Third Main Track and Grade Separation Project on the Burlington Northern Santa Fe Railway Company East-West Main Line Railroad Track SCH #2002041111

ENVIRONMENTAL IMPACT REPORT
Draft

Volume 1

March 2003

Submitted Pursuant to: California Division 13, Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

and

Burlington Northern Santa Fe Railway Company

March 25, 2003
Date of Approval

Ronald J. Kosinski
Deputy District Director
Division of Environmental Planning
District 7
California Department of Transportation

MAR. 26, 2003
Date of Approval

Warren Weber
Chief
Division of Rail
California Department of Transportation

March 27, 2003
Date of Approval

Walt Smith
General Director, Construction
The Burlington Northern and Santa Fe Railway Company

Table of Contents

Table of Contents (continued)

Chapter 4 – ENVIRONMENTAL EVALUATION

Table of Contents (continued)

Table of Contents (continued)

Table of Contents (continued)

List of Tables

List of Figures

List of Figures (continued)

Abbreviations and Acronyms

AAQS	Ambient Air Quality Standards
ADT	Average Daily Traffic
APE	area of potential effect
AQMP	Air Quality Management Plan
ARB	Air Resources Board
BMPs	best management practices
BNSF	The Burlington Northern and Santa Fe Railway Company
CAAQS	California ambient air quality standards
Cal-EPA	California Environmental Protection Agency
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health Administration
Caltrans	State Department of Transportation, Division of Rail
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
COE	U.S. Army Corps of Engineers
dB	decibel
dB(A)	A-weighted decibel scale
DEFF	effective noise generation distance
DOT	U.S. Department of Transportation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EIR	environmental impact report
EPA	Environmental Protection Agency

Abbreviations and Acronyms (continued)

FAA	Federal Aviation Administration
Fed/OSHA	Federal Occupational Safety and Health Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Agency
HAPs	hazardous air pollutants
HCM	Highway Capacity Manuals
HI	hazard index
HUD	Department of Housing and Urban Development
HWCL	Hazardous Waste Control Law
LAC	Los Angeles County
LACFCD	Los Angeles County Flood Control District
LACGP	Los Angeles County General Plan
Ldn	Day/Night Average Sound Level
Leq	equivalent energy level
LOS	Level of Service
MMA	Meyer, Mohaddes Associates, Inc.
MP	Mile Post
MSDSs	Material Safety Data Sheets
MWD	Metropolitan Water District
NAAQS	National ambient air quality standards
NAC	Noise Abatement Criteria
NHPA	National Historic Preservation Act
NIH	National Institutes of Health
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Administration

Abbreviations and Acronyms (continued)

PEIR	program environmental impact report
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter of 2.5 microns or less
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gases
ROW	right-of-way
RTP	Regional Transportation Plan
RWQCB	California Regional Water Quality Control Board
SARA	Superfund Amendments & Reauthorization Act
SBBM	San Bernardino Base and Meridian
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SoCAB	South Coast Air Basin
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Quality Control Board
TACs	Toxic air contaminants
T-BACT	Best Available Control Technology for Toxics
TCM	transportation control measure
TDA	Tom Dodson & Associates
UBC	Uniform Building Code
UFC	Uniform Fire Code
UPRR	Union Pacific Railroad
USCOE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
VOC	volatile organic compound

Units of Measurements

English	*Conversion factors*	*Metric*
<u>Area</u>		
square feet (sq ft or ft^2)	0.0929	square meter (m^2)
square yard (sq yd or yd^2)	0.8361	square meter (m^2)
square mile (sq mi or m^2)	2.590	square kilometer (km^2)
<u>Length</u>		
feet (ft)	0.3048	meter (m)
inch (in)	25.4	millimeter (mm)
mile (mi)	1.6093	kilometer (km)
yard (yd)	0.9144	meter (m)
<u>Volume</u>		
cubic feet (cu ft or ft^3)	0.0283	cubic meter (m^3)
gallon (gal)	3.785	liter (L)
cubic yard (cu yd or yd^3)	0.7646	cubic meter (m^3)
acre	0.4047	hectare
acre-feet (acre-ft or AF)	1233.49	cubic meter (m^3)
<u>Mass</u>		
ounce (oz)	28.35	grams
pound (lb)	0.4536	kilograms (kg)
ton	0.9072	1000 kg
<u>Velocity</u>		
miles per hour (mph)	1.6093	kilometer per hour (km/h)
<u>Temperature</u>		
Fahrenheit (°F)	(F°- 32°) x 5 / 9	Celsius (°C)

CHAPTER 1
EXECUTIVE SUMMARY

1.1 INTRODUCTION

The California Department of Transportation, District 7 (Department), has prepared this program Environmental Impact Report (PEIR) to evaluate the potential adverse environmental impacts that may result from construction of railroad track improvements and seven grade separation projects along a 23.66 kilometers (km) (14.7 mi) segment of The Burlington Northern and Santa Fe Railway Company's (BNSF) East-West Main Line Railroad Track. BNSF operates freight trains and the Division of Rail oversees the passenger rail system within California, and up to 100 freight and passenger trains presently use this segment of the main line track. The 23.66 km (14.7 mi) rail corridor is owned and operated by BNSF and BNSF has been retained by the Division of Rail to engineer and oversee construction of the proposed improvements along this 23.66 km (14.7 mi) segment of the Main Line Railroad Track. The Division of Rail, on behalf of Metrolink and BNSF, will be the CEQA lead agency for this rail corridor improvement project. The Department District 7 will oversee the processing of the PEIR on behalf of Division of Rail.

1.2 SUMMARY OF ENVIRONMENTAL ANALYSIS

A Program Environmental Impact Report has been selected as the appropriate document for compliance with the CEQA because that actions that will be carried out under the proposed project meets the definition of a program. In this case the proposed facilities and operations are geographically linked and they are logical parts in a chain of actions that will enhance the efficiency of train movements along the 23.66 km (14.7 mi) segment of the east-west main track. The Department is working with the understanding that the installation and construction activities within the rail corridor are interrelated based on the segment track being affected and the overall enhancement of train safety and efficiency in this segment of the main line, particularly improvement of intercity passenger rail service by improving efficiency of rail traffic along the East-West Main Line Railroad Track.

The following is a brief description of the activities proposed in the proposed facilities being evaluated in the PEIR. Within the rail corridor, passenger train service flow (efficiency) and safety are proposed to be increased by implementing a variety of rail corridor track improvements. The range of potential improvements include:

1. Installation of a new third mainline in selected areas (triple tracking with a 4.57-meter center (15 ft) for most of the alignment);

2. Installation of up to seven grade separations along the third main track alignment, including: Passons Boulevard; Pioneer Boulevard; Norwalk Boulevard and Los Nietos Road; Lakeland Road; Rosecrans Avenue/Marquardt Avenue; and Valley View Avenue.

2. Installation of new sidings (storage track);

3. Extension or upgrade of existing sidings;

4. Upgrading track structure and special track work (two new diamond crossings in the City of Santa Fe Springs);

5. Widening San Gabriel River Bridge and modification of the Slauson Avenue Overpass (note that the County of Los Angeles will also be constructing seismic retrofit improvements for this bridge during the same general time frame);

6. Upgrading signal systems; and

7. Modifications to and installation of new bridges.

Based on information developed in the Initial Study, The Department determined that implementation of the proposed project had a potential to result in several significant adverse impacts to the environment for the following issues of focus:

- Issues determined in the Initial Study that do <u>not</u> have a potential for significant adverse impact and that are <u>not</u> evaluated as part of the focus in this PEIR:
  - Aesthetics
  - Agricultural Resources
  - Land Use/Planning
  - Mineral Resources
  - Population and Housing
  - Public Services
  - Recreation
  - Utilities and Service Systems (except soil contamination).

- Issues determined to <u>have</u> a potential for significant adverse impact and that are evaluated in this EIR:
  - Air Quality
  - Biological Resources
  - Cultural Resources
  - Geology and Soils
  - Hazards and Hazardous Materials
  - Hydrology and Water Quality
  - Noise
  - Transportation / Traffic
  - Utilities and Service Systems (contaminated soil).

Based on the analysis of potential impacts contained in this document, **none** of the environmental issues have been identified to be potentially significant and unavoidable. Implementation of the proposed project is **not forecast to cause any significant adverse environmental impacts**. With implementation of all mitigation measures outlined in Chapter 4 of this PEIR, all impacts were able to be reduced to a less than significant impact level. Please refer to discussions in Chapter 4 of this PEIR for a detailed discussion of these issues and the substantive basis for concluding that implementation of the proposed project will not cause any significant adverse impacts that cannot be mitigated to a less than significant level.

A summary of the environmental findings and mitigation measures in this program Environmental Impact Report is contained in Table 1.2-1 which begins on the following page. The summary shows that the proposed project will cause no significant adverse environmental impacts if implemented as described in this document. Some environmental impacts caused by the project are nonsignificant without any mitigation. Most of the impacts described in the following table and the analysis in Chapter 4 are required to be mitigated to less than significant levels with implementation of recommended mitigation measures.

1.3 AREAS OF KNOWN CONTROVERSY

Over the past year, The Department, BNSF, Los Angeles County and local cities have held monthly meetings to develop the engineering plans for the Third Main Track and Grade Separations. In addition, The Department published a Notice of Preparation and held three scoping meetings in April 2002. By far, the major area of controversy raised by most residents and communities was noise. The existing BNSF East-West Main Line Track Corridor currently handles an average of about 100 trains per day and, as a result, the train corridor generates intrusive, high background sound levels, which are particularly noticeable where bordered by residential uses. Special effort was made to conduct a thorough noise evaluation, including a section on vibration, to address specific comments and concerns received from the public and other agencies on the noise issue.

A second major concern raised by the public was the possibility of acquiring additional property (approximately 2.02 to 4.05 hectares overall [5 to 10 acres]) to support the proposed project. The Third Main Track can be constructed within the BNSF existing right-of-way, but some of the support track facilities may require acquisition of about five acres of property. However, no residences will be impacted by construction of the Third Main Track. The construction of the grade separations has been identified as requiring the acquisition of several (about 10 overall) residential properties. The project description clearly identifies these properties, including aerial photos that show each area where property must be acquired to implement the specific grade separation. Properties will only be acquired when an actual grade separation project segment is implemented in the future.

The only other controversial issues raised by the public during this period were air quality effects, particularly fugitive dust on adjacent sensitive industrial operations and short-term traffic effects due to construction of the grade separation facilities. The traffic and air quality sections of this PEIR address these issues. No other areas of controversy were identified.

1.4 UNRESOLVED ISSUES

Based on the evaluation contained in this PEIR, no issues remain unresolved for this proposed project, except the timing of construction for future project specific segments. With implementation of identified mitigation measures, no significant adverse environmental impacts will result from implementing the proposed project. A related, but not project dependent unresolved issue, is the noise exposure adjacent to residential uses from existing train operations. The proposed project is not forecast to cause a significant increase or change in noise along this rail corridor. However, the noise data do indicate that background noise levels from current train operations are about 70 decibels using the 24-hour Community Noise Equivalent Level (CNEL) rating schedule. The possibility of installing noise attenuation features where the rail corridor lies adjacent to residential uses, particularly in Pico Rivera, is problematic as discussed in this PEIR and the appendices. Each community will need to address this issue cooperatively with the affected residents.

1.5 PERMITS AND APPROVALS

This PEIR has been prepared to address funding, construction and operation of the Third Main Track and Grade Separations Project. It may also be used by the following agencies for related reviews and approvals:

- County of Los Angeles, encroachment permits,
- County of Orange, encroachment permits,
- City of Montebello, encroachment permits,
- City of Norwalk, encroachment permits,
- City of Pico Rivera, encroachment permits,
- City of Santa Fe Springs, encroachment permits,
- City of La Mirada, encroachment permits,
- City of Commerce, encroachment permits,
- City of Fullerton, encroachment permits,
- City of Buena Park, encroachment permits,
- California Regional Water Quality Control Board, Santa Ana Region and Los Angeles Region, Section 401 (Clean Water Act) Certification,
- California Department of Fish and Game (Streambed Alteration Agreement),
- U.S. Army Corps of Engineers, Section 404 (Clean Water Act) Permit,
- State Water Resources Control Board, construction NPDES permit,
- State Public Utilities Commission (closure of Serapis Avenue and possibly other authorizations), and
- State Department of Transportation, District 7, encroachment permit(s).

1.6 ALTERNATIVES

The project evaluated in this PEIR is the construction of approximately 23.66 km (14.7 mi) of new railroad track (Third Main Track) in the BNSF rail corridor from the City of Commerce to the City of Fullerton and the construction of up to seven new grade separations located in the Cities of Pico Rivera, Santa Fe Springs and La Mirada. After careful review of the proposed project and all alternatives, the no project alternative to the proposed project (no construction of the third main track and no construction of the grade separations) is the only alternative evaluated in this document. Refer to Chapter 5 of this document for the detailed comparison of impacts from the proposed project and the no project alternative. Under the no project alternative the environmental impacts that would occur if the proposed project is not approved and implemented are identified.

The primary effect of the no project alternative is to eliminate the short-term construction impacts associated with the Third Main Track and Grade Separations project components. Although these project-related construction impacts were judged to be nonsignificant, they will create short-term inconveniences at the locations where construction occurs. Thus, the effect of implementing a no project alternative is to eliminate these construction-related adverse impacts.

Implementation of the proposed project has some very significant beneficial effects on long-term rail operations. First, implementation of the proposed project will eliminate seven existing at-grade road/rail crossings. The no project alternative would leave these at-grade crossings in place. Although the no project alternative would not result in any changes in the existing circulation system, its implementation would eliminate the significant improvements in the local circulation systems of three cities and the County of Los Angeles along this 23.66 km (14.7 mi) segment of rail corridor. Although these at-grade crossings meet existing safety regulations, train/vehicle accidents do occur at these at-grade crossings, and in particular, several deaths have occurred at the Rosecrans crossing when vehicles have failed to stop at the existing tracks.

The no project alternative would not implement the third main track improvements, nor any of the grade separations. Without any improvements, the efficiency of scheduled train flow would not be improved on the affected 23.66 km (14.7 mi) segment of the BNSF East-West Main Line. The PEIR concluded that the no project's failure to achieve the improved safety and traffic flow benefits makes it a less environmentally superior alternative than the proposed project.

This page left intentionally blank for pagination purposes.

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Air Quality	a. Conflict with or obstruct implementation of the applicable air quality plan. b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation. c. Expose sensitive receptors to substantial pollutant concentrations. d. Create objectionable odor affecting a substantial number of people.	<u>Construction</u> 4.2-1 Limit construction equipment use to a mix of equipment that is substantially the same as that used for the estimation of pollutant emissions. To the extent economically feasible, replace diesel combustion equipment with natural gas or electrical equipment. 4.2-2 All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications. 4.2-3 General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. 4.2-4 During construction, trucks and vehicles in loading and unloading queues would be kept with their engines off, when not in use, to reduce vehicle emissions. 4.2-5 Construction activities should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts. 4.2-6 Require 90-day low-NOx tune-ups for off road equipment. 4.2-7 Limit allowable idling to 10 minutes for trucks and heavy equipment. 4.2-8 Water active grading sites at least twice daily and when dust is observed migrating from the site. Watering shall be designed to maintain a minimum 12% moisture content of the disturbed soil, except where such moisture content would conflict with engineering requirements.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Air Quality (continued)		4.2-9 Suspend all grading and excavation operations when wind speeds exceed 40.23 km/h (25 mph). 4.2-10 Cover or water twice daily any on-site stockpiles of debris, dirt or other dusty material. 4.2-11 Replace ground cover or pave disturbed areas immediately after construction is completed in the affected area. 4.2-12 Sweep or wash any site access points within 30 minutes of any visible dirt deposition on any public roadway. 4.2-13 Cover all haul trucks. 4.2-14 Pave or apply water four times daily to all unpaved parking or staging areas. 4.2-15 Hydro-seed or otherwise stabilize any cleared area which is to remain inactive for more than 96 hours after clearing is completed. 4.2-16 Encourage car pooling for construction workers. 4.2-17 Limit lane closures to off-peak travel periods. 4.2-18 Park construction vehicles off traveled roadways. 4.2-19 Wet down or cover dirt hauled off-site. 4.2-20 Wash or sweep access points daily. 4.2-21 Encourage receipt of materials during non-peak traffic hours.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Air Quality (continued)		4.2-22 Conduct pre-construction assessments.	Less than significant
		4.2-23 Perform remediation consistent with air hazards criteria in SCAQMD rules and regulations.	
	Cumulative Impacts		Less than significant
Biological Resources	a. Substantial adverse direct or indirect effect on any species identified as a candidate, sensitive or special status species. b. Substantial adverse effect on riparian habitat or other sensitive natural community. c. Substantial adverse effect on federally protected wetlands. d. Substantially interfere with the movement of native fish or wildlife species, migratory wildlife corridors or impede the use of native wildlife nursery sites. e. Conflict with local policies or ordinances protecting biological resources. f. Conflict with provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved habitat conservation plan.	4.3-1 To offset short- and long-term impacts to the San Gabriel River Channel, BNSF shall implement one of the following measures: acquire 0.4047 hectare (one acre) of land within a wetland habitat mitigation bank; provide funds to an agency acceptable to the regulatory agencies to create an additional 0.4047 hectare (one additional acre) of riparian or wetland habitat at an acceptable location within the project area (including sufficient funds to establish the requisite non-wasting endowment; or with approval of Los Angeles County Flood Control and the U.S. Corps of Engineers, fund the creation of 0.4047 hectare (one acre) of riparian habitat at an acceptable location within the San Gabriel River channel.	Less than significant
	Cumulative Impact		Significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Cultural Resources	Potentially affect significant paleonto-logical / archaeological resources.	Archaeological 4.4-1 Earth-moving activities in the areas around the recorded location of Site 30-120020 and the suggested location of Site CA-LAN-182 in the APE shall be monitored by a qualified archaeologist. 4.4-2 The commemorative plaque marking the approximate site of the Los Nietos School be relocated and rededicated in coordination with the City of Santa Fe Springs following completion of the grade separation at this location. 4.4-3 Should any archaeological, historical or paleontological (cultural) resources or human remains be encountered during construction in areas where no resources were expected, construction in the area shall be immediately terminated. In the case of cultural resources, a qualified professional shall be called to examine the discovery. BNSF shall follow recommended actions for mitigation the exposed resource until the resource is fully evaluated and any necessary data recovery or avoidance measures implemented. In the case of human remains, the County Coroner shall be contacted and BNSF shall follow recommended actions for mitigation of the exposed remains until it is fully evaluated and appropriate actions taken for removal and repatriation.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Geologic Resources / Constraints	a. Subject to fault rupture, ground shaking, ground failure, liquefaction, or landslide. b. Subject to substantial erosion or the loss of topsoil. c. Subject to unstable soil that may potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse. d. Subject to expansive soil creating substantial risks to life or property.	Soils 4.5-1 Add protective covering of mulch, straw or synthetic material (erosion control blankets, tacking will be required). 4.5-2 Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed. After construction, soil shall be compacted to a level similar to pre-construction conditions. 4.5-3 Construct diversion dikes and interceptor ditches to divert water away from construction areas. 4.5-4 Install slope drains (conduits) and/or water-velocity-control devices to reduce concentrated high-velocity streams from developing. 4.5-5 Apply provisions of erosion and sediment control that reduce volume and velocity of flows and content of sediment to levels that do not cause significant rill or gully erosion in susceptible areas. In addition, provide for restoration of areas that do become eroded. Geology 4.5-6 Construction of structures in areas with high liquefaction potential shall be implemented in accordance with measures identified in the CHJ, Inc. geotechnical reports, such as use of deep pilings for the San Gabriel River bridge. 4.5-7 Apply seismic design and construction criteria to all structures subject to significant seismic shaking in accordance with the CHJ, Inc. geotechnical reports. The appropriate design criteria for the grade separations and bridges is as a: Risk Class I & II, Structures	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Geologic Resources / Constraints (continued)		4.5-7 (cont.) Critically Needed after Disaster: Structures that are critically needed after a disaster include important utility centers, fire stations, police stations, emergency communication facilities, hospitals, and critical transportation elements such as bridges and overpasses and smaller dams. Acceptable Damage: Minor non-structural; facility should remain operational and safe, or be suitable for quick restoration of service. 4.5-8 Require stability analysis for Landslide Hazard areas designated "Generally Susceptible" and "Mostly Susceptible" on the Hazards Overlay Maps. If evidence of liquefaction is identified along the track or at-grade separations, project design mitigation may include: • In-situ densification of susceptible soil. • Ground improvements such as removal and replacement of susceptible soils or dewatering. • Deep foundations designed to accommodate liquefaction. • Shallow foundation design to accommodate vertical and lateral ground displacement. 4.5-9 Require future site-specific geotechnical investigations of proposed grade separations to include an assessment of potential impacts and mitigation measures related to expansive and reactive soils and liquefaction.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Geologic Resources / Constraints (continued)		<u>Seismicity</u> 4.5-10 All development projects implemented as a result of the proposed Project shall be built in accordance with current and applicable Uniform Building Code (UBC) standards and all other applicable City, County, State and Federal laws, regulations and guidelines, which may limit construction and site preparation activities such as grading, and shall make provisions for appropriate land use restrictions, as deemed necessary, to protect residents and others from potential environmental safety hazards, either seismically induced or those resulting from other conditions such as inadequate soil conditions, which may exist in the proposed Project Area.	Less than significant
	Cumulative Impacts		Less than significant
Hazards and Risk of Upset	a. Create a significant hazard to the public or the environmental through the routine transport, use or disposal of hazardous materials.	4.6-1 All contaminated material encountered shall be delivered to a licensed treatment, disposal or recycling facility that has the appropriate systems to manage the contaminated material without significant impact on the environment. 4.6-2 Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met. 4.6-3 During construction activities within existing road rights-of-way or other easements where continuous access is required, a road operation management plan shall be prepared and implemented. At a minimum this plan shall define how to minimize the amount of time spent on construction activities; how to	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Hazards and Risk of Upset (continued)		4.6-3 (cont.) minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes; adequate signage and other controls, including flagpersons, to ensure that traffic can flow adequately during construction; the identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; and at the end of each construction day roadways shall be prepared for continued utilization without any significant roadway hazards remaining. 4.6-4 To the extent feasible, installation of pipelines or other construction activities in support of the Third Main Line and Grade Separations shall not be located on major evacuation or emergency response routes within any affected communities. Where construction on such routes is necessary, local emergency response providers shall be contacted and emergency access and evacuation requirements shall be maintained at a level sufficient to meet their needs. 4.6-5 Construction of the Third Main Track will expose the soil beneath the track and the grade separation areas. The construction contractor shall have a monitoring program installed which will identify any discolored soil or odors associated with petroleum contamination and initiate a measurement and, if required, a remediation program to prevent exposure of persons or the environment to adverse concentrations of contamination shall be implemented.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Hydrology and Water Quality	a. Violate any water quality standards or waste discharge requirements. b. Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted). c. Alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite. d. Alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of amount of surface runoff in a manner which would result in flooding onsite or offsite. e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	<u>Construction</u> 4.7-1 For each construction project, surface runoff shall be collected and retained (for use onsite) or detained, and treated when released by passing the runoff through a "first-flush' treatment system, which may include onsite riparian area, detention basin with filtration system at the outlet, or other system that removes the majority of urban storm runoff pollutants, such as petroleum products and sediment. The purpose of this measure is to remove the onsite contribution to cumulative urban storm runoff and ensure the discharge is treated to reduce contributions of urban pollutants to downstream flows. The content of the discharge from each first flush system shall meet the current discharge standards established by the Regional Board for each area. 4.7-2 A Storm Water Pollution Prevention Plan (SWPPP) has been prepared and shall be implemented for each component of the proposed project. The best management practices (BMPs) identified in the Plan, or measures determined equivalent by a qualified engineer, will be used for each site to minimize the potential for accidental releases of any chemicals or materials on the site that could degrade water quality including solid waste and require that any spill be cleaned-up, contaminated material property disposed of and the site returned to pre-discharge condition, or in full compliance with regulatory limits for the discharged material. The portion of the SWPPP that addresses erosion and related sediment discharge shall specify the percentage of pollutant removal that must be achieved to meet the current discharge standards	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Hydrology and Water Quality (continued)	f. Degrade water quality. g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard or Flood Insurance Rate Map or other flood hazard delineation map. h. Place within a 100-year flood hazard area structures which would impede or redirect flood flow. i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. j. Inundation by seiche, tsunami or mudflow.	4.7-2 (cont.) established by the Regional Board for each area. At a minimum BMPs shall achieve 60percent removal of sediment and other pollutants from disturbed sites. <u>Operation</u> 4.7-3 For long-term mitigation of site disturbances, all areas not covered by structures shall be covered with hardscape (concrete, asphalt, gravel, etc.), native vegetation and/or man-made landscape areas (for example, grass). Revegetated or landscaped areas shall provide sufficient cover to ensure that, after a two year period, erosion will not occur from concentrated flows (rills, gully, etc.) and sediment transport will be minimal as part of sheet flows. 4.7-4 If facilities are constructed in a flood zone, the facility will be brought to a level above flood hazards, or hardened against flood related impacts. Additionally, if facilities must be located within flood plains or hazard areas, a flood management program to minimize impacts to people and surrounding property shall be created and implemented for each facility that may occur within these hazard areas. 4.7-5 Where reclaimed water is reasonably available, its shall be used in place of potable water for construction activities and for permanent irrigation systems associated with the grade separation landscaped areas.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Traffic and Circulation	a. Increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections). b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. c. Result in a change in rail, waterborne or air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. d. Increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). e. Result in inadequate emergency access. f. Result in inadequate parking capacity. g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).	<u>Construction</u> 4.8-1 Prior to initiating third main track construction or any grade separation construction, a construction traffic management plan shall be submitted and approved by the affected cities. For the third main track, such plans shall be submitted and approved by each jurisdiction where third main track construction will take place, prior to initiating construction. For the grade separations plans shall be submitted as follows: the City of Pico Rivera (Passons) and the City of Santa Fe Springs/Los Angeles County (Pioneer); City of Santa Fe Springs and City of La Mirada (Valley View); and City of Santa Fe Springs for all other grade separation project components. The standard of measurement for the submitted plans shall be the provision of safe, albeit inconvenient, traffic flow during construction and the provision of adequate access through construction areas to meet safety and emergency vehicle access and transit through construction areas at all times when construction is underway for any components of the proposed project. XV.f.1 Prior to initiating construction of the third track or grade separations, BNSF shall submit a parking plan to the local affected jurisdiction for its construction staging and equipment storage sites that demonstrate adequate parking capacity for the total number of employees and delivery vehicles that will be on the site at any given time. (This measure was identified in the Initial Study, refer to Chapter 8.2 of this EIR.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Noise	a. Increase noise exposure for sensitive receptors from new noise sources. b. Expose people to severe noise levels.	4.9-1 Construction shall be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday, and between 9 a.m. to 6 p.m. on Saturday, and shall be prohibited on Sundays and federal holidays, except in emergencies. 4.9-2 Utilize construction methods or equipment that will provide the lowest level of noise impact, i.e., use newer equipment that will generate lower noise levels. 4.9-3 All construction vehicles and fixed or mobile equipment shall be equipped with properly operating and maintained mufflers or sound attenuation devices, as specified in regulations at the time of construction. 4.9-4 Schedule the construction such that the absolute minimum number of equipment would be operating at the same time. 4.9-5 Maintain good relations with the school and community such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public objections of unavoidable noise. Communities should be notified in advance of the construction and the expected temporary and intermittent noise increases during the construction period. 4.9-6 All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period shall be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Noise (continued)		4.9-7 If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds. This may include erection of temporary berms or plywood barriers to create a break in the line-of-sight, or erection of a heavy fabric tent around the noise source. 4.9-8 BNSF or the construction contractor shall establish a noise/vibration complaint program which shall, at a minimum, consist of a centralized noise complaint number posted at each construction site and coordinated with each local jurisdiction. Noise/vibration complaints received at this number shall receive a formal response, either by making modifications to project operations or activities or by installing measures to reduce noise/vibration at the receptor location. 4.9-9 For construction vibration impacts related to heavy construction equipment, jackhammers and vibratory compaction equipment, the contractor will be required to modify the construction procedure or arrange to complete the construction task in a manner that will reduce vibrations to a level below that which causes significant impact for the affected residence or facility. Such construction operation modifications may include: using equipment that generates less vibration; scheduling vibrating equipment use during periods when vibration impacts to the user can be minimized, such as working at night;	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Noise (continued)		4.9-9 (cont.) altering the use of existing equipment (slowing equipment speeds, etc.) to reduce vibrations; and altering any environmental conditions that may be contributing to vibration, such as potholes or bumps that may cause on-road trucks to bounce and generate vibration. 4.9-10 For vibrations associated with pile driving, a vibration complaint shall be responded to by monitoring vibration at the affected location; altering schedules to minimize vibration conflicts with the use; modify pile driving procedures to minimize vibration to acceptable levels; using an alternative construction method to minimize vibration; or under worst case circumstances, funding relocation of the affected use during any pile driving activity.	
Aesthetics (Impacts found to be nonsignificant in the Initial Study, refer Chapter 8.1 of this EIR.)	a. Have a substantial adverse effect on a scenic vista? b. Substantially damage scenic resources, including, but not limited to, trees, rock out-croppings, and historic buildings within a state scenic highway? c. Substantially degrade the existing visual character or quality of the site and its surroundings? d. Create a new source of sub-stantial light or glare which would adversely affect day or nighttime views in the area?	None	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Agricultural Resources (Impacts found to be nonsignificant in the Initial Study, refer to Chapter 8.1 of this EIR.)	a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	None	Less than significant
Land Use and Planning (Impacts found to be nonsignificant in the Initial Study, refer Chapter 8.1 of this EIR.)	a. Physically divide an established community. b. Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including by not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. c. Conflict with any applicable habitat conservation plan or natural community conservation plan.	No mitigations	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Mineral Resources (Impacts found to be nonsignificant in the Initial Study, refer Chapter 8.1 of this EIR.)	a. Results in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	None	Less than significant
Population and Housing (Impacts found to be non-significant in the Initial Study. Mitigation to be implemented for loss of existing housing. Refer to Chapter 8.1 of this EIR.)	a. Induce substantial population growth in an area, either directly or (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). b. Displace substantial number of existing housing, necessitating the construction of replacement housing elsewhere. c. Displace substantial numbers of people, necessitating the construction of replacement of housing elsewhere.	XII.b.1 Housing relocation assistance shall be provided to those residents that require such service. Successful relocation shall be accomplished when comparable housing within the project area is occupied by the those residents requiring housing relocation assistance.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Public Services (Impacts found to be nonsignificant in the Initial Study. Mitigation to be implemented for potential emergency access and storage area trespass protection. Refer to Chapter 8.1 of this EIR.)	a. Require the provision of new facilities or substantially alter existing governmental facilities, the construction of which could cause significant environmental effects, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: • Fire protection • Police Protection • Schools • Parks • Other public facilities.	<u>Fire</u> XIII.a.1 Prior to initiating construction of the third main line track or each of the grade separations, BNSF shall submit and have approved a fire or medical emergency response access plan that meets each affected jurisdiction's response time frame . Success for this measure will be determined by the local fire agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives. <u>Police</u> XIII.b.1 Prior to initiating construction of the third main line track or each of the grade separations, BNSF shall submit and have approved a police emergency response access plan that meets each affected jurisdiction's response time frame. Success	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Public Services (continued)		<u>Police</u> XIII.b.1 (cont.) for this measure will be determined by the local law enforcement agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives. XIII.b.2 Prior to initiating construction of the third main line track or each of the grade separations, BNSF shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards . Success for this measure will be determined by the local law enforcement agency approving and verifying that the access control plan and measures will minimize trespass and theft activities in accordance with local requirements. <u>Schools</u> XIII.c.1 Prior to initiating construction of the Passons Boulevard grade separations, BNSF shall submit a mitigation plan to the local school district providing new acreage to offset the loss of acreage from project implementation at Maizeland School. If such acreage compensation is not feasible, BNSF shall provide improvements to school facilities deemed acceptable by the local school district to offset the loss of play area and parking. Such mitigation may consist of new school equipment or other facilities deemed to offset the Passons Boulevard impacts on the school site.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Recreation (Impacts found to be nonsignificant in the Initial Study, refer Chapter 8.1 of this EIR.)	a. Would the project increase the use of existing neighorhood and regional parks of other recrea-tional facilities such that sub-stantial physical deterioration of the facility would occur or be accelerated? b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	None	Less than significant
Utilities (Impacts found to be nonsignificant in the Initial Study. Mitigation to be implemented for potential impacts related to relocating utilities within the track alignment and grade separation footprints. Refer to Chapter 8.1 of this EIR.)	a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. b. Require or result in the con-struction of new water or waste-water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. c. Require or result in the con-struction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	XVI.b.1 Prior to initiating relocation of any utility system located within the railroad right-of-way, BNSF will notify the pertinent utility of the BNSF construction plan. The BNSF will work with the utility under the terms of the utilities agreement to occupy the BNSF's right-of-way to limit short-term system relocation effects and minimize outages to the degree feasible. BNSF shall submit sufficient engineering data to verify that remaining utility systems will function as effectively after relocation as it does before relocation.	Less than significant

Table 1.2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Category/Issue	Impact Description	Mitigation Measures	Impact After Mitigation
Utilities (continued)	d. Sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed. e. Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. f. Serve by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. g. Comply with federal, state, and local statutes and regulations related to solid waste. h. Significant demand for electricity and natural gas services.		Less than significant

CHAPTER 2
INTRODUCTION

2.1 BACKGROUND

As part of its program to improve intercity passenger rail service, the California Department of Transportation, Division of Rail (Department) in cooperation with Metrolink and The Burlington Northern and Santa Fe Railway Company (BNSF), is proposing to upgrade the capacity of the existing BNSF/Amtrak/Metrolink East-West Main Line Railroad Track.

This BNSF main line rail corridor currently has two main tracks that are utilized for freight services to and from eastern destinations and for passenger service to and from the Los Angeles, San Bernardino and Orange County/San Diego metropolitan areas, with Fullerton as the central hub. It is the Department's objective to increase the efficiency of this corridor to accommodate the existing number of trains utilizing this corridor and future increases in the speed and volume of planned intercity and commuter rail passenger service.

The proposed Third Main Track and Grade Separation Project extends from the City of Commerce (Hobart at Mile Post (MP) 148.6) for 23.66 kilometers (km) (14.7 mi) to the City of Fullerton (Basta at MP 163.3). Hobart and Basta are the names of specific points along the BNSF's East-West Main Line Railroad Track that will be referenced for the mileposts identified above. The primary improvements proposed are the immediate installation of a third main track over this 23.66 km (14.7 mi) segment of main line track and the installation of up to seven grade separation projects, which will be implemented over the next several years as funding permits. The proposed project is being implemented to achieve two objectives: (1) the grade separations will substantially enhance safety and traffic flow on surface streets along this segment of the rail corridor by increasing the separation between trains and motor vehicle traffic; and (2) the third main track will enhance efficiency of train movement along this corridor and will ensure passenger train service can operate on a reliable schedule, which is the key aspect of rail passenger service that attracts additional passenger rail customers.

The track improvements between Hobart and Basta are not being implemented to allow for expanded railway traffic, although a future increase in the number of trains is projected and may occur as a result of commercial demand. The construction of the Third Main Track will enhance the flow of train traffic along this rail corridor. At its current operating level (approximately 100 trains per day, mixed freight and passenger), schedule delays occur along this segment of the corridor, which results in trains being pulled over to sidings to allow other trains to pass. With implementation of the proposed track improvements and the grade separations, such train movement conflicts will be minimized in the future under both current and future train traffic volumes.

2.2 PURPOSE AND USE OF AN ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) was adopted to implement the goal of maintaining the quality of the environment for the people of the State. Compliance with CEQA, and its implementing guidelines, requires that an agency making a decision on a project must consider its potential environmental effects/impacts before granting an approval. Further, the State adopted a policy “that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects.” Thus, an agency must examine feasible alternatives and identify feasible mitigation measures as part of the environmental review process when a potential for significant adverse environmental impact exists. CEQA also states “that in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof.” (§21002, Public Resources Code)

Pursuant to State CEQA Guidelines Section 15051(b)(1), the California Department of Transportation, Division of Rail (Department), the agency with the greatest responsibility for approving and supervising the project as a whole, will serve as CEQA Lead Agency. CEQA requires that the Lead Agency consider the environmental information in the project record, including an environmental impact report (EIR), prior to making a decision on the proposed project. The actions that will be considered by the Department are whether to certify this EIR and approve the funding to construct the third main track component of this project.

This EIR will serve as a program EIR (PEIR) for the installation of the third main line track and its related improvements, including the construction of the proposed BNSF third track across the San Gabriel River/Slauson Overpass. The project description identifies the anticipated construction activities associated with the installation of a third mainline track and identifies operational characteristics of the rail corridor in the future. Additionally, the PEIR will address the seven proposed grade separations and their related improvements within the project corridor. The seven grade separations are linked to the installation of the third main track because they will provide separation of rail and surface traffic that will allow the rail corridor to function more efficiently and safely. A PEIR has been selected as the appropriate document for compliance with the CEQA based on the definition of a program document contained in Section 15168 of the State CEQA Guidelines which states:

“A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) Geographically, (2) As a logical part in the chain of contemplated actions, (3) In conjunction with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.”

The Department is working from a core concept that the installation and construction activities within the rail corridor are so interrelated that they merit consideration under a PEIR. The activities are being considered within one environmental document because the Department has concluded that they are all being proposed for implementation within the same geographic area, BNSF’s east-west main line rail corridor; they are interrelated as a logical part in the chain of contemplated actions by the Department and other agencies; and they are essentially part of the overall program (one large project) being implemented by BNSF and the Department to fulfill a responsibility to improve intercity passenger rail service and safety by improving efficiency of rail traffic along the East-West Main Line Railroad Track.

When applied to a program proposal, such as these proposed rail transportation system improvements, the reviewing agency is required to identify the potential environmental impacts of the project and determine whether there are feasible mitigation measures or alternatives that can be implemented to substantially lessen or avoid significant environmental effects of the project. The first step in this process, completion of an Initial Study to determine whether an EIR is required, has been completed by the Department for the proposed project. Based on information developed in the Initial Study, the Department determined that implementation of the proposed project has the potential to result in several significant adverse impacts to the environment for the following issues evaluated and that an EIR with focus on the following should be prepared.

- Issues determined to <u>have</u> a potential for significant adverse impact and that are evaluated in this EIR:

  - Air Quality
  - Biological Resources
  - Cultural Resources
  - Geology and Soils
  - Hazards and Hazardous Materials
  - Hydrology and Water Quality
  - Noise
  - Transportation / Traffic
  - Utilities and Service Systems (contaminated soil).

- Issues determined in the Initial Study that do <u>not</u> have a potential for significant adverse impact and are <u>not</u> be evaluated as part of the focus in this EIR:

  - Aesthetics
  - Agricultural Resources
  - Land Use Planning
  - Mineral Resources
  - Population and Housing
  - Public Services
  - Recreation
  - Utilities and Service Systems (except soil contamination).

As noted above, this Third Main Track and Grade Separation Project is sponsored by the Department, in cooperation with Metrolink, BNSF and the Cities of Pico Rivera, Santa Fe Springs and La Mirada. This PEIR has been prepared by Tom Dodson & Associates (TDA) under contract with BNSF under authorization of the Department in accordance with Section 21151 of CEQA. TDA was retained to assist the Department and responsible agencies in compiling the necessary information required by Caltrans and responsible agencies to conduct the independent review acquired by CEQA prior to releasing the PEIR as a draft for public review. The Department has conducted an independent review of the content of this Draft PEIR and concurs with the evaluations, conclusions, and findings contained herein. In addition to the lead agency, the Department, several agencies are expected to function as responsible agencies for the project. CEQA Guidelines Section 15381 defines a "responsible agency" as a public agency other than the lead agency which has discretionary approval for the project, or components of the project.

The project will be required to obtain several permits including: a Section 404 permit from the U.S. Army Corps of Engineers (COE); a California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification; a California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement); a construction stormwater discharge permit, National Pollutant Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Stormwater Pollution Prevention Plan (SWPPP); various business permits; various encroachment or construction permits from the County; the Department and affected cities; and where required, business licenses. In addition, as the grade separation projects are implemented, it is anticipated that the Cities of Pico Rivera, Santa Fe Springs and La Mirada, as well as regional agencies, will use this PEIR in support of components of this overall project.

This document is prepared with a level of specificity that will allow these responsible agencies to utilize this PEIR as their CEQA compliance document for the discretionary decisions required to support implementation of this project.

2.2.1 Notice of Preparation and Responses

Relying on data contained in the Initial Study, the Department prepared and distributed a Notice of Preparation (NOP) for the program EIR with the scope outlined above. The NOP was distributed to the State Clearinghouse (SCH) and interested and responsible agencies, organizations, and individuals. The NOP review began on April 19, 2002 and ended on May 20, 2002. This project was assigned SCH #2002041111.

The Department received 14 comment letters on the NOP (including the State Clearinghouse distribution letter), some of which were submitted after the 30-day comment period. Of these 14 comment letters, some were from agencies and several were from organizations and individuals. Copies of the NOP and the comment letters are provided in Chapter 8 (Appendices), Section 8.1 of this PEIR. Because the Department had already determined that a PEIR should be prepared, no new issues not already included in the scope of the PEIR were identified.

In addition to the NOP distribution, the Department conducted three scoping meetings within the area of potential effect from project implementation. The scoping meetings were held on April 24, 2002 in the City of Santa Fe Springs; on April 25, 2002 in the City of La Mirada; and on April 29, 2002 in the City of Pico Rivera. A summary of comments received from the public attending these scoping meetings is also included in Appendix 8.1 of this document with a list of persons who signed the “Sign In Sheet.” No new issues were raised in these scoping meeting comments which require a modification of the scope of issues being considered in this PEIR.

While conducting research for this project, it was discovered that the proposed third main track has a potential to encroach into the glide path at Fullerton Airport, which could conflict with Federal Aviation Administration regulations. This issue was added to the evaluation of hazards and hazardous materials and is addressed in this PEIR.

2.3 SCOPE AND CONTENT OF THIS EIR

In accordance with Sections 15063 and 15082 of the State CEQA Guidelines, the Department authorized preparation of an Initial Study to identify the environmental resources and manmade systems that could experience significant environmental impact if the proposed project is implemented. After incorporating feasible mitigation measures, the Department's Initial Study concluded that the proposed project could result in one or more significant adverse impacts to the environment and, therefore, a PEIR should be prepared.

Comments regarding the scope of the PEIR received during the scoping meeting and NOP process are summarized in Appendix 8.1 of this PEIR. In addition to evaluating the environmental issues, this PEIR contains all of the sections mandated by the CEQA and State CEQA Guidelines. Table 2.3-1 provides a listing of the contents required in an EIR, along with a reference to the chapter and page number where these issues can be reviewed in the document. This PEIR is contained in two volumes. Volume 1 contains the CEQA mandated sections and appendices that support the text. Volume 2 contains the technical appendices prepared to support the evaluation in Volume 1.

Table 2.3-1
REQUIRED EIR CONTENTS

Required Section (CEQA)	Section in EIR	Page Number
Table of Contents (Section 15122)	same	ii
Summary (Section 15123)	Chapter 1	1-1
Introduction	Chapter 2	2-1
Project Description (Section 15124)	Chapter 3	3-1
Significant Environmental Effects of Proposed Project (Section 15126a); Environmental Impacts	Chapter 4	4-1
Unavoidable Significant Environmental Effects (Section 15126b)	Chapter 4	4-1
Mitigation Measures (Section 15126e)	Chapter 4	4-1
Cumulative Impacts (Section 15130)	Chapter 4	4-1
Alternatives to the Proposed Project (Section 15126f)	Chapter 5	5-1
Growth-Inducing Impacts (Section 15126d)	Chapter 6	6-1
Irreversible Environmental Changes (Section 15126c)	Chapter 6	6-1
Effects Found Not to be Significant (Section 15128)	Chapter 4	4-1
Organizations and Persons Consulted (Section 15129)	Chapter 7	7-1
Appendices, including Initial Study, Notice of Preparation, and Comment Letters	Chapter 8	8-1
Technical Appendices and Other Materials	Volume 2	--

2.4 EIR FORMAT AND ORGANIZATION

As Table 2.3-1 illustrates, this PEIR contains eight chapters which, when considered as a whole, provide the reviewer with an evaluation of the potential significant adverse impacts from implementing the proposed project described in Chapter 3. Environmental impact reports inherently contain some repetition or redundancy because potential impacts are discussed in several sections. The following paragraphs provide a summary of the content of each chapter of this PEIR.

Chapter 1 contains the executive summary for the PEIR. This includes an overview of the proposed project and a tabular summary of the potential adverse impacts and mitigation measures.

Chapter 2 provides the reviewer with an introduction to the document. This chapter of the document describes the background of the proposed project, its purpose, and its organization. The CEQA process to date is summarized and the scope of the PEIR is identified. Technical evaluations prepared for the PEIR are identified and the format and availability of the PEIR are described.

Chapter 3 contains the project description used to forecast environmental impacts. This chapter describes the activities and facilities that determine how the existing physical environment will be altered by the proposed project. This chapter sets the stage for carrying out the environmental impact forecasts contained in the next several chapters.

Chapter 4 presents the environmental impact forecasts for the issues considered in this PEIR. For each environmental issue identified in Chapter 4, the following impact evaluation is provided for the reviewer: the project's existing environmental setting; the potential impacts forecast to occur if the project is implemented; proposed mitigation measures; cumulative impacts; and unavoidable adverse impacts.

Chapter 5 contains the evaluation of alternatives to the proposed project. Included in this chapter is an analysis of the no project alternative and other project alternatives.

Chapter 6 presents the topical issues that are required in an EIR. These include: any significant irreversible environmental changes and growth inducing effects of the project. As of January 1, 1995, the assessment of short-term benefits relative to long-term impacts is no longer required because it is considered redundant to other sections in a EIR. This change was adopted as part of SB 749 (Thompson) which became law in January 1995.

Chapter 7 describes the resources used in preparing the PEIR. This includes persons and organizations contacted; list of preparers; and bibliography.

Chapter 8 contains those materials referenced as appendices to the PEIR, such as the Notice of Preparation, comment letters, scoping meeting materials, and other materials referred to in the PEIR as being necessary for project review.

Volume 2 contains the technical appendices referenced in Volume 1 of the PEIR.

2.5 AVAILABILITY OF THE BNSF THIRD TRACK AND GRADE SEPARATION PROJECT ENVIRONMENTAL IMPACT REPORT

A Notice of Availability for the Draft PEIR has been provided to all persons on the NOP mailing list. In addition, a copy of the Draft PEIR for this project has been distributed directly to all public agencies and other requesting agencies or individuals. All reviewers will be provided 45 days to review the Draft PEIR and submit comments to the Department for consideration and response. The Draft PEIR is also available for public review at the following locations during the 45-day review period:

- California Department of Transportation District 7, Division of Environmental Planning
- City of Pico Rivera, Planning Division
- City of Santa Fe Springs, Planning Division
- City of La Mirada, Public Works
- Buena Park Library
- Fullerton Public Library
- Norwalk Public Library
- Montebello Regional Library
- City of Commerce Central Library
- Pico Rivera, County Library
- Santa Fe Springs City Library
- La Mirada Library

2.6 DEPARTMENT REVIEW PROCESS

After receiving comments on the Draft PEIR, the Division of Rail will compile a Final PEIR for certification by the Department prior to making a decision on the project. The Department will review the Final PEIR for adequacy and when determined adequate, the PEIR can be used as the informational document for compliance with the CEQA for this project. Information concerning the PEIR public review schedule and meetings for this project can be obtained by contacting:

Ms. Karen Cadavona
California Department of Transportation, District 7
Division of Environmental Planning
120 South Spring Street
Los Angeles, California 90012

This page left intentionally blank for pagination purposes.

CHAPTER 3
PROJECT DESCRIPTION

Note: All Chapter 3 figures are located at the end of this chapter, not immediately following their reference in text.

This chapter contains a detailed description of the proposed project, with focus on those characteristics and activities that can cause physical changes in the environment. The description contained herein for the Third Main Track and Grade Separation Project provides the reviewer with a written summary of the project as it would be developed by the Department following certification of this Program Environmental Impact Report (PEIR). As discussed in Chapter 2, the project description focuses on the physical facilities and associated activities that would be implemented if the proposed project is approved.

The proposed third main track and the grade separations are public works projects that will be funded and implemented by public agencies, including California Department of Transportation, Division of Rail and other local and regional agencies. No entitlements are required to implement these project, but some regulatory permits may be required. Based on the nature of the project and the issues identified in the Initial Study process, the Department has determined that construction and operation of the facilities proposed could result in significant adverse environmental impacts. Scoping Meetings and a Notice of Preparation, including a detailed Initial Study, were distributed for public review in April 2002. Based on these documents and meetings, the issue of focus for this PEIR was determined. Thus, this PEIR has been prepared to address the physical changes to the environmental that may occur if the third main track project component is approved by the Department and if the grade separations are approved by other future agency decisions.

3.1 PROJECT OBJECTIVES

It is the Department's objective to increase the efficiency of the BNSF main east-west corridor to accommodate the existing number of trains utilizing this corridor and future increases in the speed and volume of planned intercity and commuter rail passenger service. Specific objectives include:

A. Installation of the grade separations to substantially enhance safety and traffic flow on surface streets along this segment of the rail corridor by increasing the separation between trains and motor vehicle traffic.

B. Installation of the third main track to enhance efficiency of train movement along this corridor and will ensure passenger train service can operate on a reliable schedule, which is the key aspect of rail passenger service that attracts additional passenger rail customers.

3.2 PROJECT CHARACTERISTICS

3.2.1 Project Location

The rail corridor extends from the City of Commerce (Hobart-Milepost (MP) 148.6) about 23.66 kilometers (km) (14.7 miles) south to the City of Fullerton (Basta Station-MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs.

Figure 3-1 illustrates the alignment of the new third main track from its beginning in the City of Commerce (Hobart) to its terminus in the City of Fullerton (Basta). It also shows the location of the seven grade separation projects: Passons Boulevard (Pico Rivera); Pioneer Boulevard (Santa Fe Springs and County of Los Angeles); Norwalk Boulevard (Santa Fe Springs); Los Nietos Road (Santa Fe Springs); Lakeland Road (Santa Fe Springs); Rosecrans Avenue/Marquardt Avenue (Santa Fe Springs); and Valley View Avenue (Santa Fe Springs and La Mirada).

Figures 3-2a through 3-2g illustrate the specific project location on the USGS 7.5 Minute Series topographic maps. The existing BNSF tracks and right-of-way (alignment) for the third main track from Hobart to Basta are illustrated on these topographic maps. The USGS topographic maps that encompass the project area include Los Angeles, South Gate, Whittier, La Habra and Anaheim 7.5 Minute Series topographic quadrangle maps. The project is located in Sections of Township 2 South (T2S) and Range 12 West (R12W), San Bernardino Base and Meridian (SBBM); Sections of T2S and R11W, SBBM; Sections of T3S and R11W, SBBM; and Sections 26 of T3S and R10W SBBM. The project area extends approximately 23.66 km (14.7 mi) in length and is best illustrated on the Conceptual Track Alignment Schematic (Track Chart) provided as Appendix 8.2 to this document. The Track Charts are self explanatory and provide a plan view of the new third mainline track that will be installed.

3.2.2 Project Description

The discussion that follows is divided into two sub-sections. The first sub-section defines those facilities and activities required to construct a third mainline track. The second sub-section includes a discussion of the grade separations improvements within the proposed project corridor and the related improvements necessary for the construction of the grade separations.

It is not anticipated that the installation of the third mainline track will cause any change in the number of train operations within the corridor. Passenger and freight train operations are solely dependent upon commercial demand. Within the rail corridor, the existing passenger train service flow (efficiency) is proposed to be increased by implementing a variety of rail corridor improvements. Efficiency is not directly related to speed of trains, but is more dependent upon the ability of trains to flow without stopping or slowing on the tracks to allow other trains to pass. The range of potential improvements include:

1. Installation of a new third mainline track in selected areas (triple tracking with a 4.57-meter (15 ft) center for most of the alignment);
2. Installation of new sidings (storage track);
3. Extension or upgrade of existing sidings;
4. Upgrade of track structure and special track work (two new diamond crossings in the City of Santa Fe Springs);
5. Widening of the San Gabriel River Bridge and modification of the Slauson Avenue Overpass (note that the County of Los Angeles will also be constructing seismic retrofit improvements for this bridge during the same general time frame); and
6. Upgrading signal systems.

For the Hobart to Basta section of the BNSF's rail corridor, the primary improvement proposed to enhance efficiency of existing train movement along the corridor is the installation of a third mainline track as shown in Appendix 8.2. However, the project will also include some upgrades at the Hobart siding; modification to and installation of new bridges; special track work improvements (diamond crossings) in Santa Fe Springs where the BNSF tracks cross the Union Pacific Railroad (UPRR) track at DT Junction and also west of Norwalk Boulevard; and signal improvements along the entire 23.66 km (14.7 mi) project alignment. Table 3-1 summarizes the proposed bridgework necessary for the completion of the third mainline track project. Note that only Bridges 150.4, 151.9, 157.5 and 158.9 encompass new construction affect the construction schedule.

As detailed engineering was progressing for the proposed third main track, it was discovered that trains on the proposed third main track would intrude into the airspace (glide path) at the end of the main runway at Fullerton Airport. After extensive consultation with the Airport staff and the State Department of Airports, the Department determined to relocate the track, which was proposed on the south side of the existing double tracked mainline, to the north side of the tracks. This is shown on the track alignment schematic provided as Appendix 8.2.

The relocation of the proposed third main track to the north side of the existing tracks has additional consequences that change the required project improvements, from the Dale Street Bridge (Buena Park) the eastern end of the project at milepost 163.35 (see the track alignment schematic in Appendix 8.2). For example, it will be necessary to install a new bridge (north side of the existing bridge) at Dale Street (MP 161.3). From Dale Street east the third main track will be located on the north side of the track. In addition an existing single storage track will be removed and replaced with a double storage track as shown in the track alignment schematic in Appendix 8.2. The new storage track will require the acquisition of additional right-of-way to accommodate the third main track and two storage tracks. The area to be acquired is vacant land (between the existing track sand the existing sound wall that mitigates noise for residences on the north side of the wall) except for some drainage infrastructure that will either be retained or replaced in kind to carry storm runoff to the nearby Orange County Flood Control District Channel (MP 160.86). Figure 3-2h shows the area to be acquired (Lot E) which encompasses an estimated 1.17 hectares (2.9 acres) and is about 7.62 to 9.14 meters (25 to 30 ft) in width and about 475.49 meters (1,560 ft) in length.

Because of the significant constraints for train movement which presently exist on the double track segment between Hobart and Basta, the Department has decided to proceed with the improvements required for this section of the railroad corridor at the earliest possible date. The third main track is proposed to be installed immediately upon authorization of funding by the Division of Rail and will be installed to support rail operations, regardless of when the grade separation projects are funded and implemented.

Just prior to finalizing the Draft PEIR for public review, the Governor published the proposed budget for the Fiscal Year 2003-2004. Due to substantial revenue shortfalls, the funding for certain components of the proposed project will be delayed, and as a result construction of specific project components may be extended over several years. Construction will proceed as follows:

Table 3-1
SUMMARY OF BRIDGEWORK

Mile Post	Stream/Street Name	Description of Work
149.5	Greenwood Avenue	Upgrade existing track to third mainline track.
151.1	Rio Hondo River	No work required.
150.4	Paramount Boulevard	Construct new 4 span Steel Girder Bridge with drilled shaft or piles on footing substructure adjacent to the existing bridge.
150.9	Rosemead Boulevard	Construct new third mainline track on existing bridge.
151.9	San Gabriel River	Construct new 7 span steel girder bridge widening with prestressed concrete piles on a concrete footing. The bridge piers will match the existing 4 foot wide piers as well as the pile cap foundation. The steel girders will match the existing bridge. A temporary construction fill with culverts to provide low flow drainage will be placed in the channel to allow piles to be driven off track. Once the piles are driven the fill will be removed approximately 4 to 6 weeks after start of pile driving. Local dewatering will be required during the construction of the pile cap foundations. Localized well points are anticipated. The San Gabriel River channel flows will not be impacted by this bridge widening except during construction. Note that work within the channel can only be conducted during the County Flood Control District's dry weather construction period, between April 15 and October 15. Also note that the County will review the improvements to the San Gabriel River Bicycle Trail, in particular to verify that the minimum 3.66 meters (12 ft) vertical clearance between the trail and the new bridge structure is maintained.
154.0	Santa Fe Springs Road	Upgrade existing track to third mainline track.
154.4	Telegraph Road	Upgrade existing track to third mainline track.
156.1	Imperial Hwy.	Upgrade existing track to third mainline track.
157.2	Carmenita Road	Upgrade existing track to third mainline track.
157.5	Coyote Creek (LACFCD)	Construct third main track bridge widening to match existing bridge. Bridge will be a 2 span welded plate steel girder bridge that matches the low chord of the existing bridge. The existing concrete channel on the North Fork of the Coyote Creek will be remove in localized areas to build the center pier and the abutments. The bike trail on the west side will remain since the vertical clearance are adequate with the bridge widening. The foundations will consist of a concrete pier and abutments on steel H-piles. The channel flows will not be impacted by this bridge widening. Note that work within the channel can only be conducted during the County Flood Control District's dry weather construction period, between April 15 and October 15.
158.9	La Mirada Creek (LACFCD)	Construct new 5 span precast concrete trestle with steel H-piles. A temporary construction fill with culverts to provide low flow drainage will be placed in the channel to allow piles to be driven off track. Once the piles are driven the fill will be removed approximately 4 to 6 weeks after start of pile driving.
160.6	Beach Boulevard	Construct new third mainline track on existing bridge.
160.9	OCFCD	Construct new third mainline track on existing bridge.
161.3	Dale Street	Construct new 4 span Steel Girder Bridge with drilled shaft or piles on footing substructure adjacent to existing bridge.
162.4	Gilbert Avenue	Construct new third mainline track on existing bridge.
163.1	Commonwealth	Upgrade existing track to third mainline track.

The original schedule envisioned initiating construction on the Third Main Track and the Valley View and Rosecrans grade separations in the first quarter of 2003. Funding constraints will delay initial construction on the Third Main Track until the third quarter of 2003, and construction of the grade separations will be delayed indefinitely. Each project element, which for purposes of this document shall be defined as the Third Main Track, and each individual grade separation, will be implemented as funding becomes available in the future. Due to this uncertain time schedule, and in conformance with the CEQA process for program environmental documents, each project element will be implemented as funding becomes available in the future. Due to this uncertain time schedule, and in conformance with the CEQA process for program environmental documents, each project element will be implemented based on subsequent review by appropriate governing agency to determine whether the project element is within the scope of the project reviewed in this document, pursuant to Sections 15162 and 15168 of the Public Resources Code. The Department or individual cities an conduct such reviews and make the appropriate environmental determination in the future, at the time each project element is implemented. However, it is intended that the level of review contained in this document is adequate to provide a basis for a future determination that each project element is within the scope of this document.

3.2.2.1 Construction Activities for Third Mainline Track

If approval is granted and funding allocated by Division of Rail, the proposed project will be completed by implementing a series of construction activities, requiring approximately 18 to 24 months to complete. The existing BNSF right-of-way varies between approximately 30.48 meters (~100 ft) and 45.72 meters (~150 ft) in the Hobart to Basta segment. Along much of the alignment, best shown on the track alignment schematic in Appendix 8.2, the right-of-way width is sufficient for the track improvements to be completed with the proposed 4.57 meter (15 ft) separation between the existing double track and proposed third main track. This is 4.57 meter (15 ft) on center, not between the edges of the track. With the exception of the new right-of-way to be acquired east of Dale Street, BNSF indicates that no new right-of-way must be acquired to permit installation of the new third mainline track along this 23.66 km (14.7 mi) segment of the BNSF corridor. However, at select industry track locations, additional right-of-way may be needed for lead tracks to serve BNSF industrial customers.

The installation of the new third track and support facilities will involve a series of construction activities that will culminate in BNSF track-laying teams installing welded rail on the new fill that will be placed between Hobart and Basta. The proposed welded rail is the heaviest rail currently being used by BNSF and it provides the best ride and safety for high speed trains, such as the existing passenger trains.

Construction Process

The first step in the construction process will be to remove and compact existing dirt and install fill to elevate the new track surface an average of about 1.52 meter (5 ft) above existing ground level to match the existing track elevation. This is accomplished in the following manner:

1. A grading contractor will be engaged to first create a compacted base for installation of the subballast. Approximately 66,970 cubic meters (m^3) (87,600 yd^3) of this material will be excavated within the alignment over the entire length of the corridor. About 17,051 m^3 (22,300 yd^3) will be utilized to make the embankment. The remaining 49,928 m^3 (65,300 yd^3) of

material to be exported from the site. This material will be removed primarily from Segments I and III of the project and made available to commercial contractors as fill material. Assuming 13 m^3 (17 yd^3) per truck, a total of 3,841 truck trips will be required to remove the excavated material (49,928/13 = 3,841). The excavation activities are proposed to occur over 75 working days, which is equal to about 51 truck trips per day (3,841/75 = 51).

After the subblast fill is placed, the dirt contractor will place ~304.8 millimeter (mm) (12 inches) of sub-ballast on the subgrade (or about 24,850 m^3 (32,500 yd^3) of sub-ballast). The subballast material will be purchased from commercial sources in the project area and delivered by truck. Assuming 13 m^3 (17 yd^3) per truck delivery, a total of 24,850 (24,850/13 = 1,912) truck trips will be required to import sufficient material to create the new fill and subballast. Assuming 50 days of subballast installation, about 38 truck trips per day (1,912/50 = 38) will occur to deliver the subballast to the entire project alignment.

An estimated 30 people are forecast to be employed during the grading operations and typical grading equipment (dozers, graders, rollers, etc.) will be used to excavate the existing material and properly compact and install the fill and subballast. Completion of the fill is expected to require approximately 3 to 5 months from the date construction begins. Due to an expected need to dispose of a portion of the excavated material it is assumed that 60 to 80 truck operations will occur per day during this phase of construction.

2. During the same period that the fill is being installed, a separate work crew will be installing bridges, drainage pipes, and other support facilities for the track. Several small culverts and several road crossings will have to be improved to ensure safety for vehicles using these roads. In addition, pipelines (such as water, natural gas, etc.) located under the railroad right-of-way will have to be protected, either by encasement, relocation or other similar measures. An estimated 50 employees may be utilized on this phase of construction. Most of the material for constructing these support facilities will be delivered by truck and are part of the 60 to 80 truck deliveries to the project each day. It is anticipated that these facilities will be completed in five to seven months, with the bridges being installed at Mileposts 150.4, 151.9, 157.5, 158.9 and 161.3, requiring the greatest amount of time to complete. As part of this phase of the project, existing telephone poles within the BNSF alignment between Hobart and Basta will be removed by a contractor and the materials removed will be recycled for other uses. The poles will be replaced by new underground communication lines.

3. The final phase of construction has been allocated twelve to eighteen months for completion. This stage involves laying the new track, upgrading existing track (~ 7,08 km or 4.4 mi) and installing the new track signals to ensure safety along the new track. Track laying will be carried out by BNSF personnel or a contractor with material delivered by rail. On top of the fill, rail, concrete ties and ballast rock will be installed. Figures 3-3a through 3-3f illustrate typical third track sections along the proposed project alignment. The new rail will be delivered in one-quarter mile segments that are delivered by a special train. The new track can be installed at a rate of approximately one-half mile per day once the fill has been placed. Track laying will require approximately 50 people to complete. At the same time, new signals required for operations and safety will be installed and hooked up to BNSF's electrical system which parallels the existing track. Once the new track is installed and tested, the new track will be available to support operations.

There will be no change to the existing drainage patterns. Existing culverts will be extended and ditches reconstructed as required to maintain historic flow paths.

Both rail and vehicular traffic will be maintained though construction. When new grade crossings (concrete planks) are installed, vehicular traffic will be detoured for short periods of time. The majority of the construction activities will take place at night to correspond to open windows in existing track operations.

Bridge Widening

The installation of a third mainline track will also involve widening the San Gabriel River Bridge at the Slauson Avenue Overpass. This site is located between MP 151.8 to MP 152.1 in the cities of Pico Rivera and Santa Fe Springs in Los Angeles County. The bridge is located immediately west of Interstate 605 at Slauson Avenue and the San Gabriel River within a portion of Section 25, T2S,R12W, SBB&M. (Whittier 7.5' USGS Topographic Map), see Figure 3-2c. The San Gabriel River Bridge must be widened because it cannot accommodate a third main track within its existing configuration.

The existing Slauson Avenue bridge over the San Gabriel River has two railroad tracks (eastbound and westbound) that pass under the Slauson Avenue Overpass. This project will add a third track on the north side of the existing tracks. This third track will create more windows for existing train operations, thus minimizing the time that trains idle in the sidings waiting for windows to move across the river. In addition, the existing passenger trains will have less conflicts with the freight trains allowing for better passenger service.

The San Gabriel River rail bridge was originally built in 1942 and included seven, 15.24 meters (50 ft) spans with a total length of 106.68 meters (350 ft). The piers are solid 1.22 meters (4 ft) stems on a pile cap foundation. The westbound bridge was added in 1969 by widening the existing piers and constructing a second bridge with 4.57 meters (15 ft) centers.

The San Gabriel River has a soft bottom with stabilized concrete-lined levees on each side. The levee to levee width is 91.44 meters (300 ft) with a 73.15 meters (240 ft) bottom width. Dams were constructed on the San Gabriel River upstream and downstream of the BNSF Bridge to spread water for aquifer recharge, and incidentally to control erosion. The 100-year design flow for the San Gabriel River in this reach is 416 cubic meter per second (cms) (14,700 cubic feet per second (cfs)). At the BNSF Bridge, the design flow depth is 3.20 meters (10.5 ft) with a velocity of 2.07 meters per second (6.8 ft per second). The freeboard at the BNSF Bridge is 3.44 meter (11.3 ft). The data for the river channel was abstracted from as-built plans, survey data, mapping data and field reviews. The design flow data were obtained by personal communication from George Antablian of Los Angeles County Public Works Hydrology section.

The river levee includes a bike trail on the east side of the river, with a controlled access maintenance road on the west side of the river. At the BNSF Bridge, the bike trails are benched on the river side to allow the trail to go under the bridge. The bike trails vary from west to east with 2.47 to 3.26 meters (8.1 to 10.7 ft) vertical clearance and have 8 to 10 percent approach grades, respectively. The bike trails are 3.05 meter (10 ft) wide and have a 1.22 meter (4 ft) chain link fence on the river side. The proposed project will maintain the existing bike trail features. Note that the

County will review the improvements to the San Gabriel River Bicycle Trail, in particular to verify that the minimum vertical clearance between the trail and the new bridge structure is maintained.

The San Gabriel river bridge has communication lines on the bridge that will remain after the construction of the third track. The railroad crosses under a major transmission line on the east side of the river but clearance will be no problem with this project. No utility conflicts are anticipated with the third track construction across the San Gabriel River.

The river right-of-way is owned by Los Angeles County and the Slauson Avenue Bridge right-of-way is owned by the City of Santa Fe Springs on the east and the City of Pico Rivera on the west. The BNSF Railway Company has a 30.48 meter (100 ft) right-of-way on each side of the river. The UPRR crosses the BNSF mainlines approximately 30.48 meter (100 ft) east of the bridge.

The Slauson Avenue Bridge (auto bridge) extends across the San Gabriel River immediately downstream of the BNSF Bridge. The Slauson Avenue overpass extends over the BNSF and UPRR east of the river. The east end of the Slauson Avenue Bridge will be modified to allow for the third track clearances. The Slauson Avenue Bridge is owned by three entities – Los Angeles County, Pico Rivera and the City of Santa Fe Springs. The bridge is maintained by Los Angeles County. The County has a project planned for the seismic retrofit for the Slauson Avenue Bridge. This work will be completed in 2002. All of the modifications to the Slauson Avenue Bridge are in the City of Santa Fe Springs.

Relating to the San Gabriel River rail bridge widening project, construction in the river will be done during then on-rainy season between April 15 and October 15. The existing 106.68 meter (350 ft), 7 span (15.24 meter or 50 ft) bridge will be widened approximately 5.09 meter (16.7 ft) to the north with similar bridge footings and piers (piling with pile cap and 1.22 meter (4 ft) solid piers). To construct the extended bridge pier footing the contractor is expected to import approximately 122.34 cubic meters (160 yd3) of embankment material to build a work platform in one half of the river. The river flows will be diverted to the open half of the river during the time of construction.

The pier foundations will include driven prestressed concrete piles with a 1.45 meter (4.75 ft) thick reinforced concrete pile cap. To construct the pier caps, dewatering may be required. Dewatering may consist of localized well points around the footings to allow the construction of the pier foundations. This work will require a COE 404 Permit, RWQCB 401 Certification, CDFG 1603 Streambed Alteration Agreement and approval by the Los Angeles County Public Works Department. Close coordination will be required with the Los Angeles County Flood Control staff to minimize dewatering. Upon the completion of construction of the piers, the embankment material placed in the river for the work platform will be removed from the river and the channel restored to its original condition. The estimated permanent concrete placed in the river channel in the form of a concrete pier footing is approximately 107 m^3 (140 yd^3).

The San Gabriel River rail bridge widening is not forecast to cause any substantial change to the hydraulic parameters during the design flow event. Thus, the proposed project is not forecast to have an adverse impact to the river hydraulics. This project will restore the river banks to their existing condition after the new bridge foundations are completed.

Relating to the Slauson Avenue Bridge (auto), Los Angeles County (LAC) will construct a seismic retrofit project on this bridge in 2002. The proposed project will modify Bent 6, Bent 7 and the retaining wall at Abutment 8. The seismic retrofit stability will be maintained with the modifications required with this project to allow for the proposed third track clearances. The traffic on Slauson Avenue will not be interrupted with the proposed modifications. The train traffic will be interrupted during slow traffic periods to allow three to four 3-hour windows of construction. These construction windows are needed while the supports are placed along Bents 6 and 7. All other construction will be outside the 7.62 meter (25 ft) clear area around the track. The retaining wall supporting Abutment 8 will be reconstructed 4.57 meter (15 ft) north to allow for the proposed third track clearances. The retaining wall will be built from the top down using soil nailing. The finish on the retaining wall will be similar to the existing structures. The modification to Piers 6 and 7 will not start until the completion of the LAC Seismic Retrofit Project.

Access to the construction of the east side of the river will be via the proposed third track. The following is a possible construction schedule for the San Gabriel River rail bridge based on a bid date of November 2003 and a Notice to Proceed of January 2004.

> Phase 1 - January to June 2004. Build the third track embankment and sub-ballast to the river bridge. Modify the Slauson Avenue Bridge Abutment 8, Bent 7 and Bent 6 to allow for the third track clearance.
>
> Phase 1A - January to March 2004. Build the river bridge abutments and bike trail modifications.
>
> Phase 2 - April to June 2004. Build the west work platform, drive piles, and extend the existing river piers. Complete the west side of the third track river bridge. Remove the west work platforms.
>
> Phase 3 - July to September 2004. Build the east work platform, drive piles, and extend the existing river piers. Complete the east side of the third track river bridge. Remove the east work platform.
>
> Phase 4 - October to December 2004. Build the third track including ballast, ties, rail. UPRR crossing frog, and crossovers.

The estimated construction period for all five phases of this component of the overall project is one year.

3.2.2.2 Operations

The purpose of the proposed improvements in the Hobart to Basta segment of the rail corridor, which have been outlined above, is to enhance current efficiency of rail traffic to flow through this segment of track. By installing a new track, the existing rail traffic will flow more efficiently and the potential addition of more trains in the future in response to regional commercial demand can occur with fewer train traffic flow constraints. As described above, one of the principal requirements for effective and efficient passenger train operations is the ability to establish and meet schedules for customer. With only two tracks along much of the existing rail corridor, there can be conflicts between freight and passenger trains (estimated to be ~100 trains per day) that can cause delays to both types of trains. By installing a third track along portions of the route, there will be sufficient trackage to permit passenger trains to maintain their speed without slowing or being stopped for short periods. This will allow passenger trains to meet schedules and thus attract greater ridership, which in turn will reduce traffic on the regional and local surface street circulation system.

At the same time, freight trains will also be able to maintain their schedules, which have become continuously more rigorous as rail operations have expanded from the West Coast to destinations to the east. Thus, there may not be an actual increase in the number of trains on the tracks in the immediate future, but all of the trains will be able to operate with fewer constraints and delays. The opportunity also exists for additional passenger trains (which typically consist of 3 to 10 car train sets) to utilize the corridor in the future without further degrading track capacity. Thus, the objective for providing better rail corridor efficiency and flow of rail traffic will be substantially enhanced by implementing the track improvements for the Hobart to Basta segment of the corridor.

3.2.2.3 Grade Separation Improvements

The specific location and characteristics of each grade separation are as follows:

1. Passons Boulevard: The site is located at MP 151.45 in the City of Pico Rivera, west of the I-605 and north of Slauson Avenue within a portion of Section 25, T2S, R12W, SBB&M (Whittier 7.5' USGS Topographic Map). Figure 3-1 shows the regional location of Passons Boulevard. Figures 3-4a through 3-4c illustrate the proposed physical changes in the environment that are forecast to occur from installing the Passons Boulevard grade separation project. Figure 3-4a is an aerial photo with the grade separation facilities and footprint shown in plan view. Figure 3-4b shows the same footprint overlayed on the property ownership map, identifying the affected parcels and the new right-of-way that is proposed to be acquired. Figure 3-4c is a cross-section through the grade separation that shows the grade for the new Passons Boulevard grade separation and the proposed road section.

   Passons Boulevard is currently a two-lane roadway with approximately 14,000 vehicle trips per day. Both residences and businesses access directly to the roadway. The existing roadway section is 12.19 meter (40 ft) wide with 3.66 meter (12 ft) lanes of travel and 2.44 meter (8 ft) shoulders. The existing roadway has curb and gutter, sidewalks, and asphalt pavement. Pedestrian traffic also occurs along this portion of Passons.

   Rivera Road intersects Passons Boulevard immediately north of the railroad's right-of- way. Rivera Road is a two-lane residential street with less than 3,000 vehicles per day. The existing pavement roadway section is 12.19 meter (40 ft) wide with curb and gutters and a sidewalk on the north side.

   The recommended alternative is an underpass with a design speed of 40.23 kilometers per hour (km/h) (25 mph), a vertical clearance of 5.03 meters (16.5 ft) and a maximum street grade of 8 percent. The proposed roadway through the underpass would be 21.34 meters (70 ft) wide with 3.05 meters (10 ft) sidewalk on the east side. Passons Boulevard will be drained by a pump station with a force main connected into a 2.90 meters (9.5 ft) high by 2.44 meters (8 ft) wide reinforced concrete box (LAFCD Project 9565) that will be relocated from its present location with Rivera Road to a new alignment approximately 304.8 meters (1,000 ft) northerly thereof. This stormwater sewer will itself be relocated approximately 304.8 meters (1,000 ft) around the depressed portion of Passons Boulevard to the north. See Figures 3-4a through 3-4c.

Right-of-way and construction easements will be required on the east and west sides of Passons Boulevard and on the north side of Rivera Road. This will require the acquisition of four single-family residences along the west side of Passons Boulevard and one single family residence along Rivera Road west of Passons Boulevard and north of the Railroad. A currently vacant apartment building is proposed for purchase along the east side of Passons Boulevard north of the Railroad. A portion of Maizeland Elementary School property will also be acquired. This property acquisition is proposed to be mitigated by transferring a portion of the vacant apartment property to the school.

Utilities located within Passons Boulevard will be relocated to the east and west sides of the proposed underpass in utility easements. Public utilities include sanitary sewer and water-lines. Private utilities include natural gas, electrical power lines, cable TV, and petroleum pipelines.

Rivera Road will be reconnected to Passons Boulevard approximately 91.44 meters (300 ft) north of its current junction.

Upon completion of the project, driveways and parking area access to the remaining residences will be reconstructed, and landscaping and wrought iron fencing will be provided along Rivera Road and at Serapis. Retaining walls through Passons Boulevard underpass will be constructed and landscaping provided to improve aesthetics, where road right-of-way permits. Access to businesses immediately north of Slauson will be reconfigured, and in some instances lost. Where this occurs, property will be acquired to support the project. Sidewalks will be installed.

2. <u>Pioneer Boulevard</u>: The site is located at MP 152.29 in the City of Santa Fe Springs, immediately east of I-605 and south of Slauson Avenue within unsectioned parcel, T2S, R12W, SBB&M (Whittier 7.5' USGS Topographic Map). Several alternatives were considered for the Pioneer Boulevard Grade Separation, but a final alternative has been identified by the City of Santa Fe Springs and Los Angeles County. Figures 3-5a through 3-5c illustrate the proposed physical changes in the environment that are forecast to occur from installing the Pioneer Boulevard grade separation project. Figure 3-5a is an aerial photo with the grade separation facilities and footprint shown in plan view for the selected alternative. Figure 3-5b is a cross-section through the grade separation that shows the grade for the new Pioneer Boulevard grade separation and the proposed road section. Figure 3-5c shows the potential property acquisition associated with the selected Pioneer Boulevard grade separation.

   Pioneer Boulevard is an arterial roadway with approximately 15,300 vehicle trips per day that has both residences and businesses accessing directly to the roadway. The existing pave-ment roadway section is 23.16 meters (76 ft) wide with four lanes of traffic and a center lane or median. The existing roadway has curb and gutter and sidewalks.

   The alternative evaluated is an underpass with a design speed of 64.37 km/h (40 mph), a vertical clearance of 4.88 meters (16 ft) and a maximum street grade of 5 percent. The proposed roadway through the underpass would be 24.38 meters (80 ft) wide with 1.83 meter (6 ft) sidewalks on each side. Pioneer Boulevard will be drained using slotted curb drains at the low point on each side of the road. The water will be transported via gravity drain within a 762 mm (30 in) corrugated metal pipe to the existing 1,752.6 mm (69 in) reinforced concrete pipe storm drain approximately 304.8 meters (1,000 ft) west of Pioneer Boulevard. A pump station will not be required. Two clean-outs will be constructed approximately 91.44 meters (300 ft) apart and a manhole constructed at the connection of the 762 mm (30 in) corrugated meter pipe and the 1,752.6 mm (69 in) storm drain.

Right-of-way and construction easements will be required on the east and west sides of Pioneer Boulevard and north side of Rivera Road. Modifications are necessary to Rivera Road, which is an east-west residential street immediately north of the BNSF railroad tracks. To the west of Pioneer Boulevard, Rivera Road is the only access to a neighborhood east of I-605. To the east of Pioneer Boulevard, Rivera Road provides access to a middle school for students walking north of Pioneer Boulevard. The proposed alternative selected includes Rivera Road over Pioneer Boulevard with an access road in the northwest quadrant. The following is a summary of the selected alternative:

3. Rivera Road over Pioneer Boulevard: This alignment adds a bridge to grade-separated Pioneer Boulevard and Rivera Road. The advantages of this alternative are:

   a. Less Right-of-Way: The five residences in the northeast quadrant will maintain access to Rivera Road and will not require acquisition.
   b. Less project costs.

   The disadvantages of this alternative are:

   a. Change in the existing traffic patterns: Indirect access between Pioneer Boulevard and Rivera Road.
   b. Additional future maintenance: The addition of a bridge (Rivera over Pioneer) and a pedestrian access ramp.

   The sanitary sewer lines will be relocated on Pioneer Boulevard. The water line on Pioneer Boulevard will be lowered. Private utilities (gas, telephone and electric) will be relocated.

   Upon completion of the project, driveways and parking area access to the remaining residences and businesses will be reconstructed, and landscaping will be provided. Retaining walls through Pioneer Boulevard will be constructed and stepped retaining walls provided to improve aesthetics, where right-of-way permits.

4. Norwalk Boulevard and Los Nietos Road: These two crossings are considered together because of their close proximity and the necessity to combine the modifications to the Norwalk/Los Nietos intersection with the grade separations. Norwalk Boulevard is located at MP 153.12 and Los Nietos Road is located at MP 153.21 both in the City of Santa Fe Springs, east of I-605 and south of Slauson Avenue within unsectioned parcel, T2S, R11W, SBB&M (Whittier 7.5' USGS Topographic Map). Figures 3-6a through 3-6d illustrate the proposed physical changes in the environment that are forecast to occur from installing the Norwalk Boulevard and Los Nietos Road grade separation projects. Figure 3-6a is an aerial photo with the grade separation facilities and footprint shown in plan view for both roads. Figure 3-6b is a cross-section through the grade separation that shows the grade for the new Norwalk Boulevard grade separation and the proposed road section. Figure 3-6c is a cross-section through the grade separation that shows the grade for the new Los Nietos Road

grade separation and the proposed road section. Figure 3-6d shows the potential property acquisition associated with this grade separation.

Norwalk Boulevard is a major arterial roadway with approximately 22,600 vehicle trips per day. Los Nietos Road is classified as a secondary arterial roadway with approximately 11,900 vehicle trips per day. The roads provide access to industrial and commercial businesses. The existing roadway section for Norwalk Boulevard is 24.38 meters (80 ft) wide and the existing roadway section for Los Nietos Road is 18.29 meters (60 ft) wide with four lanes of traffic and a center lane or median. The existing roadways have curb and gutter, sidewalks, and asphalt pavement.

The recommended alternative for each roadway is an underpass with a vertical clearance of 4.88 meters (16 ft) and a maximum street grade of 5 percent. The proposed design speed for Norwalk Boulevard is 64.37 km/h (40 mph) and 56.33 km/h (35 mph) for Los Nietos Road. The proposed roadway through the underpass would be 24.38 meters (80 ft) wide for Norwalk Boulevard and 19.51 meters (64 ft) wide for Los Nietos Road with 1.83 meters (6 ft) sidewalks on each side. The intersection of Norwalk Boulevard and Los Nietos Road will be drained using stormwater pump stations at each of the underpasses. A number of inlets will be placed on Norwalk Boulevard and Los Nietos Road to intercept the drainage before it gets to the underpasses. Each pump station will discharge the storm water collected via a 304.8 mm (12 in) force main to the existing 914.4 mm (36 in) storm drain on Los Nietos Road west. No change in the volume of storm water is forecast to occur from installing the grade separation within this already 100 percent impervious paved area.

Right-of-way and construction easements will be required on the south side of Los Nietos Road, and on the east and west sides of Norwalk Boulevard. The fast-food restaurant in the northwest quadrant of the Norwalk/Los Nietos intersection is proposed to be acquired. Temporary construction easements will be required for the construction of the shoofly for the track, for the construction of the temporary connector road between Los Nietos Road and Norwalk Boulevard and for parking lot reconstruction in the southwest, northwest, and northeast quadrants of the Norwalk/Los Nietos intersection.

The two streets have a number of utilities that will need to be relocated with the proposed underpass project. In Norwalk Boulevard, they include a 304.8 mm (12 in) sanitary sewer line, a 152.4 mm (6 in) gas line and a 304.8 mm (12 in) water line. The Norwalk Boulevard utilities are primarily south of the Los Nietos intersection. In Los Nietos Road, utilities include a 762 mm (30 in) water line, a 254 mm (10 in) gas line and a 304.8 mm (12 in) water line. In addition to the above utilities, both streets have power lines, telephone cable, and a 152.4 mm (6 in) oil line that will required relocation. The existing traffic signals and conduit/pull boxes will be removed and a new signalization system installed. During construction, a temporary signalization will be installed at Los Nietos west and the Norwalk shoofly detour.

Upon completion of the project, three parking lot areas will be reconstructed, the temporary detour road will be removed and landscaping will be provided. Retaining walls through the Norwalk Boulevard and Los Nietos Road underpass will be constructed and stepped retaining walls provided to improve aesthetics where right-of-way permits.

5. Lakeland Road: The site is located at MP 155.13 in the City of Santa Fe Springs, south of Florence Avenue and east of Bloomfield Avenue within unsectioned parcel, T3S, R11W, SBB&M (Whittier 7.5' USGS Topographic Map). Figures 3-7a and 3-7b illustrate the proposed physical changes in the environment that are forecast to occur from installing the Lakeland Road grade separation project. Figure 3-7a is an aerial photo with the grade separation facilities and footprint shown in plan view. Figure 3-7b is a cross-section through the grade separation that shows the grade for the new Lakeland Road grade separation and the proposed road section.

   Lakeland Road is a two-lane minor arterial roadway with approximately 5,000 vehicle trips per day. The existing roadway section is 19.51 meters (64 ft) wide with a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement. The road provides access to industrial businesses.

   The recommended alternative for this location is an underpass with a design speed of 48.28 km/h (30 mph), a vertical clearance of 4.57 meters 152.4 mm (15 ft 6 in) and a maximum street grade of 5 percent. The underpass will be realigned to the south to allow work around an existing 1,524 mm (60 in) storm drain that parallels the roadway. The proposed roadway through the underpass would be 17.07 meter (56 ft) wide with 1.83 meter (6 ft) sidewalks on each side. The proposed underpass will gravity drain to the west to an existing 2,133.6 mm (84 in) storm drain. On the north side of Lakeland Road there is a 1,524 mm (60 in) drain under the sidewalk. This project proposes to realign the Lakeland Road centerline to the south to avoid conflicts with this 1,524 mm (60 in) storm drain. The underpass drainage will be collected in low-head inlets and discharged to the 2,133.6 mm (84 in) storm drain approximately 91.44 meters (300 ft) west of the underpass. The underpass storm drain will have a flap-gate to prevent water from backing up on the system to the underpass. The underpass drainage area will be limited to prevent flooding in the underpass during major rainfall events.

   Right-of-way and construction easements will be required on the west side of the railroad tracks to construct the temporary shoofly detour (a shoofly is a railroad track detour). After the construction of the underpass, this detour will be removed. Temporary construction easements will be required at the drive pads to the industries east of the railroad crossing. In addition, an emergency access road will need to be installed for use during construction.

   Existing utilities include the following: 101.5 mm (4 in) and 457.2 mm (18 in) water lines, 203.2 mm (8 in) and 304.8 mm (12 in) sanitary sewer lines, 1,524 mm (60 in) storm drain, 76.2 mm (3 in) gas/oil line, 127 mm (5 in) oil line and telephone lines. This project will require the sanitary sewer lines to be relocated to provide gravity drainage to the east and west of the underpass. The 1,524 mm (60 in) storm drain will remain in place and will be worked around with the proposed underpass. The other systems (water, gas, oil, etc.) and telephone lines will be lowered to match the underpass profile.

   Upon completion of the project, driveways/parking areas will be reconstructed, landscaping on Lakeland Road will be restored in the underpass area, retaining walls through Lakeland Road will be constructed with an aesthetic treatment. Stepped retaining walls will be used west of the railroad on Lakeland Road to improve aesthetics and to allow for landscaped areas and displaced trees will be replaced.

6. Rosecrans Avenue/Marquardt Avenue: The site is located at MP 157.81 in the City of Santa Fe Springs, north of I-5 and west of Valley View Avenue within Section 16, T3S, R11W, SBB&M (Whittier 7.5' USGS Topographic Map). Figures 3-8a through 3-8d illustrate the proposed physical changes in the environment that are forecast to occur from installing the Rosecrans Avenue and Marquardt Avenue grade separation projects. Figure 3-8a is an aerial photo with the grade separation facilities and footprint shown in plan view for both roads. Figure 3-8b is a cross-section through the grade separation that shows the grade for the new Rosecrans Avenue grade separation and the proposed road section. Figure 3-8c is a cross-section through the grade separation that shows the grade for the new Marquardt Avenue grade separation and the proposed road section. Figure 3-8d shows the potential property acquisition associated with this grade separation.

   Rosecrans Avenue is an arterial roadway with approximately 25,000 vehicle trips per day. Marquardt Avenue is classified as a minor arterial roadway with approximately 5,000 vehicle trips per day. The roads provide access to industrial and commercial businesses. The existing roadway section for Rosecrans Avenue is 25.60 meters (84 ft) wide and the existing roadway section for Marquardt Avenue is 19.51 meters (64 ft) wide with four lanes of traffic and a center lane or median. The existing roadways have curb and gutter, sidewalks, and asphalt pavement.

   The recommended alternative is an underpass with a design speed of 72.42 km/h (45 mph), a vertical clearance of 4.88 meters (16 ft) and a maximum street grade of 5 percent. The proposed roadway through the underpasses would be 25.60 meters (84 ft) wide for Rosecrans Avenue and 19.51 meters (64 ft) wide at Marquardt Avenue with 1.83 meters (6 ft) sidewalks on each side. The intersection of Rosecrans Avenue and Marquardt Avenue will be drained using curb drains at the low points on each side of the road. The water will then be transported through approximately 243.84 meters (800 ft) of 1,219.2 mm (48 in) reinforced concrete pipe along Marquardt Avenue south and drain into Coyote Creek. The current storm drain system on Rosecrans east of Marquardt will be diverted to this new system. In addition, this storm drain system will be sized to gravity drain the proposed Valley View Avenue underpass described in the following section.

   Right-of-way and construction easements will be required on the south side of Rosecrans Avenue and north of the railroad and west of Marquardt Avenue in the following locations: (1) the metal stamping business in the southwest quadrant of the Rosecrans/Marquardt intersection is proposed to be acquired and this business will be relocated and additional time will be required for negotiations and moving; (2) a temporary construction easement will be required for the construction of the shoofly for the track in the northwest quadrant. The existing truck scale and loading dock in the area will need to be modified with the railroad shoofly detour. This area will lose an access point on Marquardt that will impact the use of the scales and loading docks during and after construction; (3) temporary construction easement will be required for the construction of the temporary Rosecrans shoofly detour in the southeast quadrant and the existing warehouse will be avoided; and (4) temporary construction easements will be required for the drive pad reconstruction in the four quadrants of the Rosecrans/Marquardt intersection.

   This project includes major utility relocations. The project plan is to relocate the majority of these utilities prior to the detour of Rosecrans and the temporary closing of Marquardt north.

The relocation of the sanitary sewer trunk lines (609.6 mm and 838.2 mm or 24 in and 33 in) the 1,066.8 mm (42 in) and 1,219.2 mm (48 in) storm drains in east Rosecrans, the 406.4 mm (16 in) water line on Rosecrans, and the 304.8 mm (12 in) sanitary sewer on north Marquardt can be done in the first phase of construction before traffic is detoured on Rosecrans or Marquardt. The utilities will be jacked and bored under the railroad to minimize impact to train traffic. A 101.6 mm (4 in) gas line on Rosecrans will be lowered with the construction of Rosecrans.

Due to the long clear span (54.86 meters or 180 ft) and the restricted right-of-way, a steel truss bridge is recommended at this location. The proposed truss bridge will have a 9.14 meters (30 ft) height and be 16.76 meters (55 ft) wide. The skewed alignment at the intersection and the open truss members will minimize the visual impact of the bridge.

Upon completion of the project, two businesses will be relocated (the two parcels will be acquired) and another business will have to modify its operations to accommodate the rail detour through the project, two access (drive pads) will be eliminated with this project and alternative access will be provided with this project. Landscaping will be provided, retaining walls on both streets will be constructed and stepped retaining walls will be provided where right-of-way permits to improve aesthetics.

7. <u>Valley View Avenue</u>: The site is located at MP 158.41 in the Cities of La Mirada and Santa Fe Springs, north of I-5 and south of Stage Road within Section 21, T3S, R11W, SBB&M (Whittier 7.5' USGS Topographic Map). Figures 3-9a through 3-9d illustrate the proposed physical changes in the environment that are forecast to occur from installing the Valley View Road grade separation project. Figure 3-9a is an aerial photo with the grade separation facilities and footprint shown in plan view. Figure 3-9b shows the same footprint overlayed on the property ownership map and identifies the amount of new right-of-way that is proposed to be acquired and the affected parcels. Figure 3-9c is a cross-section through the grade separation that shows the grade for the new Valley View Road grade separation and the proposed road section. Figure 3-9d is a cross-section through the grade separation that shows the grade for the new Stage Road grade separation and the proposed road section.

   Valley View Avenue is a four-lane arterial roadway with approximately 34,000 vehicle trips per day that has both residential and businesses accessing directly to the roadway. The existing roadway section is 25.60 meters (84 ft) wide with four lanes of traffic and a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement.

   Stage Road, east of Valley View Avenue, is a four-lane collector street with less than 3,800 vehicles per day. The existing roadway section is 25.60 meters (84 ft) wide with four lanes of traffic and a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement. Stage Road west of Valley View Avenue is a two-lane collector street with less than 4,600 vehicles per day. The existing road section is 13.41 meters (44 ft) wide with curb and gutter on the north side of the street only.

   The recommended alternative is an underpass with a design speed of 72.42 km/h (45 mph), a vertical clearance of 4.88 meters (16 ft) and a maximum street grade of 7 percent. The proposed roadway through the underpass would be 25.60 meters (84 ft) wide with 2.44 meters (8 ft) sidewalks on each side. The Valley View grade separation is the only fully funded grade separation project at this time, although funding is being sought by the cities, the Department and BNSF for the remaining grade separations.

Valley View Avenue will be drained by a pump station with a force main connected into 914.4 mm (36 in) reinforced concrete pipe located within Valley View Avenue south of the railroad. An alternative drainage concept may gravity drain the underpass to the Marquardt south storm drain described in the previous section. A new storm drain will be constructed to drain the property in the northeast quadrant of the proposed intersection.

Right-of-way and construction easements will be required on the east and west sides of Valley View Avenue and on the north side of Stage Road. Property will be purchased along the west side of Valley View Avenue for slopes north and south of the Railroad. A temporary detour road will be constructed for Valley View Avenue on private property to the west to maintain normal traffic flows during construction. Total temporary construction easement required is about 0.631 hectare (1.56 acres). Total permanent take of property at this location is estimated to be about 0.085 hectare (0.209 acre), spread over two properties. Underground easements may be required along Stage Road west and east of Valley View Avenue for soil nails (very long nails driven into the soil) for retaining walls.

Utilities located within Valley View Avenue will be relocated and lowered within the existing roadway limits or for gravity flow systems relocated around the depressed roadways. Public utilities include sanitary sewer and water lines. Private utilities include a 406.4 mm (16 in) natural gas pipeline, electrical power lines, cable TV, and 101.6 mm (4 in) and 203.2 (8 in) petroleum pipelines.

The intersection of Stage Road and Valley View Road will be depressed to allow Valley View Road to go under the Railroad without changing existing traffic circulation patterns.

3.2.2.4 Construction Activities for Grade Separation Projects

1. Passons Boulevard: BNSF proposes that Passons Boulevard be closed between Slauson Avenue and Rex Road to through traffic during construction of the underpass, which is estimated to require about eight months to construct. Traffic will be detoured to nearby Rosemead Boulevard. Serapis Avenue will remain open during construction to provide emergency and local access. Utilities will be relocated, and undergrounded where feasible, to the edge of the right-of-way, i.e., at the edge of the paved road section. A Los Angeles County Flood Control District (LACFCD) 2.44 meters by 2.90 meters (8 ft x 9.5 ft) storm drain will be realigned to the northern limits of the depressed roadway. Once the drainage and utilities are relocated, roadway construction can begin.

   Passons Boulevard will be reconstructed with concrete pavement through the underpass. The railroad bridge will be a four span steel girder structure. A 3.05 meters (10 ft) wide sidewalk is proposed to be constructed on the east side slope approximately 1.83 meters (6 ft) higher than the road with an appropriate safety rail. The sidewalks will be constructed concurrently with the other grade separation components. Artistic bridge treatment, fencing and landscaping will also be incorporated during this phase of the project.

Train traffic will be detoured on a double track shoofly 7.62 meters (25 ft) north of the nearest main track. Once the shoofly is constructed, the existing two main tracks will be removed to allow for bridge construction. A double track bridge will be constructed and then train traffic will be routed back onto the existing two main tracks. The third bridge will then be constructed. After the bridgework is complete, the roadway excavation work can be completed.

Borrow sites will not be required, and material excavated to construct the underpass will be disposed of as directed by the City of Pico Rivera. This may include hauling the material offsite and either disposed of or made available to contractors for use as fill at other locations.

The estimated construction time under this closure scenario for Passons Boulevard is between 8 to 10 months.

2. Pioneer Boulevard: The proposed access road in the northwest quadrant of Pioneer Boulevard and Rivera Road, will be constructed and connected to Rivera Road west of Pioneer Boulevard to allow access to the Rivera Road West Subdivision during construction. When this access road is constructed, Pioneer Boulevard will be closed with traffic detoured to Los Nietos/Norwalk/Slauson Avenue. The length of this closure is estimated to be 6 months.

   Pioneer Boulevard will be reconstructed with concrete pavement through the underpass. The railroad bridge will be steel girders to minimize the thickness of the bridge. The retaining walls will be the Department standard walls up to 2.44 meters (8 ft) in height. Over 2.44 meters (8 ft) of height, the retaining walls will be soldier piles or tie-back walls constructed from the top down.

   For train traffic, a shoofly will need to be constructed so that train traffic interruption will be held at a minimum during bridge construction. When the shoofly is constructed, the portion of the existing tracks that crosses Pioneer Boulevard may be removed. Temporary shoring, such as sheet piling, will need to be placed parallel and north of the shoofly in order for the bridges to be constructed. This will have to be done carefully, coordinating with the utility owners. Once the temporary shoring is in place, the excavation for the construction of the bridges, retaining walls and roadways may begin. When bridge construction is completed, the tracks will then be reconnected across the bridge and the shoofly can be removed, along with the temporary shoring and fill. Once the temporary shoring and the fill for the shoofly have been removed, the grading for Pioneer Boulevard can begin. Paving construction for streets, curbs, and sidewalks will follow grading.

   Borrow sites will not be required for the construction of the Pioneer Boulevard grade separation, and it is expected that surplus material will have to be exported from the site, either for disposal at an appropriate facility or for use as fill at another location.

   It is estimated that this construction project will take approximately 6 to 9 months to complete.

3. Norwalk Boulevard and Los Nietos Road: The east leg of Los Nietos Road will be closed and the Norwalk Boulevard detour constructed. The Norwalk shoofly detour will have an at-grade crossing, which will require temporary gates and flashers. The construction of the retaining

walls, concrete pavement, curbs and gutter in these areas will be completed once the traffic is detoured around the underpasses.

For train traffic, a shoofly detour will also need to be constructed so that train traffic interruption will be held at a minimum during bridge construction. When the shoofly is constructed, the portion of the existing tracks that cross the intersection of Norwalk Boulevard and Los Nietos Road can be removed. Temporary shoring, such as sheet piling, will need to be placed so the abutments for the bridge can be constructed. This will have to be done carefully, coordinating with the utility owners. Once the temporary shoring is in place, the excavation for the abutments may begin. The construction of the girder bridges can occur with a minimal amount of excavation. There must be coordination with the utility owners, before pile driving can commence.

When bridge construction is completed, the tracks will then be reconnected across the bridges and the shoofly and temporary shoring can be removed. Once the temporary shoring and the fill for the shoofly have been removed, the grading for the temporary connector road can begin. When this is complete, traffic will be routed in the same direction, but along the connector road. Construction for retaining walls, paving construction for streets, curbs, and sidewalks in the intersection and the west-bound lanes of Los Nietos Road can be done. When this is complete, traffic along Los Nietos will be routed through the underpass using the north two lanes. When the traffic is rerouted, the removal of the temporary shoring for the temporary connector road can be completed. Then, the temporary connector road can be removed and the grading for the south two lanes of Los Nietos Road and the west two lanes of Norwalk Boulevard can begin. Retaining walls, paving construction for streets, curbs, and sidewalks will follow grading.

Borrow sites will not be required, and it is expected that surplus material will have to be exported from the project site. It will either be disposed of at an appropriate facility or made available as fill to commercial contractors.

It is estimated that this construction project will take approximately 12 months to complete.

4. Lakeland Road: The Lakeland Road grade separation will be completed in three phases: (1) detours for the train traffic and vehicular traffic will be constructed and in place before Lakeland Road is closed to through traffic; (2) once the roadway is closed and the train traffic is detoured to the west, the underpass bridges, retaining walls, grading, drainage, and roadway will be constructed; and (3) once the railroad bridges are completed, the train traffic will be moved to the original alignment and the west side of Lakeland Road will be completed. The project will utilize sheet piling and soldier piles to allow top down construction.

   Borrow sites will not be required, and it is expected that surplus material will have to be exported from the site. It will either be disposed of at an appropriate facility or made available as fill to commercial contractors.

   The estimated construction time for the Lakeland Road closure is 4 months.

5. Rosecrans Avenue/Marquardt Avenue: Relating to vehicular traffic, the first phase of construction will include the demolition of the buildings in the southwest and southeast

quadrants, the relocation of utilities and the construction of the Rosecrans detour. The traffic, both on Rosecrans and Marquardt will remain on the existing streets during this phase. A temporary signal at Rosecrans and Marquardt (south) and a temporary grade crossing for the railroad will need to be constructed in the first phase.

For train traffic, a shoofly will need to be constructed so that train traffic interruption will be held at a minimum during bridge construction. When the shoofly is constructed, the portion of the existing tracks that cross the intersection of Rosecrans Avenue and Marquardt Avenue can be removed. Temporary crossing protection will be needed for the shoofly alignment. Temporary shoring, such as sheet piling, will need to be placed so the abutments for the bridge can be constructed. Once the temporary shoring is in place, the excavation for the construction of the abutments may begin. The construction of the truss bridges can be accomplished with a minimal amount of excavation. There must be coordination with the utility owners, before pile driving can commence.

When bridge construction is completed, the tracks will then be reconnected across the bridge and the shoofly and temporary shoring can be removed. Once the temporary shoring and the fill for the shoofly have been removed, the grading for Marquardt Avenue and Rosecrans Avenue north of the temporary shoring for the temporary alignment can begin. Construction of retaining walls, streets, curbs and sidewalks will follow grading. When this is complete, traffic along Rosecrans Avenue will be routed through the underpass using the north two lanes. When the traffic is rerouted, the temporary shoring for the temporary alignment can be removed. Then, the temporary alignment can be removed and the grading for the complete intersection can begin. Retaining walls, paving construction for streets, curbs and sidewalks will follow grading.

Borrow sites will not be required, and it is expected that surplus material will have to be exported from the project site. It will either be disposed of at an appropriate facility or made available as fill to commercial contractors.

It is estimated that this construction project will take approximately 12 to 18 months to complete.

6. <u>Valley View Avenue</u>: Valley View Avenue traffic will be detoured to a temporary road onto private property immediately to the west as the first phase of construction. Once traffic is rerouted, excavation of the roadway will begin. The roadway will be excavated half at a time to allow the existing utilities to be lowered within the existing roadway.

Valley View Avenue and Stage Road will be reconstructed with concrete pavement through the underpass. The railroad bridge will be a four span steel girder structure. A 3.05 meter (10 ft) wide sidewalks will be constructed on both sides of Valley View Avenue and along the north side of Stage Road. Retaining walls will be cast-in-place per the Department standard, soldier pile or tieback walls. The sidewalks will be constructed concurrently with the other grade separation components.

Train traffic will be detoured on a double track shoofly 7.62 meters (25 ft) north of the middle track. Once the shoofly is constructed, the existing tracks will be removed to allow for bridge construction. A three track bridge will be constructed and then train traffic will be routed back onto the existing two main tracks and siding track. The third bridge will then be constructed. After the bridge work is complete, roadway excavation work can begin.

Borrow sites will not be required, and it is expected that surplus material will have to be exported from the project site. It will either be disposed of at an appropriate facility or made available as fill to commercial contractors. The estimated construction time for Valley View Avenue is between 12 to 14 months.

It is possible that the Valley View grade separation (which is funded) and Rosecrans/Marquardt may be constructed at the same time. The potential effects on the area circulation system of constructing these two grade separations concurrently will be examined in the PEIR being prepared for this project.

3.2.2.5 Vehicular Traffic Detours and Road Closures

1. Passons Boulevard: Passons Boulevard will be closed between Slauson Avenue and Rex Road to through traffic during construction of the underpass. Traffic will be detoured to nearby Rosemead Boulevard. Rosemead Boulevard is grade separated from the railroad. Traffic will be routed back to Passons Boulevard north of the railroad on Washington Boulevard and south of the railroad on Slauson Avenue. Serapis Avenue will remain open during construction to provide emergency and local access to the residential neighborhood northwest of the underpass. The project will provide a shuttle bus service around the construction site to/from local schools to a bus stop along Bermudez Street adjacent to the shopping center. This will replace a pedestrian crossing which could not be maintained atthis location during construction.

2. Pioneer Boulevard: The road will be closed during construction of the bridges, retaining wall system and roadways. The Rivera Road subdivision located west of the 605 Freeway will maintain access with an access road in the northwest quadrant of the Pioneer/BNSF intersection. Pioneer traffic will be diverted to Slauson Avenue and then to Norwalk and back to Pioneer Boulevard via Los Nietos.

3. Norwalk Boulevard and Los Nietos Road: The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. A temporary detour will be provided on Norwalk Boulevard and Los Nietos Road east of the intersection to allow Norwalk traffic to flow north and south and Los Nietos traffic east. The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining wall system and roadways through the first two construction phases. Los Nietos traffic will be routed along Dice Road north to Slauson Avenue, west to Norwalk Boulevard and south to Los Nietos for the first two phases of construction. A temporary connector road for Los Nietos Road to Norwalk Boulevard will be constructed to minimize the impact on traffic during the third construction phase.

4. Lakeland Road: Lakeland Road will be closed during construction of the bridges, retaining system and roadways. Traffic will be diverted to a circular route around the Lakeland underpass via the following streets: Bloomfield Avenue, Florence Avenue, Shoemaker Road, and Imperial Highway. A temporary, emergency crossing will be provided through construction to serve the fire station on Greenstone Avenue.

5. Rosecrans Avenue/Marquardt Avenue: Marquardt Avenue north will be closed during construction of the bridges, retaining wall system and roadways. A temporary road alignment for Rosecrans Avenue will be constructed to minimize impact on eastbound and westbound traffic. The Rosecrans detour will have a temporary traffic signal at Marquardt south to maintain safe access to the area to the south. The Rosecrans detour will have an at-grade crossing with the railroad shoofly detour which will require temporary gates and flashers. These gates and flashers will be connected to the temporary traffic signal at Rosecrans and Marquardt south to prevent vehicles from queuing on the tracks. Detoured traffic on Marquardt Avenue north will be routed to Foster Road and west to Carmenita Road. Detoured traffic will not be allowed on Foster east of Marquardt.

6. Valley View Avenue: Traffic will be routed onto a temporary detour road on private property along the west side Valley View Avenue. The detour road will have an at-grade crossing with the existing tracks and the railroad shoofly. Flashing light signals and gates will be installed at the crossing. Stage Road will remain open with a temporary intersection with the detour road until the railroad bridge is constructed and roadway excavation begins. Stage Road will be closed for the rest of the project. As noted above, it is possible that the Valley View grade separation (which is funded) and Rosecrans/Marquardt may be constructed at the same time. The potential effects on the area circulation system of constructing these two grade separations concurrently will be examined in the PEIR being prepared for this project.

3.2.2.6 Permanent Road Closures

1. Serapis Avenue: Serapis Avenue in the City of Pico Rivera is proposed to be closed at the railroad tracks after construction of the third track and the Passons grade separation are completed. The pavement and crossing signals will be removed. North of the railroad tracks, the roadway will be knuckled and new curb, gutters and walks installed. South of the railroad tracks, a cul-de-sac will be provided. Fencing, landscaping and sidewalks will be installed around the perimeter of the knuckle and cul-de-sac areas where it is adjacent to the BNSF right-of-way. Final design of access controls will be determined in conjunction with the City of Pico Rivera. Easements for existing utilities are expected to remain intact. Access across the railroad will be provided by the Rosemead Boulevard underpass and the new Passons Boulevard underpass. With these two crossings permanently available to the public (both vehicles and pedestrians), no shuttles are proposed to transport children to local schools.

3.2.2.7 Other Project Components

The proposed project will have a number of staging areas to accommodate storage of equipment and material, and to provide parking for employees. The staging areas will occur along the BNSF track right-of-way at least 7.62 meters (25 ft) from the closest track. Any needed staging areas outside the railroad's right-of-way will be the responsibility of the contractor.

The project will be required to obtain several permits including, but not limited to: a Section 404 permit from the U.S. Army Corps of Engineers (COE); a California Regional Water Quality Control Board (RWQCB)401 Water Quality Certification; a California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement); a construction stormwater discharge permit, National Pollutant Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB; various business permits; various encroachment or construction permits from the County; the Department and the cities; and where required business licenses.

3.3 ALTERNATIVES

The CEQA and the State CEQA Guidelines require an evaluation of alternatives to the proposed action. Section 15126 of the State CEQA Guidelines indicates that the "discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of not significant..." One of the alternatives that must be evaluated is a "no project/no change alternative" regardless of whether it is a feasible alternative to the proposed project, i.e., would meet the project objectives or requirements. Under the no project alternative the environmental impacts that would occur if the proposed project is not approved and implemented are identified. Aside from the no project alternative, no other alternatives are evaluated in this PEIR. This alternative and its ability to reduce potentially significant environmental impacts are the subject of a detailed evaluation in Chapter 5, the Alternatives section of the PEIR.

3.4 RELATED PROJECTS

The Department and BNSF have reviewed applications within the general project area and determined that no other related projects are being considered for entitlement or development within the immediate vicinity of the proposed project. Furthermore, no other projects are currently being considered or implemented that could adversely impact resources within the proposed project areas or areas of potential impact.

3.5 USES OF THIS ENVIRONMENTAL IMPACT REPORT

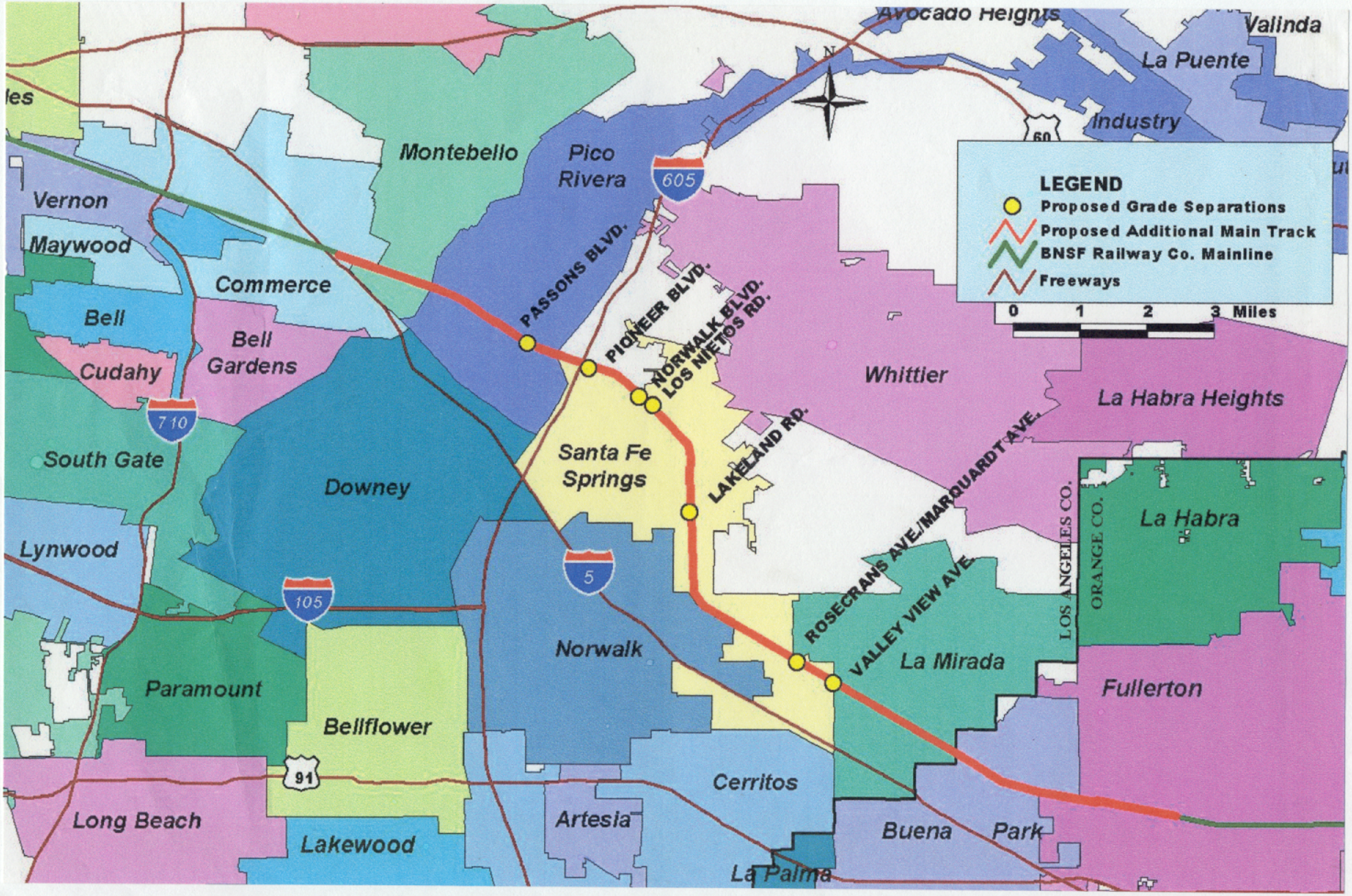
Before this project can be implemented, the Department must approve the funding for construction of the third main track and related improvements. Although some funding has been identified for the construction of the Valley View grade separation project, specific funding is still being sought to fully fund Valley View and the remaining grade separations. Certification of the PEIR will allow the Department, the local cities or other jurisdictions to rely on this document to comply with the CEQA when independent funding is obtained to construct each individual project element in the future. The lead agency for each grade separation will utilize this PEIR as a CEQA responsible agency, as outlined in Section 15096 of the State CEQA Guidelines. It is the approval of construction contracts for the grade separations by the future responsible agency that will allow the proposed grade separations to proceed and ultimately result in the physical changes to the environment.

In addition to the above discretionary actions, this EIR may also be used by the following agencies for related reviews and approvals:

- County of Los Angeles,
- County of Orange,
- City of Montebello,
- City of Norwalk,
- City of Pico Rivera,
- City of Santa Fe Springs,
- City of La Mirada,

- City of Commerce,
- City of Fullerton,
- California Regional Water Quality Control Board, Santa Ana Region and Los Angeles Region,
- California Department of Fish and Game, and
- U.S. Army Corps of Engineers.

FIGURE 3-1
Regional Location



Tom Dodson & Associates
Environmental Consultants

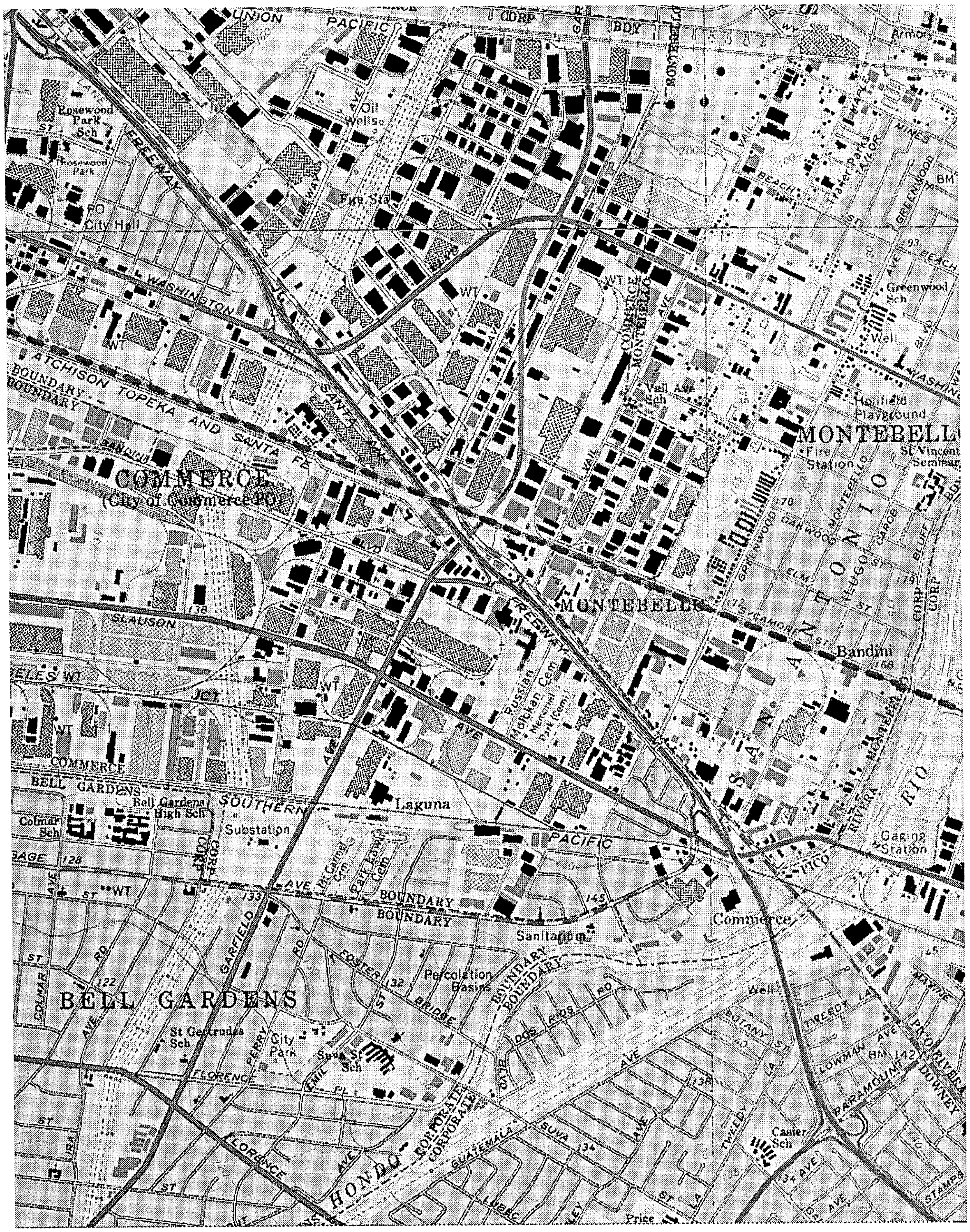
FIGURE 3-2a
Site Location

---- THIRD RAILROAD TRACK

Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

FIGURE 3-2b
Site Location



---- THIRD RAILROAD TRACK

Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

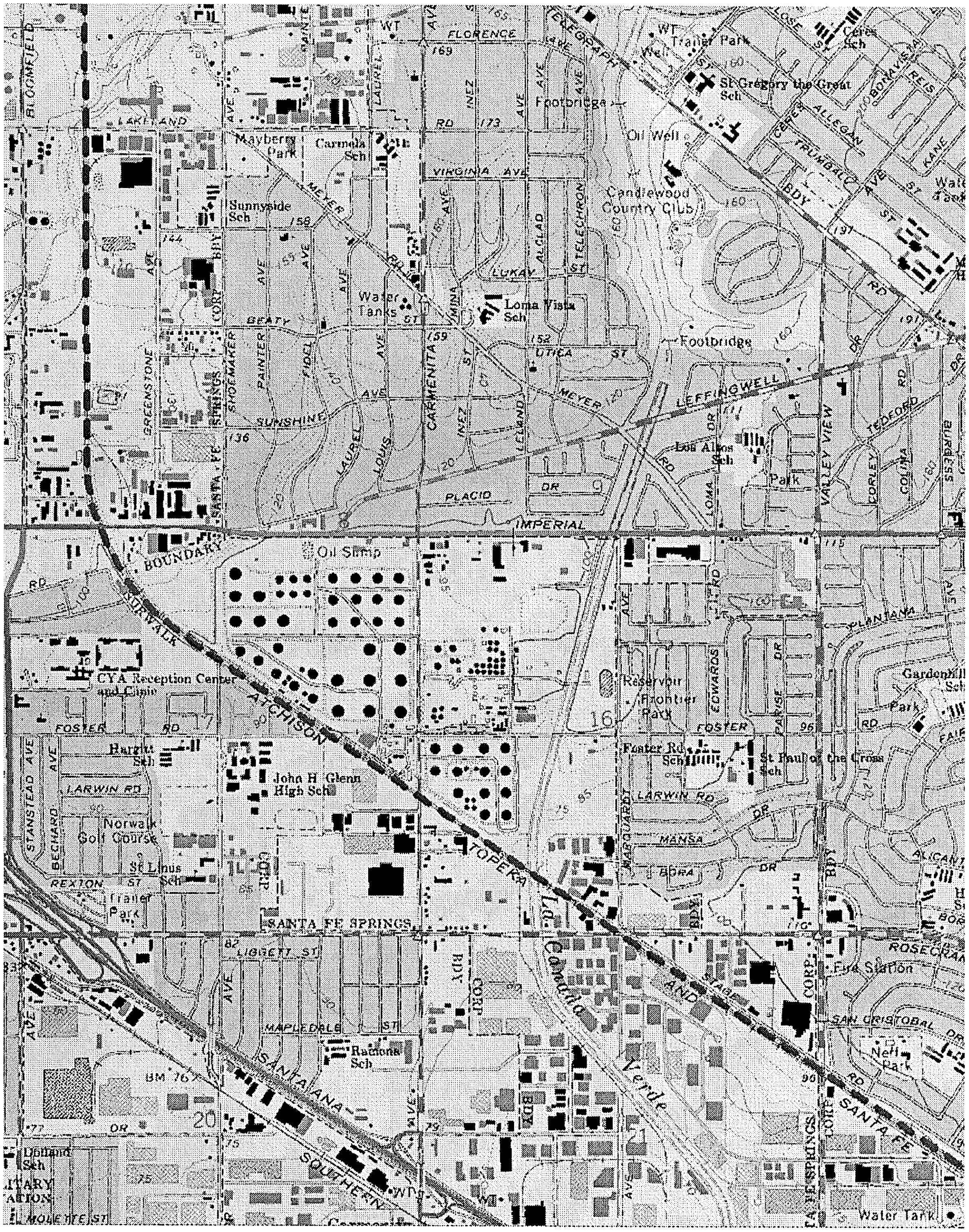
FIGURE 3-2c
Site Location

- - - - THIRD RAILROAD TRACK

Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

FIGURE 3-2d
Site Location

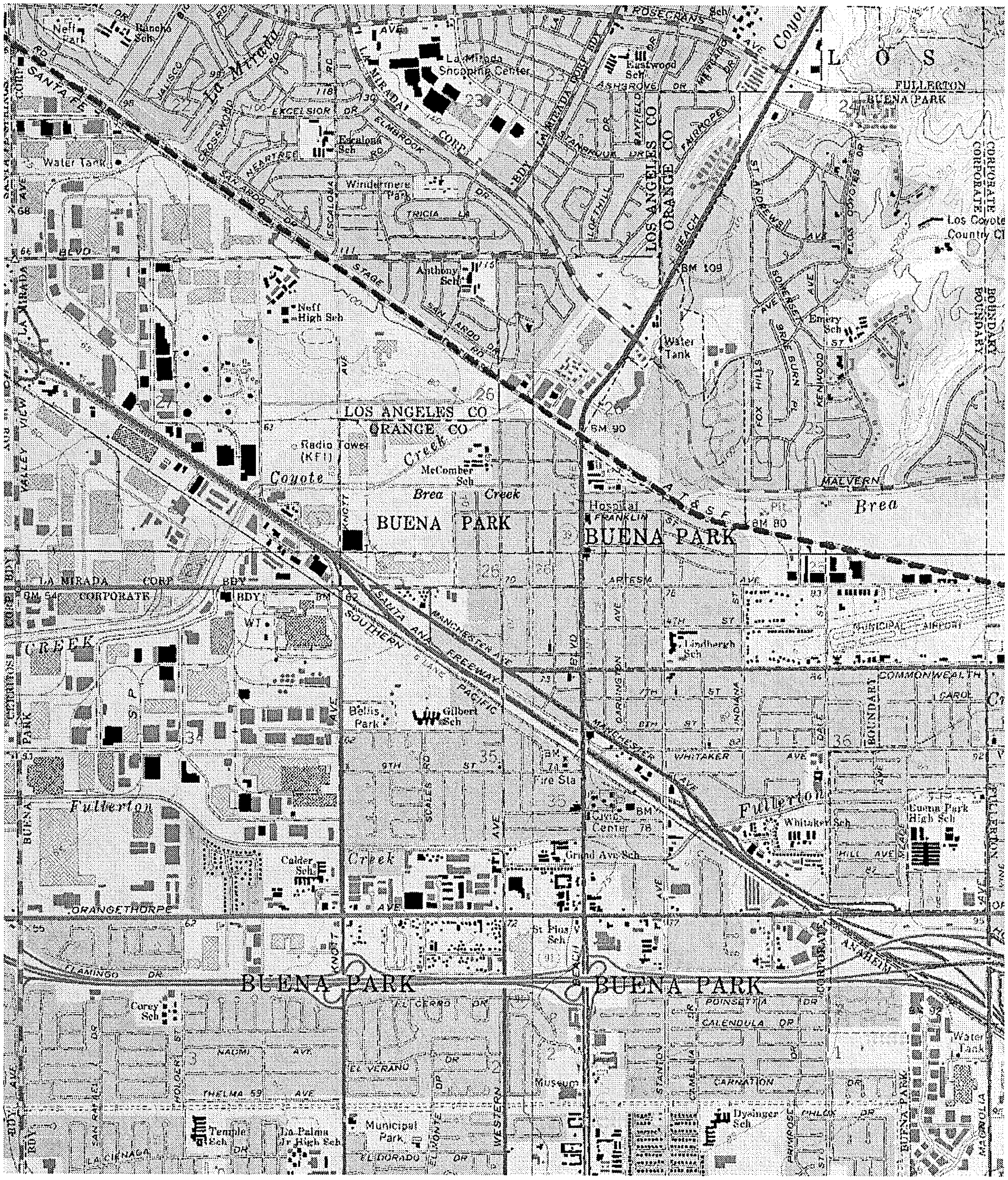


---- THIRD RAILROAD TRACK

Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

FIGURE 3-2e
Site Location

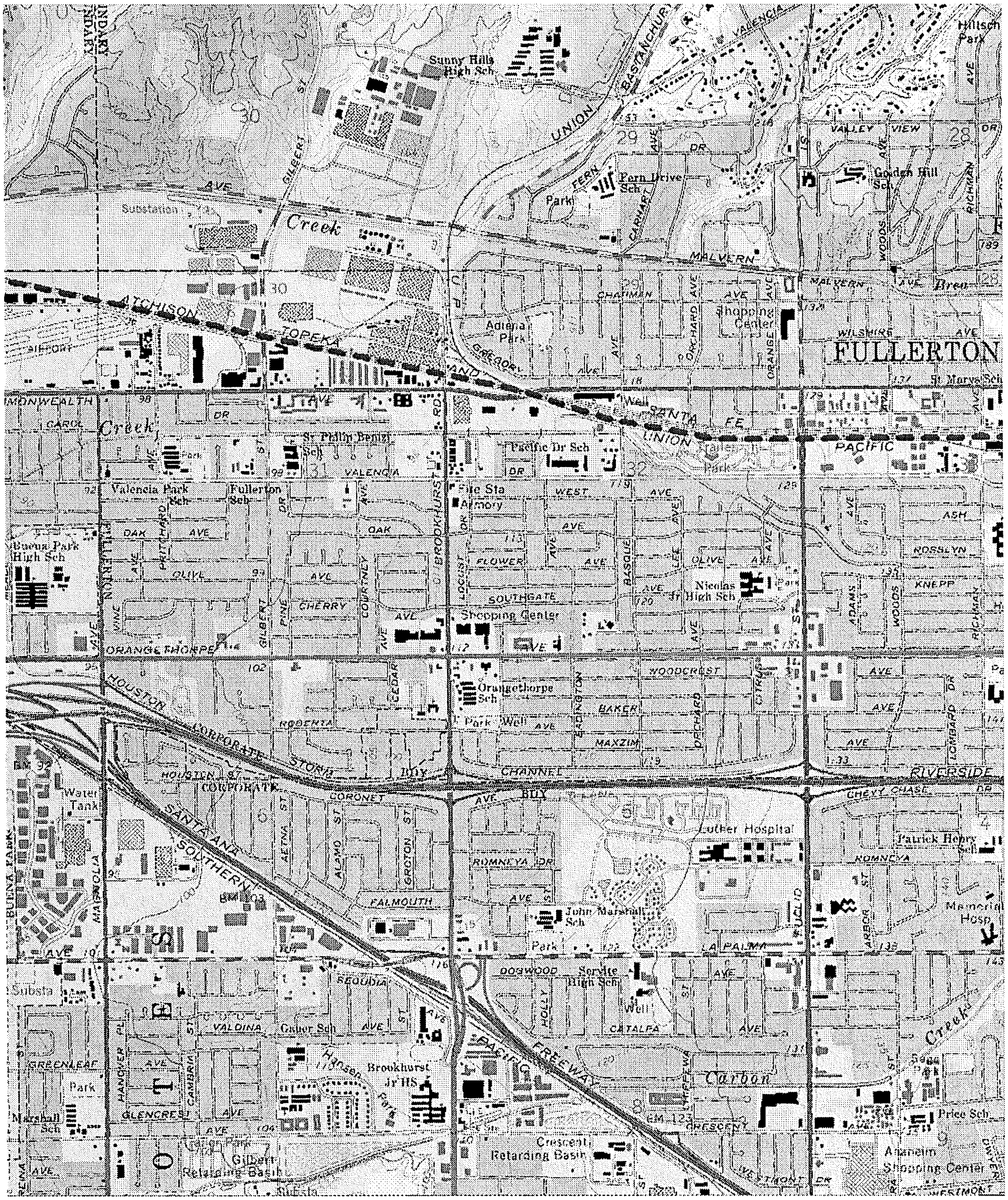


---- THIRD RAILROAD TRACK

Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

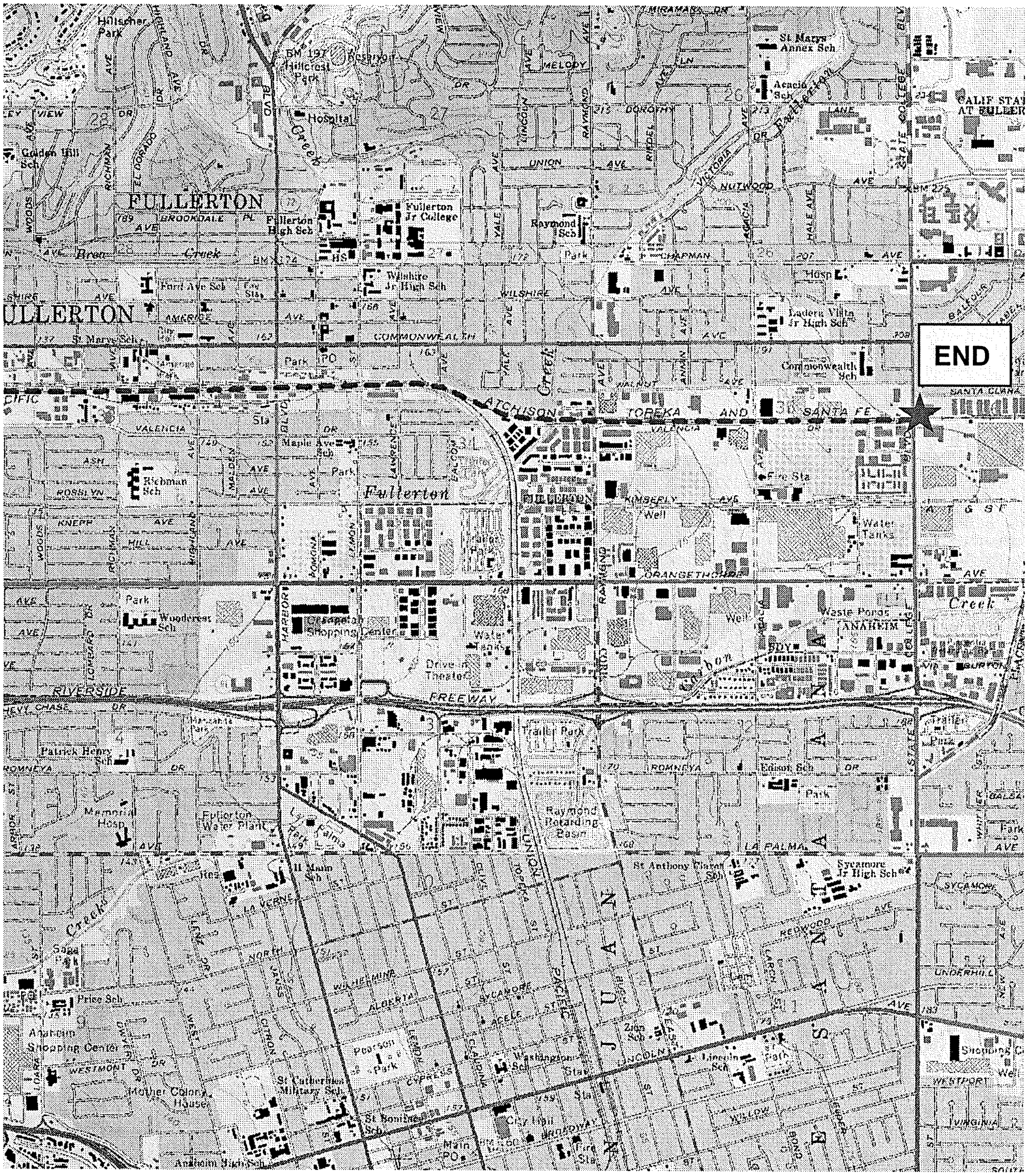
FIGURE 3-2f
Site Location



Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

FIGURE 3-2g
Site Location

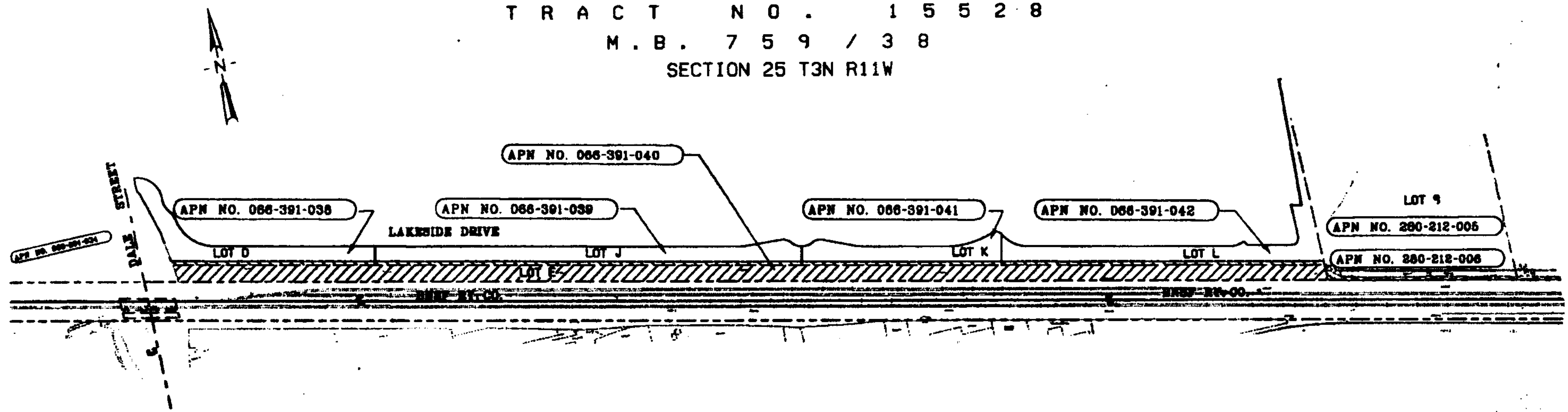


---- THIRD RAILROAD TRACK

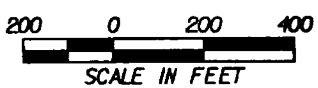
Source: DeLorme Xmap 3.0

Tom Dodson & Associates
Environmental Consultants

FIGURE 3-2h
ROW Map Dale Street

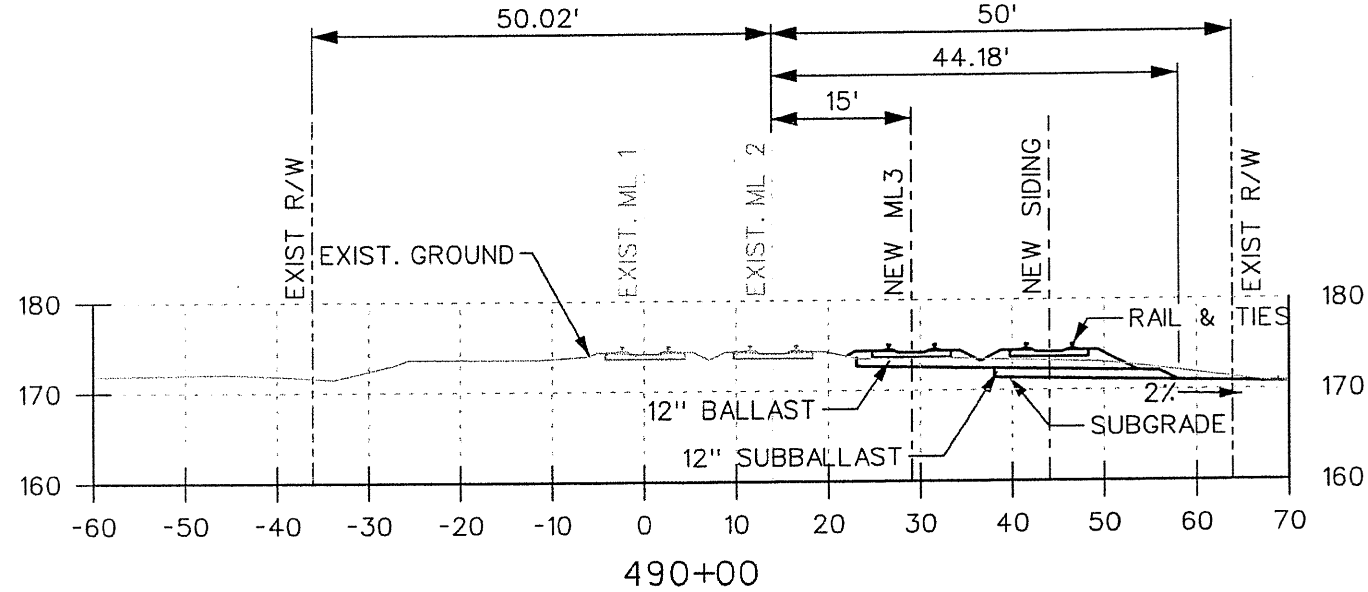


BNSF THIRD MAIN LINE SEGMENT 3 PROPOSED PROPERTY TAKE (FULL AND PARTIAL)						
ASSESSOR'S ID NO.	DESCRIPTION	OWNER'S NAME	OWNER'S ADDRESS	PROPERTY ADDRESS	AREA (ac)	NOTES
066-391-040	LOT E	LAKESIDE MASTER ASSOC.	5 PARK PLAZA 400 IRVINE,CA 92614	N/A	2.93 +/-	FULL TAKE
066-391-038	LOT D	"	"	N/A	0.12 +/-	PARTIAL TAKE
066-391-039	LOT J	"	"	N/A	0.26 +/-	PARTIAL TAKE
066-391-041	LOT K	"	"	N/A	0.12 +/-	PARTIAL TAKE
066-391-042	LOT L	"	"	N/A	0.19 +/-	PARTIAL TAKE



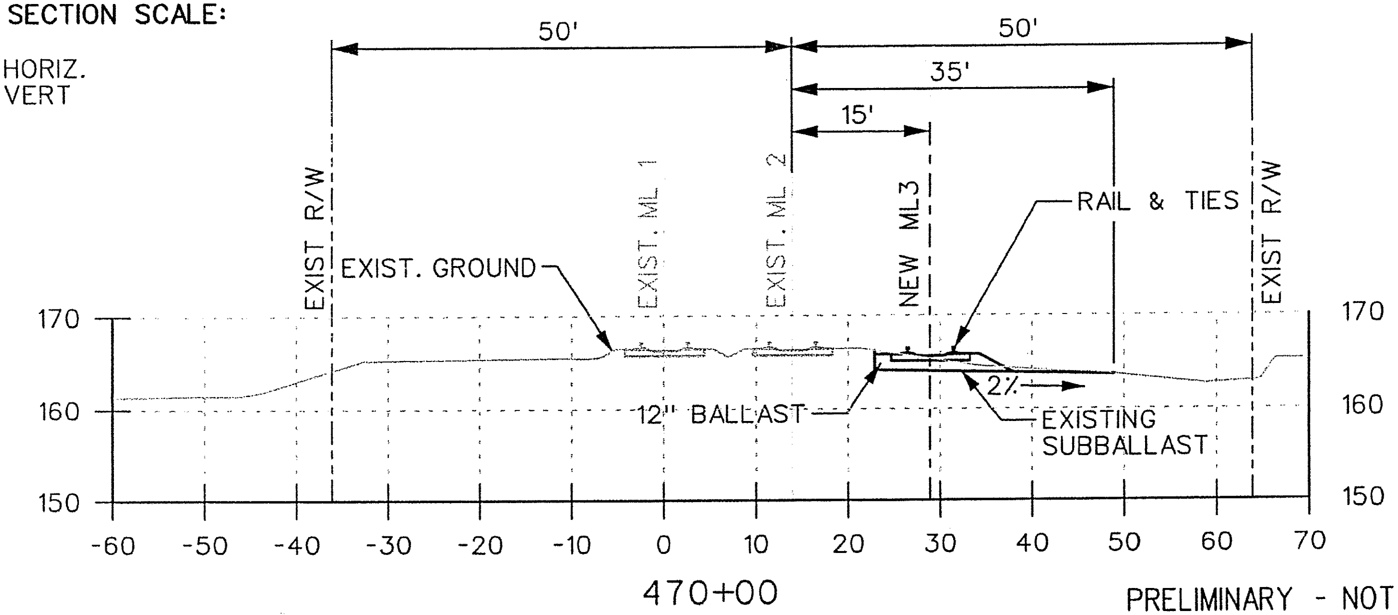
Source: HDR Engineering, Inc.

FIGURE 3-3a
Typical Sections – Commerce to DT Junction



TYPICAL SECTION SCALE:

1" = 10' HORIZ.
1" = 10' VERT

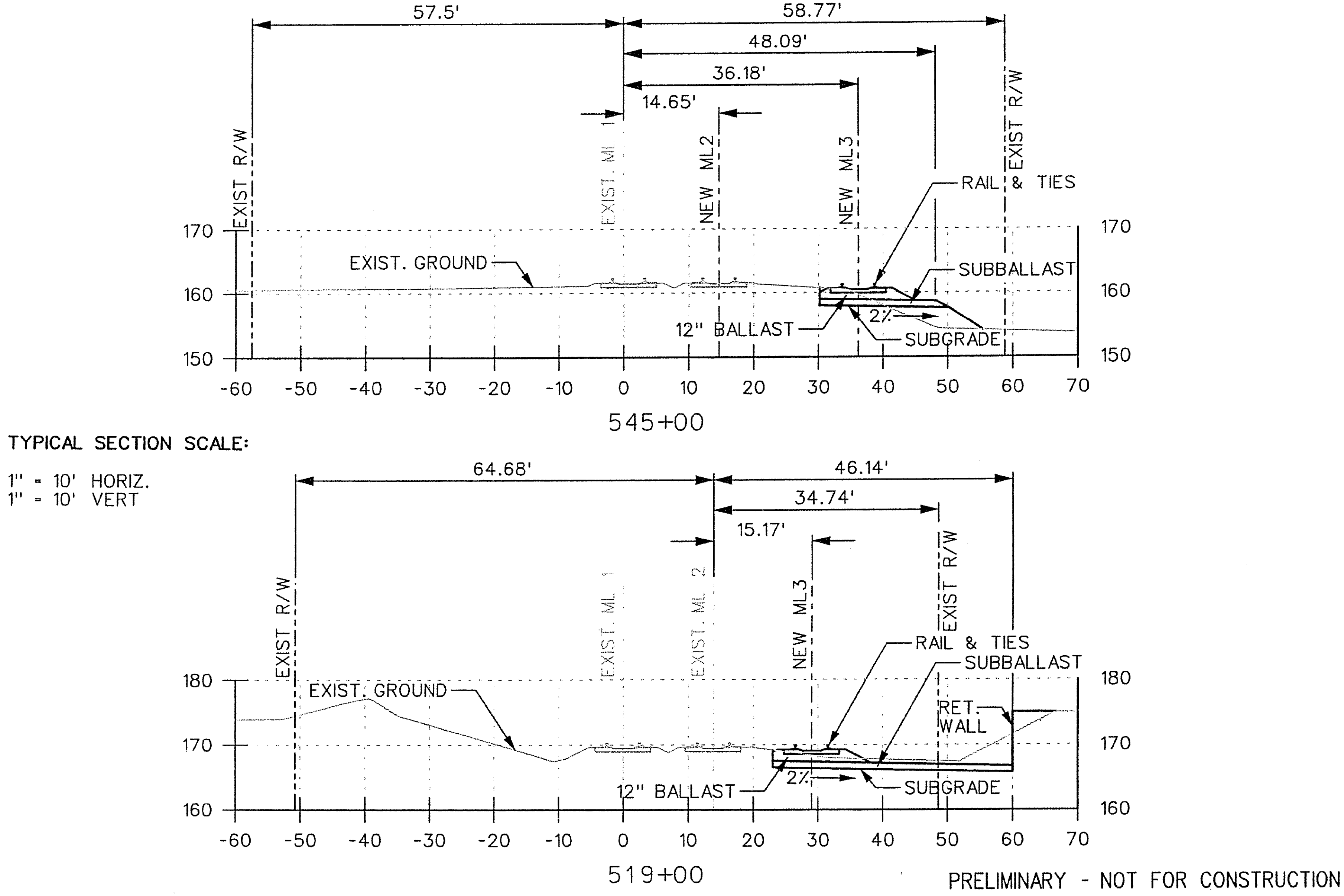


PRELIMINARY - NOT FOR CONSTRUCTION

Source: HDR Engineering, Inc.

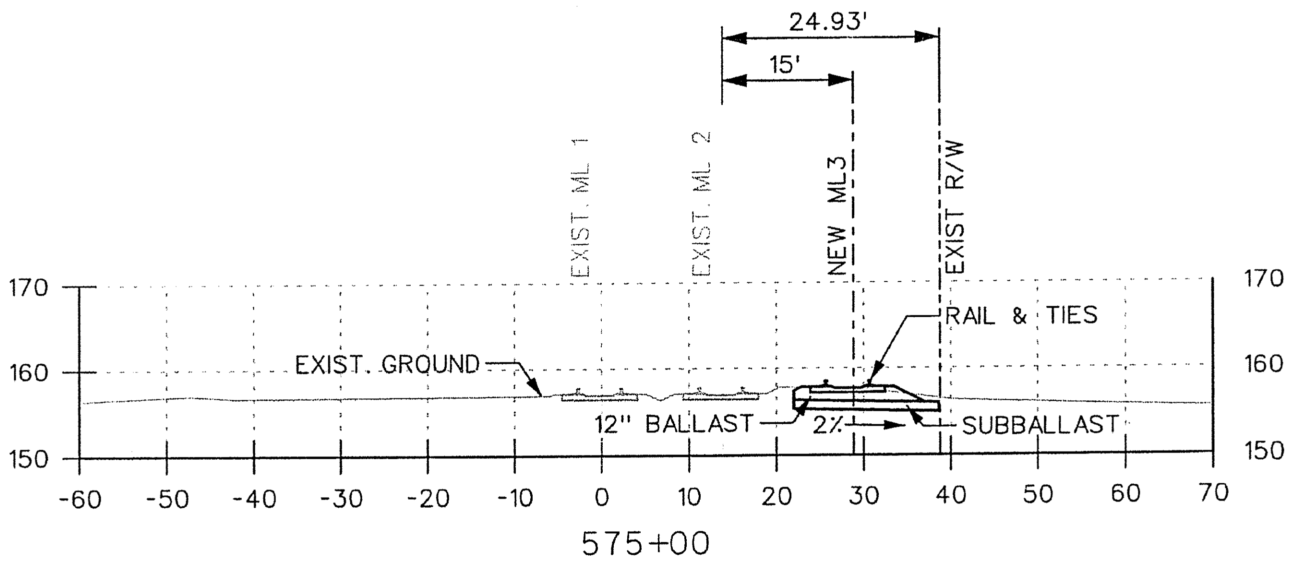
Tom Dodson & Associates
Environmental Consultants

FIGURE 3-3b
Typical Sections – Commerce to DT Junction



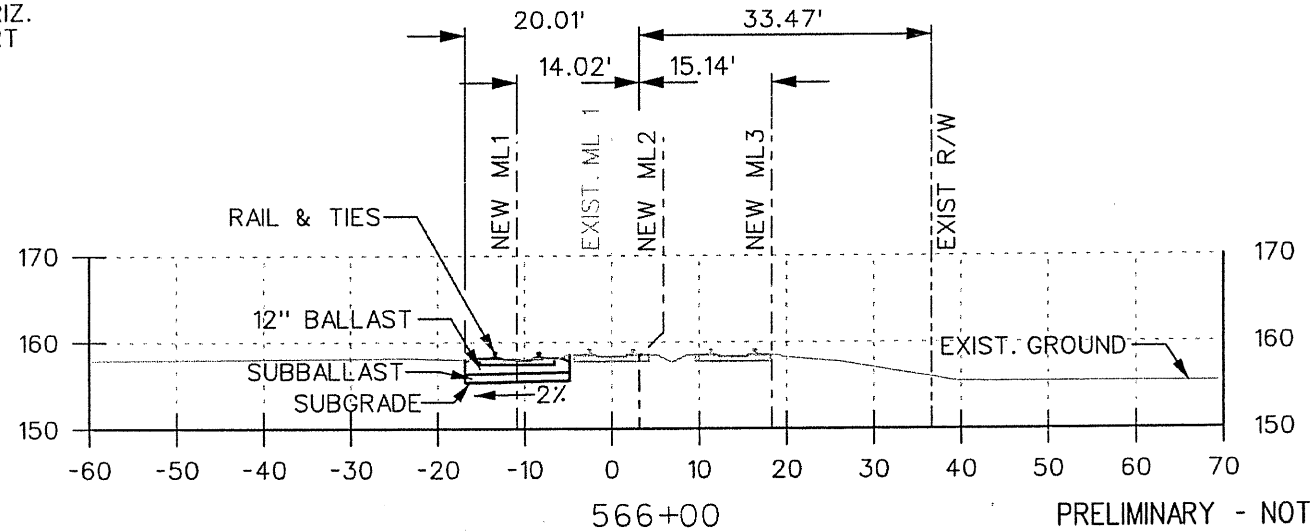
Source: HDR Engineering, Inc.

FIGURE 3-3c
Typical Sections – Commerce to DT Junction



TYPICAL SECTION SCALE:

1" = 10' HORIZ.
1" = 10' VERT

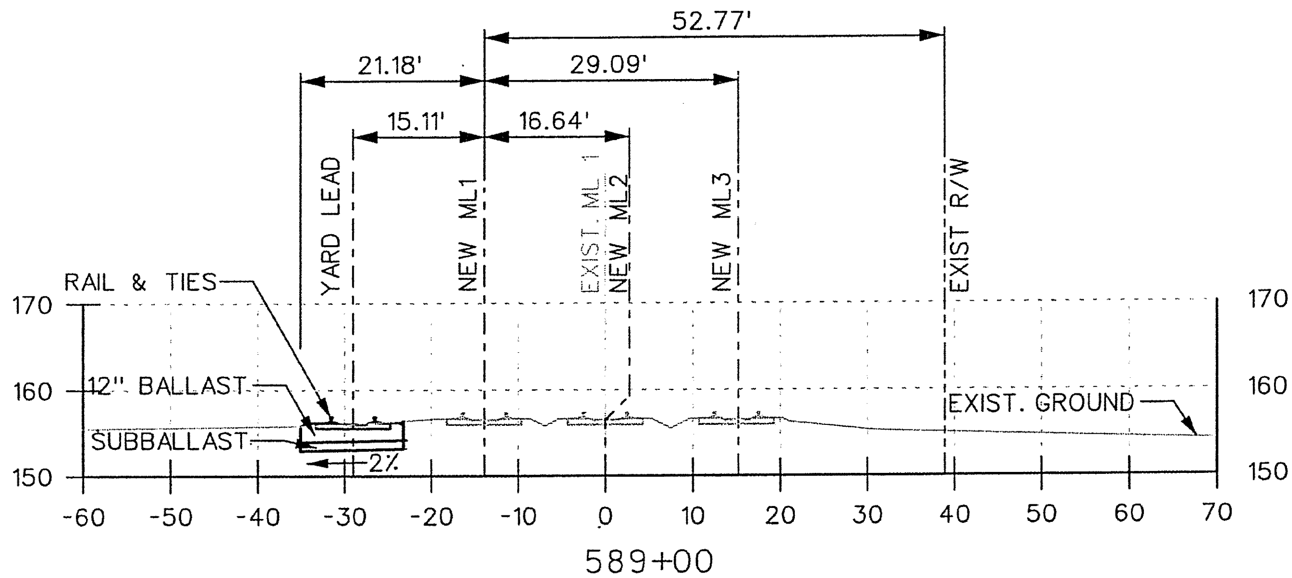


PRELIMINARY - NOT FOR CONSTRUCTION

Source: HDR Engineering, Inc.

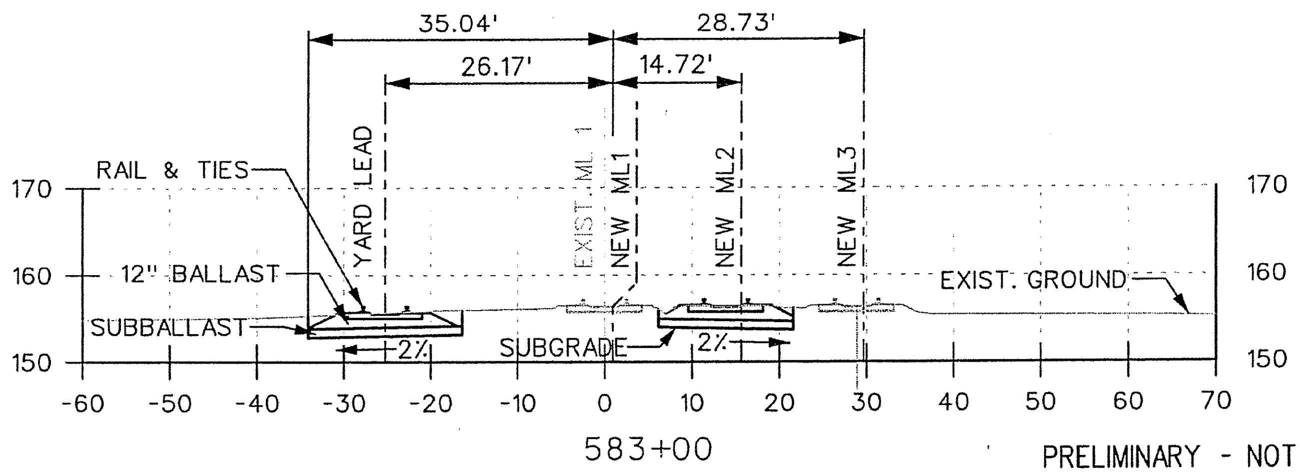
Tom Dodson & Associates
Environmental Consultants

FIGURE 3-3d
Typical Sections – Commerce to DT Junction



TYPICAL SECTION SCALE:

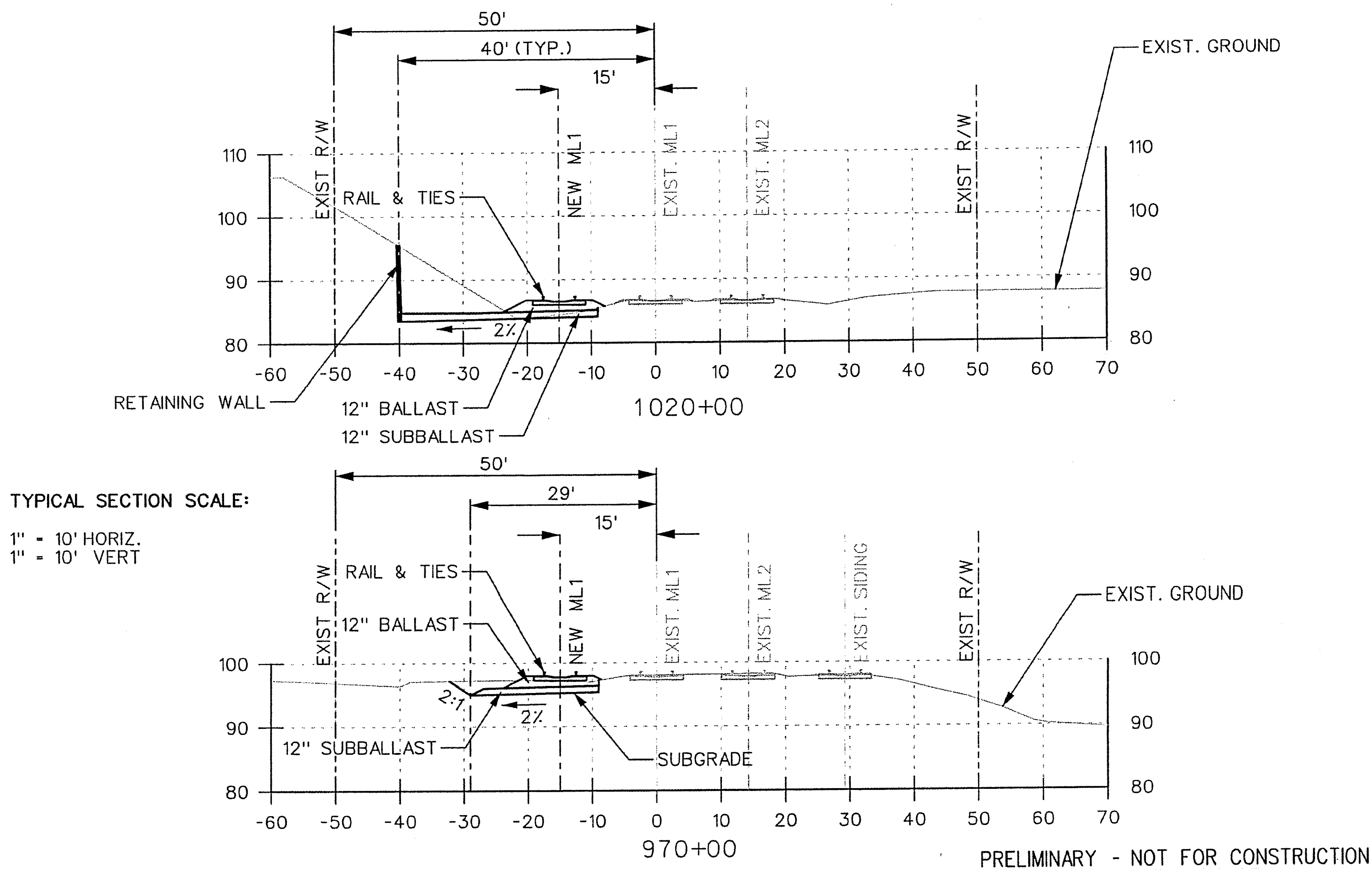
1" = 10' HORIZ.
1" = 10' VERT



PRELIMINARY - NOT FOR CONSTRUCTION

Source: HDR Engineering, Inc.

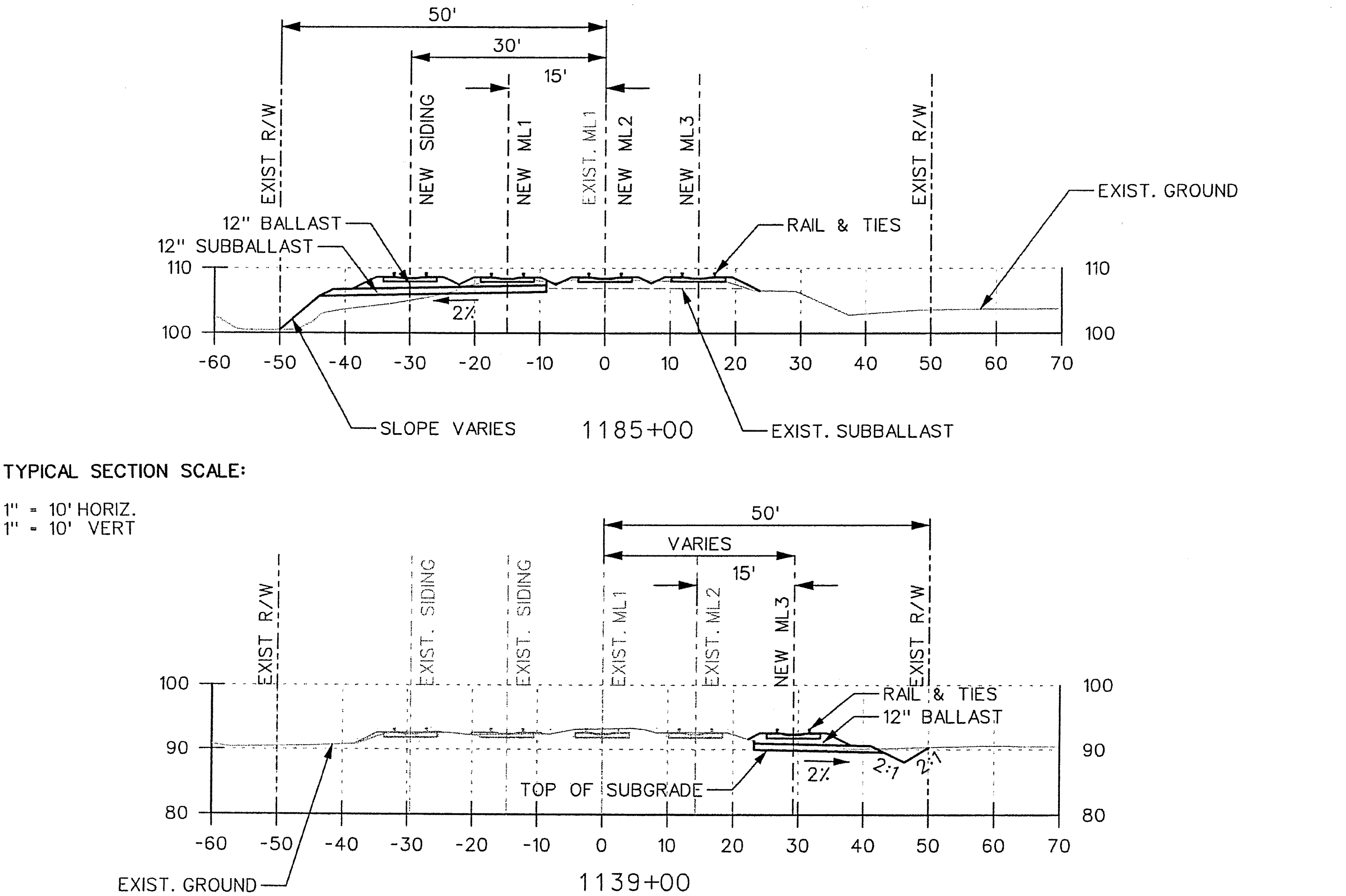
FIGURE 3-3e
Typical Sections – La Mirada to Basta



Source: HDR Engineering, Inc.

Tom Dodson & Associates
Environmental Consultants

FIGURE 3-3f
Typical Sections – La Mirada to Basta



PRELIMINARY - NOT FOR CONSTRUCTION

Source: HDR Engineering, Inc.

Tom Dodson & Associates
Environmental Consultants

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HDR

HDR Engineering, Inc.

APPROVED DATE

FILE:

DESIGNED: MGQ

CHECKED: WGS

DRAWN: CES

CHECKED: WGS

SHEET C1

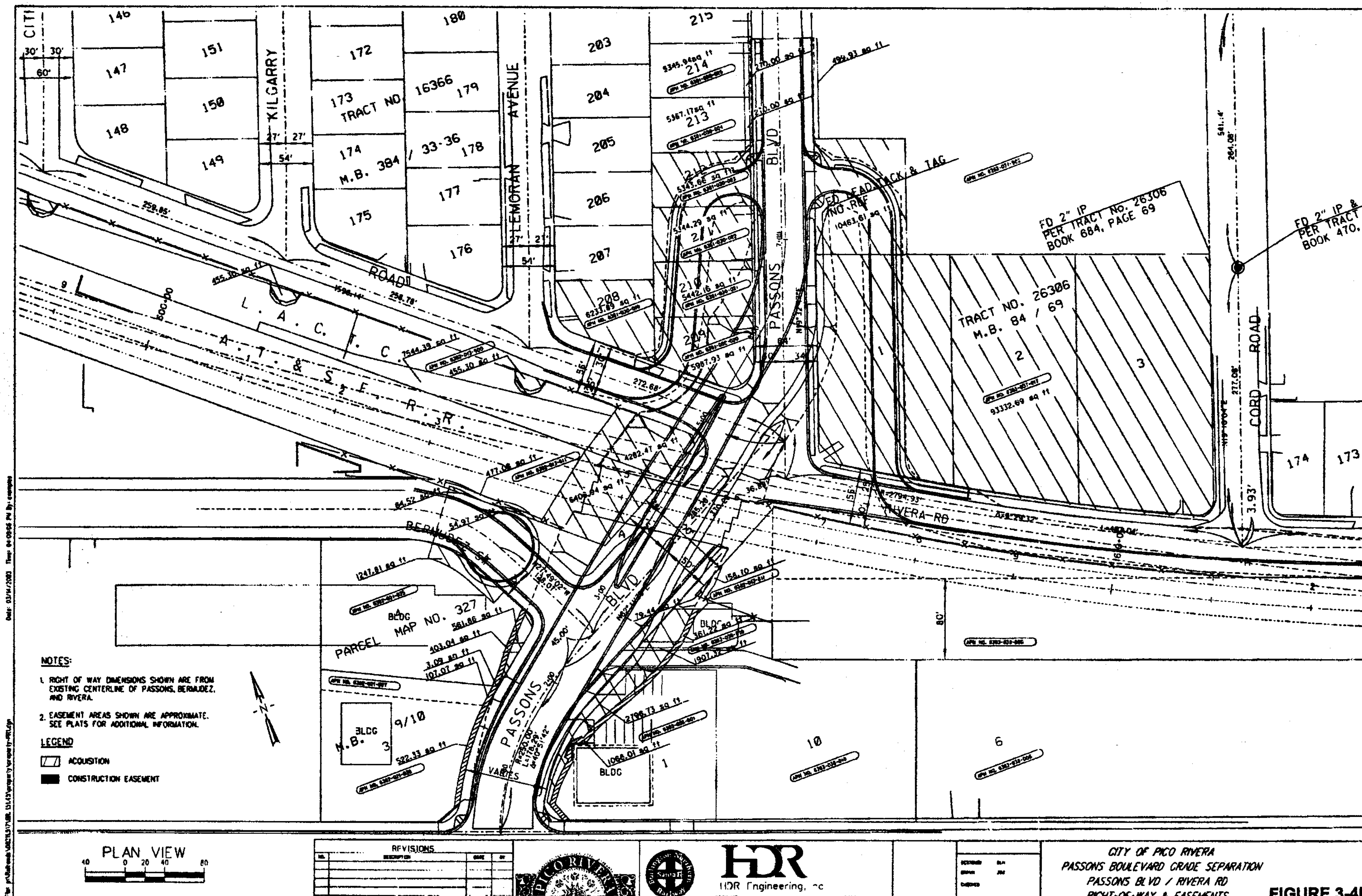
PLAN

PASSONS BLVD. UNDERPASS

NEW THIRD MAIN LINE PROJECT

FIGURE 3-4a

File: P:\08311\095.002\6.0_ProjectEng\6.11_CAD\ROADWAY\passons-pse.sht Date: 03/14/2002 Time: 01:30:00 PM By: mquandee



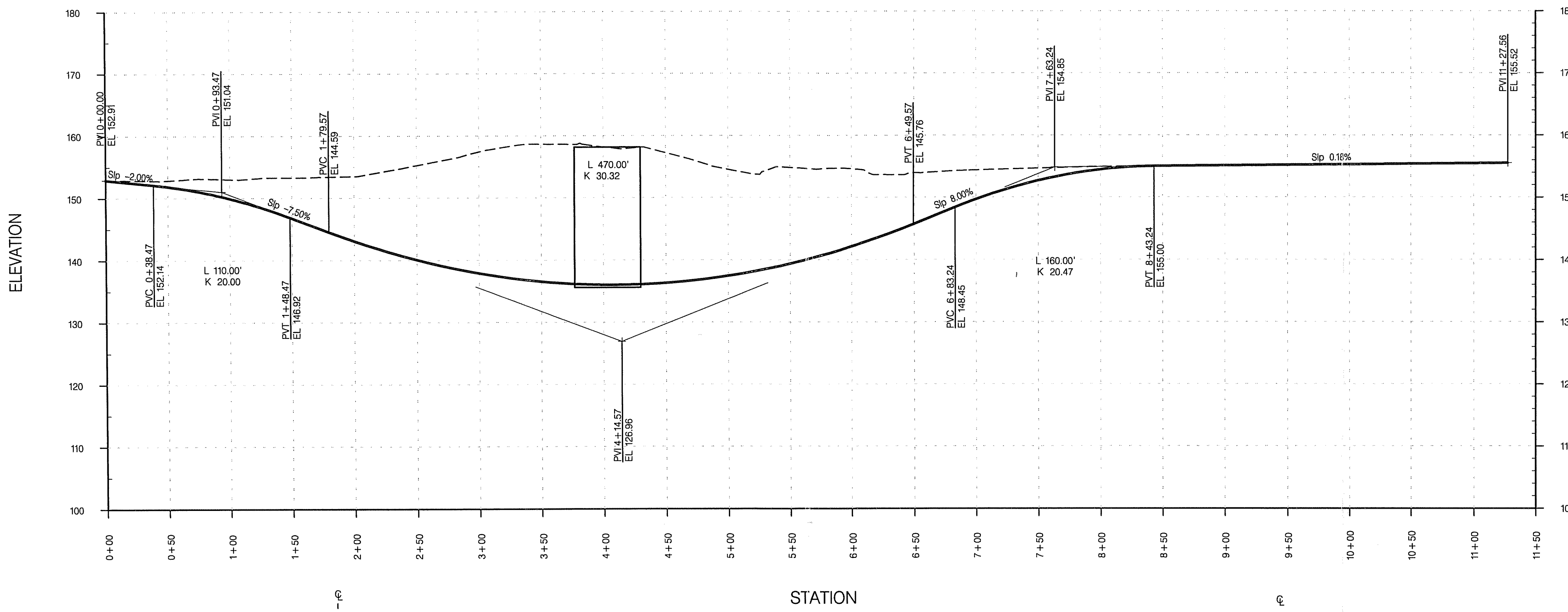
TRACT NO. 16366
M.B. 384 / 33-36
KILGARRY
LEMORAN AVENUE
PASSONS BLVD
ROAD
L. A. C. T. C.
A. T. & S. F. R.R.
TRACT NO. 26306
M.B. 84 / 69
FD 2" IP
PER TRACT No. 26306
BOOK 684, PAGE 69
CORD ROAD
RIVERA RD
BERMUDEZ ST
PARCEL MAP NO. 327
BLDG
NOTES:
1. RIGHT OF WAY DIMENSIONS SHOWN ARE FROM EXISTING CENTERLINE OF PASSONS, BERMUDEZ, AND RIVERA.
2. EASEMENT AREAS SHOWN ARE APPROXIMATE. SEE PLATS FOR ADDITIONAL INFORMATION.
LEGEND
ACQUISITION
CONSTRUCTION EASEMENT
PLAN VIEW
REVISIONS
HDR
HDR Engineering, Inc
CITY OF PICO RIVERA
PASSONS BOULEVARD GRADE SEPARATION
PASSONS BLVD / RIVERA RD
RIGHT-OF-WAY & EASEMENTS

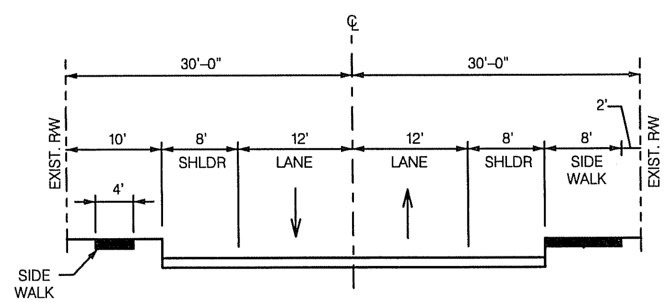
FIGURE 3-4b

FIGURE 3-4b, page 2 of 2
Proposed Passons Blvd. Underpass ROW Map

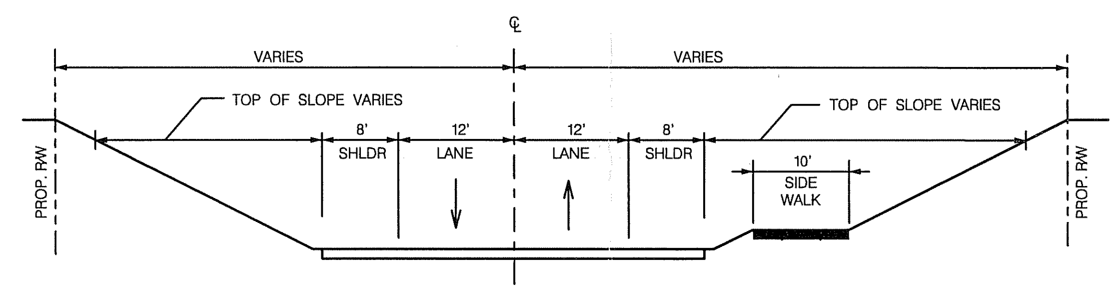
APN	Owner	Site Address	Mailing Address	Parcel Area from Tax Records	Parcel Area from CAD/Survey (Sq. Ft.)	Acquisition Area (Sq. Ft.)	PEA (Sq. Ft.)	TCE Area (Sq. Ft.)	Remarks
6382-013-811	AT&SF Railroad Co.	Fort Worth, Texas		143748	-	-	6605.87	635.76	Permanent TCE for bridge, road cut & landscaping Passons Blvd.
6382-013-900	LA Co Metropolitan	(LACTC)MTA		69260	74291.02	-	6558.97	7544.39	Permanent for bridge, road cut & landscaping along Rivera Road. Temporary for shoo-fly construction
6381-030-19	Joseph J and Esther P. Almeida Jr	7585 Lemoran Ave, Pico Rivera, CA 90660	7585 Lemoran Ave, Pico Rivera, CA 90660	6577	6233.89	6233.89		N/A	Total take for Rivera Road Construction, use house as project office, after construction & access to garage reconfigured, sell property
6381-030-20	Gladys Ochoa	7641 Passons Boulevard, Pico Rivera, CA 90660	7641 Passons Boulevard, Pico Rivera, CA 90660	5597	5987.93	5987.93		N/A	Total take for Rivera Road and Passons Blvd. Construction.
6381-030-21	Arthuru G. Gutierrez Trust	7635 Passons Boulevard, Pico Rivera, CA 90660	7635 Passons Boulevard, Pico Rivera, CA 90660	5445	5442.16	5442.16		N/A	Total take for Rivera Road and Passons Blvd. Construction.
6381-030-22	Gustavo E & Patricia L Guerra	7631 Passons Boulevard, Pico Rivera, CA 90660	7631 Passons Boulevard, Pico Rivera, CA 90660	5344	5344.29	5344.29		N/A	Total take for Rivera Road and Passons Blvd. Construction.
6381-030-23	Victor & Trinidad Godoy	7625 Passons Boulevard, Pico Rivera, CA 90660	7625 Passons Boulevard, Pico Rivera, CA 90660	5344	5343.66	5343.66		N/A	Total take for Rivera Road and Passons Blvd. Construction.
6381-030-24	Patricio & Natale Soto	7619 Passons Boulevard, Pico Rivera, CA 90660	7619 Passons Boulevard, Pico Rivera, CA 90660	5344	5387.17	N/A		270	TCE for new Passons Blvd. grade, sidewalk and relocate driveway to south side of lot.
6381-030-25	Rene & Maria Escobar	7613 Passons Boulevard, Pico Rivera, CA 90660	7613 Passons Boulevard, Pico Rivera, CA 90660	5344	5345.94	N/A		270	TCE for new Passons Blvd. grade, sidewalk and driveway
6383-037-017	Meruelo Trust	7650 Passons Boulevard, Pico Rivera, CA 90660	9550 Firestone Boulevard, Downey, CA 90241	93332.8	93332.69	93332.69		N/A	Total take for Passons Blvd. & Rivera Road. Apartment Complex. Could sell lots 2 & 3 after construction
6382-037-902	ElRancho Unified Consolidated	7602 Passons Boulevard, Pico Rivera, CA 90660	7602 Passons Boulevard, Pico Rivera, CA 90660	174958	-	10463.61		499.93	Total Take for Rivera Road, reconstruct fence along boundary. TCE for Passons Blvd. grade and sidewalk.
6382-021-035	Tzu S. Lin	9311 Slauson Ave, Pico Rivera, CA 90660	3521 Brae Burn Drive, Bakersfield, CA 93306	54885	-	1808.67		403.01	Take & TCE for construction and grading of Bermudez and Passons Blvd. Access closed off of Passons.
6382-021-037	Tzu S. Lin	9310 Slauson Ave, Pico Rivera, CA 90660	3521 Brae Burn Drive, Bakersfield, CA 93306	3637	-	3.09		107.07	Take & TCE for Passons Blvd. Access closed off of Passons
6382-021-038	Tzu S. Lin	9335 Slauson Ave, Pico Rivera, CA 90660	3521 Brae Burn Drive, Bakersfield, CA 93306	19549	-	N/A		522.33	TCE for Passons Blvd. Access closed off of Passons
6383-038-001	San GabrielRiver Co.	9401 Slauson Ave, Pico Rivera, CA 90660	9401 Slauson Ave, Pico Rivera, CA 90660	23513	-	2796.73		1066.01	Take & TCE for construction and grading of Passons Blvd. Small retaining wall around NW building corner. Access closed off of Passons.
6383-038-010	ElPolo Loco Inc. Lessee	9419 Slauson Ave, Pico Rivera, CA 90660	P.O. Box 2369, Castro Valley, CA 94546	38629	-	1807.32		361.22	Take for construction and grading of Passons Blvd. Access closed off of Passons
6383-038-805	AT&SF Railroad Co.	Fort Worth, Texas				N/A		N/A	

Source: HDR Engineering, Inc.

