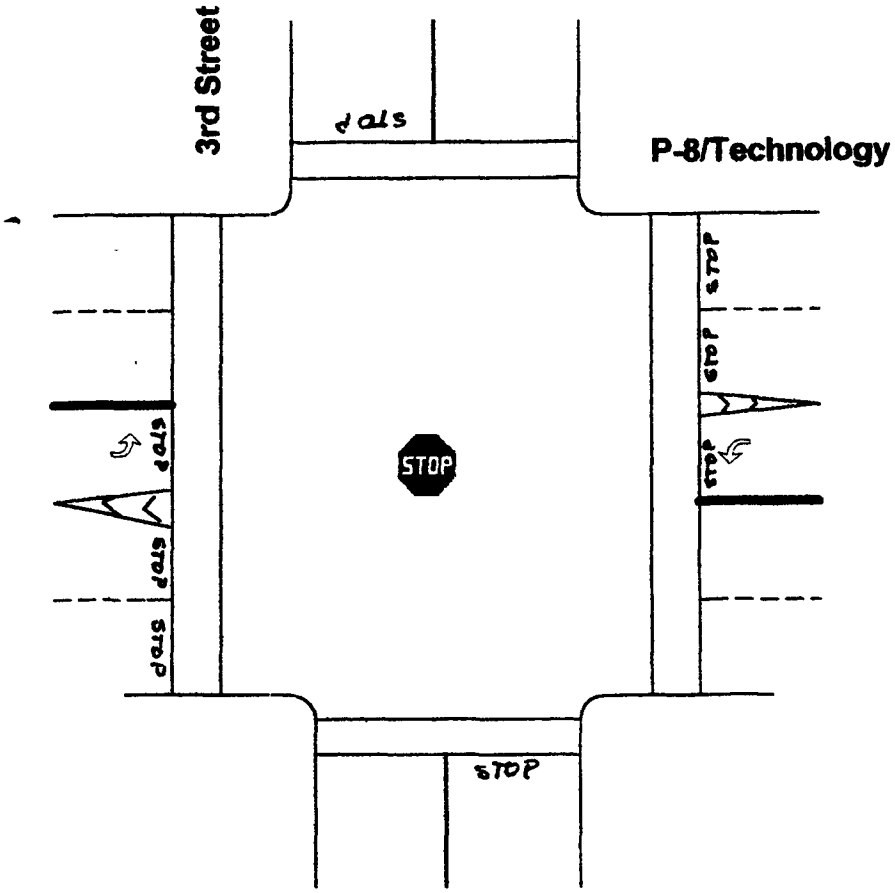

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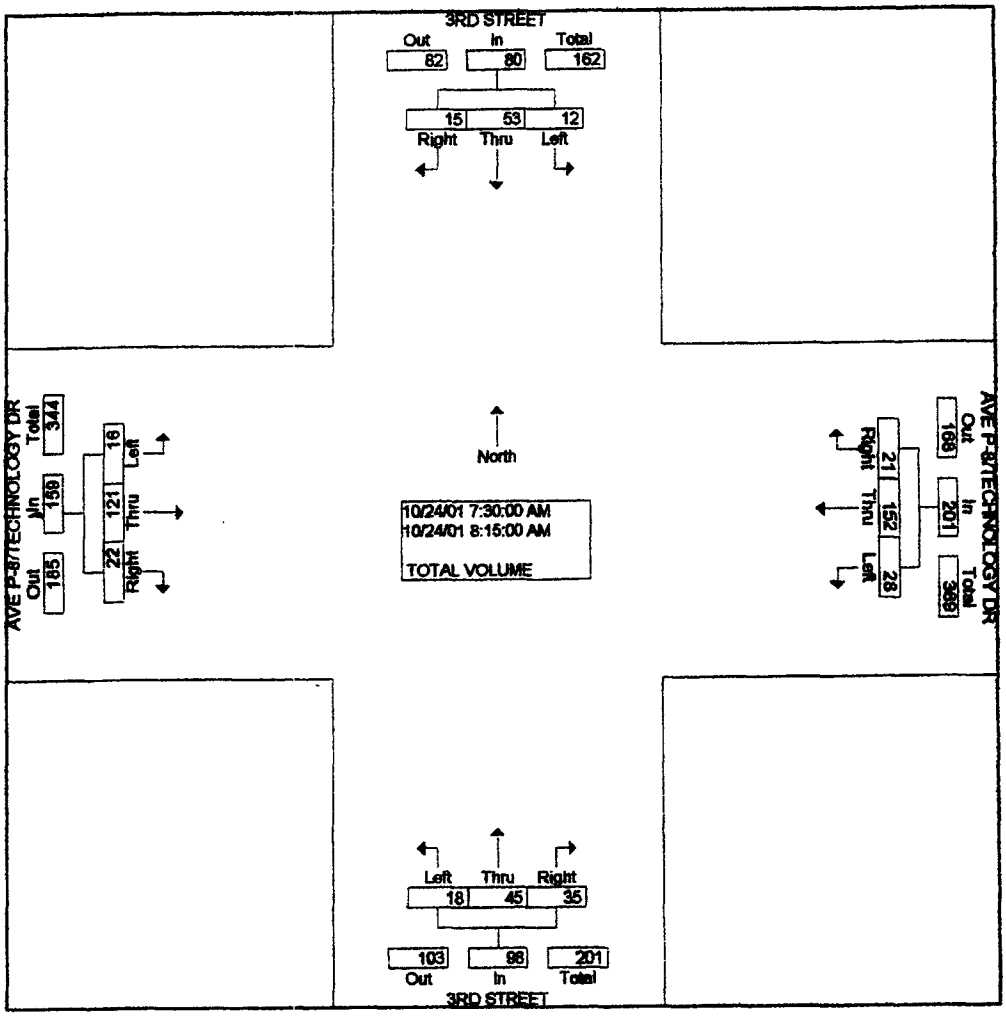

Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1

By Approach	07:45 AM				07:30 AM				08:00 AM				07:00 AM			
Volume	16	53	15	84	28	152	21	201	19	53	32	104	19	126	28	173
Percent	19.0	63.1	17.9		13.9	75.6	10.4		18.3	51.0	30.8		11.0	72.8	16.2	
High Int.	07:45 AM				07:45 AM				08:00 AM				07:45 AM			
Volume	5	17	4	26	9	66	9	84	7	18	10	35	3	39	12	54
Peak Factor				0.808				0.598				0.743				0.801

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Groups Printed- TOTAL VOLUME

	3RD STREET Southbound				AVE P-8/TECHNOLOGY DR Westbound				3RD STREET Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	5	5	10	3	27	2	32	4	8	3	15	7	28	4	39	96
07:15 AM	3	5	3	11	5	21	2	28	2	10	5	17	1	32	7	40	96
07:30 AM	3	6	4	13	5	31	7	43	4	8	11	23	8	27	5	40	119
07:45 AM	5	17	4	26	9	66	9	84	3	11	4	18	3	39	12	54	182
Total	11	33	16	60	22	145	20	187	13	37	23	73	19	126	28	173	493
08:00 AM	3	14	4	21	8	33	3	44	7	18	10	35	2	28	3	33	133
08:15 AM	1	16	3	20	6	22	2	30	4	8	10	22	3	27	2	32	104
08:30 AM	7	6	4	17	6	26	3	35	4	11	6	21	3	18	4	25	98
08:45 AM	6	9	0	15	6	28	3	37	4	16	6	26	4	23	6	33	111
Total	17	45	11	73	26	109	11	146	19	53	32	104	12	96	15	123	446
Grand Total	28	78	27	133	48	254	31	333	32	90	55	177	31	222	43	296	939
Apprch %	21.1	58.6	20.3		14.4	76.3	9.3		18.1	50.8	31.1		10.5	75.0	14.5		
Total %	3.0	8.3	2.9	14.2	5.1	27.1	3.3	35.5	3.4	9.6	5.9	18.8	3.3	23.6	4.6	31.5	

	3RD STREET Southbound				AVE P-8/TECHNOLOGY DR Westbound				3RD STREET Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	12	53	15	80	28	152	21	201	18	45	35	98	16	121	22	159	538
Percent	15.0	66.3	18.8		13.9	75.6	10.4		18.4	45.9	35 7		10.1	76.1	13.8		
07:45 Volume	5	17	4	26	9	66	9	84	3	11	4	18	3	39	12	54	182
Peak Factor																	0.739
High Int.	07:45 AM				07:45 AM				08:00 AM				07:45 AM				
Volume	5	17	4	26	9	66	9	84	7	18	10	35	3	39	12	54	
Peak Factor				0.769				0.598				0.700				0.736	

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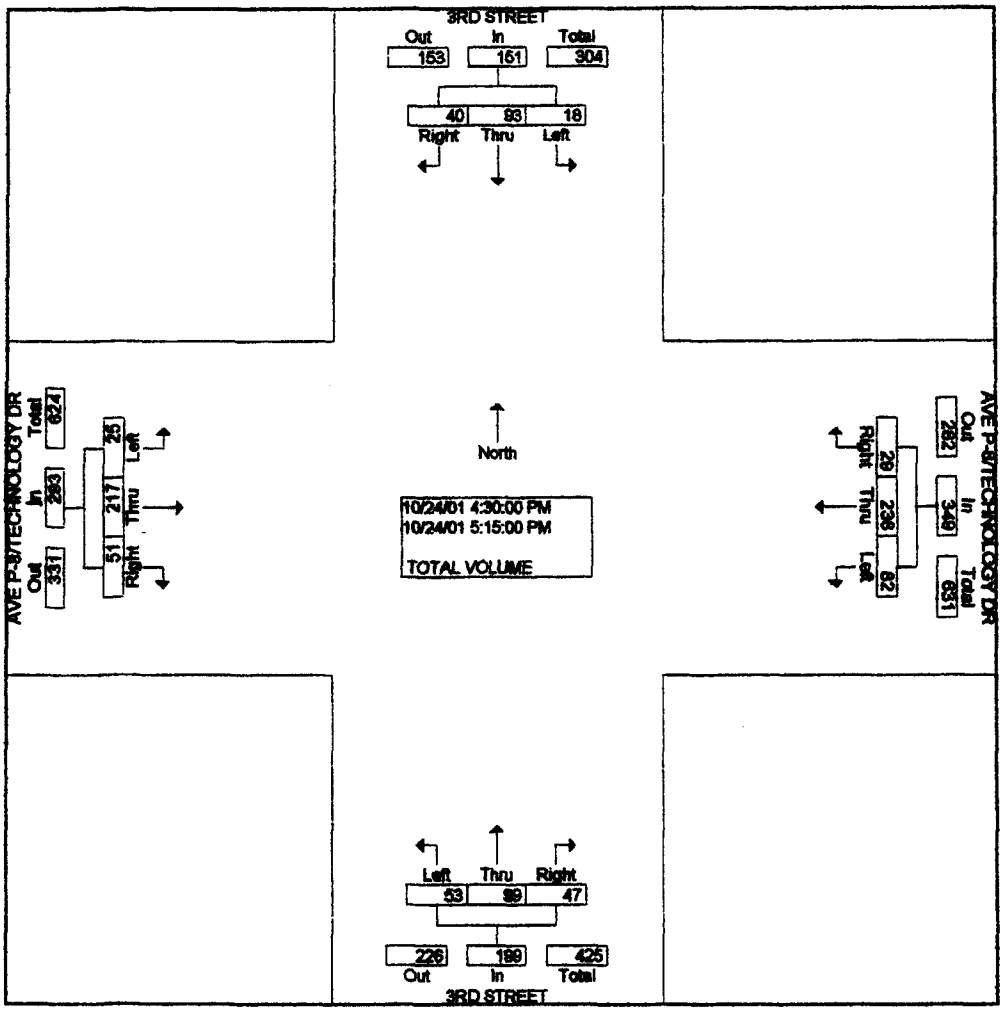

Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1

By Approach	04:00 PM				04:15 PM				04:30 PM				05:00 PM			
Volume	25	100	30	155	78	239	33	350	53	99	47	199	32	247	51	330
Percent	16.1	64.5	19.4		22.3	68.3	9.4		26.6	49.7	23.6		9.7	74.8	15.5	
High Int.	04:45 PM				04:45 PM				05:00 PM				05:00 PM			
Volume	5	26	13	44	31	74	8	113	15	28	16	59	7	76	17	100
Peak Factor				0.881				0.774				0.843				0.825

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Groups Printed- TOTAL VOLUME

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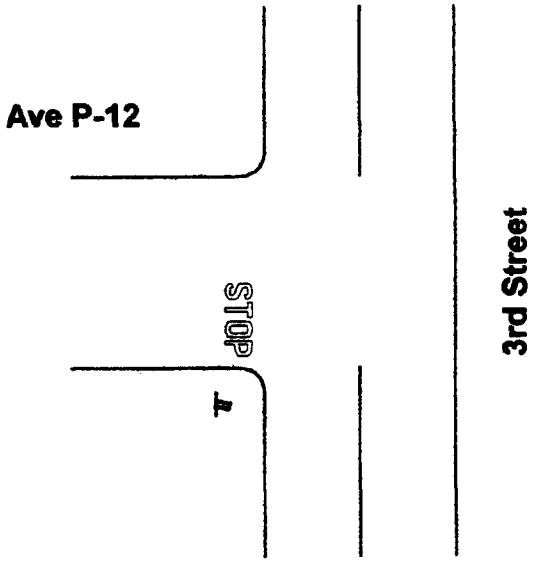
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	6	31	4	41	9	47	8	64	5	24	6	35	4	47	8	59	199
04:15 PM	7	26	6	39	9	53	8	70	8	21	8	37	3	36	11	50	196
04:30 PM	7	17	7	31	15	52	9	76	18	23	15	56	7	35	10	52	215
04:45 PM	5	26	13	44	31	74	8	113	14	22	9	45	5	48	12	65	267
Total	25	100	30	155	64	226	33	323	45	90	38	173	19	166	41	226	877
05:00 PM	3	28	9	40	23	60	8	91	15	28	16	59	7	76	17	100	290
05:15 PM	3	22	11	36	13	52	4	69	6	26	7	39	6	58	12	76	220
05:30 PM	4	22	6	32	15	42	8	65	5	17	12	34	7	61	12	80	211
05:45 PM	6	18	8	32	17	36	6	59	10	14	5	29	12	52	10	74	194
Total	16	90	34	140	68	190	26	284	36	85	40	161	32	247	51	330	915
Grand Total	41	190	64	295	132	416	59	607	81	175	78	334	51	413	92	556	1792
Apprch %	13.9	64.4	21 7		21.7	68.5	9.7		24.3	52 4	23.4		9.2	74.3	16.5		
Total %	2.3	10.6	3.6	16.5	7.4	23.2	3.3	33.9	4.5	9.8	4.4	18.6	2.8	23.0	5.1	31.0	

	3RD STREET Southbound				AVE P-8/TECHNOLOGY DR Westbound				3RD STREET Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	18	93	40	151	82	238	29	349	53	99	47	199	25	217	51	293	992
Percent	11.9	61.6	26.5		23.5	68.2	8.3		26.6	49.7	23.6		8.5	74.1	17.4		
05:00 Volume	3	28	9	40	23	60	8	91	15	28	16	59	7	76	17	100	290
Peak Factor																	0.855
High Int.	04:45 PM				04:45 PM				05:00 PM				05:00 PM				
Volume	5	26	13	44	31	74	8	113	15	28	16	59	7	76	17	100	
Peak Factor				0.858				0.772				0.843				0.733	

counts unlimited

NOT TO SCALE



CITY OF PALMDALE
N/S: 3RD STREET
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Start Date : 10/24/2001
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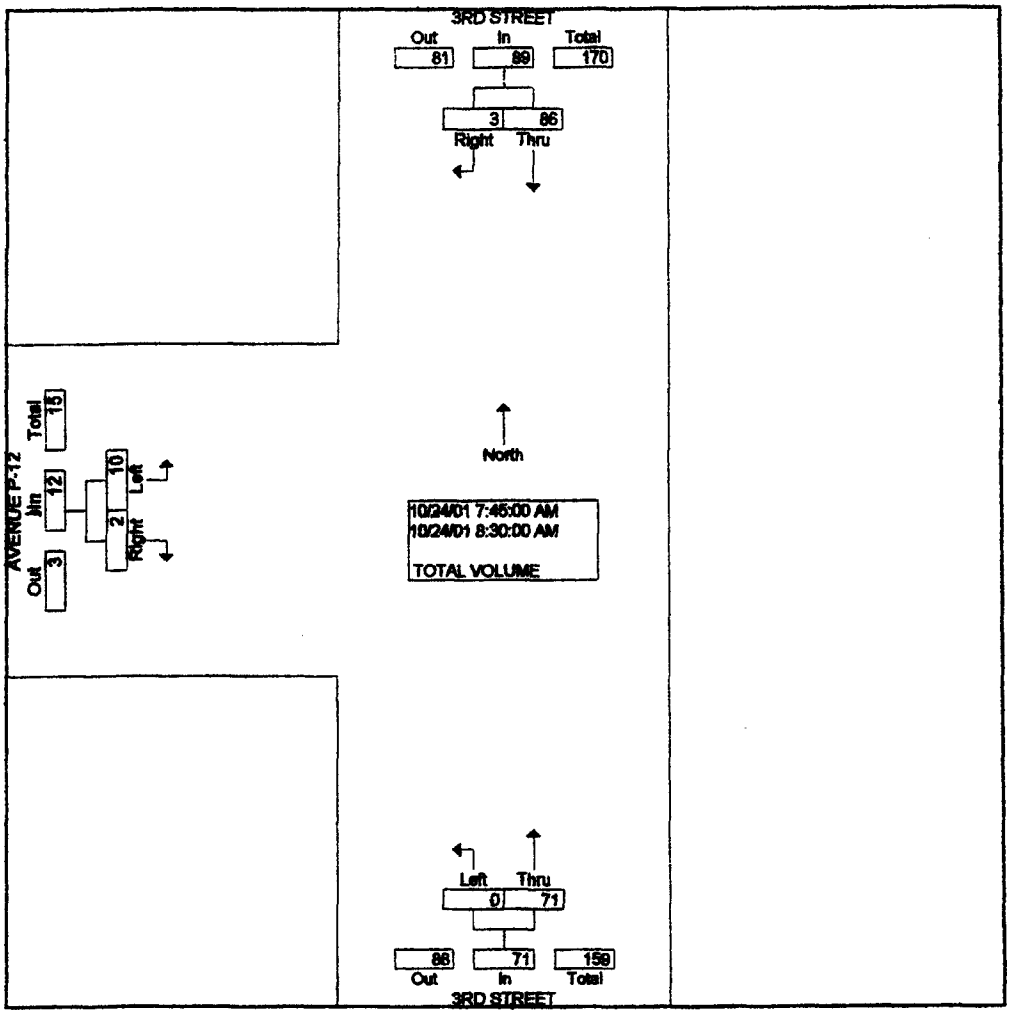

Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1

By Approach	07:45 AM				07:00 AM				07:30 AM				08:00 AM			
Volume	0	86	3	89	0	0	0	0	1	74	0	75	11	0	2	13
Percent	0.0	96.6	3.4		-	-	-		1.3	98.7	0.0		84.6	0.0	15.4	
High Int.	07:45 AM				-				08:00 AM				08:45 AM			
Volume	0	26	0	26	-	-	-	-	0	23	0	23	4	0	1	5
Peak Factor				0.856				-				0.815				0.650

CITY OF PALMDALE
N/S: 3RD STREET
E/W AVENUE P-12
WEATHER: SUNNY

COUNTS UNLIMITED, INC
909.247 6716

File Name PA3P12AM
Site Code . 00035715
Start Date : 10/24/2001
Page No : 1

Groups Printed- TOTAL VOLUME

	3RD STREET Southbound				Westbound				3RD STREET Northbound				AVENUE P-12 Eastbound				
Start Time	Left	Thru	Right	App Total	Left	Thru	Right	App Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	7	2	9	0	0	0	0	0	11	0	11	2	0	0	2	22
07:15 AM	0	10	2	12	0	0	0	0	0	11	0	11	1	0	0	1	24
07:30 AM	0	12	0	12	0	0	0	0	1	19	0	20	2	0	0	2	34
07:45 AM	0	26	0	26	0	0	0	0	0	16	0	16	3	0	1	4	46
Total	0	55	4	59	0	0	0	0	1	57	0	58	8	0	1	9	126
08:00 AM	0	22	2	24	0	0	0	0	0	23	0	23	3	0	0	3	50
08:15 AM	0	23	0	23	0	0	0	0	0	16	0	16	2	0	0	2	41
08:30 AM	0	15	1	16	0	0	0	0	0	16	0	16	2	0	1	3	35
08:45 AM	0	13	1	14	0	0	0	0	0	18	0	18	4	0	1	5	37
Total	0	73	4	77	0	0	0	0	0	73	0	73	11	0	2	13	163
Grand Total	0	128	8	136	0	0	0	0	1	130	0	131	19	0	3	22	289
Apprch %	0 0	94.1	5.9		0 0	0.0	0.0		0.8	99.2	0.0		86.4	0.0	13.6		
Total %	0 0	44.3	2.8	47.1	0 0	0 0	0.0	0.0	0 3	45.0	0 0	45.3	6.6	0.0	1.0	7.6	

	3RD STREET Southbound				Westbound				3RD STREET Northbound				AVENUE P-12 Eastbound				
Start Time	Left	Thru	Right	App Total	Left	Thru	Right	App Total	Left	Thru	Right	App Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:45 AM																
Volume	0	86	3	89	0	0	0	0	0	71	0	71	10	0	2	12	172
Percent	0.0	96.6	3 4		0.0	0.0	0.0		0 0	100 0	0.0		83.3	0 0	16.7		
08:00 Volume	0	22	2	24	0	0	0	0	0	23	0	23	3	0	0	3	50
Peak Factor																	0 860
High Int	07:45 AM				6:45:00 AM				08:00 AM				07:45 AM				
Volume	0	26	0	26	0	0	0	0	0	23	0	23	3	0	1	4	
Peak Factor				0.856								0.772				0.750	

CITY OF PALMDALE
N/S: 3RD STREET
E/W: AVENUE P-12
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
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File Name : PA3P12PM
Site Code : 00035715
Start Date : 10/24/2001
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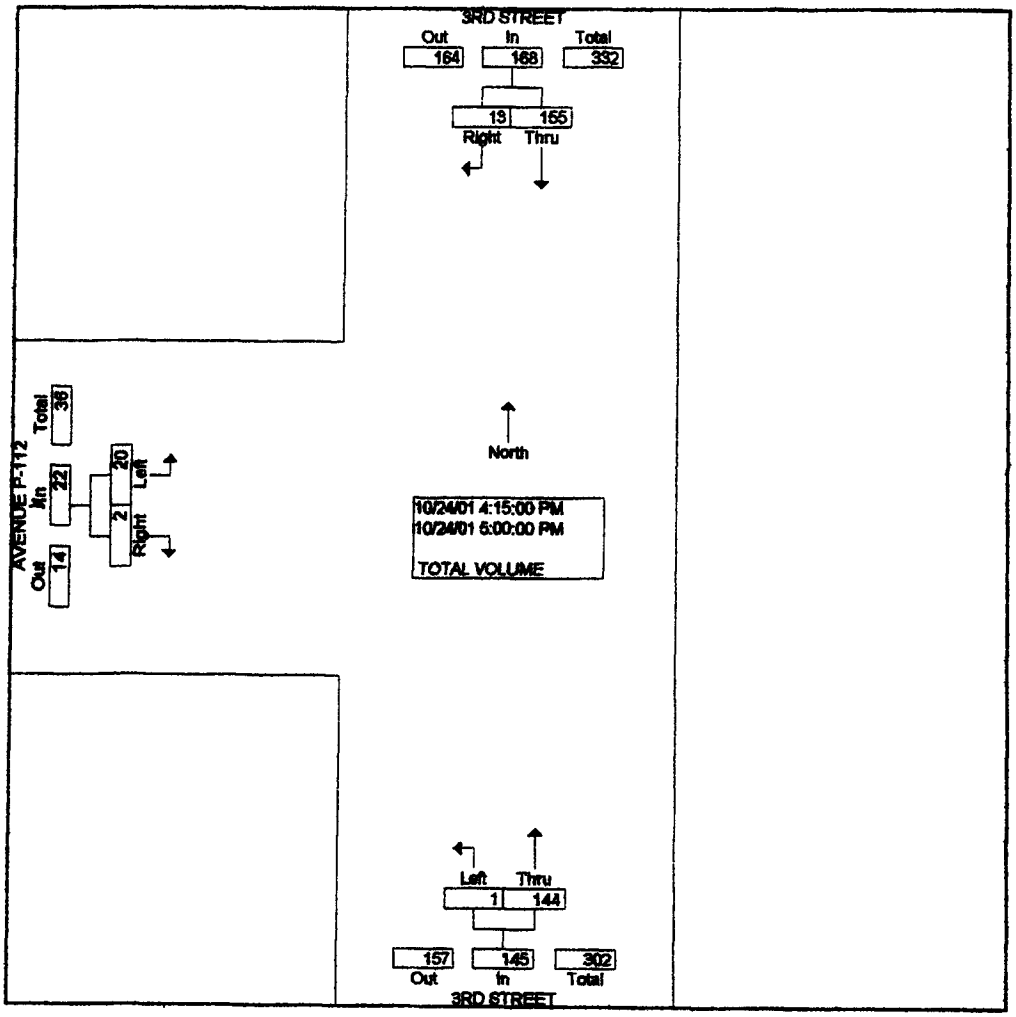


Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1

By Approach	04:15 PM				04:00 PM				04:30 PM				04:15 PM			
Volume	0	155	13	168	0	0	0	0	1	147	0	148	20	0	2	22
Percent	0.0	92.3	7.7		-	-	-		0.7	99.3	0.0		90.9	0.0	9.1	
High Int.	05:00 PM				-				05:00 PM				04:15 PM			
Volume	0	45	4	49	-	-	-	-	0	44	0	44	7	0	1	8
Peak Factor				0.857				-				0.841				0.688

CITY OF PALMDALE
N/S: 3RD STREET
E/W: AVENUE P-12
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

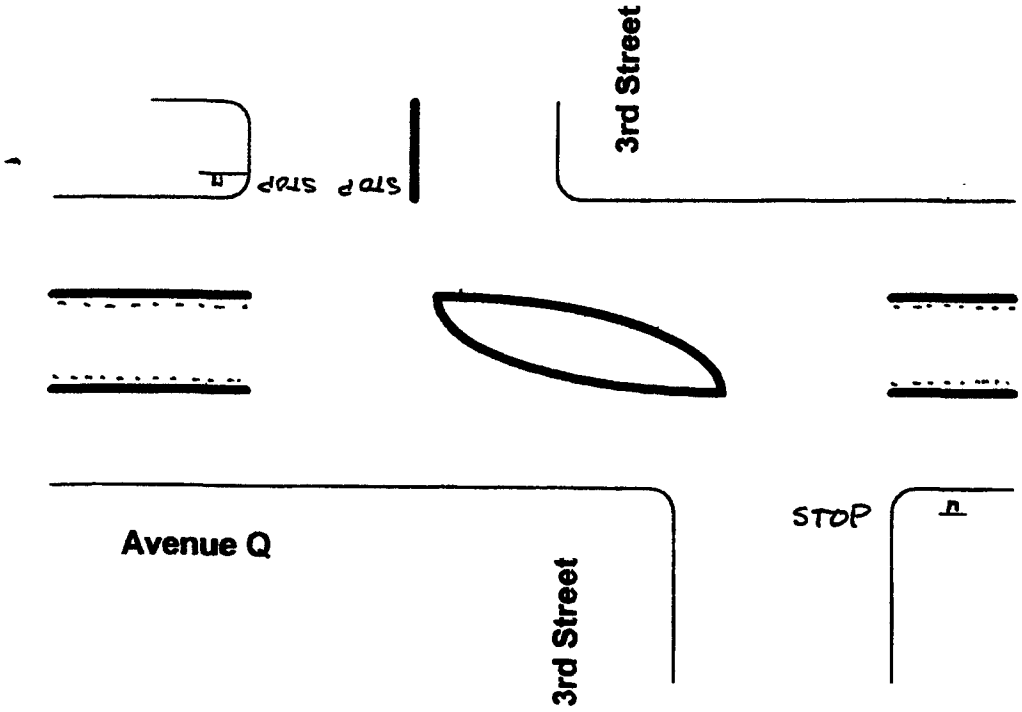
File Name : PA3P12PM
Site Code : 00035715
Start Date : 10/24/2001
Page No : 1

Groups Printed- TOTAL VOLUME

	3RD STREET Southbound				Westbound				3RD STREET Northbound				AVENUE P-112 Eastbound				
Start Time	Left	Thru	Right	App Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	0	45	3	48	0	0	0	0	0	33	0	33	2	0	1	3	84
04:15 PM	0	39	2	41	0	0	0	0	0	26	0	26	7	0	1	8	75
04:30 PM	0	37	5	42	0	0	0	0	1	39	0	40	4	0	0	4	86
04:45 PM	0	34	2	36	0	0	0	0	0	35	0	35	2	0	0	2	73
Total	0	155	12	167	0	0	0	0	1	133	0	134	15	0	2	17	318
05:00 PM	0	45	4	49	0	0	0	0	0	44	0	44	7	0	1	8	101
05:15 PM	0	35	2	37	0	0	0	0	0	29	0	29	4	0	1	5	71
05:30 PM	0	32	7	39	0	0	0	0	0	24	0	24	2	0	0	2	65
05:45 PM	0	26	3	29	0	0	0	0	1	22	0	23	4	0	2	6	58
Total	0	138	16	154	0	0	0	0	1	119	0	120	17	0	4	21	295
Grand Total	0	293	28	321	0	0	0	0	2	252	0	254	32	0	6	38	613
Apprch %	0.0	91.3	8.7		0.0	0.0	0.0		0.8	99 2	0.0		84.2	0.0	15.8		
Total %	0.0	47.8	4.6	52.4	0.0	0.0	0.0	0.0	0 3	41.1	0.0	41.4	5.2	0.0	1.0	6.2	

	3RD STREET Southbound				Westbound				3RD STREET Northbound				AVENUE P-112 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	0	155	13	168	0	0	0	0	1	144	0	145	20	0	2	22	335
Percent	0.0	92.3	7.7		0.0	0.0	0.0		0 7	99.3	0 0		90.9	0.0	9.1		
05:00 Volume	0	45	4	49	0	0	0	0	0	44	0	44	7	0	1	8	101
Peak Factor																	0.829
High Int.	05:00 PM				3:45:00 PM				05:00 PM				04:15 PM				
Volume	0	45	4	49	0	0	0	0	0	44	0	44	7	0	1	8	
Peak Factor				0.857								0.824				0.688	

Counts unlimited



CITY OF PALMDALE
N/S: 3RD STREET
E/W: AVENUE Q
WEATHER: SUNNY

COUNTS UNLIMITED, INC
909.247.6716

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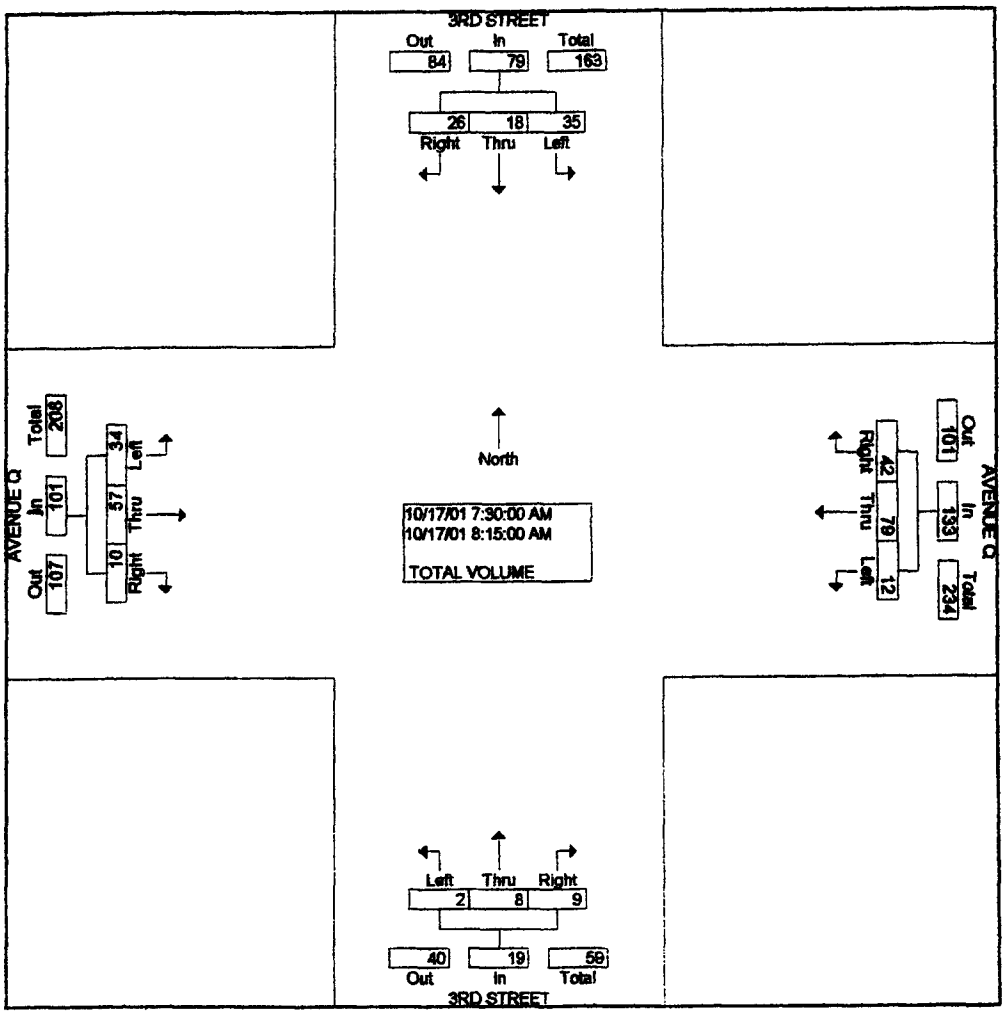

Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1

By Approach	07:45 AM				07:30 AM				07:00 AM				07:30 AM			
Volume	37	21	28	86	12	79	42	133	7	13	6	26	34	57	10	101
Percent	43.0	24.4	32.6		9.0	59.4	31.6		26.9	50 0	23 1		33.7	56.4	9.9	
High Int	07:45 AM				07:45 AM				07:00 AM				07:45 AM			
Volume	11	7	7	25	5	21	11	37	5	3	0	8	9	21	2	32
Peak Factor				0.860				0.899				0.813				0.789

CITY OF PALMDALE
N/S: 3RD STREET
E/W: AVENUE Q
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

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Site Code : 00035731
Start Date : 10/17/2001
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Groups Printed- TOTAL VOLUME

	3RD STREET Southbound				AVENUE Q Westbound				3RD STREET Northbound				AVENUE Q Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	6	0	4	10	1	14	5	20	5	3	0	8	2	10	2	14	52
07:15 AM	3	1	11	15	2	10	13	25	1	3	0	4	1	14	1	16	60
07:30 AM	5	2	3	10	3	22	10	35	1	3	2	6	8	15	4	27	78
07:45 AM	11	7	7	25	5	21	11	37	0	4	4	8	9	21	2	32	102
Total	25	10	25	60	11	67	39	117	7	13	6	26	20	60	9	89	292
08:00 AM	10	4	11	25	2	17	11	30	0	1	2	3	9	9	1	19	77
08:15 AM	9	5	5	19	2	19	10	31	1	0	1	2	8	12	3	23	75
08:30 AM	7	5	5	17	2	10	8	20	2	5	1	8	3	20	0	23	68
08:45 AM	13	3	4	20	3	13	10	26	0	2	2	4	3	14	1	18	68
Total	39	17	25	81	9	59	39	107	3	8	6	17	23	55	5	83	288
Grand Total	64	27	50	141	20	126	78	224	10	21	12	43	43	115	14	172	580
Apprch %	45.4	19.1	35.5		8.9	56.3	34.8		23.3	48.8	27.9		25.0	66.9	8.1		
Total %	11.0	4.7	8.6	24.3	3.4	21.7	13.4	38.6	1.7	3.6	2.1	7.4	7.4	19.8	2.4	29.7	

	3RD STREET Southbound				AVENUE Q Westbound				3RD STREET Northbound				AVENUE Q Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	35	18	26	79	12	79	42	133	2	8	9	19	34	57	10	101	332
Percent	44.3	22.8	32.9		9.0	59.4	31.6		10.5	42.1	47.4		33.7	56.4	9.9		
07:45 Volume	11	7	7	25	5	21	11	37	0	4	4	8	9	21	2	32	102
Peak Factor																	0.814
High Int.	07:45 AM				07:45 AM				07:45 AM				07:45 AM				
Volume	11	7	7	25	5	21	11	37	0	4	4	8	9	21	2	32	
Peak Factor				0.790				0.899				0.594				0.789	