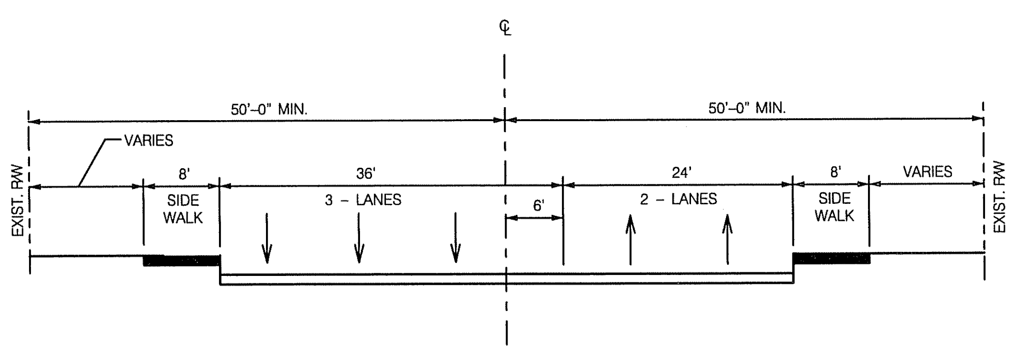




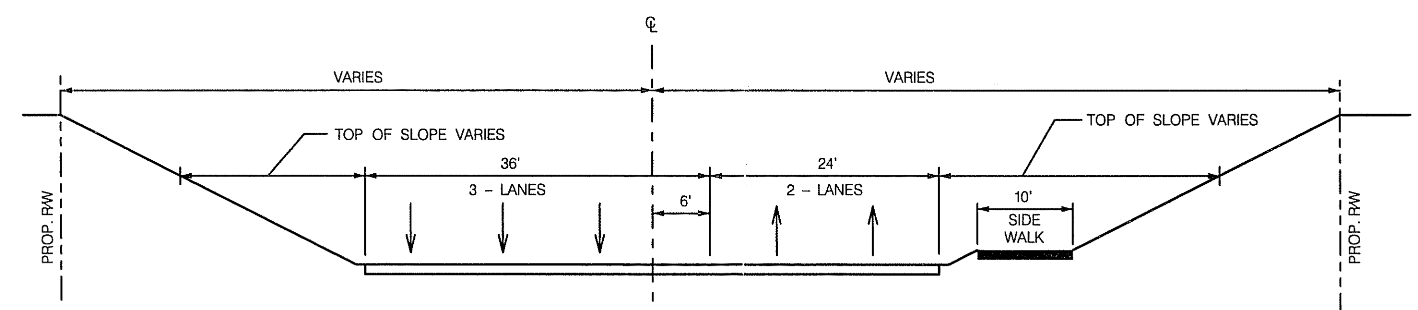
EXISTING PASSONS BLVD. (N. OF RIVERA RD)
TYPICAL SECTION



PROPOSED PASSONS BLVD. (N. OF RIVERA RD)
TYPICAL SECTION



EXISTING PASSONS BLVD. (S. OF RAILROAD)
TYPICAL SECTION



PROPOSED PASSONS BLVD. (S. OF RAILROAD)
TYPICAL SECTION

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HDR
HDR Engineering, Inc.
APPROVED DATE

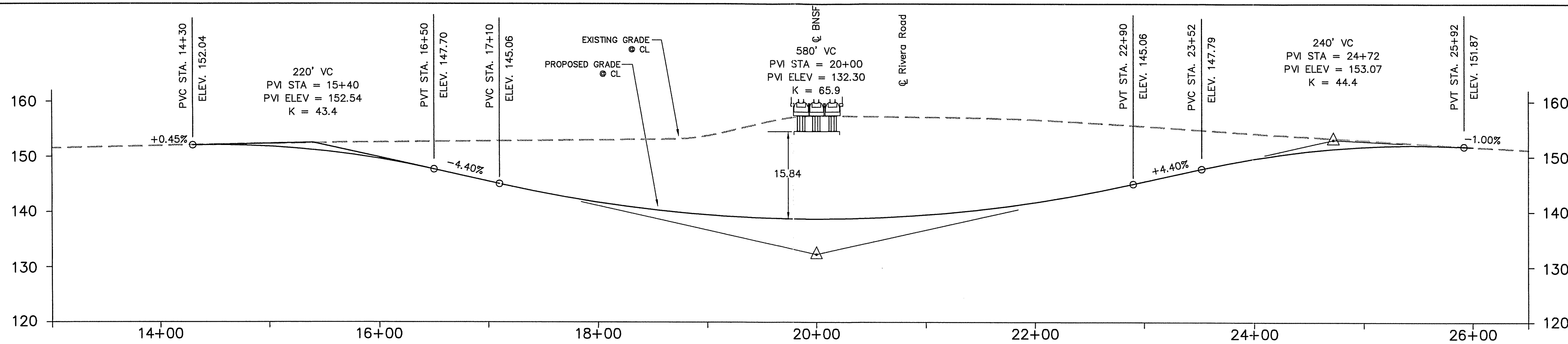
FILE:
DESIGNED: MGG
CHECKED: WGS
DRAWN: CES
CHECKED: WGS

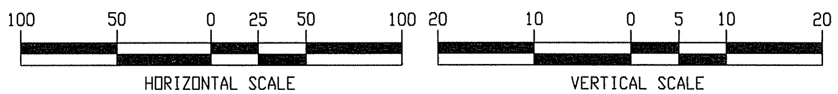
NEW THIRD MAIN TRACK PROJECT
PASSONS BLVD. GRADE SEPARATION
PROFILE AND SECTIONS

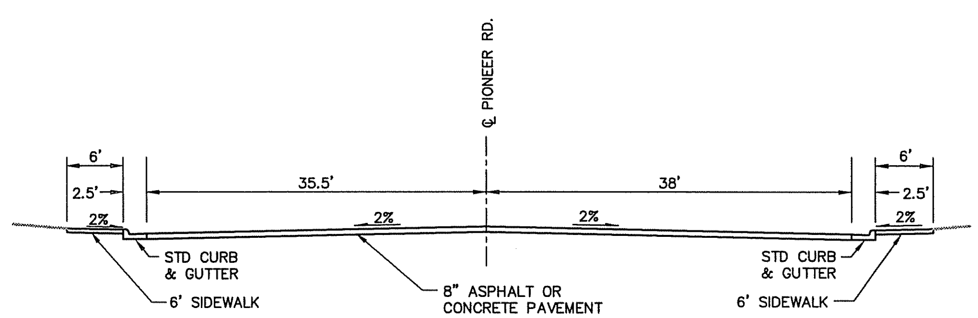
FIGURE 3-4c

PIONEER HIGH SCHOOL
SLAUSON AVE.
WHEEL LOCK CIRCLE
DANBY
MILLGROVE
MORRILL
INTERSTATE 605
ROW
RETAINING WALL
PEDESTRIAN RAMP
POINCIANA ST.
BRADWELL ST.
CASCADE CIRCLE
RIVERA ROAD
RIVERA BRIDGE OVER PIONEER
BNSF BRIDGE OVER PIONEER
PROPOSED 3RD TRACK
BNSF NORTH MAIN TRACK
SOUTH MAIN TRACK
SLAUSON AVE.
STORAGE UNITS
REBUILD PARKING LOT (ESMT)
PIONEER BLVD.
UPRR
SAN GABRIEL RIVER FREEWAY
SAN GABRIEL RIVER
N
GRAPHIC SCALE
HANSON WILSON INCORPORATED
PIONEER BOULEVARD GRADE SEPARATION
ALTERNATE 1
PIONEER BLVD. UNDER BNSF
RIVERA RD. OVER PIONEER BLVD.

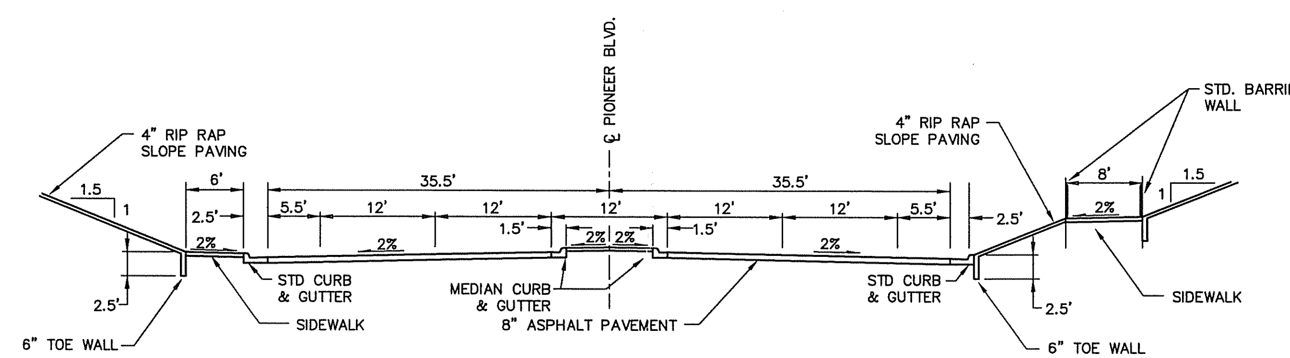
FIGURE 3-5a







EXISTING ROAD SECTION
Scale: 1" = 10'



PROPOSED UNDERPASS SECTION
Scale: 1" = 10'

PIONEER BLVD. TYPICAL SECTIONS

DESIGN SPEED 40 MPH

File\X:\PAX1510276\PLANSET\PIONEER\PIONEER DISPLAY PROFILE.DWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HANSON WILSON INCORPORATED

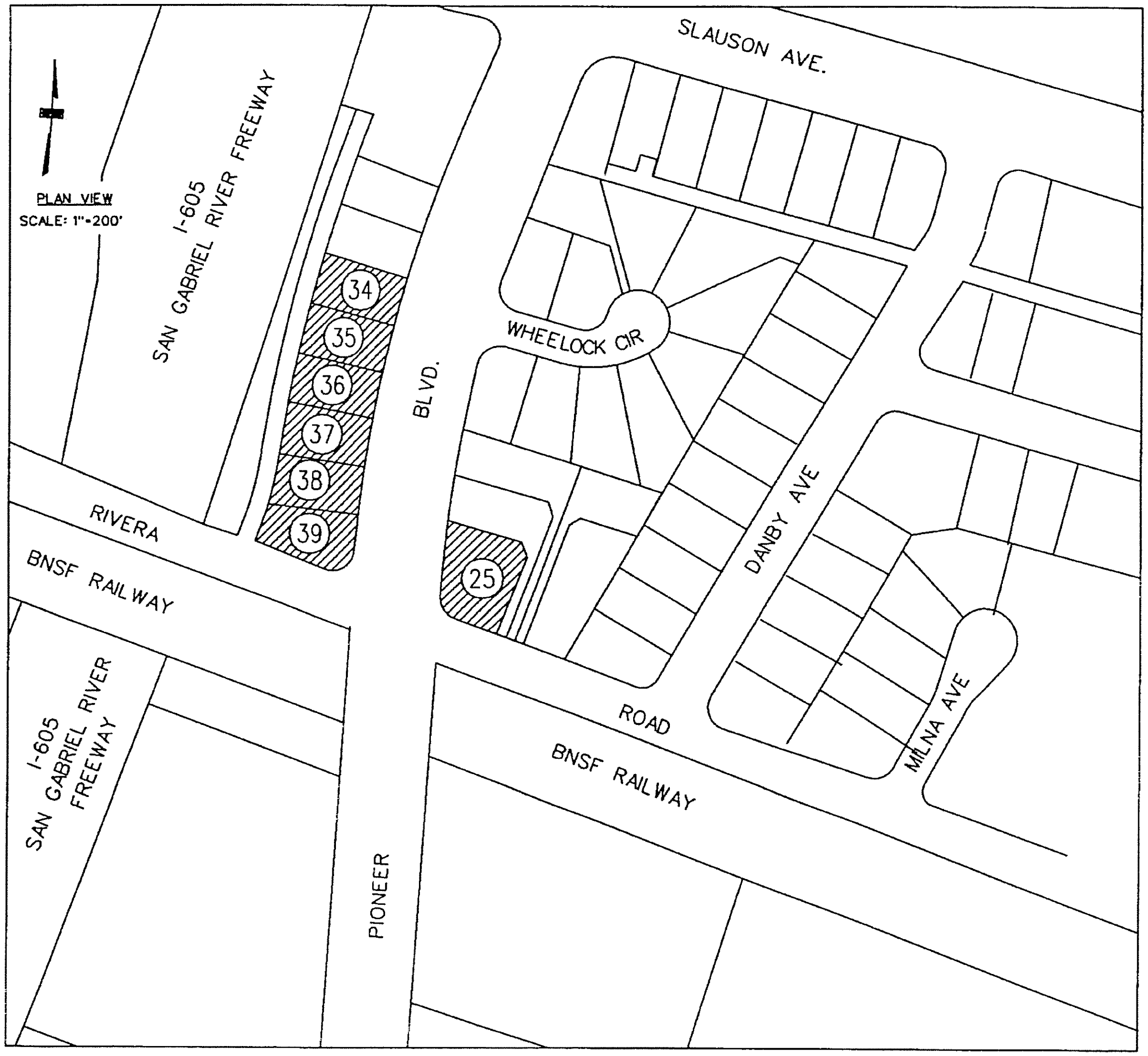
FILE: PDP.DWG
DESIGNED S.J.M.
CHECKED S.J.M.
DRAWN R.W.S.
CHECKED S.J.M.

PLAN – PROFILE
PIONEER BLVD. UNDERPASS
DT JUNCTION TO LA MIRADA
STA. 14+30 TO STA. 26+00

SHEET 1 OF 1

FIGURE 3-5b

FIGURE 3-5c
Pioneer Blvd. Grade Separation - Alternative 1



PIONEER BLVD. GRADE SEPARATION
ALTERNATIVE 1
PROPOSED PROPERTY TAKES
(ALL FULL TAKES)

ASSESSOR'S ID NO.	ADDRESS	AREA*
8177-026-025	11005 RIVERA RD.	+/- 0.19 AC
8177-026-034	8533 PIONEER BLVD.	+/- 0.13 AC
8177-026-035	8603 PIONEER BLVD.	+/- 0.13 AC
8177-026-036	8609 PIONEER BLVD.	+/- 0.13 AC
8177-026-037	8615 PIONEER BLVD.	+/- 0.13 AC
8177-026-038	8619 PIONEER BLVD.	+/- 0.13 AC
8177-026-039	8625 PIONEER BLVD.	+/- 0.15 AC
TOTAL: 7 PARCELS		+/- 0.99 AC

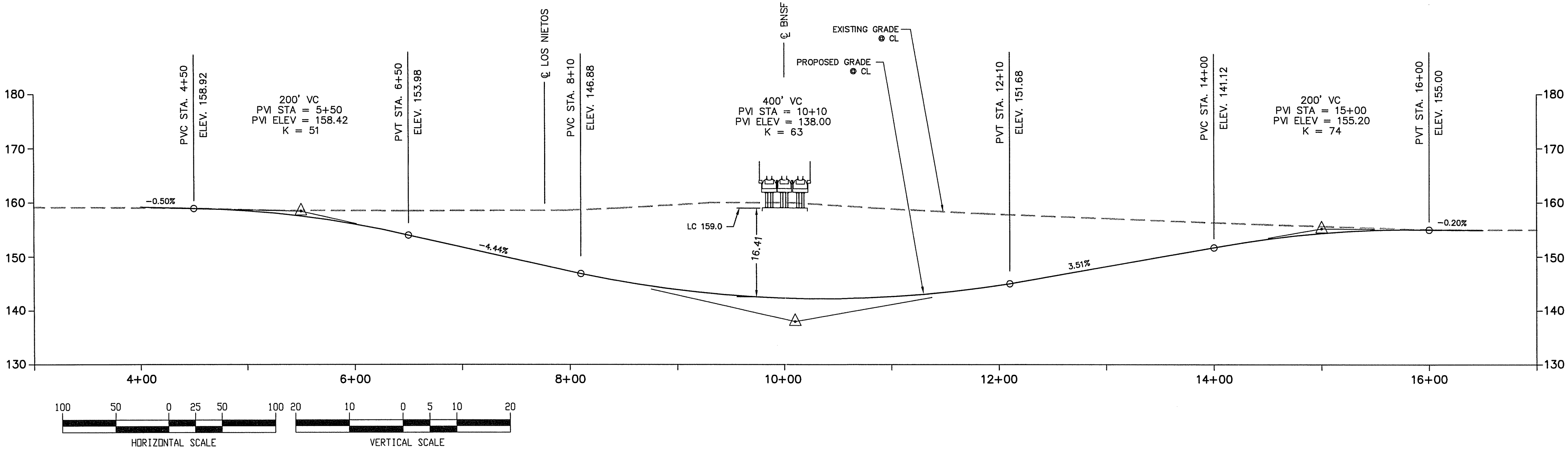
* SOURCE: LOS ANGELES CO. ASSESSOR MAPS

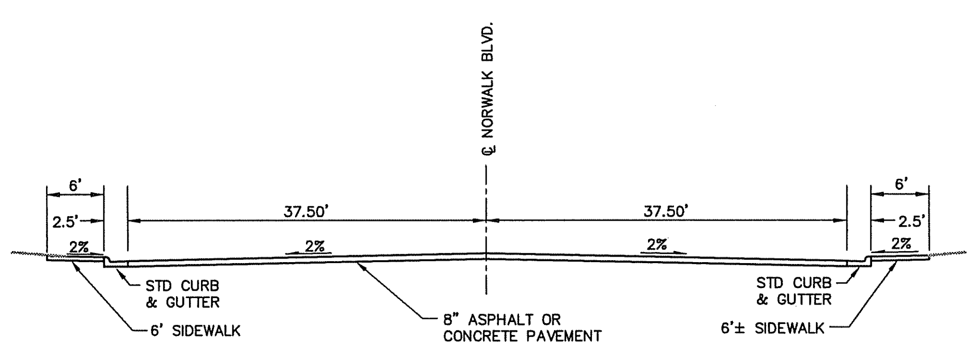
Source: Hanson Wilson, Incorporated

Tom Dodson & Associates
Environmental Consultants

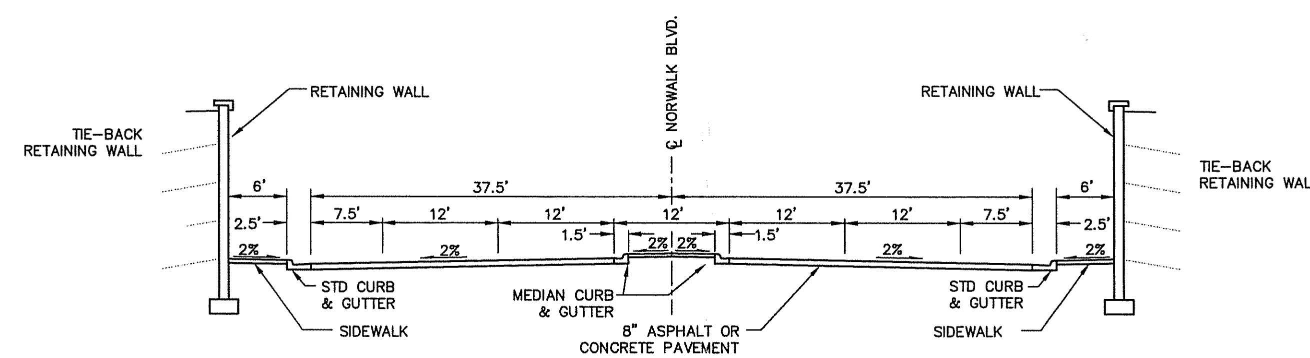

UPRR
REBUILD PARKING LOT
RELOCATE ENTRANCE AND REGRADE PARKING LOT
LANDSCAPE AREA
ROW
LANDSCAPE AREA
REBUILD PARKING LOT
LANDSCAPE AREA
UPRR
ALTMAR ROAD
DICE ROAD
PROPOSED 3RD TRACK
LOS NEITOS
NORWALK
PIKE STREET
HANSON WILSON INCORPORATED
N
GRAPHIC SCALE
DT JCT TO LA MIRADA
NEW THIRD MAIN LINE PROJECT
LOS NEITOS / NORWALK
GRADE SEPARATION

FIGURE 3-6a





EXISTING ROAD SECTION
Scale: 1" = 10'



PROPOSED UNDERPASS SECTION
Scale: 1" = 10'

NORWALK BLVD. TYPICAL SECTIONS

DESIGN SPEED 40 MPH

File:\P\PX151027\PLANSET\NORWALK LOS NIETOS\NORWALK DISPLAY PROFILE.DWG

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

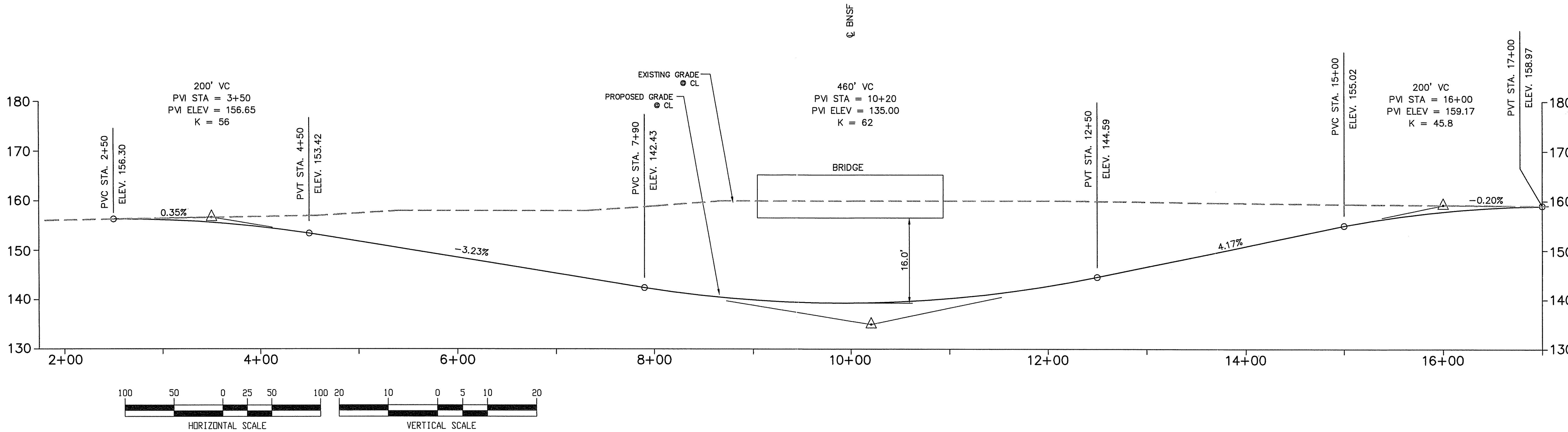
HANSON WILSON INCORPORATED

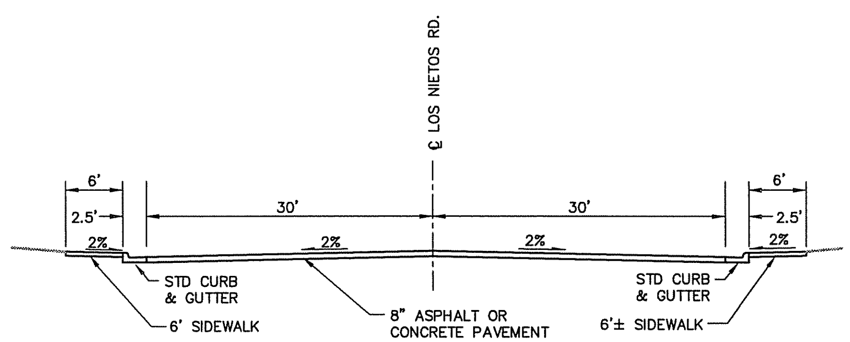
FILE: NDP.DWG
DESIGNED S.J.M.
CHECKED S.J.M.
DRAWN R.W.S.
CHECKED S.J.M.

PLAN – PROFILE
NORWALK BLVD. UNDERPASS
DT JUNCTION TO LA MIRADA
STA. 6+00 TO STA. 16+00

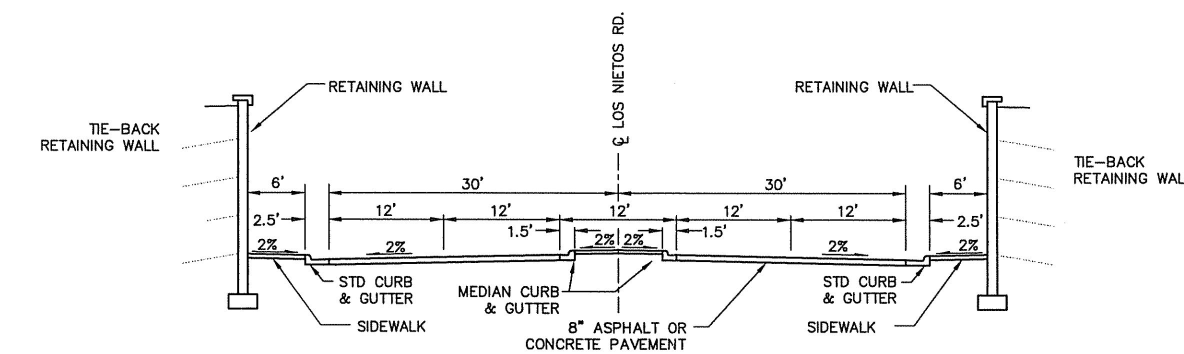
SHEET 1 OF 1

FIGURE 3-6b





EXISTING ROAD SECTION
Scale: 1" = 10'



PROPOSED UNDERPASS SECTION
Scale: 1" = 10'

LOS NIETOS ROAD TYPICAL SECTIONS

DESIGN SPEED 40 MPH

F:\eKVP\VX1510276\PLANSET\NORWALK LOS NIETOS\LOS NIETOS DISPLAY PROFILE.DWG

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HANSON WILSON INCORPORATED

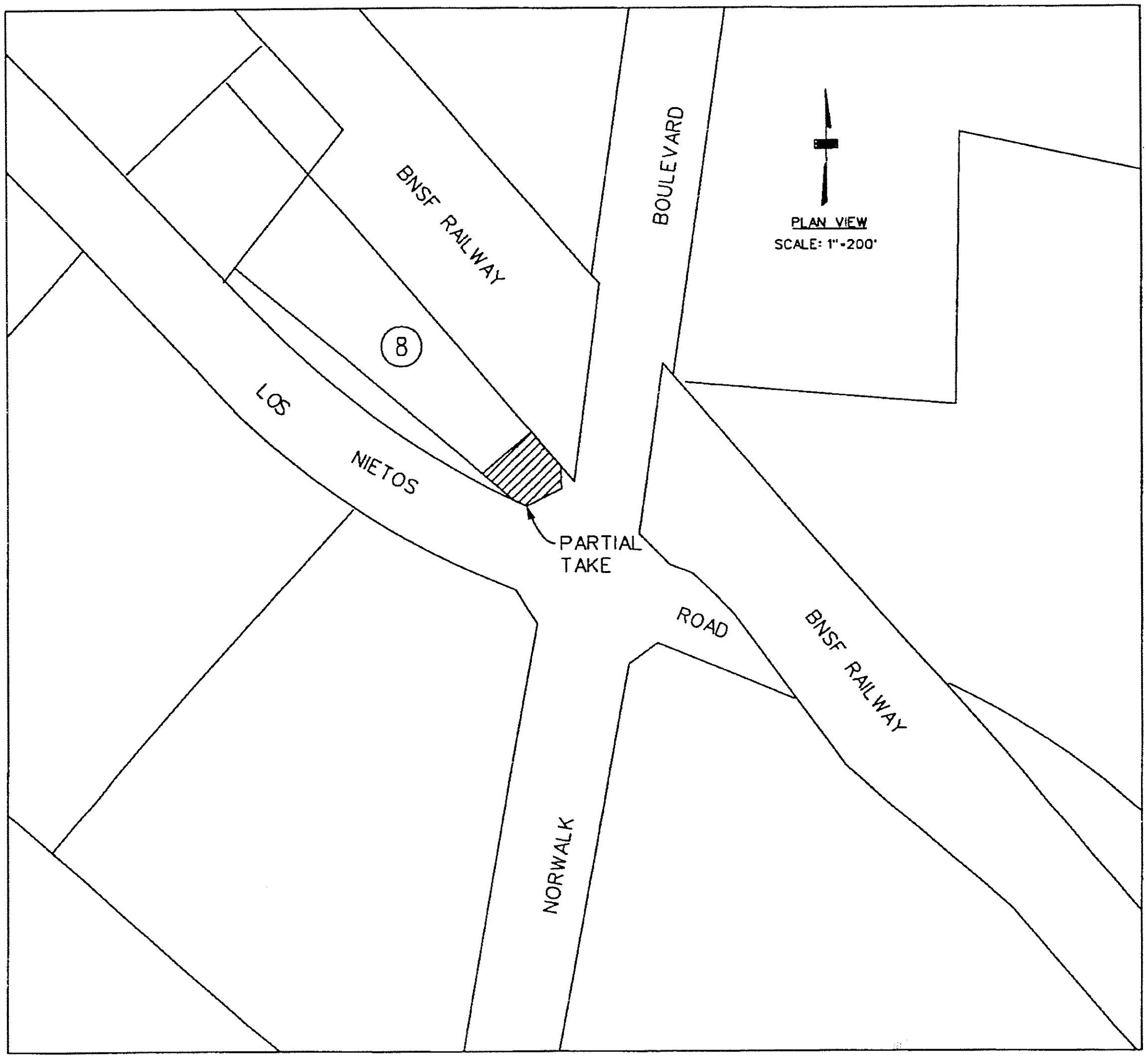
FILE: LNFP.DWG
DESIGNED S.J.M.
CHECKED S.J.M.
DRAWN R.W.S.
CHECKED S.J.M.

PLAN – PROFILE
LOS NIETOS RD. UNDERPASS
DT JUNCTION TO LA MIRADA
STA. 2+00 TO STA. 16+00

SHEET 1 OF 1

FIGURE 3-6c

FIGURE 3-6d
Norwalk Blvd. and Los Nietos Road Grade Separations



NORWALK BLVD. AND LOS NIETOS RD. GRADE SEPARATIONS
PROPOSED PROPERTY TAKE
(PARTIAL TAKE)

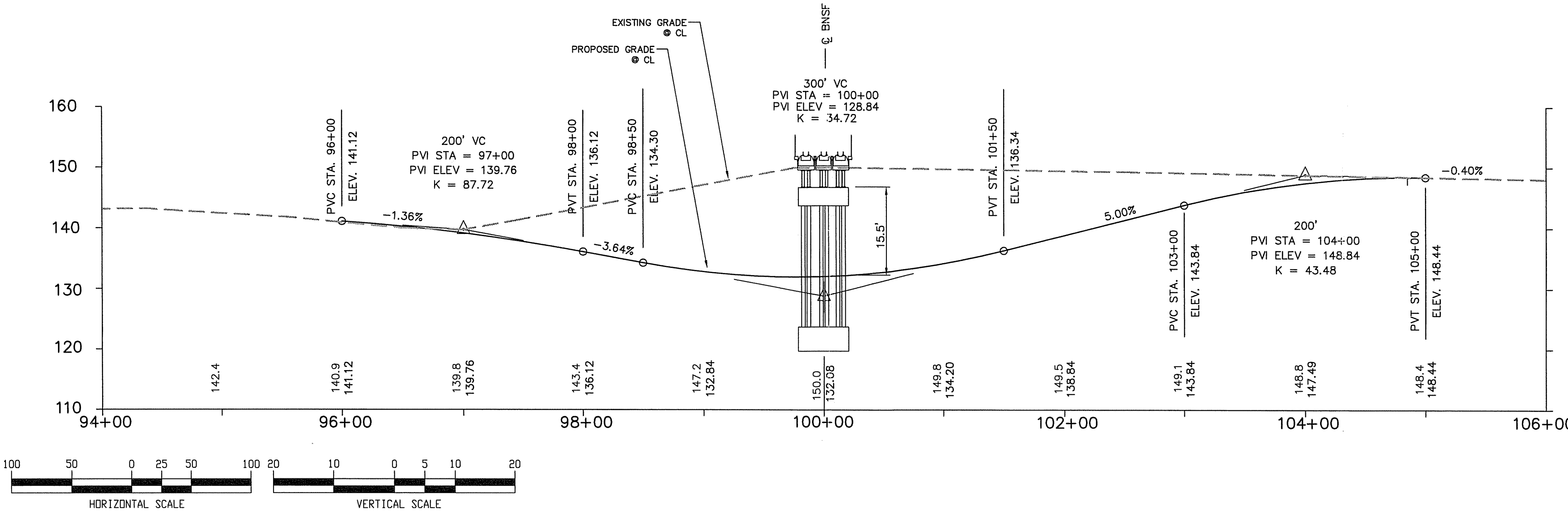
ASSESSOR'S ID NO.	ADDRESS	AREA*
8178-035-00 (8)	11703 LOS NIETOS RD.	+/- 0.10 AC
TOTAL: PORTION OF 1 PARCEL		+/- 0.10 AC

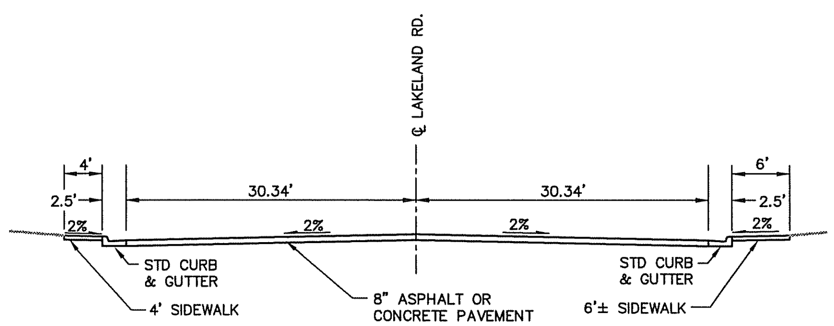
* SOURCE: LOS ANGELES CO. ASSESSOR MAPS

Source: Hanson Wilson, Incorporated

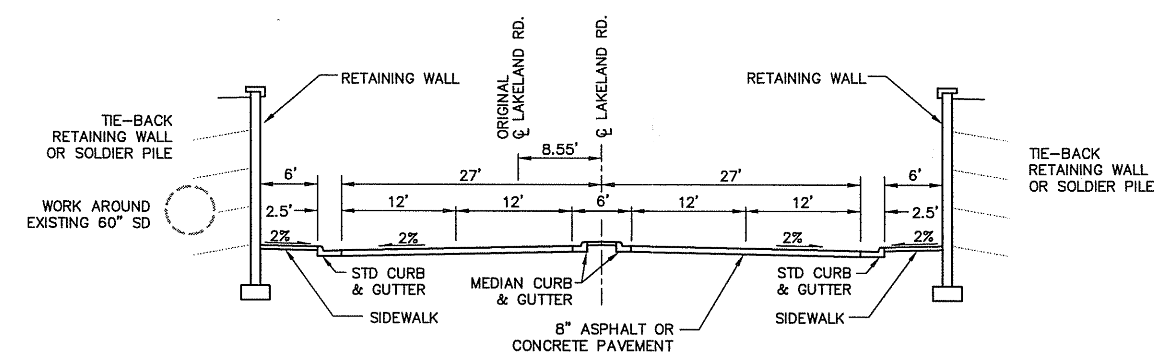

EXTEND 2-48" CULVERTS
TEMPORARY EASEMENT
CONCRETE CHANNEL
CLOSE ENTRANCE
RETAINING WALL
LAKELAND AVENUE
TEMPORARY EASEMENT
RETAINING WALL
BLOOMFIELD ROAD
BNSF SOUTH MAIN TRACK
BNSF NORTH MAIN TRACK
PROPOSED 3RD TRACK
GREENSTONE AVENUE
LOCKPORT PLACE
HANSON WILSON INCORPORATED
N
GRAPHIC SCALE
DT JCT TO LA MIRADA
NEW THIRD MAIN LINE PROJECT
LAKELAND AVE.
GRADE SEPARATION

FIGURE 3-7a





EXISTING ROAD SECTION
Scale: 1" = 10'



PROPOSED UNDERPASS SECTION
Scale: 1" = 10'

LAKELAND ROAD TYPICAL SECTIONS

DESIGN SPEED 30 MPH

FileK\P\X1510276\PLANSET\LAKELAND2\LAKELAND DISPLAY PROFILE.DWG

REVISIONS			
NO.	DESCRIPTION	DATE	BY

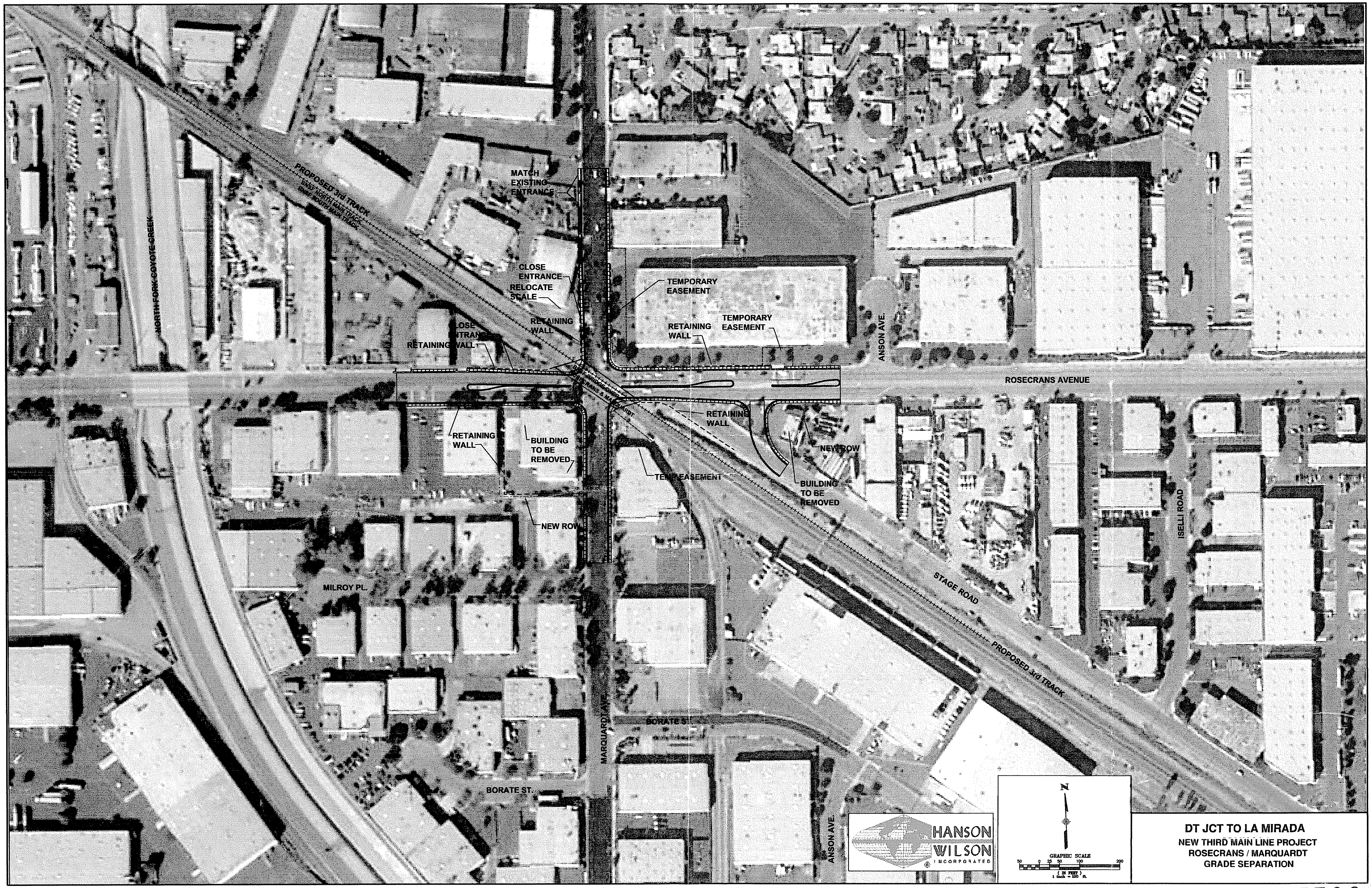
HANSON WILSON INCORPORATED

FILE: LDP.DWG
DESIGNED S.J.M.
CHECKED S.J.M.
DRAWN R.W.S.
CHECKED S.J.M.

PLAN - PROFILE
LAKELAND RD. UNDERPASS
L.A. TRIPLE TRACK MIDDLE SECTION
STA. 93+00 TO 107+00

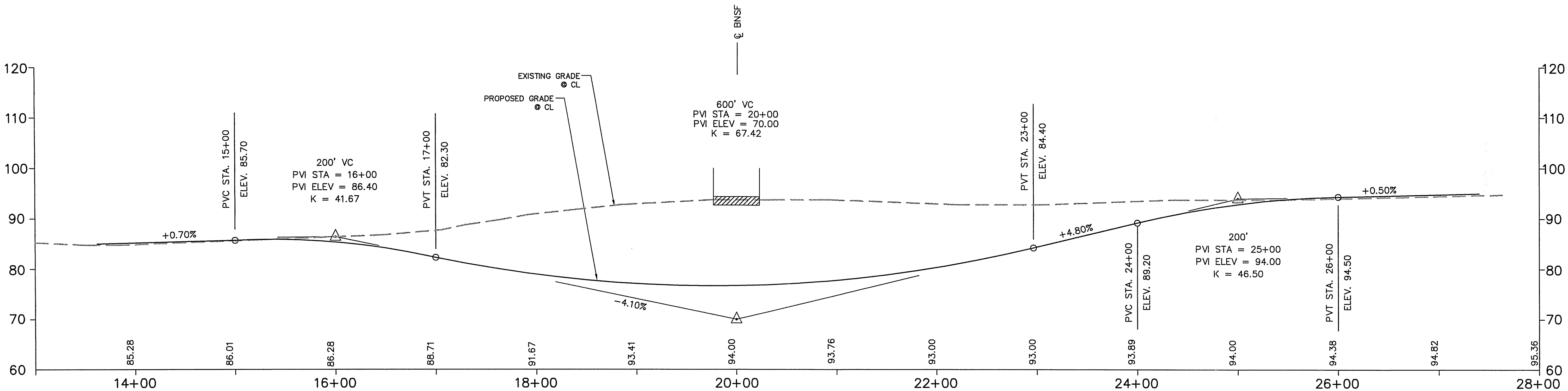
SHEET 1 OF 1

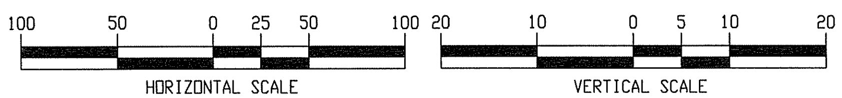
FIGURE 3-7b

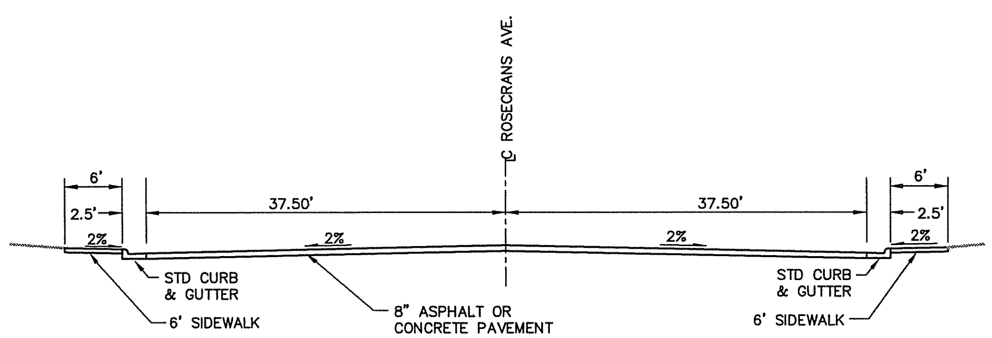


PROPOSED 3rd TRACK
NORTH FORK COYOTE CREEK
MATCH EXISTING ENTRANCE
CLOSE ENTRANCE
RELOCATE SCALE
RETAINING WALL
TEMPORARY EASEMENT
RETAINING WALL
TEMPORARY EASEMENT
ANSON AVE.
ROSECRANS AVENUE
RETAINING WALL
BUILDING TO BE REMOVED
NEW ROW
TEMP EASEMENT
BUILDING TO BE REMOVED
NEW ROW
ISELLI ROAD
STAGE ROAD
PROPOSED 3rd TRACK
MILROY PL.
MARQUARDT AVE.
BORATE ST.
BORATE ST.
ANSON AVE.
HANSON WILSON INCORPORATED
N
GRAPHIC SCALE
DT JCT TO LA MIRADA
NEW THIRD MAIN LINE PROJECT
ROSECRANS / MARQUARDT
GRADE SEPARATION

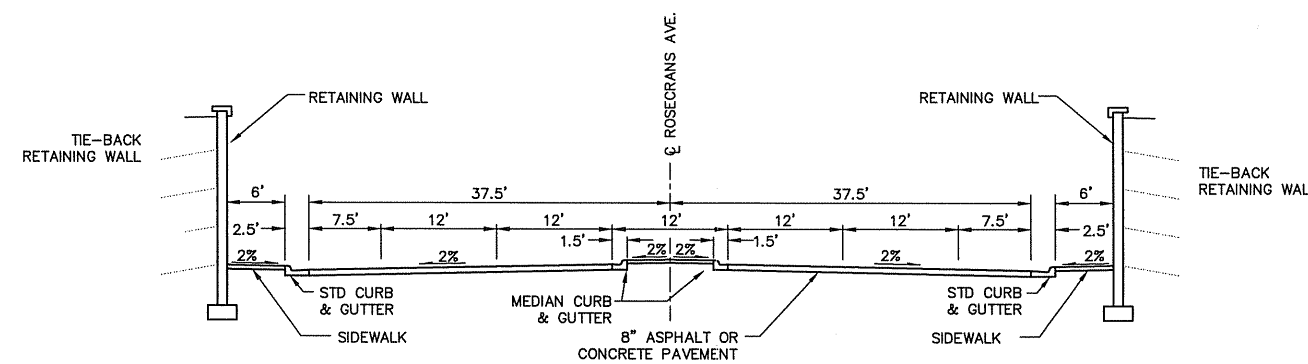
FIGURE 3-8a







EXISTING ROAD SECTION
Scale: 1" = 10'



PROPOSED UNDERPASS SECTION
Scale: 1" = 10'

ROSECRANS AVE. TYPICAL SECTIONS

DESIGN SPEED 40 MPH

FileK\P\PX1510276\PLANSET\ROSECRANS\ROSECRANS DISPLAY PROFILE.DWG

REVISIONS			
NO.	DESCRIPTION	DATE	BY

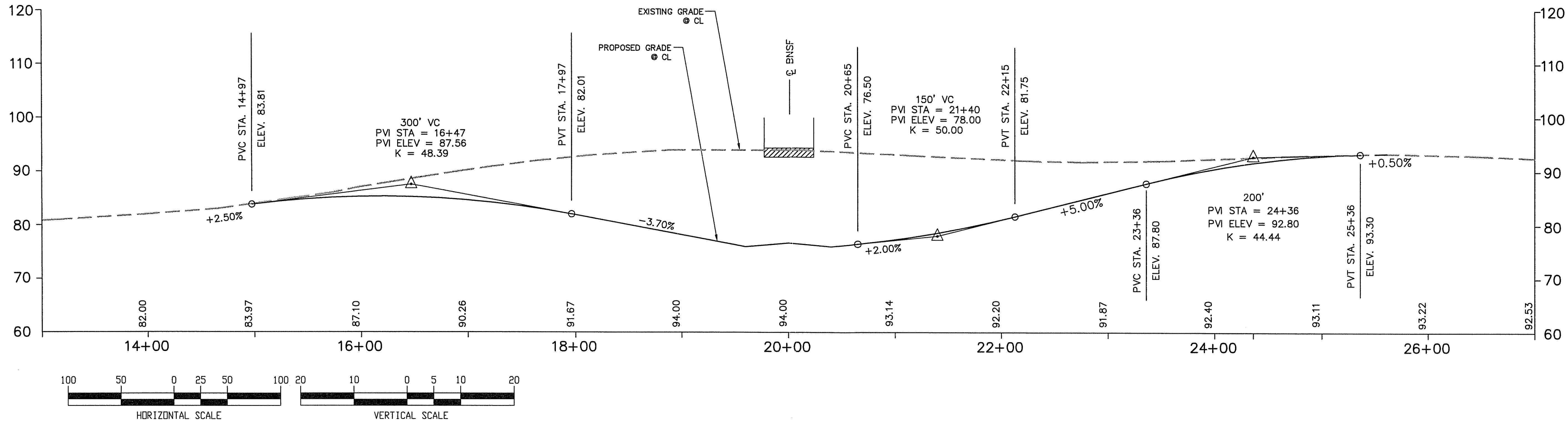
HANSON WILSON INCORPORATED

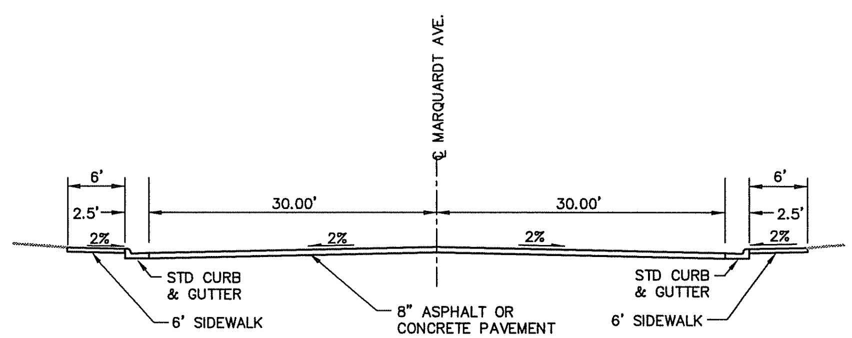
FILE: RDP.DWG
DESIGNED S.J.M.
CHECKED S.J.M.
DRAWN R.W.S.
CHECKED S.J.M.

PLAN – PROFILE
ROSECRANS AVE. UNDERPASS
DT JUNCTION TO LA MIRADA
STA. 14+00 TO STA. 26+00

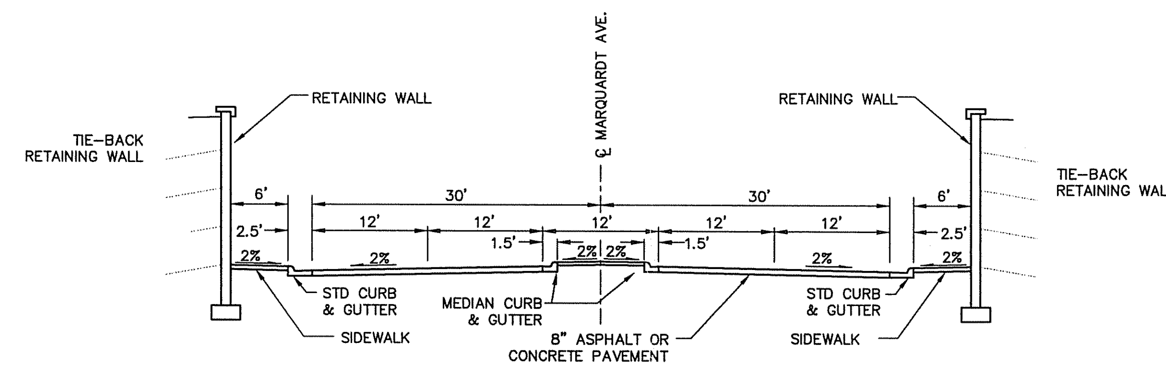
SHEET 1 OF 1

FIGURE 3-8b





EXISTING ROAD SECTION
Scale: 1" = 10'



PROPOSED UNDERPASS SECTION
Scale: 1" = 10'

MARQUARDT AVE. TYPICAL SECTIONS

DESIGN SPEED 40 MPH

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HANSON WILSON INCORPORATED

FILE: LFP.DWG
DESIGNED S.J.M.
CHECKED S.J.M.
DRAWN R.W.S.
CHECKED S.J.M.

PLAN - PROFILE
MARQUARDT AVE. UNDERPASS
DT JUNCTION TO LA MIRADA
STA. 14+00 TO STA. 26+00

SHEET 1 OF 1

FIGURE 3-8c

FileX\P\X1510276\PLANSET\ROSECRANS\MARQUADT DISPLAY PROFILE.DWG

FIGURE 3-8d
Rosecrans Avenue / Marquardt Avenue Grade Separation

ROSECRANS AVE./MARQUARDT AVE.
GRADE SEPARATION
PROPOSED PROPERTY TAKES
(ALL FULL TAKES)

ASSESSOR'S ID NO.	ADDRESS	AREA*
8069-005-001	13840 ROSECRANS AVE.	+/- 0.35 AC
8069-003-007	13750 ROSECRANS AVE.	+/- 1.04 AC
TOTAL: 2 PARCELS		+/- 1.39 AC

* SOURCE: LOS ANGELES CO. ASSESSOR MAPS

Tom Dodson & Associates
Environmental Consultants

File: P:\08311\095.002\6.0_ProjectEng\6.11_CAD\ROADWAY\valleyview-pse.sht Date: 03/14/2002 Time: 01:31:13 PM By: mquandee

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HDR
HDR Engineering, Inc.

APPROVED DATE

FILE:

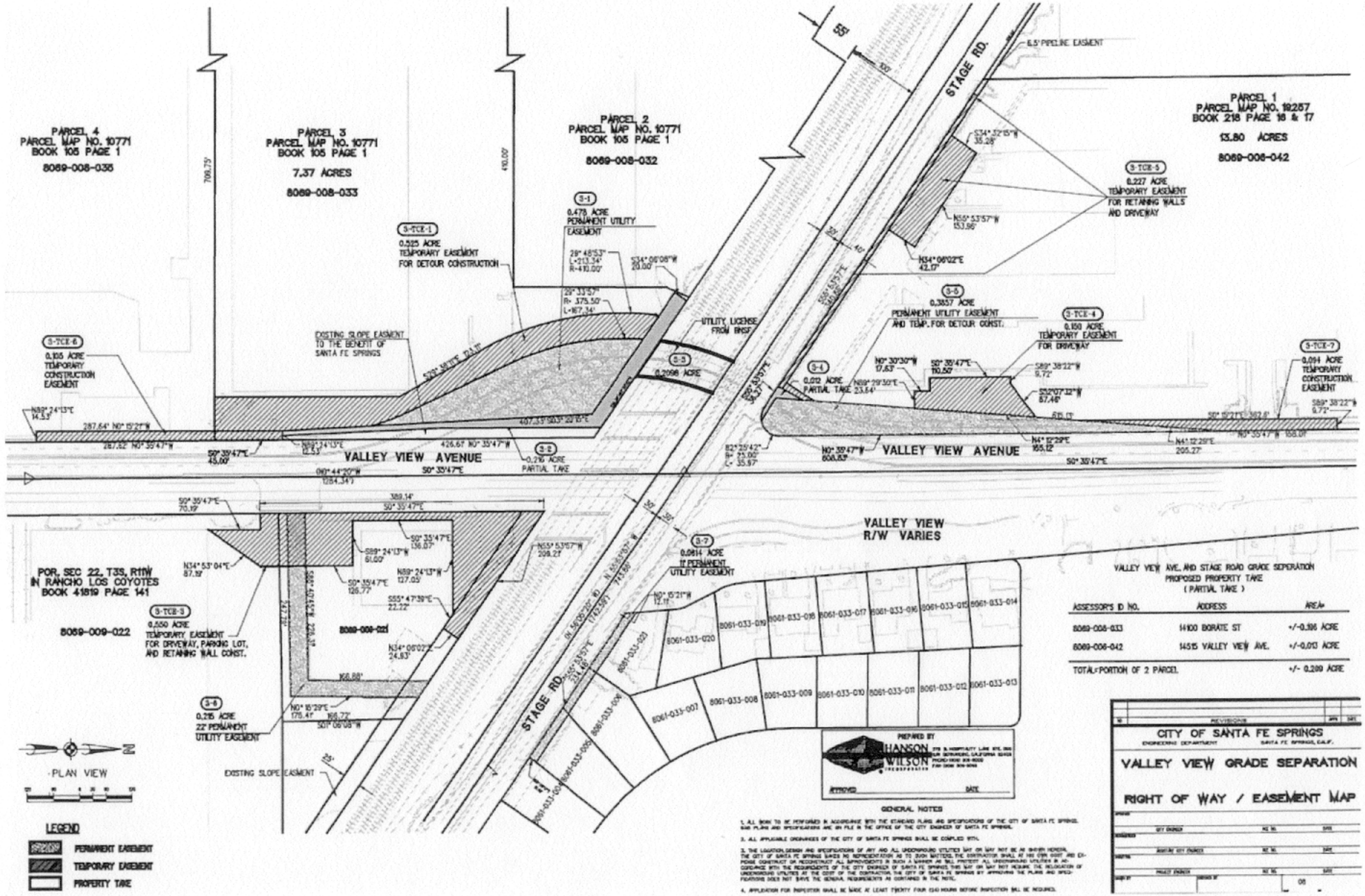
DESIGNED: MGQ
CHECKED: WGS
DRAWN: CES
CHECKED: WGS

SHEET C1

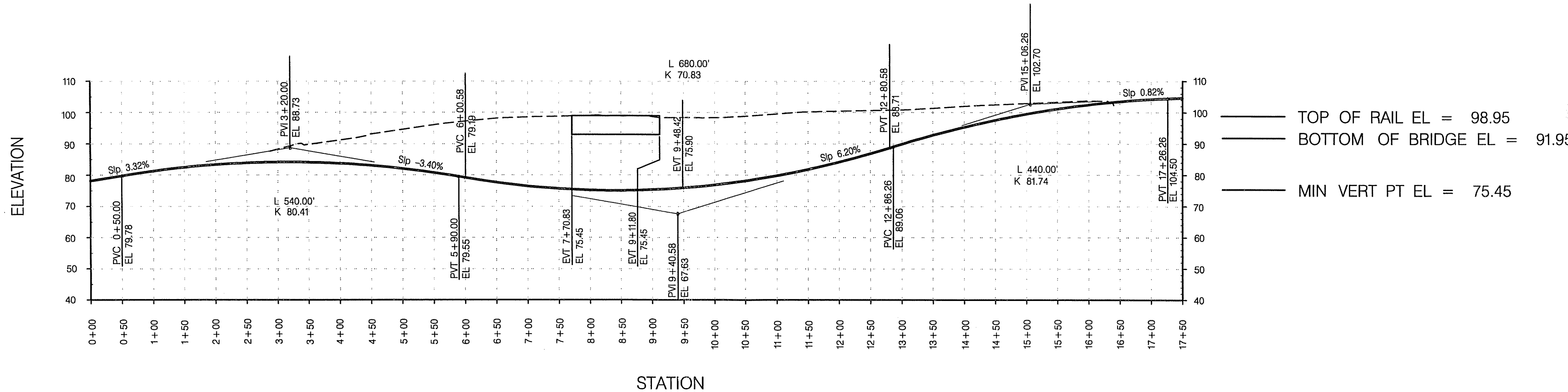
PLAN
VALLEY VIEW AVENUE UNDERPASS
THIRD MAIN LINE PROJECT

FIGURE 3-9a

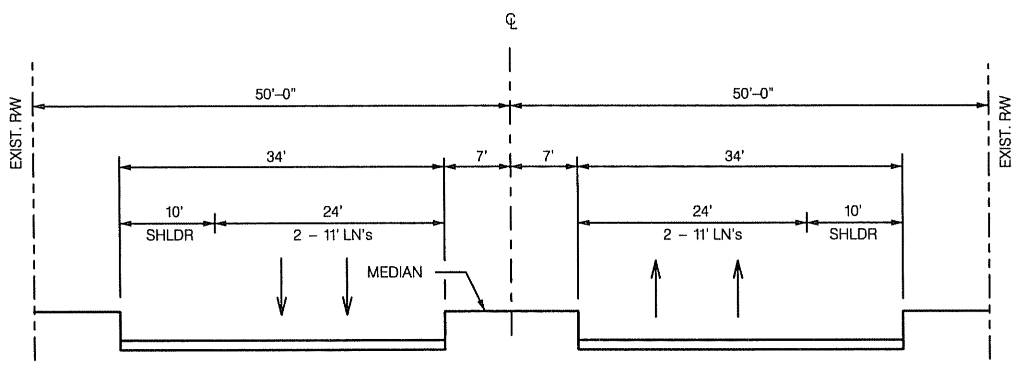
FIGURE 3-9b
Proposed Valley View Avenue Underpass ROW Map



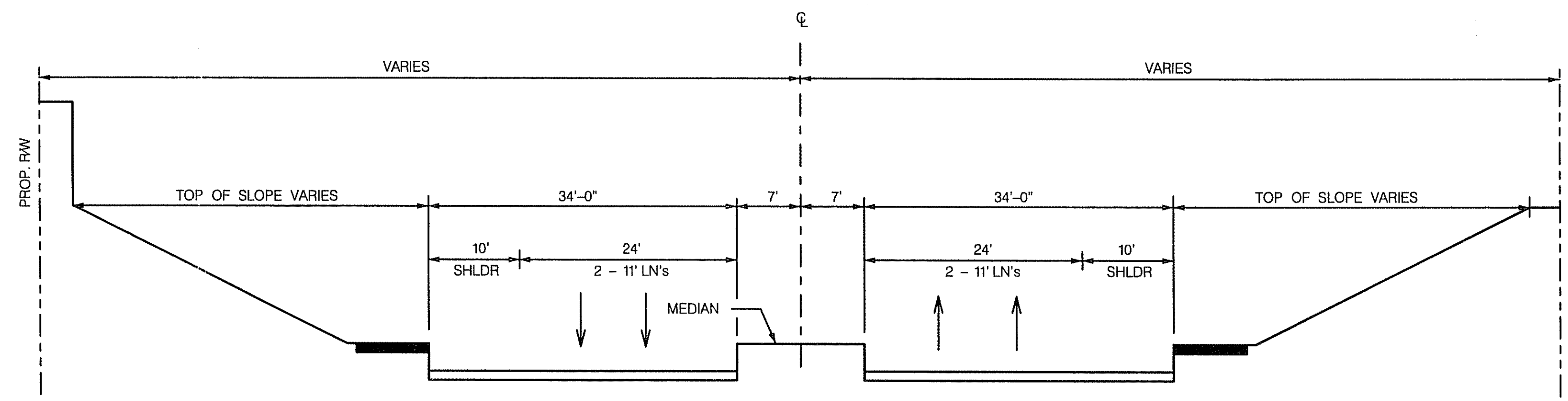
Source: HDR Engineering, Inc.



VALLEY VIEW AVENUE



EXISTING VALLEY VIEW AVE
TYPICAL SECTION



PROPOSED VALLEY VIEW AVE
TYPICAL SECTION

File: P:\08311\095.002\6.0_ProjectEng\6.11_CAD\ROADWAY\valleyview-pse-tv01-sht.dgn Date: 03/14/2002 Time: 11:47:18 AM By: mquandee

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

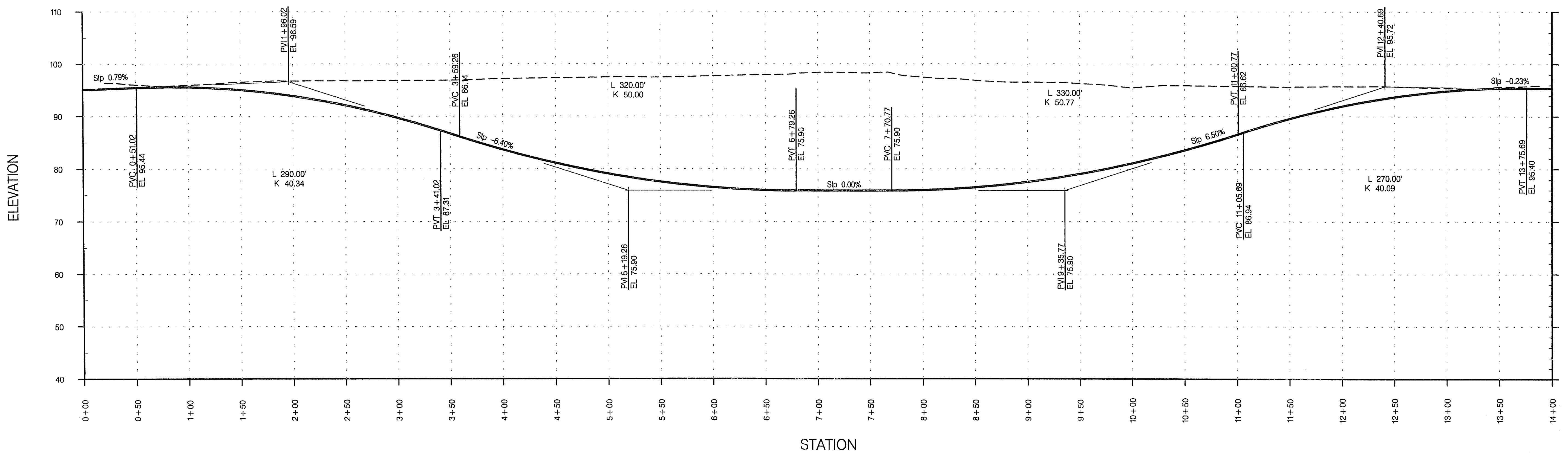
HDR
HDR Engineering, Inc.
APPROVED DATE

FILE:
DESIGNED: MGO
CHECKED: WGS
DRAWN: CES
CHECKED: WGS

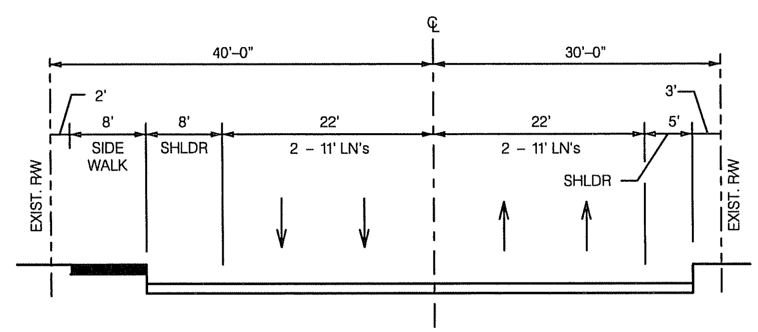
PROFILE AND SECTIONS
VALLEY VIEW AVENUE UNDERPASS
NEW THIRD MAIN LINE PROJECT

SHEET T2

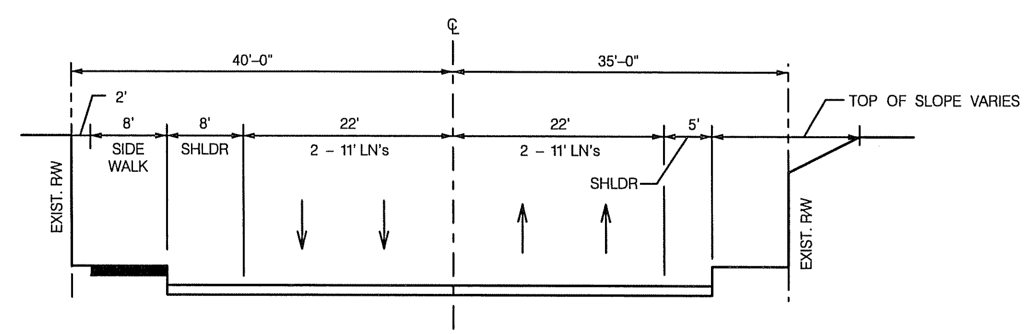
FIGURE 3-9c



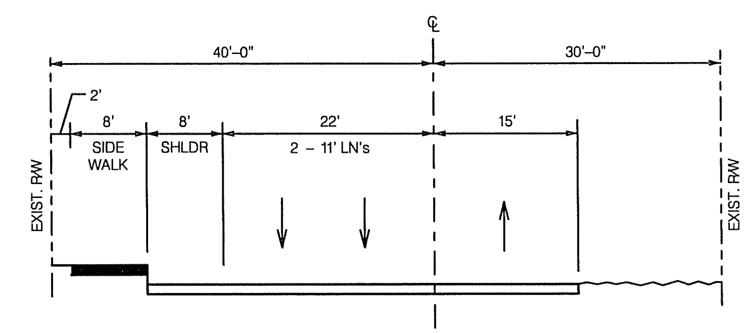
STAGE ROAD



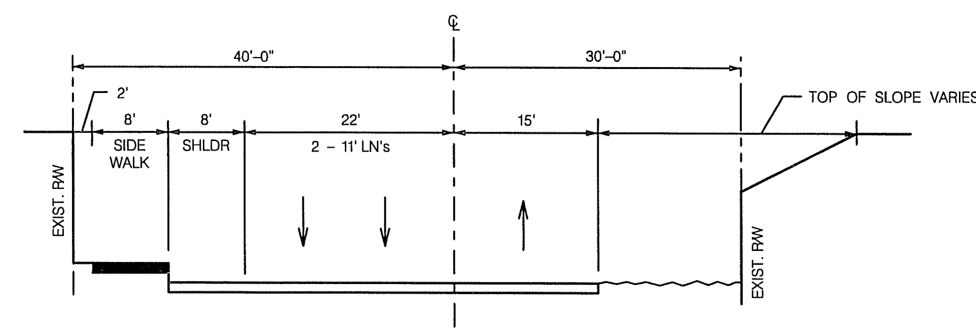
EXISTING STAGE RD (EAST)
TYPICAL SECTION



PROPOSED STAGE RD (EAST)
TYPICAL SECTION



EXISTING STAGE RD (WEST)
TYPICAL SECTION



PROPOSED STAGE RD (WEST)
TYPICAL SECTION

File: P:\08311\095.002\6.0_ProjectEng\6.11_CAD\ROADWAY\stage-pse-1v01-sht.dgn Date: 03/14/2002 Time: 11:46:15 AM By: mquandee

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS			
NO.	DESCRIPTION	DATE	BY

Burlington Northern Santa Fe Railway

HDR
HDR Engineering, Inc.
APPROVED DATE

FILE:
DESIGNED: MGQ
CHECKED: WGS
DRAWN: CES
CHECKED: WGS

PROFILE AND SECTIONS
VALLEY VIEW AVENUE UNDERPASS
NEW THIRD MAIN LINE PROJECT

SHEET T1

FIGURE 3-9d

CHAPTER 4
ENVIRONMENTAL EVALUATION

Note: Chapter 4 figures are located at the end of each subchapter, not immediately following their reference in text.

4.1 INTRODUCTION

This chapter of the Program Environmental Impact Report (PEIR) provides the detailed information used to forecast the type and significance of potential adverse environmental impacts for the issues identified in the Notice of Preparation and summarized in Chapters 2 and 3 of this document. As discussed in Chapter 3, the project description focuses on the facilities that would be constructed and activities that would occur with the implementation of the proposed project (Third Main Track and Grade Separations Project). In the following subchapters each of the environmental topics identified in the Initial Study as having a potential to cause significant impact is evaluated. The environmental impact analysis section for each environmental topic is arranged in the following manner:

a. An introduction that summarizes the specific issues of concern for each subchapter identified in the Initial Study, Notice of Preparation and scoping process;

b. A summary of the current or existing environmental setting for environmental and man-made resource issues is presented as the baseline from which impacts will be forecast;

c. Based on stated assumptions, the potential impacts without applying any mitigation are forecast and the significance of impacts is assessed using identified criteria or thresholds of significance;

d. Recommended measures that can be implemented to substantially lessen potential adverse environmental impacts are identified, their effectiveness in reducing impacts to non-significant levels is evaluated, and any adverse impacts that may be caused by implementing mitigation measures are addressed;

e. Potential cumulative adverse environmental impacts are assessed under the environmental topic, where applicable; and

f. Unavoidable adverse environmental impacts, including significant unavoidable impacts, are identified.

To provide the reviewer with a criterion or set of criteria with which to evaluate the significance of potential adverse impact, this document provides issue specific criteria, i.e. thresholds of significance, for each topic considered in this PEIR. These criteria are either standard thresholds established by law or policy (such as ambient air quality standards) or project-specific evaluation thresholds that are developed and used specifically for this project. After comparing the forecasted physical changes in the environment that may be caused by the proposed project with the significance threshold criterion or criteria, a conclusion is reached on whether the proposed project has the potential to cause a significant adverse environmental impact for the issue being evaluated.

Measures to reduce adverse environmental impacts are identified and described in this section of the PEIR. Over that past several years, mitigation has evolved in scope and complexity. As society responds to environmental degradation, environmental management tools are converted from mitigation measures to standards. Thus, last year's mitigation measures are integrated into rules and regulations, such as the Uniform Building Code or Water Quality Control Plans. Measures incorporated into rules and regulations become mandatory requirements (not discretionary) and they no longer need to be identified as additional mitigation. As a result, land use jurisdictions, such as cities or counties, incorporate former mitigation measures into the jurisdiction's Municipal Code or as standard Conditions of Approval which are then required for all projects under their purview.

Finally, as developers and planners become more sophisticated, they integrate sound environmental mitigation into their project design. As a result, the boundary between standard conditions, proponent design guidelines and mitigation measures identified in environmental documents, all designed to reduce significant environmental impacts, begin to merge. The following discussion summarizes all of the various measures anticipated to be incorporated into a decision on the Third Main Track and Grade Separations Project to reduce potential significant adverse environmental effects, either to the extent feasible or to a level of non-significance. After determining the degree of mitigation that can be achieved by the proposed measures and after identifying any adverse impacts that the mitigation measures can cause, a conclusion is provided regarding the unavoidable adverse impacts, including significant adverse environmental impacts, for each environmental topic.

This document utilizes conservative (worst case) assumptions in making impact forecasts based on the assumption that the impact forecasts should over predict (if they cannot be absolutely quantified) consequences, rather than under predict them. Technical studies were prepared for this document and they have been used to ensure technical accuracy. These technical studies are compiled in a separate volume of the PEIR (Volume 2) and copies of Volume 2 can be reviewed at the locations listed in Chapter 2. The information used and analyses performed to make impact forecasts are provided in depth in this document to allow reviewers to follow a chain of logic for each impact conclusion and to allow the reader to reach independent conclusions regarding the significance of the potential impacts described in the following subchapters.

4.2 AIR QUALITY

4.2.1 Introduction

This section of the PEIR focuses on the assessment of potential air quality impacts on the environment that may result from the implementation of the Third Main Track and Grade Separation Project (proposed project), ranging from construction activities to future operations. Implementation of the proposed project has a potential to increase air emissions over both the short and long-term. Short-term air emissions will be generated by construction activities along the 23.66 km (14.7 mi) track alignment and by construction activities at each of the grade separation sites. The long-term air emissions generated by the proposed project would be associated with potential changes in future emissions as a result of more efficient rail and surface traffic flow in the future.

Limited discussions were held at the project scoping meetings regarding the proposed project in relation to existing and future air quality. Specific concerns raised at the scoping meetings included the potential for local generation of fugitive dust which could harm industrial manufacturing operations which require a clean environment. A commitment was made at these scoping meetings to address this issue in this environmental document. It is addressed in the analysis provided below.

This subchapter relies primarily upon data contained in a technical air quality study prepared specifically for the Third Main Track and Grade Separations Project by Giroux & Associates (November 8, 2002). Most of the data from the Giroux & Associates report is reproduced below to assure technical accuracy. A copy of the Air Quality Study is provided as Section 8.3 of this PEIR.

The BNSF Triple Track Improvement Project spans approximately 23.66 km (14.7 mi) across two counties and eight different cities. From north to south the counties are: Los Angeles and Orange; and the cities are: Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park and Fullerton. The majority of the project lies within the southern part of Los Angeles County with much of the project, including most of the grade separation projects, being inside the borders of the City of Santa Fe Springs. The project will occur in a regional setting consisting of different counties and cities each with somewhat different air quality characteristics. For this reason, project conditions were presumed to be best described by an average of data obtained from the nearest air monitoring stations (City of Pico Rivera, Los Angeles County and City of La Habra, Orange County). This should provide an accurate reflection of the project region because air quality in the South Coast Air Basin is more regional than local in nature and project related air emissions will occur within a regional context.

4.2.2 Environmental Setting

The proposed Third Main Track and Grade Separation Project is located within the South Coast Air Basin (SoCAB). The South Coast Air Quality Management District (SCAQMD) has jurisdiction over air quality issues within the SoCAB. The project area is comprised of highly urbanized areas, and a few open space areas. The applicable general plans (cities and counties) for the project area of potential impact indicate that the rail corridor alignment is essentially built-out with urban development and any future development within the corridor will most likely occur as in-fill or redevelopment. While the SoCAB has some of the most unhealthful air in the nation, air quality within the Basin has continued to show improvement until the summer of 2002. At this time, the

SoCAB is classified non-attainment for ozone (O_3), small particulate matter (PM_{10}), and carbon monoxide (CO).

4.2.2.1 Meteorology/Climate Setting

The climate of the project area, as with all of Southern California, is largely dominated by the strength and position of the semi-permanent high pressure center over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, infrequent rainfall, and it drives the refreshing daytime sea breeze, as well as maintaining comfortable humidity levels and ample sunshine. Unfortunately, the same atmospheric processes that create the desirable living climate combine to severely restrict the ability of the atmosphere to disperse the air pollution generated mainly by the large population attracted by the climate. Portions of the Los Angeles Basin, including southeastern Los Angeles County and northwestern Orange County, therefore, experience some of the worst air quality in the nation for certain pollution species.

Regional air quality is controlled by the location and strength of pollutant sources and by the winds and inversions that control the horizontal and vertical regional dispersion patterns. Winds near the project site, as monitored at the SCAQMD measurement station at its Whittier air monitoring station, display several characteristic regimes.

During the day, especially in summer, winds are from the southwest-west at 11.27 to 14.48 km/h (7 to 9 mph). In the evening, wind speeds diminish and directions shift to winds from the northwest. At night, especially in winter, the land becomes cooler than the ocean and an offshore wind of 4.83 to 8.05 km/h (3 to 5 mph) develops from the northeast or east. One other important wind regime occurs when a high pressure center forms over the western United States and creates strong offshore winds. These winds are warmed and dried by air compression as they descend from the upper desert regions into the basin. These winds are accelerated through local canyons and create hot, dry, gusty Santa Ana winds from the east and northeast across southeastern Los Angeles County.

The low frequency of calms and adequate daytime ventilation speed typically do not allow for any daytime stagnation of air pollutants in the project area. The moderate onshore breeze carries any locally generated emissions eastward along the Whittier Hills toward the Chino Hills, and then toward receptors in western San Bernardino and Riverside counties. Any daytime air quality problems occur mainly when winds shift more into the northwest and the daytime clean sea breeze from the southwest is replaced by airflow from the northwest which has passed over substantial pollution generation areas of the Los Angeles area. These winds bring occasional heavy smog levels across the project site during the summer and early fall. Wind at night, drifting seaward across the air basin and off the nearby hills, is much slower and does allow for localized stagnation of pollution, but the density of vehicular sources in the upwind area is generally low enough to minimize any major air pollution problems. Any air pollution episodes, if they occur, are, therefore, due mainly to pollutants transported into the area rather than any locally generated emissions.

In addition to winds that govern the horizontal rate and trajectory of any air pollutants, southern California experiences several characteristic temperature inversions that control the vertical depth through which pollutants can be mixed. The daytime onshore flow of marine air is capped by a massive dome of warm air that acts like a giant lid over the basin. As the clean ocean air moves inland, pollutants are continually added from below without any dilution from above. As this layer slows down in inland valleys of the basin and undergoes photochemical transformations under abundant sunlight, it creates very unhealthful levels of smog (mainly ozone and particulates).

A second inversion forms at night as cool air pools in low elevations while the air aloft remains warm. Shallow radiation inversions are formed (especially in winter) that trap pollutants near intensive traffic sources such as freeways, shopping centers, train crossings, etc., and form localized violations of clean air standards called "hot spots." If any noticeable, direct air pollution effects were to occur from changes in the vehicular distribution around the region due to railway track improvement projects, it would be from automotive exhaust trapped by these nocturnal radiation inversions. Newer cars have become so "clean," however, that "hot spot" potential around big parking lots or major intersection is minimal unless non-local background levels by themselves are already at, or near, the air quality standard.

4.2.2.2 Air Quality Setting

Ambient Air Quality Standards (AAQS)

In order to assess the significance of the air quality impacts of implementing the proposed BNSF track improvement project, those impacts, together with baseline air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollution levels well above these standards before adverse health effects are observed. Recent research has shown, however, that adverse health effects may occur from life-long chronic exposure to ozone at concentrations that only slightly exceed the hourly standard. Just meeting clean air standards in the future may thus still not provide complete health protection unless an additional margin of safety is also created.

The Clean Air Act Amendments of 1970 established national AAQS with states retaining the option to adopt more stringent standards or to include other pollution species. Because California already had standards in existence before federal AAQS were established, and because of unique meteorological problems in California, there is some diversity between state and federal standards currently in effect in California as shown in Table 4.2-1.

The entries in Table 4.2-1 include the recently (1997) adopted federal standards for chronic (8-hour) ozone exposure or for ultra-small diameter particulate matter of 2.5 microns or less in diameter (called $PM_{2.5}$). The Environmental Protection Agency's (EPA) authority to adopt such standards was legally challenged. The stay of implementation was appealed, and the U.S. Supreme Court heard the appeal and issued a unanimous decision in February, 2001. The court unanimously ruled that EPA did not require specific congressional approval to promulgate national clean air standards, and that a cost-benefit analysis was not required for such standards. The court did find that there was an implementation schedule inconsistency between "old" and "new" ozone standards, and stayed final approval of the standards until the schedule issue is resolved. Data collection for these standards is on-going, but implementation planning is still awaiting schedule revisions.

Table 4.2-1
STATE OF CALIFORNIA AIR RESOURCES BOARD AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards		National Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone	1 hour	0.09 gpm (180 ug/m3)	Ultraviolet Photometry	0.12 ppm (235 ug/m3)	Same as Primary Std.	Ethylene Chemiluminescence
Carbon Monoxide	8 hours	9.0 ppm	Non-dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m3)		Non-dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
Nitrogen Dioxide	Annual Average		Gas Phase Chemiluminescence	0.053 ppm (100 ug/m3)	Same as Primary Std.	Gas Phase Chemiluminescence
	1 hour	0.25 ppm (470 ug/m3)				
Sulfur Dioxide	Annual Average		Ultraviolet Fluorescence	80 ug/m3 (0.03 ppm)		Paraosonanine
	24 hour	0.04 ppm (105 ug/m3)		365 ug/m3 (0.14 ppm)		
	3 hour				1300 ug/m3 (0.5 ppm)	
	1 hour	0.25 ppm (656 ug/m3)				
Suspended Particular Matter (PM_{10})	Annual Geometric Mean	30 ug/m3	Size Selective Inlet High Volume Sampler and Gravimetric Analysis			Inertial Separation and Gravimetric Analysis
	24 hour	50 ug/m3		150 ug/m3	Same as Primary Std.	
	Annual Arithmetic Mean			50 ug/m3		
Sulfates	24 hours	25 ug/m3	Turbidmetric Barium Sulfate			
Lead	30-day Average	1.5 ug/m3	Atomic Absorption			Atomic Absorption
	Calendar Quarter			1.5 ug/m3	Same as Primary Std.	
Hydrogen Sulfide	1 hour	0.03 ppm (42 ug/m3)	Cadmium Hydroxide ST Reaction			
Vinyl Chloride (chloroethene)	24 hour	0.010 ppm (26 ug/m3)	Tediar Bag Collection, Gas Chromatography			
Visibility Reducing Particles	8 hours (10 a.m. to 5 p.m. PSI)	Insufficient amount to produce an expansion coefficient of 0.23 per ug/m3 due to particles when the relative humidity is less than 70 percent. Measurement in accordance with ARB Method V.				

After further review of the relationship between fine particulate matter and human health effects, the California Air Resources Board adopted new state standards for $PM_{2.5}$ that are much more stringent that the federal standards. These standards were adopted June 20, 2002. No specific control programs are in place to achieve this much more stringent standard. It does represent, however, an air quality goal to dramatically reduce the adverse health effects from small-particle air pollution. Health effects from air pollutants are summarized in Table 4.2-2

Table 4.2-2
HEALTH EFFECTS SUMMARY FOR AIR POLLUTANTS

Pollutants	Sources	Primary Effects
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	Aggravation of respiratory and cardio-vascular diseases. Irrigation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide	Motor vehicle exhaust. High temperature. Stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust. Natural events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impair-ment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart disease (angina).
PM10	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 dis-comfort. Soiling. Reduced visibility.
Sulfur Dioxide	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, coating, etc.
Lead	Contaminated soil.	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

Source: SCAQMD 1993

There are no AAQS for reactive organic gases (ROG), because ROG is an issue only in regards to the photochemical reactions of ROG leading to increased ozone production. Ozone is a regional problem and cannot be directly associated with any single source. There is also an AAQS for lead in the atmosphere. However, lead is no longer emitted from internal combustion engines in meaningful concentrations due to the ban on lead in fuels.

There are also no AAQS for non-criteria pollutants (i.e., diesel exhaust). Therefore, other guidelines are used to evaluate the potential air quality impact of diesel exhaust. For non-cancer effects, the California AB 2588 Air Toxics Hot Spots program criteria identifies a hazard index. The hazard index (HI) is the ratio of a modeled concentration to a concentration (termed the reference exposure level) determined by the State of California Office of Environmental Health Hazard Assessment (OEHHA) below which no adverse health effects are expected to occur. This reference concentration for diesel exhaust is 5 ug/m^3. If the hazard index is less than 1.0, then health effects are not expected. For cancer effects, the Proposition 65 no significant risk level of 10 incremental cancers per one million exposed persons (10×10^{-6}) is the established criteria.

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 National ambient air quality standards (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 listed in Table 4.2-1.

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 non-attainment areas in the State to prepare attainment plans, and proposed to classify each such areas 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 5 percent annual reduction in the emissions of non-attainment pollutants, unless all feasible measures have been implemented. The SoCAB is classified as a “severe” non-attainment area for ozone and carbon monoxide. Per SCAQMD’s comments, the Basin is now considered to be in attainment of both federal and state nitrogen dioxide standards.

Baseline Air Quality

Existing and probable future levels of air quality around the proposed rail corridor alignment was historically best inferred from ambient air quality measurements conducted by the SCAQMD at its Whittier monitoring station. Monitoring in Whittier was discontinued at the end of 1993. The closest SCAQMD air quality data resources to the project area are now located in Pico Rivera (Los Angeles County) and La Habra (Orange County).

The various monitoring stations measure both regional pollution levels, such as smog, as well as primary vehicular pollution levels near busy roadways, such as carbon monoxide or nitrogen oxides. There are no respirable particulate air pollution (PM_{10}) monitoring stations near the project site. Local PM_{10} concentrations can, however, be inferred from regional patterns, Table 4.2-3 summarizes the last 5 years of published data from these various monitoring stations considered most representative of project site conditions. From these data the following conclusions can be drawn:

Table 4.2-3
TRACK IMPROVEMENT PROJECT AREA AIR QUALITY MONITORING SUMMARY
(Number of Days Standards Were Exceeded and Maximum Levels During Such Violations)

Pollutant/Standard	1996	1997	1998	1999	2000
Ozone					
1-hour > 0.09 ppm	26	14	24	6	10
1-hour > 0.12 ppm	7	4	8	0	2
8-hour > 0.08 ppm	9	5	8	2	4
Max. 1-hour Conc. (ppm)	0.15	0.13	0.18	0.12	0.14
Carbon Monoxide					
1-hour > 20 ppm	0	0	0	0	0
8-hour > 9 ppm	0	0	0	0	0
Max. 1-hour Conc. (ppm)	12	10	11	9	11
Max. 8-hour Conc. (ppm)	7.5	6.1	6.1	5.4	5.7
Nitrogen Oxides					
1-hour > 0.25 ppm	0	0	0	0	0
Max. 1-hour Conc. (ppm)	0.16	0.15	0.14	0.16	0.13

Note: There are no representative PM_{10} measurements made near the project area.

Source: California Air Resources Board (CARB) – Summary of Air Quality Data, Average of La Habra + Pico Rivera station data.

a. Photochemical smog (ozone) levels continue to occasionally exceed standards. The frequency of first-stage smog episodes has dropped from 6 to 8 per year in the late 80's to an average of less than once per year for most of the 1990's Federal one-hour standards have been exceeded on less than ten days per year since 1996. The last first-stage smog alert (1-hour > 0.20 ppm) was in 1994. In 1999, the federal standard was not exceeded near the proposed project for the first time on record.

b. Levels of primary automotive (unreacted) exhaust, such as carbon monoxide, very infrequently exceed the pertinent clean air standards, but not with the same frequency or intensity as the regional smog levels. Occasional violations of CO standards have noticeably diminished. The one-hour state CO standard and the 8-hour state and/or federal CO standard have not been exceeded since 1999.

c. PM_{10} levels are not monitored at any SCAQMD monitoring station near the proposed rail corridor project area. Given, however, the regionally pervasive problem of small diameter respirable particulate matter, violations of PM_{10} standards are expected in the project vicinity with routine frequency. Monitoring data for $PM_{2.5}$ are very limited both temporally and spatially. $PM_{2.5}$ monitoring is conducted in Pico Rivera. In 1999-2000, two percent of days exceeded the proposed federal $PM_{2.5}$ standard.

Air Quality Management Planning

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The SoCAB could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM_{10}. In the SoCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it in 1982 to project attainment of all standards by 2000.

In 1988, because of uncertainty in federal Clean Air Act (CAA) reauthorization, the California Legislature enacted its own California Clean Air Act (CCAA). The CCAA requires that regional emissions be reduced by 5 percent per year, averaged over 3 year periods, until attainment of all standards (state and federal) can be demonstrated. Each area of the state that did not meet a national or state ambient air quality standards were required to prepare a plan which demonstrated how the 5 percent reductions were to be achieved. Areas with the most heavily degraded air quality were required to reduce emissions 50 percent from 1987 levels by December 1, 2000. In July 1991, the SCAQMD adopted a revised AQMP which was designed to meet the CCAA requirements. The 1991 AQMP deferred the attainment date to 2010, consistent with the 1990 federal Clean Air Act.

The 1990 federal CAA required that all states with airsheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). The SoCAB has an "extreme" ozone problem. The 1991 AQMP was modified/adapted and submitted as the SoCAB portion of the SIP. The 1991 SIP submittal estimated that an 85-percent basinwide reduction in volatile organic compound (VOC) emissions and a 59-percent reduction in oxides of nitrogen (NOx) between 1990 to 2010 was needed to meet federal clean air standards. About 40 percent of these reductions were to come from existing pollution control programs. The rest would come from new rules, technologies or other reduction programs. The rest would come from new rules, technologies or other reduction programs.

In 1996, EPA ultimately approved the 1994 submittal of the SoCAB portion of the SIP. The plan was approved after considerable debate on the contingency measures that should be implemented if progress is not as rapid as anticipated in the 1994 SIP. The federal Clean Air Act required that an updated plan be submitted by February 8, 1997 which includes attainment plans for all pollutants exceeding federal standards. The CCAA requires an update of the State-mandated clean air plan every three years. The last CCAA update was completed in December, 2000.

An updated 1997 AQMP was locally adopted. CARB forwarded this plan on to EPA for its consideration and recommendation approval. The 1997 AQMP was designed to meet both Federal (EPA) and State (ARB) air quality planning guidelines. Components of the 1997 plan update included:

- Demonstration of attainment for ozone, CO, and PM_{10}
- Updated emissions inventories (1993 base year) of VOC, NOx, CO, SOx and PM_{10}
- Emissions budgets for future years of the inventoried compounds
- An updated pollution control strategy
- Contingency measures if the plan as presently proposed fails to meet stated timetables.

The proposed 1997 AQMP/SIP was challenged in federal court for excessive delay in adopting certain pollution control strategies. The Ninth Circuit Court found in favor of the environmental organizations which had brought the suit. A 1999 SIP Revision was prepared that accelerated the implementation time frame by adding more than ten new air pollution control measures or shortening implementation time frames. EPA approval of these revisions was granted in 2000 as the currently applicable SIP for the South Coast Air Basin.

A project such as the proposed BNSF Track Improvement, which covers territory in both Los Angeles and Orange Counties, does not directly relate to the AQMP/SIP process because its source of potential air quality impact is from transportation activities, mobile sources which are almost exclusively indirect, not stationary, sources. Mobile source emissions are generally incorporated into the air quality planning process through the growth forecasts prepared through SCAG's regional growth projections. However, the replacement of low-occupancy onroad automobiles to high-occupancy vehicles, such as trains, is an important transportation control measure (TCM) component that is part of the AQMP/SIP process. To the extent that the proposed project facilitates implementation of that TCM, the project is inherently consistent with the AQMP/SIP.

Specifically, by enhancing the efficiency of rail traffic flow within the BNSF main east-west rail corridor (reducing or eliminating the need for trains to pull over and wait for another train to pass) and by eliminating vehicle delays at the existing at-grade crossings, the emissions associated with mobile sources in the region will be reduced. As noted in the Traffic Section of this document (see Table 4.8-7), the total cumulative delay (total vehicle-hours) at the existing at-grade crossings is 101.2 hours during the morning, mid-day and evening peak hours alone. This amount of vehicle idling at the at-grade crossings will be eliminated when all of the grade separation project have been implemented, substantially reducing air emissions from idling mobile sources in the project area.

Air Toxics

Toxic air contaminants (TACs) are airborne substances that are capable of causing short-term or long-term adverse human health effects. TACs include both organic and inorganic chemical substances. TACs may be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Research and teaching facilities where a variety of chemicals are used for various experiments may also be a source of TACs.

The 1990 federal CAA Amendments expanded the regulation of hazardous air pollutants (HAPs; the federal government terminology for TACs), establishing a list of 172 individual compounds and 17 compounds categories to be regulated as HAPs. The federal CAA required the EPA to establish a stringent, technology based emissions standard for stationary sources of emissions of these listed substances. The CAA also required the EPA to list “major” and “area” source categories that the EPA finds sufficiently threatening to human health or the environment by November 1993, to establish emissions standards for at least 40 stationary source categories by November 1994, and to establish standards for all regulated sources by November 2002.

“Major sources” are defined as any stationary source that emits at least 10 tons per year (tpy) of any HAP or 25 tons per year of any combination of HAPs. “Area sources” are stationary sources encompassing small diverse facilities that routinely release small amounts of HAPs. By November 1997, the EPA must list sufficient categories and subcategories of area sources to ensure that

90 percent of the emissions of the 30 HAPs presenting the greatest threat to the public health in the largest number of urban areas are subject to regulation.

In the state of California, the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB2588) requires specified facilities to submit to the local air pollution control agency, in this case, the SCAQMD, a comprehensive plan to inventory air toxics emissions for all substances listed pursuant to the Act. After the inventory preparation plan is approved, the facility must implement the plan and submit the resulting air toxics emission inventory to the District. After the District receives the completed emission inventories subject to the Act, it is then required to identify high priority facilities for which health risk assessments must be prepared to estimate the potential health risk associated with TAC emissions.

Assembly Bill 1807 (Tanner Bill) set up a statewide process to determine the need for methods to set standards for toxic air contaminants. The process includes identification of toxic air contaminants, determination of emissions and ambient levels of the identified compounds, preparation of regulatory needs documents, and establishment of minimum statewide emission control standards by the Air Resources Board (ARB).

The ARB has identified several chemicals as TACs under the Tanner Bill, including asbestos, benzene, cadmium, carbon tetrachloride, chlorinated dioxins and dibensofurans (15 species), chromium (VI), ethylene dibromide, ethylene oxide and methylene chloride as toxic air contaminants. The ARB has not developed statewide ambient air quality standards for any of these toxic chemicals.

To assist local agencies evaluate potential air quality impacts associated with projects, SCAQMD has published its CEQA Air Quality Handbook (CEQA Handbook). Table 10-2 of the CEQA Handbook identifies air toxics that are subject to regulations. Rail operations are not identified as possible sources of toxic emissions, other than from diesel combustion.

The SCAQMD regulates levels of air toxics through a permitting process that covers both construction and operation. Both new and existing industries routinely use materials classified as air toxics. For both new and modified sources, the SCAQMD has adopted Rule 1401, with which the project proponent must comply before the project can be constructed and put into operation. A permit, when issued, will allow the facility to operate and will specify the conditions, if any, that might limit its operation.

Rule 1401 pertains to new source review of carcinogenic air contaminates. Rule 1401 specifies limits for maximum individual cancer risks resulting from permit units which emit carcinogenic air contaminants. It imposes Best Available Control Technology for Toxics (T-BACT) requirements based on allowable risk. It should be noted that the cumulative analysis requirement in Rule 1401 has been eliminated. Cumulative or facility wide inventory requirements are considered to be included in AQMD Rule 1402. Note, however, that mobile source emissions are not required to obtain permits under Rule 1401 and that over the long-term the proposed project does not include any activities that would generate emissions. To the contrary, as described above, the proposed project should reduce indirect sources of pollution, such as emissions from idling trains and motor vehicles within the SoCAB.

4.2.3 Project Impacts

This section assesses potentially significant environmental impacts to air quality resulting from implementing the Third Main Track and Grade Separation Project. Section 4.2.3.1 sets forth the threshold criteria used to determine the significance of air quality impacts under CEQA. Section 4.2.3.2 assesses project impacts to air quality from construction and operational emission sources for the activities and operations required to implement the proposed project, based on the project presented in Chapter 3. Air quality tables and supporting data for the impact analysis and conclusions presented below are present in Section 8.3 of this document. <u>No increase in railway service will occur as a result of implementing the proposed project.</u> Any future increases in the number of daily trains will occur regardless of whether or not this project is implemented. There is no nexus between this project and any future increases in train traffic that may occur in response to commercial demand.

4.2.3.1 <u>Significance Criteria</u>

Air quality impacts are considered significant if they cause clean air standards to be violated where they are currently met, or if they will measurably contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, may also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan,

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation,

c. Results in a cumulatively considerable net increase any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors),

d. Exposes sensitive receptors to substantial pollutant concentrations, and

e. Creates objectionable odors affecting a substantial number of people.

SCAQMD Significance Thresholds

Many pollutants require further chemical transformation before they reach their most harmful form. Impact quantification on a single-project basis is, therefore, not feasible. To overcome this difficulty, the SCAQMD has designated significant emissions levels as surrogates for evaluating impact significance independent of chemical transformation processes. Projects in the SoCAB with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant. This recommendation is advisory only; however, the SCAQMD "CEQA Air Quality Handbook" emission thresholds will be used in this document.

The following threshold levels have been used in analyzing the potential air quality impacts of the BNSF track improvement implementation. CEQA significance thresholds for construction emissions have been established by the SCAQMD:

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

The daily operational emissions “significance” thresholds are as follows:

- 550 pounds per day of CO
- 55 pounds per day of ROC
- 55 pounds per day of NO_X
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}

Projects in the SoCAB with operation-related emissions that exceed any of the emission thresholds are considered significant by the SCAQMD.

Local pollutant concentration significance thresholds established by SCAQMD include the following:

- California State 1-hour CO standard of 20.0 ppm or 23,000 ug/m^3
- California State 8-hour CO standard of 9.0 ppm or 10,000 ug/m^3

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 ppm or more, or eight hour CO concentrations by 0.45 ppm or more.

Facilities with emissions of TACs are considered significant if a health risk assessment shows an increased risk of greater than ten in one million.

The project’s air quality impacts could also be considered significant if the project is not in conformity with the SIP or is not consistent with the current AQMP.

SCAQMD emissions significance thresholds are expressed in pounds per day (lbs/day). Therefore, it is possible to evaluate the significance of a project’s impacts to air quality based on its projected maximum daily emissions. If these projected emissions exceed SCAQMD thresholds, then the projects air quality impacts are considered significant.

Federal Impact Assessment Guidelines

Federal guidelines for air quality impact assessments from improvements in existing heavy rail projects (freight and passenger) are generally exempt from formal impact analysis except under unusual circumstances if those improvements accommodate a forecast demand for service. Rail is included in the Regional Transportation Plan (RTP) which has undergone its own impact analysis process. Fixed rail is presumed to move goods and passengers in more pollution-efficient modes while reducing the volume of trucks and cars on area streets. Thus, rail operations reduce vehicular emissions both by directly replacing vehicle miles traveled (VMT) and also reducing congestion effects. There is, therefore, no impact analysis relative to federal guidelines by virtue of project consistency with the RTP.

4.2.3.2 Project Impact Analysis

The proposed project creates no population increase, nor any new on-road traffic that would cause increased regional mobile source emissions. In addition, a number of existing railroad crossings, signals, and bridges will undergo substantial upgrades. The proposed track improvements will increase average train speeds (maximum train speed on track segments will remain the same, but the average speed will increase because the train traffic can flow more efficiently along this 23.66 km (14.7 mi) rail corridor segment) and reduce train delays, idling inside tracks and surface street queuing. As a result, any potential for CO "hot spots" will be reduced from existing conditions. Dust emissions will be temporary during new track construction, and in the future during excavation and new construction of grading separations. Secondary impact indicators will thus minimally apply to the proposed project.

Improving the railroad track between the counties of Los Angeles and Orange would have negligible adverse air quality consequences, and may even create small air quality benefits. There is no proposed increase in the number of daily freight train movements associated with this project, and any future increase in the daily number of passenger trains is dependent upon passenger demand. The increased efficiency of train travel through the Los Angeles/Orange County areas (improved crossings, increased train travel speed to more pollution-efficient throttle settings, the elimination of idling trains, and shorter periods of at-grade crossing vehicular delays) may all contribute to slightly reduced emissions from trains and cars along the rail corridor and to better air quality in the region.

The proposed BNSF track improvement project will promote improved intercity passenger rail service between the counties of Los Angeles and Orange. The improvements consist of adding 23.66 km (14.7 mi) of third track, grade separation at seven existing at-grade crossings and the retrofitting of various bridges. The third track will reduce train delays and idling which now occur on side tracks as trains wait for another train to pass. The reduction in emissions from idling trains can not be quantified, but it is considered to be a net air quality benefit for the region. The grade separations will allow for increased operational efficiency and speeds of trains, as well as replace at-grade signals and will no longer interrupt traffic flow. Increased use of trains by passengers versus the use of personal vehicles is also presumed to reduce on-road emissions and congestion.

A short-term increase in dust and equipment exhaust will occur during construction of the proposed improvements; however, the direct air quality implication of project implementation will likely be minimal. Creation of a third track and grade separations are considered air quality positive, because trains are more "pollution efficient" per ton-mile or passenger-mile than on-road transportation; therefore, cumulative project impacts would likely be positive.

Short-term Construction Emissions

Construction activities for the third main track and retrofitting of bridges are expected to commence as soon as funding is available and be completed within 18 to 24 months. The grade separation construction will be implemented over the next several years. Each separation project will require between 3 to 18 months to complete. There will be approximately 18 months of construction activity which may or may not occur simultaneously. Activities include: track installation, railroad crossing modification, and the retrofitting of various bridges. Heavy equipment will be used to demolish, grade, excavate and level. Delivery of steel rail, concrete ties and ballast will be by rail where possible. Trucks will be used to haul away excavation material and to deposit fill at each construction site.

Each activity will vary in length from commencement to completion. Equipment activity levels will vary considerably from day to day. The equipment inventory to be used during construction is fairly extensive, but the hourly or daily utilization will be only a small fraction of hours that it may be used.

Each phase of construction activity will generate exhaust emissions from off-road heavy equipment, on-road trucks and other vehicles, and from train hauling of bulk materials. Emissions from each phase of proposed construction activity were calculated by combining equipment activity levels with representative emission factors from EPA's AP-42 document (off-road sources), California's EMFAC7G computer model (on-road sources) and Department Rail Division (trains) to produce the daily emissions estimates shown in Table 4.2-4. Table 4.2-5 is a worst-case composite of simultaneous maximum construction emissions from several simultaneous project phases. Peak daily construction activity internal combustion emissions will not exceed the SCAQMD significance thresholds.

Earthworks activity will also generate PM_{10} from soil disturbance activities. PM_{10} emission rates from construction are estimated to be 10.2 pounds per day per acre disturbed. The daily disturbance acreage for the combined multiple phases of this project is estimated in Table 4.2-4 to be 2.43 hectares (6.0 acres). Daily PM_{10} emissions of 61.2 pounds per day from "fugitive dust" have been included in the worst-case daily pollution burden in Table 4.2-5. Inclusion of fugitive dust in Table 4.2-4 does not change any conclusions regarding impact insignificance.

Soil disturbance creates numerous larger particulates that are rapidly redeposited on adjacent horizontal surfaces. However, because of the non-attainment status of the air basin, dust mitigation measures are recommended to reduce PM_{10} emissions even if CEQA significance thresholds are not exceeded. Such measures would similarly protect nearby sensitive receivers from construction dust soiling, most importantly along those limited portions of the alignment in close proximity to residences or a school. Specifically, certain industrial operations require a clean air environment, and concerns were expressed regarding a potential to adversely impact operations. Fugitive dust emission control measures have been identified, and in addition to specific mitigation measures, it is proposed that this project implement site specific particulate monitoring prior to initiating construction adjacent to this industrial site to verify existing background particulate concentrations. Periodic monitoring after construction begins will also be conducted to monitor and verify any increases in particulate concentrations resulting from the implementation of the proposed project, be it Third Main Track construction activities or the grade separation projects at Valley View and Rosecrans. If significant increases in particulates are identified during project implementation, BNSF will increase the application of fugitive dust control mitigation measures provided in this document.

Specific mitigation measures are outlined below to address construction emission controls that will be implemented to minimize construction-related emissions from implementing the proposed project.

Table 4.2-4
CONSTRUCTION ACTIVITY EMISSIONS BURDEN (lbs/day)

Source	Pollutant				
	CO	ROG	NOx	SOx	PM10
Track Installation Project					
Grader	0.6	0.1	1.8	0.1	0.1
Backhoe	1.7	0.6	8.0	0.5	0.6
Loader	1.1	0.5	3.8	0.4	0.3
Welder	4.3	1.6	20.1	1.3	1.4
Track-Laying Machine	2.7	0.6	6.8	< 0.1	< 0.1
Dump Trucks	1.8	0.2	2.1	0.1	0.1
Misc. Equipment	0.7	0.2	1.7	0.1	0.1
Smaller Vehicles	1.5	0.2	0.2	< 0.1	< 0.1
Rail Haul	0.4	0.3	5.3	0.1	1.0
Employee Commute	14.8	1.5	2.4	< 0.1	0.1
TOTAL	29.6	5.8	52.2	2.6	3.7
Railroad Bridge / Crossing Modifications					
Welders	2.1	0.8	10.1	0.7	0.7
Misc. Equipment	0.7	0.2	1.7	0.1	0.1
Dump Trucks	1.8	0.2	2.1	0.1	0.1
Smaller Vehicles	1.5	0.2	2.1	0.1	0.1
Rail Haul	0.4	0.3	5.3	0.1	1.0
Employee Commute	29.6	3.0	4.8	< 0.1	0.1
TOTAL	36.1	4.8	24.2	1.1	2.1

Table 4.2-5
MAXIMUM CONSTRUCTION ACTIVITY EMISSIONS BURDEN (lbs/day)

Source	Pollutant				
	CO	ROG	NOx	SOx	PM10
Track Upgrade	29.6	5.8	52.2	2.6	3.7
Crossing Mods.	36.1	4.7	24.2	1.1	2.0
Fugitive Dust	----	----	----	----	61.2
TOTAL	65.7	10.5	76.4	3.7	64.9
Exceeds Thresholds?	No	No	No	No	No

Operational Impacts

The two principal direct air quality effects of the project is that the third track will increase operational efficiency, and that the grade separations will eliminate the queuing of cars at existing at-grade crossings. Any indirect benefit of pollution efficiency and congestion reduction from shifting to rail from on-road transportation are not quantifiable within the context of a single project, but are believed to be a tangible air quality benefit.

The project traffic study has calculated that existing at-grade crossings create 423.3 vehicle hours of idling cars during the PM peak traffic hour. Assuming that the PM peak represents 10 percent of daily average daily trips (ADT), then the combined vehicle delay at all seven at-grade crossings is 4233 vehicle hours per day. The "excess" emissions associated with braking, idling, and acceleration, compared to free-flow traffic conditions, were calculated for 4233 daily hours of vehicle idling for a year 2003 travel fleet. The reduced emissions from crossing delay elimination are as follows:

Pollutant	EMFAC (g/min)	Emissions (pound/day)
CO	1.43	80.1
ROG	0.39	21.8
NOx	0.13	7.3
PM_{10}	0.03	1.7

These pollution "savings" are not considered CEQA-significant relative to the SCAQMD's CEQA implementation guidelines. They are, however, air-quality positive in an extreme non-attainment area for ozone such as the SoCAB.

Cars are rigidly controlled by air pollution laws such that even 4,000+ hours of idling will not create exhaust emissions that exceed SCAQMD significance thresholds. Diesel-powered railroad locomotives, however, are not as rigidly controlled. Reduction in their delay while idling at sidings because of inadequate track capacity is more critical in terms of emissions reduction. The process of dynamic braking of the engine to slow the cars, idling at a siding, and the strain of restarting a stopped freight train is estimated to expend around 1,200 brake-horsepower per engine during a 12-minute delay period. The NOx emission rate for a 4-stroke road engine is 10 grams per brake-horsepower-hour, or 5.3 pounds of NOx per freight engine during even a brief siding delay. If ten trains per day, with three engines each, were to be delayed under present track availability constraints, "excess" daily NOx emissions would total 48.08 kilograms (kg) (106 lbs). The SCAQMD threshold is 55 pounds per day. Although the number and duration of siding delays is not know with certainty (varies from day to day), a major reduction in such delay should result in significant air quality benefits.

Air Quality Planning Consistency

Increased rail utilization is an air quality planning goal in both the SoCAB federal SIP and the CCAA attainment plans. The proposed project is included in a regional transportation plan that has been found to conform the basin air quality attainment plan. Construction activity air emissions are below the de minimis threshold for establishing project conformity with Section 176(c) of the federal Clean Air Act Amendments of 1990. Operational emissions for the "with project" scenario are less than for the no-project alternative. The proposed project thus meets all air quality planning consistency guidelines and/or conformity requirements.

Air Toxics

The only identifiable toxic emissions associated with the proposed project are those associated with construction equipment consumption of diesel fuel. The short-term duration of such emissions and the limited emissions (identified in Tables 4.2-4 and 4.2-5) do not pose a potential for significant toxic air quality impacts. For the long-term, emission reductions in particulates associated with elimination of train idling will reduce overall diesel particulate emissions by some unquantifiable amount. No adverse construction or operation toxic air quality impacts are forecast to result from implementing this project, and over the long-term some small, net toxic air quality benefit may result from its implementation.

4.2.4 Mitigation Measures

The addition of a 23.66 km (14.7 mi) segment of a third track and improvement of 5.47 km (3.4 mi) of existing track will have negligible air quality impacts. Short-term construction impacts will be less than significant. Construction dust deposition on adjacent dust-sensitive land uses may be of concern when construction will occur in close proximity to homes, school campuses and dust-sensitive industrial operations. A small operational air quality benefit will result from elimination of side track train idling, and from elimination of on-road vehicle queuing while waiting for the track to clear.

There are no significant air quality impacts requiring impact mitigation. The project is inherently self-mitigating in promoting train travel as a transportation control measure contained in the basin AQMP/SIP.

Construction activity impacts will not exceed significance thresholds and therefore, no mitigation is required to achieve a less-than-significant impact. However, project activities may generate dust and fumes where construction activities occur within close proximity to homes and other sensitive land uses. Impacts are therefore considered potentially adverse even if significance thresholds are not exceeded. The implementation of Best Available Control Measures from the District's Rule 403 Implementation Handbook are therefore recommended to minimize nuisance levels of construction activity emissions. To avoid deferring identification of measures to a later date, the following measures have been identified for implementation in compliance with Rule 403.

The following mitigation measures are recommended to reduce NOx and VOC emissions from construction equipment.

4.2-1 Limit construction equipment use to a mix of equipment that is substantially the same as that used for the estimation of pollutant emissions. To the extent economically feasible, replace diesel combustion equipment with natural gas or electrical equipment.

4.2-2 All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

4.2-3 General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions.

4.2-4 During construction, trucks and vehicles in loading and unloading queues would be kept with their engines off, when not in use, to reduce vehicle emissions.

4.2-5 Construction activities should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

4.2-6 Require 90-day low NOx tune-ups for off road equipment.

4.2-7 Limit allowable idling to 10 minutes for trucks and heavy equipment.

Fugitive dust control is required by SCAQMD Rule 403 to prevent local nuisance impacts. The following mitigation measures are therefore recommended to reduce fugitive dust emissions.

4.2-8 Water active grading sites at least twice daily and when dust is observed migrating from the site. Watering shall be designed to maintain a minimum 12-percent moisture content of the disturbed soil, except where such moisture content would conflict with engineering requirements.

4.2-9 Suspend all grading and excavation operations when wind speeds exceed 40.23 km/h (25 mph).

4.2-10 Cover or water twice daily any on-site stockpiles of debris, dirt or other dusty material.

4.2-11 Replace ground cover or pave disturbed areas immediately after construction is completed in the affected area.

4.2-12 Sweep or wash any site access points within 30 minutes of any visible dirt deposition on any public roadway.

4.2-13 Cover all haul trucks.

4.2-14 Pave or apply water four times daily to all unpaved parking or staging areas.

4.2-15 Hydro-seed or otherwise stabilize any cleared area which is to remain inactive for more than 96 hours after clearing is completed.

The following mitigation measures are recommended to reduce emissions off of the project site.

4.2-16 Encourage car pooling for construction workers.

4.2-17 Limit lane closures to off-peak travel periods.

4.2-18 Park construction vehicles off traveled roadways.

4.2-19 Wet down or cover dirt hauled off-site.

4.2-20 Wash or sweep access points daily.

4.2-21 Encourage receipt of materials during non-peak traffic hours.

The following mitigation measures are recommended to reduce emissions during the removal of any contaminated areas that may be encountered during construction.

4.2-22 Conduct pre-construction assessments.

4.2-23 Perform remediation consistent with air hazards criteria in SCAQMD rules and regulations.

With the implementation of the above measures, air emissions from construction activities carried out in support of the proposed third main track and grade separations project can be controlled to a level of nonsignificant impact. However, to ensure that BNSF and local communities have an adequate data base to determine whether potential dust impacts may affect adjacent industrial operations in the vicinity of Rosecrans and Valley View, it will be necessary to compile a more comprehensive ambient particulate concentration baseline. Prior to initiating construction of any type at or in the vicinity of these two at-grade crossings, a background or ambient particulate pollutant baseline will be established by conducting 24-hour monitoring at these two locations. This baseline will be established prior to initiating construction at these two locations. This is not a mitigation measure. It is a tool that will be used to monitor fugitive dust levels adjacent to sensitive industrial facilities along the rail corridor and will provide a means to evaluate the validity of any complaints that may be received from adjacent sensitive receptors in these specific locations.

These measures will ensure that implementation of the third main track and grade separations project will not cause significant air quality impacts during construction. It will also enable the monitoring of pollution impacts from fugitive dust/partculates where residential uses or other sensitive uses abut project related construction activities. No long term adverse air quality impacts are forecast to result from implementing the proposed project and some benefit is forecast from project implementation as a result of eliminating train and motor vehicle idling over the long term.

4.2.5 Cumulative Impact

Implementation of the proposed Third Main Track and Grade Separation Project will contribute pollutants to the SoCAB from construction of the facilities for a period of several years. These facilities are essential infrastructure system components designed to provide adequate rail and surface traffic flow in this portion of the rail corridor. The regional air planning agencies, SCAG and SCAQMD, assume in their air planning documents (the RCPG and AQMP) that rail projects of this type are consistent with programs to reduce overall emissions and the emission forecast presented above verifies this assumption. Because this project is not forecast to cause short- or long-term emissions or exceed SCAQMD significance thresholds, and because mitigation is provided to monitor and minimize localized construction impacts, the proposed project will not contribute to significant short-term cumulative air quality impacts. Further, based on the analysis presented above, long-term pollution emissions from trains and motor vehicles are forecast to be reduced by implementing this project. Therefore, implementation of the Third Main Track and Grade Separation Project is not forecast to cause or contribute to significant cumulative air quality impacts.

4.2.6 Unavoidable Adverse Impact

The air quality evaluation presented above indicates that the proposed project will not result in potentially significant and unavoidable adverse air quality impact from constructing the third main track and grade separation project components. As noted above, mitigation measures have been identified that can reduce short-term local air quality impacts below a significant level. With no forecast long-term potential for significant increase in air emissions, implementation of the proposed project is not forecast to cause any unavoidable adverse impact to the air quality environment of the SoCAB.

4.3 BIOLOGICAL RESOURCES

4.3.1 Introduction

The study area for the Third Main Track and Grade Separations Projects is comprised wholly of the urbanized portion of Los Angeles and Orange counties. The Initial Study (see Subchapter 8.1 of this document) concluded that due to past disturbance, development and current operations within the BNSF East-West Main Line Corridor (rail corridor) and at each of the grade separation locations, no potential exists for native or sensitive biological resources to occur at these locations. This finding was based on several field reviews of the rail corridor and grade separation locations by Tom Dodson & Associate's biologist, Ms. Lisa Kegarice. The Initial Study also identified one location where new construction is proposed which has potential to contain important biological resources that will be impacted by the proposed project. The project will result in the installation of a new bridge segment over the San Gabriel River. This soft bottomed channel contains limited riparian resources in the vicinity of the new bridge location (refer to Figure 3-2c) and the activities associated with bridge construction have a potential to adversely affect sensitive biological resources. As a result, this topic will be evaluated in this PEIR.

Data provided in this section of the PEIR is abstracted from a detailed biological resource survey of the San Gabriel River channel prepared by Ms. Kegarice. A copy of this study, "Biological Survey for The Burlington Northern and Santa Fe Railway Company Third Main Track and Grade Separation Project" is provided for review as Subchapter 8.4 of this document.

Both the California and Federal endangered species acts provide legislation to protect the habitats of listed species as well as the species itself. If a state or federally listed endangered species was determined to be present within the project area, the proposed project may be constrained to avoid or minimize effects to the species. Species specific mitigation measures would need to be agreed upon and implemented to the satisfaction of all jurisdictional agencies. These jurisdictional agencies may be some or all of the following: U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and/or U.S. Army Corps of Engineers (COE).

4.3.2 Environmental Setting

4.3.2.1 Weather

The weather during the field surveys conducted on October 10, 2001 was generally clear and warm with temperature ranging from a low of 15°C (60°F) to a high of 21°C (70°F). During the field surveys conducted on March 14, 2002, weather conditions ranged from scattered clouds and drizzle to mostly sunny with winds from calm to 8.05 km/h (5 mph). The temperature ranged from the middle 10°C (50°F) to the lower 15°C (60°F) for the entire survey period.

4.3.2.2 Soils and Topography

The proposed third track segment is located in the southeast Los Angeles sedimentary basin. The San Gabriel River channel drains a substantial area originating in the San Gabriel Mountains, located about 24.14 km (15 mi) to the north. The flows in the San Gabriel River at the bridge crossing are presently confined to the existing man-made channel, which consists of a soft-bottomed sand bed with rip-rap grouted side walls. The channel is approximately 91.44 meters (300 ft) wide at the bridge crossing locations.

The San Gabriel River crossing traverses two soil series types; Psamments and Urban Land. The following is a list of the series type, a brief description of the series characteristics, and the sub-soil types.

Psamments
This map unit consists of sandy and gravelly material in intermittent streambeds of the San Gabriel River. This map unit is frequently flooded and vegetation is limited to scanty growth.

Urban Land
This map unit consists of land covered for urban uses such as buildings, roads, and parking lots.

4.3.2.3 Biological Setting

The majority of the proposed third track and grade separation segment topography is flat, with slopes ranging from zero to 5 percent. Surrounding land uses are urban and commercial/industrial developments. The vast majority of the proposed third track alignment is unvegetated and disturbed, the vegetation that does occur along the existing railroad facility is characterized by non-native weedy species such as Stork's bill (*Erodium cicutarium*), brome grasses (*Bromus* sp.), and tumbleweed (*Salsola tragus*).

Drainages in the vicinity of the proposed double track are limited to concrete lined channels and the San Gabriel River channel, which has hard sides and a natural bottom as described above. None of these channels have riparian or wetlands resources associated with them.

4.3.2.4 Wildlife

Wildlife observations made during the survey were dominated by bird and mammal species. Observations of wildlife include scat, tracks, burrows, nest, calls and individual animals. Common mammals are dogs (*Canis lupus familularis*) and beechy ground squirrel (*Spermopholus beecheyi*). Common bird species observed were crows (*Corvus brachyrhynchos*) and mourning dove (*zenaida macroura*).

4.3.2.5 Disturbances

The level of disturbance is severe. The disturbances at all of the project site result from complete residential and commercial/industrial development along the rail corridor.

4.3.2.6 CNDDB Search Results and Discussion

California Department of Fish and Game's Natural Diversity Database (CNDDB) for the Whittier Quadrangle was searched. See Appendix B of Subchapter 8.4 for the database occurrences in the vicinity of the proposed project. The following is a discussion of the species listed by the database and the General Plan as occurring within the Valley floor.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Coccyzus americanus occidentalis	Western Yellow-billed cuckoo	None / Endangered	Riparian Forest	The occurrence is from 1912, and the species has been extirpated from the project area. Further, the proposed project will avoid all the riparian habitat. Therefore, there is no suitable habitat within the proposed third track area.
Scaphiopus hammondii	Western spadefoot	None / CDFG protected	This species utilizes temporary rain pools or slow-moving permanent waters for breeding. Non-breeding habitat consists of open vegetation characterized by short grasses.	This species was observed in ponds and grasslands of the Puente Hills. Further, the proposed project will avoid all the riparian habitat. No suitable habitat occurs within the proposed third track area. There are no vernal pools within the project's area of potential impact. Therefore, the proposed third track project will not effect this species.
Phacilia stellaris	Brand's Phacilia	None / None	This species is associated with coastal scrub and coastal dune vegetation communities.	There is no suitable habitat associated with this species within the project's area of potential impact.
Lasthenia glabrata ssp. *couteri*	Coulter's Goldfield	None / None	This species is associated with alkaline soils in playas, sinks, and grasslands.	There is no suitable habitat associated with this species within the project's area of potential impact.

Coding and Terms
Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range. In fact, some species are limited to the San Bernardino Mountains area, however, they are locally common.
State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats.
State Plant Rankings: S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 809.2 hectares (2,000 ac) S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 809.2 and 4,047 hectares (2,000 and 10,000 acres) S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 4,047 and 20,235 hectares (10,000 and 50,000 acres) S4 - No Threat Rank S5 - No Threat Rank

Coding and Terms
R-E-D Code: .1 - very threatened .2 - threatened .3 - no current threats known

Based on the biological survey and absence of habitat for the above sensitive species, little or no potential exists for the sensitive species identified above to occur within the project alignment.

4.3.3 Project Impacts

Implementation of this project has limited potential to impact biological resources. Since future operations (both volume rail and surface traffic) will not be affected by the proposed project, any potential impact to biological resources is related to the proposed construction activities outlined in the project description. The impact evaluation discussion below has been conducted on a site specific basis and no further biological surveys will be conducted prior to implementation of the proposed project, unless circumstances change in the future (such as the listing of a new species that could use the project's area of potential impact).

4.3.3.1 Thresholds of Significance

The Initial Study Environmental Checklist Form (Appendix G of the State's CEQA Guidelines) provides recommendations for determining the significance of project-related impacts. The Checklist Form (Issue #IV, Biological Resources) identifies the following criteria for determining whether a project may cause a significant adverse biological resource impact:

a. have a substantial adverse direct or indirect effect on any species identified as a candidate, sensitive, or special status species;

b. have a substantial adverse effect on riparian habitat or other sensitive natural community;

c. have a substantial adverse effect on federally protected wetlands;

d. substantially interfere with the movement of native fish or wildlife species, migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e. conflict with local policies or ordinances protecting biological resources; or

f. conflict with provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved habitat conservation plan.

These thresholds of significance will be utilized in this PEIR to evaluate the potential impacts associated with implementation of this project.

The California Native Plant Society (CNPS) publishes and regularly updates the "Inventory or Rare and Endangered Vascular Plants of California." CNPS gathers information from the CNDDB, the

CDFG, and amateur and professional botanists throughout the state. Plants listed by CNPS, but not officially listed by the State, nevertheless receive protection under CEQA: that is, impacts to CNPS listed species may be considered significant.

4.3.3.2 San Gabriel River Bridge

a. Have a substantial adverse direct or indirect effect on any species identified as a candidate, sensitive, or special status species.

The results of the biological resource survey is that no listed or sensitive species or their associated habitat were observed within 15.24 meters (50 ft) on either side of the proposed alignment. Further, no wetland or other sensitive habitats will be adversely effected by the proposed third main track construction. No adverse direct or indirect impacts are forecast to affect sensitive plant or animal species or their habitat from implementing the proposed project.

b. Have a substantial adverse effect on riparian habitat or other sensitive natural community.

During construction the San Gabriel River channel bottom will be disturbed for several months while the new bridge piers are installed. The existing 106.68 meters (350 ft), 7 span (15.24 meters or 50 ft spans) bride will be widened about 5.09 meters (16.7 ft) to the north with similar bridge footings and piers (pilings with pile cap and 1.22 meters or 4 ft solid piers). An area of less than 0.4047 hectare (an acre) will be temporarily disturbed within the channel at any one time. Fill material will be installed to divert flows during the construction period which will occur during the dry season from April 15 through October 15. Once one have of the bridge foundations are constructed, any flows will be diverted to the other side of the channel. At the end of construction, the fill material will be removed the channel and the channel returned to its existing condition.

Bridge construction activities may cause two types of adverse impact: (1) nesting birds may be impacted by noise from construction activities; and (2) the minimal habitat values in the channel at the proposed bridge location will incur an approximate six-month temporal loss of availability to any species in the area. Due to the existing high noise environment caused by surface traffic on the Slauson Avenue Bridge and the BNSF rail bridge (greater than 70 dB CNEL over the channel), the incremental increase in noise level during construction (ranging from 5-10 dB each day of construction) is not forecast to cause significant adverse impact. This conclusion is based on the observation that any nesting birds in the area are presumed to have adapted to the existing high noise environment and the incremental noise will not result in greater impacts on any birds in the project area. Following construction of the new bridge across the San Gabriel River operations will remain the same and no additional noise impact is forecast to result from continued use of the rail corridor by trains. Without any significant adverse noise effects to any significant natural community, no mitigation is recommended for implementation.

Regarding the temporal loss of channel area, the lack of any significant riparian resources at the location where the bridge will be installed reduces the potential significance of the loss of the channel during the construction. Once the bridge work is completed in the channel, the new piers will permanently remove less than 464.5 square meters (m^2) (5,000 ft^2) of the channel from serving any future habitat role. Based on experience, the short- and long-term loss of channel area, even without any significant riparian or wetland resources, may be considered to be a significant adverse impact of the proposed project by the regulatory agencies. Therefore, mitigation is outlined below which will be implemented to offset or compensate for both the temporal and permanent loss of less than 0.4047 hectare (an acre) of the channel.

California Department of Fish and Game Section 1603

The CDFG takes jurisdiction over water flow areas, i.e., streams. These water flow areas are identified in the code as:

> "...natural flow or bed, channel or bank of any river stream of lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit or will use material from the streambeds..."

In order to quantify the acreages of "streambed", known limits of the channelized banks were used as the channel width and the limits of construction on either side of the bridge were used as the length. The acreages were then calculated from these measurements.

U.S. Army Corps of Engineers "Waters of the United States", excluding wetlands

The limits of "waters of the United States", excluding wetland, are defined in 33 CFR 328.3(a) as those areas within the "ordinary high water mark" (OHWM). The OHWM is defined as:

> "...that line on the shore established by the fluctuations of the water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

In order to quantify the acreages of "streambed", known limits of the channelized bed were used as the channel width and the limits of construction on either side of the bridge were used as the length. The acreages were then calculated from these measurements.

U.S. Army Corps of Engineers "Wetlands"

The conclusions of the Jurisdictional Delineation conducted in 2000 are based upon The U.S. Army Corps of Engineers' Wetland Delineation Manual, January 1987, Technical Report Y-87-1 (Manual). This Manual outlines a comprehensive approach based upon the presence of the following three parameters: wetland hydrology, hydrophytic vegetation, and hydric soils.

Wetland hydrology is present if the "sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation" (Manual). Hydrophytic vegetation is "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Manual). A positive hydrophytic vegetation indicator is present if the prevalence, characterized by the dominant species of a plant community or communities, of the vegetation is classified as hydrophytic vegetation. Dominant plant species are those that contribute more to the character of a plant community than other species present, as estimated or measured in terms of some ecological parameter (i.e., %cover, %density, etc.). Hydric soil is "soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation."

Using this Manual, a wetland determination is made when under "normal circumstances" an area has all three parameters present. An area is not functioning under normal circumstances if a positive indicator for one of the three parameters could not be found due to effects of recent human activities. If a particular site has been recently disturbed by natural or human activities, it may not meet the criteria of "normal circumstances". If this occurs it would be classified as an "Atypical Situation" meaning one or more parameters are not reliable indicators.

To complete this Jurisdictional Wetland Delineation, all three parameters were investigated: soils, hydrology, and vegetation. The Manual describes inundation greater than one month to be a "very long duration", therefore areas that were ponded or were saturated at the surface or within the root zone (usually 25.4-304.8 mm or 1-12 in). The hydrophytic vegetation is characterized by plant species that have "demonstrated an ability to achieve maturity and reproduce in an environment where all or portions of the soil within the root zone become, periodically or continuously, saturated or inundated during the growing season." (Reed) The National List of Plant Species That Occur in Wetlands was used to determine the indicator status of the dominant species of a community. The wetland area was delineated by looking for vegetation boundaries in the field between communities dominated by Facultative Wetland Species – Obligate Wetland Species and those dominated by Facultative Upland - Upland species, and comparing the hydrological and soils data along the vegetation transition.

Jurisdictional Determination

There were no jurisdictional wetlands observed within the proposed third track segment. Further, there are four water bodies crossed that may require a Section 404 permit, Section 401 Certification, or a 1603 Agreement. Permits for some or all of the bridges may be required by the COE, CDFG, and the Regional Water Quality Control Board (RWRCB). The need for a permit at any given structure will depend upon the design of the proposed structure and the construction methods. The following is a list of bridges that may require permitting: MP 151.9 (San Gabriel River), MP 157.5 (Coyote Creek), MP 158.9 (La Mirada Creek); and MP160.86 (Brea Creek).

c. Have a substantial adverse effect on federally protected wetlands.

No federally protect wetlands occur within the project area, so no adverse impact to such wetlands will result from project implementation.

d. Substantially interfere with the movement of native fish or wildlife species, migratory wildlife corridors, or impede the use of native wildlife nursery sites.

To the extent that the San Gabriel River channel serves as a possible migratory wildlife corridor, the proposed project has some potential to impact this function during construction. Mitigation has been incorporated into the project, construction within only half of the channel alignment, to allow any fauna to continue using the channel for migration purposes. Based on incorporation of this construction method, no significant impact to any wildlife movement within the channel is forecast to occur. Once construction of the expanded railroad bridge is complete, the additional of the bridge piers, adjacent to the existing rail and Slauson Avenue bridge piers, is not forecast to substantially interfere with movement of wildlife in the channel. No additional mitigation is required to address the long-term continued operation of rail operations after the bridge expansion is installed.

e. Conflict with local policies or ordinances protecting biological resources.

No local policies or ordinances protecting biological resources were identified for this portion of the San Gabriel River channel. By installing the proposed third main track directly adjacent to the existing transportation bridges crossing the San Gabriel River, the proposed project does not cause disturbance in an undisturbed portion of the river channel. Therefore, no significant conflicts with local policies or ordinances protecting biological resources is forecast to result from implementing the proposed project. No mitigation is required.

f. Conflict with provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved habitat conservation plan.

Within the project area (along the whole alignment), no adopted plans for habitat conservation were identified. Therefore, no adverse conflicts with such plans can occur and no mitigation is required.

4.3.4 Mitigation Measure

One potential significant adverse biological resource impact was identified, temporal disturbance of up to 0.4047 hectare (one acre) in the San Gabriel River channel and permanent loss of less that 464.5 m^2 (5,000 ft^2) of the channel at a highly disturbed location. The regulatory agencies (COE, CDFG and RWQCB) have been consistent in requiring mitigation to offset such impacts, even when no significant riparian or wetland resources are affected. Accordingly, the following mitigation measures will be implemented by BNSF to ensure that the above impacts are reduced to a level of nonsignificance.

4.3-1 To offset short- and long-term impacts to the San Gabriel River Channel, BNSF shall implement one of the following measures: acquire 0.4047 hectare (one acre) of land within a wetland habitat mitigation bank; provide funds to an agency acceptable to the regulatory agencies to create an additional 0.4047 hectare (one additional acre) of riparian or wetland habitat at an acceptable location within the project area (including sufficient funds to establish the requisite non-wasting endowment; or with approval of Los Angeles County Flood Control and the U.S. Corps of Engineers, fund the creation of 0.4047 hectare (one acre) of riparian habitat at an acceptable location within the San Gabriel River channel).

Implementation of the above measure is protective of the environment and no new or different adverse environmental impacts are forecast to occur from implementing the above measure. Should the regulatory agencies determine an alternative, equivalent mitigation program during acquisition of regulatory permits for work within the San Gabriel River channel, such measure shall be deemed equivalent to the above measure and no additional environmental documentation shall be required to implement a measure different than outlined above.

4.3.5 Cumulative Impacts

Based on the evaluation in this subchapter, no significant biological resource impacts are forecast to occur due to implementation of the proposed Third Main Track and Grade Separations Project. If the single potential biological impact identified in the analysis above is fully mitigated according to the required mitigation established above and by jurisdictional agencies, then the net cumulative impacts to biological resources will be less than significant.

4.3.6 Unavoidable Adverse Impact

The biological resource evaluation presented above indicates that since biological impacts can be fully mitigated to a level of nonsignificance, no unavoidable significant adverse impacts to biological resources are forecast to occur as a result of project implementation.

This page left intentionally blank for pagination purposes.

4.4 CULTURAL RESOURCES

4.4.1 Introduction

"Cultural Resources" is a term meant to encompass both archaeological, historic, and prehistoric resources. Archaeological and historic resources may occur together on the same site. Although cultural resources are man-made, they occur on the landscape as a result of previous human activities, and thus, are addressed in the CEQA process in a manner similar to natural resources.

Archaeological resources are the physical remains of past human activities, and can be either prehistoric or historic in origin. Such resources include artifacts, refuse, and features in both surface and subsurface contexts, are greater than 50 years in age and/or meet other established criteria to qualify as historic in nature.

- Prehistoric archaeological resources may include the remains of villages and campsites, food processing locations, lithic (stone) resource procurement and tool-making location, and burial and cremation areas. They may also consist of trails, rock art and geoglyphs (ground figures) and isolated artifacts. Prehistoric archaeological resources are the result of cultural activities of the ancestors and predecessors of contemporary Native Americans, and in many cases, retain special traditional and sacred significance for those people.

- Historic archaeological resources include refuse deposits, such as can and bottle dumps, filled-in privy pits and cisterns, melted adobe walls and foundations, collapsed structures and associated features, and roads and trails. They may relate to mission activities, travel and exploration, early settlement, homestead activities, cattle and sheep herding, lumbering, and mining, among other themes. In Los Angeles and Orange Counties, historical archeological resources date from the earliest Spanish Mission activities (ca. 1700s) to the middle of the 20th century.

Historic resources can be intact structures of any type that are 50 years or more of age. These resources are sometimes called the "built environment" and include houses or other structures, irrigation works, and engineering features, among other items.

Paleontological Resources are the fossil remains or traces of past life forms, including both vertebrate and invertebrate species, as well as plants. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. All vertebrate fossils are considered to be significant; other kinds of paleontologic resources must be evaluated individually for significance depending on their potential scientific value.

Known cultural resources are those which have been identified through formal recognition on one or more of the following inventories: National Register of Historic Places, California Archaeological Inventory, California Historic Resources Inventory, California Historical Landmarks, and Points of Historic Interest.

The purpose of this PEIR is to provide the Department and other interested parties with the necessary information and analysis to determine whether the proposed undertaking would have any adverse effects on cultural resources, as defined by the National Historic Preservation Act (NHPA)

Section 106 and CEQA, that may exist within the area of potential effect (APE) created by implementation of the Third Main Track and Grade Separations Project.

The information in the following evaluation has been summarized from a "Historical Resources Compliance Report" prepared for the proposed project by the firm of CRM TECH. A copy of this report is provided in Volume II, Technical Appendices.

4.4.2 Existing Environmental Setting

The proposed project involves the possible construction and/or modification of both new and/or existing facilities; with activities including installation of a new third track within the existing BNSF alignment and earthmoving operations associated with reconstructing up to seven grade crossings by creating grade separations where specific roads and railroad tracks intersect. The nature and location of all project components within the project area is precisely identified in the project description of this document. In most cases, all construction activities will occur within or along existing disturbed rights-of-way (railroad tracks and roadways) where development has already occurred. Thus, the chances of uncovering previously unidentified cultural resources are diminished. During grade separation construction, where deep cuts below the ground surface will be made, the chances of encountering cultural resources are greater than along the existing railroad right-of-way, particularly because only minimal cuts below the ground surface are needed to install the new railroad tracks. The locations within the project area boundaries with known sensitivity for cultural resources have been identified as a result of the archival records search.

4.4.2.1 Cultural Resources

The scope of the CRM TECH study included a historical/archaeological resources records search, historical background research, consultation with local governments and Native American representatives, and an intensive-level field survey. The field survey was conducted between June 21 and July 23, 2002. The results of the records search indicate that three historical/archaeological sites, designated CA-LAN-182, 19-002882 and 30-120020, were previously recorded within or adjacent to the APE. CA-LAN-182 includes several speculative locations of a Native American village noted in the early historic period, one of which was believed to be in the vicinity of the crossing between the BNSF line and the Union Pacific Railroad line in Santa Fe Springs. The presence of the site in or near the APE has not been established through archaeological field investigations, and no evidence of any archaeological remains was encountered at the suggested location in the APE during the field survey.

Site 19-002882, recorded as two primary refuse deposits dating to the 1940s-1940s, was once located near the northwestern end of the APE at Hobart, but the entire site was removed shortly after its recordation in 2000. Site 30-120020, located near Beach Boulevard in Buena Park consisted of two privies and trash pits associated with the former Northam Station on the railroad when it was recorded in 1979. None of these features, however, or any other remains of the station was observed at this location during the present survey.

As a result of this study, a total of 49 pre-1957 buildings were recorded within the APE at four of the six grade separation sites, including a former ranch house constructed around 1914, 47 tract homes constructed between 1951 and 1954, and a commercial/industrial building constructed in 1955-1956. None of these buildings, however, appears to meet CEQA's definition of a "historical resource." Also noted in the APE were 55 other buildings or groups of buildings that postdate 1957. Pursuant to current the Department policy, these buildings are not considered potential historical resources and do not require further study.

The existing BNSF railroad line that runs through the APE, built in 1885-1888 by the Riverside, Santa Ana & Los Angeles Railway Company, a Santa Fe subsidiary, was recorded during the present study as a historical site due to its age. Despite the important role that the Santa Fe Railway played in the growth of southern California in the late 19th century, the railroad line and its associated features that are present today, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance, and thus, do not appear to qualify as a "historical resource," as defined by CEQA.

Along with the railroad line, the present survey noted 18 bridges that carry the railroad tracks over various streets or natural waterways. One of these, spanning the San Gabriel River, was constructed in 1946-1947, but does not demonstrate any of the historical, architectural, or other qualities to meet the definition of a "historical resource." Of the other 17 bridges seven were listed in the California Historic Bridge Inventory as not eligible for listing in the National Register of Historic Places, including five constructed after 1956 and two constructed before 1956 but expanded in the 1960s-1970s. The majority of the bridges, number 10 in total, have not been previously evaluated for historical significance, but none of these predates 1957, and therefore none of them is considered a potential historical resource.

Additionally, consultation with the City of Santa Fe Springs revealed that the City has installed a commemorative plaque within the APE at the Los Nietos Road/Norwalk Boulevard grade separation site, which marks the approximate location of the historic Los Nietos School. This commemorative plaque has no historic value of its own, and is not considered a potential historical resource.

4.4.2.2 <u>Paleontological Resources</u>

The alluvial soils covering most of the Study Area have a low potential to contain fossil remains. There are, however, localities within the area which have documented paleontologic resource discoveries. Paleontological resources are not even mentioned in the various General Plans along the route, except as a side note. For example, in the La Mirada General Plan and Zoning Ordinance Update, the following comment is contain on page 7 of the Initial Study Environmental Checklist Form: "La Mirada does not contain any historic or archaeological resources. The City is largely built out and does not contain any known paleontological resources. The potential for uncovering such significant resources within the City is considered remote..."

4.4.3 Project Impacts

Activities requiring the excavation or movement of soil material at any location within the project area have the potential to adversely effect cultural and paleontologic resources. Since the construction of the third main track within the BNSF alignment will require minimal subsurface disturbance, the greatest potential for encountering unknown buried resources will occur at the proposed grade separations, where substantial excavations will be implemented. The impact evaluation presented below focuses on the proposed physical changes to site landscape and any potential adverse impacts these changes may have on the cultural resources that may exist. For the purposes of the following analysis of cultural resource impacts, it is assumed that the project will be approved and implemented as proposed and described in the Project Description, Chapter 3 of this document.

The cultural resource issues of focus in this evaluation are related to the types of possible alterations of the ground surface and existing substrate from construction of the facilities outlined in the project description. The proposed project construction activities have a potential to damage or destroy of archaeological, historical structures or paleontologic resources that exist within the APE defined above. The following evaluation is site specific since the location of all facilities has been defined as part of the project definition.

4.4.3.1 Thresholds of Significance

The purpose of this study is to identify any cultural resources within or adjacent to the project area, and to assist the Department in determining whether such resources meet the official definitions of "historic resources," as provided in the California Public Resources Code, in particular CEQA.

According to PRC §5020.1(j), "historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." Specifically, CEQA guidelines states that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing the California Register of Historical Resources, included in the local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR §15064.5(a) (1)-3)).

Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

A significant cultural resource impact would be any unmitigated impact associated with implementation of the proposed Third Main Track and Grade Separations Project that result in the damage, disturbance or destruction of an archeological, paleontological, or other historic/cultural resource.

a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Based on CRM TECH's findings summarized above, the proposed project has no identified historical or archaeological resources, as defined by CEQA, within the APE that may incur significant adverse impact. Further, the CRM TECH study concluded that the proposed project would have no impact on any known "historical resources." In order to protect areas of potential archaeological interest, address local historical resource concerns and address potential unknown buried resources, mitigation measures are provided below to ensure that no significant adverse cultural resource impacts occur.

b. Cause a substantial change in the significance of an archaeological resource pursuant to Section 15064.5?

Please refer to the discussion under issue a. above. No archaeological resources were identified within the APE that could be adversely impacted by implementing the proposed project. However, to address the potential of discovering subsurface/buried cultural resources, mitigation is provided to ensure that any such resources encountered will receive appropriate treatment and documentation.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

As summarized above, the potential for paleontological resources to occur within the APE is very low. In addition, the area encompassed by the project consists of highly disturbed and modified landforms (alluvial fans, stream channels, and a few small ridges) that have no unique geologic features within their boundaries. However, to address the potential of discovering subsurface/buried paleontological resources, mitigation is provided to ensure that any such resources encountered will receive appropriate treatment and documentation.

d. Disturb any human remains, including those interred outside of formal cemeteries?

The project APE does not include any cemeteries and the potential for encountering buried human remains is considered low. However, to address the potential of discovering subsurface/buried human remains, mitigation is provided to ensure that any such remains encountered will receive appropriate treatment and documentation.

4.4.4 Mitigation Measures

Mitigation measures are required to reduce potential unknown subsurface/buried archaeological, paleontological and historic resource impacts to a non-significant level. The following mitigation measures are recommended as conditions of project approval to be implemented in the instance where subsurface/buried resources/remains are encountered during construction of the proposed project.

4.4-1 Earth-moving activities in the areas around the recorded location of Site 30-120020 and the suggested location of Site CA-LAN-182 in the APE shall be monitored by a qualified archaeologist.

4.4-2 The commemorative plaque marking the approximate site of the Los Nietos School be relocated and rededicated in coordination with the City of Santa Fe Springs following completion of the grade separation at this location.

4.4-3 Should any archaeological, historical or paleontological (cultural) resources or human remains be encountered during construction in areas where no resources were expected, construction in the area shall be immediately terminated. In the case of cultural resources, a qualified professional shall be called to examine the discovery. BNSF shall follow recommended actions for mitigation of the exposed resource until the resource is fully evaluated and any necessary data recovery or avoidance measures implemented. In the case of human remains, the County Coroner shall be contacted and BNSF shall follow recommended actions for mitigation of the exposed remains until it is fully evaluated and appropriate actions taken for removal and repatriation.

These measures ensure that the project related construction activities will not cause significant impact to cultural resources. Mitigation will be accomplished through avoidance or recovery of all pertinent data from identified cultural resources exposed during construction of the proposed project. Implementing the above measures will contribute to routine environmental impacts associated with disturbing the ground during artifact and data collection.

4.4.5 Cumulative Impact

Cumulative cultural resource impacts can only occur when such resources are not avoided or are not recovered, evaluated and their data value placed in the broader context of such resources, i.e. mitigated. Based on the requirement to ensure that such exposed subsurface/buried resources are avoided or otherwise protected and evaluated, no cumulative significant adverse cultural resource impacts are forecast to occur if the proposed project is implemented.

4.4.6 Unavoidable Adverse Impact

The cultural resource evaluation presented above indicates that, with implementation of appropriate mitigation measures, the proposed project will not cause any significant unavoidable adverse cultural resource impacts. Therefore, no significant adverse cultural resource impacts are forecast to occur if the proposed project is implemented as proposed, including the above mitigation measures.

4.5 GEOLOGIC RESOURCES / CONSTRAINTS

4.5.1 Introduction

This subsection of Chapter 4 identifies and evaluates various geologic, seismic and soil impacts and constraints related to the implementation of the Third Main Track and Grade Separations Project, the proposed project. CEQA Guidelines (Section 15126.2, subd. (a)) require an analysis of potential safety problems that might be encountered as a result of implementing a proposed project. This analysis section contains an appraisal of geologic resource and constraint related impacts. Also, where appropriate, mitigation measures will be provided to minimize the exposure of people and property to geology-related hazards, such as susceptibility to surface ruptures from faulting, groundshaking, ground failures (including subsidence and liquefaction), or effects of seismically induced water hazards (i.e., tsunamis and seiches).

To evaluate potential geologic constraints or impacts associated with this project, data from the following sources were utilized:

- County of Los Angeles, General Plan
- County of Orange, General Plan
- City of Buena Park, General Plan and General Plan EIR
- City of Commerce, General Plan and General Plan EIR
- City of Fullerton, General Plan
- City of La Mirada, General Plan and General Plan EIR
- City of Montebello, General Plan
- City of Pico Rivera, General Plan and General Plan EIR
- City of Santa Fe Springs, General Plan
- Geotechnical Study, Lakeland Road Grade Separation (CHJ, Inc., December 2001)
- Geotechnical Study, Los Nietos Road & Norwalk Boulevard Grade Separation (CHJ, Inc., December 2001)
- Geotechnical Study, Passons Boulevard Grade Separation (CHJ, Inc., November 2001)
- Geotechnical Study, Pioneer Boulevard Grade Separation (CHJ, Inc., November 2001)
- Geotechnical Study, Rosecrans Avenue Grade Separation (CHJ, Inc., December 2001)
- Geotechnical Study, San Gabriel River Crossing (CHJ, Inc., November 2001)
- Geotechnical Study, Valley View Avenue Grade Separation (CHJ, Inc., December 2001)
- Industrial Minerals in California (USGS Survey, 1958, reprinted 1989)

Data are abstracted from these documents in order to characterize the existing environmental setting and to make the impact forecast.

4.5.2 Environmental Setting

The Geotechnical Studies prepared by CHJ, Inc. describe the underlying geology and hydrology within the southeast portion of the Los Angeles sedimentary basin. The following description of the existing geologic environment is intended to be a summary of the information presented in these documents, combined with data from the General Plans of cities located within the project area as defined in Chapter 3. The discussion provided below is intended to communicate with the non-technical reader/reviewer; thus, it is formatted as a simplified explanation/summary of the geology and seismicity of the area. Readers interested in the technical details of the data and reports are referred to the seven aforementioned reports, along with the safety or geologic hazards sections of the general plans mentioned in the list of resources found in Section 4.4.1 of this subchapter.

The site is located in the southeast portion of the Los Angeles sedimentary basin. The Los Angeles basin is located at the intersection of the Continental Borderlands, Peninsular Ranges and the Transverse Ranges Geomorphic Provinces. The Geotechnical Studies state that the Basin is thought to have formed as a result of regional extension, concurrent with clockwise rotation of the western Transverse Ranges block. The Los Angeles basin has been receiving sediment from adjacent uplands since the middle of the Tertiary time period approximately 30 million years ago. Accumulated sedimentary deposits are up to 6,096 meters (20,000 ft) in thickness. With continued rotation of the western Transverse Ranges block, the local tectonic regime changed from extensional to compressional in the Quaternary period and basinal closure was initiated.

Late Pleistocene to Holocene-age deformation has locally warped and faulted this sedimentary section, resulting in hills on the Los Angeles plain, such as the Puente Hills to the north of the project area and the Coyote Hills to the south of the project area. The project area is located primarily on alluvial fan material deposited between the Puente Hills and the Coyote Hills.

The site is underlain by Holocene-age alluvium and recent deposits of the San Gabriel River as mapped by Yerkes and Quaternary alluvium mapped by Jennings. Generally, the soils encountered consisted of very loose to dense silty sands and poorly graded sands underlain by medium dense to very dense sands, stiff to hard silts and clayey sands. These soils typically graded denser and harder with depth.

The drainage pattern for the project area is tributary to the following creeks and rivers: Brea Creek, Coyote Creek, Fullerton Creek, La Canada Verde Creek, La Mirada Creek, Rio Hondo River, and San Gabriel River. Figure 4.5-1 shows the existing drainage pattern for the Los Angeles Basin.

Both active and inactive earthquake faults occur in the southeastern portion of the Los Angeles Basin. As identified in Section 2 of the Safety Element of the Santa Fe Springs General Plan, there are approximately ten faults which impact the seismic characteristics of the Los Angeles Basin. The five “active” faults which have the greatest potential to generate seismic shaking in the Basin are:

- Elysian Park Thrust
- Coyote Hills Fault
- Newport-Inglewood Fault
- Norwalk Fault
- Whittier Fault.

Significant groundshaking could be caused by a major earthquake on any one of the regional faults. Ground accelerations from a maximum credible earthquake on the Whittier Fault could range as high as 1.0 g based on a magnitude 7.0 earthquake on this fault (Santa Fe Springs General Plan, Safety Element, Section 2).

The general topography for this area of the Los Angeles Basin consists of a lowland plain with slopes less than 10 percent for all areas except small regions of the Basin, such as the Coyote and Puente Hills. In the project area the topography and drainage slopes gently is to the south, with some westerly component. The Third Main Track and Grade Separation Project does not propose to build structures within any areas having a slope greater than 5 percent.

A representation of the geologic time scale is included for reference purposes as Figure 4.5-2.

4.5.2.1 Soils

The United States Department of Agriculture, Soil Conservation Survey for Los Angeles and Orange Counties indicate that the study area is located in an area of alluvial fans, plains and terraces. Soils within the project area include generally deep well-drained sands, sandy loams, silty loams, clayey loams; and riverwash. According to the City of Pico Rivera's Environmental Baseline Report, generally the soils with the study area have resulted from stream flow from the San Gabriel Mountains to the north. The alluvial deposits found within the foothill region consist of coarse-grained sediment, intermingled with organic matter, with deposition of finer-grained silts and clays in areas further downstream from the mountains.

The Project Area is comprised of ten soil associations. As described in Pico Rivera's Environmental Baseline Report, *a soil association is made up of one or more extensive soils similar in general characteristics, and includes minor areas of soils that may or may not be like the dominant soils within the area. Soil associations differ from one another by having contrasting soil properties or differing in potentialities.* The following soil associations are found in the Project Area:

Alo-Bosanko association. The soils of this association occur north of floodplains and terraces. Alo soils are dark grayish brown clay surface layer, and at a depth of 609.6 to 1,016 mm (24 to 40 in) is weathered shale or sandstone, or both. Bosanko soil composition is dark gray clay 635 mm (25 in) thick, a second layer of calcareous mixed dark gray clay and pale yellow weathered shale 304.8 mm (12 in) thick; at a depth of 558.8 to 965.2 mm (22 to 38 in) are weathered shale or sandstone, or both. The Alo and Bosanko soils are generally well drained with slow permeability.

Chino association. The soils of this association occur on nearly level valley floors. Chino soils are somewhat poorly drained, and have moderately slow subsoil permeability. These soils are used for residential areas in the Los Angeles basin.

Cieneba-Anaheim-Soper association. The soils of this association occur north of the floodplains. Cieneba soils, comprising approximately 40 percent of the association, are light brownish gray and pale brown sandy loam surface layer 127 to 482.6 mm (5 to 19 in) thick underlain by soft sandstone. Theses soils are excessively well drained. Anaheim soils, about 30 percent of the association, are composed of grayish brown loam, or clay loam surface layer 20 to 36 inches thick; underlying material is weathered sandstone or shale or both. The Anaheim soils are well drained. Soper soils are about 15 percent of the association. They are brown loam, gravelly loam, or cobbly loam surface layer and a reddish brown gravelly clay loam subsoil, and at a depth of 508 to 812.8 mm (20 to 32 in) is weathered conglomerate or sandstone or both. The Soper soils are well drained.

Hanford association, 2 to 5 percent slopes. The soils of this association occur on gently sloping alluvial fans. Hanford soils are over 1,524 mm (60 in) deep, are well drained, and have moderately rapid subsoil permeability. In the Los Angeles basin these soils are used almost exclusively for residential and industrial purposes.

Metz-San Emigdio association. The soils of this association occur on gently sloping alluvial fans and floodplains. Metz soils are over 1,524 mm (60 in) deep, are well drained, moderately alkaline and calcareous throughout. They are composed of pale brown loamy sand surface layer underlain by stratified brown, pale brown, and very pale brown loamy sands and sandy loams. The San Emigdio soils are moderately alkaline and calcareous throughout. They consist of light brownish gray fine sandy loam surface layer and stratified, very pale brown, light gray and pale brown gravelly loamy coarse sand to very fine sand loam.

Mocho-Sorrento association. The soils of this association occur on upper floodplains and on alluvial fans near foothills. Mocho soils are over 1,524 mm (60 in) deep, are well drained, moderately alkaline and calcareous throughout. They are composed of brown and grayish brown sandy loam or loam surface layer underlain by light brownish gray, brown, and pale brown stratified fine sandy loam, light silty clay loam and heavy loam. The Sorrento soils are also over 1,524 mm (60 in) deep, are well drained, neutral at the surface and become moderately alkaline and calcareous with increasing depth. They consist of grayish brown sandy loam, loam, or clay loam surface layer underlain by grayish brown, light brownish gray and pale brown silty clay loam.

Myford association. The soils of this association occur on lower edges of the foothills, on older alluvial fans and terrace remnants of the foothills. Myford soils are moderately drained with slow permeability. The surface layer is pale brown and pinkish gray sandy loam; substratum is very pale brown sandy loam to a depth of more than 1,524 mm (60 in).

Ramona-Placentia association (2 to 5 percent slopes). The soils of this association occur on strongly sloping and rolling terraces and are used for residential purposes and irrigated orchards.

Tujunga-Soboba association. The soils of this association occur on nearly level and gently sloping alluvial fans. Tujunga soils are somewhat excessively drained, and have rapid subsoil permeability. These soils are used extensively for residential development, and for wildlife habitat and recreational purposes.

Yolo association. The soils of this association occur on alluvial fans. Yolo soils are over 1,524 mm (60 in) deep, are well drained and have moderate subsoil permeability.

4.5.2.2 Mineral Resource

The State Mining and Geology Board classifies construction aggregate as an important mineral commodity. Mineral Resource Zones have been established per the Surface Mining and Reclamation Act (SMARA) for areas possessing minerals of Statewide or regional importance. The primary objectives of SMARA are the assurance of adequate supplies of mineral resources important to California's economy and the reclamation of mined lands. These objectives are implemented through land use planning and regulatory programs administered by local government with the assistance of the State. The Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Pico Rivera and Santa Fe Springs do not contain any areas designated as Mineral Resource Zones within the identified project area.

The Los Angeles County General Plan (LACGP) describes the existing mineral resources and mining activities within the eastern portion of the County. Local mineral resources consist of oil and deposits of rock, sand and gravel. A graphical representation of the special management areas described for Los Angeles County is included for reference as Figure 4.5-3. This map shows the distribution of mineral resource locations within the southeastern portion of Los Angeles County. The only mineral resources that occur near the project area are associated with the Puente Hill formation. A portion of the small Bandini oilfield overlies the City of Commerce; however it does not impact the proposed project area.

4.5.2.3 Seismic Activity

The Geotechnical Studies prepared by CHJ, Incorporated for each grade separation project contain a detailed analysis of potential seismic activity for all significant faults within the vicinity of the Project Area. A map showing the location of major faults in the vicinity of Los Angeles Basin is included as Figure 4.5-4. The project alignment does not lie within or adjacent to any Alquist-Priolo Earthquake Fault Zones designated by the State of California to include traces of suspected active faulting. No surficial evidence for active faulting on or immediately adjacent to the site was observed during the geologic field reconnaissance or on the aerial photographs reviewed. As stated from the Geotechnical Studies, a summary of the fault system and significant faults within the southeastern portion of the Los Angeles Basin include:

> LOS ANGELES BASIN FAULT SYSTEM: Numerous thrust faults that do not cut the earth's surface (blind thrusts) are now thought to exist beneath much of Southern California (Working Group on California Earthquake Probabilities, 1995). The 1987 Whittier Narrows earthquake and the 1994 Northridge earthquake are examples of blind thrust faulting on previously unknown faults.
>
> The Los Angeles basin fault system is a series of blind thrust faults that are postulated to underlie much of the Los Angeles area, including some of the most populous regions. It is thought these faults may be connected at depth by a near-horizontal "detachment" fault (Dolan and others, 1995). The Elysian Park and Compton-Los Alamitos faults are known components of the Los Angeles basin fault system.
>
> The Elysian Park thrust is a blind thrust fault, located beneath the subject site. The plane of this structure is tilted or "dips" to the north-northeast approximately 22 degrees (Dolan and others, 1995). The closest distance (hypocentral) to the fault as plotted by Blake (2000) is approximately 10.46 km (6.5 mi) south of the site. The 1987 Whittier Narrows earthquake has been attributed to the Elysian Park thrust based on the focal mechanism and aftershocks (Hauksson and Jones, 1989). The depth of this seismicity was 10.5 to 16 km.
>
> Approximately 17 miles southwest of the proposed project is the projected trace of the Compton-Los Alamitos blind thrust fault (Dolan and others, 1995; Blake, 2000). The plane of this structure dips 23 degrees to the northeast, so actual potential earthquake epicenters from an event on this fault could possibly be closer than 27.36 km (17 mi) to the site.
>
> Although important as potential sources of severe seismic shaking possible almost anywhere in Southern California, the hazard presented to the site by blind thrust faults cannot at this time be confidently quantified (Working Group on California Earthquake Probabilities, 1995).
>
> WHITTIER FAULT: The trace of the west- to northwest-trending Whittier fault is shown northeast of the site on the Alquist-Priolo Map of the La Habra quadrangle. The Los Angeles County

Seismic Safety Element shows splays of the Whittier fault as close as 4.83 km (3 mi) from the site (Leighton and Associates, 1990). The Whittier fault displays almost pure right-lateral strike slip (Rockwell and others, 1988). Evidence for activity of the Whittier fault includes offset of Holocene materials (Hannan and Lung, 1979) and microseismicity (Ziony and Yerkes, 1985). The Working Group on California Earthquake Probabilities (1995) tentatively assigned a 5 percent (±3 percent) probability of a major earthquake on the Whittier fault for the 30 year interval from 1994 to 2024.

NORWALK FAULT: The proposed project area crosses the Norwalk fault in the City of Buena Park. The Norwalk fault has been inferred from water and oil well data to exist between Norwalk and the Coyote Hills. The subsurface evidence indicates the Norwalk fault would be a northeast-dipping reverse fault. Richter (1958) reported a vertical displacement of "thousands of feet" and used seismic information to locate the 1929 "Whittier" earthquake on the Norwalk fault.

COYOTE HILLS FAULTS: Older faults that break Pleistocene-age marine sediments are common in the Coyote Hills south and east of the site. In October of 1968, surface rupture without associated recorded seismicity occurred over one of these faults located approximately 12.07 km (7.5 mi) southeast of the site (Smith, 1977). It was generally concluded this aseismic slip was triggered by oil field production operations, either oil withdrawal or water injection, both of which were occurring at the time (Smith, 1977; Hart, 1978; Tan and others, 1984).

NEWPORT-INGLEWOOD FAULT: The closest segment of the active Newport-Inglewood fault is located approximately southwest of the site. The onshore portion of this fault zone is expressed at the surface as a series of discontinuous, northwest-trending, right-lateral, strike-slip faults exhibiting a left-stepping en-echelon pattern. Subsidiary normal and reverse faults with associated right-stepping anticlinal folds are typical of this fault zone (Bryant, 1988).

OTHER FAULTS: Other active or potentially active faults are located at greater distances from the site, including the Palos Verdes, Santa Monica-Hollywood, Raymond, Sierra Madre, Elsinore, San Jacinto, San Andreas, and the fault responsible for the 1994 Northridge earthquake.

Table 4.5-1 (Pico Rivera Environmental Baseline Report and the Fullerton General Plan Update) summarizes the Richter magnitude of historical earthquakes associated with each of the above described faults. There is little doubt that Los Angeles Basin will experience strong seismic shaking in the future. Several of the nearby faults have the potential to generate large earthquakes that would be felt throughout much of the Basin.

Table 4.5-1
HISTORICAL MAXIMUM EARTHQUAKE MAGNITUDE

Fault	Historical Maximum Quake Magnitude
Whittier	6.0 (1910)
Norwalk	4.9 (1929)
Newport-Inglewood	6.3 (1933)
Coyote Hills	n/a

Source: Summarized from Pico Rivera Environmental Baseline Report (1992) and the City of Fullerton General Plan Update (1997)

The La Mirada General Plan describes the potential groundshaking, which would apply generally to the whole Los Angeles Basin in the following manner:

Ground shaking is an expected occurrence of any earthquake; the degree of ground shaking is dependent on the distance from the epicenter. Strong shaking may last a few seconds in a moderate earthquake and as long as four minutes in a large earthquake. Shaking is exaggerated on loose, water-saturated ground, and is less damaging on solid rock. Ground shaking can be expected in La Mirada from any one of several faults located in the region. This emphasizes the need for all new development projects to incorporate appropriate design features to guard against widespread property damage and loss of life in the event of an earthquake.

4.5.2.4 Ground Rupture

Fracturing and displacement of the ground surface can occur as a direct result of movement along a geologically young fault (primary ground rupture), or as a result of sympathetic movement from intense groundshaking on weakened, older fault traces (secondary ground rupture). Primary ground rupture commonly results in greater surface displacements, while secondary ground rupture is commonly more widespread. Either type of ground rupture is destructive to surface improvements, and in 1972 the State of California legislated the Alquist-Priolo Special Studies Zone Act (now known as Alquist-Priolo Earthquake Fault Zones Act) to define and restrict areas of potential fault-related ground rupture. Faults listed for specialized study areas included the San Andreas, Whittier-Elsinore, and Newport-Inglewood fault zones. The fundamental purpose of requiring further study in Alquist-Priolo zones is to prevent high-occupancy structures and important or potentially hazardous facilities from being constructed across an active earthquake fault, if avoidable. The project alignment is not crossed by any identified Alquist-Priolo Special Studies Zones.

4.5.2.5 Landslide Hazards

Areas subject to seismically induced landslides are limited to the steeper portions of the East and West Coyote Hills in the Cities Buena Park and Fullerton according to the City of Buena Park's General Plan Update EIR and the City of Fullerton's General Plan Update.

The probability of seismically induced bedrock landslides occurring within the Cities of Commerce, La Mirada, Montebello, Pico Rivera, and Santa Fe Springs adjacent to the Third Main Line Track and Grade Separations Project is low due to the relatively flat topography according to their respective General Plans.

4.5.2.6 Liquefaction Hazards

Liquefaction is a process in which strong ground shaking causes saturated soils to lose their strength and behave as a fluid. Ground failure associated with liquefaction can result in severe damage to structures. The geologic conditions for increased susceptibility to liquefaction are: (1) shallow groundwater (less than 15.24 meters or 50 ft in depth), (2) presence of unconsolidated sandy alluvium, typically Holocene in age, and (3) strong ground shaking. All three of these conditions must be present for liquefaction to occur (Geotechnical Study for the Valley View Grade Separation, page 11).

According to the State of California Department of Conservation, Division of Mines and Geology Seismic Hazards Map, La Mirada is susceptible to liquefaction in the southern portion of the City, as well as in continuous bands which follow drainage areas east to west across the City. Where the proposed third track crosses through the City of Buena Park, the project will be exposed to moderate liquefaction susceptibility. Based upon data within the City of Commerce's General Plan, Public Safety element, liquefaction hazards are not perceived to be a problem in the city due to groundwater measurements indicating levels beyond 30.48 meters (100 ft) deep. The City of Fullerton is susceptible to liquefaction in continuous bands which follow drainage areas east to west across the City. According to the City of Montebello's General Plan, the potential for liquefaction hazards is considered limited. Liquefaction within the City of Santa Fe Springs is considered not generally a hazard as the water table is generally deeper than 15.24 meters (50 ft). Areas immediately adjacent to the San Gabriel River may have moderate liquefaction risk.

The following is a summary of the liquefaction potential for the grade separation and crossing projects:

Lakeland Road Grade Separation

The Lakeland Road grade separation site does not lie in a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). A Liquefaction Seismic Hazard Zone is located as near as 243.84 meters (800 ft) to the northwest. The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the proposed grade separations as being greater than 9.14 meters (30 ft) and less than 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. Groundwater was not encountered in the exploratory boring conducted to the maximum depth of 21.34 meters (70 ft). The native soils beneath the site consist of alluvial deposits of Pleistocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the liquefaction screening and the anticipated depth to groundwater, liquefaction is not considered to be a hazard at this site.

Los Nietos Road and Norwalk Boulevard Grade Separations

The Los Nietos Road and Norwalk Boulevard grade separation sites do not lie in a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). A Liquefaction Seismic Hazard Zone is located as near as 243.84 meters (800 ft) to the northwest. The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the proposed grade separations as being greater than 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. Groundwater was encountered at 16.15 meters (53 ft) below ground surface in exploratory Boring No. 1. The native soils beneath the site consist of alluvial deposits of Holocene to Pleistocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the liquefaction screening, liquefaction is not considered to be a hazard at this site.

Passons Boulevard Grade Separation

The Passons Boulevard grade separation site lies in a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the site as being approximately 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. Groundwater was encountered at 16.46 meters (54 ft) below ground surface in exploratory Boring No. 1. The native soils beneath the site consist of alluvial deposits of Holocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the liquefaction evaluation, the soils encountered at the site when subjected to high groundwater and seismic shaking do not satisfy the criteria for liquefaction.

Pioneer Boulevard Grade Separation

The Pioneer Boulevard grade separation site lies in a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the Pioneer Boulevard Crossing as being greater than 9.14 meters (30 ft) and less than 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. A projected future depth to groundwater of 7.62 meters (25 ft) below the ground surface at the site was utilized. The native soils beneath the site consist of alluvial deposits of modern to Holocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the liquefaction evaluation, the soils encountered at the site when subjected to high groundwater and seismic shaking do not satisfy the criteria for liquefaction.

Rosecrans Avenue and Marquardt Avenue Grade Separation

The Rosecrans Avenue and Marquardt Avenue grade separation site does not lie in a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). A Liquefaction Seismic Hazard Zone is located adjacent to the site to the west. The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the proposed grade separations as being greater than 9.14 meters (30 ft) and less than 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. Groundwater was not encountered in the exploratory boring conducted as part of the study to a depth of 23.32 meters (76.5 ft). The native soils beneath the site consist of alluvial deposits of Pleistocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the liquefaction screening and the anticipated depth to groundwater, liquefaction is not considered to be a hazard at this site.

San Gabriel River/Slauson Avenue Third Track and Bridge Construction

The San Gabriel River/Slauson Avenue site lies within a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the site as being greater than 9.14 meters (30 ft) and less than 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. The native soils beneath the site consist of alluvial deposits of modern to Holocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the liquefaction evaluation, the soils encountered at the site when subjected to high groundwater and seismic shaking do satisfy the criteria for liquefaction. Based upon the anticipated depth to groundwater, the investigations for this site have indicated a significant potential for liquefaction within selected layers between 7 and 50 feet below the ground surface. Thus, liquefaction-related ground rupture within the area of the site may occur, and moderate deformations and failures of the embankments may result. The bridge structure will be founded on piles bearing through the liquefiable soils to mitigate this facility's exposure to significant liquefaction hazards.

Valley View Avenue Grade Separation

The Valley View Avenue grade separation site lies adjacent to a Liquefaction Seismic Hazard Zone designated by the State of California to include areas of historic and geologic potential for permanent ground displacement as defined by the State of California Hazards Mapping Act, Public Resources Code Section 2693(c). The Los Angeles County Safety Element (Leighton and Associates, 1990) shows the depth to ground water underlying the site as being approximately 15.24 meters (50 ft). This depth reflects the shallowest historic depth to groundwater observed in a particular well. Groundwater was encountered at 16.46 meters (54 ft) below ground surface in exploratory Boring No. 1. The native soils beneath the site consist of alluvial deposits of Pleistocene age. Moderate to severe seismic shaking at the site can be expected during the lifetime of the project. Based upon the anticipated depth to groundwater, the liquefaction hazard at this site is considered to be negligible.

4.5.2.7 Settlement/Subsidence

Settlement is the localized lowering of the ground surface due to a decrease in the volume of the underlying soil or sediment. Various phenomena can cause settlement or subsidence, including consolidation, hydro-consolidation, and seismically induced settlement. The most common reason for subsidence in valley (alluvial) areas is the lowering of the groundwater table.

Existing embankments at the grade separation sites were constructed some time ago and have been subjected to railroad loading according to the Geotechnical Study. Therefore, loading due to trains should not trigger settlement. However, construction of the new embankments wedged against the old embankments will tend to lead to settlement of the old embankments. It is expected that the settlement will be primarily on the existing embankment side of the track. In areas along the site where embankments are proposed, the settlement is estimated to be on the order of 25.4 mm (1 in). If the new track, with or without the new embankment, is to be constructed over any existing native, soils and/or undocumented fills, settlement could occur.

Spoils with moderate hydroconsolidation potential were noted within Boring No. 1 of the San Gabriel River/Slauson Avenue Crossing. Due to the bridge abutment structure being founded on a pile-type foundation system, these soils pose no significant design problem.

According to the Geotechnical Studies, subsidence of the ground surface has been reported in numerous areas of California. Principal causes have been fluid withdrawal (oil, gas, water), soil collapse, and oxidation of organic-rich soil. No organic-rich soils with significant collapse potential were encountered during the geotechnical investigations or would be expected to be present in the general area of the site. Most of the project alignment is not underlain by or adjacent to producing oil or gas fields. The area of the San Gabriel River Crossing is not underlain by or adjacent to producing oil fields. The Third Main Track does extend through the Santa Fe Springs Oil Field. Oil is currently being extracted from the area surrounding the proposed Third Main Track from Santa Fe Springs Road to Lakeland Road. Subsidence may have occurred along this portion of the site. Current oil extraction practices, which includes water injection methods, have been shown to essentially halt subsidence and cause rebound of previously subsided surfaces (Allen, 1973). Although tectonic subsidence of the central trough of the Los Angeles Basin is thought to be continuing (Troxel, 1954; Wright, 1991), the amount of tectonic subsidence expected over the lifetime of the project (100 years) would not be significant.

4.5.3 Project Impacts: Geology and Soils

This project proposes the construction of a third main track, supporting bridges, supporting signal systems, grade separations and the on-going operation of railroad. Typically, people will be present onsite for only short periods of time during construction and maintenance activities and future operations of the rail system.

The implementation of the Third Main track and Grade Separations Project within the project area would include installing new infrastructure systems, bridges, and utilities consistent with mitigation measures outlined in this document, which are designed to reduce or eliminate potentially significant incompatibilities. Theoretically, the grade separations could be built in any type of underlying geologic setting, given that sufficient need can be demonstrated for a facility in support of the Third Main Line Track and Grade Separations Project, and given that no other alternatives locations or type of facilities can accomplish the same objectives. The geology and soil issues of focus in this evaluation are examined at the level of constraints imposed on future activities proposed in support of the Third Main Track and Grade Separations Project. These constraint issues are evaluated in the following text.

4.5.3.1 <u>Significance Criteria</u>

The following criteria will be used for determining potential significant impacts related to geology and soil issues:

- Expose people or structures to substantial geologic hazards, including the risk of injury or death to humans and the loss of structures due to ground rupture, strong seismic groundshaking or seismic related ground failures, including liquefaction and landslides.

- Exposure of humans, structures or infrastructure to soil constraints, including soil characteristics that create a high risk of injury or death to humans and the premature loss of structures or infrastructure.

- Significant alterations in the site topography that can create a high potential for downstream erosion (such as loss of topsoil) and sedimentation.

- The project could result in the loss or major alteration/damage to a unique geologic resource.

4.5.3.2 <u>Potential Impacts</u>

a. Is the Project Area subject to fault rupture?

Based on all geologic studies and maps for the region discussed in subsection 4.4.2 above, active faults are known to occur within the Los Angeles Basin; however the project site does not lie within or adjacent to any Alquist-Priolo Earthquake Fault Zones designated by the State of California to include traces of suspected active faulting. The Whittier Fault and Norwalk Faults, which are considered active, are located more than 4.83 km (3 mi) northeast of the project site within the Los Angeles Basin proper. Therefore, the potential for fault rupture within the project area is considered to be low, and potential impacts can be mitigated to reduce impacts by implementing the mitigation measures listed in the following subsection. These measures will ensure that the proposed Third Main Track and Grade Separations are not subjected to significant fault rupture hazards in the event of future seismic activity. The mitigation measures are designed to deal with future projects on a case-by-case basis and will reduce impacts to levels that are less than significant.

b. Is the Project Area subject to significant seismic groundshaking?

Based on the various reference document, moderate to severe seismic groundshaking at the project site can be expected over the life of the proposed project, caused by earthquakes along portions of the fault systems within vicinity of the project. As part of the Third Main Track and Grade Separation project, the proposed new infrastructure system will be constructed to ensure that they can meet current building code and safety requirements, including seismic standards. Any replacement or modification of existing structures with new facilities will include incorporation of current seismic design standards. Because of the identified potential for significant seismic shaking hazards within the Los Angeles Basin, mitigation will be implemented to ensure that construction of new facilities meets safety requirements.

At the project specific level, future projects do have a potential to experience significant constraints, especially if constructed proximate to a fault zone, whether active or not. Aside from identifying known fault locations at this time, geotechnical constraints associated with faults have been identified in the preliminary geotechnical studies completed for the proposed project. With the existing information, site specific geotechnical impacts can be managed by implementation of a number of mitigation measures which are outlined below. Such measures include avoidance through relocation of a facility (where possible). With the implementation of the seismic ground-shaking hazard mitigation measures in a project specific manner in the future, the potential impacts related to area seismic constraints will be reduced and can be classified as less than significant.

c. Is the Project Area subject to significant seismic ground failure, including liquefaction?

Liquefaction results when water-saturated, sandy, unstable soils are subject to intense shaking, such as that caused by an earthquake. These soils lose cohesiveness, causing structures to fail. Studies indicate the location of liquefaction-prone soils in the proposed Project Area within the City of Buena Park, Fullerton and La Mirada. The potential for liquefaction is either less than significant or nonexistent in all other areas of the project area within the Los Angeles Basin. Liquefaction is typically only an issue when the water table is within 15.24 (50 ft) of the ground surface. Based upon the liquefaction evaluations prepared for the project site, the soils encountered at the San Gabriel River/Slauson Avenue crossing when subjected to high groundwater and seismic shaking satisfy the criteria for liquefaction. At the project specific level, future projects do have a potential to experience significant liquefaction constraints, especially if constructed proximate to a Liquefaction Seismic Hazard Zone. These impacts can be managed on site-by-site basis by implementation of a number of mitigation measures which are outlined below. Such measures could include evaluation by a licensed engineer prior to design or land disturbance/construction and the application of appropriate design and construction criteria to all structures subject to significant liquefaction. With the implementation of the seismic liquefaction hazard mitigation measures for specific projects in the future, the potential impacts related to area liquefaction constraints will be reduced and can be classified as less than significant.

d. Is the Project Area subject to significant landslide or mudflow hazards?

The immediate Project Area is not subject to significant landslide or mudflow hazards. Development on steep slopes can increase rates of erosion and exacerbate landslide hazards which may threaten structures; however, no substantial amount of development is proposed for areas with steep slopes (greater than 10% slope). Therefore, land-use impacts on hillsides are not anticipated to be significant. This measure is identified as mitigation in the discussion below.

Within the remainder of the Project Area, no slope areas exist that could result in significant landslides or mudslides, both due to the type of soils, degree of slope, and existing development covering much of the Los Angeles Basin. Without the presence of any landslide or mudslide hazards within the project area, no such hazard exists that can adversely impact future redevelopment activities or be impacted by these activities. No mitigation is required.

e. Is the project area subject to significant erosion or unstable soil conditions from grading activities, or will the proposed project cause significant changes in topography?

The project area is not subject to significant erosion or unstable soil conditions from grading activities, nor will any of the activities proposed by the Third Main Line Track or grade separations cause significant changes in topography. Soil data indicate that portions of the project area are moderately susceptible to erosion. Positive drainage will be provided and runoff shall be controlled to mitigate the potential for erosion. In general, the majority of project area is topographically compatible with all of the proposed project facilities outlined in the Project Description.

With the exception of the grade separations, all ground disturbing activities will affect small areas that can be designed to minimize the amount of ground disturbance. For grade separations, the amount of area disturbed may be substantial, but the separations have been designed to handle surface runoff from the proposed facilities. Local effects on soils and geology would result primarily from the construction activities associated with the proposed action, such as grading, excavating, and re-contouring the soils. These activities could alter soil profiles and the local topography and create a potential for significant erosion. To ensure that significant erosion and unstable soil conditions are not created during construction and operation of future specific projects, mitigation measures are identified to control such water related erosion. These measures will ensure that discharges of surface runoff will not exceed the erosive velocity for affected areas and that no unstable slopes are installed as part of future projects.

During construction, removal of vegetative cover and disturbance of existing topography by the exposure of cut slopes and grading activities could increase the potential for erosion by wind and water. Appropriate watering for fugitive dust controls and water erosion control measures to address non-point source water pollution will be necessary during construction of specific Third Main Track and Grade Separation facilities in previously undeveloped areas.

Mitigation measures are available to minimize erosion problems associated with wind and water, especially during the construction phase of projects. The measures below will be applied to all construction projects, to reduce erosion damage and eliminate creation of unstable slopes. However, the measures outlined below can only be applied to future specific Third Main Track and Grade Separation projects. After the construction phase, long-term erosion control can be accomplished by keeping soils under vegetative cover and planting ground cover or wind breaks to control generation of fugitive dust. After construction, soils underlying facilities and pavements will not be subject to erosion. With implementation of all measures, erosion and unstable slope impacts attributable to future Third Main Line Track and Grade Separation projects will be reduced to a less than significant level.

f. Is the Project Area subject to significant subsidence hazards?

Within the project area, a portion of the Third Main Track does extend through the Santa Fe Springs Oil Field. Oil is currently being extracted from the area surrounding the proposed Third Main Line from Santa Fe Springs Road to Lakeland Road. Subsidence may have occurred along this portion of the site. These subsidence effects are described above and are assumed to be related to oil extractions within the area itself. Current oil extraction practices, which includes water injections methods, have been shown to essentially halt subsidence and cause rebound of previously subsided surfaces (Allen, 1973).

Future specific elements of the project have a potential to experience significant subsidence constraints. However, potential impacts from subsidence can be mitigated by implementation of the mitigation measures set forth in this document. Because these impacts can be managed on site-by-site basis, by the implementation of specific mitigation measures, specific areas susceptible to subsidence hazards should be identified on a site by site basis before the implementation of each project element. With implementation of the subsidence hazard mitigation measures outlined in this document, the potential impacts related to area subsidence hazards will be reduced and can be classified as less than significant.

g. Is the Project Area subject to significant expansive soil hazards?

The soil associations present within the project area do not have any significant expansive soil characteristics. The relative shrink-swell potential for the soils in the project area are very low, and thus, does not pose a significant hazard or major constraint related to future Third Main Track and Grade Separation projects. Potential impacts associated with expansive soils are not forecast to pose any significant constraint in developing future facilities and no mitigation is required.

h. Does the Project Area have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The proposed project does not include septic tanks or alternative waste water disposal systems. No potential for any impacts to such facilities exists from implementing the proposed project. This issue will not be carried forward for evaluation in the EIR. No mitigation is required.

4.5.4 Mitigation Measures

The following mitigation measures will be implemented for individual projects implemented under the Third Main Line Track and Grade Separations Project. Implementation of these measures can reduce all potential impacts to a level that is considered to be less than significant with respect to the proposed thresholds.

4.5.4.1 Soils

Mitigation measures are available to minimize erosion problems associated with wind and water, especially during the construction phase when cut slopes are exposed. During construction, the length of time vegetation and other cover is absent should be minimized. Due to the size of areas to be disturbed by the proposed project, the filing of a Notice of Intent with the State Water Resources Control Board and the preparation and implementation of a Storm Water Pollution Prevention Program (SWPPP) is mandatory. New construction must conform with Basin Plan water quality standards when slopes are exposed. All or an appropriate combination of the following measures can be used to control potential water erosion during construction to meet the Regional Board Basin Plan storm water discharge requirements:

4.5-1 Add protective covering of mulch, straw or synthetic material (erosion control blankets, tacking will be required).

4.5-2 Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed. After construction, soil shall be compacted to a level similar to pre-construction conditions.

4.5-3 Construct diversion dikes and interceptor ditches to divert water away from construction areas.

4.5-4 Install slope drains (conduits) and/or water-velocity-control devices to reduce concentrated high-velocity streams from developing.

4.5-5 Apply provisions of erosion and sediment control that reduce volume and velocity of flows and content of sediment to levels that do not cause significant rill or gully erosion in susceptible areas. In addition, provide for restoration of areas that do become eroded.

After the construction phase, long-term erosion control can be accomplished by keeping soils under vegetative cover, hardscape (pavement, gravel, or other hard cover) and planting wind breaks. The type of vegetation used for landscape cover and wind breaks must comply with each jurisdiction's planting requirements. After construction, soils underlying facilities and pavements will not be subject to erosion.

Mitigation measures identified above shall be employed within the proposed project area. In addition, mitigation measures dealing with seismic and geologic hazards as addressed in the General Plans/EIRs of the Participating Jurisdictions shall be implemented and are hereby incorporated by reference. For the most part, construction in accordance with Uniform Building Code seismic design requirements for the project area will be sufficient to protect the project facilities. Examples of measures which are designed to minimize the potential for damage, injury and loss of life resulting from geologic hazards include the following:

4.5.4.2 Geology

4.5-6 Construction of structures in areas identified in the CHJ, Inc. geotechnical reports as having a high liquefaction potential shall be implemented in accordance with measures identified in the CHJ, Inc. geotechnical reports, such as use of deep pilings for the San Gabriel River bridge.

4.5-7 Apply seismic design and construction criteria to all structures subject to significant seismic shaking in accordance with the CHJ, Inc. geotechnical reports. The appropriate design criteria for the grade separations and bridges is as a: Risk Class I & II, Structures Critically Needed after Disaster: Structures that are critically needed after a disaster include important utility centers, fire stations, police stations, emergency communication facilities, hospitals, and critical transportation elements such as bridges and overpasses and smaller dams. <u>Acceptable Damage</u>: Minor non-structural; facility should remain operational and safe, or be suitable for quick restoration of service.

4.5-8 Require stability analysis for Landslide Hazard areas designated "Generally Susceptible" and "Mostly Susceptible" on the Hazards Overlay Maps. If evidence of liquefaction is identified along the track or at-grade separations, project design mitigation may include:

- **In-situ densification of susceptible soil.**
- **Ground improvements such as removal and replacement of susceptible soils or dewatering.**
- **Deep foundations designed to accommodate liquefaction.**
- **Shallow foundation design to accommodate vertical and lateral ground displacement.**

4.5.9 Require future site-specific geotechnical investigations of proposed grade separations to include an assessment of potential impacts and mitigation measures related to expansive and reactive soils and liquefaction.

The foregoing are general examples of appropriate mitigation measures. As individual facilities are implemented additional, more detailed project-specific measures may be employed.

4.5.4.3 <u>Seismicity</u>

The following measures shall apply to projects proposed within the Los Angeles Basin:

4.5-9 All development projects implemented as a result of the proposed Project shall be built in accordance with current and applicable Uniform Building Code (UBC) standards and all other applicable City, County, State and Federal laws, regulations and guidelines, which may limit construction and site preparation activities such as grading, and shall make provisions for appropriate land use restrictions, as deemed necessary, to protect residents and others from potential environmental safety hazards, either seismically induced or those resulting from other conditions such as inadequate soil conditions, which may exist in the proposed Project Area.

Implementation of the above mitigation measures can reduce the Project's potential impacts to and from geological hazards to below a significant level. These measures are all implemented within the existing footprint of disturbed areas and their implementation has little or no potential to cause other adverse impacts, except the installation of pilings in support of the San Gabriel Bridge. Noise caused by this activity is evaluated within the noise section of this report.

4.5.5 Cumulative Impact

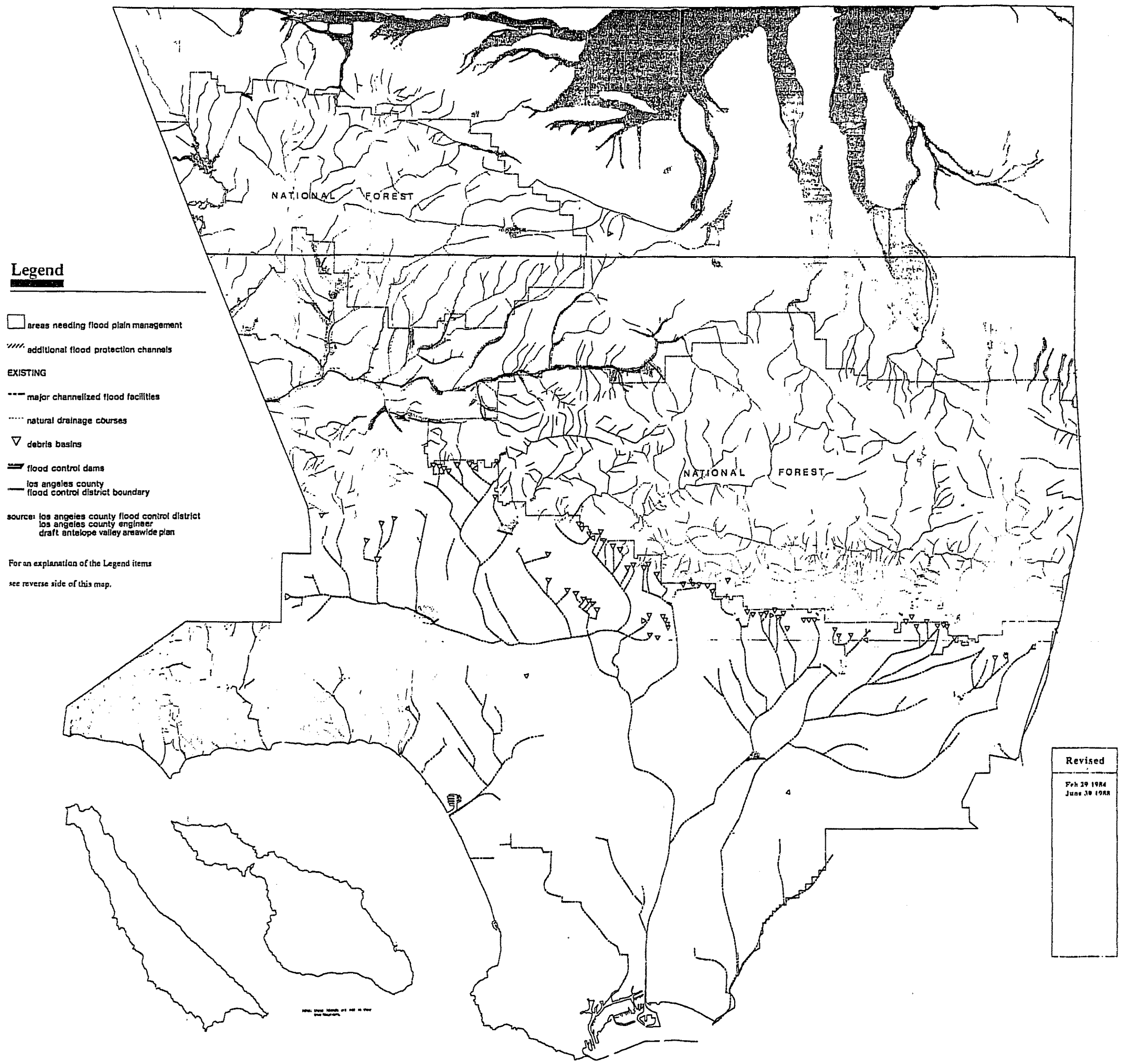
Future development in accordance with the Project Area will not cause any significant adverse geologic or soil impacts. With implementation of the mitigation measures outlined above, the proposed project will not contribute to cumulative exposure of humans in occupied structures to seismic, liquefaction or subsidence hazards. Therefore, no additional mitigation measures are required to ensure that cumulative geologic and soil impacts remain below a significant impact threshold.

4.5.6 Unavoidable Adverse Impact

The geologic and soil resource impact evaluation presented above indicates that the proposed project, the Third Main Track and Grade Separations, has a potential to cause or be exposed to significant geotechnical impacts or constraints. With implementation of mandatory design requirements to control geotechnical hazards and of proposed mitigation, implementing the Third Main Track and Grade Separations Project is not forecast to cause any significant unavoidable adverse geologic and soil resource impacts or be exposed to significant, unmitigated geotechnical constrains. Therefore, no significant unavoidable adverse geologic or soil impacts are forecast to occur if the proposed project is implemented as proposed in Chapter 3 of this PEIR.

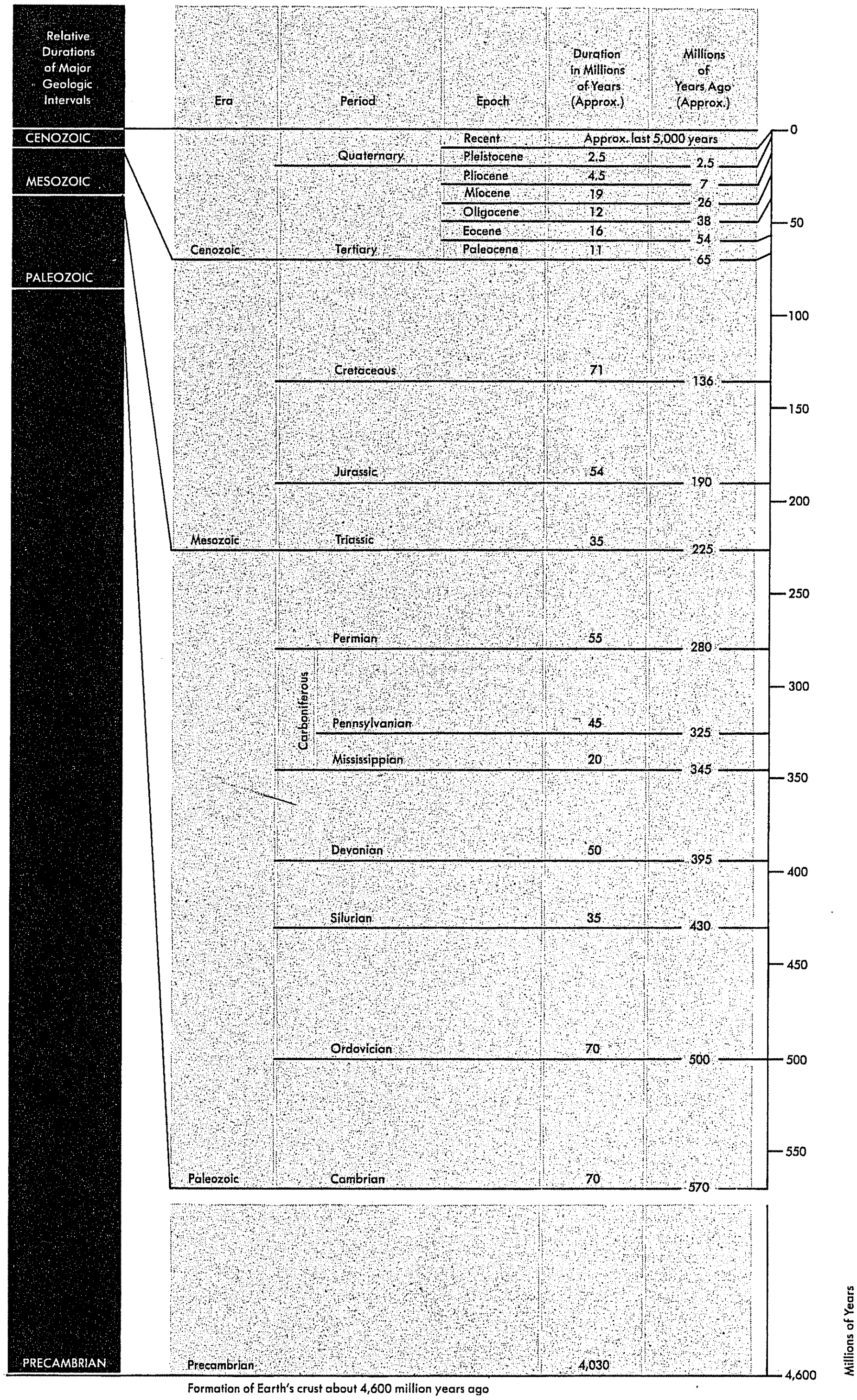
This page left intentionally blank for pagination purposes.

FIGURE 4.5-1
Existing Drainage Pattern for the Los Angeles Basin



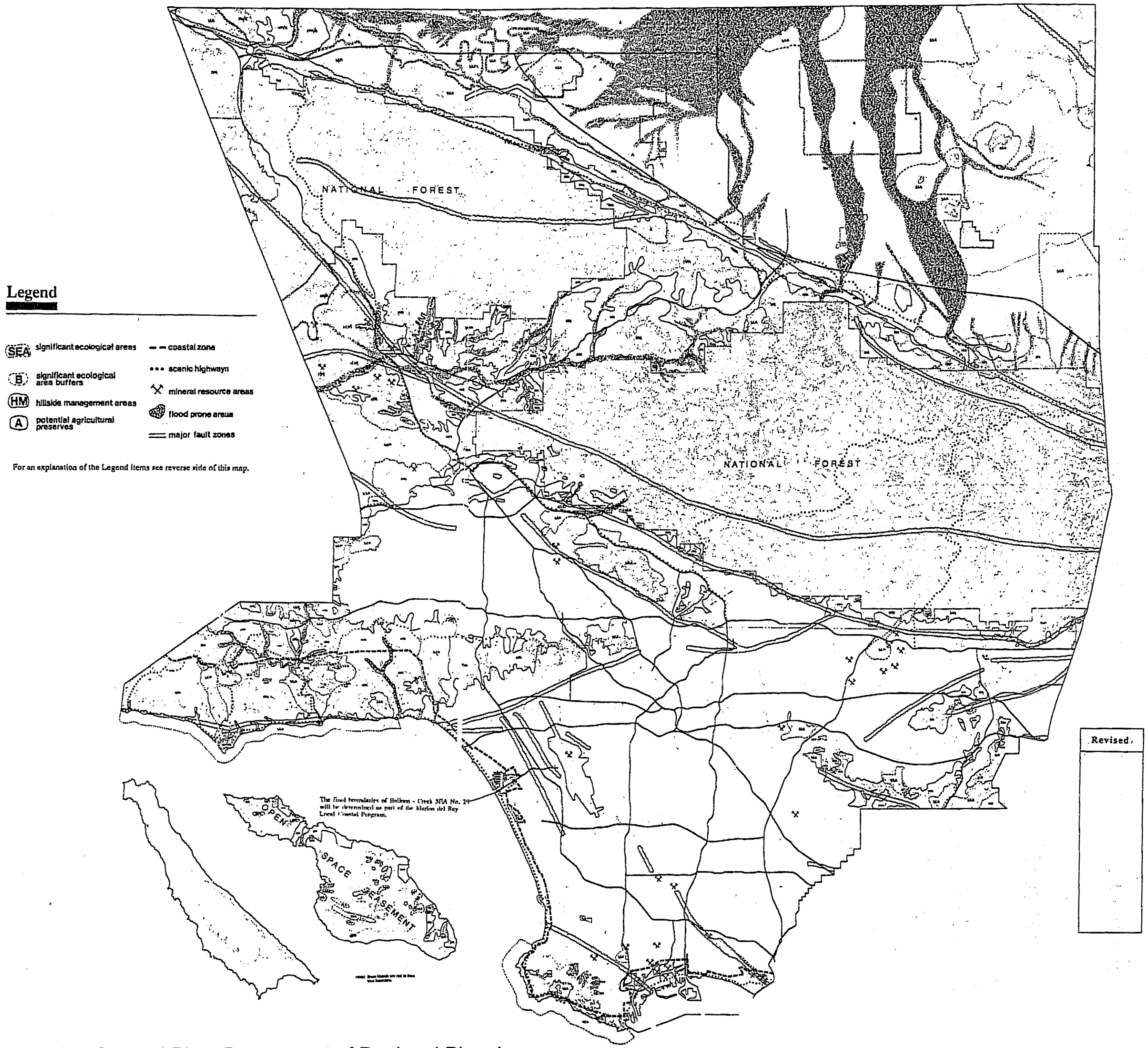
Source: County of Los Angeles General Plan, Department of Regional Planning

FIGURE 4.5-2
Geologic Time Scale



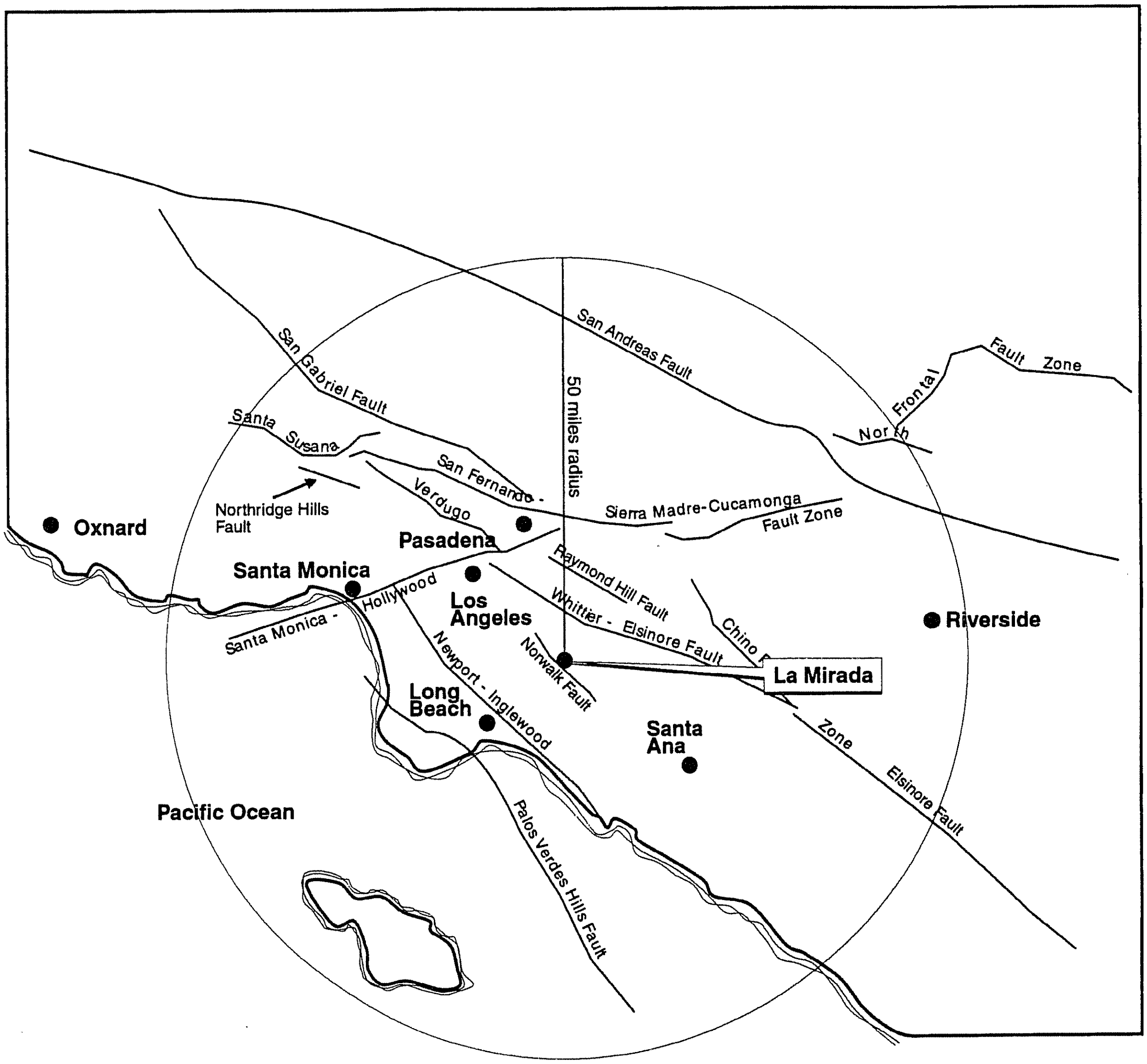
Source: Geologic Time by Don L. Eicher

FIGURE 4.5-3
Special Management Areas

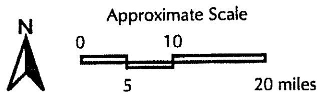


Source: County of Los Angeles General Plan, Department of Regional Planning

FIGURE 4.5-4
Major Faults in the Vicinity of Los Angeles Basin



Source: Wilson Geosciences, Inc
March, 1997



Source: La Mirada General Plan

4.6 HAZARDS AND RISK OF UPSET

4.6.1 Introduction

The analysis in this section focuses on potential hazards and risks associated with implementing the Third Main Track and Grade Separation Project ranging from construction activities to operation of facilities. This section also addresses the transport and handling of hazardous materials as part of the proposed construction activities and the rail operations. The Los Angeles County Hazardous Waste Management Plan, the Orange County Hazardous Waste Management Plan and local agency general plans have been reviewed for policies regarding management of hazardous materials and wastes and contaminated areas.

4.6.2 Environmental Setting

4.6.2.1 Existing Policies and Regulations

The principal agency for managing contamination from illegal or accidental releases of hazardous materials and wastes in the State of California is the Department of Toxic Substances Control (DTSC). In addition to enforcing state regulations (California Code of Regulations (CCR) Titles 17, 19, and 22), the DTSC was granted authorization from the federal EPA in 1992 to be the agency responsible for regulating the generation, transport, and disposal of hazardous waste under the authority of the Resource Conservation and Recovery Act (RCRA) in California. Other agencies that may periodically coordinate with DTSC or with the enforcement of regulations that address site activities include: County of Los Angeles Fire Department Health Hazardous Materials Division, the Orange County Environmental Health Division, Orange County Fire Authority Hazardous Materials Services Section, local City fire departments, the Regional Water Quality Control Board (RWQCB, Los Angeles), the State Water Resources Control Board, the SCAQMD, the Department of Transportation, and the California Highway Patrol.

The East-West Main Line Track is located near the northeasterly boundary of the Fullerton Airport. The Federal Aviation Administration (FAA) has jurisdiction over the permitting of airports and establishes standards for their construction and operation. These standards include limiting obstructions in the vicinity of the airport that could adversely effect the operation of aircraft. 14 CFR Part 77.25 provides methods of determining if obstructions around airports pose a potential hazard to aircraft operations. Compliance with FAA regulations are required of an airport to maintain an active operations permit.

4.6.2.2 Risk Associated with the Use of Hazardous Materials

Hazard vs. Risk

Worker and public health are potentially at risk whenever hazardous materials are present or will be used. It is important to differentiate between the "hazard" of these materials and the acceptability of the "risk" they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to human health and the environment is determined by the probability of exposure to the hazardous substance and the severity of harm such exposure would pose. The likelihood and means of exposure, in addition to the inherent toxicity of a substance, determine the degree of risk to human health. When the risk of an activity is judged acceptable by society in relation to perceived benefits, the activity is judged to be safe.

Means of Exposure

Exposure to hazardous materials could occur in the following manner: (1) improper handling or use of hazardous materials during the course of business, particularly by untrained personnel; (2) failure of storage containment systems; (3) environmentally unsound treatment/disposal methods; (4) transportation accidents; (5) fire, explosion or other emergencies; or (6) permitted release of hazardous materials by regulatory agencies. The following factors influence the health effects of exposure to hazardous materials: the dose to which the person is exposed, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

The means of exposure as outlined above would determine the way in which toxic materials are absorbed into the body and, therefore, the bodily organs or systems affected. The major ways in which toxic materials may enter and be absorbed by the body are through the mouth (ingestion), the skin (penetration), or the lungs (inhalation). How a hazardous substance gets into the body and what damage it causes depends on the form or physical properties of the substance (i.e., liquid, solid, gas, dust, fibers, fumes or mist). A chemical may be toxic by one route and not another.

Health effects from exposure to toxic materials may be acute or chronic. Acute effects, usually resulting from a single exposure to a toxic material, may include significant immediate damage to organs and systems in the body, and possibly death. Chronic effects, usually resulting from long term exposure to a toxic or hazardous substance, may also include systemic and organ damage, as well as birth defects, genetic damage and cancer.

Hazardous Material Handling

Hazardous materials could be utilized during short-term construction activities. The rail operation itself does involve the use and /or transport of hazardous substances. Table 4.6-1 lists federal, state and local regulatory agencies that oversee hazardous substances handling and management, and the statutes and regulations that these agencies administer. The following discussion contains a summary review of regulatory controls pertaining to hazardous materials.

Table 4.6-1
SUMMARY OF HAZARDOUS MATERIALS REGULATORY AUTHORITY

Regulatory Agency	Jurisdiction	Authority
FEDERAL AGENCIES		
Dept. of Transportation	Federal	Hazardous Materials Transportation Act - Code of Federal Regulations (CFR) 49
Environmental Protection Agency	Federal	Federal Water Pollution Control Act Clean Air Act Resource Conservation & Recovery Act (RCRA) Comprehensive Environmental Response, Compensation & Liability Act Superfund Amendments & Reauthorization Act (SARA) Federal Insecticide, Fungicide & Rodenticide Act
Occupational Safety and Health Administration	Federal	Occupational Safety and Health Act & CFR 29
STATE AGENCIES		
Dept. of Toxic Substances Control	State	California Code of Regulations (CCR) Titles 17, 19, & 22
Dept. of Industrial Relations (CAL-OSHA)	State	California Occupational Safety & Health Act, CCR Title 8
State Water Resources Control Board & Regional Water Quality Control Board	State	Porter-Cologne Water Quality Control Act Underground Storage Tank Law
Health & Welfare Agency	State	Safe Drinking Water & Toxic Enforcement Act
Air Resources Board & Air Pollution Control District	State	Air Resources Act AB 1807 Air Toxics “Hot Spots” Information and Assessment Act
Office of Emergency Services	State	Hazardous Materials Release Response Plans/Inventory Law Acutely Hazardous Materials Law
Dept. of Fish and Game	State	Fish and Game Code
Dept. of Food and Agriculture	State	Food and Agriculture Code
State Fire Marshal	State	Uniform Fire Code, CCR Title 19
COUNTY AGENCIES		
County of Los Angeles, Health/Hazardous Materials Division County of LA, Fire Department Hazardous Materials Division Orange County, Department of Emergency Management Services, Division of Fire Marshal Orange County, Certified Unified Program Agency Orange County Fire Authority	County	Uniform Fire Code Hazardous Waste Control Statutes, H&S 25100 et. seq. Hazardous Materials Release Response Plans/Inventory Statutes, H&S 25500 et. seq. Acutely Hazardous Materials Regulations, CCR Titles 19, 22, & 23 Los Angeles County Code, Title 12, Environmental Protection County of Orange County Code

Regulatory Agency	Jurisdiction	Authority
REGIONAL AGENCIES		
South Coast Air Quality Management District	South Coast Air Basin	Air Toxics "Hot Spots" Information and Assessment Act

Source: Urban Logic Consultants 1/98 and Local General Plans

4.6.2.3 Federal

Federal agencies that regulate hazardous and toxic materials include the EPA, the Occupational Safety and Health Administration (OSHA), the Nuclear Regulatory Commission (NRC), the U.S. Department of Transportation (DOT), and the National Institutes of Health (NIH). The following federal laws and guidelines govern hazardous materials. Hazardous materials handling and management associated with the proposed project must comply with applicable regulations as follows:

- Federal Water Pollution Control Act
- Clean Air Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substances Control Act

Until August 1992, the principal agency at the federal level regulating the generation, transport and disposal of hazardous waste was the EPA under the authority of the RCRA. However, effective August 1, 1992, the California Environmental Protection Agency (Cal-EPA) and the DTSC, were authorized to implement the State's hazardous waste management program in lieu of the EPA.

4.6.2.4 State

The Cal-EPA and the State Water Resources Control Board generally govern the use of hazardous materials and the management of hazardous waste. The California Highway Patrol (CHP) and the California Department of Transportation (Department) enforce hazardous substance transportation regulations. Chemical suppliers must comply with all applicable packaging, labeling and shipping regulations.

Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Hazardous Materials Release Response Plans and Inventory Act

- Porter-Cologne Water Quality Control Act
- Tanner Toxics Act

DTSC has primary regulatory responsibility for the management of hazardous materials/substances and the generation, transport and disposal of hazardous waste under the authority of the Hazardous Waste Control Law (HWCL). DTSC can delegate enforcement to local jurisdictions that enter into agreements with the State agency. State regulations applicable to hazardous materials are indexed agreements in Title 26 of the CCR.

4.6.2.5 Regional

The SCAQMD works with the CARB and is responsible for developing and implementing rules and regulations to control the emission of air toxics on a local level. The SCAQMD establishes permitting requirements, inspects emission sources, and enforces measures through educational programs and/or fines. The Los Angeles and Santa Ana Regional Water Quality Control Boards control the discharge of toxic materials in wastewater and from disposal facilities through the issuance of waste discharge requirements and NPDES permits under authority from the State Water Resources Control Board and the federal EPA.

4.6.2.6 Local

The 23.66 km (14.7 mi) project runs through portions of Los Angeles and Orange Counties and the cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Pico Rivera, and Santa Fe Springs. Table 4.6-2 delineates the local General Plan elements that address hazardous materials and the risk of upset.

Table 4.6-2
SUMMARY OF GENERAL PLAN ELEMENTS

Jurisdictions	Applicable General Plan Element
County of Los Angeles	Safety Element
County of Orange	Safety Element
City of Buena Park	Safety Element
City of Commerce	Public Safety Element
City of Fullerton	Regional Coordination Element
City of La Mirada	Safety and Community Services Element
City of Montebello	Safety Element
City of Pico Rivera	Environmental Hazards Element
City of Santa Fe Springs	Safety Element

The local agency General Plans set forth policies and actions that are meant to achieve goals relative to hazards and the risk of upset. A summary of these policies is noted below by local jurisdiction.

County of Los Angeles — Safety Element Policy 21 and 22

> Promote the safe transportation of hazardous materials.
>
> Encourage businesses and organizations which store and use hazardous materials to improve management and transportation of such materials.

County of Orange — Safety Element Policy

> To implement the Orange County Emergency Plan particularly sections addressing hazardous waste, infectious waste, radioactive materials, and nuclear materials incidences. This will help to foster participation in countywide planning efforts.

City of Buena Park — Safety Element Policy 6.2

> Cooperate and coordinate with transportation and flammable gas/liquid distribution companies to ensure that adequate emergency plans are operational.

City of Commerce — Public Safety Element Policy 1.5

> Work with the Sheriff's Department to enforce the use of the hazardous materials transport routes identified in the Public Safety Element.

City of Fullerton — Regional Coordination Element Policy RC-3.1

> Ensure that Fullerton hazardous waste management activities are in compliance with State and federal laws and regulations, while maintaining local control and decision making.

City of La Mirada — Safety and Community Services Element Policy 3.1 and 3.2

> Cooperate with federal, State and County agencies to reduce the risks associated with the use and transport of hazardous materials.
>
> Continue to inventory and identify the source of all hazardous materials stored, used, or transported in the City.

City of Pico Rivera — Environmental Hazards Element Policy B.4.2

> Coordinate with Los Angeles County in the development of measures to identify, monitor, and manage hazardous wastes generated, used, recycled, or transported within or through the City.

City of Santa Fe Springs — Safety Element Policy 7.3

> Assure compliance, through inspection, of all requirements regarding the posting, of permits, placards, and disclosure statements related to the storage, use and transportation of hazardous materials.

The following agencies are responsible for enforcing the State regulations governing hazardous waste generators, hazardous waste storage, and transport, including inspections and enforcement: separate fire departments of the cities of Buena Park, Fullerton, Montebello, and Santa Fe Springs; the Orange County Fire Authority; the Los Angeles County Fire Department, covering the applicable County unincorporated areas and providing services to the cities of Commerce, La Mirada and Pico Rivera; and the Orange County Certified Unified Program Agency. These agencies regulate the use, storage, and disposal of hazardous materials in their respective areas by issuing permits, monitoring regulatory compliance, investigating complaints, and other enforcement activities. In addition to providing fire protection and emergency services, the departments regulate the use and storage of hazardous materials for the service area and provides emergency response in the event of accidental release of hazardous materials. Each department/authority also administers the local Fire Code which incorporates articles of the Uniform Fire Code (UFC). The UFC is a model code setting construction standards for buildings and associated fixtures, in order to prevent or mitigate hazards resulting from fire or explosion. The Orange County Certified Unified Program Agency reviews technical aspects of hazardous waste site cleanups, and oversees remediation of certain contaminated sites resulting from leaking underground storage tanks.

4.6.2.7 Hazardous Materials Transportation

Federal

The DOT has the regulatory responsibility for the safe transportation of hazardous materials between states and to foreign countries. DOT regulations govern all means of hazardous materials transportation (except for those packages shipped by mail, which are covered by the U.S. Postal Service regulations), including transportation by rail. DOT regulations are contained in the Code of Federal Regulations Title 49.

Under RCRA, the EPA sets standards for transporters of hazardous waste. In turn, the federal government authorized the State of California to carry out EPA regulations concerning transportation of hazardous wastes originating in, or passing through, the State.

State

The State of California has adopted regulations for the intrastate movement of hazardous materials. State regulations are indexed in the CCR Title 26.

The CHP has primary responsibility for enforcing federal and State regulations related to the transport of hazardous materials over streets and highways, including hazardous materials labeling and packaging regulations. The CHP also responds to hazardous materials transportation emergencies. The goal of these regulations is to prevent leakage and spills of material in transit and to provide detailed information to clean-up crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance.

Common carriers which transport hazardous materials on roadways are licensed by the CHP under conditions specified in CCR Title 26, Division 14.1 Transportation of Hazardous Material, Section 32000.5, License to Transport Hazardous Materials. This section requires licensing of every motor (common) carrier who transports, for a fee, in excess of 226.8 kilogram (kg) (500 lbs) of hazardous materials at one time, and every carrier, if not for hire, who carries more than 453.6 kg (1,000 lbs) of hazardous materials of the type requiring placards. If the supplier or distributor carries fewer than 453.6 kg (1,000 lbs) of material, a license is not required.

Interstates 5, and 605 are designated explosives routes according to the CHP manual *Explosive Routes and Stopping Places.*

For railroads, there are no restrictions on transportation routes. There are controls on the types of materials which can be transported and on the location of the materials in relation to possible sources of ignition (e.g., the locomotive).

4.6.2.8 Hazardous Materials Worker Safety Requirements

Federal

The Federal Occupational Safety and Health Administration (Fed/OSHA) is the agency responsible for ensuring worker safety. Fed/OSHA sets federal standards for implementation of training in the work place, exposure limits, and safety procedures in the handling of hazardous materials (as well as other hazards). Fed/OSHA also establishes criteria by which each state can implement its own health and safety program.

State

The California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal/OSHA), assumes primary responsibility for developing and enforcing work place safety regulations within the State. Cal/OSHA standards are often more stringent than federal regulations.

Cal/OSHA regulations concerning the management of hazardous materials include requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, providing employees with Material Safety Data Sheets (MSDSs), describing the hazards of chemicals, and documenting employee training programs.

Both federal and state laws include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. The training, must include safe methods for handling hazardous materials, an explanation of MSDSs, use of emergency response equipment, and building emergency response plans and procedures.

4.6.2.9 Potentially Contaminated Areas

The Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) is a data base of contaminated properties under the Federal Superfund program. The U.S. Environmental Protection Agency (EPA) has developed and maintains a list of such properties. Table 4.6-3 delineates 16 sites within Orange and Los Angeles County that appear on the EPA's database as of July 2, 2002 within the general area of the project.

Table 4.6-3
CERCLIS HAZARDOUS WASTE SITES

Jurisdiction	County	Site Name and Situs
Fullerton	Orange	• McColl, Rosecrans & Sunny Ridge
Commerce	Los Angeles	• Crown Zellerbach Corporation, 5900 Sheila Street • Western Lead Products Company, 4530 East Pacific Way
Pico Rivera	Los Angeles	• Dolco Packaging Plant, 4850 Greg Rd/Whittier Blvd. • M & T - subsidiary of ELF Acquitaine, Paramount/Rex Road • Pico Auto Savage, 8500 Whittier Blvd. • Southern California Gas Co., 8101 S. Rosemead Blvd.
Santa Fe Springs	Los Angeles	• Continental Heat Treating, 10643 South Norwalk Blvd. • Earl Manufacturing, 11862 Burke Street • Jalk Fee, 10607 Norwalk Blvd. • Metro Diesel Injection, 12631 Los Nietos Rd. • Neville Chem Co., 12800 E. Imperial Hwy. • Norwalk Dump, 13780 E. Imperial Hwy. • Parker Hannifin, 11808 Burke Street • Powerine Oil Co., 12354 Lakeland Rd. • Waste Disposal, Inc., 12731 E. Los Nietos Rd.

The cities of Buena Park, La Mirada and Montebello do not have sites listed as part of the EPA's CERCLIS database. A closer review of the sixteen listed sites was undertaken to evaluate the proximity and relationship to the BNSF Main Line Track. None of the above listed 16 sites will impact the construction of the Third Main Line Track nor the individual grade separation projects.

4.6.3 Project Impacts

Implementation of the Third Main Track and Grade Separation Project has the potential to increase hazards and risk of upset from its construction activities, limited utilization of hazardous materials, and operation of rail line to transport hazardous materials. Anytime construction activities are carried out, a potential exists for accidental releases of hazardous or toxic materials, particularly petroleum products. Operation of rail line also requires transportation of hazardous materials as part of routine operations.

A variety of land uses, including residential, commercial and industrial, are adjacent to the existing right-of-way of the BNSF Main Line as it runs through portions of Los Angeles and Orange counties and the cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Pico Rivera, and Santa Fe Springs. The use and generation of hazardous materials is commonplace in industrial activities as well as certain commercial activities. There are a number of businesses in the affected jurisdictions that handle hazardous materials such as chemical industries, service stations, auto body shops, and paint stores. The implementation of the Third Main Track and Grade Separation Project will not alter the on-going operations of these uses.

The project involves the demolition of existing structures and as such could lead to the release of asbestos fibers, as commonly found in older buildings. Compliance with SCAQMD Rule 1403 will reduce risks relating to asbestos to the demolition crew and adjacent uses.

The proposed Third Main Track project is located adjacent to Fullerton Airport and trains using the track have a potential to obstruct aircraft operations at the airport.

4.6.3.1 Significance Criteria

In accordance with *CEQA Guidelines,* the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. The criteria or standards, used to determine the significance of impacts may vary depending on the nature of the project. Impacts resulting from the implementation of the Third Main Line Track and Grade Separations will be considered significant if they cause any of the following:

- Handling, production, disposal or treatment of hazardous materials that puts public health and safety at risk, including exposure of sensitive receptors to substantial pollutant concentrations or creation of unsafe conditions for workers or the general public.

- New hazards or additional human exposure to hazards will be created that cannot be managed so as not to pose a threat to the environment or people.

- Project-related activities increase the risk of upset (accidents) in a manner that exposes the Project Area population to greater health risks.

- Project-related activities increase the risk of a safety hazard for people and/or aircraft operations.

4.6.3.2 Discussion of Hazard and Risk of Upset Impacts

a. *Will the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials risk of accidental explosion or release of hazardous substances, including, but not limited to oil, pesticides, chemicals, or radiation?*

Inherent to the use of hazardous materials is the risk of an accidental release. Because of this risk, Federal, State and local agencies have established regulations to minimize the likelihood of such occurrences. During construction or maintenance activities in support of the Third Main Line Track and Grade Separations, fuels, oils, solvents, and other petroleum materials classified as "hazardous" will be used to support these operations.

There are two approaches to managing hazards: (1) minimize the potential release of hazardous or toxic substances into the environment; and (2) if released, have the resources and techniques on hand to respond to an accidental release, including controlling a release, managing any adverse exposure from a release; cleaning up (remediating) a release; and properly disposing of the material contaminated by the release.

Mitigation measures designed to reduce, control or remediate potential accidental releases must be implemented to prevent the creation of new contaminated areas that may require remediation and to minimize exposure of humans to public health risks from accidental releases. Such measures are presented in the following section. These measures are provided to reduce the potential for such accidents to occur (use of best management practices to minimize potential for accidental releases as part of construction activities); to immediately collect and store or remove the primary source of contamination, including soils; and to remediate any residual contamination to levels that do not exceed regulatory thresholds for allowable use in the future. By implementing these measures, potentially significant adverse environmental impacts from accidental releases associated with construction of the Third Main Line Track and Grade Separations can be reduced to a non-significant level of impact.

Regarding operations after the new facilities are installed the following findings have been developed: the removal of the at grade crossings will substantially reduce safety hazards associated with rail operations because a critical traffic movement will be eliminated by separating rail and auto traffic; and since this project provides more efficient flow of rail traffic the potential for rail accidents will be reduced. BNSF's emergency response capabilities will remain the same and the ability to respond to accidents will remain the same after completion of the project as before. Therefore, the net effect of the proposed project is to reduce the potential for accidents relative to the current environmental setting.

In the City of Santa Fe Springs, the Fire Department identified a potential to expose potential petroleum contaminated areas during construction as a result of past oil production operations. The City expressed concern that the construction operations may expose contaminated areas and require remediation before construct can be initiated. This will require that any contamination be identified in the field during construction and that the SWPPP contain spill prevention control countermeasures to control the potential for encountering such contamination. Mitigation is provided below to ensure that the exposure to or of past contamination as a result of past petroleum production operations will not result in significant exposure to contamination for future construction employees or residents located adjacent to the alignment. This measure can reduce potential significant impacts from construction activities in support of the proposed project to a level of nonsignificant.

b. Does the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

None of the short-term construction activities or the long-term operations activities attributable to the proposed project will generate substantial quantities of hazardous emissions or require the handling of acutely hazardous materials, substances or wastes near an existing or proposed school. The Los Nietos Middle School located at 11425 Rivera Road, Santa Fe Springs is within one-quarter mile of the existing railroad right-of-way. Since the East-West Main Line is a rail facility that is already in operation, the addition of a third track would not result in an additional hazard for people attending the middle school. Note that by reducing overall hazards from rail operations as outlined above, the exposure to schools is reduced overall. As described above, inherent to the use of hazardous materials is the risk of an accidental release of hazardous emissions. During construction or maintenance activities in support of the Third Main Track and Grade Separations, fuels, oils, solvents, and other petroleum materials classified as "hazardous" will be used to support these operations.

Mitigation measures designed to reduce, or control potential accidental releases must be implemented to minimize exposure of humans to public health risks from accidental releases. Such measures are presented in the following section. These measures are provided to reduce the potential for such accidents to occur (use of best management practices to minimize potential for accidental releases). By implementing these measures potentially significant adverse environmental impacts from accidental releases associated with implementing the Third Main Track and Grade Separations can be reduced to a non-significant level of impact.

c. *Will the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Although the rail line itself is not located on the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) data base, a number of businesses located within the City of Santa Fe Springs adjacent to the rail line are identified on the Federal Superfund program. The City of Santa Fe Springs has established a Hazardous Materials Management System to administer federal and state mandated programs. By continuing to operate the Hazardous Materials Management System within the City of Santa Fe Springs, potentially significant adverse environmental impacts from contaminated properties can be reduced to a non-significant level of impact. The other jurisdictions affected by this project participate in either the Los Angeles or Orange counties Hazardous Waste Management Plans. Compliance with these programs provide adequate mitigation to reduce potential impacts to potential contaminated sites to a non-significant level.

d. *Would the project result in a safety hazard for people residing or working in the project area as it is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, public use airport or Private air strip?*

A review of the Fullerton Airport Plan and available engineering drawings for the Third Main Track indicates that trains using the original track alignment would encroach into the glide path envelope of the airport. Although not a permanent obstruction, the Department has determined that the best approach to this potential impact is to avoid the potential project impact altogether by avoiding the impact by relocating the new third rail to the west side of the track, which will place the trains below the glide path envelope. Avoidance of the potential conflict with the glide slope is a project design solution and no mitigation is required to ensure that no airport land use conflicts will occur from implementing the proposed project.

e. *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Major evacuation routes are located within the project area along major interstates, freeways and major north-south and east-west roads. The proposed project activities will not result in a change to the emergency evacuation plans or emergency response plans over the long-term. In the short-term, construction activities related to construction of the third main track, the grade separations and other infrastructure system improvements located within existing road rights-of-way have a potential to interfere with such plans. Mitigation is identified below to ensure that roads under construction remain passable or that alternative routes are available both during daily construction and at the end of the day after construction is completed. These measures ensure that the proposed project will not significantly interfere with the existing emergency response plans or the emergency evacuation plans maintained by the local jurisdictions.

f. *Will the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

The proposed project is not located in or near a wildland fire area. No potential exists to increase fire hazards in wildland areas or in the Project Area. Therefore, the proposed project is not forecast to adversely impact fire hazards within the Project Area. No mitigation is required.

4.6.4 Mitigation Measures

The following mitigation measures are recommended as conditions of project implementation. These measures will be implemented to minimize the potential for hazard effects from implementing the proposed project.

4.6-1 All contaminated material encountered shall be delivered to a licensed treatment, disposal or recycling facility that has the appropriate systems to manage the contaminated material without significant impact on the environment.

4.6-2 Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.

4.6-3 During construction activities within existing road rights-of-way or other easements where continuous access is required, a road operation management plan shall be prepared and implemented. At a minimum this plan shall define how to minimize the amount of time spent on construction activities; how to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes; adequate signage and other controls, including flagpersons, to ensure that traffic can flow adequately during construction; the identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur; and at the end of each construction day roadways shall be prepared for continued utilization without any significant roadway hazards remaining.

4.6-4 To the extent feasible, installation of pipelines or other construction activities in support of the Third Main Line and Grade Separations shall not be located on major evacuation or emergency response routes within any affected communities. Where construction on such

routes is necessary, local emergency response providers shall be contacted and emergency access and evacuation requirements shall be maintained at a level sufficient to meet their needs.

4.6-5 Construction of the Third Main Track will expose the soil beneath the track and the grade separation areas. The construction contractor shall have a monitoring program installed which will identify any discolored soil or odors associated with petroleum contamination and initiate a measurement and, if required, a remediation program to prevent exposure of persons or the environment to adverse concentrations of contamination shall be implemented.

4.6.5 Cumulative Impact

Hazards, risk of upset and human health impacts within the Project Area are not forecast to be cumulatively significant and adverse. Each accidental release is required to be managed in a fashion that will not leave any significant residual contamination that can contribute to increased public health risk. Potential contamination and effects on emergency routes can be controlled through implementation of the mitigation measures outlined above. Therefore, the proposed project has no identified potential to significantly increase the cumulative risk of such impacts beyond current levels. The proposed project will not contribute to any new cumulative adverse impacts with implementation of the identified mitigation.

4.6.6 Unavoidable Adverse Impact

The hazards, risk of upset and human health evaluation presented above indicates that the proposed project has a potential to cause adverse health risk impacts from implementing the third main track and grade separation project activities. It is possible to control or avoid the potential these potential health risk impacts by implementing the identified mitigation measures and avoiding the potential intrusion on the glide slope into Fullerton airport. Therefore, no significant unavoidable adverse hazard, risk of upset or human health impacts are forecast to occur if the proposed project and identified mitigation is implemented.

4.7 HYDROLOGY / WATER QUALITY

4.7.1 Introduction

Hydrology and water quality issues are included as a topic for evaluation in this EIR because construction and operation of the proposed Third Main Track and Grade Separations Project have the potential to alter drainage patterns and degrade water quality. Implementation of the proposed project will not intentionally modify the hydrologic characteristics of the Los Angeles Basin nor the Lower Santa Ana River Basin. Under the programmatic concept, the focus is on the type of facilities and activities that will be implemented under the proposed project, and an examination of the general impacts that may result from implementing facilities and activities, instead of site specific impacts. However, when sufficient information is available about the background environmental resources and systems, it is possible to accurately forecast the type of impacts that may occur, and more importantly, to identify those mitigation measures that can ensure potential impacts from constructing and operating facilities and related activities will not reach a level of significant impact.

4.7.2 Environmental Setting

4.7.2.1 Surface Waters

The following surface waters are located within the Project Area. The Brea, Coyote and Fullerton Creeks are the major drainage features flowing through the Project Area in the Cities of Buena Park and Fullerton. According to the City of Buena Park's General Plan Update EIR, Brea Creek merges with the Coyote Creek, which flows southwestward for about 32.19 km (20 mi), then joins the San Gabriel River, generally along the Los Angeles-Orange County boundary line, and empties into the Pacific Ocean at Seal Beach. Fullerton Creek generally maintains an east-west flow through the respective cities, joining the Coyote Creek Channel in La Palma. The Coyote Creek Channel and La Mirada Creek channel run through the City of La Mirada and cross the BNSF rail corridor.

The City of Santa Fe Springs General Plan states that the San Gabriel River runs north to south from the San Gabriel Mountains to the Pacific Ocean. The river parallels the western border of the City of Santa Fe Springs along the San Gabriel Freeway. Coyote Creek runs along the eastern City border and cuts through both the northern and southern portions of the City of Santa Fe Springs.

According to the City of Pico Rivera's Environmental Baseline Report, the Rio Hondo is contained in a lined channel running north to south for its entire length below the Whittier Narrows Dam through the City. The Rio Hondo separates Pico Rivera from the City of Montebello to the west. The City of Commerce does not have any major surface water channels located within the project area.

A hydrology report was prepared by Hanson-Wilson, Inc. to address the impacts to the hydrologic parameters of the San Gabriel River should the BNSF Bridge be widened by 5.09 meters (16.7 ft) to accommodate a proposed third track. The result of the report stated that the BNSF Bridge widening will basically cause no change to the hydraulic parameters during the design flow event. No scour, nor impact to the water surface elevation of the river channel will be caused by the proposed bridge improvements.

4.7.2.2 Water Quality

As stated in the City of Santa Fe Springs General Plan, water and its quality and availability are issues that directly affect everyone's health and safety. In all its forms and from all its sources, water is a precious commodity that is often taken for granted. Due to southern California's climate and large population, the use and conservation of water is of significant importance. The overall responsibility for the protection and management of the state's water resources falls upon the Department of Water Resources (DWR). The DWR uses the California Water Plan as a master plan to inventory water needs, sources, and problems, and to help coordinate local, state and federal water programs. DWR also oversees the State Water Project which is the delivery system that provides imported water through the California Aqueduct to the southern California area.

The State Water Resources Control Board regulates California's water quality and administers water rights. The Board, through its nine regional boards, establishes wastewater discharge requirements and carries out water pollution control programs. It also issues permits for new water rights and assists in determining existing rights. These rights are permits to water from surface rivers, streams and lakes.

BNSF's engineers have prepared a Stormwater Pollution Prevention Plan (SWPPP). This plan will be applicable for all project activities. The goal of this SWPPP is to protect overall water quality during the installation of the new rail and grade separation infrastructure. Construction activities could potentially affect water quality by the storage and handling of hazardous materials, as well as, soil erosion or sedimentation. With the implementation of best management practices (BMPs) outlined in the SWPPP, the potential for the transport of hazardous materials, erosion or sedimentation to receiving waters can be minimized.

There are two groundwater basins in the project area: the Lower Santa Ana River Basin and the Central Basin of the Los Angeles River system. The Cities of Buena Park and Fullerton are within the Lower Santa Ana River Basin. The Cities of Commerce, La Mirada, Montebello, Pico Rivera and Santa Fe Springs lie within the Central Basin system.

The City of Buena Park's General Plan Update EIR indicates that the groundwater resources in the Lower Santa Ana River Basin generally consist of an upper layer of shallow, unconfined and semi-perched water, and a principal body of fresh water underneath. Water movement is generally from points of recharge (percolation areas, spreading grounds, streams) to points of discharge (groundwater wells, springs and the ocean) because of difference in groundwater elevations between these points.

The City of Pico Rivera's Environmental Baseline Report states that groundwater in the area is drawn from the Central Basin, which underlies the entire San Gabriel Valley. Groundwater depths vary, primarily depending on the amount of water extracted through groundwater production activities (pumping). Local precipitation in the Basin does not directly influence the groundwater supply to any great degree. This is due to the presence of a layer of impermeable material that lies between the surface and the producing aquifers. As a consequence, very little of the annual rainfall reaches the groundwater where it can be pumped back to the surface. Natural replenishment of the groundwater supply is limited to surface inflow through Whittier Narrows. Groundwater levels are maintained through artificial replenishment. This is achieved through water spreading, where water is flooded on areas at those locations where it can percolate into the underground aquifers.

Surface flows in the Rio Hondo and San Gabriel River channels are diverted downstream from the Whittier Narrows Dam to the Rio Hondo and San Gabriel Spreading Grounds. These two large, off-channel percolation basins are contained entirely within the City of Pico Rivera.

According to the City of Fullerton's General Plan, the City pumps approximately 75 percent of its water from the groundwater supply. The remaining 25 percent is purchased from the Metropolitan Water District. Water in the City of Buena Park is derived from local groundwater wells (60%), and connections with Metropolitan Water District (40%) per agreements with the Municipal Water District of Orange County. Groundwater quality in the Buena Park-Fullerton-Anaheim area is generally acceptable for most beneficial uses, although the presence of calcium bicarbonate renders the water as "hard".

As described in the Open Space and Conservation Element of the La Mirada General Plan, innovative design and joint use of flood control facilities allow La Mirada Creek to function as an open space resource rather than a traditional flood control facility. Strategically-located check dams control flood runoff. The landscaped areas of La Mirada Creek Park allow water to percolate into the groundwater supply. This conserves water resources and the load on existing flood control facilities. Because the greenbelt is a natural watershed, valuable topsoil is conserved, reducing erosion and pollution of waters reaching conventional flood control channels. Reduced pollution of these waters makes reclamation of flood runoff waters more economical. The City of La Mirada also participates as a co-permittee with the County of Los Angeles in the National Pollutant System Discharge Elimination System (NPDES) program to help reduce pollutant loads in urban runoff. According to the NPDES permit, all new development projects and substantial rehabilitation projects are required to incorporate BMPs. Proposed development projects (public and private) within La Mirada will continue to incorporate BMPs to preclude significant water quality impacts from non-point source pollutants.

Water in the City of Santa Fe Springs is supplied by three sources: well water, the Central Basin Water Authority, and the Metropolitan Water District (MWD). The well water is regulated by the Water Replenishment District of Southern California and has been determined to be of excellent quality. Currently, the City is served by five local water purveyors: the San Gabriel Valley Water Company, the Southern California Water Company, the Park Water Company, the Suburban Water Company, and the Orchard Dale Water District. The City of Santa Fe Springs has installed a reclaimed water system which provides treated wastewater effluent (recycled water) for irrigation and other non-potable uses. The reclaimed water system is managed by the Central Basin Water Authority.

In June of 1991, the Santa Fe Springs entered into a Joint Powers Agreement with the cities of Cerritos, Commerce, Downey, La Mirada, Lakewood, Norwalk, Paramount, Pico Rivera, and Whittier, along with the Central and West Basin Water Replenishment Districts, to form the Southeast Water Coalition. The Coalition was formed to act in consort with the State of California, the federal government, and any other pertinent agencies, in matters pertaining to the improvement and protection of the quality and quantity of potable water in the southeast area of Los Angeles County.

Groundwater in the City of Pico Rivera meets State and federal standards for domestic use according to published reports by the City of Pico Rivera, the Pico Water District and the San Gabriel Valley Water Company.

The City of Montebello's General Plan states that the City is served by five water companies and agencies. Imported water from the Metropolitan Water District is the City's primary source.

4.7.2.3 Flood Hazards

The City of Fullerton participates in the National Flood Hazard Insurance Program. Under this program, flood hazards have been determined based on 500 and 100 year storms. There are presently some developed areas in the 100-year flood zone which create a hazardous condition in the City of Fullerton. The 100-year flood areas are generally adjacent to creeks and channels within the City. According to the City of Buena Park's General Plan Update EIR, the majority of the City has been designated as within the 100-year floodplain where flood water depths would average less than 0.3048 meter (1 ft). Some pocket areas will have depths greater than one foot and these flood areas are associated with the water channels in the City: Brea Creek Channel and Fullerton Creek Channel.

According to the La Mirada General Plan, historically, flooding has affected large areas of the City, but efforts to control flooding with the improvement of La Mirada Creek as a controlled flood facility have been successful in reducing flood hazards. Although portions of La Mirada Creek are still subject to overflow, the associated hazards are not a threat to life or property. Therefore, the only risk would be attributed to significant blockage along La Mirada Creek or Coyote Creek.

The City of Santa Fe Springs General Plan states that the City is also a participant in the National Flood Hazard Insurance Program. The majority of the proposed project area falls under the category of 100 to 500-year flooding with average depths less than one foot, or areas protected by levees. A small portion of the project area between Florence Avenue and Lakeland Avenue is within the 100-year flood area.

Within the City of Pico Rivera, flooding has been controlled by recent improvements to the Rio Hondo channel and all of this City has been removed from the 100-year flood hazard zone.

Flooding within the City of Montebello has generally been confined to the southern portion of the city, adjacent to the Rio Hondo River Channel. Because the City of Commerce, is heavily urbanized, minor ponding will occur during intense rainstorms according to the City's General Plan, Public Safety Element Technical Report.

4.7.2.4 Dam Inundation

The City of Buena Park's General Plan Update EIR identifies that there are three dams which currently control stormwater runoff in the City that may affect the Project Area. Flood waters from the Prado Dam would arrive approximately 6.25 hours after release and would reach a maximum depth of 1.22 meters (4 ft) after 7.5 hours of the dam's failure. Excess storm flows from Brea Dam would be diverted to the Brea Creek Flood Control Channel, which merges with the Coyote Creek Channel. Inundation would extend through the north central portion of the City of Buena Park, generally between the Artesia-Riverside Freeway and Malvern Avenue. Excess storm flows from

Carbon Canyon Dam would be directed to the Carbon Canyon Creek, which follows an east-west path through the southern portion of the City of Buena Park, merging with Coyote Creek. Inundation from waters from the Carbon Canyon Dam would affect the same area that would be inundated by the Brea Dam overflow. Failure of any of these dams would create flood hazards to the project area.

The City of Santa Fe Springs General Plan identifies that the Whittier Narrows Dam is located 5 miles northwest of the City of Santa Fe Springs northern boundary. It is 12.07 km (7.5 mi) down stream of the Santa Fe Flood Control Basin. It is west of the San Gabriel River flood control channel and the San Gabriel River Freeway (I-605). In the unlikely event of dam failure, the water flow direction would be southerly toward the cities of Pico Rivera, Whittier, Santa Fe Springs, Downey and Norwalk. The area of inundation would be bounded by Norwalk Boulevard on the east and the Los Angeles River on the west. A water depth level of approximately 1.52 meters (5 ft) is predicted for the northern most part of Santa Fe Springs, including the project area, with an arrival time of one hour, gradually declining in depth to 1.22 meters (4 ft) at the southern end of the City's impacted area.

According to the City of Commerce's General Plan, Public Safety Element, portions of Commerce lie within the dam inundation area of the Garvey Reservoir in Monterey Park. The water is held behind a 18.29 meters (60 ft) high earth fill dam. If the dam were to fail, water release would proceed south, contained roughly between Fulton and Orange Avenues, through Monterey Park and into Montebello and Commerce. Flows could be expected to reach Commerce approximately fifteen minutes after initial dam failure.

4.7.2.5 <u>Seiche</u>

Seiche is the oscillation of the surface of a landlocked water body that varies from a few minutes to several hours. Seiche can be seismically induced or be the result of material (rocks, landslide, etc.) falling into the water body. According to the Pico Rivera's Environmental Baseline Report, seiching is a potential hazard for the Whittier Narrow Dam if water is present at the time of an earthquake, as well as for steel reservoirs or tanks. No additional major landlocked surface water bodies occur in or near the proposed project area.

4.7.3 Project Impacts

This section assesses potentially significant environmental impacts to hydrology and water quality resulting from the proposed Third Main Track and Grade Separations Project.

4.7.3.1 <u>Significance Criteria</u>

The following thresholds are proposed for assessing and determining significant drainage or water quality impacts from implementing the proposed project.

- Substantially degrade water quality in the Lower Santa Ana River Basin or the Central Basin of the Los Angeles River system.
- Violate any water quality standards or waste discharge requirements.
- Substantially alter the existing drainage pattern of the area in a manner which would result in substantial erosion or sedimentation within or downstream of the project area.

- Substantially alter the existing drainage pattern of the area or substantially increase the rate or amount of surface runoff in a manner which would result in flooding within or downstream of project area.
- Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems.
- Place structures within a 100-year flood hazard area which would expose people or structures to significant risk of loss, injury or death.

Each of the above thresholds will be applied to the potential water resource and water quality impacts forecast to occur from implementing the proposed project, and a decision regarding the significance of potential hydrology impacts will be clearly presented in the following analysis.

4.7.3.2 Potential Impacts

a. Does the project violate any water quality standards or waste discharge requirements?

The process of constructing the third main track and the grade separations would result in construction activities that have a potential to cause erosion, sedimentation and accidental release of pollutants that could violate water quality standards. BNSF engineers have prepared a SWPPP for implementation of the proposed project. This SWPPP will be applicable for the implementation of all project activities that disturb the ground. With the implementation of BMPs outlined in this Plan, the potential for the release (accidental or otherwise) of hazardous materials to receiving waters will be minimized, as will potential erosion or sedimentation.

The California State Water Resources Control Board (SWRCB) has established a statewide construction general permit applicable to the project. Under this general permit, it is the responsibility of the project proponent to submit a Notice of Intent (NOI) to the SWRCB, prepare and implement the SWPPP, and revise the SWPPP as necessary as construction conditions change. The BMPs must include both structural and non-structural measures, where applicable, and the assignment of long-term maintenance responsibilities. The Los Angeles Regional Water Quality Control Board adopted more stringent requirements for controlling construction activities last year and the SWPPP prepared for the proposed project incorporates construction measures that will be adequate to meet the Board’s more stringent controls.

Post Development

Development of the proposed project will not alter the permanent activities associated with the project area (rail and surface transportation activities), but it will alter their configuration. In particular the grade separation components of the project will result in the capture of flows at the lowest point of the underpasses and discharge these flows to the local and regional storm water management (flood control) system. The Regional Board has established municipal storm water discharge standards for the surface runoff from the cities along the project alignment and the storm water discharged from the underpasses must meet these discharge standards in order to ensure that significant water quality degradation will not occur. Mitigation is provided below to ensure that future surface water runoff from the project site does not cause significant water quality degradation.

Mitigation is described in this section of this EIR which will reduce to a level of insignificance or entirely avoid the potentially significant surface water quality and groundwater quality degradation impacts of the project.

b. Does the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?

The proposed project is the construction of a third mainline track and seven grade separations. The project does include short- or long-term activities that will consume substantial volumes of water. During construction between 18,925 and 37,850 liters (5,000 and 10,000 gal) of water will be required per day to control the generation of fugitive dust, with more water being required during track construction (larger area) than during construction of the grade separations. Assuming 180 days of ground disturbing activities along track alignment and 37.850 liters (10,000 gal) of water per day used to control dust (including construction of the various bridges), a total of 6,784 m^3 (5.5 acre-ft) of water could be consumed. Recycled water is available along most of the alignment which can eliminate any demand on groundwater supplies. Mitigation is required to ensure that recycled water is used where it is available. Based on the small volume of water and utilization of recycled water, where available, the impact on groundwater supplies is not forecast to be a significant adverse impact. Note that none of the project components will be constructed within areas where groundwater recharge is carried out.

At the grade separations, it is assumed that an average of 18,825 liters (5,000 gal) of water per day will be required to control fugitive dust. Assuming 120 days of ground disturbing activities at each grade separation, approximately 2,220 m^3 (1.8 acre-ft) of water will be consumed to construct each grade separation. The cumulative demand for construction water for the seven grade separation components is 17,769 m^3 (14 acre-ft). Again, this is a relatively small volume of water that can be supplied from recycled water sources, which minimizes the demand on groundwater resources.

If potable water must be used for construction of the proposed project, at some locations the fees paid to the local water purveyors may include acquisition costs for MWD imported water supplies, which can be used to offset potential adverse impacts to local groundwater supplies.

Over the long-term, the only project demand for water resources will be for irrigating landscaping at each of the grade separations. Note that the BNSF alignment is not landscaped and does not require irrigation. Landscaped areas consume between 2.467 to 3,700 m^3 (2 to 3 acre-ft) of water per year. Assuming a maximum of 0.4047 hectare (one acre) of landscaped area per grade separation, a total of 2.83 hectares (7 acres) will require permanent irrigation. This acreage would equate to long-term water consumption of 14,802 to 25,903 m^3 (14 to 21 acre-ft) of water for irrigation purposes. Although this is not considered to be a significant volume of water, and in some instances the proposed landscaping replaces existing landscaped areas, the project's long-term demand for water is not considered to be significant within the context of water available to the project area. Regardless, mitigation is established which will require the use reclaimed water, where reasonably available.

c. Does the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?

The proposed project may substantially alter the existing drainage pattern of the project site in a manner which could result in substantial erosion or siltation onsite. Specifically, material will be excavated in the San Gabriel River channel and new surface runoff (drainage) facilities will be installed at the grade separations. The project will also construct one new outfall into Coyote Creek in conjunction with the Rosecrans and Valley View grade separations.

Portions of the project area are moderately susceptible to erosion. Positive drainage will be provided and runoff shall be controlled to mitigate the potential for erosion. In general, the majority of project area is topographically compatible with all of the proposed project facilities outlined in the Project Description. For example, the topography of the track alignment is essentially flat and drainage from the BNSF right-of-way (ROW) is already established along its 23.66 km (14.7 mi) length. The new track will occupy a portion of this ROW, but it is not forecast to substantially increase runoff or cause any major modifications in discharge of runoff from the ROW. This is because the new track will continue to absorb rainfall similar to the existing soil along the easement.

For grade separations, the amount of area disturbed may be several acres in size at a given location, but the new grade separations are designed to handle surface runoff. Local effects on drainage would result primarily from the construction activities associated with the proposed action, such as grading, excavating, and re-contouring the soils. These activities could alter soil profiles and the local topography and create a potential for significant erosion. To ensure that significant erosion is not created during construction and operation of future specific projects, mitigation measures are incorporated into the SWPPP to control such water related erosion. These measures will ensure that discharges of surface runoff will not exceed the erosive velocity for affected areas and that no unstable slopes are installed as part of future projects.

During construction, removal of vegetative cover and disturbance of existing topography by the exposure of cut slopes and grading activities could increase the potential for erosion by wind and water. Appropriate watering for fugitive dust controls and water erosion control measures to address non-point source water pollution will be necessary during construction of specific Third Main Track and Grade Separation facilities in previously undeveloped areas.

SWPPP measures are available to minimize erosion problems associated with wind and water, especially during the construction phase of projects. The measures should be applied to all construction projects, to reduce erosion damage and eliminate creation of unstable slopes. However, the measures outlined can only be applied to future specific Third Main Track and Grade Separation projects. After the construction phase, long-term erosion control can be accomplished by keeping soils under vegetative cover. After construction, soils underlying facilities and pavements will not be subject to erosion. With implementation of all SWPPP measures, erosion and drainage alteration impacts attributable to future Third Main Track and Grade Separations Project will be reduced to a less than significant level.

d. Does the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?

The proposed project will alter the existing drainage pattern in portions of the project alignment, but these alterations will not cause major changes in the direction or volume of flow. Given the lack of permeability that exists within the project areas, the amount of any increase in runoff is not forecast to be significantly increased.

As discussed immediately above, the amount of runoff from the BNSF ROW will not be substantially increased, as the area adjacent to the existing tracks will be replaced by the new track which will continue to absorb precipitation in a manner similar to the existing compacted soil. Runoff from the ROW will continue to be collected and discharged to the same drainage system as presently used along the ROW. In this instance, the potential modifications in the existing surface runoff management system are forecast to be minor and none of the major channels presently carrying storm runoff will require modification based on project drainage calculations.

At the project specific level, future grade separation projects do have a potential to experience significant flooding and inundation constraints. Each of the grade separations are proposed to be constructed as underpasses. It is important to note that the areas where these underpasses will be installed are already either paved or compacted and therefore, the issue is not one of substantial increases in runoff, but a change in the nature of storm runoff from the new grade separations. These impacts can be managed on site-by-site basis by implementation of a number of mitigation measures which are outlined below. Such measures include identification and study of flood hazards and inundation areas, and the utilization of mitigation technology that is appropriate to each grade separation setting based on standard civil engineering drainage solutions. For example, at some grade separation locations, the flow that accumulates at the low point of the underpasses will have to be pumped into the existing drainage channels. At other locations, the storm runoff can be captured and delivered by gravity to the existing drainage system at a point downstream of the underpass. At Passons Boulevard, the existing drainage channel, a 3.05 by 3.05 meter (10 ft x 10 ft) box culvert, will have to be realigned in order to install the underpass. This realignment is shown on Figure 3-4a of this document. With the implementation of the flood hazard mitigation measures in the future for each element of the project, the potential impacts related to area hydrology and drainage constraints will be reduced and can be classified as less than significant.

e. Does the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The proposed project is not expected to create or contribute significant quantities of storm runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Drainage calculations compiled by the project engineers demonstrate that the backbone drainage system is adequate to handle the storm runoff from both the third main track ROW and the individual grade separations. These drainage calculations are available for review upon request. This project will maintain the existing drainage patterns and the existing and proposed runoff volumes are essentially the same.

Regarding water quality, the strategy developed as part of the SWPPP BMPs is to incorporate a "Treatment Train" concept. This is a series of BMPs used in conjunction with one another to "treat" runoff. Each BMP will be chosen for its ability to remove or limit erosion, to keep soil on-site, and sediment control to reduce the impact of sedimentation. With the implementation of the BMPs in the future as each element of the project is constructed, the potential impacts related to area hydrology and drainage constraints will be reduced and can be classified as less than significant.

f. Does the Project otherwise substantially degrade water quality?

The proposed project is the construction of a third main track and the grade separations and previous sections of this subchapter indicate that there will be activities with a potential to cause degradation of water quality. A SWPPP has already been prepared for this project and will be implemented for all project activities. With the implementation of the BMPs outlined in this Plan, the potential for the degradation of water quality will be controlled to a level of nonsignificant impact.

g. Does the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Since there is no new housing included in this project, no adverse impact can occur.

h. Does the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Implementation of the proposed project will place some of the proposed facilities in areas exposed to 100-year flood hazards, as outlined in the existing setting discussion above. Portions of the existing railroad track and facilities lie within the 100-year flood hazard area as identified within the respective jurisdictions General Plans. The new third track will be similarly exposed. However, the new track is not forecast to impede or redirect flood flows in any different manner than the existing environmental setting. Therefore, for the third main track, no adverse modifications to the physical environment that would impede or redirect flood flows will occur, and no mitigation is required.

At the project specific level, future grade separation projects do have a potential to experience significant flooding and inundation constraints. These impacts can be managed on site-by-site basis by implementation of a number of mitigation measures which are outlined below. Such measures include identification of flood hazards and inundation areas and the use of mitigation measures contained in this document to ensure that downstream flows from the project area do not experience significant hazards. Note that the underpasses will allow accumulation of greater volumes of storm flow, with commensurate new drainage systems, so downstream areas should experience less, not greater, hazards during the 100-year event. With the implementation of the flood hazard mitigation measures in the future as each element of the project is constructed, the potential impacts related to area flood constraints will be reduced and can be classified as less than significant.

i. Does the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The proposed project does not have facilities that will expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. With no potential for additional impact, no mitigation is required for this environmental issue.

j. Is the Project Area subject to significant seiche, tsunami, or volcanic hazards?

Based on all geologic studies and maps for the region, no surface water bodies are in the immediate project area that could create seiche or tsunami and no volcanic hazards occur in the

Project Area. Without the presence of any of these hazards in the area, no hazard exists that can adversely impact future third main track activities or be impacted by these activities. No mitigation is required.

4.7.4 Mitigation Measures

The following measures shall apply to projects proposed within the Lower Santa Ana River Basin and the Central Basin of the Los Angeles River System:

4.7-1 **For each construction project, surface runoff shall be collected and retained (for use onsite) or detained, and treated when released by passing the runoff through a "first-flush' treatment system, which may include onsite riparian area, detention basin with filtration system at the outlet, or other system that removes the majority of urban storm runoff pollutants, such as petroleum products and sediment. The purpose of this measure is to remove the onsite contribution to cumulative urban storm runoff and ensure the discharge is treated to reduce contributions of urban pollutants to downstream flows. The content of the discharge from each first flush system shall meet the current discharge standards established by the Regional Board for each area.**

4.7-2 **A Storm Water Pollution Prevention Plan (SWPPP) has been prepared and shall be implemented for each component of the proposed project. The best management practices (BMPs) identified in the Plan, or measures determined equivalent by a qualified engineer, will be used for each site to minimize the potential for accidental releases of any chemicals or materials on the site that could degrade water quality including solid waste and require that any spill be cleaned-up, contaminated material properly disposed of and the site returned to pre-discharge condition, or in full compliance with regulatory limits for the discharged material. The portion of the SWPPP that addresses erosion and related sediment discharge shall specify the percentage of pollutant removal that must be achieved to meet the current discharge standards established by the Regional Board for each area. At a minimum, BMPs shall achieve 60 percent removal of sediment and other pollutants from disturbed sites.**

4.7-3 **For long-term mitigation of site disturbances, all areas not covered by structures shall be covered with hardscape (concrete, asphalt, gravel, etc.), native vegetation and/or man-made landscape areas (for example, grass). Revegetated or landscaped areas shall provide sufficient cover to ensure that, after a two year period, erosion will not occur from concentrated flows (rills, gully, etc.) and sediment transport will be minimal as part of sheet flows.**

The following measure shall apply to projects proposed within the 100-year flood hazard areas:

4.7-4 **If facilities are constructed in a flood zone, the facility will be brought to a level above flood hazards, or hardened against flood related impacts. Additionally, if facilities must be located within flood plains or hazard areas, a flood management program to minimize impacts to people and surrounding property shall be created and implemented for each facility that may occur within these hazard areas.**

The following measure shall apply to project components that generate short- and long-term demand for water resources

4.7-5 **Where reclaimed water is reasonably available, its shall be used in place of potable water for construction activities and for permanent irrigation systems associated with the grade separation landscaped areas.**

4.7.5 Cumulative Impact

The areas where Third Main Track and Grade Separations Project have a potential to cause local cumulative impacts include: contributions to increased cumulative runoff and flood hazards (mitigated to a level of non-significance); and contributions to potential water quality degradation. Based on the evaluation contained in this subchapter, implementation of the proposed Third Main Line Track and Grade Separations Project is not forecast to cause any cumulative significant adverse environmental impacts with implementation of the recommended mitigation. Because the project minimizes increases in runoff and controls discharge of pollutants during both construction and operation in accordance with waste discharge requirements established by the Regional Boards for the project area, no significant cumulative water resource or water quality impacts are forecast to result from implementing the proposed project.

4.7.6 Unavoidable Adverse Impacts

Construction and operation of the facilities identified in the Third Main Track and Grade Separation Project have the potential to result in significant adverse water resource and water quality impacts if not mitigated. Mitigation measures are identified to reduce potential impacts from the construction and operation of the Third Main Track and Grade Separations and their associated infrastructure improvements and the on-going operation of the rail line to a nonsignificant level.

4.8 TRAFFIC AND CIRCULATION

4.8.1 Introduction

As part of its program to improve intercity passenger rail service, the State Department of Transportation, Division of Rail (Department) in cooperation with Metrolink and The Burlington Northern and Santa Fe Railway Company (BNSF), is proposing to install a third main track and construct grade separations at seven locations to enhance safety and the efficiency of train movement along the existing BNSF/Amtrak/Metrolink East-West Main Line Railroad Tracks (rail corridor).

The BNSF main line rail corridor currently has two main tracks that are utilized for freight services to and from eastern destinations and for passenger service to and from the Los Angeles, San Bernardino and Orange County/San Diego metropolitan areas, with Fullerton as the central hub. The tracks also serve Amtrak trains originating in San Diego that provide service between San Diego and Los Angeles. It is the Department's objective to increase the efficiency of this corridor to accommodate the existing number of trains utilizing this corridor and future increases in the speed and volume of planned intercity and commuter rail passenger service.

The proposed Third Main Track and Grade Separation Project extends from the City of Commerce (Hobart) for 23.66 km (14.7 mi) to the City of Fullerton (Basta). The primary improvements proposed are the installation of a third main track over this 23.66 km (14.7 mi) segment of main line track and the installation of up to seven grade separation projects, which will be implemented over the next several years as funding permits.

As part of the environmental evaluation for the project, a traffic study was prepared by Meyer, Mohaddes Associates, Inc. (MMA), which analyzes the potential circulation system impacts of the proposed third track and grade separation project. A copy of the MMA traffic study is provided in Volume II, Technical Appendices. The rail corridor extends from the City of Commerce (Hobart - MP 148.6) about 23.66 km (14.7 mi) south to the City of Fullerton (Basta Station - MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs. Figure 4.8-1 shows the alignment of the proposed third main track within the study area. Figure 4.8-1 also shows the locations of the seven proposed grade separation projects, which are (listed in order from west to east):

Passons Boulevard
Pioneer Boulevard
Norwalk Boulevard
Los Nietos Road
Lakeland Road
Rosecrans Avenue/Marquardt Avenue
Valley View Avenue

All other crossings between Hobart and Basta Stations are currently grade separated.

4.8.2 Existing Traffic Conditions

This section describes in detail the existing traffic conditions at the seven proposed grade separation locations. Discussion includes current traffic volumes, roadway geometrics and current operating conditions.

4.8.2.1 Passons Boulevard

Passons Boulevard is a two-lane facility which runs in a north-south direction. Figure 4.8-2 shows the study area and the local traffic circulation system. In the vicinity of the rail crossing, Passons Boulevard is fronted primarily with residential and neighborhood commercial uses. Based on recent traffic counts, Passons Boulevard near the BNSF rail crossing currently carries approximately 1,160 vehicles (315 northbound and 845 southbound) during the AM peak hour. During the PM peak hour, Passons Boulevard carries approximately 855 vehicles (445 northbound and 410 southbound). Figure 4.8-2 also shows the existing peak hour traffic volumes.

As part of the proposed project, the current at-grade crossing at Serapis Avenue is proposed to be permanently closed to vehicular traffic. Serapis Avenue is a two-lane local roadway which runs parallel to, and west of, Passons Boulevard. Within the study area, Serapis Avenue is fronted primarily by residential uses north of the rail crossing and commercial uses south of the rail crossing. Traffic counts along Serapis Avenue show that the facility carries approximately 215 AM peak hour vehicles (75 northbound and 140 southbound) and 305 PM peak hour vehicles (160 northbound and 145 southbound). Figure 4.8-2 also shows the AM and PM peak hour traffic volumes along other key roadways within the study area.

4.8.2.2 Pioneer Boulevard

Within the study area, Pioneer Boulevard is a four-lane roadway aligned in the north-south direction. Land uses along Pioneer Boulevard near the rail crossings are primarily residential with some commercial. Figure 4.8-3 shows the local traffic circulation system within the study area and existing traffic volumes along the major roadways. As can be seen, Pioneer Boulevard carries approximately 1,532 vehicles (584 northbound and 948 southbound) during the AM peak hour, 978 vehicles (478 northbound and 500 southbound) during the midday peak hour, and 1,544 vehicles (755 northbound and 789 southbound) during the PM peak hour.

4.8.2.3 Norwalk Boulevard

Within the study area, Norwalk Boulevard is a four-lane roadway aligned in the north-south direction. Land uses along this roadway are primarily commercial. Figure 4.8-3 also shows existing traffic volumes along Norwalk Boulevard near the BNSF rail crossing. As shown, Norwalk Boulevard carries approximately 1,688 vehicles (736 northbound and 952 southbound) during the AM peak hour, 1,539 vehicles (752 northbound and 787 southbound) during the midday peak hour, and 2,262 vehicles (1,157 northbound and 1,105 southbound) during the PM peak hour.

4.8.2.4 Los Nietos Road

Los Nietos Road, within the study area, is a four-lane roadway that is aligned in the east-west direction and is fronted by commercial use. Figure 4.8-3 shows existing traffic volumes along Los

Nietos Road near the rail crossing. As shown, Los Nietos Road carries approximately 1,037 vehicles (313 eastbound and 724 westbound) during the AM peak hour, 827 vehicles (309 eastbound and 518 westbound) during the midday peak hour, and 1,427 vehicles (402 eastbound and 725 westbound) during the PM peak hour.

4.8.2.5 Lakeland Road

Lakeland Road near the rail crossing is a two-lane roadway which runs in the east-west direction fronted primarily by industrial use. Figure 4.8-4 shows the local traffic circulation system and the existing traffic volumes along major streets within the area. As shown in Figure 4.8-4, Lakeland Road carries approximately 719 vehicles (308 eastbound and 411 westbound) during the AM peak hour, 566 vehicles (282 eastbound and 284 westbound) during the midday peak hour, and 699 vehicles (359 eastbound and 340 westbound) during the PM peak hour.

4.8.2.6 Rosecrans Avenue/Marquardt Avenue

The BNSF railroad tracks cross through the intersection of Rosecrans Avenue and Marquardt Avenue diagonally. Within the study area, Rosecrans Avenue is a four-lane roadway aligned in the east-west direction. Marquardt Avenue is a four-lane roadway aligned in the north-south direction. Both roadways are fronted by commercial and industrial land uses. Figure 4.8-5 shows the local traffic circulation system and existing traffic volumes along major streets within the area.

West of the BNSF railroad tracks, Rosecrans Avenue carries approximately 2,170 vehicles (992 eastbound and 1,178 westbound) during the AM peak hour, 1,790 vehicles (725 eastbound and 984 westbound) during the midday peak hour, and 2,171 vehicles (1,304 eastbound and 867 westbound) during the PM peak hour. East of the BNSF railroad tracks, Rosecrans Avenue carries approximately 1,921 vehicles (604 eastbound and 1,317 westbound) during the AM peak hour, 1,475 vehicles (740 eastbound and 735 westbound) during the midday peak hour, and 1,586 vehicles (847 eastbound and 739 westbound) during the PM peak hour.

North of the rail crossing, Marquardt Avenue carries approximately 555 vehicles (283 northbound and 272 southbound) during the AM peak hour, 535 vehicles (349 northbound and 186 southbound) during the midday peak hour, and 732 vehicles (462 northbound and 270 southbound) during the PM peak hour. South of the rail crossing, it carries approximately 344 vehicles (86 northbound and 258 southbound) during the AM peak hour, 327 vehicles (164 northbound and 160 southbound) during the midday peak hour, and 471 vehicles (274 northbound and 197 southbound) during the PM peak hour.

4.8.2.7 Valley View Avenue

Within the study area, Valley View Avenue is a four-lane roadway aligned in the north-south direction. South of the rail crossing, Valley View Avenue is fronted by commercial land use. To the north of the crossing, it is fronted by residential use. Figure 4.8-6 shows the local traffic circulation system for the portion of the study area and existing traffic volumes along the major streets within the study area. As can be seen, Valley View Avenue carries approximately 2,605 vehicles (1,050 northbound and 1,555 southbound) during the AM peak hour, 1,910 vehicles (991 northbound and 919 southbound) during the midday peak hour, and 2,632 vehicles (1,552 northbound and 1,080 southbound) during the PM peak hour.

Roadway Capacity Analysis

The efficiency of traffic operations at a location is measured in terms of Level of Service (LOS). Level of service is a description of traffic performance. The level of service concept is a measure of average operating conditions during an hour. It is based on volume-to-capacity (V/C) ratio. Levels range from "A" to "F" with "A" representing excellent (free-flow) conditions and "F" representing extreme congestion. The methodology compares the amount of traffic that a roadway segment is able to carry (the capacity) to the level of traffic during the peak hour (volume). Roadway segments with vehicular volumes, which are at or near capacity, experience greater congestion and longer vehicle delays. Table 4.8-1 describes the level of service concept and the operating conditions expected under each level of service.

Table 4.8-1
LEVEL OF SERVICE

LOS	Description
A	Primarily free-flow operations. Vehicles are unimpeded in their ability to maneuver in the traffic stream.
B	Reasonably free-flow, free-flow speeds generally maintained. Lowest average spacing between vehicles is 100.58 meters (330 ft).
C	Speeds at or near free-flow. Freedom to maneuver within traffic stream is noticeably restricted and lane changes require more vigilance.
D	Speeds begin to decline slightly and density begins to increase with increasing flows. Freedom to maneuver is more noticeably limited, and traffic stream has little space to absorb disruptions.
E	Operation at capacity. Operations at this level are volatile, and there are virtually no usable gaps in the traffic stream. Maneuvering within traffic stream is extremely limited.
F	Breakdown in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. Number of vehicles arriving at a point is greater than the number of vehicles that can move through it.

Based on the existing level of traffic and the roadway geometrics, capacity and level of service analysis were performed at each of the major roadways along the corridor which are proposed to be grade separated. Table 4.8-2 summarizes the results. As can be seen, all the roadway segments are operating at acceptable levels of service (i.e. LOS A, B, C or D), not taking into consideration the delay to traffic caused by gate-down time at railroad crossings.

Existing Rail Operational Characteristics

As part of the study, MMA conducted surveys at rail crossings to assess current rail operational characteristics. Based on conversations with BNSF representatives, current freight train movements do not have set schedules and the train characteristics (i.e. lengths, number of cars, speeds) vary depending on load conditions. Contrary to freight train movements, Metrolink passenger trains operate on a set schedule.

Table 4.8-2
EXISTING PEAK HOUR LEVEL OF SERVICE SUMMARY

Location	AM Peak Hour				Midday Peak Hour				PM Peak Hour			
	NB / EB		SB / WB		NB / EB		SB / WB		NB / EB		SB / WB	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1. Passons Blvd.	0.467	A	0.601	B	0.583	A	0.589	A	0.698	B	0.575	A
2. Serapis Ave.	0.113	A	0.216	A	0.124	A	0.115	A	0.201	A	0.189	A
3. Pioneer Blvd.	0.328	A	0.533	A	0.269	A	0.281	A	0.424	A	0.443	A
4. Norwalk Blvd.	0.413	A	0.357	A	0.422	A	0.295	A	0.650	B	0.414	A
5. Los Nietos Rd.	0.185	A	0.428	A	0.183	A	0.307	A	0.238	A	0.429	A
6. Lakeland Rd.	0.362	A	0.484	A	0.332	A	0.334	A	0.422	A	0.400	A
7. Rosecrans Ave.	0.372	A	0.493	A	0.369	A	0.275	A	0.488	A	0.277	A
8. Marquardt Ave.	0.048	A	0.153	A	0.092	A	0.104	A	0.154	A	0.152	A
9. Valley View Ave.	0.295	A	0.874	D	0.278	A	0.516	A	0.436	A	0.607	B

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

MMA conducted field surveys on May 10 and May 13, 2002 at the Passons Boulevard and Serapis Avenue crossings. The two-day survey yielded data on a total of 64 crossing data. Data collected includes:

Train Frequency - number of trains observed

Gate-down Time - this is the period of time which gates are activated. The gate-down time can be categorized into three intervals:

1. Approach Time - time interval from initial gate down to the moment the train is at the crossing
2. Crossing Time - time interval between the first car and the last car of the train to completely clear the crossing
3. Recovery Time - time interval between the last train car and the gates to come up

Type of train - as mentioned previously, there are two types of trains, freight and passenger. Data were collected for the two types as their difference in operational characteristics would affect delays at crossings.

Length of train - the lengths in terms of cars were also collected as part of the survey. Although passenger trains do not vary in lengths as much, freight trains do vary depending on type and number of loads.

Table 4.8-3 summarizes the survey results. As can be seen, the average frequencies for freight trains for the AM, midday and PM peak hours are 1.8, 1.5 and 2.0, respectively. Average frequencies for passenger trains for the AM, midday and PM peak hours are 5.3, 1.5 and 4.3, respectively. The average gate down times for freight trains ranges from 2'30" to 2'46" and is much longer as compared to passenger trains due to the much longer lengths and slower travel speed.

Table 4.8-3
SUMMARY OF TRAIN SURVEY RESULTS

	AM Peak Hour	PM Peak Hour
Average Train Frequency		
Freight	1.8	2.0
Passenger	5.3	4.3
Average Gate Down Time (min:sec)		
Freight	02:46	02:30
Passenger	00:56	00:55
Average Length of Train (# of Cars)		
Freight	70.3	71.5
Passenger	5.2	5.2

Note: Results shown based on 64 surveys conducted on May 10 and May 13, 2002.

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Delay Analysis

The calculation of delays at train crossings takes into account the gate down time, and also the time it takes for the dissipation of traffic queue which directly relates to the level of vehicular traffic volume on the respective roadway. This is the amount of time it takes for vehicular flow to return to "normal" conditions. Due to stoppage at the crossings, vehicles would queue back from the crossing gates. The length of queue depends on vehicular arrival and departure rate and the number of travel lanes on the respective roadway and gate down time. The calculation of vehicle delay is as follows:

$$\text{Delay} = [(T^2)(Q/2)(n)]/(1-Q/D)$$

Where:

T = Gate Down Time (min)
Q = Average Arrival Rate (veh/min/lane)
D = Average Departure Rate (veh/min/lane)
n = Number of Lanes

The formula shown is widely accepted and has been used in other rail delay studies including: Port of Long Beach EIRs, Port of Los Angeles EIRs, Alameda Corridor, San Gabriel Valley (ACE) and Placentia (OnTrac) grade crossing studies. The application of the formula shown is for the purpose of estimating the total vehicle delay per occurrence. The formula has been slightly modified to include hourly frequency to estimate peak hour delays. The resulting delay is in terms of total vehicle-hours. This is a weighted delay, which takes into account hourly vehicular volumes. To correlate this result with the Highway Capacity Manual's (HCM) definition for level of service (LOS) based on average delay per vehicle during the peak hour of traffic, results are also shown in this format. Level of service definition per HCM 2000 is presented below:

Level of Service	Avg. Delay (sec/veh)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Table 4.8-4 shows the estimated delay at each of the eight locations under existing 2002 conditions for the AM, midday and PM peak hours. The results show that based on hourly average delay, all the crossings are experiencing good levels of service (i.e. LOS A, B, or C).

It should be noted that the results shown in average vehicle delay in seconds are for the purpose of estimating level of service on an hourly basis. In reality, vehicles that are stopped during train crossings experience much longer delays. However, vehicles experience virtually no delays at other times of the peak hour.

Table 4.8-4
EXISTING RAIL SUMMARY

Freight Train Parameters				Passenger Train Parameters		
	Gate Down Time	Frequency			Gate Down Time	Frequency
AM	2.77 min	1.8 trains/hour		AM	0.93 min	5.3 trains/hour
Midday	2.78 min	1.5 trains/hour		Midday	1.02 min	1.5 trains/hour
PM	2.50 min	2.0 trains/hour		PM	0.92 min	4.3 trains/hour

AM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		Freight Delay (veh-hr)		Passenger Delay (veh-hr)		Total Delay (veh-hr)		Average Vehicle-Delay (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	416	535	6.93	8.92	1	1	1.10	1.60	0.37	0.53	1.47	2.12	12.7	B	14.3	B
2. Serapis Av	90	173	1.50	2.88	1	1	0.18	0.38	0.06	0.12	0.24	0.50	9.8	A	10.4	B
3. Pioneer Bl	584	948	4.87	7.90	2	2	1.39	2.66	0.46	0.88	1.85	3.54	11.4	B	13.4	B
4. Norwalk Bl	736	952	6.13	5.29	2	3	1.87	2.32	0.62	0.77	2.49	3.08	12.2	B	11.7	B
5. Los Nietos Rd	313	724	2.61	6.03	2	2	0.67	1.83	0.22	0.61	0.89	2.44	10.3	B	12.1	B
6. Lakeland Rd	308	411	5.13	6.85	1	1	0.74	1.09	0.25	0.36	0.99	1.45	11.6	B	12.7	B
7. Rosecrans Av	992	1317	5.51	7.32	3	3	2.44	3.57	0.81	1.19	3.25	4.76	11.8	B	13.0	B
8. Marquardt Av	86	272	0.72	2.27	2	2	0.17	0.57	0.06	0.19	0.23	0.76	9.5	A	10.1	B
9. Valley View Av	1050	1555	4.38	12.96	4	2	2.44	6.19	0.81	2.06	3.25	8.25	11.1	B	19.1	C

MIDDAY PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		Freight Delay (veh-hr)		Passenger Delay (veh-hr)		Total Delay (veh-hr)		Average Vehicle-Delay (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	519	524	8.65	8.73	1	1	1.28	1.30	0.17	0.17	1.45	1.47	10.1	B	10.1	B
2. Serapis Av	99	92	1.65	1.53	1	1	0.17	0.16	0.02	0.02	0.19	0.18	7.0	A	7.0	A
3. Pioneer Bl	478	500	3.98	4.17	2	2	0.92	0.97	0.12	0.13	1.04	1.10	7.8	A	7.9	A
4. Norwalk Bl	752	787	6.27	4.37	2	3	1.62	1.54	0.22	0.21	1.83	1.74	8.8	A	8.0	A
5. Los Nietos Rd	309	518	2.58	4.32	2	2	0.55	1.01	0.07	0.14	0.63	1.14	7.3	A	7.9	A
6. Lakeland Rd	282	284	4.70	4.73	1	1	0.56	0.56	0.08	0.08	0.63	0.64	8.1	A	8.1	A
7. Rosecrans Av	984	735	5.47	4.08	3	3	2.03	1.41	0.27	0.19	2.30	1.60	8.4	A	7.9	A
8. Marquardt Av	164	186	1.37	1.55	2	2	0.28	0.32	0.04	0.04	0.32	0.36	7.0	A	7.0	A
9. Valley View Av	991	919	4.13	7.66	4	2	1.91	2.13	0.26	0.29	2.17	2.42	7.9	A	9.5	A

PM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		Freight Delay (veh-hr)		Passenger Delay (veh-hr)		Total Delay (veh-hr)		Average Vehicle-Delay (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	621	512	10.35	8.53	1	1	1.84	1.35	0.54	0.39	2.38	1.74	13.8	B	12.3	B
2. Serapis Av	161	151	2.68	2.52	1	1	0.31	0.29	0.09	0.08	0.40	0.38	9.0	A	9.0	A
3. Pioneer Bl	755	789	6.29	6.58	2	2	1.75	1.86	0.51	0.54	2.26	2.40	10.8	B	10.9	B
4. Norwalk Bl	1157	1105	9.64	6.14	2	3	3.27	2.54	0.95	0.74	4.22	3.28	13.1	B	10.7	B
5. Los Nietos Rd	402	725	3.35	6.04	2	2	0.81	1.66	0.23	0.48	1.04	2.14	9.3	A	10.6	B
6. Lakeland Rd	359	340	5.98	5.67	1	1	0.82	0.76	0.24	0.22	1.06	0.99	10.6	B	10.4	B
7. Rosecrans Av	1304	739	7.24	4.11	3	3	3.19	1.54	0.93	0.45	4.12	1.98	11.4	B	9.7	A
8. Marquardt Av	274	270	2.28	2.25	2	2	0.52	0.52	0.15	0.15	0.68	0.67	8.9	A	8.9	A
9. Valley View Av	1552	1080	6.47	9.00	4	2	3.63	2.93	1.06	0.85	4.69	3.78	10.9	B	12.6	B

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

4.8.3 Project Impacts

Development of the third main track and grade separations project as described in Chapter 3 of this PEIR will result in the creation of short-term circulation system impacts and related generation of additional short-term volumes of traffic which could adversely affect the areas circulation system. No increase in train traffic will be generated by implementation of the proposed project, although train traffic is forecast to increase in the future (regardless of whether the proposed improvements are implemented) due to forecast increases in future passenger and freight traffic within the region.

4.8.3.1 Thresholds of Significance

The various jurisdictions utilize a range of level of service conditions as the threshold of significance for circulation system impacts. For this analysis, the circulation system performance objective is the provision and maintenance of LOS "E" operation, based upon average peak hour weekday conditions. Mitigation is required for those intersections which are projected to operate at less than LOS "E" with the proposed project.

4.8.3.2 Future No Project Conditions

To evaluate the potential impact of the proposed project on local traffic conditions, it is first necessary to develop a forecast of future traffic volumes in the study area under conditions without the proposed project. This provides a basis against which to measure the proposed project's traffic impacts.

The anticipated completion date of the Third Track construction is year 2005. Due to approval/ funding issues, there is no firm date for the completion of the proposed seven grade separations at this time. For the purpose of the EIR, a near-term year 2005 horizon year has been selected for analysis. The horizon year represents the selected impact forecast date at which it is assumed that all of the project components are installed. The forecast of 2005 No-Project traffic volumes consists of existing traffic plus ambient traffic growth (general background regional growth). Since no new projects have been identified that will affect the circulation system within the project alignment, the ambient traffic growth represents the cumulative contribution to project impacts. The following describes the growth components.

Ambient Traffic Growth

Ambient traffic is the traffic growth that will occur in the study area due to general employment growth, housing growth and growth in regional through trips in southern California. Even if there was no change in housing or employment in the study area, there will be some background (ambient) traffic growth in the region. Based on discussions with staff in the various cities, very little growth is anticipated in and around the study area. A one percent per year growth rate was assumed for all facilities as a conservative estimate of traffic increase in the study area. Existing 2002 traffic volumes were increased by a growth factor of 1.03 to account for regional traffic growth through the 2005 horizon year.

Rail Traffic Growth

In addition to vehicular traffic growth, growth in rail activities has also been considered. In 2000 the BNSF Hobart to Fullerton Line carried a total of 96 movements per day (50 BNSF through freight and 46 passenger). Based on the Los Angeles Inland Empire Trade Corridor Cost-Benefit Study conducted by the Los Angeles Economic Development Corporation with subconsultant Leachman and Associates LLC (11/6/01), the 2010 forecast of the Hobart to Fullerton Line is expected to increase to 150 trains per day (74 BNSF through freight and 76 passenger). This is an increase of 48 percent in freight movement and 65 percent in passenger train movement. This translates to an average of 5-percent growth in freight movements and 6.5-percent growth in passenger train movements. To estimate rail growth, existing peak hour train frequencies were adjusted (freight - 15% growth and passenger - 20%) to reflect the increase in rail activities through the 2005 horizon year.

4.8.3.3 Future No-Project Delay Analysis

Based on the forecast parameters discussed above, year 2005 vehicular volumes and associated delays are estimated. Figures 4.8-7 through 4.8-11 illustrate the traffic no project peak hour traffic volume forecast. Table 4.8-5 summarizes the 2005 level of service at the eight key roadway segments. Results show that all segments would operate at acceptable levels of service (i.e. LOS D or better), not taking into account delay at the railroad crossings.

The future no-project rail delay results are shown on Table 4.8-6. As can be seen, with the increase in both freight and passenger rail activities and vehicular volumes, delays at rail crossings are expected to increase.

4.8.3.4 Future With Project Conditions

Under future with project conditions, the Third Track would be operational which would increase rail efficiency by reducing conflicts between freight and passenger trains. This would also lead to increases in rail operational speeds and less delays to passenger service. In addition to increased efficiency of rail traffic, vehicular traffic on the seven study locations would also be significantly improved due to the construction of the grade-separations. This improvement would virtually eliminate all vehicular delays associated with rail traffic.

Table 4.8-5
FUTURE NO PROJECT PEAK HOUR LEVEL OF SERVICE SUMMARY

Location	AM Peak Hour				Midday Peak Hour				PM Peak Hour			
	NB / EB		SB / WB		NB / EB		SB / WB		NB / EB		SB / WB	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1. Passons Blvd.	0.481	A	0.619	B	0.601	B	0.607	B	0.719	C	0.592	A
2. Serapis Ave.	0.116	A	0.223	A	0.128	A	0.119	A	0.208	A	0.195	A
3. Pioneer Blvd.	0.338	A	0.548	A	0.276	A	0.289	A	0.437	A	0.457	A
4. Norwalk Blvd.	0.426	A	0.367	A	0.435	A	0.304	A	0.670	B	0.426	A
5. Los Nietos Rd.	0.191	A	0.441	A	0.188	A	0.316	A	0.245	A	0.442	A
6. Lakeland Rd.	0.373	A	0.498	A	0.341	A	0.345	A	0.435	A	0.412	A
7. Rosecrans Ave.	0.383	A	0.508	A	0.380	A	0.284	A	0.503	A	0.285	A
8. Marquardt Ave.	0.050	A	0.157	A	0.095	A	0.108	A	0.158	A	0.156	A
9. Valley View Ave.	0.304	A	0.900	D	0.287	A	0.532	A	0.449	A	0.625	B

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Table 4.8-6
FUTURE NO PROJECT RAIL DELAY SUMMARY

Freight Train Parameters

	Gate Down Time	Frequency
AM	2.77 min	2.1 trains/hour
Midday	2.78 min	1.7 trains/hour
PM	2.50 min	2.3 trains/hour

Passenger Train Parameters

	Gate Down Time	Frequency
AM	0.93 min	6.4 trains/hour
Midday	1.02 min	1.8 trains/hour
PM	0.92 min	5.2 trains/hour

AM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		Freight Delay (veh-hr)		Passenger Delay (veh-hr)		Total Delay (veh-hr)		Average Vehicle-Delay (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	428	551	7.13	9.18	1	1	1.32	1.92	0.46	0.67	1.78	2.59	15.0	B	16.9	C
2. Serapis Av	93	178	1.55	2.97	1	1	0.22	0.45	0.08	0.15	0.29	0.60	11.4	B	12.1	B
3. Pioneer Bl	602	976	5.02	8.13	2	2	1.66	3.19	0.58	1.11	2.24	4.30	13.4	B	15.8	C
4. Norwalk Bl	758	981	6.32	5.45	2	3	2.24	2.77	0.77	0.96	3.01	3.73	14.3	B	13.7	B
5. Los Nietos Rd	322	746	2.68	6.22	2	2	0.80	2.19	0.28	0.76	1.07	2.95	12.0	B	14.2	B
6. Lakeland Rd	317	423	5.28	7.05	1	1	0.89	1.30	0.31	0.45	1.19	1.75	13.6	B	14.9	B
7. Rosecrans Av	1022	1357	5.68	7.54	3	3	2.92	4.29	1.01	1.48	3.93	5.77	13.8	B	15.3	C
8. Marquardt Av	89	280	0.74	2.33	2	2	0.20	0.68	0.07	0.24	0.27	0.92	11.0	B	11.8	B
9. Valley View Av	1082	1602	4.51	13.35	4	2	2.91	7.58	1.01	2.63	3.92	10.21	13.0	B	22.9	C

MIDDAY PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		Freight Delay (veh-hr)		Passenger Delay (veh-hr)		Total Delay (veh-hr)		Average Vehicle-Delay (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	535	540	8.92	9.00	1	1	1.54	1.56	0.22	0.22	1.76	1.78	11.8	B	11.9	B
2. Serapis Av	102	95	1.70	1.58	1	1	0.20	0.19	0.03	0.03	0.23	0.21	8.2	A	8.1	A
3. Pioneer Bl	492	515	4.10	4.29	2	2	1.09	1.15	0.15	0.16	1.24	1.31	9.1	A	9.2	A
4. Norwalk Bl	775	811	6.46	4.51	2	3	1.93	1.83	0.27	0.26	2.21	2.09	10.3	B	9.3	A
5. Los Nietos Rd	318	534	2.65	4.45	2	2	0.66	1.20	0.09	0.17	0.75	1.37	8.5	A	9.2	A
6. Lakeland Rd	290	293	4.83	4.88	1	1	0.67	0.67	0.09	0.09	0.76	0.77	9.4	A	9.4	A
7. Rosecrans Av	1014	757	5.63	4.21	3	3	2.42	1.69	0.34	0.24	2.76	1.92	9.8	A	9.1	A
8. Marquardt Av	169	192	1.41	1.60	2	2	0.33	0.38	0.05	0.05	0.38	0.43	8.1	A	8.1	A
9. Valley View Av	1021	947	4.25	7.89	4	2	2.28	2.56	0.32	0.36	2.60	2.92	9.2	A	11.1	B

PM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		Freight Delay (veh-hr)		Passenger Delay (veh-hr)		Total Delay (veh-hr)		Average Vehicle-Delay (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	640	527	10.67	8.78	1	1	2.23	1.62	0.68	0.49	2.91	2.11	16.3	C	14.4	B
2. Serapis Av	166	156	2.77	2.60	1	1	0.37	0.35	0.11	0.11	0.49	0.45	10.5	B	10.5	B
3. Pioneer Bl	778	813	6.48	6.78	2	2	2.10	2.23	0.64	0.68	2.73	2.90	12.7	B	12.9	B
4. Norwalk Bl	1192	1138	9.93	6.32	2	3	3.95	3.04	1.20	0.92	5.15	3.97	15.5	C	12.5	B
5. Los Nietos Rd	414	747	3.45	6.23	2	2	0.96	1.99	0.29	0.60	1.25	2.59	10.9	B	12.5	B
6. Lakeland Rd	370	350	6.17	5.83	1	1	0.98	0.91	0.30	0.28	1.28	1.19	12.4	B	12.2	B
7. Rosecrans Av	1343	761	7.46	4.23	3	3	3.82	1.83	1.16	0.56	4.98	2.38	13.4	B	11.3	B
8. Marquardt Av	282	278	2.35	2.32	2	2	0.62	0.61	0.19	0.19	0.81	0.80	10.3	B	10.3	B
9. Valley View Av	1599	1112	6.66	9.27	4	2	4.35	3.53	1.32	1.07	5.67	4.60	12.8	B	14.9	B

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Table 4.8-7 below summarizes the total cumulative delays (total vehicle-hours) at all the at-grade crossings and the benefit of the proposed project based on the 2005 horizon year :

Table 4.8-7
TOTAL VEHICLE-DELAY SUMMARY

Scenario	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Existing Conditions	41.58 hours	21.23 hours	38.21 hours
Future No-Project	50.51 hours	25.50 hours	46.27 hours
Future With Project	0	0	0

As can be seen, under current conditions, a total of 42 hours, 21 hours and 38 hours of vehicle-delay are experienced during the AM, midday and PM peak hours, respectively. Under future no-project conditions, the delays in the 2005 horizon year would increase to 51 hours (21% increase), 26 hours (20% increase) and 46 hours (21%) during the AM, midday and PM peak hours, respectively. With the proposed project, delays would decrease to zero hours for all three peak hour periods.

4.8.3.5 Serapis Avenue Closure

Assuming the closure of Serapis Avenue, the majority of through traffic would be shifted to Passons Boulevard and Rosemead Boulevard. Based on the forecast of vehicular traffic discussed in the Future No-Project section, a total of 225 vehicles are expected to shift from Serapis Avenue during the AM peak Hour. A total of 315 vehicles would be expected to shift from Serapis Avenue during the PM peak hour.

Based on comments received from citizens and elected officials in the City of Pico Rivera, concerns regarding traffic impacts on Rex Road at Rosemead Boulevard and Passons Boulevard and on Slauson Avenue at Rosemead Boulevard and Passons Boulevard due to the Serapis Avenue closure. MMA has conducted intersection level of service analysis at the four key intersections to identify potential impacts. Table 4.8-8 summarizes the results under existing, future no project and future with project scenarios. As can be seen, under existing conditions, all intersections are operating at good levels of service (i.e. LOS D or better) with the exception of Slauson Avenue at Rosemead Boulevard which is currently operating at LOS “F” during the PM peak hour.

Under Future 2005 No-Project conditions, the intersection of Rex Road and Rosemead Boulevard is expected to deteriorate to LOS “D” during the PM peak hour and the intersection of Slauson Avenue at Rosemead Boulevard would remain at LOS “F” during the PM peak hour.

Under Future With Project conditions (with closure of Serapis Avenue), all four study intersections would experience increase in delay but no significant traffic impact is identified.

Table 4.8-8
INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	Existing 2002				Future 2005 No-Project				Future 2005 With Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Rex Rd. & Rosemead Blvd.	0.839	D	0.753	C	0.920	E	0.776	C	0.927	E	0.796	C
Rex. Rd. & Passons Blvd.[(a)]	14.1	B	8.0	B	14.8	B	15.0	B	18.2	C	20.6	C
Slauson Ave. & Rosemead Blvd.	0.794	C	1.035	F	0.818	D	1.067	F	0.840	D	1.079	F
Slauson Ave. & Passons Blvd.	0.777	C	0.835	D	0.800	D	0.860	D	0.837	D	0.891	D

Note: (a) Four-way stop controlled - LOS based on delay.

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

With the closure of Serapis Avenue, conflicts between rail and vehicular traffic would be eliminated. However, pedestrians who currently utilized Serapis Avenue would be impacted. Approximately 23 pedestrians utilize the Serapis crossing during the AM peak period and 75 during the PM peak period. With the closure of Serapis Avenue, pedestrians would be required to walk to either Passons Boulevard or Rosemead Boulevard to safely cross the railroad tracks. Additional investigation by the City of Pico Rivera (6/13 and 6/14 2002) indicated that about 50 additional pedestrians cross the tracks on Serapis during the remainder of the day. Thus, about 150 persons would be diverted to Passons or Rosemead Boulevard. Note that Passons is approximately 0.48 km (0.3 mi) east of Serapis and Rosemead is about 0.32 km (0.2 mi) west of Serapis. Both Passons and Rosemead Boulevards would be grade-separated, thus allowing safe pedestrian crossing without conflict with rail traffic.

The project objective in closing Serapis is to eliminate an at-grade crossing that, after full project implementation, would be the only remaining at-grade crossing within the 23.66 km (14.7 mi) long project area. The purpose of eliminating this crossing through closure of Serapis at the railroad tracks is for safety. By installing the grade separation at Passons the City of Pico Rivera will have no delay for north-south pedestrian or vehicle traffic on the local circulation system. This is a major benefit to the community because it means that all foot and vehicular traffic in the future will be able to traverse north-south without the hazard of interacting with trains. The fundamental issue is whether the diversion of pedestrian and vehicle traffic, which currently incurs several hours of delays per day (see Tables 4.8-7 and 4.8-8) and related safety hazards, can be considered a significant adverse impact on the environment. Based on the trip data, findings and analysis outlined above in this document regarding improvement north-south circulation in the City of Pico Rivera, it is concluded that the shift in both pedestrian and vehicular traffic due to closure of Serapis is not considered to be a significant adverse impact to the circulation system. It is an adverse impact because the distance east to Passons (0.3 miles) and west to Rosemead (0.2 miles) represents an increase travel distance compared to current conditions. However, because the increase does not unreasonably burden pedestrians and because the new grade separation at Passons, combined with the existing grade separated crossing of the tracks at Rosemead, eliminates all delays for pedestrians and vehicles, the potential impact is considered adverse, but not significant.

Should the City of Pico Rivera conclude that north-south pedestrian movement on Serapis is important to the local community, regardless of the significance of this impact, mitigation is available which could be implemented by the City to accommodate local pedestrian crossing at Serapis. The City could commit funds to construct a pedestrian overcrossing/bridge, which would completely eliminate any pedestrian and rail conflicts. The issue is highly local and the cost of a pedestrian grade separation has been variously estimated to range between $1 million and $1.5 million. However, as indicated above, the installation of a grade-separated pedestrian crossing at Serapis is not justified based on a finding of significant impact on pedestrians from closure of Serapis.

4.8.3.6 <u>Construction Management</u>

Construction related impacts were not quantitatively assessed in this document; however any impacts which may occur due to construction activities are temporary in nature. That is, after the construction of the project is completed any impacts associated with these construction activities will be alleviated. Therefore, any improvements of a physical/permanent nature would not be recommended. However, prior to the start of construction a construction traffic management plan should be developed. The plan should address, but is not limited to, such items as:

Time of construction activities (e.g., off-peak hours)
Truck/Haul routes
Construction employee parking
Construction equipment staging
Potential lane closures
Work zone traffic control

The construction traffic management plan viewed as mitigation for short-term circulation system impacts and must be designed to minimize many of the anticipated impacts associated with the construction activities of the project.

Passons Boulevard

During construction of Passons Boulevard grade-separation, Passons Boulevard would be closed to through traffic between Slauson Avenue and Rex Road, except for local access. Estimated construction time for Passons with full closure is 8 months. Traffic will be detoured to Rosemead Boulevard which runs parallel to and west of Passons Boulevard. Traffic would be detoured from Passons Boulevard to Rosemead Boulevard via Washington Boulevard and Slauson Avenue. Figure 4.8-12 shows the detour route. Although not intended to be a detour, Serapis Avenue would remain open to local traffic during construction of the Passons grade-separation. The closure of Serapis Avenue would occur only after the completion of the Passons grade-separation.

Based on projected 2005 traffic volumes and available roadway capacity, Rosemead Boulevard should be able to accommodate the detoured traffic from Passons Boulevard. Provisions will be made for pedestrian traffic to safely transit north-south on Passons due to students accessing Maizeland Elementary School, just north of the railroad tracks.

Pioneer Boulevard

Pioneer Boulevard will be closed during construction of the bridges, retaining system and roadways. This will be done by construction of the intersection with Rivera Road and Pioneer Boulevard, thus allowing eastbound traffic on Rivera Road to divert to Pioneer Boulevard. Traffic north of Rivera Road will be diverted to Slauson Avenue and then to Norwalk and back Pioneer Boulevard up to the south side of the temporary shoring. Northbound traffic on Pioneer Boulevard will be diverted to Norwalk Boulevard and Slauson Avenue via Los Nietos Road. Figure 4.8-13 shows the detour route. To prevent potential cut-through traffic during construction period, proper detour signage will be installed. In addition, "No Through Traffic" signs are recommended at Walnut Street and Rivera Road at Norwalk Boulevard.

Norwalk Boulevard/Los Nietos

The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. A temporary shoofly detour will be provided on Norwalk Boulevard (west of the intersection) and Los Nietos Road east of the intersection to allow Norwalk traffic to flow north and south and Los Nietos traffic east. The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. Los Nietos traffic will be routed along Dice Road north to Slauson Avenue, west to Norwalk Boulevard and south to Los Nietos for the first two phases of construction. A temporary connector road for Los Nietos Road to Norwalk will be constructed so as to have a minimum impact on traffic during the third construction phase. Figure 4.8-14 shows the detour plan and road closures at Norwalk and Los Nietos.

Lakeland Road

Lakeland Road will be closed during construction of the bridges, retaining system and roadways. Traffic will be diverted to a circular route around the Lakeland underpass via the following streets: Bloomfield Avenue, Florence Avenue, Shoemaker Road, and Imperial Highway. A temporary, emergency crossing will be provided through construction to serve the Fire Station on Greenstone Avenue. Figure 4.8-15 shows the detour routes.

Rosecrans Avenue/Marquardt Avenue

Marquardt Avenue north will be closed during construction of the bridges, retaining system and roadways. A temporary road alignment for Rosecrans Avenue will be constructed so as to have a minimum impact on the traffic eastbound and westbound. The Rosecrans detour will have a temporary traffic signal at Marquardt south to maintain safe access to the area to the south. The Rosecrans detour will have an at-grade crossing with the railroad shoofly detour which will require temporary gates and flashers. These gates and flashers will be connected to the temporary traffic signal at Rosecrans and Marquardt south to prevent vehicles from queuing on the tracks. Detoured traffic on Marquardt Avenue north will be routed to Foster and west to Carmenita Road. Detoured traffic will not be allowed on Foster east of Marquardt. Figure 4.8-16 shows the detour plans.

Valley View Avenue

Traffic will be routed onto a temporary detour road on private property along the west side Valley View Avenue. The detour road will have an at-grade crossing with the existing tracks and the railroad shoofly. Flashing light signals and gates will be installed at the crossing. Stage Road will remain open with a temporary intersection with the detour road until the railroad bridge is constructed and roadway excavation begins. Stage Road will be closed for the rest of the project. Figure 4.8-17 shows the detour plans.

4.8.4 Mitigation Measures that Reduce Potential Significant Impacts

Only one potentially significant circulation system impact has been forecast to occur if the proposed project is implemented as proposed. Otherwise, after completion of the proposed project, circulation in the City of Pico Rivera and Santa Fe Springs will be substantially improved at all of the proposed grade separation project. This will result because the current local traffic delays due to trains operating on the East-West Main Corridor (see Tables 4.8-7 and 4.8-8) will be eliminated. The following mitigation measures will be implemented to offset the potentially significant circulation system effects of constructing the grade separations.

4.8-1 Prior to initiating third main track construction or any grade separation construction, a construction traffic management plan shall be submitted and approved by the affected

cities. For the third main track, such plans shall be submitted and approved by each jurisdiction where third main track construction will take place, prior to initiating construction. For the grade separations, plans shall be submitted as follows: the City of Pico Rivera (Passons) and the City of Santa Fe Springs/Los Angeles County (Pioneer); City of Santa Fe Springs and City of La Mirada (Valley View); and City of Santa Fe Springs for all other grade separation project components. The standard of measurement for the submitted plans shall be the provision of safe, albeit inconvenient, traffic flow during construction and the provision of adequate access through construction areas to meet safety and emergency vehicle access and transit through construction areas at all times when construction is underway for any components of the proposed project.

Implementation of the above measure will reduce the proposed project's potential significant circulation system impacts to a level of nonsignificance.

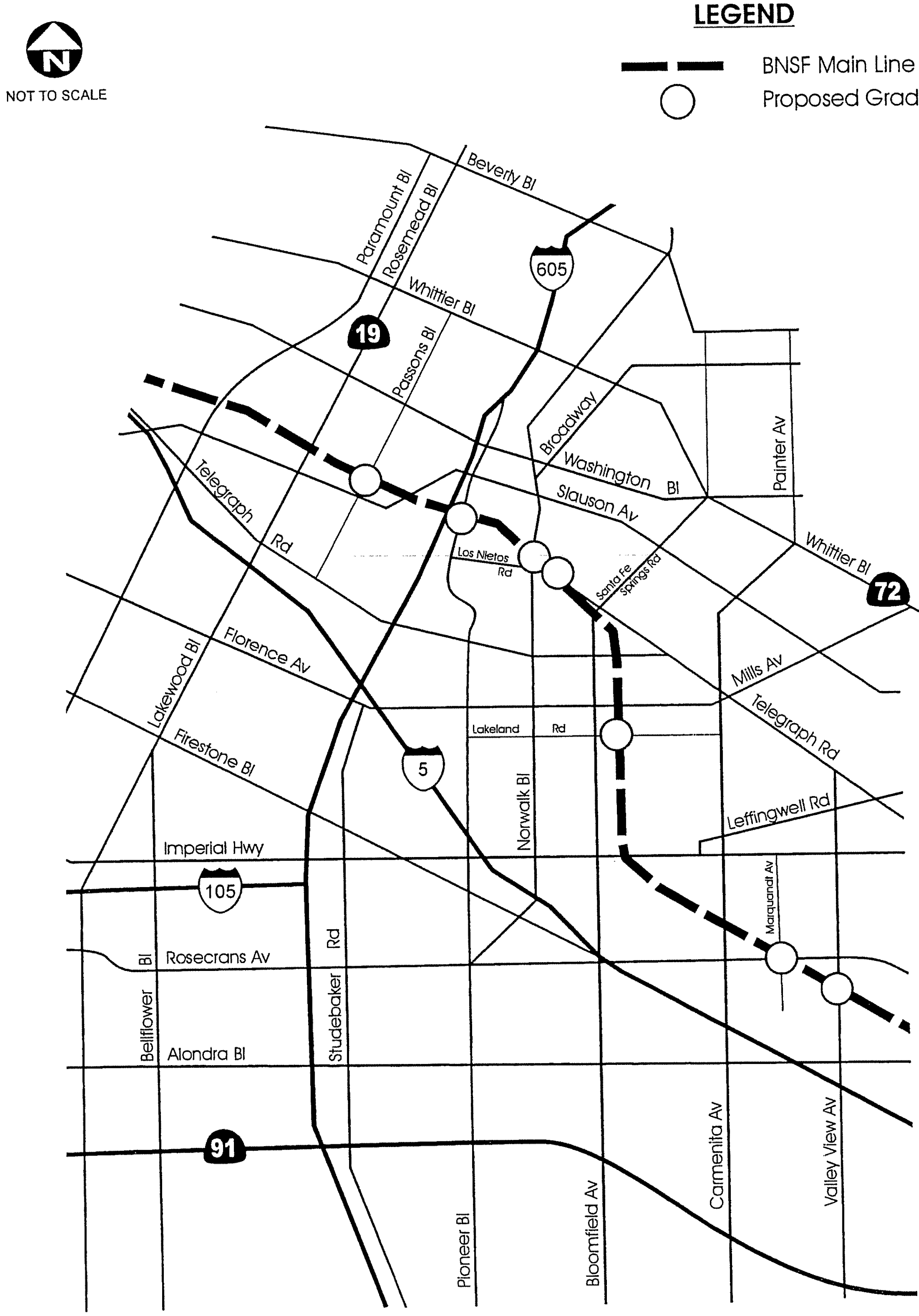
4.8.5 Cumulative Impacts

The circulation system impact analysis incorporates an annual growth factor because this project will be located in a built-out region of Los Angeles County. Because, for the most part, the areas surrounding the proposed project have already been developed, any new development would be in fill or redevelopment. For this reason, the use of an annual traffic growth factor to predict cumulative long term traffic impacts is appropriate. The potentially significant short term circulation system impacts can be reduced to a level of nonsignificance with implementation of the above mitigation measure. Because the timing of the various project segments is unresolved, a list of future projects in the area of the project cannot be determined with certainty. No projects were identified that would directly affect the area of specific project elements. However, after accounting for the annual traffic growth factor, because the project will improve circulation over the long term, the cumulative traffic impacts resulting from growth in the built-out region are not forecast to be significant. Traffic management plans being prepared for the construction of the project will identify any other projects to be constructed within the immediate area of a project element and mitigate any short term traffic congestion that may arise. Based on the data contained in this evaluation, no significant cumulative traffic impacts are forecast to occur from implementing the proposed project.

4.8.6 Unavoidable Adverse Impacts

Based on data presented in this subchapter of the EIR, the proposed project has no potential to cause significant adverse impact on any circulation system components along the 23.66 km (14.7 mi) project alignment, after implementation of the required short-term mitigation measures. The traffic management mitigation identified in this document can reduce potential short-term unavoidable adverse circulation impacts during construction to a level of nonsignificance, as outlined above. Therefore, with implementation of the mitigation measures identified, it is concluded that the proposed project can be implemented without causing any unavoidable significant adverse circulation system impacts.

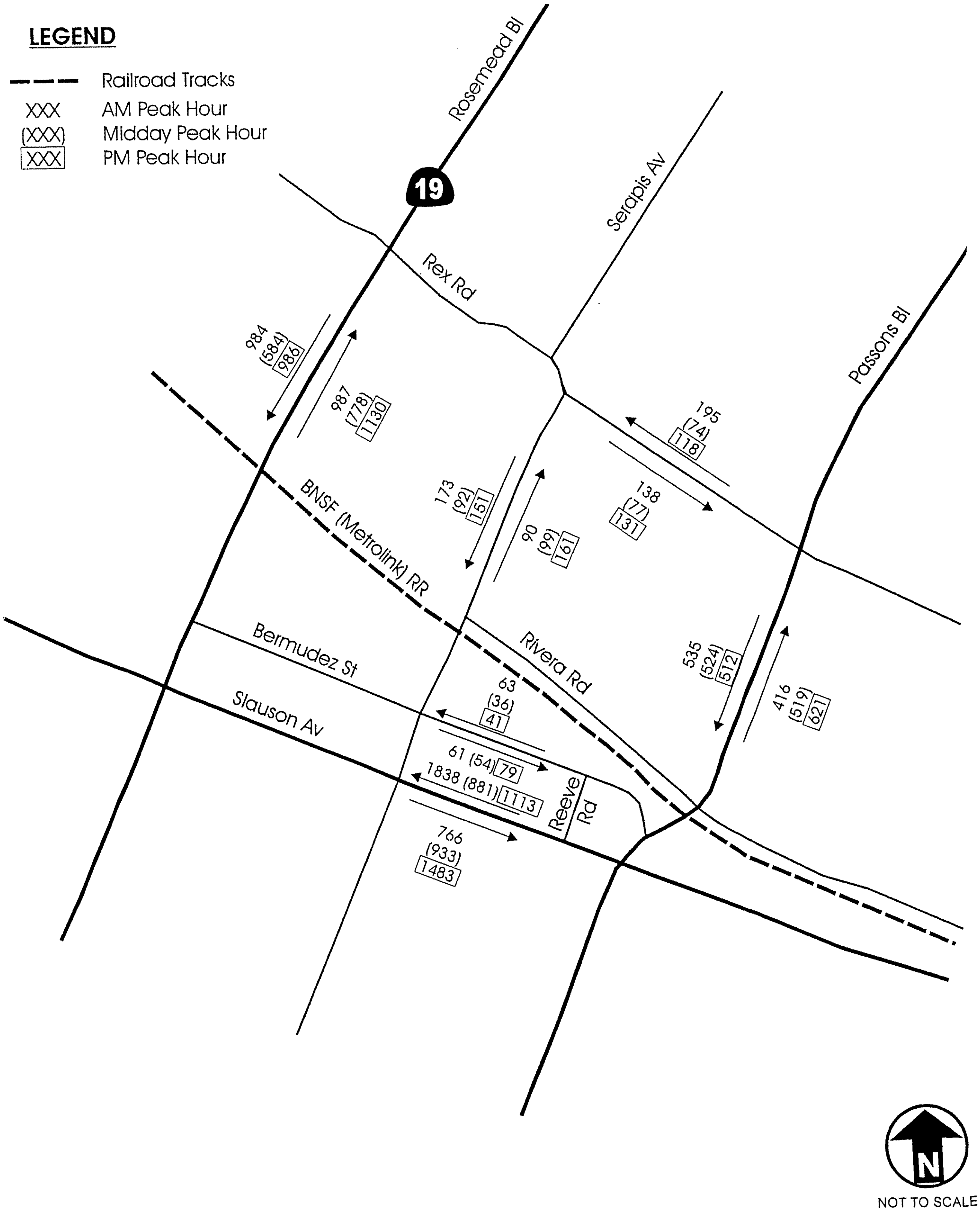
FIGURE 4.8-1
Study Area



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

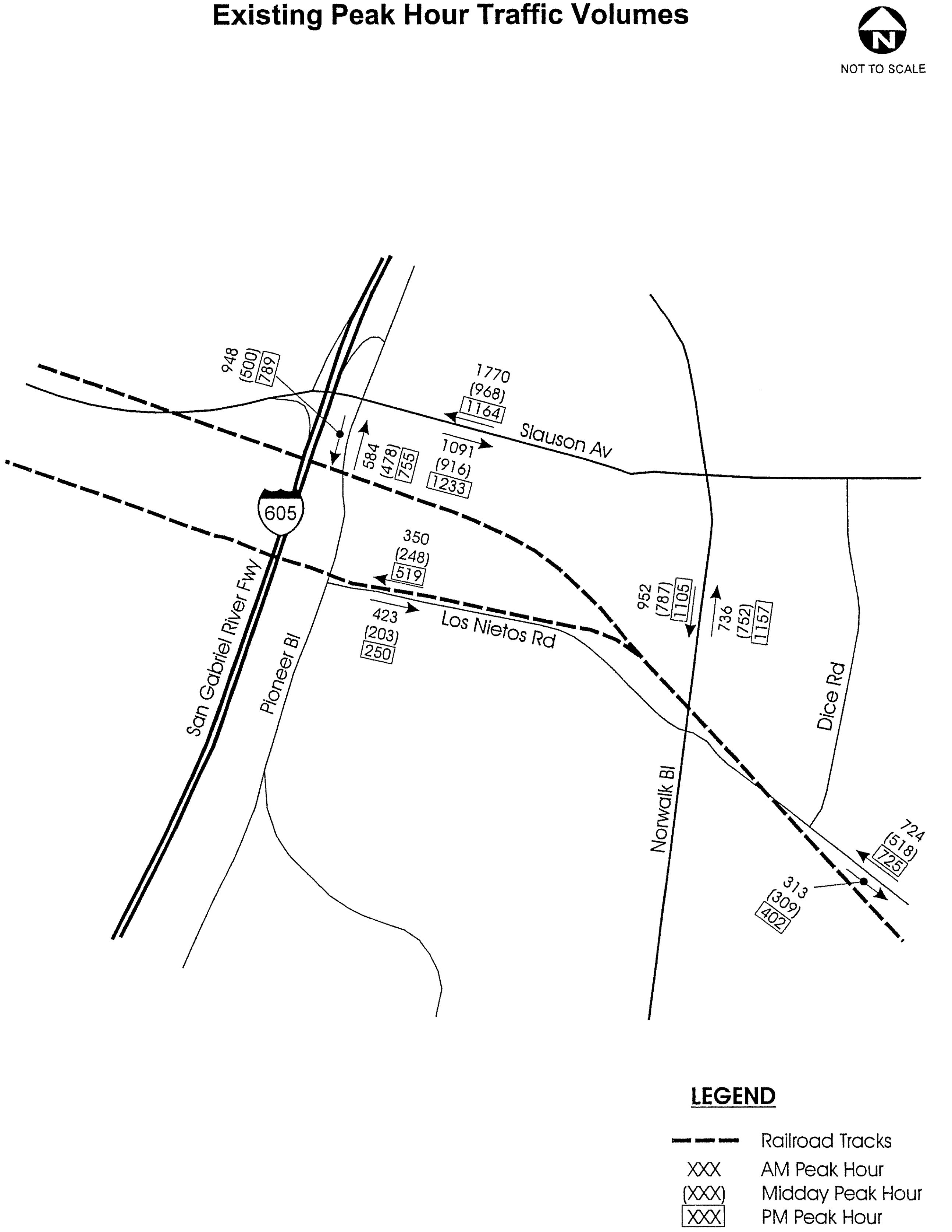
FIGURE 4.8-2
Existing Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

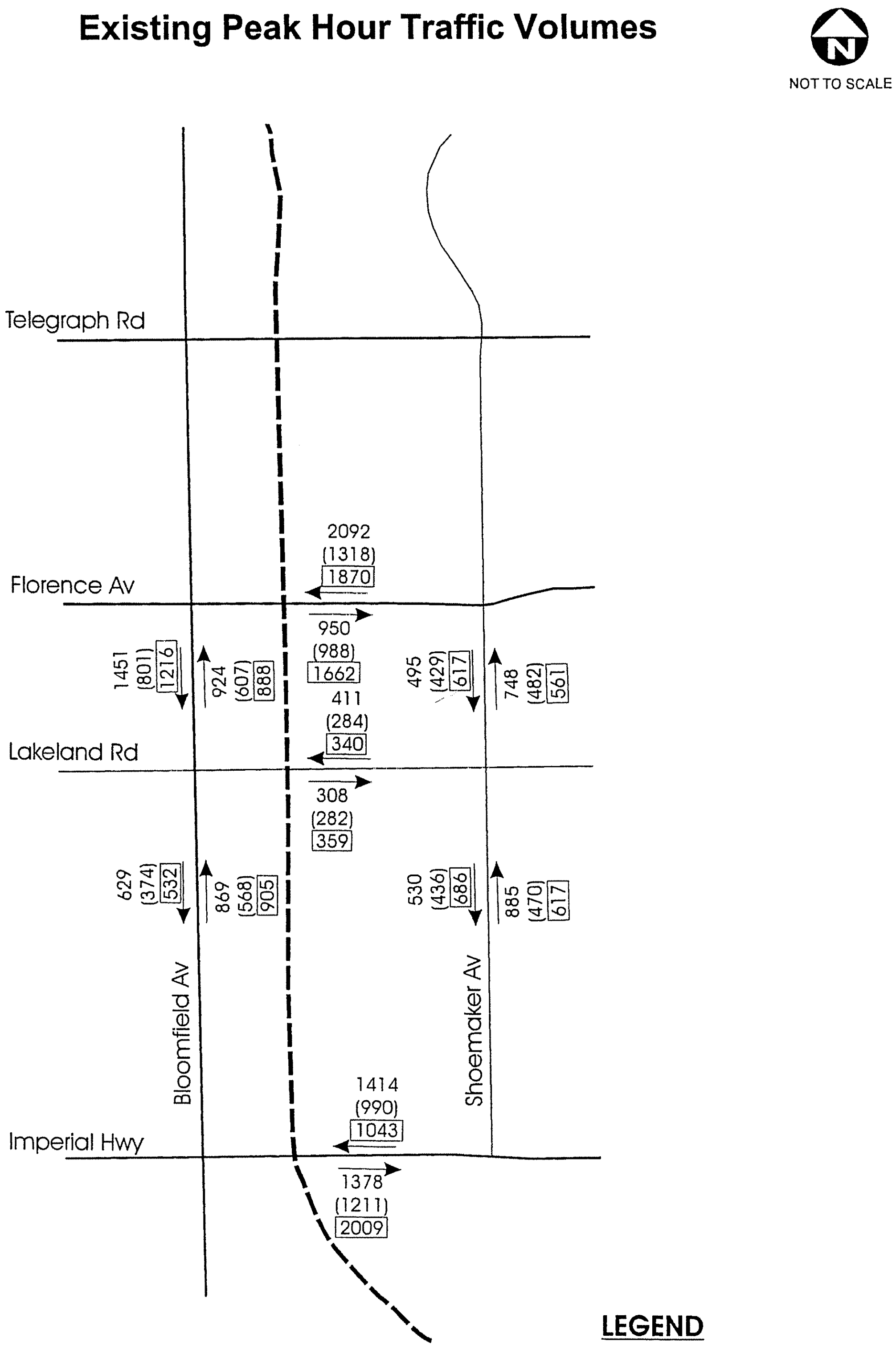
FIGURE 4.8-3
Existing Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

FIGURE 4.8-4
Existing Peak Hour Traffic Volumes



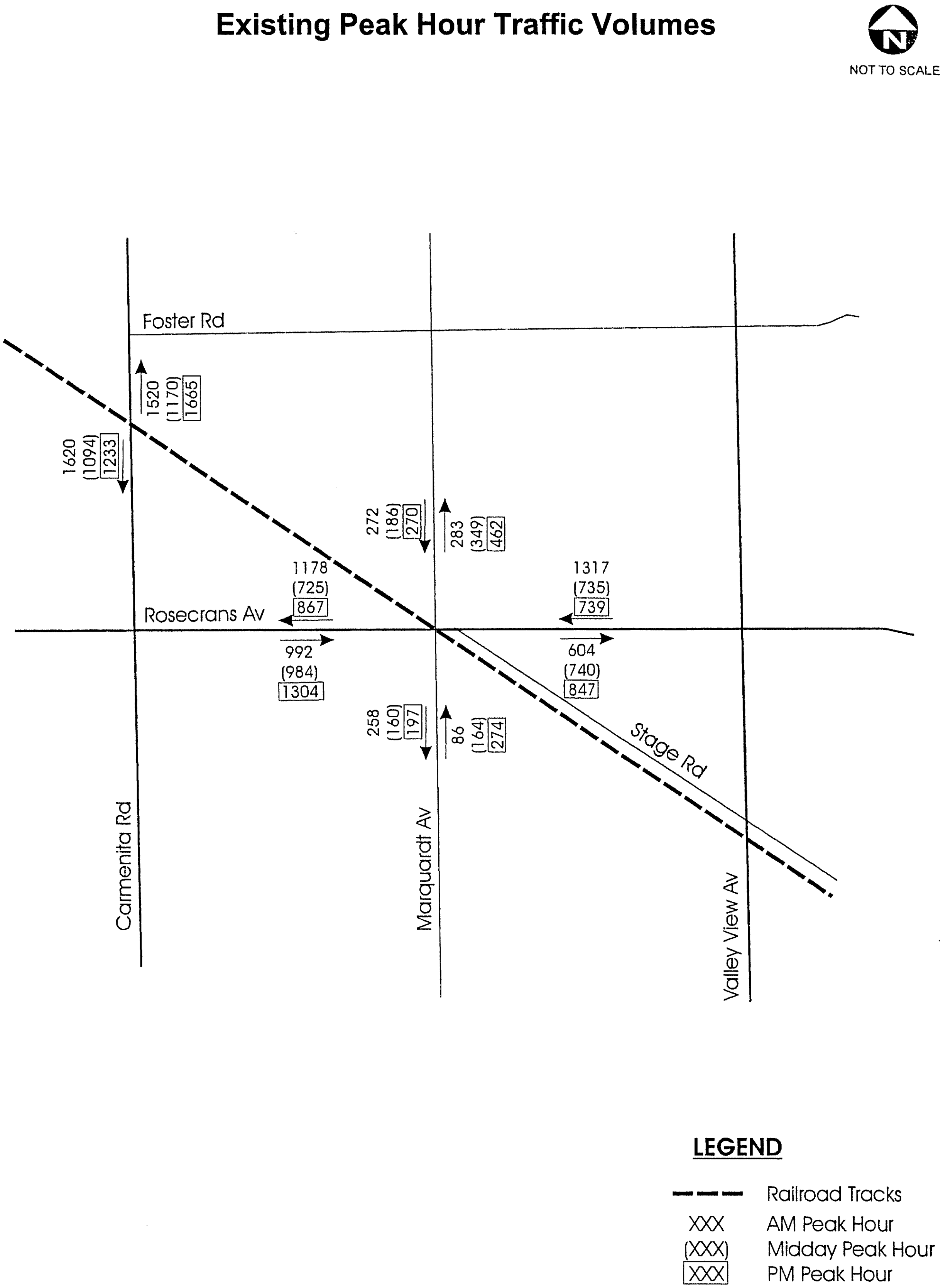
LEGEND

Railroad Tracks
XXX AM Peak Hour
(XXX) Midday Peak Hour
XXX (boxed) PM Peak Hour

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

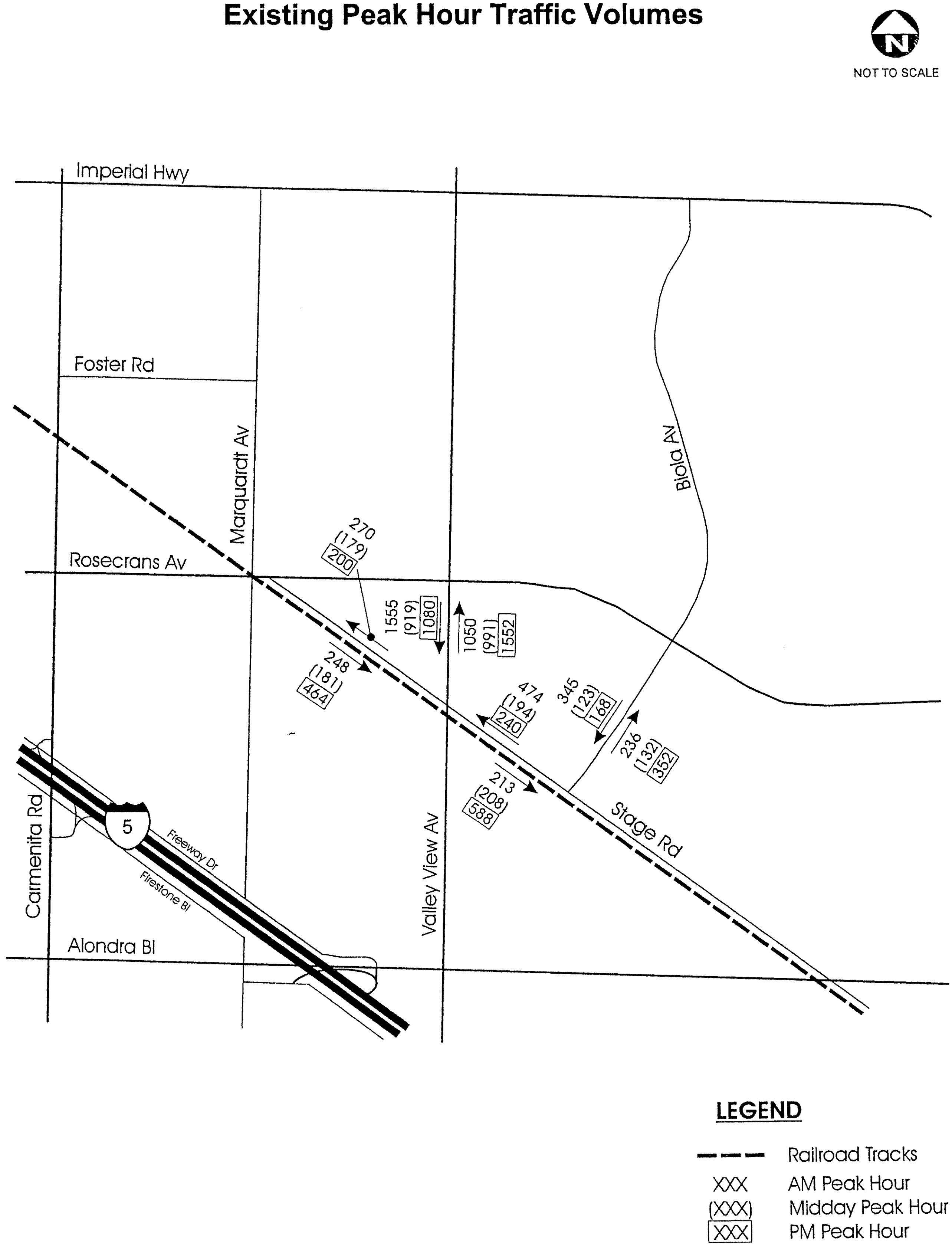
FIGURE 4.8-5
Existing Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

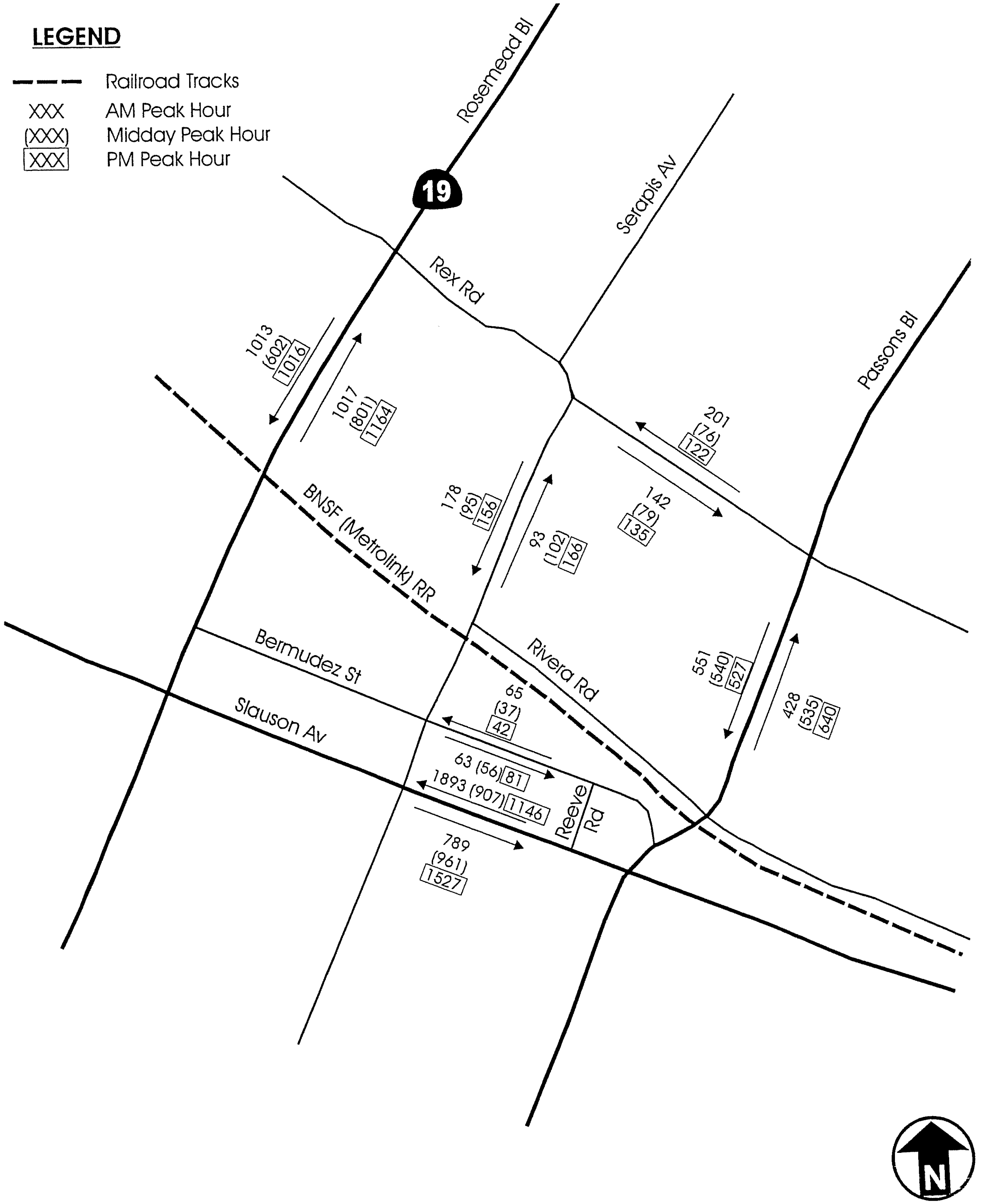
FIGURE 4.8-6
Existing Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

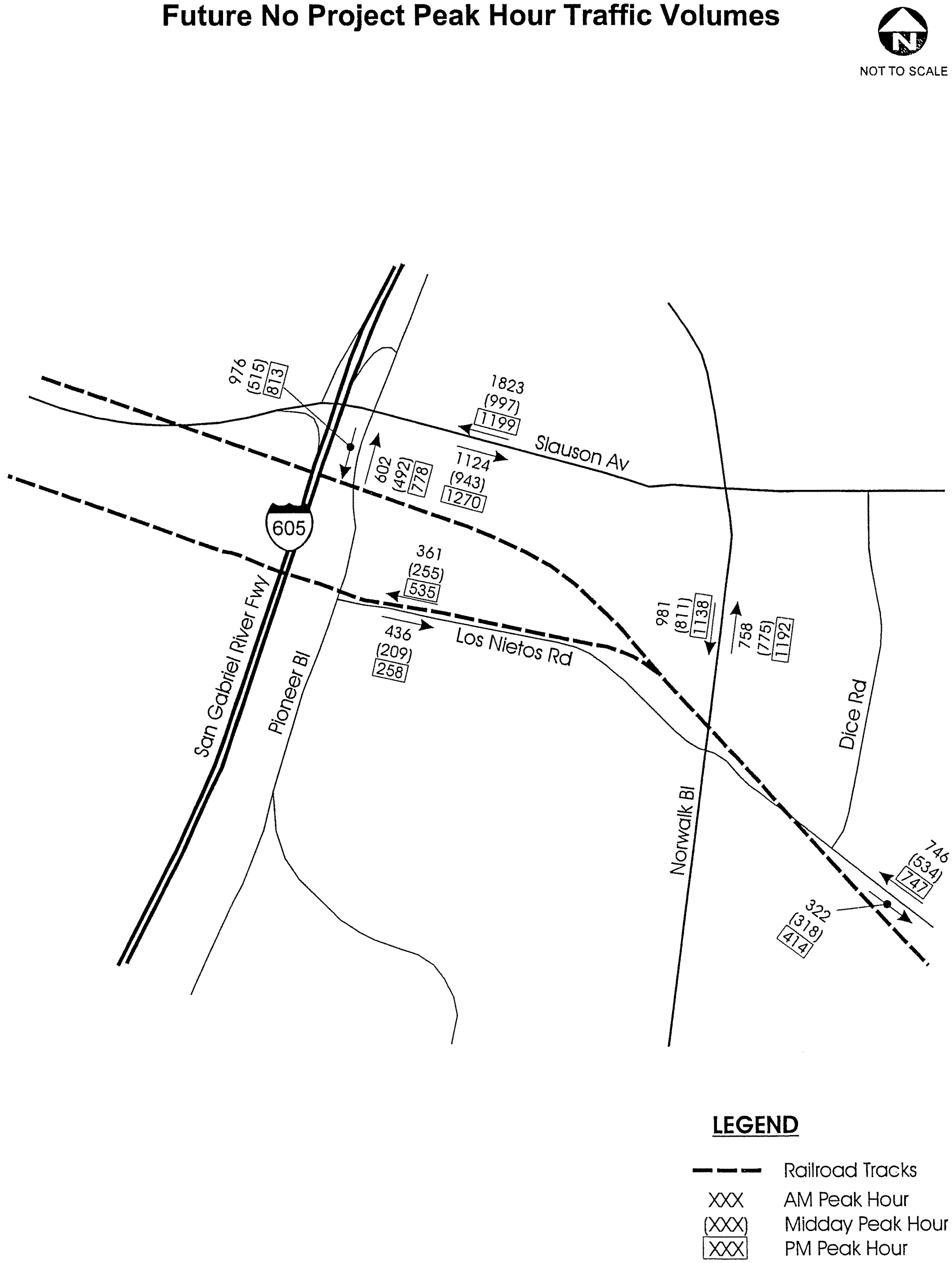
FIGURE 4.8-7
Future No Project Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

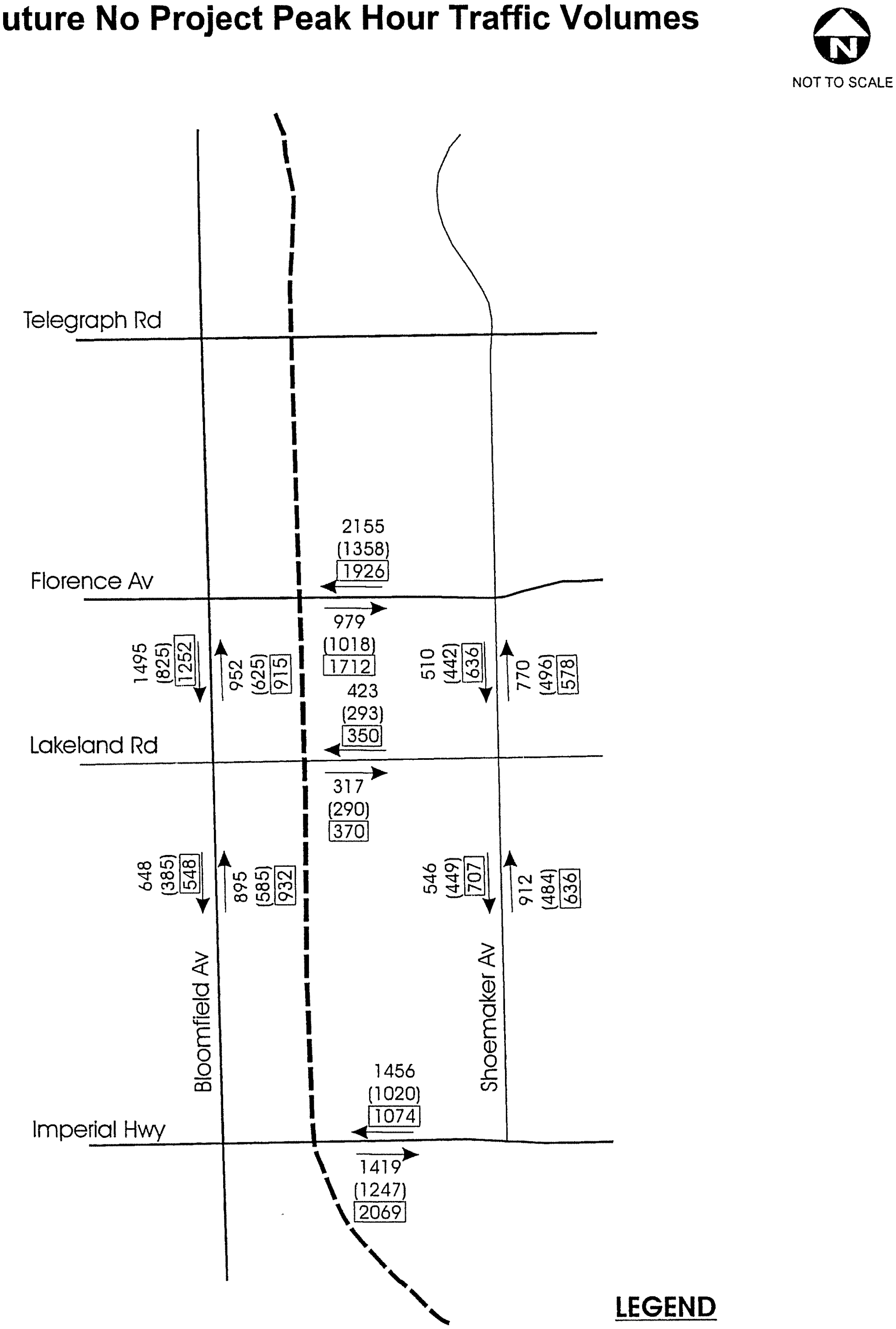
FIGURE 4.8-8
Future No Project Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

FIGURE 4.8-9
Future No Project Peak Hour Traffic Volumes



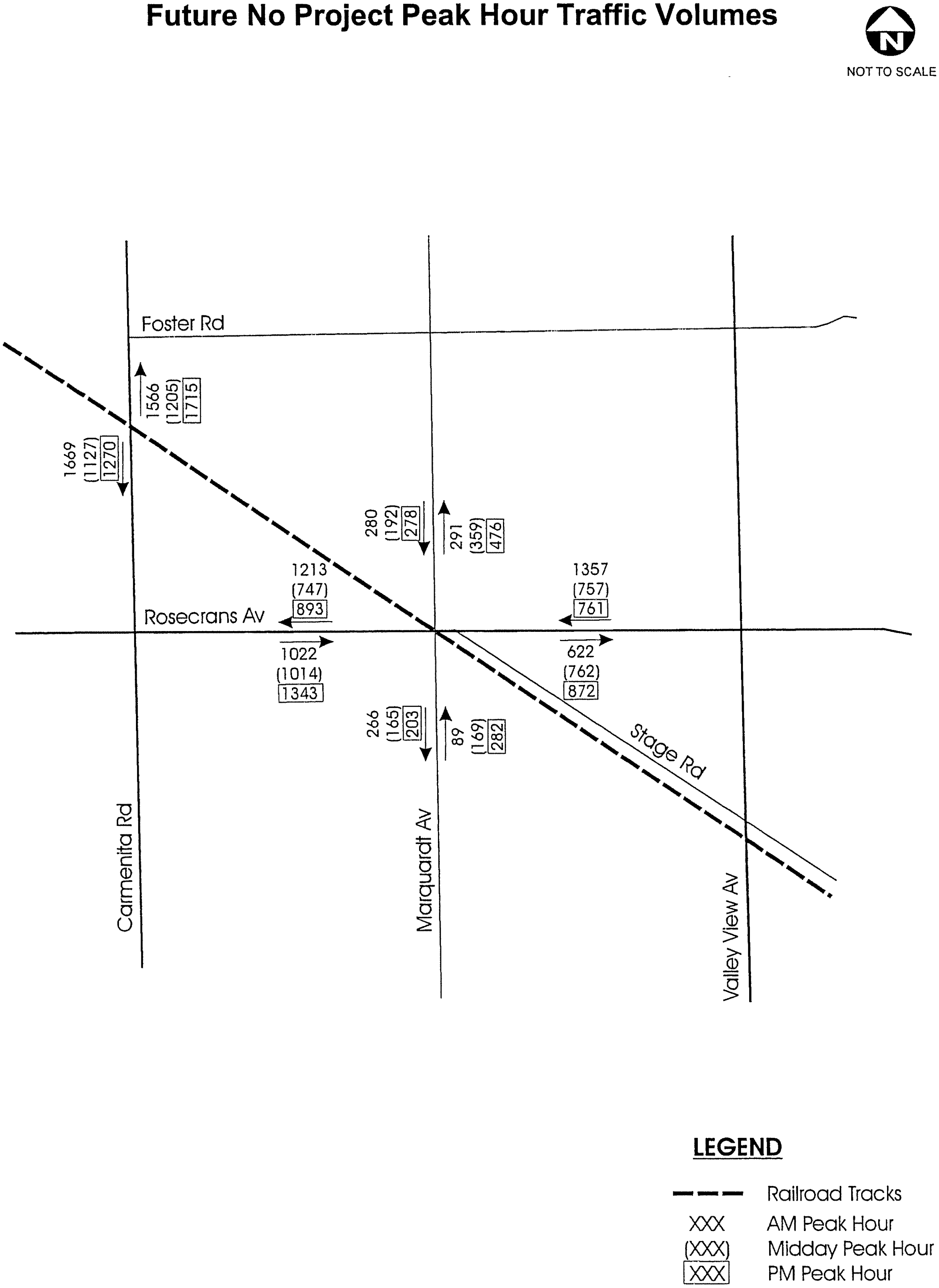
LEGEND

— — —	Railroad Tracks
XXX	AM Peak Hour
(XXX)	Midday Peak Hour
$\boxed{XXX}$	PM Peak Hour

Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

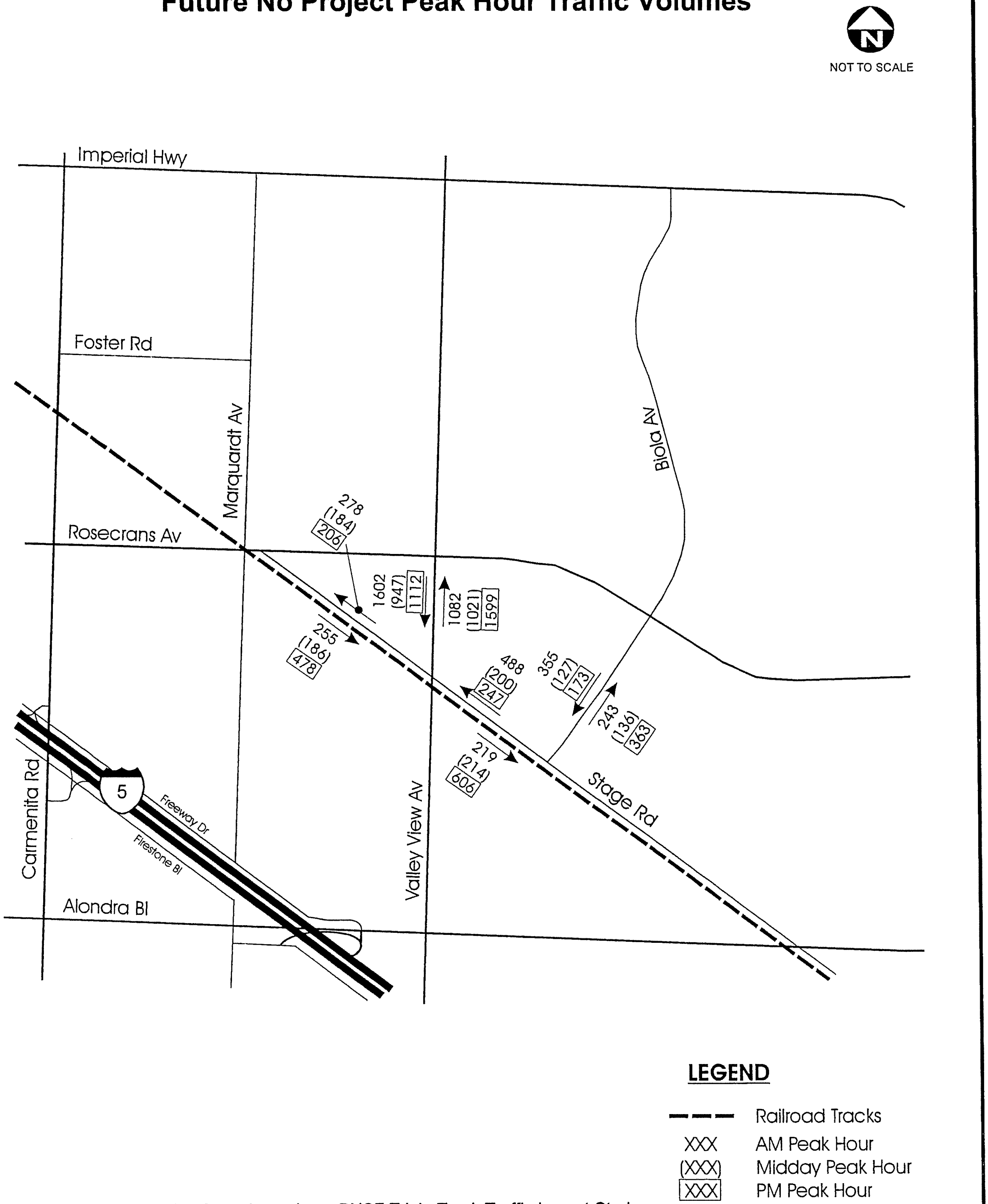
FIGURE 4.8-10
Future No Project Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

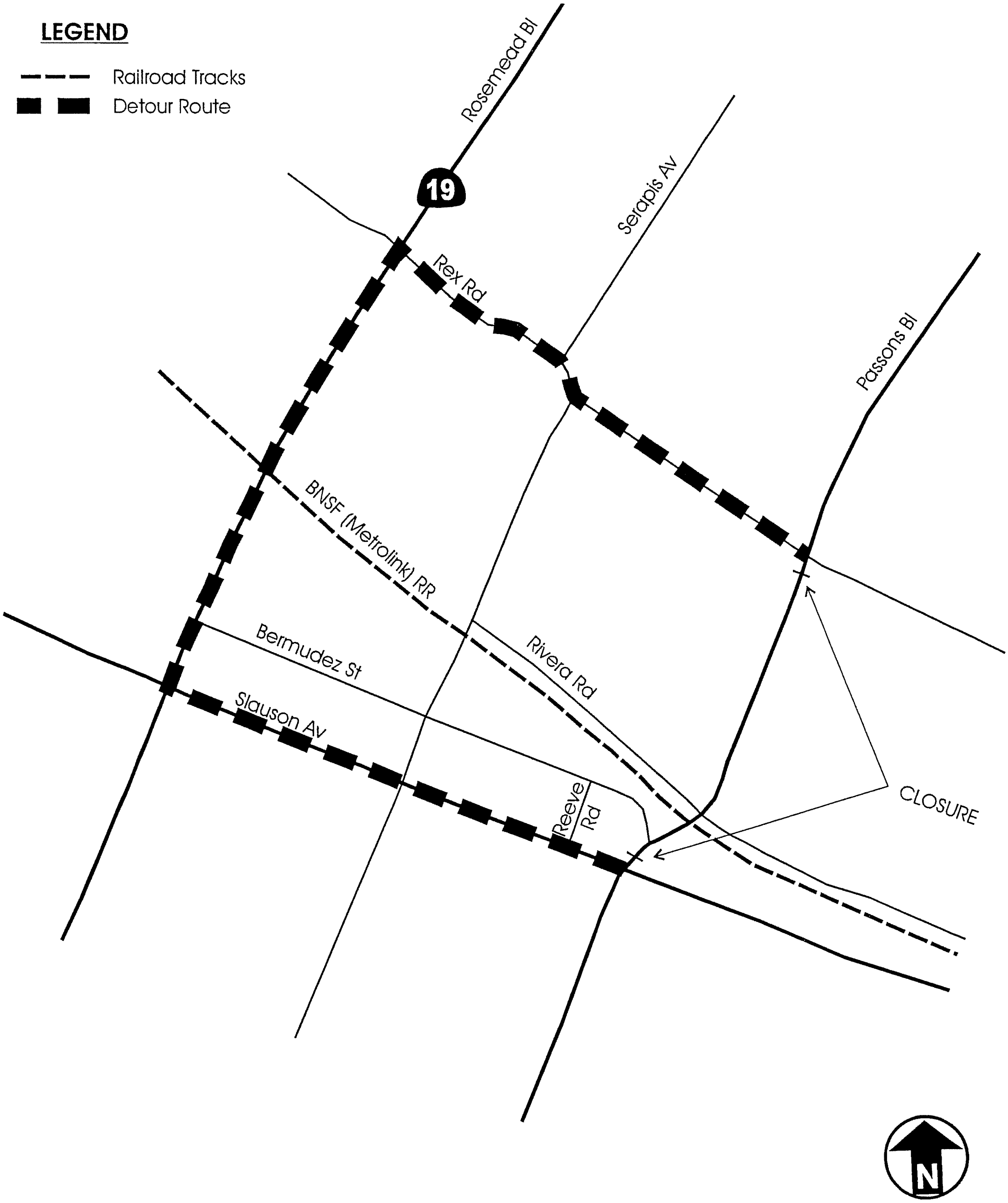
FIGURE 4.8-11
Future No Project Peak Hour Traffic Volumes



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

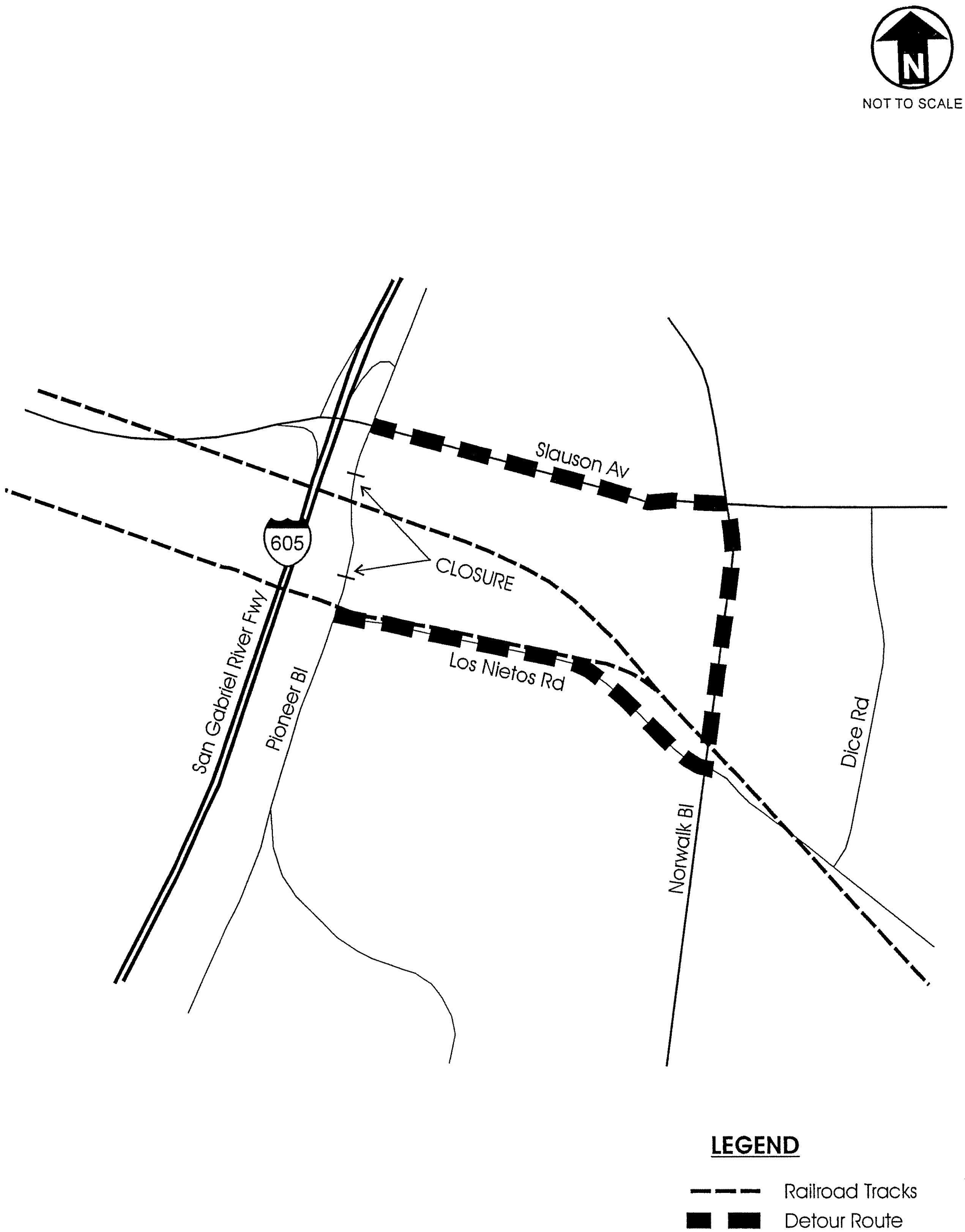
FIGURE 4.8-12
Passons Blvd. - Construction Detour Plan



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

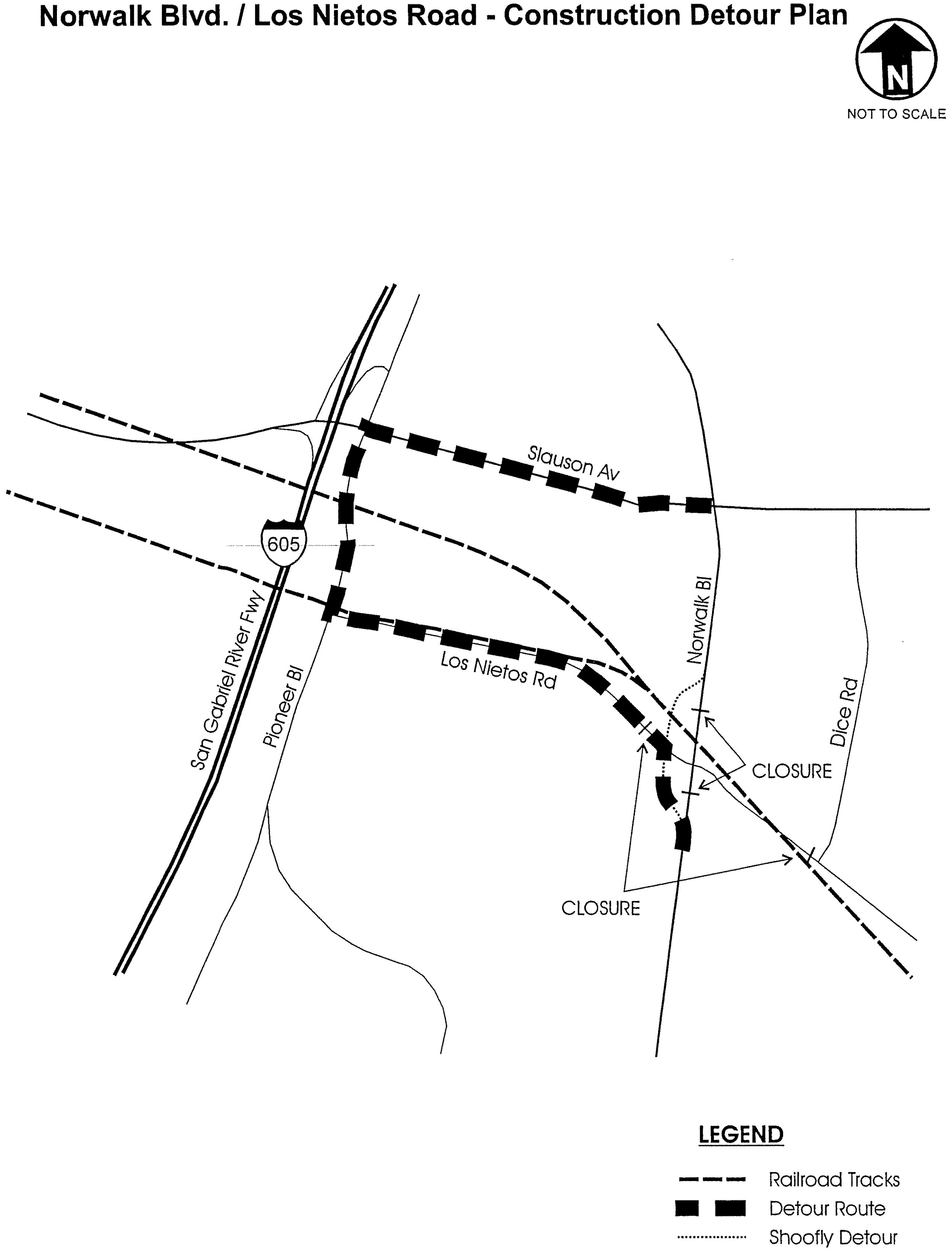
FIGURE 4.8-13
Pioneer Blvd. - Construction Detour Plan



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

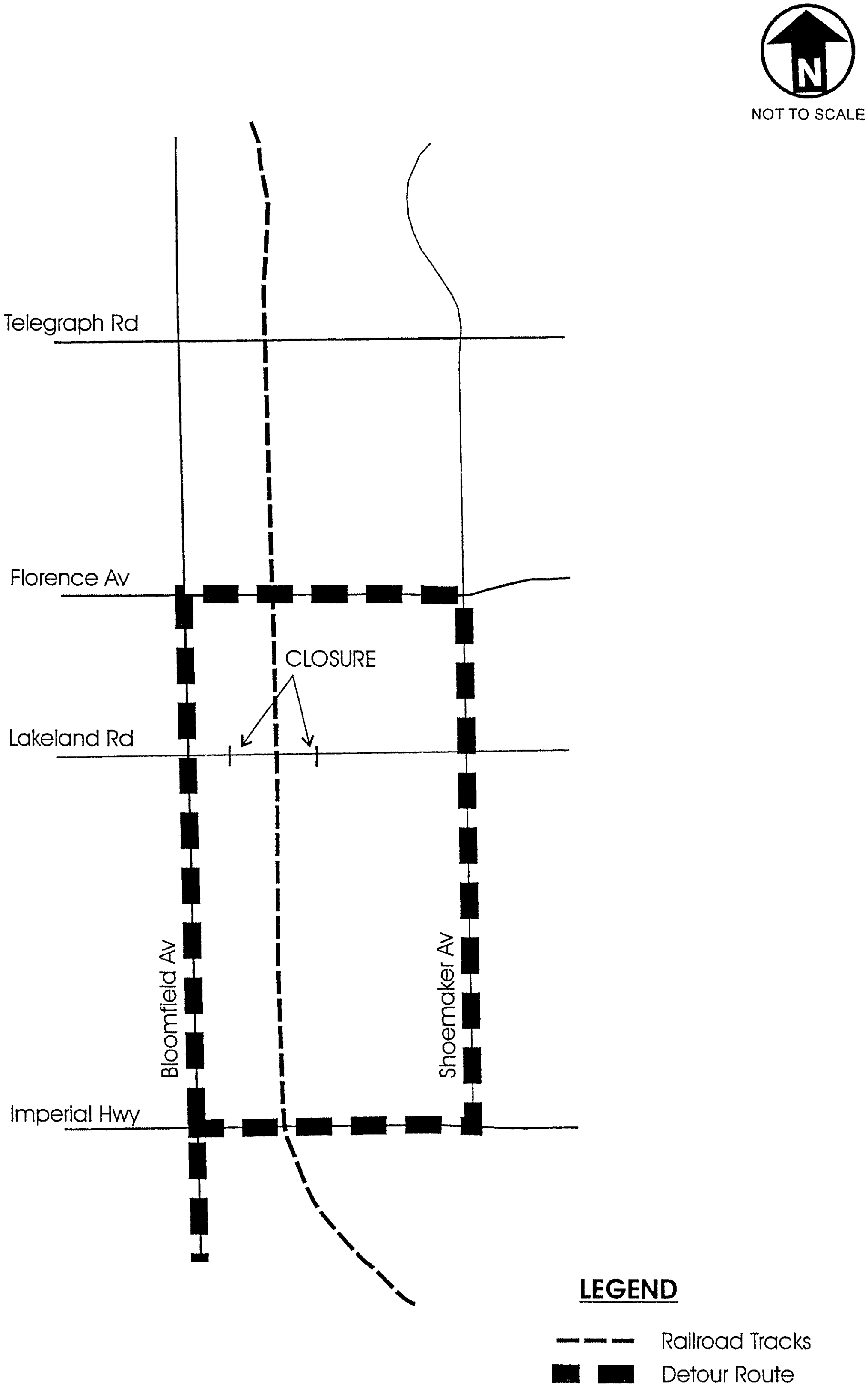
FIGURE 4.8-14
Norwalk Blvd. / Los Nietos Road - Construction Detour Plan



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

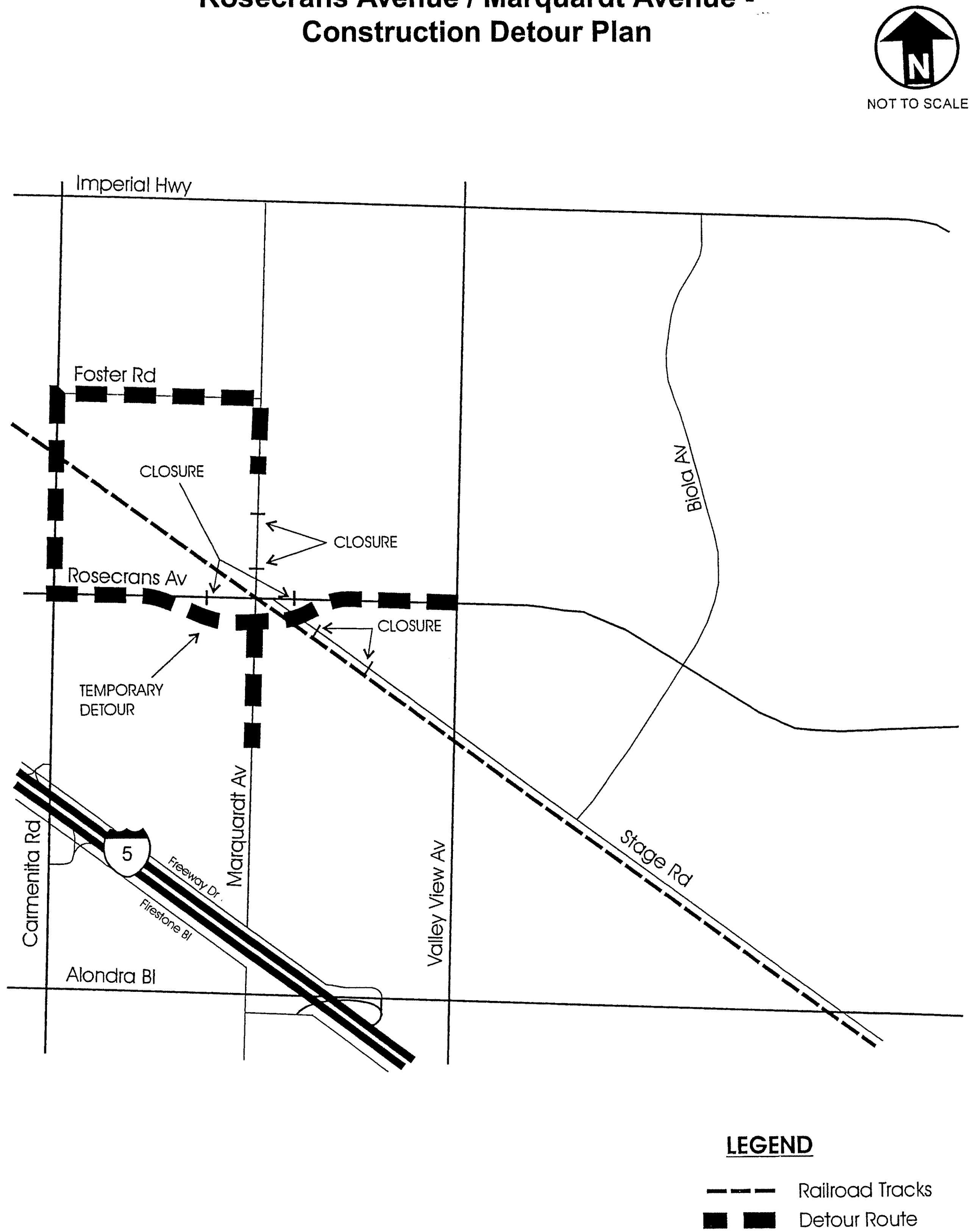
Tom Dodson & Associates
Environmental Consultants

FIGURE 4.8-15
Lakeland Road - Construction Detour Plan



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

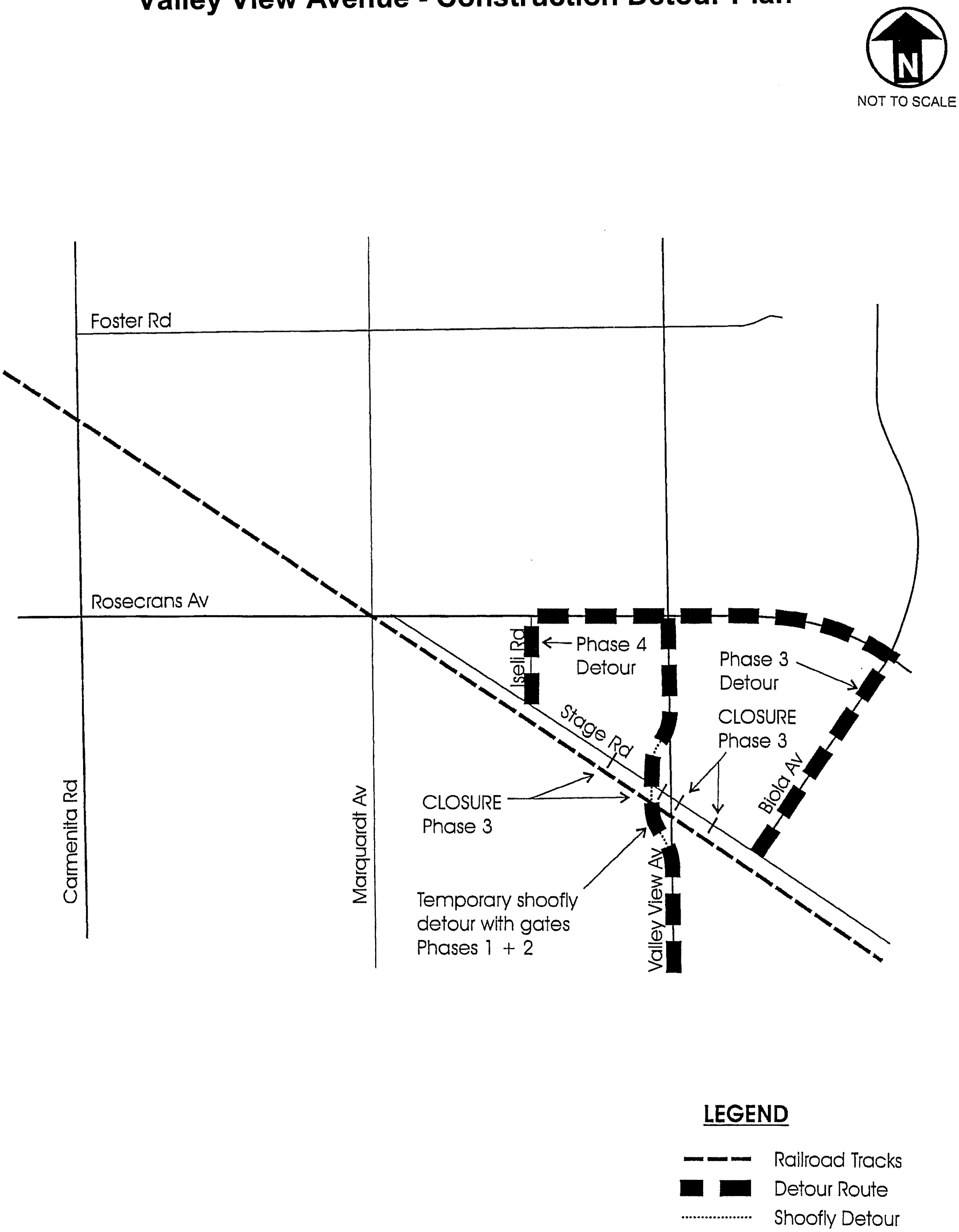
FIGURE 4.8-16
Rosecrans Avenue / Marquardt Avenue - Construction Detour Plan



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

FIGURE 4.8-17
Valley View Avenue - Construction Detour Plan



Source: Meyer, Mohaddes Associates, Inc. - BNSF Triple Track Traffic Impact Study

Tom Dodson & Associates
Environmental Consultants

4.9 NOISE

4.9.1 Introduction

This section of the PEIR focuses on the assessment of potential noise impacts on the environment that may result from the implementation of the Third Main Track and Grade Separation Project (proposed project), ranging from construction activities to future operations. Implementation of the proposed project has a potential to cause increased noise levels over both the short and long-term. Short-term noise will be generated by construction activities along the 23.66 km (14.7 mi) track alignment and by construction activities at each of the grade separation sites. The long-term noise generated by the proposed project would be associated with potential noise increases due to the addition of a third tract at the new location.