CITY OF PALMDALE
N/S: 3RD STREET
E/W: AVENUE Q
WEATHER: SUNNY

COUNTS UNLIMITED, INC
909.247.6716

File Name : pa03aqpm
Site Code : 00035731
Start Date : 10/17/2001
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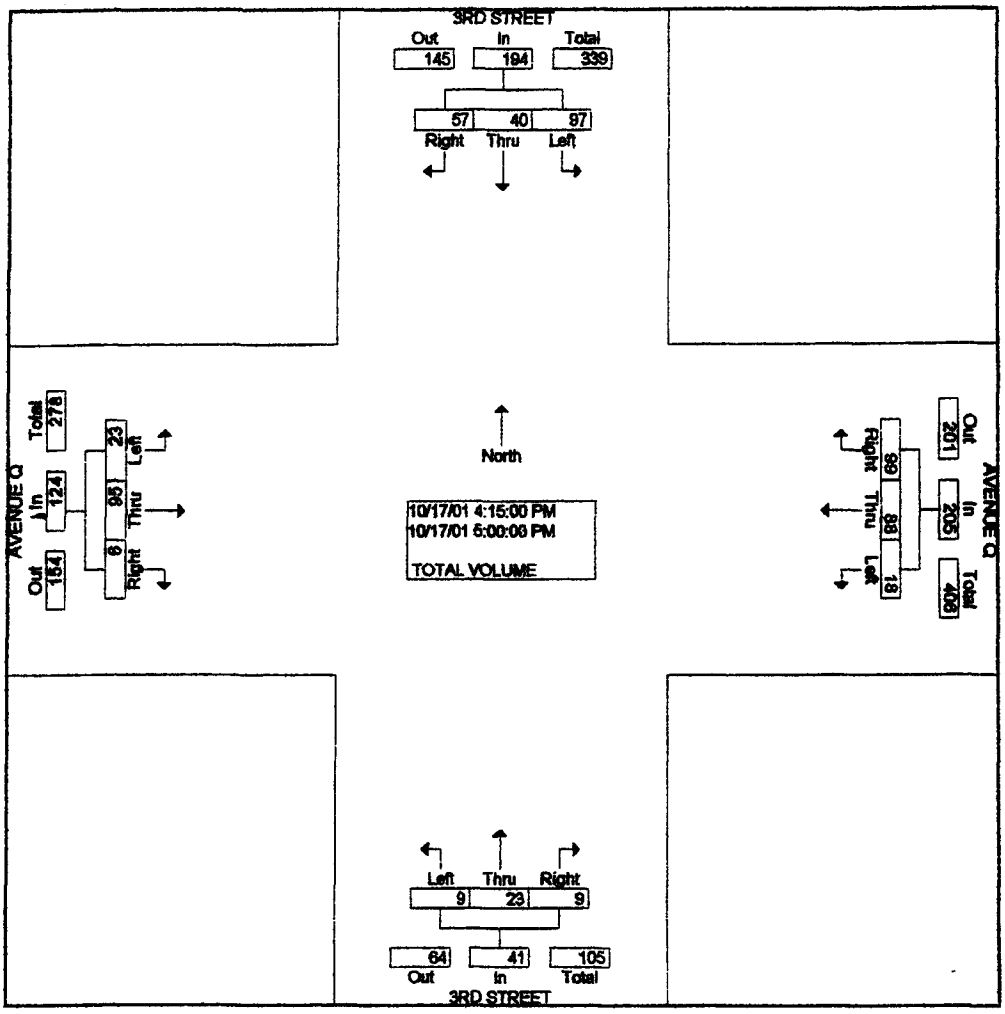

Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1

By Approach	04:15 PM				04:45 PM				04:15 PM				04:00 PM			
Volume	97	40	57	194	15	93	107	215	9	23	9	41	29	95	6	130
Percent	50.0	20.6	29.4		7.0	43.3	49.8		22.0	56.1	22.0		22.3	73.1	4.6	
High Int.	04:30 PM				04:45 PM				05:00 PM				04:00 PM			
Volume	34	11	14	59	6	25	35	66	2	6	3	11	12	29	2	43
Peak Factor				0.822				0.814				0.932				0.756

CITY OF PALMDALE
N/S: 3RD STREET
E/W: AVENUE Q
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

File Name : pa03aqpm
Site Code : 00035731
Start Date : 10/17/2001
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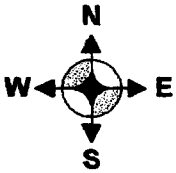
Groups Printed- TOTAL VOLUME

	3RD STREET Southbound				AVENUE Q Westbound				3RD STREET Northbound				AVENUE Q Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	16	8	5	29	8	24	15	47	1	2	6	9	12	29	2	43	128
04:15 PM	22	11	21	54	6	16	18	40	1	5	4	10	2	21	1	24	128
04:30 PM	34	11	14	59	3	22	19	44	1	7	2	10	4	24	1	29	142
04:45 PM	24	8	14	46	6	25	35	66	5	5	0	10	11	21	2	34	156
Total	96	38	54	188	23	87	87	197	8	19	12	39	29	95	6	130	554
05:00 PM	17	10	8	35	3	25	27	55	2	6	3	11	6	29	2	37	138
05:15 PM	20	4	13	37	3	20	24	47	0	3	0	3	7	15	1	23	110
05:30 PM	17	10	9	36	3	23	21	47	4	7	0	11	4	14	0	18	112
05:45 PM	13	15	6	34	3	25	16	44	3	8	5	16	4	24	4	32	126
Total	67	39	36	142	12	93	88	193	9	24	8	41	21	82	7	110	486
Grand Total	163	77	90	330	35	180	175	390	17	43	20	80	50	177	13	240	1040
Apprch %	49.4	23.3	27.3		9.0	46.2	44.9		21.3	53.8	25.0		20.8	73.8	5.4		
Total %	15.7	7.4	8.7	31.7	3.4	17.3	16.8	37.5	1.6	4.1	1.9	7.7	4.8	17.0	1.3	23.1	

	3RD STREET Southbound				AVENUE Q Westbound				3RD STREET Northbound				AVENUE Q Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	97	40	57	194	18	88	99	205	9	23	9	41	23	95	6	124	564
Percent	50.0	20.6	29.4		8.8	42.9	48.3		22.0	56.1	22.0		18.5	76.6	4.8		
04:45 Volume	24	8	14	46	6	25	35	66	5	5	0	10	11	21	2	34	156
Peak Factor																	0.904
High Int.	04:30 PM				04:45 PM				05:00 PM				05:00 PM				
Volume	34	11	14	59	6	25	35	66	2	6	3	11	6	29	2	37	
Peak Factor				0.822				0.777				0.932				0.838	

counts unlimited



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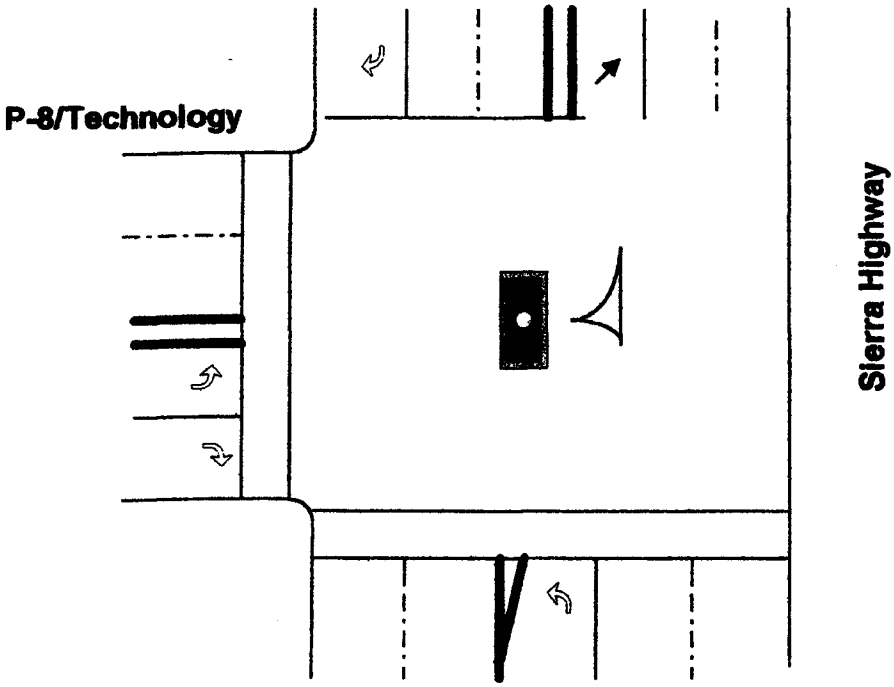

CITY OF PALMDALE
N/S: SIERRA HIGHWAY
E/W: AVENUE P-8/TECHNOLOGY DRIVE
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

File Name : PASITEAM
Site Code : 00035715
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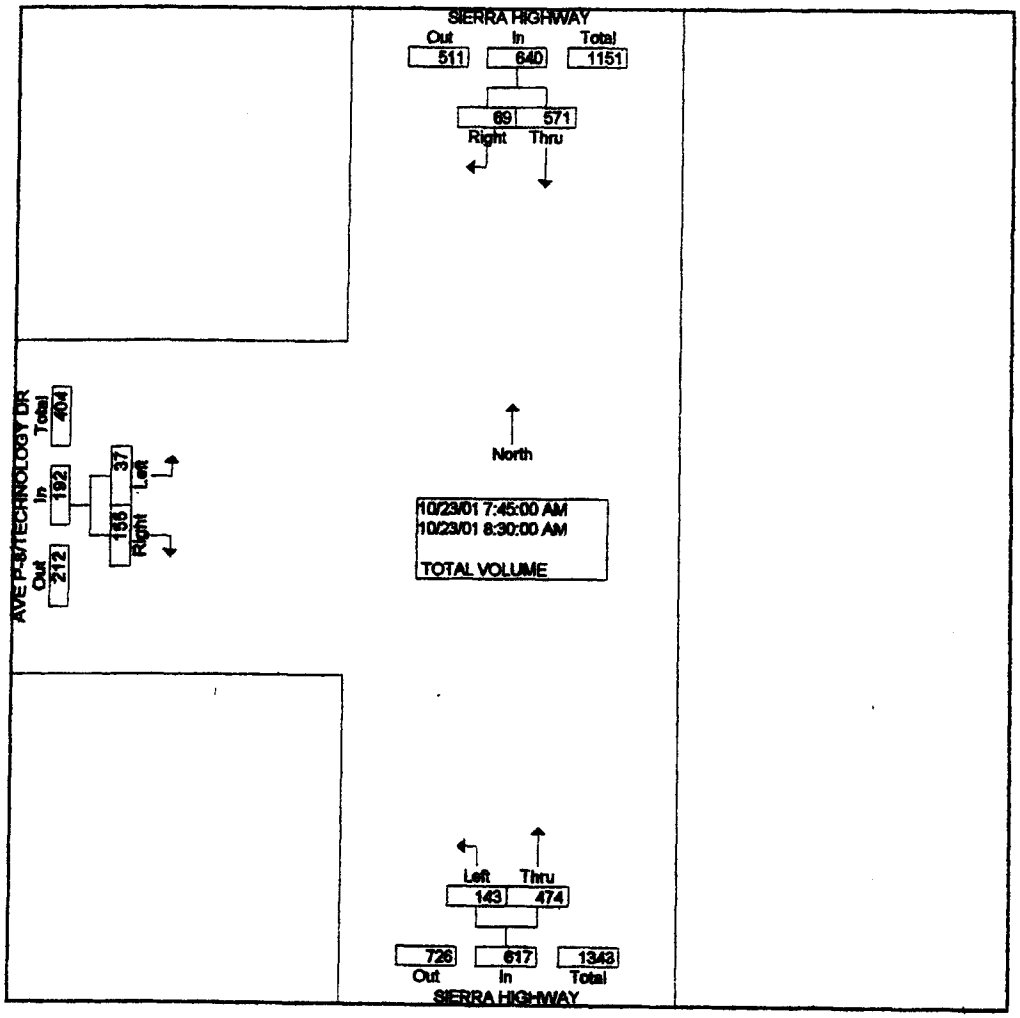


Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1

By Approach	07:45 AM				07:00 AM				07:45 AM				07:30 AM			
Volume	0	571	69	640	0	0	0	0	143	474	0	617	32	0	164	196
Percent	0.0	89.2	10.8		-	-	-		23.2	76.8	0.0		16.3	0.0	83.7	
High Int.	07:45 AM				-				07:45 AM				07:45 AM			
Volume	0	173	24	197	-	-	-	-	51	112	0	163	9	0	52	61
Peak Factor				0.812				-				0.946				0.803

CITY OF PALMDALE
N/S: SIERRA HIGHWAY
E/W: AVENUE P-8/TECHNOLOGY DRIVE
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

File Name : PASITEAM
Site Code . 00035715
Start Date : 10/23/2001
Page No : 1

Groups Printed- TOTAL VOLUME

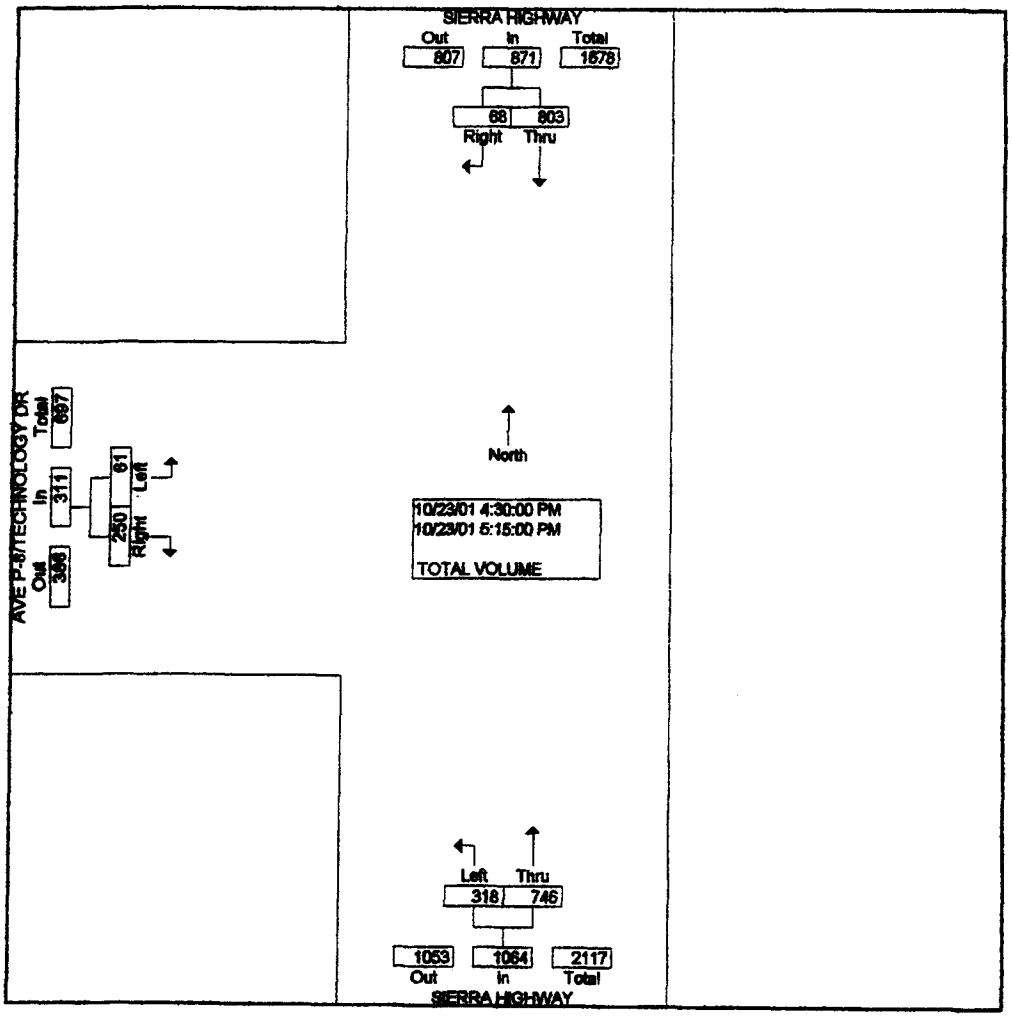
	SIERRA HIGHWAY Southbound				Westbound				SIERRA HIGHWAY Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	76	2	78	0	0	0	0	31	82	0	113	8	0	27	35	226
07:15 AM	0	104	12	116	0	0	0	0	27	76	0	103	5	0	34	39	258
07:30 AM	0	106	17	123	0	0	0	0	27	116	0	143	7	0	39	46	312
07:45 AM	0	173	24	197	0	0	0	0	51	112	0	163	9	0	52	61	421
Total	0	459	55	514	0	0	0	0	136	386	0	522	29	0	152	181	1217
08:00 AM	0	128	26	154	0	0	0	0	37	113	0	150	9	0	37	46	350
08:15 AM	0	136	11	147	0	0	0	0	31	124	0	155	7	0	36	43	345
08:30 AM	0	134	8	142	0	0	0	0	24	125	0	149	12	0	30	42	333
08:45 AM	0	151	10	161	0	0	0	0	34	106	0	140	7	0	31	38	339
Total	0	549	55	604	0	0	0	0	126	468	0	594	35	0	134	169	1367
Grand Total	0	1008	110	1118	0	0	0	0	262	854	0	1116	64	0	286	350	2584
Apprch %	0.0	90.2	9.8		0.0	0.0	0.0		23.5	76.5	0.0		18.3	0.0	81.7		
Total %	0.0	39.0	4.3	43.3	0.0	0.0	0.0	0.0	10.1	33.0	0.0	43.2	2.5	0.0	11.1	13.5	

	SIERRA HIGHWAY Southbound				Westbound				SIERRA HIGHWAY Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:45 AM																
Volume	0	571	69	640	0	0	0	0	143	474	0	617	37	0	155	192	1449
Percent	0.0	89.2	10.8		0.0	0.0	0.0		23.2	76.8	0.0		19.3	0.0	80.7		
07:45 Volume	0	173	24	197	0	0	0	0	51	112	0	163	9	0	52	61	421
Peak Factor																	0.860
High Int.	07:45 AM				6:45:00 AM				07:45 AM				07:45 AM				
Volume	0	173	24	197	0	0	0	0	51	112	0	163	9	0	52	61	
Peak Factor				0.812								0.946				0.787	

CITY OF PALMDALE
N/S: SIERRA HIGHWAY
E/W: AVENUE P-8/TECHNOLOGY DRIVE
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

File Name : PASIP8PM
Site Code : 00035715
Start Date : 10/23/2001
Page No : 2



Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1

By Approach	04:30 PM				04:00 PM				04:15 PM				04:15 PM			
Volume	0	803	68	871	0	0	0	0	302	768	0	1070	61	0	250	311
Percent	0.0	92.2	7.8		-	-	-		28.2	71.8	0.0		19.6	0.0	80.4	
High Int.	05:15 PM								05:00 PM				05:00 PM			
Volume	0	213	18	231	-	-	-	-	93	230	0	323	17	0	64	81
Peak Factor				0.943				-				0.828				0.960

CITY OF PALMDALE
N/S: SIERRA HIGHWAY
E/W: AVENUE P-8/TECHNOLOGY DRIVE
WEATHER: SUNNY

COUNTS UNLIMITED, INC.
909.247.6716

File Name : PASIP8PM
Site Code : 00035715
Start Date : 10/23/2001
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Groups Printed- TOTAL VOLUME