Extensive discussions were held at the project scoping meetings regarding the proposed project in relation to existing and future noise. As the data in this document indicates, the existing rail operations create a high background noise environment, greater than 70 dB using the Community Noise Equivalent Level noise averaging method (CNEL indicates the average noise over a 24-hour period, including penalties for night time noise). Many residents, particularly in the cities of Pico Rivera and Santa Fe Springs, expressed concern that the proposed project will cause new significant noise impacts. A commitment was made at these scoping meetings to address the following issues for the residents: first, will the proposed project result significant new noise impacts to existing sensitive noise receptors; second, will sound walls be installed in certain noise sensitive areas (for example, residential areas adjacent to Rivera Street in the City of Pico Rivera) to reduce noise impacts; and third, what will be the effect on the noise environment from future train operations, even though such future operational increases are not a part of the proposed project? These issues are addressed in the analysis provided below.

This subchapter relies primarily upon data contained in a technical noise study prepared specifically for the Third Main Track and Grade Separations Project by Giroux and Associates (November 8, 2002). The general plan noise elements for cities within the project area were consulted and information used as necessary from those documents. Most of the data from the Giroux and Associates report is reproduced below to assure technical accuracy, however, the entire document is provided as Section 8.5 of this PEIR.

4.9.2 Environmental Setting

4.9.2.1 Noise Terminology

Noise is often defined as unwanted sound. Sound is easily measured with instruments, but the human variability in subjective and physical responses to sound complicates the understanding of its impact on people. People judge the relative magnitude of sound by subjective terms such as “loudness” or “noisiness.”

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, special frequency-dependent rating scales have been devised to relate noise to human sensitivity. The A-weighted decibel scale dB(A) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquake intensity. In general, a 1 dB change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3 dB change in sound pressure level is considered a "just detectable" difference in most ambient situations. A 5 dB change in sound pressure is readily noticeable and a 10 dB change is considered a doubling (or halving) of the subjective loudness. For traffic related noise, generally speaking, a 3 dB(A) increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume. Because few projects individually cause a doubling or halving of the traffic volumes on already heavily traveled roadways, most traffic noise impacts tend to be cumulative in nature. This concept of increases in traffic also applies to rail operations which are also linear noise sources similar to vehicle traffic on roads.

In terms of human response to noise, a sound 10 dB(A) higher than another is judged to be twice as loud; 20 dB(A) higher, four times as loud; and so forth. Everyday sounds normally range from 30 dB(A) (very quiet) to 100 dB(A) (very loud.) Examples of various sound levels in different environments are shown on Table 4.9-1, Sound Levels and Human Response.

There are three general methods used to measure sound over a period of time: the Community Noise Equivalent Level (CNEL), the equivalent energy level (LEQ), and the Day/Night Average Sound Level (Ldn).

CNEL: The predominant community noise rating scale used in California for land use compatibility assessment is the CNEL. The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as LEQs, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dB(A) in the evening (7 p.m. to 10 p.m.), and +10 dB(A) for the night (10 p.m. to 7 a.m.). CNEL may be indicated by "dB(A) CNEL" or just "CNEL."

LEQ: The LEQ is the sound level containing the same steady-state total energy over a given sample time period as a continuously varying ambient level. The LEQ can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. LEQ is typically computed over 1, 8, and 24-hour sample periods.

Ldn: Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the LEQ. The Ldn is calculated by averaging the LEQs for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10 p.m. to 7 a.m.), by a 10 dB(A) to account for the increased sensitivity of people to noises that occur at night. In most applications, CNEL and Ldn are generally indistinguishable.

Table 4.9-1
SOUND LEVELS AND HUMAN RESPONSE

	dBA	
	145	
Physically Painful	140	Sonic Boom
Extremely Loud	135	
	130	
	125	
Discomforting	120	Jet Takeoff at 200'
Maximum Vocal Effort	115	Auto Horn at 3'
Very Annoying Hearing	110	Rock ‘n Roll Band
Hearing Damage	105	Power Mower at 3'
Very Loud	100	Garbage Truck
	95	Heavy Truck at 50'
	90	Food Blender, Pneumatic Drill at 50’
	85	Electric Mixer, Alarm Clock
	80	Freight Train at 50'
	75	Busy Street Traffic at 50'
Telephone Use Difficult	70	Freeway Traffic at 50', Vacuum Cleaner at 10'
	65	Dishwater at 10'
Intrusive	60	Air Conditioning Unit at 20'
	55	Normal Conversation at 5'
Quiet	50	Typical Daytime Suburban Background
	45	Refrigerator at 10'
	40	Bird Calls
	35	Library
Very Quiet	30	Soft Whisper at 15'
	25	
	20	Broadcasting Studio
	15	
Just Audible	10	Leaves Rustling
	5	
Threshold of Hearing	0	
	dBA	

Source: Adapted from William Bronson, “Ear Pollution,” California Health (October 1971), p.29

Other noise metrics (methods of measurement) include the following. The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L90, L50, L10, etc.). L50 equals the level exceeded 50 percent of the time.

4.9.2.2 Noise Standards and Criteria

Noise rating scales, noise standards, community noise assessment criteria and noise mitigation measures are discussed below to provide a brief overview of how noise is evaluated and to explain the noise standards used in the Noise Elements of the land use jurisdiction General Plans within the Project Area. This information is needed in order to understand the existing background noise conditions in the project area.

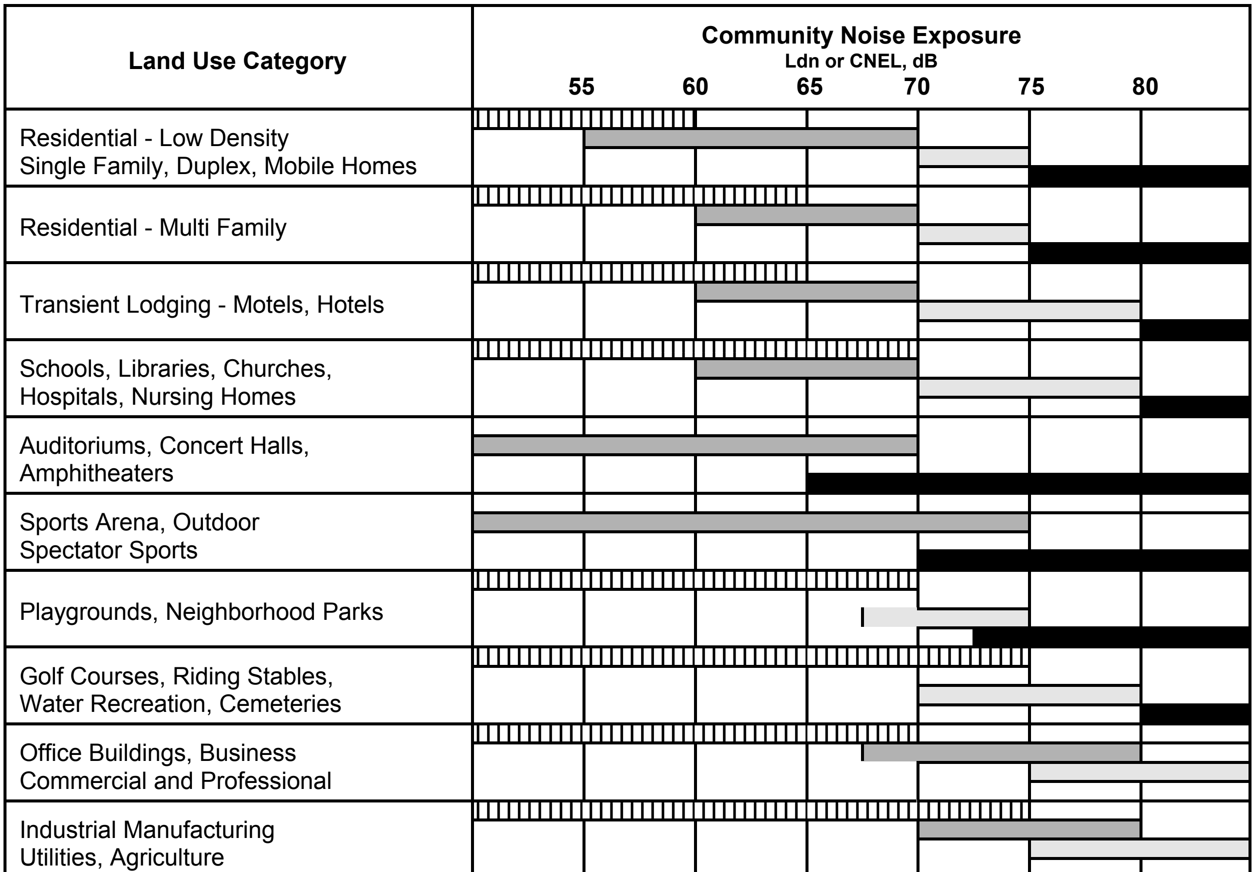
State of California Guidelines – The State of California has established guidelines for acceptable community noise levels that are based on the CNEL rating scale. The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", and "clearly unacceptable" noise levels for various land use types. As shown in Table 4.9-2, Land Use Compatibility for Community Noise Exposure, single-family homes are "normally acceptable" in exterior noise environments up to 60 dB CNEL and "conditionally acceptable" up to 70 dB CNEL based on this scale. Multiple family residential uses are "normally acceptable" up to 65 dB CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 dB CNEL, as are office buildings and business, commercial and professional uses.

Federal Guidelines – Noise standards promulgated by various agencies differ somewhat from one agency to another. The Federal Highway Administration (FHWA) has adopted Noise Abatement Criteria (NAC) which are based upon the noisiest single hour of the day (Leq[1]). Exterior noise levels of 67 dB(A) Leq in usable outdoor space are considered the maximum desirable noise exposure for noise-sensitive land uses as shown in Table 4.9-3. If there are no exterior uses at such receiver sites, attainment of 52 dB(A) Leq is considered the maximum desirable interior noise exposure.

The Department of Housing and Urban Development (HUD) has adopted noise standards for residential properties for which it provides funding. The HUD standards are based upon the day-night level, Ldn, which is essentially identical to CNEL. HUD Ldn standards are very similar to the Sate of California CNEL-based noise/land use compatibility criteria shown in Table 4.9-2. A noise exposure of 60 dB(A) Ldn in usable outdoor space is considered most desirable, and considered conditionally acceptable up to 65 dB(A) Ldn. If there are no exterior uses which require noise protection, and interior exposure of 45 dB(A) Ldn is the target for habitable interior rooms.

The Federal Transit Agency (FTA) has adopted noise evaluation criteria that incorporate both the peak hour and the 24-hour Ldn for various categories of land uses. The FTA standards are detailed in the impact discussion.

Table 4.9-2
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



Interpretation

Normally Acceptable – Specified land use is satisfactory based upon the assumption that any building involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable – New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development should generally not be undertaken.

Table 4.9-3
FHWA NOISE ABATEMENT CRITERIA

Activity Category	Noise Abatement Criteria Level LEQ	Description of Activity Category
A	57 (exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of open space, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas and parks which are not included in category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries and hospitals.
C	72 (exterior)	Developed lands, properties or activities not included in Category A or B above.
D	----	Undeveloped lands which may or may not have associated noise abatement criteria.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Note: The noise abatement criteria specified by the FHWA are presented in terms of the maximum 1-hour equivalent noise level (LEQ).

Typical noise standards within the local jurisdiction's general plans along the project alignment encourage residential interior noise standards of 45 dBA CNEL and an exterior standard of 60-65 dBA CNEL. CNEL can be expressed as a daily average or as an annual average exposure to smooth out any day to day variations in noise generation. The local jurisdictions use land use planning decisions relative to chronic noise exposure. An annual average noise level in excess of 60-65 dB CNEL is considered an excessive exterior exposure for most residential or other noise sensitive uses, unless mitigation is implemented to achieve this level where feasible.

Sources of noise can be divided into transportation sources and non-transportation sources. The existing noise environment along the project alignment area is dominated primarily by transportation-related (non-point source) noise sources. These noise sources include traffic noise from nearby roadways and from adjacent railroad lines. Non-transportation noise sources within the project area include point sources, such as industrial activity, music, and amplified sound and area sources, such as activities conducted at shopping malls, at a ball park or in the neighborhood.

4.9.2.3 <u>Existing Noise Environment</u>

Noise Sources – The proposed project "site" is a 23.66 km (14.7 mi) span of railway track starting at the City of Commerce [Hobart at Mile Post (MP) 148.9] and extending to the City of Fullerton [Basta at MP 163.3]. Rail, motor vehicles and industrial activities generate the largest portion of noise along this 23.66 km (14.7 mi) project site. Much of the rail segment is surrounded by industrial or commercially zoned areas, however a section of the alignment runs through "sensitive receptor" areas (residential) within the Cities of Pico Rivera, Santa Fe Springs, La Mirada and Buena Park.

Transportation (Mobile) Noise Sources – Motor vehicle noise sources include automobiles, trucks, buses and trains. The noise produced by these sources occurs primarily on roadways and may be of sufficient magnitude to expose various land uses to excessive noise levels.

Point Source (Stationary) Noise Sources – Stationary noise sources within the project vicinity include ongoing construction, industrial and commercial land uses. The noise associated with these sources may represent a single-event noise occurrence, short-term or long-term/continuous noise, but are very localized as opposed to pervasive mobile sources.

Sensitive Receptors – This noise analysis focuses primarily upon project impacts to sensitive noise receptors located in proximity to the project site. Noise sensitive land uses in the project area include residential areas, both multifamily housing and single-family dwelling units.

During the public review period for the Notice of Preparation and the three public scoping meetings, noise effects on residences was raised as one of the primary existing concerns by residents located adjacent to the existing railroad tracks. In particular, residents along the existing BNSF tracks on Rivera, between Serapis and Passons in the City of Pico Rivera, expressed strong concerns regarding the existing noise environment and the potential effect of the proposed project. One component of the resident's concerns at this location is the impact of the existing switching operations for local rail customers. Although the switching operations are unrelated to the proposed project (i.e., they will continue whether or not the proposed project is implemented), a BNSF representative (personal communication Mr. John Fleming) indicated that installation of the third main track will reduce the amount of time local switching activities are conducted because the new third main track will provide sufficient track distance for the process of "breaking down" and "building" the trains that serve local industries. So the switching operations can be conducted more quickly, in one to two hours, rather than the current three to four hours. Thus, the existing noise environment along Rivera between Serapis and Passons will be beneficially affected by the proposed project as the time required for switching activities in the future will be reduced.

Existing Residential Noise – Because of the concerns expressed by local residents along Rivera, long-term noise monitoring was conducted at three different locations in this area on July 30 and July 31, 2002. Noise levels along Rivera Road, adjacent to the train tracks and near the various noise-sensitive receptors, were monitored for 24 hours. The meters were placed 13.72 to 36.58 meters (15-40 yards) from the north train track. Measurements were made with digital sound meters. Monitoring was conducted for 24 hours and the data are representative of existing baseline levels in the surrounding area. Figure 4.9-1 shows the three locations where the noise data were gathered. These three monitoring locations are considered to be representative of noise levels along the 23.66 km (14.7 mi) project track segment.

Noise levels were predominantly in the 60-70 dB range. Table 4.9-4 shows the results of the on-site noise monitoring for all three sites.

Table 4.9-4
ONSITE NOISE MONITORING SUMMARY
BNSF TRIPLE TRACK IMPROVEMENT
July 30, 2002 - July 31, 2002

Parameter	Noise Levels (dBA)		
	Site 1	Site 2	Site 3
Peak 1-Hour (LEQ)	76	71	73
Max. 1-Second (Lmax)	96	96	96
Hour Observed	37476	37318	37476
2nd High Hour	74	71	70
Hour Observed	37318	37256	20-21
3rd High Hour	74	70	70
Hour Observed	37256	37476	37508
Min. 1-Hour	61	61	63
Hour Observed	37602	19-20	19-20
24-Hour CNEL	78	74	74

Site 1 = On Rivera, 54.86 meters (60 yards) east of Passons at grade crossing, 13.72 meters (15 yards) to North Track.
Site 2 = Farthest east end of Rivera Street, 13.72 meters (15 yards) to North Track.
Site 3 = Intersection Rivera/Lochalene, 36.58 meters (40 yards) north to Track.

Monitoring Site #1 is located on Rivera Road, just east of the existing Passons at-grade crossing, 13.72 meters (45 ft) north of the northern-most track. The highest peak 1-hour noise equivalent level (Leq) was 76 dBA and the measured 24-hour CNEL value was 78 dBA. This is the highest noise reading of the three monitoring sites, which is believed to be due to the rail traffic combined with motor vehicle traffic on Passons and surrounding activity levels. Note that the highest peak hour value occurred from 8 a.m. to 9 a.m. for Site #1 and the second highest hourly noise level occurred early in the morning, from 3 a.m. to 4 a.m. The third highest hourly noise level occurred from noon to 1 p.m. at Site #1. The lowest hourly noise reading was 61 dBA Leq and it occurred in the period from noon to 1 p.m.

Monitoring Site #2 is located on Rivera Road where it terminates adjacent to the San Gabriel River channel, 13.72 meters (45 ft) north of the northern-most track.. The highest peak 1-hour noise equivalent level (Leq) was 71 dBA and the measured 24-hour CNEL value was 74 dBA. The CNEL value for Monitoring Site #2 was judged to be the general background noise level adjacent to the railroad tracks at locations which are not adjacent to major roads or highways where significant traffic would increase the background noise level. Note that the highest peak hour value occurred from 3 a.m. to 4 a.m. for Site #2 and the second highest hourly noise level occurred early in the morning, from midnight. to 1 a.m. The third highest hourly noise level occurred from 8 a.m. to

9 a.m. at Site #2. The lowest hourly noise reading was 61 dBA Leq and it occurred in the period from 7 p.m. to 8 p.m.

Monitoring Site #3 is located on the north site of Rivera Road at its intersection with Lochalene, 36.58 meters (120 ft) north of the northern-most track.. The highest peak 1-hour noise equivalent level (Leq) was 73 dBA and the measured 24-hour CNEL value was 74 dBA. Note that the highest peak hour value occurred from 8 a.m. to 9 a.m. for Site #3 and the second highest hourly noise level occurred in the evening, from 10 p.m. to 11 p.m. The third highest hourly noise level occurred from 9 a.m. to 10 a.m. at Site #3. The lowest hourly noise reading was 63 dBA Leq and it occurred in the period from 7 p.m. to 8 p.m.

At all three sites the highest one second maximum noise level was 96 dBA, which is consistent with the passage of a train.

When comparing the noise level at Site #3, it is important to keep in mind that the distance from the northern-most track to the monitoring location was about three times that for Monitoring Sites #1 and #2, 36.58 meters (120 ft) compared to 13.72 meters (45 ft). Linear sound sources diminish at about 3 dB per doubling of distance. Thus, for Monitoring Site #3, which is about three times the distance from the tracks as Sites #1 and #2, the equivalent sound level at 13.72 meters (45 ft) for Monitoring Site #3 would be approximately 77-78 dBA, or about equivalent to the 24 hour CNEL level measured at the Site #1. Since road traffic near Monitoring Site #3 is relatively low, it is assumed that the switching activity causes the increase in background noise when compared to the background CNEL measured at Monitoring Site #2.

To provide some perspective on the existing noise setting, noise data from the Pico Rivera “General Plan Environmental Baseline Report” and the City of Santa Fe Springs “General Plan” were obtained. According to Table III-B-5 of the Pico Rivera document, train movements adjacent to the BNSF tracks created a background noise level of 69.3 dBA CNEL at a rear yard at 8607 Warvale, which is located about 0.80 km (0.5 mi) west of Monitoring Site #3. Figures 2 and 3 of the City of Santa Fe Springs General Plan Noise Element indicate a CNEL of about 75 dBA in 1992 and a similar value estimated for 2012. The value of 74 dBA CNEL as the background along the rail corridor is consistent with the latter value, and somewhat higher than the 1992 measured value. The noise levels portrayed in Table 4.9-4 are considered representative for the whole third main track alignment, because the same general number of trains utilize this whole 23.66 km (14.7 mi) long alignment.

In addition to these two general Plan values verifying background noise levels, the City of Pico Rivera contracted with ENVIRON International Corporation to examine the noise conditions along Rivera Road (noise was monitored at two locations 9613 and 9539 Rivera Road). ENVIRON delivered its report (titled “Noise Barrier Analysis for the Railroad along Rivera Road Pico Rivera, California) in May 2002 based on noise monitoring data gathered in April 2001. Using a monitoring methodology comparable to that used by Giroux & Associates, ENVIRON identified a CNEL value of 71.5 dBA, which is again comparable to that measured for this study.

Such levels would require noise mitigation for the creation of any new usable outdoor space for noise-sensitive uses. Since "normal" structural attenuation without any upgrades is 20 dB, with closed, single-paned windows, the observed exterior levels would make it difficult to meet the 45 dB CNEL interior standard at any sensitive residential occupancies unless enhanced noise protection measures are used (dual-paned windows, extra insulation, etc.). Elevated baseline noise levels will mask any small possible noise changes associated with higher speed train movements along the upgraded corridor. However, elevated noise levels will also make the area sensitive to any worsening of noise conditions.

4.9.3 Project Impacts

The project's potential to generate noise was included in this PEIR based on the potential for specific project activities to cause short-term and long-term changes in the noise environment surrounding the third main track and grade separations project. Short-term noise increases could result from construction activities and the long-term noise increases could be associated with the additional track being installed 4.57 meters (15 ft) north of the existing tracks. Specifically, the proposed project will generate two sources of noise along its alignment: temporary construction activity noise and railway service noise. Any operational noise impacts would derive from a slight relocation of the rail center-line and from possible speed increases associated with reduced delay. Noise from identified future rail traffic growth is forecast in this document in accordance with commitments made to members of the public, but future increases in the number of daily trains will occur regardless of whether this project is implemented or not. <u>No increase in future rail operations will occur as a result of implementing the proposed project.</u> Some on-road noise changes may occur as a result of grade separated crossings that eliminate current motor vehicle traffic delays at at-grade crossings and that depress the traffic below the ground surface beneath the rail bridges at each of the proposed grade separation project sites.

4.9.3.1 <u>Significance Criteria</u>

Noise impact criteria are described in detail in section 4.9.2.2 above. The following criteria will be used to determine whether noise levels have been significantly increased.

Local Criteria

A project is considered to have a significant noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receptors. A substantial noise increase in an environment where noise standards are already exceeded would be considered a significant impact.

In addition to being concerned about the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing noise environment. If the existing noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, some impact may occur. Lacking adopted standards for evaluating such impacts, general rules of thumb for community noise environments are that a change of 5 dB(A) or more is readily noticeable and, therefore, is considered a significant impact. Changes between 3 and 5 dB(A) may be noticed by some individuals and are, therefore considered to constitute a substantial increase since under these conditions sporadic complaints may occur. Changes in community noise levels of 3 dB(A) or less are normally not noticeable and therefore, considered less than significant with respect to CEQA guidelines.

Federal Noise Impact Criteria

The Federal Transit Agency (FTA) has not developed guidelines for noise/vibration impact assessment from heavy rail projects. The FTA has developed a comprehensive guideline for transit projects, which may include heavy rail as one component. In the absence of definitive guidance for heavy rail project impact assessment, the FTA's Transit Noise and Vibration Impact Assessment (DOT-T-95-16, 1995) has been presumed applicable to the proposed project as well.

FTA guidelines define three classes of land uses where noise exposure should be evaluated, and the guidelines there specify the change in noise levels that would have no impact, limited impact and definite impact. The project alignment has Category 2 land uses within its potential noise impact corridor of 114.3 meters (375 ft) (FTA Manual, Table 401, Rail Mainline). Category 2 uses are residences. These occur mainly in Pico Rivera and Santa Fe Springs, with some residences occurring in the project vicinity in La Mirada and Buena Park. Category 1 uses (amphitheaters, concert pavilions, etc.) do not occur near the track. Category 3 uses (schools, libraries, churches, etc.) occur at several locations in Pico Rivera and Santa Fe Springs. However, any noise impacts are addressed in terms of the more stringent Category 2 noise standards.

Because the residential (Category 2) uses in Pico Rivera already have extremely high baseline noise conditions, even a small increase in noise is considered environmentally adverse. Based upon the measurement data in Table 4.9-4 of peak hour and/or 24-hour CNEL/Ldn in the low-to mid-70 dB range, any project-related increment of 65 dB Ldn would be enough to create a noise impact under FTA guidelines. This represents an allowable increase in baseline conditions of 0.5 dB or less as characterizing an impact. Because the proposed project will not of itself generate any increase in train activity, but only move existing traffic more safely and efficiently, the physical change in track location is the only direct project impact that would likely create a potential change in noise levels. Because CEQA significance guidelines of +3 dB are much less stringent, the federal (FTA) guideline is the most relevant criterion.

4.9.3.2 <u>Noise Impact Analysis</u>

Short-term Construction Noise Sources

Impact 1: Construction-related activities associated with the transport of workers and equipment, as well as site preparation and construction would result in short-term noise impacts.

Implementation of the proposed project would involve the addition of new railroad tracks next to existing tracks between Los Angeles and Orange counties, improvements to bridges and crossings, and grade separations at seven locations. Activities associated with such construction is forecast to result in a noticeable temporary noise source. Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers and, off-road construction itself. Since transportation of personnel and materials, consisting of about 100 trips per day, will occur on already heavily traveled roadways, background noise conditions will mask any project related on-road contributions. Heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise related to this task will be minimal. On-road transportation of materials will be greatest for grade separation construction. Potentially perceptible noise impacts will thus mainly be associated with on-site heavy equipment use. Note that the background CNEL along rail corridor is assumed to 74 dBA where rail noise dominates, and up to 78 dBA at locations where rail and motor vehicle noise are combined, such as at each of the grade separations.

Construction activities occur in various steps, each of which involves different types of equipment that have distinct noise characteristics. These incremental construction steps will alter the character of the noise levels surrounding the construction sites as the project is developed. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise to be categorized according to discrete work phases, as discussed below.

Figure 4.9-2 shows the typical range of construction activity equipment noise. For track improvements, the first work phase category, earth moving and materials handling equipment to establish a new track bed, would include typical construction machinery, such as small dozers, front loaders, etc. Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 15.24 meters (50 ft) from earth moving equipment typically range from 73 to 96 dB(A). Although noise ranges during all phases of construction are similar in level, the second phase, track laying, typically varies from 85 to 90 dB(A) at 15.24 meters (50 ft) from the source. This activity has the potential to temporarily exceed noise standards due to the various power tools and equipment used in track and tie placement, welding and finishing the track. However, with implementation of recommended mitigation measures, such as limiting construction hours in accordance with the City Municipal Codes in each project jurisdiction and the temporary nature of construction, impacts from construction activities can be reduced to a less-than-significant level.

Grade separation construction is generally noisier than track construction because the activity itself is noisy, and the equipment operations remain in one location for an extended period of time. The excavation of an under-crossing; the installation of bridge supports that may require driver piles; delivery of concrete in trucks to pour foundations and bridge components; and the operation of equipment to establish a new roadbed (graders, compactors, rollers, pavers, etc.) will operate for many months at one location.

Maximum grade separation construction activity noise impact potential would occur near the Passons Boulevard site or Valley View, and to a slightly lesser degree at Pioneer Boulevard. Construction activities at these locations will occur in proximity to homes or a school (Maizeland) and they could be intrusive, during the day time. The peak noise level from an excavator or dump truck is around 95 dB at 15.24 meters (50 ft) from the source. The maximum sound level from pile driving is 100 dB. The measured existing train traffic noise peaks at three separate sites near Passons Boulevard at around 13.72 meters (45 ft) from the track centerline was 96 dB. Construction equipment noise is therefore similar to an individual train noise event as currently experienced (unless pile driving is required). A substantial portion of grade separation construction noise will be generated from within the underpass cavity where the sides of the cavity will shield the line of sight to the nearest noise sensitive receivers, thus reducing these noise source impacts at sensitive receptor sites.

Unless pile driving is required, the magnitude of the peak noise is similar to existing conditions, and therefore not considered to be a significant adverse impact. Because pile driving would generate noise levels in excess of baseline conditions, noise abatement/protection from such activity in terms of possibly limiting hours of pile driving from 8 a.m. to 5 p.m., pre-drilling piles, or using cast-in-place drilled pilings are recommended noise control where noise sensitive uses occur within 60.96 meters (200 ft) of any pilings required for grade-separation construction

Since construction noise is of a temporary nature, most jurisdictions do not require such noise to be mitigated to the specific sound level threshold outlined above. However, they do require operational considerations (i.e., limitation of construction hours, the muffling of construction equipment, noise complaint response programs, etc. and in some locations specialized noise controls) to minimize noise impacts during the construction process. Construction noise levels affecting sensitive receptors may exceed the significance thresholds during the day, but eliminating this source of noise at night can reduce these short-term impacts to a non-significant level. Mitigation measures are identified below which ensure that construction activities do not significantly intrude on sensitive receptors in the evening or expose such receptors to damaging levels of noise at any time. With implementation of these measures, short-term construction activities are not forecast to cause significant adverse noise impact.

Permanent Operation Noise Sources

Impact 2: Implementation of the proposed project would result in an increase of train noise levels at noise-sensitive uses along the BNSF track.

Noise level changes due to construction and use of a third track would shift the noise generation "centroid" closer to the location of the nearest noise receptors. The effective noise generation distance (DEFF) is currently calculated per FTA Manual (P.5-14) as:

DEFF = SQRT [D x (D+15)] (in feet)

where D is the distance to the nearest track. The addition of another track closer to the nearest noise-sensitive land use would change the effective generation location (DNEW) as:

DNEW = SQRT [DEFF X (D-15)]

Application of these formulas to the observed noise level would increase noise levels shown on Table 4.9-5. Any sensitive (Category 2) land use would experience an "impact" (+0.5 dB or more) if the receiver is located within 30.48 meters (100 ft) of the nearest track, and the new track is added on the receiver's side of the existing track. There are no Category 2 receivers located so close to the existing track as to experience a noise impact solely from the addition of a third track adjacent to the two existing mainline tracks. Therefore, the potential noise impact to existing sensitive noise receptors falls below both the federal and CEQA significance thresholds outlined above. Based on these calculations, installation of the third main track is not a significant adverse noise impact as it is not forecast to significantly alter the existing noise or vibration environment along the third main track rail corridor alignment. No mitigation is required for the forecast increase in noise.

Table 4.9-5
APPLICATION OF FORMULAS TO THE OBSERVED NOISE LEVEL

Distance to Nearest Track (meters)	Noise Increase Due to New Track
15.24 (50')	+1.0 dB
18.29 (60')	+0.9 dB
21.34 (70')	+0.8 dB
24.38 (80')	+0.7 dB
27.43 (90')	+0.6 dB
30.48 (100')	+0.5 dB
33.53 (110')	+0.4 dB

Increases in noise levels associated with continued growth in train operations on the project track segment, which is not a part of this project, will derive from the projected growth of 50 percent in track utilization over the next ten years. A 50 percent growth translates into a +1.8 dB noise level increase. Given the elevated baseline levels, this potential increase in train operations would constitute a significant adverse noise impact under federal guidelines. The increase would be less than the +3 dB increment identified as significant under CEQA threshold. This forecast is provided solely at the request of the local residents, and it does not reflect an impact that will result from implementation of the third main track component of this proposed project. As noted above, train operations are independent of this project and are forecast to increase regardless of whether this project is approved or not.

At several locations with residences or a school close to the track and at all the proposed grade separation project components, the minor noise increase in noise due to track relocation will be fully off-set by the reduction in existing train horn use for at-grade intersections. Use of train horns in an area of multiple at-grade crossings is perhaps the most serious noise issue of existing train traffic and once the grade separations are installed the need to blow the train horn is eliminated. Use of horns is discretionary with each train's engineer, but BNSF has established guidelines that dictate horn use at all at-grade crossings for safety reasons. Grade separations at seven locations in the cities of Pico Rivera, Santa Fe Springs and La Mirada will essentially eliminate horn noise when they are completed and operating. Elimination of train horn noise in the evening and night hours will be particularly important since the sudden, intrusive horn noise will be eliminated at each grade separation location.

The reduction in noise due to elimination of horns at the seven proposed grade separations was compared to the calculated noise increment from the third track addition. The Federal Transit Administration (FTA) in "Transit Noise and Vibration Impact Assessment," (1995) shows that the one-hour average noise level for horns from one train moving at 80.47 km/h (50 mph) is 72 dB LEQ. The horn noise contribution from 100 trains per day currently using this rail corridor is a function of peak hourly traffic, and of their day/night distribution in terms of CNEL/Ldn levels. The peak hourly noise exposure of possibly up to ten trains per hour (five northbound and five southbound) could be as high as 82 dB(A) at 15.24 meters (50 ft) from the track if all trains sounded their horns at the identical location for the same duration. Not all horns are sounded equally, and Metrorail or Amtrak trains often use more of a short "toot" rather than an extended signal. Nevertheless, the elimination of the train horns for the new crossings will create a localized noise exposure benefit in terms of both the character of the noise and its magnitude.

Noise Barrier Analysis

A copy of the noise barrier analysis prepared by ENVIRON is included in Volume II, Technical Appendices. As previously discussed, many residents expressed concern that the proposed project would cause a significant increase in noise which would justify the installation of a noise attenuation barrier. The noise analysis presented above indicates that the installation and use of the proposed third main track will not cause significant noise impacts on adjacent sensitive receptors (residences) in the Rivera Road area of Pico Rivera. However, the existing noise environment adjacent to the tracks exceeds normally and conditionally acceptable noise levels for residential uses. The referenced study, prepared under contract to the City of Pico Rivera, concluded that a 7.62 meters (25 ft) high cinder-block wall with a certain density (20 kg/m^2 or 4 lb/ft^2) would be sufficient to meet a 65 dB CNEL value. However, this analysis assumed a 71.5 dBA CNEL, less than the 74-78 dBA CNEL value measured for the project area by Giroux & Associates. To achieve the additional sound attenuation to meet a 65 dBA CNEL threshold at the nearest residences along Rivera Road would require a wall 9.14 meters (30 ft) high or more adjacent to the tracks.

Such a wall would be taller than the local residences and would create a major aesthetic and visual barrier within the community. The proposed project will not cause an increase in noise that will serve as a nexus to justify the proposed project installing such a wall. Since the noise impacts are an existing condition, the City and local residents must confront this major policy issue and determine whether there is sufficient justification, first to construct such a large noise attenuation barrier within the community, second to address the issue of whether partial noise mitigation by a smaller noise attenuation wall may be justified; and third to identify an alternative source of funding to install such a barrier.

Vibration Impact Assessment

Vibration is oscillatory movement which can be described in terms of distance displacement, vibrational velocity or acceleration. The vibration velocity is perhaps the most common vibration descriptor. The peak particle velocity (PPV) during one vibration cycle is the maximum instantaneous peak in the vibration signal. It is a good indicator of possible structural damage. The root-mean-squared (RMS) velocity is a smoothed representation of the average level of “shaking” during each vibration cycle. The human body is more sensitive to a continuous rolling or shaking motion (RMS) than it is to a single jolt (PPV).

For ease of representation, a decibel scale is used for vibration similar to the scale used for sound. The most common vibration velocity reference level in the United States is one-millionth inch/second as follows:

Vibration Velocity (in/sec)	Vibration Decibels (VdB)	Typical Source / Effect
0	0	Undetectable by humans
0.000001	20	Undetectable by humans
0.0001	40	undetectable, isolated house in the country
0.0001	60	Almost perceptible, typical suburban residence
0.01	80	Annoying, loaded truck going over large bump
0.03	90	Very annoying, bulldozer operating nearby
0.1	100	Building damage, construction blasting nearby

Human Perception

The commonly accepted human threshold of perception for vibration is 65 VdB (re: 10^{-6} in/sec). The dividing line between vaguely perceptible and clearly perceptible is around 75 VdB. At 85 VdB, the vibration becomes intrusive for sleeping, reading or most other "quiet" activities. There are no adopted vibration impact criteria that have been developed and approved by appropriate agencies for purposes of environmental assessment. The Federal Transit Administration, in "Transit Noise and Vibration Impact Assessment" (1995) has developed recommended impact criteria for transit projects. In the absence of definitive standards for train activity vibration, these guidelines have been incorporated into the following discussion.

The FTA's suggested vibration impact criteria are as follows:

Land Use	Threshold	
	Frequent*	Infrequent**
Precision manufacturing or research	65	65
Residences with sleeping areas	72	80
Schools and other daytime only uses	75	83

Notes: * More than 70 events per day.
** Less than 70 events per day.

The FTA Manual provides a screening distance for vibration effects. Unless there are unusual vibration propagation conditions, passage of a heavy rail passenger, commuter or freight train moving at moderate speed (80.47 km/h or 50 mph) will have no perceptible impact at the following distances:

School classroom 36.58 meters (120 ft) from tracks

Occupied residences 60.96 meters (200 ft) from tracks

There are no classrooms within the possible vibration zone. There are, however, homes within 60.96 meters (200 ft) of the tracks. A more detailed vibration analysis is specified in the FTA Guidelines if a screening analysis cannot rule out any impact potential

Vibration Impact

For impact forecast purposes, it is assumed that the proposed project will relocate approximately one-third of existing train movements onto the new track. Although some growth in rail service is anticipated to occur over time, the proposed project does not accommodate service demand that could not be met on existing trackage. To be sure, the growth could not be accommodated as efficiently or as safely on only two existing tracks, but the number of vibration events would be identical with or without the project.

The vibration velocity as a function of distance from the track (“D”) is expressed as follows:

$$\text{VdB (at “D”)} = 78 - 20 \times \log (D/100)$$

where VdB in decibels (re: 10^{-6} in/sec) and D is expressed in feet.

Inside a home, the interface between the building shell and its foundation will absorb about 5 VdB of vibrational energy. However, the resonance of the structure will amplify the net vibration by +6 dB. Within 1 dB, the vibration velocity outside the structure and within the interior are identical.

The vibration velocity impact criterion for residences is 72 VdB for frequent (>70/day) events, and 80 VdB for infrequent (<70/day) occurrences. Existing train activity is estimated at 96 train movements per day. Existing conditions are in the “frequent” category. In terms of quantifying a threshold of significance for vibration impact, a vibration velocity impact criterion of 72 VdB would be applicable to the project area. Based upon the above predictive equation, the zone of potentially perceptible vibration extends as follows:

Distance from Tract Midpoint (meters)	Vibration Velocity (VdB)
30.48 (100 ft)	78
38.1 (125 ft)	76
45.72 (150 ft)	74.5
60.96 (200 ft)	72
91.44 (300 ft)	68.5
121.92 (400 ft)	66

Therefore, the zone of potentially significant vibration impact extends as far as 60.96 meters (200 ft) from the track centerline. Addition of a third mainline track will slightly change the maximum location of vibration perception, and may slightly increase the severity of individual vibration events toward the side of new track construction. The centroid of vibration generation (mainly from train locomotive) will shift by 2.29 meters (+7.5 ft) for a 4.57 meters (15 ft) separation between the existing and proposed tracks. The potential vibration perception distance will increase toward the track side of new construction. Conversely, the number of perceptible vibration events on the side away from the new track near the fringe of the perception threshold will decrease as one-third of existing traffic is shifted to the new track away from the closest receptors. The increased vibration magnitude of individual transit events is expressed as follows (VdB):

Distance from Track C.L. (meters)	Toward New Track Construction	Away from New Track Construction
30.48 (100 ft)	+1.4 max.	-0.6 avg.
45.72 (150 ft)	+0.9 max.	-0.4 avg.
60.96 (200 ft)	+0.7 max.	-0.3 avg.

An increase of +1.4 VdB is not considered a substantial increase even at 30.48 meters (100 ft) from the existing nearest track. Most existing residences are 45.72 meters (150 ft) or more from the nearest track. Their maximum increase of less than 1.0 VdB is likely an imperceptible change from current conditions. Addition of a third mainline track will not have a substantially adverse vibration effect on the closest residences along several portions of the project.

Regarding construction vibration impacts, particularly during construction of grade separations, there is a potential for significant, random vibration impacts associated with use of certain equipment, such as jackhammers or pile drivers. Where vibration sensitive facilities, such as manufacturing facilities, occur in proximity to construction activities that may cause short-term adverse vibration impacts, the mitigation measures identified below will reduce these potential short term impacts to a level of nonsignificant impact.

4.9.4 Mitigation Measures

The evaluation of potential noise impacts presented above identified potentially significant noise impacts. The potential noise impacts from implementing the proposed project range from non-significant without mitigation to potentially significant unless mitigation or other measures are implemented. During construction, grading, site clearance and structural construction activities generate the most noise. The following mitigation measures will be implemented to reduce noise impacts to the minimum level achievable.

4.9-1 Construction shall be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday, and between 9 a.m. to 6 p.m. on Saturday, and shall be prohibited on Sundays and federal holidays, except in emergencies.

4.9-2 Utilize construction methods or equipment that will provide the lowest level of noise impact, i.e., use newer equipment that will generate lower noise levels.

4.9-3 All construction vehicles and fixed or mobile equipment shall be equipped with properly operating and maintained mufflers or sound attenuation devices, as specified in regulations at the time of construction.

4.9-4 Schedule the construction such that the absolute minimum number of equipment would be operating at the same time.

4.9-5 Maintain good relations with the school and community such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public

objections of unavoidable noise. Communities should be notified in advance of the construction and of the expected temporary and intermittent noise increases during the construction period.

4.9-6 All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period shall be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.

4.9-7 If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds. This may include erection of temporary berms or plywood barriers to create a break in the line-of-sight, or erection of a heavy fabric tent around the noise source.

4.9-8 BNSF or the construction contractor shall establish a noise/vibration complaint program which shall, at a minimum, consist of a centralized noise complaint number posted at each construction site and coordinated with each local jurisdiction. Noise/vibration complaints received at this number shall receive a formal response, either by making modifications to project operations or activities or by installing measures to reduce noise/vibration at the receptor location.

4.9-9 For construction vibration impacts related to heavy construction equipment, jackhammers and vibratory compaction equipment, the contractor will be required to modify the construction procedure or arrange to complete the construction task in a manner that will reduce vibrations to a level below that which causes significant impact for the affected residence or facility. Such construction operation modifications may include: using equipment that generates less vibration; scheduling vibrating equipment use during periods when vibration impacts to the user can be minimized, such as working at night; altering the use of existing equipment (slowing equipment speeds, etc.) to reduce vibrations; and altering any environmental conditions that may be contributing to vibration, such as potholes or bumps that may cause on-road trucks to bounce and generate vibration.

4.9-10 For vibrations associated with pile driving, a vibration complaint shall be responded to by monitoring vibration at the affected location; altering schedules to minimize vibration conflicts with the use; modify pile driving procedures to minimize vibration to acceptable levels; using an alternative construction method to minimize vibration; or under worst case circumstances, funding relocation of the affected use during any pile driving activity.

Based on implementing the above measures, noise and vibration from construction activities carried out in support of the proposed third main track and grade separations project can be controlled to a level of nonsignificant impact. However, to ensure that BNSF and local communities have an adequate data base to determine the validity of noise complaints, it will be necessary to compile a more comprehensive noise and vibration data baseline. Prior to initiating construction of any grade separation project, a new background or ambient noise/vibration baseline will be established by conducting 24-hour monitoring within each mile of the third main track alignment and at each grade separation project location. This baseline will be established prior to initiating construction or operations of the new facility. This is not a mitigation measure. It is a tool that will be used to evaluate the validity of noise or operation complaints from adjacent sensitive receptors along the rail corridor.

These measures ensure that implementation of the third main track and grade separations project will not cause significant noise impacts during construction or cause hearing damage to employees or nearby receptors from severe noise levels. Potentially significant noise impacts where residential uses or other sensitive uses abut major construction activities will have noise impacts reduced to a non-significant level by implementing the above measures. No long-term adverse noise impacts are forecast to result from implementing the proposed project and some benefit is forecast to result from project implementation as a result of eliminating horn blowing, installing newer, quieter track, reducing the time required to assemble trains at the nearby switch yard and lowering the elevation of traffic flow at grade separations below the existing ground surface.

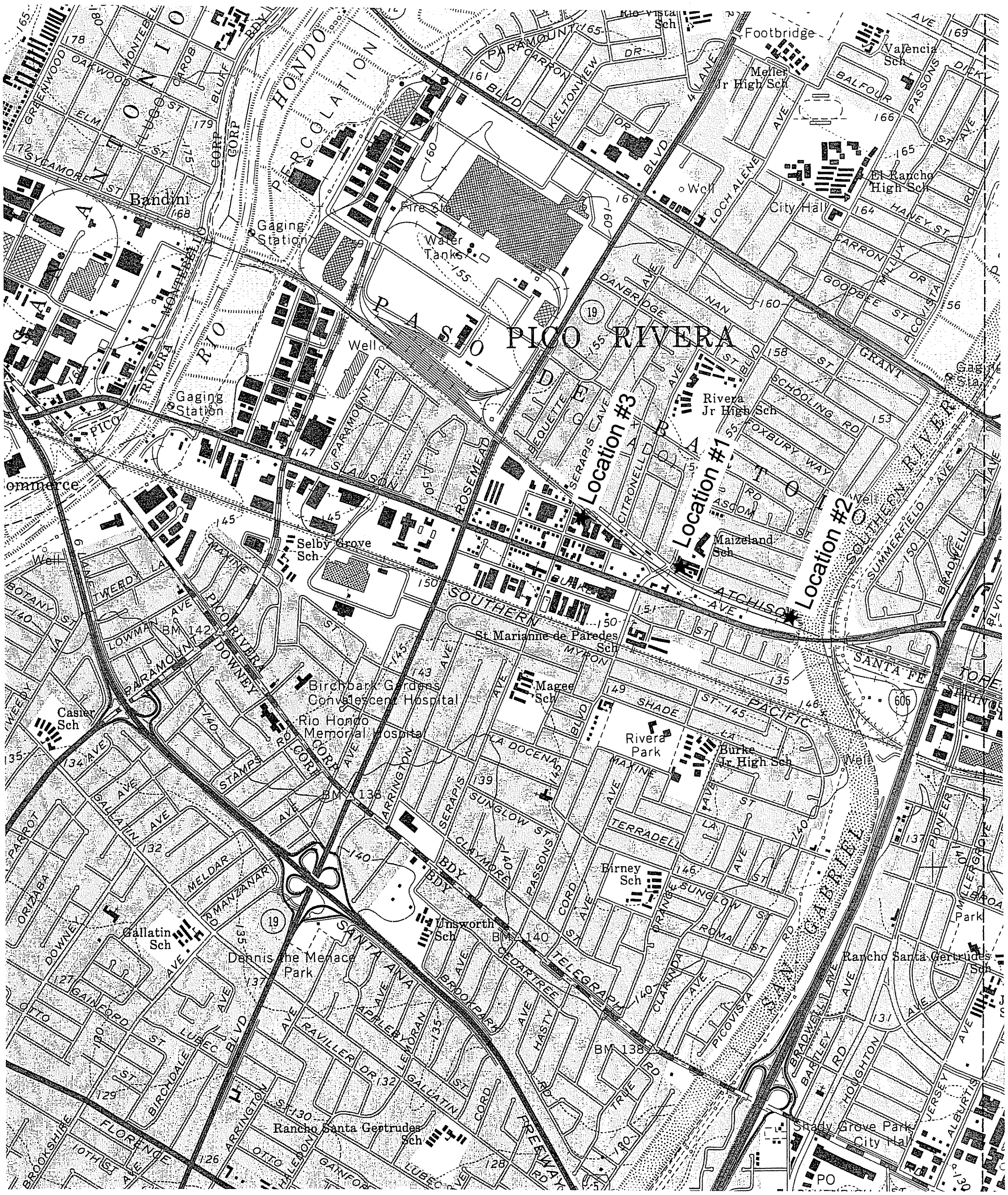
4.9.5 Cumulative Impact

The noise forecast data contained in the local agency general plans demonstrates that future traffic noise levels from general growth (cumulative traffic increases) within the Project Area will result in significant noise impacts. However, the proposed project is not forecast to cause or contribute measurably to such cumulative noise impacts. Project operations are considered an insignificant contribution to the combined rail and surface traffic related noise impacts. Because implementation of the third main track and grade separations project will not constitute a significant contribution to the cumulative increases in noise along the rail corridor, the proposed project is not forecast to cause any cumulatively significant noise impacts.

4.9.6 Unavoidable Adverse Impact

The noise evaluation presented above indicates that the proposed project has a potential to cause potentially significant and unavoidable adverse noise impact from constructing the third main track and grade separation project components. As noted above, mitigation measures have been identified that can reduce both short-term noise impacts below a significant level. With no forecast long-term potential for significant noise increases, implementation of the proposed project is forecast to cause an unavoidable, nonsignificant adverse impact to the noise environment.

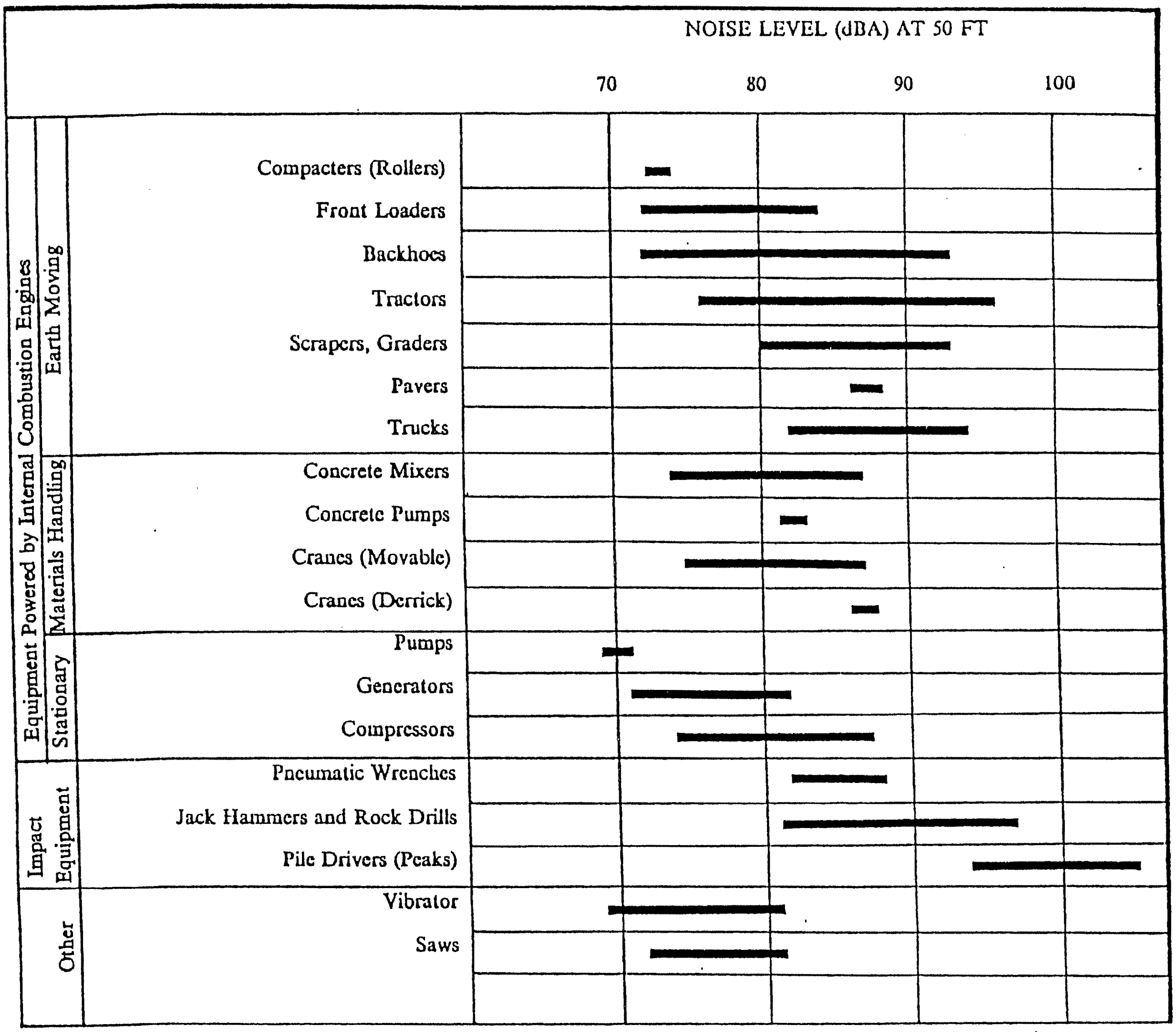
FIGURE 4.9-1
Noise Monitoring Locations



Source: USGS

Tom Dodson & Associates
Environmental Consultants

FIGURE 4.9-2
Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, Dec. 31, 1971, "Noise from Construction Equipment & Operations"

Source: EPA "Noise from Construction Equipment and Operations"

4.10 HOUSING

4.10.1 Introduction

When the Notice of Preparation (NOP) for the Third Main Track and Grade Separation Project was distributed, the conclusion was reached that the project impacts on housing resources within the project area of impact would not incur significant adverse impact. Although a few (less than ten) single-family residences would be lost in the City of Pico Rivera and Los Angeles County (near Santa Fe Springs) as a result of constructing the grade separations, the number of affected units was so small relative to the housing stock in each community, that this loss was determined to be adverse, but not significant. Housing relocation costs were required as mitigation for those residences that would be eliminated by the proposed project and based on this mitigation, the potential housing impacts were concluded to be a nonsignificant adverse impact of the project.

When the NOP was distributed, which typically establishes the date of the environmental baseline used to forecast environmental impacts, a 90-unit apartment (multifamily) residential complex located at Rivera Road and Passons Boulevard in the City of Pico Rivera was closed and unoccupied. After completing the preliminary engineering for the Passons Grade Separation project component, it was determined that either all or a portion of the apartment complex site would be required to relocate Rivera Road to support the Passons Grade Separation. After conferring with the City of Pico Rivera Staff, it was concluded that since the apartment complex was unoccupied and apparently abandoned, the elimination of between 45 and 90 unoccupied units would not cause any significant adverse impacts on the housing resources of the City. This finding was incorporated into the Initial Study supporting the NOP. Housing was not included as an issue of significance for further evaluation in the project Program Environmental Impact Report (PEIR).

Since the NOP was distributed in April 2002, new owners of the apartment complex have rehabilitated the complex and many of the units are now occupied. Typically, the baseline used to forecast impacts is established at the time the NOP is distributed. However, after conferring with the City of Pico Rivera, a decision has been made to bring forward this specific housing issue into the PEIR and address the potential loss of up to 90 multifamily residential units in the City of Pico Rivera as a potential significant impact to housing resources within the City. This subchapter relies primarily upon data contained in the City of Pico Rivera Housing Element, adopted November 2001. The 2001 Housing Element is incorporated by reference as authorized under Section 15150 of the State CEQA Guidelines and pertinent data from the City Housing Element is provided in the analysis which follows.

4.10.2 Environmental Setting

The City of Pico Rivera is located in southeastern Los Angeles County, about 16.09 km (10 mi) southeast of downtown Los Angeles. The City encompasses a total land area of about 2,312 hectares (5,713 acres). Approximately 37 percent of the City, about 852.70 hectares (2,107 acres), contains residential uses. Of the 852.70 hectares (2,107 acres), 756.79 hectares (1,870 acres) are designated for single-family residential uses, 14.97 hectares (37 acres) are allocated to medium density residential development, and 80.94 hectares (200 acres) are designated for high density development. Due to large areas of open space within the City boundaries (flood plains and Whittier Narrows Regional Park), the residential 852.70 hectares (2,107 acres) of residentially designated land comprises about 70 percent of the City's developable land.

According to Department of Finance estimates in the year 2000, the City contained an estimated 16,688 housing units and a population of 65,202 persons. The City's housing resources consist of the following type of units:

Single-family detached	12,606
Single-family attached	705
Multifamily (2-4 units)	255
Multifamily (5 units or more)	2,648
Subtotal:	16,214

The remaining units (474) consist of mobile homes and group quarters for a total of 16,688 housing units.

The Rivera Garden Apartments, located at the northeast corner of the intersection of Rivera Road and Passons Boulevard, contains an estimated 90 apartment units, or about 2.1 percent of the total 2,903 multifamily residential units in the City. Of the total 16,688 units in the City, the 90 units at the Rivera Garden Apartments represents 0.54 percent.

The Southern California Association of Governments (SCAG) determines "housing needs" for cities within the southern California region. Housing needs are characterized in the following manner according to the City's Housing Element (page 3-1):

- The *Very Low Income* households are those whose income does not exceed 50 percent of the median household income for the greater Los Angeles area;
- The *Low Income* households earn from 45 to 80 percent of the median;
- The *Moderate Income* groups earn from 80 to 120 percent of the median; and
- The *Above Moderate* households earn over 120 percent of the median income.

SCAG has assigned a "Regional Housing Needs Assessment" (RHNA) for the City of Pico Rivera which identifies the number of units that need to be constructed within the City over the 7-year period ending in 2005. The City of Pico Rivera RHNA allocation is 552 residential units. Table 4.10-1 (Table 3-1 of the City's Housing Element) summarizes the information that resulted in the allocation of the City's RHNA of 552 residential units.

For the seven-year planning period, 1998 through 2005, a total of 310 units have been developed within the City. In addition, the City has been working with developers with the goal of implementing a 105 unit affordable senior housing project. According the City Staff, this project will be developed with 70 units, instead of 105 units. Therefore, the total number of units either developed or committed at this point is 380 units. Thus, at this time the number of units required to meet the City's 2005 RHNA is 172 units (380 + 172 = 552 units). To fulfill the City's RHNA allocation would require development of 172 units between now (February 2003 and December 2005, a little less than 3 years.

The remainder of the City's Housing Element details the resources and actions available for the City to meet its RHNA allocation by 2005 and provides Housing Element Goals, Policies, Programs and Objectives that will be implemented to maintain the City's housing resources and meet its RHNA allocation commitments.

Table 4.10-1
SUMMARY OF RHNA FOR THE CITY OF PICO RIVERA

Number of Units				Number
1. 1998 Households				16,061
2. 2005 Households				16,397
3. 7-year growth in households (1998 Households - 2005 Households)				336
4. Vacancy Need				57
5. Replacement Need				159
6. Total Need - Future Housing				552
7. 7-year Annual Average Unit Growth				80 du/year
Future Housing Needs by Income Group				
Very Low	**Low**	**Moderate**	**Above Moderate**	**Total**[1]
122	93	126	212	552
22.10%	16.8%	22.8%	38.4%	100%

[1] The number of units indicated by income category do not add up because of rounding. These figures are directly taken from SCAG RHNA.

Source: SCAG Regional Housing Needs Assessment, 2000.

Those Goals, Policies, Programs and Objectives that are pertinent to the proposed Third Main Track and Grade Separation Project consist of the following:

Goal 4 - The City of Pico Rivera will encourage a moderate amount of growth in apartment construction.

Goal 14 - The City of Pico Rivera will make every effort to construct, rehabilitate, and/or conserve 552 housing units over the next 5-year period.

Note that the referenced 5-year period encompasses 2001 through 2005.

Relevant housing policy issues are identified in the Housing Element as (5.3.1) conserving the existing stock of affordable housing; and (5.3.2) development of housing including affordable housing.

The Housing Policy Implementation Matrix (Table 5-1 of the Housing Element, reproduced herein as Table 4.10-2) identifies specific policies and programs to support the policies identified above. Policies 4 through 8 address provision of new housing, including affordable housing. Policies 15 through 17 and Policies 19 through 22 address actions to assist utilization of remaining land in the City to meet the RHNA allocation.

Table 4.10-2
HOUSING POLICY IMPLEMENTATION MATRIX

Housing Element Policy	Implementing Programs
Policy 1. The City shall continue to encourage the maintenance and repair of existing owner-occupied and rental housing to prevent deterioration.	Low Interest Loan Rehabilitation Grant Paint-up / Fix-up Rebate Annual Review of Infrastructure Neighborhood Services Rehabilitation Publicity Grant Program
Policy 2. The City shall continue to promote the rehabilitation of substandard housing and neighborhoods.	Low Interest Loan Rehabilitation Grant Paint-up / Fix-up Rebate Neighborhood Services Rehabilitation Publicity
Policy 3. The City shall continue to provide and maintain an adequate level of public facilities and services in all areas of the City.	Annual Review of Infrastructure Infrastructure Financing
Policy 4. The City shall continue to assist in the development of adequate housing to meet the needs of low and moderate-income households.	Bonuses and Incentives Developer Consultation Housing Sites Inventory Underutilized Parcels Ordinance Review
Policy 5. The City shall continue to encourage the maximum commitment of funds by private entities for the provision of affordable housing.	Bonuses and Incentives Developer Consultation
Policy 6. The City shall utilize Federal, State, and local assistance for the provision of affordable housing, including programs to promote home ownership by first-time home buyers.	First Time Home Ownership Participation in Ind. Cities Authority Fresh-rate
Policy 7. The City shall continue to provide incentives and funding to promote private construction of affordable housing for all economic segments of the community.	Bonuses and Incentives Housing Sites Inventory Ordinance Review
Policy 8. The City shall continue to promote the development of new housing for first-time home buyers. (New policy)	First Time Home Ownership
Policy 9. The City shall continue to encourage the use of energy saving technology in the design, construction, and operation system of residential buildings.	Energy Conservation
Policy 10. The City shall continue to provide technical assistance in an attempt to maintain the recent growth rate in new housing construction.	Project Sales/Conversion Assist. Developer Consultation
Policy 11. The City shall continue to encourage a commitment of resources from private entitles to assist in the provision of housing for those special needs groups.	Annual Review of Infrastructure Fee Reduction Section 8 Housing Assistance
Policy 12. The City shall continue to pursue the feasibility of providing additional housing opportunities for seniors in the City.	Grant Acquisition Second-Unit Program Fee Reduction
Policy 13. The City shall explore the feasibility of obtaining financial assistance from other governmental agencies to assist in the development of new housing for those special needs groups living in the City.	Grant Acquisition Federal Tax Credit Fee Reduction
Policy 14. The City shall continue to require that new housing development conform to the requirements of the Americans with Disabilities Act (ADA).	Guidelines for Development Standards Developer Consultation Neighborhood Services
Policy 15. The City shall continue to conduct an annual inventory of available sites, including an analysis of infrastructure and underutilized parcels.	Housing Sites Inventory

Housing Element Policy	Implementing Programs
Policy 16. The City will continue to support assisted housing by locating appropriate sites.	Housing Sites Inventory
Policy 17. The City will continue to develop incentives for land assembly.	Housing Sites Inventory Underutilized Parcels Ordinance Review Condominium Development
Policy 18. The City will continue to assist with infrastructure financing.	Infrastructure Financing
Policy 19. The City will leverage available funds to maximize housing construction and rehabilitation (new policy).	Infrastructure Financing Fee Reduction
Policy 20. The City will continue to support changes in zoning, subdivisions, and other applicable codes and ordinances to encourage housing.	Housing Sites Inventory Underutilized Parcels Ordinance Review Fee Reduction
Policy 21. The City will continue to support reduced fees for qualifying projects.	Fee Reduction
Policy 22. The City will continue to encourage condominium/townhome development in existing multifamily land use areas of the General Plan.	Condominium Development
Policy 23. The City will continue to promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, or the presence of handicapped persons.	Ordinance Review Fair Housing
Policy 24. The City will continue to promote equal housing opportunity for all economic, racial, and social groups.	Ordinance Review Fair Housing
Policy 25. The City will continue to promote housing that meets the special needs of large families, minorities, elderly, handicapped, and single-parent households with children.	Fair Housing
Policy 26. The City will continue to promote greater awareness of tenant and landlord rights.	Fair Housing

Source: City of Pico Rivera, 2000.

In addition, a number of programs (Section 5.4 of the Housing Element) are identified to fulfill the goals and policies referenced above. Fundamentally, these programs are designed to conserve the existing stock of affordable housing and develop new affordable housing units, as required, to meet the RHNA allocation.

In summary, the City Housing Element acknowledges the RHNA allocation of 552 new residential units assigned to it by SCAG and establishes a goal of meeting this RHNA allocation on behalf of the City. At present the City needs to construct an additional 172 residential units by the end of 2005 (most in the very low and low income category) to meet the RHNA allocation. If averaged over the next 3 years, about 58 new residential units would need to be constructed each year to meet Goal 14 of the 2001 Housing Element.

4.10.3 Project Impacts

As was determined in the Initial Study supporting the NOP, the construction and operation of the Third Main Track will not require the acquisition of any property that contains housing resources. The proposed design for constructing the Passons Boulevard was identified in the Initial Study/NOP as requiring the acquisition of up to five single-family residences and all or one-half of the vacant Rivera Gardens Apartments (90 apartment rental units). The final design requires the acquisition of these properties in order to relocate existing major drainage facilities and Rivera Road in conjunction with the Passons Boulevard underpass. A change in circumstances, rehabilitation and occupancy of the apartment complex, has resulted in the incorporation of the loss of the rental housing as a potential significant impact from implementing the Passons Boulevard Grade Separation component of the overall proposed project.

4.10.3.1 Significance Criteria

The following criteria will be used to determine whether impacts to housing resources may reach a level of potential significant adverse environmental impact:

- The loss of residential units results in the City of Pico Rivera not being consistent with the 2001 Housing Element to the General Plan.

- The loss of residential units causes the City to fail to meet the Regional Housing Needs Assessment allocation of 552 units by 2005.

4.10.3.2 Housing Impact Analysis

Construction and utilization of the proposed Passons Boulevard grade separation is forecast to remove up to five single-family residential units and between 45 to 90 multifamily residential units, permanently. Because of recent budget constraints, it is not clear when construction on the Passons Boulevard grade separation will begin, but the City indicates that it intends to continue seeking funding to implement this project at the earliest possible date. Therefore, in order to make the housing impact analysis conservative, it is assumed that the City will be constructing the grade separation prior to 2005 when the existing RHNA allocation must be fulfilled. If construction of this grade separation were to occur after 2005, the existing residential units would not be adversely impacted until the next housing element and RHNA cycle where the City might be able to keep the future RHNA at a low level by coordinating with SCAG.

Regardless, the Passons Boulevard grade separation project is forecast to eliminate between 50 (45 + 5 = 50) and 95 (90 + 5 = 95) residential units, of which at least 90 units are considered to be affordable housing rental units. Elimination of the maximum number of units (95) as a result of implementing the proposed grade separation will reduce the total housing stock from an estimated 16,688 units to 16,593 units, a reduction of about 0.57 percent. Single-family detached units will be reduced by five units to an estimated 12,601 units, a reduction of about 0.04 percent. Multi-family units will be reduced from about 2903 units to 2,813 units, a reduction of about 3.1 percent.

Perhaps more important from an impact standpoint is the fact that the loss of up to 95 residential units will affect the City's RHNA allocation. The City was assigned a RHNA allocation of 552 units, which includes a net balance of units gained and lost. To date the City has experienced construction or commitment of 380 units, leaving 172 units to be constructed by the end of 2005. The proposed grade separation project will remove up to 95 units which would cause the net increment of units during the RHNA planning period to be reduced to 285. This circumstance would necessitate the construction of 267 new residential units, instead of 172 units, for the City to meet its RHNA allocation.

When the significance threshold criteria listed above are applied, the above quantitative analysis indicates that implementation of the Passons Boulevard grade separation has a potential to cause significant impact to existing housing resources because it reduces the possibility of for the City to meet its RHNA allocation and, as a result, it could cause this project to be inconsistent with the City's 2001 Housing Element to the General Plan. Therefore, mitigation is required to reduce this potential project impact to a level of nonsignificant impact. Mitigation is outlined below to address this issue and when implemented the project's potential significant impact on City of Pico Rivera housing resources can be either avoided or fully compensated.

4.10.4 Mitigation Measures

The evaluation of potential City of Pico Rivera housing resource impacts presented above identified potentially significant housing resource impacts. The following mitigation measure will be implemented to reduce housing resource impacts to a level of nonsignificant adverse impact. However, before addressing the required mitigation, it is important to note that future circumstances could eliminate this potential impact. Regardless of when the Passons Boulevard grade separation is implemented in the future, it is possible that the City may experience the construction of 267 new residential units between now and the time when the property must be taken to support the construction of the grade separation. The City already has a program to monitor the construction of new units in the City. If the monitoring demonstrates the construction of 267 new residential units, including up to 90 affordable rental units, prior to initiating construction on the grade separation, the potential impact of the proposed project will be eliminated or fully compensated for and the mitigation outlined below will not need to be implemented.

4.10-1 Within two years of taking the properties required for the Passons Boulevard Grade Separation, the City of Pico Rivera shall elicit, encourage or provide for opportunities for construction of up to 95 residential units (to be based on the actual number of units removed in support of the grade separation), with up to 90 units being affordable rental units.

Based on implementing either of the above measures, housing resource impacts from implementing the Passons Boulevard grade separation can be controlled to a level of nonsignificant impact. These measures ensure that implementation of the third main track and grade separations project will not cause significant housing resource impacts.

4.10.5 Cumulative Impact

The housing resource impact evaluation above include the five single-family residences that may be eliminated as a result of implementing the proposed project. No additional projects that proposed to remove housing has been identified by the City. Regardless, but offsetting the loss of 95 units or eliminating the requirement to offset these units, any cumulative contribution to housing resource impacts by the proposed project will have been eliminated.

4.10.6 Unavoidable Adverse Impact

The housing resource evaluation presented above indicates that the proposed project has a potential to cause potentially significant and unavoidable adverse impacts from constructing the Passons Boulevard grade separation project component. As noted above, mitigation measures have been identified that can reduce this potential impact below a significant level. Therefore, implementation of the proposed project is not forecast to cause any unavoidable significant adverse impact to the housing resources in the City of Pico Rivera.

CHAPTER 5
ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) and the State CEQA Guidelines require an evaluation of alternatives to the proposed action in an environmental impact report (EIR) to examine ways to reduce potentially significant adverse environmental impacts to a nonsignificant level. Section 15126(d) of the State CEQA Guidelines indicates that the "discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of not significant..." In this case no significant adverse impacts have been identified. The State Guidelines also state that "a range of reasonable alternatives to the project... which could feasiblely attain the basic objectives of the project" and "The range of alternatives required in an EIR is governed by "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice."

The project evaluated in this Program EIR (PEIR) is the construction of approximately 23.66 km (14.7 mi) of new railroad track (third main track) in the BNSF rail corridor from the City of Commerce to the City of Fullerton and the construction of up to seven new grade separations located in the Cities of Pico Rivera, Santa Fe Springs and La Mirada. One of the alternatives that must be evaluated in an EIR is a "no project alternative" regardless of whether it is a feasible alternative to the proposed project, i.e., would meet the project objectives or requirements. Under this alternative the environmental impacts that would occur if the proposed project is not approved and implemented are identified. After review of the proposed Third Main Track and Grade Separation Project and receipt of comments on the Notice of Preparation, only the no alternative to the proposed project is evaluated in this document.

The proposed project could theoretically be located at another site within southern California. However, the existing BNSF east-west main rail corridor has been fixed in place within its existing alignment for about 100 years and the California Supreme Court determined the following in previous case law, *Citizens of Gillette Valley* v. *Board of Supervisors*, 1988:

> "[A] project alternative which cannot be feasibly accomplished need not be exhaustively considered. A feasible alternative is one which can be accomplished in a successful manner within a reasonable period of time, taking into account economic, legal, social and technological factors." [Citations.] Surely whether a property is owned or can reasonable be acquired by the project proponent has a strong bearing on the likelihood of a project's ultimate costs and the changes for an expeditions and successful accomplishment."

The proposed third main track and the grade separation sites are fixed in place and the need for the new track and the grade separation facilities cannot be fulfilled at any other location. Since there are no other locations where these facilities can be installed to meet project objectives, it is not possible to transfer this proposed project to another facility or location and reasonably meet the project objectives defined in the Project Description, Chapter 3. The Supreme Court ruled that it is not necessary to consider alternative locations when such an alternative is not reasonable or feasible. Therefore, the alternative of implementing the proposed project at another location is not considered a reasonable or feasible alternative to the proposed project and will not be given further consideration in this document.

The following evaluation will also include identification of an environmentally superior alternative as required by the State CEQA Guidelines.

5.2 NO PROJECT ALTERNATIVE

The No Project Alternative would result in eliminating the construction of 23.66 km (14.7 mi) of new track in the BNSF rail corridor and the construction of seven grade separations within this corridor, the specific purpose of which is to separate rail and vehicle traffic to enhance safety and increase the efficiency of both rail and surface traffic flow within the alignment. The failure to install these improvements would leave two main tracks to handle the existing estimated 100 trains per days with continuation of trains moving to sidings and idling while another train passes. The train delays that presently occur along the rail corridor would continue and any future increases in train traffic would exacerbate this condition. The no project alternative would also not meet the project objectives stated in Chapter 3 and is, therefore, not considered a reasonable or feasible alternative.

Implementation of the no project alternative will result in the following environmental effects when compared to the proposed project.

1. Aesthetics: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section I) as having no potential to cause significant adverse Aesthetic impacts. The whole rail corridor alignment occurs within an urban area which does not contain any significant scenic vistas or no major scenic resources. Rail improvements within the corridor will not cause any significant degradation of the visual character or quality of this corridor and the grade separations are being designed to add a high quality visual component at each grade separation location. Existing urban night-lighting occurs along the whole of the rail corridor and the proposed project will not make any substantial changes to this existing night lighting setting. No mitigation was identified or required to reduce the potential physical changes that will result from implementing the proposed project. The no project alternative would eliminate these potential nonsignificant aesthetic impacts by eliminating their installation. Improvements in the visual setting at the grade separations (articulation of the bridges and new landscaping) would be eliminated by implementing the no project alternative. The no project alternative would result in retaining the existing visual setting at the grade separations and this no project impact can be considered a more adverse impact than implementing the proposed project. Because the proposed project aesthetic impacts are considered nonsignificant and possibly beneficial at the grade separations, the proposed project alternative is considered environmentally superior to the no project for aesthetic issues.

2. Agricultural Resources: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section II) as having no potential to cause significant adverse Agricultural Resource impacts. No agricultural resources or land use designations occur within the project area of potential impact. Therefore, neither the proposed project or no project alternative have any possibility of affecting such resources. Because the proposed project and no project alternative impacts are the same, neither alternative is considered environmentally superior with regard to agricultural resource issues.

3. Air Quality: The Air Quality issue is evaluated in Subchapter 4.2 of this PEIR. The proposed project was identified as having nonsignificant emissions during construction; potential

emission reductions over the long-term; and potential locally significant impacts due to project construction emission effects on local sensitive uses. Mitigation was identified to reduce this local potential impact to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate the short-term nonsignificant construction and local air emission impacts by eliminating the need to install new infrastructure. This alternative would also eliminate the net air quality benefits that are forecast to result from eliminating train and motor vehicle idling that presently occurs within this 23.66 km (14.7 mi) segment of BNSF's east-west mainline corridor. Because the proposed project's short-term air quality impacts can be mitigated to a nonsignificant level and the long-term impact forecast will improve air quality, the proposed project alternative is considered environmentally superior to the no project alternative for air quality issues.

4. Biological Resources: The Biological Resources issue is evaluated in Subchapter 4.3 of this PEIR. The vast portion of the project rail corridor alignment and grade separation locations are developed with urban uses and no significant biological resources occur within these areas. The proposed project was identified as having potentially significant adverse biological resources within the San Gabriel River channel, but mitigation was identified to reduce this potential impact to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate the potential mitigated nonsignificant biological resource impact by eliminating the need to expand the existing rail bridge across the San Gabriel River. Because the proposed project biological resources impact can be mitigated to a nonsignificant level, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for biological resource issues.

5. Cultural Resources: The Cultural Resources issue is evaluated in Subchapter 4.4 of this PEIR. The proposed project was identified as having potentially significant cultural resources within its area of potential impact, but after careful evaluation none of these resources appear to remain intact. Some mitigation is required to address discovery of buried or unknown cultural resources and to relocate an existing commemorative plaque for an old school (Los Nietos School) site. The no project alternative would eliminate these potential nonsignificant cultural resource impacts by eliminating the need to install the proposed facilities. Because the proposed project cultural resources impact can be mitigated to a nonsignificant level, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for cultural resource issues.

6. Geologic Resources/Constraints: The Geologic Resources/Constraints issue is evaluated in Subchapter 4.5 of this PEIR. The proposed project was identified as having potentially significant adverse geology and soils impacts related to construction of the new rail and grade separation facilities. Construction projects have a potential to be exposed to significant geotechnical constraints and/or cause geologic/soil impacts, such as an increased potential for loss of topsoil due to erosion. Mitigation was identified to reduce these impacts to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate these potential these nonsignificant geology and soils impacts by eliminating the need to install the new facilities. Because the proposed project geology and soils impacts can be mitigated to a nonsignificant level, the no project alternative is not considered to have

significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for geology and soil issues.

7. Hazards and Risk of Upset: The Hazards and Risk of Upset issue is evaluated in Subchapter 4.6 of this PEIR. The proposed project was identified as having potentially significant adverse hazard/risk of upset impacts related to construction of new infrastructure facilities, adverse effects due to accidental spills, discovery of contaminated soil during construction and disruption of emergency or evacuation routes. Mitigation was identified to reduce these impacts to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate these potential nonsignificant hazard/risk of upset impacts by eliminating the need to install the new facilities. The no project alternative will also leave seven at grade crossings of the railroad tracks, which can be a major constraint to future evacuation or emergency response. Because the proposed project hazard and risk of upset impacts can be mitigated to a nonsignificant level, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and neither alternative is considered environmentally superior with regard to hazards and risk of upset issues.

8. Hydrology and Water Quality: The Hydrology and Water Quality issues are evaluated in Subchapter 4.7 of this PEIR. The proposed project was identified as having potentially significant water quality, flood hazard and potable water consumption impacts, primarily during construction. Mitigation was identified to reduce these potentially significant impacts to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate these potential nonsignificant hydrology and water quality impacts by eliminating the construction of the proposed facilities and retaining the current surface water hydrology and water quality environment. Because the proposed project hydrology/water quality impacts can be mitigated to a nonsignificant level, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for hydrology and water quality issues.

9. Land Use and Planning: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section IX) as having no potential to cause significant adverse Land Use impacts. The whole rail corridor alignment is developed and within the area of potential impact, the land uses consist of rail corridor and circulation system improvements. Rail improvements within the corridor and the grade separations at the seven locations will enhance the functioning of the regional rail and local circulation systems. The no project alternative would eliminate these potential enhancements to these essential systems that support the region. The no project alternative would result in retaining the existing rail and circulation systems and this no project impact can be considered a more adverse land use impact than implementing the proposed project. Because the proposed project land use impacts are considered beneficial to the existing systems and the region, the proposed project alternative is considered environmentally superior to the no project for land use issues.

10. Mineral Resources: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section X) as having no potential to cause significant adverse Mineral Resource impacts. No surface mineral resources are known to occur within the project area of potential impact and subsurface petroleum resources can be accessed from locations outside of the rail corridor and grade separation impact area. Therefore,

neither the proposed project or no project alternative have any possibility of adversely affecting such resources. Because the proposed project and no project alternative impacts are the same, neither alternative is considered environmentally superior with regard to mineral resources issues.

11. Noise: The Noise issue is evaluated in Subchapter 4.9 of this PEIR. The proposed project was identified as having potentially significant adverse noise impacts related to construction of new facilities, but project related operational noise impacts were identified as being nonsignificant without mitigation. Mitigation was identified to reduce the construction noise impacts to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate the potential nonsignificant operational noise impacts and the mitigated, short-term construction noise impacts. Because the proposed project noise impacts can be mitigated to a nonsignificant level or will not be significant, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for noise issues.

12. Population and Housing: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section XII) as having a potential to cause significant adverse Population and Housing impacts. The proposed project was identified as having a potentially significant adverse direct housing impact due to the loss of between 10 and 15 residences from building the proposed project, all related to installing the grade separations. The no project alternative would have the eliminate this potential impact on housing because it would eliminate the grade separations. Because the proposed project population and housing impacts will be nonsignificant without mitigation but will eliminate some existing housing in a housing deficient region, the no project alternative is considered environmentally superior to the proposed project for population and housing issues.

13. Public Services: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section XIII) as having a potential to cause significant adverse Public Services impacts. The proposed project was identified as having potentially significant adverse public service impacts related to demand for fire protection (hazardous materials) and police protection capacity and land for the Mazeland School. Mitigation was identified to reduce these impacts to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate these potential nonsignificant public service impacts by eliminating the demand for fire and police protection capacity and the requirement to take a small area of the Mazeland School in support of constructing the Passons grade separation. Because the proposed project public service impacts can be mitigated to a nonsignificant level, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for public service issues.

14. Recreation: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section XIV) as having a potential to cause significant adverse Recreation impacts. The proposed project was identified as having a potentially significant adverse effect on the existing bicycle trails at the San Gabriel River and Coyote Creek sites, related to installation of the third main track. The project design incorporates design measures to protect the existing trails and ensure their continued comparable functioning in the future. Therefore, no mitigation was required. The no project alternative would have the

eliminate this potential impact on recreation because it would eliminate the installation of the third main track. Because the proposed project and no project alternative impacts are essentially the same, neither alternative is considered environmentally superior with regard to recreation issues.

15. Transportation and Circulation: The Transportation and Circulation issue is evaluated in Subchapter 4.8 of this PEIR. The proposed project was identified as having potentially significant transportation and circulation impacts during construction of new facilities, and was identified as having a significant beneficial effect at each grade separation location in the future when the grade separation is installed. Mitigation was identified to reduce the short-term construction circulation system impacts to a level of nonsignificant impact for the proposed project. The no project alternative would eliminate these potential nonsignificant short-term transportation and circulation impacts by eliminating the need to install new the new facilities. The no project alternative would also eliminate the significant circulation system and safety benefits that will accrue to the cities of Pico Rivera, Santa Fe Springs and La Mirada. Because the proposed project's short-term air quality impacts can be mitigated to a nonsignificant level and the long-term impact forecast is for better the circulation system and safety, the proposed project alternative is considered environmentally superior to the no project alternative for transportation and circulation issues.

16. Utilities and Service Systems: The proposed project was evaluated in the Initial Study and Notice of Preparation (see Appendix 8.1, Section XVI) as having a potential to cause significant adverse Utilities and Service Systems impacts. The proposed project was identified as having a potentially significant adverse direct impact on existing utilities within the rail corridor alignment and the grade separation locations from building the proposed project. The no project alternative would have the eliminate this potential impact on existing utilities within the project area of potential impact. Because the proposed project utilities and service systems impacts will be nonsignificant without mitigation, the no project alternative is not considered to have significantly less environmental impacts than the proposed project and it is only marginally environmentally superior for utilities and service systems issues.

The comparative analysis of the no project alternative to the proposed project indicates that the no project alternative may result in more significant adverse environmental impacts than the proposed project. The proposed project is not forecast to cause project specific or cumulative significant adverse environmental impacts with implementation of the identified mitigation measures. On the other hand, implementing the no project alternative will result in significant air quality and circulation system benefits being foregone. For those issues where the no project alternative is environmentally superior, the degree of superiority is not considered significant relative to the environmental condition that will exist in the future for the circulation system and air quality emissions. Because of these two potentially significant adverse impacts, the no project alternative is not considered environmentally superior to the proposed project. Also, because the no project alternative would not achieve the project benefits outlined in Chapter 3 of this PEIR, it is not considered a feasible alternative for implementation in place of the proposed project.

CHAPTER 6
TOPICAL ISSUES

6.1 GROWTH INDUCEMENT

The growth inducement issue related to the proposed Third Main Track and Grade Separation Project is partly addressed in subchapter 4.2, Air Quality, of this document. The conclusion reached regarding the project's consistency with regional growth and air quality attainment projections stated: *Increased rail utilization is an air quality planning goal in both the South Coast Air Basin federal SIP and the California Clean Air Act attainment plans. The proposed project is included in a regional transportation plan that has been found to conform the basin air quality attainment plan,,,,The proposed project thus meets all air quality planning consistency guidelines and/or conformity requirements.*

Traditionally, significant growth is induced in one of three ways. In the first instance, a new project is located in an isolated area and when developed it brings sufficient urban infrastructure to cause new or additional development pressure on the intervening and surrounding land. This type of induced growth leads to conversion of adjacent acreage to higher intensity uses, either unexpectedly or through accelerated development. This conversion occurs because the adjacent land becomes more suitable for development and, hence, more valuable because of the availability of the new infrastructure. This type of growth inducement is typically termed "leap frog" or "premature" development because it creates an island of higher intensity developed land within a larger area of lower intensity land use.

The proposed project will not cause or contribute to "leap frog" or "premature" development because its purpose is enhance the efficiency of train operations while improving safety for surface transportation by replacing up to seven at-grade crossings with grade separated crossings. All circulation system components already exist within established alignments and none of the proposed facility components will extend into new areas that could be considered to contribute to leap frog or premature development. Land adjacent to the rail corridor and grade separation locations is already fully developed with urban land uses. Because the proposed project and support facilities envisioned by this project do not extend service to new uses or areas not already served by existing rail and surface transport system, it has no potential to cause or contribute to accelerated development within the project's area of potential impact. Thus, implementation of the proposed project cannot cause or contribute to leap frog or premature growth.

A second type of growth inducement is caused when a project of large size, relative to the surrounding community or area, is developed within a community and impacts the surrounding community by producing a "multiplier effect," which results in substantial indirect community growth, not necessarily adjacent to the project site or of the same type of use as the project itself. This type of stimulus to community growth is typified by the development of major destination recreation facilities, such as Disney World near Orlando, Florida, or around a military base, such as the Marine Corps Air Ground Combat Center near Twentynine Palms. The proposed project is not a new development that has a potential to cause growth through a "multiplier effect." The rail and surface transportation systems are already in place and this type of project, improvements in the circulation system, does not have a potential to induce population growth or growth in the economy itself. The area served by the proposed project is a fully developed urban area. Development within the project area will be consistent with growth decisions already made by local agencies governing land use decisions, and further, the proposed project does not remove any existing constraint on future development because existing areas to be served by the proposed project have alternative means (the no project alternative, see Chapter 5) to meet future transportation demands within the project area. No new "large" projects are known to be proposed or contingent on the implementation of the proposed project and no potential for this type of multiplier growth inducement can be caused by the implementing the proposed project.

A third and more subtle type of growth inducement occurs when land use plans are established that create a potential for growth because the available land and the permitted land uses result in the attraction of new development. This type of growth inducement is often attributed to projects designed to provide new infrastructure necessary to meet the land use objectives, or community vision, contained in the governing land use agencies' general plans. In this case, the proposed project will install new infrastructure, but it will be an enhancement of existing transportation systems that is not forecast to attract new development. It is assumed that the proposed project's recycled water will allow both the rail and surface transport systems to operate more efficiently and safely to meet the current and future demand.

The question still remains as to whether the proposed implementation of the proposed project accommodates existing commercial demand and the related environmental impacts caused by the increased population that can utilize the project's new capacity in the future. The answer to this question can be found in the land use planning process which now determines the future vision of the communities and region to which the proposed project is a key transportation component. The ultimate vision of the area of potential impact is established by the regional planning agencies in conjunction with local general plans. These plans assume that the transportation infrastructure required to support the region's population will be in place as growth occurs in the future. The net effect of these general and regional plans is to create a set of expectations regarding future land use, commercial demand and growth that may or may not occur depending upon the actual carrying capacity of the various utility system resources required to meet future growth. The proposed project provides one alternative transportation system improvement to meet this defined future growth.

It also seems clear that the established planning process and the overall growth pressures in southern California are the primary causes of future growth, i.e. they induce the actual growth that occurs, and the various local support systems are effectively forced to create master plans that can accommodate such growth, at least within the limits of current or future resources that may be available. Without the necessary resources or without long-term plans required to support growth, it is also apparent that growth can be constrained or limited.

The position taken in this document is that the utility and transportation planning process is appropriately a passive (accommodating) role, not an active (inducing) role, in future growth that is dictated by local land use plans and the unabated growth of population throughout southern California. If communities within the project's area of potential impact chose to restrict growth and maintain a certain vision of the future as a static or slowly growing entity, the land use planning agencies (cities and counties) had the opportunity during the general planning process to establish such plans for the establishment of a carrying capacity based land us plan. Under such circumstances, the demand for improvements to the rail system and the local surface transportation system is justified based on the existing population and utilization factors. In this instance, the proposed Third Main Track and Grade Separation Project is deemed to accommodate a level of future growth that is consistent with adopted General Plan land use designations, and the proposed project will not modify this level of future growth.

Under this circumstance, this evaluation of the third type of growth inducement for the proposed project concludes that it is not significantly growth inducing; rather, it is growth accommodating. It will not provide rail or surface traffic system improvements greater than that contained in both regional planning documents, such as the Regional Comprehensive Plan and Growth and the Air Quality Management Plan, and local growth forecasts. It also does not include infrastructure designed to support more intensive uses of land. Therefore, the proposed project is not judged to cause significant growth inducing impacts.

6.2 CUMULATIVE IMPACTS

The following text summarizes the cumulative impact analysis provided in each subchapter of Chapter 4. The intent of a cumulative impact evaluation is to provide the public and decision-makers with an understanding of a given project's contributions to area-wide or community environmental impacts when added to other or all development proposed in an area. The state CEQA Guidelines provide two alternative methods for making cumulative impact forecasts: (1) a list of past, present and reasonably anticipated projects in the project area, or (2) the broad growth impact forecast contained in general or regional plans. There are regional plans that address certain environmental issue, such as the Air Quality Management Plan. On the other hand, rail and surface transportation system improvements very rarely contribute to cumulative effects, other than for localized issues, such as noise or traffic flow.

The cumulative impacts of implementing the proposed project are summarized in Chapter 4 for each environmental issue. The proposed project was evaluated in the context of its cumulative effect on affected resources. Chapter 4 analysis for all topical issues regarding cumulative impacts determined either that there was no potential for significant cumulative impacts resulting from the implementation of the proposed project, or that with the implementation of proposed mitigation measures, potential cumulative impacts can be reduced to less than significant levels. This is because the proposed project’s contributions to such cumulative impacts can be controlled so that the implementation of the third main track and up to seven grade separation facilities will not cause or contribute to significant cumulative impacts.

Discussion of each issue follows:

1. Aesthetics: The rail corridor alignment and individual grade separation locations are already fully developed with transportation system improvements. The visual setting is wholly urban in character and the proposed project will not alter the character of the visual setting at any location within the area of potential impact. All new grade separation facilities that will be installed will incorporate design components that are consistent with each local jurisdiction’s design guidelines. No potential exists to cause cumulative adverse aesthetic impacts.

2. Agricultural Resources: No agricultural resources occur within the project’s area of potential impact; nor is any land within the area of impact designated for agricultural use. The proposed project has no possibility of contributing to cumulative adverse effects on agricultural resources.

3. Air Quality: As described in Subchapter 4.2 of this document, the forecast emissions from constructing the third main track and grade separation facilities fall below the threshold considered to be cumulatively significant by the SCAQMD during construction. Over the long term, air emissions are forecast to be reduced as a result of implementing the proposed project. Therefore, the proposed project will not contributed to cumulative adverse effects on air quality.

4. Biological Resources: With the exception of limited biological resources within the San Gabriel River channel, implementation of the proposed project occurs within totally urbanized areas with no potential to contribute to cumulative adverse biological resource impacts. Mitigation will be implemented to compensate for the small area of habitat loss in the San Gabriel River channel. Therefore, the proposed project will not contribute to significant cumulative biological resource impacts.

5. Cultural Resources: No significant cultural resources were identified within the proposed project's area of potential impact. Based on the data available, the proposed project can not contribute to significant cumulative cultural resource impacts.

6. Geologic Resources/Constraints: Geology issues rarely have a cumulative impact component. In this case, the proposed project's area of potential impact is already occupied by rail and surface transportation facilities. The new facilities will not be inhabited and therefore, they do not add to the cumulative exposure of occupied structures that may be adversely impacted by a regional seismic event. The new grade separation facilities must be constructed to remain safe and functional following such a regional earthquake. Based on the data available, the proposed project will not contribute to significant cumulative geology resources and constraint impacts.

7. Hazards and Risk of Upset: Regarding traffic hazards and safety, the proposed project will reduce safety hazards between trains and surface vehicles at all the proposed grade separation locations. Therefore, the project will not contribute to potential cumulative circulation safety hazards. The proposed project does increase the potential for accidental release of hazardous materials or exposure of unknown hazardous materials during construction. Mitigation has been identified to control this potential impact so that it will not contribute to significant cumulative hazards and risk of upset impacts.

8. Hydrology and Water Quality: The project drainage studies indicate that the proposed projects will be implemented without significantly increasing runoff and causing significant downstream adverse flood hazard impacts. A potential for water quality degradation will increase during construction and mitigation is being implemented to ensure that potential water quality degradation does not contribute to cumulative water quality impacts down stream from the project area of potential impact. Note that over the long-term, the new drainage system and required best management practices for the permanent drainage system improvements should result in an improved water quality management system. Thus, based on the data available, the proposed project will not contribute to significant cumulative hydrology and water quality impacts.

9. Land Use and Planning: The project will not alter any land uses and will contribute to enhancing the rail and surface transportation system land uses within the area of potential impact. Therefore, the proposed project will not contribute to significant cumulative land use and planning impacts.

10. Mineral Resources: No surface resources occur within the project area of potential impact and the proposed project will not alter access to subsurface petroleum resources. Therefore, the proposed project has no potential to contribute to significant cumulative mineral resource impacts.

11. Noise: The local noise environment along the project alignment is already above accepted levels for residential uses. After detailed evaluation, it was determined that the project has a potential to increase noise and contribute to cumulative significant noise levels during construction. Mitigation is identified to control construction noise effects to acceptable levels. Long-term noise impacts were forecast to be

less than significant, i.e., changes in permanent noise levels will not be audible. Based on the data available, the proposed project will not contribute to significant cumulative noise impacts.

12. Population and Housing: The proposed project will not have any effect on population. However, the implementation of proposed project may eliminate up to 15 existing residences in order to install all of the grade separation facilities. Mitigation is identified to assist with relocation of displaced residents and the loss of 15 residential units is not considered to be a significant adverse impact on the regional (cumulative) housing market.

13. Public Services: Potential demand for fire and police protection capacity and adverse effects to the Mazeland School site were identified as the only potential adverse impacts of the proposed project. Mitigation is identified to address each of these impacts and can reduce the impacts to a level of nonsignificant adverse impact. Therefore, the proposed project will not contribute to significant cumulative public service impacts.

14. Recreation: The only recreation impact identified for the proposed project was on two regional bicycle trail systems. The bridge designs at the San Gabriel River channel and Coyote Creek channel incorporate designs to maintain and enhance the trail systems at this location. Therefore, the proposed project has no potential to contribute to significant recreation impacts.

15. Transportation and Circulation: During construction of the third main track and grade separation facilities, the circulation system will incur adverse impact that may contribute to cumulative degradation of traffic flow. Mitigation is identified to address this issue and assure adequate flow of traffic during construction. Over the long-term circulation and traffic flow will be improved because of elimination of delays when trains pass through existing at grade crossings. Thus, over the long-term the effect on cumulative traffic flow is forecast to be beneficial, not adverse.

16. Utilities and Service Systems: Potential demand for utilities and service system capacity from implementing the proposed project are forecast to be nonsignificant. During construction a potential exists to adversely impact existing utilities within the area of potential impact. Mitigation is identified to reduce this impact to a level of nonsignificance and this impact does not have any identified cumulative effect. Therefore, the proposed project will not contribute to significant cumulative utilities and service systems impacts.

In summary, implementation of the proposed project, with mitigation measures is not forecast to contribute to any cumulatively significant adverse impacts.

6.3 IRREVERSIBLE ENVIRONMENTAL CHANGES

If the Third Main Track and Grade Separation Project is approved and implemented, the following irreversible and/or environmental changes would be involved:

a. The construction, installation and maintenance of new rail and grade separation facilities, as proposed in the project description, will involve the irreversible consumption of natural resources in the form of construction materials, water, and energy sources. Money and manpower will be expended to develop and maintain the facilities.

b. Since the proposed project area of potential impact is already dedicated to existing transportation system uses, the utilization of individual sites for the facilities, will, for all intents and purposes, further eliminate the possibility of development of the land for other uses.

c. Building materials, including forest and mineral products and steel, will be permanently committed to above construction projects related to the long-term implementation of the proposed project.

d. The permanent reductions in air emissions and enhanced safety and flow of traffic at the grade separation locations are in effect irreversible benefits of the proposed project.

e. The loss of less than one acre habitat in the San Gabriel River channel is considered to be in effect irreversible.

f. The loss of up to 15 existing and occupied single-family residences is considered to be irreversible.

None of the above irreversible or unavoidable adverse impacts are forecast to be significant if the proposed project is implemented. All other potential adverse impacts from implementing the proposed project are considered reversible. Construction air pollutant emissions and impacts to water resources and water quality can be changed by both humans and nature over time by cleaning air and water. Soils and geologic resources will be affected but can be modified in the future to suit different purposes. Thus, through the incorporation of recommended mitigation measures together with the implementation of the proposed project, no significant irreversible environmental changes will be caused within the project area of impact that can be attributable to the proposed project. Implementation of the suite of mitigation measures in this document will insure that all irreversible and/or unavoidable environmental impacts, as identified above and described within Chapter 4 of this PEIR, can be adequately mitigated to a level of insignificance.

CHAPTER 7
PREPARATION RESOURCES

7.1 REPORT PREPARATION

7.1.1 Lead Agency

Department of Transportation, Caltrans
District 7
120 South Spring Street
Los Angeles, CA 90012

Contact: Gary Iverson, Senior Environmental Planner (213) 897-3818
Karen Cadavona

7.1.2 EIR Consultant

Tom Dodson & Associates
2150 North Arrowhead Avenue
San Bernardino, California 92405
(909) 882-3612

Tom Dodson
Lisa Kegarice
Patti Nahill
Tami Fincher-Kelley
Christine Camacho

7.1.3 BNSF and Engineering Support Staff

The Burlington Northern and Santa Fe Railway Company
John Fleming
Walt Smith
Robert Brendza

Hanson Wilson, Inc.
Steve Metro

HDR Engineering
Wayne Short

7.2 BIBLIOGRAPHY

The following documents were used in preparing this EIR:

Blodgett Baylosis Associates, City of Pico Rivera Rancho de Bartolo Specific Plan Amendment, December 2000.

Blodgett Baylosis Associates, City of Pico Rivera Rancho de Bartolo Specific Plan Amendment Initial Study (Section 6.0), December 2000.

City of Buena Park, General Plan, Adopted 1994, Amended October 20, 1997.

City of Buena Park, Final EIR for the General Plan. June 28, 1995.

C.H.J. Incorporated, Update to Geotechnical Investigation Proposed Third Main Line D.T. Junction to Commerce, MP 152.1 to MP 148.5, Section No. CP96-1, Los Angeles County, California, December 7, 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line Lakeland Road Grade Separation, Los Angeles County, California, December 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line Los Nietos Road & Norwalk Boulevard Grade Separation, Los Angeles County, California, December 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line Passons Boulevard Grade Separation, Pico Rivera, Los Angeles County, California, November 29, 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line Pioneer Boulevard Grade Separation, Los Angeles County, California, November 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line Rosecrans Avenue Grade Separation, Los Angeles County, California, December 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line San Gabriel River Crossing, Los Angeles County, California, November 2001.

C.H.J. Incorporated, Geotechnical Study Burlington Northern Santa Fe Proposed Third Main Line Valley View Avenue Grade Separation, Santa Fe Springs, Los Angeles County, California, December 19, 2001.

City of Commerce, General Plan, Adopted September 8, 1987

City of Commerce, Zoning Ordinance, February 1991

CRM TECH, Historical Resources Compliance Report (Draft), Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angeles and Orange Counties, California, November 2002.

ENVIRON International Corporation, Noise Barrier Analysis for the Railroad along Rivera Road, Pico Rivera, California, May 15, 2002.

City of Fullerton, General Plan Update, September 1996.

City of Fullerton, Revisions to the Fullerton General Plan Update Draft EIR, February 15 - March 31, 1996.

Giroux & Associates Environmental Consultants, Air Quality Impact Analysis BNSF Triple Track Improvement Project, Counties of Los Angeles and Orange, California, November 8, 2002.

Giroux & Associates Environmental Consultants, Noise Impact Analysis BNSF Triple Track Improvement Project, Counties of Los Angeles and Orange, California, November 8, 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Lakeland Road Grade Separation Study (Draft), December 3, 2001.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Lakeland Road Grade Separation Study, March 11, 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Lakeland Road Preliminary Drainage Report (Draft), June 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Los Nietos & Norwalk Boulevard Grade Separation Study (Draft), December 3, 2001.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Los Nietos & Norwalk Boulevard Grade Separation Study, March 11, 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Los Nietos & Norwalk Boulevard Preliminary Drainage Report, August 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Pioneer Boulevard Grade Separation Study (Draft), December 3, 2001.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Pioneer Boulevard Grade Separation Study, March 11, 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Pioneer Boulevard Preliminary Drainage Report (Draft), June 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Rosecrans Avenue & Marquardt Avenue Grade Separation Study (Draft), December 3, 2001.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Rosecrans Avenue & Marquardt Avenue Grade Separation Study, March 11, 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Rosecrans Avenue & Marquardt Avenue Preliminary Drainage Report (Draft), June 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, San Gabriel River / Slauson Avenue Triple Track Feasibility Study, December 3, 2001.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, San Gabriel River / Slauson Avenue Triple Track Feasibility Study (Revised), March 2002.

Hanson-Wilson, Inc., BNSF LA Triple Track Project, Segment Two, Valley View Avenue & Stage Road Preliminary Drainage Report, August 2002.

HDR Engineering, Inc., BNSF/Caltrans Southern California Division, San Bernardino Subdivision Third Main Line: Segment 1 (Line Segment 7602), Commerce to DT Junction.

HDR Engineering, Inc., BNSF/Caltrans Southern California Division, San Bernardino Subdivision Third Main Line: Segment 2 (Line Segment 7602), DT Junction to La Mirada.

HDR Engineering, Inc., BNSF/Caltrans Southern California Division, San Bernardino Subdivision Third Main Line: Segment 3 (Line Segment 7602), La Mirada to Basta.

HDR Engineering, Inc., BNSF Final Engineering Design, Construction Documents and Construction Management Services for the Construction of a Third Main Line Track in Orange and Los Angeles Counties, March 26, 2001.

Meyer, Mohaddes Associates, BNSF Triple Track and Grade Separation Project Hobart to Basta, Traffic Impact Report, October 2000.

City of La Mirada, General Plan, November 2001.

City of La Mirada, General Plan and Zoning Ordinance Update, November 2001.

County of Los Angeles, General Plan.

City of Montebello, General Plan Elements.

County of Range, General Plan.

City of Pico Rivera, General Plan, Adopted August 16, 1992.

City of Pico Rivera, General Plan Environmental Baseline Report, Second Update, August 16, 1993.

City of Pico Rivera, General Plan Final Environmental Impact Report, Certified August 16, 1993.

City of Pico Rivera, Resolution No. 1032, Approving Request for a Conditional Use Permit for a Master Site Plan in the Rancho de Bartolo Specific Plan Planning Area, December 13, 2000.

City of Santa Fe Springs, General Plan, 1991-1994

South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993.

Southern California Association of Governments, Regional Comprehensive Plan and Guide Handbook, 1995.

Tom Dodson & Associates, Biological Survey for the BNSF Railway Company Third Main Track and Grade Separation Project, July 2002.

U.S. Geological Survey, Industrial Minerals in California, 1958, reprinted 1989.

This page left intentionally blank for pagination purposes.

CHAPTER 8
APPENDICES

8.1 NOTICE OF PREPARATION / SCOPING ANNOUNCEMENT; INITIAL STUDY; AND COMMENTS FROM NOP/INITIAL STUDY AND SCOPING MEETINGS

8.2 CONCEPTUAL TRACK ALIGNMENT SCHEMATIC (TRACK CHART)

8.3 AIR QUALITY IMPACT ANALYSIS

8.4 BIOLOGICAL SURVEY

8.5 NOISE IMPACT ANALYSIS

APPENDIX 8.1

NOTICE OF PREPARATION / SCOPING ANNOUNCEMENT; INITIAL STUDY; AND COMMENTS FROM NOP / INITIAL STUDY AND SCOPING MEETINGS

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5267
FAX (916) 654-6608
TTY (916) 654-4086

Flex your power!
Be energy efficient!

April 16, 2002

Notice of Preparation/Scoping Announcement

Interested Individuals:

The California Department of Transportation (Caltrans), District 7 is formally initiating studies for the proposed construction of a third main track and seven grade separations on the Burlington Northern Santa Fe (BNSF) Railway Company's East-West Main Line Railroad Track. The third main track rail corridor extends from the City of Commerce for approximately 14.7 miles to the City of Fullerton.

The BNSF main line rail corridor currently has two tracks that are utilized for eastern freight services and passenger service connecting Los Angels, San Bernardino, Orange, and San Diego counties. The project objective is to increase the efficiency of this corridor to accommodate the existing number of trains utilizing this corridor and to address the projected future volume increases of planned intercity and commuter rail passenger service.

Preliminary environmental resource studies and agency coordination have indicated that the resulting environmental document will be an Environmental Impact Report.

Copies of the Notice of Preparation (NOP) are available for review by interested parties. To gain access to a copy of the NOP, please contact the individual listed within your area. Also, materials will be available for inspection at the scoping meetings and a short presentation will precede the public comment period. Public scoping meetings will be held to allow public comment on the proposed project at the following locations:

April 24, 2002, 3:00 p.m. - 5:00 p.m.
City of Santa Fe Springs, City Council Chambers
11710 East Telegraph Road
For NOP review please contact Marina Sueiro at (562) 868-0511.

April 25, 2002, 6:00 p.m. – 8:00 p.m.
City of La Mirada, City Hall
13700 La Mirada Boulevard
For NOP review please contact Steve Forster at (562) 943-0131.

April 29, 2002, 7:00 p.m. to 9:00 p.m.
City of Pico Rivera, City Council Chambers
6615 Passons Boulevard
For NOP review please contact Julia Ramirez at (562) 801-4334.

We will be pleased to answer any questions or comments you may have in respect to this project. Please send your written comments or suggestions by **May 16, 2002** to:

California Department of Transportation,
Environmental Planning
Attn: Gary Iverson, Office Chief
120 South Spring Street
Los Angeles, CA 90012

If you have any questions please contact Karen Cadavona of my staff at (213) 897-0676, or myself at (213) 897-3818. We appreciate your interest in this study.

Sincerely,

Gary Iverson

Gary Iverson, Office Chief
Caltrans, Division of Environmental Planning

"Caltrans improves mobility across California"

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5267
FAX (916) 654-6608
TTY (916) 654-4086

Flex your power!
Be energy efficient!

April 16, 2002

Notice of Preparation/Scoping Announcement

Responsible Agencies, Review Agencies, and Interested Parties:

The California Department of Transportation (Caltrans), District 7 proposes construction of a third main track and seven grade separations on the Burlington Northern Santa Fe (BNSF) Railway Company's East-West Main Line Railroad Track. Caltrans will serve as the Lead Agency for this document based on its responsibility for initial funding of the railroad improvements and for managing passenger rail facilities in the state. To evaluate the potential significant environmental impacts that may result from the proposed project a focused program Environmental Impact Report (PEIR) is being prepared. The potentially significant environmental impacts identified in the attached Initial Study are as follows: air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, transportation and traffic, and utilities and service systems.

This transmittal constitutes a Notice of Preparation (NOP) for the proposed PEIR and serves as a request for environmental information that you or your organization believes should be addressed in the proposed environmental document. A detailed Initial Study with substantiation is attached for review to assist you in providing comments on the scope of the PEIR. In addition to any general comments, please be sure to address the scope and content of environmental information or issues that relate to your agency's statutory responsibilities in connection with the proposed project. Scoping meetings will be conducted for this project as noted on the attached notice of availability.

Comment Period: Based on the time limits defined by CEQA, your response should be sent at the earliest possible date, but no later than 30 days from receipt of this notice. All comments and any questions should be directed to:

California Department of Transportation
Division of Environmental Planning
Attn.: Gary Iverson, Office Chief
120 South Spring Street
Los Angeles, CA 90012

Project Location: The third main track rail corridor extends from the City of Commerce (Hobart-MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station-MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs. (Please refer to the maps in the attached Initial Study.)

The purpose of this Notice of Preparation, project description and the Initial Study, which contains a discussion of probable environmental effects, is summarized below for use in focusing you or your agency's comments for consideration in the PEIR.

Purpose of the Notice of Preparation: The purpose of this NOP is to fulfill legal notification requirements, and inform the public and CEQA Responsible and Trustee Agencies that an EIR will be prepared. This NOP solicits agency and interested party concerns regarding the potential environmental effects of implementing the proposed rail corridor and grade separations project. CEQA encourages early consultation with private persons and organizations that may have information or may be concerned with any potential adverse environmental effects related to physical changes in the environment that may be caused by implementing the project. Responses to the NOP that specifically focus on potentially significant environmental issues are of particular interest to Caltrans.

All written responses to this NOP will be included in the appendices to the PEIR. The content of the responses will help guide the focus and scope of the PEIR in accordance with State CEQA Guidelines.

I. NOP PROJECT DESCRIPTION

Caltrans, specifically the Division of Rail, oversees the passenger rail system within California. The 14.7 mile rail corridor is owned and operated by Burlington Northern Santa Fe Railway Company (BNSF). The Division of Rail, on behalf of Metrolink and BNSF, will be the CEQA lead agency for this rail corridor improvement project.

This EIR will serve as a program EIR (PEIR) for the installation of the third main line track and its related improvements, including the construction of the proposed BNSF third track across the San Gabriel River/Slauson Overpass. The project description identifies the anticipated construction activities associated with the installation of a third mainline track and identifies operational characteristics of the rail corridor in the future. Additionally, the PEIR will address seven proposed grade separations and their related improvements within the proposed project corridor. The seven grade separations are linked to the installation of the third main track because they will provide separation of rail and surface traffic that will allow the rail corridor to function more efficiently and safely. A PEIR has been selected as the appropriate document for compliance with the CEQA based on the definition of a program document contained in Section 15168 of the State CEQA Guidelines which states:

"A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either: (1) Geographically, (2) As a logical part in the chain of contemplated actions, (3) In conjunction with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways."

Caltrans is working from a core concept that the installation and construction activities within the rail corridor are so interrelated that they merit consideration under a PEIR. The activities are being considered within one environmental document because Caltrans has concluded that they are all being proposed for implementation within the same geographic area, BNSF's east-west main line rail corridor; they are interrelated as a logical part in the chain of contemplated actions by Caltrans and other agencies; and they are essentially part of the overall program (one large project) being implemented by BNSF and Caltrans to fulfill a responsibility to improve intercity passenger rail service by improving efficiency of rail traffic along the East-West Main Line Railroad Track.

The following is a brief description of the activities proposed in the proposed facilities being evaluated in the PEIR.

A. THIRD MAINLINE TRACK IMPROVEMENTS

By implementing a variety of rail corridor track improvements within the rail corridor, passenger train service flow (efficiency) and safety are proposed to increase. The range of potential improvements include:

1) Installation of a new third mainline in selected areas (triple tracking with a 15-foot center for most of the alignment);
2) Installation of new sidings (storage track);
3) Extension or upgrade of existing sidings;
4) Upgrading track structure and special track work (two new diamond crossings in the City of Santa Fe Springs);
5) Widening San Gabriel River Bridge and modification of the Slauson Avenue Overpass (note that the County of Los Angeles will also be constructing seismic retrofit improvements for this bridge during the same general time frame);
6) Upgrading signal systems; and
7) Modifications to and installation of new bridges.

Immediately upon authorization of funding by the Division of Rail, the proposed third main track will be installed to support rail operations regardless of when the grade separation projects are funded and implemented.

II. GRADE SEPARATION IMPROVEMENTS

Seven new grade separations are proposed as part of the rail corridor improvement project. The grade separations projects are located within the Cities of Pico Rivera, Santa Fe Springs and La Mirada and Los Angeles County. The affected locations are as follows: Passons Boulevard in the City of Pico Rivera; Pioneer Boulevard, Norwalk Boulevard, Los Nietos Road, Lakeland Road, Rosecrans Avenue/Marquardt Avenue and Valley View Avenue in the City of Santa Fe Springs; and Valley View Avenue in the City of La Mirada. Several of the grade separations overlap into unincorporated areas of Los Angeles County.

III. PERMANENT ROAD CLOSURES

Serapis Avenue in the City of Pico Rivera is proposed to be closed at the railroad tracks after construction of the third track and the Passons grade separation are completed.

Please refer to the detailed project description attached as part of the Initial Study for this proposed project. Each element of this program is outlined in detail and graphics are provided to assist the reviewer in understanding the potential impacts addressed in the Environmental Checklist Form.

Thank you in advance for any comments you may submit in response to this NOP. For agencies, please include the name of a contact person in your agency if you submit comments. If you have any questions, please contact Karen Cadavona of my staff at (213) 897-0676 or myself at (213) 897-3818.

Gary Iverson

Mr. Gary Iverson, Office Chief
Caltrans District 7, Environmental Planning

Notice of Completion

State of California
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Third Main Track and Seven Grade Separations Project, BNSF East/West Main Line Railroad Track

Project Title

The third main track rail corridor extends from the City of Commerce (Hobart-MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station-MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs.

Project Location – Specific

Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera and Santa Fe Springs

Project Location – City

Los Angeles and Orange Counties

Project Location – County

Description of Nature, Purpose, and Beneficiaries of Project

The Department of Transportation, Caltrans District 7 (Caltrans), will serve as the Lead Agency under the CEQA and will coordinate the preparation of a focused program Environmental Impact Report (PEIR) that will evaluate the potential significant environmental impacts that may result from construction of railroad track improvements (a new third main track and supporting infrastructure) and seven grade separations along a 14.7 mile segment of the Burlington Northern Santa Fe Railway Company's East-West Main Line Railroad Track.

Department of Transportation (Caltrans)	District 7, Los Angeles
Lead Agency	**Division**

120 S. Spring Street, Los Angeles, California 90012

Address Where Copy of Notice of Preparation and Initial Study Are Available

April 19, 2002 through May 20, 2002

Review Period

Mr. Gary Iverson	213/897-3818
Contact Person	**Area Code / Phone / Extension**

Notice of Completion and Environmental Document Transmittal Form

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 — 916/445-0613

See NOTE below

SCH # ____________

1. **Project Title** Third Main Track and Seven Grade Separations Project, BNSF East /West Main Line Railroad Track Project
2. Lead Agency Department of Transportation (Caltrans District 7, Los Angeles)
3. Contact Person Gary Iverson
3a. Street Address 120 South Spring Street
3b. City Los Angeles, CA 90012
3c. County Los Angeles County
3e. Phone (213) 897-3818

Project Location The third main track rail corridor extends from the City of Commerce (Hobart-MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station-MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs.

4. Counties Los Angeles and Orange Counties
4a. City/Community: Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera and Santa Fe Springs
4b. Assessor's Parcel No. N/A
4c. Section N//A Twp. ____ Range ____
5a. Cross Streets N/A
5b. For Rural, Nearest Community N/A
6. Within 2 miles: 6a. State Hwy Interstate 5 and SH 605
6b. Airports Fullerton Airport
6c. Railways Burlington Northern Santa Fe Railway
6d. Waterways San Gabriel River and Coyote Creek

7. Document Type

CEQA: 01. ☑ NOP; 02. ☐ Early Cons; 03. ☐ Neg Dec; 04. ☐ Draft EIR; 05. ☐ Supplement/Subsequent EIR (Prior SCH No.: ________); 06. ☐ NOE; 07. ☐ NOC; 08. ☐ NOD

NEPA: 09. ☐ NOI; 10. ☐ FONSI; 11. ☐ Draft EIS; 12. ☐ EA

OTHER: 13. ☐ Joint Document; 14. ☐ Final Document; 15. ☐ Other ________

8. Local Action Type

01. ☐ General Plan Update
02. ☐ New Element
03. ☐ General Plan Amendment
04. ☐ Master Plan
05. ☐ Annexation
06. ☐ Specific Plan
07. ☐ Community Plan
08. ☐ Redevelopment
09. ☐ Rezone
10. ☐ Land Division (Subdivision, Parcel Map, Tract Map, etc.)
11. ☐ Use Permit
12. ☐ Waste Mgmt Plan
13. ☐ Cancel Ag Preserve
14. ☐ Other None Required

9. Development Type

01. ☐ Residential: *Units*____ *Acres*____
02. ☐ Office: *Sq.ft.*____ *Acres*____ *Employees*____
03. ☐ Shopping/Commercial Sq.ft. ____ Acres____ Employees____
04. ☐ Industrial: Sq.ft.____ Acres____ Employees____
05. ☐ Water Facilities: *MGD*____
06. ☑ Transportation: *Type* *construct third railroad track, supporting infrastructure and seven grade separations*
07. ☐ Mining: *Mineral*____
08. ☐ Power: *Type*____ *Watts*____
09. ☐ Waste Treatment: *Type*____
10. ☐ OCS Related
11. ☐ Other: ____

10. Total Acres approximately 150 acres total

11. Total Jobs Created N/A

12. Project Issues Discussed in Document

01. ☐ Aesthetics/Visual
02. ☐ Agricultural Land
03. ☑ Air Quality
04. ☑ Archaeological/Historical
05. ☐ Coastal Zone
06. ☐ Economic
07. ☐ Fire Hazard
08. ☑ Flooding/Drainage
09. ☑ Geologic/Seismic
10. ☐ Jobs/Housing Balance
11. ☐ Minerals
12. ☑ Noise
13. ☐ Public Services
14. ☐ Schools
15. ☐ Septic Systems
16. ☐ Sewer Capacity
17. ☐ Social
18. ☑ Soil Erosion
19. ☐ Solid Waste
20. ☑ Toxic/Hazardous
21. ☑ Traffic/Circulation
22. ☑ Vegetation
23. ☑ Water Quality
24. ☐ Water Supply
25. ☑ Wetland/Riparian
26. ☑ Wildlife
27. ☐ Growth Inducing
28. ☐ Incompatible Land Use
29. ☑ Cumulative Effects
30. ☐ Other ________

13. Funding (approx.) Federal $ N/A **State $** ~$50 million **Total $** ~$150-200 million

14. Present Land Use and Zoning: Transportation

15. Project Description The Department of Transportation, Caltrans District 7 (Caltrans), will serve as the Lead Agency under the CEQA and will coordinate the preparation of a focused program Environmental Impact Report (PEIR) that will evaluate the potential significant environmental impacts that may result from construction of railroad track improvements (a new third main track and supporting infrastructure) and seven grade separations along a 14.7 mile segment of the Burlington Northern Santa Fe Railway Company's East-West Main Line Railroad Track.

16. Signature of Lead Agency Representative Tom Dumas on behalf of Gary Iverson Date 4/17/02

Reviewing Agencies

- ☐ Resource Agency
- ☐ Boating / Waterways
- ☐ Conservation
- ☑ Fish and Game
- ☐ Forestry
- ☐ Colorado River Board
- ☐ Dept. Water Resources
- ☐ Reclamation
- ☐ Parks and Recreation
- ☐ Office of Historic Preservation
- ☑ Native American Heritage Commission
- ☐ S.F. Bay Cons. And Dev't. Commission
- ☐ Coastal Commission
- ☐ Energy Commission
- ☐ State Lands Commission
- ☑ Air Resources Board
- ☐ Solid Waste Management Board
- ☐ SWRCB: Sacramento
- ☑ RWQCB: Region # 4
- ☐ Water Rights
- ☐ Water Quality
- ☑ Caltrans District 7
- ☐ Dept. of Transportation Planning
- ☐ Aeronautics
- ☐ California Highway Patrol
- ☐ Housing and Community Dev't.
- ☐ Statewide Health Planning
- ☐ Health
- ☐ Food and Agriculture
- ☐ Public Utilities Commission
- ☐ Public Works
- ☐ Corrections
- ☐ General Services
- ☐ OLA
- ☐ Santa Monica Mountains
- ☐ TRPA
- ☐ OPR — OLGA
- ☐ OPR — Coastal
- ☐ Bureau of Land Management
- ☐ Forest Service
- ☐ Other ______
- ☐ Other ______

For SCH Use Only:

Date Received at SCH ______ Catalog Number ______
Date Review Starts ______ Applicant ______
Date to Agencies ______ Consultant ______
Date to SCH ______ Contact ______ Phone ______
Clearance Date ______ Address ______
Notes: ______

APPENDIX 8.1

NOTICE OF PREPARATION / SCOPING ANNOUNCEMENT; INITIAL STUDY; AND COMMENTS FROM NOP / INITIAL STUDY AND SCOPING MEETINGS

INITIAL STUDY

for

Third Main Track and Grade Separation Project on the Burlington Northern Santa Fe Railway Company East-West Main Line Railroad Track

Lead Agency:

DEPARTMENT OF TRANSPORTATION, DISTRICT 7
120 South Spring Street
Los Angeles, California 90012

Project Sponsor:

DEPARTMENT OF TRANSPORTATION, DIVISION OF RAILS
AND
BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY

Preparation assistance by:

TOM DODSON & ASSOCIATES
2150 North Arrowhead Avenue
San Bernardino, California 92405

APRIL 2001

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

INITIAL STUDY
FOR THE
THIRD MAIN TRACK AND GRADE SEPARATION PROJECT
ON THE BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
EAST-WEST MAIN LINE RAILROAD TRACK

A. INTRODUCTION

As part of its program to improve intercity passenger rail service, the State Department of Transportation, Division of Rail (Caltrans) in cooperation with Metrolink and Burlington Northern Santa Fe Railway Company (BNSF), is proposing to upgrade the capacity of the existing BNSF/Amtrak/Metrolink East-West Main Line Railroad Track.

This BNSF main line rail corridor currently has two main tracks that are utilized for freight services to and from eastern destinations and for passenger service to and from the Los Angeles, San Bernardino and Orange County/San Diego metropolitan areas, with Fullerton as the central hub. It is Caltrans' objective to increase the efficiency of this corridor to accommodate the existing number of trains utilizing this corridor and future increases in the speed and volume of planned intercity and commuter rail passenger service.

The proposed Third Main Track and Grade Separation Project extends from the City of Commerce (Hobart at Mile Post (MP) 148.6) for 14.7 miles to the City of Fullerton (Basta at MP 163.3). Hobart and Basta are the names of specific points along the BNSF's East-West Main Line Railroad Track that will be referenced for the mileposts identified above. The primary improvements proposed are the immediate installation of a third main track over this 14.7 mile segment of main line track and the installation of up to seven grade separation projects, which will be implemented over the next several years as funding permits. The proposed project is being implemented to achieve two objectives: the grade separations will substantially enhance safety and traffic flow on surface streets along this segment of the rail corridor by increasing the separation between trains and motor vehicle traffic; and the third main track will enhance efficiency of train movement along this corridor and will ensure passenger train service can operate on a reliable schedule, which is the key aspect of rail passenger service that attracts additional passenger rail customers.

The improvements for the segment between Hobart and Basta are not being implemented to allow for expanded railway traffic. However, they will enhance the flow of train traffic which is forecast to increase in the future along this rail corridor. At its current operating level (approximately 100 trains per day, mixed freight and passenger), schedule delays occur along this segment of the corridor, which results in trains being pulled over to sidings to allow other trains to pass. Such conflicts will be minimized in the future under both current and future train traffic volumes.

B. PROJECT LOCATION

The rail corridor extends from the City of Commerce (Hobart-MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station-MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs.

Figure 1 illustrates the alignment of the new third main track from its start in the City of Commerce (Hobart) to its terminus in the City of Fullerton (Basta). It also shows the location of the seven grade separation projects: Passons Boulevard (Pico Rivera); Pioneer Boulevard (Santa Fe Springs and County of Los Angeles); Norwalk Boulevard (Santa Fe Springs); Los Nietos Road (Santa Fe Springs); Lakeland Road (Santa Fe Springs); Rosecrans Avenue/Marquardt Avenue (Santa Fe Springs); and Valley View Avenue (Santa Fe Springs and La Mirada).

Figures 2a through 2g illustrate the specific project location on the USGS 7.5' topographic maps. The existing BNSF tracks and right-of-way (alignment) for the third main track from Hobart to Basta are illustrated on these topographic maps. The USGS topographic maps that apply to the project area include Los Angeles, South Gate, Whittier, La Habra and Anaheim 7.5' topographical quadrangle maps. The project is located in Sections of Township 2 South (T2S) and Range 12 West (R12W), San Bernardino Base and Meridian (SBBM); Sections of T2S and R11W, SBBM; Sections of T3S and R11W, SBBM; Sections 26 of T3S and R10W SBBM. The project area extends approximately 14.7 miles in length and is best illustrated on the Conceptual Track Alignment Schematic (Track Chart) provided as Attachment 1 to this document. The Track Charts are self explanatory and provide a plan view of the new third mainline track that will be installed.

C. PROJECT DESCRIPTION

The discussion that follows is divided into two sub-sections. The first sub-section defines the addition of a third mainline track and related improvements, including the construction of the proposed BNSF third track across the San Gabriel River/Slauson Overpass; identifies the anticipated construction activities associated with the installation of a third mainline track; and identifies operational characteristics of the rail corridor. The second sub-section includes a discussion of grade separations improvements within the proposed project corridor and the related improvements necessary for the construction of the grade separations.

C.1 Third Mainline Track Improvements

Within the rail corridor, passenger train service flow (efficiency) is proposed to be increased by implementing a variety of rail corridor improvements. The range of potential improvement include:

1. Installation of a new third mainline in selected areas (triple tracking with a 15-foot center for most of the alignment);
2. Installation of new sidings (storage track);
3. Extension or upgrade of existing sidings;
4. Upgrading track structure and special track work (two new diamond crossings in the City of Santa Fe Springs);
5. Widening San Gabriel River Bridge and modification of the Slauson Avenue Overpass (note that the County of Los Angeles will also be constructing seismic retrofit improvements for this bridge during the same general time frame); and
6. Upgrading signal systems.

For the Hobart to Basta section of the BNSF's rail corridor, the primary improvement proposed to enhance efficiency of train movement along the corridor is the installation of a third mainline track as shown in Attachment 1. However, the project will also include some upgrades at the Hobart siding; modification to and installation of new bridges; special track work improvements (diamond crossings) in Santa Fe Springs where the BNSF tracks cross the Union Pacific Railroad (UPRR) track at DT Junction and also west of Norwalk Boulevard; and signal improvements along the whole

14.7 mile alignment of the project. Table 1 summarizes the proposed bridgework necessary for the completion of the third mainline track project. Note that only Bridges 150.4, 151.9, 157.5 and 158.9 encompass new construction that will require time to complete

Because of the significant constraints for train movement, which presently exists on the double tracks between Hobart and Basta, Caltrans has decided to proceed with the improvements required for this section of the railroad corridor at the earliest possible date. The third main track is proposed to be installed immediately upon authorization of funding by the Division of Rail and it will be installed to support rail operations regardless of when the grade separation projects are funded and implemented.

C.1.a Construction Activities for Third Mainline Track

The proposed project will be completed by implementing a series of construction activities and will require approximately 18 to 24 months to complete if approval is granted and funding provided by Caltrans. The existing BNSF right-of-way varies between approximately 100 feet (~100') and 150 feet (~150') in the Hobart to Basta segment. Along much of the alignment, shown in Attachment 1, the right-of-way is sufficient for the track improvements to be completed with the proposed 15-foot separation between the existing track and proposed track. This is 15-foot on center, not between the edges of the track. At this time BNSF indicates that no new right-of-way will have to be acquired before the new third mainline track can be installed. Since there is sufficient right-of-way, the third track and related facilities can be constructed in the existing right-of-way. At select industry track locations, additional right-of-way may be needed for lead tracks to serve BNSF industrial customers.

The installation of the new third track and support facilities will involve a series of construction activities that will culminate in track-laying gangs installing welded rail on the new fill that will be installed between Hobart and Basta. The proposed welded rail is the heaviest rail currently being used by BNSF and it provides the best ride and safety for high speed trains, such as the existing and proposed passenger trains.

The first step in the construction process will be to install the fill to elevate the new track surface an average of about five feet above existing ground level bringing the new track to the existing track elevation. This is accomplished in the following manner:

1. A grading contractor will be placed under contract to first create a compacted base for installation of the fill. Import of fill will be limited to subballast. Approximately 87,600 cubic yards of fill material will be excavated within the alignment over the whole length of the corridor. The embankment will utilize 22,300 cubic yards of material, which will leave about 65,300 cubic yards of material to be hauled from the site. This material will be removed primarily from Segments I and III of the project and made available to commercial contractors as fill material. Assuming 17 cubic yards per truck, a total of 3,841 truck trips will be required to remove the excavated material (65,300/17 = 3,841). The excavation activities are proposed to occur over 75 working days, which is equal to about 51 truck trips per day (3,841/75 = 51).

TABLE 1
Summary of Bridgework

Mile Post	Stream/Street Name	Description of Work
149.5	Greenwood Avenue	Upgrade existing track to third mainline track
151.1	Rio Hondo River	No work required
150.4	Paramount Boulevard	Construct new 4 span Steel Girder Bridge with drilled shaft or piles on footing substructure adjacent to the existing bridge.
150.9	Rosemead Boulevard	Construct new third mainline track on existing bridge.
151.9	San Gabriel River	Construct new 7 span steel girder bridge widening with prestressed concrete piles on a concrete footing. The bridge piers will match the existing 4 foot wide piers as well as the pile cap foundation. The steel girders will match the existing bridge. A temporary construction fill with culverts to provide low flow drainage will be placed in the channel to allow piles to be driven off track. Once the piles are driven the fill will be removed approximately 4 to 6 weeks after start of pile driving. Local dewatering will be required during the construction of the pile cap foundations. Localized well points are anticipated. The San Gabriel River channel flows will not be impacted by this bridge widening except during construction. Note that work within the channel can only be conducted during the County Flood Control District's dry weather construction period, between April 15 and October 15. Also note that the County will review the improvements to the San Gabriel River Bicycle Trail, in particular to verify that the minimum 12-foot vertical clearance between the trail and the new bridge structure is maintained.
154.0	Santa Fe Springs Road	Upgrade existing track to third mainline track
154.4	Telegraph Road	Upgrade existing track to third mainline track
156.1	Imperial Hwy.	Upgrade existing track to third mainline track
157.2	Carmenita Road	Upgrade existing track to third mainline track
157.5	Coyote Creek (LACFCD)	Construct third main track bridge widening to match existing bridge. Bridge will be a 2 span welded plate steel girder bridge that matches the low chord of the existing bridge. The existing concrete channel on the North Fork of the Coyote Creek will be remove in localized areas to build the center pier and the abutments. The bike trail on the west side will remain since the vertical clearance are adequate with the bridge widening. The foundations will consist of a concrete pier and abutments on steel H-piles. The channel flows will not be impacted by this bridge widening. Note that work within the channel can only be conducted during the County Flood Control District's dry weather construction period, between April 15 and October 15.
158.9	La Mirada Creek (LACFCD)	Construct new 5 span precast concrete trestle with steel H-piles. A temporary construction fill with culverts to provide low flow drainage will be placed in the channel to allow piles to be driven off track. Once the piles are driven the fill will be removed approximately 4 to 6 weeks after start of pile driving.
160.6	Beach Boulevard	Construct new third mainline track on existing bridge.
160.9	OCFCD	Construct new third mainline track on existing bridge.
161.3	Dale Street	Construct new third mainline track on existing bridge.
162.4	Gilbert Avenue	Construct new third mainline track on existing bridge.
163.1	Commonwealth	Upgrade existing track to third mainline track

After the fill is placed, the dirt contractor will place 12 inches of sub-ballast on subgrade (or about 32,500 cubic yards of sub-ballast). The subballast material will be purchased from commercial sources in the project area and delivered by truck. Assuming 17 cubic yards per truck delivery, a total of 1,912 (32,500/17 = 1,912) truck trips will be required to provide sufficient material to create the new fill and subballast. Assuming 50 days of subballast installation, about 38 truck trips per day (1,912/50 = 38) will occur to deliver the subballast to the entire project alignment.

An estimated 30 people are forecast to be employed during grading and typical grading equipment (dozers, graders, rollers, etc.) will be used to properly compact and install the fill and subballast. Completion of the fill is expected to require approximately three to five months from the date construction begins. Due to an expected need to dispose of a portion of the excavated material it is assumed that 60 to 80 truck deliveries will occur per day during this phase of construction.

2. During the same period that the fill is being installed, a separate work crew will be installing bridges, drainage pipes, and other support facilities for the track. Several small culverts and several road crossings will have to be improved to ensure safety for vehicles using these roads. In addition, pipelines (such as water, natural gas, etc.) located under the railroad right-of-way will have to be protected, either by encasement, relocation or other similar measures. An estimated 50 employees may be utilized on this phase of construction. Most of the material for constructing these support facilities will be delivered by truck and are part of the 60 to 80 truck deliveries to the project each day. It is anticipated that these facilities will be completed in five to seven months, with bridges being installed at Mileposts 150.4, 151.9, 157.5, and 158.9, requiring the greatest amount of time to complete. As part of this phase of the project, existing telephone poles within the BNSF alignment between Hobart and Basta will be removed by a contractor and the materials removed will be recycled for other uses.

3. The final phase of construction has been allocated twelve to eighteen months for completion. This stage involves laying the new track, upgrading existing track (approx. 4.4 miles) and installing the new track signals to ensure safety along the new track. Track laying is carried out by BNSF personnel or a contractor with material delivered by rail. On top of the fill, rail, concrete ties and ballast rock will be installed. Figures 3a through 3f illustrate typical third track sections along the proposed project alignment. The new rail will be delivered in 1/4 mile segments that are delivered by a special train. The new track can be installed at a rate of approximately 1/2 mile per day once the fill has been completed. Track laying requires approximately fifty people to carry out the required tasks. At the same time, new signals required for operations and safety will be installed and hooked up to BNSF's electrical system which parallels the existing track. Once the new track is installed and tested, the new track will be available to support operations.

There will be no change to the existing drainage patterns. Existing culverts will be extended and ditches replaced to maintain historic flow paths.

Both rail and vehicular traffic will be maintained though construction. When new grade crossings (concrete planks) are installed, vehicular traffic will be detoured for short periods of time. The majority of the construction activities will take place at night to correspond to open windows of track operations.

The installation of a third mainline track will also involve widening the San Gabriel River Bridge at the Slauson Avenue Overpass. This site is located between mile posts 151.8 to 152.1 in the Cities of Pico Rivera and Santa Fe Springs in Los Angeles County. The bridge is located immediately west of I-605 at Slauson Avenue and the San Gabriel River within unsectioned parcel, T2S, R12W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map).

The existing San Gabriel River bridge has two railroad tracks (eastbound and westbound) over the San Gabriel River and under the Slauson Avenue Overpass. This project will add a third track on the north side of the existing tracks. This third track will create more windows for train operations, thus minimizing the time that trains idle in the sidings waiting for windows to move across the river. In addition, the passenger trains will have less conflicts with the freight trains allowing for better passenger service.

The San Gabriel River bridge was originally built in 1942 and included seven 50-foot spans with a total length of 350 feet. The piers are solid four-foot stems on a pile cap foundation. The westbound bridge was added in 1969 by widening the existing piers and constructing a second bridge at 15-foot centers.

The San Gabriel River has a soft bottom with stabilized levees on each side. The levee to levee width is 300 feet with a 240 foot bottom width. Dams were constructed on the San Gabriel River upstream and downstream of the BNSF Bridge to spread water for aquifer recharge and incidentally to control erosion. Since the dams were constructed, the bottom 240 feet of the channel has developed into a wetland area. The 100-year design flow for the San Gabriel River in this reach is 14,700 cubic feet per second (cfs). At the BNSF Bridge, the design flow depth is 10.5 feet with a velocity of 6.8 feet per second. The freeboard at the BNSF Bridge is 11.3 feet. The data for the river channel was abstracted from as built plans, survey data, mapping data and field reviews. The design flow data were obtained by personal communication from George Antablian of Los Angeles County Public Works Hydrology section.

The river levee includes a bike trail on the east side of the river, with a controlled access maintenance road on the west side of the river. At the BNSF Bridge, the bike trails are benched on the river side to allow the trail to go under the bridge. The bike trails vary from west to east at an 8.1 to 10.7 foot vertical clearance and have 8 to 10 percent approach grades, respectively. The bike trails are 10 feet wide and have a 4-foot chain link fence on the river side. The proposed project will maintain the existing bike trail features. Note that the County will review the improvements to the San Gabriel River Bicycle Trail, in particular to verify that the minimum vertical clearance between the trail and the new bridge structure is maintained.

The BNSF river bridge has communication lines on the bridge that will remain after the construction of the third track. The railroad crosses under a major transmission line on the east side of the river but clearance will be no problem with this project. No utility conflicts are anticipated with the third track construction across the San Gabriel River.

The river right-of-way is owned by Los Angeles County and the Slauson Avenue Bridge right-of-way is owned by the City of Santa Fe Springs on the east and the City of Pico Rivera on the west. The BNSF Railway Company has a 100-foot right-of-way on each side of the river. The UPRR crosses the BNSF mainlines approximately 100 feet east of the river bridge.

The Slauson Avenue Bridge extends across the San Gabriel River immediately downstream of the BNSF Bridge. The Slauson Avenue overpass extends over the BNSF and UPRR east of the river.

The east end of the Slauson Avenue Bridge will be modified to allow for the third track clearances. The Slauson Avenue Bridge is owned by three entities - Los Angeles County, Pico Rivera and the City of Santa Fe Springs. The bridge is maintained by Los Angeles County. The County has a project planned for the seismic retrofit for the Slauson Avenue Bridge. This work will be completed in 2002. All of the modifications to the Slauson Avenue Bridge are in the City of Santa Fe Springs.

Relating to the San Gabriel Bridge widening project, construction in the river will be done during the non-rainy season between April 15 and October 15. The existing 350-foot, 7 span (50 foot) bridge will be widened approximately 16.7 feet to the north with similar bridge footings and piers (piling with pile cap and 4-foot solid piers). To construct the extended bridge pier footing the contractor is expected to import approximately 160 cubic yards of embankment material to build a work platform in one half of the river. The river flows will be diverted to the open half of the river during the time of construction.

The pier foundations will include driven prestressed concrete piles with a 4.75 foot thick reinforced concrete pile cap. To construct the pier caps, dewatering may be required. Dewatering may consist of localized well points around the footings to allow the construction of the pier foundations. This work will require a Corps of Engineers 404 Permit, Regional Board 401 Certification and California Department of Fish and Game 1603 Streambed Alteration Agreement and approval by the Los Angeles County Public Works Department. Close coordination will be required with the Los Angeles County Flood Control staff to minimize dewatering. Upon the completion of construction of the piers, the embankment material placed in the river for the work platform will be removed from the river and the channel restored to its original condition. The estimated permanent concrete placed in the river channel in the form of a concrete pier footing is approximately 140 cubic yards.

The BNSF Bridge widening is not forecast to cause any substantial change to the hydraulic parameters during the design flow event. Thus, the proposed project is not forecast to have an adverse impact to the river hydraulics. This project will restore the river banks to their existing condition.

Relating to the Slauson Avenue Bridge, Los Angeles County (LAC) will construct a seismic retrofit project on this bridge in 2002. This project will modify Bent 6, Bent 7 and the retaining wall at Abutment 8. The seismic retrofit stability will be maintained with the modifications required with this project to allow for the proposed third track clearances. The traffic on Slauson Avenue will not be interrupted with the proposed modifications. The train traffic will be interrupted during slow traffic periods to allow 3-4 windows of 3 hours length. These construction windows are needed while the supports are placed along bents 6 and 7. All other construction will be outside the 25-foot clear area around the track. The retaining wall supporting abutment 8 will be reconstructed 15 feet north to allow for the proposed third track clearances. The retaining wall will be built from the top down using soil nailing. The finish on the retaining wall will be similar to the existing structures. The modification to Piers 6 and 7 will not start until the completion of the LAC seismic Retrofit Project.

The construction in the San Gabriel River is limited to the non-rainy periods, between April 15 and October 15. In addition, access to the construction of the east side of the river will be via the proposed third track. The following is a possible schedule for the San Gabriel River Third Track based on a bid date of November 2002 and a Notice to Proceed of January 2003.

PHASE 1 - JANUARY to JUNE 2003. Build the third track embankment and sub-ballast to the river bridge. Modify the Slauson Avenue Bridge Abutment 8, Bent 7 and Bent 6 to allow for the third track clearance.

PHASE 1A - JANUARY TO MARCH 2003. Build the river bridge abutments and bike trail modifications.

PHASE 2 - APRIL TO JUNE 2003. Build the west work platform, drive piles, and extend the existing river piers. Complete the west side of the third track river bridge. Remove the west work platforms.

PHASE 3 - JULY TO SEPTEMBER 2003. Build the east work platform, drive piles, and extend the existing river piers. Complete the east side of the third track river bridge. Remove the east work platform.

PHASE 4 - OCTOBER TO DECEMBER 2003. Build the third track including ballast, ties, rail, UPRR crossing frog, and crossovers.

The estimated construction period for all five phases of this project is one year.

C.1.b Operations

The purpose of the proposed improvements in the Hobart to Basta segment of the rail corridor, which have been outlined above, is to enhance efficiency of rail traffic to flow through this segment of track. By installing a new track, the existing rail traffic will flow more efficiently and the anticipated addition of additional trains in the future can occur with fewer train traffic flow constraints. As described above, one of the principal requirements for effective and efficient passenger train operations is the ability to establish and meet schedules for customer. With only two tracks along much of the existing rail corridor, there can be conflicts between freight and passenger trains (estimated to be ~100 trains per day) that can cause both types of trains to incur delays. By installing a third track along portions of the route, there will be sufficient trackage to permit passenger trains to maintain their speed without slowing or being stopped for short periods. This will allow passenger trains to meet schedules and thus attract greater ridership, which in turn reduces traffic on the regional and local circulation system.

At the same time freight trains will also be able to maintain their schedules, which have become continuously more rigorous as rail operations have expanded from the west coast. Thus, there may not be an actual increase in the number of trains on the tracks in the immediate future, but all of the trains will be able to operate with fewer constraints and delays. The opportunity also exists for additional passenger trains (which typically consist of 3 to 10 car train sets) to utilize the corridor in the future without further degrading track capacity. Thus, the objective for providing better rail corridor efficiency and flow of rail traffic will be substantially enhanced by implementing the track improvements for the Hobart to Basta segment of the corridor.

C.2 Grade Separation Improvements

The specific location and characteristics of each grade separation are as follows:

1. Passons Boulevard: The site is located at mile post 151.45 in the City of Pico Rivera, west of I-605 and north of Slauson Avenue within unsectioned parcel, T2S, R12W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map). Figure 1 shows the regional location of Passons Boulevard. Figures 4a through 4c illustrate the proposed physical changes in the environment that are forecast to occur from installing the Passons Boulevard grade separation project. Figure 4a is an aerial photo with the grade separation facilities and footprint shown in plan view. Figure 4b shows the same footprint overlayed on the property

ownership map and identifies the amount of new right-of-way that is proposed to be acquired and the affected parcels. Figure 4c is a cross-section through the grade separation that shows the grade for the new Passons Boulevard grade separation and the proposed road section.

Passons Boulevard is currently a two-lane roadway with approximately 14,000 vehicle trips per day that has both residences and businesses accessing directly to the roadway. The existing roadway section is 40 feet wide with 12-foot lanes of travel and an 8-foot shoulders. The existing roadway has curb and gutter, sidewalks, and asphalt pavement. Pedestrian traffic along this portion of Passons also occurs.

Rivera Road intersects Passons Boulevard immediately north of the railroad's right-of- way. Rivera Road is a two-lane residential street with less than 3,000 vehicles per day. The existing pavement roadway section is 40-feet wide with curb and gutters, a sidewalk on the north side and asphalt pavement.

The recommended alternative is an underpass with a design speed of 25 mph, a vertical clearance of 16.5 feet and a maximum street grade of 8 percent. The proposed roadway through the underpass would be 70-feet wide with a 10-foot sidewalk on the east side. Passons Boulevard will be drained by a pump station with a force main connected into 9.5 foot by 8 foot reinforced concrete box (LAFCD Project 9565) that will be relocated from its present location with Rivera Road to a new alignment approximately 1,000 feet northerly thereof. This stormwater sewer will itself be relocated approximately 1,000 feet around the depressed portion of Passons Boulevard to the north. See Figures 4a through 4c.

Right-of-way and construction easements will be required on the east and west sides of Passons Boulevard and on the north side of Rivera Road. This will require the acquisition of four single family residences along the west side of Passons Boulevard and one single family residence along Rivera Road west of Passons Boulevard and north of the Railroad. A currently vacant apartment building is proposed for purchase along the east side of Passons Boulevard north of the Railroad. A portion of Maizeland Elementary School property will also be acquired. This property acquisition is proposed to be mitigated by transferring a portion of the vacant apartment property to the school.

Utilities located within Passons Boulevard will be relocated to the east and west sides of the proposed underpass in utility easements. Public utilities include sanitary sewer and water lines. Private utilities include natural gas, electrical power lines, cable TV, and petroleum pipelines.

Rivera Road will be reconnected to Passons Boulevard further to the north where Passons begins to be depressed to go under the Railroad.

Upon completion of the project, driveways/parking area access to the remaining residences will be reconstructed, and landscaping and wrought iron fencing will be provided along Rivera Road and at Serapis. Retaining walls through Passons Boulevard will be constructed and landscaping provided to improve aesthetics, where right-of-way permits. Access to businesses immediately north of Slauson will be reconfigured, and in some instances lost. Sidewalks will be installed.

2. <u>Pioneer Boulevard</u>: The site is located at mile post 152.29 in the City of Santa Fe Springs, immediately east of I-605 and south of Slauson Avenue within unsectioned parcel, T2S, R12W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map). Several alternatives were considered for the Pioneer Boulevard Grade Separation, but a final alternative has been identified by the City of Santa Fe Springs and Los Angeles County. Figures 5a through 5c illustrate the proposed physical changes in the environment that are forecast to occur from installing the Pioneer Boulevard grade separation project. Figure 5a is an aerial photo with the grade separation facilities and footprint shown in plan view for the selected alternative. Figure 5b is a cross-section through the grade separation that shows the grade for the new Pioneer Boulevard grade separation and the proposed road section. Figure 5c shows the potential property acquisition associated with the selected Pioneer Boulevard grade separation.

   Pioneer Boulevard is an arterial roadway with approximately 15,300 vehicle trips per day that has both residences and businesses accessing directly to the roadway. The existing pavement roadway section is 76-feet wide with four lanes of traffic and a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement.

   The alternative evaluated is an underpass with a design speed of 40 mph, a vertical clearance of 16 feet and a maximum street grade of 5 percent. The proposed roadway through the underpass would be 80-feet wide with 6-foot sidewalks on each side. Pioneer Boulevard will be drained using slotted curb drains at the low point on each side of the road. The water will be transported via gravity drain within a 30-inch smooth pipe to the existing 69-inch RCP storm drain approximately 1,000 feet west of Pioneer Boulevard and a storm water pump station will not be required. Two clean-outs will be constructed approximately 300 feet apart and a manhole constructed at the connection of the 30-inch CMP and the 69-inch storm drain.

   Right-of-way and construction easements will be required on the east and west sides of Pioneer Boulevard and north side of Rivera Road. Modifications are necessary to Rivera Road, which is an east-west residential street immediately north of the BNSF railroad tracks. To the west of Pioneer Boulevard, Rivera Road is the only access to a neighborhood east of I-605. To the east of Pioneer Boulevard, Rivera Road provides pedestrian access to an middle school for students walking north of Pioneer Boulevard. The proposed alternative selected at Pioneer Boulevard includes Rivera Road over Pioneer Boulevard with an access road in the northwest quadrant. The following is a summary of the selected alternative:

3. <u>Rivera Road over Pioneer Boulevard</u>: This alignment adds a bridge to grade separate Pioneer Boulevard and Rivera Road. The advantages of this alternative are:

   a. Less Right-of-Way: The five residences in the northeast quadrant will maintain access to Rivera Road and will not require acquisition.
   b. Less project costs.

   The disadvantages of this alternative are:

   a. Change in the existing traffic patterns: Indirect access between Pioneer Boulevard and Rivera Road.
   b. Additional future maintenance: The addition of a bridge (Rivera over Pioneer) and a pedestrian access ramp.

The sanitary sewer lines will be adjusted on Pioneer Boulevard. The water line on Pioneer Boulevard will be lowered. Private utilities (gas, telephone and electric) will be relocated.

Upon completion of the project, driveways/parking area access to the remaining residences and businesses will be reconstructed, and landscaping will be provided. Retaining walls through Pioneer Boulevard will be constructed and stepped retaining walls provided to improve aesthetics, where right-of-way permits.

4. Norwalk Boulevard and Los Nietos Road: These two crossings are considered together because of their close proximity and the necessity to combine the modifications to the Norwalk/Los Nietos intersection with the grade separations. Norwalk Boulevard is located at mile post 153.12 and Los Nietos Road is located at mile post 153.21 both in the City of Santa Fe Springs, east of I-605 and south of Slauson Avenue within unsectioned parcel, T2S, R11W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map). Figures 6a through 6d illustrate the proposed physical changes in the environment that are forecast to occur from installing the Norwalk Boulevard and Los Nietos Road grade separation projects. Figure 6a is an aerial photo with the grade separation facilities and footprint shown in plan view for both roads. Figure 6b is a cross-section through the grade separation that shows the grade for the new Norwalk Boulevard grade separation and the proposed road section. Figure 6c is a cross-section through the grade separation that shows the grade for the new Los Nietos Road grade separation and the proposed road section. Figure 6d shows the potential property acquisition associated with this grade separation.

   Norwalk Boulevard is a major arterial roadway with approximately 22,600 vehicle trips per day. Los Nietos Road is classified as a secondary arterial roadway with approximately 11,900 vehicle trips per day. The roads provide access to industrial and commercial businesses. The existing roadway section for Norwalk Boulevard is 80-feet wide and the existing roadway section for Los Nietos Road is 60-feet wide with four lanes of traffic and a center lane or median. The existing roadways have curb and gutter, sidewalks, and asphalt pavement.

   The recommended alternative for each is an underpass with a vertical clearance of 16 feet and a maximum street grade of 5 percent. The proposed design speed for Norwalk Boulevard is 40 mph and for Los Nietos Road is 35 mph. The proposed roadway through the underpass would be 80-feet wide for Norwalk Boulevard and 64-feet wide for Los Nietos Road with 6-foot sidewalks on each side. The intersection of Norwalk Boulevard and Los Nietos Road will be drained using stormwater pump stations. The pump stations will be located at each of the underpasses. A number of inlets will be placed on Norwalk Boulevard and Los Nietos Road to intercept the drainage before it gets to the underpasses. Each underpass pump station will discharge the underpass storm water via a 12-inch force main to the existing 36-inch storm drain on Los Nietos Road west.

   Right-of-way and construction easements will be required on the south side of Los Nietos Road, and on the east and west sides of Norwalk Boulevard. The fast-food restaurant in the northwest quadrant of the Norwalk/Los Nietos intersection is proposed to be acquired. Temporary construction easements will be required for the construction of the shoofly for the track, for the construction of the temporary connector road between Los Nietos Road and Norwalk Boulevard and for parking lot reconstruction in the southwest, northwest, and northeast quadrants of the Norwalk/Los Nietos intersection.

The two streets have a number of utilities that will need to be relocated with the proposed underpass project. In Norwalk Boulevard, they include a 12-inch sanitary sewer line, a 6-inch gas line and a 12-inch water line. The Norwalk Boulevard utilities are primarily south of the Los Nietos intersection. In Los Nietos Road, they include a 30-inch water line, a 10-inch gas line and a 12-inch water line. In addition to the above utilities, the streets have power lines, telephone cable, and a 6-inch oil line that will required relocation. The existing traffic signals and conduit/pull boxes will be removed and a new signalization system installed. During construction, a temporary signalization will be installed at Los Nietos west and the Norwalk shoofly detour.

Upon completion of the project, three parking lot areas will be reconstructed, the temporary detour road will be removed and landscaping will be provided. Retaining walls through Norwalk Boulevard and Los Nietos Road will be constructed and stepped retaining walls provided to improve aesthetics where right-of-way permits.

5. <u>Lakeland Road</u>: The site is located at mile post 155.13 in the City of Santa Fe Springs, south of Florence Avenue and east of Bloomfield Avenue within unsectioned parcel, T3S, R11W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map). Figures 7a and 7b illustrate the proposed physical changes in the environment that are forecast to occur from installing the Lakeland Road grade separation project. Figure 7a is an aerial photo with the grade separation facilities and footprint shown in plan view. Figure 7b is a cross-section through the grade separation that shows the grade for the new Lakeland Road grade separation and the proposed road section.

   Lakeland Road is a two-lane minor arterial roadway with approximately 5,000 vehicle trips per day. The existing roadway section is 64-feet wide with a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement. The road provides access to industrial businesses.

   The recommended alternative for this location is an underpass with a design speed of 30 mph, a vertical clearance of 15 feet 6 inches and a maximum street grade of 5 percent. The underpass will be realigned to the south to allow work around an existing 60-inch storm drain that parallels the roadway. The proposed roadway through the underpass would be 56 feet wide with 6-foot sidewalks on each side. The proposed underpass will gravity drain to the west to an existing 84-inch storm drain. On the north side of Lakeland Road there is a 60-inch storm drain under the sidewalk. This project proposes to realign the Lakeland Road centerline to the south to avoid conflicts with this 60-inch storm drain. The underpass drainage will be collected in low-head inlets and discharged to the 84-inch storm drain approximately 300 feet west of the underpass. The underpass storm drain will have a flap-gate to prevent water from backing up on the system to the underpass. The underpass drainage area will be limited to prevent flooding in the underpass during major rainfall events.

   Right-of-way and construction easements will be required on the west side of the railroad tracks to construct the temporary shoofly detour. After the construction of the underpass, this detour will be removed. Temporary construction easements will be required at the drive pads to the industries east of the railroad crossing. In addition, an emergency access road will need to be installed for use during construction.

   The existing utilities include the following: 4-inch and 18-inch water lines, 8-inch and 12-inch sanitary sewer lines, 60-inch storm drain, 3-inch gas/oil line, 5-inch oil line and telephone lines.

This project will require the sanitary sewer lines to be relocated to provide gravity drainage to the east and west of the underpass. The 60-inch storm drain will remain in place and will be worked around with the proposed underpass. The other systems (water, gas, oil, etc.) and telephone lines will be lowered to match the underpass profile.

Upon completion of the project, driveways/parking areas will be reconstructed, landscaping on Lakeland Road will be restored in the underpass area, retaining walls through Lakeland Road will be constructed with an aesthetic treatment, stepped retaining walls will be used west of the railroad on Lakeland Road to improve aesthetics and to allow for landscaped areas and displaced trees will be replaced.

6. <u>Rosecrans Avenue/Marquardt Avenue</u>: The site is located at mile post 157.81 in the City of Santa Fe Springs, north of I-5 and west of Valley View Avenue within Section 16, T3S, R11W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map). Figures 8a through 8d illustrate the proposed physical changes in the environment that are forecast to occur from installing the Rosecrans Avenue and Marquardt Avenue grade separation projects. Figure 8a is an aerial photo with the grade separation facilities and footprint shown in plan view for both roads. Figure 8b is a cross-section through the grade separation that shows the grade for the new Rosecrans Avenue grade separation and the proposed road section. Figure 8c is a cross-section through the grade separation that shows the grade for the new Marquardt Avenue grade separation and the proposed road section. Figure 8d shows the potential property acquisition associated with this grade separation.

   Rosecrans Avenue is an arterial roadway with approximately 25,000 vehicle trips per day. Marquardt Avenue is classified as a minor arterial roadway with approximately 5,000 vehicle trips per day. The roads provide access to industrial and commercial businesses. The existing roadway section for Rosecrans Avenue is 84 feet wide and the existing roadway section for Marquardt Avenue is 64 feet wide with four lanes of traffic and a center lane or median. The existing roadways have curb and gutter, sidewalks, and asphalt pavement.

   The recommended alternative is an underpass with a design speed of 45 mph, a vertical clearance of 16 feet and a maximum street grade of 5 percent. The proposed roadway through the underpasses would be 84 feet wide for Rosecrans Avenue and 64 feet wide at Marquardt Avenue with 6-foot sidewalks on each side. The intersection of Rosecrans Avenue and Marquardt Avenue will be drained using curb drains at the low points on each side of the road. The water will then be transported through approximately 800 feet of 48-inch reinforced concrete pipe (RCP) along Marquardt Avenue south and drain into Coyote Creek. The current storm drain system on Rosecrans east will be diverted to this new system. In addition, this storm drain system will be sized to gravity drain the proposed Valley View Avenue underpass described in the following section.

   Right-of-way and construction easements will be required on the south side of Rosecrans Avenue and north of the railroad and west of Marquardt Avenue in the following locations: (1) the metal stamping business in the southwest quadrant of the Rosecrans/Marquardt intersection is proposed to be acquired and this business will be relocated and additional time will be required for negotiations and moving; (2) a temporary construction easement will be required for the construction of the shoofly for the track in the northwest quadrant. The existing truck scale and loading dock in the area will need to be modified with the railroad shoofly detour. This area will lose an access point on Marquardt that will impact the use of the scales and loading docks during and after construction; (3) temporary construction easement will be required for the construction of the temporary Rosecrans shoofly detour in the southeast quadrant and the existing warehouse will be avoided; and (4) temporary construction easements will be required for the drive pad reconstruction in the four quadrants of the Rosecrans/Marquardt intersection.

This project includes major utility relocations. The project plan is to relocate the majority of these utilities prior to the detour of Rosecrans and the temporary closing of Marquardt north. The relocation of the sanitary sewer trunk lines (24-inch and 33-inch), the 42-inch and 48-inch storm drains in east Rosecrans, the 16-inch water line on Rosecrans, and the 12-inch sanitary sewer on north Marquardt can be done in the first phase of construction before traffic is detoured on Rosecrans or Marquardt. The utilities will be jacked and bored under the railroad to minimize impact to train traffic. A 4-inch gas line on Rosecrans will be lowered with the construction of Rosecrans.

Due to the long clear span (180 feet) and the restricted right-of-way, a steel truss bridge is recommended at this location. The proposed truss bridge will have a 30-foot height and be 55-feet wide. The skewed alignment at the intersection and the open truss members will minimize the visual impact of the bridge.

Upon completion of the project, two businesses will be relocated and another business will have to modify its operations to accommodate the rail detour through the project, two access (drive pads) will be eliminated with this project and alternative access will be provided with this project. Landscaping will be provided, retaining walls on both streets will be constructed and stepped retaining walls will be provided where right-of-way permits to improve aesthetics.

7. <u>Valley View Avenue</u>: The site is located at mile post 158.41 in the Cities of La Mirada and Santa Fe Springs, north of I-5 and south of Stage Road within Section 21, T3S, R11W, San Bernardino Base and Meridian (SBB&M). (Whittier 7.5' USGS Topographic Map). Figures 9a through 9d illustrate the proposed physical changes in the environment that are forecast to occur from installing the Valley View Road grade separation project. Figure 9a is an aerial photo with the grade separation facilities and footprint shown in plan view. Figure 9b shows the same footprint overlayed on the property ownership map and identifies the amount of new right-of-way that is proposed to be acquired and the affected parcels. Figure 9c is a cross-section through the grade separation that shows the grade for the new Valley View Road grade separation and the proposed road section. Figure 9d is a cross-section through the grade separation that shows the grade for the new Stage Road grade separation and the proposed road section.

   Valley View Avenue is a four-lane arterial roadway with approximately 34,000 vehicle trips per day that has both residential and businesses accessing directly to the roadway. The existing roadway section is 84-feet wide with four lanes of traffic and a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement.

   Stage Road, east of Valley View Avenue, is a four-lane collector street with less than 3,800 vehicles per day. The existing roadway section is 84-feet wide with four lanes of traffic and a center lane or median. The existing roadway has curb and gutter, sidewalks, and asphalt pavement. Stage Road west of Valley View Avenue is a two-lane collector street with less than 4,600 vehicles per day. The existing road section is 44-feet wide with curb and gutter on the north side of the street only.

The recommended alternative is an underpass with a design speed of 45 mph, a vertical clearance of 16 feet and a maximum street grade of 7 percent. The proposed roadway through the underpass would be 84-feet wide with 8-foot sidewalks on each side. The Valley View grade separation is the only fully funded grade separation project at this time, although funding is being sought by the cities, Caltrans and BNSF for the remaining grade separations.

Valley View Avenue will be drained by a pump station with a force main connected into 36-inch reinforced concrete pipe located within Valley View Avenue south of the railroad. An alternative drainage concept may gravity drain the underpass to the Marquardt south storm drain described in the previous section. A new storm drain will be constructed to drain the property in the northeast quadrant of the proposed intersection.

Right-of-way and construction easements will be required on the east and west sides of Valley View Avenue and on the north side of Stage Road. Property will be purchased along the west side of Valley View Avenue for slopes north and south of the Railroad. A temporary detour road will be construct for Valley View Avenue on private property to the west to maintain normal traffic flows during construction. Underground easements may be required along Stage Road west and east of Valley View Avenue for soil nails for retaining walls.

Utilities located within Valley View Avenue will be relocated and lowered within the existing roadway limits or for gravity flow systems relocated around the depressed roadways. Public utilities include sanitary sewer and water lines. Private utilities include a 16-inch natural gas pipeline, electrical power lines, cable TV, and 4-inch and 8-inch petroleum pipelines.

The intersection of Stage Road and Valley View Road will be depressed to allow Valley View Road to go under the Railroad without changing existing traffic circulation patterns.

C.3 Construction Activities for Grade Separation Projects

1. Passons Boulevard: BNSF proposes that Passons Boulevard be closed between Slauson Avenue and Rex Road to through traffic during construction of the underpass, which is estimated to require about eight months to construct. Traffic will be detoured to nearby Rosemead Boulevard. Serapis Avenue will remain open during construction to provide emergency and local access. Utilities will be relocated, and undergrounded where feasible, to the edge of the right-of-way, i.e., at the edge of the paved road section. A Los Angeles County Flood Control District (LACFD) 8-foot by 9.5-foot storm drain will be realigned to the northern limits of the depressed roadway. Once the drainage and utilities are relocated, roadway construction can begin.

   Passons Boulevard will be reconstructed with concrete pavement through the underpass. The railroad bridge will be a four span steel girder structure. A ten-foot wide sidewalk is proposed to be constructed on the east side slope approximately six feet higher than the road. The sidewalks will be constructed concurrently with the other grade separation components. Artistic bridge treatment, fencing and landscaping will also be incorporated during this phase of the project.

   Train traffic will be detoured on a double track shoofly 25 feet north of the nearest main track. Once the shoofly is constructed, the existing two main tracks will be removed to allow for bridge construction. A double track bridge will be constructed and then train traffic will be routed back onto the existing two main tracks. The third bridge will then be constructed. After the bridge work is complete, the roadway excavation work can be completed.

Borrow sites will not be required, and material excavated to construct the underpass will be disposed of as directed by the City of Pico Rivera. This may include hauling the material offsite and either disposed of or made available to contractors for use as fill at other locations.

The estimated construction time under this closure scenario for Passons Boulevard is between 8 to 10 months.

2. Pioneer Boulevard: Relating to vehicular traffic, the proposed access road in the northwest quadrant of Pioneer Boulevard and Rivera Road, will have to be constructed and connected to Rivera Road west of Pioneer Boulevard to allow access to the Rivera Road West Subdivision during construction. When this access road is constructed, Pioneer Boulevard will be closed with traffic detoured to Los Nietos/Norwalk/Slauson Avenue. The length of this closure is estimated to be six months.

   Pioneer Boulevard will be reconstructed with concrete pavement through the underpass. The railroad bridge will be steel girders to minimize the thickness of the bridge. The retaining walls will be CALTRANS standard walls up to eight feet in height. Over eight feet of height, the retaining walls will be soldier piles or tie-back walls constructed from the top down.

   For train traffic, a shoofly will need to be constructed so that train traffic interruption will be held at a minimum during bridge construction. When the shoofly is constructed, the portion of the existing tracks that crosses Pioneer Boulevard may be removed. Temporary shoring, such as sheet piling, will need to be placed parallel and north of the shoofly in order for the bridges to be constructed. This will have to be done carefully, coordinating with the utility owners. Once the temporary shoring is in place, the excavation for the construction of the bridges, retaining walls and roadways may begin. When bridge construction is completed, the tracks will then be reconnected across the bridge and the shoofly can be removed, along with the temporary shoring and fill. Once the temporary shoring and the fill for the shoofly have been removed, the grading for Pioneer Boulevard can begin. Paving construction for streets, curbs, and sidewalks will follow grading.

   Borrow sites will not be required for the construction of the Pioneer Boulevard grade separation, and it is expected that additional material will have to be hauled from the site and either disposing of the material or making it available for fill at another location.

   It is estimated that this construction project will take approximately six to nine months to complete.

3. Norwalk Boulevard and Los Nietos Road: Relating to vehicular traffic, the east leg of Los Nietos Road will be closed and the Norwalk Boulevard detour constructed. The Norwalk shoofly detour will have an at-grade crossing with the railroad shoofly detour which will require temporary gates and flashers. The construction of the retaining walls, concrete pavement, curbs and gutter in these areas will be done once the traffic is detoured around the underpasses.

   For train traffic, a shoofly will need to be constructed so that train traffic interruption will be held at a minimum during bridge construction. When the shoofly is constructed, the portion of the existing tracks that cross the intersection of Norwalk Boulevard and Los Nietos Road can be removed. Temporary shoring, such as sheet piling, will need to be placed so the abutments for the bridge can be constructed. This will have to be done carefully, coordinating with the utility owners. Once the temporary shoring is in place, the excavation for the abutments may begin. The construction of the girder bridges can occur with a minimal amount of excavation. There must be coordination with the utility owners, before pile driving can commence.

When bridge construction is completed, the tracks will then be reconnected across the bridges and the shoofly and temporary shoring can be removed. Once the temporary shoring and the fill for the shoofly have been removed, the grading for the temporary connector road can begin. When this is complete, traffic will be routed in the same direction, but along the connector road. Construction for retaining walls, paving construction for streets, curbs, and sidewalks in the intersection and the west-bound lanes of Los Nietos Road can be done. When this is complete, traffic along Los Nietos will be routed through the underpass using the north two lanes. When the traffic is rerouted, the removal of the temporary shoring for the temporary connector road can be completed. Then, the temporary connector road can be removed and the grading for the south two lanes of Los Nietos Road and the west two lanes of Norwalk Boulevard can begin. Retaining walls, paving construction for streets, curbs, and sidewalks will follow grading.

Borrow sites will not be required, and it is expected that material will have to be hauled off the project site. It will either be disposed of or made available as fill to commercial contractors.

It is estimated that this construction project will take approximately twelve months to complete.

4. Lakeland Road: The Lakeland Road grade separation will be completed in three phases: (1) detours for the train traffic and vehicular traffic will be constructed and in place before Lakeland Road is closed to through traffic; (2) once the roadway is closed and the train traffic is detoured to the west, the underpass bridges, retaining walls, grading, drainage, and roadway will be constructed; and (3) once the railroad bridges are completed, the train traffic will be moved to the original alignment and the west side of Lakeland Road will be completed. The project will utilize sheet piling and soldier piles to allow top down construction.

   Borrow sites will not be required, and it is expected that additional material will have to be hauled offsite. It will either be disposed of or made available as fill to commercial contractors.

   The estimated construction time for the Lakeland Road closure is four months.

5. Rosecrans Avenue/Marquardt Avenue: Relating to vehicular traffic, the first phase of construction will include the demolition of the buildings in the southwest and southeast quadrants, the relocation of utilities and the construction of the Rosecrans detour. The traffic, both on Rosecrans and Marquardt will remain on the existing streets during this phase. A temporary signal at Rosecrans and Marquardt (south) and a temporary grade crossing for the railroad will need to be constructed in the first phase.

   For train traffic, a shoofly will need to be constructed so that train traffic interruption will be held at a minimum during bridge construction. When the shoofly is constructed, the portion of the existing tracks that cross the intersection of Rosecrans Avenue and Marquardt Avenue can be removed. Temporary crossing protection will be needed for the shoofly alignment. Temporary shoring, such as sheet piling, will need to be placed so the abutments for the bridge can be constructed. This will have to be done carefully, coordinating with the utility owners. Once the temporary shoring is in place, the excavation for the construction of the abutments may begin. The construction of the truss bridges can be accomplished with a minimal amount of excavation. Again there must be coordination with the utility owners, before pile driving can commence.

When bridge construction is completed, the tracks will then be reconnected across the bridge and the shoofly and temporary shoring can be removed. Once the temporary shoring and the fill for the shoofly have been removed, the grading for Marquardt Avenue and Rosecrans Avenue north of the temporary shoring for the temporary alignment can begin. Retaining walls, paving construction for streets, curbs and sidewalks will follow grading. When this is complete, traffic along Rosecrans Avenue will be routed through the underpass using the north two lanes. When the traffic is rerouted, the removal of the temporary shoring for the temporary alignment can be removed. Then, the temporary alignment can be removed and the grading for the complete intersection can begin. Retaining walls, paving construction for streets, curbs and sidewalks will follow grading.

Borrow sites will not be required, and it is expected that material will have to be hauled off the project site. It will either be disposed of or made available as fill to commercial contractors.

It is estimated that this construction project will take approximately 12 to 18 months to complete.

6. Valley View Avenue: Valley View Avenue traffic will be detoured to a temporary road onto private property immediately to the west as the first phase of construction. Once traffic is rerouted, excavation of the roadway will begin. The roadway will be excavated half at a time to allow the existing utilities to be lowered within the existing roadway.

   Valley View Avenue and Stage Road will be reconstructed with concrete pavement through the underpass. The railroad bridge will be a four span steel girder structure. Ten-foot wide sidewalks will be constructed on both sides of Valley View Avenue and along the north side of Stage Road. Retaining walls will be cast-in-place per Caltrans standard, soldier pile or tieback walls. The sidewalks will be constructed concurrently with the other grade separation components.

   Train traffic will be detoured on a double track shoofly 25-feet north of the middle track. Once the shoofly is constructed, the existing tracks will be removed to allow for bridge construction. A three track bridge will be constructed and then train traffic will be routed back onto the existing two main tracks and siding track. The third bridge will then be constructed. After the bridge work is complete, the roadway excavation work can begin.

   Borrow sites will not be required, and material excavated to construct the underpass will be hauled offsite to an approved disposal site. It will either be disposed of or made available as fill to commercial contractors. The estimated construction time for Valley View Avenue is between 12 to 14 months.

   It is possible that the Valley View grade separation (which is funded) and Rosecrans/Marquardt may be constructed at the same time. The potential effects on the area circulation system of constructing these two grade separations concurrently will be examined in the PEIR being prepared for this project.

C.4 Vehicular Traffic Detours and Road Closures

1. Passons Boulevard: Passons Boulevard will be closed between Slauson Avenue and Rex Road to through traffic during construction of the underpass. Traffic will be detoured to nearby Rosemead Boulevard. Rosemead Boulevard is grade separated from the railroad. Traffic will be routed back to Passons Boulevard north of the railroad on Washington Boulevard and south of the railroad on Slauson Avenue. Serapis Avenue will remain open during construction to provide emergency and local access to the residential neighborhood northwest of the underpass. A temporary pedestrian crossing with crossing warning signals and gates will be installed to provide pedestrian access to nearby shopping center and schools.

2. Pioneer Boulevard: The road will be closed during construction of the bridges, retaining system and roadways. The Rivera Road subdivision located west of the 605 Freeway will maintain access with an access road in the northwest quadrant of the Pioneer/BNSF Pioneer traffic will be diverted to Slauson Avenue and then to Norwalk and back to Pioneer Boulevard via Los Nietos.

3. Norwalk Boulevard and Los Nietos Road: The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. A temporary detour will be provided on Norwalk Boulevard and Los Nietos Road east of the intersection to allow Norwalk traffic to flow north and south and Los Nietos traffic east. The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. Los Nietos traffic will be routed along Dice Road north to Slauson Avenue, west to Norwalk Boulevard and south to Los Nietos for the first two phases of construction. A temporary connector road for Los Nietos Road to Norwalk will be constructed as to have a minimum impact on traffic during the third construction phase.

4. Lakeland Road: Lakeland Road will be closed during construction of the bridges, retaining system and roadways. Traffic will be diverted to a circular route around the Lakeland underpass via the following streets: Bloomfield Avenue, Florence Avenue, Shoemaker Road, and Imperial Highway. A temporary, emergency crossing will be provided through construction to serve the Fire Station on Greenstone Avenue.

5. Rosecrans Avenue/Marquardt Avenue: Marquardt Avenue north will be closed during construction of the bridges, retaining system and roadways. A temporary road alignment for Rosecrans Avenue will be constructed so as to have a minimum impact on the traffic eastbound and westbound. The Rosecrans detour will have a temporary traffic signal at Marquardt south to maintain safe access to the area to the south. The Rosecrans detour will have an at-grade crossing with the railroad shoofly detour which will require temporary gates and flashers. These gates and flashers will be connected to the temporary traffic signal at Rosecrans and Marquardt south to prevent vehicles from queuing on the tracks. Detoured traffic on Marquardt Avenue north will be routed to Foster and west to Carmenita Road. Detoured traffic will not be allowed on Foster east of Marquardt.

6. Valley View Avenue: Traffic will be routed onto a temporary detour road on private property along the west side Valley View Avenue. The detour road will have an at-grade crossing with the existing tracks and the railroad shoofly. Flashing light signals and gates will be installed at the crossing. Stage Road will remain open with a temporary intersection with the detour road until the railroad bridge is constructed and roadway excavation begins. Stage Road will

be closed for the rest of the project. As noted above, it is possible that the Valley View grade separation (which is funded) and Rosecrans/Marquardt may be constructed at the same time. The potential effects on the area circulation system of constructing these two grade separations concurrently will be examined in the PEIR being prepared for this project.

C.5 Permanent Road Closures

1. Serapis Avenue: Serapis Avenue in the City of Pico Rivera is proposed to be closed at the railroad tracks after construction of the third track and the Passons grade separation are completed. The pavement and crossing signals will be removed. North of the railroad tracks, the roadway will be knuckled and new curb, gutters and walks installed. South of the railroad tracks, a cul-de-sac will be provided. Fencing, landscaping and sidewalks will be installed around the perimeter of the knuckle and cul-de-sac areas where it is adjacent to the BNSF right-of-way. Final design of access controls will be determined in conjunction with the City of Pico Rivera. Easements for existing utilities are expected to remain intact. Access across the railroad will be provided by the Rosemead Boulevard underpass and the new Passons Boulevard underpass.

C.6 Other Project Components

The proposed project will have a number of staging areas to accommodate storage of equipment and material, and to provide parking for employees. The staging areas will occur along the BNSF track right-of-way at least 25 feet from the closest track. The staging areas off the railroad's right-of-way will be the responsibility of the contractor, if required.

The project will be required to obtain several permits including: a Section 404 permit from the U.S. Army Corps of Engineers; a California Regional Water Quality Control Board 401 Water Quality Certification; a California Department of Fish and Game Stream Bed Alteration Agreement (1601 or 1603 Agreement); a construction storm water discharge permit, National Pollutant Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP); various business permits; various encroachment or construction permits from the County; Caltrans and the cities; and where required business licenses.

The Initial Study Environmental Checklist Form follows.

INITIAL STUDY ENVIRONMENTAL CHECKLIST FORM

This form and the descriptive information in the application package constitute the contents of an Initial Study pursuant to Section 15063 of the State CEQA Guidelines.

PROJECT DESCRIPTION:

1. Project title: Third Main Track and Grade Separation Project on the Burlington Northern Santa Fe Railway Company East-West Main Line Railroad Track

2. Lead agency name and address: Department of Transportation, Caltrans
   District 7
   120 South Spring Street
   Los Angeles, CA 90012

3. Contact person and phone number: Karen Cadavona, Environmental Planner
   (213) 897-0676

4. Project location: The rail corridor extends from the City of Commerce (Hobart-MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station-MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs.

5. Project sponsor's name and address:

   Department of Transportation
   Division of Rail
   1120 N Street, Room #3400
   P.O. Box 942874, MS 74
   Sacramento, CA 92474-0001

   BNSF Railway Company
   Attn. Mr. John Fleming
   1776 West March Lane, Ste. 405
   Stockton, CA 95207

6. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary support, or offsite features necessary for its implementation. Attach additional sheets if necessary.)

   See the preceding detailed project description

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

❑	Aesthetics	❑	Agriculture Resources	X	Air Quality
X	Biological Resources	X	Cultural Resources	❑	Geology / Soils
X	Hazards & Hazardous Materials	X	Hydrology / Water Quality	❑	Land Use / Planning
❑	Mineral Resources	X	Noise	❑	Population / Housing
❑	Public Services	❑	Recreation	X	Transportation / Traffic
X	Utilities / Service Systems	X	Mandatory Findings of Significance		

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
I.	**AESTHETICS** – Would the project:				
a.	Have a substantial adverse effect on a scenic vista?	❑	❑	X	❑
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❑	❑	X	❑
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	❑	❑	X	❑
d.	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	❑	❑	X	❑

SUBSTANTIATION:

The environmental setting for the proposed project is the urban southern California setting of seven cities (Commerce, Montebello, Pico Rivera, Santa Fe Springs, La Mirada, Buena Park and Fullerton) and the County of Los Angeles. The BNSF East-West Main Line extends through these cities in an existing rail corridor that contains two main tracks and occasional main tracks. This corridor is bounded by urban development and man-made landscapes that vary between intensely industrial areas; commercial areas; residential areas; and human disturbed drainage channels, most of which are concrete, excluding the soft bottom channel of the San Gabriel River. The project proposes to install a third main track and supporting signal system improvements within the existing rail corridor owned by BNSF, at grade, along a 14.7 mile segment of the corridor. Within three cities (Pico Rivera, Santa Fe Springs and La Mirada) and unincorporated areas within the County of Los Angeles, the project proposes to install seven grade separations between existing at-grade roads and the railroad tracks by constructing underpasses at each location. The project also proposes to widen the railroad bridge over the San Gabriel River. The following adverse aesthetic impacts are forecast to result from implementation of the proposed project summarized above.

I.a All of the proposed project facilities are at or below grade and occur within highly disturbed visual settings with no identified significant scenic vistas. The use and visual appearance of the rail corridor will have essentially the same visual impact in regards to the third mainline track. The grade separations will result in a change to the existing visual settings. However, since the grade separations are underpasses, with rail bridges over them at grade or slightly above grade and since no significant scenic vistas occur along the rail corridor, the potential impact of the project to scenic vistas is considered to be less than significant without any mitigation.

I.b The proposed project site is located within a highly disturbed and urbanized visual setting along its whole alignment. Even the San Gabriel River is no longer natural as it is bounded by hard channel walls There are no rock outcroppings, trees, or other features that would be considered significant scenic resources along the site. The rail corridor is not located along or within a view corridor of state scenic highway. The proposed new track is at grade and has no potential to disturb any significant scenic resources since no exist along the rail corridor. The proposed grade separations occur at highly urbanized intersections of the railroad tracks and major arterials or highways. Because the grade separations will be installed as underpasses and because no significant scenic resources occur at the grade separation, the installation of the grade separations are not forecast to cause any significant impact to such resources. No mitigation is required.

I.c The visual setting for the rail corridor alignment is already dominated by the existing rails and train operations. The proposed project will add a new track, but will not alter the existing character or quality of the existing visual setting along the alignment. Implementation of this project component has no potential to cause a significant degradation of the existing visual character or quality of the rail corridor. No mitigation is required for the third main track.

The grade separations will result in a substantial change in the visual setting at each of the seven locations. These locations presently consist of at grade roads, in most cases with little or no landscaping and little or no significant visual resource character. The installation of the proposed grade separations may result in a visual benefit realized from implementing the proposed project due to the addition of landscaped retaining walls (straight and stepped) through the grade separations. The proposed grade separations will be consistent with the more aesthetically attractive grade separations that already exist in the project area based on the designs presented by the project engineers. These drawings have been provided to the Pico Rivera, Santa Fe Springs and the County of Los Angeles and they incorporate landscape and structural designs that are consistent with city and County requirements for such structures. These designs incorporate the project mitigation to enhance the visual setting at each grade crossing, rather than degrade it, and with implementation of these designs, no additional mitigation is required.

I.d The rail corridor does not include any general lighting. Signal lights will replace existing signal lights and are focused along the alignment, not installed in a manner that affects adjacent properties. The existing grade crossing have lights and controls related to rail and street traffic that will be eliminated. The existing lighting at the grade separations will be replaced by new lighting within the underpasses that will not substantially alter the existing background lighting. In fact, since the new lighting will be installed below grade, the new lighting is not forecast to constitute a new source of substantial light or glare. None of the proposed project facilities or activities is forecast to cause significant light or glare. No mitigation is required.

Conclusion

Based on the analysis presented above, aesthetic and visual resources are not forecast to experience significant adverse impacts from project implementation. The aesthetic issue will not be carried forward as an issue of focus in the environmental impact report (EIR) that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
II.	**AGRICULTURE RESOURCES** – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❑	❑	❑	X
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❑	❑	❑	X
c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	❑	❑	❑	X

SUBSTANTIATION:

The project area of potential effect does not include any agricultural uses or prime or important farmland along its alignment.

II.a All aspects of the existing proposed project are located within an existing rail corridor which has been urbanized for decades. As such, there is no prime or other important farm land would be converted from agricultural use by the proposed project. No potential exists to adversely impact such farmland because it does not exist within the project's area of potential impact. No mitigation is required.

II.b Please refer to response II.a. The project alignment and the grade separation areas do not include any agricultural uses and no agricultural zoning. No potential exists to conflict with such uses or potential Williamson Act contracts. No mitigation is required.

II.c The proposed project will serve as part of an overall program to increase the efficiency of the East-West Main Line Railroad Track rail corridor. The land uses surrounding the proposed project site are transportation, flood control, vacant land, commercial, industrial and residential. There are no agricultural land uses in the surrounding area that can be impacted by the proposed project and therefore, this project has no potential to adversely impact any agricultural use, either directly or indirectly. No mitigation is required.