	SIERRA HIGHWAY Southbound				Westbound				SIERRA HIGHWAY Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	0	208	21	229	0	0	0	0	66	208	0	274	9	0	52	61	564
04:15 PM	0	174	21	195	0	0	0	0	35	175	0	210	18	0	61	79	484
04:30 PM	0	182	20	202	0	0	0	0	71	189	0	260	13	0	64	77	539
04:45 PM	0	195	14	209	0	0	0	0	103	174	0	277	13	0	61	74	560
Total	0	759	76	835	0	0	0	0	275	746	0	1021	53	0	238	291	2147
05:00 PM	0	213	16	229	0	0	0	0	93	230	0	323	17	0	64	81	633
05:15 PM	0	213	18	231	0	0	0	0	51	153	0	204	18	0	61	79	514
05:30 PM	0	157	20	177	0	0	0	0	61	182	0	243	11	0	57	68	488
05:45 PM	0	134	14	148	0	0	0	0	39	125	0	164	8	0	66	74	386
Total	0	717	68	785	0	0	0	0	244	690	0	934	54	0	248	302	2021
Grand Total	0	1476	144	1620	0	0	0	0	519	1436	0	1955	107	0	486	593	4168
Apprch %	0.0	91.1	8.9		0.0	0.0	0.0		26.5	73.5	0.0		18.0	0.0	82.0		
Total %	0.0	35.4	3.5	38.9	0.0	0.0	0.0	0.0	12.5	34.5	0.0	46.9	2.6	0.0	11.7	14.2	

	SIERRA HIGHWAY Southbound				Westbound				SIERRA HIGHWAY Northbound				AVE P-8/TECHNOLOGY DR Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	803	68	871	0	0	0	0	318	746	0	1064	61	0	250	311	2246
Percent	0.0	92.2	7.8		0.0	0.0	0.0		29.9	70.1	0.0		19.6	0.0	80.4		
05:00 Volume	0	213	16	229	0	0	0	0	93	230	0	323	17	0	64	81	633
Peak Factor																	0.887
High Int.	05:15 PM				3:45:00 PM				05:00 PM				05:00 PM				
Volume	0	213	18	231	0	0	0	0	93	230	0	323	17	0	64	81	
Peak Factor				0.943								0.824				0.960	

APPENDIX B

INTERSECTION LEVEL OF SERVICE CALCULATIONS

EXISTING LOS CALCULATIONS

Existing Geometry

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 3rd Street East/Technology Drive

Cycle (sec):	100	Critical Vol./Cap. (X):	0.196
Loss Time (sec):	6 (Y+R = 4 sec)	Average Delay (sec/veh):	9.0
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	24	61	47	16	72	20	22	164	30	38	206	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	61	47	16	72	20	22	164	30	38	206	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	61	47	16	72	20	22	164	30	38	206	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	61	47	16	72	20	22	164	30	38	206	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	24	61	47	16	72	20	22	164	30	38	206	28
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.18	0.46	0.36	0.15	0.67	0.18	1.00	1.69	0.31	1.00	1.76	0.24
Final Sat.:	122	311	240	97	437	121	589	1103	206	598	1164	161
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.16	0.16	0.16	0.04	0.15	0.15	0.06	0.18	0.17
Crit Moves:		****		****				****			****	
Delay/Veh:	9.1	9.1	9.1	9.1	9.1	9.1	8.8	8.9	8.7	8.9	9.0	8.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.1	9.1	9.1	9.1	9.1	9.1	8.8	8.9	8.7	8.9	9.0	8.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.1			9.1			8.9			9.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.1			9.1			8.9			9.0	
LOS by Appr:		A			A			A			A	

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #2 3rd Street East/Avenue P-12

****

Average Delay (sec/veh): 9.4 Worst Case Level Of Service: A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	83	0	0	100	3	12	0	2	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	83	0	0	100	3	12	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	83	0	0	100	3	12	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	83	0	0	100	3	12	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	185	xxxx	102	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	809	xxxx	959	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	809	xxxx	959	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	828	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.4	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx				9.4		xxxxxx		
ApproachLOS:	*			*				A		*		

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #3 3rd Street East/Avenue Q

****

Average Delay (sec/veh): 11.2 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	2	10	11	43	22	32	42	70	12	15	97	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	10	11	43	22	32	42	70	12	15	97	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	10	11	43	22	32	42	70	12	15	97	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	2	10	11	43	22	32	42	70	12	15	97	52
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	340	339	76	324	319	123	149	xxxx	xxxxx	82	xxxx	xxxxx
Potent Cap.:	618	586	991	633	601	933	1445	xxxx	xxxxx	1528	xxxx	xxxxx
Move Cap.:	562	563	991	600	578	933	1445	xxxx	xxxxx	1528	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	709	xxxxx	xxxx	673	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	10.2	xxxxx	xxxxx	11.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		10.2			11.2			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

Existing Geometry

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Sierra Highway/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.385
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 23 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 0			0 0 2 0 1			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	166	551	0	0	664	80	43	0	180	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	551	0	0	664	80	43	0	180	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	551	0	0	664	80	43	0	180	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	551	0	0	664	80	43	0	180	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	166	551	0	0	664	80	43	0	180	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3800	0	0	3800	1900	1800	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.00	0.00	0.17	0.04	0.02	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.24	0.69	0.00	0.00	0.45	0.45	0.25	0.00	0.25	0.00	0.00	0.00
Volume/Cap:	0.38	0.21	0.00	0.00	0.38	0.09	0.10	0.00	0.38	0.00	0.00	0.00
Delay/Veh:	32.4	5.5	0.0	0.0	18.2	15.6	29.2	0.0	31.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.4	5.5	0.0	0.0	18.2	15.6	29.2	0.0	31.9	0.0	0.0	0.0
DesignQueue:	7	10	0	0	21	2	2	0	8	0	0	0

Existing Geometry

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 3rd Street East/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.409
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	62	116	55	21	109	47	29	254	60	96	278	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	116	55	21	109	47	29	254	60	96	278	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	116	55	21	109	47	29	254	60	96	278	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	116	55	21	109	47	29	254	60	96	278	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	62	116	55	21	109	47	29	254	60	96	278	34
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	0.50	0.23	0.12	0.62	0.26	1.00	1.62	0.38	1.00	1.78	0.22
Final Sat.:	152	284	135	66	342	147	508	901	218	518	1007	125
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	0.41	0.32	0.32	0.32	0.06	0.28	0.27	0.19	0.28	0.27
Crit Moves:	****					****		****			****	
Delay/Veh:	12.6	12.6	12.6	11.5	11.5	11.5	9.9	11.1	10.8	10.8	11.0	10.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.6	12.6	12.6	11.5	11.5	11.5	9.9	11.1	10.8	10.8	11.0	10.8
LOS by Move:	B	B	B	B	B	B	A	B	B	B	B	B
ApproachDel:	12.6			11.5			11.0			11.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.6			11.5			11.0			11.0		
LOS by Appr:	B			B			B			B		

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 3rd Street East/Avenue P-12

Average Delay (sec/veh): 10.8 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0	0	0 0 0	1	0	0 0 1!	0	0	0 0 0	0	0
Volume Module:												
Base Vol:	1	174	0	0	187	16	24	0	2	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	174	0	0	187	16	24	0	2	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	174	0	0	187	16	24	0	2	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	174	0	0	187	16	24	0	2	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	203	xxxx	xxxxx	xxxx	xxxx	xxxxx	371	xxxx	195	xxxx	xxxx	xxxxx
Potent Cap.:	1381	xxxx	xxxxx	xxxx	xxxx	xxxxx	634	xxxx	851	xxxx	xxxx	xxxxx
Move Cap.:	1381	xxxx	xxxxx	xxxx	xxxx	xxxxx	633	xxxx	851	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	646	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.8	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			10.8			xxxxxx		
ApproachLOS:	*			*			B			*		

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 3rd Street East/Avenue Q

Average Delay (sec/veh): 13.8 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	10	25	10	107	44	63	25	105	7	20	97	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	25	10	107	44	63	25	105	7	20	97	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	25	10	107	44	63	25	105	7	20	97	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	10	25	10	107	44	63	25	105	7	20	97	110
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	404	406	109	368	354	152	207	xxxx	xxxxx	112	xxxx	xxxxx
Potent Cap.:	561	538	951	592	574	900	1376	xxxx	xxxxx	1490	xxxx	xxxxx
Move Cap.:	478	521	951	551	556	900	1376	xxxx	xxxxx	1490	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	7.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	566	xxxxx	xxxx	623	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	11.9	xxxxx	xxxxx	13.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		11.9			13.8			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

Existing Geometry

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Sierra Highway/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.623
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.1
Optimal Cycle: 35 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 0			0 0 2 0 1			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	359	841	0	0	905	77	69	0	282	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	359	841	0	0	905	77	69	0	282	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	359	841	0	0	905	77	69	0	282	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	841	0	0	905	77	69	0	282	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	359	841	0	0	905	77	69	0	282	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3800	0	0	3800	1900	1800	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.22	0.00	0.00	0.24	0.04	0.04	0.00	0.15	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.32	0.70	0.00	0.00	0.38	0.38	0.24	0.00	0.24	0.00	0.00	0.00
Volume/Cap:	0.62	0.32	0.00	0.00	0.62	0.11	0.16	0.00	0.62	0.00	0.00	0.00
Delay/Veh:	31.0	5.8	0.0	0.0	25.9	20.0	30.4	0.0	36.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.0	5.8	0.0	0.0	25.9	20.0	30.4	0.0	36.8	0.0	0.0	0.0
DesignQueue:	14	15	0	0	33	3	3	0	12	0	0	0

NEAR-TERM (2003) BACKGROUND LOS CALCULATIONS

Existing Geometry

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 3rd Street East/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.217
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	26	66	51	18	77	22	23	177	32	41	222	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	66	51	18	77	22	23	177	32	41	222	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	66	51	18	77	22	23	177	32	41	222	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	66	51	18	77	22	23	177	32	41	222	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	26	66	51	18	77	22	23	177	32	41	222	31
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.18	0.46	0.36	0.15	0.66	0.19	1.00	1.69	0.31	1.00	1.75	0.25
Final Sat.:	120	304	235	98	421	120	578	1084	200	588	1140	162
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.18	0.18	0.18	0.04	0.16	0.16	0.07	0.19	0.19
Crit Moves:		****			****			****			****	
Delay/Veh:	9.4	9.4	9.4	9.3	9.3	9.3	8.9	9.1	8.9	9.0	9.3	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	9.4	9.4	9.3	9.3	9.3	8.9	9.1	8.9	9.0	9.3	9.1
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		9.4			9.3			9.1			9.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.4			9.3			9.1			9.2	
LOS by Appr:		A			A			A			A	

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 3rd Street East/Avenue P-12

Average Delay (sec/veh): 9.5 Worst Case Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	89	0	0	108	4	13	0	3	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	89	0	0	108	4	13	0	3	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	89	0	0	108	4	13	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	89	0	0	108	4	13	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	199	xxxx	110	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	794	xxxx	949	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	794	xxxx	949	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	819	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.5	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx				9.5		xxxxxx		
ApproachLOS:	*			*				A		*		

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 3rd Street East/Avenue Q

Average Delay (sec/veh): 11.9 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	3	11	12	46	24	34	45	94	13	16	117	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	11	12	46	24	34	45	94	13	16	117	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	11	12	46	24	34	45	94	13	16	117	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	3	11	12	46	24	34	45	94	13	16	117	56
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	397	396	101	379	374	145	173	xxxx	xxxxx	107	xxxx	xxxxx
Potent Cap.:	567	545	960	582	560	908	1416	xxxx	xxxxx	1497	xxxx	xxxxx
Move Cap.:	510	522	960	548	536	908	1416	xxxx	xxxxx	1497	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	659	xxxxx	xxxx	626	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	10.7	xxxxx	xxxxx	11.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:		10.7			11.9			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

Existing Geometry

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Sierra Highway/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.416
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 24 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 0			0 0 2 0 1			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	180	595	0	0	717	87	46	0	195	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	595	0	0	717	87	46	0	195	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	595	0	0	717	87	46	0	195	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	595	0	0	717	87	46	0	195	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	180	595	0	0	717	87	46	0	195	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3800	0	0	3800	1900	1800	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.16	0.00	0.00	0.19	0.05	0.03	0.00	0.10	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.24	0.69	0.00	0.00	0.45	0.45	0.25	0.00	0.25	0.00	0.00	0.00
Volume/Cap:	0.42	0.23	0.00	0.00	0.42	0.10	0.10	0.00	0.42	0.00	0.00	0.00
Delay/Veh:	32.7	5.6	0.0	0.0	18.6	15.7	29.2	0.0	32.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.7	5.6	0.0	0.0	18.6	15.7	29.2	0.0	32.2	0.0	0.0	0.0
DesignQueue:	8	11	0	0	23	3	2	0	8	0	0	0

Existing Geometry

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 3rd Street East/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.454
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.1
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	67	125	59	23	117	51	32	274	64	104	301	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	125	59	23	117	51	32	274	64	104	301	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	125	59	23	117	51	32	274	64	104	301	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	125	59	23	117	51	32	274	64	104	301	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	67	125	59	23	117	51	32	274	64	104	301	37
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.27	0.50	0.23	0.12	0.61	0.27	1.00	1.62	0.38	1.00	1.78	0.22
Final Sat.:	148	275	130	65	328	143	493	874	209	503	975	121
Capacity Analysis Module:												
Vol/Sat:	0.45	0.45	0.45	0.36	0.36	0.36	0.06	0.31	0.31	0.21	0.31	0.30
Crit Moves:	****				****			****			****	
Delay/Veh:	13.7	13.7	13.7	12.3	12.3	12.3	10.1	11.8	11.5	11.3	11.7	11.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.7	13.7	13.7	12.3	12.3	12.3	10.1	11.8	11.5	11.3	11.7	11.5
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B
ApproachDel:		13.7			12.3			11.6			11.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		13.7			12.3			11.6			11.6	
LOS by Appr:		B			B			B			B	

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 3rd Street East/Avenue P-12

Average Delay (sec/veh): 11.0 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	1	188	0	0	202	17	26	0	3	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	188	0	0	202	17	26	0	3	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	188	0	0	202	17	26	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	188	0	0	202	17	26	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	219	xxxx	xxxxx	xxxx	xxxx	xxxxx	401	xxxx	211	xxxx	xxxx	xxxxx
Potent Cap.:	1362	xxxx	xxxxx	xxxx	xxxx	xxxxx	609	xxxx	835	xxxx	xxxx	xxxxx
Move Cap.:	1362	xxxx	xxxxx	xxxx	xxxx	xxxxx	609	xxxx	835	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	626	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.0			xxxxxx		
ApproachLOS:	*			*			B			*		

Existing Geometry

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 3rd Street East/Avenue Q

Average Delay (sec/veh): 15.6 Worst Case Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	11	27	11	116	48	68	27	130	7	22	122	118
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	27	11	116	48	68	27	130	7	22	122	118
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	27	11	116	48	68	27	130	7	22	122	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	27	11	116	48	68	27	130	7	22	122	118
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	471	472	134	432	416	181	240	xxxx	xxxxx	137	xxxx	xxxxx
Potent Cap.:	507	494	921	538	530	867	1339	xxxx	xxxxx	1459	xxxx	xxxxx
Move Cap.:	422	476	921	495	512	867	1339	xxxx	xxxxx	1459	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	7.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	517	xxxxx	xxxx	571	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	12.7	xxxxx	xxxxx	15.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	C	*	*	*	*	*	*	*
ApproachDel:		12.7			15.6			xxxxxx			xxxxxx	
ApproachLOS:		B			C			*			*	

Existing Geometry

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 Sierra Highway/Technology Drive

Cycle (sec):	100	Critical Vol./Cap. (X):	0.673
Loss Time (sec):	6 (Y+R = 4 sec)	Average Delay (sec/veh):	21.9
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	0	0 0	2 0	1	1 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	387	908	0	0	978	83	74	0	304	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	387	908	0	0	978	83	74	0	304	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	387	908	0	0	978	83	74	0	304	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	908	0	0	978	83	74	0	304	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	387	908	0	0	978	83	74	0	304	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3800	0	0	3800	1900	1800	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.24	0.00	0.00	0.26	0.04	0.04	0.00	0.16	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.32	0.70	0.00	0.00	0.38	0.38	0.24	0.00	0.24	0.00	0.00	0.00
Volume/Cap:	0.67	0.34	0.00	0.00	0.67	0.11	0.17	0.00	0.67	0.00	0.00	0.00
Delay/Veh:	32.6	5.9	0.0	0.0	26.9	20.0	30.5	0.0	38.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.6	5.9	0.0	0.0	26.9	20.0	30.5	0.0	38.5	0.0	0.0	0.0
DesignQueue:	15	16	0	0	36	3	3	0	13	0	0	0

NEAR-TERM (2003) PLUS PROJECT LOS CALCULATIONS

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 3rd Street East/Technology Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.300
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	26	76	51	53	113	22	23	177	32	41	222	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	76	51	53	113	22	23	177	32	41	222	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	76	51	53	113	22	23	177	32	41	222	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	76	51	53	113	22	23	177	32	41	222	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	26	76	51	53	113	22	23	177	32	41	222	41
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.17	0.50	0.33	0.28	0.60	0.12	1.00	1.69	0.31	1.00	1.69	0.31
Final Sat.:	107	313	210	177	376	73	547	1020	188	559	1040	196
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.30	0.30	0.30	0.04	0.17	0.17	0.07	0.21	0.21
Crit Moves:		****			****			****			****	
Delay/Veh:	9.9	9.9	9.9	10.5	10.5	10.5	9.2	9.5	9.3	9.4	9.7	9.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.9	9.9	9.9	10.5	10.5	10.5	9.2	9.5	9.3	9.4	9.7	9.5
LOS by Move:	A	A	A	B	B	B	A	A	A	A	A	A
ApproachDel:		9.9			10.5			9.5			9.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.9			10.5			9.5			9.7	
LOS by Appr:		A			B			A			A	

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #2 3rd Street East/Avenue P-12

****

Average Delay (sec/veh): 10.4 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	89	36	36	108	4	13	0	3	11	0	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	89	36	36	108	4	13	0	3	11	0	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	89	36	36	108	4	13	0	3	11	0	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	89	36	36	108	4	13	0	3	11	0	11
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	125	xxxx	xxxxx	295	xxxx	110	291	xxxx	107
Potent Cap.:	xxxx	xxxx	xxxxx	1474	xxxx	xxxxx	662	xxxx	949	666	xxxx	953
Move Cap.:	xxxx	xxxx	xxxxx	1474	xxxx	xxxxx	642	xxxx	949	651	xxxx	953
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	683	xxxxx	xxxx	773	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.4	xxxxx	xxxxx	9.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			10.4			9.8		
ApproachLOS:	*			*			B			A		

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #3 3rd Street East/Avenue Q

****

Average Delay (sec/veh): 13.2 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	3	11	12	46	24	45	81	130	13	16	128	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	11	12	46	24	45	81	130	13	16	128	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	11	12	46	24	45	81	130	13	16	128	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	3	11	12	46	24	45	81	130	13	16	128	56
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	521	514	137	498	493	156	184	xxxx	xxxxx	143	xxxx	xxxxx
Potent Cap.:	469	467	917	486	480	895	1403	xxxx	xxxxx	1452	xxxx	xxxxx
Move Cap.:	405	435	917	446	447	895	1403	xxxx	xxxxx	1452	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	7.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	568	xxxxx	xxxx	555	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	11.6	xxxxx	xxxxx	13.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	*	*	*
ApproachDel:	11.6			13.2			xxxxxx			xxxxxx		
ApproachLOS:	B			B			*			*		