<u>Conclusion</u>

Based on the analysis presented above, agricultural resources are not forecast to experience significant adverse impacts from project implementation. The agricultural resource issue will not be carried forward as an issue of focus in the environmental impact report (EIR) that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
III.	**AIR QUALITY** – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a.	Conflict with or obstruct implementation of the applicable air quality plan?	❑	❑	❑	X
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X	❑	❑	❑
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X	❑	❑	❑
d.	Expose sensitive receptors to substantial pollutant concentrations?	X	❑	❑	❑
e.	Create objectionable odors affecting a substantial number of people?	❑	❑	❑	X

SUBSTANTIATION:

Air quality within the South Coast Air Basin remains significant and adverse to humans because the health protective standards for three air pollutants (ozone, CO, and PM10). Although at the general level the proposed project may reduce air emissions, short-term air emissions may exceed significance thresholds.

III.a The Southern California Association of Governments (SCAG) and South Coast Air Quality Management District (SCAQMD or District) are responsible for ensuring compliance with the Clean Air Act within the South Coast Air Basin (SoCAB). These agencies are responsible for air quality planning in the Basin and have developed an Air Quality Management Plan (AQMP, 1997). Consistency with the AQMP is determined by comparing the proposed project with regional (SCAG) and local (general plan) growth forecasts. This project does not propose to alter land use designations or increase development densities allowed by the affected jurisdictions. It will enhance the future potential for mass transit (rail operations) and can reduce future vehicle miles traveled through its implementation. Therefore, there is no adverse impact to this issue because this project is considered beneficial, not an adverse conflict with the AQMP. No mitigation is required.

III.b The proposed project is located in the SoCAB. The SCAQMD has jurisdiction over air quality issues within the Basin. The SoCAB is currently a non-attainment basin for three of six criteria pollutants utilized to determine attainment of natural ambient air quality standards. These three criteria pollutants are ozone, CO, and PM10. The project may result in emissions that could contribute to violations of the air quality standards. Therefore, the issue of short- and long-term air pollutant emissions will be evaluated as part of the EIR that will be prepared for this project.

III.c Please refer to III.b. The proposed project could contribute to a cumulatively significant increase in criteria pollutants within the SoCAB. Therefore, the issue of short- and long-term air pollutant emissions will be evaluated as part of the EIR that will be prepared for this project.

III.d Please refer to III.b. The proposed project could contribute to exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the issue of short- and long-term air pollutant emissions will be evaluated as part of the EIR that will be prepared for this project.

III.e Please refer to III.b. The proposed project could contribute to significant objectionable odors that could affect a significant number of people. Therefore, the issue of odor emissions will be evaluated as part of the EIR that will be prepared for this project.

Conclusion

Based on the analysis presented above, air quality resources may experience significant adverse impacts from project implementation greater than the significant emission criteria contained in the SCAQMD "CEQA Air Quality Handbook". The air quality issues identified above will be carried forward as issues of focus in the environmental impact report (EIR) that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES** – Would the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X	❑	❑	❑
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X	❑	❑	❑
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	X	❑	❑	❑
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	X	❑	❑	❑
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	X	❑	❑	❑
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❑	❑	❑	X

SUBSTANTIATION:

The majority of the proposed project alignment does not have any native biological resources because the alignment has been converted to an urban/suburban setting due to past activities. However, the San Gabriel River does contain potentially significant biological resources, and the expansion of the bridge may cause significant adverse impacts to biological resources located within the River channel.

IV.a-e The project may result in significant adverse impact to biological resources.

IV.f No habitat conservation plans are known to occur within the project alignment; therefore, this issue will not be considered in the EIR.

Conclusion

Biological resources may experience significant adverse impacts from project implementation. The biological resources issues identified above will be carried forward as issues of focus in the environmental impact report (EIR) that will be prepared for this project.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	X	❑	❑	❑
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	X	❑	❑	❑
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	X	❑	❑	❑
d. Disturb any human remains, including those interred outside of formal cemeteries?	X	❑	❑	❑

SUBSTANTIATION:

The majority of the proposed project alignment does not have any remaining cultural resources because the alignment has been converted to an urban/suburban setting due to past activities. However, the grade separations may affect potentially significant cultural resources, and the installation of the grade separations may cause significant adverse impacts to cultural resources within the project's area of potential effect.

V.a-f The project may result in significant adverse impact to cultural resources.

Conclusion

Cultural resources may experience significant adverse impacts from project implementation. The cultural resources issues identified above will be carried forward as issues of focus in the environmental impact report (EIR) that will be prepared for this project.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	❑	❑	❑	X
• Strong seismic ground shaking?	❑	X	❑	❑
• Seismic-related ground failure, including liquefaction?	❑	X	❑	❑
• Landslides?	❑	❑	❑	X
b. Result in substantial soil erosion or the loss of topsoil?	❑	X	❑	❑
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	❑	X	❑	❑
d. Be located on expansive soil, as defined in Table 18 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	❑	X	❑	❑
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	❑	❑	❑	X

SUBSTANTIATION:

Geologic and soil resource issues have been characterized at a general level through review of the Safety Elements of the General Plans that control land uses within the project area. No Alquist-Priolo Earthquake Fault Zones cross the project alignment. However, other geology and soil constraints and resource issues may pose significant project implementation issues as described below.

VI.a The proposed project is construction of a third mainline track along the Burlington Northern Santa Fe rail corridor and the construction of grade separation improvements within the proposed project corridor. It would not expose people or structures to potential substantial adverse geologic constraints/effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault; or landslides. The proposed project is not located within an Alquist-Priolo Earthquake Fault Zone and habitable structures are not a part of the proposed project. It may expose people or structures to potential substantial adverse geologic constraints/effects, including the risk of loss, injury, or death involving: strong seismic ground shaking; and seismic-related ground failure, including liquefaction. These latter two issues will be addressed as part of a more detailed investigation in the EIR.

VI.b During construction and operation, the project slopes would be exposed to a potential for substantial soil erosion. Potential erosion impacts related to constructing or operating the recharge basin may cause a significant adverse erosion or sedimentation impact as a result of implementing the proposed project.

VI.c The proposed project may be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse.

VI.d The proposed project may be located on expansive soil, as defined in Table 18 1-B of the Uniform Building Code (1994), and may create substantial risks to life or property.

VI.e The proposed project does not include septic tanks or alternative waste water disposal systems. No potential for any impacts to such facilities exists from implementing the proposed project. This issue will not be carried forward for evaluation in the EIR. No mitigation is required.

Conclusion

Based on the analysis presented above, geology and soils may experience significant adverse impacts from project implementation. The geologic and soil resources issues identified above will be carried forward as issues of focus in the environmental impact report (EIR) that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
VII.	**HAZARDS AND HAZARDOUS MATERIALS** – Would the project:				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	X	❑	❑	❑
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	X	❑	❑	❑
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	X	❑	❑	❑
d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	X	❑	❑	❑
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	❑	❑	X	❑
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	❑	❑	❑	X
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	X	❑	❑	❑
h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❑	❑	❑	X

SUBSTANTIATION:

The proposed grade separations will significantly reduce traffic hazards by separating rail and vehicle traffic. On the other hand, short-term circulation system effects may adversely impact traffic flow, safety and emergency responses times. The rail corridor has been disturbed for decades and potential hazards may occur within the footprint of the proposed grade separation projects. No wildlands occur within the project areas that could pose a significant wildland fire hazard.

VII.a The proposed project will use hazardous substances and may result in hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials.

VII.b The proposed project will use hazardous substances. The rail operation itself does involve the use or transport of any hazardous substances, but the enhanced safety from implementation of the proposed project will reduce potential accidental releases of such substances by enhancing safety of both rail and vehicle operations through the project rail corridor. A potential does exist during the short-term construction activities for accidental releases of hazardous materials and this issue will be evaluated in the EIR.

VII.c The proposed project rail corridor is located within one-quarter mile of an existing or proposed school. The potential exists for construction or operation activities that may adversely impact a school and its students. This issue will be evaluated in the EIR.

VII.d The proposed project may be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. This issue will be fully clarified in the EIR prepared for this project.

VII.e The project alignment is located at the east end of the Fullerton Municipal Airport. Since it is a rail facility that is already in operation, the addition of a third track would not result in a safety hazard for people residing or working in an airport project area. No potential exists to expose facilities or humans to any but random aircraft related hazards (unpredictable aircraft crashes). Even if such an event occurred, no humans or occupied structures associated with the proposed project would be exposed to such hazards. No mitigation is required.

VII.f The proposed project is not located within the vicinity of a private air strip. No potential exists to expose facilities or humans to any private air strip operational impacts. No mitigation is required.

VII.g Short-term detours related to construction activities could interfere with emergency access or impair implementation of emergency response plans or emergency evacuation plans. This issue will be evaluated in the EIR.

VII.h The proposed project is not located in or near a wildland fire area. No potential exists for this project to be exposed to significant wildland fire hazards or to cause any such hazards. No mitigation is required.

Conclusion

Based on the analysis presented above, hazards and hazardous materials may experience significant adverse impacts from project implementation. The hazard issues identified above will be carried forward as issues of focus in the environmental impact report (EIR) that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
VIII.	**HYDROLOGY AND WATER QUALITY** – Would the project:				
a.	Violate any water quality standards or waste discharge requirements?	X	❑	❑	❑
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	❑	❑	❑	X
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?	X	❑	❑	❑
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	X	❑	❑	❑
e.	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	X	❑	❑	❑
f.	Otherwise substantially degrade water quality?	X	❑	❑	❑
g.	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❑	❑	❑	X
h.	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	❑	❑	X	❑
i.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❑	X	❑	❑
j.	Inundation by seiche, tsunami, or mudflow?	❑	❑	❑	X

SUBSTANTIATION:

The project alignment crosses several stream channels, will alter some storm drains and will continue to deliver storm water runoff from the project area to drainage systems for ultimate transport to the Pacific Ocean. No significant long-term water consumption will occur as a result of the proposed project.

VIII.a The process of constructing the third mainline track and the grade separations would result in construction activities that could result in erosion, sedimentation and accidental release of pollutants. As a result, a potential does exist to violate water quality standards and this issue will be evaluated in the EIR.

VIII.b The proposed project is the construction of a third mainline track and seven grade separations. The project does not propose to deplete groundwater supplies or interfere substantially with groundwater recharge. No mitigation is required.

VIII.c The proposed project may substantially alter the existing drainage pattern of the project site in a manner which could result in substantial erosion or siltation onsite. Specifically, material will be excavated in the San Gabriel River channel and new surface runoff (drainage) facilities will be installed at the grade separations. The project will also construct one new outfall into Coyote Creek in conjunction with the Rosecrans and Valley View grade separations. This issue will be evaluated in the EIR.

VIII.d The proposed project would substantially alter the existing drainage pattern portions of the project alignment, but the project's effect on the actual rate or amount of surface runoff is not yet known. Given the lack of permeability that exists within the project alignment, the amount of any increase in runoff is not expected to be significantly increased, but the potential for an increase in flooding will be evaluated in the EIR.

VIII.e The proposed project is not expected to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. However, this issue will be quantified and evaluated in the EIR.

VIII.f The proposed project is the construction of a third mainline track and the grade separations and it is possible that there will be activities that will result in degradation of water quality. This issue will be evaluated in the EIR.

VIII.g There is no new housing included in this project, so no adverse impact can occur.

VIII.h Project facilities may cause structures to be placed in areas that could impede or redirect flood flows. This issue will be evaluated in the EIR.

VIII.i The proposed project does not have facilities that will expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

VIII.j The proposed project is not exposed to any inundation by seiche, tsunami, or mudflow at this location.

<u>Conclusion</u>

Based on the analysis presented above, hydrology and water quality may experience significant adverse impacts from project implementation. The hydrology and water quality issues identified above will be carried forward as issues of focus in the environmental impact report (EIR) that will be prepared for this project.

IX. LAND USE AND PLANNING – Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a.	Physically divide an established community?	❑	❑	❑	X
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❑	❑	X	❑
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	❑	❑	❑	X

SUBSTANTIATION:

The whole 14.7 mile rail corridor segment where the project will be installed is developed with urban land uses, including industrial, commercial, residential, transportation and some open space or infrastructure (drainage channel) uses. Each of the eight affected land use jurisdictions assign different labels to the BNSF rail corridor, but each acknowledges the rail corridor through its boundaries and recognizes it as a current, legitimate land use. The proposed third main track will be located wholly within the BNSF right-of-way and the proposed grade separations in the four communities (Cities of Pico Rivera, Santa Fe Springs, La Mirada and County of Los Angeles) are improvements that are generally supported in each local jurisdiction's General Plan. For example, in the City of Santa Fe Springs where six new grade separations are proposed, General Plan Policy 1:10 of the Circulation Element states: "Continue plans to provide grade separation between railroads and major thoroughfares, wherever feasible." The proposed project is fully consistent with this goal.

IX.a The proposed project site is an existing rail corridor. The construction of the third mainline track and the grade separations will not further physically divide an established human community. In fact, by segregating rail and vehicle traffic, the grade separations will enhance the flow of traffic through each community and will substantially enhance community traffic safety. Thus, the installation of the proposed project improvements will not cause a significant increase in the division of the existing communities, and should result in providing continuous flow of traffic between those areas currently divided by the rail line that have at grade road crossings over the railroad corridor. No mitigation is required.

IX.b The proposed project will be implemented along an existing rail corridor. The project will facilitate more efficient rail operations along the BNSF rail corridor and the proposed grade separation projects will fully conform with City policies to eliminate the current at grade crossings. Therefore, the project has no potential to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. No mitigation is required.

IX.c There are currently no adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan associated with the proposed project alignment. Therefore, no potential exists for conflicts with any such plan. No mitigation is required.

<u>Conclusion</u>

Based on the analysis presented above, land use and planning resources will not experience significant adverse impacts from project implementation. The land use issue will not be carried forward as an issue of focus in the EIR that will be prepared for this project.

X. **MINERAL RESOURCES** – Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❑	❑	X	❑
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❑	❑	X	❑

SUBSTANTIATION:

A review of the relevant General Plan indicates that no mineral resource zones, excluding underground petroleum resources, occur along the project alignment. No petroleum extraction occurs within the rail corridor or within the areas encompassed by the proposed grade separations. Oil and gas extraction facilities do not require a specific location to successfully exploit these resources. Thus, access to such resource will not be significantly reduced if the proposed project facilities are implemented.

X.a The proposed project site is not located within an area known to have construction aggregate deposits nor will it result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. As described above, subsurface petroleum resources can be accessed from a broad area and the proposed project's footprints will not significantly restrict access to such resources in the future. No mitigation is required.

X.b The proposed project site is not considered an important mineral recovery site delineated on any of the local general plans, specific plan or other land use plan. No significant adverse impacts to mineral resources or mineral resource availability are forecast to result from implementing the proposed project. No mitigation is required.

<u>Conclusion</u>

Based on the analysis presented above, mineral resources will not experience significant adverse impacts from project implementation. The mineral resource issue will not be carried forward as an issue of focus in the EIR that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XI.	**NOISE** – Would the project result in:				
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X	❑	❑	❑
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X	❑	❑	❑
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X	❑	❑	❑
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X	❑	❑	❑
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	X	❑	❑	❑
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	X

SUBSTANTIATION:

The General Plans of each local jurisdiction identify the rail corridor and at grade street crossings as important sources of noise within each community. Although the proposed project does not generate additional permanent noise on its own, short-term construction noise and shifts in the location of noise at grade separations may change the noise environment.

XI.a The proposed project has the potential to expose persons or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies during construction activities. This issue will be evaluated in the EIR.

XI.b The proposed project has the potential to expose persons to or generate excessive groundborne vibration or groundborne noise levels during construction activities. This issue will be evaluated in the EIR.

XI.c The proposed project is not forecast to directly cause an increase in rail traffic, which is related to commercial demand for passenger and freight capacity on the BNSF East-West Main Line corridor. The project may reduce the amount of time that trains are placed on sidings to idle while other trains pass and thereby reduce noise associated with train idling and starting and stopping. The grade separations will also reduce the number of times that train whistles are used. The modification in the grade separations may alter the existing pattern of noise generation from the affected roads. These noise issues will be evaluated as part of the EIR.

XI.d During construction, the proposed project will cause a substantial temporary increase in ambient noise levels in the project vicinity above levels existing without the project. This potential impact will be evaluated in the EIR.

XI.e The proposed project site is located within two miles of the Fullerton Municipal Airport. Noise from operations would not expose people residing or working in the project area to excessive noise levels, but potential noise impacts from airport operations will be considered as part of the EIR. Noise exposure impacts from implementing the proposed project, will be evaluated in the EIR.

XI.f The proposed project site is not within the vicinity of a private airstrip. No potential for exposure to any noise impacts from such airport operations exists at the project location. With no potential for adverse noise impacts from implementing the proposed project, this issue will not be evaluated in the EIR.

Conclusion

Based on the analysis presented above, noise levels may experience significant adverse impacts from project implementation. The noise issues identified above will be carried forward as issues of focus in the EIR that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XII.	**POPULATION AND HOUSING** – Would the project:				
a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❑	❑	X	❑
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❑	X	❑	❑
c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❑	X	❑	❑

SUBSTANTIATION:

The proposed project will provide short-term employment during construction activities for about 100-200 persons. The regional labor market will provide these employees and no new significant short-term demand for housing is forecast to result from implementing the proposed project. Over the long-term the third rail is not forecast to result in any increase in permanent employment within the region. Nor is any increase in long-term employment forecast to occur as a result of installing the grade separations. The project will result in the displacing the occupants of between 10 and 15 existing residences due to the areas that must be disturbed as part of installing and operating the grade separations.

XII.a The proposed project is the construction of a third mainline track and grade separations, it has no potential to induce substantial short- or long-term population growth in the area, either directly or indirectly. No new employees will be required to implement this project and no housing is proposed as part of the project. No significant growth inducement is forecast to result from implementing the proposed project. This issue will not be evaluated in the EIR.

XII.b The proposed project site is an existing rail corridor. Between 10 and 15 existing residences and one vacant apartment building may be acquired in support of project construction and operation. The removal of this amount of housing is not considered substantial on a regional basis, but since the loss of housing will be limited to one city (Pico Rivera) and an unincorporated area of Los Angeles County, the potential impact from loss of housing may be considered a significant adverse impact. To acquire the residences and vacant apartment complex, BNSF or the local municipalities must legally pay "fair-market value," so the issue of adequate reimbursement for the properties is adequately mitigated through existing laws and regulations. However, to find new residences for any of the residents that may be displaced, the following mitigation measure will be implemented:

XII.b.1 Housing relocation assistance shall be provided to those residents that require such service. Successful relocation shall be accomplished when comparable housing within the project area is occupied by the those residents requiring housing relocation assistance.

Implementation of the above measure will ensure that potential significant adverse impacts to displaced residents are fully mitigated to a nonsignificant level. Whether the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601-4655) and implementing regulations at 49 CFR, part 24, will be utilized to support housing relocation assistance will depend upon whether the cities or BNSF oversee implementation of the grade separation projects that require property acquisition. BNSF is not obligated to follow the Act's procedures because it is a private business, but the above mitigation measure requires adequate housing relocation assistance regardless of which party oversees the construction and property acquisition.

XII.c Please refer to discussion under issue XII.b. The regional housing market has sufficient vacant units available to meet the needs of the few residents that will be impacted by the proposed project. The mitigation outlined under measure XII.b ensures that these residents will obtain comparable housing. No requirement to construct replacement housing is forecast to be required in this instance.

<u>Conclusion</u>

Based on the analysis presented above, population and housing will not experience significant adverse impacts from project implementation as long as mitigation outlined above is implemented. The population and housing issue will not be carried forward as an issue of focus in the EIR that will be prepared for this project.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XIII. PUBLIC SERVICES – Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	❑	X	❑	❑
Police protection?	❑	X	❑	❑
Schools?	❑	X	❑	❑
Parks?	❑	❑	❑	X
Other public facilities?	❑	❑	❑	X

SUBSTANTIATION:

The existing rail operations and at grade road crossings place a minimal demand on fire and police protection and place no identifiable demand on schools, parks or other public service systems. The proposed project may cause short-term effects on emergency services provided by fire and law enforcement services along the proposed 14.7 mile third main track rail corridor. Closure of existing roads for certain periods will require development of alternative emergency response routes. Similarly, construction staging areas may experience an increase in trespass and theft activities over the short-term, which can place additional demand on local law enforcement services. These issues are addressed below.

XIII. Fire Protection: Along the whole construction route, but particularly at the proposed grade separations in Pico Rivera, Santa Fe Springs, La Mirada and small areas of Los Angeles County a potential exists to adversely impact emergency response from one side of the railroad tracks to the other. To address this potential impact, the following mitigation measure will be implemented:

XIII.a.1 Prior to initiating construction of the third main line track or each of the grade separations, BNSF shall submit and have approved a fire or medical emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local fire agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.

Implementation of the above measure will ensure that potential significant adverse impacts to emergency fire response capability are mitigated to a level such that the current level of service (as of the date of construction) is maintained.

Over the long-term, the installation of both the third main track and the grade separations will facilitate better emergency response capabilities on both sides of the tracks. Until the grade separations are completed, the third main track will facilitate better movement of trains along the corridor, thus reducing the amount of time that a train spends at any one point, such as at an existing road that crosses the tracks at grade (for example Passons Boulevard in Pico Rivera and Pioneer Road in Santa Fe Springs).

No mitigation is required for the long-term emergency access and fire protection capability of the affected fire departments.

Police Protection: Police emergency responses will experience the same short-term impacts during construction of the third track and the grade separations. Similar mitigation shall be implemented to ensure that police response times are maintained within each local jurisdiction's response time guidelines.

XIII.b.1 Prior to initiating construction of the third main line track or each of the grade separations, BNSF shall submit and have approved a police emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local law enforcement agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.

Implementation of the above measure will ensure that potential significant adverse impacts to emergency law enforcement response capability are mitigated below a level of significance.

Staging and equipment storage areas shall be provided with adequate protection to minimize potential for trespass and theft. The following mitigation measure shall be implemented by BNSF during construction to minimize demand for law enforcement response during construction:

XIII.b.2 Prior to initiating construction of the third main line track or each of the grade separations, BNSF shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards. Success for this measure will be determined by the local law enforcement agency approving and verifying that the access control plan and measures will minimize trespass and theft activities in accordance with local requirements.

Implementation of the above measure will ensure that potential significant adverse demand impacts for law enforcement resources during construction are mitigated below a level of significance.

The long-term impacts from implementing the proposed project will be beneficial for law enforcement access throughout the City for the same reasons as outlined above for fire department emergency access.

Schools: Since the proposed project is not forecast to substantially increase area employment or the number of residences within the area, no potential significant demand for school capacity is forecast to occur from implementing the proposed project. One school, Maizeland School, in the City of Pico Rivera may experience direct significant adverse impacts from installing the Passons Boulevard underpass under the present design for this grade separation project. Approximately .22 acres of the northwestern corner of the Maizeland School site will be acquired and utilized to relocate Rivera Road and an existing drainage channel as part of the Passons Boulevard grade separation project. The impacted area on the school site is comprised or athletic fields and parking area and its loss may be considered a significant impact to the school site. Therefore, the following mitigation measure shall be implemented:

XIII.c.1 Prior to initiating construction of the Passons Boulevard grade separations, BNSF shall submit a mitigation plan to the local school district providing new acreage to offset the loss of acreage from project implementation at Maizeland School. If such acreage compensation is not feasible, BNSF shall provide improvements to school facilities deemed acceptable by the local school district to offset the loss of play area and parking. Such mitigation may consist of new school equipment or other facilities deemed to offset the Passons Boulevard impacts on the school site.

Implementation of the above measure will ensure that potential significant adverse impacts to the Maizeland School site are mitigated below a level of significance.

Parks: No parks occur along the proposed alignment for the third main track or within the impact area of the grade separations. Therefore, no potential adverse impacts to park facilities and resources can occur since direct or indirect effects (generation of additional demand due to population growth) are not forecast to occur from implementing the proposed project. No mitigation is required.

Other Public Facilities: The proposed grade separations will replace existing roads with underpasses under the BNSF rail corridor. Costs for maintaining these new grade separation facilities will fall to the local communities, which must fund their operation and maintenance. This ongoing cost must be allocated from existing and future funding resources of local communities. Based on the fact that such costs already must be funded for existing road crossings of the rail corridor and the value engineering that has been incorporated into the grade separation designs, any additional operations and maintenance costs are not forecast to be significant and adverse. No mitigation is required.

Conclusion

Based on the analysis presented above, public services will not experience significant adverse impacts from project implementation as long as mitigation measures outlined above are implemented. The public service issue will not be carried forward as an issue of focus in the EIR that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XIV.	**RECREATION** –				
a.	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❑	❑	❑	X
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❑	❑	X	❑

SUBSTANTIATION:

The only recreation facilities located within the project area are the bicycle trails along the San Gabriel River and Coyote Creek.

XIV.a The proposed project does not include housing, an increase in population, or a place of employment with employees, that have a potential to increase the use of existing neighborhood parks or other recreation facilities. No adverse impact from demand for recreational facilities is forecast to occur from implementing the proposed project. No mitigation is required.

XIV.b The proposed project does not include any recreation facilities, but it will be required to reconstruct the existing bike trails along the San Gabriel River and Coyote Creek. This construction is included as part of the proposed project and engineering drawings, so no mitigation is required to ensure that the bike trail is maintained over the long term, consistent with the County's design requirements, including the 12-feet of separation between the trail and the new San Gabriel River and Coyote Creek rail bridge addition. No additional mitigation is required.

Conclusion

Based on the analysis presented above, recreation will not experience significant adverse impacts from project implementation. The recreation issue will not be carried forward as an issue of focus in the EIR that will be prepared for this project.

XV. TRANSPORTATION/TRAFFIC – Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	X	❑	❑	❑
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	X	❑	❑	❑
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❑	❑	❑	X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	X	❑	❑	❑
e. Result in inadequate emergency access?	❑	X	❑	❑
f. Result in inadequate parking capacity?	❑	❑	X	❑
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	❑	❑	❑	X

SUBSTANTIATION:

The circulation systems of seven cities and a small portion of the County of Los Angeles may be impacted by the proposed project, particularly in the short-term. However, over the long-term the enhanced efficiency of the rail corridor and the new grade separations are forecast to substantially improve the flow of traffic on local streets.

XV.a The project may result in an increase in short-term traffic which is substantial in relation to the existing traffic load and capacity of the street system. Some long-term traffic impacts may also result from installing the grade separations and the closure of Serapis in the City of Pico Rivera. These issues will be evaluated in the EIR.

XV.b The project may cause short-or long-term traffic impacts that may exceed level of service standards, either individually or cumulatively, that have been established by local and regional agencies for designated roads or highways. These issues will be evaluated in the EIR.

XV.c The proposed project will not have an impact on the air traffic patterns associated with any airport. No adverse impact is possible for this issue. No mitigation is required.

XV.d The proposed project may increase short-term traffic hazards due to construction activities, including closure of at grade road crossings at proposed grade separations, limited access through grade separation construction areas, trucks enter and leave the project site to transport loads of dirt or to deliver construction materials. This issue will be evaluated in the EIR. On the other hand, the primary long-term benefit to traffic safety will be the isolation of rail and vehicle traffic at each of the grade separation sites over the long-term.

XV.e Construction activities have been identified (see Public Service discussions for Fire and Police Protection) as having a potential to cause short-term inadequate emergency access. This issue will be addressed by mitigation measures identified under the Public Service issue discussion. With grade separations installed future emergency access will be improved which is one of the primary benefits of the proposed project.

XV.f The proposed project will not result in an increased demand for permanent parking capacity for either the third main track or the grade separations. Short-term construction activity may require parking for construction employees. The following mitigation measure will be implemented to prevent inadequate parking capacity from occurring in association with the proposed project.

XV.f.1 Prior to initiating construction of the third track or grade separations, BNSF shall submit a parking plan to the local affected jurisdiction for its construction staging and equipment storage sites that demonstrate adequate parking capacity for the total number of employees and delivery vehicles that will be on the site at any given time.

Implementation of the above measure will ensure that potential significant adverse impacts associated with construction parking demands are fully mitigated to a nonsignificant level.

XV.g The proposed project has no potential to adversely impact adopted policies, plans, or programs supporting alternative transportation. Implementation of the project will allow more efficient flow of rail traffic along the corridor and more efficient and safe flow of mass transit and alternative transportation modes (bicycles and pedestrians) along roads where grade separations will be installed. With no potential to conflict with alternative transportation policies, plans and programs, no adverse impact is forecast to occur. No mitigation is required.

Conclusion

Based on the analysis presented above, the circulation system and traffic may experience significant adverse impacts from project implementation. The traffic issues identified above will be carried forward as issues of focus in the EIR that will be prepared for this project.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XVI.	**UTILITIES AND SERVICE SYSTEMS** – Would the project:				
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❑	❑	❑	X
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❑	X	❑	❑
c.	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X	❑	❑	❑
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❑	❑	X	❑
e.	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❑	❑	❑	X
f.	Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❑	❑	X	❑
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	❑	❑	❑	X

SUBSTANTIATION:

The third main track will not require connection to any utility systems, except electricity (to power signals and other track support equipment) and the storm water drainage system. The electricity demand for the new signals is forecast to be less than that which is currently consumed by the existing system. The storm water drainage system impacts of the proposed project have already been identified as being part of the EIR under the hydrology and water quality issue. The grade separations will also require continued connection to the electricity grid and the area and regional storm water drainage system. Since future energy demand for the grade separations is not forecast to be significant, this issue will not be evaluated as part of the EIR that will be prepared for this project. Storm water drainage from underpasses will be included in the EIR evaluation. A final issue does not relate directly to demand for additional capacity from the utilities identified above. The proposed project may require relocation of existing utilities, particularly in support of the grade separations. The potential impacts of this utility relocation is addressed below.

XVI.a The proposed project is an existing rail corridor. No wastewater treatment is associated with the implementation of the project. Therefore, no wastewater discharge orders will be affected and the project has no potential to conflict with such an order. No mitigation is required.

XVI.b The proposed project will require the relocation of all utilities that may conflict with installation and operations of the third main track or grade separations. Utility relocation is a major component of the construction activities associated with the proposed project. These activities are addressed as part of other specific issue discussions, such as hydrology, air quality, cultural resources, etc. For the purpose of relocating the utility systems and ensuring that they will function properly, the following mitigation measures will be implemented by BNSF to ensure that utility capacity and service is not diminished or significantly effected by the proposed project.

XVI.b.1 Prior to initiating relocation of any utility system located within the railroad right-of-way, BNSF will notify the pertinent utility of the BNSF construction plan. The BNSF will work with the utility under the terms of the utilities agreement to occupy the BNSF's right-of-way to limit short-term system relocation effects and minimize outages to the degree feasible. BNSF shall submit sufficient engineering data to verify that remaining utility systems will function as effectively after relocation as it does before relocation.

Implementation of the above measure will ensure that potential significant adverse impacts associated with utility system relocation are fully mitigated to a nonsignificant level during both the short- and long-term.

XVI.c The proposed project is a new third main track and grade separations. This project will require modifications in and the construction of new storm water drainage facilities or expansion of existing facilities beyond those which currently exist. This issue will be evaluated in the EIR.

XVI.d The proposed project will use water to support construction over the short-term and to support landscaping over the long-term. The water required for construction is forecast to be about 30,000 gallons per day of construction for the third track and grade separations. This volume of water will place a short-term demand on local water supplies which are considered adequate to meet this construction water demand. In addition, for many of the cities that are served by Metropolitan Water District (supplier of imported water to several cities in the project area), this agency has indicated in a recent publication ("Report on Metropolitan's Water Supplies," February 11, 2002) that it has sufficient water supplies to meet future water demand over the long-term for its customers. The short- and long-term demand by the proposed project is not forecast to cause significant water supply impacts. No mitigation is required.

XVI.e No wastewater treatment demand is associated with the proposed project, so no potential for adverse impact is forecast to occur from its implementation. No mitigation is required.

XVI.f The proposed project will generate solid waste during construction. The soil/sediment excavated will be made available to local jurisdictions and/or commercial haulers as fill. The asphalt and other waste will be transported and disposed of at appropriate recycling or solid waste landfills. Los Angeles County has identified sufficient disposal capacity to meet the short- and long-term needs of County residents. No solid waste is expected to be generated within Orange County. Based on the availability of adequate disposal and recycling capacity, disposal of the construction debris from the proposed project is not forecast to result in significant impacts to the environment. Since recycling is mandated where feasible in Los Angeles County, no additional mitigation is required to transport waste to recycling facilities where feasible.

XVI.g The solid waste disposal of construction debris that will be generated by the proposed project will be carried out in full compliance with pertinent statutes and regulations. Under the hazards discussion the potential exists to encounter contaminated soil or sediment during construction of the third main track and grade separations. This specific issue will be evaluated in the EIR.

Conclusion

Based on the analysis presented above, utilities and service systems will not experience significant adverse impacts from project implementation, with the exception of potential contaminated soils that may require special management techniques. The single utility issue (management of contaminated soil) identified above will be carried forward as issues of focus in the EIR that will be prepared for this project, but all other utility issues are considered to be nonsignificant with implementation of mitigation outlined above.

XVII. **MANDATORY FINDINGS OF SIGNIFICANCE** –	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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?	X	❑	❑	❑
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	X	❑	❑	❑
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X	❑	❑	❑

SUBSTANTIATION:

XVII.a The proposed project has a potential to adversely impact biological and cultural resources. These issues will be evaluated in the EIR that will be prepared for this project.

XVII.b Cumulative impacts from the proposed project may occur under the following resources issues: air quality, hazards, hydrology and water quality; noise and transportation/traffic. No other cumulative impacts were identified from implementing the proposed project.

XVII.c Potentially substantial adverse effects on human beings may result from implementing the proposed project for the following issues: air quality, geology/soils, hazards, hydrology/water quality, noise and transportation/traffic.

Conclusion

This Initial Study indicates that for the following issues, no potential for significant impact exists or that design and mitigation measures are available to reduce potentially significant impacts to a level of nonsignificance. These issues include: aesthetics, agricultural resources, land use/planning, mineral resources, population and housing, public services, recreation and most utility/service system issues. The following issues have been identified as experiencing potentially unavoidable and unmitigable significant impacts: air quality, biological resources, cultural resources, geology/soils, hazards & hazardous materials, hydrology/water quality, noise, transportation traffic, and managing potentially contaminated material that may be exposed during construction of the project. Caltrans concludes that these issues will be evaluated in a programmatic EIR that will be prepared for the proposed third main track and grade separations project evaluated in this Initial Study.

City of La Mirada
Scoping Meeting Comments
April 25, 2002

AGENCY or Indivudual	ISSUES RAISED or COMMENT	WAS ISSUE ADDRESSED
Arnold Applebaum Solid State Divices	1. Concerned about the ability of traffic to turn left and get toand from his business. 2. Congestion caused by construction for employees going up Valley View. 3. The impact of noise and dust on his business - sensitive aerospace equipment. 4. Will Stage Road remain a through street? 5. Will SSDI's secondary driveway (to North parking lot) remain open? 6. Will any part of SSDI property need to be acquired for the project? 7. Will the microwave linkconstruction between SSDI and Stage Road be disrupted? 8. Landscaping / Repairs to front of SSDI building and access during construction? 9. SSDI will need to know months in advance of any interruption / switchovers of utilities due to long term uninterruptible high reliability testing of components. 10. Access needs to be maintained to a. liquid nitrogen tank in SSDI parking lot. A heavy truck delivers liquid nitrogen every other night (not during business hours). 11. Heavy dust would be detrimental to SSDI's production which involves manufacturing of parts that must meet military specifications. 12. The project will create more walls, which is an invitation for more graffiti. 13. SSDI seems to be in the eye of the storm with this phase of the project. SSDI had contractual obligations and needs to notify the government and its other customers well in advance of what's going on. 13. SSDI would like to have a copy of the MOU. 14. Mr. Applebaum disapproves of the project. 15. Numerous environmental issues listed on comment card: noise, dust, safety issues, vibration, traffic, fire protection, elimination of access to property. 16. This project will decrease his property value. 17. This project will impact his customer flow. 18. Fire exit driveway will interfere with emergency exit ability. 19. Will there be a (4) fourth track? 20. Stage Road had a drainage and flooding problem will this project correct it? 21. Will large truck have access to his business? 22. Vibration and dust will effect his airspace manufacturing company. Will there be compensation for lost business or will the project pay for upgrading of fans and equipment to maintain the working environment? 23. Stage Road is a blighted area - concerned about the lack of clean-up by the city. 24. Can trucks park along BNSF railroad?	

	25. Is Valley View totally funded? 26. How long will the construction take? 27. Because of this project, he will lose one of his parking lots. In order to access to the other lot where his trucks will have to go onto a neighboring property.
Frank Futati	1. Are the cars going to go over the train or under? 2. Will the third track and Valley View start at the same time? Valley View and RC will be impacted. 3. Will Rosecrans be finished before starting Valley View? 4. What will be impact on traffic on Rosecrans and Valley View? 5. Would like to have a copy of NOP.
Jose Domingus	1. He lives on the frontage road by Valley View. Will there be heavier traffic in the neighborhood? 2. Which way will trains be detoured during construction?
Faustol Rowland	1. Concerned about increased noise and pollution. 2. Would like the train to go under the road so the pollution would not settle on homes. 3. Is Brookhurst going to be closed permanently? 4. Could it possibly be built below grade? 5. At what point will access to State Street be impacted?
Richard Aggen	1. Noise is a major problem. Will it increase or decrease? 2. Will there be more trains? 3. Would like the track dropped below road.
Ray Ramerice City of Commerce	1. Can more efficient fuels and cleaner fuels be burned.? 2 Can the state of California demand that the engines use clean fuels?
Mrs. Egan	1. Noise is a factor.Will there be time constraints? 2. The trains use their horns excessively, at times playing games and songs. Can anything be done to stop this?
David Leather	1. Why do the trains blow their whistles so much at intersections?
Ed Morrach	1. The project goes down by Brookhurst. Are there going to be additional tracks?
Kathy Gaston	1. Will this project have any impact on the switching and the engines being run for so long?

2. Would like a sound wall.

Attached:
Sign-in-sheet

La Mirada ?

SIGN IN SHEET:

Name	Address	Phone
June "Kathy" Gaston	14339 San Ardo	714-521-1128
Rudolph R. Casillas	14348 San Ardo Dr	714-521-0391
Troy Honeycutt	14253 San Ardo Dr.	714-523-1352

SIGN IN SHEET:

Name	Address	Phone
Cecilia A. Carrillo	11128 Wheelock St	562-699-5664
Arnold N. Applebaum	14830 VALLEY VIEW,	562-404-3529
Joe O. Toledo	8533 Pioneer	695-7824
MIRIAM ARATO,	10924 WRIGHTWOOD LN STUDIO CITY, CA 91604	323-656-6505

Questions or Commets:

* TRAFFIC PROBLEMS
* DRIVEWAYS
* SAFETY CONCERNS
* ADJ. PROPERTY NOT NOTIFIED.
* DIMINISHED PROP. VALUE
* NOISE, DUST, ACCESS DURING CONSTRUCTION
* VIBRATION
* GRAFFITI

Name: ARNOLD N. APPLEBAUM

Address: 14830 VALLEY VIEW AVE

City of Pico Rivera
Scoping Meeting Comments
April 29, 2002

AGENCY or Individual	ISSUES RAISED or COMMENT	WAS ISSUE ADDRESSED
H. Salazar	1. Traffic access to Passions is a problem. 2. Passions is the only street that has freeway and emergency access. 3. Emergency vehicles will be on Rosecrans and Passions. Will emergency vehicles be able to access the community effectively? 4. Traffic backs up at Passions 5. A sound wall is needed in this area. 6. There is air pollution, cancer-causing diesel fumes and water may be polluted too. 7. There was a plating company with a well that has been closed. There are 28 homes in the area and more than half of the residents have contracted cancer from the water.	
Tony Contraries	1. What will the traffic speed limit be in the area? will it be the same or revised? 2. Will the road be two lanes or four? 3.Will the third track add more vibration? 4. Will a train station be put in the area? 5. What kind of fence will be put up to keep the children out of the area?	
Alex Rodriquez	1. Noise is a factor for the residents on the North end of Rivera Road. 2. What kind of noise barrier will be provided to reduce the noise? 3. How is this project being funded? 4. Concerned about the cancer causing diesel fumes. 5. Not all of the money is coming from Caltrans, Is some of it coming from the City? 6. How and where is the money coming from? 7. How expensive is a sound wall, to the city or whoever? 8. Is the City able to build a wall if the City wants to in conjunction with this project?	
Burt Rodriquez	1. Concerned over issue of the sound wall. Has experienced the reflection of noise because he lives in the apartments. He has experienced an increase in noise, and wants noise reduction.	
Vince Hernandez	1. Residents are paying for the noise - vibration - pollution - and other issues, such as sleep deprivation and our homes being damaged by vibration and pollution. 2. He lives on the east side of the track. Will the train be closer to his house?	

	3. What will be the direct effect on his home? 4. Will the new track be used for passing and switching? 5. Have automated horns been considered? 6. What is the difference between automated and manual horns? 7. Is there a point where the noise is measured? 8. Can you specify a point where the noise and vibration can be measured?
Sonia Soto	1. What difference will this third track make in noise and vibration? 2. Will the third track increase the train traffic? 3.. Why can't you just improve the two tracks? 4. How can the community stop the addition of new trains? 5. How can the community control traffic and the noise of the trains? 6. Where is the office in charge of maintenance? 7. Is the maintenance going to be done at regular times? 8. This third track is going to devalue homes, he is not sure if the project is good for this community.
Julio Soto	1. He is concerned with the City, and residents not getting any response from the City to help us with the noise and vibration of the trains. 2. How can stop the noise be stopped? 3. How can the community be heloed? This is going to kill the whole community because of the pollution. 4. What can residents do?
Alfonso Lora	1. What is the speed limit difference between passenger and freight trains? 2. Is there a weight limit for each? 3. Is there a difference in weight limits in freight and passenger trains?
Councilman Armenta	1. What kind of construction are you looking at for Passons? 2. What is the spansion going to look like? 3. Will it be like the picture at Dale? Similar?
Gloria Salazar	1. Are you going to take any homes? 2. Her home is at Pioneer and Reverie Road, one of the six on the map.
Attached: Sign-in-sheet	

SIGN IN SHEET:

Name	Address	Phone
Henrietta Salazar	7548 Kilgarry	949-5967
Julio Soto	8943 WARVALE St	942-0261
SONIA SOTO	" "	
Vince Hernandz	9041 E. RIVRRA Rd	948-3276
Gloria & Tony Contreras	758 Lemoran Ave	949-4401
Salvador Castaneda	7635 BirchleafAV	562-801-1619
JORGE PARRA	7613 BIRCHLEAF AVE	562 942-8318
ALFONSO LARA	9027 RIVERA RD.	949-5923
Josephina Garcia	7563 Beguette	949-0976
Salvador Vallejo	7627 Birchleaf ave	942 2461
ANTONIO CARBAJAL (JR.)	7525 CRAVELL AVE.	949-7192
Bert Rodriguez	[illegible]	[illegible]
Alex Rodrig	9502 Poinciana St	562 949 1258
Gloria Salazar	8625 S. Pioneer - Whittier	562-699 4221
Marlon Noguera	7621 Birchleaf Ave Pico Rivera	(562) 949-7718

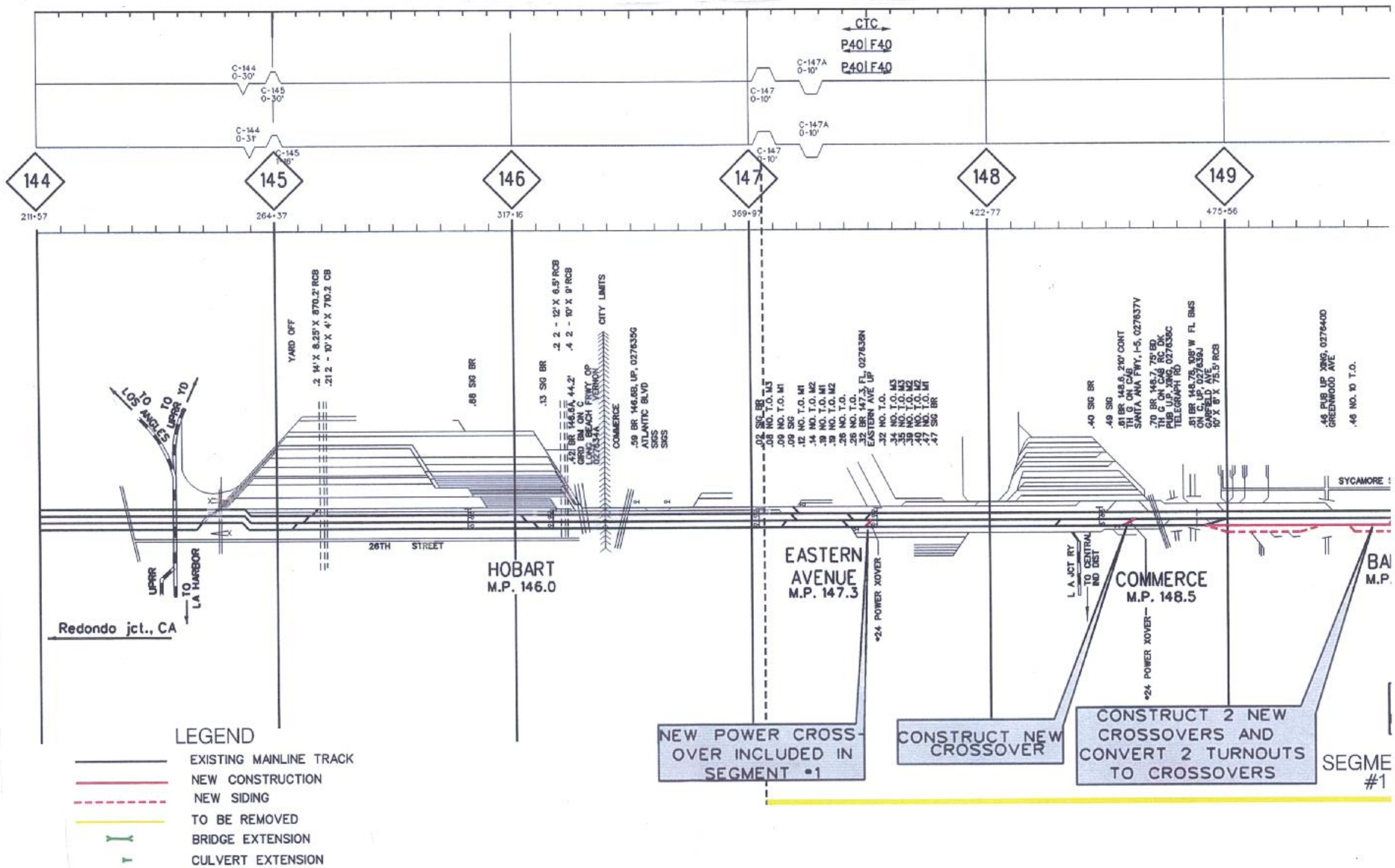
SIGN IN SHEET:

Name	Address	Phone
JOSE DOMINGUEZ	14632 VALLEY VIEW	714-521-2990
Sandra Dominguez	14632 VALLEY VIEW	714 521-2990
CINDY ROWLAN	14302 SAN ARDO DR	(714) 670-8569
EDWARD H. J. MOORLACH	113 ROSE DRIVE Fullerton	(714) 526-0526
ARNOLD APPLEBAUM	14830 VALLEY VIEW	(562) 404-3529
Teresa Truey	14409 Iseli Rd, Santa Fe Springs	(562) 921-9980
Cindy Swanson	13191 Crossroads Parkway North, Ste 115 City of Industry CA 91746	562 948 4351
RICHARD EGGAN	14311 SAN ARDO DR LA MIRADA CA 90638	714-521-7[illegible]
FAUSTO ROWLAN	14302 SAN ARDO DR	(714) 670-8569
DAVID LEATHER	14233 SAN FELICIANO DR	(714) 994-5053
GREG FUTATO	14446 SAN ARDO DR.	(714) 521-0975
RAY RAMIREZ	2535 COMMERCE WAY COMMERCE, CA. 90040	(323) 722-4805 EXT. 2330

APPENDIX 8.2

CONCEPTUAL TRACK ALIGNMENT SCHEMATIC (TRACK CHART)

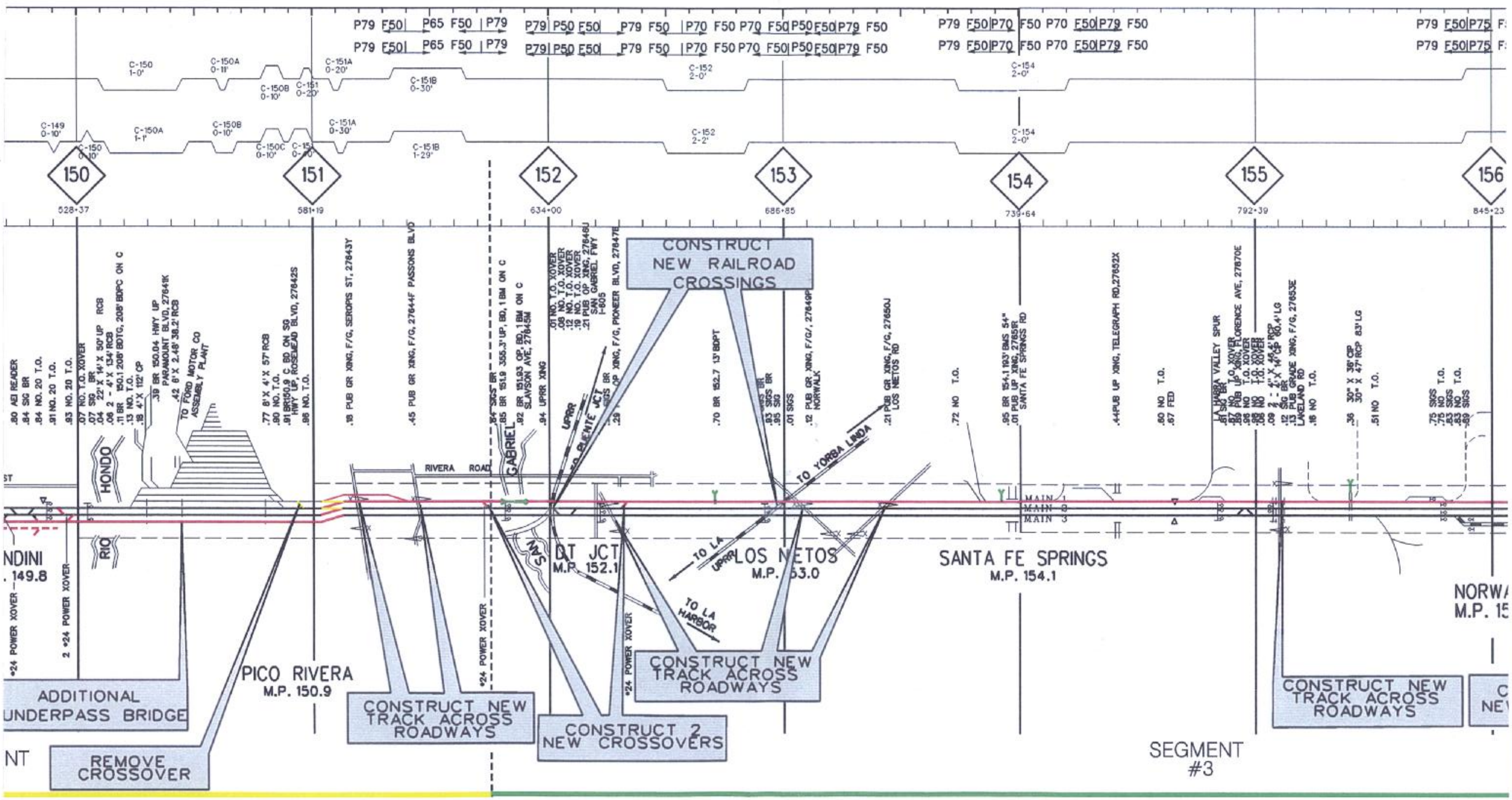
ATTACHMENT 1, page 1 of 4
San Bernardino Subdivision Capacity Improvements
Hobart to Basta, MP 144 to 164, Track Alignment Schematic



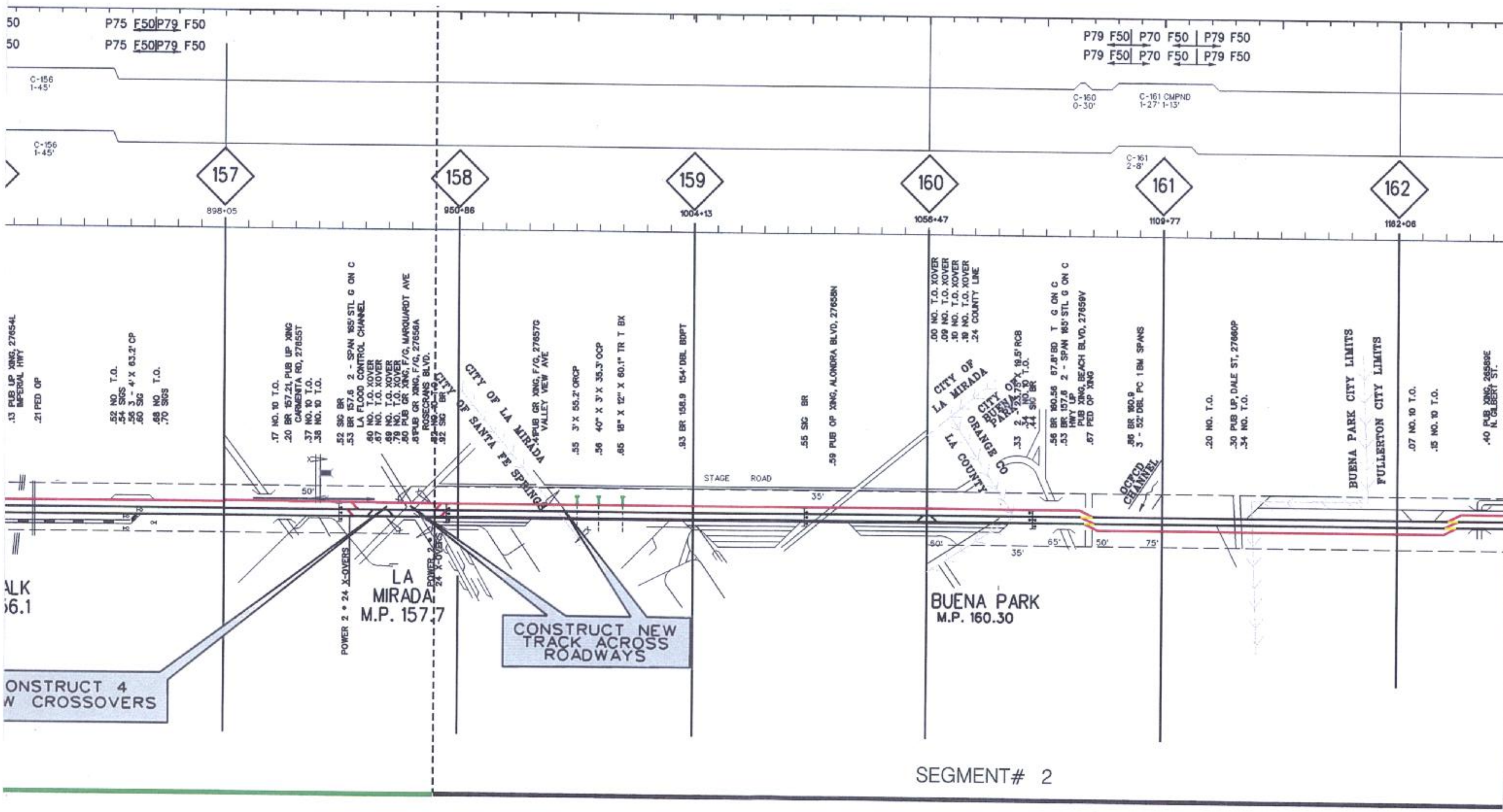
ATTACHMENT 1, page 2 of 4

San Bernardino Subdivision Capacity Improvements

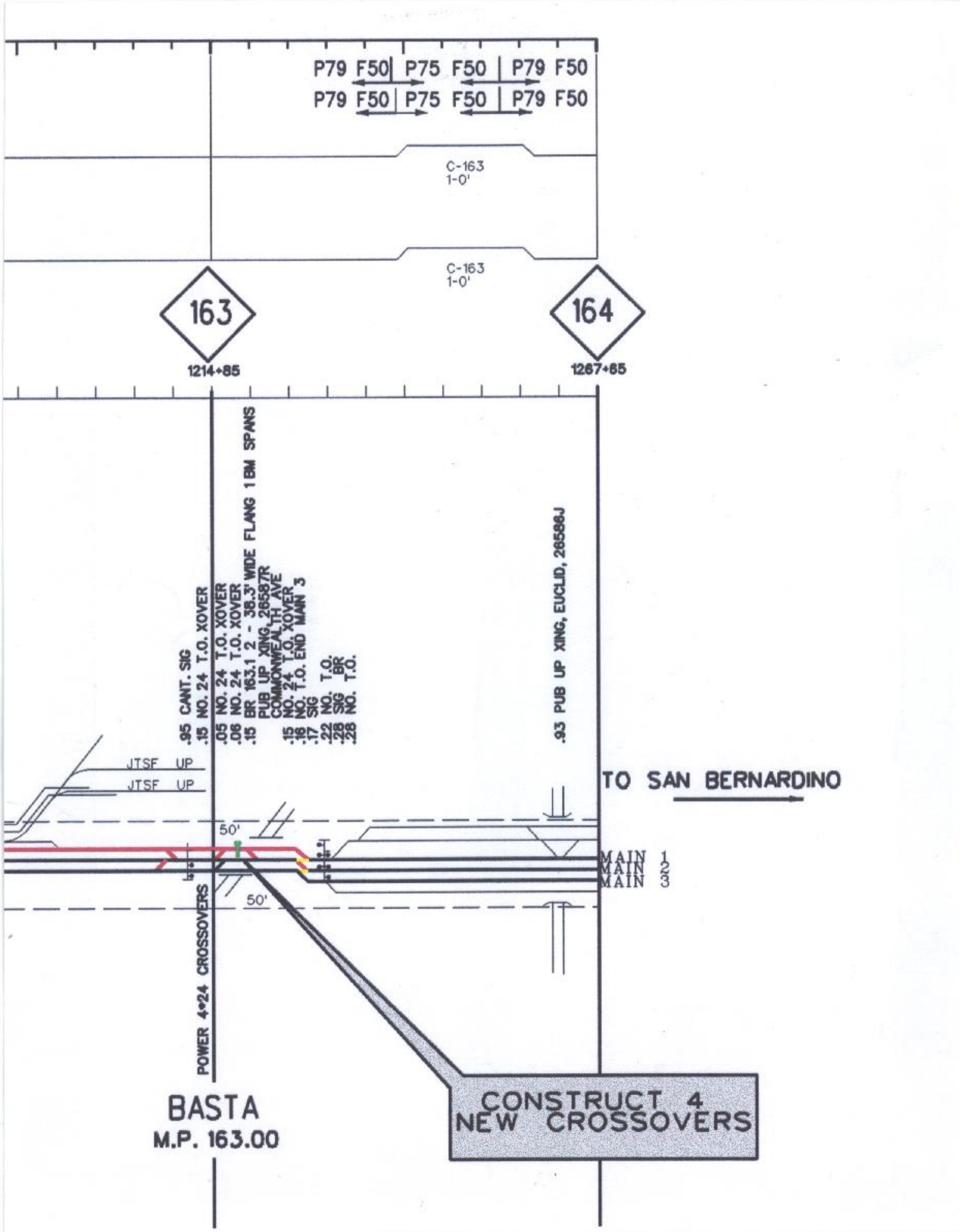
Hobart to Basta, MP 144 to 164, Track Alignment Schematic



ATTACHMENT 1, page 3 of 4
San Bernardino Subdivision Capacity Improvements
Hobart to Basta, MP 144 to 164, Track Alignment Schematic



ATTACHMENT 1, page 4 of 4
San Bernardino Subdivision Capacity Improvements
Hobart to Basta, MP 144 to 164, Track Alignment Schematic



Source: Hanson Wilson, Incorporated

Tom Dodson & Associates
Environmental Consultants

APPENDIX 8.3

AIR QUALITY IMPACT ANALYSIS

Giroux & Associates
Environmental Consultants

17744 Sky Park Circle, Suite 210
Irvine, California 92614 - Phone (949) 851-8609 - Fax (949) 851-8612

AIR QUALITY IMPACT STUDY

BNSF TRIPLE TRACK IMPROVEMENT PROJECT

COUNTIES OF LOS ANGELES AND ORANGE, CALIFORNIA

Prepared for:

Tom Dodson & Associates
Attn: Tom Dodson
2150 North Arrowhead Avenue
San Bernardino, California 92405

Date:

December 23, 2002

Project No.: P02-023

TABLE OF CONTENTS

PROJECT SETTING

The BNSF Triple Track Improvement Project spans approximately 14.7 miles across two counties and eight different cities. From north to south the counties are: Los Angeles and Orange, and the cities are: Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park and Fullerton. The majority of the project lies within the southern part of Los Angeles County with much of the project being inside the borders of the City of Santa Fe Springs. The project encompasses different counties and cities with somewhat different air quality characteristics. Project conditions were presumed to be best described by an average of data obtained from the nearest air monitoring stations (City of Pico Rivera, Los Angeles County and City of La Habra, Orange County). This should provide an accurate reflection of the project region because air quality in the South Coast Air Basin is more regional than local in nature.

METEOROLOGY / CLIMATE SETTING

The climate of the project area, as with all of Southern California, is largely dominated by the strength and position of the semi-permanent high pressure center over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, infrequent rainfall, and it drives the refreshing daytime sea breeze, as well as maintaining comfortable humidity levels and ample sunshine. Unfortunately, the same atmospheric processes that create the desirable living climate combine to severely restrict the ability of the atmosphere to disperse the air pollution generated mainly by the large population attracted by the climate. Portions of the Los Angeles Basin, including southeastern Los Angeles County and northwestern Orange County, therefore, experience some of the worst air quality in the nation for certain pollution species.

Regional air quality is controlled by the location and strength of pollutant sources and by the winds and inversions that control the horizontal and vertical regional dispersion patterns. Winds near the project site, as monitored at the South Coast Air Quality Management District (SCAQMD) measurement station at its Whittier air monitoring station, display several characteristic regimes.

During the day, especially in summer, winds are from the southwest-west at 7-9 miles per hour. In the evening, wind speeds diminish and directions shift to winds from the northwest. At night, especially in winter, the land becomes cooler than the ocean and an offshore wind of 3-5 miles per hour develops from the northeast or east. One other important wind regime occurs when a high pressure center forms over the western United States and creates strong offshore winds. These winds are warmed and dried by air compression as they descend from the upper desert regions into the basin. These winds are accelerated through local canyons and create hot, dry, gusty Santa Ana winds from the east and northeast across southeastern Los Angeles County.

The low frequency of calms and adequate daytime ventilation speed typically do not allow for any daytime stagnation of air pollutants in the project area. The moderate onshore breeze carries any locally generated emissions eastward along the Whittier Hills toward the Chino Hills, and then toward receptors in western San Bernardino and Riverside Counties. Any daytime air quality problems occur mainly when winds shift more into the northwest and the daytime clean sea breeze from the southwest is replaced by airflow from the northwest which has passed over substantial pollution generation areas of the Los Angeles area. These winds bring occasional heavy smog levels across the project site during the summer and early fall. Wind at night drifting seaward across the air basin and off the nearby hills is much slower and does allow for localized stagnation of pollution, but the density of vehicular sources in the upwind area is generally low enough to minimize any major air pollution problems. Any air pollution episodes, if they occur, are, therefore, due mainly to pollutants transported into the area rather than any locally generated emissions.

In addition to winds that govern the horizontal rate and trajectory of any air pollutants, Southern California experiences several characteristic temperature inversions that control the vertical depth through which pollutants can be mixed. The daytime onshore flow of marine air is capped by a massive dome of warm air that acts like a giant lid over the basin. As the clean ocean air moves inland, pollutants are continually added from below without any dilution from above. As this layer shows down in inland valleys of the basin and undergoes photochemical transformations under abundant sunlight, it creates very unhealthful levels of smog (mainly ozone).

A second inversion forms at night as cool air pools in low elevations while the air aloft remains warm. Shallow radiation inversions are formed (especially in winter) that trap pollutants near intensive traffic sources such as freeways, shopping centers, train crossings, etc., and form localized violations of clean air standards called "hot spots." If any noticeable, direct air pollution effects were to occur from changes in the vehicular distribution around the region due to railway track improvement projects, it would be from automotive exhaust trapped by these nocturnal radiation inversions. Newer cars have become so "clean," however, that "hot spot" potential around big parking lots or major intersection is minimal unless non-local background levels by themselves are already at, or near, the air quality standard.

AIR QUALITY SETTING

Ambient Air Quality Standards (AAQS)

In order to assess the significance of the air quality impacts of the proposed BNSF track improvement project, those impacts, together with baseline air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollution levels well above these standards before adverse health effects are observed. Recent research has shown, however, that adverse health effects may occur from life-long chronic exposure to ozone at concentrations that only slightly exceed the hourly standard. Just meeting clean air standards in the future may thus still not provide complete health protection unless an additional margin of safety is also created.

The Clean Air Act Amendments of 1970 established national AAQS with states retaining the option to adopt more stringent standards or to include other pollution species. Because California already had standards in existence before federal AAQS were established, and because of unique meteorological problems in California, there is some diversity between state and federal standards currently in effect in California as shown in Table 1.

The entries in Table 1 include the recently (1997) adopted federal standards for chronic (8-hour) ozone exposure or for ultra-small diameter particulate matter of 2.5 microns or less in diameter (called "PM-2.5"). The Environmental Protection Agency's (EPA) authority to adopt such standards was legally challenged. The stay of implementation was appealed, and the U.S. Supreme Court heard the appeal and issued a unanimous decision in February, 2001. The court unanimously ruled that EPA did not require specific congressional approval to promulgate national clean air standards, and that a cost-benefit analysis was not required for such standards. The court did find that there was an implementation schedule inconsistency between "old" and "new" ozone standards, and stayed final approval of the standards until the schedule issue is resolved. Data collection for these standards is on-going, but implementation planning is still awaiting schedule revisions.

After further review of the relationship between fine particulate matter and human health effects, the California Air Resources Board adopted new state standards for PM-2.5 that are much more stringent that the federal standards. These standards were adopted June 20, 2002. No specific control programs are in place to achieve this much more stringent standard. It does represent, however, an air quality goal to dramatically reduce the adverse health effects from small-particle air pollution.

Table 1
Ambient Air Quality Standards

<table>
<tr><th rowspan="2">Pollutant</th><th rowspan="2">Average Time</th><th colspan="2">California Standards</th><th colspan="3">National Standards</th></tr>
<tr><th>Concentration</th><th>Method</th><th>Primary</th><th>Secondary</th><th>Method</th></tr>
<tr><td>Ozone</td><td>1 hour</td><td>0.09 gpm
(180 ug/m3)</td><td>Ultraviolet Photometry</td><td>0.12 ppm
(235 ug/m3)</td><td>Same as Primary Std.</td><td>Ethylene Chemiluminescence</td></tr>
<tr><td rowspan="2">Carbon Monoxide</td><td>8 hours</td><td>9.0 ppm</td><td rowspan="2">Non-dispersive Infrared Spectroscopy (NDIR)</td><td>9 ppm
(10 mg/m3)</td><td rowspan="2"></td><td rowspan="2">Non-dispersive Infrared Spectroscopy (NDIR)</td></tr>
<tr><td>1 hour</td><td>20 ppm
(23 mg/m3)</td><td>35 ppm
(40 mg/m3)</td></tr>
<tr><td rowspan="2">Nitrogen Dioxide</td><td>Annual Average</td><td></td><td rowspan="2">Gas Phase Chemiluminescence</td><td>0.053 ppm
(100 ug/m3)</td><td rowspan="2">Same as Primary Std.</td><td rowspan="2">Gas Phase Chemiluminescence</td></tr>
<tr><td>1 hour</td><td>0.25 ppm
(470 ug/m3)</td><td></td></tr>
<tr><td rowspan="4">Sulfur Dioxide</td><td>Annual Average</td><td></td><td rowspan="4">Ultraviolet Fluorescence</td><td>80 ug/m3
(0.03 ppm)</td><td></td><td rowspan="4">Paraosonanine</td></tr>
<tr><td>24 hour</td><td>0.04 ppm
(105 ug/m3)</td><td>365 ug/m3
(0.14 ppm)</td><td></td></tr>
<tr><td>3 hour</td><td></td><td></td><td>1300 ug/m3
(0.5 ppm)</td></tr>
<tr><td>1 hour</td><td>0.25 ppm
(656 ug/m3)</td><td></td><td></td></tr>
<tr><td rowspan="3">Suspended Particular Matter (PM_{10})</td><td>Annual Geometric Mean</td><td>30 ug/m3</td><td rowspan="3">Size Selective Inlet High Volume Sampler and Gravimetric Analysis</td><td></td><td></td><td rowspan="3">Inertial Separation and Gravimetric Analysis</td></tr>
<tr><td>24 hour</td><td>50 ug/m3</td><td>150 ug/m3</td><td rowspan="2">Same as Primary Std.</td></tr>
<tr><td>Annual Arithmetic Mean</td><td></td><td>50 ug/m3</td></tr>
<tr><td>Sulfates</td><td>24 hours</td><td>25 ug/m3</td><td>Turbidimetric Barium Sulfate</td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Lead</td><td>30-day Average</td><td>1.5 ug/m3</td><td rowspan="2">Atomic Absorption</td><td></td><td></td><td rowspan="2">Atomic Absorption</td></tr>
<tr><td>Calendar Quarter</td><td></td><td>1.5 ug/m3</td><td>Same as Primary Std.</td></tr>
<tr><td>Hydrogen Sulfide</td><td>1 hour</td><td>0.03 ppm
(42 ug/m3)</td><td>Cadmium Hydroxide ST Reaction</td><td></td><td></td><td></td></tr>
<tr><td>Vinyl Chloride (chloroethene)</td><td>24 hour</td><td>0.010 ppm
(26 ug/m3)</td><td>Tediar Bag Collection, Gas Chromatography</td><td></td><td></td><td></td></tr>
<tr><td>Visibility Reducing Particles</td><td>8 hours
(10 a.m. to 5 p.m. PSI)</td><td colspan="2">Insufficient amount to produce an expansion coefficient of 0.23 per ug/m3 due to particles when the relative humidity is less than 70 percent. Measurement in accordance with ARB Method V.</td><td></td><td></td><td></td></tr>
</table>

Baseline Air Quality

Existing and probable future levels of air quality around the proposed track improvement project area was historically best inferred from ambient air quality measurements conducted by the SCAQMD at its Whittier monitoring station. Monitoring in Whittier was discontinued at the end of 1993. The closest SCAQMD air quality data resources to the project area are now located in Pico Rivera, (Los Angeles County) and La Habra, (Orange County).

The various monitoring stations measure both regional pollution levels such as smog, as well as primary vehicular pollution levels near busy roadways such as carbon monoxide or nitrogen oxides. There are not respirable particulate air pollution (PM-10) monitoring stations near the project site. Local PM-10 concentrations can, however, be inferred from regional patterns, Table 2 summarizes the last five years of published data from these various monitoring stations considered most representative of project site conditions. From these data the following conclusions can be drawn:

a. Photochemical smog (ozone) levels continue to occasionally exceed standards. The frequency of first-stage smog episodes has dropped from 6 to 8 per year in the late 80's to an average of less than once per year for most of the 1990's Federal one-hour standards have been exceeded on an average of three days per year since 1997. The last first-stage smog alert (1-hour > 0.20 ppm) was in 1994. In 1999, the federal standard was not exceeded near the proposed project for the first time on record.

b. Levels of primary automotive (unreacted) exhaust such as carbon monoxide very infrequently exceed their clean air standards, but not with the same frequency or intensity as the regional smog levels. Occasional violations of CO standards have noticeably diminished. The one-hour state CO standard and the 8-hour state and/or federal CO standard have not been exceeded since before 1996.

c. PM-10 levels are not monitored at any SCAQMD monitoring station near the proposed track improvement project area. Given, however, the regionally pervasive problem of small diameter respirable particulate matter, violations of PM-10 standards are expected in the project vicinity with routine frequency. Monitoring data for PM-2.5 are very limited both temporally and spatially. PM-2.5 monitoring is conducted in Pico Rivera. In 1999-2001, two percent (2%) of days exceeded the federal PM-2.5 standard.

Air Quality Management Planning

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The South Coast Air Basin (SCAB) could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it in 1982 to project attainment of all standards by 2000.

Table 2
Track Improvement Project Area
Air Quality Monitoring Summary
(Number of Days Standards Were Exceeded
and Maximum Levels During Such Violations)

Pollutant/Standard	1997	1998	1999	2000	2001
Ozone					
1-hour > 0.09 ppm	14	24	6	10	6
1-hour > 0.12 ppm	4	8	0	2	1
8-hour > 0.08 ppm	5	8	2	4	2
Max. 1-hour Conc. (ppm)	0.13	0.18	0.12	0.14	0.13
Carbon Monoxide					
1-hour > 20 ppm	0	0	0	0	0
8-hour > 9 ppm	0	0	0	0	0
Max. 1-hour Conc. (ppm)	10	11	9	11	9
Max. 8-hour Conc. (ppm)	6.1	6.1	5.4	5.7	4.4
Nitrogen Oxides					
1-hour > 0.25 ppm	0	0	0	0	0
Max. 1-hour Conc. (ppm)	0.15	0.14	0.16	0.13	0.14

Note: There are no representative PM_{10} measurements made near the project area.

Source: California Air Resources Board (CARB) – Summary of Air Quality Data, Average of La Habra + Pico Rivera station data.

In 1988, because of uncertainty in federal Clean Air Act reauthorization, the California Legislature enacted its own California Clean Air Act (CCAA). The CCAA requires that regional emissions be reduced by 5 percent (5%) per year, averaged over 3 year periods, until attainment of all standards (state and federal) can be demonstrated. Each area of the state that did not meet a national or state ambient air quality standard was required to prepare a plan which demonstrated how the 5 percent (5%) reductions was to be achieved.. Areas with the most heavily degraded air quality were required to reduce emissions 50 percent (50%) from 1987 levels by December 1, 2000. IN July 1991, the SCAQMD adopted a revised AQMP which was designed to meet the CCAA requirements. The 1991 AQMP deferred the attainment date to 2010, consistent with the 1990 federal Clean Air Act.

The 1990 federal CAAA required that all states with airsheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). The SCAB has an "extreme" ozone problem. The 1991 AQMP was modified/adapted and submitted as the SCAB portion of the SIP. The 1991 SIP submittal estimated that an 85% basin wide reduction in volatile organic compound (VOC) emissions and a 59% reduction in oxides of nitrogen (NOs) between 1990 to 2010 was needed to meet federal clean air standards. About 40% of these reductions were to come from existing pollution control programs. The rest would come from new rules, technologies or other reduction programs. The rest would come from new rules, technologies or other reduction programs.

In 1996, EPA ultimately approved the 1994 submittal of the SCAB position of the SIP. The plan was approved after considerable debate on the contingency measures that should be implemented if progress is not as rapid as anticipated in the 1994 SIP. The federal Clean Air Act required that an updated plan be submitted by February 8, 1997 which includes attainment plans for all pollutants exceeding federal standards. The CCAA requires an update of the State-mandated clean air plan every three years. The last CCAA update was completed in December, 2000.

An updated 1997 AQMP was locally adopted. CARB forwarded this plan on to EPA for its consideration and recommendation approval. The 1997 AQMP was designed to meet both Federal (EPA) and State (ARB) air quality planning guidelines. Components of the 1997 plan update included:

- Demonstration of attainment for ozone, CO, and PM-10
- Updated emissions inventories (1993 base year) of VOC, NOx, CO, SOx and PM-10
- Emissions budgets for future years of the inventoried compounds
- An updated pollution control strategy
- Contingency measures if the plan as presently proposed fails to meet stated timetables.

The proposed 1997 AQMP/SIP was challenged in federal court for excessive delay in adopting certain pollution control strategies. The Ninth Circuit Court found for the environmental organizations which had brought the suit. A 1999 SIP Revision was prepared that accelerated the implementation timeframe by adding more than ten (10) new air pollution control measures or shortening implementation timeframes. EPA approval of these revisions was granted in 2000 as the currently applicable SIP for the South Coast Air Basin.

A project such as the proposed BNSF Track Improvement, which covers territory in both Los Angeles and Orange Counties, does not directly relate to the AQMP/SIP process because it's source is potential air quality impact is almost exclusively from indirect (transportation) sources. Mobile source emissions are generally incorporated into the air quality planning process through the growth forecasts prepared through SCAG's regional growth projections. Division of low-occupancy on-road automobiles to high-occupancy vehicles such as trains is however, am important transportation control measure (TCM) component that is part of the AQMP/SIP process. To the extent that the proposed project facilitates implementation of that TCM, the project is inherently consistent with the AQMP/SIP.

AIR QUALITY IMPACT

CEQA Significance Criteria

Air quality impacts are considered significant if they cause clean air standards to be violated where they are currently met, or if they measurable contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five (5) tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Many pollutants require further chemical transformation before they reach their most harmful form. Impact quantification on a single-project basis is therefore not feasible. To overcome this difficulty, the SCAQMD has designated significant emissions levels as surrogates for evaluating impact significance independent of chemical transformation processes. Projects in the SCAB with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant:

SCAQMD Emissions Significance Thresholds
(lb/day)

Pollutant	Construction	Operations
ROC	75	55
NOx	100	55
CO	550	50
PM-10	150	150
SOx	150	150

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

These threshold levels have been used in analyzing the potential air quality impacts of the BNSF track improvement implementation.

Federal Impact Assessment Guidelines

Federal guidelines for air quality impact assessments from improvements in existing heavy rail projects (freight and passenger) are generally exempt from formal impact analysis except under unusual circumstances if those improvements accommodate a forecast demand for service. Rail is included in the Regional Transportation Plan (RTP) which has undergone its own impact analysis process. Fixed rail is presumed to move goods and passengers in more pollution-efficient modes while reducing the volume of trucks and cars on area streets. Rail thus reduces vehicular emissions both by directly replacing vehicle miles traveled (VMT) and also reducing congestion effects. There is therefore no impact analysis relative to federal guidelines by virtue of project consistency with the RTP.

Sources of Impact

The proposed project creates no population increase, nor any new on-road traffic that would cause increased regional emissions. A number of existing railroad crossings, signals, and bridges will undergo substantial upgrades. The proposed track improvements will increase train speeds and reduce both train delays and idling inside tracks and surface street queuing. Any potential for CO "hot spots" will be reduced from existing conditions. Dust emissions will be temporary during new track construction, during any excavation and new construction of grading separations. Secondary impact indicators will thus minimally apply to the proposed project.

Improving the railroad track between the counties of Los Angeles and Orange would have negligible adverse air quality consequences, and may even create small air quality benefits. There is no proposed increase in the number of daily freight train movements, and any future increase in the daily number of passenger trains is dependent upon passenger demand. Increased used of trains by passengers versus use of personal vehicles may reduce on-road emissions and congestion. The increased efficiency of train travel through the Los Angeles/Orange County areas (improved crossings, increased train travel speed to more pollution-efficient throttle settings, the elimination of idling trains, and shorter periods of at-grade crossing vehicular delays) may all contribute to slightly better air quality.

The proposed BNSF track improvement project will promote improved intercity passenger rail service between the counties of Los Angeles and Orange. The improvements consist of adding 14.7 miles of third track grade separation at 7 crossings and the retrofitting of various bridges. The third track will reduce train delays and idling which now occur on side tracks as trains wait for one to pass. The grade separations will allow for increased operational efficiency and speeds of trains, as well as replace at-grade signals and will no longer interrupt traffic flow.

A short-term increase in dust and equipment exhaust will occur during construction of the proposed improvements; however, the direct air quality implication of project implementation will likely be minimal. Creation of a third track and grade separations are considered air quality positive, but there may be other environmental issues (noise, etc.) that could have an off-setting negative effect because trains are more "pollution efficient" per ton-mile or passenger-mile than on-road transportation, cumulative project impacts would likely be positive.

Construction Activity Impacts

Construction activities for the third track and retrofitting of bridges are expected to commence as soon as funding is available and be completed within 18-24 months. The grade separation construction will be implemented over the next several years. Each separation project will require between 3-18 months to complete. There will be approximately eighteen (18) months of construction activity which may or may not occur simultaneously. Activities include: track installation, railroad crossing modification, and the retrofitting of various bridges. Heavy equipment will be used to demolish, grade, excavate and level. Delivery of steel rail, concrete ties and ballast will be by rail where possible. Trucks will be used to haul away excavation material and to deposit fill at each construction site.

Each activity will vary in length from commencement to completion. Equipment activity levels will vary considerably from day to day. The equipment inventory to be used during construction is fairly extensive, but the hourly or daily utilization will be a small fraction of all the equipment that may be used.

Each phase of construction activity will generate exhaust emissions from off-road heavy equipment, on-road trucks and other vehicles, and from train hauling of bulk materials. Emissions from each phase of proposed construction activity were calculated by combining equipment activity levels with representative emission factors from EPA's AP-42 document (off-road sources), California's EMFAC7G computer model (on-road sources) and Caltrans Rail Division (trains) to produce the daily emissions estimates shown in Table 3. Table 4 is a worst-case composite of simultaneous maximum construction emissions from several simultaneous project phases. Peak daily construction activity internal combustion emissions will not exceed the suggested significance thresholds.

Earthworks activity will also generate PM-10 from soil disturbance activities. PM-10 emission rates from construction are estimated to be 10.2 pounds per day per acre disturbed. The daily disturbance acreage for the combined multiple phases of this project is estimated in Table 3 to be 6.0 acres. Daily PM-10 emissions of 61.2 pounds per day from "fugitive dust" have been included in the worst-case daily pollution burden in Table 4. Inclusion of fugitive dust in Table 3 does not change any conclusions regarding impact insignificance.

Soil disturbance creates numerous larger particulates that are rapidly redeposited on adjacent horizontal surfaces. However, because of the non-attainment status of the air basin, dust mitigation measures are recommended to reduce PM-10 emissions even if CEQA significance thresholds are not exceeded. Such measures would similarly protect nearby sensitive receivers from construction dust soiling along those limited portions of the alignment in close proximity to residences or a school.

Table 3
Construction Activity Emissions Burden (lb/day)

Track Installation Project

Source	Pollutant				
	CO	ROG	Nox	SOs	PM-10
Grader	0.6	0.1	1.8	0.1	0.1
Backhoe	1.7	0.6	8.0	0.5	0.6
Loader	1.1	0.5	3.8	0.4	0.3
Welder	4.3	1.6	20.1	1.3	1.4
Track-Laying Machine	2.7	0.6	6.8	< 0.1	< 0.1
Dump Trucks	1.8	0.2	2.1	0.1	0.1
Misc. Equipment	0.7	0.2	1.7	0.1	0.1
Smaller Vehicles	1.5	0.2	0.2	< 0.1	< 0.1
Rail Haul	0.4	0.3	5.3	0.1	1.0
Employee Commute	14.8	1.5	2.4	< 0.1	0.1
TOTAL	29.6	5.8	52.2	2.6	3.7

Railroad Bridge / Crossing Modifications

Source	Pollutant				
	CO	ROG	NOx	SOs	PM-10
Welders	2.1	0.8	10.1	0.7	0.7
Misc. Equipment	0.7	0.2	1.7	0.1	0.1
Dump Trucks	1.8	0.2	2.1	0.1	0.1
Smaller Vehicles	1.5	0.2	2.1	0.1	0.1
Rail Haul	0.4	0.3	5.3	0.1	1.0
Employee Commute	29.6	3.0	4.8	< 0.1	0.1
TOTAL	36.1	4.8	24.2	1.1	2.1

Table 4
Maximum Construction Activity Emissions Burden (lb/day)

Source	Pollutant				
	CO	ROG	NOx	SOs	PM10
Track Upgrade	29.6	5.8	52.2	2.6	3.7
Crossing Mods.	36.1	4.7	24.2	1.1	2.0
Fugitive Dust	----	----	----	----	61.2
TOTAL	65.7	10.5	76.4	3.7	64.9
Exceeds Thresholds?	No	No	No	No	No

Operational Impacts

The two principal direct air quality effects of the project is that the third track will increase operational efficiency, and that the grade separations will eliminate the queuing of cars at existing at-grade crossings. Any indirect benefit of pollution efficiency and congestion reduction from shifting to rail from on-road transportation are not quantifiable within the context of a single project, but are believed to be a tangible air quality benefit.

The project traffic study has calculated that existing at-grade crossings create 423.3 vehicle hours of idling cars during the p.m. peak traffic hour. Assuming that the p.m. peak represents ten (10) percent of daily ADT, then the combined vehicle delay at all seven at-grade crossings is 4233 vehicle hours per day. The "excess" emissions associated with braking, idling, and acceleration, compared to free-flow traffic conditions, were calculated for 4233 daily hours of vehicle idling for a year 2003 travel fleet. The reduced emissions from crossing delay elimination are as follows:

Pollutant	EMFAC (g/min)	Emissions (pounds/day)
CO	1.43	80.1
ROG	0.39	21.8
NOx	0.13	7.3
PM-10	0.03	1.7

These pollution "savings" are not considered CEQA-significant relative to the SCAQMD's CEQA implementation guidelines. They are, however, air-quality positive in an extreme non-attainment area for ozone such as the South Coast Air Basin.

Cars are rigidly controlled by air pollution laws such that even 4000+ hours of idling will not create exhaust emissions that exceed SCAQMD significance thresholds. Diesel-powered railroad locomotives, however, are not as rigidly controlled. Reduction in their delay while idling at sidings because of inadequate track capacity is more critical in emissions reduction. The process of dynamic braking of the engine to slow the cars, idling at a siding, and the strain of restarting a stopped freight train is estimated to expend around 1200 brake-horsepower per engine during a 12-minute delay period. The NOx emission rate for a 4-stroke road engine is 10 grams per brake-horsepower-hour, of 5.3 pounds of NOx per freight engine during even a brief siding delay. If ten trains per day, with three engines each, were to be delayed under present track availability constraints, "excess" daily NOx emissions would total 106 pounds. The SCAQMD threshold is 55 pounds per day. Although the number and duration of siding delays is not know with certainty (varies from day to day), a major reduction in such delay may have significant air quality benefits.

Air Quality Planning Consistency

Increased rail utilization is an air quality planning goal in both the South Coast Air Basin federal SIP and the California Clean Air Act attainment plans. The proposed project is included in a regional transportation plan that has been found to conform the basin air quality attainment plan. Construction activity air emissions are below the de minimis threshold for establishing project conformity with Section 176(c) of the federal Clean Air Act Amendments of 1990. Operational emissions for the "with project" scenario are less than for the no-project alternative. The proposed project thus meets all air quality planning consistency guidelines and/or conformity requirements.

MITIGATION

The addition of a 14.7 mile segment of a third track and improvement of 3.4 miles of existing track will have negligible air quality impacts. Short-term construction impacts will be less than significant. Construction dust deposition on adjacent dust-sensitive land uses may be of concern when construction will occur in close proximity to homes and a school campus. A small operational air quality benefit will result from elimination of side track train idling, and from elimination of on-road vehicle queuing while waiting for the track to clear.

There are no significant air quality impacts requiring impact mitigation. The project is inherently self-mitigating in promoting train travel as a transportation control measure contained in the basin AQMP/SIP.

Construction activity impacts will not exceed significance thresholds requiring mitigation to achieve a less-than-significant impact. However, project activities may generate dust and fumes if built within close proximity to homes and other sensitive land uses. Impacts are therefore considered potentially adverse even if significance thresholds are not exceeded. The implementation of reasonably available control measures (RACMs) is therefore recommended to minimize nuisance levels of construction activity emissions.

Recommended RACMs includes:

Dust: Use enhanced dust control measures. The menu of enhanced dust control measures includes the following:

- Water all active construction areas at least twice daily.
- Cover all haul trucks or maintain at least two feet of freeboard.
- Pave or apply water four times daily to all unpaved parking or staging areas.
- Sweep or wash any site access points within 30 minutes of any visible dirt deposition on any public roadway.
- Cover or water twice daily any on-site stockpiles of debris, dirt or other dusty material.
- Suspend all operations on any unpaved surface if winds exceed 25 mph.
- Hydro-seed or otherwise stabilize any cleared area which is to remain inactive for more than 96 hours after clearing is completed.

Emissions:

- Require 90-day low-NOx tune ups for off road equipment.
- Limit allowable idling to 10 minutes for trucks and heavy equipment.

Off-Site Impacts:

- Encourage car pooling for construction workers.
- Limit lane closures to off-peak travel periods.
- Park construction vehicles off traveled roadways.
- Wet down or cover dirt hauled off-site.
- Wash or sweep access points daily.
- Encourage receipt of materials during non-peak traffic hours.
- Sandbag construction sites for erosion control.

Hazards:

- Conduct pre-construction assessments.
- Perform remediation consistent with air hazards criteria in SCAQMD rules and regulations

APPENDIX 8.4

BIOLOGICAL SURVEY

BIOLOGICAL SURVEY

FOR THE

BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY THIRD MAIN TRACK AND GRADE SEPARATION PROJECT

Submitted to:

DEPARTMENT OF TRANSPORTATION, DISTRICT 7
120 South Spring Street
Los Angeles, California 90012

Prepared for:

BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
Principal-in-Charge: John Fleming

Prepared by:

Lisa M. Kegarice
TOM DODSON & ASSOCIATES
2150 North Arrowhead Avenue
San Bernardino, California 92405
(909) 882-3612

JULY 2002

TABLE OF CONTENTS

FIGURES / PHOTOS

INTRODUCTION AND SUMMARY OF FINDINGS

Tom Dodson & Associates (TDA) has conducted a biological survey for the Burlington Northern Santa Fe Railway Company's (BNSF) proposed Third Main Track and Grade Separation Project. The rail corridor extends from the City of Commerce (Hobart at MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station at MP 163.3). The affected jurisdictions include Los Angeles and Orange counties and the cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs (see Figure 1).

The majority of the proposed project alignment does not have any native biological resources because the alignment has been converted to an urban/suburban setting due to past activities. Including but not limited to the conversion of natural channels to concrete trapezoidal channels with no vegetation or soil structure. However, the San Gabriel River does contain a natural bottom, and the expansion of the bridge impact biological resources located within the River channel. Therefore, the biological survey for this project is being focused on the San Gabriel River bridge crossing.

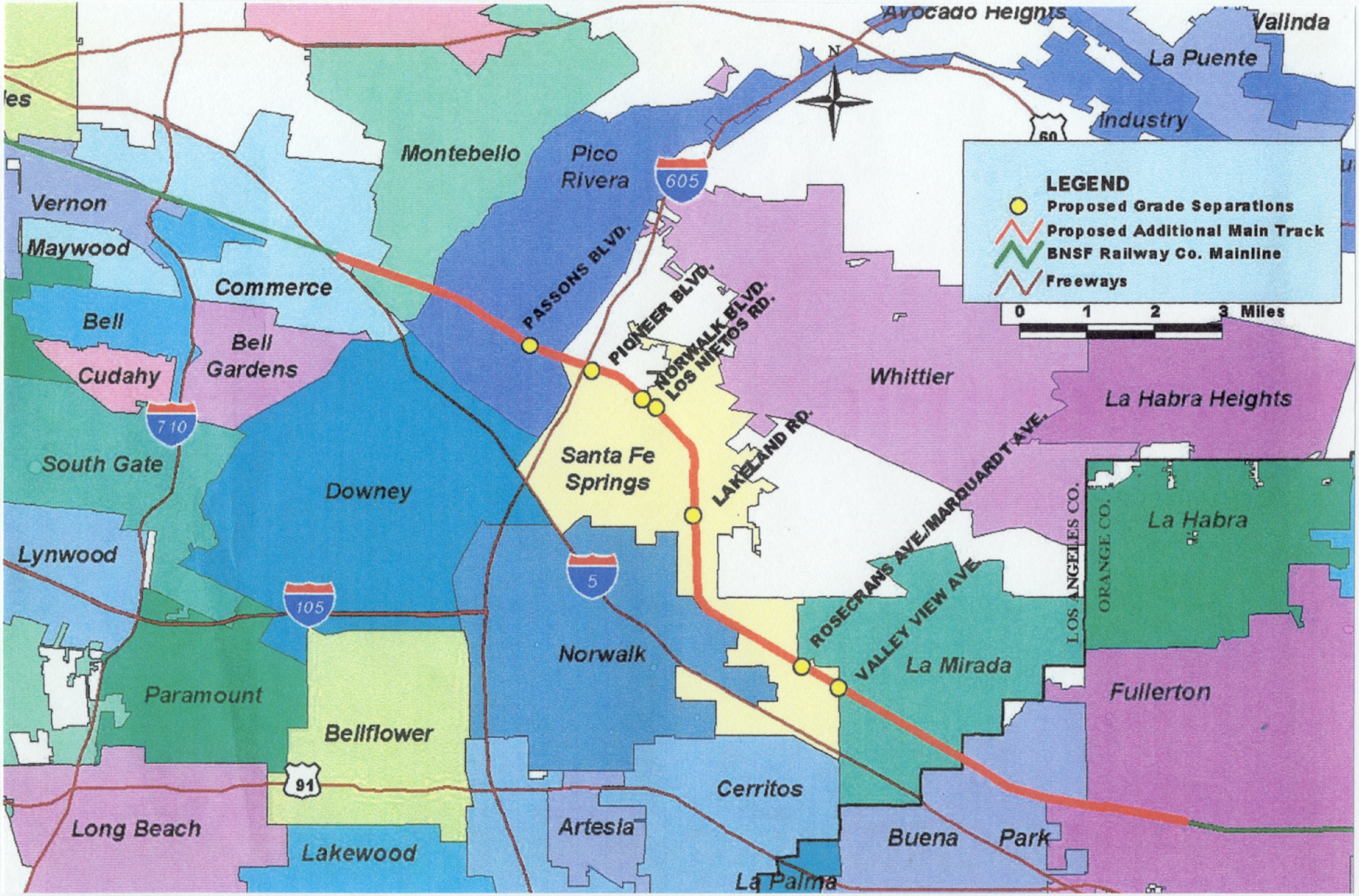
The San Gabriel River bridge is located adjacent to the Slauson Avenue overpass. This site is located between Mile Posts 151.8 to 152.1 in the cities of Pico Rivera and Santa Fe Springs in Los Angeles County. The bridge is located immediately west of Interstate 605 at Slauson Avenue and the San Gabriel River within unsectioned parcel, T2S, R12W, San Bernardino Base and Meridian (SBB&M) (see Figure 2, Site Location and Figure 3, Aerial Photograph).

The existing San Gabriel River bridge has two railroad tracks (eastbound and westbound) over the San Gabriel River and under the Slauson Avenue overpass. This project will add a third track on the north side of the existing tracks. This third track will create more windows for train operations, thus minimizing the time that trains idle in the sidings waiting for windows to move across the river. In addition, the passenger trains will have less conflicts with the freight trains allowing for better passenger service.

The San Gabriel River bridge was originally built in 1942 and included seven 50-foot spans with a total length of 350 feet. The piers are solid four-foot stems on a pile cap foundation. The westbound bridge was added in 1969 by widening the existing piers and constructing a second bridge at 15-foot centers.

The San Gabriel River has a soft bottom with stabilized levees on each side. The levee to levee width is 300 feet with a 240-foot bottom width. Dams were constructed on the San Gabriel River upstream and downstream of the BNSF bridge to spread water for aquifer recharge, and incidentally to control erosion. The 100-year design flow for the San Gabriel River in this reach is 14,700 cubic feet per second (cfs). The river levee includes a bike trail on the east side of the river, with a controlled access maintenance road on the west side of the river. At the BNSF bridge, the bike trails are benched on the river side to allow

FIGURE 1
Regional Location



Tom Dodson & Associates
Environmental Consultants

FIGURE 2
Site Location Map

Source: DeLorme TopoQuads

Tom Dodson & Associates
Environmental Consultants

FIGURE 3
Aerial Photograph

the trail to go under the bridge. The bike trails vary from west to east at an 8.1 to 10.7 foot vertical clearance and have 8 to 10 percent approach grades, respectively. The bike trails are 10 feet wide and have a 4-foot chain link fence on the river side.

Based upon a review of the California Natural Diversity Data Base (CNDDB) and field surveys, there are no listed species likely to occur within the vicinity of the project area. The area adjacent to the track along the proposed third mainline segment is highly disturbed and does not support native plant communities and is not likely to support these species. Further, no wetland or other sensitive habitats will be adversely effected by the proposed third track construction.

METHODOLOGY

Background information was gathered prior to visiting this site in order to determine what species would be expected in this area. This background check included a search of the California Department of Fish and Game's (CDFG) Natural Diversity Database (CNDDB) and two site visits. The CNDDB search was completed for the USGS – Whittier Quadrangle, 7.5 Minute Series topographic map.

Field surveys were conducted by Ms. Lisa Kegarice of Tom Dodson & Associates on October 10, 2001 and March 14, 2002. Photos were taken to characterize habitat conditions. Additionally, disturbance characteristics and all other animal signs were recorded. The primary focus of this field investigation was to determine the presence of any sensitive biological resources on the project site; and to determine the extent of jurisdictional "waters of the United States" under Section 404 of the Clean Water Act, including wetlands, and CDFG "Streambed" under Section 1600 of the CDFG Code. The following discussion outlines the specific criteria for the three types of jurisdictional areas: streambed, waters, and wetlands.

<u>California Department of Fish and Game Section 1603</u>

The CDFG takes jurisdiction over water flow areas, i.e., streams. These water flow areas are identified in the code as:

> "...natural flow or bed, channel or bank of any river stream of lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit or will use material from the streambeds..."

In order to quantify the acreages of "streambed", known limits of the channelized banks were used as the channel width and the limits of construction on either side of the bridge were used as the length. The acreages were then calculated from these measurements.

U.S. Army Corps of Engineers "Waters of the United States", excluding wetlands

The limits of "waters of the United States", excluding wetland, are defined in 33 CFR 328.3(a) as those areas within the "ordinary high water mark" (OHWM). The OHWM is defined as:

> "...that line on the shore established by the fluctuations of the water and indicated by physical characteristics such as clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

In order to quantify the acreages of "streambed", known limits of the channelized bed were used as the channel width and the limits of construction on either side of the bridge were used as the length. The acreages were then calculated from these measurements.

U.S. Army Corps of Engineers "Wetlands"

The conclusions of the Jurisdictional Delineation conducted in 2000 are based upon The U.S. Army Corps of Engineers' Wetland Delineation Manual, January 1987, Technical Report Y-87-1 (Manual). This Manual outlines a comprehensive approach based upon the presence of the following three parameters: wetland hydrology, hydrophytic vegetation, and hydric soils.

Wetland hydrology is present if the "sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation" (Manual). Hydrophytic vegetation is "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Manual). A positive hydrophytic vegetation indicator is present if the prevalence, characterized by the dominant species of a plant community or communities, of the vegetation is classified as hydrophytic vegetation. Dominant plant species are those that contribute more to the character of a plant community than other species present, as estimated or measured in terms of some ecological parameter (i.e., %cover, %density, etc.). Hydric soil is "soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation."

Using this Manual, a wetland determination is made when under "normal circumstances" an area has all three parameters present. An area is not functioning under normal circumstances if a positive indicator for one of the three parameters could not be found due to effects of recent human activities. If a particular site has been recently disturbed by natural or human activities, it may not meet the criteria of "normal circumstances". If this occurs it would be classified as an "Atypical Situation" meaning one or more parameters are not reliable indicators.

To complete this Jurisdictional Wetland Delineation, all three parameters were investigated: soils, hydrology, and vegetation. The Manual describes inundation greater than one month to be a "very long duration", therefore areas that were ponded or were saturated at the surface or within the root zone (usually 1-12 inches). The hydrophytic vegetation is characterized by plant species that have "demonstrated an ability to achieve maturity and reproduce in an environment where all or portions of the soil within the root zone become, periodically or continuously, saturated or inundated during the growing season." (Reed) The National List of Plant Species That Occur in Wetlands was used to determine the indicator status of the dominant species of a community. The wetland area was delineated by looking for vegetation boundaries in the field between communities dominated by Facultative Wetland Species – Obligate Wetland Species and those dominated by Facultative Upland - Upland species, and comparing the hydrological and soils data along the vegetation transition.

RESULTS

No State or Federal listed species or locally sensitive biological resources were observed during any of the field surveys. The areas adjacent to the existing brdige are predominantly unvegetated and very disturbed.

Weather

The weather during the field surveys conducted on October 10, 2001 was generally clear and warm with temperature ranging from low 60°F to the low 70°F. During the field surveys conducted on March 14, 2002, it ranged from scattered clouds and drizzle to mostly sunny with winds from calm to 5 miles per hour. The temperature ranged from the middle 50°F to the lower 60°F for the entire survey period.

Soils and Topography

The proposed third track segment is located in the southeast Los Angeles sedimentary basin.

The San Gabriel River crossing traverses two soil series types; Psamments and Urban Land. The following is a list of the series type, a brief description of the series characteristics, and the sub-soil types.

Psamments

This map unit consists of sandy and gravelly material in intermittent streambeds of the San Gabriel River. This map unit is frequently flooded and vegetated is limited to scanty growth.

Urban Land

This map unit consists of land covered for urban uses such as buildings, roads, and parking lots.

Biological Setting

The majority of the proposed third track and grade separation segment topography is flat, with slopes ranging from zero to 5 percent. Surrounding land uses are urban and commercial/industrial developments. The vast majority of the proposed third track alignment is unvegetated and disturbed, the vegetation that does occur along the existing railroad facility is characterized by non-naive weedy species such as Stork's bill (*Erodium cicutarium*), brome grasses (*Bromus* sp.), and tumbleweed (*Salsola tragus*).

Drainages in the vicinity of the proposed double track are limited to concrete lined channels and the San Gabriel River, which has hard sides and a natural bottom. None of these channels have riparian or wetlands resources associated with them.

Wildlife

Wildlife observations made during the survey were dominated by bird and mammal species. Observations of wildlife include scat, tracks, burrows, nest, calls and individual animals. Common mammals are dogs (*Canis lupus familularis*) and beechy ground squirrel (*Spermopholus beecheyi*). Common bird species observed were crows (*Corvus brachyrhynchos*) and mourning dove (*zenaida macroura*).

Disturbances

The level of disturbance is severe. The disturbances are incurred from complete residential and commercial/industrial development.

Jurisdictional Determination

There were no jurisdictional wetlands observed within the proposed third track segment. Further, there are three water bodies crossed that my require a Section 404 permit, Section 401 Certification, or a 1603 Agreement. Permits for some or all of the bridges may be required by the U.S. Army Corps of Engineers (COE), CDFG, and the State Water Quality Control Board (SWRCB). The need for a permit at any given structure will depend upon the design of the proposed structure and the construction methods. The following is a list of bridges that may require permitting: MP 151.9 (San Gabriel River), MP 157.5 (Coyote Creek), and MP 158.9 (La Mirada Creek).

CNDDB Search Results and Discussion

California Department of Fish and Game's CNDDB for the Whittier Quadrangle was searched. The following is a discussion of the species listed by the database and the General Plan as occurring within the Valley floor.

Scientific Name	Common Name	Status Federal/State	Typical Habitat	Occurrence Potential
Coccyzus americanus occidentalis	Western Yellow-billed cuckoo	None / Endangered	Riparian Forest	The occurrence is from 1912, and has been extirpated from the area. Further, the proposed project will avoid all the riparian habitat. Therefore, there is no suitable habitat within the proposed third track area.
Scaphiopus hammondii	Western spadefoot	None / CDFG protected	This species utilizes temporary rain pools or slow moving permanent waters for breeding. Non-breeding habitat consists of open vegetation characterized by short grasses.	This species was observed ponds and grasslands of the Puente Hills. Further, the proposed project will avoid all the riparian habitat. Therefore, there is no suitable habitat within the proposed third track area. There are no vernal pools with in the project impact areas. Therefore the proposed third track project will not effect this species.
Phacilia stellaris	Brand's Phacilia	None / None	This species is associated with coastal scrub and coastal dune vegetation communities.	There is no suitable habitat associated with this project.
Lasthenia glabrata ssp. *couteri*	Coulter's Goldfileds	None / None	This species is associated with associated with alkaline soils in playas, sinks, and grasslands.	There is no suitable habitat associated with this project.

Coding and Terms
Federal Species of Concern: "taxa for which the U.S. Fish and Wildlife Service has information that indicates proposing to list the taxa as endangered or threatened is possibly appropriate, but for which substantial data on the biological vulnerability and threats are not currently known or on file to support the immediate preparation of rules." (Arnold). All of these species have a limited range. In fact, some species are limited to the San Bernardino Mountains area, however, they are locally common.
State Species of Special Concern: An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited acreages, and/or continuing threats.

Coding and Terms
State Plant Rankings: S1 - less than 6 element occurrences, or less than 1,000 individuals, or less than 2,000 acres S2 - 6 to 20 element occurrences, or between 1,000 and 3,000 individuals, or between 2,000 and 10,000 acres S3 - 21 to 100 element occurrences, or between 3,000 and 10,000 individuals, or between 10,000 and 50,000 acres S4 - No Threat Rank S5 - No Threat Rank
R-E-D Code: .1 - very threatened .2 - threatened .3 - no current threats known

CONCLUSIONS

The results of this survey is that no listed or sensitive species or their associated habitat were observed within 50 feet on either side of the proposed alignment. Further, no wetland or other sensitive habitats will be adversely effected by the proposed double track construction.

Typical Site Photograph (South Side of the Bridge)

Typical Site Photograph (North Side of the Bridge)

REFERENCES

AOU (American Ornithologists'' Union). 1998. Check-List of North American Birds. Seventh Edition. American Ornithologists'' Union, Washington, D.C. 829 pp.

Botelho, E.S. and P.C. Arrowood. 1998. The effect of burrow site use on the reproductive success of a partially migratory population of western burrowing owls (Speotyto cunicularia hypugaea). J. Raptor Research 32: 233-240.

Brylski, P., L. Barkley, B. McKernan, S.J. Montgomery, R. Minnich, and M. Price. 1993. Proceedings of the Biology and Management of Rodents in Southern California Symposium. San Bernardino County Museum, Redlands, California, June 26, 1993. Presented by the Southern California Chapter of the Wildlife Society.

Butts, K.O. 1973. Life history and habitat requirements of burrowing owls in western Oklahoma. Unpublished MS thesis, Oklahoma State University, Stillwater. 188 pp. California Science and Engineering Associates. 1996. Final threatened and endangered species survey, March Air Reserve Base, Riverside County, California.

California Department of Fish and Game

1998. Endangered and Threatened Animals of California, 7pp.

1998. Endangered, Threatened and Rare Plants of California, 13pp.

1995. Staff Report on Burrowing owl mitigation. State of California.

1984. Guidelines for assessing effects of proposed developments on rare and endangered plants and plant communities, 2pp.

2002. Natural communities. (Update of Holland, R., 1986)

California Natural Diversity Data Base (NDDB). 2002 Annotated record search for special animals, plants and natural communities – Lake Matthews, Alberhill, Corona South, and Santiago Peak quadrangles. Natural Heritage Division, Sacramento, California.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1992. *Birds in Jeopardy*. Stanford University Press, Stanford, California.

Garrett, K. and J. Dunn. 1981. Birds of Southern California: Status and Distribution. Los Angeles Audubon Society. 407 pp.

Grinnell, J. and A.H. Miller. 1944. The Distribution of the Birds of California. Pacific Coast Avifauna Number 27. Copper Ornithological Club, Berkeley, California. Reprinted by Artemisia Press, Lee Vining, California; April 1986. 617 pp.

Hall, E.R. 1981. The Mammals of North America. John Wiley and Sons, New York. 2 Vol. 1181 pp.

Hamilton, R. and D.R. Willick. 1996. The Birds of Orange County, California: Status and Distribution. Sea and Sage Press, Irvine, California. 150 pp. with appendices.

Hickman, James C., Ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, California.

Holland, Robert F., Ph.D. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game Nongame Heritage Program (now Natural Heritage Division), Sacramento. October.

Holland, V.L. and Keil, David J. 1990. *California Vegetation*, 4th ed. El Corral Publications, San Luis Obispo, California.

Jameson, E.W. Jr. and H.J. Peeters. 1988. California Mammals. University of California Berkeley Press. 403 pp.

Jennings, M. and M. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California* (draft). California Department of Fish and Game.

National Geographic Society. 1983. *Field Guide to the Birds of North America*. National Geographic Society, Washington, D.C.

Remsen, J.V., Jr. 1978. Bird species of special concern in California. Calif. Dept. Fish and Game, Sacramento. Wildl. Manage. Admin. Rep. No. 78-1. 54pp.

Skinner, M.W. and B. M. Pavlik, eds. 1994. *Inventory of Rare and Endangered Vascular Plants of California,* 5th edition. California Native Plant Society, Sacramento, California.

State of California. 1999. Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants. Natural Heritage Division, Department of Fish and Game, Sacramento, California.

Stebbins, Robert C. 1985. *A Field Guide to Western Reptiles and Amphibians*. Houghton Mifflin, Boston, Massachusetts.

Terres, John K. 1980. *The Audubon Society Encyclopedia of North American Birds*. Knopf. New York, New York.

U.S. Fish and Wildlife Service. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Three Vernal Pool Plants and the Riverside Fairy Shrimp. Federal Register 58: 41384-41392.

Zeiner, D.C., W.,F. Laudenslayer, Jr., K.E. Mayer, M. White. Editors. 1990. California's Wildlife. Volume 2. Birds. State of California, Department of Fish and Game. Sacramento, California. 731 pp.

APPENDIX A

SPECIES LIST

APPENDIX A
SPECIES LIST

PLANT SPECIES

Angiospermea: Dicotyledonae	**Flowering plants: Dicots**
Amarantheceae	Amaranth Family
Amaranthus sp.	Pigweed
Asteraceae	Sunflower Family
Ambrosia acanthicarpa	Ann. Bur-sage
Centaurea melitensis	Star thistle
Haploppus squarrosus	Common Sunflower
Heterotheca grandiflora	Telegraph weed
Boraginaceae	Borage Family
Amsinckia sp.	Fiddleneck
Brassicaceae	Mustard Family
Brassica sp	
Chenopodiaceae	Goosefoot family
salsola tragus	Russian thistle (Tumbleweed)
Geraneaceae	Geranium Family
Erodium cicutarium	Filaree
Salicaceae	Willow Family
Salix sp.	Willow
Angiospermae: Monocotyledonae	**Flowering Plants: Monocots**
Poaceae	Grass Family
Avena barbata	Oats
Bromus rubens	Red brome
Bromus tectorum	Cheat grass
Bromus diandris	Ripgut
Vulpia myuros	Fescue

ANIMAL SPECIES

Reptilia	**Reptiles**
Iguanidae	Iguanids
scloperous occidentalis	Western Fence Lizard
Aves	**Birds**
Carpodacus	Finches
Carpodacus mexicanis	House finch
Columbidae	Pigeons and doves
Zenaida macroura	Mourning Dove
Corvidae	Crows and Jays
Corvus brachyrhynchos	American Crow
Emberizidae	Sparrow, Warblers, Tanangers
Melospiza melodia	Song sparrow
Mimidae	Mockingbirds and Thrashers
Mimus polyglottos	Northern mockingbird
Mammalia	**Mammals**
Leporidae	Rabbits and hares
Sylvilagus auduboni	
Sciuridae	Squirrels, chipmunks
Spermophilus beecheyi	California Ground Squirrel
Canidae	Foxes, wolves and dogs
Canis lupus familularis	Dog

APPENDIX B

CNNDB

List of Elements and Status by Scientific Name
Whittier

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
COCCYZUS AMERICANUS OCCIDENTALIS *WESTERN YELLOW-BILLED CUCKOO*	None/ Endangered	G5T3/ S1		
LASTHENIA GLABRATA SSP COULTERI *COULTER'S GOLDFIELDS*	None/ None	G4T3/ S2.1	1B/ 2-3-2	
NAVARRETIA PROSTRATA *PROSTRATE NAVARRETIA*	Species of Concern/ None	G2?/ S2.1?	1B/ 2-3-3	
ORCUTTIA CALIFORNICA *CALIFORNIA ORCUTT GRASS*	Endangered/ Endangered	G2/ S2.1	1B/ 3-3-2	
PHACELIA STELLARIS *BRAND'S PHACELIA*	None/ None	G1G2/ S1.1	1B/ 3-3-2	
SCAPHIOPUS HAMMONDII *WESTERN SPADEFOOT*	Species of Concern/ None	G3?/ S3?		SC

APPENDIX 8.5

NOISE IMPACT ANALYSIS

Giroux & Associates
Environmental Consultants

17744 Sky Park Circle, Suite 210
Irvine, California 92614 - Phone (949) 851-8609 - Fax (949) 851-8612

NOISE AND VIBRATION IMPACT ANALYSIS

BNSF TRIPLE TRACK IMPROVEMENT PROJECT

COUNTIES OF LOS ANGELES AND ORANGE, CALIFORNIA

Prepared for:

Tom Dodson & Associates
Attn: Tom Dodson
2150 North Arrowhead Avenue
San Bernardino, California 92405

Date:

December 23, 2002

Project No.: P02-023

TABLE OF CONTENTS

Page No.

NOISE ENVIRONMENT SETTING

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, special frequency-dependent rating scales have been devised to relate noise to human sensitivity. The A-weighted decibel scale dB(A) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquake intensity. In general, a 1 dB change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3 dB change in sound pressure level is considered a "just detectable" difference in most ambient situations. A 5 dB change is readily noticeable and a 10 dB change is considered a doubling (or halving) of the subjective loudness. It should be noted that, generally speaking, a 3 dB(A) increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume. Because few projects individually cause a doubling or halving of the traffic volumes on already heavily traveled roadways, most traffic noise impacts tend to be cumulative in nature.

In terms of human response to noise, a sound 10 dB(A) higher than another is judged to be twice as loud; 20 dB(A) higher, four times as loud; and so forth. Everyday sounds normally range from 30 dB(A) (very quiet) to 100 dB(A) (very loud.) Examples of various sound levels in different environments are shown in Table 1 - Sound Levels and Human Response.

Table 1
Sound Levels and Human Response

	dBA	
	145	
Physically Painful	140	Sonic Boom
Extremely Loud	135	
	130	
	125	
Discomforting	120	Jet Takeoff at 200'
Maximum Vocal Effort	115	Auto Horn at 3'
Very Annoying Hearing	110	Rock 'n Roll Band
Hearing Damage	105	Power Mower at 3'
Very Loud	100	Garbage Truck
	95	Heavy Truck at 50'
	90	Food Blender, Pneumatic Drill at 50'
	85	Electric Mixer, Alarm Clock
	80	Freight Train at 50'
	75	Busy Street Traffic at 50'
Telephone Use Difficult	70	Freeway Traffic at 50', Vacuum Cleaner at 10'
	65	Dishwasher at 10'
Intrusive	60	Air Conditioning Unit at 20'
	55	Normal Conversation at 5'
Quiet	50	Typical Daytime Suburban Background
	45	Refrigerator at 10'
	40	Bird Calls
	35	Library
Very Quiet	30	Soft Whisper at 15'
	25	
	20	Broadcasting Studio
	15	
Just Audible	10	Leaves Rustling
	5	
Threshold of Hearing	0	
	dBA	

SOURCE: ADAPTED FROM WILLIAM BRONSON, "EAR POLLUTION," CALIFORNIA HEALTH (OCTOBER, 1971), P. 29

Noise Scales

There are three general methods used to measure sound over a period of time: the Community Noise Equivalent Level (CNEL), the equivalent energy level (LEQ), and the Day/Night Average Sound Level (Ldn).

CNEL: The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as LEQs, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dB(A) in the evening (7 p.m. to 10 p.m.), and +10 dB(A) for the night (10 p.m. to 7 a.m.). CNEL may be indicated by "dB(A) CNEL" or just "CNEL."

Leq: The LEQ is the sound level containing the same steady-state total energy over a given sample time period as a continuously varying ambient level. The LEQ can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. LEQ is typically computed over 1, 8, and 24-hour sample periods.

Ldn: Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the LEQ. The Ldn is calculated by averaging the LEQs for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10 p.m. to 7 a.m.), by a 10 dB(A) to account for the increased sensitivity of people to noises that occur at night. In most applications, CNEL and Ldn are generally indistinguishable.

Other Noise Metrics

The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L90, L50, L10, etc.). L50 equals the level exceeded 50 percent of the time.

Noise Standards

State of California Guideline: The State of California has established guidelines for acceptable community noise levels that are based on the CNEL rating scale. The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable," and "clearly unacceptable" noise levels for various land use types. As shown in Table 2, Land Use Compatibility for Community Noise Exposure, single-family homes are "normally acceptable" in exterior noise environments up to 60 dB CNEL and "conditionally acceptable" up to 70 dB CNEL based on this scale. Multiple family residential uses are "normally acceptable" up to 65 dB CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 dB CNEL, as are office buildings and business, commercial and professional uses.

Federal Guidelines: Noise standards promulgated by various agencies differ somewhat from one agency to another. The Federal Highway Administration (FHWA) has adopted Noise Abatement Criteria (NAC) which are based upon the noisiest single hour of the day (Leq[1]). Exterior noise levels of 67 dB(A) Leq in usable outdoor space are considered the maximum desirable noise exposure for noise-sensitive land uses as shown in Table 3. If there are no exterior uses at such receiver sites, attainment of 52 dB(A) Leq is considered the maximum desirable interior noise exposure.

The Department of Housing and Urban Development (HUD) has adopted noise standards for residential properties for which it provides funding. The HUD standards are based upon the day-night level, Ldn, which is essentially identical to CNEL). HUD Ldn standards are very similar to the Sate of California CNEL-based noise/land use compatibility criteria shown in Table 2. A noise exposure of 60 dB(A) Ldn in usable outdoor space is considered most desirable, and considered conditionally acceptable up to 65 dB(A) Ldn. If there are no exterior uses which require noise protection, and interior exposure of 45 dB(A) Ldn is the target for habitable interior rooms.

The Federal Transit Agency (FTA) has adopted noise evaluation criteria that incorporate both the peak hour and the 24-hour Ldn for various categories of land uses. The FTA standards are detailed in the impact discussion.

Existing Noise Environment

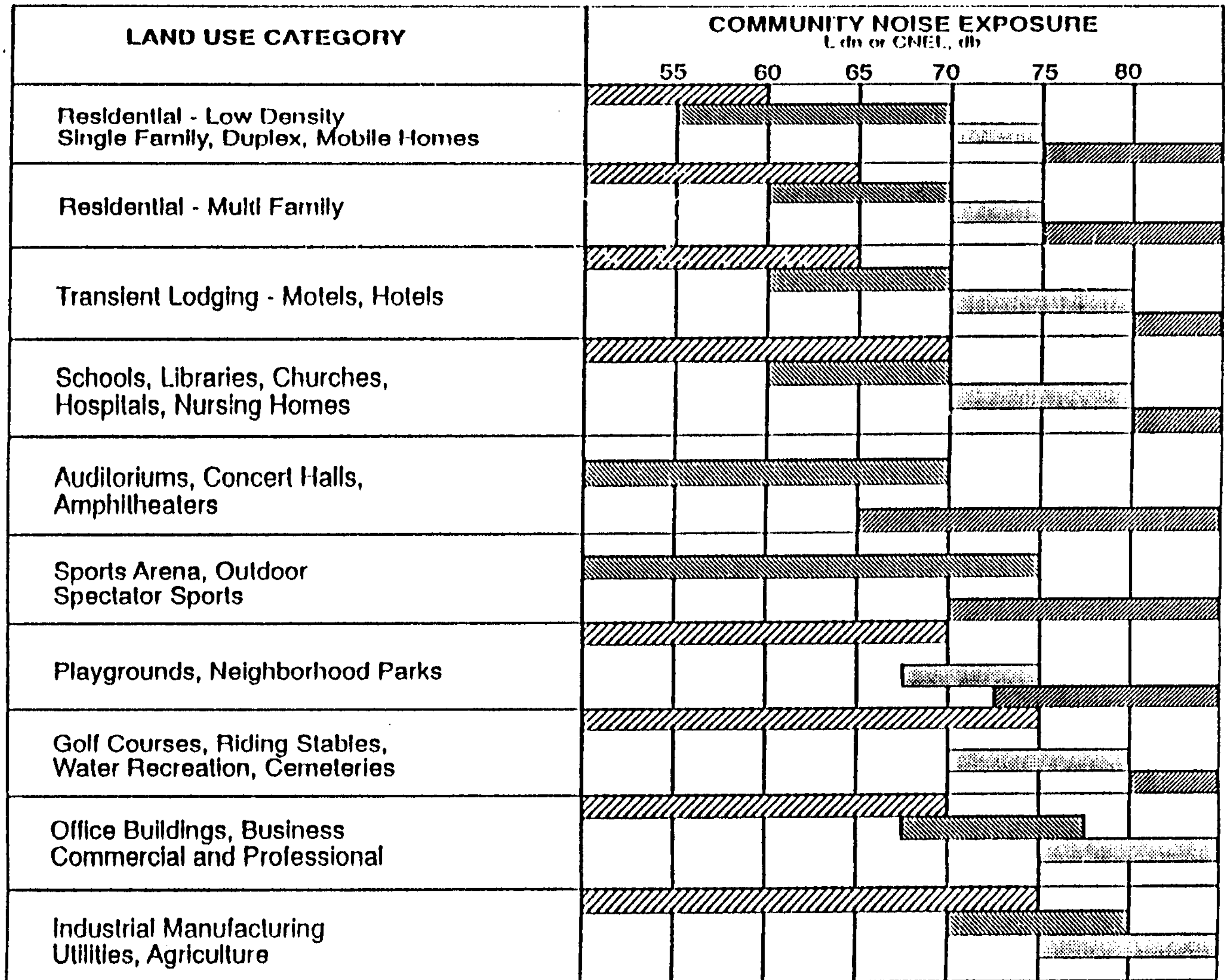
Noise Sources. The proposed project "site" is a 14.7 mile span of railway track starting at the City of Commerce [Hobart at Mile Post (MP) 148.9] and extending to the City of Fullerton [Basta at MP 163.3]. Much of the rail segment is surrounded by industrial or commercially zoned areas, however a section of it runs through a "sensitive receptor" area through the City of Pico Rivera. Vehicular and industrial sources generate the largest portion of noise along this 14.7 mile project "site."

Mobile Noise Sources: Motor vehicle noise sources include automobiles, trucks, buses and trains. The noise produced by these sources occurs primarily on roadways and may be of sufficient magnitude to expose various land uses to excessive noise levels.

Stationary Noise Sources: Stationary noise sources within the project vicinity include ongoing construction, industrial and commercial land uses. The noise associated with these sources may represent a single-event noise occurrence, short-term or long-term/continuous noise, but are very localized as opposed to pervasive mobile sources.

Sensitive Receptors: This noise analysis focuses primarily upon project impacts to sensitive noise receptors located in proximity to the project site. Noise sensitive land uses in the project area include residential areas, both multi family housing and single family dwelling units.

Table 2
Land Use Compatibility for Community Noise Environments



INTERPRETATION

NORMALLY ACCEPTABLE
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, *General Plan Guidelines*, 1990

Table 3
FHWA Noise Abatement Criteria

The noise abatement criteria specified by the FHWA are presented in terms of the maximum one hour Equivalent Noise Level (LEQ)

Activity Category	Noise Abatement Criteria Level LEQ	Description of Activity Category
A	57 (exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of open space, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas and parks which are not included in category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries and hospitals.
C	72 (exterior)	Developed lands, properties or activities not included in Category A or B above.
D	----	Undveloped lands which may or may not have associated noise abatement criteria.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Existing Residential Noise

Long-term noise monitoring was conducted at three different locations on July 30 to July 31st, 2002. Noise levels along Rivera Road, adjacent to the train tracks and near the various noise-sensitive receptors were monitored. The meters were placed 15-40 yards from the north train track. Measurements were made with digital sound meters. Monitoring was conducted for 24 hours and the data are representative of existing baseline levels in the surrounding area.

Table 4 shows the results of the on-site noise monitoring for all three sites. Hourly average noise levels ranged from the low 60 to mid-70 dBA Leq levels. Because of the nocturnal weighting penalty for noise events from 10 p.m. to 7 a.m., the 24-hour CNEL at each monitoring location was higher than even the noisiest hour of the day. CNEL levels ranged from 74-78 dBA.

Levels exceeding 70 dBA CNEL are considered "generally unacceptable" for residential use. Above 75 dBA CNEL, noise is considered "completely unacceptable" for noise sensitive uses. The noise meters were located between the nearest homes and the tracks to reduce any local contamination. Within the additional distance between the monitoring site and the nearest homes, geometric spreading losses would reduce noise level by several decibels. The estimated CNELs at the nearest monitored residences are in the lower 70 dBA CNEL range. As noted above, such levels are considered generally unacceptable for residential use, but are not considered completely unacceptable.

If new noise-sensitive land uses were to be built within the train noise impact zone, such levels would require noise mitigation for the creation of any new usable outdoor space such as yards, decks or patios in accordance with noise policies in cities along the proposed improvements. Since "normal" structural attenuation without any upgrades is 20 dB, with closed single-paned windows, the observed exterior levels would make it difficult to meet the 45 dB CNEL interior standard at any sensitive residential occupancies unless enhanced noise protection measures are used (dual-paned windows, extra insulation, etc. Existing residential uses would be identically sensitive to noise. Older dwellings have less likelihood of being equipped with upgraded windows, extra insulation, etc., than would new construction. Noise policies for new construction are therefore an indication for abatement of noise exposure at existing uses near the track of such abatement is found to be reasonable and feasible. Elevated baseline noise levels will mask any small possible noise changes associated with higher speed train movements along the upgraded corridor. However, elevated noise levels will also make the area sensitive to any worsening of noise conditions.

Table 4
On-Site Noise Monitoring Summary
BNSF Triple Track Improvement
July 30, 2002 - July 31, 2002

Parameter	Noise Levels (dBA)		
	Site 1	Site 2	Site 3
Peak 1-Hour (LEQ)	76	71	73
Max. 1-Second (Lmax)	96	96	96
Hour Observed	08-09	03-04	08-09
2^{nd} High Hour	74	71	70
Hour Observed	03-04	00-01	20-21
3^{rd} High Hour	74	70	70
Hour Observed	00-01	08-09	09-10
Min. 1-Hour	61	61	63
Hour Observed	12-13	19-20	19-20
24-Hour CNEL	78	74	74

Site 1 = On Rivera, 60 yards east of Passons at grade X-ing, 15 yards to North Track.
Site 2 = Farthest east end of Rivera Street, 15 yards to North Track.
Site 3 = Intersection Rivera/Lochalene, 40 yards north to Track.

NOISE IMPACT ASSESSMENT

The BNSF Track Improvement project will generate two sources of noise along its alignment: temporary construction activity noise and railway service noise. No increase in railway service will occur as a result of project implementation. Any operational emissions impacts would derive from a slight relocation of the rail center-line, from possible speed increases associated with reduced delay, and from possible future rail traffic growth. Some on-road noise changes may occur as a result of grade separated crossings that eliminate current motor vehicle traffic delays at at-grade crossings.

Impact Significance Criteria (CEQA Thresholds of Significance)

A project is considered to have a significant noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receptors. A substantial increase in an environment where noise standards are already exceeded would be considered to experience a significant impact. In addition to being concerned about the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing noise environment. If the existing noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, some impact may occur. Lacking adopted standards for evaluating such impacts, general rules of thumb for community noise environments are that a change of 5 dB(A) or more is readily noticeable and, therefore, is considered a significant impact. Changes between 3 and 5 dB(A) may be noticed by some individuals and are, therefore considered to constitute a substantial increase since under these conditions sporadic complaints may occur. Changes in community noise levels of 3 dB(A) or less are normally not noticeable and therefore considered less than significant with respect to CEQA guidelines.

Federal Noise Impact Criteria

The Federal Transit Agency (FTA) has not developed guidelines for noise/vibration impact assessment from heavy rail projects. The FTA has developed a comprehensive guideline for transit projects, which may include heavy rail as one component. In the absence of definitive guidance for general rail project impact assessment, the FTA's Transit Noise and Vibration Impact Assessment (DOT-T-95-16, 1995) has been presumed applicable to the proposed project as well.

FTA guidelines define three classes of land uses where noise exposure should be evaluated, and the guidelines there specify the change in noise levels that would have no impact, limited impact and definite impact. The project alignment has Category 2 land uses within its potential noise impact corridor of 375 feet (FTA Manual, Table 401, Rail Mainline). Category 2 uses are residences. These occur mainly in Pico Rivera. Category 1 uses (amphitheaters, concert pavilions, etc) do not occur near the track. Category 3 uses (schools, libraries, churches, etc) occur at several locations in Pico Rivera/Los Nietos. However, any noise impacts are addressed in terms of the more stringent Category 2 noise standards.

Table 5 shows the range of noise increments that would represent various impact criteria. Because the residential (Category 2) uses in Pico Rivera already have extremely high baseline noise conditions, even a small increase in noise is considered environmentally adverse. Based upon the measurement data in Table 4 of peak hour and/or 24-hour CNEL/Ldn in the low-to mid-70 dB range, any project-related increment of 65 dB Ldn would be enough to create a noise impact under FTA guidelines. This represents an allowable increase in baseline conditions of 0.5 dB or less as characterizing an impact. Because the proposed project will not of itself generate any increase in train activity, but only move existing traffic more safely and efficiently, the physical change in track location is the only direct project impact that would likely create a potential change in noise levels. Because CEQA significance guidelines of +3 dB are much less stringent, the federal (FTA) guideline is the most relevant criterion.

Effects of the Project

Noise impacts for new projects are generally divided between short-term construction and long-term operational sources. For the BNSF Track Improvement project, freight and passenger services already exist. The improvements are designed to improve inter-city and community passenger service between Los Angeles and Orange Counties, move trains at more efficient speeds, and reduce engine idling and delays on side tracks. These activities may change noise conditions along the project alignment. Operational activity noise changes, plus the noise effects associated with construction, are the focus of the project noise impact analysis.

Impacts of the Project

Short-Term Impacts

Impact 1: Construction-related activities associated with the transport of workers and equipment, as well as site preparation and construction would result in short-term noise impacts.

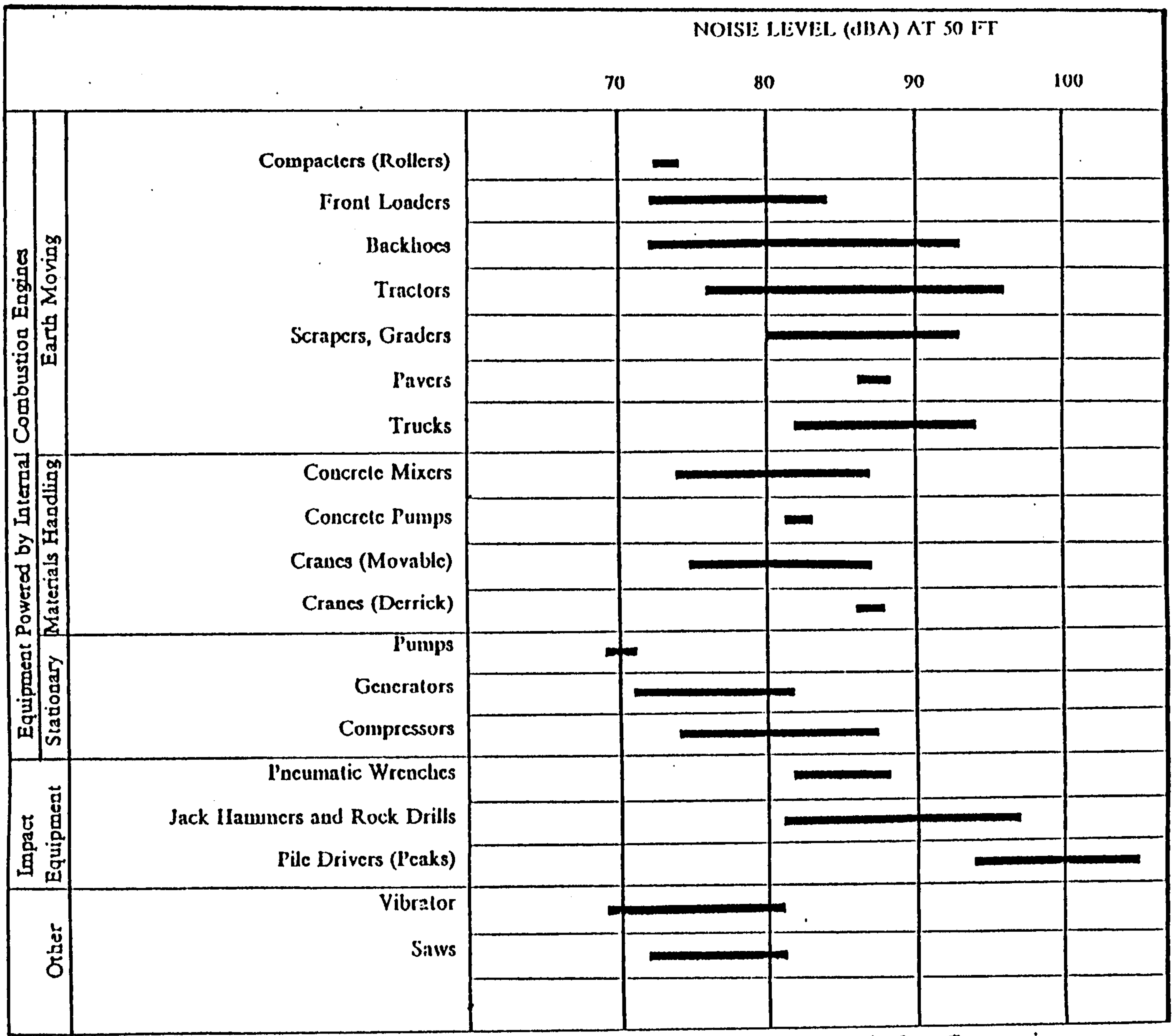
Discussion: Implementation of the proposed project would involve the addition of new railroad tracks next to existing tracks between Los Angeles and Orange counties, improvements to bridges and crossings, and grade separations at seven locations. Activities associated with such construction may be a highly noticeable temporary noise source. Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers and, off-road construction itself. Since transportation of personnel and materials will occur on already heavily traveled roadways, background noise conditions will mask any project on-road contributions. Heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise will be minimal. On-road transportation of materials will be greatest for grade separation construction. Potentially perceptible impacts will thus mainly be associated with on-site heavy equipment use.

Construction activities occur in various steps, each of which involves different types of equipment and a distinct noise characteristic. These steps would alter the character of the noise levels surrounding the construction sites as the project is developed. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise to be categorized according to discrete work phases, as discussed below.

Table 5
Land Use Categories and Metrics for Transit Noise Impact Criteria

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor Leq (h)*	Tracts of land where quiet is an essential element of their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use.
2	Outdoor Ldn	Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq (h)*	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches where it is important to avoid interference with such activities as speech, mediation, and concentration on reading material. Building with interior spaces where quiet is important, such as medical offices, conference rooms, recording studios and concert halls fall into this category. Places for mediation or study associated with cemeteries, monuments, museums. Certain historical sites, parks, and recreational facilities are also included.

* Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.



Source: EPA PB 206717, Environmental Protection Agency, Dec. 31, 1971, "Noise from Construction Equipment & Operations"

TYPICAL CONSTRUCTION EQUIPMENT NOISE GENERATION LEVELS

FIGURE 1

Long-Term Impacts

Impact 2: Implementation of the proposed project would result in an increase of train noise levels at noise-sensitive uses along the BNSF track.

Noise level changes due to construction and use of a third track would shift the noise generation "centroid" closer to the location of the nearest track. The effective noise generation distance (DEFF) is currently calculated per FTA Manual (P.5-14) as:

DEFF = SQRT [D x (D+15)] (in feet)

where D is the distance to the nearest track. The addition of another track closer to the nearest noise-sensitive land use would change the effective generation location (DNEW) as:

DNEW = SQRT [DEFF X (D-15)]

Application of these formulas to the observed noise level would increase noise levels as follows:

Distance to Nearest Track (feet)	**Noise Increase Due to New Track (feet)**
50'	+1.0 dB
60'	+0.9 dB
70'	+0.8 dB
80'	+0.7 dB
90'	+0.6 dB
100'	+0.5 dB
110'	+0.4 dB

Any sensitive (Category 2) land use would experience an "impact" (+0.5 dB or more) if the receiver is located within 100 feet of the nearest track, and the new track is added on the receiver's side of the existing track. There are no Category 2 receivers located so close to the existing track as to experience a noise impact solely from the addition of a third track along two existing mainline tracks.

Increases in noise levels associated with continued growth on the project track segment, which is not a part of this project, will derive from the projected growth of 50 percent in track utilization. A 50 percent growth translates into a +1.8 dB noise level increase. Given the elevated baseline levels, such an increase would constitute an impact under federal guidelines. The increase would be less than the +3 dB increment identified as significant under CEQA thresholds.

At several locations with residences and a school close to the track, minor noise increases due to track relocation will be off-set by the reduction in existing train horn use for at-grade intersections. Use of train horns in an area of multiple at-grade crossings is perhaps the most serious noise issue of existing train traffic. Use of horns is discretionary with each train's engineer, but BNSF has established guidelines that dictate horn use at all at-grade crossings for safety reasons. Grade separations at seven locations in the cities of Pico Rivera, Santa Fe Springs and La Mirada will essentially eliminate horn noise when they are completed and operating.

The reduction in noise due to elimination of horns at the seven proposed grade separations was compared to the calculated noise increment from the third track addition. The Federal Transit Administration (FTA) in "Transit Noise and Vibration Impact Assessment," (1995) shows that the one-hour average noise level for horns from one train moving at 50 mph is 72 dB LEQ. The horn noise contribution from 100 trains per day currently using the track is a function of peak hourly traffic, and of their day/night distribution in terms of CNEL/Ldn levels. The peak hourly noise exposure of possibly up to ten trains per hour (five northbound and five southbound) could be as high as 82 dB(A) at 50 feet from the track if all trains sounded their horns at the identical location for the same duration. Not all horns are sounded equally, and Metrorail or Amtrak trains often use more of a short "toot" rather than an extended signal. Nevertheless, the elimination of the train horns for the new crossings will create a localized noise exposure benefit in terms of both the character of the noise and its magnitude.

NOISE IMPACT REDUCTION

Cumulative growth of train traffic will create a noise impact at noise-sensitive land uses near the track that already experience generally excessive noise levels. Noise abatement should be a consideration for cumulative long-term growth of train movements along the BNSF/Amtrak/Metrorail corridor. There are no impacts associated with the project that would establish a nexus between project implementation and any associated noise abatement. The cumulative impact should, however, be attenuated as part of an overall train noise impact mitigation program.

Noise reduction can be accomplished by three menus:

1. Reduce the source strength. Relocate the source away from the receiver; reduce the number of sources; slow them down to a quieter travel speed; eliminated use of horns; use quieter locomotives; place the tracks on a floating track-bed; or "true" wheels more frequently.

2. Modify the receiver by relocating noise-sensitive uses away from the source and/or increasing the buffer distance; structurally modify the receiver through noise insulation and ventilation to allow habitable interiors to meet appropriate standards even if exterior levels are generally unacceptable.

3. Interrupt the source-receiver geometry to place the receiver within the "noise-shadow" of the direct line-of-sight of the source.

Various options or permutations of the three attenuation techniques are generally employed. Source modification is often difficult in rail projects because moving more goods or people at greater travel speeds is the basic efficiency goal of this system of transportation. Regulation of source elements is difficult because local control is pre-empted by state or federal agencies. Alternatives to powerful locomotives traveling on steel rails are not generally available.

Because source-control options are limited, and because receiver modification (relocation/ demolition or insulation) may be expensive, socially disruptive and only partially address the issue, noise barriers are typically the abatement technique of choice. Barriers also have possible limitations (destruction of viewshed, physical division of the community, limited benefit to elevated receivers, targets for graffiti, safety issues in hiding wrongful behavior from view, etc.). Since locomotive engines are an elevated noise source, the barrier often needs to be quiet tall to achieve a break in the line-of-sight. Construction of a barrier on only one side of a linear source creates reflection of extra sound toward the unshielded side.

Selection of any noise attenuation option requires a site-specific analysis of the opportunities and constraints. For roadway projects, specific guidelines have been developed that establish minimum attenuation goals and definitions of reasonable and feasible measures to be included as part of any proposed improvement. There is no similar guidance for rail projects. Noise abatement decisions have traditionally "defaulted" to roadway assessment guidelines, or to the noise goals of local jurisdictions. Any potential mitigation of cumulative rail noise impacts thus first needs to adopt an agreed set of protocols and standards, and then apply those guidelines uniformly to the noise environment along the project corridor.

VIBRATION IMPACT ASSESSMENT

Vibration is oscillatory movement which can be described in terms of distance displacement, vibrational velocity or acceleration. The vibration velocity is perhaps the most common vibration descriptor. The peak particle velocity (PPV) during one vibration cycle is the maximum instantaneous peak in the vibration signal. It is a good indicator of possible structural damage. The root-mean-squared (RMS) velocity is a smoothed representation of the average level of "shaking" during each vibration cycle. The human body is more sensitive to a continuous rolling or shaking motion (RMS) than it is to a single jolt (PPV).

For ease of representation, a decibel scale is used for vibration similar to the scale used for sound. The most common vibration velocity reference level in the United States is one-millionth inch/second as follows:

Vibration Velocity (in/sec)	Vibration Decibels (VdB)	Typical Source / Effect
0.0000001	0	Undetectable by humans
0.000001	20	Undetectable by humans
0.0001	40	undetectable, isolated house in the country
0.0001	60	Almost perceptible, typical suburban residence
0.01	80	Annoying, loaded truck going over large bump
0.03	90	Very annoying, bulldozer operating nearby
0.1	100	Building damage, construction blasting nearby

Human Perception

The commonly accepted human threshold of perception for vibration is 65 VdB (re: 10^{-6} in/sec). The dividing line between vaguely perceptible and clearly perceptible is around 75 VdB. At 85 VdB, the vibration becomes intrusive for sleeping, reading or most other "quiet" activities. There are no adopted vibration impact criteria that have been developed and approved by appropriate agencies for purposes of environmental assessment. The Federal Transit Administration, in "Transit Noise and Vibration Impact Assessment" (1995) has developed recommended impact criteria for transit projects. In the absence of definitive standards for train activity vibration, these guidelines have been incorporated into the following discussion.

The FTA's suggested vibration impact criteria are as follows:

Land Use	Threshold	
	Frequent*	Infrequent**
Precision manufacturing or research	65	65
Residences with sleeping areas	72	80
Schools and other daytime only uses	75	83

Notes: * More than 70 events per day.
** Less than 70 events per day.

The FTA Manual provides a screening distance for vibration effects. Unless there are unusual vibration propagation conditions, passage of a heavy rail passenger, commuter or freight train moving at moderate speed (50 mph) will have no perceptible impact following distances:

School classroom 120 feet from tracks

Occupied residences 200 feet from tracks

There are no classrooms within the possible vibration zone. There are, however, homes within 200 feet of the tracks. A more detailed vibration analysis is specified in the FTA Guidelines if a screening analysis cannot rule out any impact potential

Vibration Impact

The proposed project will relocate approximately one-third of existing train movements onto the new track. Although some growth in rail service is anticipated to occur over time, the proposed project does not accommodate service demand that could not be met on existing trackage. To be sure, the growth could not be accommodated as efficiently or as safely on only two existing tracks, but the number of vibration events would be identical with or without the project.

The vibration velocity as a function of distance from the track ("D") is expressed as follows:

$$\text{VdB (at "D")} = 78 - 20 \times \log (D/100)$$

where VdB in decibels (re: 10-6 in/sec) and D is expressed in feet

Inside a home, the interface between the building shell and its foundation will absorb about 5 VdB of vibrational energy. However, the resonance of the structure will amplify the net vibration by +6 dB. Within 1 dB, the vibration velocity outside the structure and within the interior are identical.

The vibration velocity impact criterion for residences is 72 VdB for frequent (>70/day) events, and 80 VdB for infrequent (<70/day) occurrences. Existing train activity is estimated at 96 train movements per day. Existing conditions are in the "frequent" category. A vibration velocity impact criterion of 72 VdB would be applicable to the project area. Based upon the above predictive equation, the zone of potentially perceptible vibration extends as follows:

Distance from Tract Midpoint (feet)	Vibration Velocity (VdB)
100	78
125	76
150	74.5
200	72
300	68.5
400	66

The zone of potential vibration impact is therefore as far as 200 feet from the track centerline. Addition of a third mainline track will slightly change the maximum location of vibration perception, and may slightly increase the severity of individual vibration events toward the side of new track construction. The centroid of vibration generation (mainly from train locomotive) will shift by +7.5 feet for a 15-foot separation between the existing and proposed tracks. The potential vibration perception distance will increase toward the track side of new construction. Conversely, the number of perceptible vibration events on the side away from the new track near the fringe of the perception threshold will decrease as one-third of existing traffic is shifted to the new track away from the closest receptors. The increased vibration magnitude of individual passerbys is expressed as follows (VdB):

Distance from Track C.L. (feet)	Toward New Track Construction	Away from New Track Construction
100	+1.4 max.	-0.6 avg.
150	+0.9 max.	-0.4 avg.
200	+0.7 max.	-0.3 avg.

An increase of +1.4 VdB is not considered a substantial increase even at 100 feet from the existing nearest track. Most existing residences are 150 feet or more from the nearest track. Their maximum increase of less than 1.0 VdB is likely an imperceptible change from current conditions. Addition of a third mainline track will not have a substantially adverse vibration effect on the closest residences along several portions of the project.

Third Main Track and Grade Separation Project on the Burlington Northern Santa Fe Railway Company East-West Main Line Railroad Track
SCH #2002041111

ENVIRONMENTAL IMPACT REPORT
Draft

Volume 2 - Technical Appendices

March 2003

Submitted Pursuant to: California Division 13, Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

and

Burlington Northern Santa Fe Railway Company

March 25, 2003
Date of Approval

Ronald J. Kosinski
Ronald J. Kosinski
Deputy District Director
Division of Environmental Planning
District 7
California Department of Transportation

MAR. 26, 2003
Date of Approval

Warren D Weber
Warren Weber
Chief
Division of Rail
California Department of Transportation

March 27, 2003
Date of Approval

Walt N. Smith
Walt Smith
General Director, Construction
The Burlington Northern and Santa Fe Railway Company

Table of Contents

Volume 2 (Technical Appendices)

HISTORICAL RESOURCES COMPLIANCE REPORT

DRAFT

HISTORICAL RESOURCES COMPLIANCE REPORT

Third Main Track and Grade Separation Project
Hobart (MP 148.9) to Basta (MP 163.3)
BNSF/Metrolink East-West Main Line Railroad Track
Vernon to Fullerton, Los Angles and Orange Counties, California

Prepared for:

____

Gary Iverson, Office Chief
Environmental Planning
Caltrans District 7
120 South Spring Street
Los Angeles, CA 90012

Prepared by:

____

Bai Tang, M.A., Principal Investigator
Michael Hogan, Ph.D., Principal Investigator
Mariam Dahdul, M.A., Archaeologist/Report Writer
CRM TECH
4472 Orange Street
Riverside, CA 92501

CRM TECH Contract #789
USGS Los Angeles, South Gate, Whittier, La Habra, and Anaheim, Calif., 7.5' quadrangles
T2-3S R10-13W, San Bernardino Base Meridian

November 2002

SUMMARY OF FINDINGS

The present Historic Resources Compliance Report is prepared in compliance with the California Environmental Quality Act (CEQA) for the proposed third main track and grade separation project on the Burlington Northern Santa Fe (BNSF) Railway Company's East-West Main Link Railroad between Hobart (Mile Post 148.9) in the City of Vernon and Basta (MP 163.3) in the City of Fullerton, California. The project's Area of Potential Effects (APE) is delineated to encompass the actual footprint of all necessary construction activities, as well as areas adjacent to the six grade separation sites that may potentially be affected by visual, noise, and atmospheric intrusions as a result of the project. The purpose of the survey is to determine whether any "historical resources," as defined by CEQA, are present within or adjacent to the APE.

The scope of this study includes a historical/archaeological resources records search; historical background research; consultation with local governments, local historical preservation organizations, and Native American representatives; and a systematic field survey. The field survey was completed between June 21 and July 23, 2002. This report, in conjunction with the attached Archaeological Survey Report (App. 1) and Historical Resources Evaluation Report (App. 2), presents a summary of the methods, results, and final conclusion of the study.

The results of the records search indicate that three historical/archaeological sites, designated CA-LAN-182, 19-002882, and 30-120020, were previously recorded within or adjacent to the APE. CA-LAN-182 includes several speculative locations of a Native American village noted in the early historic period, one of which was believed to be in the vicinity of the Los Nietos Road/Norwalk Boulevard grade separation site in Santa Fe Springs. The presence of the site in or near the APE has not been established through archaeological field investigations, and no evidence of any archaeological remains was encountered at the suggested location in the APE during the field survey.

Site 19-002882, recorded as two refuse deposits dating to the 1930s-1940s, was once located near the northwestern end of the APE at Hobart, but the entire site was removed shortly after its recordation in 2000. Site 30-120020, located near Beach Boulevard in Buena Park, consisted of two privies and trash pits associated with the former Northam Station on the present-day BNSF line when it was recorded in 1979. None of these features, however, or any other remains of the station was observed at this location during the present survey.

As a result of this study, a total of 49 pre-1957 buildings were recorded within the APE at four of the six grade separation sites, including a former ranch house constructed around 1914, 47 tract homes constructed between 1951 and 1954, and a commercial/industrial building constructed in 1955-1956. None of these buildings appears to meet CEQA's definition of a "historical resource." Also noted in the APE were 55 other buildings or groups of buildings that postdate 1957. Pursuant to Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later, these buildings are not considered potential "historical resources," and do not require further study.

The existing BNSF railroad line that runs through the APE, built in 1885-1888 by the Riverside, Santa Ana and Los Angeles Railway Company, a Santa Fe subsidiary, was recorded during the present study as a historical site due to its age, and designated temporarily as CRM TECH 789-50H. Despite the important role that the Santa Fe Railway played in the growth of southern California in the late 19th century, the railroad line and its associated features that are present today, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance, and thus do not appear to qualify as a "historical resource."

Along with the railroad line, the survey noted 18 bridges that carry the BNSF line over various streets or natural waterways. Thirteen of these were previously evaluated as ineligible for listing in the National Register of Historic Places (App. 3). The five oldest among them, constructed between 1937 and 1950, have become 50 years old since the establishment of the Inventory in 1984-1986, but none of them demonstrates any special historical, architectural, or other qualities to warrant a formal re-evaluation. Furthermore, at least four of the five have been widened, extended, or otherwise altered since the 1960s. Five of the 18 bridges were not previously evaluated for historical significance, but all five have been constructed since 1967. None of the 18 bridges, therefore, appear to qualify as a "historical resource."

Consultation with the City of Santa Fe Springs revealed that the City has installed a commemorative plaque within the APE at the Los Nietos Road/Norwalk Boulevard grade separation site, which marks the approximate location of the historic Los Nietos School. This commemorative plaque has no historic value of its own, and is not considered a potential "historical resource." No archaeological remains or other potentially historic features were observed in the vicinity of the plaque.

Based on these findings, the present report concludes that no "historical resources," as defined by CEQA, are known to exist within or adjacent to the APE, and thus the proposed project will have *no impact* on any known "historical resources." However, in order to properly protect areas of potential archaeological interest and address local historical resource concerns, it is recommended for the proposed project that:

- Earth-moving operations in the area around the reported location of Site CA-LAN-182 in the APE be monitored by a qualified archaeologist; and
- The commemorative plaque marking the approximate site of the Los Nietos School be relocated and rededicated in coordination with the City of Santa Fe Springs.

In addition to these recommendations, if buried cultural materials are encountered elsewhere during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the finds.

PROJECT DESCRIPTION

As part of its program to improve inter-city passenger rail services, the State of California Department of Transportation, Division of Rails, proposes a project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway Company/Metrolink East-West Main Line Railroad Track. The project entails primarily the installation of a third main line track along a 14.7-mile segment of the existing BNSF Railway, extending from Hobart (Mile Post 148.9) in the City of Vernon, Los Angeles County, to Basta (MP 163.3) in the City of Fullerton, Orange County, California (Exhibit A, Map 1). The project route traverses portions of the San Juan Cajon de Santa Ana, Los Coyotes, Santa Gertrudes (McFarland and Downey), Santa Gertrudes (Colima), Paso de Bartolo (Sepulveda), Paso de Bartolo (Guirado), and San Antonio (Lugo) land grants lying within of T2-3S R10-13W, San Bernardino Base Meridian, across or along the boundaries of the Cities of Fullerton, Buena Park, La Mirada, Santa Fe Springs, Norwalk, Pico Rivera, Montebello, City of Commerce, and Vernon (Exhibit A, Map 2).

In addition to the installation of the third main line track, the project also includes various other improvements and upgrading, most notably the construction of six grade separations at the BNSF main line's intersections with Passons Boulevard, Pioneer Boulevard, Norwalk Boulevard/Los Nietos Road, Lakeland Road, Rosecrans Avenue/Marquardt Avenue, and Valley View Avenue, located in the Cities of Pico Rivera, Santa Fe Springs, and La Mirada, and the unincorporated community of Los Nietos. The project's Area of Potential Effects (APE) is delineated to encompass the actual footprint of all necessary construction activities along the project route, as well as areas adjacent to the six grade separation sites that may potentially be affected by visual, noise, and atmospheric intrusions as a result of the project (Exhibit A, Maps 2, 3).

SUMMARY OF IDENTIFICATION EFFORTS

RECORDS SEARCH

In June, 2002, the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, performed a historical/archaeological resources records search on the APE. During the records search the following sources were consulted:

- National Register of Historic Places;
- California Register of Historical Resources;
- California Historical Landmarks;
- California Points of Historical Interest;
- California Historical Resource Information System;
- City of Los Angeles Historic-Cultural Monuments.

Besides the records of SCCIC, the California Historic Bridge Inventory was also examined for previously identified cultural resources within or adjacent to the APE (App. 3).

The results of the records search indicate that three historical/archaeological sites, designated CA-LAN-182, 19-002882, and 30-120020, were previously recorded within or adjacent to the APE. However, no archaeological remains associated with these sites were discovered at any of these locations during the present survey. Sites 19-002882 and 30-120020, representing mostly historic-period trash dumps, are apparently no longer in existence in or near the APE at the present time. Site CA-LAN-182 includes several speculative locations of a Native American village noted in the early historic period, one of which was believed to be in the vicinity of the APE where the BNSF line crosses Los Nietos Road and Norwalk Boulevard in Santa Fe Springs. The presence of the site in or near the APE, however, has not been established through archaeological field investigations.

HISTORICAL BACKGROUND RESEARCH

In conjunction with the records search, a general historical background research was conducted on the basis of historic maps of the project vicinity and published literature in local/regional history and the history of the Atchison, Topeka and Santa Fe Railway (ATSF), forerunner of BNSF in southern California. Among maps consulted were the U.S. General Land Office's (GLO) land survey plat maps produced in the mid-19th century and the U.S. Geological Survey's (USGS) topographic maps dated 1900-1945. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, also located in Riverside.

After potentially historic sites, buildings, and other features were identified within the APE during the field survey, additional historical research was carried out in an attempt to establish the age and historical background of these features. In addition to the sources listed above, archival records of BNSF, the County of Los Angeles, and the Cities of Pico Rivera, Santa Fe Springs, and La Mirada were consulted during this phase of the research, as were materials on file at the local history collections of the various public libraries in the communities along the project route.

FIELD SURVEY

The archaeological field survey of the APE was carried out by project archaeologist Daniel Ballester on June 21 and 24, 2002. The survey was conducted at an intensive-level, primarily by walking a single transect along the side of the existing railroad tracks where the proposed third main line track will be installed, covering a total width of at least 30 feet from the edge of the existing tracks. Reported locations of previously recorded historical/archaeological sites in or near the APE were surveyed with particular care for the purpose of examining the current conditions of these sites.

The archaeological survey covered the direct APE of the project, or all areas where construction activities and/or other ground disturbances will occur during the project. The indirect APE around each of the six proposed grade separation sites, meanwhile, was surveyed systematically for historic-era features of built environment. This part of the field survey was performed by project historians/architectural historians Bai "Tom" Tang and Teresa Woodard on July 23, 2002.

During the built environment survey, Tang and Woodard inspected all existing buildings within or adjacent to the maximum extent of ground disturbances, and completed field recording procedures on buildings that appeared to be more than 45 years old. In order to facilitate the proper recordation and evaluation of all pre-1957 buildings in the APE, Tang and Woodard made detailed notations and preliminary photo-documentation of their structural and architectural characteristics and current conditions. Based on the field observations and the results of subsequent historical research, DPR 523 forms were prepared on each of the resources determined to be within the APE.

PUBLIC PARTICIPATION

CONSULTATION WITH LOCAL COMMUNITIES

In July and August, 2002, governments of the nine cities along the project route were contacted to identify any cultural resources of local historical interest that may be present within or adjacent to the APE, and to solicit from the local communities any other comments regarding cultural resources issues. A telephone log with names and positions of the persons contacted at each City and copies of written correspondences are presented in Appendix 4. Written requests for similar information were also sent to the Heritage Coordinating Council of Fullerton and the Whittier Historical Society and Museum (App. 4), the two local historical organizations along the project route that are identified by the American Association for State and Local History.

To date, neither of the two local historical organizations has responded to the inquiry. Of the nine Cities, five stated that they had no cultural resources concerns regarding this project. Three of them have not provided specific replies, although the Cities of Norwalk and Montebello reserved the opportunity to comment further once their City staff members learn more about the project plans. The City of Santa Fe Springs, meanwhile, brought to attention a City-installed commemorative plaque that is located within the APE, which marks the approximate location of the historic Los Nietos School. According to Gilbert Lee of the City of Santa Fe Springs Planning Department, the plaque, located near the northeastern corner of Los Nietos Road and Norwalk Boulevard, will need to be relocated and rededicated.

CONSULTATION WITH NATIVE AMERICAN REPRESENTATIVES

On July 3, 2002, the State of California's Native American Heritage Commission in Sacramento was contacted in order to seek its input on potential cultural resources concerns (App. 4). In response, the commission reported in a letter dated July 5, 2002, that its sacred lands records indicate no Native American cultural resources in the immediate vicinity of the APE (App. 4). However, noting that "the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area," the commission suggested that other Native American representatives be contacted, and provided a list of potential contacts in the region.

Following the commission's recommendation, on July 10 written requests for comments were sent to all individuals on the list and the organizations they represent (App. 4). Subsequently, telephone consultation was initiated with these Native American representatives between July 11 and 26. As of this writing, Samuel H. Dunlap, secretary of the Gabrielino/Tongva Tribal Council of the Gabrielino Tongva Nation, has responded in writing to request that Native American monitors be present during any ground-disturbing operations associated with the project (App. 4). Of the four persons or organizations that responded to the telephone inquiries, two stated that they had no concerns or no comments regarding this project, one recommended Native American and archaeological monitoring, and one pointed out the high sensitivity of the area for Native American cultural remains but offered no specific recommendations (App. 4). No specific properties of Native American traditional cultural value were identified by any of the individuals or organizations contacted.

DESCRIPTION OF IDENTIFIED CULTURAL RESOURCES

As a result of the various research procedures completed during the present survey, a total of 49 historic-era buildings, a historic-era archaeological site, and 18 railroad bridges ranging in construction date from 1941 to 1996 were noted within the proposed project's APE, as listed below.

- **Historical Resources Listed in the California Register**

  No such properties are present within the APE.

- **Historical Resources Previously Determined Eligible for the California Register**

  No such properties are present within the APE.

- **Historical Resources Potentially Eligible for the California Register**

  No such properties are present within the APE.

- **Properties That Appear Potentially Eligible for the California Register but Require Further Study**

  No such properties are present within the APE.

- **Properties Previously Determined Ineligible for the California Register**

Name	Address/Location	Community	Map Ref. No.
Greenwood Ave. Bridge	BNSF M.P. 149.5	Montebello	1
Rio Hondo Bridge	BNSF M.P. 150.1	Pico Rivera	2
Paramount Blvd. Bridge	BNSF M.P. 150.4	Pico Rivera	3
Rosemead Blvd. Bridge	BNSF M.P. 150.9	Pico Rivera	4
San Gabriel River Bridge	BNSF M.P. 151.9	Pico Rivera	5
Santa Fe Springs Rd. Bridge	BNSF M.P. 154.0	Santa Fe Springs	6
Telegraph Rd. Bridge	BNSF M.P. 154.4	Santa Fe Springs	7
Imperial Hwy. Bridge	BNSF M.P. 156.1	Santa Fe Springs/Norwalk	9
Coyote Cr. Bridge	BNSF M.P. 160.4	Buena Park	13
Beach Blvd. Bridge	BNSF M.P. 160.6	Buena Park	14
Brea Cr. Bridge	BNSF M.P. 160.9	Buena Park	15
Gilbert Ave. Bridge	BNSF M.P. 162.4	Fullerton	17
Commonwealth Ave. Bridge	BNSF M.P. 163.1	Fullerton	18

- **Properties That Appear Ineligible for the California Register**

Name	Address/Location	Community	Map Ref. No.
Florance Ave. Bridge	BNSF M.P. 154.9	Santa Fe Springs	8
Carmenita Rd. Bridge	BNSF M.P. 157.2	Santa Fe Springs	10
La Canada Verde Cr. Bridge	BNSF M.P. 157.5	Santa Fe Springs	11
La Mirada Cr. Bridge	BNSF M.P. 158.9	La Mirada	12
Dale St. Bridge	BNSF M.P. 161.3	Buena Park	16
None (residence)	7568 Lemoran Ave.	Pico Rivera	19
None (residence)	7574 Lemoran Ave.	Pico Rivera	20
None (residence)	7578 Lemoran Ave.	Pico Rivera	21
None (residence)	7581 Lemoran Ave.	Pico Rivera	22
None (residence)	7584 Lemoran Ave.	Pico Rivera	23
None (residence)	7619 Passons Blvd.	Pico Rivera	24
None (residence)	7625 Passons Blvd.	Pico Rivera	25
None (residence)	7631 Passons Blvd.	Pico Rivera	26
None (residence)	7635 Passons Blvd.	Pico Rivera	27
None (residence)	7641 Passons Blvd.	Pico Rivera	28
None (residence)	8625 Danby Rd.	L.A. County	29
None (residence)	8629 Danby Rd.	L.A. County	30
None (residence)	8633 Danby Rd.	L.A. County	31
None (residence)	8516 Pioneer Blvd.	L.A. County	32
None (residence)	8523 Pioneer Blvd.	L.A. County	33
None (residence)	8529 Pioneer Blvd.	L.A. County	34
None (residence)	8533 Pioneer Blvd.	L.A. County	35
None (residence)	8603 Pioneer Blvd.	L.A. County	36
None (residence)	8609 Pioneer Blvd.	L.A. County	37
None (residence)	8615 Pioneer Blvd.	L.A. County	38
None (residence)	8619 Pioneer Blvd.	L.A. County	39
None (residence)	8625 Pioneer Blvd.	L.A. County	40
None (residence)	11005 Rivera Rd.	L.A. County	41
None (residence)	11021 Rivera Rd.	L.A. County	42
None (residence)	11117 Rivera Rd.	L.A. County	43
None (residence)	11131 Rivera Rd.	L.A. County	44
None (residence)	10702 Wheelock Cir.	L.A. County	45
None (residence)	10703 Wheelock Cir.	L.A. County	46
None (residence)	10706 Wheelock Cir.	L.A. County	47
None (residence)	10710 Wheelock Cir.	L.A. County	48
None (residence)	10714 Wheelock Cir.	L.A. County	49
None (commercial bldg.)	14051 Marquardt Ave.	Santa Fe Springs	50
None (residence)	14508 Valley View Rd.	La Mirada	51
None (residence)	14514 Valley View Rd.	La Mirada	52
None (residence)	14520 Valley View Rd.	La Mirada	53
None (residence)	14528 Valley View Rd.	La Mirada	54
None (residence)	14602 Valley View Rd.	La Mirada	55
None (residence)	14610 Valley View Rd.	La Mirada	56
None (residence)	14618 Valley View Rd.	La Mirada	57
None (residence)	14624 Valley View Rd.	La Mirada	58
None (residence)	14632 Valley View Rd.	La Mirada	59
None (residence)	14638 Valley View Rd.	La Mirada	60
None (residence)	14644 Valley View Rd.	La Mirada	61
None (residence)	14652 Valley View Rd.	La Mirada	62
None (residence)	14324 San Ardo Dr.	La Mirada	63

None (residence)	14330 San Ardo Dr.	La Mirada	64
None (residence)	14336 San Ardo Dr.	La Mirada	65
None (residence)	14342 San Ardo Dr.	La Mirada	66
None (residence)	14348 San Ardo Dr.	La Mirada	67
Los Nietos School plaque	Los Nietos Rd. /Norwalk Blvd.	Santa Fe Springs	68
BNSF Railroad	(Through entire APE)	N/A	None

Also noted in the APE were 55 other buildings or groups of buildings that postdate 1957. Pursuant to Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later, these buildings are not considered potential historical resources, and do not require further study.

Records of the South Central Coastal Information Center indicate that three historical/ archaeological sites were previously recorded within or adjacent to the APE. However, no surface manifestation of any archaeological remains was discovered at any of these locations during the present survey.

NO HISTORICAL RESOURCE FINDING

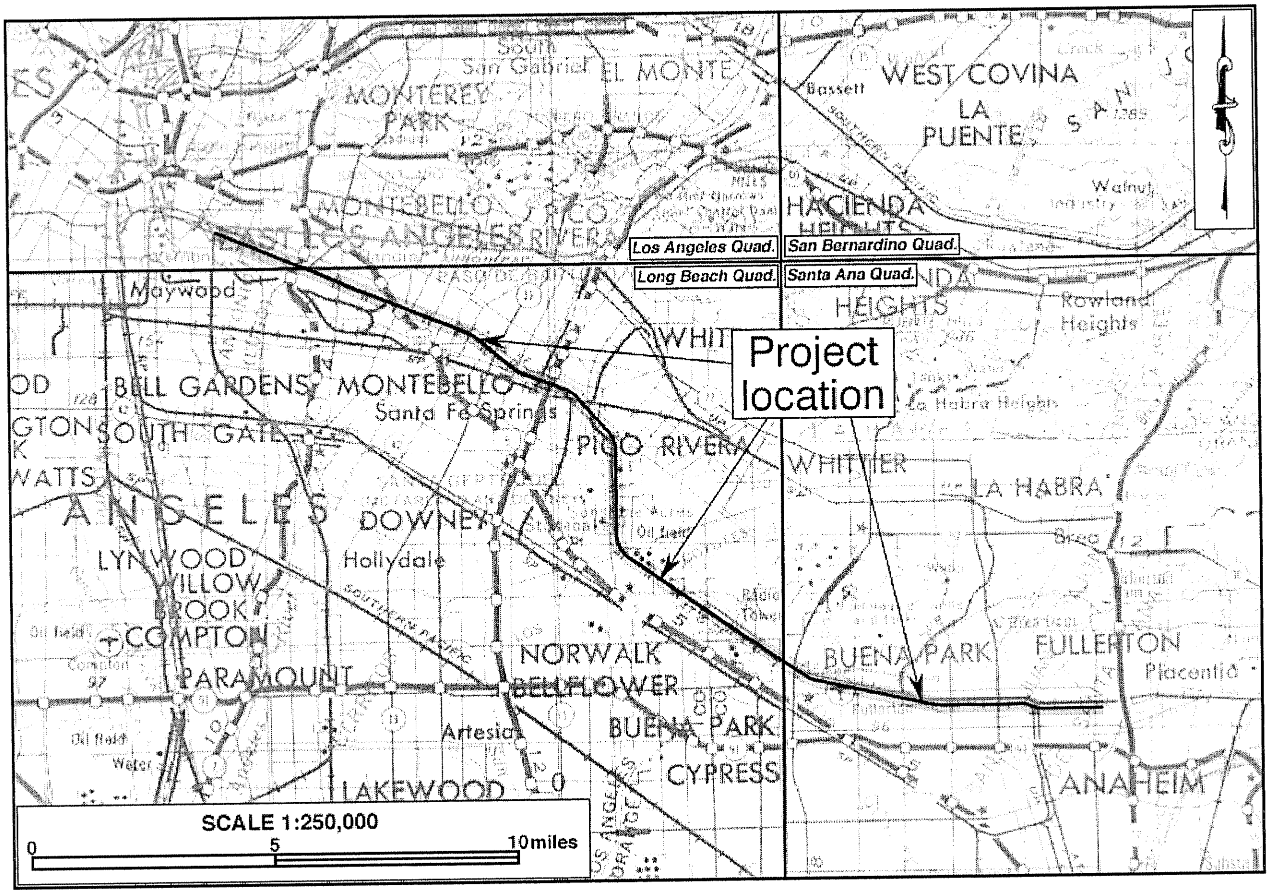
Based on the findings presented above, this report concludes that no "historical resources," as defined by CEQA, are known to exist within or adjacent to the APE, and thus the proposed project will have *no impact* on any known "historical resources." However, in order to properly protect areas of potential archaeological interest and address local historical resource concerns, it is recommended for the proposed project that:

- Earth-moving operations in the area around the reported location of Site CA-LAN-182 in the APE be monitored by a qualified archaeologist; and
- The commemorative plaque marking the approximate site of the Los Nietos School be relocated and rededicated in coordination with the City of Santa Fe Springs.

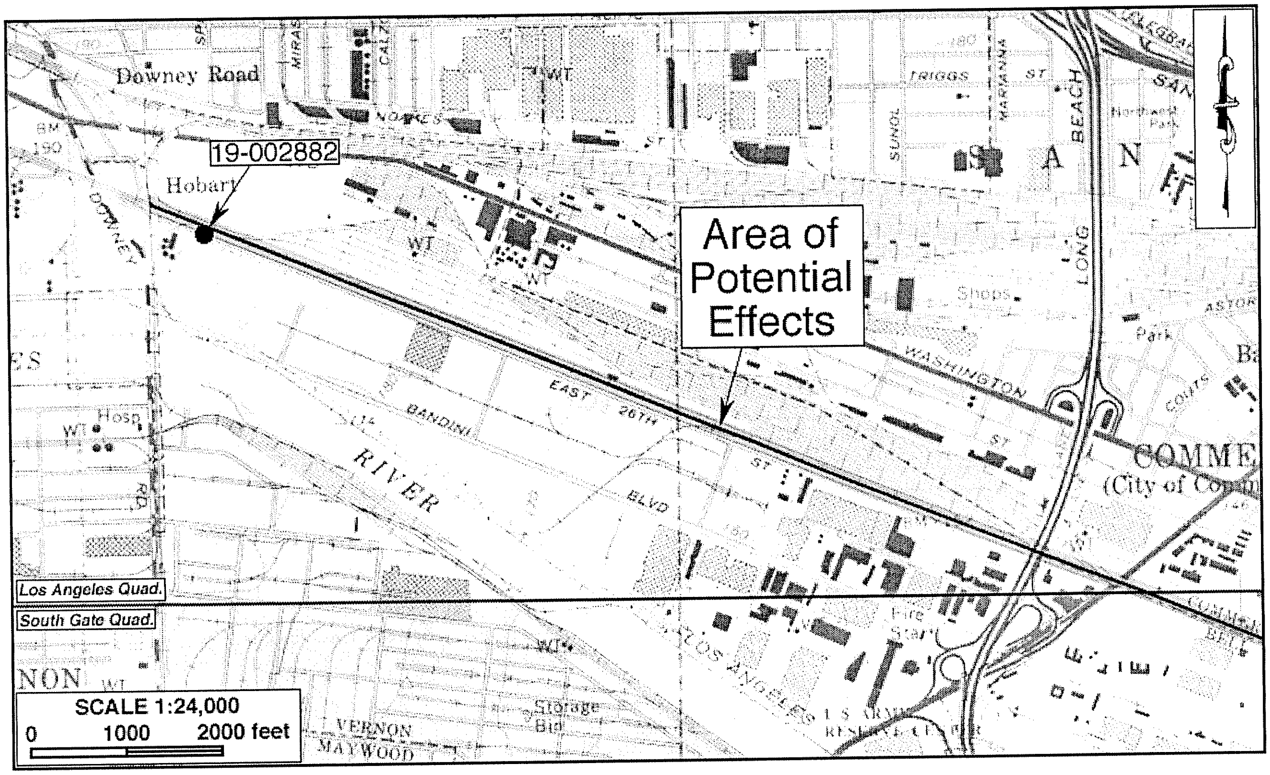
In addition to these recommendations, if buried cultural materials are encountered elsewhere during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the finds.

EXHIBIT A

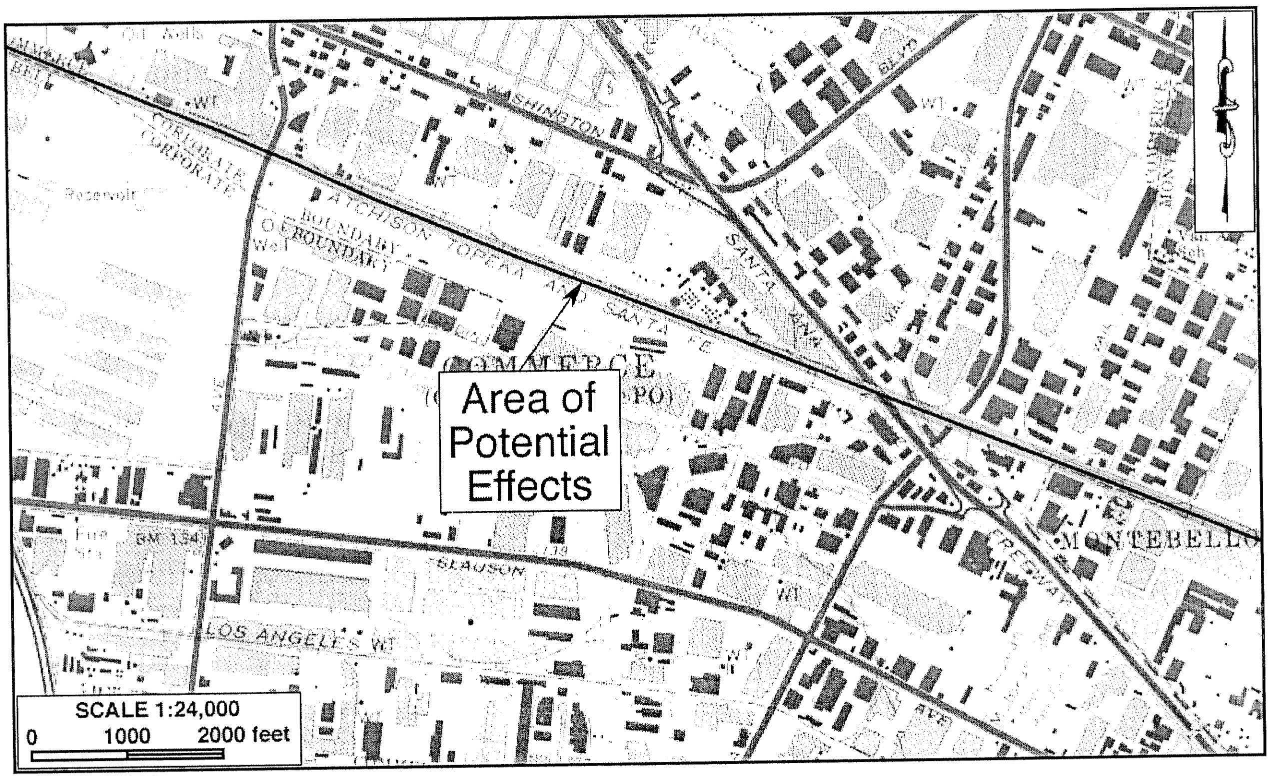
PROJECT MAPS



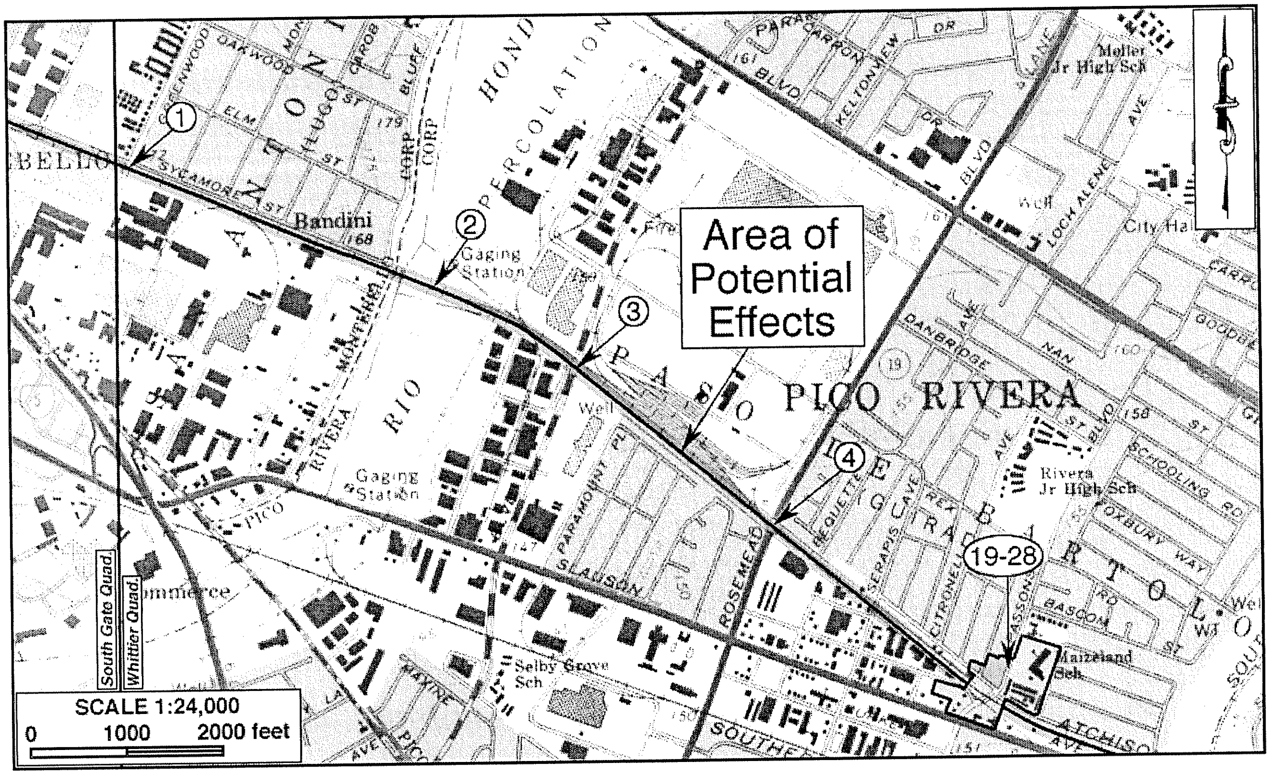
Map 1. Project location map.