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Transportation Way/Technology Drive

Average Delay (sec/veh): 10.4 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	11	0	54	0	0	0	0	241	36	122	266	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	0	54	0	0	0	0	241	36	122	266	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	0	54	0	0	0	0	241	36	122	266	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	0	54	0	0	0	0	241	36	122	266	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	636	xxxx	139	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	277	xxxx	xxxxx
Potent Cap.:	415	xxxx	891	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1298	xxxx	xxxxx
Move Cap.:	385	xxxx	891	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1298	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	729	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	10.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		10.4		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B			*			*			*	

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #5 Sierra Highway/Technology Drive

****

Cycle (sec): 100 Critical Vol./Cap. (X): 0.446
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 60 Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 0			0 0 2 0 1			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	218	595	0	0	717	170	88	0	208	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	218	595	0	0	717	170	88	0	208	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	218	595	0	0	717	170	88	0	208	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	218	595	0	0	717	170	88	0	208	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	218	595	0	0	717	170	88	0	208	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3800	0	0	3800	1900	1800	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.16	0.00	0.00	0.19	0.09	0.05	0.00	0.11	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.27	0.69	0.00	0.00	0.42	0.42	0.25	0.00	0.25	0.00	0.00	0.00
Volume/Cap:	0.45	0.23	0.00	0.00	0.45	0.21	0.20	0.00	0.45	0.00	0.00	0.00
Delay/Veh:	30.8	5.6	0.0	0.0	20.7	18.4	30.2	0.0	32.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	5.6	0.0	0.0	20.7	18.4	30.2	0.0	32.6	0.0	0.0	0.0
DesignQueue:	9	11	0	0	24	6	4	0	9	0	0	0

****

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

****

Intersection #1 3rd Street East/Technology Drive

****

Cycle (sec): 100 Critical Vol./Cap. (X): 0.538
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 0 Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	67	163	59	35	129	51	32	274	64	104	301	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	163	59	35	129	51	32	274	64	104	301	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	163	59	35	129	51	32	274	64	104	301	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	163	59	35	129	51	32	274	64	104	301	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	67	163	59	35	129	51	32	274	64	104	301	74
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.23	0.57	0.20	0.16	0.60	0.24	1.00	1.62	0.38	1.00	1.61	0.39
Final Sat.:	124	303	110	84	309	122	469	827	198	484	846	213
Capacity Analysis Module:												
Vol/Sat:	0.54	0.54	0.54	0.42	0.42	0.42	0.07	0.33	0.32	0.21	0.36	0.35
Crit Moves:		****			****			****			****	
Delay/Veh:	15.9	15.9	15.9	13.6	13.6	13.6	10.5	12.5	12.1	11.7	12.6	12.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.9	15.9	15.9	13.6	13.6	13.6	10.5	12.5	12.1	11.7	12.6	12.3
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		15.9			13.6			12.3			12.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.9			13.6			12.3			12.4	
LOS by Appr:		C			B			B			B	

****

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #2 3rd Street East/Avenue P-12

****

Average Delay (sec/veh): 12.4 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	1	188	12	12	202	17	26	0	3	38	0	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	188	12	12	202	17	26	0	3	38	0	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	188	12	12	202	17	26	0	3	38	0	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	188	12	12	202	17	26	0	3	38	0	38
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	219	xxxx	xxxxx	200	xxxx	xxxxx	450	xxxx	211	432	xxxx	194
Potent Cap.:	1362	xxxx	xxxxx	1384	xxxx	xxxxx	523	xxxx	835	537	xxxx	853
Move Cap.:	1362	xxxx	xxxxx	1384	xxxx	xxxxx	496	xxxx	835	532	xxxx	853
Level Of Service Module:												
Stopped Del:	7.6	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	518	xxxxx	xxxx	655	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	12.4	xxxxx	xxxxx	11.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			12.4			11.2		
ApproachLOS:	*			*			B			B		

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #3 3rd Street East/Avenue Q

****

Average Delay (sec/veh): 18.0 Worst Case Level Of Service: C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	11	27	11	116	48	106	39	142	7	22	159	118
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	27	11	116	48	106	39	142	7	22	159	118
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	27	11	116	48	106	39	142	7	22	159	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	27	11	116	48	106	39	142	7	22	159	118
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	563	545	146	505	489	218	277	xxxx	xxxxx	149	xxxx	xxxxx
Potent Cap.:	440	449	907	481	482	827	1298	xxxx	xxxxx	1445	xxxx	xxxxx
Move Cap.:	341	429	907	437	461	827	1298	xxxx	xxxxx	1445	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	7.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	457	xxxxx	xxxx	542	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	13.8	xxxxx	xxxxx	18.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	C	*	*	*	*	*	*	*
ApproachDel:	13.8			18.0			xxxxxx			xxxxxx		
ApproachLOS:	B			C			*			*		

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Transportation Way/Technology Drive

Average Delay (sec/veh): 12.8 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	38	0	124	0	0	0	0	379	12	56	470	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	0	124	0	0	0	0	379	12	56	470	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	0	124	0	0	0	0	379	12	56	470	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	38	0	124	0	0	0	0	379	12	56	470	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	732	xxxx	196	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	391	xxxx	xxxxx
Potent Cap.:	361	xxxx	819	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1179	xxxx	xxxxx
Move Cap.:	348	xxxx	819	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1179	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	621	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	12.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		12.8			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

Existing Geometry
Plus Project Access

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #5 Sierra Highway/Technology Drive

****

Cycle (sec):	100	Critical Vol./Cap. (X):	0.704
Loss Time (sec):	6 (Y+R = 4 sec)	Average Delay (sec/veh):	23.5
Optimal Cycle:	60	Level Of Service:	C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 0			0 0 2 0 1			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	402	908	0	0	978	124	158	0	344	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	402	908	0	0	978	124	158	0	344	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	402	908	0	0	978	124	158	0	344	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	402	908	0	0	978	124	158	0	344	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	402	908	0	0	978	124	158	0	344	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3800	0	0	3800	1900	1800	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.24	0.00	0.00	0.26	0.07	0.09	0.00	0.18	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.32	0.68	0.00	0.00	0.37	0.37	0.26	0.00	0.26	0.00	0.00	0.00
Volume/Cap:	0.70	0.35	0.00	0.00	0.70	0.18	0.34	0.00	0.70	0.00	0.00	0.00
Delay/Veh:	34.0	6.7	0.0	0.0	28.8	21.7	30.7	0.0	38.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	6.7	0.0	0.0	28.8	21.7	30.7	0.0	38.3	0.0	0.0	0.0
DesignQueue:	16	17	0	0	37	4	7	0	15	0	0	0

****

APPENDIX C

TRAFFIC VOLUME DATA

Table C-1 - Peak Hour Volume Summary

		Existing				Year 2003 Background				Year 2003 Plus Project			
		Raw		with PHF		Raw		with PHF		Raw		with PHF	
Int.	Lanes	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
1	3rd Street East/Technology Drive												
NBL	0	18	53	24	62	19	57	26	67	19	57	26	67
NBT	1	45	99	61	116	49	107	66	125	54	127	76	163
NBR	0	35	47	47	55	38	51	51	59	38	51	51	59
SBL	0	12	18	16	21	13	19	18	23	31	26	53	35
SBT	1	53	93	72	109	57	100	77	117	76	107	113	129
SBR	0	15	40	20	47	16	43	22	51	16	43	22	51
EBL	1	16	25	22	29	17	27	23	32	17	27	23	32
EBT	2	121	217	164	254	131	234	177	274	131	234	177	274
EBR	0	22	51	30	60	24	55	32	64	24	55	32	64
WBL	1	28	82	38	96	30	89	41	104	30	89	41	104
WBT	2	152	238	206	278	164	257	222	301	164	257	222	301
WBR	0	21	29	28	34	23	31	31	37	28	51	41	74
North Leg													
	Approach	80	151	108	177	86	163	117	191	123	177	189	215
	Departure	82	153	111	179	89	165	120	193	100	205	141	268
	Total	162	304	219	356	175	328	237	384	223	382	330	483
South Leg													
	Approach	98	199	133	233	106	215	143	251	111	235	154	289
	Departure	103	226	139	264	111	244	151	285	130	251	186	297
	Total	201	425	272	497	217	459	294	537	241	486	340	586
East Leg													
	Approach	201	349	272	408	217	377	294	441	223	397	304	478
	Departure	168	282	227	330	181	305	246	356	200	311	281	368
	Total	369	631	499	738	399	681	539	797	422	708	586	846
West Leg													
	Approach	159	293	215	343	172	316	232	370	172	316	232	370
	Departure	185	331	250	387	200	357	270	418	200	357	270	418
	Total	344	624	465	730	372	674	503	788	372	674	503	788
Total Approaches													
	Approach	538	992	728	1,160	581	1,071	786	1,253	629	1,125	879	1,352
	Departure	538	992	728	1,160	581	1,071	786	1,253	629	1,125	879	1,352
	Total	1,076	1,984	1,456	2,320	1,162	2,143	1,573	2,506	1,257	2,249	1,759	2,704

Table C-1 - Peak Hour Volume Summary

		Existing				Year 2003 Background				Year 2003 Plus Project			
		Raw		with PHF		Raw		with PHF		Raw		with PHF	
Int.	Lanes	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
2	3rd Street East/Avenue P-12												
NBL	0	0	1	0	1	0	1	0	1	0	1	0	1
NBT	1	71	144	83	174	77	156	89	188	77	156	89	188
NBR						0	0			18	7	36	12
SBL						0	0			18	7	36	12
SBT	1	86	155	100	187	93	167	108	202	93	167	108	202
SBR	0	3	13	3	16	3	14	4	17	3	14	4	17
EBL		10	20	12	24	11	22	13	26	11	22	13	26
EBT	1					0	0			0	0	0	0
EBR	0	2	2	2	2	2	2	3	3	2	2	3	3
WBL										6	20	11	38
WBT										0	0	0	0
WBR										6	20	11	38
North Leg													
Approach		89	168	103	203	96	181	112	219	114	188	148	231
Departure		81	164	94	198	87	177	102	214	93	197	112	251
Total		170	332	198	400	184	359	213	433	207	385	260	482
South Leg													
Approach		71	145	83	175	77	157	89	189	95	163	125	201
Departure		88	157	102	189	95	170	111	205	101	189	121	242
Total		159	302	185	364	172	326	200	393	196	353	246	443
East Leg													
Approach		0	0	0	0	0	0	0	0	11	40	21	75
Departure		0	0	0	0	0	0	0	0	37	14	72	24
Total		0	0	0	0	0	0	0	0	48	53	93	99
West Leg													
Approach		12	22	14	27	13	24	15	29	13	24	15	29
Departure		3	14	3	17	3	15	4	18	3	15	4	18
Total		15	36	17	43	16	39	19	47	16	39	19	47
Total Approaches													
Approach		172	335	200	404	186	362	216	436	233	415	309	535
Departure		172	335	200	404	186	362	216	436	233	415	309	535
Total		344	670	400	808	372	724	432	873	467	830	618	1,071

Table C-1 - Peak Hour Volume Summary

		Existing				Year 2003 Background				Year 2003 Plus Project			
		Raw		with PHF		Raw		with PHF		Raw		with PHF	
Int.	Lanes	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
3	3rd Street East/Avenue Q												
NBL	0	2	9	2	10	2	10	3	11	2	10	3	11
NBT	1	8	23	10	25	9	25	11	27	9	25	11	27
NBR	0	9	9	11	10	10	10	12	11	10	10	12	11
SBL	0	35	97	43	107	38	105	46	116	38	105	46	116
SBT	1	18	40	22	44	19	43	24	48	19	43	24	48
SBR	0	26	57	32	63	28	62	34	68	34	81	45	106
EBL	1	34	23	42	25	37	25	45	27	55	32	81	39
EBT	1	57	95	70	105	77	118	94	130	95	124	130	142
EBR	0	10	6	12	7	11	6	13	7	11	6	13	7
WBL	1	12	18	15	20	13	19	16	22	13	19	16	22
WBT	1	79	88	97	97	95	110	117	122	101	130	128	159
WBR	0	42	99	52	110	45	107	56	118	45	107	56	118
North Leg													
	Approach	79	194	97	215	85	210	105	232	91	229	115	269
	Departure	84	145	103	160	91	157	111	173	109	163	147	185
	Total	163	339	200	375	176	366	216	405	200	393	263	454
South Leg													
	Approach	19	41	23	45	21	44	25	49	21	44	25	49
	Departure	40	64	49	71	43	69	53	76	43	69	53	76
	Total	59	105	72	116	64	113	78	125	64	113	78	125
East Leg													
	Approach	133	205	163	227	154	236	189	262	159	256	199	299
	Departure	101	201	124	222	124	232	152	257	142	239	188	269
	Total	234	406	287	449	278	468	341	518	302	495	388	568
West Leg													
	Approach	101	124	124	137	124	149	152	165	161	163	224	189
	Departure	107	154	131	170	126	181	154	201	137	221	176	276
	Total	208	278	256	308	250	330	307	365	297	384	400	464
Total Approaches													
	Approach	332	564	408	624	384	639	471	707	431	692	564	806
	Departure	332	564	408	624	384	639	471	707	431	692	564	806
	Total	664	1,128	816	1,248	767	1,278	942	1,414	862	1,385	1,129	1,612

Table C-1 - Peak Hour Volume Summary

		Existing				Year 2003 Background				Year 2003 Plus Project			
		Raw		with PHF		Raw		with PHF		Raw		with PHF	
Int.	Lanes	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
4	Transportation Way/Technology Drive												
NBL										6	20	11	38
NBT													
NBR										41	77	54	124
SBL													
SBT													
SBR													
EBL													
EBT	2	192	311	223	351	207	336	241	379	207	336	241	379
EBR										18	7	36	12
WBL										75	42	122	56
WBT	2	212	386	247	435	229	417	266	470	229	417	266	470
WBR													
North Leg													
Approach		0	0	0	0	0	0	0	0	0	0	0	0
Departure		0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
Approach		0	0	0	0	0	0	0	0	46	97	65	162
Departure		0	0	0	0	0	0	0	0	93	49	158	68
Total		0	0	0	0	0	0	0	0	139	146	223	229
East Leg													
Approach		212	386	247	435	229	417	266	470	304	459	388	526
Departure		192	311	223	351	207	336	241	379	248	413	296	503
Total		404	697	470	786	436	753	507	849	552	872	684	1,028
West Leg													
Approach		192	311	223	351	207	336	241	379	226	343	277	391
Departure		212	386	247	435	229	417	266	470	234	437	277	507
Total		404	697	470	786	436	753	507	849	460	779	554	898
Total Approaches													
Approach		404	697	470	786	436	753	507	849	576	898	730	1,078
Departure		404	697	470	786	436	753	507	849	576	898	730	1,078
Total		808	1,394	940	1,572	873	1,506	1,015	1,697	1,151	1,797	1,460	2,156

Table C-1 - Peak Hour Volume Summary

		Existing				Year 2003 Background				Year 2003 Plus Project			
		Raw		with PHF		Raw		with PHF		Raw		with PHF	
Int.	Lanes	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
5	Sierra Highway/Technology Drive												
NBL	1	143	318	166	359	154	343	180	387	175	353	218	402
NBT	2	474	746	551	841	512	806	595	908	512	806	595	908
NBR													
SBL													
SBT	2	571	803	664	905	617	867	717	978	617	867	717	978
SBR	1	69	68	80	77	75	73	87	83	128	106	170	124
EBL	1	37	61	43	69	40	66	46	74	73	121	88	158
EBT													
EBR	1	155	250	180	282	167	270	195	304	176	292	208	344
WBL													
WBT													
WBR													
North Leg													
	Approach	640	871	744	982	691	941	804	1,061	745	974	887	1,102
	Departure	511	807	594	910	552	872	642	983	585	926	683	1,067
	Total	1,151	1,678	1,338	1,892	1,243	1,812	1,445	2,043	1,330	1,900	1,570	2,169
South Leg													
	Approach	617	1,064	717	1,200	666	1,149	775	1,296	687	1,158	813	1,310
	Departure	726	1,053	844	1,187	784	1,137	912	1,282	792	1,159	925	1,322
	Total	1,343	2,117	1,562	2,387	1,450	2,286	1,687	2,578	1,479	2,318	1,738	2,632
East Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
West Leg													
	Approach	192	311	223	351	207	336	241	379	248	413	296	503
	Departure	212	386	247	435	229	417	266	470	304	459	388	526
	Total	404	697	470	786	436	753	507	849	552	872	684	1,028
Total Approaches													
	Approach	1,449	2,246	1,685	2,532	1,565	2,426	1,820	2,735	1,680	2,545	1,996	2,914
	Departure	1,449	2,246	1,685	2,532	1,565	2,426	1,820	2,735	1,680	2,545	1,996	2,914
	Total	2,898	4,492	3,370	5,064	3,130	4,851	3,639	5,469	3,361	5,090	3,992	5,829

Table C-2 - Peak Hour Volume Summary

Int.	Lanes	Existing A.M.	Existing P.M.	Year 2003 8% growth A.M.	Year 2003 8% growth P.M.	Year 2003 Background Projects A.M.	Year 2003 Background Projects P.M.	Year 2003 Background Total A.M.	Year 2003 Background Total P.M.
1	**3rd Street East/Technology Drive**								
NBL	0	18	53	1	4	0	0	19	57
NBT	1	45	99	4	8	0	0	49	107
NBR	0	35	47	3	4	0	0	38	51
SBL	0	12	18	1	1	0	0	13	19
SBT	1	53	93	4	7	0	0	57	100
SBR	0	15	40	1	3	0	0	16	43
EBL	1	16	25	1	2	0	0	17	27
EBT	2	121	217	10	17	0	0	131	234
EBR	0	22	51	2	4	0	0	24	55
WBL	1	28	82	2	7	0	0	30	89
WBT	2	152	238	12	19	0	0	164	257
WBR	0	21	29	2	2	0	0	23	31
North Leg									
	Approach	80	151	6	12	0	0	86	163
	Departure	82	153	7	12	0	0	89	165
	Total	162	304	13	24	0	0	175	328
South Leg									
	Approach	98	199	8	16	0	0	106	215
	Departure	103	226	8	18	0	0	111	244
	Total	201	425	16	34	0	0	217	459
East Leg									
	Approach	201	349	16	28	0	0	217	377
	Departure	168	282	13	23	0	0	181	305
	Total	369	631	30	50	0	0	399	681
West Leg									
	Approach	159	293	13	23	0	0	172	316
	Departure	185	331	15	26	0	0	200	357
	Total	344	624	28	50	0	0	372	674
Total Approaches									
	Approach	538	992	43	79	0	0	581	1,071
	Departure	538	992	43	79	0	0	581	1,071
	Total	1,076	1,984	86	159	0	0	1,162	2,143

Table C-2 - Peak Hour Volume Summary

Int.	Lanes	Existing A.M.	Existing P.M.	Year 2003 8% growth A.M.	Year 2003 8% growth P.M.	Year 2003 Background Projects A.M.	Year 2003 Background Projects P.M.	Year 2003 Background Total A.M.	Year 2003 Background Total P.M.
2	**3rd Street East/Avenue P-12**								
NBL	0	0	1	0	0	0	0	0	1
NBT	1	71	144	6	12	0	0	77	156
NBR	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0
SBT	1	86	155	7	12	0	0	93	167
SBR	0	3	13	0	1	0	0	3	14
EBL	0	10	20	1	2	0	0	11	22
EBT	1	0	0	0	0	0	0	0	0
EBR	0	2	2	0	0	0	0	2	2
WBL	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0
North Leg									
	Approach	89	168	7	13	0	0	96	181
	Departure	81	164	6	13	0	0	87	177
	Total	170	332	14	27	0	0	184	359
South Leg									
	Approach	71	145	6	12	0	0	77	157
	Departure	88	157	7	13	0	0	95	170
	Total	159	302	13	24	0	0	172	326
East Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
West Leg									
	Approach	12	22	1	2	0	0	13	24
	Departure	3	14	0	1	0	0	3	15
	Total	15	36	1	3	0	0	16	39
Total Approaches									
	Approach	172	335	14	27	0	0	186	362
	Departure	172	335	14	27	0	0	186	362
	Total	344	670	28	54	0	0	372	724

Table C-2 - Peak Hour Volume Summary

Int.	Lanes	Existing A.M.	Existing P.M.	Year 2003 8% growth A.M.	Year 2003 8% growth P.M.	Year 2003 Background Projects A.M.	Year 2003 Background Projects P.M.	Year 2003 Background Total A.M.	Year 2003 Background Total P.M.
3	**3rd Street East/Avenue Q**								
NBL	0	2	9	0	1	0	0	2	10
NBT	1	8	23	1	2	0	0	9	25
NBR	0	9	9	1	1	0	0	10	10
SBL	0	35	97	3	8	0	0	38	105
SBT	1	18	40	1	3	0	0	19	43
SBR	0	26	57	2	5	0	0	28	62
EBL	1	34	23	3	2	0	0	37	25
EBT	1	57	95	5	8	15	15	77	118
EBR	0	10	6	1	0	0	0	11	6
WBL	1	12	18	1	1	0	0	13	19
WBT	1	79	88	6	7	10	15	95	110
WBR	0	42	99	3	8	0	0	45	107
North Leg									
	Approach	79	194	6	16	0	0	85	210
	Departure	84	145	7	12	0	0	91	157
	Total	163	339	13	27	0	0	176	366
South Leg									
	Approach	19	41	2	3	0	0	21	44
	Departure	40	64	3	5	0	0	43	69
	Total	59	105	5	8	0	0	64	113
East Leg									
	Approach	133	205	11	16	10	15	154	236
	Departure	101	201	8	16	15	15	124	232
	Total	234	406	19	32	25	30	278	468
West Leg									
	Approach	101	124	8	10	15	15	124	149
	Departure	107	154	9	12	10	15	126	181
	Total	208	278	17	22	25	30	250	330
Total Approaches									
	Approach	332	564	27	45	25	30	384	639
	Departure	332	564	27	45	25	30	384	639
	Total	664	1,128	53	90	50	60	767	1,278

Table C-2 - Peak Hour Volume Summary

Int.	Lanes	Existing A.M.	Existing P.M.	Year 2003 8% growth A.M.	Year 2003 8% growth P.M.	Year 2003 Background Projects A.M.	Year 2003 Background Projects P.M.	Year 2003 Background Total A.M.	Year 2003 Background Total P.M.
4	Transportation Way/Technology Drive								
NBL	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0
EBT	2	192	311	15	25	0	0	207	336
EBR	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0
WBT	2	212	386	17	31	0	0	229	417
WBR	0	0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
East Leg									
	Approach	212	386	17	31	0	0	229	417
	Departure	192	311	15	25	0	0	207	336
	Total	404	697	32	56	0	0	436	753
West Leg									
	Approach	192	311	15	25	0	0	207	336
	Departure	212	386	17	31	0	0	229	417
	Total	404	697	32	56	0	0	436	753
Total Approaches									
	Approach	404	697	32	56	0	0	436	753
	Departure	404	697	32	56	0	0	436	753
	Total	808	1,394	65	112	0	0	873	1,506

Table C-2 - Peak Hour Volume Summary

Int.	Lanes	Existing A.M.	Existing P.M.	Year 2003 8% growth A.M.	Year 2003 8% growth P.M.	Year 2003 Background Projects A.M.	Year 2003 Background Projects P.M.	Year 2003 Background Total A.M.	Year 2003 Background Total P.M.
5	**Sierra Highway/Technology Drive**								
NBL	1	143	318	11	25	0	0	154	343
NBT	2	474	746	38	60	0	0	512	806
NBR	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0
SBT	2	571	803	46	64	0	0	617	867
SBR	1	69	68	6	5	0	0	75	73
EBL	1	37	61	3	5	0	0	40	66
EBT	0	0	0	0	0	0	0	0	0
EBR	1	155	250	12	20	0	0	167	270
WBL	0	0	0	0	0	0	0	0	0
WBT	0	0	0	0	0	0	0	0	0
WBR	0	0	0	0	0	0	0	0	0
North Leg									
	Approach	640	871	51	70	0	0	691	941
	Departure	511	807	41	65	0	0	552	872
	Total	1,151	1,678	92	134	0	0	1,243	1,812
South Leg									
	Approach	617	1,064	49	85	0	0	666	1,149
	Departure	726	1,053	58	84	0	0	784	1,137
	Total	1,343	2,117	107	169	0	0	1,450	2,286
East Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
West Leg									
	Approach	192	311	15	25	0	0	207	336
	Departure	212	386	17	31	0	0	229	417
	Total	404	697	32	56	0	0	436	753
Total Approaches									
	Approach	1,449	2,246	116	180	0	0	1,565	2,426
	Departure	1,449	2,246	116	180	0	0	1,565	2,426
	Total	2,898	4,492	232	359	0	0	3,130	4,851

Table C-3 - Bus Trips Shifted to Palmdale Transportation Center

Shifted Trips	Daily	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total
Local Buses:							
Routes 1, 6 and 96		5	5	10	5	5	10
Route 3		2	2	4	2	2	4
Routes 7, 92, 95 and 97		2	2	4	1	1	2
Commuter Buses:							
Routes 785, 786, and 787[1]		4	4	8	4	4	8
Total Bus Trips	240	13	13	26	12	12	24
PCE Trips	480	26	26	52	24	24	48

[1] Estimated bus trips only. Passenger vehicle trips accounted for in Park & Ride trip generation.
Notes: Bus trips shifted from existing Antelope Vally Mall bus transfer location
PCE = passenger car equivalent, one bus equivalent to two passenger cars

Table C-4 - Metrolink Trip Generation

Average Metrolink Morning Commute Ridership

Month	Lancaster Station	Acton Station	Monthly Average
October 2000	219	279	249
November 2000	217	284	251
January 2001	220	308	264
February 2001	273	333	303
March 2001	273	294	284
April 2001	233	346	290
May 2001	281	343	312
June 2001	294	332	313
Average Morning Commute Ridership =			283
Average Morning Hourly Ridership =			71

Note: Ridership data from four weekday outbound trains (departing from Lancaster station at 4:17 a.m., 5:14 a.m., 5:53 a.m., and 6:26 a.m.). Data for December 2000 not available.

Acton Station Modal Splits

% drive alone	60%
% drive in carpool to station[1]	17%
% dropped off[1]	20%
% bus	3%
TOTAL	100%

[1] 37% drive with other, assumed to be 17% carpool, 20% dropped off

Estimated Metrolink Peak Hour Trip Generation

A.M. Peak Hour			P.M. Peak Hour			Daily
In[1]	Out[2]	Total	In[3]	Out[4]	Total	Total
63	14	77	14	63	77	768

[1] AM inbound derived as follows: (hourly ridership X percent drive alone) + (hourly ridership X percent carpool)/2.0 occupancy factor + (hourly ridership X percent dropped off)

[2] AM outbound derived as follows: (hourly ridership X percent dropped off)

[3] PM inbound same as a.m. outbound.

[4] PM outbound same as a.m. intbound.

Table C-5 - Retail Trips

			A.M. Peak Hour			P.M. Peak Hour		
Use	**Amount (Units)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Retail	10.0 sf							
	trip generation rates	40.67	0.43	0.28	0.71	1.11	1.48	2.59
	trip generation	407	4	3	7	11	15	26

Notes: Bus trips shifted from existing Antelope Vally Mall bus transfer location
PCE = passenger car equivalent, one bus equivalent to two passenger cars

Table C-6 - Palmdale Transportation Center Trip Generation Estimate

Generator	Daily	Daily with PHF	A.M. Peak Hour Raw In	A.M. Peak Hour Raw Out	A.M. Peak Hour Raw Total	A.M. Peak Hour with PHF In	A.M. Peak Hour with PHF Out	A.M. Peak Hour with PHF Total	P.M. Peak Hour Raw In	P.M. Peak Hour Raw Out	P.M. Peak Hour Raw Total	P.M. Peak Hour with PHF In	P.M. Peak Hour with PHF Out	P.M. Peak Hour with PHF Total
Local Buses/Commuter Buses	480	480	26	26	52	26	26	52	24	24	48	24	24	48
Metrolink Station	768	1,536	63	14	77	125	28	154	14	63	77	28	125	154
Park and Ride Lot[1]														
- carpools/vanpools	290	580	22	7	29	44	14	58	7	22	29	14	44	58
- commuter buses	460	920	33	13	46	66	26	92	13	33	46	26	66	92
Retail	407	407	4	3	7	4	3	7	11	15	26	11	15	26
Total Trip Generation	2,405	3,922	148	63	211	266	97	363	69	156	226	103	274	377

[1] Estimated trips for carpools/vanpools and commuter buses. Based on 1999 traffic volume and passenger ocupancy data for the Avenue S Park & Ride Lot. Trips pro-rated as project site is one-third the size of Avenue S, and reduced by 75% to account for the due superior locaiton of the Avenue S site for carpooling.

Table C-7 - Project A.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		with PHF
									63	14	125	28	26	26	26	26	55	20	110	40	4	3	4	3	211	363
1 3rd Street East/Technology Drive																										
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
SBT	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
North Leg																										
Approach									19	0	38	0	0	0	0	0	17	0	33	0	1	0	1	0	37	72
Departure									0	4	0	8	0	0	0	0	0	6	0	12	0	1	0	1	11	21
Total									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
South Leg																										
Approach									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Departure									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
East Leg																										
Approach									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Departure									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
West Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches																										
Approach									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Departure									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Total									38	8	75	17	0	0	0	0	33	12	66	24	3	2	3	2	95	186

Table C-7 - Project A.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHF	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									63	14	125	28	26	26	26	26	55	20	110	40	4	3	4	3	211	363
2 3rd Street East/Avenue P-12																										
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
SBL	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
North Leg																										
Approach									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Departure									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
South Leg																										
Approach									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Departure									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
East Leg																										
Approach									0	4	0	8	0	0	0	0	0	6	0	12	0	1	0	1	11	21
Departure									19	0	38	0	0	0	0	0	17	0	33	0	1	0	1	0	37	72
Total									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
West Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches																										
Approach									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Departure									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Total									38	8	75	17	0	0	0	0	33	12	66	24	3	2	3	2	95	186

Table C-7 - Project A.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHI	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									63	14	125	28	26	26	26	26	55	20	110	40	4	3	4	3	211	363
3 3rd Street East/Avenue Q																										
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
EBL	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
EBT	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																										
Approach									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Departure									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
South Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg																										
Approach									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Departure									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
West Leg																										
Approach									19	0	38	0	0	0	0	0	17	0	33	0	1	0	1	0	37	72
Departure									0	4	0	8	0	0	0	0	0	6	0	12	0	1	0	1	11	21
Total									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Total Approaches																										
Approach									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Departure									19	4	38	8	0	0	0	0	17	6	33	12	1	1	1	1	48	93
Total									38	8	75	17	0	0	0	0	33	12	66	24	3	2	3	2	95	186

Table C-7 - Project A.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHF	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									63	14	125	28	26	26	26	26	55	20	110	40	4	3	4	3	211	363
Transportation Way/Technology Drive																										
NBL	0%	15%	0%	0%	0%	15%	0%	15%	0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0%	40%	0%	100%	0%	40%	0%	40%	0	6	0	11	0	26	0	26	0	8	0	16	0	1	0	1	41	54
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	15%	0%	0%	0%	15%	0%	15%	0%	9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
WBL	40%	0%	100%	0%	40%	0%	40%	0%	25	0	50	0	26	0	26	0	22	0	44	0	2	0	2	0	75	122
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lorth Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
outh Leg																										
Approach									0	8	0	16	0	26	0	26	0	11	0	22	0	2	0	2	46	65
Departure									34	0	69	0	26	0	26	0	30	0	61	0	2	0	2	0	93	158
Total									34	8	69	16	26	26	26	26	30	11	61	22	2	2	2	2	139	223
ast Leg																										
Approach									25	0	50	0	26	0	26	0	22	0	44	0	2	0	2	0	75	122
Departure									0	6	0	11	0	26	0	26	0	8	0	16	0	1	0	1	41	54
Total									25	6	50	11	26	26	26	26	22	8	44	16	2	1	2	1	116	176
Vest Leg																										
Approach									9	0	19	0	0	0	0	0	8	0	17	0	1	0	1	0	18	36
Departure									0	2	0	4	0	0	0	0	0	3	0	6	0	0	0	0	6	11
Total									9	2	19	4	0	0	0	0	8	3	17	6	1	0	1	0	24	47
otal Approaches																										
Approach									34	8	69	16	26	26	26	26	30	11	61	22	2	2	2	2	139	223
Departure									34	8	69	16	26	26	26	26	30	11	61	22	2	2	2	2	139	223
Total									69	16	138	31	52	52	52	52	61	22	121	44	5	3	5	3	279	446

Table C-7 - Project A.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		with PHF
									63	14	125	28	26	26	26	26	55	20	110	40	4	3	4	3	211	363
5 Sierra Highway/Technology Drive																										
NBL	15%	0%	10%	0%	15%	0%	15%	0%	9	0	19	0	3	0	3	0	8	0	17	0	1	0	1	0	21	39
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	25%	0%	90%	0%	25%	0%	25%	0%	16	0	31	0	23	0	23	0	14	0	28	0	1	0	1	0	54	83
EBL	0%	25%	0%	90%	0%	25%	0%	25%	0	4	0	7	0	23	0	23	0	5	0	10	0	1	0	1	33	41
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0%	15%	0%	10%	0%	15%	0%	15%	0	2	0	4	0	3	0	3	0	3	0	6	0	0	0	0	8	13
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																										
Approach									16	0	31	0	23	0	23	0	14	0	28	0	1	0	1	0	54	83
Departure									0	4	0	7	0	23	0	23	0	5	0	10	0	1	0	1	33	41
Total									16	4	31	7	23	23	23	23	14	5	28	10	1	1	1	1	87	124
South Leg																										
Approach									9	0	19	0	3	0	3	0	8	0	17	0	1	0	1	0	21	39
Departure									0	2	0	4	0	3	0	3	0	3	0	6	0	0	0	0	8	13
Total									9	2	19	4	3	3	3	3	8	3	17	6	1	0	1	0	29	52
East Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Leg																										
Approach									0	6	0	11	0	26	0	26	0	8	0	16	0	1	0	1	41	54
Departure									25	0	50	0	26	0	26	0	22	0	44	0	2	0	2	0	75	122
Total									25	6	50	11	26	26	26	26	22	8	44	16	2	1	2	1	116	176
Total Approaches																										
Approach									25	6	50	11	26	26	26	26	22	8	44	16	2	1	2	1	116	176
Departure									25	6	50	11	26	26	26	26	22	8	44	16	2	1	2	1	116	176
Total									50	11	100	23	52	52	52	52	44	16	88	32	3	2	3	2	231	353

Table C-8 - Project P.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHF	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									14	63	28	125	24	24	24	24	20	55	40	110	11	15	11	15	226	377
1 3rd Street East/Technology Drive																										
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
SBT	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
North Leg																										
Approach									4	0	8	0	0	0	0	0	6	0	12	0	3	0	3	0	14	24
Departure									0	19	0	38	0	0	0	0	0	17	0	33	0	4	0	4	40	75
Total									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
South Leg																										
Approach									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Departure									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
East Leg																										
Approach									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Departure									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
West Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches																										
Approach									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Departure									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Total									8	38	17	75	0	0	0	0	12	33	24	66	7	9	7	9	107	198

Table C-8 - Project P.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHF	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									14	63	28	125	24	24	24	24	20	55	40	110	11	15	11	15	226	377
2 3rd Street East/Avenue P-12																										
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
SBL	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
North Leg																										
Approach									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Departure									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
South Leg																										
Approach									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Departure									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
East Leg																										
Approach									0	19	0	38	0	0	0	0	0	17	0	33	0	4	0	4	40	75
Departure									4	0	8	0	0	0	0	0	6	0	12	0	3	0	3	0	14	24
Total									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
West Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches																										
Approach									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Departure									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Total									8	38	17	75	0	0	0	0	12	33	24	66	7	9	7	9	107	198

Table C-8 - Project P.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHF	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									14	63	28	125	24	24	24	24	20	55	40	110	11	15	11	15	226	377
3 3rd Street East/Avenue Q																										
NBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
EBL	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
EBT	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
EBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																										
Approach									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Departure									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
South Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg																										
Approach									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Departure									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
West Leg																										
Approach									4	0	8	0	0	0	0	0	6	0	12	0	3	0	3	0	14	24
Departure									0	19	0	38	0	0	0	0	0	17	0	33	0	4	0	4	40	75
Total									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Total Approaches																										
Approach									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Departure									4	19	8	38	0	0	0	0	6	17	12	33	3	4	3	4	53	99
Total									8	38	17	75	0	0	0	0	12	33	24	66	7	9	7	9	107	198

Table C-8 - Project P.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with PHF	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									14	63	28	125	24	24	24	24	20	55	40	110	11	15	11	15	226	377
4 Transportation Way/Technology Drive																										
NBL	0%	15%	0%	0%	0%	15%	0%	15%	0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0%	40%	0%	100%	0%	40%	0%	40%	0	25	0	50	0	24	0	24	0	22	0	44	0	6	0	6	77	124
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	15%	0%	0%	0%	15%	0%	15%	0%	2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
WBL	40%	0%	100%	0%	40%	0%	40%	0%	6	0	11	0	24	0	24	0	8	0	16	0	4	0	4	0	42	56
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																										
Approach									0	34	0	69	0	24	0	24	0	30	0	61	0	8	0	8	97	162
Departure									8	0	16	0	24	0	24	0	11	0	22	0	6	0	6	0	49	68
Total									8	34	16	69	24	24	24	24	11	30	22	61	6	8	6	8	146	229
East Leg																										
Approach									6	0	11	0	24	0	24	0	8	0	16	0	4	0	4	0	42	56
Departure									0	25	0	50	0	24	0	24	0	22	0	44	0	6	0	6	77	124
Total									6	25	11	50	24	24	24	24	8	22	16	44	4	6	4	6	119	180
West Leg																										
Approach									2	0	4	0	0	0	0	0	3	0	6	0	2	0	2	0	7	12
Departure									0	9	0	19	0	0	0	0	0	8	0	17	0	2	0	2	20	38
Total									2	9	4	19	0	0	0	0	3	8	6	17	2	2	2	2	27	49
Total Approaches																										
Approach									8	34	16	69	24	24	24	24	11	30	22	61	6	8	6	8	146	229
Departure									8	34	16	69	24	24	24	24	11	30	22	61	6	8	6	8	146	229
Total									16	69	31	138	48	48	48	48	22	61	44	121	12	16	12	16	291	458