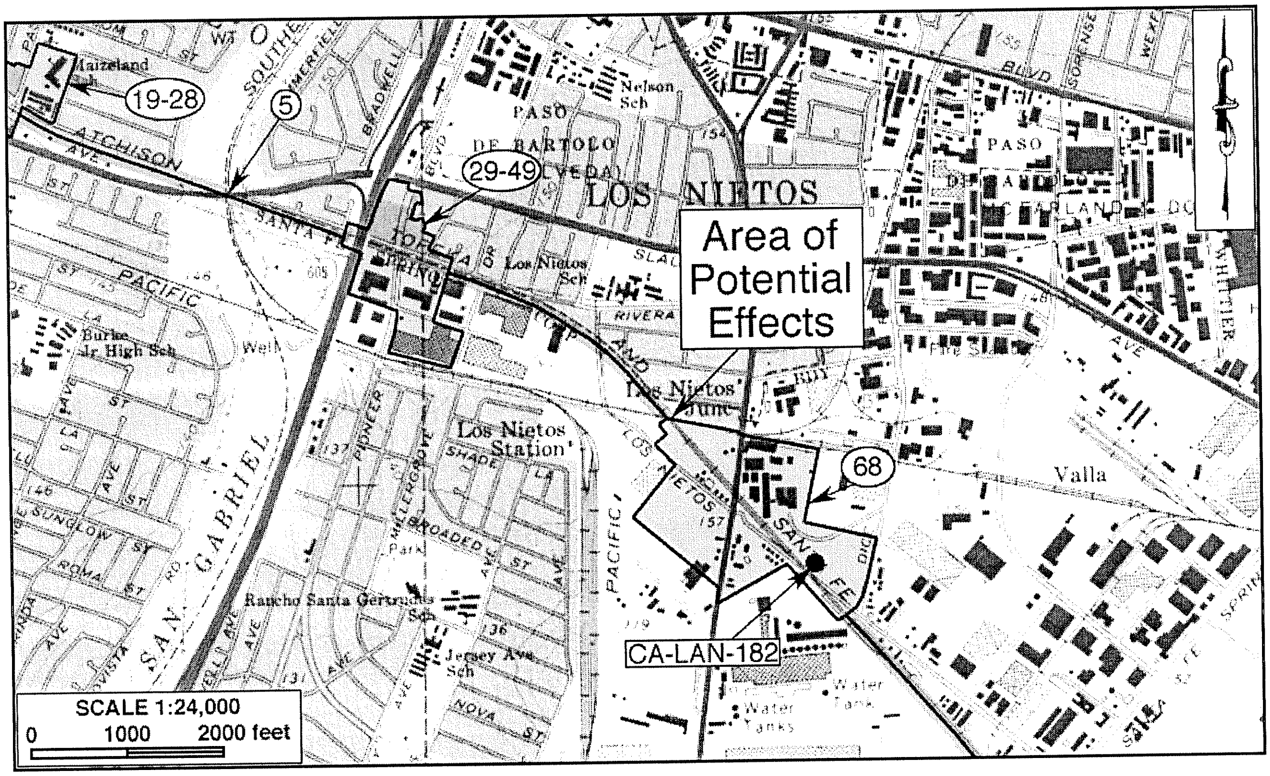
Map 2a. Project vicinity and sitelocations (1). (Based on USGS Los Angeles and South Gate, California, 7.5' quadrangles)



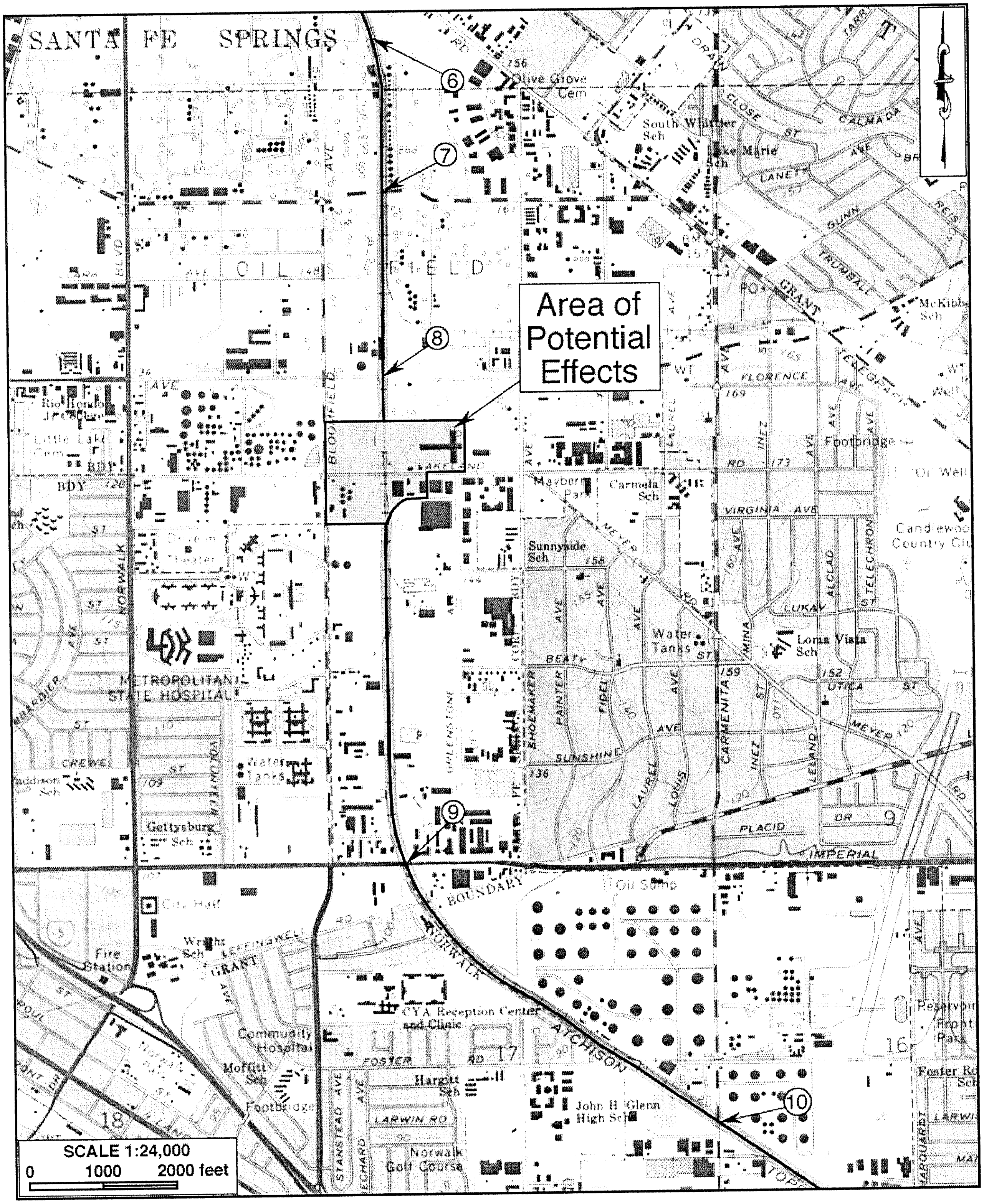
Map 2b. Project vicinity and sitelocations (2). (Based on USGS South Gate, California, 7.5' quadrangle)



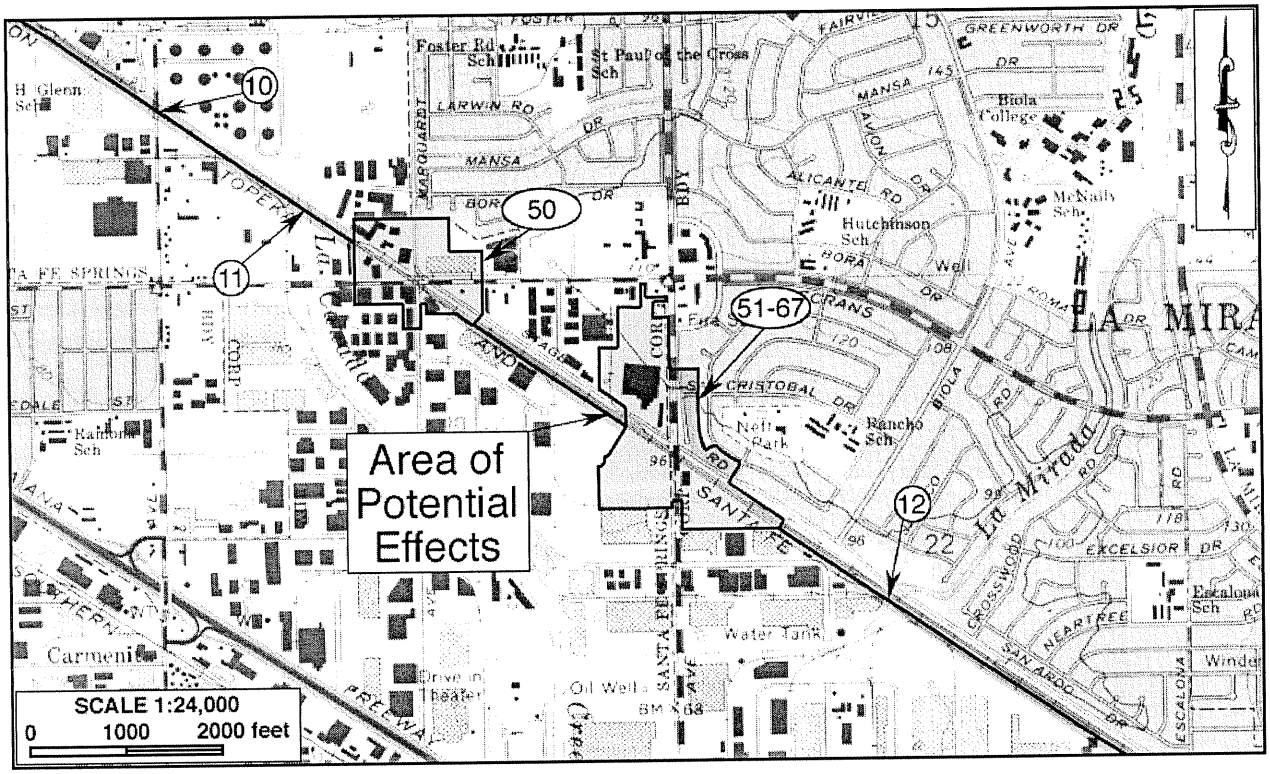
Map 2c. Project vicinity and sitelocations (3). See Map 3 for exact locations of 19-28. (Based on USGS South Gate and Whittier, California, 7.5' quadrangles)



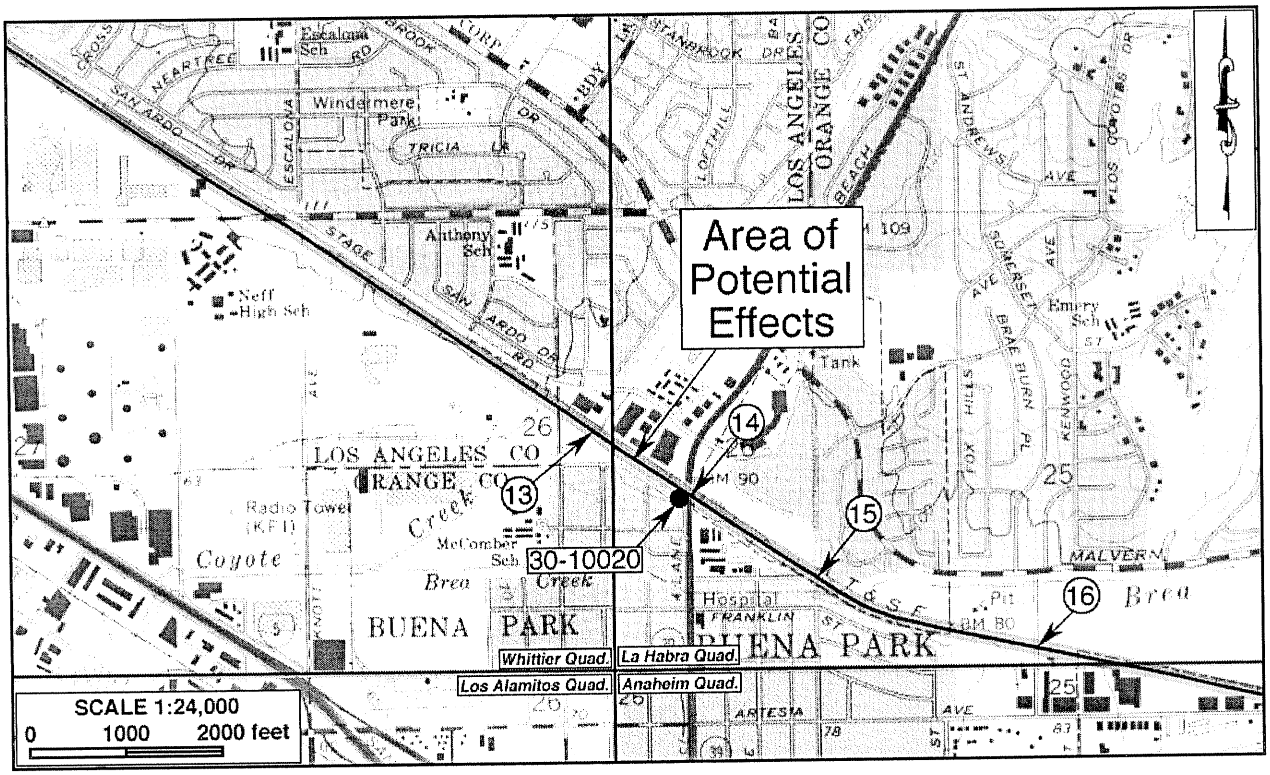
Map 2d. Project vicinity and site locations (4). See Map 3 for exact locations of 19-49 and 68. (Based on USGS Whittier, California, 7.5' quadrangle)



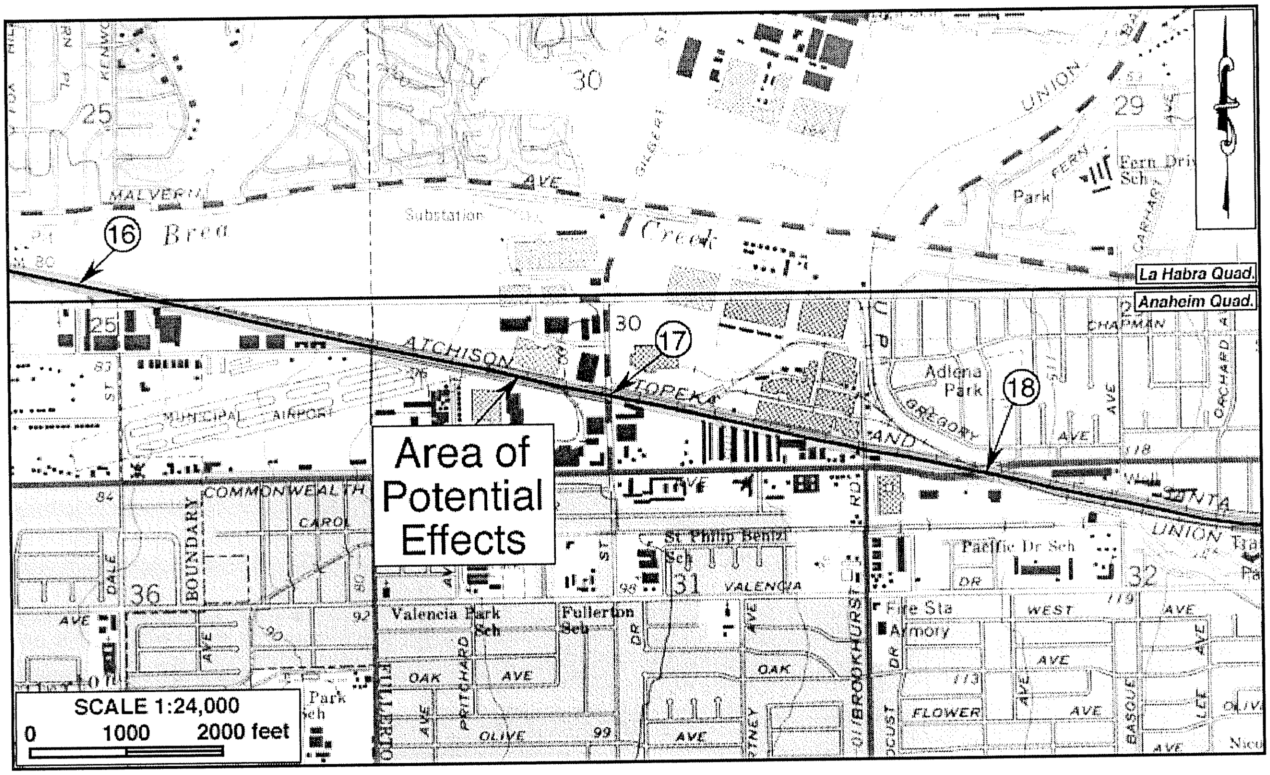
Map 2e. Project vicinity and site locations (5). (Based on USGS Whittier, California, 7.5' quadrangle)



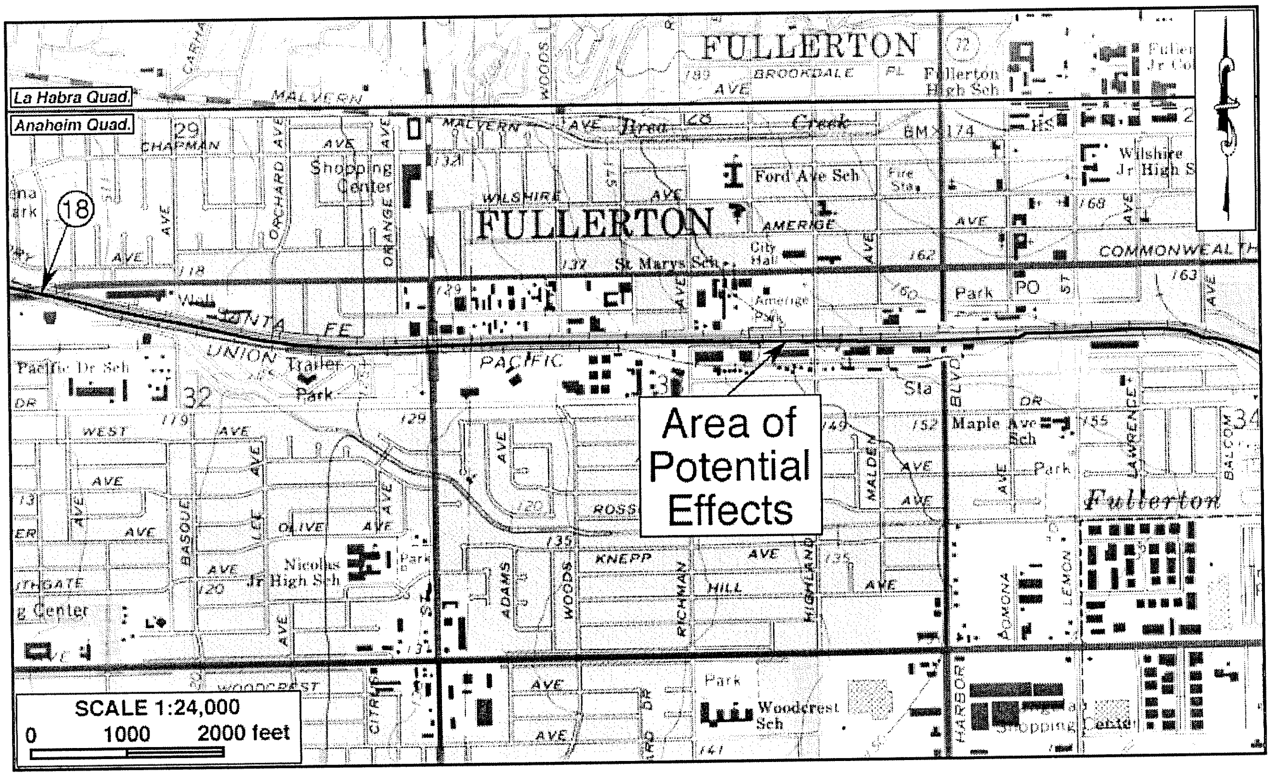
Map 2f. Project vicinity and site locations (6). See Map 3 for exact locations of 50-67. (Based on USGS Whittier, California, 7.5' quadrangle)



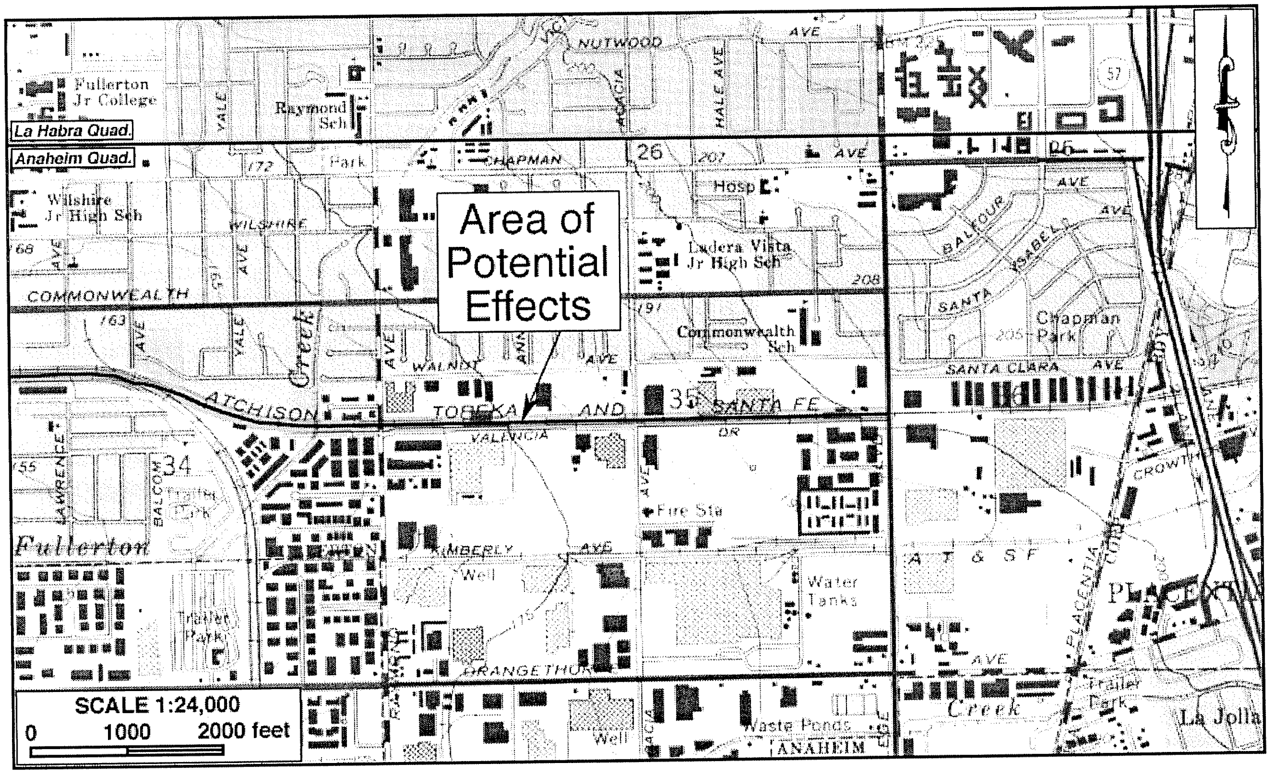
Map 2g. Project vicinity and site locations (7). (Based on USGS Whittier, La Habra, Los Alamitos, and Anaheim, California, 7.5' quadrangles)



Map 2h. Project vicinity and site locations (8). (Based on USGS La Habra and Anaheim, California, 7.5' quadrangles)



Map 2i. Project vicinity and site locations (9). (Based on USGS La Habra and Anaheim, California, 7.5' quadrangles)



Map 2j. Project vicinity and site locations (10). (Based on USGS La Habra and Anaheim, California, 7.5' quadrangles)

MAP 3. INDIRECT AREA OF POTENTIAL EFFECTS AT THE PROPOSED GRADE SEPARATION SITES

(ATTACHED)

REVISIONS			
NO.	DESCRIPTION	DATE	BY
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

LEGEND:

EFFECTED AREA

HANSON WILSON INCORPORATED

APPROVED DATE

FILE: ...\Grade sep.dgn

L.A. TRIPLE TRACK GRADE SEPERATIONS
AREA OF POTENTIAL EFFECT

ROSECRANS

X2510276

1-20-03

File: C:\Grade sep.dgn Date: 01/23/2003 Time: 09:27:55 AM By: gonzaloya

REVISIONS

NO.	DESCRIPTION	DATE	BY

LEGEND:

EFFECTED AREA

HANSON WILSON INCORPORATED

APPROVED DATE

FILE: ..\Grade sep.dgn

L.A. TRIPLE TRACK GRADE SEPERATIONS
AREA OF POTENTIAL EFFECT

PASSONS

X2510276

1-20-03

REVISIONS			
NO.	DESCRIPTION	DATE	BY
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

LEGEND:

—— EFFECTED AREA

HANSON WILSON INCORPORATED

APPROVED DATE

FILE: ...\Grade sep.dgn

DESIGNED

CHECKED

DRAWN

CHECKED

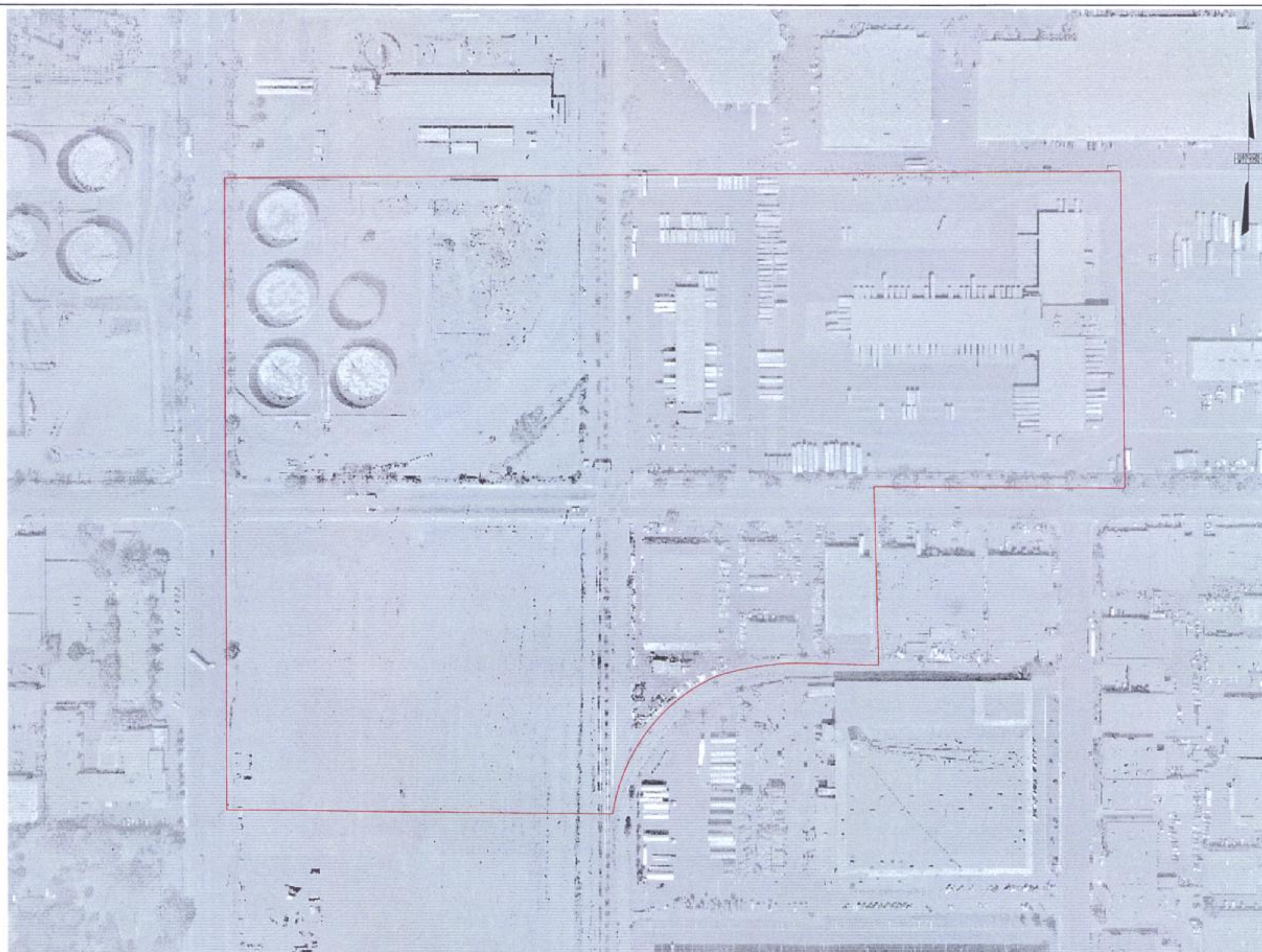
L.A. TRIPLE TRACK GRADE SEPERATIONS
AREA OF POTENTIAL EFFECT

LOS NIETOS

X2510276

1-20-03

File: C:\Grade sep.dgn Date: 01/23/2003 Time: 09:52:06 AM By: gomezraye



REVISIONS

NO.	DESCRIPTION	DATE	BY

LEGEND:

EFFECTED AREA

HANSON WILSON INCORPORATED

APPROVED DATE

FILE: ...\Grade sep.dgn

DESIGNED
CHECKED
DRAWN
CHECKED

L.A. TRIPLE TRACK GRADE SEPERATIONS
AREA OF POTENTIAL EFFECT

LAKELAND

X2510276

1-20-03

File: C:\Grade sep.dgn Date: 01/23/2003 Time: 09:32:40 AM By: gamarlaya

REVISIONS

NO.	DESCRIPTION	DATE	BY
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

LEGEND:

—— EFFECTED AREA

Burlington Northern Santa Fe Railway

HANSON WILSON INCORPORATED

APPROVED DATE

FILE: ...\Grade sep.dgn

DESIGNED

CHECKED

DRAWN

CHECKED

L.A. TRIPLE TRACK GRADE SEPERATIONS
AREA OF POTENTIAL EFFECT

VALLEY VIEW

X2510276

1-20-03

Date: 01/23/2003 Time: 03:13:35 PM By: gonorteyo

File: C:\Grade sep.dgn

APPENDIX 1

ARCHAEOLOGICAL SURVEY REPORT

Third Main Track and Grade Separation Project
Hobart (MP 148.9) to Basta (MP 163.3)
BNSF/Metrolink East-West Main Line Railroad Track
Vernon to Fullerton, Los Angles and Orange Counties, California

Prepared for:

Gary Iverson, Office Chief
Environmental Planning
Caltrans District 7
120 South Spring Street
Los Angeles, CA 90012

Prepared by:

Michael Hogan, Ph.D., Principal Investigator/Archaeologist
Mariam Dahdul, M.A., Archaeologist/Report Writer
Daniel Ballester, B.A., Archaeologist
CRM TECH
4472 Orange Street
Riverside, CA 92501

CRM TECH Contract #789
USGS Los Angeles, South Gate, Whittier, La Habra, and Anaheim, Calif., 7.5' quadrangles
T2-3S R10-13W, San Bernardino Base Meridian
Sites CA-LAN-182, 19-002882, and 30-120020
Keywords: Presumed Native American Village Site, Privies/Historic-Era Trash Deposits; Gabrielino; Buena Park, City of Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, Santa Fe Springs, Vernon

November 2002

TABLE OF CONTENTS

SUMMARY OF FINDINGS

The present Archaeological Survey Report is prepared in compliance with the California Environmental Quality Act (CEQA) for the proposed third main track and grade separation project on the Burlington Northern Santa Fe (BNSF) Railway Company's East-West Main Link Railroad between Hobart (Mile Post 148.9) in the City of Vernon and Basta (MP 163.3) in the City of Fullerton, California. The project's Area of Potential Effects (APE) is delineated to encompass the actual footprint of all necessary construction activities, as well as areas adjacent to the six grade separation sites that may potentially be affected by visual, noise, and atmospheric intrusions as a result of the project. The purpose of the survey is to identify and, if possible, evaluate any archaeological resources within or adjacent to the APE.

A records search conducted in conjunction with the present survey indicate that three historical/archaeological sites, designated CA-LAN-182, 19-002882, and 30-120020, were previously recorded within or adjacent to the APE. CA-LAN-182 includes several speculative locations of a Native American village noted in the early historic period, one of which was believed to be in the vicinity of the Los Nietos Road/Norwalk Boulevard grade separation site in Santa Fe Springs. The presence of the site in or near the APE has not been established through archaeological field investigations, and no evidence of any archaeological remains was encountered at the suggested location in the APE during the field survey.

Site 19-002882, recorded as two refuse deposits dating to the 1930s-1940s, was once located near the northwestern end of the APE at Hobart, but the entire site was removed shortly after its recordation in 2000. Site 30-120020, located near Beach Boulevard in Buena Park, consisted of two privies and trash pits associated with the former Northam Station on the present-day BNSF line when it was recorded in 1979. None of these features, however, or any other remains of the station was observed at this location during the present survey.

During the course of the survey, the existing BNSF line that runs through the APE, originally built in 1885-1888, was recorded as a historic-era site due to its age, and designated temporarily as CRM TECH 789-50H. This site, which does not appear to meet CEQA's definition of a "historical resource," is discussed in further detail in the accompanying Historical Resources Evaluation Report (HRCR App. 2), along with a total of 67 other features of built environment noted within the APE.

In light of these findings, this report concludes that the location of Site CA-LAN-182 in the APE remains sensitive for subsurface archaeological deposits that may be associated with prehistoric or early-historic-period Native American land use, and any ground-disturbing activities at that location should be monitored by a qualified archaeologist. If buried cultural materials are encountered elsewhere during construction, it is Caltrans' policy that work in that area must halt until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

INTRODUCTION

The present archaeological survey covered an approximately 14.7-mile segment of the Burlington Northern Santa Fe (BNSF) Railway Company/Metrolink East-West Main Line Railroad Track between the City of Vernon, Los Angeles County, and the City of Fullerton, Orange County, California (see HRCR Exhibit A). The survey was conducted on June 21 and June 24, 2002, by project archaeologist Daniel Ballester, who holds a B.A. degree in Anthropology from California State University, San Bernardino (1998), and has performed archaeological field research in southern California for four years.

PROJECT LOCATION AND DESCRIPTION

As part of its program to improve inter-city passenger rail services, the State of California Department of Transportation, Division of Rails, proposes a project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway Company/Metrolink East-West Main Line Railroad Track. The project entails primarily the installation of a third main line track along the existing BNSF Railway from Hobart (Mile Post 148.9) to Basta (MP 163.3). The project route traverses portions of the San Juan Cajon de Santa Ana, Los Coyotes, Santa Gertrudes (McFarland and Downey), Santa Gertrudes (Colima), Paso de Bartolo (Sepulveda), Paso de Bartolo (Guirado), and San Antonio (Lugo) land grants lying within of T2-3S R10-13W, San Bernardino Base Meridian, across or along the boundaries of the Cities of Fullerton, Buena Park, La Mirada, Santa Fe Springs, Norwalk, Pico Rivera, Montebello, City of Commerce, and Vernon (see HRCR Exhibit A).

In addition to the installation of the third main line track, the project also includes various other improvements and upgrading, most notably the construction of six grade separations at the BNSF main line's intersections with Passons Boulevard, Pioneer Boulevard, Norwalk Boulevard/Los Nietos Road, Lakeland Road, Rosecrans Avenue/Marquardt Avenue, and Valley View Avenue, located in the Cities of Pico Rivera, Santa Fe Springs, and La Mirada, and the unincorporated community of Los Nietos. The project's Area of Potential Effects (APE) is delineated to encompass the actual footprint of all necessary construction activities along the project route, as well as areas adjacent to the six grade separation sites that may potentially be affected by visual, noise, and atmospheric intrusions as a result of the project (see HRCR Exhibit A).

SOURCES CONSULTED

Prior to the commencement of the archaeological field survey, the following sources were consulted for a complete inventory of previously identified cultural resources in or near the APE, existing cultural resources reports pertaining to the vicinity, and historic-era features that may be encountered within or adjacent to the APE:

- National Register of Historic Places;
- California Register of Historical Resources;
- California Historical Landmarks;
- California Points of Historical Interest;

- California Historical Resource Information System;
- City of Los Angeles Historic-Cultural Monuments;
- California Historic Bridge Inventory;
- Published literature in local, regional, and railroad history;
- Historic maps of the project vicinity.

Most of these sources were examined at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, during a records search completed on June 15, 2002. The records search results indicate that approximately 20 previous cultural resources studies have occurred along various segments of the current project route, and three historical/archaeological sites, designated CA-LAN-182, 19-002882, and 30-120020, had been recorded within or adjacent to the APE prior to this study.

CA-LAN-182 includes several speculative locations of a Native American village noted in the early historic period, one of which was believed to be in the vicinity of the Los Nietos Road/Norwalk Boulevard grade separation site in Santa Fe Springs. The presence of the site in or near the APE has not been established through archaeological field investigations. Site 19-002882, recorded as two refuse deposits dating to the 1930s-1940s, was once located near the northwestern end of the APE at Hobart, but the entire site was removed shortly after its recordation in 2000. Site 30-120020, located near Beach Boulevard in Buena Park, consisted of two privies and trash pits associated with the former Northam Station on the present-day BNSF line when it was recorded in 1979.

Within a half-mile radius of the APE, 11 additional cultural resources studies were reported to SCCIC on various tracts of land and linear features, resulting in the identification of 24 historic-era sites within the scope of the records search. Ten of the 24 sites are located in La Mirada, including some of the city's oldest and best-known historic buildings or their former sites. Three of the buildings, the 1885 George house, the 1893 Neff Home, and the 1893 Neff Barn, all located in what is now Neff Park, are currently listed in the National Register of Historic Places. Another building, the 1814 Patricio Ontiveros Adobe in Santa Fe Springs, is also listed in the National Register. In addition, it is designated a California Point of Historical Interest, as is the 1916 Rivera First Baptist Church in Pico Rivera.

In Fullerton, eight buildings within the half-mile scope of the records search are in the National Register, including the Chapman Building, the Elephant Packing House, Farmers and Merchants Bank, the Heterbrink House, the Masonic Temple, the Lois Plummer Auditorium, the Santa Fe Railway Depot, and the Union Pacific Railway Depot. The other four previously identified sites include the former Southern Pacific Railroad, the Union Pacific Railroad, and two subterranean structures identified as a septic tank and a drainage feature. These four sites were found near the northwestern end of the APE in Vernon.

With the exception of CA-LAN-182, 19-002882, and 30-120020, none of the previously identified cultural resources is, or was, located within or immediately adjacent to the present project's APE. Therefore, none of them requires any further considerations during this study. The reported locations of the three sites that were recorded within or adjacent to the APE were subjected to particularly intensive inspection during this survey, as discussed in further detail below.

BACKGROUND

ENVIRONMENT

The APE traverses through mostly urbanized areas of various cities in Los Angeles and Orange Counties, in what is generally considered the Greater Los Angeles Metropolitan Area. It lies across the southeastern portion of the Los Angeles Basin, a relatively level, low-lying region surrounded by the Santa Monica, Santa Susana, San Gabriel, and Santa Ana Mountains. Elevations along the project route range from 80 to 190 feet above mean sea level.

The natural environment along the APE has been drastically changed as a result of the past 200 years of gradual development, particularly recent urban expansion. A few rivers and creeks flow across the APE, but most have been altered from their natural state, many of them little more than concrete-lined drainage channels devoid of vegetation. The largest of these natural waterways, the San Gabriel River, has not been greatly modified where it crosses the APE, and still retains a wetland area with dense vegetation growth and wildlife.

Vegetation within the project's direct APE is generally limited to small grasses and shrubs growing along chain-link fences delineating the railroad right-of-way, while the indirect APE around the six grade separation sites features typical urban landscaping, with few areas of undeveloped land. Ground visibility within the APE is relatively poor (0-30%) due to the large amount of gravel covering the soils.

ARCHAEOLOGY

It is widely acknowledged that human occupation in what is now the State of California began 8,000-12,000 years ago. In attempting to describe and understand the cultural processes that occurred in the ensuing years, archaeologists have developed a number of chronological frameworks that endeavor to correlate the technological and cultural changes that are observable in archaeological records to distinct time periods. The general framework for the prehistory of the San Diego coastal region is outlined in Moratto (1984), which is the basis for the following discussion.

According to some theories, migration of indigenous groups from the interior deserts of southern California to the already inhabited coastal region appears to have taken place around 7,500 years ago. Unfortunately, very little is known about the coastal groups during this early period in prehistory. With the immigration of people from the interior, a fusion of regional cultural traits, specifically those pertaining to subsistence procurement, occurred between the newcomers and coastal inhabitants. The newcomers introduced new plant resources and plant processing techniques to the coast groups while they learned to exploit more intensively the littoral resources.

Archaeological investigations at various sites along the southern Californian coast have uncovered valuable data regarding later time periods in this region. Sites dating to the La Jolla I Period, ca. 5,500-3,500 B.C., have yielded numerous millingstone tools, crudely shaped scrapers, and flexed burials. The La Jolla II Period, ca. 3,500-2,000 B.C., is distinguished from the previous period by the presence of cemeteries, discoidals, and various projectile point types. Following this is the La Jolla III Period, ca. 2,000-1,000 B.C., which is characterized by the influence of Yuman cultural traits from the east on the coastal cultures.

With this second intrusion of eastern groups to the area, increased exploitation of terrestrial food sources further diminished the coastal people's dependence on littoral resources. With an increasing focus on acorn-processing activities, indigenous groups along the southern Californian coast slowly began settling the interior regions. There was also a shift from inhumation to cremation around 500 B.C., possibly another result of eastern influences.

ETHNOGRAPHY

The APE is located in the heart of the traditional homeland of the Gabrielino, a Takic-speaking people considered to be the most populous and most powerful ethnic group in aboriginal southern California (Bean and Smith 1978:538). The Gabrielino's territory was centered in the Los Angeles Basin, reaching from San Clemente Island to the present-day San Bernardino-Riverside area and south into southern Orange County, but their influence spread as far as the San Joaquin Valley, the Colorado River, and Baja California. Unfortunately, most Gabrielino cultural practices had declined long before systematic ethnographic studies were instituted. As a result, knowledge about them and their lifeways is meager. Today, the leading ethnographic sources on Gabrielino culture are Bean and Smith (1978) and McCawley (1996).

According to the archaeological record, the Gabrielino were not the first inhabitants of the Los Angeles Basin, but arrived around 500 B.C., slowly replacing the indigenous Hokan speakers. As early as 1542, the Gabrielino were in contact with the Spanish during the historic expedition of Juan Rodríguez Cabrillo. But it was not until 1769 that the Spaniards took steps to colonize Gabrielino territory. Shortly afterwards, most of the Gabrielino people were incorporated into Mission San Gabriel and other missions in southern California. Due to introduced diseases, dietary deficiencies, and forceful reduction, the Gabrielino population dwindled rapidly. By 1900, they had almost ceased to exist as a culturally identifiable group (Bean and Smith 1978:540). In recent decades, however, there has been a renaissance of Native American activism and cultural revitalization among a number of groups of Gabrielino descendants.

HISTORY

The inland areas of present-day Los Angeles and Orange Counties received their earliest European visitors in the late 18th century with the arrival of Spanish explorers and missionaries. By 1784, Juan Manuel Nieto, a Spanish soldier, had secured for himself a temporary land grant and become the area's first non-religious settler. Between then and 1837, the entire APE passed into private ownership as parts of various Spanish and Mexican land grants, on which large herds of cattle provided the main source of income for the *rancheros*.

After the American annexation of Alta California in 1848, the region experienced enormous growth during the latter half of the 19th century. In the vicinity of the APE, the cultivation of oranges, walnuts, and avocados gradually became the leading "industry" in the late 19th and early 20th centuries. In the meantime, an oil boom in present-day Fullerton and Santa

Fe Springs also ushered in pockets of industrial establishments along the APE. Beginning in the late 1940s, as elsewhere in southern California, the forces of suburbanization swept through the project vicinity. Since then, residential and commercial have assumed a dominating influence in local economical growth*.

FIELD METHODS

The archaeological field survey of the APE, as mentioned above, was carried out on June 21 and June 24, 2002, by project archaeologist Daniel Ballester. The survey was conducted at an intensive-level, primarily by walking a single transect along the side of the existing railroad tracks where the proposed third main line track will be installed, covering a total width of at least 30 feet from the edge of the existing tracks. Reported locations of previously recorded historical/archaeological sites in or near the APE were surveyed with particular care for the purpose of examining the current conditions of these sites.

The archaeological survey covered the direct APE of the project, or all areas where construction activities and/or other ground disturbances will occur during the project. The indirect APE around each of the six proposed grade separation sites, meanwhile, was surveyed systematically for historic-era features of built environment, as discussed in the accompanying Historical Resources Evaluation Report (HRCR App. 2).

STUDY FINDINGS AND CONCLUSIONS

The results of the field survey reveal that none of the three sites previously recorded within or adjacent to the APE, CA-LAN-182, 19-002882, and 30-120020, can be found today, at least in or near the APE boundaries. The reported location of Site CA-LAN-182 in the APE, as stated above, was only speculative in nature, and had never been confirmed through archaeological field investigations. Furthermore, the location has been extensively disturbed at least since the construction of the present-day BNSF Railway in 1885-1888. It is not unexpected, therefore, that no evidence of any archaeological remains indicative of an early-historic-period Native American village was encountered at this location.

Of the two previously recorded historic-era sites, 19-002882, consisting of two refuse deposits, is reported to have been removed since its recordation in 2000, as stated above. The same fate probably also befell the archaeological features recorded at 30-120020, namely the privies and trash pits associated with the former railway station at Northam, as none of these features or any other archaeological remains of the station was observed at this location during this survey.

Despite the absence of any surface manifestation, the area around the reported location of Site CA-LAN-182 should be considered archaeologically sensitive because it remains the possible location of an early-historic-period Native American village, where the possibility of undisturbed subsurface cultural deposits cannot be ignored. In view of this possibility, any ground-disturbing activities at that location should be monitored by a qualified archaeologist.

---

* For a more detailed discussion of the area's historical background since the 18th century, see "Historical Overview" in the Historical Resources Evaluation Report (HRCR App. 2).

During the course of the survey, the existing BNSF line that runs through the APE, originally built in 1885-1888, was recorded as a historic-era site due to its age, and designated temporarily as CRM TECH 789-50H. This site, which does not appear to meet CEQA's definition of a "historical resource," is discussed in further detail in the Historical Resources Evaluation Report (HRCR App. 2), along with a total of 67 other features of built environment noted within the APE.

No other archaeological investigations will be necessary for this project. However, if buried cultural materials are encountered elsewhere during construction, it is Caltrans' policy that work in that area must halt until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

REFERENCES

Bean, Lowell John, and Charles R. Smith
1978 Gabrielino. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 538-549. Smithsonian Institution, Washington, D.C.

McCawley, William
1996 *The First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press/ Ballena Press, Banning/Novato, California.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando, Florida.

ATTACHMENT A

ARCHAEOLOGICAL SITE RECORDS

CA-LAN-182, 19-002882, and 30-120020

MAPPED

11, 401100E.
3761650N.

University of California

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site LAn 182 2. Map WHITTIER 3. County LOS ANGELES

4. Twp. ______ Range ______; ______ 1/4 of ______ 1/4 of Sec. ______

5. Location ~~The three most likely locations are marked on the map as 182a, 182b, and 182c.~~

______ 6. On contour elevation ______

7. Previous designations for site Sejat

8. Owner ______ 9. Address ______

10. Previous owners, dates ______

11. Present tenant ______

12. Attitude toward excavation ______

13. Description of site an historic Gabrielißio village

14. Area ______ 15. Depth ______ 16. Height ______

17. Vegetation ______ 18. Nearest water San Gabriel River

19. Soil of site ______ 20. Surrounding soil type ______

21. Previous excavation ______

22. Cultivation ______ 23. Erosion ______

24. Buildings, roads, etc. ______

25. Possibility of destruction ______

26. House pits ______

27. Other features ______

28. Burials ______

29. Artifacts ______

30. Remarks see over

31. Published references W. W. ROBINSON, "Whittier" Title and Trust Co. 1947

32. Accession No. ______ 33. Sketch map ______

34. Date Jan 12, 1950 35. Recorded by ______ 36. Photos ______

RESULTS: Near the river were brush huts, the dwellings of Shoshonean Indians who lived on wild seeds, small game , and honey. This was the village of Sejat, so call by Father Boscana of San Juan Capistrano. It was the traditional place of wild bee whose hives were located in holes found in the river banks. Long ago the people of the village became too many in number. Some of them wandered south and in time colonized the Valley of San Juan Capistrano. The story of the journey from the Whittier region passed into writings of Geronimo Boscana.

Sajat, sometimes called Suka, may have been at the knoll of black sandy soil a short distance dwnstream from the Pio Pico mansion. It may have been near the Soutern Pac. Junct. Tower that stands at the crossing of the Whittier spur of the S. P. with the Santa Fe or near the Tomas Sanchez Colima house at both of which spots were Indian graveyards. Its site may have been just west of the old Guirado place where the first white settler, Jose Manuel Nieto, built his home. John P. Harrington, Indian authority, suggests these places, for they were pointed out to him by Juan Ramirez who had lived eighty yrs. in this area.

Oct 1984

FIELDWORK UPDATE OF THE PICO SITE, LAN-182A BY STEVEN BRIGGS

A SMALL EXCAVATION CREW HAS CONTINUED WORK EVERY SATURDAY AND SUNDAY DURING THE MONTH OF AUGUST IN UNITS 2A AND 3. UNIT A HAS BEEN COMPLETED TO 120 CM AND UNIT 3 HAS BEEN COMPLETED TO 80 CM.

UNIT 2A IS UNIT 2, EXPANDED FROM A 1M by 1M TO A 2M by 2M UNIT. THE NEXT LEVEL, (120-130 CM) SHOULD EXPOSE THE REST OF FEATURE 1 FOUND LAST MAY IN UNIT 2. FEATURE 1 WAS A TIGHTLY PACKED ROCK SCATTER OR POSSIBLE HEARTH LOCATED IN THE NW CORNER. THE EXPANDED UNIT 2A WILL HOPEFULLY EXPOSE THE REST OF THIS FEATURE.

A LOT OF NEW INFORMATION AND MANY QUESTIONS HAVE ARISEN THIS LAST MONTH FROM BOTH THE EXCAVATION AND THE LITERATURE SEARCH. THIS PICO HOUSE SITE IS A SMALL FRACTION OF THE SITE ORIGINALLY RECORDED IN THE 1940's. THE ORIGINAL SITE FORMS, AT UCLA, HAVE VERY LITTLE HELPFUL INFORMATION. BASICALLY, THE PICO SITE WAS RECORDED SIMPLY AS ONE OF THREE OR ONE OF FIVE POSSIBLE SITES OF THE LEGENDARY "SEJAT". PCAS MEMBER STEPHEN O'NEIL HAS RECENTLY POINTED OUT THAT SEJAT IS MENTIONED IN FATHER BOSCANA'S BOOK CHINIGCHINICH. MY UNDERSTANDING OF SEJAT IS THAT THIS SITE OR REGION, ACCORDING TO BOSCANA, IS POSSIBLY THE AREA FROM WHERE THE JUANENO PEOPLE MIGRATED. WHETHER OR NOT THE PICO SITE IS SEJAT, WE DO KNOW IT IS ALSO CALLED "LA RANCHERIA" IN BOSCANA'S BOOK.

WE HAVE ALSO LEARNED THAT THE ARCHAEOLOGICAL SURVEY ASSOCIATION OF SOUTHERN CALIFORNIA EXCAVATED SEVERAL UNITS ON SEGMENTS OF THIS SITE WHICH NO LONGER EXIST. THESE EXCAVATIONS WERE DONE BACK IN THE EARLY 1940's. UNFORTUNATELY, IT APPEARS THAT ALL OF THE ARTIFACTS FROM THAT EXCAVATION HAVE BEEN LOST, AND CURRENTLY THE ASA HAS NOT BEEN ABLE TO TRACE THEM FOR EXAMINATION. A COPY OF THE ASA REPORT IS AVAILABLE, AND WAS PUBLISHED IN THE ASA NEWSLETTER, VOLUME 2, NUMBER 3.

DESPITE THE DIFFICULTIES INVOLVED IN RETRACING PREVIOUS RESEARCH, THE PCAS EXCAVATION HAS YIELDED USEFUL INFORMATION. FOR EXAMPLE, HUNDREDS OF SMALL SHATTERED BONE FRAGMENTS HAVE BEEN RECOVERED, MANY OF THEM BURNT. IN A PERSONAL COMMUNICATION WITH FAUNAL ANALYST PAUL LANGENWALTER, HE HAS COMMENTED THAT THE AMOUNT OF BONE RECOVERED PLUS THE OTHER CULTURAL INDICATORS SUGGESTS A MAJOR INDIAN VILLAGE SITE.

OTHER CULTURAL MATERIAL INCLUDES AN AVERAGE OF ONE TO FOUR TARRING PEBBLES RECOVERED PER LEVEL. MANY CHERT FLAKES, AND ABUNDANT FIRE-ALTERED STONE HAVE BEEN RECOVERED. WE HAVE ALSO BEEN FINDING AN OCCASIONAL PIECE OF FIRED CLAY. AS OF YET WE HAVE NOT RECOVERED ANY DIAGNOSTIC POTTERY.

SEEDS HAVE ALSO BEEN RECOVERED, AS OF YET UNIDENTIFIED. SOME HAVE BEEN BURNT. ONE OF THE MOST INTERESTING QUESTIONS ABOUT THE SITE CONCERNS THE SEEDS, AND WHETHER OR NOT THE TWO TYPES BEING RECOVERED ARE CULTURAL OR INTRUSIVE.

QUITE A BIT MORE CAN BE SAID ABOUT THE PICO SITE, BUT WE'D RATHER TALK TO YOU ON THE SITE. THIS TEST EXCAVATION MUST BE COMPLETED BY OCTOBER 21. WE NEED YOUR PARTICIPATION AT THE SITE. FOR INFORMATION, PLEASE CALL JIM BROCK AT (714) 548-6622.

MAPPED
11/401100E.
3761650N.

University of California

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site LAn 182 2. Map WHITTIER 3. County LOS ANGELES

4. Twp. ______ Range ______; ______ 1/4 of ______ 1/4 of Sec. ______

5. Location ~~The three most likely locations are marked on the map as 182a, 182b, and 182c.~~

______ 6. On contour elevation ______

7. Previous designations for site Sejat

8. Owner ______ 9. Address ______

10. Previous owners, dates ______

11. Present tenant ______

12. Attitude toward excavation ______

13. Description of site an historic Gabrieliño village

14. Area ______ 15. Depth ______ 16. Height ______

17. Vegetation ______ 18. Nearest water San Gabriel River

19. Soil of site ______ 20. Surrounding soil type ______

21. Previous excavation ______

22. Cultivation ______ 23. Erosion ______

24. Buildings, roads, etc. ______

25. Possibility of destruction ______

26. House pits ______

27. Other features ______

28. Burials ______

29. Artifacts ______

30. Remarks see over

31. Published references W. W. ROBINSON, "Whittier" Title and Trust Co. 1947

32. Accession No. ______ 33. Sketch map ______

34. Date Jan 12, 1950 35. Recorded by ______ 36. Photos ______

RESULTS: Near the river were brush huts, the dwellings of Shoshonean Indians who lived on wild seeds, small game , and honey. This was the village. of Sejat, so call by Father Boscana of San Juan Capistrano. It was the traditional place of wild bee whose hives were located in holes found in the river banks. Long ago the people of the village became too many in number. Some of them wandered south and in time colonized the Valley of San Juan Capistrano. The story of the journey from the Whittier region passed into writings of Geronimo Boscana.

Sajat, sometimes called Suka, may have been at the knoll of black sandy soil a short distance dwnstream from the Pio Pico mansion. It may have been near the Soutern Pac. Junct. Tower that stands at the crossing of the Whittier spur of the S. P. with the Santa Fe or near the Tomas Sanchez Colima house at both of which spots were Indian graveyards. Its site may have been just west of the old Guirado place where the first white settler, Jose Manuel Nieto, built his home. John P. Harrington, Indian authority, suggests these places, for they were pointed out to him by Juan Ramirez who had lived eighty yrs. in this area.

Oct 1984

FIELDWORK UPDATE OF THE PICO SITE, LAN-182A BY STEVEN BRIGGS

A SMALL EXCAVATION CREW HAS CONTINUED WORK EVERY SATURDAY AND SUNDAY DURING THE MONTH OF AUGUST IN UNITS 2A AND 3. UNIT A HAS BEEN COMPLETED TO 120 CM AND UNIT 3 HAS BEEN COMPLETED TO 80 CM.

UNIT 2A IS UNIT 2, EXPANDED FROM A 1M by 1M TO A 2M by 2M UNIT. THE NEXT LEVEL, (120-130 CM) SHOULD EXPOSE THE REST OF FEATURE 1 FOUND LAST MAY IN UNIT 2. FEATURE 1 WAS A TIGHTLY PACKED ROCK SCATTER OR POSSIBLE HEARTH LOCATED IN THE NW CORNER. THE EXPANDED UNIT 2A WILL HOPEFULLY EXPOSE THE REST OF THIS FEATURE.

A LOT OF NEW INFORMATION AND MANY QUESTIONS HAVE ARISEN THIS LAST MONTH FROM BOTH THE EXCAVATION AND THE LITERATURE SEARCH. THIS PICO HOUSE SITE IS A SMALL FRACTION OF THE SITE ORIGINALLY RECORDED IN THE 1940's. THE ORIGINAL SITE FORMS, AT UCLA, HAVE VERY LITTLE HELPFUL INFORMATION. BASICALLY, THE PICO SITE WAS RECORDED SIMPLY AS ONE OF THREE OR ONE OF FIVE POSSIBLE SITES OF THE LEGENDARY "SEJAT". PCAS MEMBER STEPHEN O'NEIL HAS RECENTLY POINTED OUT THAT SEJAT IS MENTIONED IN FATHER BOSCANA'S BOOK CHINIGCHINICH. MY UNDERSTANDING OF SEJAT IS THAT THIS SITE OR REGION, ACCORDING TO BOSCANA, IS POSSIBLY THE AREA FROM WHERE THE JUANENO PEOPLE MIGRATED. WHETHER OR NOT THE PICO SITE IS SEJAT, WE DO KNOW IT IS ALSO CALLED "LA RANCHERIA" IN BOSCANA'S BOOK.

WE HAVE ALSO LEARNED THAT THE ARCHAEOLOGICAL SURVEY ASSOCIATION OF SOUTHERN CALIFORNIA EXCAVATED SEVERAL UNITS ON SEGMENTS OF THIS SITE WHICH NO LONGER EXIST. THESE EXCAVATIONS WERE DONE BACK IN THE EARLY 1940's. UNFORTUNATELY, IT APPEARS THAT ALL OF THE ARTIFACTS FROM THAT EXCAVATION HAVE BEEN LOST, AND CURRENTLY THE ASA HAS NOT BEEN ABLE TO TRACE THEM FOR EXAMINATION. A COPY OF THE ASA REPORT IS AVAILABLE, AND WAS PUBLISHED IN THE ASA NEWSLETTER, VOLUME 2, NUMBER 3.

DESPITE THE DIFFICULTIES INVOLVED IN RETRACING PREVIOUS RESEARCH, THE PCAS EXCAVATION HAS YIELDED USEFUL INFORMATION. FOR EXAMPLE, HUNDREDS OF SMALL SHATTERED BONE FRAGMENTS HAVE BEEN RECOVERED, MANY OF THEM BURNT. IN A PERSONAL COMMUNICATION WITH FAUNAL ANALYST PAUL LANGENWALTER, HE HAS COMMENTED THAT THE AMOUNT OF BONE RECOVERED PLUS THE OTHER CULTURAL INDICATORS SUGGESTS A MAJOR INDIAN VILLAGE SITE.

OTHER CULTURAL MATERIAL INCLUDES AN AVERAGE OF ONE TO FOUR TARRING PEBBLES RECOVERED PER LEVEL. MANY CHERT FLAKES, AND ABUNDANT FIRE-ALTERED STONE HAVE BEEN RECOVERED. WE HAVE ALSO BEEN FINDING AN OCCASIONAL PIECE OF FIRED CLAY. AS OF YET WE HAVE NOT RECOVERED ANY DIAGNOSTIC POTTERY.

SEEDS HAVE ALSO BEEN RECOVERED, AS OF YET UNIDENTIFIED. SOME HAVE BEEN BURNT. ONE OF THE MOST INTERESTING QUESTIONS ABOUT THE SITE CONCERNS THE SEEDS, AND WHETHER OR NOT THE TWO TYPES BEING RECOVERED ARE CULTURAL OR INTRUSIVE.

QUITE A BIT MORE CAN BE SAID ABOUT THE PICO SITE, BUT WE'D RATHER TALK TO YOU ON THE SITE. THIS TEST EXCAVATION MUST BE COMPLETED BY OCTOBER 21. WE NEED YOUR PARTICIPATION AT THE SITE. FOR INFORMATION, PLEASE CALL JIM BROCK AT (714) 548-6622.

Applied EarthWorks, Inc.
PRIMARY RECORD

Primary # 19 - 002882
HRI #
Trinomial
NRHP Status Code

Other Listings **Review Code** **Reviewer** **Date**

P1. **Temporary Number/Resource Name:** AE-AC-2045H

P2. **Location: a. County** Los Angeles , California ☒ Not for publication ☐ Unrestricted
b. USGS 7.5' Quad Los Angeles **Date** 1966, photorevised 1981, 1994
T. 2S, **R.** 13W ; **of** **of** **Sec.** Not sectioned
c. Address: **City** Los Angeles **Zip**
d. Zone 11 , 388990 **mE/** 3763830 **mN**
e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): AE-AC-2045H consists of two primary refuse deposits exposed during ACTA-related utility trenching along the south side of the Burlington Northern Santa Fe Railroad right-of-way between Hobart Tower and Indiana Avenue, northeast of 3650 East 26th Street and approximately 110 ft east of Downey Road in the city of Los Angeles.

P3a. **Description** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): AE-AC-2045H consists of two primary refuse deposits situated approximately 2 ft below current grade and measure roughly 2 ft wide by 3 ft long by an unknown depth (construction activities had removed most of the deposits prior to recordation by the archaeological monitor). The deposits contained domestic refuse, including glass beverage bottles, glass food containers, and metal cooking utensils, dating to the 1930s and 1940s. The archaeological monitor collected a representative sample of artifacts prior to the entire removal of both deposits.

P3b. **Resource Attributes** (List attributes and codes): AH4 - Refuse deposits.

P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of district ☐ Other:

P5. **Photograph or Drawing:** (Photograph required for buildings, structures, and objects.)

P6. **Date Constructed/Age and Source:** ☐ Prehistoric ☒ Historic ☐ Both

P7. **Owner and Address:** Unknown.

P8. **Recorded by** (Name, affiliation, address): R. Krautkramer, Applied EarthWorks, Inc. 3292 E. Florida Ave., Suite A, Hemet, CA 92544.

P9. **Date Recorded:** December 22 2000

P10. **Type of Survey:** ☐ Intensive ☐ Reconnaissance ☒ Other
Describe: Site was recorded during ACTA-related construction.

P11. **Report Citation** (Provide full citation or enter "none"): None as of yet.

***Attachments:** ☐ None ☒ Location Map ☒ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☒ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

Temporary Number/Resource Name: AE-AC-2045H

A1. Dimensions: Both deposits measure approximately **a.** 3 ft (E/W) **Length** **b.** 2 ft (N-S) **Width**

Method of Measurement: ☒ Paced ☐ Taped ☐ Visual estimate ☐ Other

Method of Determination (Check any that apply): ☒ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☐ Other (explain):

Reliability of Determination: ☒ High ☐ Medium ☐ Low ☐ Other Explain:

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Disturbances ☐ Site limits incompletely defined ☐ Other (Explain): See above.

A2. Depth: ☐ None ☐ Unknown Method of Determination: The refuse deposits were located approximately 2 ft below current grade.

A3. Human Remains: ☐ Present ☒ Absent ☐ Possible ☐ Unknown (Explain):

A4. Features (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map): Aside from the refuse deposits, no features were readily observed.

A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features): The deposits contained domestic refuse, including glass beverage bottles, glass food containers, and metal cooking utensils, dating to the 1930s and 1940s.

A6. Were Specimens Collected? ☐ No ☒ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.) Because the artifacts may be contaminated by hazardous materials, no artifact record or catalog has been completed until the artifacts are thoroughly cleaned

A7. Site Condition: ☐ Good ☒ Fair ☐ Poor (Describe disturbances): Site condition at the time of recordation; deposits have subsequently been destroyed by construction-related activities

A8. Nearest Water (Type, distance, and direction): The channelized Los Angeles River drainage is approximately 0.25 mi north of the site area.

A9. Elevation: 187 ft amsl.

A10. Environmental Setting (Describe vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc., as appropriate): The site, located in the industrial district of Los Angeles, is in disturbed silty, sandy sediments of the Los Angeles River flood plain; slope is less than one percent with a southern aspect, and exposure is open.

A11. Historical Information (Note sources and provide full citations in Field A15 below): None available as of yet.

A12. Age: ☐ Prehistoric ☐ Pre-Colonial (1500–1769) ☐ Spanish/Mexican (1769–1848) ☐ Early American (1848–1880) ☐ Turn of century (1880–1914) ☒ Early 20th century (1914–1945) ☐ Post WWII (1945+) ☐ Undetermined Factual or estimated dates of occupation (explain): Dates are based on diagnostic artifacts.

A13. Interpretations (Discuss scientific, interpretive, ethnic, and other values of site, if known): None as of yet.

A14. Remarks: Continued monitoring of construction excavation in the area of AE-AC-2045H is recommended. Additional archival research will be conducted to further ascertain the association of AE-AC-2045H.

A15. References (Give full citations including the names and address of any persons interviewed, if possible):

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record): RK-30, Frames 1-8; AC-2045H, Frames 1-8.

A17. Form Prepared by: M. Horne **Date:** 2/08/01
Affiliation and Address: Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544

Applied EarthWorks, Inc.
PHOTOGRAPH RECORD

Primary # 19 - 002882
HRI #/Trinomial

Temporary Number/Resource Name: AC-2045H—Refuse deposits F-1 and F-2
Project Name: Alameda Corridor Monitoring Project **Roll #** RK-30 **Photographer:** R. Krautkramer
Camera Format: 35 mm **Lens Size:** 38–60 mm
Film Type and Speed: Fujicolor 100 color print **Year:** 2000
Negatives Kept at: Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544

Mo.	Day	Time	Exp./ Frame	Subject/Description	View Toward	Accession #
12	22	0754	1	Menu board for exposed refuse deposits F-1 and F-2 north of E. 26th St.	Down	
12	22	1017	2	Overview looking east towards Bendor Construction storm drain excavation on location of features.	E	
12	22	1019	3	Overview showing location along east–west BNSF tracks and located due east of Hob??? tower at 84+00.	W	
12	22	1023	4	Closeup showing location of Feature 1.	S	
12	22	1031	5	Closeup showing Feature 2 location.	S	
12	22	1032	6	Closeup of Feature 2 showing remnants of deposit; small deposit of rusty metal between 88+00 and 87+00.	S	
12	22	1035	7	Western side view of removed concrete footing, pad. Probably base of old signal tower,?????????????????	W	
12	22	1036	8	Front closeup shot of exposed concrete footing/pad with bolts on top. Probably remnants of an early signal tower base. Found somewhere between Stations 87+00 and 88+00 BNSF just north of E. 26th St. east of Downey Rd.	S	

Applied EarthWorks, Inc.
PHOTOGRAPH RECORD

Primary # 19-002882
HRI #/Trinomial

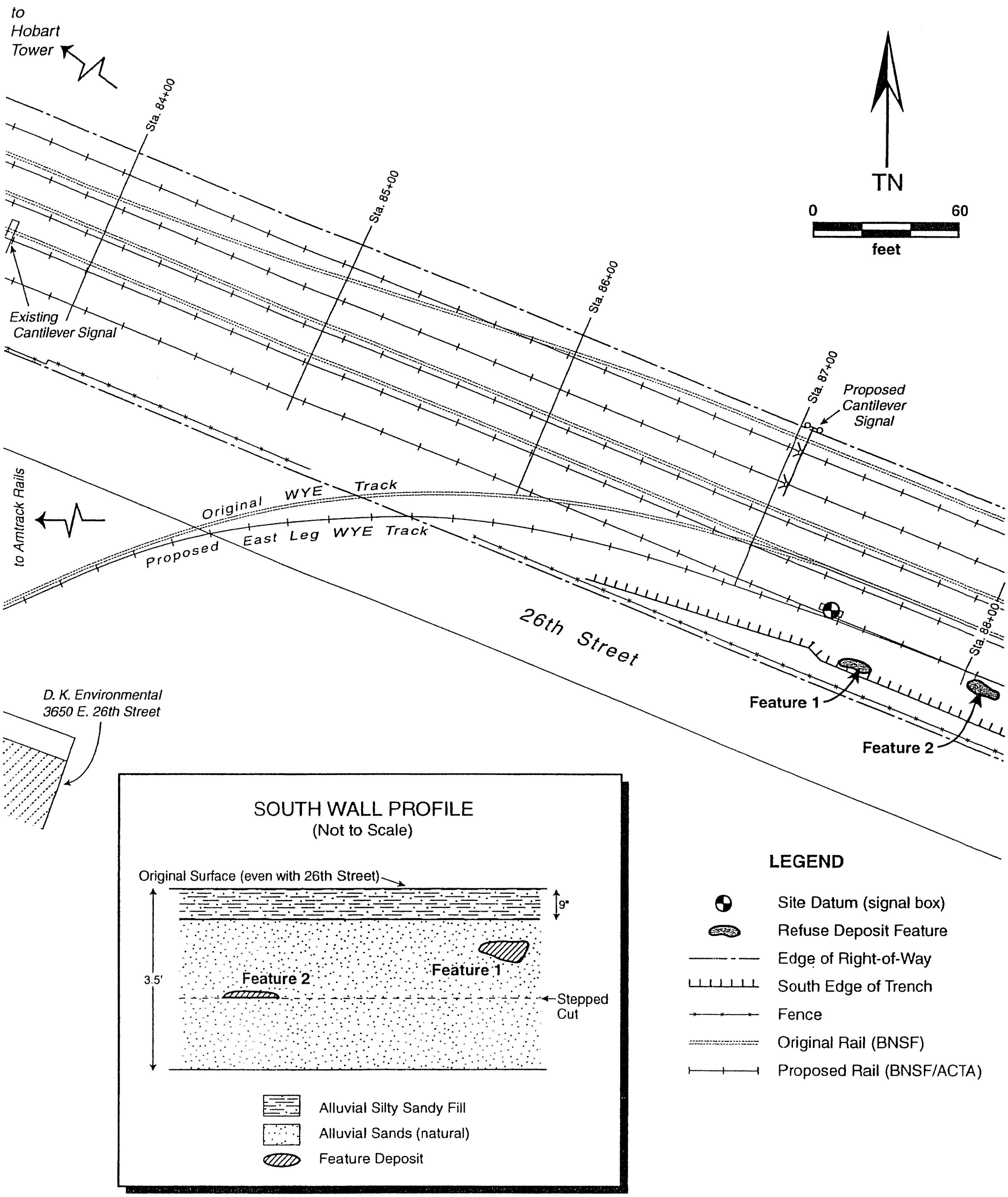
Temporary Number/Resource Name: AC-2045H—Refuse deposits F-1 and F-2
Project Name: Alameda Corridor Monitoring Project **Roll #** AC-2045H **Photographer:** R. Krautkramer
Camera Format: Digital **Lens Size:** 42 mm
Film Type and Speed: 3.5" disk **Year:** 2000
Negatives Kept at: Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544

Mo.	Day	Time	Exp./ Frame	Subject/Description	View Toward	Accession #
12	22	0754	1	Menu board for refuse deposits AC-2045H F-1 and F-2 north of E. 26th St.	Down	
12	22	1017	2	Overview looking east towards excavation trench (Bendor Construction on location of features).	E	
12	22	1019	3	Overview showing approximate location of feature along east–west running BNSF tracks.	W	
12	22	1023	4	Closeup showing location of Feature 1.	S	
12	22	1031	5	Closeup showing Feature 2 location.	S	
12	22	1032	6	Closeup of Feature 2 showing small deposit of rusty material within stepped excavation approx. 6 x 12 in.	S	
12	22	1034	7	Western side view of concrete footing, pad with bolt on top portion, excavated from trench.	W	
12	22	1035	8	Front closeup shot of unknown concrete footing/pad removed adjacent to F-2, but no provenience was noted—only paleo monitor was present when removed, somewhere along south side of tracks between Stations 87+00 and 88+00 just north of E. 26th St.	S	

Applied EarthWorks, Inc.
SITE MAP SHEET

Primary # 19 - 002882
HRI #/Trinomial

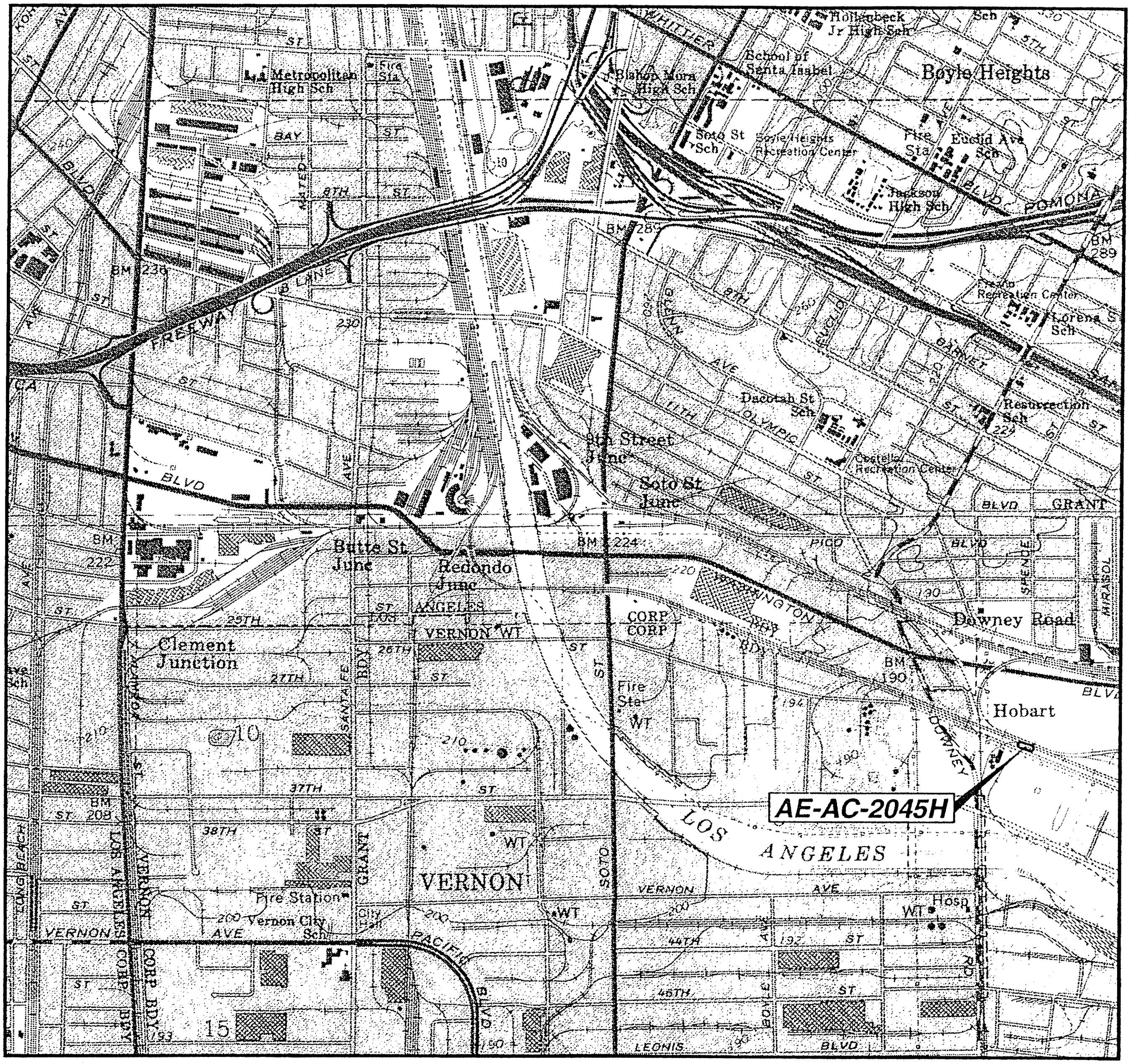
Temporary Number/Resource Name: AE-AC-2045H
Map Name: AE-AC-2045H Site Map **Scale:** 1" : 60' **Date:** February 2001

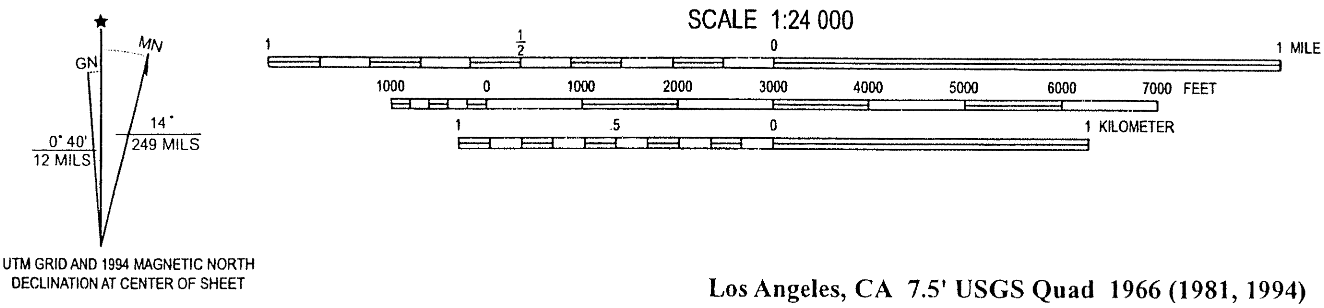


Applied EarthWorks, Inc.
LOCATION MAP SHEET

Primary # 19-002882
HRI #/Trinomial

Page 7 of 7
Temporary Number/Resource Name: AE- AC-2045H
Map Name: AE-AC-2045H Location Map **Scale:** 1:24,000 **Date:** February 2001





Los Angeles, CA 7.5' USGS Quad 1966 (1981, 1994)

30-120020

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code ______
Other Listings ______
Review Code ______ Reviewer ______ Date ______

Page ___ of ___

*Resource Name or #: (Assigned by recorder) ______

P1. Other Identifier: ______

*P2. Location: ☐ Not for Publication ☐ Unrestricted *a. County ______
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad La Habra Quad Date ____ T___; R___; ___ ¼ of ___ ¼ of Sec ___; ______ B.M.
c. Address ______ City ______ Zip ______
d. UTM: (Give more than one for large and/or linear resources) Zone ____; ______ mE/ ______ mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The project area contains two potentially significant cultural resources:

1. Two privies and historic trash pits associated with the Northam Railroad Station. These remains extend in time from the late 1800's to 1962. Historical outside privies have proven to yield significant historical artifacts in other areas.

2. The subsurface may contain segments of a paleontological fossil bearing formation known as "La Habra" found in nearby Coyote Creek,

*P3b. Resource Attributes: (List attributes and codes) ______

*P4. Resources Present: ☐Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)

P5b. Description of Photo: (View, date, accession #) ______

*P6. Date Constructed/Age and Sources: ☐Historic ☐Prehistoric ☐Both

*P7. Owner and Address:

*P8. Recorded by: (Name, affiliation, and address) ______

*P9. Date Recorded: ______

*P10. Survey Type: (Describe)

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") ______

*Attachments: NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List) ______

DPR 523A (1/95)

*Required information

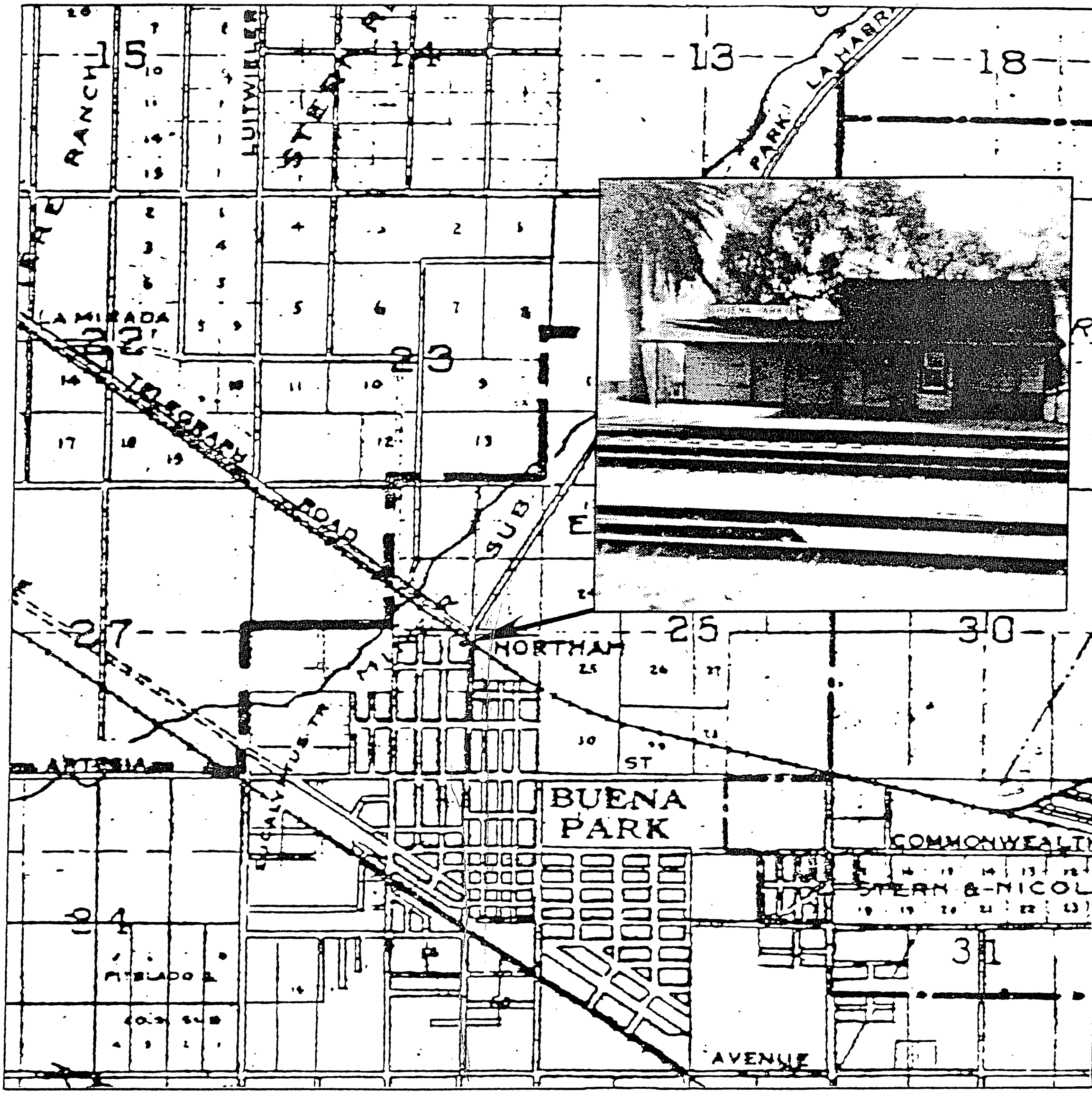


Figure 4. Map and Photo Showing Position of Northam Station. Photo taken by H.A. Chamberlain in the 1960's. Map is enlargement of a portion of the official Orange County Map (1932); original provided by Santa Ana Local History Room, Santa Ana Public Library.

APPENDIX 2

HISTORICAL RESOURCES EVALUATION REPORT

Third Main Track and Grade Separation Project
Hobart (MP 148.9) to Basta (MP 163.3)
BNSF/Metrolink East-West Main Line Railroad Track
Vernon to Fullerton, Los Angles and Orange Counties, California

Prepared for:

Gary Iverson, Office Chief
Environmental Planning
Caltrans District 7
120 South Spring Street
Los Angeles, CA 90012

Prepared by:

Bai "Tom" Tang, M.A., Principal Investigator/Historian/Architectural Historian
Teresa Woodard, B.A., Historian/Architectural Historian
CRM TECH
4472 Orange Street
Riverside, CA 92501

CRM TECH Contract #789
USGS Los Angeles, South Gate, Whittier, La Habra, and Anaheim, Calif., 7.5' quadrangles
T2-3S R10-13W, San Bernardino Base Meridian
Sites CRM TECH 789-1H to -50H

November 2002

TABLE OF CONTENTS

SUMMARY OF FINDINGS

The present Historical Resources Evaluation Report is prepared in compliance with the California Environmental Quality Act (CEQA) for the proposed third main track and grade separation project on the Burlington Northern Santa Fe (BNSF) Railway Company's East-West Main Link Railroad between Hobart (Mile Post 148.9) in the City of Vernon and Basta (MP 163.3) in the City of Fullerton, California. The project's Area of Potential Effects (APE) is delineated to encompass the actual footprint of all necessary construction activities, as well as areas adjacent to the six grade separation sites that may potentially be affected by visual, noise, and atmospheric intrusions as a result of the project. The purpose of the report is to evaluate the historical significance of built environment cultural resources that were noted during the present survey within or adjacent to the APE.

Fieldwork for this survey was completed on June 21-24 and July 23, 2002. As a result of the survey, a total of 49 pre-1957 buildings were recorded within the APE, but none of them appears to meet CEQA's definition of a "historical resource." Also noted in the APE were 55 other buildings or groups of buildings that postdate 1957. Pursuant to Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later, these buildings are not considered potential "historical resources," and do not require further study.

The existing BNSF railroad line that runs through the APE, originally built in 1885-1888, was recorded during the survey as a historical site due to its age, and designated temporarily as CRM TECH 789-50H. Despite the important role that the Santa Fe Railway played in the growth of southern California in the late 19th century, the railroad line and its associated features that are present today, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance, and thus do not appear to qualify as a "historical resource."

Along with the railroad line, the survey noted 18 bridges that carry the BNSF line over various streets or natural waterways. Thirteen of these were previously evaluated as ineligible for listing in the National Register of Historic Places. The five oldest among them, constructed between 1937 and 1950, have become 50 years old since the establishment of the Inventory in 1984-1986, but none of them demonstrates any special historical, architectural, or other qualities to warrant a formal re-evaluation. Five of the 18 bridges were not previously evaluated for historical significance, but all five have been constructed since 1967. None of the 18 bridges, therefore, appear to qualify as a "historical resource."

Also located within the APE is a commemorative plaque installed by the City of Santa Fe Springs, which marks the approximate location of the historic Los Nietos School. The plaque has no historic value of its own, and is not considered a potential "historical resource." No archaeological remains or other potentially historic features were observed in the vicinity of the plaque.

Based on these findings, the present report concludes that no "historical resources," as defined by CEQA, are known to exist within or adjacent to the APE, and thus the proposed project will have *no impact* on any known "historical resources."

PROJECT DESCRIPTION

As part of its program to improve inter-city passenger rail services, the State of California Department of Transportation, Division of Rails, proposes a project to upgrade the capacity of the Burlington Northern Santa Fe (BNSF) Railway Company/Metrolink East-West Main Line Railroad Track. The project entails primarily the installation of a third main line track along the existing BNSF Railway from Hobart (Mile Post 148.9) to Basta (MP 163.3). The project route traverses portions of the San Juan Cajon de Santa Ana, Los Coyotes, Santa Gertrudes (McFarland and Downey), Santa Gertrudes (Colima), Paso de Bartolo (Sepulveda), Paso de Bartolo (Guirado), and San Antonio (Lugo) land grants lying within of T2-3S R10-13W, San Bernardino Base Meridian, across or along the boundaries of the Cities of Fullerton, Buena Park, La Mirada, Santa Fe Springs, Norwalk, Pico Rivera, Montebello, City of Commerce, and Vernon (see HRCR Exhibit A).

In addition to the installation of the third main line track, the project also includes various other improvements and upgrading, most notably the construction of six grade separations at the BNSF main line's intersections with Passons Boulevard, Pioneer Boulevard, Norwalk Boulevard/Los Nietos Road, Lakeland Road, Rosecrans Avenue/Marquardt Avenue, and Valley View Avenue, located in the Cities of Pico Rivera, Santa Fe Springs, and La Mirada, and the unincorporated community of Los Nietos. The project's Area of Potential Effects (APE) is delineated to encompass the actual footprint of all necessary construction activities along the project route, as well as areas adjacent to the six grade separation sites that may potentially be affected by visual, noise, and atmospheric intrusions as a result of the project (see HRCR Exhibit A).

RESEARCH METHODS

RECORDS SEARCH

In June, 2002, the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, performed a historical/archaeological resources records search on the APE. During the records search the following sources were consulted:

- National Register of Historic Places;
- California Register of Historical Resources;
- California Historical Landmarks;
- California Points of Historical Interest;
- California Historical Resource Information System;
- City of Los Angeles Historic-Cultural Monuments.

Besides the records of SCCIC, the California Historic Bridge Inventory was also examined for previously identified cultural resources within or adjacent to the APE (HRCR App. 3).

HISTORICAL BACKGROUND RESEARCH

In conjunction with the records search, a general historical background research was conducted on the basis of historic maps of the project vicinity and published literature in local/regional history and the history of the Atchison, Topeka and Santa Fe Railway

(ATSF), forerunner of BNSF in southern California. Among maps consulted were the U.S. General Land Office's (GLO) land survey plat maps produced in the mid-19th century and the U.S. Geological Survey's (USGS) topographic maps dated 1900-1945. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, also located in Riverside.

After potentially historic sites, buildings, and other features were identified within the APE during the field survey, additional historical research was carried out in an attempt to establish the age and historical background of these features. In addition to the sources listed above, archival records of BNSF, the County of Los Angeles, and the Cities of Pico Rivera, Santa Fe Springs, and La Mirada were consulted during this phase of the research, as were materials on file at the local history collections of the various public libraries in the communities along the project route.

CONSULTATION WITH LOCAL COMMUNITIES

In July and August, 2002, governments of the nine cities along the project route were contacted to identify any cultural resources of local historical interest that may be present within or adjacent to the APE, and to solicit from the local communities any other comments regarding cultural resources issues. A telephone log with names and positions of the persons contacted at each City and copies of written correspondences are presented in Appendix 4 to the HRCR. Written requests for similar information were also sent to the Heritage Coordinating Council of Fullerton and the Whittier Historical Society and Museum (HRCR App. 4), the two local historical organizations along the project route that are identified by the American Association for State and Local History (2002).

HISTORICAL OVERVIEW

EARLY EXPLORATION AND SETTLEMENT IN THE SPANISH/MEXICAN PERIODS

The present-day southeastern Los Angeles County and northwestern Orange County, in which the Area of Potential Effects lies, received the earliest European visitors in the late 18th century with the arrival of Spanish explorers and missionaries. Mission San Gabriel, originally founded in what is now Montebello, was awarded jurisdiction over most of the APE after its establishment in 1771. Shortly afterwards, Juan Manuel Nieto, a Spanish soldier, became the area's first non-religious settler. By 1784, Nieto had built the first adobe house in the region on a 145,000-acre rancho he had received as a temporary land grant from the King of Spain, which included all the land from the mountains to the sea between the Santa Ana and San Gabriel Rivers.

After Nieto's death, the property was divided among his heirs into five smaller ranchos: Los Alamitos, Los Cerritos, Santa Gertrudes, Los Coyotes, and Las Bolsas. The APE traverses through two of these, Los Coyotes and Santa Gertrudes, as well as three later Spanish or Mexican (after 1822) land grants: San Antonio, created in 1810; Paso de Bartolo Viejo, created in 1835; and San Juan Cajon de Santa Ana, created in 1837. By 1837, the entire APE had been claimed by the recipients of these land grants. As elsewhere in Alta California, cattle raising was the most prevalent economic activity on these and other nearby ranchos until the influx of American settlers eventually brought an end to this now-romanticized lifestyle after the end of Mexican rule.

GROWTH AND URBANIZATION SINCE THE AMERICAN ANNEXATION

After the American annexation of Alta California in 1848, the area experienced enormous growth during the latter half of the 19th century, when it benefited from both the gradual expansion of the nearby City of Los Angeles and the establishment of horticulture as the main agricultural pursuit of southern California. In the vicinity of the APE, orange, walnut, and avocado cultivation gradually became the leading "industry" in the late 19th and early 20th centuries, after earlier attempts at growing corn, hay, and vineyards proved to be unsuccessful (ATSF 1983:226). The Pico Rivera area, for example, was devoted almost exclusively to citrus production in the 1940s (*ibid.*). In addition to horticulture, dairy farming also played an important role in the local economy, most notably in Norwalk and Buena Park (City of Norwalk 2002; ATSF 1983:230).

In the late 1890s, petroleum was discovered in the rolling hills north of the town of Fullerton, ushering in an oil boom along the southeastern portion of the APE. The boom culminated during the 1920s, when the Santa Fe Springs area distinguished itself as the most productive oil field in California (Da Rold 1979:10). The heavy concentration of the petroleum industry caused other industrial establishments to gravitate to the area as well. In 1957, when the City of Santa Fe Springs was incorporated, the area was largely divided into an industrial east side and a residential west side, with most of the residential development occurring during the post-WWII period (*ibid.*:11).

Beginning in the late 1940s, as a result of the post-war prosperity in American economy and the accompanying population explosion in the Los Angeles area, the forces of suburbanization swept through the project vicinity, and assumed a dominating influence in local economical growth. Situated on the southeastern rim of the fast-growing metropolis of Los Angeles, the large stretches of farmlands along the APE became a prime target for tract home developers. In 1953, for example, the McNally-Neff family sold most of its 2,278-acre orchard land holdings, known as Windemere Ranch, for residential subdivision, on which virtually the entire City of La Mirada was created (City of La Mirada 2002). In less than seven years after that, the formerly 100-home community grew to 10,000 homes (*ibid.*).

Among the eight incorporated cities along the APE, Norwalk was founded in 1877 around a station on the Southern Pacific Railway (SP), followed ten years later by Fullerton and Buena Park, both of them on or near the Atchison, Topeka, and Santa Fe Railway (ATSF). Fullerton, in fact, was named for a Santa Fe land agent who is credited with routing the railroad through the city (Anonymous 2002). Supported by the twin pillars of its livelihood, oranges and oil, Fullerton grew rapidly, and was incorporated as a city in 1904, followed by Montebello in 1920. The other six cities along the APE, including Norwalk and Buena Park, were not incorporated until after WWII. In retrospect, Fullerton's strategic location on the ATSF system contributed significantly to its growth in the late 19th century.

THE ATCHISON, TOPEKA, AND SANTA FE RAILWAY IN THE APE

As often demonstrated in the history of the American West, many of the communities along the project route owe their births to the railroad in the APE, historically the Atchison, Topeka, and Santa Fe Railway. Prior to the arrival of the ATSF in the 1880s, the Southern Pacific Railway, completed through the Los Angeles area in 1876-1877, enjoyed a railroad monopoly in California. In 1885, upon the completion of the first ATSF line in southern California, the two railroad giants engaged each other in a fierce rate war. For a short time in March, 1886, the cutthroat competition drove the price of a passenger ticket from the Midwest to southern California to as low as one dollar, making it "cheaper to travel than to stay home" (Ingersoll 1904:267).

The demise of the SP's railroad monopoly was an important factor in the great southern California land boom of the 1880s. In 1887 alone, more than 200,000 newcomers arrived in southern California (BNSF 2002). In both the coastal regions and inland valleys, new towns sprang up by the dozens on former holdings of the cattle ranches or timely acquisitions of land speculators. During one single year, real estate sales in Los Angeles County exceeded $200 million (*ibid.*). With the development of the refrigerated cars soon after, the railroads were also instrumental in establishing southern California's growing agricultural business by transporting the perishable produce, especially the high-profit fresh fruits, to faraway eastern cities.

Most of the railroad in the APE was constructed in 1885-1888 as a part of the ATSF main line from Los Angeles to Orange, and on to San Diego (Gustafson and Serpico 1992:113). The easternmost segment, measuring approximately 1.5 miles in length, was built in 1910 as a part of the "Fullerton Cutoff," which straightened and shortened the ATSF line between Los Angeles and Riverside (*ibid.*). During the heyday of the railroad age, the line in the APE was a component of the ATSF's celebrated "Kite-Shaped Track" between Los Angeles and the San Bernardino-Redlands-Riverside area. Between the 1890s and the 1910s, the Kite-Shaped Track was one of the most popular tourist attractions in southern California, and helped propel several towns along the route, such as Pasadena, Redlands, and Riverside, into favored winter resorts for the rich and famous (Duke 1991:8).

With the completion of the Fullerton Cutoff in 1910, the Fullerton station became a travel hub with connections to Los Angeles, San Bernardino, and San Diego (Gustafson and Serpico 1992:127). Other major stations on the ATSF along the APE include Northam (now Buena Park), La Mirada, Santa Fe Springs, Los Nietos, Rivera (now Pico Rivera), and Manhattan (now Hobart), all of which were established between 1888 and 1894 (*ibid.*:126, 130, 133). Almost all of the depots at these locations were demolished during the 1960s-1970s, leaving the 1930 Fullerton depot, now an Amtrak agency, and the 1896 Pico Rivera depot, which was moved away from the railroad in 1972, the lone survivors (*ibid.*:126-137). Although the railroad remains active today, the demise of the depots, once the pride of the communities they served, marked unmistakably the end of the golden age for the steel rails.

FIELD METHODS

The initial field survey of the APE was conducted on June 21 and June 24, 2002, by project archaeologist Daniel Ballester, who holds a B.A. degree in Anthropology from California State University, San Bernardino (1998), and has performed archaeological field research in southern California for four years. The survey covered the direct APE of the project, or all areas where construction activities and/or other ground disturbances will occur during the project. The indirect APE around each of the six proposed grade separation sites, meanwhile, was surveyed systematically for historic-era features of built environment.

The built environment survey of the indirect APE was performed by project historians/ architectural historians Bai "Tom" Tang and Teresa Woodard on July 23, 2002. Tang received his M.A. degree in American history from Yale University in 1987, underwent further post-graduate training in public history at the University of California, Riverside, and has been engaged in cultural resources management as a public historian specializing in Section 106- and CEQA-compliance studies since 1991. Woodard graduated from the University of California, Riverside, in 1997 with a B.A. degree in History and French, and is currently a third-year graduate student in Public History at the same institution. She has had various experiences in title research, city planning, and historic building survey since 1998.

During this phase of the field survey, Tang and Woodard inspected all existing buildings within or adjacent to the maximum extent of ground disturbances, and completed field recording procedures on buildings that appeared to be more than 45 years old. In order to facilitate the proper recordation and evaluation of all pre-1957 buildings in the APE, Tang and Woodard made detailed notations and preliminary photo-documentation of their structural and architectural characteristics and current conditions. Based on the field observations and the results of subsequent historical research, DPR 523 forms were prepared on each of the resources determined to be within the APE (see Attachment A).

DESCRIPTION OF CULTURAL RESOURCES

As a result of the survey, a total of 49 pre-1957 buildings were recorded within the APE at four of the six grade separation sites, including 48 single-family residences and 1 commercial/industrial building. One of the residences, located at 11005 Rivera Road in the unincorporated community of Los Nietos, is a former ranch house that was constructed around 1914, while all of the other 47 are tract homes dating to 1951-1954. The commercial/industrial building, located at 14051 Marquardt Avenue in the City of Santa Fe Springs, was also constructed in the 1950s.

The existing BNSF railroad line that runs through the APE was recorded during the survey as a historical site, and designated temporarily as CRM TECH 789-50H. Most of this line, as stated above, was built in 1885-1888 by the Riverside, Santa Ana and Los Angeles Railway Company, an ATSF subsidiary, but as a working railroad after more than 100 years of continuous operation, its current physical characteristics reflect very little of its historic origin. This site and the 49 pre-1957 buildings are discussed in further detail in the attached DPR 523 forms (Attachment A).

In addition to the 50 resources formally recorded, the survey also encountered 18 bridges that carry the BNSF line over various streets or natural waterways, as listed below:

BNSF M.P.	Bridge No.	Feature Crossed	Year Built*	Known Alteration(s)*	NRHP Status*
149.5	53C1791	Greenwood Ave.	1983		Not eligible
150.1	53C0471	Rio Hondo	1941	1966/2001-2002	Not eligible
150.4	53C0192	Paramount Blvd.	1958		Not eligible
150.9	53-0232/53-0232W	Rosemead Blvd. (SR 19)	1937	1971-1972	Not eligible
151.9	53C0719	San Gabriel River	1946-1947	1965-1966	Not eligible

154.0	53C1699	Santa Fe Springs Rd.	1979		Not eligible
154.4	53C1700	Telegraph Rd.	1977-1979		Not eligible
154.9	Not found	Florance Ave.	1980		N/A
156.1	53C0857	Imperial Hwy.	1976-1977		Not eligible
157.2	53C1864	Carmenita Rd.	1983		Not evaluated
157.5	Not found	La Canada Verde Cr.	1967		N/A
158.9	Not found	La Mirada Cr.	1996		N/A
160.4	55C0198	Coyote Cr.	1950		Not eligible
160.6	55-0632/55-0632W	Beach Blvd. (SR 39)	1984		Not eligible
160.9	55C0197	Brea Cr.	1950	1985, 1999	Not eligible
161.3	Not found	Dale St.	1996		N/A
162.4	55C0263	Gilbert Ave.	1983		Not eligible
163.1	55C0310	Commonwealth Ave.	1961		Not eligible

* Source: California Historic Bridge Inventory; Hostler and Wollerton 2002.

As the foregoing list indicates, 13 of the 18 bridges are currently listed in the California Historic Bridge Inventory as not being eligible for the National Register of Historic Places (see HRCR App. 3). The five bridges that were not previously evaluated for historical significance were constructed during the last 35 years, and are not considered to be potentially historic. Therefore, none of these bridges was formally recorded during this survey.

Also located within the APE at the Los Nietos Road/Norwalk Boulevard grade separation site is a commemorative plaque installed by the City of Santa Fe Springs, which marks the approximate location of the historic Los Nietos School. The plaque, dedicated in 1998, stand on the northeastern corner of Los Nietos Road and Norwalk Boulevard, in a heavily disturbed area that was developed into an industrial park in 1988-1989. No historical /archaeological features were observed in the vicinity of the plaque.

RESOURCE SIGNIFICANCE

In summary of the findings presented above, the construction of ATSF in the 1880s, the establishment of horticulture as the leading "industry" in the late 19th and early 20th centuries, and the post-WWII urban expansion provided the most notable driving forces in the growth of the communities along the project route, and constitute the main themes in the history of the APE. The completion of the ATSF system, the second transcontinental railroad to reach California, brought an end to the Southern Pacific Railway's transportation monopoly and directly spurred the great land boom of the 1880s, to which the roots of numerous southern California's cities and towns can be traced. A horticulture-based economy, especially the citrus industry, eventually turned the relatively brief boom into sustained growth. The post-WWII suburbanization of former rural areas around Los Angeles fundamentally altered the cultural—as well as physical—landscape of the region, and transformed it into the bustling metropolitan center it is today.

All three of the themes in the APE's history, therefore, are in themselves important historical events of statewide or at least regional significance. It is within these contexts that the 69 built environment cultural resources noted within the APE were evaluated for historical significance, and the results of the evaluation are summarized below.

SITE CRM TECH 789-1H TO -49H (PRE-1957 BUILDINGS)

Among the 49 historic-era buildings in the APE, the oldest residence, at 11005 Rivera Road in Los Nietos, is related to the period in regional history when agriculture, in particular horticulture, was the foundation of the local economy, while the other 47 residences are products of the post-WWII suburban boom. None of the 49 buildings, however, demonstrates an association with these themes or events that is particularly important. In other words, there is no evidence that these buildings are more closely associated with the themes or events than the numerous other buildings from similar periods.

Despite extensive research, no persons of recognized significance in national, state, or local history have been identified in association with any of the 49 buildings. Nor does any of the buildings possess a special architectural, aesthetic, or artistic merit that meets the requirement of the California Register criteria. Therefore, none of the 49 buildings recorded during this survey appears to be eligible for listing in the California Register, and thus none of them appears to qualify as a "historical resource," as defined by CEQA.

SITE CRM TECH 789-50H (FORMER ATSF RAILROAD)

The railroad line recorded as CRM TECH 789-50H, originally constructed in 1885-1888, is closely associated with an important event in the history of the APE and the State of California, namely the coming of a second transcontinental railroad. As stated above, it marked the beginning of the end of the Southern Pacific Railway Company's transportation monopoly, and contributed directly to the southern California land boom of the 1880s. However, the existing railroad line and its associated features that constitute CRM TECH 789-50H, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance. Therefore, the site does not appear eligible for listing in the California Register, and does not appear to qualify as a "historical resource."

RAILROAD BRIDGES

As mentioned above, 13 of the 18 bridges noted within the APE have been previously evaluated as ineligible for listing in the National Register of Historic Places, the criteria for which is essentially identical to those for the California Register. The five oldest among them, constructed between 1937 and 1950, have become 50 years old since the previous evaluation in 1984-1986, but being of standard construction in each case, none of them demonstrates any special historical, architectural, or other qualities to warrant a formal re-evaluation. Furthermore, at least four of the five have been widened, extended, or otherwise altered since the 1960s. Five of the 18 bridges have not been previously evaluated for historical significance, but none of these five predates 1967. Therefore, none of the 18 bridges appears to be eligible for listing in the California Register, and none of them appears to qualify as a "historical resource."

COMMEMORATIVE PLAQUE FOR LOS NIETOS SCHOOL SITE

This plaque was dedicated in recent years to commemorate a chapter in the history of the City of Santa Fe Springs. Being a commemorative property, it is not directly associated with that chapter of history, but rather serves "as evidence of a later generation's assessment of the past (NPS 1991:39). As such, it is not considered a potential "historical resource."

STUDY FINDINGS AND CONCLUSIONS

In conclusion, a total of 69 built environment cultural resources were encountered within or adjacent to the APE, but none of them appears to qualify as a "historical resource." These 69 resources are listed below:

- **Historical Resources Listed in the California Register**

  No such properties are present within the APE.

- **Historical Resources Previously Determined Eligible for the California Register**

  No such properties are present within the APE.

- **Historical Resources Potentially Eligible for the California Register**

  No such properties are present within the APE.

- **Properties That Appear Potentially Eligible for the California Register but Require Further Study**

  No such properties are present within the APE.

- **Properties Previously Determined Ineligible for the California Register**

Name	Address/Location	Community	Map Ref. No.
Greenwood Ave. Bridge	BNSF M.P. 149.5	Montebello	1
Rio Hondo Bridge	BNSF M.P. 150.1	Pico Rivera	2
Paramount Blvd. Bridge	BNSF M.P. 150.4	Pico Rivera	3
Rosemead Blvd. Bridge	BNSF M.P. 150.9	Pico Rivera	4
San Gabriel River Bridge	BNSF M.P. 151.9	Pico Rivera	5
Santa Fe Springs Rd. Bridge	BNSF M.P. 154.0	Santa Fe Springs	6
Telegraph Rd. Bridge	BNSF M.P. 154.4	Santa Fe Springs	7
Imperial Hwy. Bridge	BNSF M.P. 156.1	Santa Fe Springs/Norwalk	9
Coyote Cr. Bridge	BNSF M.P. 160.4	Buena Park	13
Beach Blvd. Bridge	BNSF M.P. 160.6	Buena Park	14
Brea Cr. Bridge	BNSF M.P. 160.9	Buena Park	15
Gilbert Ave. Bridge	BNSF M.P. 162.4	Fullerton	17
Commonwealth Ave. Bridge	BNSF M.P. 163.1	Fullerton	18

- **Properties That Appear Ineligible for the California Register**

Name	Address/Location	Community	Map Ref. No.
Florance Ave. Bridge	BNSF M.P. 154.9	Santa Fe Springs	8
Carmenita Rd. Bridge	BNSF M.P. 157.2	Santa Fe Springs	10
La Canada Verde Cr. Bridge	BNSF M.P. 157.5	Santa Fe Springs	11
La Mirada Cr. Bridge	BNSF M.P. 158.9	La Mirada	12

Dale St. Bridge	BNSF M.P. 161.3	Buena Park	16
None (residence)	7568 Lemoran Ave.	Pico Rivera	19
None (residence)	7574 Lemoran Ave.	Pico Rivera	20
None (residence)	7578 Lemoran Ave.	Pico Rivera	21
None (residence)	7581 Lemoran Ave.	Pico Rivera	22
None (residence)	7584 Lemoran Ave.	Pico Rivera	23
None (residence)	7619 Passons Blvd.	Pico Rivera	24
None (residence)	7625 Passons Blvd.	Pico Rivera	25
None (residence)	7631 Passons Blvd.	Pico Rivera	26
None (residence)	7635 Passons Blvd.	Pico Rivera	27
None (residence)	7641 Passons Blvd.	Pico Rivera	28
None (residence)	8625 Danby Rd.	L.A. County	29
None (residence)	8629 Danby Rd.	L.A. County	30
None (residence)	8633 Danby Rd.	L.A. County	31
None (residence)	8516 Pioneer Blvd.	L.A. County	32
None (residence)	8523 Pioneer Blvd.	L.A. County	33
None (residence)	8529 Pioneer Blvd.	L.A. County	34
None (residence)	8533 Pioneer Blvd.	L.A. County	35
None (residence)	8603 Pioneer Blvd.	L.A. County	36
None (residence)	8609 Pioneer Blvd.	L.A. County	37
None (residence)	8615 Pioneer Blvd.	L.A. County	38
None (residence)	8619 Pioneer Blvd.	L.A. County	39
None (residence)	8625 Pioneer Blvd.	L.A. County	40
None (residence)	11005 Rivera Rd.	L.A. County	41
None (residence)	11021 Rivera Rd.	L.A. County	42
None (residence)	11117 Rivera Rd.	L.A. County	43
None (residence)	11131 Rivera Rd.	L.A. County	44
None (residence)	10702 Wheelock Cir.	L.A. County	45
None (residence)	10703 Wheelock Cir.	L.A. County	46
None (residence)	10706 Wheelock Cir.	L.A. County	47
None (residence)	10710 Wheelock Cir.	L.A. County	48
None (residence)	10714 Wheelock Cir.	L.A. County	49
None (commercial bldg.)	14051 Marquardt Ave.	Santa Fe Springs	50
None (residence)	14508 Valley View Rd.	La Mirada	51
None (residence)	14514 Valley View Rd.	La Mirada	52
None (residence)	14520 Valley View Rd.	La Mirada	53
None (residence)	14528 Valley View Rd.	La Mirada	54
None (residence)	14602 Valley View Rd.	La Mirada	55
None (residence)	14610 Valley View Rd.	La Mirada	56
None (residence)	14618 Valley View Rd.	La Mirada	57
None (residence)	14624 Valley View Rd.	La Mirada	58
None (residence)	14632 Valley View Rd.	La Mirada	59
None (residence)	14638 Valley View Rd.	La Mirada	60
None (residence)	14644 Valley View Rd.	La Mirada	61
None (residence)	14652 Valley View Rd.	La Mirada	62
None (residence)	14324 San Ardo Dr.	La Mirada	63
None (residence)	14330 San Ardo Dr.	La Mirada	64
None (residence)	14336 San Ardo Dr.	La Mirada	65
None (residence)	14342 San Ardo Dr.	La Mirada	66
None (residence)	14348 San Ardo Dr.	La Mirada	67
Los Nietos School plaque	Los Nietos Rd. /Norwalk Blvd.	Santa Fe Springs	68
BNSF Railroad	(Through entire APE)	N/A	None

Also noted in the APE were 55 other buildings or groups of buildings that postdate 1957. Pursuant to Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later, these buildings are not considered potential historical resources, and do not require further study.

Based on the findings presented above, this report concludes that no "historical resources," as defined by CEQA, are known to exist within or adjacent to the APE, and thus the proposed project will have *no impact* on any known "historical resources."

REFERENCES

American Association for State and Local History
2002 *Directory of Historical Organizations in the United States and Canada*; fifteenth edition. Alta Mira Press, Walnut Creek, California.

Anonymous
2002 California Facts and City Index. Available at www.usacitiesonline.com.

ATSF (Atchison, Topeka, and Santa Fe Railway Company)
1983 History of the Santa Fe Coastlines. ATSF internal document. Provided by the Burlington Northern Santa Fe Railway Company.

BNSF (Burlington Northern Santa Fe Railway Company)
2002 Official website of the Burlington Northern Santa Fe Railway Company. Available at www.bnsf.com.

City of La Mirada
2002 History of La Mirada. Available at www.cityoflamirada.org.

City of Norwalk
2002 City Overview. Available at www.ci.norwalk.ca.us/norwalkinfo.asp.

Da Rold, Joe (ed.)
1979 *The History of Santa Fe Springs, California*. Santa Fe Springs Historical Committee, Santa Fe Springs, California.

Duke, Donald
1991 Kite-Shaped Track Excursion. In *The Branding Iron* (Los Angeles) Summer 1991:8-12.

Gustafson, Lee, and Philip Serpico
1992 *Santa Fe Coast Lines Depots, Los Angeles Division*. Omni Publications, Palmdale, California.

Hostler, Lee, and Verne Wollerton
2002 Personal communication based on BNSF records.

Ingersoll, L. A.
1904 *Ingersoll's Century Annals of San Bernardino County, 1769-1904*. L. A. Ingersoll, Los Angeles.

NPS (National Park Service, U.S. Department of the Interior)
1991 *How to Apply the National Register Criteria for Evaluation*; revised edition. National Register Bulletin No. 15, Washington, D.C.

ATTACHMENT A

ARCHITECTURAL INVENTORY/EVALUATION (DPR) FORMS

CRM TECH 789-1H to -50H

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

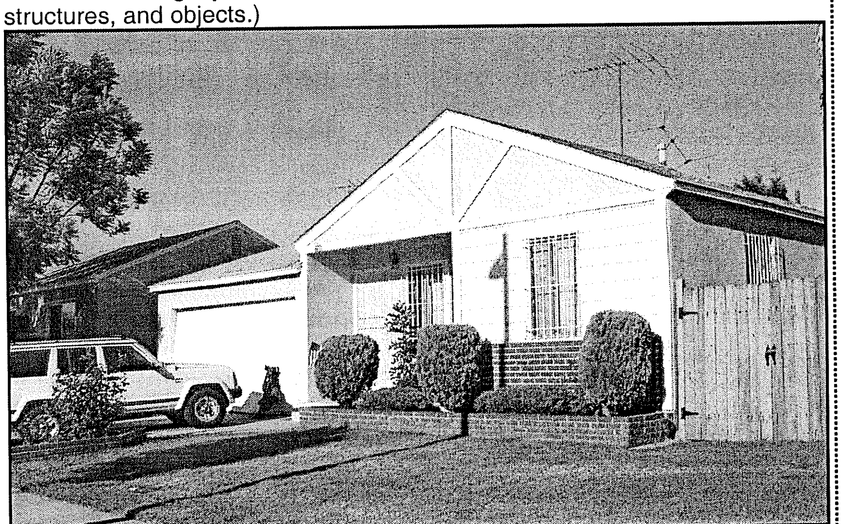
Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-1H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7568 Lemoran Avenue City Pico Rivera Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398820 mE/ 3759240 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-016

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-family residence is a one-story, rectangular wood-frame house with several different façade materials. Most of the house is covered in stucco, while the southern half of the façade is clad with horizontal boards with a three-foot brick veneer at the bottom. The house has a medium-pitched gable-on-hip roof, covered with composition shingles. A half-timbered effect is created at the peak of the front-facing gable with wood beams peering out through the stucco. The main entrance is set in an off-centered, recessed porch. The attached garage faces the street. Fenestration consists primarily of rectangular, aluminum-framed, sliding windows.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

*P6. Date Constructed/Age and Sources:
√ Historic ___ Prehistoric ___ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address:
Christina Archuleta et al., 7568 Lemoran Avenue, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #__________
HRI #__________

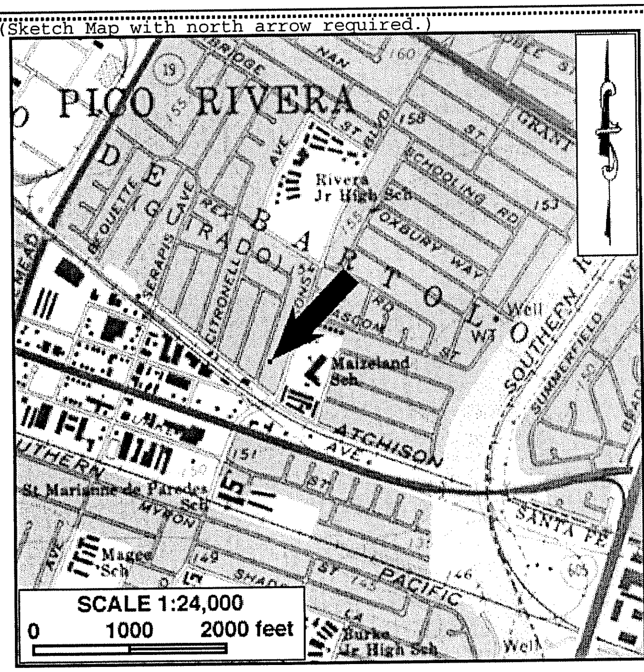
BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-1H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to City of Pico Rivera records, this house was constructed in 1950 as part of a tract home development by the Claremont Company. Robert Sonnenburg, the first owner-occupant of the house, acquired the property from the developer around 1951.
***B7. Moved?** √ No ____ Yes ____ Unknown **Date:**______ **Original Location:**______
***B8. Related Features:** None
B9a. Architect: Herman Light   b. Builder: Halper Construction
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)______
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:______
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-2H

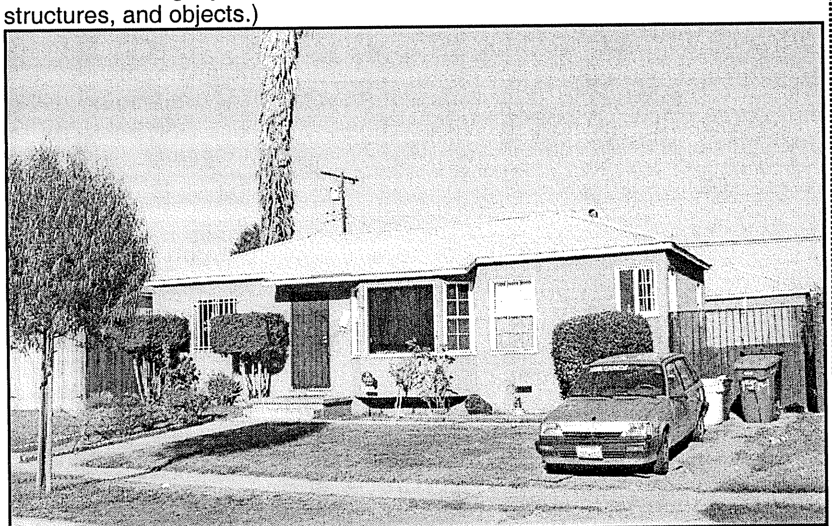
P1. Other Identifier:
*P2. Location: ____ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7574 Lemoran Avenue City Pico Rivera Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398810 mE/ 3759220 mN
UTM Derivation: √ USGS Quad ____ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-017

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence has a rectangular ground plan and is of wood-frame construction. It is surmounted by a low-pitched hip roof, covered with composition shingles, with a small extension over the shallow entry porch and a bay window. This large bay window is composed of a single fixed sash in the center, flanked by two vinyl-framed, multi-paned double-hung windows. The house has a detached garage in the rear. There seems to be minimal alterations to the exterior of the house, with only the replacements of windows and the addition of a security door and window bars apparent.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

*P6. Date Constructed/Age and Sources:
√ Historic ____ Prehistoric ____ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address:
Juan & Mary Larios, 7574 Lemoran Avenue, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #_____
HRI #_____

***NRHP Status Code** 6Y

***Resource Name or #** (Assigned by recorder) CRM TECH 789-2H

B1. Historic Name: None

B2. Common Name: None

B3. Original Use: Residential   B4. Present Use: Residential

***B5. Architectural Style:** Mininal Traditional

***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed along with others in this housing tract, which was developed in 1950 by the Claremont Company. In 1951, Kenneth and Virginia Whitely purchased the house from the company. A half bath was added to the house in 1967, and in 1995 a 17-foot by 15-foot patio cover was installed.

***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** _____ **Original Location:** _____

***B8. Related Features:** Detached garage

B9a. Architect: Herman Light   b. Builder: Halper Construction

***B10. Significance: Theme** N/A   **Area** N/A

Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.

B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building

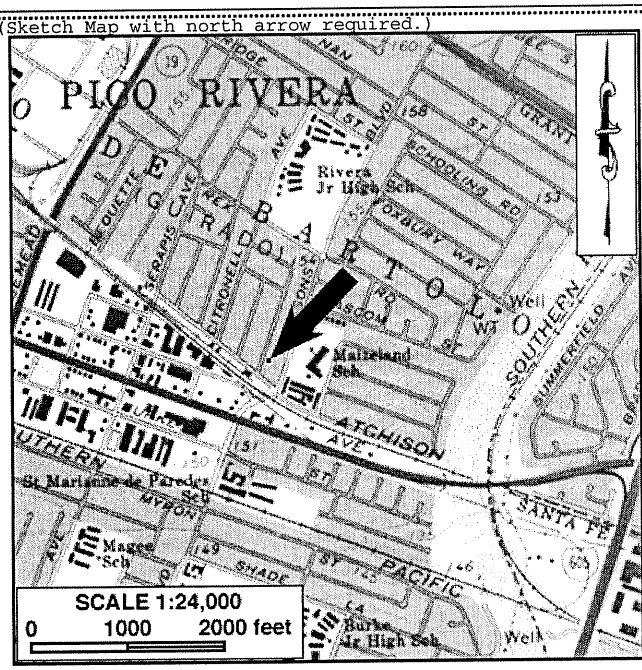
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records

B13. Remarks: _____

***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard

***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

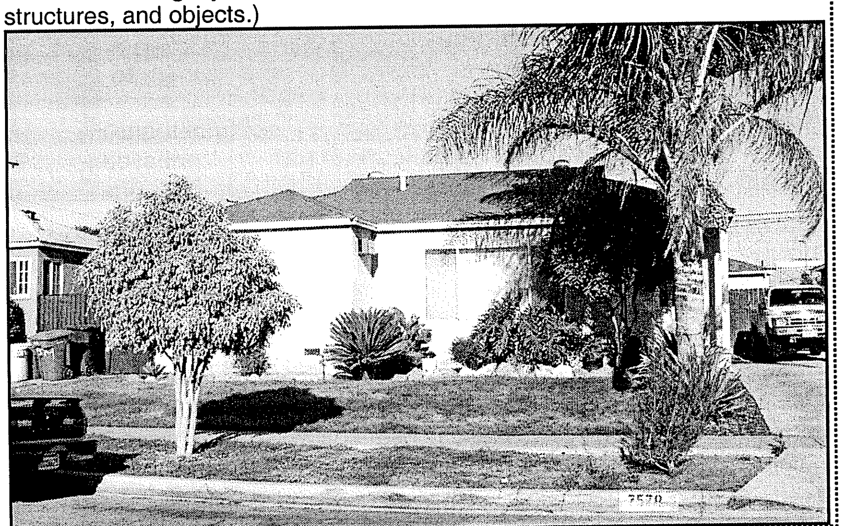
Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-3H

P1. Other Identifier:
***P2. Location:** ____Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R12W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7578 Lemoran Avenue **City** Pico Rivera **Zip** 90660
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 398800 **mE**/ 3759180 **mN**
UTM Derivation: √ USGS Quad ____GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-018

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This L-shaped, one-story single-family residence is characterized by its gable-on-hip roof with a hip-roofed front-facing wing. The entire roof is covered with composition shingles. The house is clad in stucco and features aluminum-framed sliding windows that are not original. The small, off-centered entry porch is situated under the main roof and is supported by a single wood post. The house has a detached garage in the rear.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property
***P4. Resources Present:** √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the east

***P6. Date Constructed/Age and Sources:**
√ Historic ____Prehistoric ____Both
Construction Date: 1950 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Candelaria R. Galvan, 7578 Lemoran Avenue, Pico Rivera, CA 90660

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

DPR 523A (1/95) ***Required information**

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

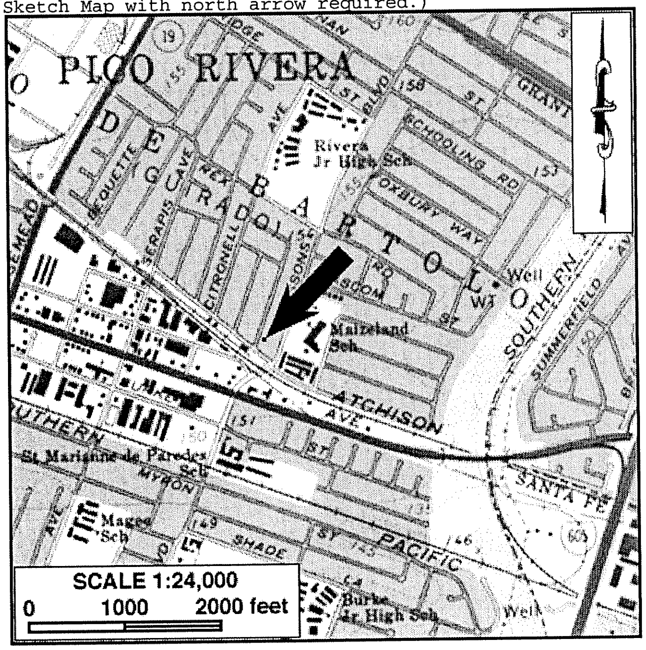
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #________
HRI #________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-3H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed along with others in this housing tract, which was developed in 1950 by the Claremont Company. In 1951, John Ruscich purchased the house from the developer. A half bath was added to the house in 1984.
***B7. Moved?** √ No ___Yes ___Unknown **Date:**______ **Original Location:**______
***B8. Related Features:** Detached garage
B9a. Architect: Herman Light b. Builder: Halper Construction
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:______
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-4H

P1. Other Identifier:

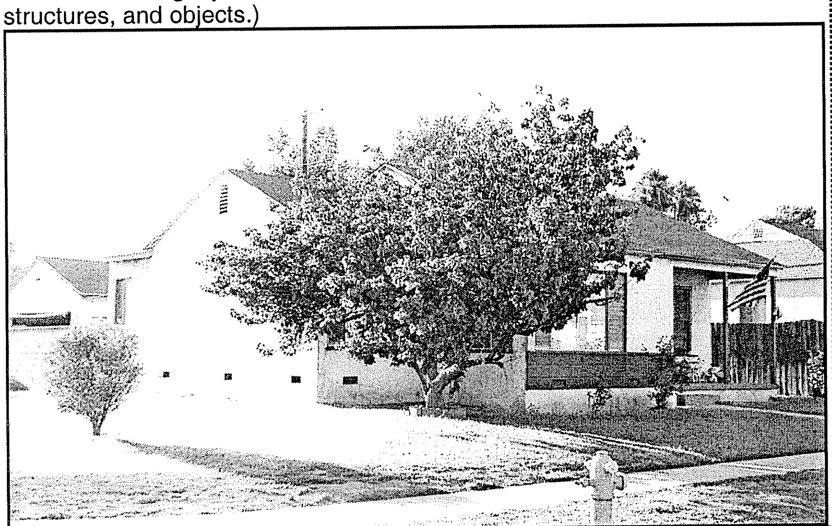
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7581 Lemoran Avenue City Pico Rivera Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398770 mE/ 3759200 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-029-016

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family house is of wood-frame construction. Built on a rectangular plan, the house has a side-gabled roof, covered with composition shingles. The façade is clad in stucco with a horizontal board veneer at the center-bottom. The house features a small recessed porch supported by two square wood posts. The fenestration on the house consists of aluminum-framed sliding windows. There is a detached garage in the rear of the house.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address:
Carlos A. & Gloria Contreras, 7581 Lemoran Avenue, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

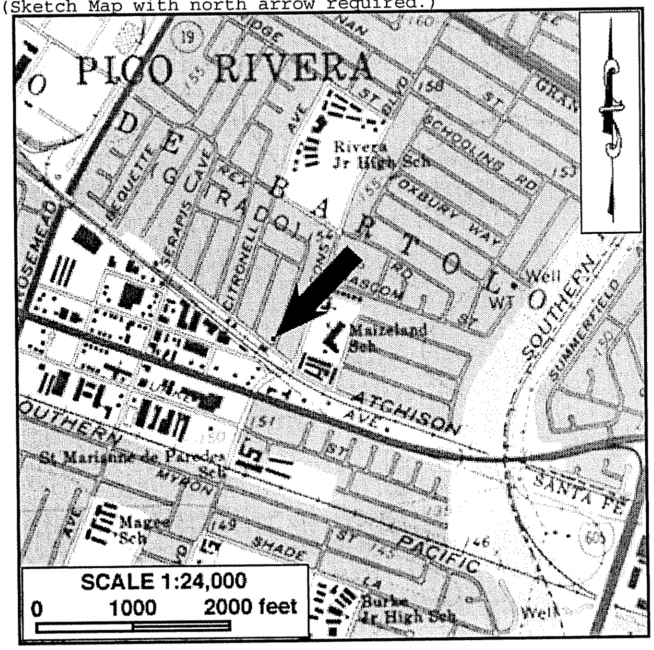
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-4H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed along with others on Tract No. 16366, which was developed in 1950 by the Claremont Company. In 1951, Robert Ammerman purchased the house from the developer. A screened patio cover was added to the house in 1980.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** None
B9a. Architect: Herman Light b. Builder: Halper Construction
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ______ Reviewer ______ Date ______

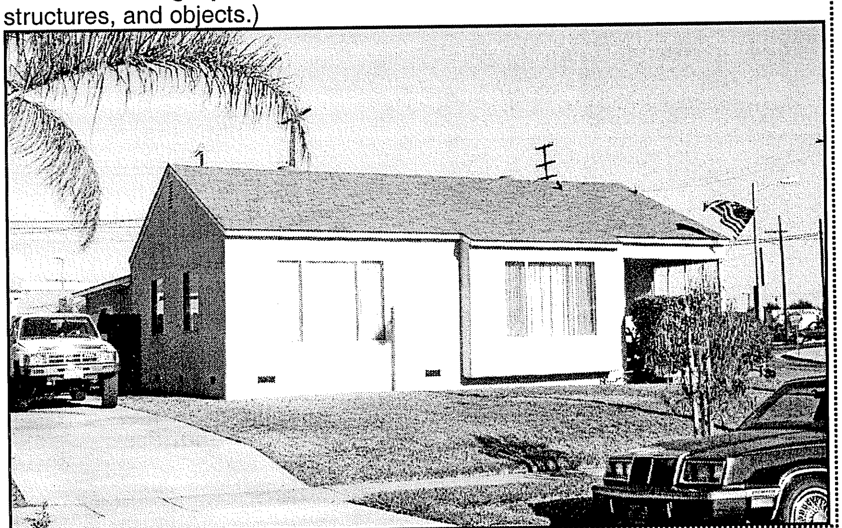
*Resource Name or # (Assigned by recorder) CRM TECH 789-5H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7584 Lemoran Avenue City Pico Rivera Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398770 mE/ 3759160 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-019

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-family residence features an L-shaped ground plan and a cross-gabled roof that is covered with composition shingles. The asymmetrical façade, clad in stucco, holds a large rectangular bay with a single aluminum-framed sliding window under a small roof extension. The recessed entry porch is located at the southwestern corner of the house, is supported by square wood posts that are arranged in a box pattern. There is a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the east

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address: Joseph J. Jr. & Ester P. Almeida, 7584 Lemoran Avenue, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y

***Resource Name or #** (Assigned by recorder) CRM TECH 789-5H

B1. Historic Name: None

B2. Common Name: None

B3. Original Use: Residential   B4. Present Use: Residential

***B5. Architectural Style:** Mininal Traditional

***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed together with others in this tract home development, which was built in 1950 by the Claremont Company. In 1951, William Barnett purchased the house from the developer. In 1975, a family room, bedroom and bathroom were added to the existing house.

***B7. Moved?** √ No ____ Yes ____ Unknown **Date:** ____ **Original Location:** ____

***B8. Related Features:** Detached garage

B9a. Architect: Herman Light   b. Builder: Halper Construction

***B10. Significance: Theme** N/A **Area** N/A

Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.

B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building

***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records

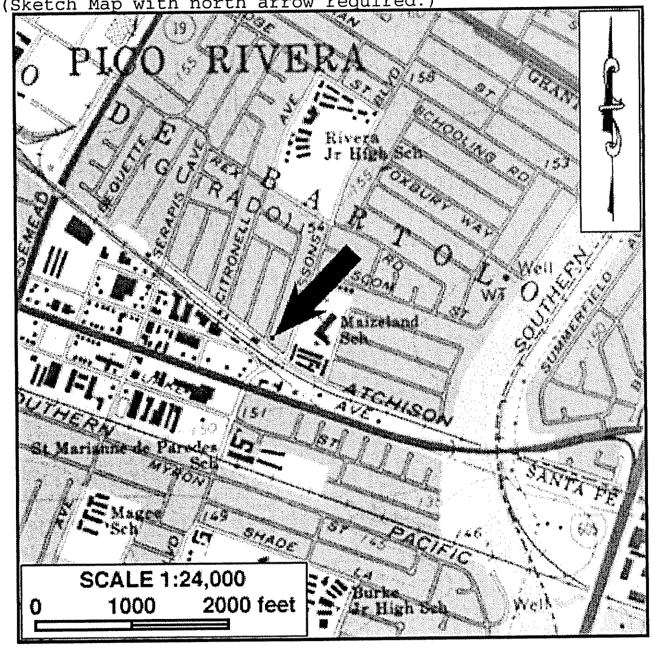
B13. Remarks:

***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard

***Date of Evaluation:** September 2002

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ______
HRI # ______
Trinomial ______
NRHP Status Code 6Y
Other Listings ______
Review Code ______ Reviewer ______ Date ______

Page 1 of 2   *Resource Name or # (Assigned by recorder) CRM TECH 789-6H

P1. Other Identifier: ______

*P2. Location: ____ Not for Publication √ Unrestricted   *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif.   Date 1965, photorevised 1981
T2S; R12W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7619 Passons Boulevard   City Pico Rivera   Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398870 mE/ 3759220 mN
UTM Derivation: √ USGS Quad ____ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-024

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and features a rectangular ground plan. The medium-pitched side-gabled roof is sheathed in composition shingles. The house is clad in stucco and the majority of the windows are wood-framed with fixed sashes, with a few aluminum-framed sliding windows visible from the side. The off-centered, recessed entry porch is supported by one square wooden post. The house has a detached garage and chain-link fencing.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources:
√ Historic ____ Prehistoric ____ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address:
Patricio & Natalia Soto, 7619 Passons Boulevard, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List): ______

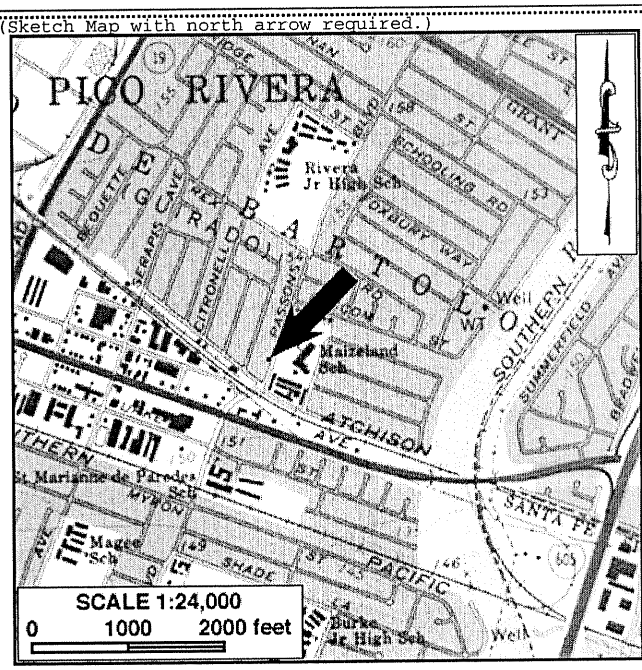
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-6H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed together with others in this tract home development, which was built in 1950 by the Claremont Company. In 1951, Geoff Weiss purchased the house from the developer.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Detached garage, chain-link fence
B9a. Architect: Herman Light b. Builder: Halper Construction
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2

*Resource Name or # (Assigned by recorder) CRM TECH 789-7H

P1. Other Identifier:

*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant

c. Address 7625 Passons Boulevard City Pico Rivera Zip 90660

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398860 mE/ 3759200 mN
UTM Derivation: √ USGS Quad ___ GPS

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-023

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-family residence has an irregular ground plan and an asymmetrical façade. The wood-frame, single-story house features a medium-pitched cross-gabled roof, covered with composition shingles. The exterior is covered in stucco with broad stucco trim around the aluminum-framed sliding windows. The off-centered, recessed porch is supported by thick, stuccoed square posts with double-diamond design on all sides, echoing another post on the southeastern corner of the house. Exterior remodeling has significantly altered the appearance of the house.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address: Victor & Trinidad Godoy, 7625 Passons Boulevard, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

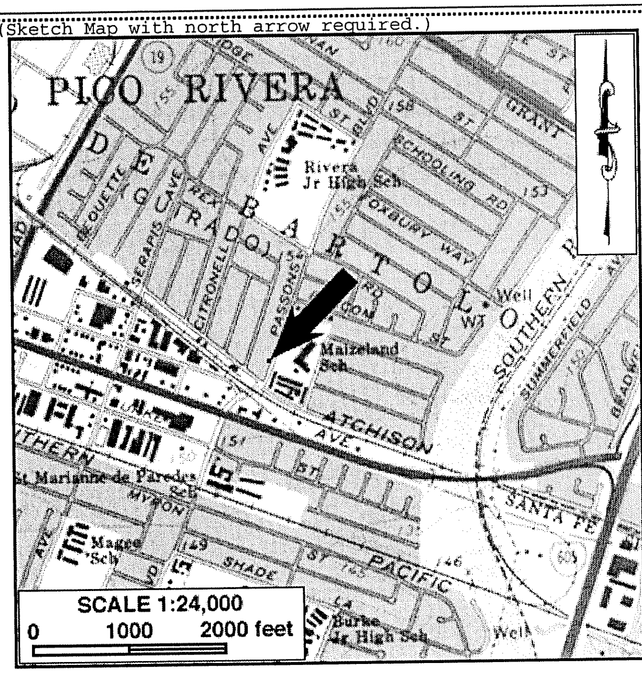
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-7H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed along with others in this tract home development, which was built in 1950 by the Claremont Company. In 1951, Joeseph Adlesich purchased the house from the developer.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage, fence
B9a. Architect: Herman Light b. Builder: Halper Construction
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ____
HRI # ____
Trinomial ____
NRHP Status Code 6Y
Other Listings ____
Review Code ____ Reviewer ____ Date ____

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-8H

P1. Other Identifier: ____

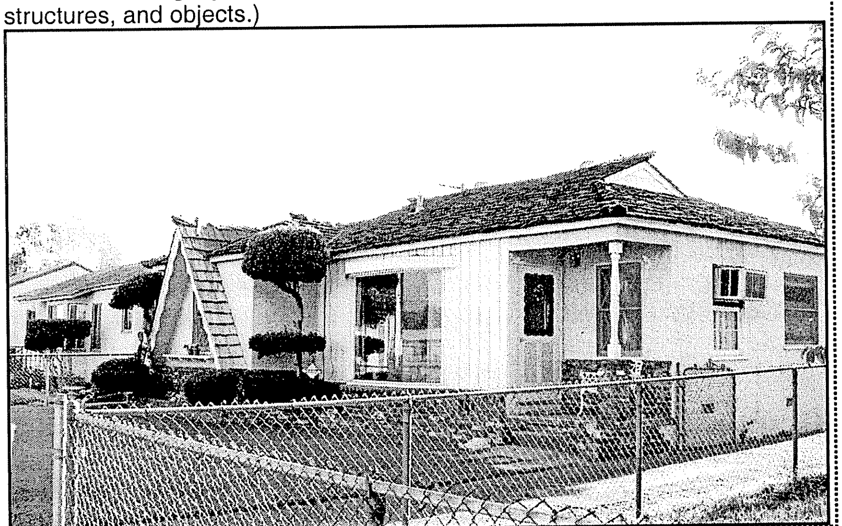
*P2. Location: ____ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ____ 1/4 of ____ 1/4 of Sec ____; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7631 Passons Boulevard City Pico Rivera Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398850 mE/ 3759180 mN
UTM Derivation: √ USGS Quad ____ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-022

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence features a medium-pitched gable-on-hip roof with a hip-roofed front-facing wing, all clad in wood shingles. This wing is characterized by a steep-pitched gable set into the hip roof, with decorative verge boards that allude to a Swiss Chalet influence. The asymmetrical façade is clad in stucco and vertical board-and-batten, with a three-foot brick veneer with stones interspersed throughout. At the center of the façade is a large bay window with a plate-glass panel. The remainder of the front fenestration consists of wood-framed, cross-paned double-hung windows. The recessed porch is located at the northeastern corner and is supported by a brick and stone pier, which echoes the veneer, and a turned wood post. There is a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southwest

*P6. Date Constructed/Age and Sources: √ Historic ____ Prehistoric ____ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address:
Gustavo E. & Patricia L. Guerra, 7631 Passons Boulevard, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List): ____

DPR 523A (1/95) *Required information

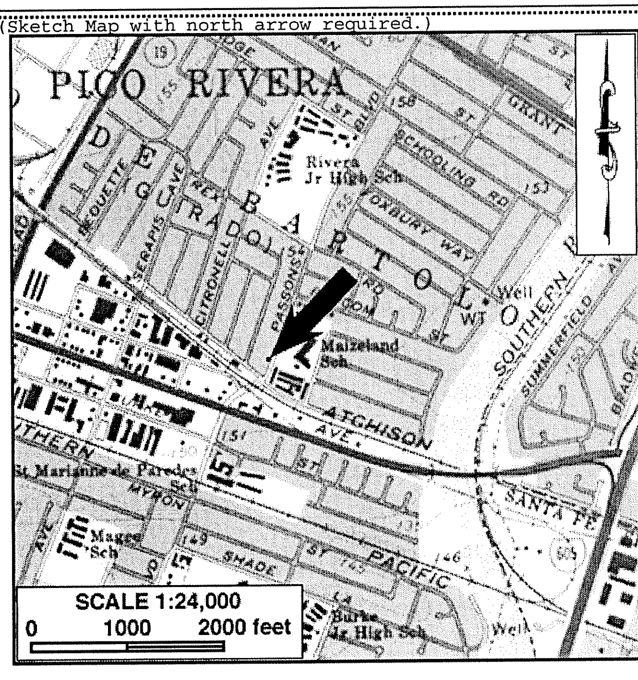
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-8H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional with Swiis Chalet Influence
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed along with others as part of a tract home development, which was built in 1950 by the Claremont Company. In 1951, Arthur and June Gieger purchased the house from the developer. The current appearance of the house is clearly the result of later alterations which were not documented in available archival sources.
*B7. **Moved?** √ No ____ Yes ____ Unknown **Date:** ____ **Original Location:** ____
*B8. **Related Features:** Detached garage, fence
B9a. Architect: Herman Light b. Builder: Halper Construction
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-9H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant
c. Address 7635 Passons Boulevard City Pico Rivera Zip 90660
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 398840 mE/ 3759160 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-021

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A one-story single-family residence of wood-frame construction, this house features a rectangular ground plan and a low-pitched hip roof covered with composition shingles. The exterior walls are clad in stucco and feature aluminum-framed sliding windows. An entry porch sits just off-center, under a small extension of the main roof, and has two wrought iron rails on either side of the concrete porch steps. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1950 (see Items B6 and B12 for details)

*P7. Owner and Address: Arthur G. Gutierrez Trust, 7635 Passons Boulevard, Pico Rivera, CA 90660

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

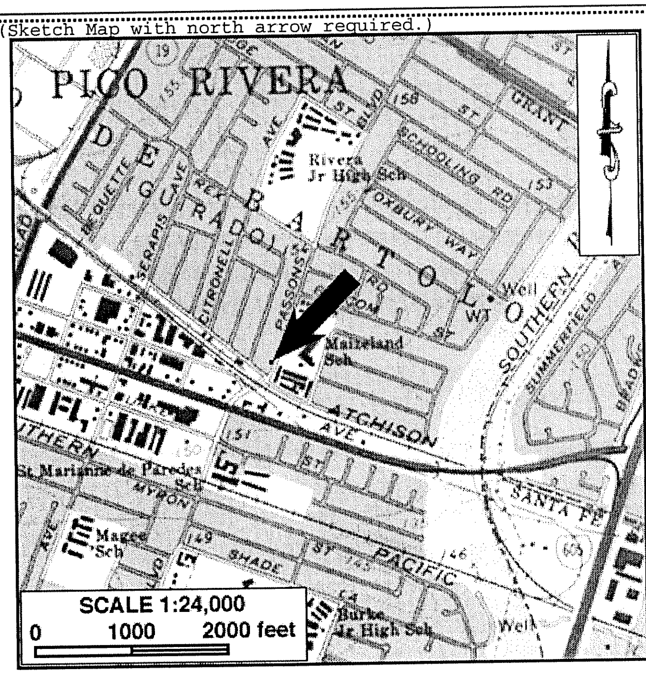
Primary #
HRI #

Page 2 of 2

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-9H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to City of Pico Rivera records, this house was constructed in 1950 as part of a tract home development by the Claremont Company. Around 1951, the house was acquired by Geoff Gray from the developer.
***B7. Moved?** √ No ____Yes ____Unknown **Date:** ______ **Original Location:** ______
***B8. Related Features:** Detached garage
B9a. Architect: Herman Light b. Builder: Halper Construction
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ______ Reviewer ______ Date ______

Page 1 of 2

*Resource Name or # (Assigned by recorder) CRM TECH 789-10H

P1. Other Identifier:

***P2. Location:** ____ Not for Publication √ Unrestricted ***a. County** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Guirado) land grant

c. Address 7641 Passons Boulevard **City** Pico Rivera **Zip** 90660

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 398820 mE/ 3759140 mN

UTM Derivation: √ USGS Quad ___ GPS

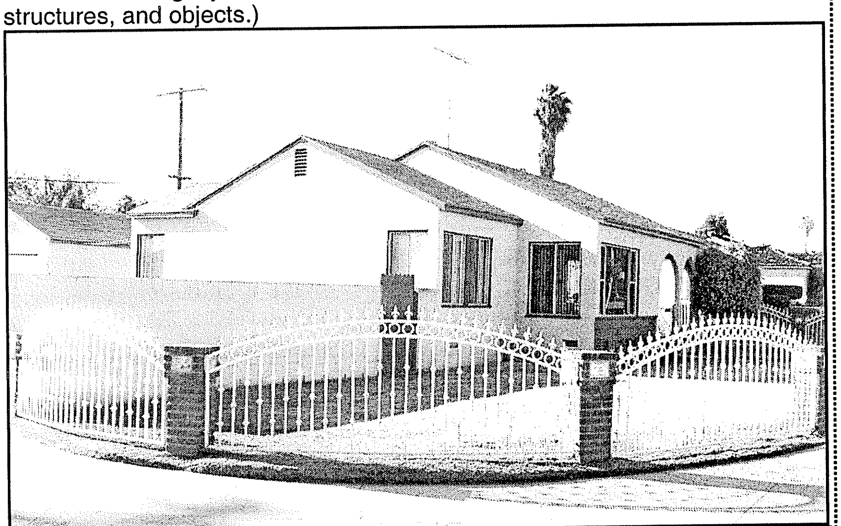
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 6381-030-020

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-family residence of wood-frame construction is situated on a corner lot. The one-story house has an L-shape ground plan and an asymmetrical façade. The medium-pitched cross-gabled roof is clad in composition shingles. The majority of the exterior walls are covered in stucco with a small area of horizontal clapboards at the bottom of the façade. Fenestration consists of aluminum-framed sliding windows. The entry porch is located at the northeastern corner, supported by two stuccoed arches facing the front and one facing the side. The house is accompanied by a detached garage and a wrought iron fence with brick pillars.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both

Construction Date: 1950 (see Items B6 and B12 for details)

***P7. Owner and Address:** Gladys Ochoa et al., 7641 Passons Boulevard, Pico Rivera, CA 90660

***P8. Recorded by:** (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

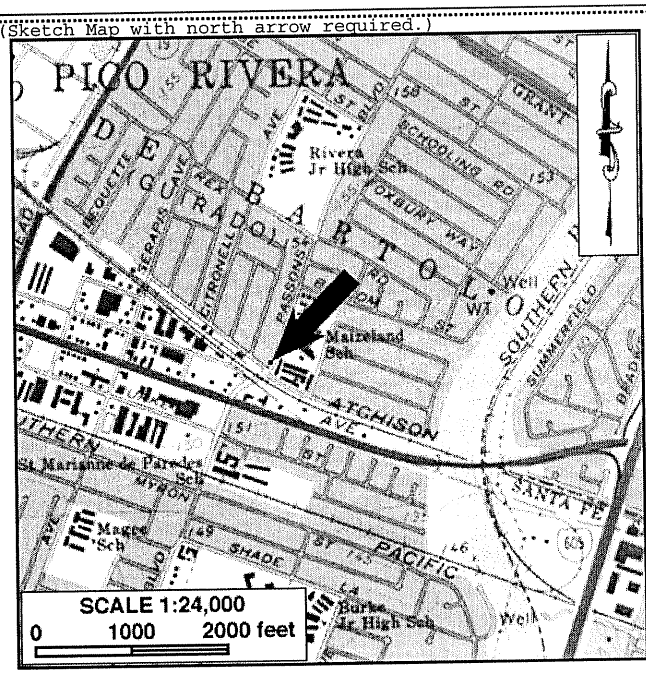
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-10H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed along with others as part of a tract home development, which was built in 1950 by the Claremont Company. In 1951, Aubrey Henry purchased the house from the developer.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Detached garage, fence
B9a. Architect: Herman Light b. Builder: Halper Construction
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Pico Rivera building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

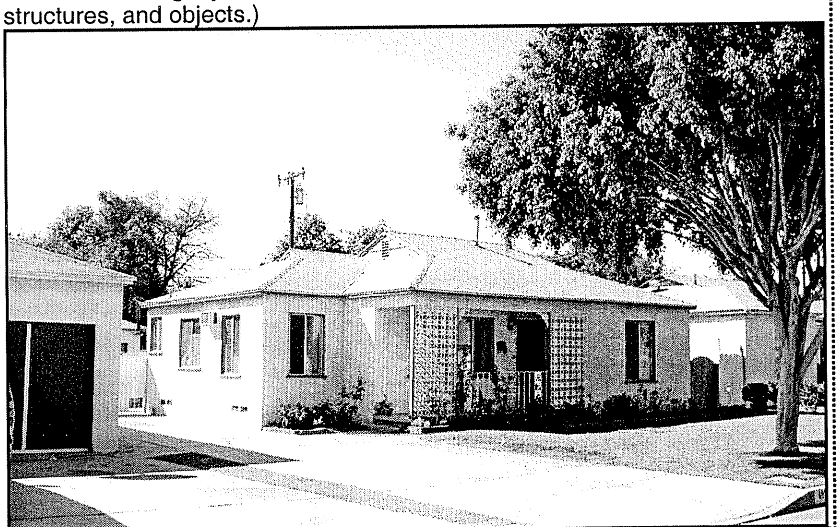
Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-11H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R11W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 8625 Danby Road City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400150 mE/ 3758650 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-019

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) Featuring an L-shape ground plan, this wood-framed single-story house has an asymmetrical façade. The medium-pitched gable-on-hip roof is covered with composition shingles. The exterior walls are clad in stucco with horizontal clapboards at the peaks of the gables. All visible windows are aluminum-framed. The recessed entry porch is centered and is supported by thin wood posts with ornamental concrete blocks. The house has a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources:
√ Historic ___ Prehistoric ___ Both
Construction Date: 1949 (see Items B6 and B12 for details)

*P7. Owner and Address:
Juan & Maria Valadez, 8625 Danby Road, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record
___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record
___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

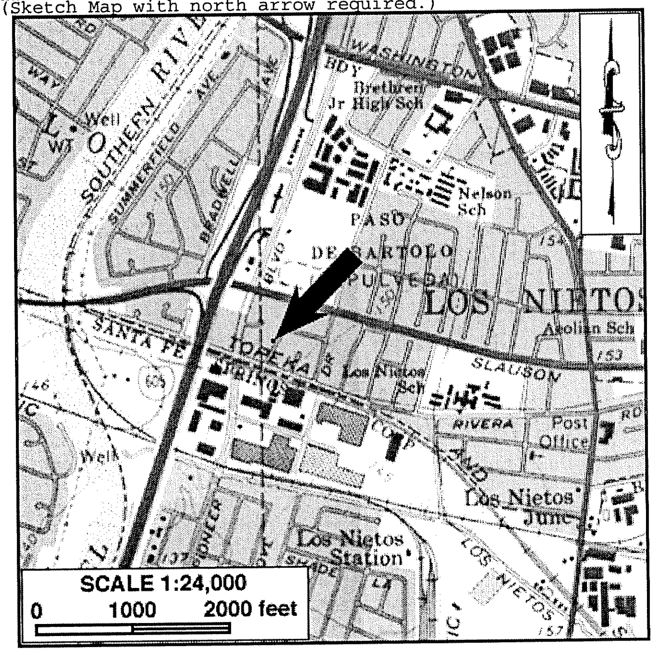
Primary #__________
HRI #__________

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-11H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently built in 1949 by Sentinel Corporation, along with others in the tract home development. It was purchased in 1950 by Ernest and Grace Schmidt from the Gibert Investment Company.
***B7. Moved?** √ No ____ Yes ____ Unknown **Date:**__________ **Original Location:**__________
***B8. Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:__________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-12H

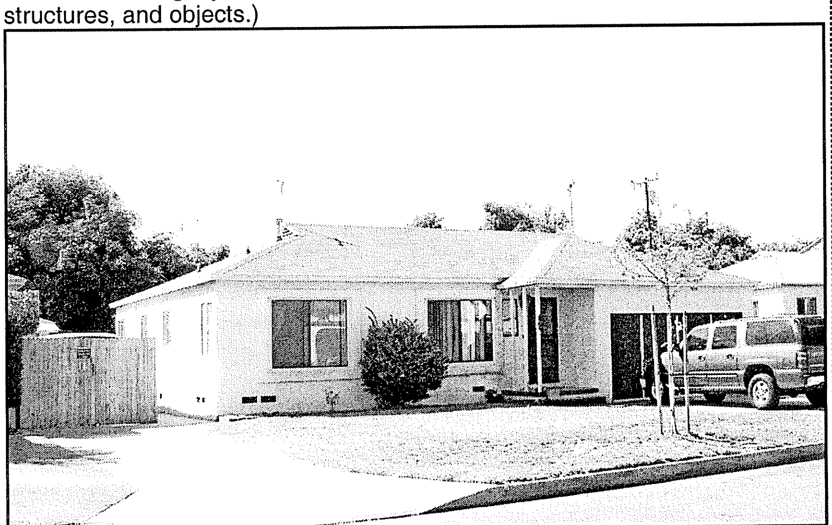
P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R11W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 8629 Danby Road City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400140 mE/ 3758630 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-020

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has a slight L-shaped ground plan. The medium-pitched gable-on-hip roof has a cross hip over the attached garage and is covered with composition shingles. The asymmetrical façade features a stuccoed exterior and aluminum-framed sliding windows with wide stucco trim. An off-centered porch is supported by three thin wood posts.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1949 (see Items B6 and B12 for details)

*P7. Owner and Address:
James T. & Peggy L. Prickett, 8629 Danby Road, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

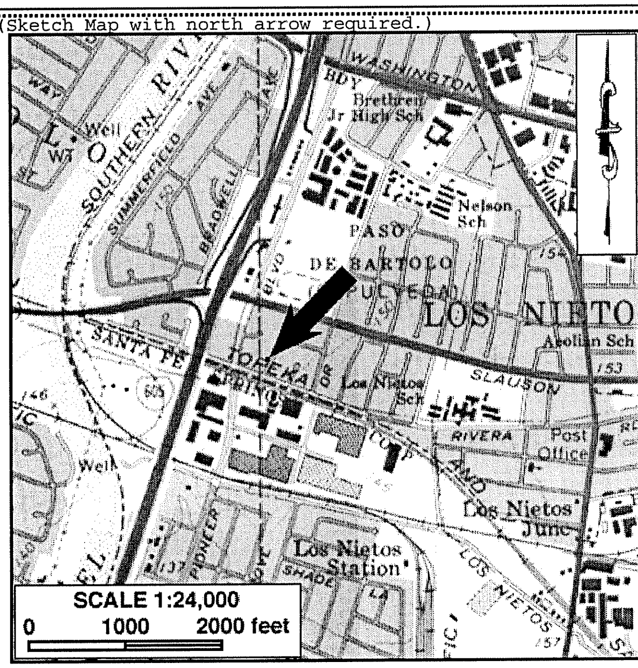
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-12H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently built in 1949 by Sentinel Corporation, along with others in the tract home development. It was purchased in 1951 by Wallace and Virginia Roberts from Gibert Investment Company.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** None
B9a. Architect: Unknown b. Builder: Unknown
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
*Date of Evaluation: September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-13H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R11W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8633 Danby Road **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400130 mE/ 3758620 mN
UTM Derivation: √ USGS Quad ___ GPS

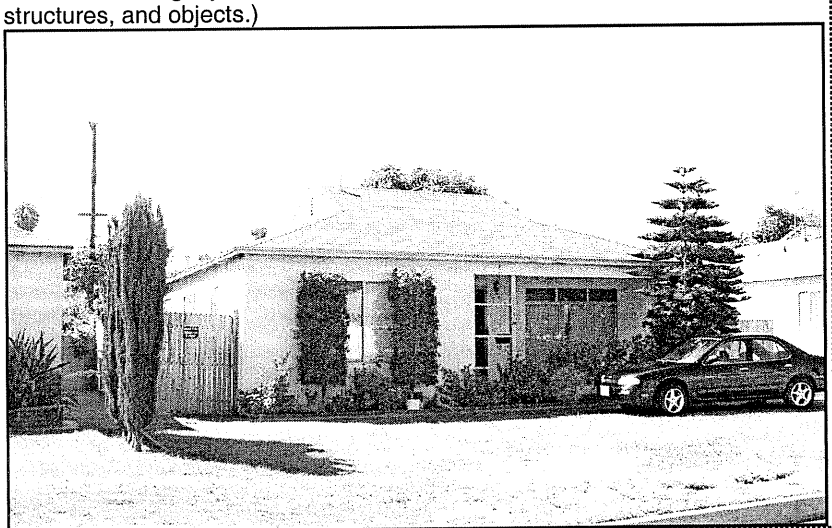
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-021

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A one-story single-family residence, this house is of wood-frame construction and features an L-shaped ground plan. The gable-on-hip roof is medium-pitched and is covered with composition shingles. The stuccoed exterior features aluminum-framed sliding windows and a recessed, off-center porch, which is supported by a square wood post. The house has a detached garage.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1949 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Saul & Teresa C. Gonzalez, 8633 Danby Road, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

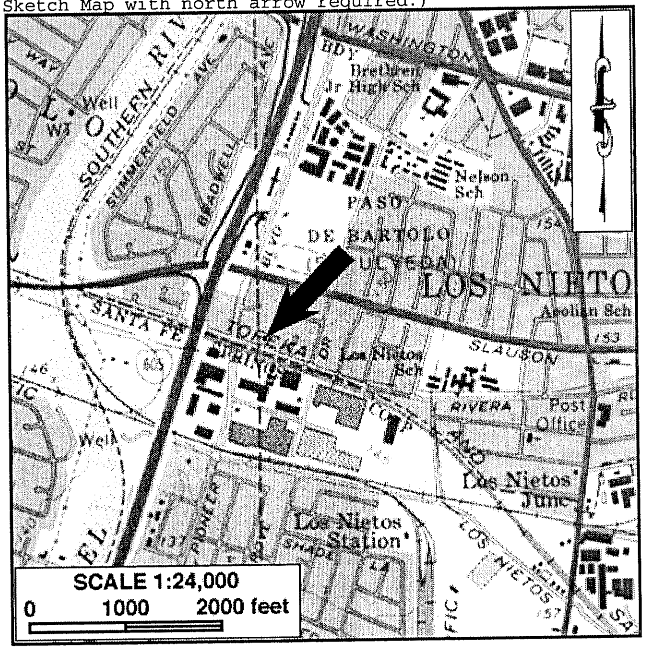
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-13H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently built in 1949 by Sentinel Corporation, along with others in the tract home development. It was purchased in 1951 by Ernest and Monico Martinez from Gibert Investment Company.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Unknown
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ___ Reviewer ___ Date ___

Page 1 of 2 ***Resource Name or #** (Assigned by recorder) CRM TECH 789-14H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8516 Pioneer Boulevard **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400080 **mE/** 3758800 **mN**
UTM Derivation: √ USGS Quad ___ GPS

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-003

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This wood-framed single-family residence is elevated from street level. The one-story house has a rectangular ground plan and an asymmetrical façade. The low-pitched hip roof is covered wih composition shingles. Brick and stone veneer comprises most of the exterior wall cladding, with a small addition near the southerly end covered with stucco. This addition now houses the main entrance with a small, recessed portico. Aluminum-framed sliding windows are most prevalent, with one large wood-framed, fixed window in a shallow bay. A concrete block retaining wall topped with an ornamental wrought iron fence encloses the front yard.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the east

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1953 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Raul V. Medina Trust, 8516 Pioneer Boulevard, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

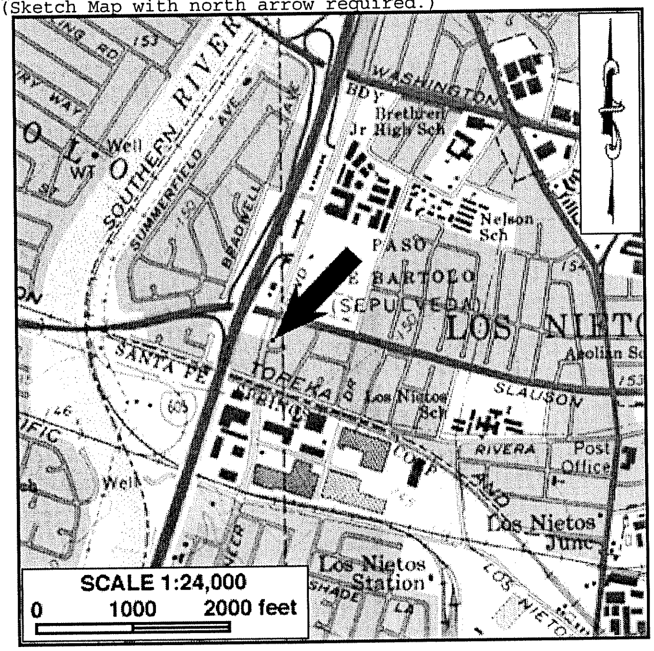
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-14H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional (altered)
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Lawrence Stahlecker acquired the house in the same year from Pasadena Savings and Loan Association. Later alterations to the house include a 230-square-foot room addition in 1958, enclosure of a patio in 1963, a 175-square-foot room addition in 1975, and the addition of two bedrooms, two bathrooms, a study and a den in 1986.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Wall
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #_____
HRI #_____
Trinomial_____
NRHP Status Code 6Y
Other Listings_____
Review Code_____ Reviewer_____ Date_____

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-15H

P1. Other Identifier:

***P2. Location:** ____ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8523 Pioneer Boulevard **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400070 mE/ 400780 mN

UTM Derivation: √ USGS Quad ____ GPS

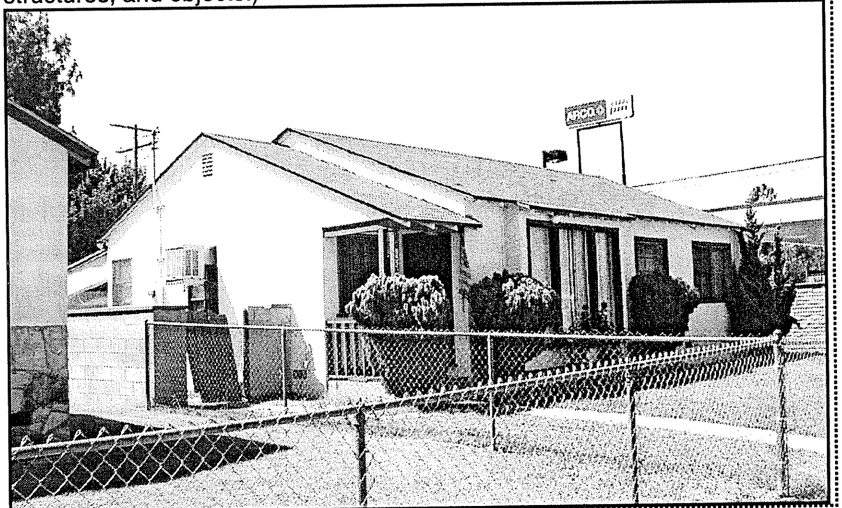
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-032

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A single-family residence of wood-frame construction, this one-story house features a rectangular ground plan and an asymmetrical façade. The medium-pitched, overlapping side-gable roof is covered with composition shingles. The exterior walls are clad in stucco, with scalloped wood trim around the wood-framed double-hung windows in the façade. Other windows are wood-framed with fixed sashes. The small entry porch is located at the southeastern corner of the house and is supported by two square wood posts, with a simple wood railing on one side of the porch.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ____ Prehistoric ____ Both
Construction Date: 1953 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Socorro Herrer Trust, 8523 Pioneer Boulevard, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

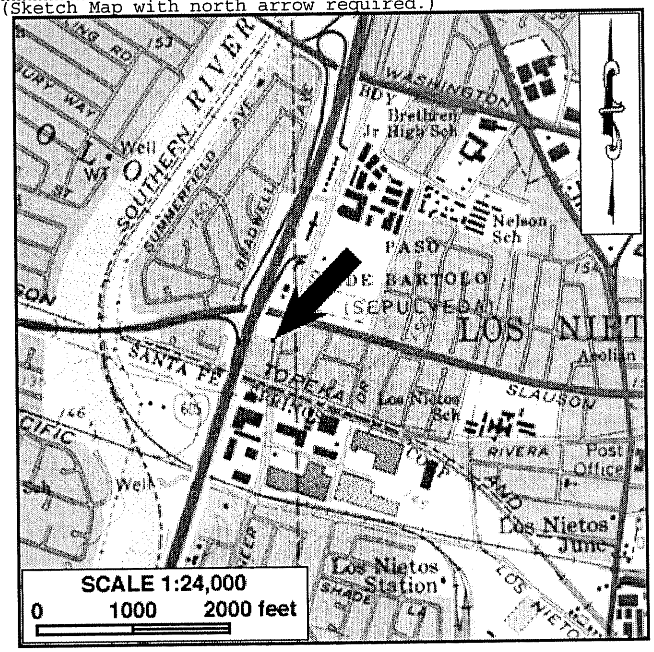
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-15H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed n 1953 along with the others in this tract home development. Carl and Charlotte Merscheim purchased the house from Pasadena Savings and Loan Association in 1953.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Fence
B9a. Architect: Unknown   b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-16H

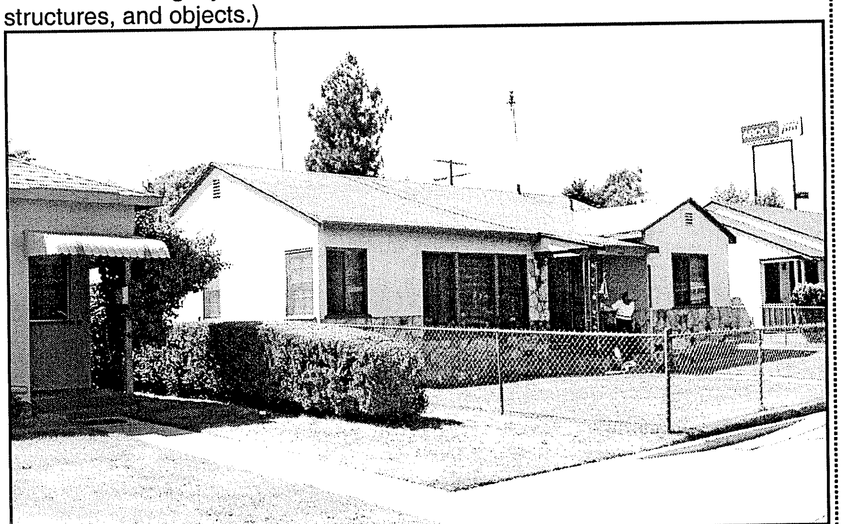
P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 8529 Pioneer Boulevard City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400060 mE/ 3758760 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-033

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and features an L-shape ground plan. The medium-pitched cross-gabled roof is sheathed in composition shingles. The asymmetrical façade is clad in stucco and stone veneer. The majority of the windows are aluminum-framed sliding windows, although a few wood-framed windows with fixed or double-hung sashes still remain. A small, off-centered entry porch is situated under an extension of the main roof and has decorative wrought iron supports. A chain-link fence encloses the front yard.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the north

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address:
Carl W. & Jane B. Like, 8529 Pioneer Boulevard, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y

*Resource Name or # (Assigned by recorder) CRM TECH 789-16H

B1. Historic Name: None

B2. Common Name: None

B3. Original Use: Residential   B4. Present Use: Residential

*B5. **Architectural Style:** Mininal Traditional

*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed in 1953 by Development Engineers along with the others in this tract home development. Carl and Jane Like purchased the house from Pasadena Savings and Loan Association in 1953 and they remain the current owners.

*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___

*B8. **Related Features:** Fence

B9a. Architect: Unknown   b. Builder: Development Engineers

*B10. **Significance: Theme** N/A **Area** N/A

Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.

B11. Additional Resource Attributes: (List attributes and codes) HP46: Walls/gates/fences

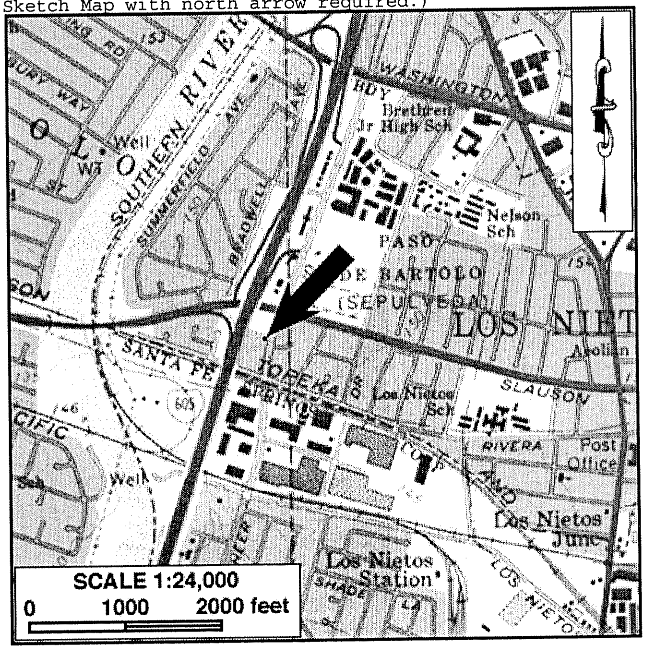
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records

B13. Remarks:

*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard

***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder) CRM TECH 789-17H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8533 Pioneer Boulevard **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400050 mE/ 3758740 mN

UTM Derivation: √ USGS Quad ___ GPS

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-034

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This wood-framed single-family residence is one-story and has a rectangular ground plan. The house is surmounted by a medium-pitched hip roof covered with composition shingles. The asymmetrical façade features a stucco exterior and awnings over the front windows, which are wood-framed double-hungs. One large window is housed in a shallow rectangular bay. The off-centered, recessed entry porch is supported by one square wood post and is extended by a similar awning. There is a small shed in the rear.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1953 (see Items B6 and B12 for details)

***P7. Owner and Address:** Joe O. and Hortense Toledo, 8533 Pioneer Boulevard, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

*Required information

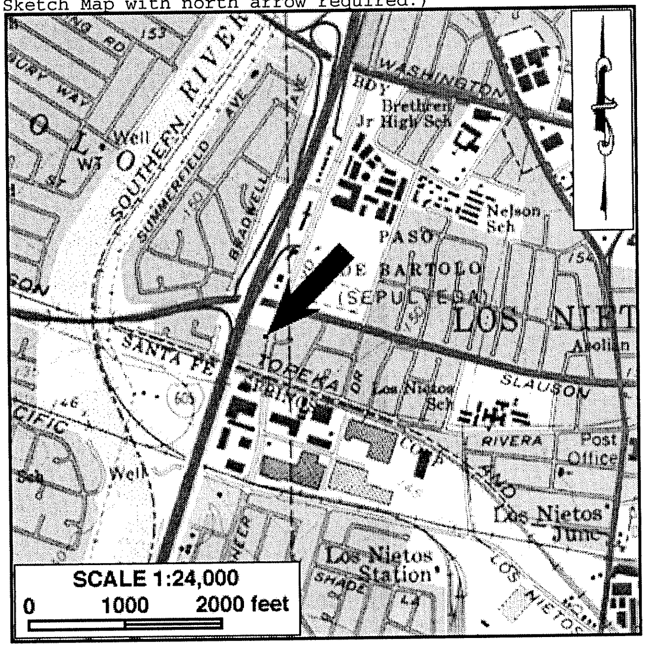
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-17H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Warren Munyon acquired the house in the same year from Pasadena Savings and Loan Association.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Shed
B9a. Architect: Unknown   b. Builder: Development Engineers
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-18H

P1. Other Identifier:

*P2. Location: ___Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8603 Pioneer Boulevard City Los Nietos Zip 90606

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400050 mE/ 3758720 mN
UTM Derivation: √ USGS Quad ___GPS

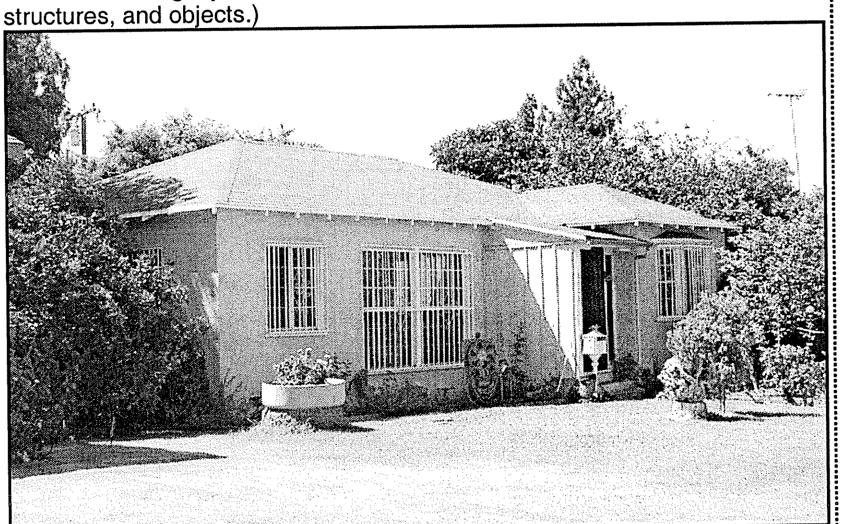
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-035

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A one-story house of wood-frame construction, this single-family residence features a slight L-shape ground plan. The cross-hip roof is sheathed in composition shingles. There is a small extension of the main roof over the now enclosed entry porch. The asymmetrical front façade sports one large central window as well as a bay window, both of which are equipped with security bars.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___Structure ___Object ___Site ___District ___Element of District ___Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources:
√ Historic ___Prehistoric ___Both
Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address:
Lucia Burgara et al., 8603 Pioneer Boulevard, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___None ___Location Map ___Continuation Sheet √ Building, Structure, and Object Record ___Archaeological Record ___District Record ___Linear Resource Record ___Milling Station Record ___Rock Art Record ___Artifact Record ___Photograph Record ___Other (List):

DPR 523A (1/95) *Required information

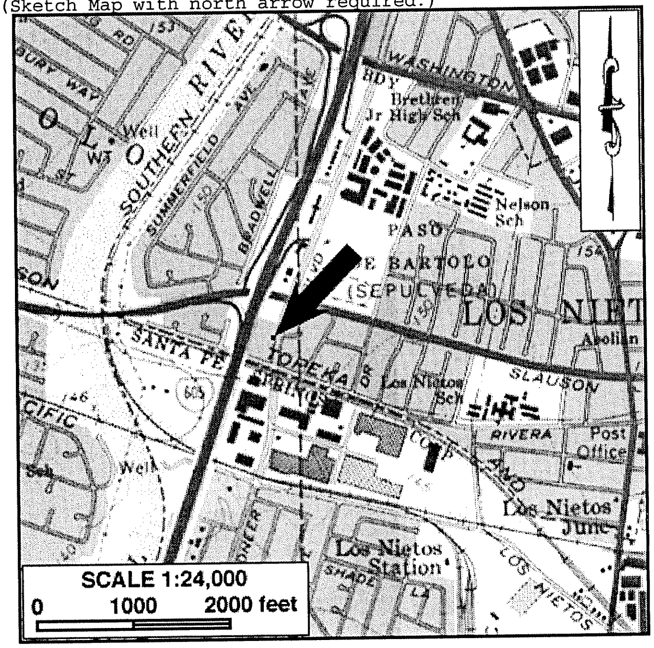
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #__________
HRI #__________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-18H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Jay Petrell acquired the house in the same year from Pasadena Savings and Loan Association.
***B7. Moved?** √ No ____Yes ____Unknown **Date:**________ **Original Location:**________
***B8. Related Features:** None
B9a. Architect: Unknown   b. Builder: Development Engineers
***B10. Significance: Theme** N/A   **Area** N/A
Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)________
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 ***Resource Name or #** (Assigned by recorder) CRM TECH 789-19H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8609 Pioneer Boulevard **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400040 mE/ 3758710 mN

UTM Derivation: √ USGS Quad ___ GPS

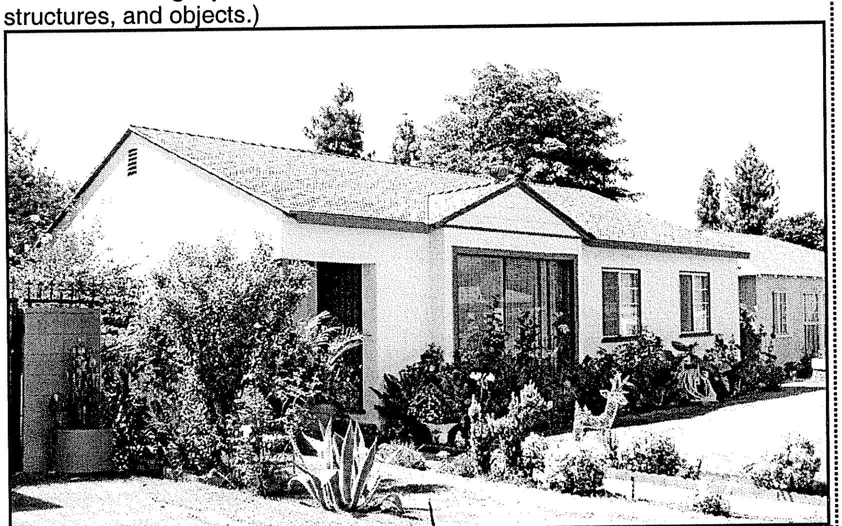
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-036

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has a rectangular ground plan. The house is surmounted by a side-gabled roof with an intersecting gable over a rectangular bay window. The roof is covered with composition shingles. The asymmetrical façade features two vinyl-framed sliding windows and one large wood-framed fixed window that is situated in the shallow bay. The off-centered, recessed porch is supported by one square wood post.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both

Construction Date: 1953 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Luis & Evangelina Rangel, 8609 Pioneer Boulevard, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) ***Required information**

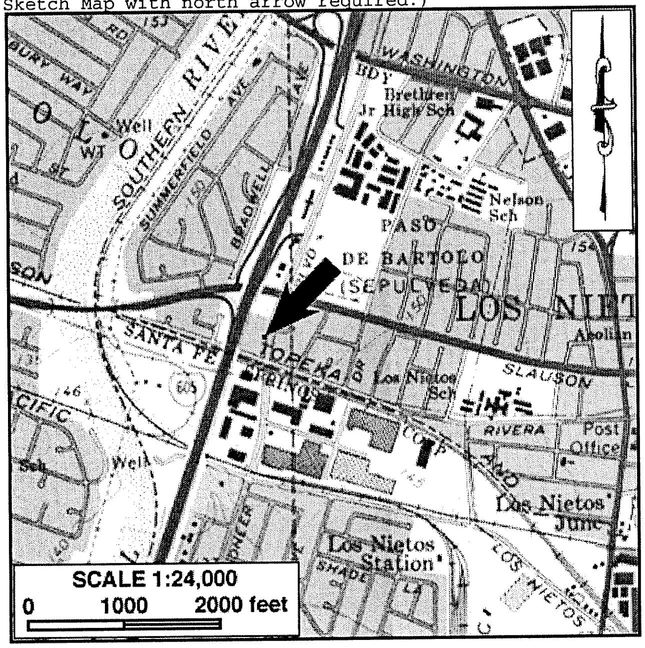
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-19H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Jose Hautekamer acquired the house in the same year from Pasadena Savings and Loan Association.
*B7. **Moved?** √ No ____Yes ____Unknown **Date:** **Original Location:**
*B8. **Related Features:** None
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-20H

P1. Other Identifier:

*P2. Location: ____Not for Publication √ Unrestricted *a. County Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 8615 Pioneer Boulevard City Los Nietos Zip 90606

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400030 mE/ 3758690 mN

UTM Derivation: √ USGS Quad ____GPS

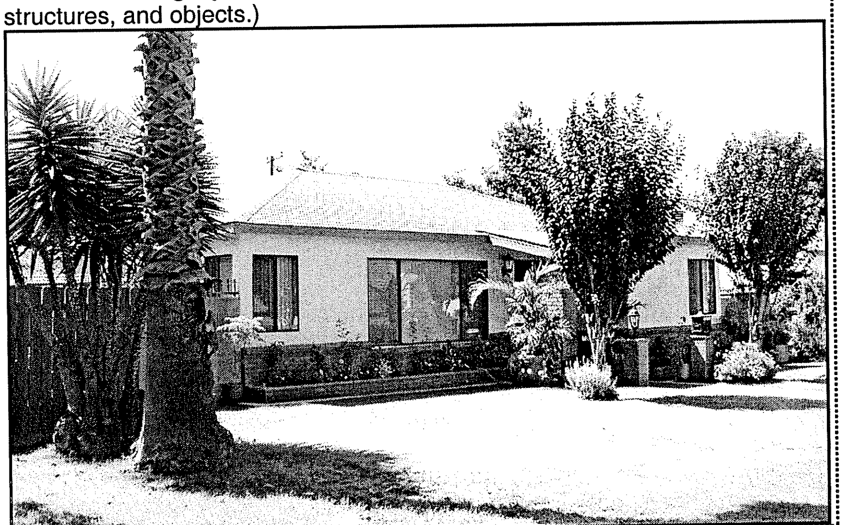
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-037

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A wood-framed single-family residence, this one-story house has a rectangular ground plan and an asymmetrical façade. The low-pitched cross-hip roof is clad in composition shingles. Stucco comprises most of the exterior wall cladding, with the lower portion of the façade sporting a two-foot brick veneer. Aluminum-framed, sliding windows are present throughout the façade. The centered porch is located under a small roof extension and is supported by a single brick pillar. The house features extensive decorative brick work.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources: √ Historic ____Prehistoric ____Both

Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address: Salvador L. & Maria E. Jimenez, 8615 Pioneer Boulevard, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

DPR 523A (1/95)

*Required information

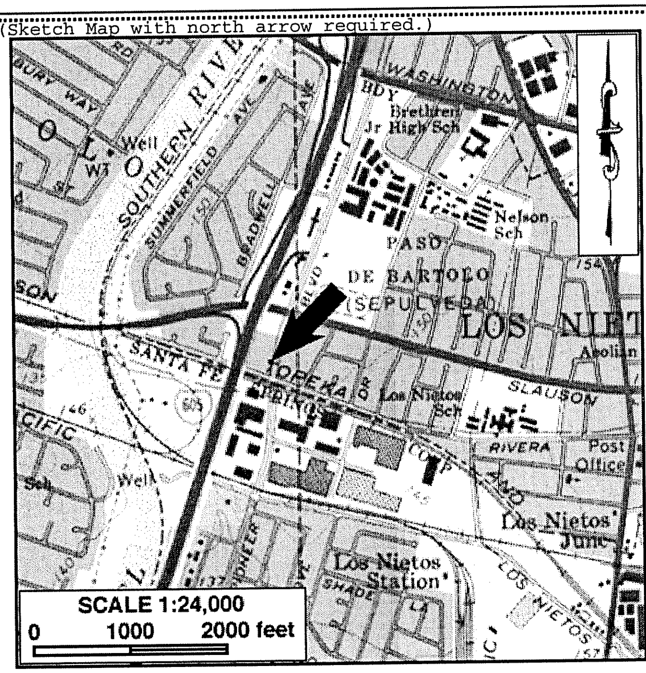
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #________
HRI #________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-20H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Chauncy Reveal acquired the house in the same year from Pasadena Savings and Loan Association.
*B7. **Moved?** √ No ____ Yes ____ Unknown **Date:**________ **Original Location:**________
*B8. **Related Features:** None
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)________
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:________
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ___ Reviewer ___ Date ___

Page 1 of 2

*Resource Name or # (Assigned by recorder) CRM TECH 789-21H

P1. Other Identifier:

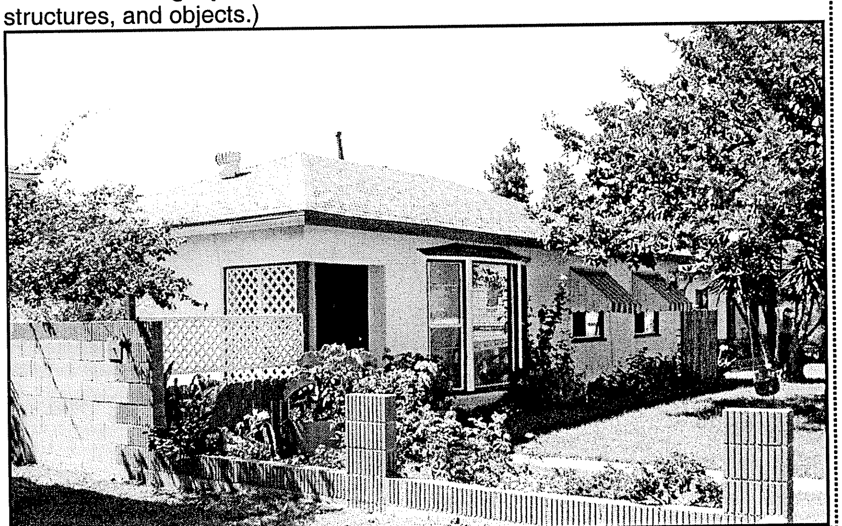
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 8619 Pioneer Boulevard City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400020 mE/ 3758670 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-038

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has a rectangular ground plan. The medium-pitched hip roof is sheathed in composition shingles. The asymmetrical façade features a large central polygonal bay window and two smaller windows under awnings. All windows consist of aluminum-framed sliding sashes with the exception of the bay window, which is wood-framed with fixed and double-hung sashes. The recessed porch is located at the southeastern corner of the house and is supported by a single square wood post with decorative wood lattice at the side.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address: Miguel & Juana Nuno, 8619 Pioneer Boulevard, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

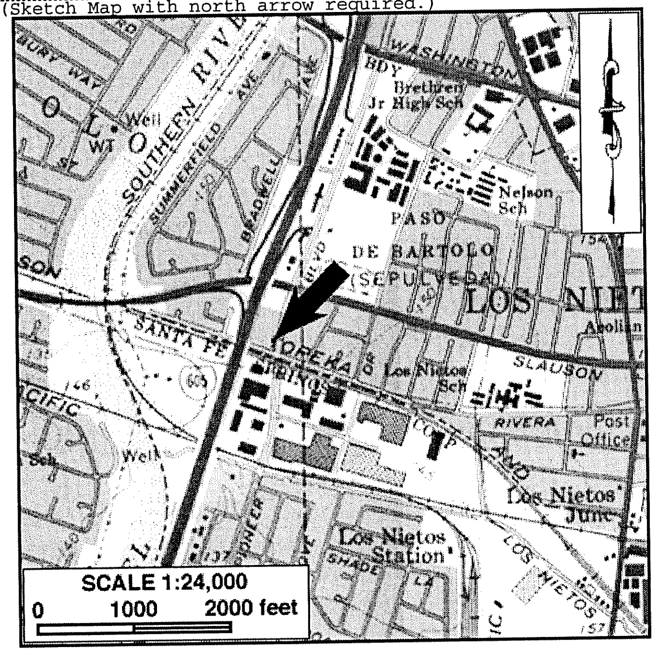
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #__________
HRI #__________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-21H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Lewis Cimins acquired the house in the same year from Pasadena Savings and Loan Association. Later alterations to the dwelling include a family room addition in 1971 and the replacement of 15 windows in 2000.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:**______ **Original Location:**______
***B8. Related Features:** None
B9a. Architect: Unknown   b. Builder: Development Engineers
***B10. Significance: Theme** N/A   **Area** N/A
Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)______
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:______
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-22H

P1. Other Identifier:

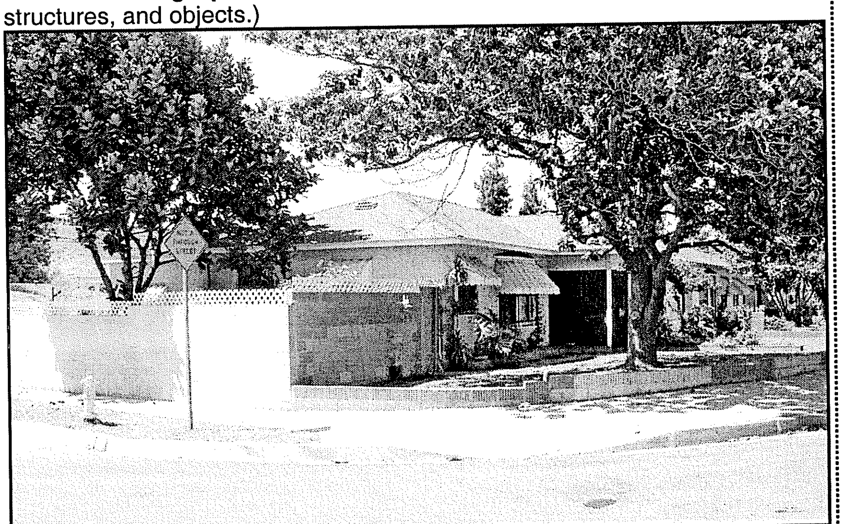
*P2. Location: ____ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 8625 Pioneer Boulevard City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400020 mE/ 3758650 mN
UTM Derivation: √ USGS Quad ____ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-039

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This wood-framed single-family residence is one-story and has an L-shape ground plan. The medium-pitched cross-gabled roof is covered with composition shingles. The asymmetrical façade features a shallow polygonal bay window and a smaller wood-framed double-hung window, both topped with awnings. The recessed porch has a security screen at the entrance. The house has a concrete block wall that separates the front yard from the back.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources:
√ Historic ____ Prehistoric ____ Both
Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address:
Bob & Gloria Salazar, 8625 Pioneer Boulevard, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

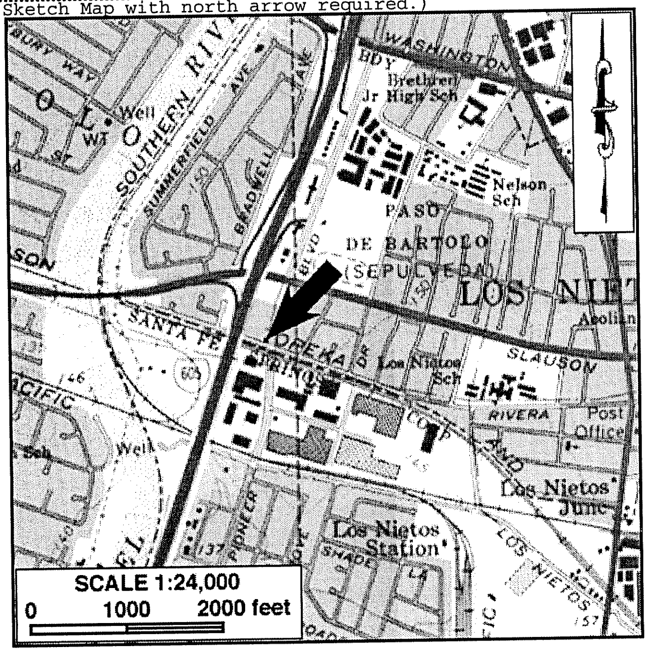
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-22H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Carl Dashney acquired the house in the same year from Pasadena Savings and Loan Association. Later alterations include a 136-square-foot room addition in 1965, a 114-square-foot room addition in 1967, and a 220-square-foot room addition to the back of the house in 1997.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Wall
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-23H

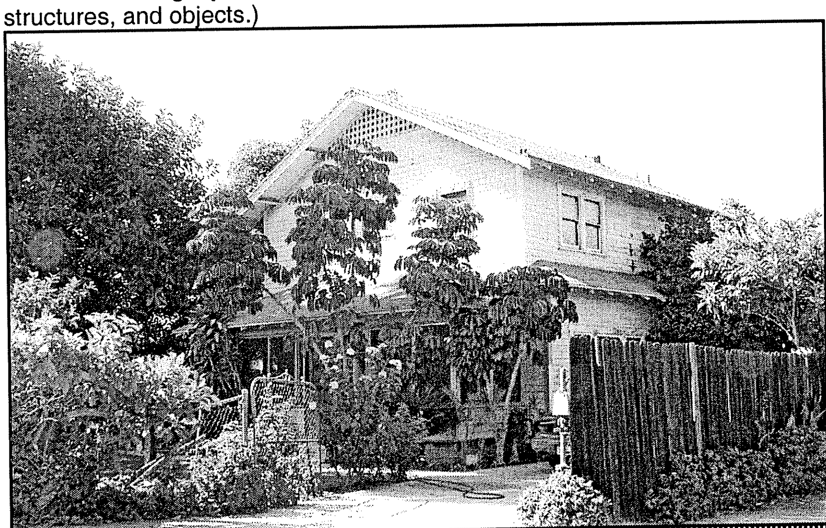
P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 11005 Rivera Road City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400060 mE/ 3758640 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-025

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This two-story house features a rectangular ground plan and a symmetrical façade. The medium-pitched front-gabled roof is characterized by its wide eaves, exposed rafters, and lattice vents at the peaks of the gables. The roof is covered with composition shingles and the exterior walls are clad in horizontal clapboards. The house appears to retain the original wood-framed double-hung windows, surrounded by broad, flat trim. The open veranda in the façade has been screened in, and is surmounted by a partial hip roof, also covered in composition shingles. On either side of the house, there are shallow pent roofs between the first and second stories. The property is enclosed by a chain-link fence that is covered with vines. There is a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources:
√ Historic ___ Prehistoric ___ Both
Construction Date: Ca. 1914 (see Items B6 and B12 for details)

*P7. Owner and Address:
Theresa J. & Crescencio V. Marquez, 11005 Rivera Road, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

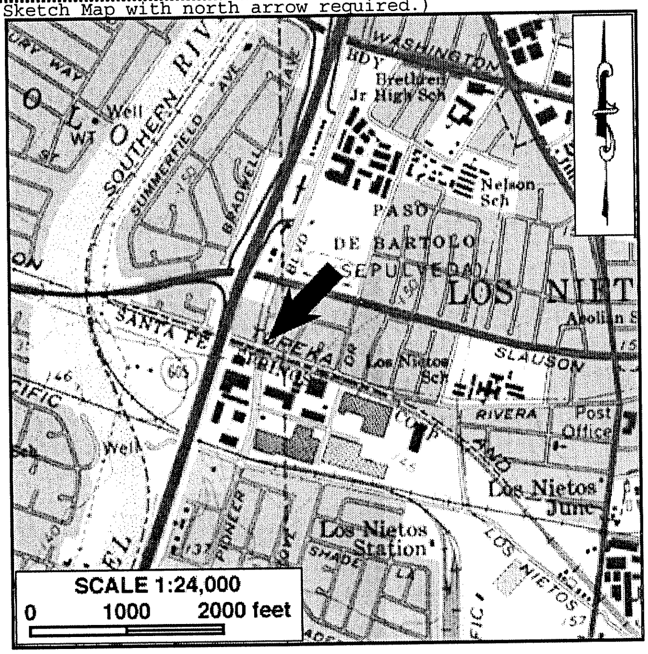
Primary # ______
HRI # ______

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-23H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Vernacular
***B6. Construction History:** (Construction date, alterations, and date of alterations) Los Angeles County Assessor's records indicate that this house was constructed around 1914 as the residence of Caleb J. Gish, who was listed in the local directory as a walnut farmer in 1920. Around 1935, Caleb Gish's wife Dora became the property owner, having probably inherited it after her husband's death. Within the next few years, ownership of the house was transferred to Ralph E. Gish, evidently a son of Caleb and Dora Gish based on his presence in the household in 1924. During the 1920s, Ralph Gish worked as a box-maker in nearby Whittier. In the early 1950s, the property was listed under the names of both Dora and Ralph Gish, who sold much of the former family ranch to be developed into tract homes in the post-WWII period, but retained this house at least into the 1960s. In 1998, at the request of the County of Los Angeles, windows in the enclosed front porch were removed and replaced with screens. There are no records, however, pertaining to the enclosure of the porch or any other alterations in County archives.