Table C-8 - Project P.M. Peak Hour Trip Assignment

	Metrolink %		Bus %		Park & Ride/ Commuter %		Retail %		Metrolink Trips		PHF	PHF	Bus Trips		PHF	PHF	Park & Ride/ Commuters		PHF	PHF	Retail Trips		PHF	PHF	Project Trips with Pl	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
									14	63	28	125	24	24	24	24	20	55	40	110	11	15	11	15	226	377
5 Sierra Highway/Technology Drive																										
NBL	15%	0%	10%	0%	15%	0%	15%	0%	2	0	4	0	2	0	2	0	3	0	6	0	2	0	2	0	9	14
NBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	25%	0%	90%	0%	25%	0%	25%	0%	4	0	7	0	22	0	22	0	5	0	10	0	3	0	3	0	33	41
EBL	0%	25%	0%	90%	0%	25%	0%	25%	0	16	0	31	0	22	0	22	0	14	0	28	0	4	0	4	55	84
EBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0%	15%	0%	10%	0%	15%	0%	15%	0	9	0	19	0	2	0	2	0	8	0	17	0	2	0	2	22	40
WBL	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																										
Approach									4	0	7	0	22	0	22	0	5	0	10	0	3	0	3	0	33	41
Departure									0	16	0	31	0	22	0	22	0	14	0	28	0	4	0	4	55	84
Total									4	16	7	31	22	22	22	22	5	14	10	28	3	4	3	4	88	126
South Leg																										
Approach									2	0	4	0	2	0	2	0	3	0	6	0	2	0	2	0	9	14
Departure									0	9	0	19	0	2	0	2	0	8	0	17	0	2	0	2	22	40
Total									2	9	4	19	2	2	2	2	3	8	6	17	2	2	2	2	31	54
East Leg																										
Approach									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Leg																										
Approach									0	25	0	50	0	24	0	24	0	22	0	44	0	6	0	6	77	124
Departure									6	0	11	0	24	0	24	0	8	0	16	0	4	0	4	0	42	56
Total									6	25	11	50	24	24	24	24	8	22	16	44	4	6	4	6	119	180
Total Approaches																										
Approach									6	25	11	50	24	24	24	24	8	22	16	44	4	6	4	6	119	180
Departure									6	25	11	50	24	24	24	24	8	22	16	44	4	6	4	6	119	180
Total									11	50	23	100	48	48	48	48	16	44	32	88	9	12	9	12	238	360

APPENDIX 9

STATE OF CALIFORNIA –THE RESOURCES AGENCY

GRAY DAVIS *Governor*

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

P O Box 944246
SACRAMENTO, CA 94244-2460
Website: www.fire ca gov
(916)653-7949

R28

RECEIVED
JAN 18 2001
PLANNING DEPT.

January 16, 2001

Jackie Ota
City of Palmdale, Planning Department
38250 North Sierra Highway
Palmdale, CA 93550

RE: Cultural Resources Inspection for City of Palmdale Tree Planting Project

Dear Jackie:

The California Department of Forestry and Fire Protection administers various granting programs for to assist in the planting of trees in urban settings. Applicants for Urban and Community Forestry programs must comply with certain requirements and regulations including an environmental impact analysis pursuant to the California Environmental Quality Act (CEQA). One of the resource studies required under this program is an evaluation of potential threats to historical and archaeological properties that may occur within or adjacent to the project location. This process usually entails a formal archaeological records check with the appropriate regional Information Center of the California Historical Resources System of the Office of Historic Preservation, as well as a field inspection or survey of the project site.

A records check was obtained from the South Central Coastal Information Center for the project area. Although several previous archaeological studies had been done on adjacent parcels, no historical or archaeological properties were identified in the records search. I conducted a field inspection of the subject property on January 3, 2001 and found no surface indications of archaeological remains, nor any evidence of significant historical resources. The property is situated along the western side of the Southern Pacific Railroad (a potentially significant historical property), however the proposed tree planting activities should not affect this historic resource. No further mitigation is required for the assessment or protection of cultural resources.

Sincerely,

Gerrit L. Fenenga, Ph.D.
Associate State Archaeologist

glf

City of Palmdale

CITY OF
PALMDALE
INCORPORATED
AUGUST 24, 1962
FIRST CITY OF ANTELOPE VALLEY

December 6, 2000

JAMES C. LEDFORD, JR.
Mayor
MIKE DISPENZA
Mayor Pro Tem
ROD PENNER
Councilmember

Ms. Margaret Lopez, Coordinator
California State University, Fullerton
Department of Anthropology
800 N. State College Boulevard
PO Box 6846
Fullerton, CA 92834-6846

RE: Archaeological Records Check Request

Dear Ms. Lopez:

Enclosed is an Archaeological Records Check Request, which is required by CDF. Gerrit Fenenga, an archaeologist with the California Department of Forestry and Fire Protection is requesting the Archaeological Records Check on behalf of the City of Palmdale. I have included the required maps and information in order to complete the request form.

The results may be sent to Gerrit Fenenga at the following address:

1416 Ninth Street, Room 1416-22
PO Box 944246
Sacramento, CA 94244-2460

I would also like to request a letter of presence/absence be sent to the City of Palmdale, including the bill for the records check at the following address:

Attention: Jaclyn Ota, Junior Planner
38250 Sierra Highway
Palmdale, California 93550

The fees may be charged to account number 450-4700-424525-4815, Palmdale Transportation Center program.

If you have any questions, please do not hesitate to call me at (661) 267-5207.

Sincerely,

Jaclyn Ota

Jaclyn Ota
Junior Planner

38300 North Sierra Highway, Palmdale, CA 93550-4798 * 661/267-5100 * Fax 661/ 267-5122 * TDD 661/267-5167
Auxiliary Aids provided for Communication Accessibility upon 72 hour notice and request.

ARCHAEOLOGICAL RECORDS CHECK REQUEST FOR A CDF PROJECT

This form may only be used to initiate a California Department of Forestry and Fire Protection (CDF) archaeological records check for a CDF project. The Requestor must either be an RPF or a Professional Archaeologist, or a person who has completed a CDF Archaeological Training Course and is working under the direction of an RPF or a Professional Archaeologist This request cannot be processed without a project map and the Requestor's signature on this form The project map must be a photocopied USGS 7 5' map section at a scale of 1:24,000 with the actual project boundaries clearly indicated. A set of instructions for the use of this form and the records check process it initiates is available from CDF Any questions pertaining to the use of this form or the procedures to conduct an archaeological records check for a CDF project may be directed to CDF Archaeology Program Manager Dan Foster at (916) 653-0839 or to any of the regional CDF Archaeologists

Requestor: Gerrit L. Fenenga

Affiliation: CDF

Address: 1416 Ninth St., Room 1416-22
PO Box 944246, Sacramento, CA 94244-2460

Phone #: 916-651-2021

Name of RPF or Archaeologist involved: Gerrit L. Fenenga

Affiliation: CDF

Address: 1416 Ninth St., Room 1416-22
PO Box 944246, Sacramento, CA 94244-2460

Phone #: 916-651-2021

Project Name: City of Palmdale Tree Planting

County of proposed project: Los Angeles

USGS Quad(s): Palmdale 7.5' quadrangle

Legal Location: APNs 3006-006-004, 007, 008, 903, and 904

Number of Acres: 20.08

Project Type: Urban Forestry

IC File # (completed by IC):

Project Description: Tree Planting

RECORDS CHECK OPTIONS (check one)

(X) COMPLETE RECORDS CHECK

( ) LIMITED RECORDS CHECK

( ) EMERGENCY NOTICE RECORDS CHECK

( ) RECORDS CHECK UPDATE (previous IC File #):

DIRECTION TO THE INFORMATION CENTER

The Requestor should provide any archaeological or historical site information about the project area which is already known to the Requestor. This will avoid unnecessary time spent on the records check providing material already available

(X) No archaeological or historical information known about this project area

( ) I am aware of the following previous investigations within this project area:

( ) I am aware of the following known archaeological or historical sites within or directly adjacent to the project area:

( ) I do not request photocopies of the reports or site records listed above, as I already have them.

(X) Information Center shall notify Requestor, prior to initiating the records check, if the total fee is likely to exceed $200.

( ) Information Center shall notify Requestor , prior to initiating the records check, if the total fee is likely to exceed $100.

( ) Other relevant information (attach additional pages if necessary):

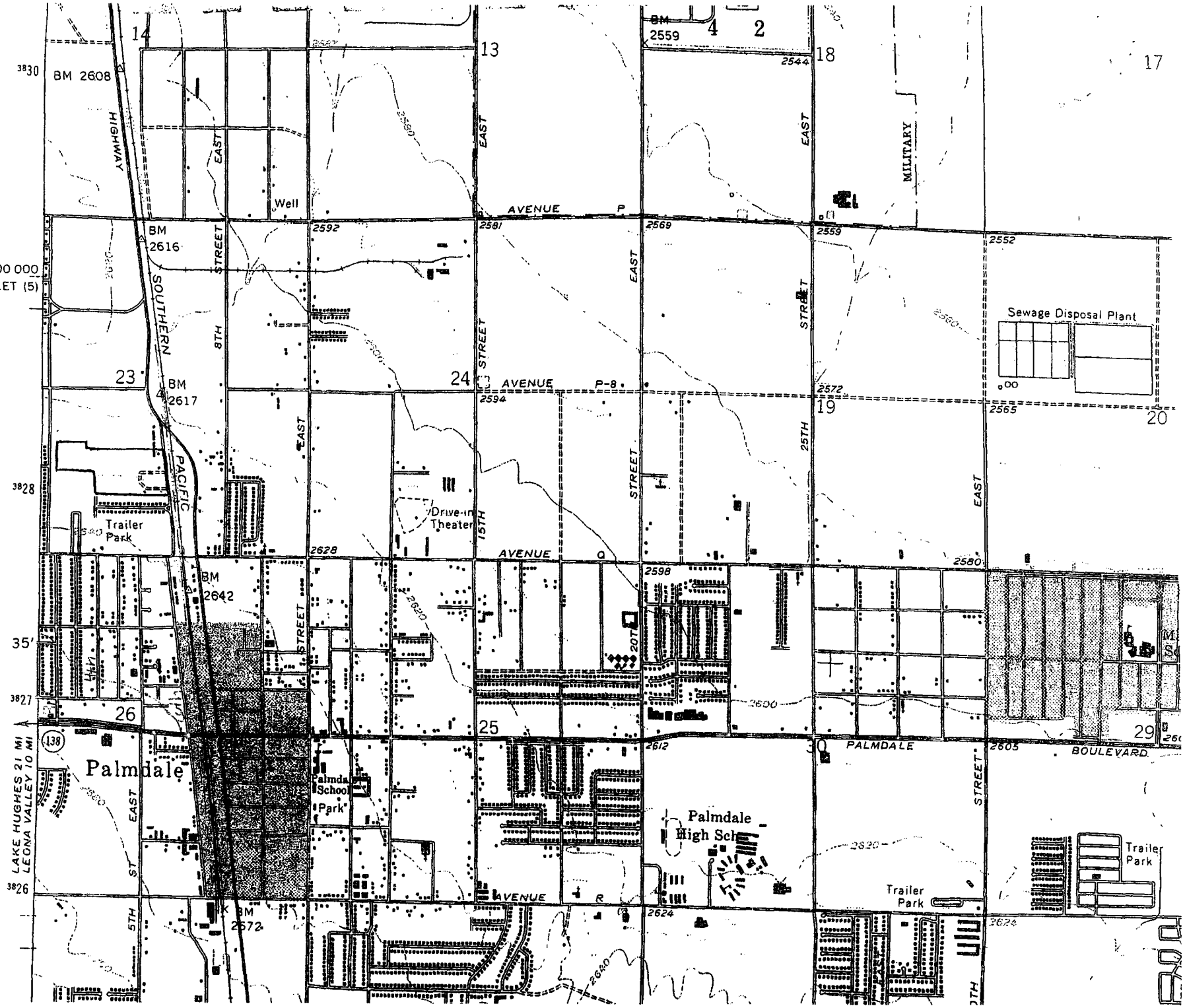
( ) Special Instructions:

CONFIDENTIALITY STATEMENT AND DOCUMENTATION RESPONSIBILITY

I understand that the Information Center is providing confidential archaeological information as a service to CDF, the Requestor and the Registered Professional Forester (RPF) or Professional Archaeologist responsible for the CDF project. By requesting this information, the Requestor and the RPF or Archaeologist assume the professional responsibility to the State Office of Historic Preservation and the Information Center for the appropriate management of this information This management shall ensure that: (1) all information regarding specific site locations is kept confidential except for disclosures required by forest practice rules or necessary to carry-out protection of sites, (2) specific site locations are not included in any document made available to the general public, (3) this information shall not be utilized by the Requestor to destroy, excavate, or vandalize historical resources, and (4) the information is not utilized for project planning outside the scope of this MOA Furthermore, CDF, in its capacity as lead agency under CEQA for environmental review and approval of projects on privately-owned and other non-federal lands in California, shall determine which historical resources identified during the project review process need to be recorded, re-recorded, or supplemented This determination will be based on the legal authority to carry out recording efforts on private property and other considerations The Requestor shall be responsible to ensure that a complete copy of any archaeological investigation report and two copies of any site records or supplements (completed to State standards, as determined by CDF) prepared for this project, if any such site records were prepared, shall be sent to the appropriate Information Center within 30 days of project approval. This must be a final report containing any corrections required during review by CDF. By signature on this form, the Requestor agrees to comply with the terms stated in this paragraph.

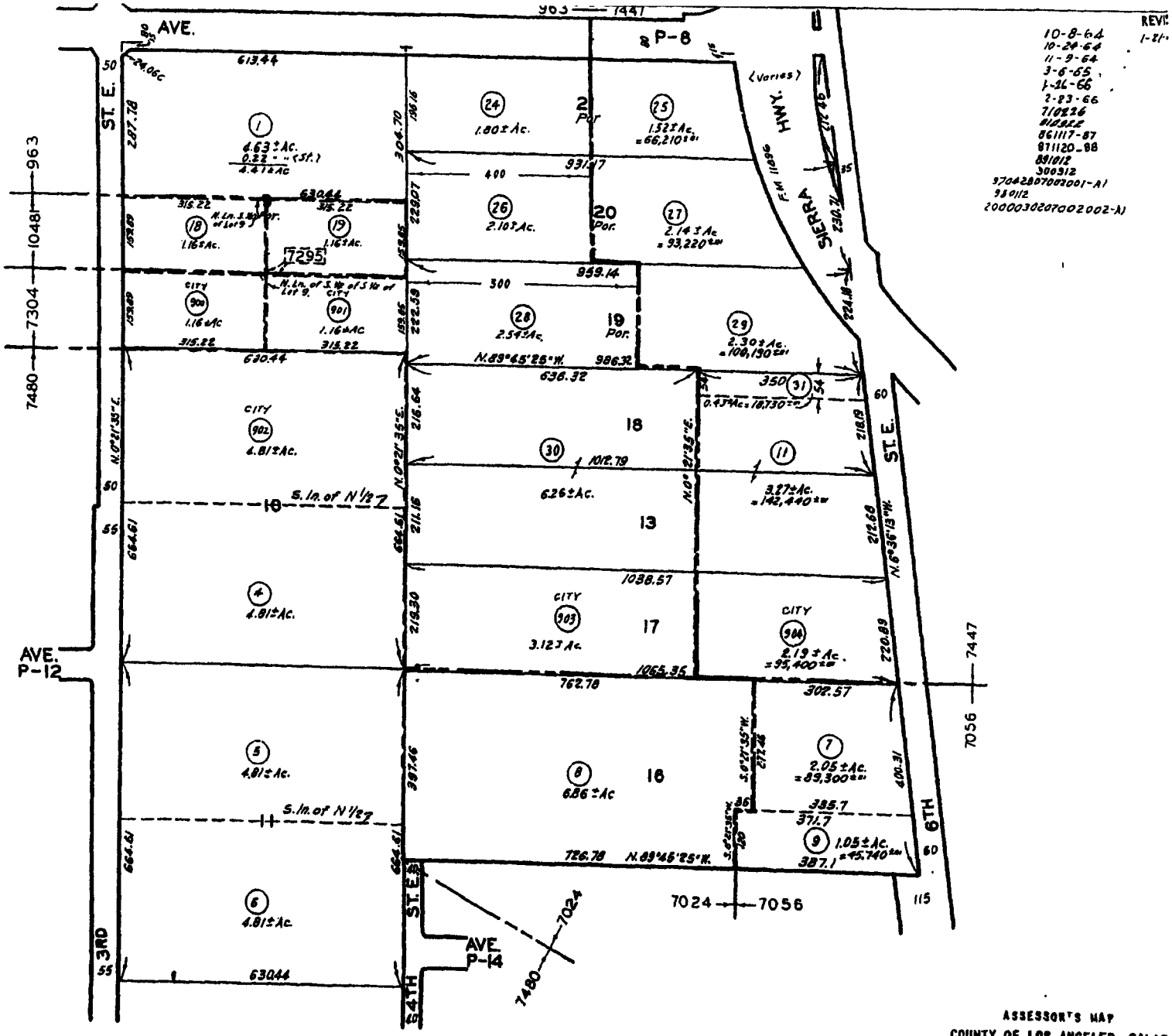
Signature of Requestor (required): Gerrit L. Fenenga Date signed: 12-1-00

CDF Archaeology Office 01/01/97



BM 2608
BM 2616
BM 2617
BM 2642
BM 2672
BM 2559
400 000 FEET (5)
HIGHWAY
SOUTHERN PACIFIC
8TH STREET EAST
15TH STREET EAST
20TH STREET EAST
25TH STREET EAST
5TH ST EAST
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
PALMDALE BOULEVARD
MILITARY
Well
Sewage Disposal Plant
Drive-in Theater
Trailer Park
Palmdale
Palmdale School Park
Palmdale High Sch
LAKE HUGHES 21 MI
LEONA VALLEY 10 MI
138

06	6
1" = 200'	



TRACT NO. 7670

M.B. 114 - 28 - 30

N

CODE
7024 7447
7056 963
7480 7295
7304
10481

FOR PREV. ASSM'T. SEE: 124-1

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

C = County
D = Special District
S = State
P = Private
U = Unknown

National Register Status
See Prev PP

ICE OF HISTORIC PRESERVATION * * * Directory of Properties in the Historic Property Data File for LOS ANGELES County. Page 130 09-04-96