***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ______ **Original Location:** ______
***B8. Related Features:** Detached garage, fence
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records; Whittier city directories (1920, 1924)
B13. Remarks: ______
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-24H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 11021 Rivera Road **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400110 **mE/** 3758600 **mN**

UTM Derivation: √ USGS Quad ___ GPS

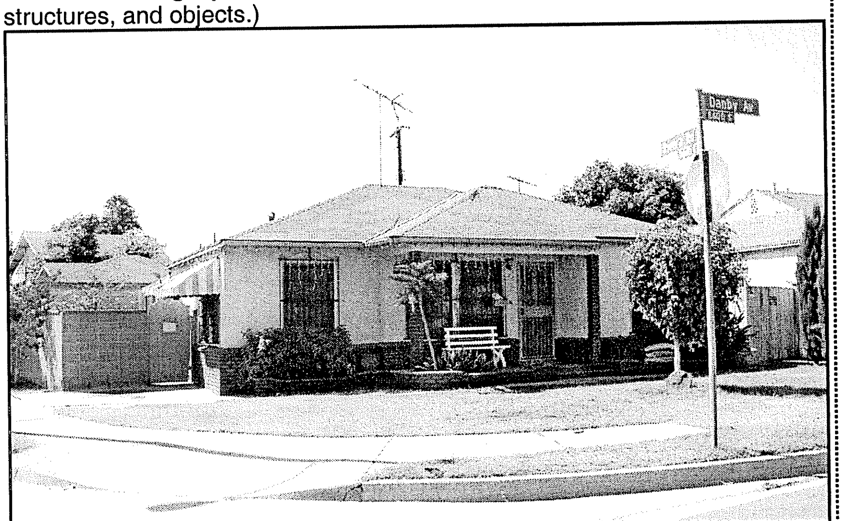
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-022

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction. The house has an L-shape ground plan and a medium-pitched cross-hip roof, clad in composition shingles. The asymmetrical façade is focused at a centered, recessed porch supported by two thin brick pillars. The exterior wall surface is covered in stucco, with a brick veneer over the lower portion of the front, from the base of the windows to the ground. The house also has brick planters under the windows and a detached garage to the side.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both

Construction Date: 1949 (see Items B6 and B12 for details)

***P7. Owner and Address:** Roy & Angie Levario Trust, 11021 Rivera Road, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

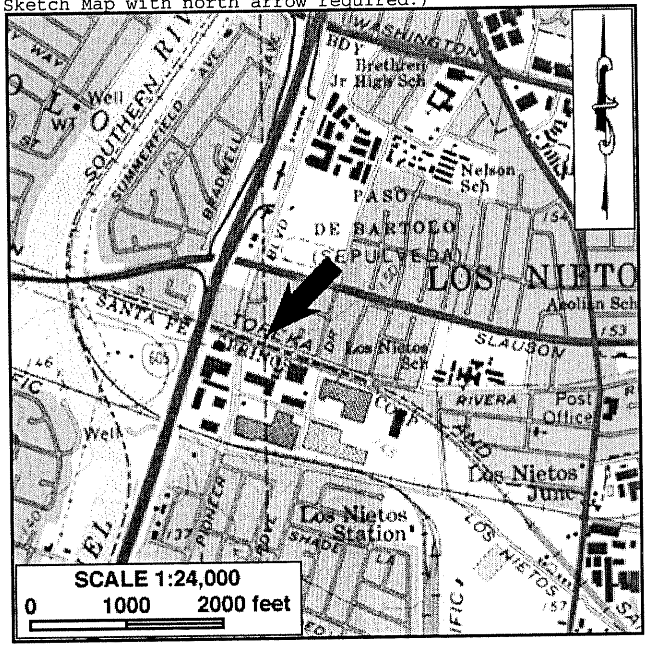
Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-24H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently built in 1949 by Sentinel Corporation as part of a tract home development. It was purchased in 1951 by Rafael and Adeline Huante from Gibert Investment Company.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage
B9a. Architect: Unknown   b. Builder: Unknown
*B10. **Significance: Theme** N/A   **Area** N/A
Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-25H

P1. Other Identifier:

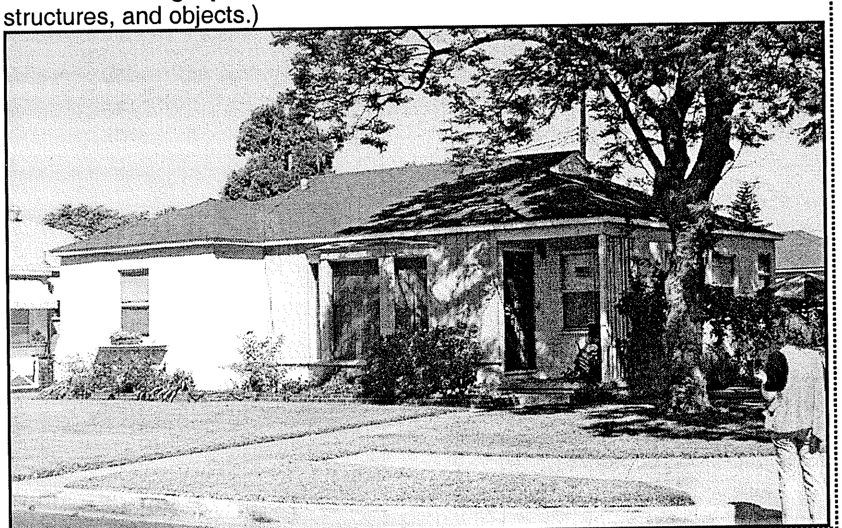
***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. **B.M.** Within the Paso de Bartolo (Sepulveda) land grant
c. Address 11117 Rivera Road **City** Los Nietos **Zip** 90606
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400140 **mE/** 3758590 **mN**
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-025-008

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A one-story house, this wood-framed single-family residence has an L-shape ground plan. The medium-pitched gable-on-hip roof has a cross hip over the front extension of the L and is covered in composition shingles. The asymmetrical façade sports a large polygonal bay window with wood-framed fixed sashes. The remaining fenestration consists of aluminum-framed sliding windows. Exterior wall cladding materials are stucco and vertical boards, which occurs immediately around the bay window. The off-centered, recessed entry porch is supported by a single square wood post and has decorative wood slats. There is a detached garage.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the east

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1949 (see Items B6 and B12 for details)

***P7. Owner and Address:** Jose B. Jr. & Dolores Ruiz, 11117 Rivera Road, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

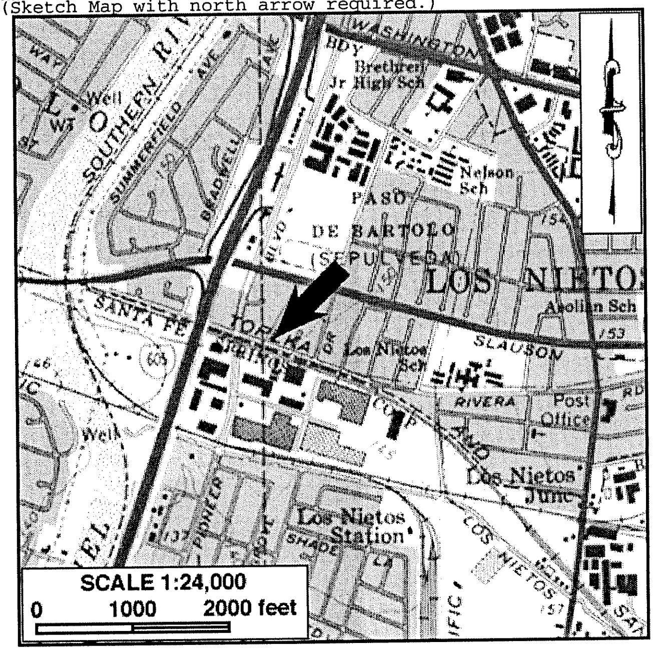
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-25H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently built in 1949 by Sentinel Corporation as part of a tract home development. It was purchased in 1951 by Edward Landa from Gibert Investment Company.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage
B9a. Architect: Unknown   b. Builder: Unknown
*B10. **Significance:** **Theme** N/A   **Area** N/A
Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
*Date of Evaluation: September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #______
HRI #______
Trinomial______
NRHP Status Code 6Y
Other Listings______
Review Code______ Reviewer______ Date______

***Resource Name or #** (Assigned by recorder) CRM TECH 789-26H

P1. Other Identifier:

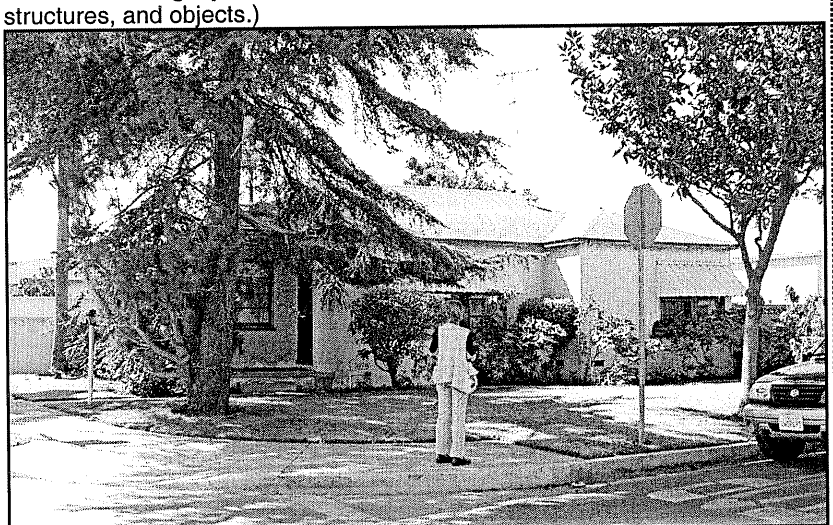
***P2. Location:** ____ **Not for Publication** √ **Unrestricted** ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R11W; ___ 1/4 of ___ 1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 11131 Rivera Road **City** Los Nietos **Zip** 90606
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400150 **mE**/ 3758580 **mN**
UTM Derivation: √ USGS Quad ____ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-025-033

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story, wood-framed single-family residence has an L-shape ground plan. The medium-pitched gable-on-hip roof has a cross hip over the front extension of the L and is covered in composition shingles. The house is clad in stucco and has wood-framed double-hung windows throughout. The recessed porch is located at the southeastern corner of the house and is supported by a single square wood post. The house has a detached garage.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

***P6. Date Constructed/Age and Sources:** √ Historic ____ Prehistoric ____ Both
Construction Date: 1949 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Fausto C. & Consuelo Barros, 11131 Rivera Road, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

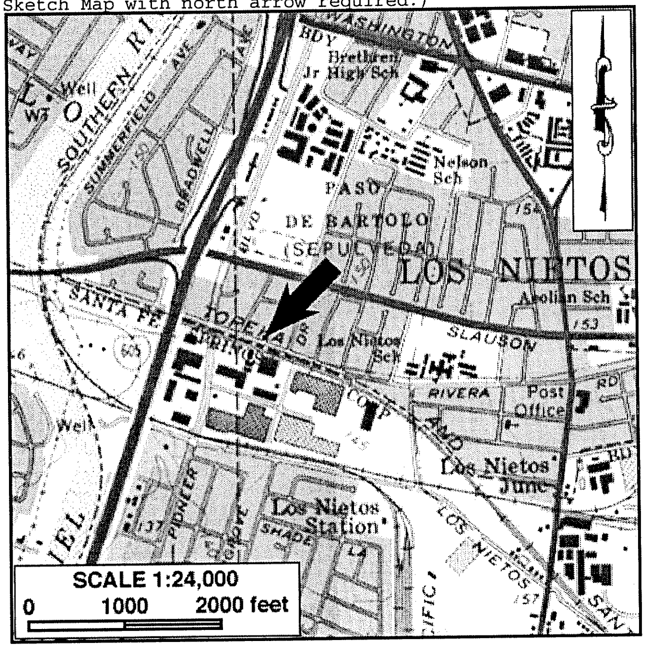
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #__________
HRI #__________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-26H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently built in 1949 by Sentinel Corporation as part of a tract home development. It was purchased in 1951 by Joe and Helen Cervantes from Gibert Investment Company.
***B7. Moved?** √ No ____ Yes ____ Unknown **Date:**________ **Original Location:**________
***B8. Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-27H

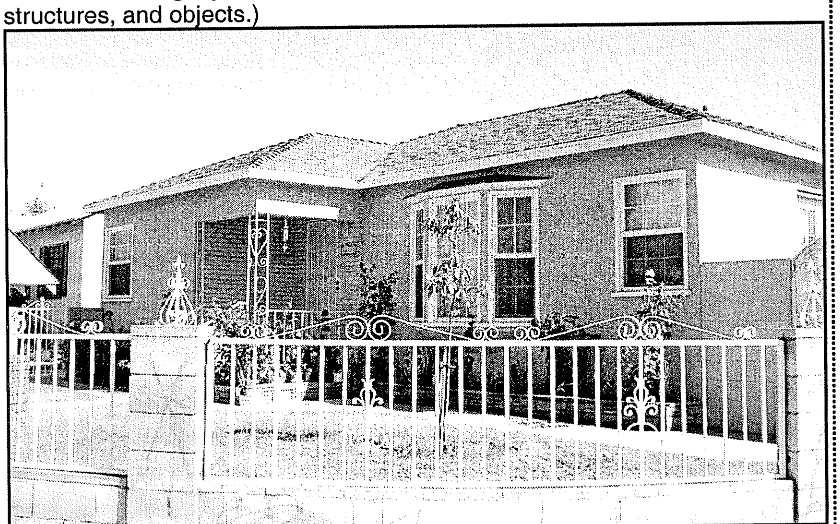
P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 10702 Wheelock Circle City Los Nietos Zip 90606
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400070 mE/ 3758700 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-011

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story, wood-framed single-family residence has an L-shape ground plan. The low-pitched cross hip roof is covered in composition shingles. The stucco-clad, asymmetrical façade contains a shallow polygonal bay window. Fenestration is composed of vinyl-framed double-hung windows. The recessed entry porch is off-centered and features decorative wrought iron supports and a painted brick veneer surrounding the front door. This house is adorned with a concrete block and wrought iron fence, and has a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

*P6. Date Constructed/Age and Sources:
√ Historic ___ Prehistoric ___ Both
Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address:
Ray & Hilda Aguirre, 10702 Wheelock Circle, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

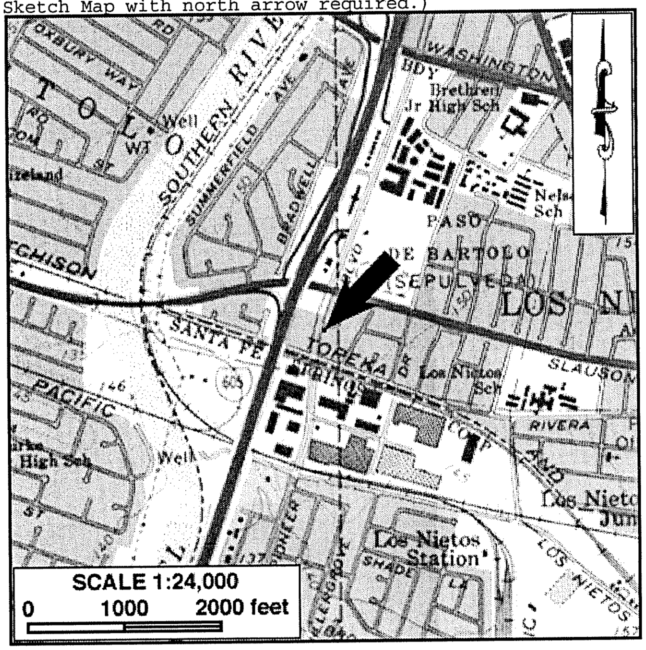
Primary #
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-27H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Jason and Lena Daily acquired the house in the same year from Pasadena Savings and Loan Association. Later alterations include a 112-square-foot workshop added in 1956, a patio cover added in 1958 and a patio enclosure in 1959.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Development Engineers
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of 2

*Resource Name or # (Assigned by recorder) CRM TECH 789-28H

P1. Other Identifier:

*P2. Location: ____ Not for Publication √ Unrestricted *a. County Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 10703 Wheelock Circle City Los Nietos Zip 90606

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400080 mE/ 3758740 mN

UTM Derivation: √ USGS Quad ____ GPS

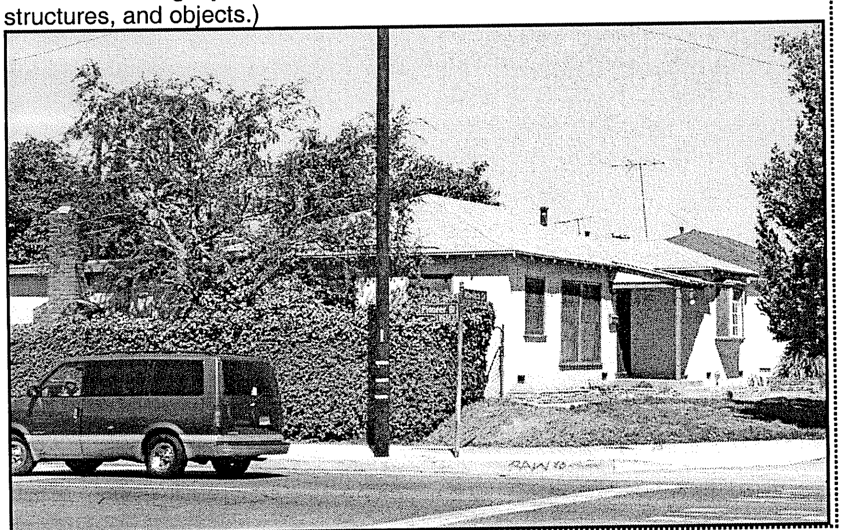
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-002

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story, wood-framed single-family residence has an L-shape ground plan. The low-pitched cross hip roof features exposed rafters and is sheathed in composition shingles. The exterior walls are clad in stucco and feature a shallow polygonal bay window in the asymmetrical façade. Fenestration is composed of wood-framed double-hung windows and one wood-framed fixed window. The entry porch is supported by one thin, square wood post. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

*P6. Date Constructed/Age and Sources: √ Historic ____ Prehistoric ____ Both

Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address: Victoria Rosales, 10703 Wheelock Circle, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

DPR 523A (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

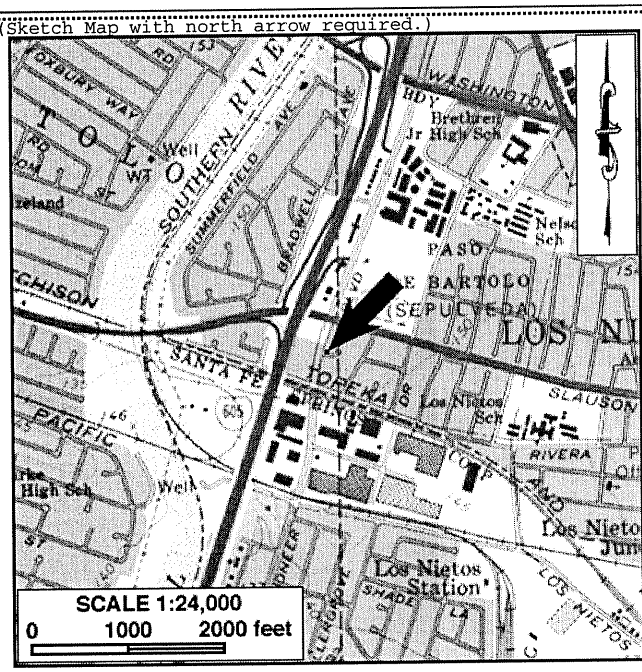
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-28H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed in 1953 by Development Engineers along with the others on Tract 17934. Stanley and Dona Greer purchased the house from Pasadena Savings and Loan Association in 1953. A 320-square-foot family room was added in 1963.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-29H

P1. Other Identifier:

*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 10706 Wheelock Circle City Los Nietos Zip 90606

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 400090 mE/ 3758700 mN

UTM Derivation: √ USGS Quad ___ GPS

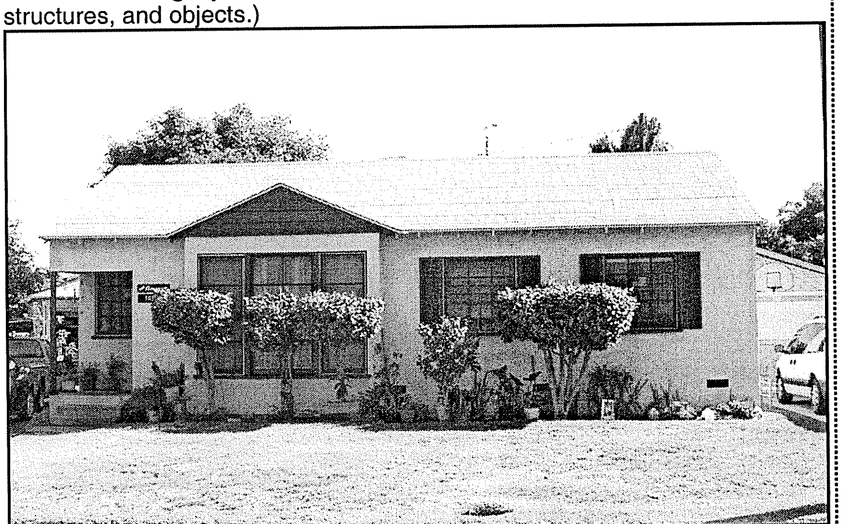
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-010

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has a rectangular ground plan. The house is surmounted by a side-gabled roof with an intersecting gable over a front bay window. The roof is covered with composition shingles. The asymmetrical façade is characterized by two small multi-paned, wood-framed double-hung windows flanked by wood shutters and one large wood-framed double-hung window situated in the shallow rectangular bay. The off-centered, recessed porch is supported by one square wood post. The house has a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the south

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both

Construction Date: 1953 (see Items B6 and B12 for details)

*P7. Owner and Address: Clinton B. Rose M. Balder, 10706 Wheelock Circle, Los Nietos, CA 90606

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

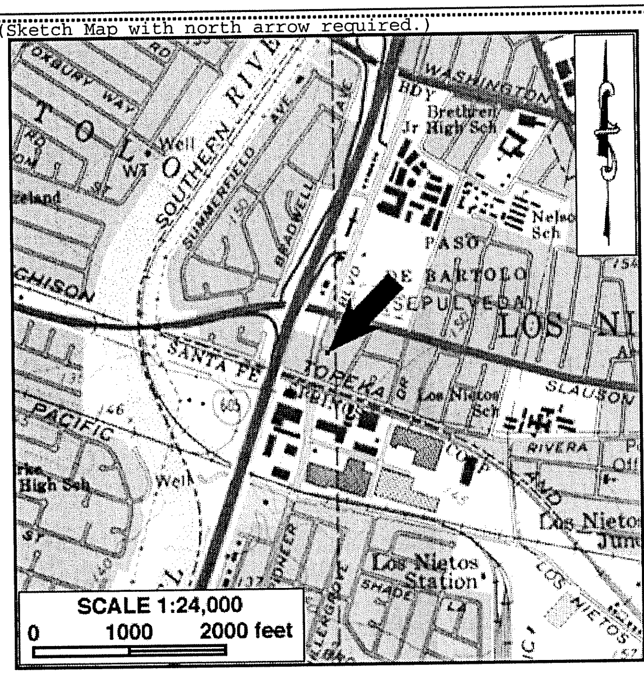
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-29H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed in 1953 by Development Engineers along with the others on Tract 17934. Louis and Elaine Trotechaud purchased the house from Pasadena Savings and Loan Association in 1953. A 468-square-foot room was added in 1963.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder) CRM TECH 789-30H

P1. Other Identifier:

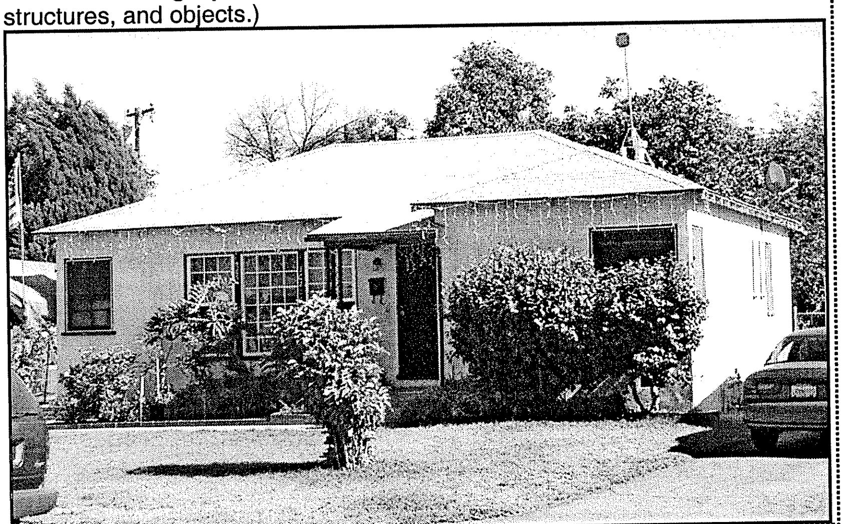
***P2. Location:** ___Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T2S; R12W; ___1/4 of ___1/4 of Sec___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant
c. Address 10710 Wheelock Circle **City** Los Nietos **Zip** 90606
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400110 mE/ 3758700 mN
UTM Derivation: √ USGS Quad ___GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-009

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story, wood-framed single-family residence has an L-shape ground plan. The medium-pitched cross-hip roof is sheathed in composition shingles. The exterior walls are clad in stucco. Front fenestration consists of one large vinyl-framed double-hung window and smaller wood-framed double-hungs. The entry porch is supported by a group of thin metal post with ornamental ironwork. The house has a detached garage.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___Structure ___Object ___Site ___District ___Element of District ___Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

***P6. Date Constructed/Age and Sources:** √ Historic ___Prehistoric ___Both
Construction Date: 1953 (see Items B6 and B12 for details)

***P7. Owner and Address:** Richard & Adelaida Grantillo, 10710 Wheelock Circle, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___None ___Location Map ___Continuation Sheet √ Building, Structure, and Object Record ___Archaeological Record ___District Record ___Linear Resource Record ___Milling Station Record ___Rock Art Record ___Artifact Record ___Photograph Record ___Other (List):

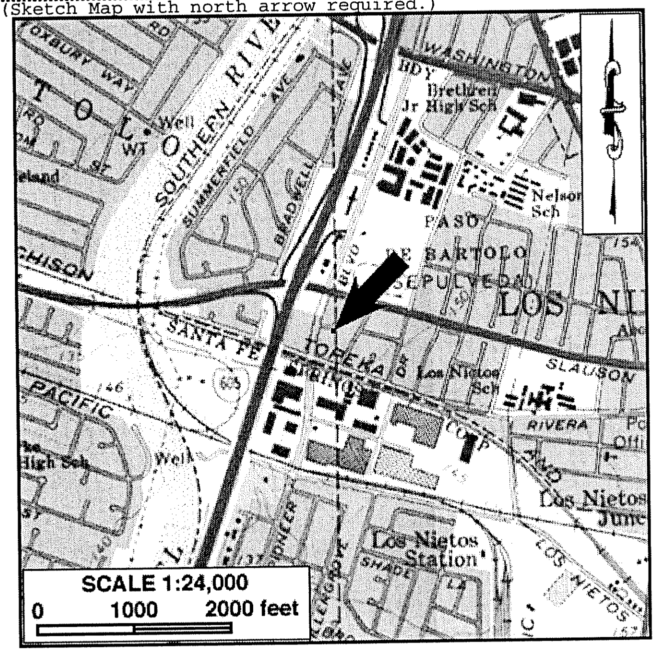
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-30H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Mininal Traditional
*B6. **Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed in 1953 by Development Engineers along with the others in this tract home development. Carl Johnson purchased the house from Pasadena Savings and Loan Association in 1953. A 430-square-foot screened patio was added in 1968.
*B7. **Moved?** √ No ____ Yes ____ Unknown **Date:** ____ **Original Location:** ____
*B8. **Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Development Engineers
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder) CRM TECH 789-31H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T2S; R12W; ___1/4 of ___1/4 of Sec ___; S.B. B.M. Within the Paso de Bartolo (Sepulveda) land grant

c. Address 10714 Wheelock Circle **City** Los Nietos **Zip** 90606

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 400120 mE/ 3758700 mN

UTM Derivation: √ USGS Quad ___ GPS

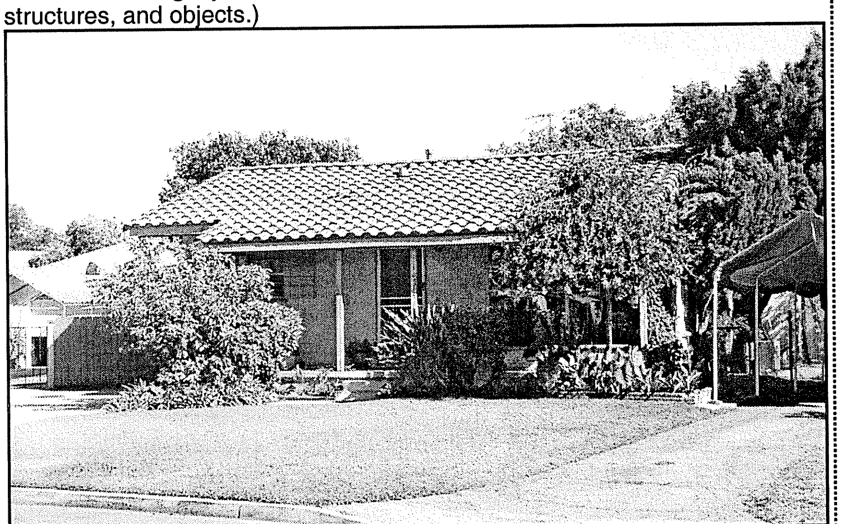
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8177-026-008

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction, and has a rectangular ground plan. The medium-pitched side-gabled roof is covered with ceramic tiles and features open eaves that extend well beyond the walls and are supported by slanted wood posts at the easterly corners. This wide eave overhangs an open veranda in the façade. The exterior wall surface is clad entirely in stucco. Fenestration includes a large wood-framed picture window in the front and aluminum-framed double-hung windows. The house has a detached garage in the rear.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1953 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Rodriguez Family Trust, 10714 Wheelock Circle, Los Nietos, CA 90606

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

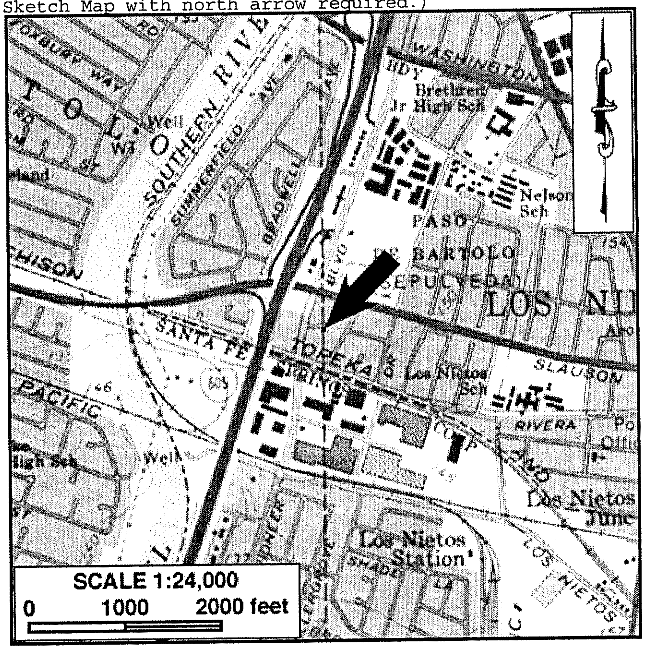
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #_____
HRI #_____

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-31H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Mininal Traditional with Spanish influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to County of Los Angeles records, this house was constructed in 1953 by Development Engineers as part of a tract home development. Jack and Beverly Love acquired the house in the same year from Pasadena Savings and Loan Association. Later alterations include a 316-square-foot room addition in 1966 and the addition of a service porch in 1986.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** _____ **Original Location:** _____
***B8. Related Features:** Detached garage
B9a. Architect: Unknown b. Builder: Development Engineers
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; County of Los Angeles building safety records
B13. Remarks: _____
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ______ Reviewer ______ Date ______

Page 1 of 2

*Resource Name or # (Assigned by recorder) CRM TECH 789-32H

P1. Other Identifier:

*P2. Location: ____Not for Publication √ Unrestricted *a. County Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981

T3S; R11W; __1/4 of __1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant

c. Address 14324 San Ardo Drive City La Mirada Zip 90638

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405040 mE/ 3751170 mN

UTM Derivation: √ USGS Quad ____GPS

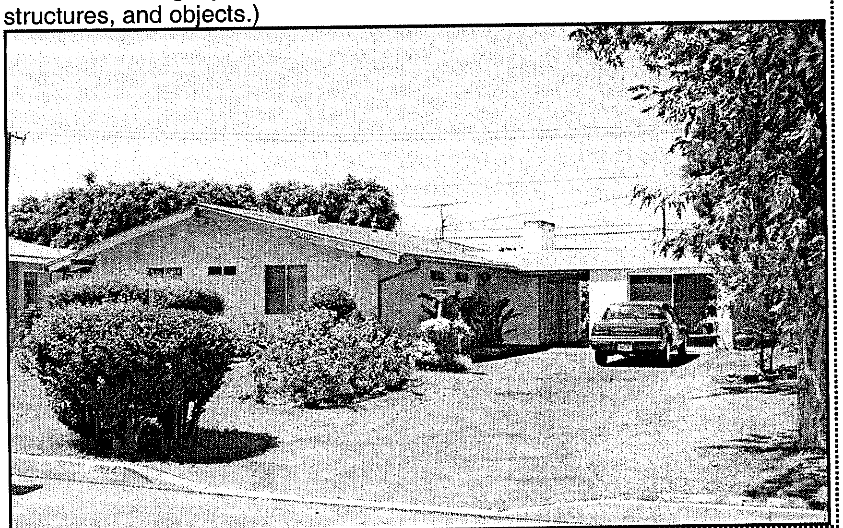
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-006

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story, post-WWII vernacular house is of wood-frame construction and has a T-shape ground plan. The low-pitched front-gabled roof has wide, open eaves and is covered with composition shingles. The asymmetrical façade is clad in stucco. Fenestration consists of small to medium-sized aluminum-framed sliding windows. A breezeway has been created between the original house and the garage, which appears to have been converted to interior living space. The garage is surmounted by a flat roof.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southwest

*P6. Date Constructed/Age and Sources: √ Historic ____Prehistoric ____Both

Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address:
Felino L. & Guadelupe R. Elias, 14324 San Ardo Drive, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

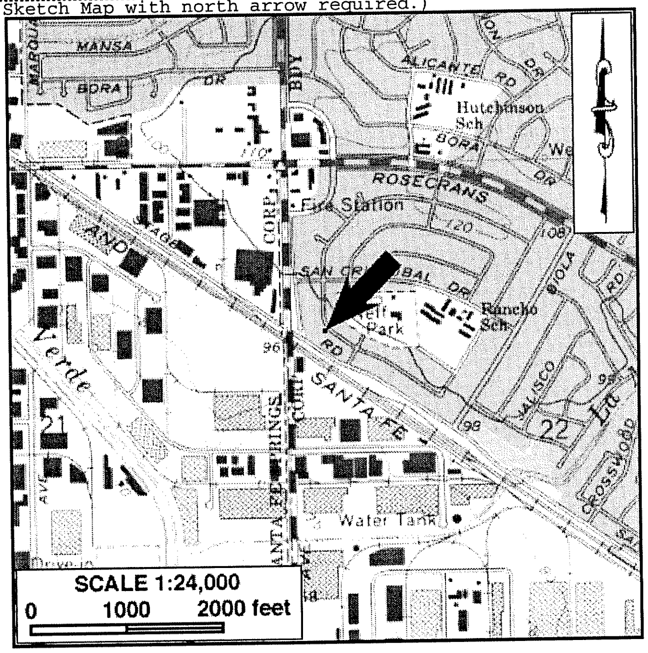
Primary #
HRI #

Page 2 of 2

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-32H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. William J. Ulens purchased the home in 1955. Later alterations include a 300-square-foot rumpus room added in 1957, a 350-square-foot addition of a bedroom and a bathroom in 1962, and a 760-square-foot guesthouse constructed in 1963.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ______ **Original Location:** ______
***B8. Related Features:** None
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) ______
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks: ______
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

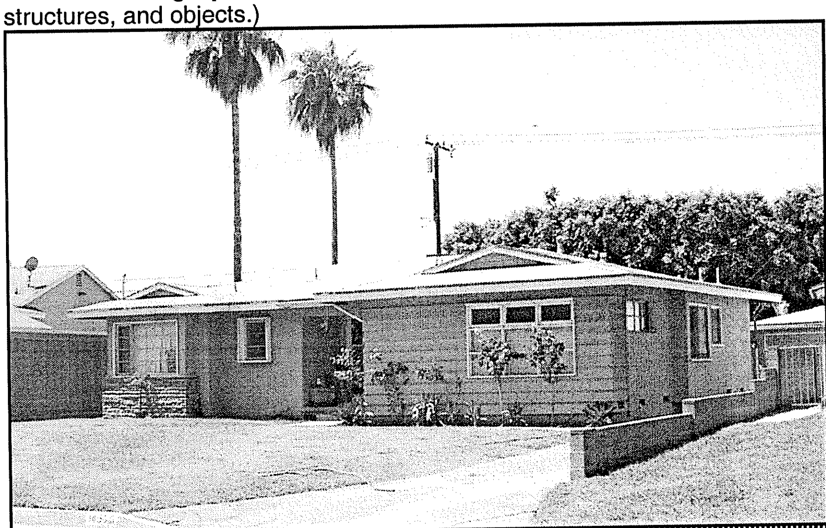
Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-33H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant
c. Address 14330 San Ardo Drive City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405040 mE/ 3751150 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-005

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story, post-WWII vernacular house is of wood-frame construction and has an L-shape ground plan. The low-pitched gable-on-hip roof is characterized by its wide, open eaves and is covered in composition shingles. The asymmetrical façade is clad with various materials, including stucco and stone veneer in the northern portion and horizontal clapboards in the southern portion. Fenestration consists of wood-framed double-hung and casement windows. The recessed entry porch is off-centered. The house has a detached garage in the rear.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the south

*P6. Date Constructed/Age and Sources:
√ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address:
Juan & Alicia Jimenez, 14330 San Ardo Drive, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

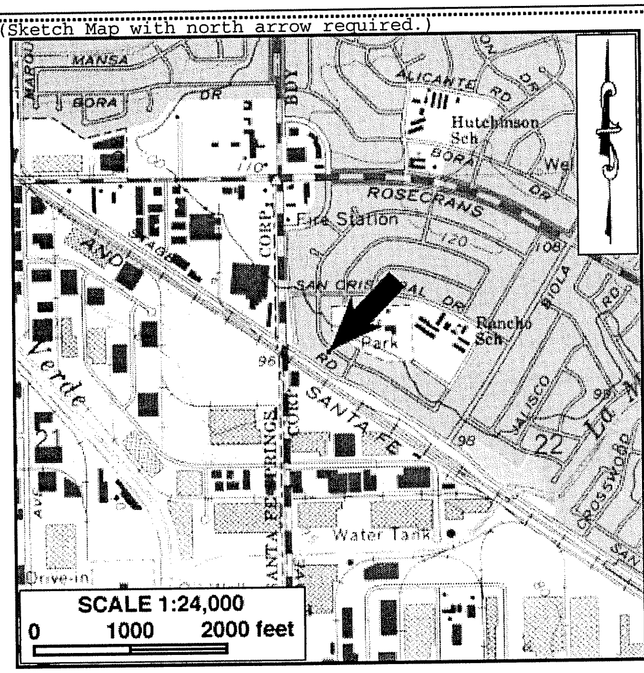
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #____________
HRI #____________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-33H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Stanley and Treva McCormack purchased the home in 1955. Later alterations include the addition of a 345-square-foot den in 1958 and a 195-square-foot bedroom and bathroom addition in 1963.
***B7. Moved?** √ No ____Yes ____Unknown **Date:**________ **Original Location:**________
***B8. Related Features:** Detached garage
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

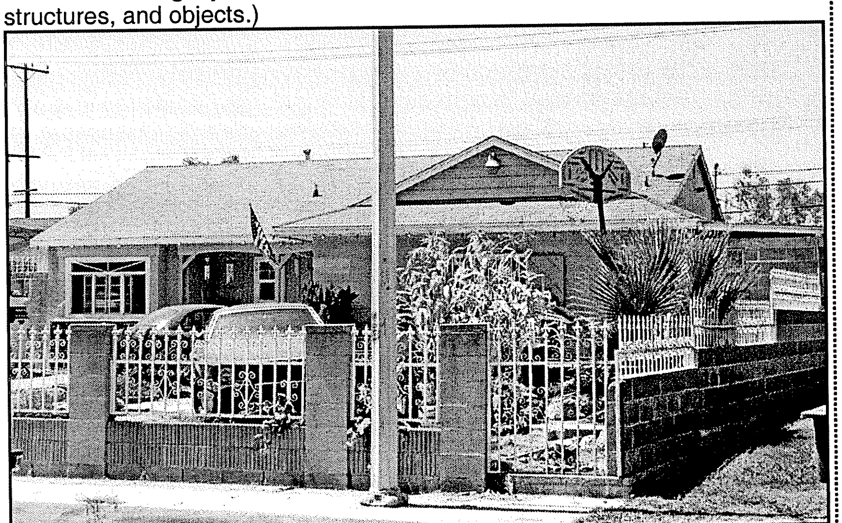
*Resource Name or # (Assigned by recorder) CRM TECH 789-34H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant
c. Address 14336 San Ardo Drive City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405040 mE/ 3751120 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-004

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story, post-WWII vernacular house is of wood-frame construction and has an L-shape ground plan. The medium-pitched side-gabled roof features an intersecting gable-on-hip extension over the attached garage. The asymmetrical façade is clad in various materials, including horizontal boards on the garage, stucco and stone veneer on the southeasterly portion, and vertical board-and-batten in the recessed porch. This off-centered porch is supported by square wood posts with diagonal braces near the top. Front fenestration is composed of vinyl-framed sliding windows. The front yard is enclosed with a concrete block and wrought iron fence.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Carl Rozatti, 14336 San Ardo Drive, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

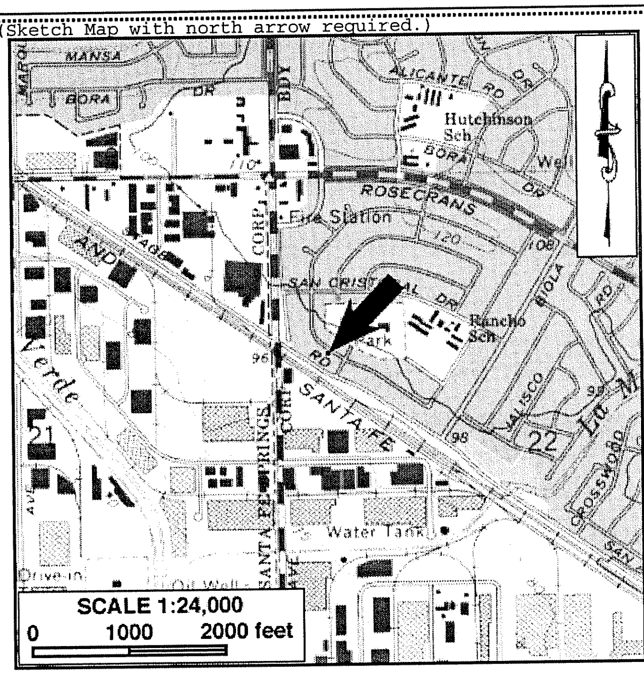
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-34H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential
B4. Present Use: Residential
*B5. **Architectural Style:** Ranch Influence
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Walter B. and Louise Krueger purchased the home in 1955. Later alterations include a 392-square-foot rumpus room and dressing area added in 1962-1965, an 84-square-foot bathroom addition in 1980, and a 324-square-foot enclosed patio constructed in 1980.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ________ **Original Location:** ________
*B8. **Related Features:** Fence
B9a. Architect: David Freedman
b. Builder: Devon Construction Company
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-35H

P1. Other Identifier:

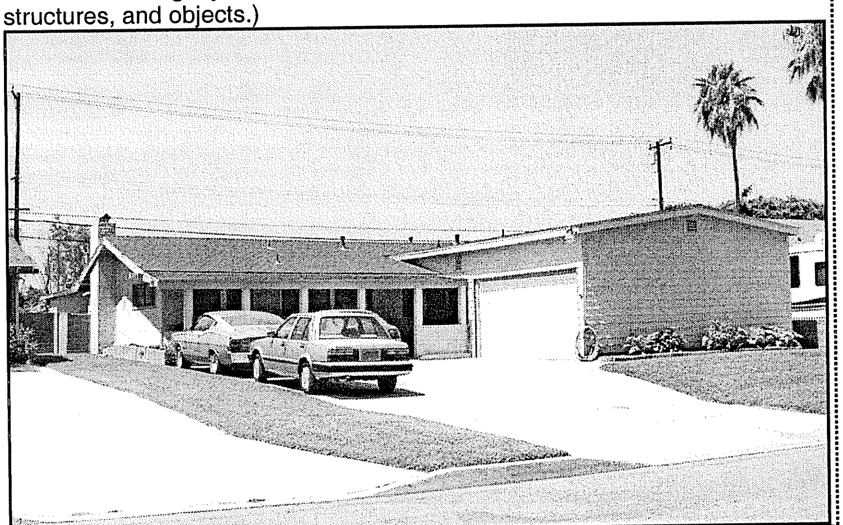
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant
c. Address 14342 San Ardo Drive City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405050 mE/ 3751100 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-003

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story, post-WWII vernacular house is of wood-frame construction and has an L-shape ground plan. The low-pitched cross-gabled roof is covered with composition shingles and is characterized by false beams under the side gables. The asymmetrical façade is clad with horizontal clapboards and features aluminum-framed double-hung and sliding windows. The front porch is an open veranda, supported by square wood posts resting on cut stone railing.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southwest

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address:
James E. & Earlene Lipsey, 14342 San Ardo Drive, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

*Required information

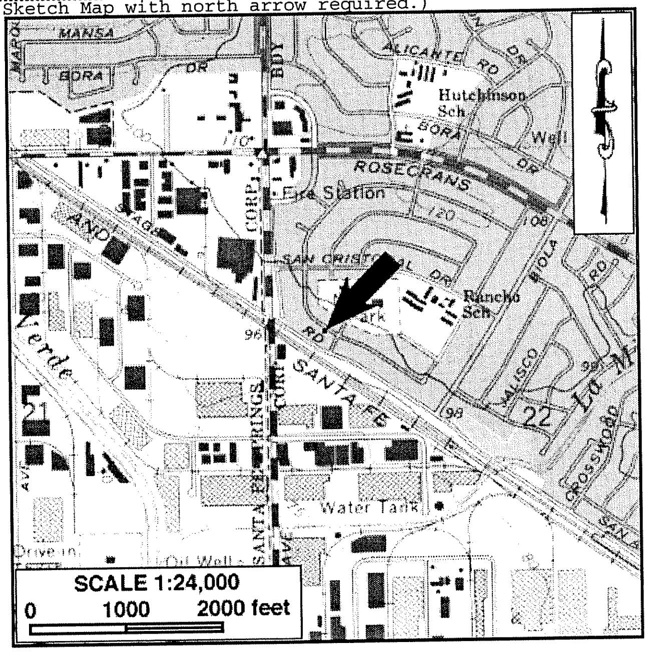
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-35H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Clarence H. and Enid Chatfield purchased the home in 1955. Later alterations include a 179-square-foot tool shed and hobby shop added in 1956, a 270-square-foot aluminum patio cover with a screened enclosure installed in 1978, and another screened aluminum patio added in 1979.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** None
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A   **Area** N/A
Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

***Resource Name or #** (Assigned by recorder) CRM TECH 789-36H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant

c. Address 14348 San Ardo Drive **City** La Mirada **Zip** 90638

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 405060 **mE/** 3751080 **mN**

UTM Derivation: √ USGS Quad ___ GPS

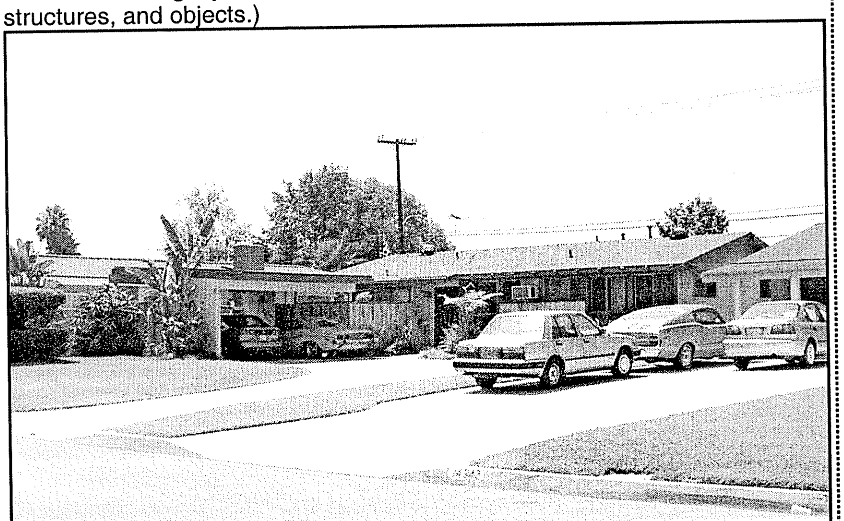
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-002

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story, post-WWII vernacular house is of wood-frame construction and has an L-shape ground plan. The low-pitched side-gabled roof over the main structure is connected to the shed roof over a carport and a small, attached shed in the front, all of which is covered with composition shingles. The roof has exposed rafters and false beams under the gables. The asymmetrical façade is clad primarily in stucco with a wood veneer in the front. Most windows are aluminum-framed with sliding sashes. A small wood fence links the house to the carport.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the south

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both

Construction Date: 1954 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Rudolph R. & Ester Casillas, 14348 San Ardo Drive, La Mirada, CA 90638

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95)

*Required information

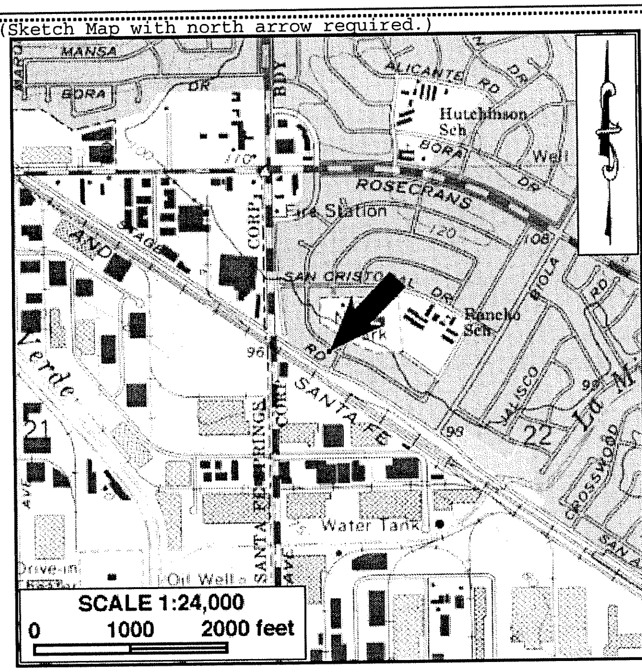
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #__________
HRI #__________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-36H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Rudolph and Ester Casillas purchased the home in 1955.
***B7. Moved?** √ No ____ Yes ____ Unknown **Date:**________ **Original Location:**________
***B8. Related Features:** Carport, fence
B9a. Architect: David Freedman b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code   Reviewer   Date

Page 1 of 2   *Resource Name or # (Assigned by recorder) CRM TECH 789-37H

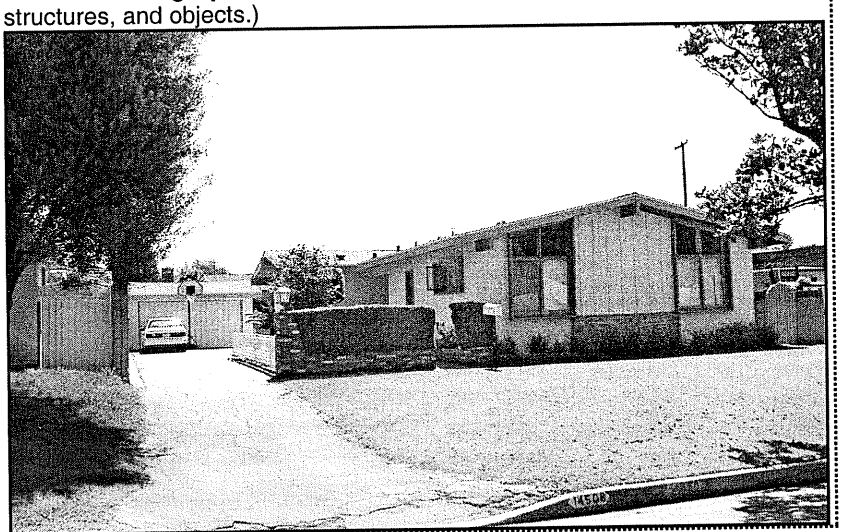
P1. Other Identifier:
*P2. Location: ____Not for Publication √ Unrestricted   *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif.   Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant
c. Address 14508 Valley View Road   City La Mirada   Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 404980 mE/ 3751330 mN
UTM Derivation: √ USGS Quad ____GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-032-012

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and is built upon an L-shape ground plan. The cross-gabled roof, covered with composition shingles, is characterized by three false beams located under the gable ends. The exterior walls feature several cladding materials including stucco, stone veneer, and vertical wood boards. The entry porch is recessed and does not face the street. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

*P6. Date Constructed/Age and Sources: √ Historic ____Prehistoric ____Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Uriel Garcia, 14508 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

DPR 523A (1/95)   *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

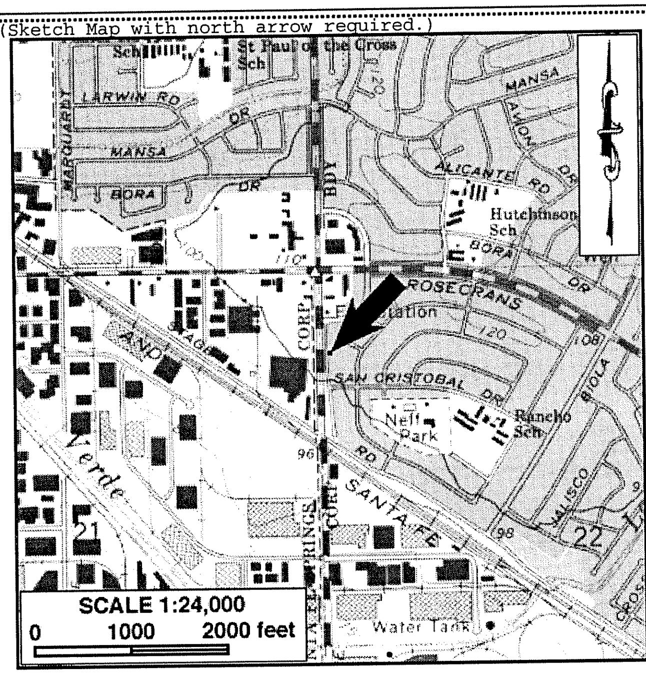
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-37H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
*B5. **Architectural Style:** Ranch Influence
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Frank L. Elwell acquired the home in 1955. Later alterations include a 400-square-foot rumpus room added in 1964 and a retaining wall built in 1986.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage, wall
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-38H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. **USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981

T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant

c. **Address** 14514 Valley View Road **City** La Mirada **Zip** 90638

d. **UTM:** (Give more than one for large and/or linear resources) **Zone** 11; 404980 mE/ 3751310 mN

UTM Derivation: √ USGS Quad ___ GPS

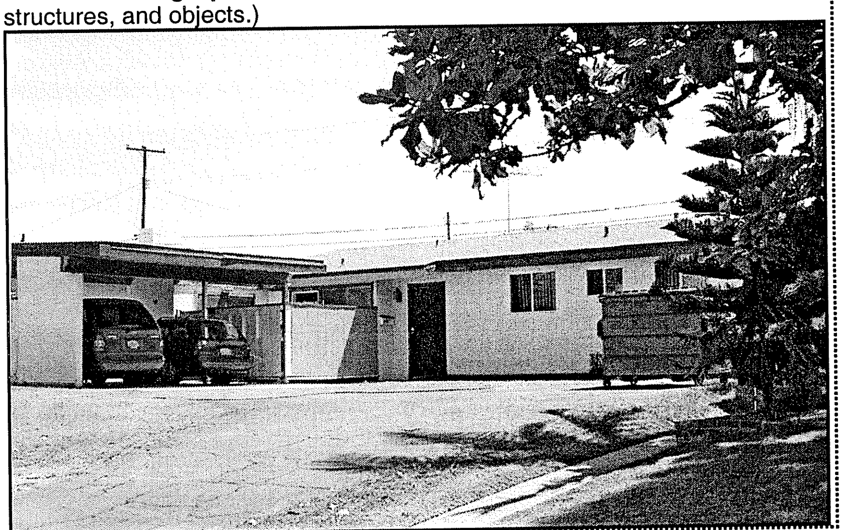
e. **Other Locational Data:** (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-032-013

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story house is of wood-frame construction and has an L-shape ground plan. The low-pitched side-gabled roof is connected to the shed roof over a carport and a small, attached shed in the front, all of which is covered with composition shingles. The roof has exposed rafters under the wide eaves and false beams under the gable ends. The asymmetrical façade is clad in stucco. Most windows are aluminum-framed with sliding sashes. A small wood fence links the house to the carport.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Lawrence & Leaseley Jairam, 14514 Valley View Road, La Mirada, CA 90638

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

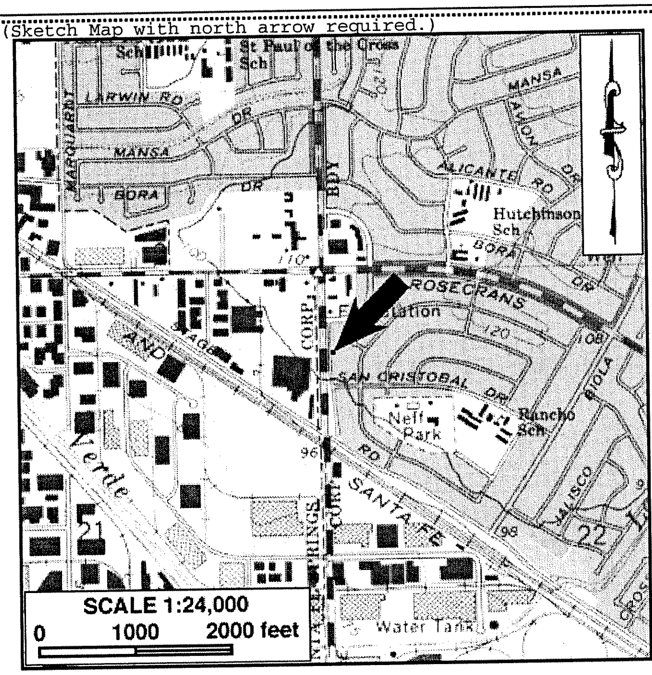
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-38H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential
B4. Present Use: Residential
*B5. **Architectural Style:** Ranch Influence
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Jay E. Gordon purchased the home in 1955. Later alterations include a patio cover installed in the back yard in 1985 and the replacement of windows and stuccoing of the front of the house in 2000.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Carport
B9a. Architect: David Freedman
b. Builder: Devon Construction Company
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of 2

*Resource Name or # (Assigned by recorder) CRM TECH 789-39H

P1. Other Identifier:

*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981

T3S; R11W; ___1/4 of ___1/4 of Sec___; S.B. B.M. Within the Los Coyotes land grant

c. Address 14520 Valley View Road City La Mirada Zip 90638

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 404980 mE/ 3751290 mN

UTM Derivation: √ USGS Quad ___ GPS

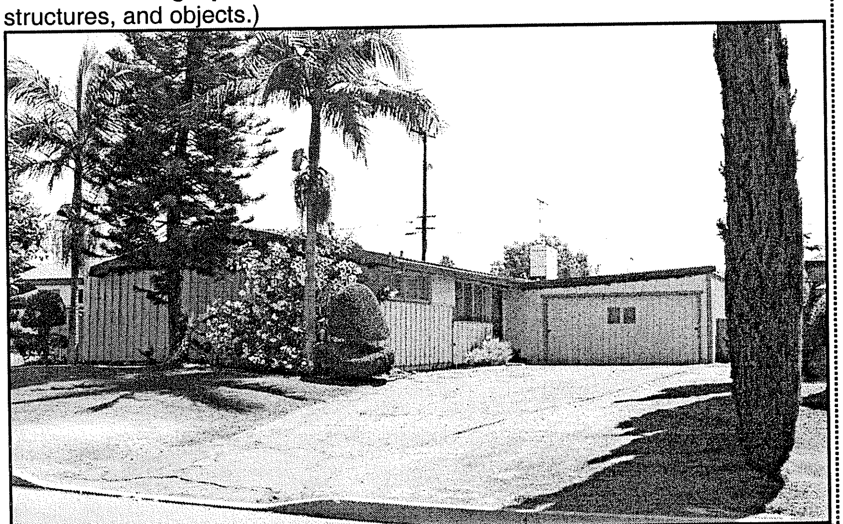
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-032-014

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has an L-shape ground plan. The roof is front-gabled with a shed roof over the attached garage, both of which are sheathed in composition shingles. The asymmetrical façade features both stucco and vertical board-and-batten as exterior cladding materials. Fenestration includes a large aluminum-framed window at the peak of the front-facing gable and a number of wood-framed casement windows.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both

Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Armando & Sandra Valencia, 14520 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y

***Resource Name or #** (Assigned by recorder) CRM TECH 789-39H

B1. Historic Name: None

B2. Common Name: None

B3. Original Use: Residential   B4. Present Use: Residential

***B5. Architectural Style:** Ranch Influence

***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Thomas and Judith B. Stenglein purchased the home in 1955. A 410-square-foot rumpus room was added in 1964-1965.

***B7. Moved?** √ No ____ Yes ____ Unknown **Date:** ____ **Original Location:** ____

***B8. Related Features:** None

B9a. Architect: David Freedman   b. Builder: Devon Construction Company

***B10. Significance: Theme** N/A   **Area** N/A

Period of Significance N/A   **Property Type** N/A   **Applicable Criteria** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.

B11. Additional Resource Attributes: (List attributes and codes)

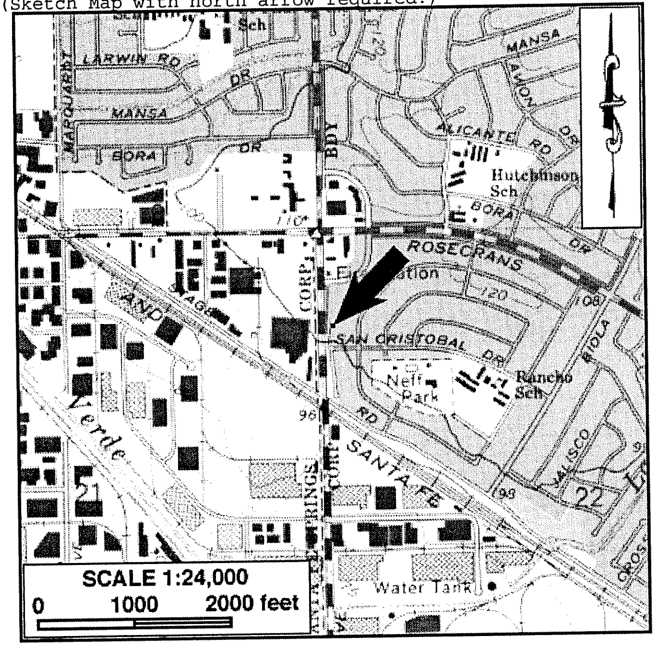
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records

B13. Remarks:

***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard

***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

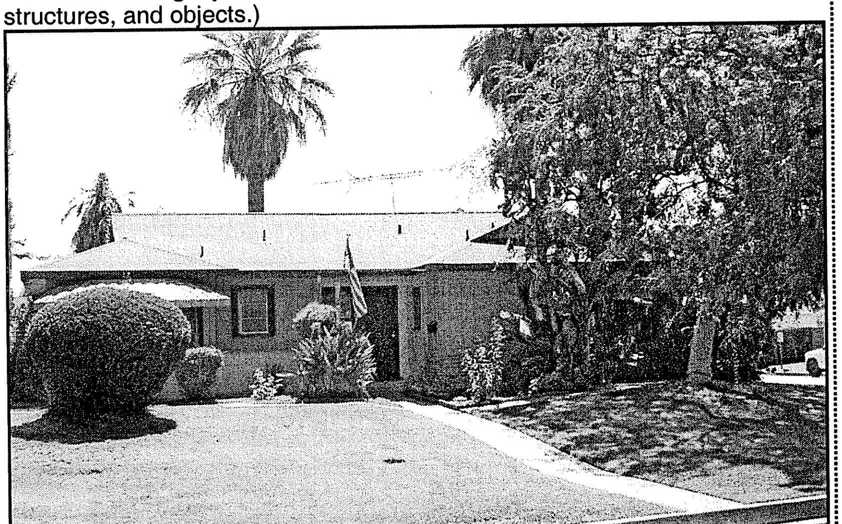
Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-40H

P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant
c. Address 14528 Valley View Road City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 404980 mE/ 3751270 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-032-015

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This wood-framed single-family residence is one-story and has an L-shape plan. The low-pitched gable-on-hip roof is covered with composition shingles. The asymmetrical façade features various exterior cladding materials, including vertical board-and-batten, stone veneer, and stucco. The majority of windows appear to be wood-frame casements and double-hungs. Two large front windows have awnings. The small, recessed porch is off-centered and is flanked by two small windows. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Carlos A. & Lourdes Bonnett, 14528 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

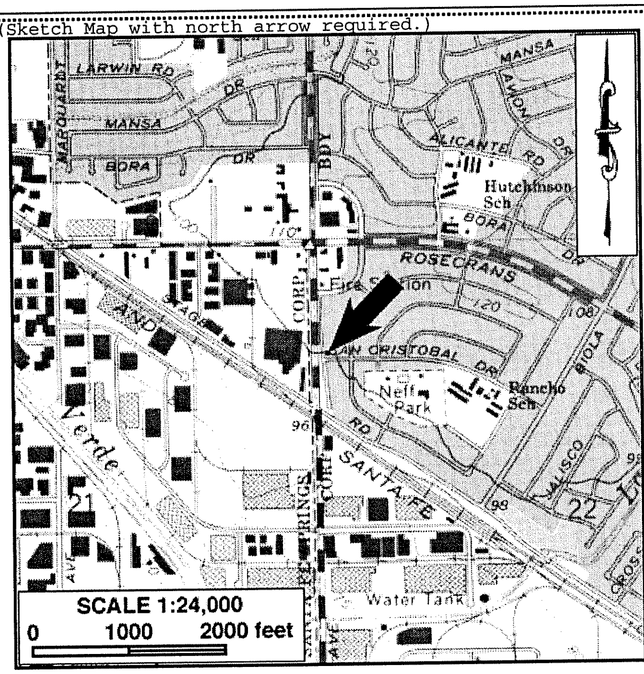
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-40H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Gladys C. and Newtie A. Jones purchased the home in 1955. Later alterations include a 666-square-foot room addition in 1990 and a 200-square-foot patio in the same year.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Detached garage
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 ***Resource Name or #** (Assigned by recorder) CRM TECH 789-41H

P1. Other Identifier:

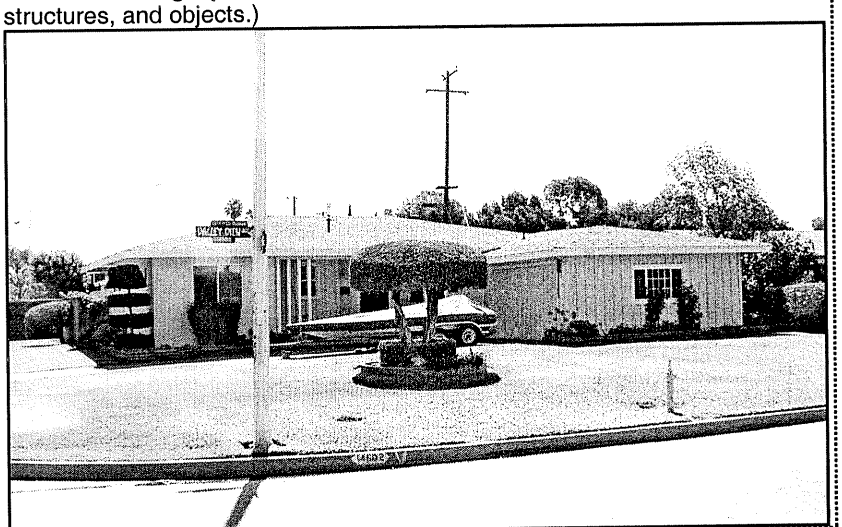
***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T3S; R11W; __1/4 of__1/4 of Sec__; S.B. **B.M.** Within the Los Coyotes land grant
c. Address 14602 Valley View Road **City** La Mirada **Zip** 90638
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 405000 **mE/** 3751240 **mN**
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-014

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has an L-shape ground plan. The low-pitched cross-hip roof is covered with composition shingles. The asymmetrical façade features a variety of cladding materials, including stucco, vertical flush boards, and board-and-batten. Fenestration consists entirely of aluminum-framed sliding windows. The recessed porch is off-centered and issupported by four rectangular wood posts.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the east

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Richard C. Ueberroth et al., 14602 Valley View Road, La Mirada, CA 90638

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) ***Required information**

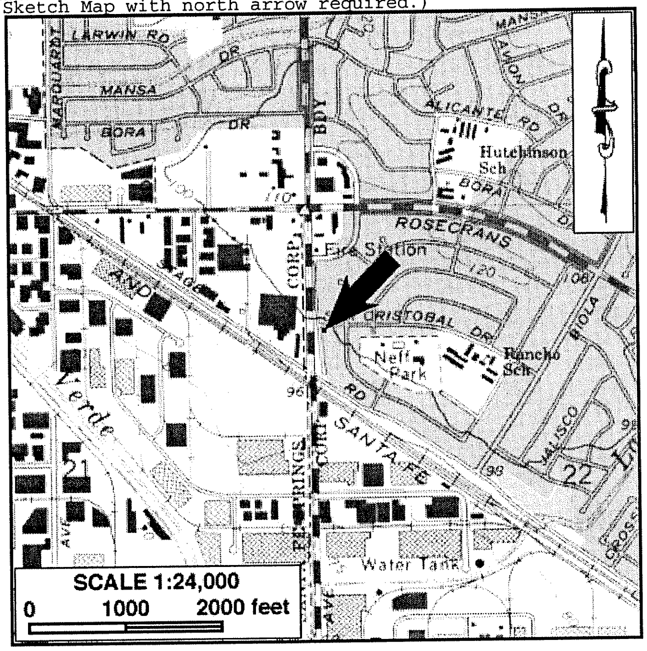
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-41H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Wallace H. Henschel purchased the home in 1955. A patio was added in 1975.
***B7. Moved?** √ No ____ Yes ____ Unknown **Date:** ____ **Original Location:** ____
***B8. Related Features:** Detached garage
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

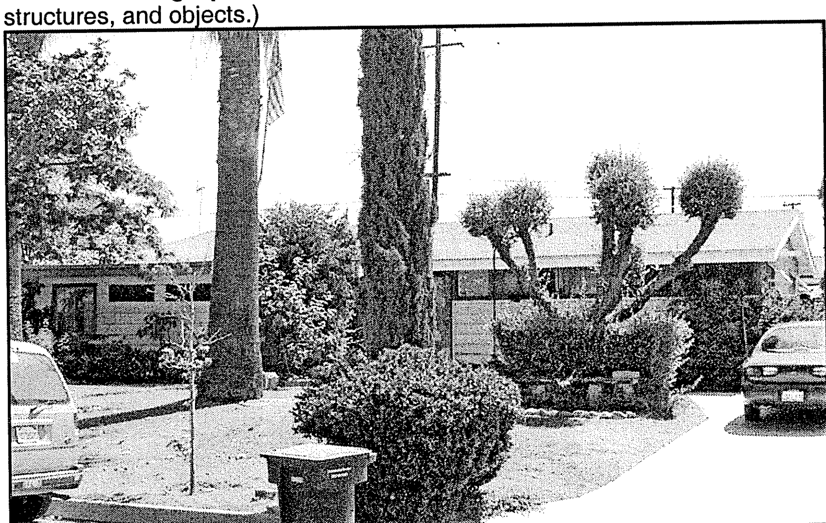
*Resource Name or # (Assigned by recorder) CRM TECH 789-42H

P1. Other Identifier:
*P2. Location: ____Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant
c. Address 14610 Valley View Road City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405000 mE/ 3751220 mN
UTM Derivation: √ USGS Quad ____GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-015

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has an L-shape ground plan. The side-gabled roof, covered with composition shingles, is characterized by three false beams under the side gables. Exterior cladding materials on the asymmetrical façade include stucco and vertical flush boards. The majority of fenestration is composed of wood-frame casement windows with aluminum-framed sliding windows in a front addition. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

*P6. Date Constructed/Age and Sources: √ Historic ____Prehistoric ____Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Gilbert & Jane G. Cadena, 14610 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

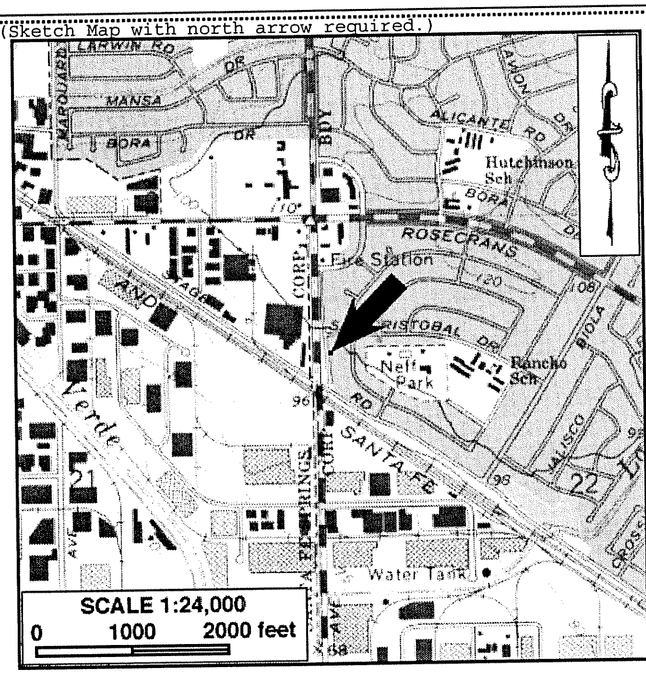
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-42H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Ranch Influence
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Edward Zewes purchased the home in 1955.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** None
B9a. Architect: David Freedman b. Builder: Devon Construction Company
*B10. **Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #_____
HRI #_____
Trinomial_____
NRHP Status Code 6Y
Other Listings_____
Review Code_____ Reviewer_____ Date_____

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-43H

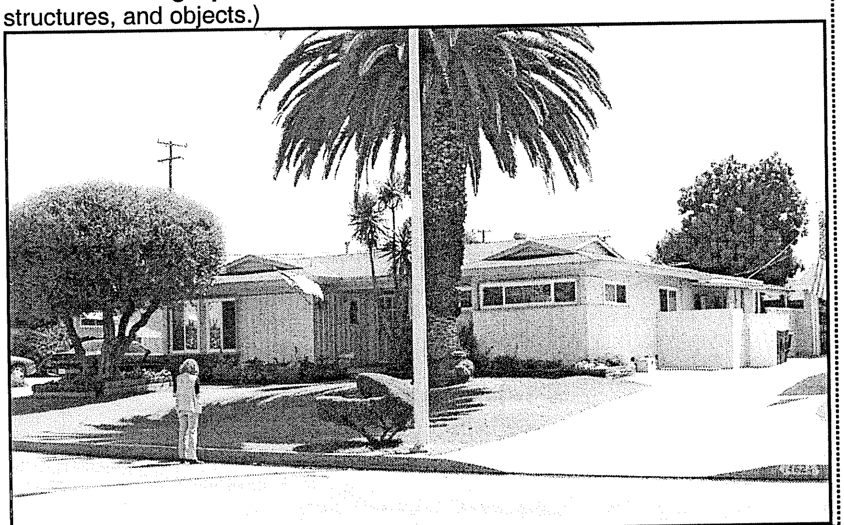
P1. Other Identifier:
*P2. Location: ____Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant
c. Address 14618 Valley View Road City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405000 mE/ 3751200 mN
UTM Derivation: √ USGS Quad ____GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-016

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) A one-story house, this wood-framed single-family residence has a U-shape ground plan. The roof is gable-on-hip with the two small extensions at each corner, all covered with composition shingles. Exterior wall surface materials include stucco, vertical boards, and stone veneer. Fenestration is composed of aluminum-framed sliding windows. There is a recessed porch that is centered. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

*P6. Date Constructed/Age and Sources:
√ Historic ____Prehistoric ____Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address:
Joseph W. & Gail M. Shine, 14618 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

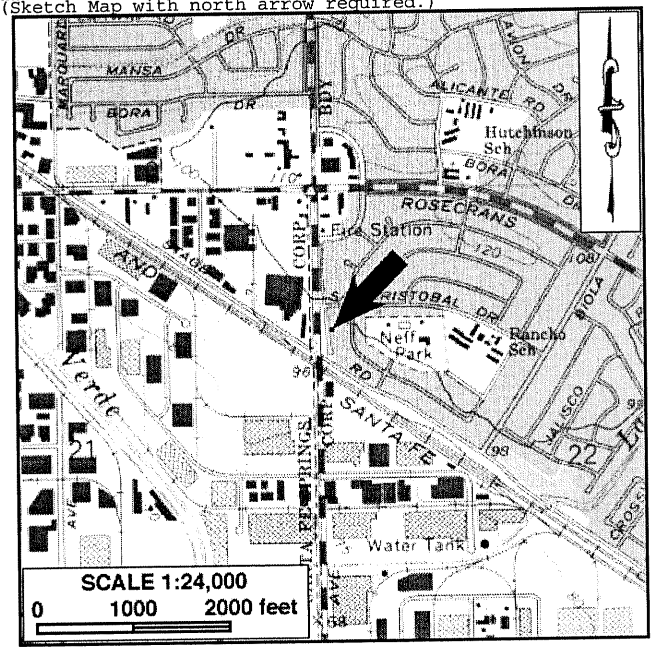
Primary #__________
HRI #__________

Page 2 of 2

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-43H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. John A. and Sandra Mackey purchased the home in 1955. A 750-square-foot playroom and bedroom were added in 1965.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:**______ **Original Location:**______
***B8. Related Features:** Detached garage
B9a. Architect: David Freedman b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:______
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-44H

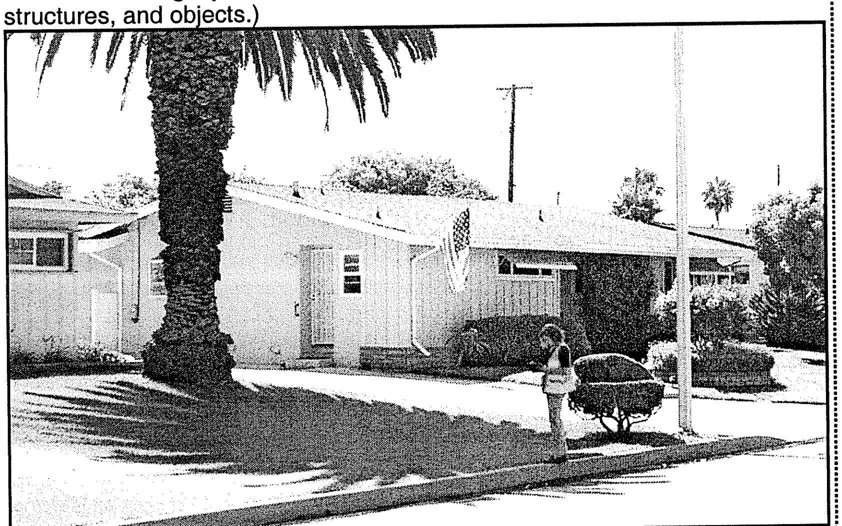
P1. Other Identifier:
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant
c. Address 14624 Valley View Road City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405000 mE/ 3751170 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-017

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has an L-shape ground plan. The low-pitched side-gabled roof is sheathed in composition shingles. The asymmetrical façade is clad in a various materials, including vertical board-and-batten, vertical flush boards, stucco on the sides, and a stone veneer border that runs along the bottom of the front and sides of the house. The house features a recessed porch that is just off-center, and is accompanied by a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

*P6. Date Constructed/Age and Sources: √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Jay Orendorff et al., 14624 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

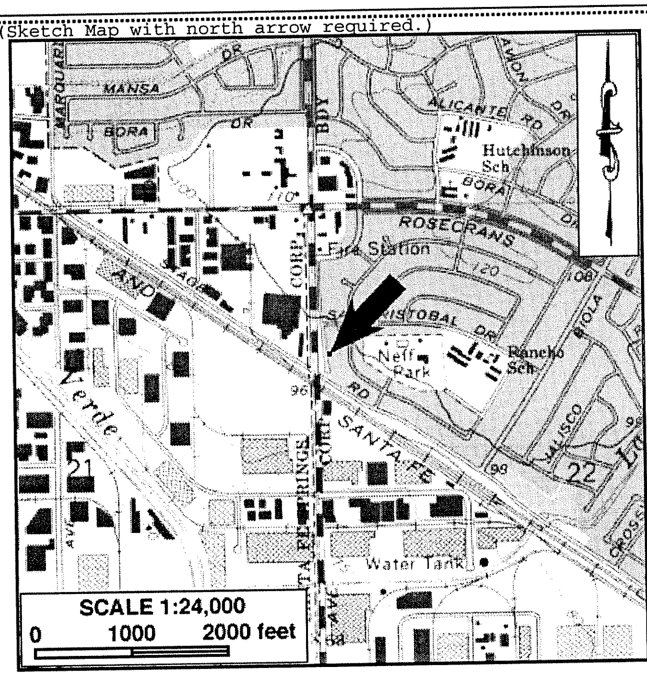
Primary #
HRI #

Page 2 of 2

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-44H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential   B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Clarence P. and Lillian J. Young purchased the home in 1955. Later alterations include two additions made in 1965-1967, one measuring 385 square feet and the other 181 square feet.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Detached garage
B9a. Architect: David Freedman   b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

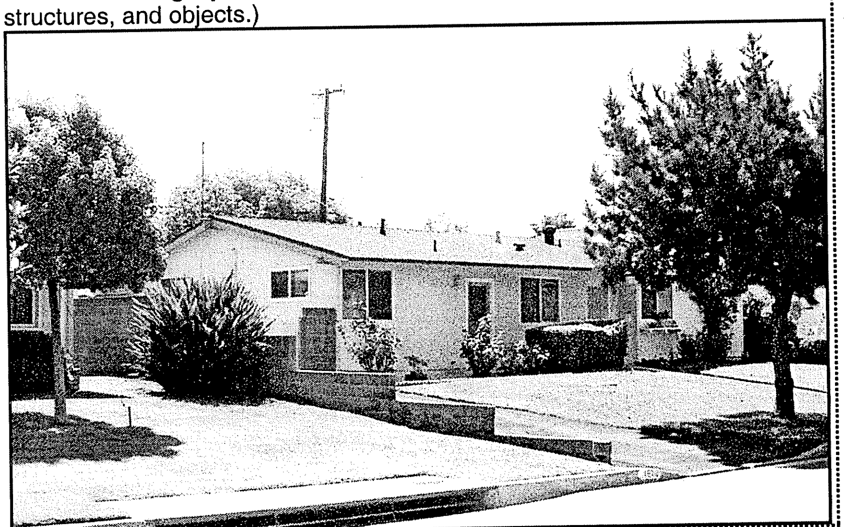
*Resource Name or # (Assigned by recorder) CRM TECH 789-45H

P1. Other Identifier:
*P2. Location: ____Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant
c. Address 14632 Valley View Road City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405000 mE/ 3751140 mN
UTM Derivation: √ USGS Quad ____GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-018

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has a rectangular ground plan. The low-pitched side-gabled roof is covered with composition shingles. The asymmetrical façade features a stucco exterior with horizontal clapboards on the southern side of the front façade and vertical board-and-batten below the window at the northern side. Fenestration is composed of aluminum-framed sliding windows. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property
*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

*P6. Date Constructed/Age and Sources: √ Historic ____Prehistoric ____Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address: Jose & Sandra F. Dominguez, 14632 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address) Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

*Required information

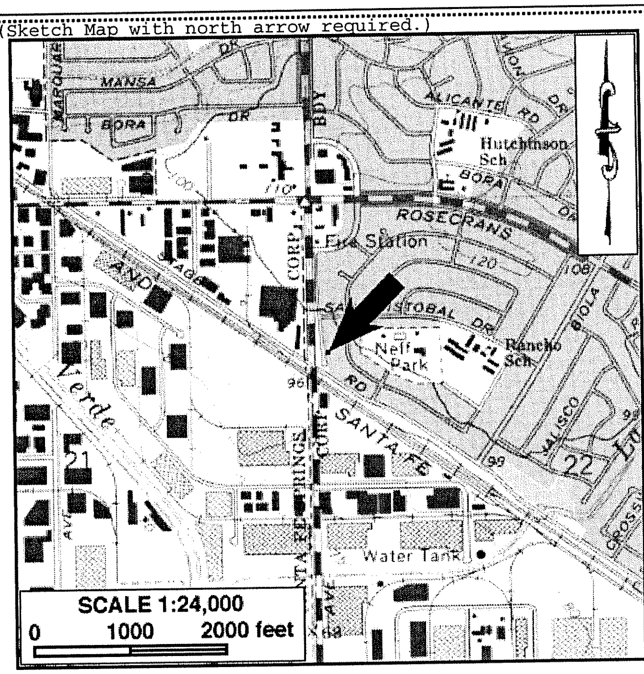
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-45H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
*B5. **Architectural Style:** Ranch Influence
*B6. **Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Stanley A. Jr. and Doris J. La Fontaine purchased the home in 1955. A 300-square-foot family room was added in 1988.
*B7. **Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
*B8. **Related Features:** Detached garage
B9a. Architect: David Freedman b. Builder: Devon Construction Company
*B10. **Significance:** **Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
*B12. **References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
*B14. **Evaluator:** Bai "Tom" Tang and Teresa Woodard
*Date of Evaluation: September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-46H

P1. Other Identifier:

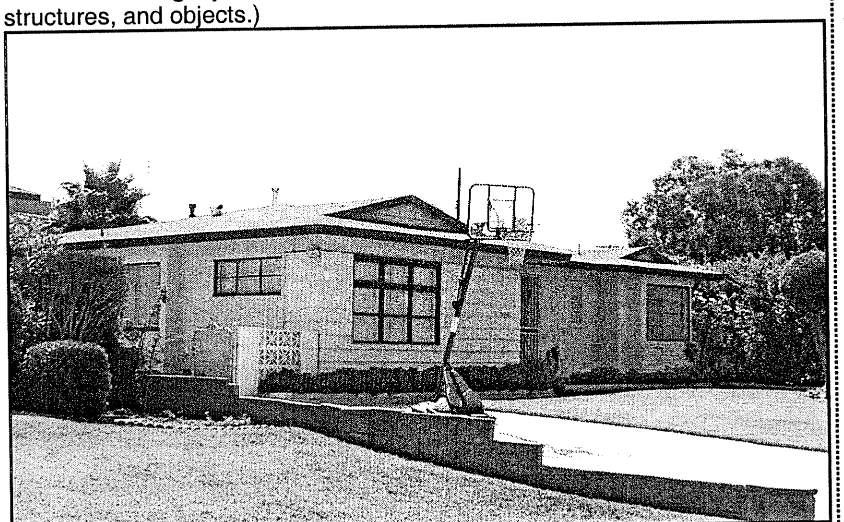
*P2. Location: ___ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant
c. Address 14638 Valley View Road City La Mirada Zip 90638
d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405000 mE/ 3751120 mN
UTM Derivation: √ USGS Quad ___ GPS
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-019

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story single-family residence is of wood-frame construction and has a slight U-shape ground plan. The low-pitched gable-on-hip roof is covered with composition shingles. The asymmetrical façade features various exterior cladding materials, including stucco, horizontal clapboards, and painted stone veneer. The majority of fenestration is composed of wood-framed casement windows. There is a security gate at the front entry porch. The house has a detached garage.

*P3b. Resource Attributes: (List attributes and codes) HP2: Single family property

*P4. Resources Present: √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

*P6. Date Constructed/Age and Sources:
√ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

*P7. Owner and Address:
Ronaldo & Mara Magpantay, 14638 Valley View Road, La Mirada, CA 90638

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

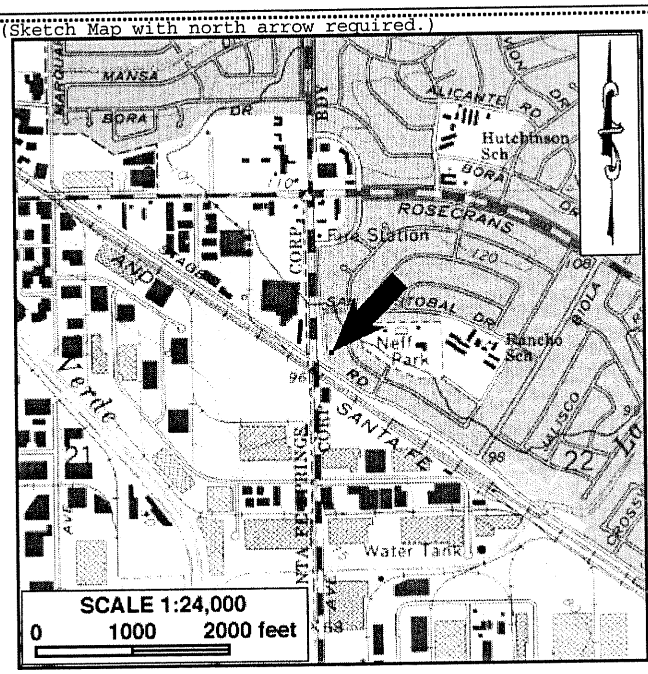
Primary #
HRI #

Page 2 of 2

*NRHP Status Code 6Y
*Resource Name or # (Assigned by recorder) CRM TECH 789-46H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Paul W. and Jean Bolock purchased the home in 1955.
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Detached garage
B9a. Architect: David Freedman b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

***Resource Name or #** (Assigned by recorder) CRM TECH 789-47H

P1. Other Identifier:

***P2. Location:** ___ Not for Publication √ Unrestricted ***a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Whittier, Calif. **Date** 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant

c. Address 14644 Valley View Road **City** La Mirada **Zip** 90638

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11; 405000 mE/ 3751100 mN
UTM Derivation: √ USGS Quad ___ GPS

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-020

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This wood-framed single-family residence is one-story and has a U-shape ground plan. The gable-on-hip roof is sheathed in composition shingles. The asymmetrical façade features wood shingles on the upper portion with stucco covering the lower portion, except a small patch of stone veneer near the southwestern corner of the house. Fenestration is composed entirely of vinyl-framed sliding and fixed windows. The shallow entry-porch is recessed and off-centered.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ___ Structure ___ Object ___ Site ___ District ___ Element of District ___ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northeast

***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
Construction Date: 1954 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Ralph & Lailla Vincent, 14644 Valley View Road, La Mirada, CA 90638

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ___ None ___ Location Map ___ Continuation Sheet √ Building, Structure, and Object Record ___ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record ___ Artifact Record ___ Photograph Record ___ Other (List):

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

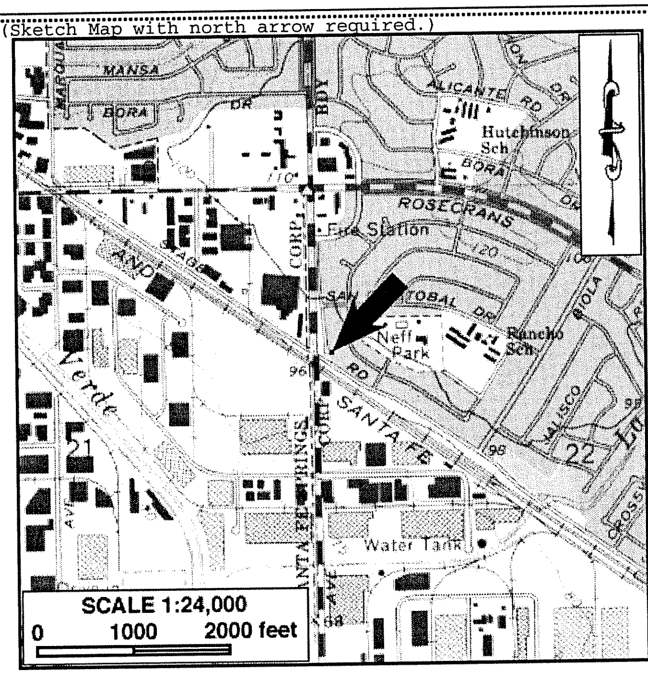
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #__________
HRI #__________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-47H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) This house was evidently constructed in 1954 by Devon Construction Company along with the others on the same tract. In 1955 Robert O. Reinhart acquired the house.
***B7. Moved?** √ No ____ Yes ____ Unknown **Date:**________ **Original Location:**________
***B8. Related Features:** None
B9a. Architect: David Freedman b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes)________
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

DPR 523B (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of 2 *Resource Name or # (Assigned by recorder) CRM TECH 789-48H

P1. Other Identifier:

***P2. Location:** ____ Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of __1/4 of Sec __; S.B. B.M. Within the Los Coyotes land grant

c. Address 14652 Valley View Road City La Mirada Zip 90638

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 405000 mE/ 3751080 mN
UTM Derivation: √ USGS Quad ____ GPS

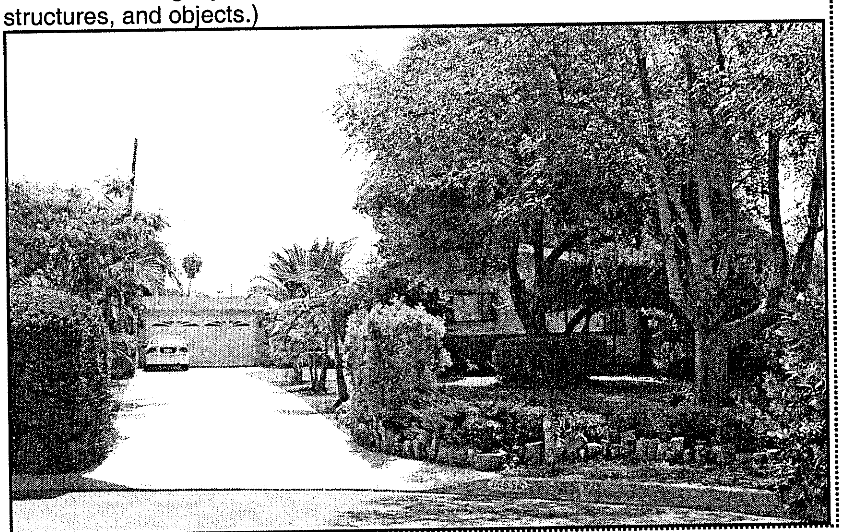
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8061-033-021

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This one-story wood-framed single-family residence is largely obscured from the public roadway by dense plants. The low-pitched front-gabled roof is covered with composition shingles. The exterior walls are clad in stucco and feature aluminum-framed sliding windows. The house has a low brick wall around the front yard, and a detached garage.

***P3b. Resource Attributes:** (List attributes and codes) HP2: Single family property

***P4. Resources Present:** √ Building ____ Structure ____ Object ____ Site ____ District ____ Element of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the southeast

***P6. Date Constructed/Age and Sources:** √ Historic ____ Prehistoric ____ Both
Construction Date: 1954 (see Items B6 and B12 for details)

***P7. Owner and Address:**
Daniel & Martha Castillo, 14652 Valley View Road, La Mirada, CA 90638

***P8. Recorded by:** (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** July 23, 2002

***P10. Survey Type:** Intensive-level historic property survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

***Attachments:** ____ None ____ Location Map ____ Continuation Sheet √ Building, Structure, and Object Record ____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

DPR 523A (1/95) *Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

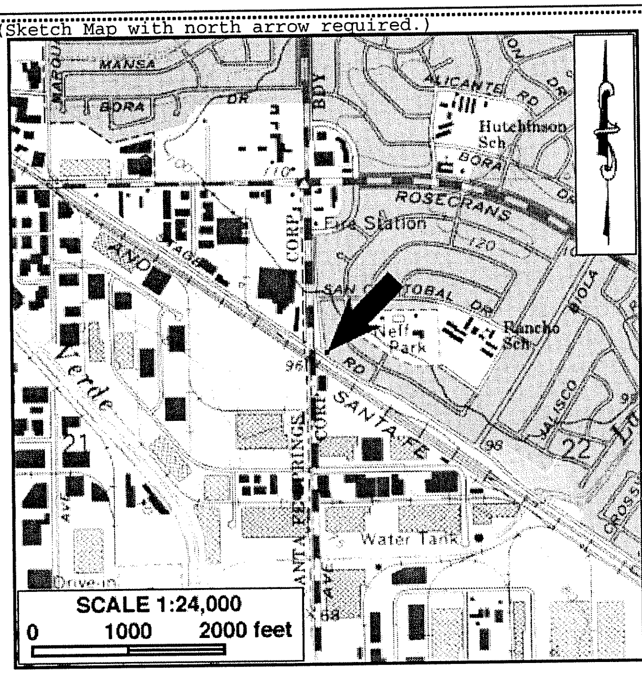
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #__________
HRI #__________

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-48H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Residential B4. Present Use: Residential
***B5. Architectural Style:** Ranch Influence
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to the records of the City of La Mirada, this house was constructed in 1954 as part of a tract home development by Devon Construction Company. Floyd L. Worth purchased the home in 1955.
***B7. Moved?** √ No ____Yes ____Unknown **Date:**________ **Original Location:**________
***B8. Related Features:** Detached garage, wall
B9a. Architect: David Freedman b. Builder: Devon Construction Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP4: Ancillary building, HP46: Walls/gates/fences
***B12. References:** Los Angeles County Assessor's real property assessment records; City of La Mirada building safety records
B13. Remarks:________
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Y
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-49H

P1. Other Identifier:

*P2. Location: ____Not for Publication √ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Whittier, Calif. Date 1965, photorevised 1981
T3S; R11W; __1/4 of__1/4 of Sec__; S.B. B.M. Within the Los Coyotes land grant

c. Address 14051 Marquardt City Santa Fe Springs Zip 90670

d. UTM: (Give more than one for large and/or linear resources) Zone 11; 404100 mE/ 3751720 mN
UTM Derivation: √ USGS Quad ____GPS

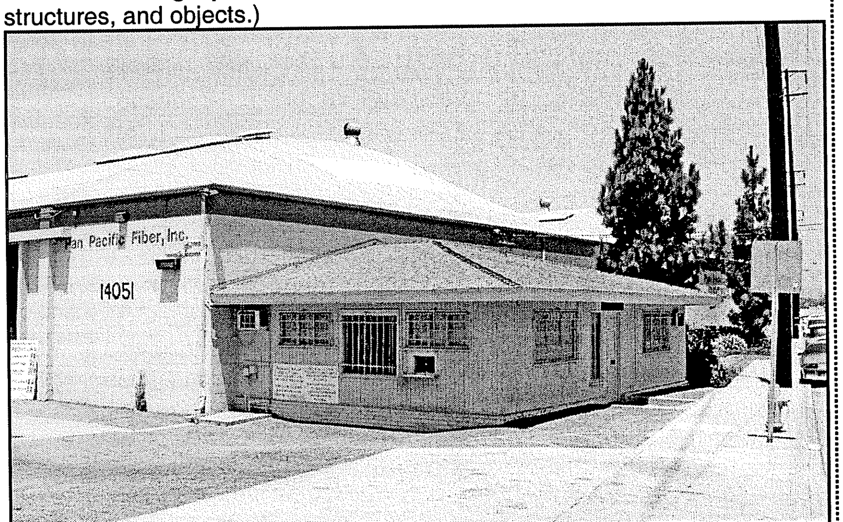
e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 8059-029-007

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) This single-story industrial building consists of a front office of wood-frame construction attached to a large warehouse built of concrete blocks. Both portions have rectangular ground plans. The office has a hip roof covered with composition shingles. Its façade is clad in horizontal clapboards with a one-foot brick veneer along the bottom. Fenestration in the office is composed of wood-framed casement windows with security bars. The warehouse is surmounted by a gently vaulted roof with slightly flared eaves, covered with composition sheets. A roll-up door constitutes the main entrance to the warehouse.

*P3b. Resource Attributes: (List attributes and codes) HP6: 1-3 story commercial building; HP8: Industrial building

*P4. Resources Present: √ Building ____Structure ____Object ____Site ____District ____Element of District ____Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) Photo taken on July 23, 2002; view to the northwest

*P6. Date Constructed/Age and Sources:
√ Historic ____Prehistoric ____Both
Construction Date: 1955-1956 (see Items B6 and B12 for details)

*P7. Owner and Address:
Unknown, 14051 Marquardt, Santa Fe Springs, CA 90670

*P8. Recorded by: (Name, affiliation, and address)
Bai "Tom" Tang and Teresa Woodard, CRM TECH, 4472 Orange Street, Riverside, CA 92501

*P9. Date Recorded: July 23, 2002

*P10. Survey Type: Intensive-level historic property survey

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None ____Location Map ____Continuation Sheet √ Building, Structure, and Object Record ____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record ____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

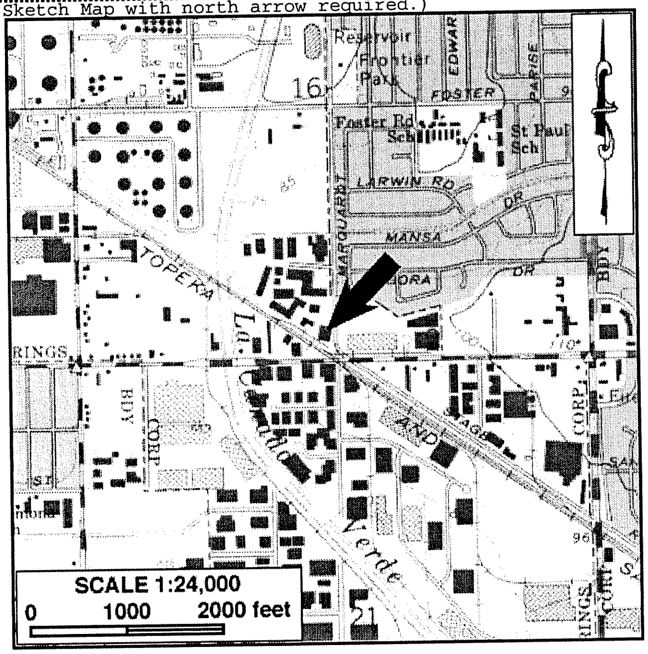
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, AND OBJECT RECORD

Primary #
HRI #

***NRHP Status Code** 6Y
***Resource Name or #** (Assigned by recorder) CRM TECH 789-49H

B1. Historic Name: None
B2. Common Name: None
B3. Original Use: Commercial/industrial   B4. Present Use: Commercial/industrial
***B5. Architectural Style:** None
***B6. Construction History:** (Construction date, alterations, and date of alterations) According to archival records of the City of Santa Fe Springs, this building was constructed in 1955-1956 as the office and storage warehouse of Stewart Plywood Company, which was in operation at this location at the time. The company listed itself as the construction contractor in the building permit application. In 1959, an 8,000-square-foot plywood warehouse was added on the property, but its exact location is unclear. Other than the construction of a block wall and at least two scale pits, no other alterations were recorded. Among later owners of the building were the Stewart Family Trust (1994) and Pan-Pacific Fibers (1996, 1999).
***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___
***B8. Related Features:** Fence
B9a. Architect: R. A. Graves   b. Builder: O. W. Stewart Plywood Company
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) This building does not meet any of the NRHP criteria.
B11. Additional Resource Attributes: (List attributes and codes) HP46: Walls/gates/fences
***B12. References:** Los Angeles County Assessor's real property assessment records; City of Santa Fe Springs building safety records
B13. Remarks:
***B14. Evaluator:** Bai "Tom" Tang and Teresa Woodard
***Date of Evaluation:** September 2002

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

*Resource Name or # (Assigned by recorder) CRM TECH 789-50H

P1. Other Identifier: Burlington Northern Santa Fe (BNSF, formerly Atchison, Topeka and Santa Fe) Railway

***P2. Location:** √ Not for Publication ____Unrestricted ***a. County** Los Angeles/Orange
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quads** Los Angeles, Calif. **Date** 1966, photorevised 1981
South Gate, Calif. **Date** 1964, photorevised 1981
Whittier, Calif. **Date** 1965, photorevised 1981
La Habra, Calif. **Date** 1964, photorevised 1981
Anaheim, Calif. **Date** 1965, photorevised 1981

T2-3S **R**10-13W, S.B. **B.M.** Within the boundaries of the San Juan Cajon de Santa Ana, Los Coyotes, Santa Gertrudes (McFarland and Downey), Santa Gertrudes (Colima), Paso de Bartolo (Sepulveda), Paso de Bartolo (Guirado), and San Antonio (Lugo) land grants

Elevation: Ca. 80-190 feet above mean sea level

c. Address N/A **City** Fullerton, Buena Park, La Mirada, Santa Fe Springs, Norwalk, Pico Rivera, Montebello, City of Commerce, and Vernon
Zip Code N/A

d. UTM: Zone 11; **NW end:** 388830 **mE/** 3763880 **mN; SE end:** 417800 **mE/** 3747600 **mN**
UTM Derivation: √ USGS Quad ____GPS

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) The recorded segment of the railroad extends from Basta (BNSF Mile Post 163.3) in the City of Fullerton to Hobart (M.P. 148.9) in the City of Vernon

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of an approximately 14.7-mile segment of the Burlington Northern Santa Fe (formerly Atchison, Topeka and Santa Fe) Railway. Most of the rail line dates originally to the 1880s. However, as a working railroad after more than 100 years of continuous operation, its current physical characteristics reflect very little of the historic origin. The existing tracks and other associated railroad features are mostly modern in origin, and show no particular historical characteristics today.

***P3b. Resource Attributes:** (List attributes and codes) HP37: Railroad

***P4. Resources Present:** ____Building ____Structure ____Object √ Site ____District ____Element of District ____Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

(See p. 9)

P5b. Description of Photo: (view, date, accession #) Photos taken on June 21, 2002

***P6. Date Constructed/Age of Sources:** √ Historic ____Prehistoric ____Both 1885-1888 (see Items B6 and B12 for detail)

***P7. Owner and Address:** Burlington Northern Santa Fe Railway Company, 2650 Lou Menk Drive, Fort Worth, TX 76131

***P8. Recorded by:** (Name, affiliation, and address) Daniel Ballester/Bai "Tom" Tang, CRM TECH, 4472 Orange Street, Riverside, CA 92501

***P9. Date Recorded:** June-July 2002

***P10. Survey Type:** CEQA-compliance survey

(Continued on p. 2)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD (Continued)

Primary #
HRI #
Trinomial

*Resource Name or # (Assigned by recorder) CRM TECH 789-50H

*P11. **Report Citation:** (Cite survey report and other sources, or enter "none.") Bai Tang, Michael Hogan, and Mariam Dahdul (2002): Historical Resources Compliance Report: Third Main Track and Grade Separation Project, Hobart (MP 148.9) to Basta (MP 163.3), BNSF/Metrolink East-West Main Line Railroad Track, Vernon to Fullerton, Los Angles and Orange Counties, California. On file, South Central Coastal Information Center, California State University, Fullerton.

*Attachments: ____None √ Location Map √ Continuation Sheet √ Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI #

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) CRM TECH 789-50H

B1. Historic Name: Atchison, Topeka and Santa Fe Railway

B2. Common Name: Burlington Northern Santa Fe Railway

B3. Original Use: Railroad B4. Present Use: Railroad

***B5. Architectural Style:** N/A

***B6. Construction History:** (Construction date, alterations, and date of alterations) Most of the railroad line within this site was constructed in 1885-1888 by the Riverside, Santa Ana and Los Angeles Railway Company, an ATSF subsidiary, as a part of the ATSF main line from Los Angeles to Orange and San Diego. The easternmost segment, measuring approximately 1.5 miles in length, was built in 1910 as a part of the "Fullerton Cutoff," which straightened and shortened the ATSF line between Los Angeles and Riverside. During the heyday of the railroad age, the line was a part of the ATSF's famed "Kite-Shaped Track," one of the most popular tourist attractions in southern California in the 1890s-1910s. Almost all of the physical components of the railroad, however, have been replaced over the years.

***B7. Moved?** √ No ___ Yes ___ Unknown **Date:** ___ **Original Location:** ___

***B8. Related Features:** Bridges, culverts, and other common railroad features (see p. 9)

B9a. Architect: N/A b. Builder: Riverside, Santa Ana and Los Angeles Railway Company

***B10. Significance: Theme** Railroad transportation **Area** California

Period of Significance 1880s **Property Type** Railroad **Applicable Criteria** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.) The railroad line at this site is closely associated with an important event in 19th-century California history, namely the coming of a second transcontinental railroad, which marked the beginning of the end of the Southern Pacific Railway Company's transportation monopoly and contributed directly to the southern California land boom of the 1880s. It is also associated with the emergence of southern California as a favored tourist destiny in the late 19th and early 20th centuries. However, the existing railroad line and its associated features that constitute the site, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance. Therefore, the site does not appear eligible for listing in the National Register of Historic Places.

B11. Additional Resource Attributes: (List attributes and codes) HP19: Bridges/culverts

***B12. References:** Donald Duke (1991): Kite-Shaped Track Excursion, in *The Branding Iron* (Los Angeles) Summer 1991:8-12; Lee Gustafson and Philip Serpico (1992): *Santa Fe Coast Lines Depots, Los Angeles Division*, Omni Publications, Palmdale, California.

B13. Remarks:

***B14. Evaluator:** Bai "Tom" Tang

***Date of Evaluation:** November 2002

(Sketch Map with north arrow required.)

(See pp. 4-8)

(This space reserved for official comments.)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial

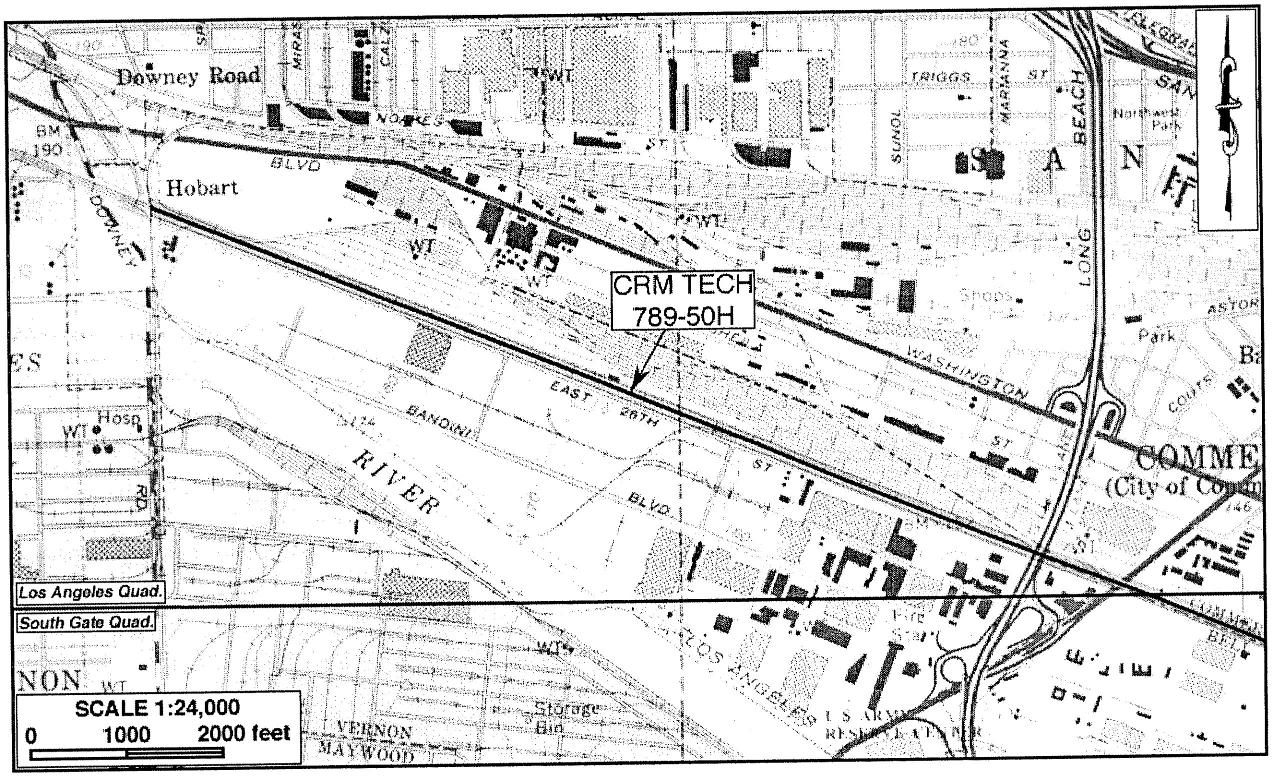
Page 4 of 9

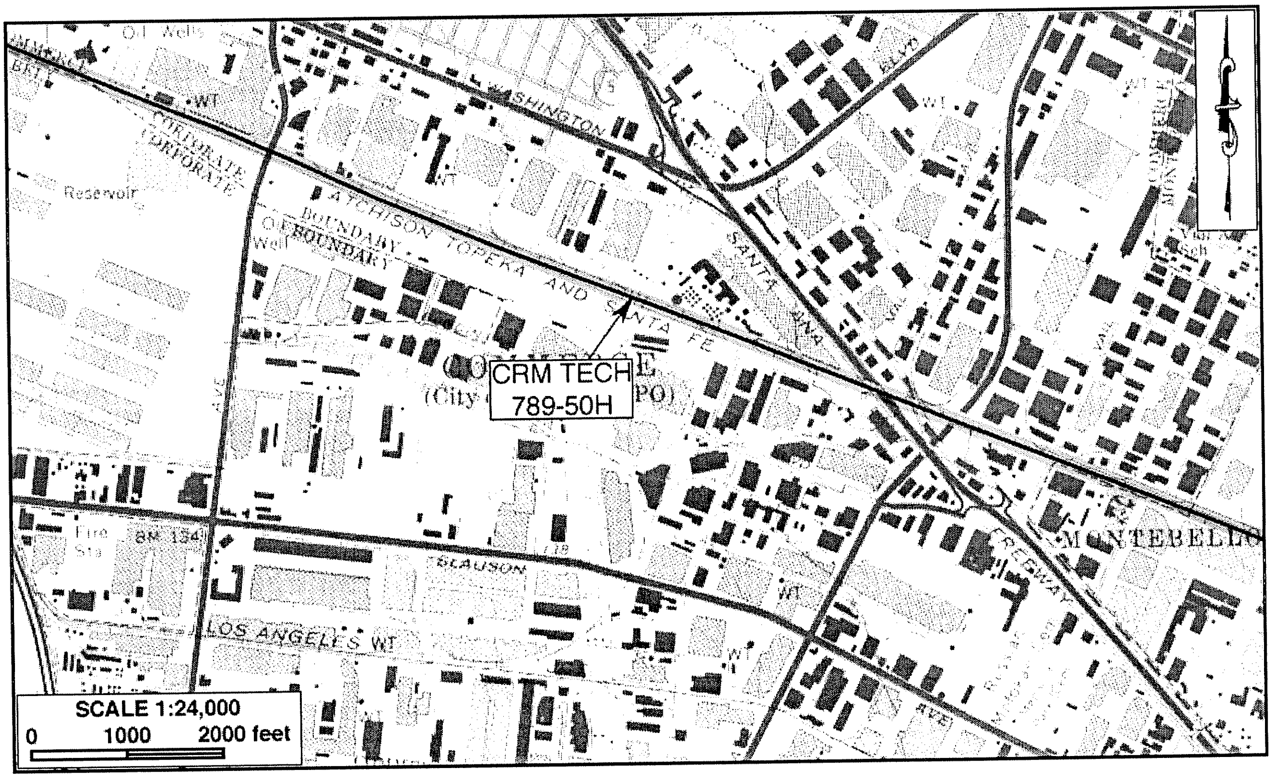
*Resource Name or # (Assigned by recorder) CRM TECH 789-50H

*Map Name: Los Angeles and South Gate, Calif.

*Scale: 1:24,000

*Date of Map: 1964/1966, photorevised 1981





DPR 523J (1/95)

*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial

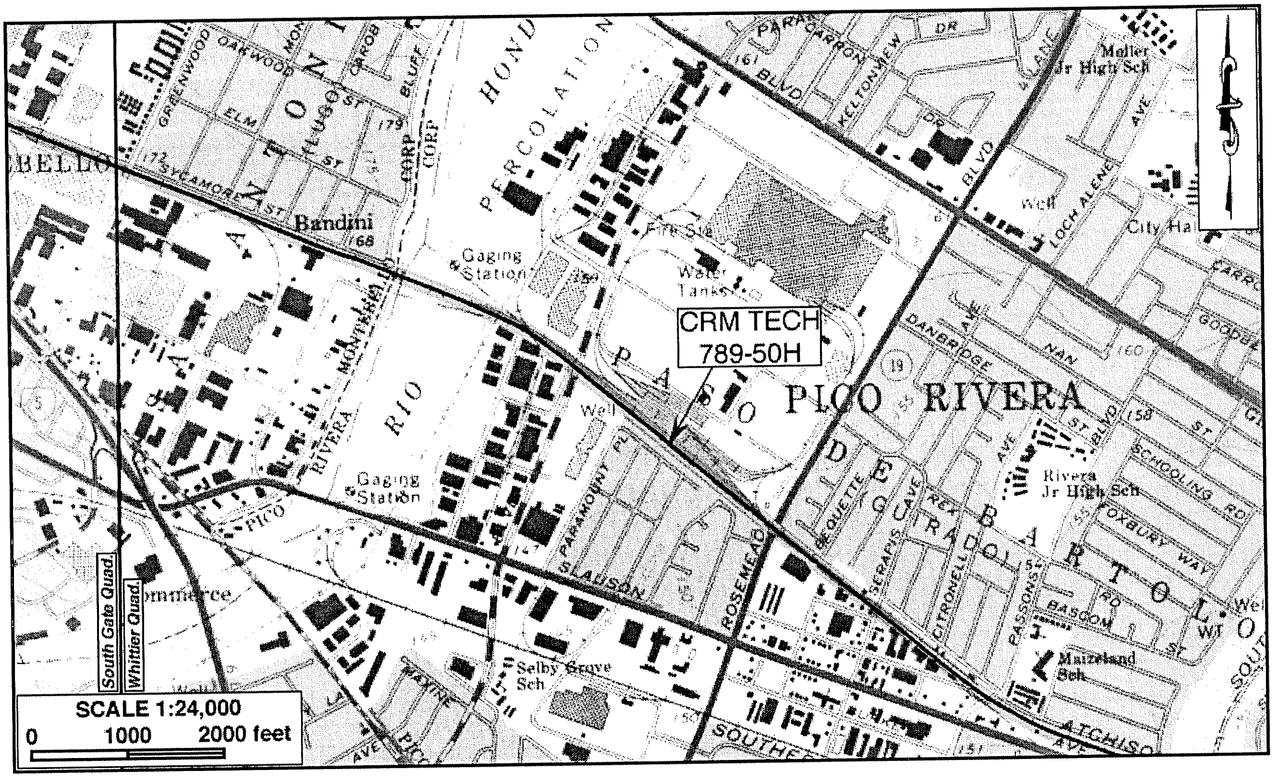
Page 5 of 9

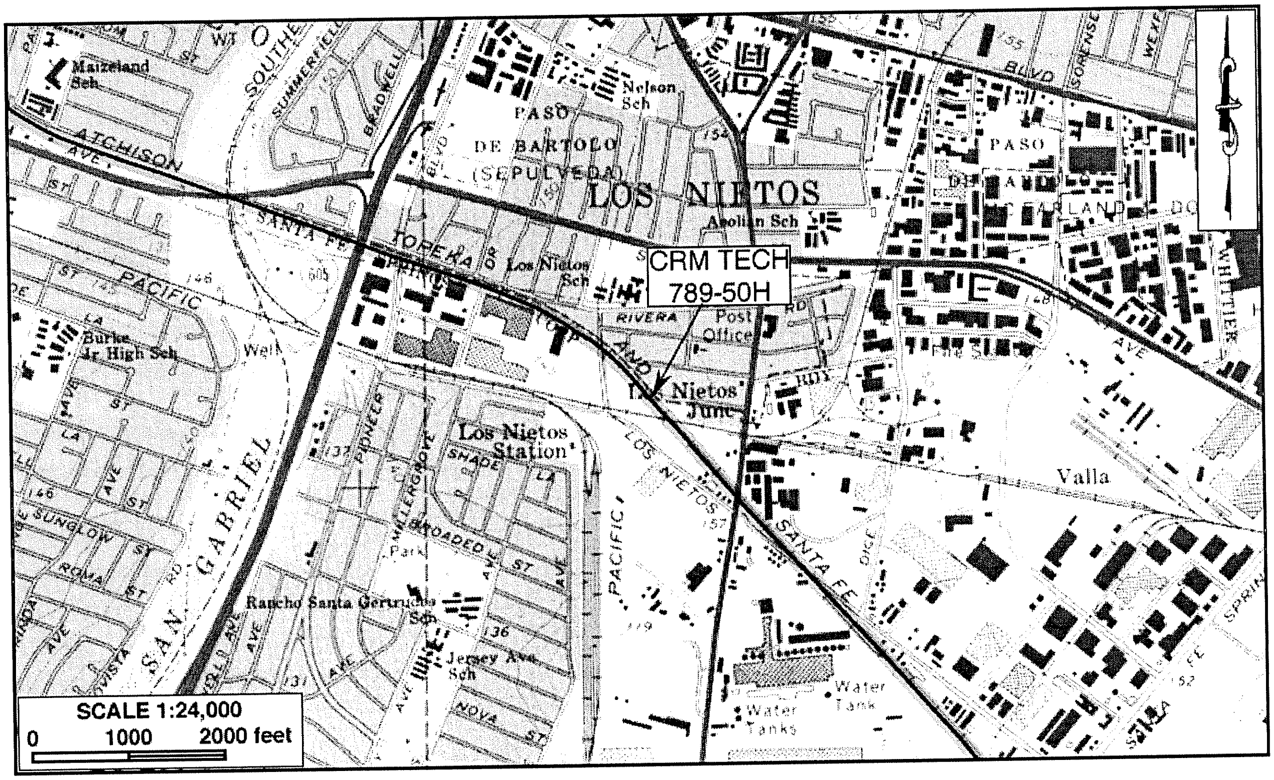
*Resource Name or # (Assigned by recorder) CRM TECH 789-50H

*Map Name: South Gate and Whittier, Calif.

*Scale: 1:24,000

*Date of Map: 1964/1965, photorevised 1981





DPR 523J (1/95)

*Required information

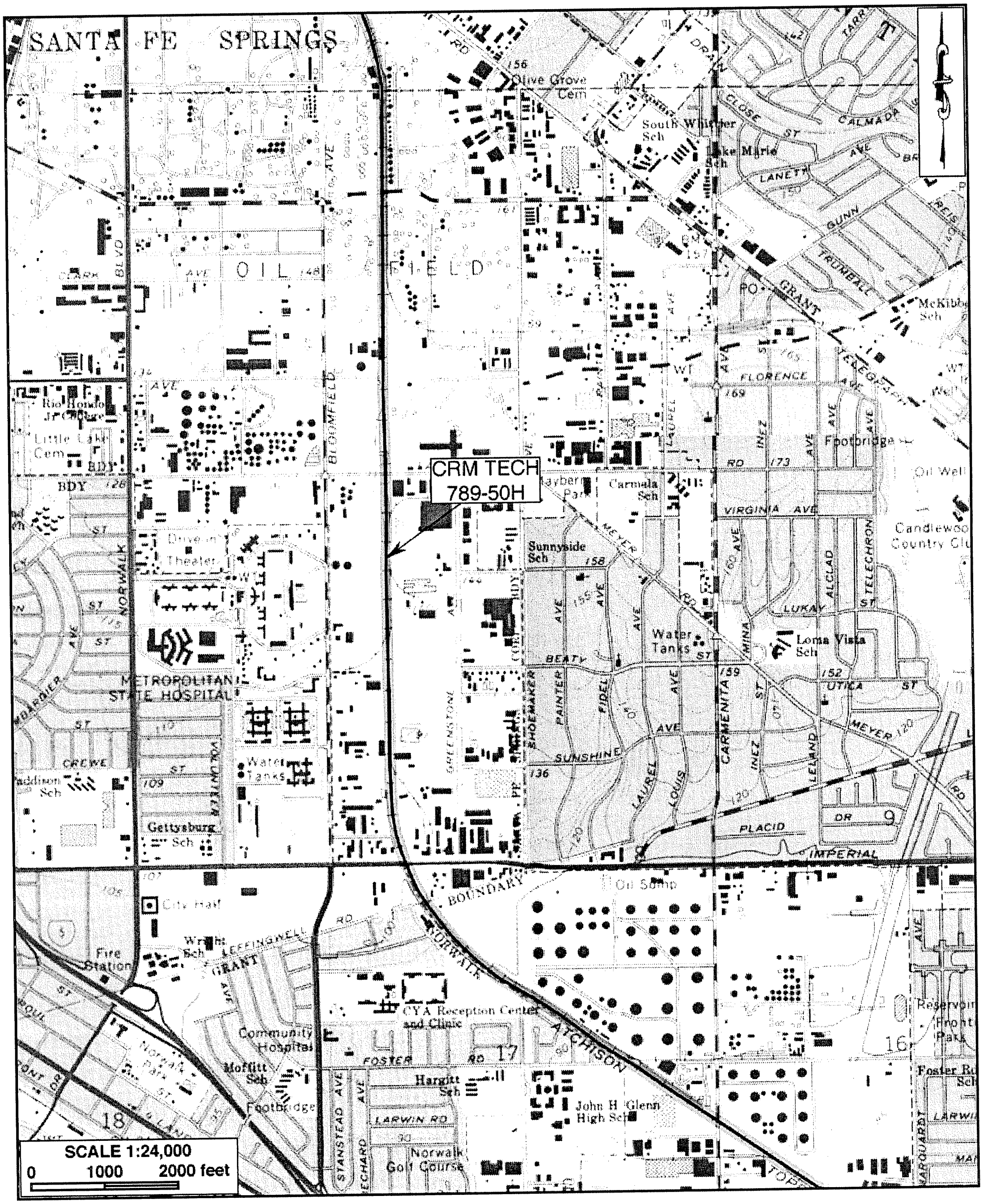
State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial

Page 6 of 9 *Resource Name or # (Assigned by recorder) CRM TECH 789-50H

*Map Name: Whittier, Calif. *Scale: 1:24,000

*Date of Map: 1965, photorevised 1981



*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial

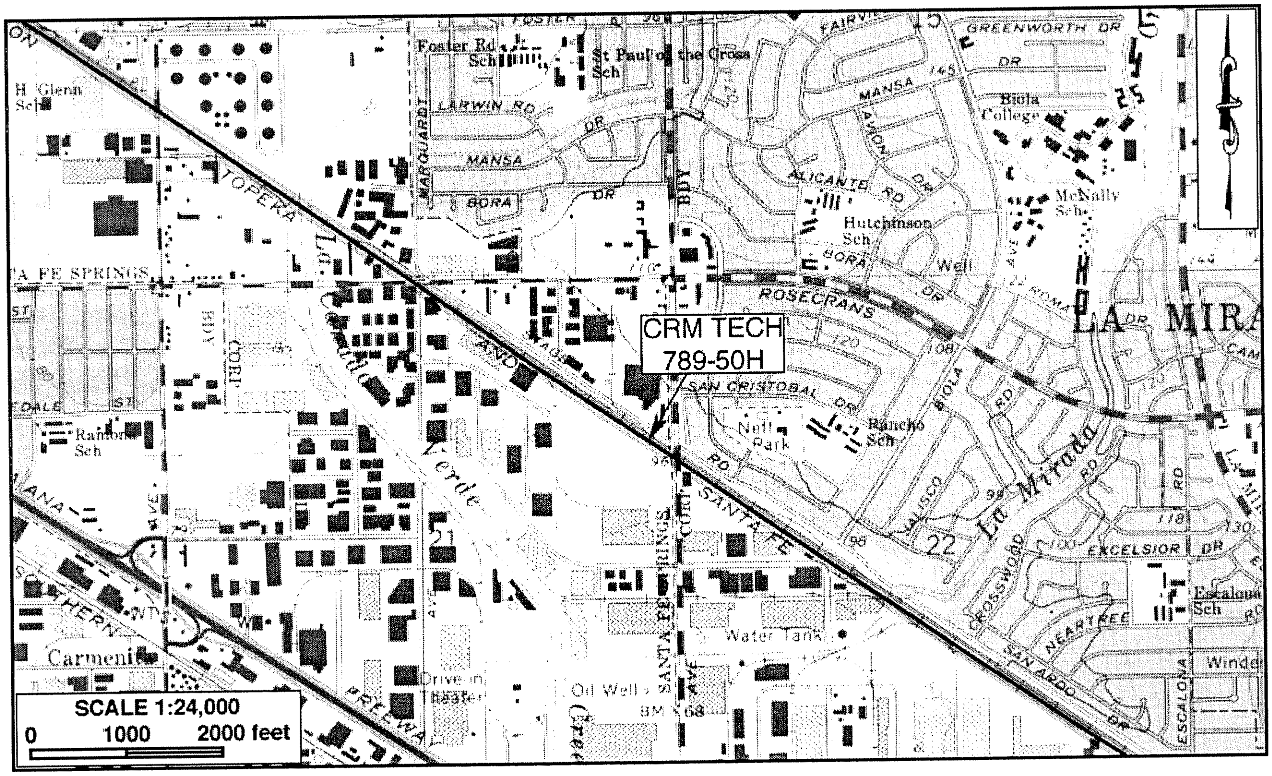
Page 7 of 9

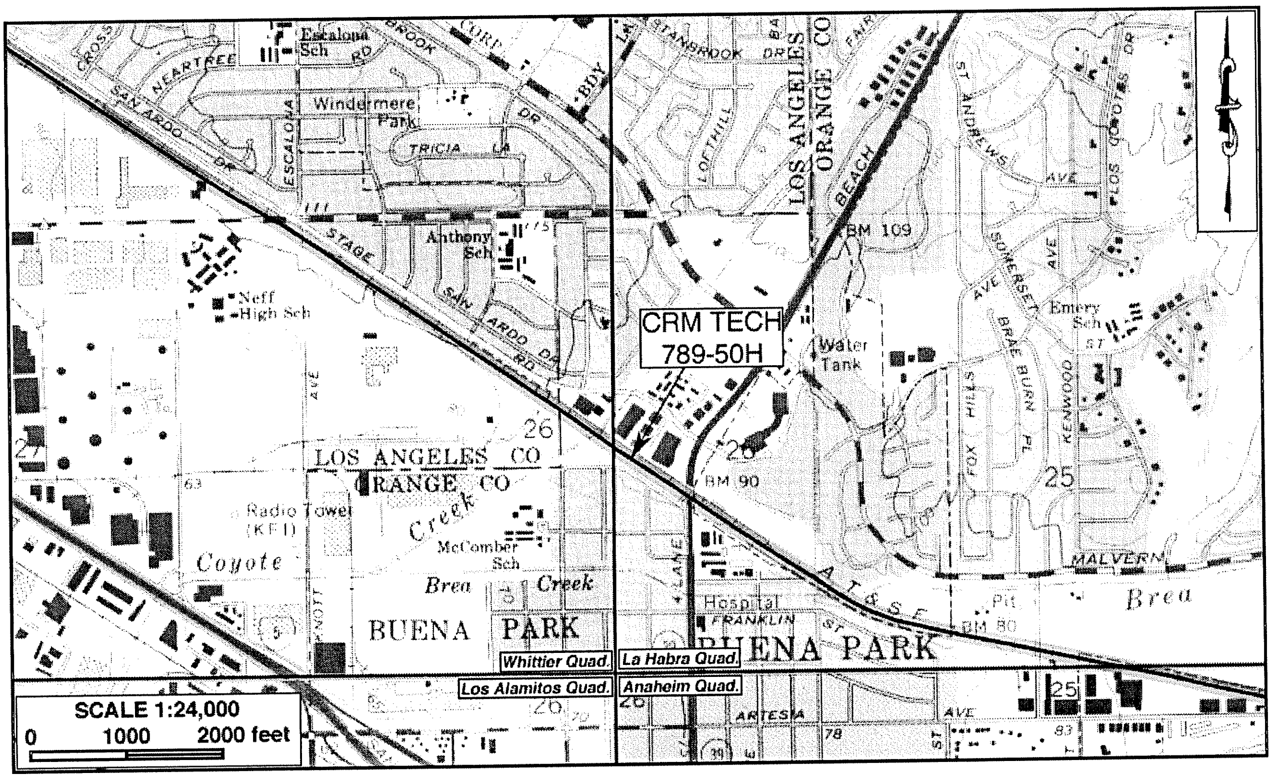
*Resource Name or # (Assigned by recorder) CRM TECH 789-50H

*Map Name: Whittier, La Habra, Los Alamitos, and Anaheim, Calif.

*Scale: 1:24,000

*Date of Map: 1964/1965, photorevised 1981





*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI #
Trinomial

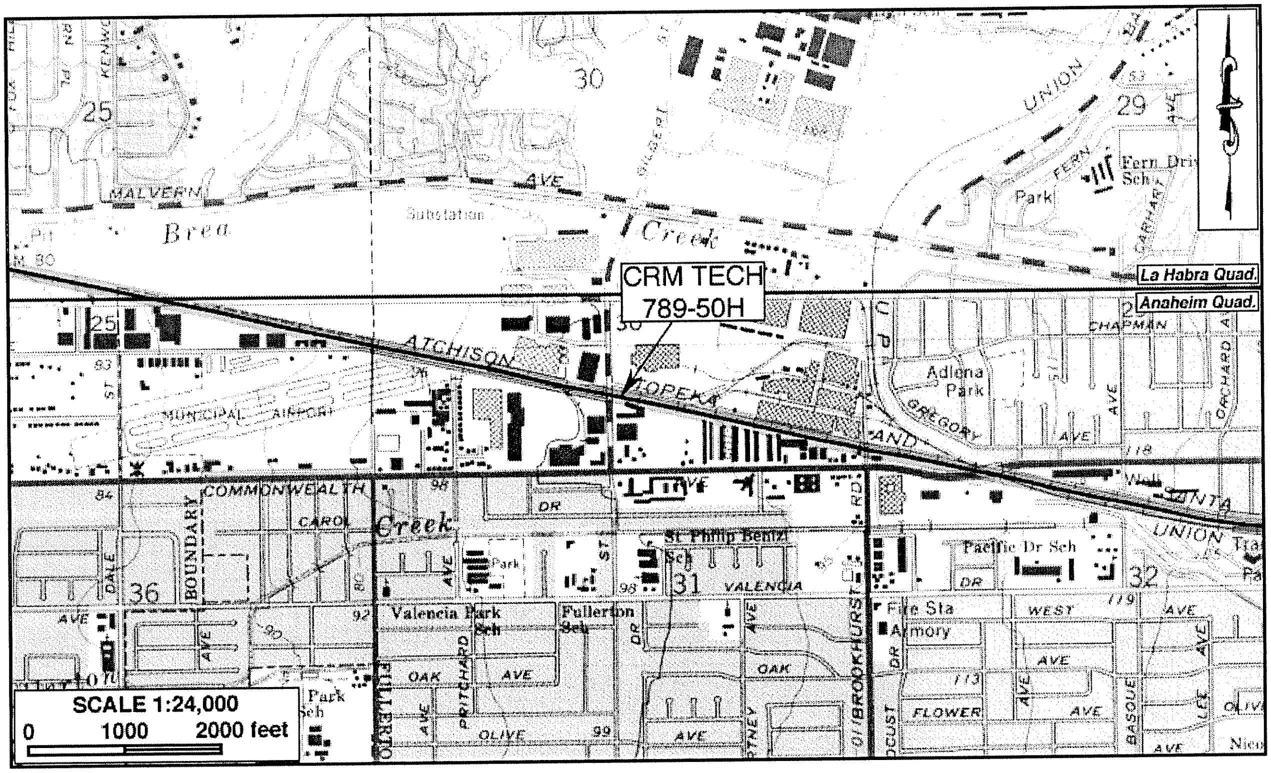
Page 8 of 9

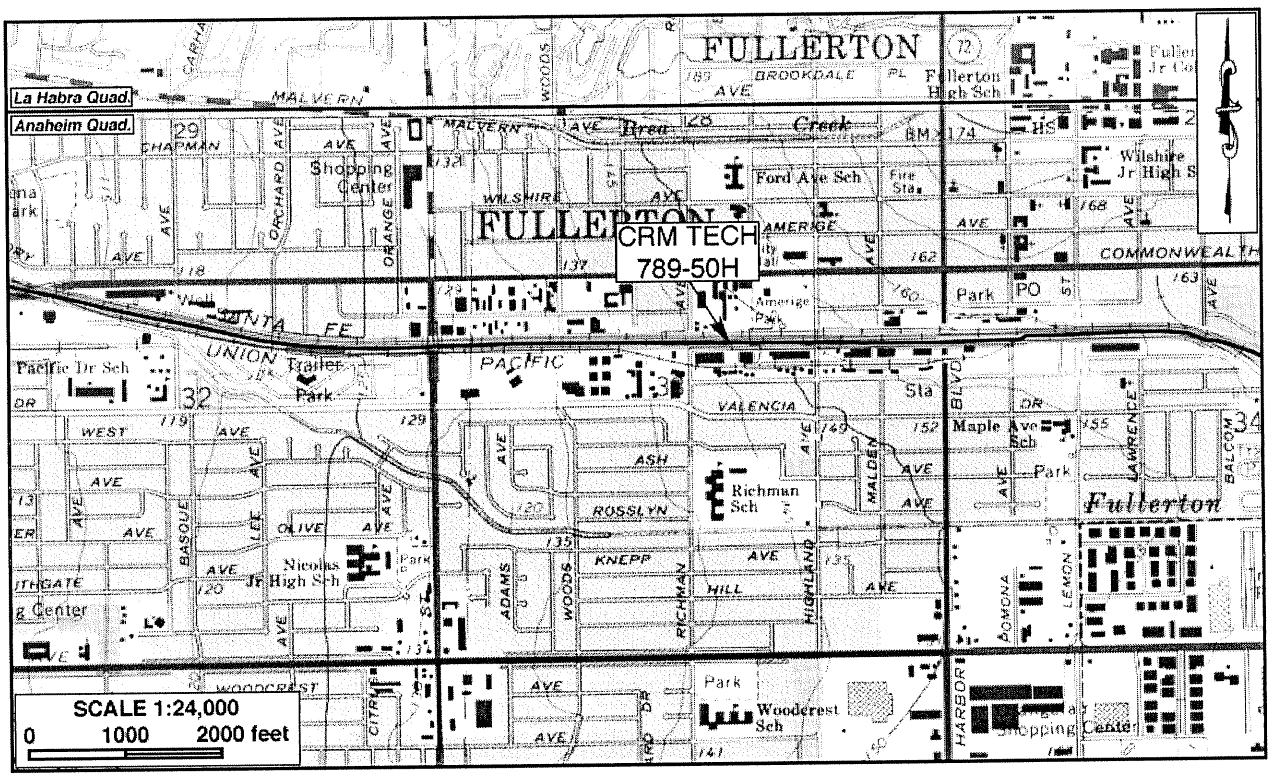
*Resource Name or # (Assigned by recorder) CRM TECH 789-50H

*Map Name: La Habra and Anaheim, Calif.

*Scale: 1:24,000

*Date of Map: 1964/1965, photorevised 1981



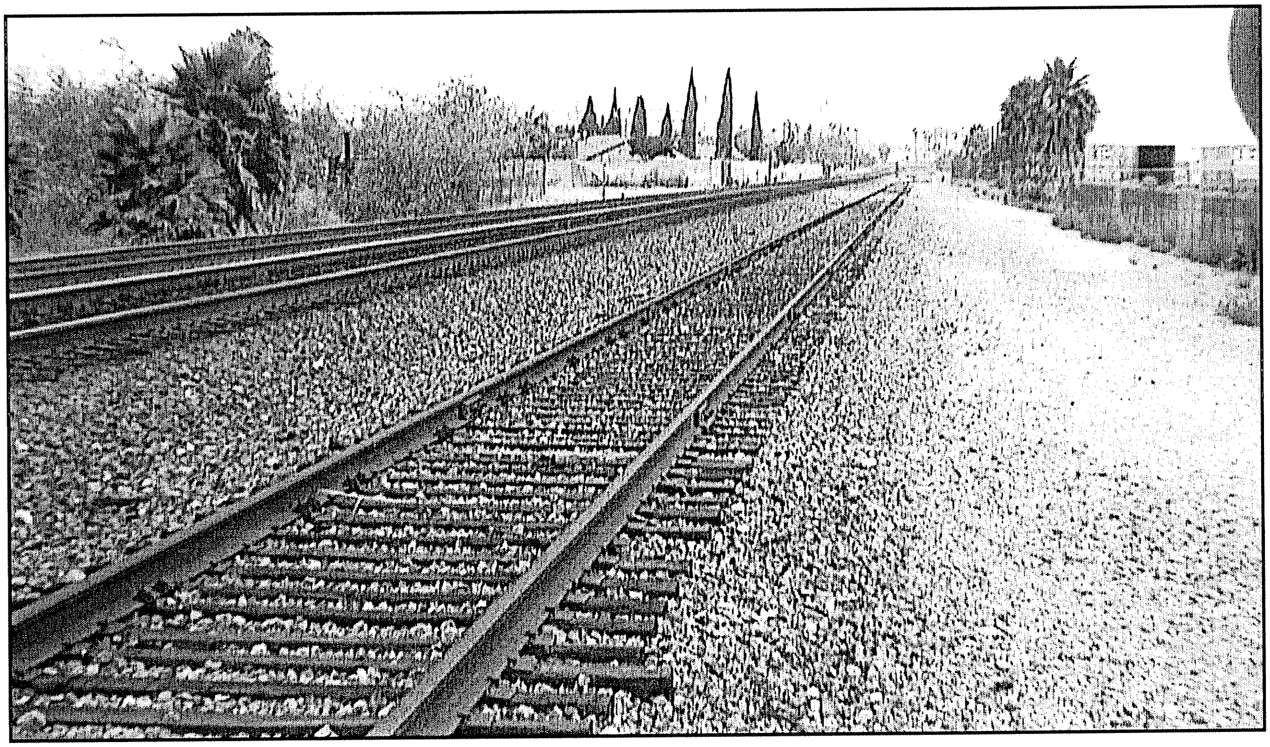


State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI #
Trinomial

Resource name or # (Assigned by recorder) CRM TECH 878-2H

Photo Taken by Danniel Ballester ***Date** June 21, 2002 √ Continuation ___ Update



Typical view of the existing railroad line

Old concrete culvert across the railroad bed

*Required information

APPENDIX 3

CALIFORNIA HISTORIC BRIDGE INVENTORY PRINTOUT

Third Main Track and Grade Separation Project
Hobart (MP 148.9) to Basta (MP 163.3)
BNSF/Metrolink East-West Main Line Railroad Track
Vernon to Fullerton, Los Angles and Orange Counties, California

Historical Significance - Local Agency Bridges
Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C1759	07	GRANADA CHANNEL	HAVNHRST AV & RUFNER AV	5 Not eligible for NRHP	1972	
53C1760	07	BIG TUJUNGA WASH	600' N BIG TUJUNGA CYN R	5 Not eligible for NRHP	1971	
53C1762	07	BULL CREEK	BALBOA & RUFFNER AV	5 Not eligible for NRHP	1955	
53C1763	07	VERMONT CANYON RD TUNNEL	1.3 MI N/O LOS FELIZ BLVD	5 Not eligible for NRHP	-1	
53C1764	07	VIGNES STREET UNDERPASS	0.2 MI E OF N MAIN ST	5 Not eligible for NRHP	1938	
53C1766	07	PALMS JUNIOR HIGH PUC	GLENDON AV-KELTON AV	5 Not eligible for NRHP	1953	
53C1767	07	SANTA MONICA CYN CHANNEL	BTW MNDVL CYN RD/RIVRA RD	5 Not eligible for NRHP	1966	
53C1770	07	COCA COLA CONVEYOR OC	0.1 MI E OF CENTRAL AVE	5 Not eligible for NRHP	1967	
53C1771	07	CITY HALL EAST TUNNEL	100 FT S OF TEMPLE ST	5 Not eligible for NRHP	1971	
53C1772	07	MISSION ROAD OH	1/4 MI NE OF MACY ST	5 Not eligible for NRHP		
53C1773	07	SUNSET PLAZA SIDEHILL BR	1.5 MI N OF SUNSET BLVD	5 Not eligible for NRHP	1956	
53C1776L	07	SOLEMINT OH	W/O SR 14 NR SOLEMINT	5 Not eligible for NRHP	1968	
53C1776R	07	SOLEMINT OH	0.5 MI S/O SOLEDAD	5 Not eligible for NRHP	1938	
53C1777L	07	SANTA CLARA RIVER	0.3 MI S SOLEDAD CYN RD	5 Not eligible for NRHP	1938	
53C1777R	07	SANTA CLARA RIVER	0.3 MI S SOLEDAD CYN RD	5 Not eligible for NRHP	1968	
53C1779	07	BALDWIN HILLS PARK RD OC	2.8 KM N/O SLAUSON AVE	5 Not eligible for NRHP	1985	
53C1780	07	CIVIC CENTER MALL	0.02 MI E OF MAIN ST	5 Not eligible for NRHP	1975	
53C1782	07	SAN MARTINEZ CHIQUITO CR	3 MI W GOLDEN STATE FRWY	5 Not eligible for NRHP	1925	1960
53C1785	07	PICKENS CANYON CHANNEL	0.1 MI E/O BRIGGS AVE	5 Not eligible for NRHP	1935	
53C1786	07	VERDUGO WASH	1.3 MI N/O VENTURA FWY	5 Not eligible for NRHP	1933	1938
53C1787	07	VERDUGO WASH	0.1 MI S/O VERDUGO RD	5 Not eligible for NRHP	1933	
53C1790	07	SYCAMORE STREET	1/4 MI N SANTA ANA FRWY	5 Not eligible for NRHP	1983	
53C1791	07	GREENWOOD AVE UP	1/4 MI N SANTA ANA FRWY	5 Not eligible for NRHP	1983	
53C1792	07	ALDER CREEK BR	4.1 MI E ANGELES FORST HY	5 Not eligible for NRHP	1983	
53C1793	07	MILL CREEK BR	150' E ANGELES FOREST HWY	5 Not eligible for NRHP	1982	
53C1794	07	UNKNOWN WASH	1/4 MI N POMONA FRWY	5 Not eligible for NRHP	1981	
53C1795	07	ARTESIA-NORWALK STRM DRN	0.1 MI W/O NORWALK BLVD	5 Not eligible for NRHP	1982	
53C1796	07	HUMANE WAY	0.3 MI W CORONA EXPWY	5 Not eligible for NRHP	1982	
53C1797	07	PASEO VALENCIA POC	0.7 MI S VALENCIA BL	5 Not eligible for NRHP	1983	
53C1798	07	PASEO VALENCIA POC	1.1 MI S VALENCIA BLVD	5 Not eligible for NRHP	1983	
53C1799	07	MINT CANYON WASH	150' E/O SIERRA HWY	5 Not eligible for NRHP	1983	
53C1800	07	ALONDRA BL OH (ATSF RR)	100' W STAGE ROAD	5 Not eligible for NRHP	1984	
53C1801	07	PASEO VALENCIA POC	0.5 MI E MCBEAN PARKWAY	5 Not eligible for NRHP	1982	
53C1802	07	IMPERIAL HIGHWAY UP	1/2 MI E 605 FRWY	5 Not eligible for NRHP	1984	
53C1803	07	UNKNOWN WASH	1/4 MI N POMONA FRWY	5 Not eligible for NRHP	1978	
53C1804	07	LONG BEACH PROMENADE POC	0.1 MI W PINE ST	5 Not eligible for NRHP	1983	
53C1805	07	LONG BEACH PROMENADE POC	0.1 MI W PINE ST	5 Not eligible for NRHP	1983	
53C1806	07	LONG BEACH PARKING STRUT	0.1 MI N QUEENS WAY	5 Not eligible for NRHP	1983	
53C1807	07	SANTA CLARA RIVER (SF)	0.4 MI S LYONS AVE	5 Not eligible for NRHP	1971	
53C1808	07	SAN JOSE CREEK	5/8 MI N POMONA FWY	5 Not eligible for NRHP	1983	
53C1809	07	UPPR	1/4 MI E WORKMAN MILL RD	5 Not eligible for NRHP	1983	
53C1812	07	MEDEA CREEK	0.1 MI W KANAN RD	5 Not eligible for NRHP	1982	
53C1813	07	HALLS CANYON CHANNEL	0.1 MI W OF CASTLE ROAD	5 Not eligible for NRHP	1935	1955
53C1814	07	SANTA ANITA WASH	0.6 MI E/O SANTA ANITA AV	5 Not eligible for NRHP	1958	
53C1815	07	SAWPIT WASH	0.2 MI W MOUNTAIN AVE	5 Not eligible for NRHP	1928	1952

Historical Significance - Local Agency Bridges

Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C0443	07	MARSHALL CANYON WASH	1.2 MI W WHITE AVE	5 Not eligible for NRHP	1967	
53C0444	07	EATON WASH	800' W ROSEMEAD BLVD	5 Not eligible for NRHP	1927	1953
53C0445	07	LOS ANGELES RIVER	3/4 MI E ATLANTIC BLVD	5 Not eligible for NRHP	1942	
53C0446	07	SAN GABRIEL RIVER	0.3 MI E SAN GAB R FWY	5 Not eligible for NRHP	1961	1973
53C0447	07	SUSANNA CANYON CREEK	2.2 MI E SAN G CANYON RD	5 Not eligible for NRHP	1942	1968
53C0448	07	AZUSA AVENUE UP	3/8 MI N POMONA FWY	5 Not eligible for NRHP	1971	
53C0449	07	WALNUT CREEK	1 MI W CITRUS ST	5 Not eligible for NRHP	1967	
53C0450	07	RUBIO WASH	1/4 MI S OF LAS TUNAS DR	5 Not eligible for NRHP	1914	1925
53C0451	07	NORTH FORK COYOTE CREEK	0.3 MI N IMPERIAL HWY	5 Not eligible for NRHP	1961	
53C0452	07	LOS CERRITOS CH	0.1 MI S SPRING ST	5 Not eligible for NRHP	1956	
53C0453	07	CLARK AVE DRAIN	0.5 MI E OF LAKEWOOD BLVD	5 Not eligible for NRHP	1962	
53C0454	07	PALO VERDE DRAIN	1/4 MI E/O BELLFLOWER BLV	5 Not eligible for NRHP	1955	
53C0455	07	NORWALK BLVD UP	1/2 MI N WHITTIER BLVD	5 Not eligible for NRHP	1966	
53C0456	07	CHINO CREEK	1/4 MI E TOWNE AVE	5 Not eligible for NRHP	1962	1971
53C0457	07	DOMINGUEZ SCHOOL POC	3/4 MI S DEL AMO BLVD	5 Not eligible for NRHP	1954	
53C0458	07	SANTA FE AVE UP	1/8 MI N/O SAN DIEGO FWY	5 Not eligible for NRHP	1932	
53C0459	07	DOMINGUEZ CHANNEL	0.8 MI S CARSON ST	5 Not eligible for NRHP	1963	
53C0460	07	COMPTON CREEK	0.5 MI E WILMINGTON AVE	5 Not eligible for NRHP	1938	
53C0461	07	LA MIRADA CHANNEL	0.5 MI W VALLEY VIEW AVE	5 Not eligible for NRHP	1968	
53C0462	07	SORENSEN DRAIN	1/2 MI E CARMENITA AVE	5 Not eligible for NRHP	1960	
53C0463	07	SORENSEN DRAIN	1 MI N TELEGRAPH RD	5 Not eligible for NRHP	1959	
53C0464	07	N FK COYOTE CREEK	3/4 MI W VALLEY VIEW AVE	5 Not eligible for NRHP	1960	
53C0465	07	N FK COYOTE CREEK	1 MI S TELEGRAPH RD	5 Not eligible for NRHP	1960	
53C0467	07	SAN JOSE CREEK	0.1 MI S VALLEY BLVD	5 Not eligible for NRHP	1968	1975
53C0468	07	SAN JOSE CREEK BOH	1/4 MI E OF POMONA BLVD	5 Not eligible for NRHP	1972	
53C0469	07	SANTA CLARA RIVER	4 MI E BOUQUET CYN RD	5 Not eligible for NRHP	1973	
53C0470	07	LEFFINGWELL CREEK	0.8 MI N LEFFINGWELL RD	5 Not eligible for NRHP	1963	
53C0471	07	RIO HONDO	3/8 MI W/O PARAMOUNT BLVD	5 Not eligible for NRHP	1941	1966
53C0472	07	TELEGRAPH RD UP	0.9 MI E SAN GABRIEL RIV	5 Not eligible for NRHP	1952	
53C0473	07	LOS ANGELES RIVER	1.0 MI NORTH OF U.S. 101	5 Not eligible for NRHP	1960	
53C0474	07	BROWNS CREEK	BTW COZYCROFT A/LURLINE A	5 Not eligible for NRHP	1971	
53C0475	07	ALISO CREEK	BTW WILBUR AVE/CREBS AVE	5 Not eligible for NRHP	1954	
53C0476	07	BULL CREEK	1.3 MI WEST OF I-405	5 Not eligible for NRHP	1954	1973
53C0477	07	SHERMAN WAY TUNNEL	BTW VALJEAN A/HVNHURST AV	5 Not eligible for NRHP	1958	
53C0478	07	BOUQUET CANYON RD	1.4 MI N SOLEDAD CYN RD	5 Not eligible for NRHP	1976	
53C0479	07	BOUQUET CANYON RD	3 MI N SOLEDAD CYN RD	5 Not eligible for NRHP	1967	
53C0481	07	87TH ST E UNDER SPTCO	2 MI N PEARBLOSSOM HWY	5 Not eligible for NRHP	1967	
53C0482	07	CALIFORNIA AQUEDUCT	1 MI N SIERRA HWY	5 Not eligible for NRHP	1968	
53C0483	07	PEARBLOSSOM HWY OH	2 MI N ANTELOPE VAL HWY	5 Not eligible for NRHP	1959	
53C0484	07	SHIRLEYJEAN STR	100' W OF LA CRESENTA AVE	5 Not eligible for NRHP	1953	
53C0485	07	INDIAN CANYON CREEK	3/8 MI E AGUA DULCE CYN R	5 Not eligible for NRHP	1946	1962
53C0486	07	MAHER CANYON CREEK	3.3 MI E AGUA DULCE CYN R	5 Not eligible for NRHP	1949	1962
53C0487	07	NELSON CANYON WASH	3 MI E AGUA DULCE CYN RD	5 Not eligible for NRHP	1949	1962
53C0488	07	SANTA CLARA RIV BR	0.3 MI E AGUA DULCE CY RD	5 Not eligible for NRHP	1936	1940
53C0489	07	SOLEDAD CANYON RD TUNNEL	6.7 MI E SIERRA HWY	5 Not eligible for NRHP	1935	1953

Historical Significance - Local Agency Bridges

Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C0148	07	RIO HONDO	1/8 MI W/O ROSEMEAD BLVD	5 Not eligible for NRHP	1936	
53C0149	07	COYOTE CREEK	0.8 MI E VALLEY VIEW AVE	5 Not eligible for NRHP	1950	
53C0150	07	COYOTE CREEK	0.9 MI E VALLEY VIEW AVE	5 Not eligible for NRHP	1950	
53C0151	07	FIRST STREET OC	0.4 MI SW/O US 101	5 Not eligible for NRHP	1940	1971
53C0153	07	FIGUEROA ST	0.1 MI S/O US 101	5 Not eligible for NRHP	1940	
53C0154	07	TELEGRAPH RD UNDER AT&SF	0.1 MI W GARFIELD AVE	5 Not eligible for NRHP	1925	
53C0156	07	RIO HONDO RIVER	0.5 MI W PARAMOUNT BL	5 Not eligible for NRHP	1951	1959
53C0157	07	SAN GABRIEL RIVER	0.1 MI W SAN GABR FWY	5 Not eligible for NRHP	1961	
53C0158	07	LOS ANGELES RIVER	0.3 MI S FLORENCE AVE	5 Not eligible for NRHP	1939	
53C0159	07	LOS ANGELES RIVER	500' W/O LONG BEACH FWY	5 Not eligible for NRHP	1940	
53C0160	07	RIVERSIDE DRIVE BOH	0.1 MI W/O SR 11	5 Not eligible for NRHP	1939	
53C0161	07	MYRA AVE	BTW ST GEORGE ST/MYRA AVE	2 Br eligible for NRHP	1925	
53C0163	07	LOS ANGELES RIVER BOH	RIO VSTA AV-SNTA FE AV	2 Br eligible for NRHP	1925	
53C0164	07	SEPULVEDA TUNNEL	0.5 MI W/O I-405	5 Not eligible for NRHP	1929	
53C0166	07	RIO HONDO	0.5 MI S FIRESTONE BLVD	5 Not eligible for NRHP	1951	1978
53C0168	07	WILSHIRE BLVD	0.25 MI W OF SAN DIEGO FW	5 Not eligible for NRHP	1957	
53C0172	07	EATON WASH	0.2 MI W BALDWIN AVE	5 Not eligible for NRHP	1956	
53C0174	07	BURBANK-WESTERN CHANNEL	1/4 MI W GOLDEN STATE FRY	5 Not eligible for NRHP	1949	
53C0178	07	VALLEY BLVD OH	1/2 MI E HACIENDA BLVD	5 Not eligible for NRHP	1957	
53C0183	07	SIERRA HW-TUNNEL STATION	0.1 MI EAST OF I-5	5 Not eligible for NRHP	1911	1934
53C0185	07	LOS ANGELES RIVER	1/2 MI S ALONDRA BLVD	5 Not eligible for NRHP	1937	
53C0190L	07	LOS ANGELES RIVER	0.1 MI E LONG BEACH FWY	5 Not eligible for NRHP	1951	1972
53C0190R	07	LOS ANGELES RIVER	0.1 MI E LONG BEACH FWY	5 Not eligible for NRHP	1951	1972
53C0191	07	WALNUT CREEK	100' S/O SBD FWY	5 Not eligible for NRHP	1975	
53C0192	07	PARAMOUNT BLVD UP	5/8 MI S WASHINGTON BLVD	5 Not eligible for NRHP	1958	
53C0193	07	GARVEY AVE UNDER SPTC	1/4 MI E VALLEY BLVD	5 Not eligible for NRHP	1933	
53C0198	07	BURBANK BLVD OH	300' W GOLDEN STATE FRWY	5 Not eligible for NRHP	1958	
53C0200	07	MAGNOLIA BLVD	1/8 MI W GOLDEN STATE FRY	5 Not eligible for NRHP	1949	1959
53C0201	07	OLIVE AVE FRG RD	1/8 MI W GOLDEN STATE FRY	5 Not eligible for NRHP	1949	1959
53C0202	07	SPRING ST UC	1/4 MI W/O LAKEWOOD BLVD	5 Not eligible for NRHP	1978	
53C0203	07	N FK COYOTE CREEK	0.3 MI W VALLEY VIEW AVE	5 Not eligible for NRHP	1959	
53C0208	07	ORANGE AVE OH	1/2 MI S WILLOW ST	5 Not eligible for NRHP	1932	
53C0209	07	MARINE STADIUM & APPIAN	1/2 MI W PACIFIC COAST HY	5 Not eligible for NRHP	1955	
53C0210	07	LOS CERRITOS CHAN	0.1 MI W STUDEBAKER RD	5 Not eligible for NRHP	1984	
53C0211	07	LOS CERRITOS CHANNEL	1/4 MI W/O STUDEBAKER RD	5 Not eligible for NRHP	1956	
53C0214	07	LOS CERRITOS DRAINAGE CH	0.1 MI S SPRING ST	5 Not eligible for NRHP	1954	
53C0215	07	LOS CERITOS DR CHAN BR	0.1 MI W PALO VERDE AVE	5 Not eligible for NRHP	1954	1966
53C0216	07	LOS CERITOS DRN CHANN BR	0.1 MI S WILLOW ST	5 Not eligible for NRHP	1956	
53C0218	07	LOS CERRITOS DRA CHAN BR	0.1 MI S SPRING ST	5 Not eligible for NRHP	1954	1977
53C0219	07	PALO VERDE DRAIN BR	0.1 MI W PALO VERDE AV	5 Not eligible for NRHP	1953	
53C0220	07	LOS CERRITOS DRAINAGE CH	0.2 MI W BELLFLOWER BLVD	5 Not eligible for NRHP	1963	
53C0221	07	LOS CERRITOS DRAINAGE CH	1/4 MI E CLARK AVE	5 Not eligible for NRHP	1962	
53C0226	07	VERDUGO WA	1/8 MI N VENTURA FRY	5 Not eligible for NRHP	1939	
53C0227	07	LOS CERRITOS DR CHANNEL	0.4 MI W BELLFLOWER BL	5 Not eligible for NRHP	1963	
53C0229	07	LOS CERRITOS DRAIN CHANN	0.4 MI W BELLFLOWER BL	5 Not eligible for NRHP	1963	

Historical Significance - State Bridges Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53 0148	07	TELEPHONE OC	07-LA-405-23.30-ING	5 Not eligible for NRHP	1961	
53 0162	07	NEWELL STREET UC	07-LA-005-22.26-LA	5 Not eligible for NRHP	1961	
53 0162H	07	NEWELL ST UC	07-LA-002-14.97-LA	5 Not eligible for NRHP	1961	
53 0162K	07	NEWELL STREET UC	07-LA-005-22.26-LA	5 Not eligible for NRHP	1961	
53 0163	07	RIVERSIDE DR UC	07-LA-005-21.94-LA	5 Not eligible for NRHP	1961	
53 0164	07	GILROY STREET UC	07-LA-005-22.78-LA	5 Not eligible for NRHP	1961	1974
53 0164H	07	GILROY STRET UC	07-LA-002-15.30-LA	5 Not eligible for NRHP	1961	
53 0166	07	ARROYO SECO	07-LA-134-R12.57-PAS	5 Not eligible for NRHP	1953	1971
53 0171	07	FLORENCE AVENUE OC	07-LA-005-6.38-SFSP	5 Not eligible for NRHP	1953	
53 0183	07	EL NIDO UP	07-LA-107-3.73-TOR	5 Not eligible for NRHP	1926	1958
53 0184	07	ANGELES CREST TUNNEL 1	07-LA-002-62.82	5 Not eligible for NRHP	1950	
53 0199R	07	FIGUEROA ST TUNNEL	07-LA-110-24.90-LA	5 Not eligible for NRHP	1936	
53 0200R	07	FIGUEROA ST TUNNEL	07-LA-110-25.14-LA	5 Not eligible for NRHP	1931	
53 0201R	07	FIGUEROA ST TUNNEL	07-LA-110-25.28-LA	5 Not eligible for NRHP	1931	
53 0202R	07	FIGUEROA ST TUNNEL	07-LA-110-25.37-LA	5 Not eligible for NRHP	1931	
53 0213	07	SAN GABRIEL RIVER	07-LA-005-7.06-DNY	5 Not eligible for NRHP	1953	1965
53 0214	07	CARMENITA ROAD OC	07-LA-005-2.41-NRW	5 Not eligible for NRHP	1955	
53 0215L	07	LOS CERRITOS CHANNEL	07-LA-022-1.09-LBCH	5 Not eligible for NRHP	1959	
53 0215R	07	LOS CERRITOS CHANNEL	07-LA-022-1.09-LBCH	5 Not eligible for NRHP	1955	
53 0232	07	RIVERA UP	07-LA-019-13.30-PRV	5 Not eligible for NRHP	1937	1971
53 0232W	07	RIVERA UP PP	07-LA-019-13.31-PRV	5 Not eligible for NRHP	1972	
53 0233	07	PICO UP	07-LA-019-15.69-PRV	5 Not eligible for NRHP	1938	
53 0233W	07	PICO UP PP	07-LA-019-15.69-PRV	5 Not eligible for NRHP	1938	
53 0235	07	RIO HONDO	07-LA-164-4.91-EMTE	5 Not eligible for NRHP	1937	1951
53 0237	07	ROSEMEAD UNDERPASS	07-LA-164-5.63-RSMD	5 Not eligible for NRHP	1951	1972
53 0238	07	RUDELL UNDERPASS	07-LA-164-6.89-TMPC	5 Not eligible for NRHP	1938	
53 0238W	07	RUDELL UP PP	07-LA-164-6.90-TMPC	5 Not eligible for NRHP	1938	
53 0240	07	TEMPLE STREET UC	07-LA-110-23.61-LA	5 Not eligible for NRHP	1948	
53 0240G	07	TEMPLE STREET UC	07-LA-110-23.61-LA	5 Not eligible for NRHP	1948	
53 0240H	07	TEMPLE STREET UC	07-LA-101-1.63-LA	5 Not eligible for NRHP	1948	1996
53 0242	07	PALMS BLVD OC	07-LA-405-28.51-LA	5 Not eligible for NRHP	1959	
53 0246	07	SUNSET BLVD OC	07-LA-110-23.83-LA	5 Not eligible for NRHP	1948	
53 0255	07	LOS ANGELES RIVER	07-LA-002-15.52-LA	5 Not eligible for NRHP	1961	
53 0256	07	RIPPLE STREET UC	07-LA-002-15.32-LA	5 Not eligible for NRHP	1961	
53 0256F	07	RIPPLE STREET UC	07-LA-002-15.32-LA	5 Not eligible for NRHP	1961	
53 0276	07	ARROYO SECO	07-LA-110-30.10-SPAS	2 Br eligible for NRHP	1939	
53 0278M	07	EASTMAN AVE PUC	07-LA-005-14.60-VER	5 Not eligible for NRHP	1951	
53 0279	07	COYOTE CREEK	07-LA-005-.34-LMRD	5 Not eligible for NRHP	1934	1959
53 0281	07	EAST REDONDO BEACH UP	07-LA-091-2.11-LNDL	5 Not eligible for NRHP	1923	1954
53 0283F	07	RIPPLE ST UC	07-LA-002-15.44-LA	5 Not eligible for NRHP	1961	
53 0301	07	MULHOLLAND OC	07-LA-101-8.75-LA	5 Not eligible for NRHP	1940	
53 0302L	07	SAN GABRIEL RIVER	07-LA-022-1.42-LBCH	5 Not eligible for NRHP	1959	
53 0302R	07	SAN GABRIEL RIVER	07-LA-022-1.42-LBCH	5 Not eligible for NRHP	1941	1953
53 0303L	07	LITTLE ROCK CREEK	07-LA-138-53.55	5 Not eligible for NRHP	1952	
53 0303R	07	LITTLE ROCK CREEK	07-LA-138-53.55	4 Hist sign not determin	1995	