EET.ADDRESS.....	NAMES.....	CITY NAME.....	OWN	YR-C	C	#PR	OTHREG	CHL#	PROP-#	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	HRS	CRIT
27 5TH AVE		LOS ANGELES	P	1923	B				023565	HIST.SURV.	0053-1019-0000		5S	
45 5TH AVE		LOS ANGELES	P	1906	B				023566	HIST.SURV.	0053-1020-0000		6	
09 5TH AVE		LOS ANGELES	P	1916	B				023567	HIST.SURV.	0053-1021-0000		5S	
15 5TH AVE	JOHN M JOHNSON	LOS ANGELES	P	1905	B				023568	HIST.SURV.	0053-1022-0000		6	

"#PR": # of properties contributing to this resource

"C": Type of property.
D = District
B = Building
C = Site
S = Structure
O = Object

"OTHREG": codes of legal designations other than National Register of Historic Preservation

H : HABS / HAERS Record
N : National Historic Landmark
S : State Historic Landmark
C : CA Pt. of Hist. Interest
P : State or Local Park
L : Locally designated
O : Other type of Registration

Appendix 2. National Register Status Codes

October 1997

CODE	DESCRIPTION	#OCC.
1	Property is listed on the Nat.Register.	25
1B	Listed in NR as an individual property and as a Contributor.	51
1D	Listed in NR as a Contributor to a district or mult. resource property.	7560
1S	Listed in NR as an individual property.	2439
2	Determined elig. for Nat.Register in a formal process.	553
2B	Deter.elig.for NR as separate and as a contributor.	4
2B1	Determined elig. by the Keeper for separate and as a contributor.	5
2B2	Det.elig. by Keeper as separate & as a contributor by consensus.	75
2B3	Det.elig. as separate by consensus and as contributor by Keeper.	
2B4	Determined elig. by consensus as separate and as a contributor.	15
2D	Determined elig.for Nat.Reg. as a contributor to a district.	278
2D1	Determined elig. for listing as a contributor by the Keeper.	582
2D2	Determined elig. for listing as a contributor by consensus det.	5653
2D3	Det.elig.for NR list as a contrib.by other than cons.det.or kpr.	192
2D4	Det.elig.for NR as a contributor by MOA Participant w/o review by OHP	
2S	Determined elig.for Nat.Reg. as separate listing.	50
2S1	Determined elig. for separate listing by the Keeper.	599
2S2	Det.elig. for separate listing by a consensus determination.	2061
2S3	Det.elig.for NR list as individ.by other than cons.det.or kpr.	78
2S4	Det.elig.for separate listing by MOA Participant without review by OHP	
3	Appears elig.for NR to person completing or reviewing form.	456
3B	Appears elig.as sep. and as contributor to a documented district.	1435
3D	Appears elig. as contributor to a fully documented district.	6745
3S	Appears eligible for listing in NR as a separate property.	9161
4	Might become eligible for listing on the Nat.Register.	119
4B	May become elig.for NR as separate and as a contributor.	535
4B1	May become elig.for NR under 4S1 and 4D1-4D8 or 4M1-4M8.	
4B2	May become elig.for NR under 4S2 and 4D1-4D8 or 4M1-4M8.	
4B3	May become elig.for NR under 4S3 and 4D1-4D8 or 4M1-4M8.	
4B4	May become elig.for NR under 4S4 and 4D1-4D8 or 4M1-4M8.	
4B5	May become elig.for NR under 4S5 and 4D1-4D8 or 4M1-4M8.	
4B6	May become elig.for NR under 4S6 and 4D1-4D8 or 4M1-4M8.	
4B7	May become elig.for NR under 4S7 and 4D1-4D8 or 4M1-4M8.	
4B8	May become elig.for NR under 4S8 and 4D1-4D8 or 4M1-4M8.	
4D	May become elig.for NR as a contributing property.	3030
4D1	May become elig.for NR as contrib. when Dist. becomes old enough.	1
4D2	May become elig.for NR as contributor with more research on Dist.	310
4D3	May become elig.for NR as contrib.if context info. is expanded.	7
4D4	May become elig.for NR as contrib. if approp.prop.type defined.	
4D5	May become elig.for NR as contrib. when prop.types are clarified.	
4D6	May become elig.NR as contrib.if Dist.is eval.in diff.context.	
4D7	May become elig.for NR as contrib.if integrity of Dist.is rstrd.	1
4D8	May become elig.for NR as contrib.when other like Dist.are lost.	
4M	May become elig.for NR as a contributor.	
4M1	May become elig.NR as contrib.if rstrd and Dist.becomes old enough.	
4M2	May become elig.forNR as contrib.if rstrd & more research on Dist.	

Appendix 2. National Register Status Codes (continued)
October 1997

CODE	DESCRIPTION.	#OCC.
4M3	May become elig.forNR as contrib.ifrestored & context is expanded.	
4M4	May become elig.NR as contrib.if rstrd&approp.prop.type is defnd.	
4M5	May become elig.NR as contrib.if rstrd & prop.types are clarified.	
4M6	May become elig.NRas contrib.if rstrd&Dist.eval.in diff.context.	
4M7	May become elig.NR as contrib.if rstrd & integ.of Dist. is rstrd.	3
4M8	May become elig.NR as contrib.if rstrd & oth like Dist.are lost.	
4R	May become a contributor to a listed/elig./appears.elig.dist.	181
4S	May become elig.for NR as a separate property.	6266
4S1	May become elig.for NR as separate when it becomes old enough.	80
4S2	May become elig.for NR as separate with more research.	132
4S3	May become elig.for NR as separate if context info. is expanded.	45
4S4	May become elig.for NR as sep. if more approp.prop.type is def.	
4S5	May become elig.for NR as sep. when regis.requirements clarified.	6
4S6	May become elig.for NR as separate when eval. in another context.	1
4S7	May become elig.for NR as sep. when its integrity is restored.	81
4S8	May become elig.for NR as sep. when other like prop. are lost.	11
4X	May become elig.forNRas contrib.toDistrict that has not been doc.	307
5	Ineligible for the NRegister but still of local interest.	62
5B	Elig.for LocList only - Both as separate property and as contrib.	669
5B1	Eligible for Local Listing only - Both 5S1 and 5D1.	3
5B2	Eligible for Local Listing only - Both 5S2 and 5D2.	
5B3	Not Elig.LocList but for spec.consid. LocPlan - Both 5S3 and 5D3.	
5B4	Elig.for LocList only - Both 5S1 and 5D2.	8
5B5	Elig.for LocList only - Both 5S1 and 5D3.	
5B6	Elig.for LocList only - Both 5S2 and 5D1.	
5B7	Elig.for LocList only - Both 5S2 and 5D2.	
5B8	Elig.for LocList only - Both 5S3 and 5D1.	
5B9	Elig.for LocList only - Both 5S3 and 5D2.	
5D	Eligible for Local Listing as contributor only.	10176
5D1	Elig.LocList only - contrib.to Dist.list or elig.under LocOrd.	303
5D2	Elig.LocList only - contrib.to Dist.etc. elig.under poss. LocOrd.	1
5D3	Not Elig.LocList - contrib.to Dist.etc; elig.spec.consid.LocPlan.	156
5N	Not Elig for anything but Needs special consid.for other reasons.	333
5S	Eligible for Local Listing only.	13084
5S1	Elig.for LocList only - listed or elig.sep.under exist LocOrd.	269
5S2	Elig.LocList only - likely to become elig.sep.under poss.LocOrd.	7
5S3	Not Elig.LocList - is elig. for spec.consid. in Local Planning.	323
5X	*Unknown*	1
6	Det.inelig.for National Register listing.	5354
6U	Determined inelig.for NR by MOA Participant without review by SHPO	
6W	Removed from Nat.Reg. by Keeper.	18
6W1	Removed from Nat.Reg. by Keeper - Listed Property destroyed.	26
6W2	Removed from NR by Keeper - Property still extant - not re-evaluated.	1
6W3	Dist. Rmvd from NR by Kpr - Prop. extant - Appears individually elig.	25
6X	Determined inelig.for NR by Keeper.	25
6X1	Det.inelig.for NR by Keeper with no potential for any listing.	504
6X2	Det.inelig.NR by Keeper, no potential for NR, n/eval for LocList.	84

Appendix 2. National Register Status Codes (continued)
October 1997

CODE	DESCRIPTION.	#OCC.
6X3	Det.inelig.NR by Kpr, n/eval potential NR, n/eval LocList.	1202
6Y	Det.inelig.for NR by consensus.	2944
6Y1	Det.inelig.for NR by consensus with no potential for any listing.	2499
6Y2	Det.inelig.NR by consensus, no potential NR, n/eval for LocList.	12387
6Y3	Det.inelig.NR by consen., n/eval potential NR, n/eval LocList.	221
6Y4	Det.inelig.NR/consensus, app.elig Loc.List or may become elig. for NR	76
6Z	Found inelig.for NR.	419
6Z1	Found inelig.for NR with no potential for any listing.	482
6Z2	Found inelig.for NR, no potential for NR, n/eval for LocList.	77
6Z3	Found.inelig. NR, n/eval for potential for NR, n/eval for LocLst.	341
7	Not evaluated.	5269
7J	Received by OHP for evaluation or action but not yet evaluated.	2541
7K	Resubmitted to OHP for action but not reevaluated.	847
7L	Evaluated for a Register other than the National Register.	2227
7M	Submitted to OHP for eval. but not evaluated - referred to NPS.	1154
7R	Submitted as Part of a Reconnaissance Level Survey: NOT EVALUATED!	3228
None	*Property without evaluation status (Mistakes)*	305

California Historical Resources Information System
California State University, Fullerton
Department of Anthropology
800 North State College Boulevard
Fullerton, CA 92834-6846
(714) 278-5395 / FAX (714) 278-5542
anthro.fullerton.edu/sccic.html

Los Angeles
Orange
Ventura

REFERRAL LIST FOR HISTORICAL RESOURCES CONSULTANTS

This is a partial, alphabetically ordered, list of individuals, firms and institutions which meet minimum qualifications to perform identification, evaluation, registration, and treatment activities within the profession under which they are listed, in compliance with federal and state environmental laws. It is composed of all individuals who have requested listing by this Information Center and who have satisfactorily documented that they meet the Secretary of the Interior's Standards (SIS) for that profession. Inclusion on this list is determined solely on this evaluation and not on a review of current work.

The first page of this listing is comprised of individuals who were certified by the Society of Professional Archaeologists and who were listed on this Information Center's Referral List as of August 11, 1995. These individuals may or may not meet the Secretary of the Interior's Standards.

The Information Center provides a copy of this list without charge when field inspection is recommended or upon request.

This list has been prepared in accordance with guidelines stipulated by the State. Inclusion on this list does not constitute endorsement or recommendation by the State or this Information Center.

Questions regarding this Referral List may be directed to John Thomas, Staff Archaeologist, or Jan Wooley, Staff Historian, Coordinators of the California Historical Resources Information System, Office of Historic Preservation, at (916) 653-6624.

SOPA

Greenwood and Associates Greenwood, Roberta S., 725 Jacon Way, Pacific Palisades, CA 90272
(310) 454-3091

Archaeological Associates Van Horn, David, White, Laura S., P.O. Box 180, Sun City, CA 92586
(909) 244-1783/FAX (909) 244-0084

Begole, Robert S. 722 North Pine Street, Anaheim, CA 92805

Chambers Group Inc. Mason, Roger, P.O. Box 57002, Irvine, CA 92619-7002
(714) 261-5414

Duffield, Ann Q. 143 Monterrey Drive, Claremont, CA 91711

Gray and Pape Inc. P.O. Box 4550-19, 27800 Hale Court, Tehachapi, CA 93561

Peak & Associates, Inc. Peak, Melinda A., 3941 Park Drive, Suite 20-329, El Dorado Hills, CA 95762
(916) 939-2405/FAX (916) 939-2406 peakinc@jps.net

Scientific Resource Surveys, Inc. Whitney-Desautels, Nancy A.; P.O. Box 2349, Temecula, CA 92593-2349
(909) 767-2555/FAX (909) 767-0305

ARCHAEOLOGY

Anthropological Studies Center Praetzellis, Adrian; Praetzellis, Mary; Sunshine, Psota; Stewart, Suzanne; Gibson, Erica; Ziesing, Grace; Meyer, Jack; Meyer, Mike; Sonoma State University, Building 29, 1801 East Cotati Ave, Building 29, Rohnert Park, CA 94928-3609
(707)664-2381/FAX (707)664-4155 www.sonoma.edu/projects/asc/ asc@sonoma.edu

Applied EarthWorks, Inc. Goldberg, Susan K., Pritchard Parker, Mari A.Romano, Horne, Melinda C., Williams, Scott Alan, 3292 E. Florida Avenue, Suite A, Hemet, CA 92544-4941
(909) 766-2000

Archaeological Advisory Group Brock, James, P.O. Box 491, Pioneertown, CA 92268-0491
(760) 228-1142/FAX (760) 369-4002

Archaeological Consulting Services Alexandrowicz, John Stephen, P.O. Box 39, 13826 Pollard Drive, Lytle Creek, CA 92358
(909) 887-0795

Archaeological Resource Management Corporation Allen, Kathleen C., Demcak, Carol R., 1114 N. Gilbert St., Anahiem, CA 92801
(714) 491-9702

Archaeological Services Counsultants, Inc Stevenson, Christopher M., 4620 Indianola Avenue
Columbus, OH 43214
(614) 268-2514/FAX (614) 268-7881

ASM Affiliates Byrd, Brian F., Eighmey, James, Giacomini, Barb, McDonald, Meg, Reddy, Seetha N. Schaefer, Jerry, Victorino, Kenneth D., 543 Encinitas Blvd., Ste 114. Encinitas, CA 92024
(760) 632-1094/FAX (760) 632-0913

BC Enterprises Cottrell, Marie G., 11278 Los Alamitos Blvd, # 179, Los Alamitos, CA 90720

Boxt, Mathew A. 3636 Wesley St., Culver City, CA 90232
(310) 838-0349/ mboxt@aol.com

Brian F. Smith and Assoc. Pierson, Larry J., Smith, Brian F., 14678 Ibex Court, San Diego, CA 92129
(858) 484-0915/fax (858) 486-4523

C.A. Singer & Associates, Inc. Singer, Clay A., P.O. Box #99, Cambria, CA 93428
(805) 927-0455/FAX (805) 927-0414

Bakersfield, CA 93311-1099
(661) 664-2476/FAX (661) 664-2143

Chace & Associates Chace, Paul G., 1823 Kenora Drive, Escondido, CA 92027
(760) 743-8609

Compass Rose Romani, John F., 6206 Peach Avenue, Van Nuys, CA 91411
(818) 989-0656

CRM Tech Love, Bruce 2411 Sunset Drive, Riverside, CA 92506
(909) 784-3051/FAX (909) 784-2987

De Barros, Philip 13730 Via Cima Bella, San Diego, CA 92129

Department of Sociology and Anthropology, CSU Sutton, Mark Q., 9001 Stockdale Highway, Bakersfield, CA 93311-1099
(805) 664-3153

Dillon, Brian D. 16007 Lemarsh Street, North Hills, CA 91343
(818) 893-3468

Discovery Works, Inc Padon, Beth; P.O. Box 51476, Irvine, CA 92619
(949) 733-1915 bpadon@discoveryworks.com

ECORP Consultanting, Inc. Childress, Mitchell R., 2100 Embarcadero St., Suite 105, Oakland, CA 94606
(510) 434-0151 Fax (510) 434-0155 mchildress@ecorpconsulting.com

Express Archaeological Solutions Wrobleski, David E., 13806 Vanowen St., Van Nuys, CA 91405 or 937 Stanford, Simi Valley, CA 90635
arklogst@www.earthlink.net (805) 522-0766
Krautenkramr, Richard, 200 Monterey Rd. Ste. C, South Pasadena, CA 91303
(323) 257-3848 Archaeodiver@earthlink.net

Far Western Anthropological Research Group, Inc. Gilreath, Amy; Hildebrandt, Bill; Waechter, Sharon; Wohlgemuth, Eric; P.O. Box 413, Davis California 95617
(530) 756-3941 phone, (530) 756-0811

H.E.A.R.T. Wlodarski, Robert J., 8701 Lava Place, West Hills, CA 91304
(818) 340-6676

Hudlow Cultural Resource Associates Hudlow, Scott M.; Silsbee, Laura Barrett; 6312 Castlepoint Street, Bakersfield, CA 93313

Institute For Archaeological Research Napton, L. Kyle, California State Unversity, Stanislaus, 801 W. Monte Vista Avenue, Turlock, CA 95382
(209) 667-3060/FAX (209) 667-3324

Interdisciplinary Research Inc. Magalousis, Nicholas M., P.O. Box 102, Laguna Beach, CA 92652
(949) 494-9808

Intermountain Research Ataman, Kathryn Ann; Dugas, Daniel P.; Elston, Robert G.; Zeanah, David W.; P.O. Drawer A, Silver City, Nevada 89428

KEA Environmental Apple, Rebecca; Dolan, Christy; York, Andrew
1420 Kettmer Blvd., Suite 620, San Diego, CA 92101
(619) 233-1454 / FAX (619) 233-0952 / keaenvironmental.com

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Los Angeles
Orange
Ventura

December 20, 2000

RECEIVED
DEC 26 2000
PLANNING DEPT.

Jaclyn Ota, Junior Planner
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RE: Records Search for City of Palmdale Tree Planting

Dear Ms. Ota,

As per your request received on December 14, we have conducted a records search for the above referenced project. This search included a review of all recorded historic and prehistoric archaeological sites within a half-mile radius of the project area, as well as a review of all known cultural resource reports. In addition, we have checked our file of historic maps, the California State Historic Resources Inventory, the National Register of Historic Places, the listing of California Historical Landmarks, and the California Points of Historical Interest. The following is a discussion of our findings for the project area.

Due to the sensitive nature of cultural resources, archaeological site locations are not released.

RITTER RIDGE QUADRANGLE

PREHISTORIC RESOURCES:

No prehistoric sites have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

No historic archaeological sites have been identified within a half-mile radius of the project area.

Historic maps for this area are not on file for review.

The California State Historic Resources Inventory lists four properties that have been evaluated for historical significance potentially within a half-mile radius of the project area.

The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Six studies (LA1547, LA2324, LA2342, LA3017*, LA4008, LA4141) have been conducted within a half-mile radius of the project area. There are two additional investigations located on the Palmdale 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

If you have any questions regarding our results or the recommendations presented herein, please feel free to contact our office at (714) 278-5395.

Invoices are mailed approximately two weeks after records searches are completed. This enables your firm to request further information under the same invoice number. **Please reference the invoice number listed below when making inquiries.** Requests made after invoicing will involve the preparation of a separate invoice with a $15.00 handling fee.

Sincerely,

Margaret Lopez

Margaret Lopez
Coordinator

Enclosures:

( ) Primary Number Explanation
( ) Site list - 0 pages
(X) SIS list - 8 pages
(X) HRI - 2 pages
(X) National Register Status Code - 4 pages
( ) Invoice #9078a