Historical Significance - Local Agency Bridges

Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C0707	07	SAN DIMAS WASH	1.0 MI E GRAND AVE	5 Not eligible for NRHP	1960	
53C0708	07	SAN DIMAS WASH	0.9 MI E GRAND AVE	5 Not eligible for NRHP	1960	
53C0709	07	SAN DIMAS WASH BR	0.1 MI N FOOTHILL AVE	5 Not eligible for NRHP	1962	1991
53C0710	07	CHARTER OAK WASH	0.1 MI W BARRANCA AVE	5 Not eligible for NRHP	1965	
53C0711	07	LOWER BUENA VISTA CHAN	0.3 MI N ARROW HWY	5 Not eligible for NRHP	1955	
53C0712	07	DOMINGUEZ CHANNEL	0.2 MI W CRENSHAW BL	5 Not eligible for NRHP	1961	
53C0713	07	DOMINGUEZ CHANNEL	1/2 MI W/O CRENSHAW BLVD	5 Not eligible for NRHP	1961	
53C0714	07	DOMINGUEZ CHANNEL	1/4 MI S OF ARTESIA BLVD	5 Not eligible for NRHP	1960	
53C0715	07	DOMINGUEZ CHANNEL	1/4 MI S/O REDONDO BEACH	5 Not eligible for NRHP	1960	
53C0718	07	DOWNEY AVE DRAIN	1/2 MI W LAKEWOOD BLVD	5 Not eligible for NRHP	1959	
53C0719	07	SAN GABRIEL RIVER	0.4 MI W SAN GABRL RIV F	5 Not eligible for NRHP	1966	
53C0720	07	MAE BOYER PARK POC	0.5 MI W OF SAN GA RIV FW	5 Not eligible for NRHP	1966	
53C0721	07	CRIDLEY DRAIN	1/4 MI S OF DEL AMO BLVD	5 Not eligible for NRHP	1962	1966
53C0722	07	PALO VERDE DRAIN	1/2 MI S OF DEL AMO BLVD	5 Not eligible for NRHP	1977	
53C0723	07	PALO VERDE DRAIN	1/4 MI N OF CARSON ST	5 Not eligible for NRHP	1977	
53C0724	07	MARK TWAIN SCHOOL POC	1/2 MI S/O DEL AMO BLVD	5 Not eligible for NRHP	1958	
53C0725	07	KEYNOTE ST LATERAL BR	0.6 MI S CARSON ST	5 Not eligible for NRHP	1963	
53C0726	07	SAN GABRIEL RIVER BR	3/4 MI W/O SAN GAB RI FWY	5 Not eligible for NRHP	1963	
53C0727	07	EL DORADO PARK E ACSS RD	3/4 MI W SAN GBRIL RIV FY	5 Not eligible for NRHP	1963	
53C0728	07	LOS CERRITOS DRAIN CHANN	1/4 MI W BELLFLOWER BLVD	5 Not eligible for NRHP	1955	
53C0729	07	PALO VERDE DRAIN BRIDGE	0.1 MI W LOS COYOTES DIAG	5 Not eligible for NRHP	1958	
53C0730	07	LOS CERRITOS DRA CHA	0.1 MI W STUDEBAKER RD	5 Not eligible for NRHP	1966	
53C0731	07	WALNUT CREEK	60' W/O ORANGE AVE	5 Not eligible for NRHP	1961	
53C0732	07	WALNUT CREEK	50' N/O MERCED AVE	5 Not eligible for NRHP	1961	
53C0733	07	WALNUT CREEK	1.1 MI N/O AMAR RD	5 Not eligible for NRHP	1961	
53C0734	07	SAN JOSE CR	1/2 MI S VALLEY BLVD	5 Not eligible for NRHP	1967	
53C0735	07	VERDUGO WASH	0.3 MI W VERDUGO RD	2 Br eligible for NRHP	1938	
53C0736	07	VERDUGO WASH	500' N VENTURA FRWY	2 Br eligible for NRHP	1938	
53C0737	07	VERDUGO WASH	500' N VENTURA FRWY	5 Not eligible for NRHP	1969	
53C0739	07	DEL AMO BLVD UP	0.2 MI W ATLANTIC AVE	5 Not eligible for NRHP	1950	
53C0741	07	VERDUGO WASH	1/4 MI N VENTURA FWY	2 Br eligible for NRHP	1936	
53C0742	07	VERDUGO WASH	1/3 MI E SAN FERNANDO BL	5 Not eligible for NRHP	1940	
53C0743	07	VERDUGO WASH	1/4 MI N VENTURA FREEWAY	5 Not eligible for NRHP	1981	
53C0745	07	VERDUGO WA	1/8 MI W VERDUGO RD	5 Not eligible for NRHP	1936	
53C0746	07	VERDUGO & CANADA POC	1 1/4 MI N VENTURA FRWY	5 Not eligible for NRHP	1961	
53C0747	07	BRAND BLVD UP	3/4 MI N GOLDEN STATE FWY	5 Not eligible for NRHP	-1	
53C0748	07	WESTERN AVE OH	1/4 MI N/E GOLDEN ST FWY	5 Not eligible for NRHP	1967	
53C0749	07	ACCESS ROAD	1/4 MI E GOLDEN STATE FRY	5 Not eligible for NRHP	1963	
53C0750	07	ALAMEDA AVE UP	1/4 MI E GOLDEN STATE FRY	5 Not eligible for NRHP	1963	
53C0751	07	ACCESS ROAD	1/4 MI E GOLDEN STATE FRY	5 Not eligible for NRHP	1963	
53C0752	07	BURBANK-WESTERN CHANNEL	3/8 MI W GOLDEN STATE FRY	5 Not eligible for NRHP	1940	
53C0754	07	BURBANK-WESTERN CHANNEL	1/4 MI W GOLDEN STATE FRY	5 Not eligible for NRHP	1949	
53C0755	07	ARROYO SECO CHANNEL	0.8 MI W FAIR OAKS AVE	5 Not eligible for NRHP	1939	
53C0756	07	ARROYO SECO CHANNEL	0.1 MI W ARROYO BLVD	5 Not eligible for NRHP	1939	
53C0757	07	ARROYO SECO CHANNEL	0.9 MI W FAIR OAKS AVE	2 Br eligible for NRHP	1922	

Historical Significance - Local Agency Bridges

Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C1646	07	LEMORAN AVE STORM DRAIN	0.4 MI E ROSEMEAD BLVD	5 Not eligible for NRHP	1967	
53C1649	07	SANTA ANITA AVE UNDER SP	0.2 MI N VALLEY BLVD	5 Not eligible for NRHP	1974	
53C1651	07	STORM DRAIN B.I. NO. 587	0.1 MI E VAN NESS BLVD	5 Not eligible for NRHP	1962	
53C1652	07	STORM DRAIN B.I. NO. 587	1.4 MI S SAN DIEGO FWY	5 Not eligible for NRHP		
53C1653	07	STORM DRAIN B.I. NO. 587	0.5 MI W WESTERN AVE	5 Not eligible for NRHP		
53C1654	07	STORM DRAIN B.I. NO. 587	0.5 MI N TORRANCE BLVD	5 Not eligible for NRHP	1980	
53C1655	07	MOBIL OIL CO PIPELINES	1/4 MI S/O 190TH ST	5 Not eligible for NRHP	1975	
53C1656	07	MOBIL OIL CO ACCESS RD	0.2 MI S/O 190TH ST	5 Not eligible for NRHP	1975	
53C1657	07	LAS VIRGENES CREEK	1 MI N VENTURA FRWY	5 Not eligible for NRHP	1974	1979
53C1658	07	CHALON SIDEHILL BRIDGE	0.8 MI N SUNSET BLVD	5 Not eligible for NRHP	1949	
53C1660	07	MISSION ROAD SOH	0.5 MI EAST OF 1-5	5 Not eligible for NRHP	1980	
53C1661	07	GRIFFIN AVE OH	BTW N MAIN ST/MISSION RD	5 Not eligible for NRHP	1980	
53C1662	07	PACOIMA WASH	0.2 MI SOUTH/WEST OF I-5	5 Not eligible for NRHP	1974	
53C1663	07	ARROYO SECO CHANNEL	RAMON DR & GOLD PLACE	5 Not eligible for NRHP	1939	
53C1664	07	MARENGO AVE OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1665	07	MARGUERITA AVE OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1666	07	ATLANTIC BLVD OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1667	07	SIXTH ST OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1668	07	FOURTH ST OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1669	07	GARFIELD AVE OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1670	07	CHAPEL AVE OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1671	07	RUBIO WASH	0.1 MI E DEL MAR AVE	5 Not eligible for NRHP	1968	
53C1672	07	RUBIO WASH	0.1 MI E DELMAR AVE	5 Not eligible for NRHP	1938	
53C1673	07	CIRCLE DRIVE OC	0.7 MI N HUNTINGTON DR	5 Not eligible for NRHP		
53C1674	07	FREMONT AVE OH	0.01 MI S MISSION RD	5 Not eligible for NRHP	1979	
53C1675	07	ALHAMBRA WASH BRIDGE	0.1 MI W NEW AVE	5 Not eligible for NRHP	1969	
53C1679	07	RUBIO WASH	0.1 MI E DEL MAR AVE	5 Not eligible for NRHP	1910	1963
53C1681	07	HASKELL CANYON CHANNEL	0.4 MI N BOUQUET CYN RD	5 Not eligible for NRHP	1979	
53C1684	07	HANSON HEIGHTS CHANNEL	1.5 MI NORTH OF I-5	5 Not eligible for NRHP	1963	
53C1686	07	ARROYO CANYON	390 m W/O MANDVLE CYN RD	5 Not eligible for NRHP	1928	
53C1687	07	BROWNS CANYON CREEK	DE SOTO AVE & VARIEL AVE	5 Not eligible for NRHP	1973	
53C1688	07	CARROLL CANAL	0.2 km S OF VENICE BLVD	1 Br on Natl Reg Hist Pl	1907	
53C1689	07	LINNIE CANAL	0.25 km S of Venice Blvd	1 Br on Natl Reg Hist Pl	1907	
53C1690	07	HOWLAND CANAL	0.2 MI S VENICE BLVD	1 Br on Natl Reg Hist Pl	1907	
53C1691	07	SHERMAN CANAL	0.25 MI S VENICE BLVD	1 Br on Natl Reg Hist Pl	1907	
53C1692	07	CALIFORNIA AQUEDUCT	1 MI N/O LANCASTER RD	5 Not eligible for NRHP	1976	
53C1693	07	CALIFORNIA AQUEDUCT	1 MI N/O LANCASTER RD	5 Not eligible for NRHP	1976	
53C1694	07	CALIFORNIA AQUEDUCT	1/4 MI S/O LANCASTER RD	5 Not eligible for NRHP	1976	
53C1695	07	CALIFORNIA AQUEDUCT	0.2 MI S/O AVE N	5 Not eligible for NRHP	1975	
53C1696	07	LA MIRADA CREEK	0.2 MI N IMPERIAL HWY	5 Not eligible for NRHP	1979	
53C1697	07	ALISO CANYON CREEK	1.4 MI W ANGELES FOR HWY	5 Not eligible for NRHP	-1	
53C1698	07	DRAINAGE CHANNEL	1/8 MI E/O BLOOMFIELD AVE	5 Not eligible for NRHP	-1	
53C1699	07	SANTA FE SPRINGS ROAD UP	5/8 MI E NORWALK BLVD	5 Not eligible for NRHP	1979	
53C1700	07	TELEGRAPH RD UP	0.6 MI E NORWALK BLVD	5 Not eligible for NRHP	1977	
53C1701	07	CRENSHAW BLVD UP	1/4 MI N/O TORRANCE BLVD	5 Not eligible for NRHP	1980	

Historical Significance - Local Agency Bridges | Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C0853	07	PUENTE CREEK BRIDGE	0.8 MI W AZUSA AVE	5 Not eligible for NRHP	1974	
53C0854	07	ALHAMBRA WASH	3/8 MI E SAN GABRIEL BLVD	5 Not eligible for NRHP	1974	
53C0855	07	SANTA CLARA RIV (SO FK)	0.5 MI S/O LYONS AVE	5 Not eligible for NRHP	1971	
53C0857	07	IMPERIAL HWY UP	1/4 MI W SHOEMAKER AVE	5 Not eligible for NRHP	1977	
53C0858	07	NORMANDIE AVE DRAIN	1/2 MI S OF SEPULVEDA BL	5 Not eligible for NRHP	1971	
53C0859	07	LOS ANGELES RIVER	0.4 MI WEST OF I-5	2 Br eligible for NRHP	1928	1939
53C0860	07	FLNT CYN CHNL & EQUEST T	1000' W OF 210 FREEWAY	5 Not eligible for NRHP	1924	
53C0861	07	S FK SANTA CLARA RIV	1MI S OF LYONS AVE	5 Not eligible for NRHP	-1	
53C0862	07	LINDERO CYN CHANNEL	1000' W KANAN RD	5 Not eligible for NRHP	1972	
53C0863	07	AT & SF RR	1/4 MI N PASADENA FRWY	5 Not eligible for NRHP	1972	
53C0864	07	MARTIN L KING JR AVE OH	0.7 MI N/O PACIFIC C HWY	5 Not eligible for NRHP	1957	
53C0865	07	TORRANCE LATERAL	1/4 MI N/O TORRANCE BLVD	5 Not eligible for NRHP	1960	
53C0867	07	LOS ANGELES RIVER	200' N BANDINI BLVD	5 Not eligible for NRHP	1928	1987
53C0868	07	LOS ANGELES RIVER	0.2 MI W SOTO ST	5 Not eligible for NRHP	-1	
53C0870	07	AMARGOSA DRAIN	500' E/O ANTELOPE VLY FWY	5 Not eligible for NRHP	1972	
53C0871	07	AMARGOSA DRAIN	200' E/O ANTELOPE VLY FWY	5 Not eligible for NRHP	1972	
53C0872	07	AMARGOSA DRAIN	300' E/O ANTELOPE VLY FWY	5 Not eligible for NRHP	1972	
53C0873	07	HACIENDA BLVD UP	1/4 MI N VALLEY BLVD	5 Not eligible for NRHP	1977	
53C0874	07	AMARGOSA DRAIN	200' E/O ANTELOPE VLY FWY	5 Not eligible for NRHP	1972	
53C0875	07	BALLONA CREEK	200' W OF LA CIENEGA BLVD	5 Not eligible for NRHP	1938	
53C0876	07	BALLONA CREEK	1/2 MI W LA CIENEGA BL	5 Not eligible for NRHP	1938	
53C0877	07	BALLONA CREEK	W JEFFERSON BLVD	5 Not eligible for NRHP	1938	
53C0879	07	CHARTER OAK WASH	0.1 MI W BARRANCA AVE	5 Not eligible for NRHP	1965	
53C0881	07	STD OIL PIPE LINE	3/4 MI N ROSECRANS AVE	5 Not eligible for NRHP	-1	
53C0883	07	LIVE OAK WASH	0.6 MI W WHITE AVE	5 Not eligible for NRHP	1950	
53C0884	07	OCEAN BLVD	0.1 MI W HARBOR SCENIC D	5 Not eligible for NRHP	1961	
53C0885	07	ANAHEIM ST	0.1 MI W LOS ANGELES RIV	5 Not eligible for NRHP	1954	
53C0887	07	LITTLE DALTON WASH	1 MI E GRAND AVE	5 Not eligible for NRHP	1959	
53C0888	07	LITTLE DALTON WASH	0.8 MI E GRAND AVE	5 Not eligible for NRHP	1959	
53C0889	07	HARBOR SCENIC DR	0.1 MI E HARBOR PLAZA	5 Not eligible for NRHP	1967	
53C0890L	07	QUEENS WAY SBND OC	0.6 MI S OCEAN BLVD	5 Not eligible for NRHP	1967	
53C0890R	07	HARBOR SCENIC DR N SEP	0.6 MI S OCEAN BLVD	5 Not eligible for NRHP	1967	
53C0891	07	LINDERO CYN CHANNEL	1/4 MI E LINDERO CYN RD	5 Not eligible for NRHP	1975	
53C0892L	07	QUEENS WAY SB	0.1 MI S OCEAN BLVD	5 Not eligible for NRHP	1967	
53C0892R	07	SHORELINE DRIVE	0.1 MI S OCEAN BLVD	5 Not eligible for NRHP	1967	
53C0897	07	SANTA ANITA AVE UNDER SP	1/4 MI N VALLEY BLVD	5 Not eligible for NRHP	1914	
53C0899L	07	KANAN DUME RD SB TUNNEL	4.3 MI N PACIFIC CST HWY	5 Not eligible for NRHP	1983	
53C0899R	07	KANAN DUME RD NB TUNNEL	4.3 MI N PACIFIC CST HWY	5 Not eligible for NRHP	1974	
53C0900L	07	KANAN ROAD SB TUNNEL	0.7 MI N MULHOLLAND HWY	5 Not eligible for NRHP	1983	
53C0900R	07	KANAN ROAD NB TUNNEL	0.7 MI N MULHOLLAND HWY	5 Not eligible for NRHP	1968	
53C0901L	07	KANAN RD S BND TUNNEL	1 1/2 MI N MULHOLLAND HWY	5 Not eligible for NRHP	1978	
53C0901R	07	KANAN RD N BND TUNNEL	1.5 MI N MULHOLLAND HWY	5 Not eligible for NRHP	1968	
53C0902	07	DURFEE AVE UP	0.1 MI N/O VALLEY BLVD	5 Not eligible for NRHP	1976	
53C0903	07	7TH ST W B ON RAMP UC	0.2 MI N BROADWAY	5 Not eligible for NRHP	1961	
53C0907	07	COMPTON CREEK	1/2 MI S ROSECRANS AVE	5 Not eligible for NRHP	1938	

Historical Significance - Local Agency Bridges | Los Angeles County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
53C1862	07	UNNAMED WASH	AT 190TH STREET WEST	5 Not eligible for NRHP	-1	
53C1863	07	UNNAMED WASH	0.1 MI W 190TH ST W	5 Not eligible for NRHP	-1	
53C1864	07	CARMENITA ROAD UP	0.2 MI N ROSECRANS AVE	4 Hist sign not determin	1983	
53C1865	07	MILAN CREEK	0.3 MI N ROSECRANS AVE	4 Hist sign not determin	1982	
53C1866	07	EAST FORK SNOW CREEK	0.2 MI E GRAND AVE	5 Not eligible for NRHP	1984	
53C1867	07	EAST FORK SNOW CREEK	0.1 MI W LA PUENTE RD	5 Not eligible for NRHP	1984	
53C1868	07	AMARGOSA CREEK	0.6 MI W/O SIERRA HWY	5 Not eligible for NRHP	1989	
53C1869	07	E CANYON CHANNEL	BTW GS FWY/SHRP A @ 14607	5 Not eligible for NRHP	1967	
53C1870	07	SP/UP RR	0.4 MI S/O CARSON STR.	5 Not eligible for NRHP	1986	
53C1871	07	PUDDINGSTONE CHANNEL	0.1 MI S/O ALLEN AVE.	5 Not eligible for NRHP	1985	
53C1872	07	EASTERN AVE UNDER SFRR	0.3 MI S/O WASHINGTON BLV	5 Not eligible for NRHP	1982	
53C1874	07	ARROYO SECO CHANNEL	AT I-110	5 Not eligible for NRHP	1912	
53C1875	07	ARROYO SECO CHANNEL	AT I-110	5 Not eligible for NRHP	1939	
53C1876	07	ARROYO SECO CHANNEL	AT I-110	5 Not eligible for NRHP	1940	
53C1877	07	ARROYO SECO CHANNEL	AT I-110	5 Not eligible for NRHP	1939	
53C1878	07	ARROYO SECO CHANNEL	AT I-110	5 Not eligible for NRHP	1909	1939
53C1879	07	ARROYO SECO CHANNEL	AT I-110	5 Not eligible for NRHP	1940	
53C1880	07	SIXTH STREET VIADUCT	E SANTA ANA FRWY	5 Not eligible for NRHP	1932	
53C1881	07	GLENDALE BL SB, LA RIV	SOUTHBOUND GLENDALE	5 Not eligible for NRHP	1929	
53C1882	07	HYPERION AVE	OVER RIVERSIDE DR	5 Not eligible for NRHP	1929	
53C1883	07	LOS ANGELES RIVER	GLENDALE BL OVER LA RIV	5 Not eligible for NRHP	1929	
53C1884	07	LOS ANGELES RIVER	GLENDALE BL OVER LA RIV	5 Not eligible for NRHP	1929	
53C1885	07	BALBOA BLVD SOH	SAN FERNANDO RD AT I-5	5 Not eligible for NRHP	1971	
53C1886	07	BOWDOIN ST PUC	W TEMESCAL CYN RD	5 Not eligible for NRHP	1961	
53C1887	07	ETHEL AVE POC	630' N/O BURBANK BLVD	5 Not eligible for NRHP	1961	
53C1888	07	MILAN CREEK	500' E VALLEY VIEW AVE	5 Not eligible for NRHP	1987	
53C1889	07	MILAN CREEK	0.5 MI E VALLEY VIEW AVE	5 Not eligible for NRHP	1987	
53C1890	07	MILAN CREEK	0.8 MI S IMPERIAL HWY	5 Not eligible for NRHP	1987	
53C1891	07	SDBI 528	0.1 MI S VALLEY BLVD	4 Hist sign not determin	1986	
53C1892	07	PECK ROAD UNDER SPTC	0.2 MI N SAN BRDINO FRWY	5 Not eligible for NRHP	1988	
53C1893	07	ORANGE ST	50' S BROADWAY	5 Not eligible for NRHP	1985	
53C1894	07	GLENDALE GALLERIA POC	0.1 MI S/O BROADWAY	5 Not eligible for NRHP	1985	
53C1895	07	REMINGTON CHANNEL	0.7 MI W ROMERO CYN RD	5 Not eligible for NRHP	1981	
53C1896	07	SAWPIT WASH	0.2 MI W MOUNTAIN AVE	5 Not eligible for NRHP	1968	
53C1897	07	SAWPIT WASH	0.2 MI W MOUNTAIN AVE	5 Not eligible for NRHP	1968	
53C1898	07	MARENGO AVE OVERCROSSING	INTX MARENGO CORSON I-210	5 Not eligible for NRHP	1976	
53C1899	07	220TH ST POC	0.2 MI S/O CARSON ST	5 Not eligible for NRHP	1962	
53C1900	07	APPIAN WAY/PROMENDAE	0.6 MI W LINCOLN BLVD	5 Not eligible for NRHP	1939	
53C1901	07	FAIRGROVE STORM DRAIN BR	0.3 MI W BLDWN PARK BL	5 Not eligible for NRHP	1956	
53C1902	07	OLIVE AVE OH	AT INTERSTATE 5	5 Not eligible for NRHP	1959	
53C1903	07	MAGNOLIA BLVD OH	AT INTERSTATE 5	5 Not eligible for NRHP	1959	
53C1904	07	BOMBARDIER AVE DRAIN	0.1 MI E SNTA ANA FRWY	5 Not eligible for NRHP	1954	
53C1905	07	GORMAN CREEK	0.1 MI N LANCASTER RD	5 Not eligible for NRHP	1967	
53C1906	07	VIA CHICO AVE	0.1 MI S PALOS VERDES DR	5 Not eligible for NRHP	1929	
53C1907	07	FLOWER ST POC	180 FT N 5TH ST	4 Hist sign not determin	1983	

Historical Significance - Local Agency Bridges
Orange County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
55C0148	12	SANTA ANA RIVER CHANNEL	0.1 MI W HARBOR BLVD	5 Not eligible for NRHP	1961	1969
55C0149L	12	SAN DIEGO CREEK CHANNEL	0.3 MI S BRISTOL ST	5 Not eligible for NRHP	1965	1978
55C0149R	12	SAN DIEGO CREEK CHANNEL	0.3 MI S BRISTOL ST	5 Not eligible for NRHP	1968	1978
55C0151	12	GOLDENROD AVE POC	1.3 MI SE OF S.R.1	5 Not eligible for NRHP	1928	
55C0154	12	SANTA ANA RIVER CHANNEL	0.3 MI E HARBOR BLVD	5 Not eligible for NRHP	1959	
55C0155	12	ALISO CREEK	0.35 MI E OF TORO RD	5 Not eligible for NRHP	1974	
55C0156	12	SUNSET CHANNEL	0.4 MI S EDINGER AVE	5 Not eligible for NRHP	1966	
55C0157	12	ANAHEIM BARBER CITY CH	0.6 MI S/O WESTMINISTER	5 Not eligible for NRHP	1976	
55C0158	12	MOODY CREEK CHANNEL	0.4 MI W MOODY ST	5 Not eligible for NRHP	1957	1977
55C0159	12	SANTA ANA RIVER CHANNEL	0.2 MI W MAIN ST	5 Not eligible for NRHP	1967	1977
55C0160	12	BOLSA CHICA CH	0.8 MI W VLY VIEW ST	5 Not eligible for NRHP	1966	
55C0161	12	ANAHEIM-BARBER CITY CHAN	0.3 MI W/O RTE 39	5 Not eligible for NRHP	1966	
55C0162	12	ANAHEIM-BARBER CITY CHAN	0.3 MI W SPRINGDALE ST	5 Not eligible for NRHP	1976	
55C0163	12	SANTA ANA RIVER	0.4 MI W FAIRVIEW ST	5 Not eligible for NRHP	1964	1977
55C0164	12	SANTA ANA SANTA FE CH	0.5 MI W OF ROUTE 55	5 Not eligible for NRHP	1965	
55C0166	12	CROWN VALLEY PARKWAY OH	0.1 MI WEST OF ROUTE I-5	5 Not eligible for NRHP	1970	1980
55C0168	12	HANDY CREEK	0.2 MI E ORANGE PK BLVD	5 Not eligible for NRHP	1937	
55C0172	12	SANTIAGO CREEK	.1 MI N OF MODJESKA G RD	5 Not eligible for NRHP	1935	
55C0173	12	SANTIAGO CREEK	.4 MI E OF MODJESKA G RD	5 Not eligible for NRHP	1947	
55C0174	12	SILVERADO CYN CREEK	1.6 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1935	
55C0175	12	LADD CANYON	2.2 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1947	
55C0176	12	SILVERADO CYN CREEK	0.1 MI S SLVRDO CYN RD	5 Not eligible for NRHP		1983
55C0177	12	SILVERADO CYN CREEK	4.4 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1947	
55C0178	12	SILVERADO CYN CREEK	4.9 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1947	
55C0179	12	SILVERADO CYN CREEK	5.4 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1947	
55C0180	12	SILVERADO CYN CREEK	2.7 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1971	
55C0181	12	SILVERADO CYN CREEK	3.1 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1970	
55C0182	12	SILVERADO CYN CREEK	3.6 MI E OF SANTIAGO RD	5 Not eligible for NRHP	1970	
55C0183	12	SILVERADO CYN CREEK	50' N SILVERADO CYN RD	5 Not eligible for NRHP	1963	
55C0184	12	SANTIAGO CREEK CHANNEL	.2 MI N OF SANTIAGO C RD	5 Not eligible for NRHP	1970	1998
55C0185	12	SANTIAGO CREEK	50' S MOJESKA CYN RD	5 Not eligible for NRHP	1970	
55C0186	12	ENGLISH CANYON CHANNEL	300' W LOS ALISOS BLVD	5 Not eligible for NRHP	1976	
55C0187	12	ENGLISH CANYON CHANNEL	300' W LOS ALISOS BLVD	5 Not eligible for NRHP	1976	
55C0188	12	SILVERADO CANYON CREEK	200' S SILVERADO CYN RD	5 Not eligible for NRHP	1965	
55C0189	12	SILVERADO CANYON CREEK	50' N SILVERADO CYN RD	5 Not eligible for NRHP	1957	
55C0190	12	ENGLISH CYN CHANNEL	300' W LOS ALISOS BLVD	5 Not eligible for NRHP	1976	
55C0191	12	CANADA CHANNEL	0.2 MI S OF LAKE FOREST	5 Not eligible for NRHP	1976	
55C0192	12	CARBON CANYON CHANNEL	0.2 MI W OF ROSE DR	5 Not eligible for NRHP	1934	
55C0193	12	FULLERTON CREEK CHANNEL	0.2 MI N ORANGETHORPE AV	5 Not eligible for NRHP	1958	1967
55C0194	12	FULLERTON CREEK CHANNEL	0.15 MI S/O WHITAKER ST	5 Not eligible for NRHP	1958	1964
55C0196	12	BREA CREEK CHANNEL	0.1 MI S OF PACIFIC AVE	5 Not eligible for NRHP	1960	
55C0197	12	BREA CREEK CHANNEL	100' N FRANKLIN ST	5 Not eligible for NRHP	1950	
55C0198	12	COYOTE CREEK CHANNEL	0.2 MI NW OF BEACH BLVD	5 Not eligible for NRHP	1950	
55C0199	12	CARBON CREEK CHANNEL	0.1 MI N/O BALL RD	5 Not eligible for NRHP	1958	1972
55C0200	12	FULLERTON CREEK CHANNEL	50' N MELROSE ST	5 Not eligible for NRHP	1950	

Historical Significance - State Bridges Orange County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
55 0608	12	COAL CANYON CREEK	12-ORA-091-R17.92-ANA	5 Not eligible for NRHP	1971	
55 0609S	12	GOLF CART UC	12-ORA-005-15.23-MSNV	5 Not eligible for NRHP	1971	
55 0610	12	AVENIDA VISTA HERMOSA OC	12-ORA-005-4.08-SCLE	5 Not eligible for NRHP	1981	
55 0612	12	VON KARMAN AVE OC	12-ORA-405-7.40-IRVN	5 Not eligible for NRHP	1979	
55 0613	12	ANAHM-HASTR OC	12-ORA-005-_036.610-ANA	5 Not eligible for NRHP	1981	
55 0614	12	N. ARM NEWPORT BAY	12-ORA-001-R18.22-NPTB	5 Not eligible for NRHP	1981	
55 0615	12	BROADWAY OC	12-ORA-005-33.31-SA	5 Not eligible for NRHP	1985	
55 0617M	12	HUNTINGTON CRIB WALL	12-ORA-001-27.00-HNTB	5 Not eligible for NRHP		
55 0618	12	BITTERBUSH CHANNEL	12-ORA-057-11.20-ORA	5 Not eligible for NRHP	1976	
55 0620F	12	S1-N5 CONN OC	12-ORA-001-R.13-SJCP	5 Not eligible for NRHP	1973	
55 0621M	12	N ARM NEWPORT BAY BIKE B	12-ORA-001-18.38-NPTB	5 Not eligible for NRHP	1982	
55 0629	12	ALTON PKWY OC	12-ORA-005-22.21-IRVN	5 Not eligible for NRHP	1984	
55 0630	12	HARVARD AVE OC	12-ORA-405-6.20-IRVN	5 Not eligible for NRHP	1983	
55 0631	12	LOS ALISOS BLVD OC	12-ORA-005-17.94-LGNH	5 Not eligible for NRHP	1984	
55 0632	12	BEACH BLVD UP	12-ORA-039-16.04-BPK	5 Not eligible for NRHP	1984	
55 0632W	12	BEACH BLVD UP PP	12-ORA-039-16.03-BPK	5 Not eligible for NRHP	1984	
55 0634K	12	BROOKHURST ST OH (NB)	12-ORA-004-.00-ANA	5 Not eligible for NRHP	1957	
55 0635K	12	BROOKHURST ST OH (SB)	12-ORA-004-.00-ANA	5 Not eligible for NRHP	1976	
55 0636	12	BIRCH ST OC	12-ORA-073-R25.45-NPTB	5 Not eligible for NRHP	1985	1998
55 0637S	12	MACARTHUR BLVD UC	12-ORA-073-R24.67-IRVN	5 Not eligible for NRHP	1985	
55 0638	12	YALE AVE OC	12-ORA-005-R25.80-IRVN	5 Not eligible for NRHP	1984	1991
55 0639	12	YALE AVE POC	12-ORA-405-4.67-IRVN	4 Hist sign not determin	1986	
55 0640	12	SALT CREEK PUC	12-ORA-001-3.80-DAPT	5 Not eligible for NRHP	1983	
55 0641	12	MCFADDEN STREET OC	12-ORA-055-R9.96-TUS	5 Not eligible for NRHP	1988	
55 0642K	12	S5-NWPORT/N55-S5 CON SEP	12-ORA-005-30.17-TUS	4 Hist sign not determin	1995	
55 0643G	12	N55-N5 CONN OC	12-ORA-055-10.37-TUS	5 Not eligible for NRHP	1995	
55 0644F	12	S55-S5 CONN OC	12-ORA-055-10.67-TUS	5 Not eligible for NRHP	1995	
55 0645G	12	N5-N55/N55-4TH ST CONN	12-ORA-005-30.32-TUS	5 Not eligible for NRHP	1995	
55 0646	12	1ST STREET OC	12-ORA-005-30.90-SA	5 Not eligible for NRHP	1995	
55 0646W	12	FIRST ST OC PP	12-ORA-005-30.92-SA	5 Not eligible for NRHP	1993	
55 0647	12	1ST STREET OC	12-ORA-055-10.80-TUS	5 Not eligible for NRHP	1995	
55 0647W	12	FIRST ST OC PP	12-ORA-055-10.78-TUS	5 Not eligible for NRHP	1993	
55 0648K	12	4TH ST-S55 ON RAMP OC	12-ORA-055-10.90-SA	5 Not eligible for NRHP	1992	
55 0649	12	4TH STREET OC	12-ORA-005-31.09-SA	5 Not eligible for NRHP	1995	
55 0650	12	FOURTH STREET OC	12-ORA-055-10.98-SA	5 Not eligible for NRHP	1992	
55 0652	12	CRYSTAL COVE PUC	12-ORA-001-13.44-LGNB	5 Not eligible for NRHP	1932	1992
55 0653L	12	ALTON PARKWAY OC	12-ORA-133-8.75-IRVN	5 Not eligible for NRHP	1987	
55 0653R	12	ALTON PARKWAY OC	12-ORA-133-8.75-IRVN	5 Not eligible for NRHP	1987	
55 0654	12	BARRANCA PARKWAY OC	12-ORA-133-9.00-IRVN	5 Not eligible for NRHP	1990	
55 0655	12	EL MODENA IRVN CHANNEL	12-ORA-005-27.82-TUS	4 Hist sign not determin	1992	
55 0656	12	JAMBOREE ROAD UC	12-ORA-005-27.59-IRVN	5 Not eligible for NRHP	1991	
55 0656W	12	JAMBOREE RD UC PUMP PLNT	12-ORA-005-27.60-IRVN	5 Not eligible for NRHP	1991	
55 0657	12	TUSTIN RANCH OC	12-ORA-005-28.25-TUS	4 Hist sign not determin	1992	
55 0658	12	TALBERT CHANNEL	12-ORA-001-21.82-HNTB	5 Not eligible for NRHP	1991	
55 0659G	12	N133-N5/5 CONN SEP	12-ORA-133-9.48-IRVN	5 Not eligible for NRHP	1991	

Historical Significance - Local Agency Bridges

Orange County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
55C0258	12	SHELTER CHANNEL	0.4 MI E/O ADMIRALTY DR	5 Not eligible for NRHP	1963	
55C0259	12	WEATHERLY CHANNEL	0.3 MI W/O SAYBROOK LN	5 Not eligible for NRHP	1965	
55C0260	12	TRINIDAD ISLAND CHANNEL	0.2 MI S/O EDINGER AVE	5 Not eligible for NRHP	1974	
55C0261	12	RIVO ALTO	0.1 MI NE OF BALBOA BLVD	5 Not eligible for NRHP	1973	
55C0263	12	GILBERT STREET UP	0.1 MI N COMMONWEALTH AV	5 Not eligible for NRHP	1986	
55C0264L	12	COYOTE CREEK CHANNEL	0.2 MI W LOS ALAMITOS BL	5 Not eligible for NRHP	1962	
55C0264R	12	COYOTE CREEK CHANNEL	0.2 MI W LOS ALAMITOS BL	5 Not eligible for NRHP	1956	
55C0265	12	WATERS WAY	PARK AVE AT COLLINS ISLE	5 Not eligible for NRHP	1953	
55C0266	12	TRABUCO CREEK CHANNEL	0.5 MI N OF JUNIPERO S RD	5 Not eligible for NRHP	1970	
55C0267	12	CARBON CREEK CHANNEL	0.2 MI S OF BALL RD	5 Not eligible for NRHP	1958	1963
55C0268	12	CARBON CREEK CHANNEL	0.1 MI S OF BALL RD	5 Not eligible for NRHP	1958	1964
55C0269	12	CARBON CREEK CHANNEL	0.1 MI S OF BALL RD	5 Not eligible for NRHP	1958	1963
55C0270	12	CARBON CREEK CHANNEL	0.2 MI W VLY VIEW ST	5 Not eligible for NRHP	1958	1963
55C0271	12	CARBON CREEK CHANNEL	0.3 MI N OF BALL RD	5 Not eligible for NRHP	1959	
55C0272	12	CARBON CREEK CHANNEL	200' S ORANGE AVE	5 Not eligible for NRHP	1959	
55C0273	12	CARBON CREEK CHANNEL	0.1 MI E WESTERN AVE	5 Not eligible for NRHP	1959	
55C0274	12	CARBON CREEK CHANNEL	0.2 MI S OF LINCOLN AVE	5 Not eligible for NRHP	1959	
55C0275	12	CARBON CREEK CHANNEL	0.3 MI S CRESCENT AVE	5 Not eligible for NRHP	1959	1981
55C0278M	12	CARBON CREEK CHANNEL	CITRON ST	5 Not eligible for NRHP	1959	
55C0280	12	OSO CREEK	0.4 MI E OF ROUTE I-5	5 Not eligible for NRHP	1972	
55C0281	12	OSO CREEK	0.2 MI W OF I-5	5 Not eligible for NRHP	1963	1972
55C0282	12	QUEEN ELIZABETH PASSAGE	0.1 MI NE/O PAC COAST HWY	5 Not eligible for NRHP	1963	
55C0283	12	SUNSET CHANNEL	100' N/E PACIFIC CST HWY	5 Not eligible for NRHP	1959	
55C0284	12	SHORT CHANNEL	0.1 MI W/O SAYBROOK LN	5 Not eligible for NRHP	1963	
55C0287	12	IMPERIAL CHANNEL	50' S IMPERIAL HWY	5 Not eligible for NRHP	1960	1961
55C0288	12	BREA CREEK CHANNEL	0.1 MI E/O HARBOR BLVD	5 Not eligible for NRHP	1966	
55C0289	12	BREA CREEK CHANNEL	100' S MALVERN AVE	5 Not eligible for NRHP	1957	
55C0290	12	BREA CREEK CHANNEL	100' S MALVERN AVE	5 Not eligible for NRHP	1936	1957
55C0291	12	BREA CREEK CHANNEL	AT WOODS AVE	5 Not eligible for NRHP	1939	1969
55C0292	12	FULLERTON CREEK CHANNEL	0.1 MI N/O VALENCIA DR	5 Not eligible for NRHP	1958	1976
55C0293	12	FULLERTON CREEK CHANNEL	0.2 MI S/O VALENCIA DR	5 Not eligible for NRHP	1958	
55C0294	12	FULLERTON CREEK CHANNEL	0.2 MI S/O VALENCIA DR	5 Not eligible for NRHP	1959	1987
55C0295	12	FULLERTON CR CHANNEL	0.2 MI S/O VALENCIA DR	5 Not eligible for NRHP	1977	
55C0296	12	FULLERTON CR CHANNEL	300' W RAYMOND AVE	5 Not eligible for NRHP	1964	1987
55C0297	12	FULLERTON CR CHANNEL	0.2 MI N NUTWOOD AVE	5 Not eligible for NRHP	1955	
55C0298	12	FULLERTON CR CHANNEL	0.05 MI E ACACIA AVE	5 Not eligible for NRHP	1955	
55C0299	12	CARBON CANYON CHANNEL	0.2 MI W/O ROSE DR	5 Not eligible for NRHP	1967	1987
55C0300	12	CARBON CANYON CHANNEL	0.3 MI W ORANGETHORPE AV.	5 Not eligible for NRHP	1967	
55C0301	12	ATWOOD CHANNEL	50' S ORANGETHORPE AV	5 Not eligible for NRHP	1960	
55C0302	12	ATWOOD CHANNEL	0.1 MI S ORANGETHORPE AV	5 Not eligible for NRHP	1965	
55C0303	12	ATWOOD CHANNEL	0.1 MI S ORANGETHORPE AV	5 Not eligible for NRHP	1965	
55C0304	12	ATWOOD CHANNEL	0.1 MI S ORANGETHORPE AV	5 Not eligible for NRHP	1965	1986
55C0307	12	LEMON PARK POC	0.3 MI N/O ORANGETHORPE	5 Not eligible for NRHP	1977	
55C0308	12	WALNUT AVE OC	0.11 MI S COMMONWEALTH AV	5 Not eligible for NRHP	1978	
55C0309	12	LEMON ST UP	0.1 MI S/O COMMONWEALTH A	5 Not eligible for NRHP	1978	

Historical Significance - Local Agency Bridges

Orange County

Bridge Number	District	Structure Name	Location	Historical Significance	Year Built	Year Wid/Ext
55C0310	12	COMMONWEALTH AVE UP	0.2 MI E BROOKHURST RD	5 Not eligible for NRHP	1961	
55C0311	12	EUCLID ST SOUTH UP	0.11 MI S/O COMMONWEAL AV	5 Not eligible for NRHP	1960	
55C0312	12	EUCLID ST NORTH UP	0.1 MI S/O COMMONWEAL AV	5 Not eligible for NRHP	1960	
55C0313	12	LOFTUS DIVERSION CHANNEL	0.3 MI N IMPERIAL HWY	5 Not eligible for NRHP	1968	
55C0314	12	ATWOOD CHANNEL	0.5 MI N LA PALMA AVE	5 Not eligible for NRHP	1965	
55C0315	12	RICHFIELD CHANNEL	0.3 MI N ORANGETHORPE AV	5 Not eligible for NRHP	1964	1992
55C0316	12	RICHFIELD CHANNEL	0.1 MI N ORANGETHORPE AV	5 Not eligible for NRHP	1964	1992
55C0317	12	CARBON CYN DIVERSION CHA	0.3 MI W/O MILLER ST	5 Not eligible for NRHP	1960	
55C0319	12	CARBON CYN DIVERSION CHA	0.1 MI E KRAEMER BLVD	5 Not eligible for NRHP	1960	
55C0321	12	COLLINS CHANNEL	0.1 MI E/O MAIN ST	5 Not eligible for NRHP	1959	
55C0322	12	COLLINS CHANNEL	0.3 MI S/O KATELLA AVE	5 Not eligible for NRHP	1959	
55C0324	12	BITTERBUSH CHANNEL	0.7 MI W/O MAIN ST	5 Not eligible for NRHP	1973	
55C0325	12	IMPERIAL CHANNEL	0.1 MI N IMPERIAL HWY	5 Not eligible for NRHP	1963	
55C0326	12	COYOTE CR CHANNEL	0.1 MI S LAMBERT RD	5 Not eligible for NRHP	1963	
55C0327	12	COYOTE CR CHANNEL	0.2 MI E IDAHO ST	5 Not eligible for NRHP	1972	
55C0328	12	COYOTE CR CHANNEL	0.1 MI N LAMBERT RD	5 Not eligible for NRHP	1978	
55C0329	12	COYOTE CR CHANNEL	0.2 MI NORTH LAMBERT RD	5 Not eligible for NRHP	1965	1978
55C0330	12	COYOTE CR CHANNEL	0.2 MI NORTH LAMBERT RD	5 Not eligible for NRHP	1978	
55C0331	12	COYOTE CR CHANNEL	0.1 MI NORTH LAMBERT RD	5 Not eligible for NRHP	1965	
55C0333	12	SANTIAGO CREEK CHANNEL	0.1 MI N OF ROUTE 22	5 Not eligible for NRHP	1972	
55C0334M	12	EL MODENA-IRVINE CHANNEL	BRYAN AVE	5 Not eligible for NRHP	1980	1987
55C0336	12	EL MODENA IRVINE CHANNEL	0.2 MI W JAMBOREE RD	5 Not eligible for NRHP	1974	
55C0339L	12	SAN DIEGO CREEK CHANNEL	0.3 MI E JAMBOREE RD	5 Not eligible for NRHP	1969	1988
55C0339R	12	SAN DIEGO CREEK CHANNEL	0.3 MI E JAMBOREE RD	5 Not eligible for NRHP	1988	
55C0340M	12	PETERS CANYON CHANNEL	0.3 MI W HARVARD AVE	5 Not eligible for NRHP	1963	
55C0342L	12	PETERS CANYON CHANNEL	0.2 MI E JAMBOREE RD	5 Not eligible for NRHP	1969	
55C0342R	12	PETERS CANYON CHANNEL	0.2 MI E JAMBOREE RD	5 Not eligible for NRHP		
55C0343	12	EAST BREA CHANNEL	0.1 MI S IMPERIAL HY	5 Not eligible for NRHP	1967	
55C0344	12	SANTA ANA RIVER CHANNEL	0.5 MI E BROOKHURST ST	5 Not eligible for NRHP	1977	
55C0345	12	FULLERTON DAM DIV CHANNE	0.3 MI N/O BASTANCHURY	5 Not eligible for NRHP	1941	1965
55C0346	12	CARBON CREEK CHANNEL	0.1 MI S ORANGETHORPE AVE	5 Not eligible for NRHP	1969	1977
55C0347	12	CARBON CREEK CHANNEL	0.1 MI S LINCOLN AVE	5 Not eligible for NRHP	1959	
55C0348M	12	CARBON CREEK CHANNEL	CRESCENT AVE	5 Not eligible for NRHP	1959	1971
55C0349	12	CARBON CREEK CHANNEL	0.1 MI N CRESCENT AVE	5 Not eligible for NRHP	1960	
55C0350	12	CARBON CREEK CHANNEL	0.2 MI N CRESCENT AVE	5 Not eligible for NRHP	1960	
55C0351	12	CARBON CREEK CHANNEL	0.2 MI N CRESCENT AVE	5 Not eligible for NRHP	1961	
55C0352	12	CARBON CREEK CHANNEL	0.1 MI S LA PALMA AVE	5 Not eligible for NRHP	1961	
55C0353	12	CARBON CREEK CHANNEL	300' W OF EAST ST	5 Not eligible for NRHP	1961	
55C0354	12	CARBON CREEK CHANNEL	300' W OF EAST ST	5 Not eligible for NRHP	1961	
55C0355	12	PLACENTIA STORM CHANNEL	100' W OF SR 57	5 Not eligible for NRHP	1969	
55C0356	12	PLACENTIA STORM CHANNEL	100' W OF SR 57	5 Not eligible for NRHP	1969	
55C0357	12	SAN DIEGO CREEK CHANNEL	0.2 MI S BARRANCA PKY	5 Not eligible for NRHP	1971	
55C0361M	12	LANE CHANNEL	100'E MACARTHUR BLVD	5 Not eligible for NRHP		1987
55C0362	12	LANE CHANNEL	100' N/E MCARTHUR BLVD	5 Not eligible for NRHP		
55C0363	12	SANTA ANA DELHI CHANNEL	100' E FLOWER ST	5 Not eligible for NRHP	1971	

APPENDIX 4

CORRESPONDENCE WITH LOCAL COMMUNITY AND NATIVE AMERICAN REPRESENTATIVES*

Third Main Track and Grade Separation Project
Hobart (MP 148.9) to Basta (MP 163.3)
BNSF/Metrolink East-West Main Line Railroad Track
Vernon to Fullerton, Los Angles and Orange Counties, California

* All Cities along the project route and all persons and organizations in the Native American Heritage Commission's referral list were contacted. Sample letters are included in this report.

CRM TECH

FAX COVER SHEET

2411 Sunset Drive
Riverside, CA 92506
909·784·3051·Tel
909·784·2987·Fax

To:
Rob Wood

Native American
Heritage Commission

Fax:
(916) 657-5390

From:

Laura Hensley Shaker

Date:
July 3, 2002

Number of pages (including this cover sheet):

2

HARDCOPY:

_____ will follow by mail

√ will not follow unless requested

RE: Sacred Land records search

Dear Mr. Wood:

This is to request a Sacred Lands records search. The Area of Potential Effects runs through Los Angeles County, California. The project involves the construction of a third rail corridor of the BNSF Railroad, extending from the City of Vernon (Hobart) about 14.7 miles south to the City of Fullerton (Basta Station). There will also be grade separations at seven different intersections along this section of tracks.

- **Name of project:** 789: Grade Separation L.A.

- **Project location:** The project is located in the counties of Los Angeles and Orange, and include the cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs.

- **USGS quad information:**
  Los Angeles, Calif., 7.5' quadrangle. T2S R13/12W

  South Gate, Calif., 7.5' quadrangle. T2S R12W

  Whittier, Calif., 7.5' quadrangle.
  Sections 16,17,21,22,26; T2/3S R12/11W

  La Habra, Calif., 7.5' quadrangle.
  Sections 25,26; T3S R11W

  Anaheim, Calif., 7.5' quadrangle.
  Sections 25,26,27,28,29,30 ; T3S R11/10W

Thank you very much for your assistance.

Sincerely,

Laura Hensley Shaker
CRM TECH

Map included

July 10, 2002

Gabrielino/Tongva Tribal Council of the Gabrielino Nation
501 Santa Monica Blvd., Suite 500
Santa Monica, CA 90401-2415

RE: Proposed project 789-Grade Separation LA

Dear Council:

CRM TECH has been hired to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the people most likely to be aware of Native American cultural resources in the vicinity of this undertaking. Therefore, I am writing to inquire if you or other members of your group have any knowledge of sacred/religious sites or other sites of Native American traditional cultural concern at or near the location of the above referenced project.

The proposed project is located in the counties of Los Angeles and Orange, and include the cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs. The project's Area of Potential Effects (APE) is depicted on the accompanying page, based on the Los Angeles County Metropolitan Area road map.

CRM TECH is in the process of conducting an intensive-level field survey of the APE for this project. The results of the survey are completely negative thus far, and no archaeological sites, features, or artifacts were discovered within the APE.

Any information you can provide about Native American concerns regarding the location of this project will be greatly appreciated. Thank you very much for your consideration of this matter.

Thank you very much for your consideration of this matter.

Cordially,

Laura Hensley Shaker
CRM TECH

STATE OF CALIFORNIA Gray Davis, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

July 5, 2002

Laura Hensley Shaker
CRM TECH
2411 Sunset Drive
Riverside, CA 92506

RE: Proposed 789: Grade Separation L.A., Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs; Los Angeles and Orange County.

Sent by Fax: (909) 784-2987
Pages Sent: 3

Dear Ms. Shaker:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Rob Wood

Rob Wood
Environmental Specialist III

NATIVE AMERICAN CONTACTS
Los Angeles and Orange Counties
July 5, 2002

Samuel H. Dunlap
P.O. Box 1391
Temecula, CA 92593
(909) 699-5544 (Voice)
(909) 262-9351 (Cell)
(909) 693-9196 FAX
Gabrielino
Cahuilla
Luiseno

John Valenzuela
PO Box 402597
Hesperia, CA 92340
(760) 949-2103 Home
Chumash
Tataviam
Tongva, Gabrielino
Vanyume; Serrano
Kitanemuk

LA City/County Native American Indian Comm
3175 West 6th Street, Rm. 403
Los Angeles, CA 90020
(213) 351-5308
(213) 386-3995 FAX

Gabrieleno/Tongva Tribal Council
Anthony Morales, Chairperson
PO Box 693
San Gabriel, CA 91778
(626) 286-1632
(626) 286-1262 Fax
(626) 286-1758 (Home)
Gabrieleno Tongva

Ti'At Society
Cindi Alvitre
PO Box 1138
Avalon, CA 90704
(310) 510-8934
Gabrielino

Craig Torres
713 E. Bishop
Santa Ana, CA 92701
(714) 542-6678
Gabrielino Tongva

Island Gabrielino Group
John Jeffredo
PO Box 669
San Marcos, CA 92079-0
619 723-9279
Gabrielino

Angela Louise Lassos-Sanchez
336 Metropole / PO Box 1204
Avalon, CA 90704
(310) 510-1082 - Home
Gabrielino Tongva

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Chairperson
PO Box 490
Bellflower, CA 90707
(562) 761-6417 - Voice
562 920-9449 - Fax
Gabrielino Tongva

Alfred L. Valenzuela
18678 Pad Court
Newhall, CA 91321
(661) 252-1486 Home
(661) 755-8314 Work
Chumash
Tataviam
Gabrielino
Kitanemuk
Vanyume ; Serrano

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed 789: Grade Separation L.A., Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs; Los Angeles and Orange Counties.

NATIVE AMERICAN CONTACTS
Los Angeles and Orange Counties
July 5, 2002

Jim Velasques
5776 42nd Street
Riverside, CA 92509
(909) 784-6660

Gabrielino
Kumeyaay

Gabrielino/Tongva Tribal Council of the Gabrielino Tongva Nation
501 Santa Monica Blvd., Suite 500
Santa Monica, CA 90401-2415
(310) 587-2203
(310) 587-2281 Fax

Gabrieleno Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed 789: Grade Separation L.A., Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs; Los Angeles and Orange Counties.

CRM TECH

FAX COVER SHEET

2411 Sunset Drive
Riverside, CA 92506
909·784·3051·Tel
909·784·2987·Fax

To:

Samuel Dunlap
Tribal Secretary

Gabriellino/Tongva
Tribal Council of the
Gabriellino Tongva
Nation

Fax:

(310) 587-2281

From:

Laura Hensley Shaker

Date:

July 22, 2002

Number of pages (including this cover sheet):

1

HARDCOPY:

_______ will follow by mail

__√__ will not follow unless requested

RE: 789: Grade Separation L.A.

The proposed project involves the construction of a third rail corridor of the BNSF Railroad, extending from the City of Vernon (Hobart) about 14.7 miles south to the City of Fullerton (Basta Station). There will also be grade separations at seven different intersections along this section of tracks.

Dear Mr. Dunlap:

Thank you very much for promptly responding to our letter. We received your fax regarding you request of having a Native American monitor in addition to a qualified archaeologist on duty during any subsurface digging for the proposed project. CRM TECH will inform the client of your recommendations for the project referenced above.

Please let us know if you need more information or have any questions.

Thank you,

Laura Hensley Shaker
CRM TECH

GABRIELINO/TONGVA TRIBAL COUNCIL
of the
GABRIELINO TONGVA NATION
501 Santa Monica Blvd., Suite 500
Santa Monica, CA 90401-2415
(310) 587-2203
(310) 587-2281 (fax)
www.TongvaTribe.org

July 16, 2002

Laura Hensley Shaker
CRM Tech
2411 Sunset Drive
Riverside, CA 92506

RE: Project 789 - Grade Separation, LA

Dear Ms. Shaker:

In response to your letter dated 07/10/02, I am stating the following concerns of our tribal council. After evaluating the correspondence that you provided, our concerns would be for the adequate protection of any archaeological deposits that may be encountered during the construction of the proposed project. Although it appears that your company is conducting the proper field survey of the Area of Potential Effects for this project, your observations would seem to be limited to only surface artifacts. We would recommend that adequate provisions be made for onsite archaeological monitoring during subsurface construction activity of this project. Since this project falls within the traditional cultural properties of the Gabrielino/Tongva, I would request that a Native American monitoring component be included in order to assist the archaeologist in the proper disposition and identification of Native American burials and/or cultural deposits that may be uncovered.

We look forward to being involved in the environmental review process and I anticipate discussing this project with you further. Please feel free to contact me at (909) 262-9351.

Sincerely,

Samuel H. Dunlap

Samuel H. Dunlap
Tribal Secretary

"One Tribe, One Nation, For <u>all</u> Gabrielinos"

CRM TECH

FAX COVER SHEET

2411 Sunset Drive
Riverside, CA 92506
909·784·3051·Tel
909·784·2987·Fax

To:
Bob Zarrilli
Head of Planning

City of Commerce
Planning Department

Fax:
(323) 887-4441

From:
Laura Hensley Shaker

Date:
July 31, 2002

Number of pages (including this cover sheet):
3

HARDCOPY:

______ will follow by mail

√ will not follow unless requested

RE: Cultural resources/Historical Preservation concerns pertaining to the Third Main Tack and Grade Separation Project

Dear Mr. Zarrilli:

CRM TECH has been hired by Tom Dodson and Associates to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the cities involved to determine if they have historic preservation and cultural resources concerns at or near the location of the above referenced project.

The proposed undertaking involves the construction of a third rail corridor of the BNSF Railroad, extending from the City of Vernon (Hobart) about 14.7 miles south to the City of Fullerton (Basta Station). There will also be grade separations at seven different intersections along this section of tracks. There is not a scheduled grade separation along the section of track concerning the City of Commerce.

I have included a map of the area of potential effects in the City of Commerce.

USGS quad information pertaining to the City of Commerce:

Los Angeles, Calif., 7.5' quadrangle.
T2S R12/13W

South Gate, Calif., 7.5' quadrangle. T2S R12W

Please let us know if you need more information or have any questions. Or you may contact:
Tom Dodson at *Tom Dodson and Associates* (909) 882-3612

Thank you,

Laura Hensley Shaker
CRM TECH

August 21, 2002

Heritage Coordinating Council
c/o Fullerton Public Library
353 W Commonwealth Ave.
Fullerton, CA 92835

RE: Cultural resources/Historical Preservation concerns pertaining to the Third Main Tack and Grade Separation Project

To Whom It May Concern:

CRM TECH has been hired to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the local historical societies along the project route to determine if they have historic preservation and cultural resources concerns at or near the location of the above referenced project.

The proposed undertaking involves the construction of a third rail corridor of the BNSF Railroad, extending from the City of Vernon (Hobart) about 14.7 miles south to the City of Fullerton (Basta Station). The majority of the project is confined within the existing right-of-way. There will be grade separations at six different intersections along this section of tracks. However there is not a scheduled grade separation within the City of Fullerton.

The project's Area of Potential Effects (APE) is depicted on the accompanying page, based on the Los Angeles County Metropolitan Area road map. Any information you may have on potential historical resources within or adjacent to the project area, including those of local historical interest, will be greatly appreciated.

Please let us know if you need more information or have any questions.

Thank you,

Laura Hensley Shaker
CRM TECH

August 21, 2002

Whittier Historical Society and Museum
6755 Newlin Ave.
Whittier, CA 90601

RE: Cultural resources/Historical Preservation concerns pertaining to the Third Main Tack and Grade Separation Project

To Whom It May Concern:

CRM TECH has been hired to conduct the cultural resources study for the proposed project referenced above. One of our responsibilities in this capacity is to consult with the local historical societies along the project route to determine if they have historic preservation and cultural resources concerns at or near the location of the above referenced project.

The proposed undertaking involves the construction of a third rail corridor of the BNSF Railroad, extending from the City of Vernon (Hobart) about 14.7 miles south to the City of Fullerton (Basta Station). The majority of the project is confined within the existing right-of-way. There will be grade separations at six different intersections along this section of tracks. However there is not a scheduled grade separation within the City of Whittier.

The preliminary results of the survey indicate that a total of 49 pre-1957 buildings are located adjacent to the project area, but 48 of them only date to the 1950s, including 47 early-1950s tract homes in Pico Rivera, La Mirada, and the Los Nietos/Rivera area. The only building that predates 1950 is a ca. 1914 residence on the northeastern corner of Pioneer Boulevard and Rivera Road, which was the home of the Gish family during the historic period. In 1914, the family was headed by Caleb J. Gish, a Rivera walnut farmer, and several of his sons, including Ralph Gish, who later inherited the property, worked and/or lived in Whittier during the 1920s-1940s. Any information you might have on this house or the Gish family will be greatly appreciated.

The project's Area of Potential Effects (APE) is depicted on the accompanying page, based on the Los Angeles County Metropolitan Area road map. If you are aware of any potential historical resources within or adjacent to the project area, including those of local historical interest, please let us know at your earliest convenience.

Please let us know if you need more information or have any questions.

Thank you,

Laura Hensley Shaker
CRM TECH

TELEPHONE LOG: NATIVE AMERICAN CONSULTATION

Name	Time & Date of Calls	Responses
Cindi Alvitre	11:00 am, July 23, 2002 8:11 am, July 24, 2002	No responses to date.
Gabrielino/Tongva Tribal Council of the Gabrielino Nation	11:00 am, July 23, 2002	Samuel H. Dunlap responded on behalf of the Council (see below).
Robert F. Dorame	11:27 am, July 23, 2002 12:26 pm, July 23, 2002	No responses to date.
Samuel H. Dunlap	(Responded in writing)	Mr. Dunlap recommends that an archaeologist and a Native American monitor be present during earth-moving operations.
John Jeffredo	11:33 am, July 23, 2002 8:13 am, July 24, 2002	Telephone number temporarily out of service.
L.A. City/County Native American Indian Commission	11:35 am, July 23, 2002	The Commission did not express any concerns or comments regarding the project.
Angela Lassos-Sanchez	11:40 am, July 23, 2002 8:15 am, July 24, 2002	Wrong number.
Anthony Morales	9:10 am, July 11, 2002	Mr. Morales states that the areas along the APE are highly sensitive for Native American archaeological remains. He emphasizes that there is always the possibility of finding artifacts even if the results of the survey are negative.
Craig Torres	11:42 am, July 23, 2002 8:58 am, July 24, 2002 9:00 am, July 26, 2002	No responses to date.
Alfred L. Valenzuela	10:15 am, July 23, 2002 8:55 am, July 24, 2002 9:10 am, July 26, 2002	No responses to date.
John Valenzuela	10:30 am, July 23, 2002	Based on the presence of previously identified sites within a one-mile radius, Mr. Valenzuela recommends that an archaeologist and a Native American monitor be present during earth-moving operations.
Jim Velasques	10:45 am, July 23, 2002	Mr.Velasques does not have any concerns regarding this project.

TELEPHONE LOG: CONSULTATION WITH LOCAL GOVERNMENTS

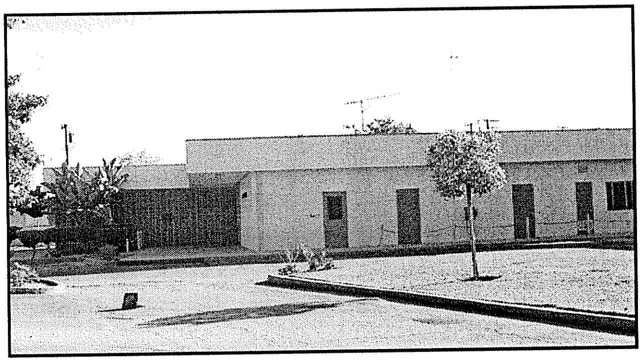
Agency	Contacts	Time & Date of Calls	Responses
City of Buena Park	Sam Makar, Planning Dept.	9:13 am, July 30, 2002 9:33 am, July 30, 2002	The City has no cultural resource concerns regarding this project.
City of Commerce	Bob Zarrilli, Planning Dept.; Larry Garcia, Public Services	2:30 pm, July 29, 2002 8:30 am, July 30, 2002 9:30 am, July 30, 2002 10:10 am, Aug. 2, 2002	No responses to date.
City of Fullerton	Teri Galvin, Planning Dept.	3:00 pm, July 29, 2002 3:30 pm, July 29, 2002	The City has no cultural resource concerns regarding this project.
City of La Mirada	Steve Mendoza, Planning Dept.	3:30 pm, July 25, 2002	The City has no cultural resource concerns regarding this project.
City of Montebello	Ted Spaceff, Director of Public Works	8:50 am, July 30, 2002 1:00 pm, July 30, 2002 8:46 am, July 31, 2002	Mr. Spaceff will comment after learning more about the project.
City of Norwalk	Clay Rumbaoa, Planning Dept.	8:00 am, July 31, 2002 10:30 am, July 31, 2002 10:13 am, Aug. 2, 2002 2:45 pm, Aug. 5, 2002 3:00 pm, Aug. 5, 2002 3:40 pm, Aug. 5, 2002	Mr. Rumbaoa states that the City may have cultural resource concerns regarding the project, but has not identified specific issues.
City of Pico Rivera	Julie Ramirez, Planning Dept.	9:06 am, July 30, 2002 9:30 am, Aug. 5, 2002	The City has no cultural resource concerns regarding this project.
City of Sante Fe Springs	Gilbert Lee, Planning Dept.	9:10 am, July 30, 2002 10:45 am, July 30, 2002	A commemorative plaque at the intersection of Los Nietos Road and Norwalk Boulevard marking the approximate location of the historic Los Nietos School will need to be relocated and rededicated.
City of Vernon	Kevin Wilson, Board of Directors	2:00 pm, July 29, 2002 11:20 am, July 30, 2002 11:51 am, July 31, 2002	The City has no cultural resource concerns regarding this project.

POST-1957 BUILDINGS IN THE AREA OF POTENTIAL EFFECTS

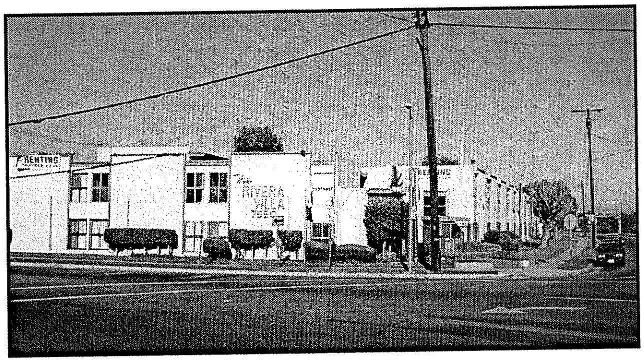
Third Main Track and Grade Separation Project
Hobart (MP 148.9) to Basta (MP 163.3)
BNSF/Metrolink East-West Main Line Railroad Track
Vernon to Fullerton, Los Angles and Orange Counties, California

Prepared by:

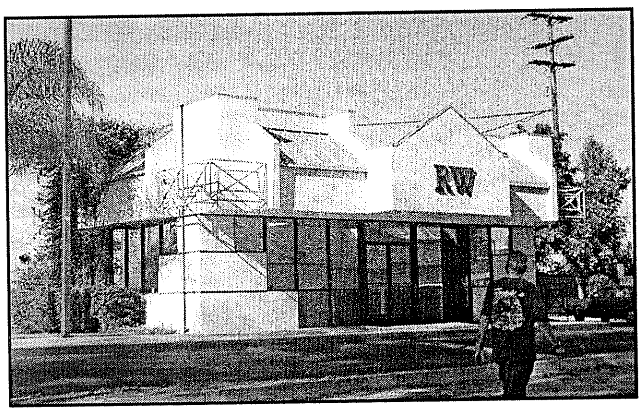
Bai "Tom" Tang, M.A., Principal Investigator
Teresa Woodard, B.A., Historian/Architectural Historian
CRM TECH
4472 Orange Street
Riverside, CA 92501



APN: 6383-037-902
Address: 7601 Cord Avenue, Pico Rivera
Identifier: Maizeland School
Construction Date: Ca. 1965

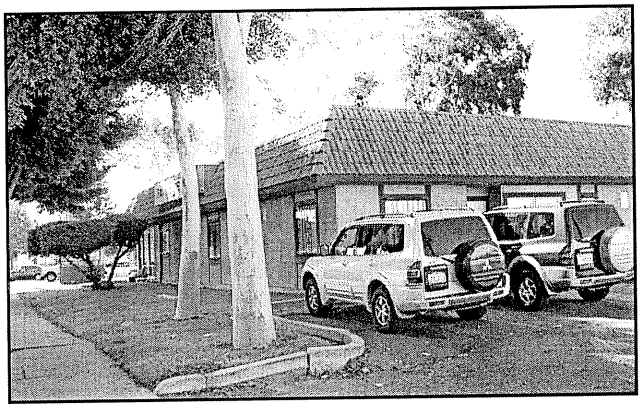


APN: 6383-037-017
Address: 7650 Passons Boulevard, Pico Rivera
Identifier: The Rivera Villa Appartments
Construction Date: 1962-1963



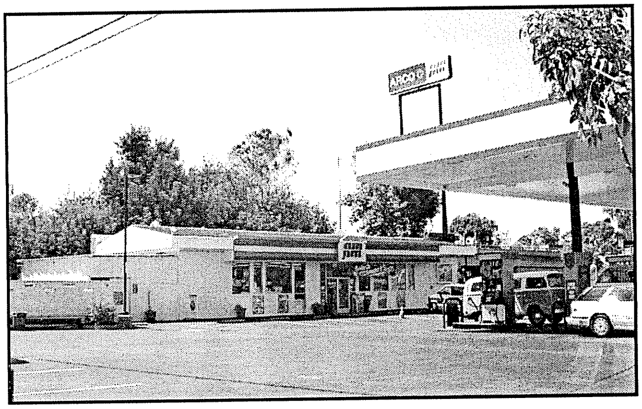
APN: 6383-038-010
Address: 7748 Passons Boulevard, Pico Rivera
Identifier: Commercial building
Construction Date: 1990

APN: 6382-021-035 to-38
Address: 9311-9349 Slauson Avenue, Pico Rivera
Identifier: Commercial buildings
Construction Date: 1987

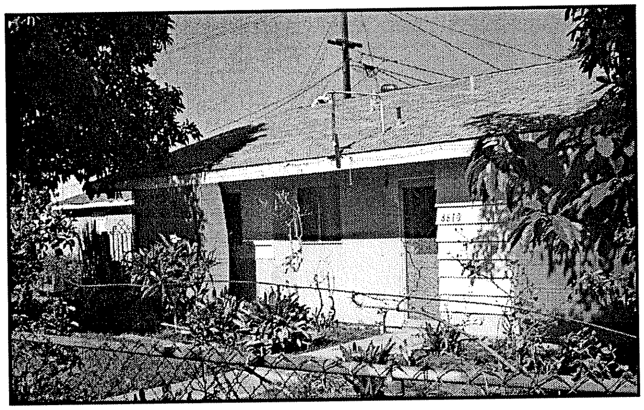


APN: 6383-038-001
Address: 9401 Slauson Avenue, Pico Rivera
Identifier: Dental clinic
Construction Date: 1980

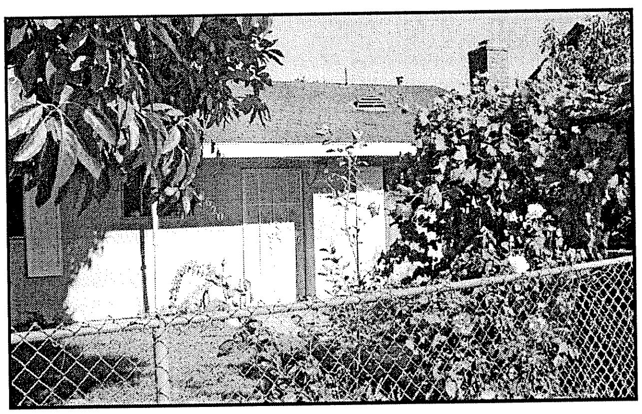
APN: 6383-038-010
Address: 9419 Slauson Avenue, Pico Rivera
Identifier: Commercial building
Construction Date: 1990



APN: 8177-026-049
Address: 8505 Pioneer Boulevard, L.A. County
Identifier: Arco gas station
Construction Date: 1980s-1990s (est.)

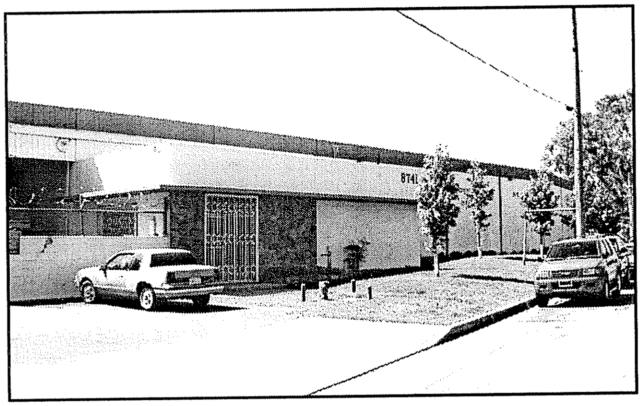


APN: 8177-026-027
Address: 8610 Pioneer Boulevard, L.A. County
Identifier: Single-family residence
Construction Date: 1969

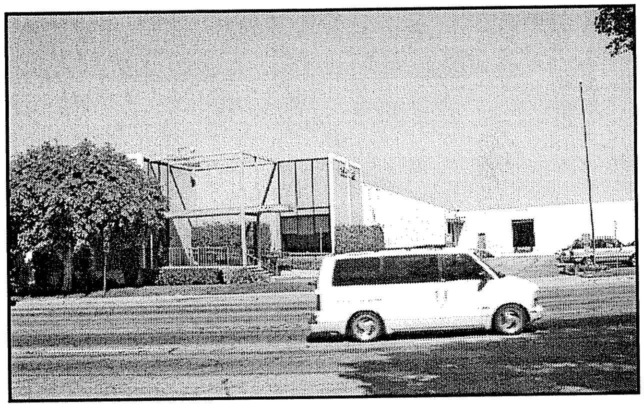


APN: 8177-026-026
Address: 8620 Pioneer Boulevard, L.A. County
Identifier: Single-family residence
Construction Date: 1969

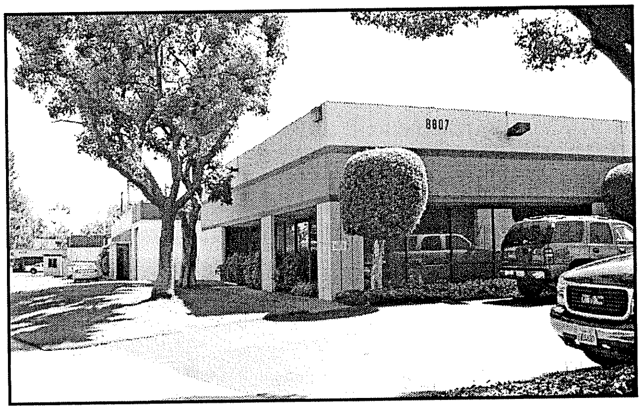
APN: 8177-031-013
Address: 8731 Pioneer Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1962-1966



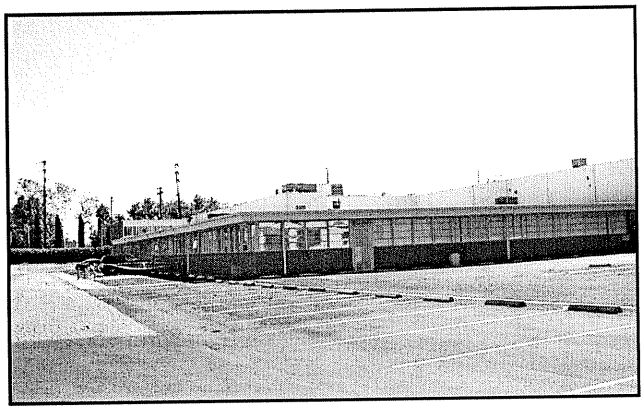
APN: 8177-031-009
Address: 8741 Pioneer Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1962-1966



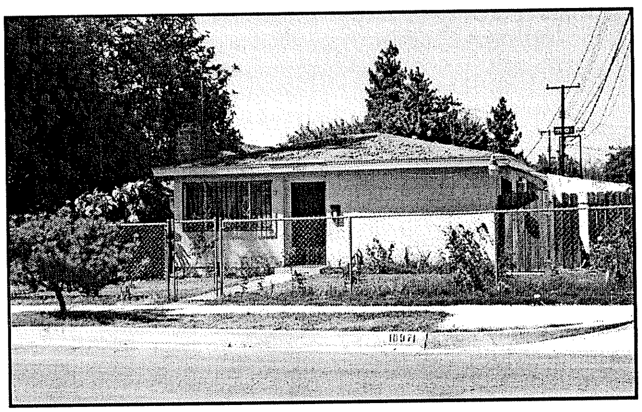
APN: 8178-037-020
Address: 8750 Pioneer Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1969



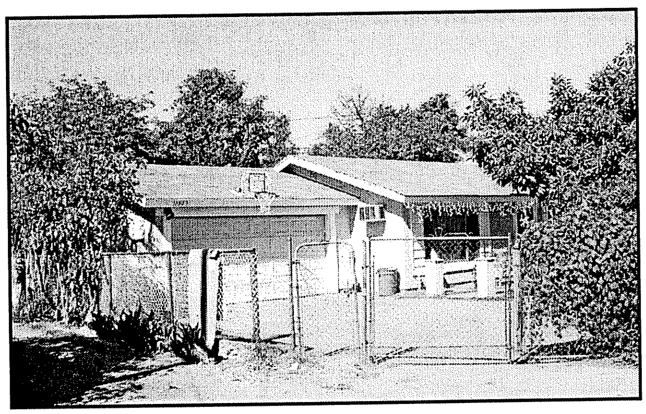
APN: 8177-031-010
Address: 8807 Pioneer Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1978



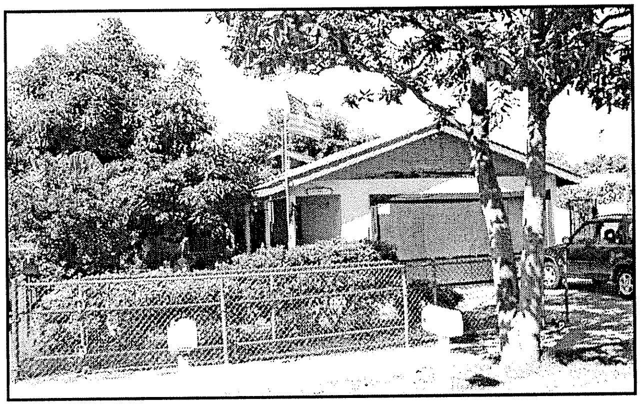
APN: 8178-037-012
Address: 8825 Pioneer Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1962-1963



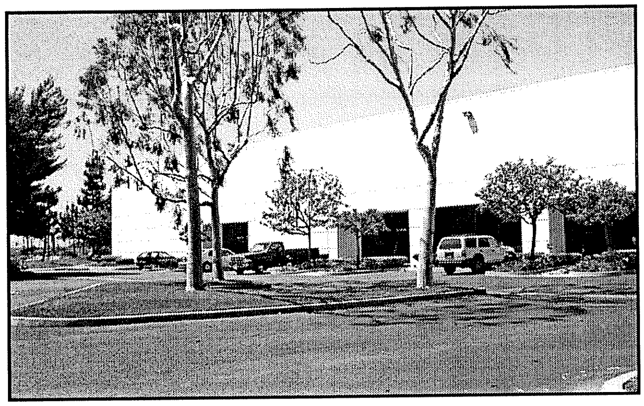
APN: 8177-026-040
Address: 10971 Rivera Road, L.A. County
Identifier: Single-family residence
Construction Date: 1969



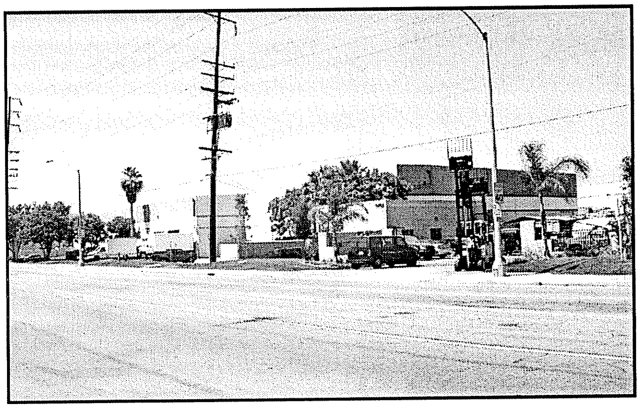
APN: 8177-026-029
Address: 11009 Rivera Road, L.A. County
Identifier: Single-family residence
Construction Date: 1970



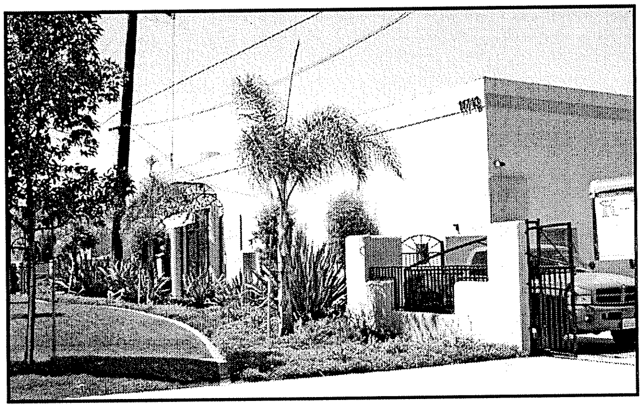
APN: 8177-026-030
Address: 11011 Rivera Road, L.A. County
Identifier: Single-family residence
Construction Date: 1969-1970



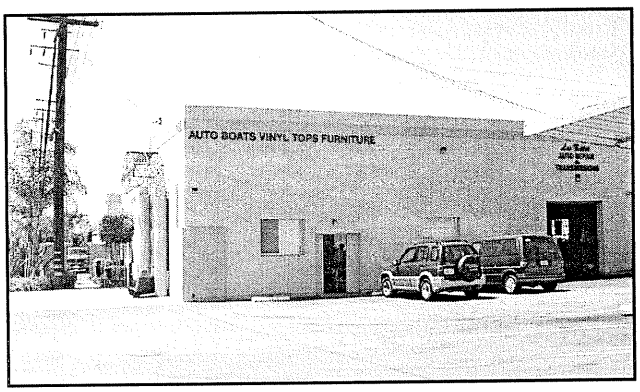
APN: 8168-001-025
Address: 9115 Dice Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1989



APN: 8178-035-010
Address: 11703 Los Nietos Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1980s (est.)

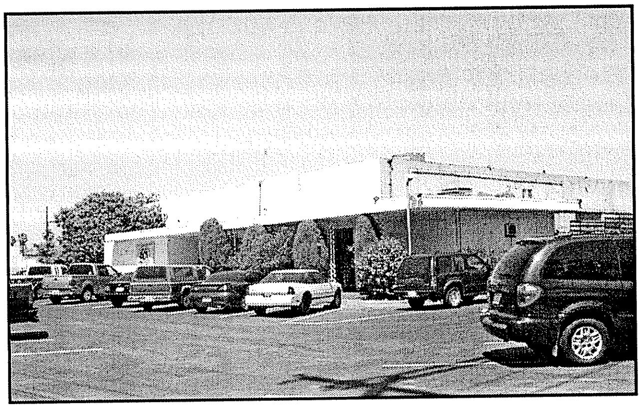


APN: 8178-035-011
Address: 11713 Los Nietos Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1980s (est.)



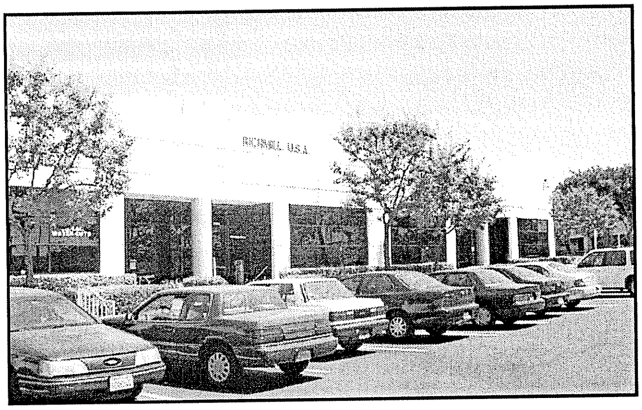
APN: 8178-035-008
Address: 11731 Los Nietos Road, Santa Fe Springs
Identifier: Commercial building
Construction Date: 1960s-1970s (est.)

APN: 8168-001-027 and -028
Address: 11925-11933 Los Nietos Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1988



APN: 8168-001-015
Address: 9016 Norwalk Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1988

APN: 8168-035-016
Address: 9023 Norwalk Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1992

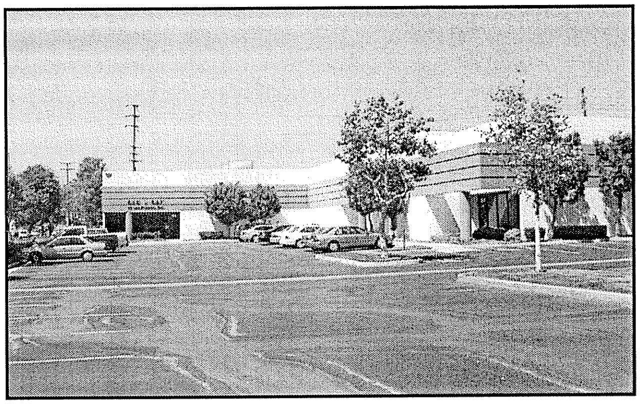


APN: 8168-001-034
Address: 9120-9128 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1988

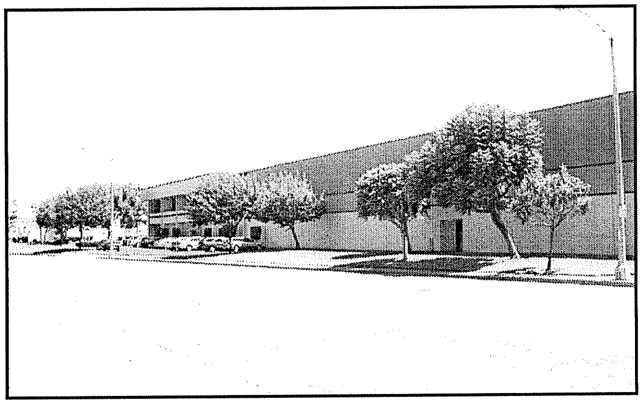
APN: 8168-001-028
Address: 9130-9140 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1989

APN: 8178-035-008
Address: 9135 Norwalk Boulevard, Santa Fe Springs
Identifier: Fastfood restaurant
Construction Date: 1963

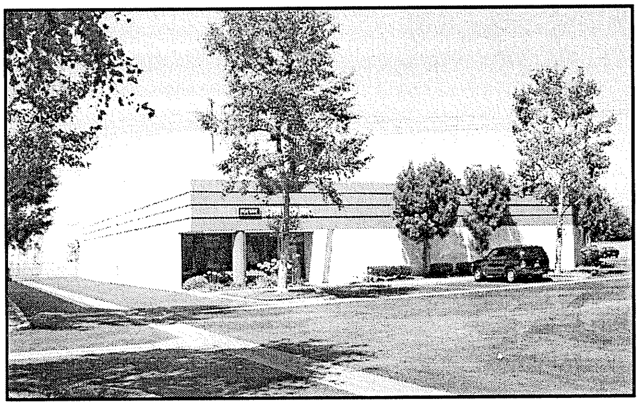
APN: 8168-001-028
Address: 9142-9160 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1988



APN: 8002-016-014 and -018 to -020
Address: 9210-9218 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1985-1986

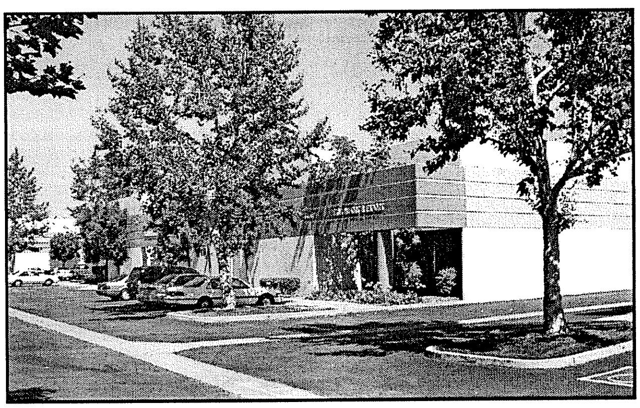


APN: 8002-013-008
Address: 9211 Norwalk Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1980

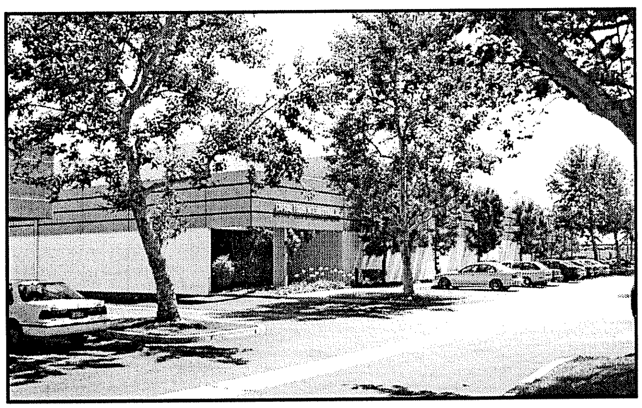


APN: 8002-016-020
Address: 9220 Norwalk Boulevard, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1986

APN: 8002-016-016
Address: 9230-9234 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1986

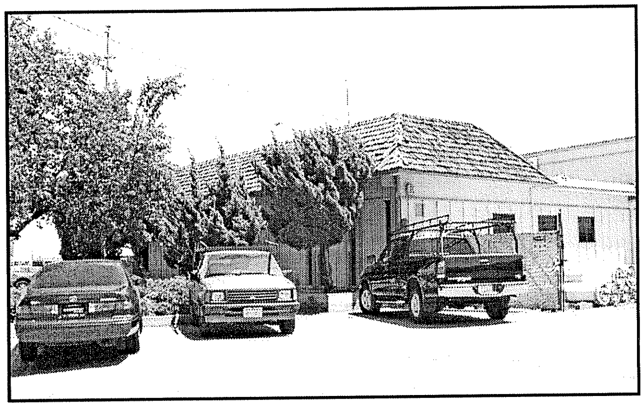


APN: 8002-016-020 and -029
Address: 9240-9244 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1986

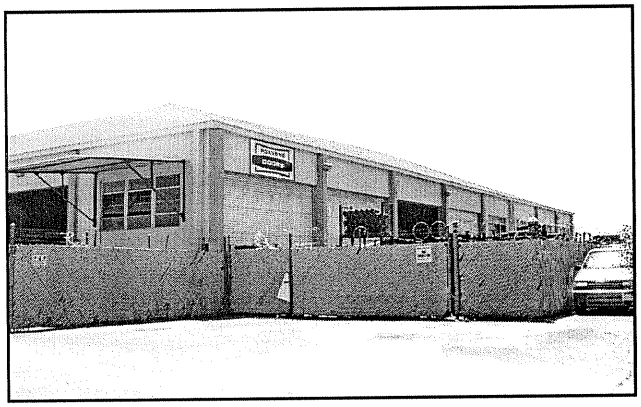


APN: 8002-017-029 and -030
Address: 9310-9314 Norwalk Blvd., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1986

APN: 8011-016-022
Address: 12739 Lakeland Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1992

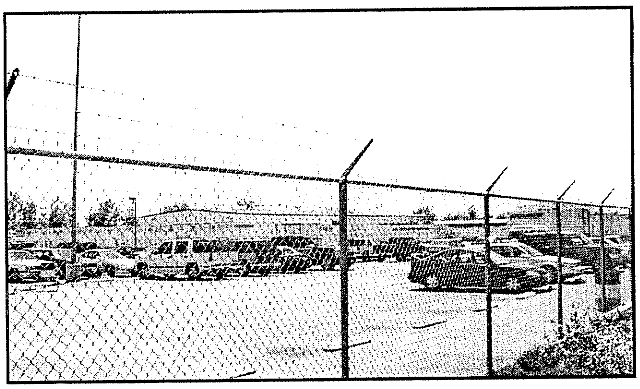


APN: 8026-001-019
Address: 12740 (a) Lakeland Ave., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1962

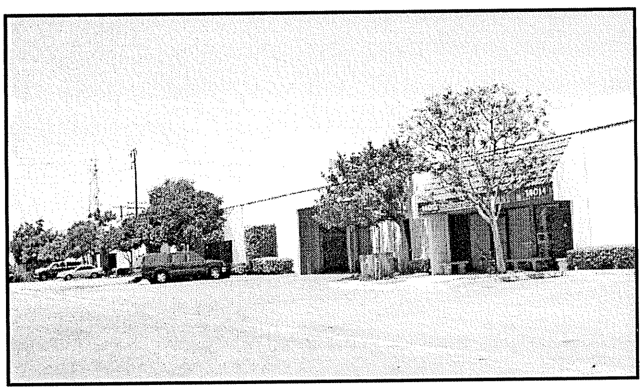


APN: 8026-001-019
Address: 12740 (b) Lakeland Ave., Santa Fe Springs
Identifier: Office building
Construction Date: 1962, alt. 1969 & 1978

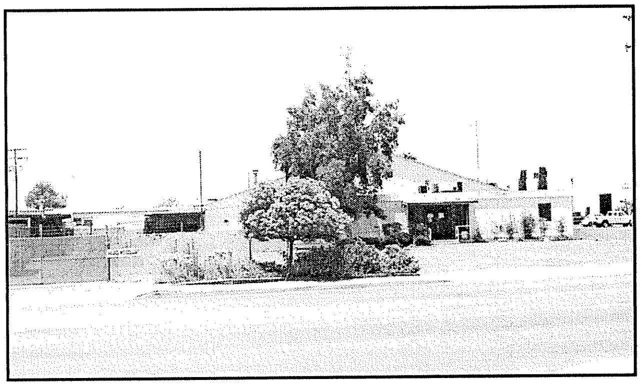
APN: 8026-001-020
Address: 12758 Lakeland Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1974



APN: 8011-016-023
Address: 12903 Lakeland Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1968, alt. 1986

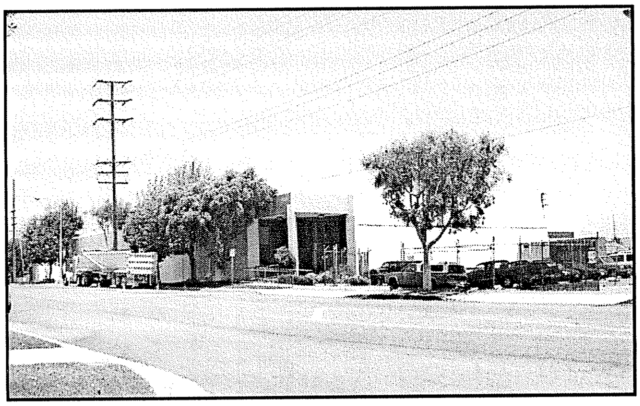


APN: 8059-028-030 to -036
Address: 14004-14014 Marquardt Ave., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1978

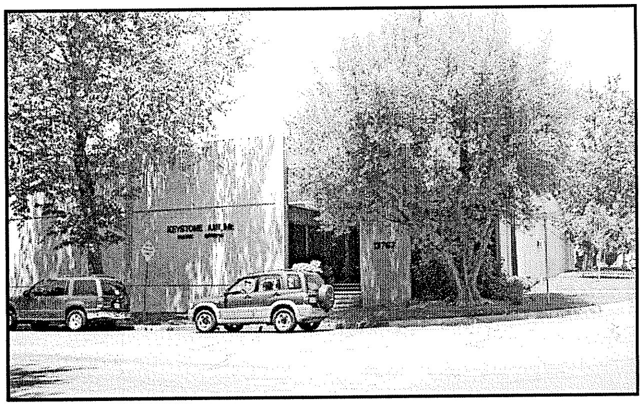


APN: 8059-029-006
Address: 14013 Marquardt Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1981

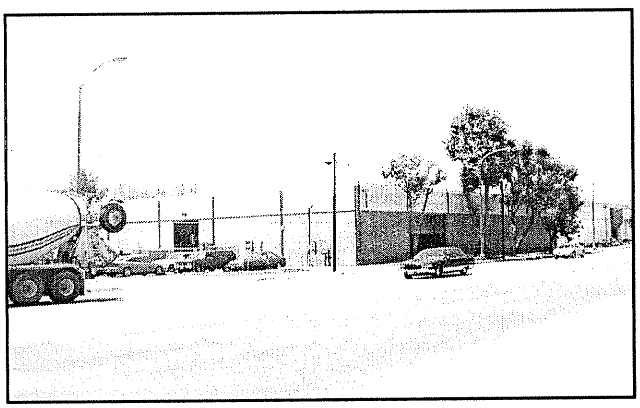
APN: 8059-028-037 to -042
Address: 14018-14028 Marquardt Ave., Santa Fe Springs
Identifier: Industrial building
Construction Date: 1978



APN: 8069-007-043
Address: 14330 Marquardt Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1976

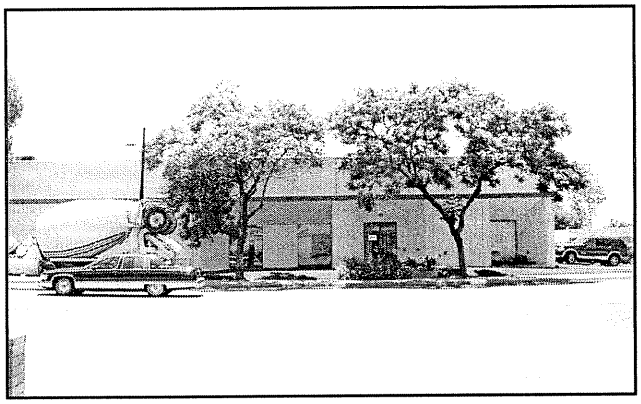


APN: 8069-003-015
Address: 13767 Milroy Place, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1971, alt. 1991

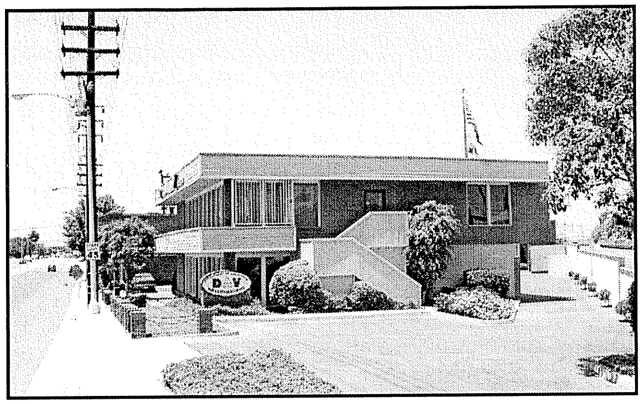


APN: 8069-003-009
Address: 13720 Rosecrans Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1972

APN: 8059-029-030
Address: 13729 Rosecrans Avenue, Santa Fe Springs
Identifier: Commercial building
Construction Date: 1972



APN: 8069-003-008
Address: 13730 Rosecrans Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1976



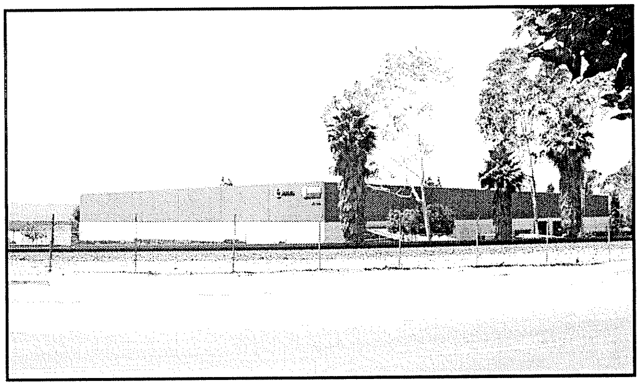
APN: 8059-029-029
Address: 13733 Rosecrans Avenue, Santa Fe Springs
Identifier: Commercial building
Construction Date: 1981, alt. 1983

APN: 8069-003-007
Address: 13750 Rosecrans Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1978

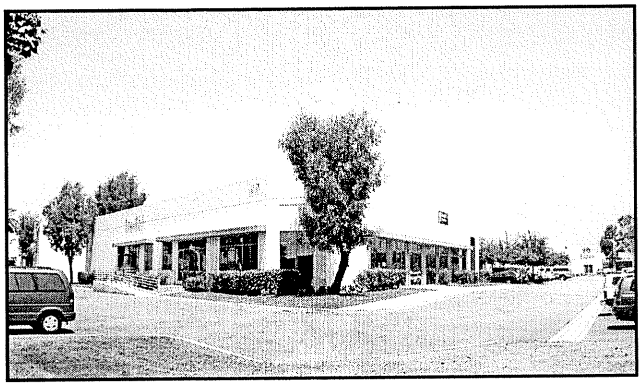
APN: 8069-005-001
Address: 13840-13848 Rosecrans Ave., Santa Fe Springs
Identifier: Commercial building
Construction Date: 1972

APN: 8069-028-028 and -029
Address: 13861 Rosecrans Avenue, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1975

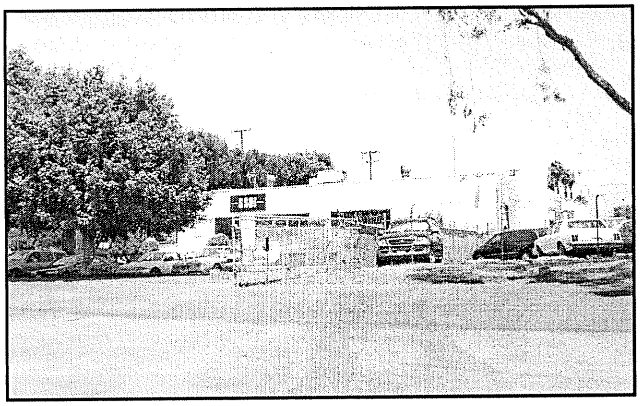
APN: 8069-006-037
Address: 14077-14079 Stage Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1989



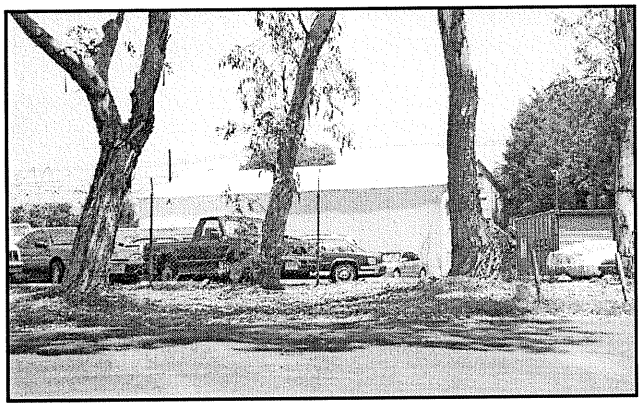
APN: 8069-008-032
Address: 14100 Borate Street, Santa Fe Springs
Identifier: Industrial building
Construction Date: Ca. 1990 (est.)



APN: 8069-006-042
Address: 14545-14565 Valley View Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: 1989

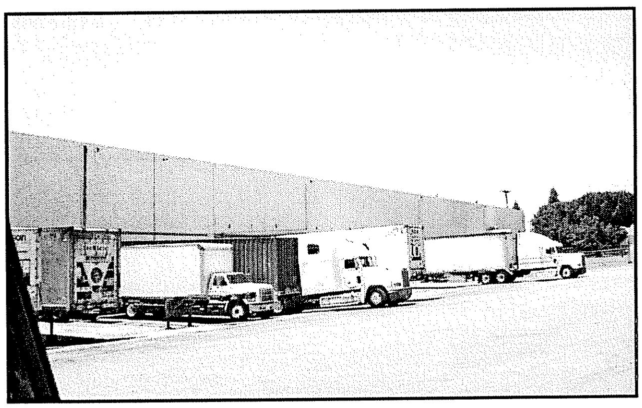


APN: 8069-009-021
Address: 14830 (a) Valley View Road, La Mirada
Identifier: Industrial building
Construction Date: Ca. 1980 (est.)



APN: 8069-009-021
Address: 14830 (b) Valley View Road, La Mirada
Identifier: Industrial building
Construction Date: Ca. 1980 (est.)

APN: 8069-008-033
Address: 14911 Valley View Road, Santa Fe Springs
Identifier: Industrial building
Construction Date: Ca. 1984



APN: 8069-009-020
Address: 14950-14952 Valley View Road, La Mirada
Identifier: Industrial building
Construction Date: Ca. 1990 (est.)

TRAFFIC IMPACT ANALYSIS

BNSF TRIPLE TRACK AND GRADE SEPARATION PROJECT
Hobart to Basta

TRAFFIC IMPACT REPORT

Prepared for

Tom Dodson & Associates

Prepared by

Meyer, Mohaddes Associates
900 Wilshire Boulevard, Suite 1200
Los Angeles, CA 90017

October 2002

J02-018

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

As part of its program to improve intercity passenger rail service, the State Department of Transportation, Division of Rail (Caltrans) in cooperation with Metrolink and Burlington Northern Santa Fe Railway Company (BNSF), is proposing to upgrade the capacity of the existing BNSF/Amtrak/Metrolink East-West Main Line Railroad Tracks.

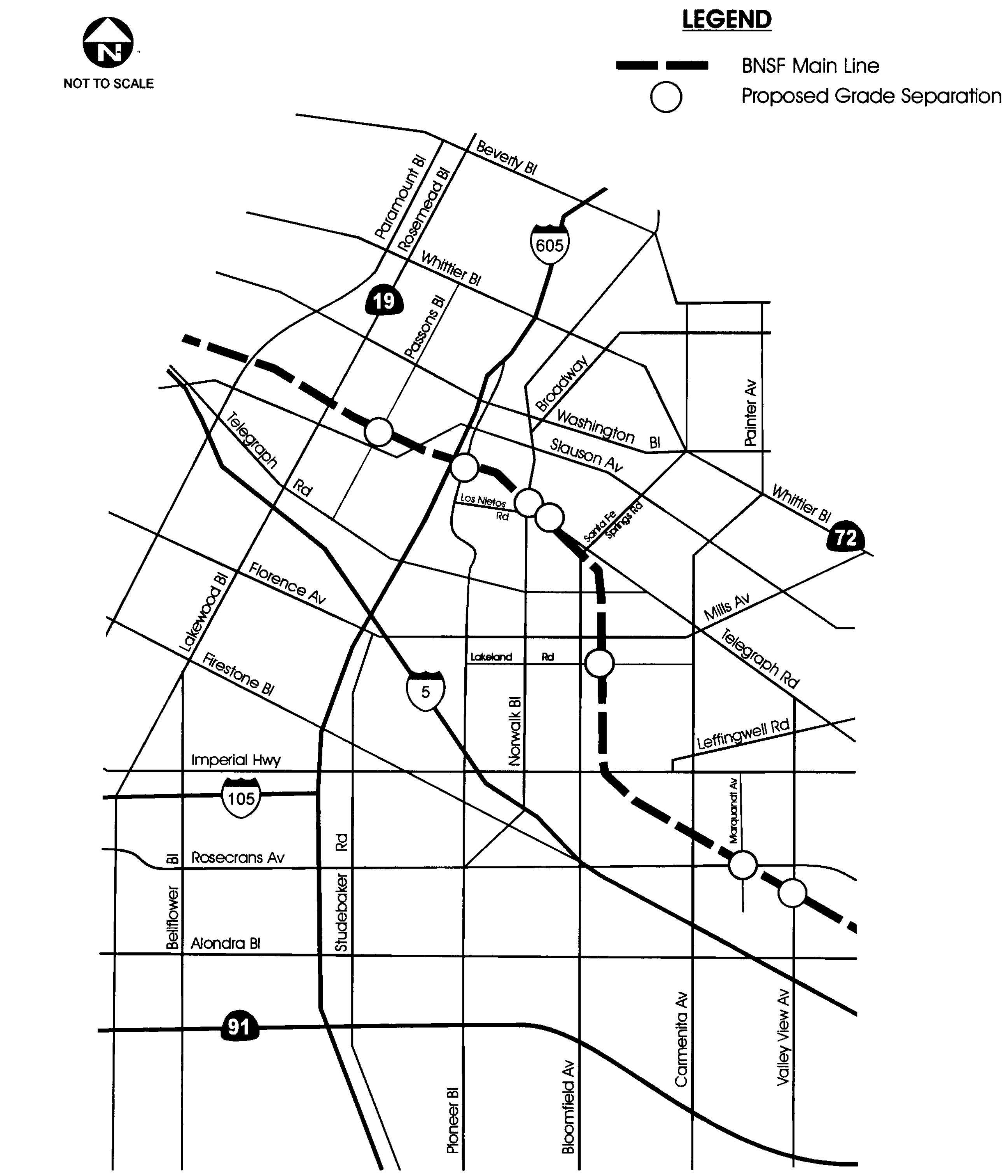
This BNSF main line rail corridor currently has two main tracks that are utilized for freight services to and from eastern destinations and for passenger service to and from the Los Angeles, San Bernardino and Orange County/San Diego metropolitan areas, with Fullerton as the central hub. It is Caltrans' objective to increase the efficiency of this corridor to accommodate the existing number of trains utilizing this corridor and future increases in the speed and volume of planned intercity and commuter rail passenger service.

The proposed Third Main Track and Grade Separation Project extends from the City of Commerce (Hobart) for 14.7 miles to the City of Fullerton (Basta). The primary improvements proposed are the installation of a third main track over this 14.7 mile segment of main line track and the installation of up to seven grade separation projects, which will be implemented over the next several years as funding permits.

As part of the environmental evaluation for the project, this traffic study analyzes the potential impacts of the proposed third track and grade separation project. The rail corridor extends from the City of Commerce (Hobart – MP 148.6) about 14.7 miles south to the City of Fullerton (Basta Station – MP 163.3). The affected jurisdictions include Los Angeles and Orange Counties and the Cities of Buena Park, Commerce, Fullerton, La Mirada, Montebello, Norwalk, Pico Rivera, and Santa Fe Springs. Figure 1 shows the alignment of the proposed third main track within the study area. Figure 1 also shows the locations of the seven proposed grade separation projects, which are:

1. Passons Boulevard
2. Pioneer Boulevard
3. Norwalk Boulevard
4. Los Nietos Road
5. Lakeland Road
6. Rosecrans Avenue/Marquardt Avenue
7. Valley View Avenue

All other crossings between Hobart and Basta Stations are currently grade separated.



Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 1
Study Area

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\study area.cdr 7/01/02

EXISTING TRAFFIC CONDITIONS

This section describes in detail existing traffic conditions at the seven proposed grade separation locations. Discussion includes current traffic volumes, roadway geometrics and current operating conditions.

Passons Boulevard

Passons Boulevard is a two-lane facility which runs in the north-south direction. Figure 2 shows the study area and the local traffic circulation system. In the vicinity of the rail crossing, Passons Boulevard is fronted primarily with residential and neighborhood commercial uses. Based on recent traffic counts, Passons Boulevard near the BNSF rail crossing currently carries approximately 1,160 vehicles (315 northbound and 845 southbound) during the AM peak hour. During the PM peak hour, Passons Boulevard carries approximately 855 vehicles (445 northbound and 410 southbound). Figure 2 also shows the existing peak hour traffic volumes.

As part of the proposed Triple Track/Grade Separation project, the current at-grade crossing at Serapis Avenue is proposed to be permanently closed to vehicular traffic. Serapis Avenue is a two-lane local roadway which runs parallel to and west of Passons Boulevard. Within the study area, Serapis Avenue is fronted primarily by residential uses north of the rail crossing and commercial uses south of the rail crossing. Traffic counts along Serapis Avenue show that the facility carries approximately 215 AM peak hour vehicles (75 northbound and 140 southbound) and 305 PM peak hour vehicles (160 northbound and 145 southbound). Figure 2 also shows the AM and PM peak hour traffic volumes along other key roadways within the study area.

Pioneer Boulevard

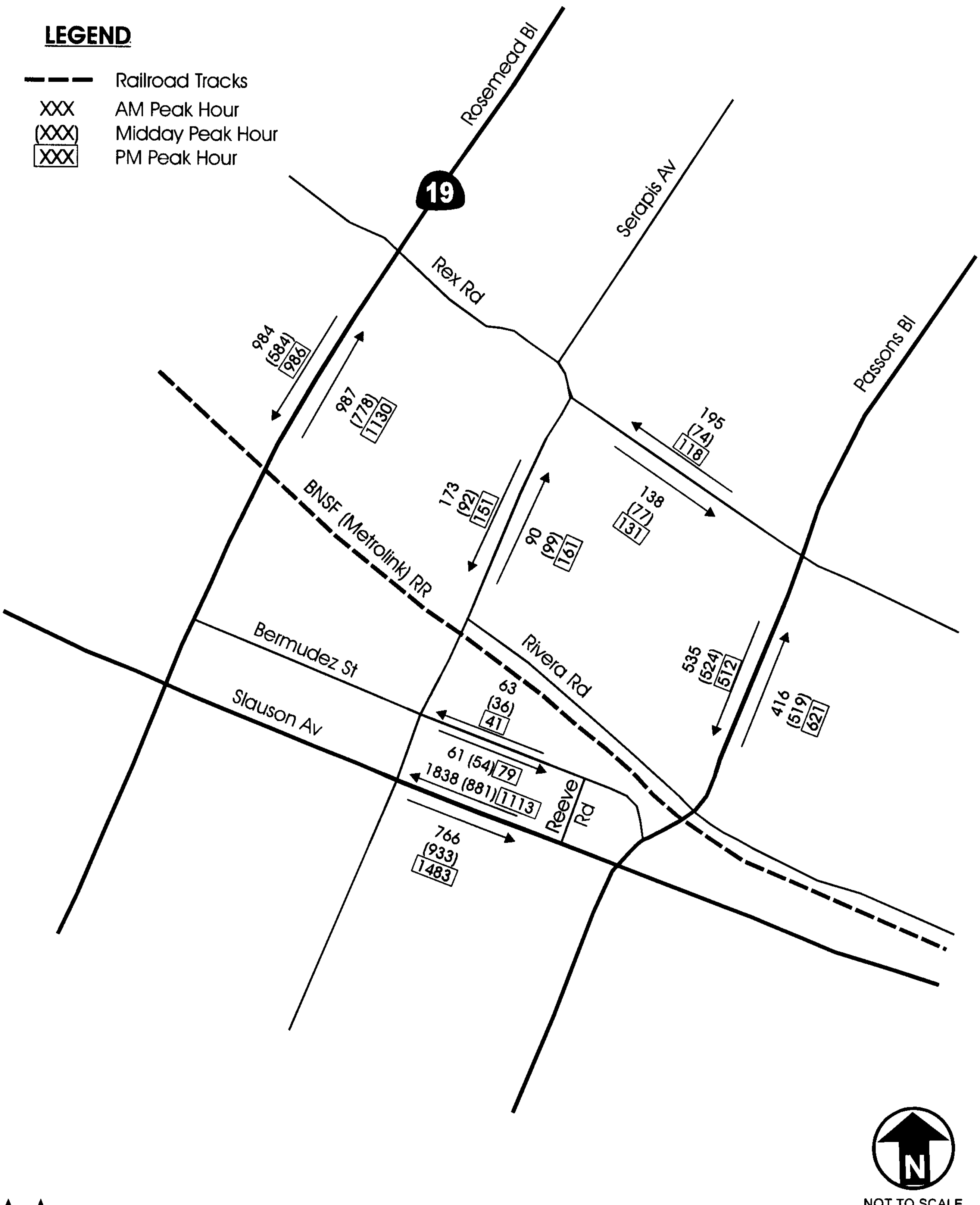
Within the study area, Pioneer Boulevard is a four-lane roadway aligned in the north-south direction. Land uses along Pioneer Boulevard near the rail crossings are primarily residential with some commercial. Figure 3 shows the local traffic circulation system within the study area and existing traffic volumes along the major roadways. As can be seen, Pioneer Boulevard carries approximately 1,532 vehicles (584 northbound and 948 southbound) during the AM peak hour, 978 vehicles (478 northbound and 500 southbound) during the midday peak hour, and 1,544 vehicles (755 northbound and 789 southbound) during the PM peak hour.

Norwalk Boulevard

Within the study area, Norwalk Boulevard is a four-lane roadway aligned in the north-south direction. Land uses along this roadway are primarily commercial. Figure 3 also shows existing traffic volumes along Norwalk Boulevard near the BNSF rail crossing. As shown, Norwalk Boulevard carries approximately 1,688 vehicles (736 northbound and 952 southbound) during the AM peak hour, 1,539 vehicles (752 northbound and 787 southbound) during the midday peak hour, and 2,262 vehicles (1,157 northbound and 1,105 southbound) during the PM peak hour.

Los Nietos Road

Los Nietos Road, within the study area, is a four-lane roadway that is aligned in the east-west direction and is fronted by commercial use. Figure 3 shows existing traffic volumes along Los



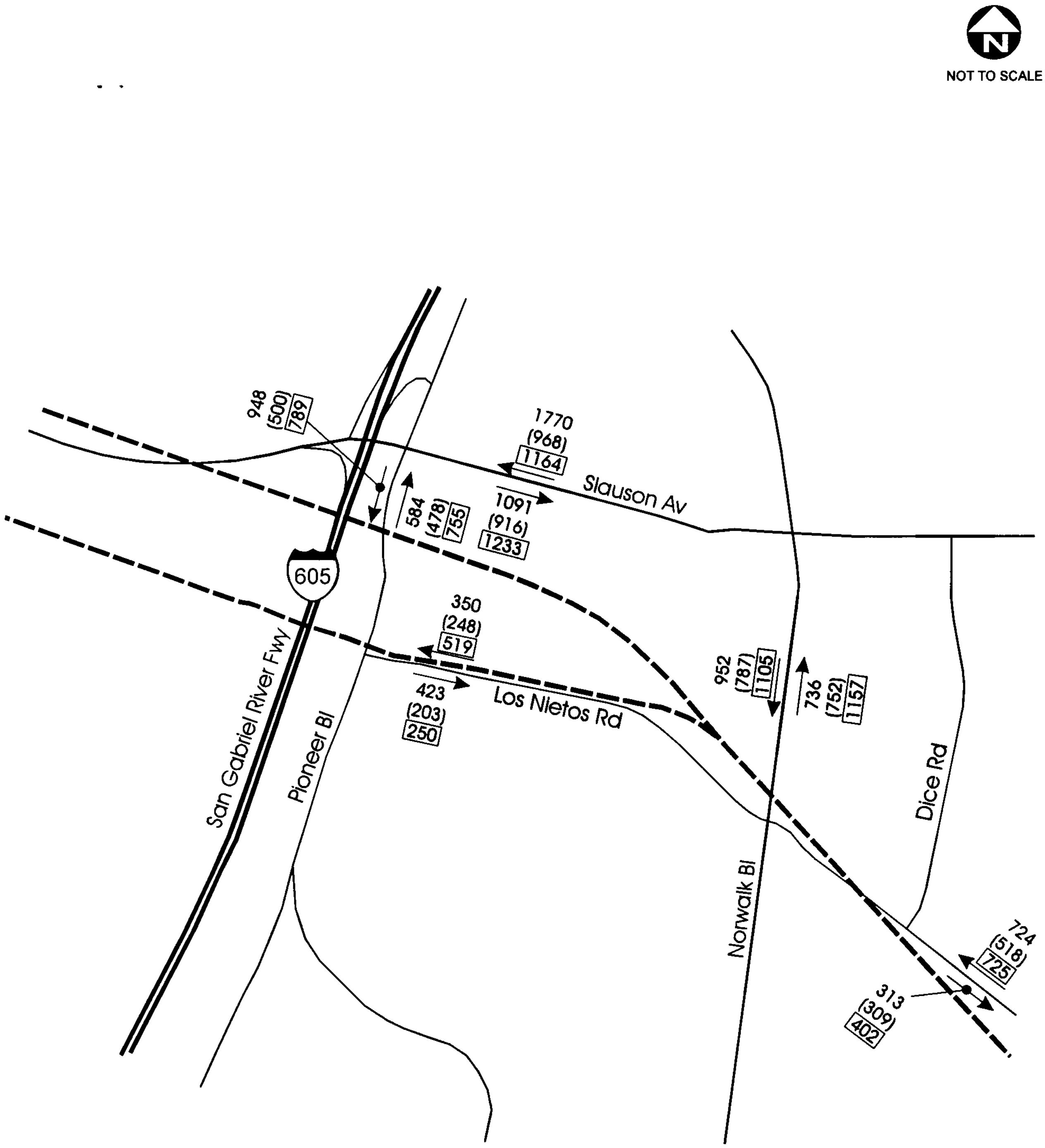
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 2
Existing Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Passons-Serapis\Gra\xvol.cdr 7/03/02



LEGEND

— — —	Railroad Tracks
XXX	AM Peak Hour
(XXX)	Midday Peak Hour
[XXX]	PM Peak Hour

Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 3
Existing Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\XVolA.cdr 7/01/02

Nietos Road near the rail crossing. As shown, Los Nietos Road carries approximately 1,037 vehicles (313 eastbound and 724 westbound) during the AM peak hour, 827 vehicles (309 eastbound and 518 westbound) during the midday peak hour, and 1,427 vehicles (402 eastbound and 725 westbound) during the PM peak hour.

Lakeland Road

Lakeland Road near the rail crossing is a two-lane roadway which runs in the east-west direction fronted primarily by industrial use. Figure 4 shows the local traffic circulation system and the existing traffic volumes along major streets within the area. As shown in Figure 4, Lakeland Road carries approximately 719 vehicles (308 eastbound and 411 westbound) during the AM peak hour, 566 vehicles (282 eastbound and 284 westbound) during the midday peak hour, and 699 vehicles (359 eastbound and 340 westbound) during the PM peak hour.

Rosecrans Avenue/Marquandt Avenue

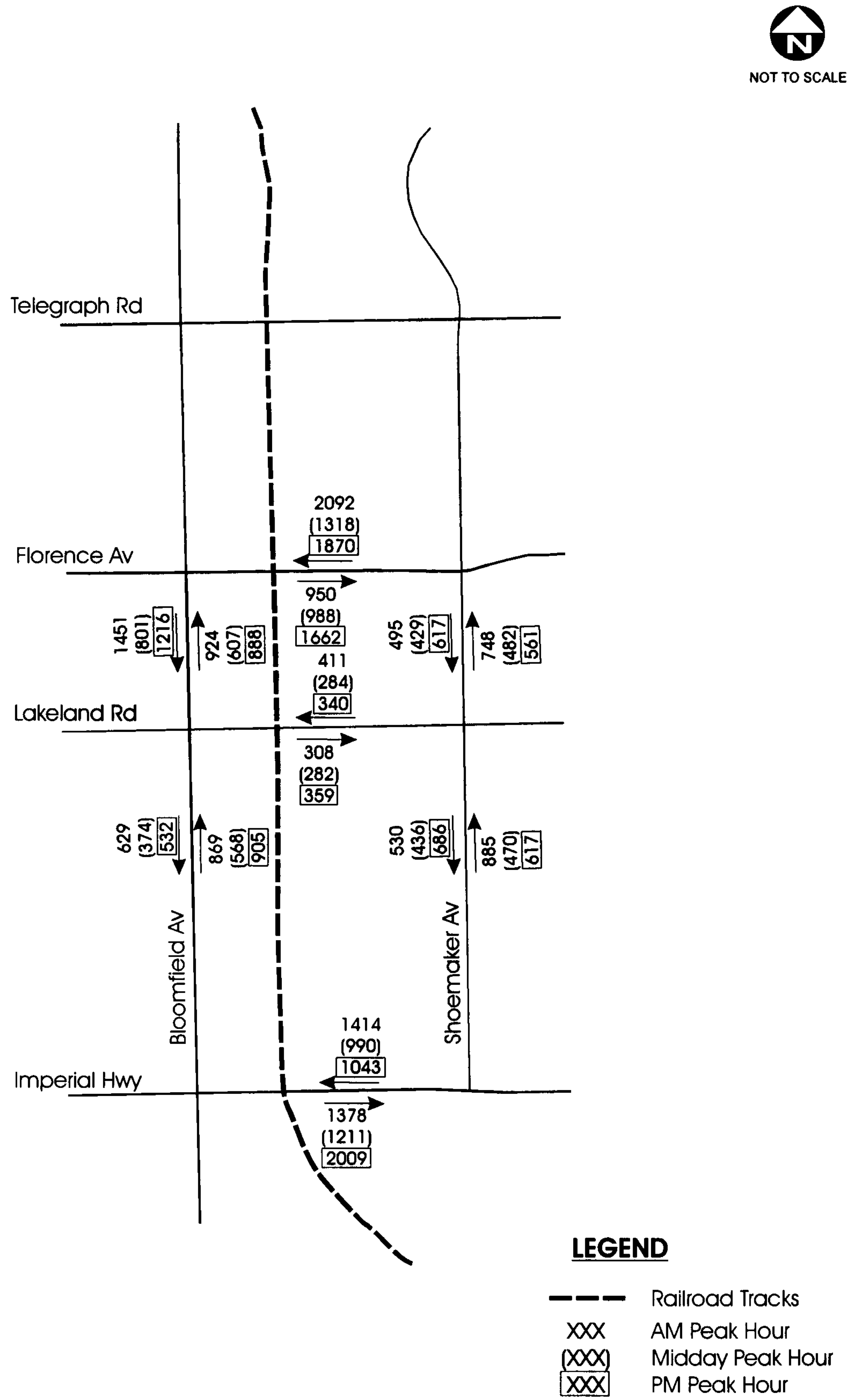
The BNSF railroad tracks cross through the intersection of Rosecrans Avenue and Marquandt Avenue diagonally. Within the study area, Rosecrans Avenue is a four-lane roadway aligned in the east-west direction. Marquandt Avenue is a four-lane roadway aligned in the north-south direction. Both roadways are fronted by commercial and industrial land uses. Figure 5 shows the local traffic circulation system and existing traffic volumes along major streets within the area.

West of the BNSF railroad tracks, Rosecrans Avenue carries approximately 2,170 vehicles (992 eastbound and 1,178 westbound) during the AM peak hour, 1,790 vehicles (725 eastbound and 984 westbound) during the midday peak hour, and 2,171 vehicles (1,304 eastbound and 867 westbound) during the PM peak hour. East of the BNSF railroad tracks, Rosecrans Avenue carries approximately 1,921 vehicles (604 eastbound and 1,317 westbound) during the AM peak hour, 1,475 vehicles (740 eastbound and 735 westbound) during the midday peak hour, and 1,586 vehicles (847 eastbound and 739 westbound) during the PM peak hour.

North of the rail crossing, Marquandt Avenue carries approximately 555 vehicles (283 northbound and 272 southbound) during the AM peak hour, 535 vehicles (349 northbound and 186 southbound) during the midday peak hour, and 732 vehicles (462 northbound and 270 southbound) during the PM peak hour. South of the rail crossing, it carries approximately 344 vehicles (86 northbound and 258 southbound) during the AM peak hour, 327 vehicles (164 northbound and 160 southbound) during the midday peak hour, and 471 vehicles (274 northbound and 197 southbound) during the PM peak hour.

Valley View Avenue

Within the study area, Valley View Avenue is a four-lane roadway aligned in the north-south direction. South of the rail crossing, Valley View Avenue is fronted by commercial land use. To the north of the crossing, it is fronted by residential use. Figure 6 shows the local traffic circulation system for the portion of the study area and existing traffic volumes along the major streets within the study area. As can be seen, Valley View Avenue carries approximately 2,605 vehicles (1,050 northbound and 1,555 southbound) during the AM peak hour, 1,910 vehicles (991 northbound and 919 southbound) during the midday peak hour, and 2,632 vehicles (1,552 northbound and 1,080 southbound) during the PM peak hour.



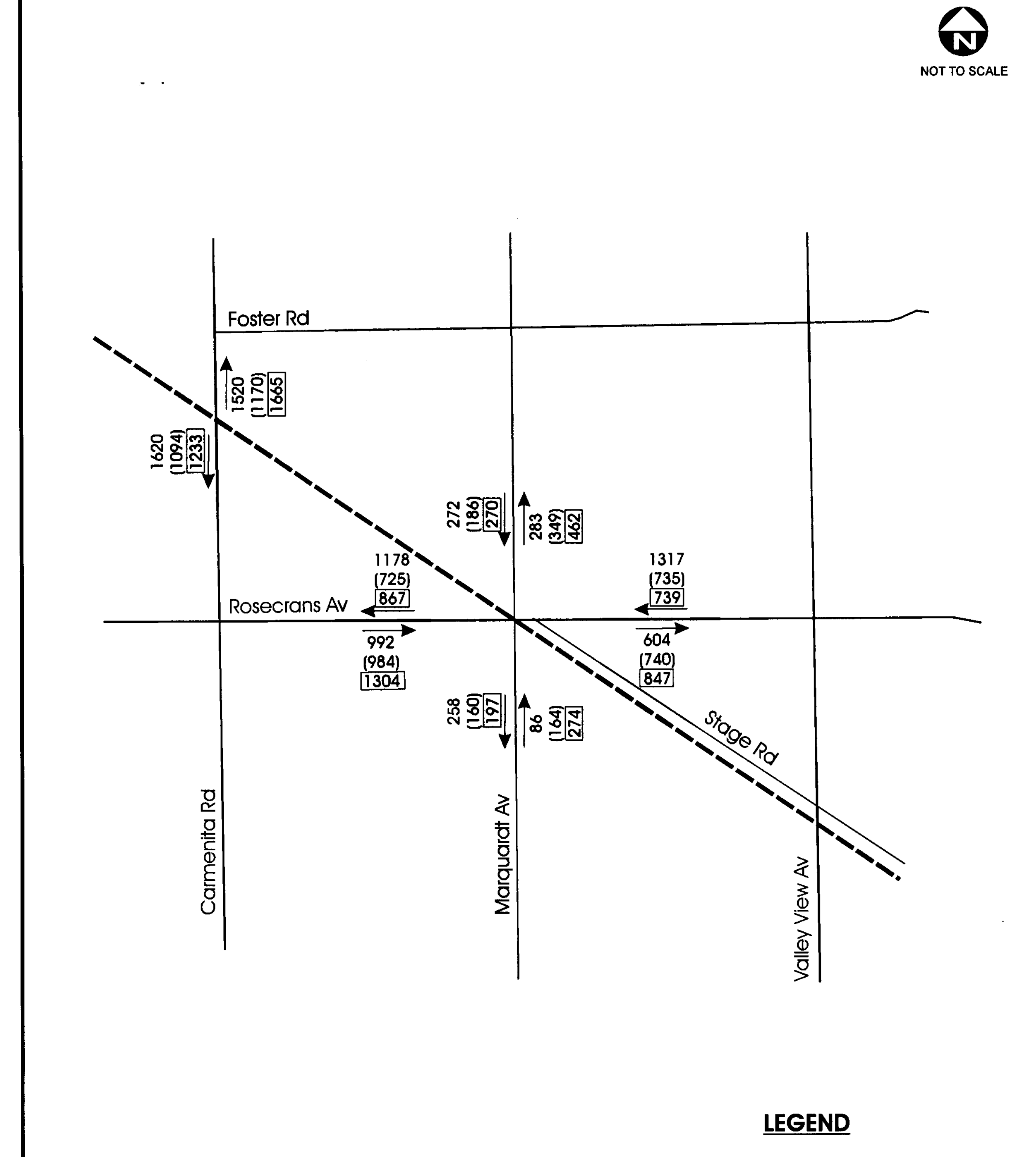
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 4
Existing Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\XVolB.cdr 7/01/02



LEGEND

- Railroad Tracks
- XXX AM Peak Hour
- (XXX) Midday Peak Hour
- [XXX] PM Peak Hour

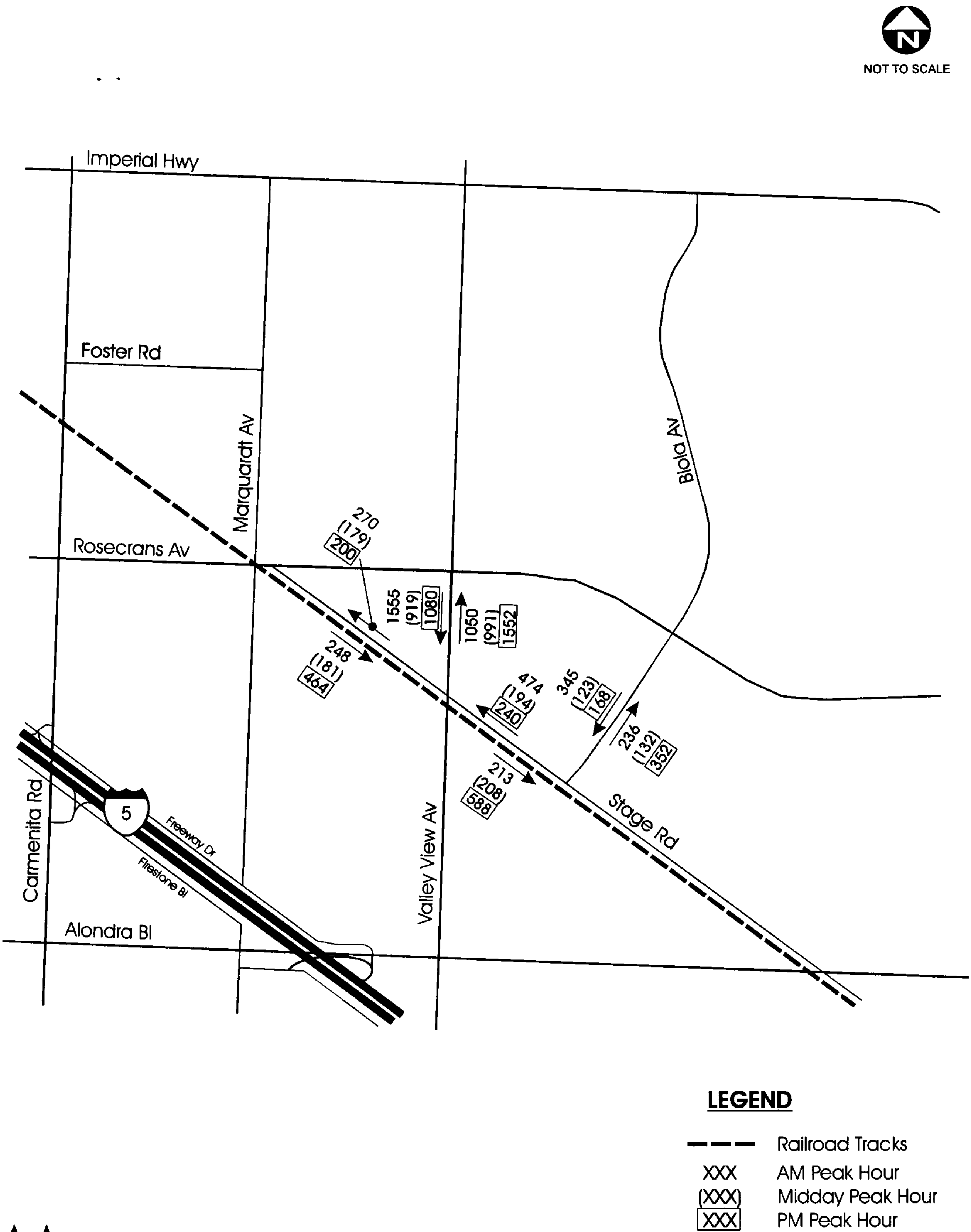
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 5
Existing Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\XVolC.cdr 7/01/02



Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 6
Existing Peak Hour Traffic Volumes

Roadway Capacity Analysis

The efficiency of traffic operations at a location is measured in terms of Level of Service (LOS). Level of service is a description of traffic performance. The level of service concept is a measure of average operating conditions during an hour. It is based on volume-to-capacity (V/C) ratio. Levels range from A to F with A representing excellent (free-flow) conditions and F representing extreme congestion. The methodology compares the amount of traffic that a roadway segment is able to carry (the capacity) to the level of traffic during the peak hour (volume). Roadway segments with vehicular volumes, which are at or near capacity, experience greater congestion and longer vehicle delays. Table 1 describes the level of service concept and the operating conditions expected under each level of service.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

LOS	Interpretation	Volume to Capacity Ratio
A	Excellent operation. All approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.000 - 0.600
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow.	0.601 - 0.700
C	Good operation. Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701 - 0.800
D	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 - 0.900
E	Poor operation. Some long standing vehicular queues develop.	0.901 - 1.000
F	Forced flow. Represents jammed conditions. Potential for stop and go type traffic flow.	Over 1.000

Based on the existing level of traffic and the roadway geometrics, capacity and level of service analysis were performed at each of the major roadways along the corridor which are proposed to be grade separated. Table 2 summarizes the results. As can be seen, all the roadway segments are operating at acceptable levels of service (i.e. LOS A, B, C or D), not taking into consideration the delay to traffic caused by gate-down time at railroad crossings.

Existing Rail Operational Characteristics

As part of the study, MMA conducted surveys at rail crossings to assess current rail operational characteristics. Based on conversations with BNSF representatives, current freight train movements do not have set schedules and the train characteristics (i.e. lengths, number of cars, speeds) vary depending on load conditions. Contrary to freight train movements, Metrolink passenger trains operate on a set schedule.

TABLE 2
EXISTING PEAK HOUR LEVEL OF SERVICE SUMMARY

	AM Peak Hour				Midday Peak Hour				PM Peak Hour			
	NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB	
Location	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1. Passons Bl	0.467	A	0.601	B	0.583	A	0.589	A	0.698	B	0.575	A
2. Serapis Av	0.113	A	0.216	A	0.124	A	0.115	A	0.201	A	0.189	A
3. Pioneer Bl	0.328	A	0.533	A	0.269	A	0.281	A	0.424	A	0.443	A
4. Norwalk Bl	0.413	A	0.357	A	0.422	A	0.295	A	0.650	B	0.414	A
5. Los Nietos Rd	0.185	A	0.428	A	0.183	A	0.307	A	0.238	A	0.429	A
6. Lakeland Rd	0.362	A	0.484	A	0.332	A	0.334	A	0.422	A	0.400	A
7. Rosecrans Av	0.372	A	0.493	A	0.369	A	0.275	A	0.488	A	0.277	A
8. Marquardt Av	0.048	A	0.153	A	0.092	A	0.104	A	0.154	A	0.152	A
9. Valley View Av	0.295	A	0.874	D	0.278	A	0.516	A	0.436	A	0.607	B

MMA conducted field surveys on May 10 and May 13, 2002 at the Passons Boulevard and Serapis Avenue crossings. The two-day survey yielded data on a total of 64 crossing data. Data collected includes:

Train Frequency – number of trains observed

Gate-down Time - this is the period of time which gates are activated. The gate-down time can be categorized into three intervals:

1. *Approach Time* - time interval from initial gate down to the moment the train is at the crossing

2. *Crossing Time* – time interval between the first car and the last car of the train to completely clear the crossing

3. *Recovery Time* – time interval between the last train car and the gates to come up

Type of train – as mentioned previously, there are two types of trains, freight and passenger. Data were collected for the two types as their difference in operational characteristics would affect delays at crossings.

Length of train – the lengths in terms of cars were also collected as part of the survey. Although passenger trains do not vary in lengths as much, freight trains however do vary depending on type and number of loads.

Table 3 summarizes the survey results. As can be seen, the average frequencies for freight trains for the AM, midday and PM peak hours are 1.8, 1.5 and 2.0, respectively. Average frequencies for passenger trains for the AM, midday and PM peak hours are 5.3, 1.5 and 4.3, respectively. The average gate down times for freight trains ranges from 2'30" to 2'46" and is much longer as compared to passenger trains due to the much longer lengths and slower travel speed.

Detailed survey results are provided in Appendix A.

Delay Analysis
The calculation of delays at train crossings takes into account the gate down time, and also the time it takes for the dissipation of traffic queue which directly relates to the level of vehicular traffic volume on the respective roadway. This is the amount of time it takes for vehicular flow to return to "normal" conditions. Due to stoppage at the crossings, vehicles would queue back from the crossing gates. The length of queue depends on vehicular arrival and departure rate and the number of travel lanes on the respective roadway and gate down time. The calculation of vehicle delay is as follows:

$$\text{Delay} = [(T^2)(Q/2)(n)]/(1-Q/D)$$

Where:

T = Gate Down Time (min)
Q = Average Arrival Rate (veh/min/lane)
D = Average Departure Rate (veh/min/lane)
n = Number of Lanes

MMA conducted field surveys on May 10 and May 13, 2002 at the Passons Boulevard and Serapis Avenue crossings. The two-day survey yielded data on a total of 64 crossing data. Data collected includes:

- Train Frequency – number of trains observed

- Gate-down Time - this is the period of time which gates are activated. The gate-down time can be categorized into three intervals:

    1. *Approach Time* - time interval from initial gate down to the moment the train is at the crossing

    2. *Crossing Time* – time interval between the first car and the last car of the train to completely clear the crossing

    3. *Recovery Time* – time interval between the last train car and the gates to come up

- Type of train – as mentioned previously, there are two types of trains, freight and passenger. Data were collected for the two types as their difference in operational characteristics would affect delays at crossings.

- Length of train – the lengths in terms of cars were also collected as part of the survey. Although passenger trains do not vary in lengths as much, freight trains however do vary depending on type and number of loads.

Table 3 summarizes the survey results. As can be seen, the average frequencies for freight trains for the AM, midday and PM peak hours are 1.8, 1.5 and 2.0, respectively. Average frequencies for passenger trains for the AM, midday and PM peak hours are 5.3, 1.5 and 4.3, respectively. The average gate down times for freight trains ranges from 2'30" to 2'46" and is much longer as compared to passenger trains due to the much longer lengths and slower travel speed.

Detailed survey results are provided in Appendix A.

Delay Analysis
The calculation of delays at train crossings takes into account the gate down time, and also the time it takes for the dissipation of traffic queue which directly relates to the level of vehicular traffic volume on the respective roadway. This is the amount of time it takes for vehicular flow to return to "normal" conditions. Due to stoppage at the crossings, vehicles would queue back from the crossing gates. The length of queue depends on vehicular arrival and departure rate and the number of travel lanes on the respective roadway and gate down time. The calculation of vehicle delay is as follows:

$$\text{Delay} = [(T^2)(Q/2)(n)]/(1-Q/D)$$

Where:

T = Gate Down Time (min)
Q = Average Arrival Rate (veh/min/lane)
D = Average Departure Rate (veh/min/lane)
n = Number of Lanes

TABLE 3
SUMMARY OF TRAIN SURVEY RESULTS

	AM Peak Hour	PM Peak Hour
Average Train Frequency		
Freight	1.8	2.0
Passenger	5.3	4.3
Average Gate Down Time (min:sec)		
Freight	02:46	02:30
Passenger	00:56	00:55
Average Length of Train (# of Cars)		
Freight	70.3	71.5
Passenger	5.2	5.2

Note: Results shown based on 64 surveys conducted on May 10 and May 13, 2002.

The formula shown is widely accepted and has been used in other rail delay studies including: Port of Long Beach EIRs, Port of Los Angeles EIRs, Alameda Corridor, San Gabriel Valley (ACE) and Placentia (OnTrac) grade crossing studies. The application of the formula shown is for the purpose of estimating the total vehicle delay per occurrence. The formula has been slightly modified to include hourly frequency to estimate peak hour delays. The resulting delay is in terms of total vehicle-hours. This is a weighted delay, which takes into account hourly vehicular volumes. To correlate this result with the Highway Capacity Manual's (HCM) definition for level of service (LOS) based on average delay per vehicle during the peak hour of traffic, results are also shown in this format. Level of service definition per HCM 2000 is presented below:

Level of Service	**Avg. Delay (sec/veh)**
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Table 4 shows the estimated delay at each of the eight locations under existing 2002 conditions for the AM, midday and PM peak hours. The results show that based on hourly average delay, all the crossings are experiencing good levels of service (i.e. LOS A, B, or C).

It should be noted that the results shown in average vehicle delay in seconds are for the purpose of estimating level of service on an hourly basis. In reality, vehicles that are stopped during train crossings experience much longer delays. However, vehicles experience virtually no delays at other times of the peak hour.

TABLE 4
Existing Rail Delay Summary

Freight Train Parameters

	Gate Down Time	Frequency
AM	2.77 min	1.8 trains/hour
Midday	2.78 min	1.5 trains/hour
PM	2.50 min	2.0 trains/hour

Passenger Train Parameters

	Gate Down Time	Frequency
AM	0.93 min	5.3 trains/hour
Midday	1.02 min	1.5 trains/hour
PM	0.92 min	4.3 trains/hour

AM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		FREIGHT DELAY (veh-hr)		PASSENGER DELAY (veh-hr)		TOTAL DELAY (veh-hr)		AVERAGE VEHICLE-DELAY (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	416	535	6.93	8.92	1	1	1.10	1.60	0.37	0.53	1.47	2.12	12.7	B	14.3	B
2. Serapis Av	90	173	1.50	2.88	1	1	0.18	0.38	0.06	0.12	0.24	0.50	9.8	A	10.4	B
3. Pioneer Bl	584	948	4.87	7.90	2	2	1.39	2.66	0.46	0.88	1.85	3.54	11.4	B	13.4	B
4. Norwalk Bl	736	952	6.13	5.29	2	3	1.87	2.32	0.62	0.77	2.49	3.08	12.2	B	11.7	B
5. Los Nietos Rd	313	724	2.61	6.03	2	2	0.67	1.83	0.22	0.61	0.89	2.44	10.3	B	12.1	B
6. Lakeland Rd	308	411	5.13	6.85	1	1	0.74	1.09	0.25	0.36	0.99	1.45	11.6	B	12.7	B
7. Rosecrans Av	992	1317	5.51	7.32	3	3	2.44	3.57	0.81	1.19	3.25	4.76	11.8	B	13.0	B
8. Marquardt Av	86	272	0.72	2.27	2	2	0.17	0.57	0.06	0.19	0.23	0.76	9.5	A	10.1	B
9. Valley View Av	1050	1555	4.38	12.96	4	2	2.44	6.19	0.81	2.06	3.25	8.25	11.1	B	19.1	C

MIDDAY PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		FREIGHT DELAY (veh-hr)		PASSENGER DELAY (veh-hr)		TOTAL DELAY (veh-hr)		AVERAGE VEHICLE-DELAY (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	519	524	8.65	8.73	1	1	1.28	1.30	0.17	0.17	1.45	1.47	10.1	B	10.1	B
2. Serapis Av	99	92	1.65	1.53	1	1	0.17	0.16	0.02	0.02	0.19	0.18	7.0	A	7.0	A
3. Pioneer Bl	478	500	3.98	4.17	2	2	0.92	0.97	0.12	0.13	1.04	1.10	7.8	A	7.9	A
4. Norwalk Bl	752	787	6.27	4.37	2	3	1.62	1.54	0.22	0.21	1.83	1.74	8.8	A	8.0	A
5. Los Nietos Rd	309	518	2.58	4.32	2	2	0.55	1.01	0.07	0.14	0.63	1.14	7.3	A	7.9	A
6. Lakeland Rd	282	284	4.70	4.73	1	1	0.56	0.56	0.08	0.08	0.63	0.64	8.1	A	8.1	A
7. Rosecrans Av	984	735	5.47	4.08	3	3	2.03	1.41	0.27	0.19	2.30	1.60	8.4	A	7.9	A
8. Marquardt Av	164	186	1.37	1.55	2	2	0.28	0.32	0.04	0.04	0.32	0.36	7.0	A	7.0	A
9. Valley View Av	991	919	4.13	7.66	4	2	1.91	2.13	0.26	0.29	2.17	2.42	7.9	A	9.5	A

PM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		FREIGHT DELAY (veh-hr)		PASSENGER DELAY (veh-hr)		TOTAL DELAY (veh-hr)		AVERAGE VEHICLE-DELAY (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	621	512	10.35	8.53	1	1	1.84	1.35	0.54	0.39	2.38	1.74	13.8	B	12.3	B
2. Serapis Av	161	151	2.68	2.52	1	1	0.31	0.29	0.09	0.08	0.40	0.38	9.0	A	9.0	A
3. Pioneer Bl	755	789	6.29	6.58	2	2	1.75	1.86	0.51	0.54	2.26	2.40	10.8	B	10.9	B
4. Norwalk Bl	1157	1105	9.64	6.14	2	3	3.27	2.54	0.95	0.74	4.22	3.28	13.1	B	10.7	B
5. Los Nietos Rd	402	725	3.35	6.04	2	2	0.81	1.66	0.23	0.48	1.04	2.14	9.3	A	10.6	B
6. Lakeland Rd	359	340	5.98	5.67	1	1	0.82	0.76	0.24	0.22	1.06	0.99	10.6	B	10.4	B
7. Rosecrans Av	1304	739	7.24	4.11	3	3	3.19	1.54	0.93	0.45	4.12	1.98	11.4	B	9.7	A
8. Marquardt Av	274	270	2.28	2.25	2	2	0.52	0.52	0.15	0.15	0.68	0.67	8.9	A	8.9	A
9. Valley View Av	1552	1080	6.47	9.00	4	2	3.63	2.93	1.06	0.85	4.69	3.78	10.9	B	12.6	B

FUTURE NO PROJECT CONDITIONS

To evaluate the potential impact of the proposed project on local traffic conditions, it is first necessary to develop a forecast of future traffic volumes in the study area under conditions without the proposed project. This provides a basis against which to measure the proposed project's traffic impacts.

The anticipated completion date of the Third Track construction is year 2005. Due to approval/funding issues, there is no firm date for the completion of the proposed seven grade separations at this time. For the purpose of the EIR, a near-term year 2005 horizon year has been selected for analysis. The forecast of 2005 No-Project traffic volumes consists of existing traffic plus ambient traffic growth (general background regional growth). The following describes the growth components.

Ambient Traffic Growth

Ambient traffic is the traffic growth that will occur in the study area due to general employment growth, housing growth and growth in regional through trips in southern California. Even if there was no change in housing or employment in the study area, there will be some background (ambient) traffic growth in the region. Based on discussions with staff in the various cities, very little growth is anticipated in and around the study area. A one percent per year growth rate was assumed for all facilities as a conservative estimate of traffic increase in the study area. Existing 2002 traffic volumes were increased by a growth factor of 1.03 to account for regional traffic growth.

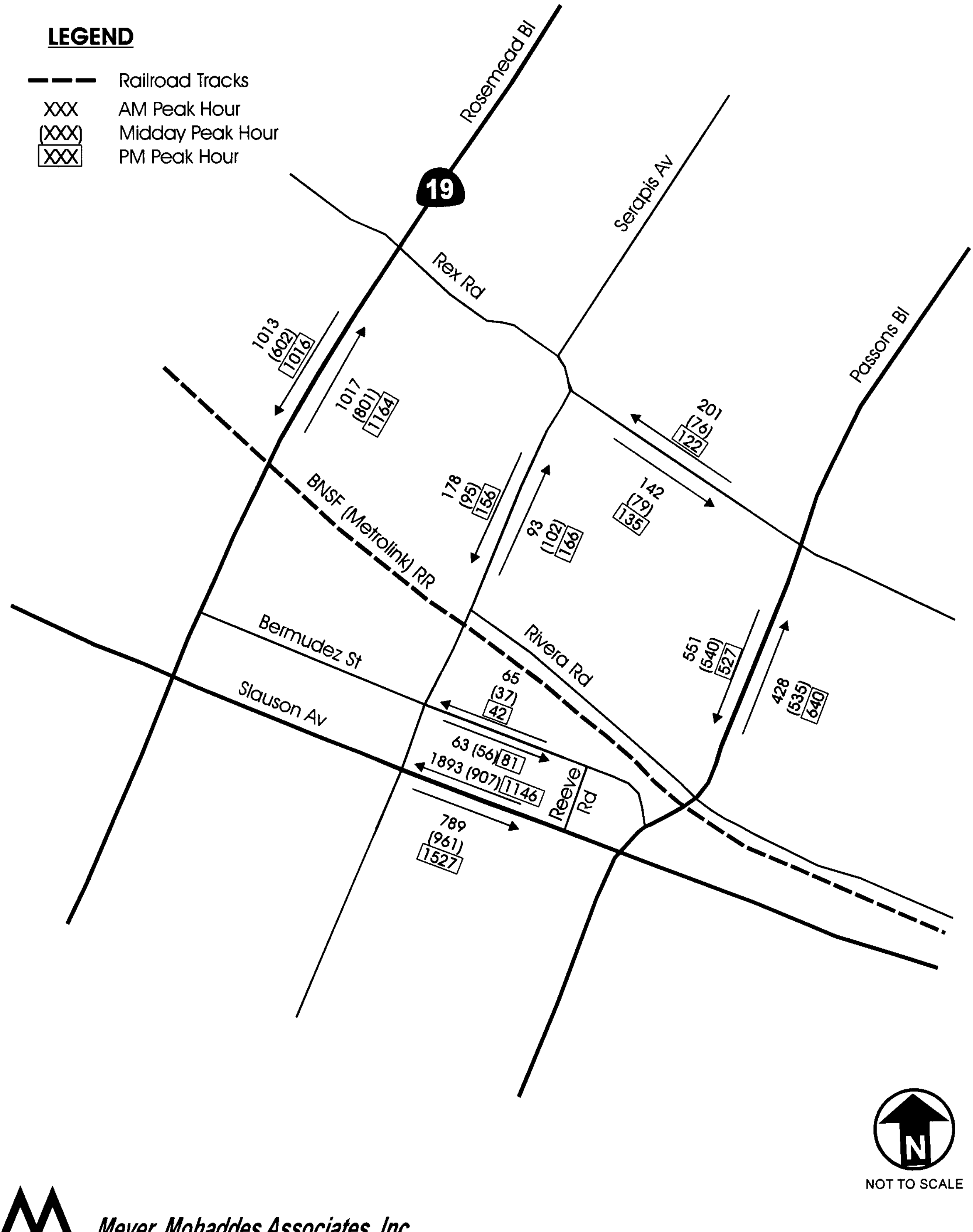
Rail Traffic Growth

In addition to vehicular traffic growth, growth in rail activities has also been considered. In 2000 the BNSF Hobart to Fullerton Line carried a total of 96 movements per day (50 BNSF through freight and 46 passenger). Based on the Los Angeles Inland Empire Trade Corridor Cost-Benefit Study conducted by the Los Angeles Economic Development Corporation with subconsultant Leachman and Associates LLC (11/6/01), the 2010 forecast of the Hobart to Fullerton Line is expected to increase to 150 trains per day (74 BNSF through freight and 76 passenger). This is an increase of 48 percent in freight movement and 65 percent in passenger train movement. This translate to an average of 5 percent growth in freight movements and 6.5 percent growth in passenger train movements. To estimate rail growth, existing peak hour train frequencies were adjusted (freight – 15 percent growth and passenger – 20 percent) to reflect the increase in rail activities.

Future No-Project Delay Analysis

Based on the forecast parameters discussed above, year 2005 vehicular volumes and associated delays are estimated. Figures 7, 8, 9, 10 and 11 illustrate the traffic forecast. Table 5 summarizes the 2005 level of service at the eight key roadway segments. Results show that all segments would operate at acceptable levels of service (i.e. LOS D or better), not taking into account delay at the railroad crossings.

The future no-project rail delay results are shown on Table 6. As can be seen, with the increase in both freight and passenger rail activities and vehicular volumes, delays at rail crossings are expected to increase.

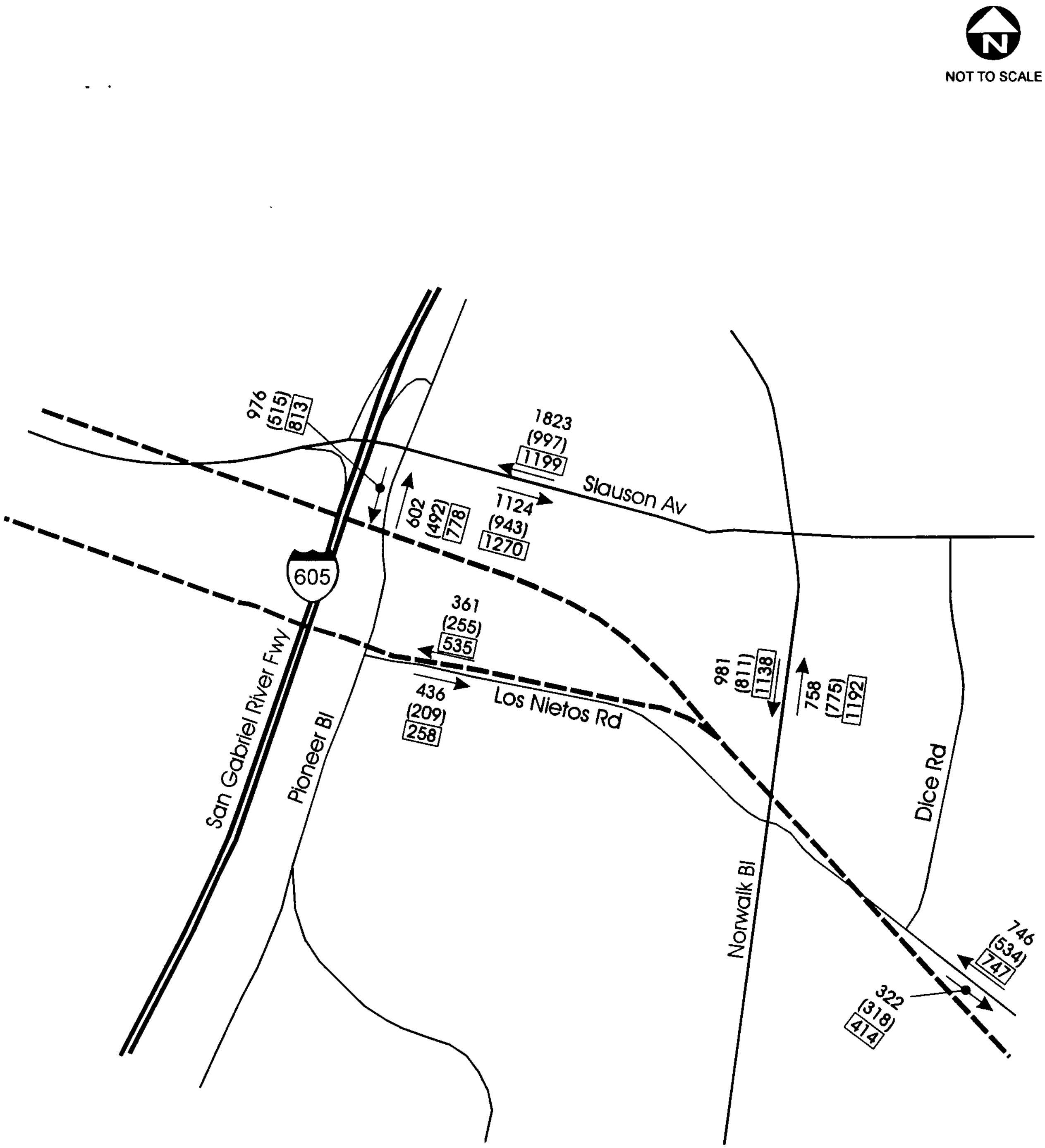


Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 7
Future No Project Peak Hour Traffic Volumes



LEGEND

– – –	Railroad Tracks
XXX	AM Peak Hour
(XXX)	Midday Peak Hour
[XXX]	PM Peak Hour

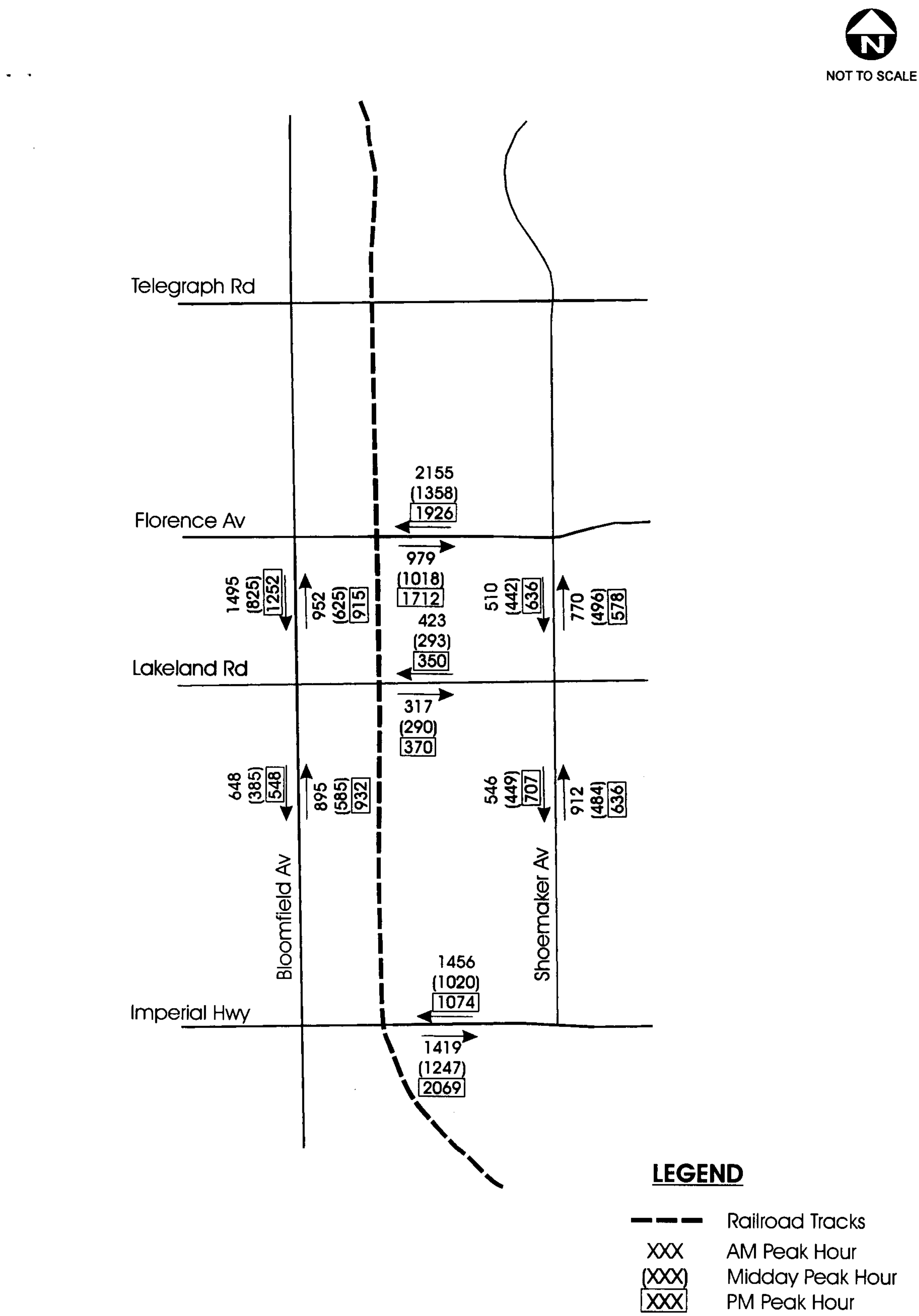
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 8
Future No Project Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\fnpvols.cdr 7/08/02



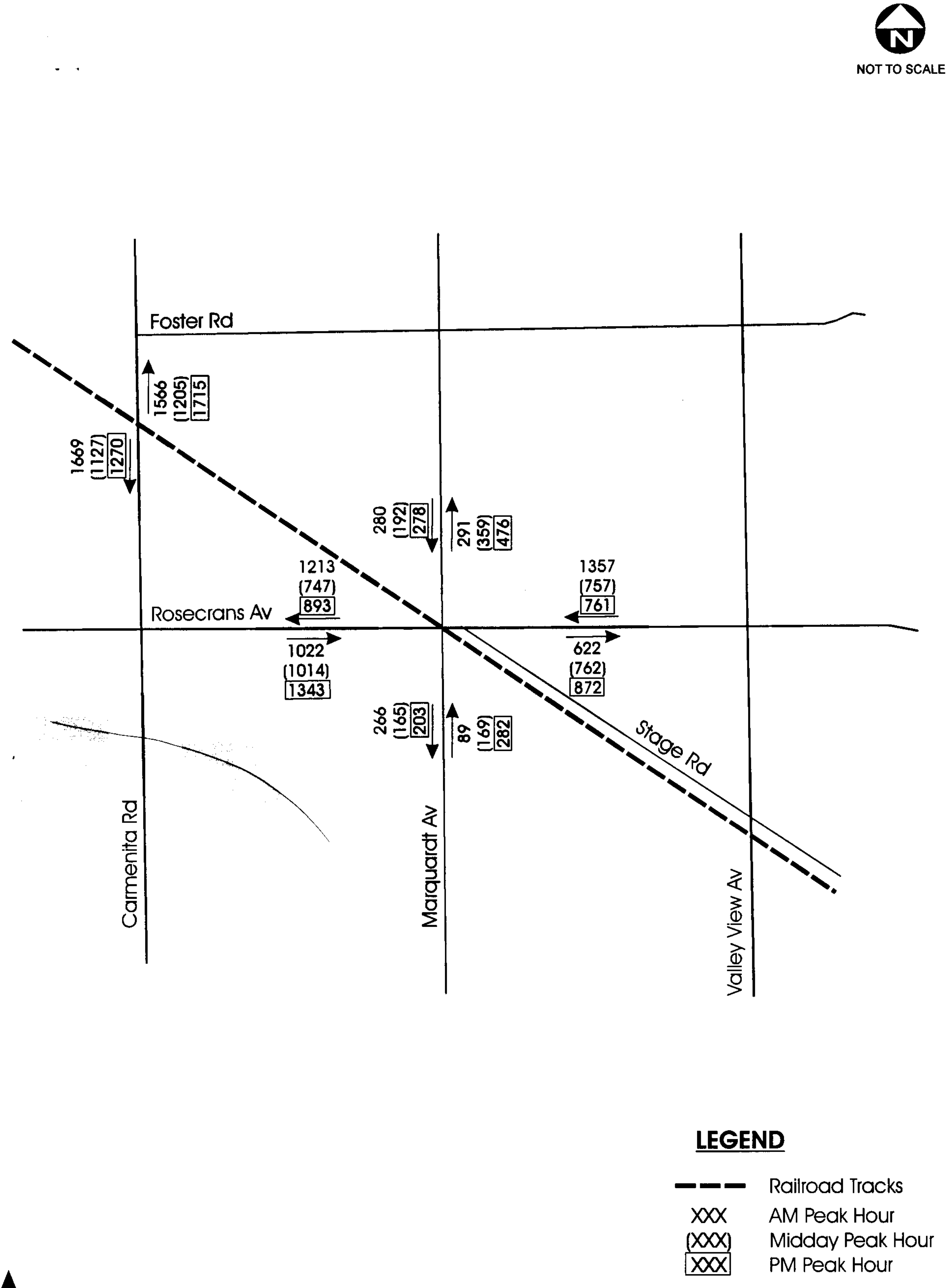
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 9
Future No Project Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\fnpvolb.cdr 7/09/02

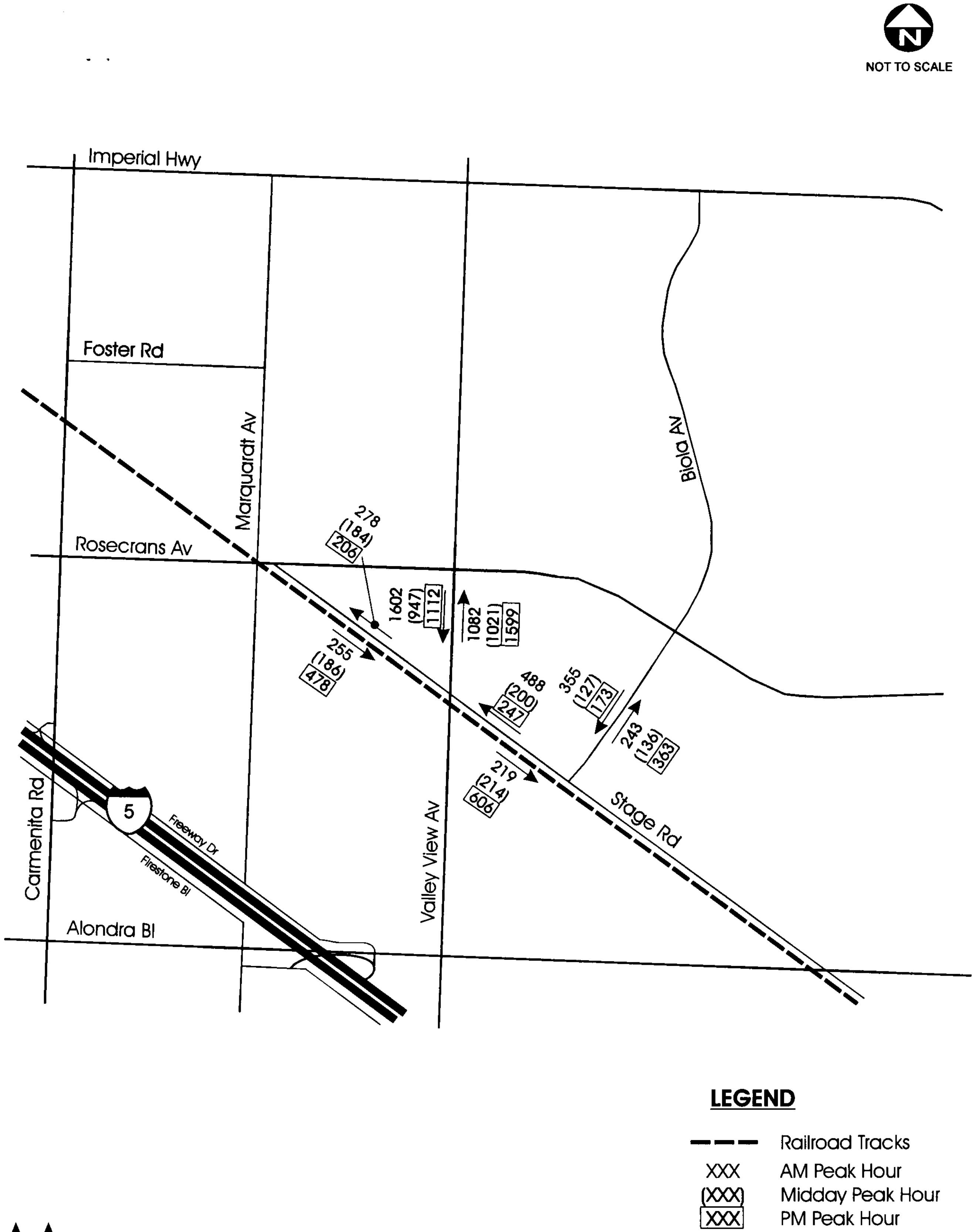


Meyer, Mohaddes Associates, Inc.
An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 10
Future No Project Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\fnpvolc.cdr 7/10/02



Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 11
Future No Project Peak Hour Traffic Volumes

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\fnpvold.cdr 7/08/02

TABLE 5
FUTURE NO PROJECT PEAK HOUR LEVEL OF SERVICE SUMMARY

Location	AM Peak Hour				Midday Peak Hour				PM Peak Hour			
	NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
1. Passons Bl	0.481	A	0.619	B	0.601	B	0.607	B	0.719	C	0.592	A
2. Serapis Av	0.116	A	0.223	A	0.128	A	0.119	A	0.208	A	0.195	A
3. Pioneer Bl	0.338	A	0.548	A	0.276	A	0.289	A	0.437	A	0.457	A
4. Norwalk Bl	0.426	A	0.367	A	0.435	A	0.304	A	0.670	B	0.426	A
5. Los Nietos Rd	0.191	A	0.441	A	0.188	A	0.316	A	0.245	A	0.442	A
6. Lakeland Rd	0.373	A	0.498	A	0.341	A	0.345	A	0.435	A	0.412	A
7. Rosecrans Av	0.383	A	0.508	A	0.380	A	0.284	A	0.503	A	0.285	A
8. Marquardt Av	0.050	A	0.157	A	0.095	A	0.108	A	0.158	A	0.156	A
9. Valley View Av	0.304	A	0.900	D	0.287	A	0.532	A	0.449	A	0.625	B

TABLE 6
Future No Project Rail Delay Summary

Freight Train Parameters

	Gate Down Time	Frequency
AM	2.77 min	2.1 trains/hour
Midday	2.78 min	1.7 trains/hour
PM	2.50 min	2.3 trains/hour

Passenger Train Parameters

	Gate Down Time	Frequency
AM	0.93 min	6.4 trains/hour
Midday	1.02 min	1.8 trains/hour
PM	0.92 min	5.2 trains/hour

AM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		FREIGHT DELAY (veh-hr)		PASSENGER DELAY (veh-hr)		TOTAL DELAY (veh-hr)		AVERAGE VEHICLE-DELAY (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	428	551	7.13	9.18	1	1	1.32	1.92	0.46	0.67	1.78	2.59	15.0	B	16.9	C
2. Serapis Av	93	178	1.55	2.97	1	1	0.22	0.45	0.08	0.15	0.29	0.60	11.4	B	12.1	B
3. Pioneer Bl	602	976	5.02	8.13	2	2	1.66	3.19	0.58	1.11	2.24	4.30	13.4	B	15.8	C
4. Norwalk Bl	758	981	6.32	5.45	2	3	2.24	2.77	0.77	0.96	3.01	3.73	14.3	B	13.7	B
5. Los Nietos Rd	322	746	2.68	6.22	2	2	0.80	2.19	0.28	0.76	1.07	2.95	12.0	B	14.2	B
6. Lakeland Rd	317	423	5.28	7.05	1	1	0.89	1.30	0.31	0.45	1.19	1.75	13.6	B	14.9	B
7. Rosecrans Av	1022	1357	5.68	7.54	3	3	2.92	4.29	1.01	1.48	3.93	5.77	13.8	B	15.3	C
8. Marquardt Av	89	280	0.74	2.33	2	2	0.20	0.68	0.07	0.24	0.27	0.92	11.0	B	11.8	B
9. Valley View Av	1082	1602	4.51	13.35	4	2	2.91	7.58	1.01	2.63	3.92	10.21	13.0	B	22.9	C

MIDDAY PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		FREIGHT DELAY (veh-hr)		PASSENGER DELAY (veh-hr)		TOTAL DELAY (veh-hr)		AVERAGE VEHICLE-DELAY (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	535	540	8.92	9.00	1	1	1.54	1.56	0.22	0.22	1.76	1.78	11.8	B	11.9	B
2. Serapis Av	102	95	1.70	1.58	1	1	0.20	0.19	0.03	0.03	0.23	0.21	8.2	A	8.1	A
3. Pioneer Bl	492	515	4.10	4.29	2	2	1.09	1.15	0.15	0.16	1.24	1.31	9.1	A	9.2	A
4. Norwalk Bl	775	811	6.46	4.51	2	3	1.93	1.83	0.27	0.26	2.21	2.09	10.3	B	9.3	A
5. Los Nietos Rd	318	534	2.65	4.45	2	2	0.66	1.20	0.09	0.17	0.75	1.37	8.5	A	9.2	A
6. Lakeland Rd	290	293	4.83	4.88	1	1	0.67	0.67	0.09	0.09	0.76	0.77	9.4	A	9.4	A
7. Rosecrans Av	1014	757	5.63	4.21	3	3	2.42	1.69	0.34	0.24	2.76	1.92	9.8	A	9.1	A
8. Marquardt Av	169	192	1.41	1.60	2	2	0.33	0.38	0.05	0.05	0.38	0.43	8.1	A	8.1	A
9. Valley View Av	1021	947	4.25	7.89	4	2	2.28	2.56	0.32	0.36	2.60	2.92	9.2	A	11.1	B

PM PEAK HOUR

Rail Crossing	Hourly Volume		Arrival Rate (veh/min/ln)		No. of Lanes		FREIGHT DELAY (veh-hr)		PASSENGER DELAY (veh-hr)		TOTAL DELAY (veh-hr)		AVERAGE VEHICLE-DELAY (seconds)			
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	LOS	SB/WB	LOS
1. Passons Bl	640	527	10.67	8.78	1	1	2.23	1.62	0.68	0.49	2.91	2.11	16.3	C	14.4	B
2. Serapis Av	166	156	2.77	2.60	1	1	0.37	0.35	0.11	0.11	0.49	0.45	10.5	B	10.5	B
3. Pioneer Bl	778	813	6.48	6.78	2	2	2.10	2.23	0.64	0.68	2.73	2.90	12.7	B	12.9	B
4. Norwalk Bl	1192	1138	9.93	6.32	2	3	3.95	3.04	1.20	0.92	5.15	3.97	15.5	C	12.5	B
5. Los Nietos Rd	414	747	3.45	6.23	2	2	0.96	1.99	0.29	0.60	1.25	2.59	10.9	B	12.5	B
6. Lakeland Rd	370	350	6.17	5.83	1	1	0.98	0.91	0.30	0.28	1.28	1.19	12.4	B	12.2	B
7. Rosecrans Av	1343	761	7.46	4.23	3	3	3.82	1.83	1.16	0.56	4.98	2.38	13.4	B	11.3	B
8. Marquardt Av	282	278	2.35	2.32	2	2	0.62	0.61	0.19	0.19	0.81	0.80	10.3	B	10.3	B
9. Valley View Av	1599	1112	6.66	9.27	4	2	4.35	3.53	1.32	1.07	5.67	4.60	12.8	B	14.9	B

Future With Project Conditions

Under future with project conditions, the Third Track would be operational which would increase rail efficiency by reducing conflicts between freight and passenger trains. This would also lead to increases in rail operational speeds and less delays to passenger service. In addition to increased efficiency of rail traffic, vehicular traffic on the seven study locations would also be significantly improved due to the construction of the grade-separations. This improvement would virtually eliminate all vehicular delays associated with rail traffic.

Table 7 below summarizes the total cumulative delays (total vehicle-hours) at all the at-grade crossings and the benefit of the proposed project:

Table 7
Total Vehicle-Delay Summary

Scenario	AM Pk Hr	Midday Pk Hr	PM Pk Hr
Existing Conditions	41.58 hours	21.23 hours	38.21 hours
Future No-Project	50.51 hours	25.50 hours	46.27 hours
Future With Project	0	0	0

As can be seen, under current conditions, a total of 42 hours, 21 hours and 38 hours of vehicle-delay are experienced during the AM, midday and PM peak hours, respectively. Under future no-project conditions, the delays would increase to 51 hours (21% increase), 26 hours (20% increase) and 46 hours (during the AM, midday and PM peak hours, respectively. With the proposed project, delays would decrease to zero hours for all three peak hour periods.

Serapis Avenue Closure

Assuming the closure of Serapis Avenue, the majority of through traffic would be shifted to Passons Boulevard and Rosemead Boulevard. Based on the forecast of vehicular traffic discussed in the Future No-Project section, a total of 225 vehicles are expected to shift from Serapis Avenue during the AM peak Hour. A total of 315 vehicles would be expected to shift from Serapis Avenue during the PM peak hour.

Based on comments received from citizens and elected officials in the City of Pico Rivera, concerns regarding traffic impacts on Rex Road at Rosemead Boulevard and Passons Boulevard and on Slauson Avenue at Rosemead Boulevard and Passons Boulevard due to the Serapis Avenue closure. MMA have conducted intersection level of service analysis at the four key intersections to identify potential impacts. Table 8 summarizes the results under existing, future no project and future with project scenarios. As can be seen, under Existing conditions, all intersections are operating at good levels of service (i.e. LOS D or better) with the exception of Slauson Avenue at Rosemead Boulevard which is currently operating at LOS F during the PM peak hour. Under Future 2005 No-Project conditions, the intersection of Rex Road and

Table 8
Intersection Level of Service Summary

	Existing 2002				Future 2005 No-Project				Future 2005 With Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersectio	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**
Rex Rd & I	0.839	D	0.753	C	0.920	E	0.776	C	0.927	E	0.796	C
Rex Rd & I	14.1	B	8.0	B	14.8	B	15.0	B	18.2	C	20.6	C
Slauson Av	0.794	C	1.035	F	0.818	D	1.067	F	0.840	D	1.079	F
Slauson Av	0.777	C	0.835	D	0.800	D	0.860	D	0.837	D	0.891	D

Notes:
[a] Four-way stop controlled - LOS based on delay.

Rosemead Boulevard is expected to deteriorate to LOS D during the PM peak hour and the intersection of Slauson Avenue at Rosemead Boulevard would remain at LOS F during the PM peak hour.

Under Future With Project conditions (with closure of Serapis Avenue), all four study intersections would experience increase in delay but no significant traffic impact is expected.

With the closure of Serapis Avenue, conflicts between rail and vehicular traffic would be eliminated. However, pedestrians who currently utilized Serapis Avenue would be impacted. As discussed previously, approximately 23 pedestrians utilize the Serapis crossing during the AM peak period and 75 during the PM peak period. With the closure of Serapis Avenue, pedestrian would be required to walk to either Passons Boulevard or Rosemead Boulevard to safely cross the rail crossing. Both Passons Boulevard and Rosemead Boulevard would be grade-separated, thus allowing safe pedestrian crossing without conflict with rail traffic. A pedestrian overpass at Serapis Avenue would also be possible should the community and the City wishes to pursue this possibility.

CONSTRUCTION MANAGEMENT

Construction related impacts were not quantitatively assessed however any impacts which may occur due to construction activities are temporary in nature. That is, after the construction of the project is completed any impacts associated with these construction activities should be alleviated. Therefore, any improvements of a physical/permanent nature would not be recommended. However, prior to the start of construction a construction traffic management plan should be developed. The plan should address, but is not limited to, such items as:

Time of construction activities (e.g., off-peak hours)
Truck/Haul routes
Construction employee parking
Construction equipment staging
Potential lane closures
Work zone traffic control

The construction traffic management plan should minimize many of the anticipated impacts associated with the construction activities of the project.

Passons Boulevard

During construction of Passons Boulevard grade-separation, Passons Boulevard would be closed to through traffic between Slauson Avenue and Rex Road. Traffic will be detoured to Rosemead Boulevard which run parallel to and west of Passons Boulevard. Traffic would be detoured from Passons Boulevard to Rosemead Boulevard via Washington Boulevard and Slauson Avenue. Figure 12 shows the detour route. Although not intended to be a detour, Serapis Avenue would remain open to local traffic during construction of the Passons grade-separation. The closure of Serapis Avenue would occur after the completion of the Passons grade-separation.

Based on projected 2005 traffic volumes and available roadway capacity, Rosemead Boulevard should be able to accommodate the detoured traffic from Passons Boulevard.

Pioneer Boulevard

Pioneer Boulevard will be closed during construction of the bridges, retaining system and roadways. This will be done by construction of the intersection with Rivera Road and Pioneer Boulevard, thus allowing eastbound traffic on Rivera Road to divert to Pioneer Boulevard. Traffic north of Rivera Road will be diverted to Slauson Avenue and then to Norwalk and back Pioneer Boulevard up to the south side of the temporary shoring. Northbound traffic on Pioneer Boulevard will be diverted to Norwalk Boulevard and Slauson Avenue via Los Nietos Road. Figure 12 shows the detour route. To prevent potential cut-through traffic during construction period, proper detour signage will be installed. In addition, "No Through Traffic" signs are recommended at the Walnut Street and Rivera Road at Norwalk Boulevard is recommended.

Norwalk Boulevard/Los Nietos

The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. A temporary shoofly detour will be provided on Norwalk Boulevard (west of the intersection) and Los Nietos Road east of the intersection to allow Norwalk traffic to flow north and south and Los Nietos traffic east. The part of Los Nietos Road east of the intersection will be closed during construction of the bridges, retaining system and roadways through the first two construction phases. Los Nietos traffic will be routed along Dice Road north to Slauson Avenue, west to Norwalk Boulevard and south to Los Nietos for the first two phases of construction. A temporary connector road for Los Nietos Road to Norwalk will be constructed as to have a minimum impact on traffic during the third construction phase. Figure 12 also shows the detour plan and road closures.

Lakeland Road

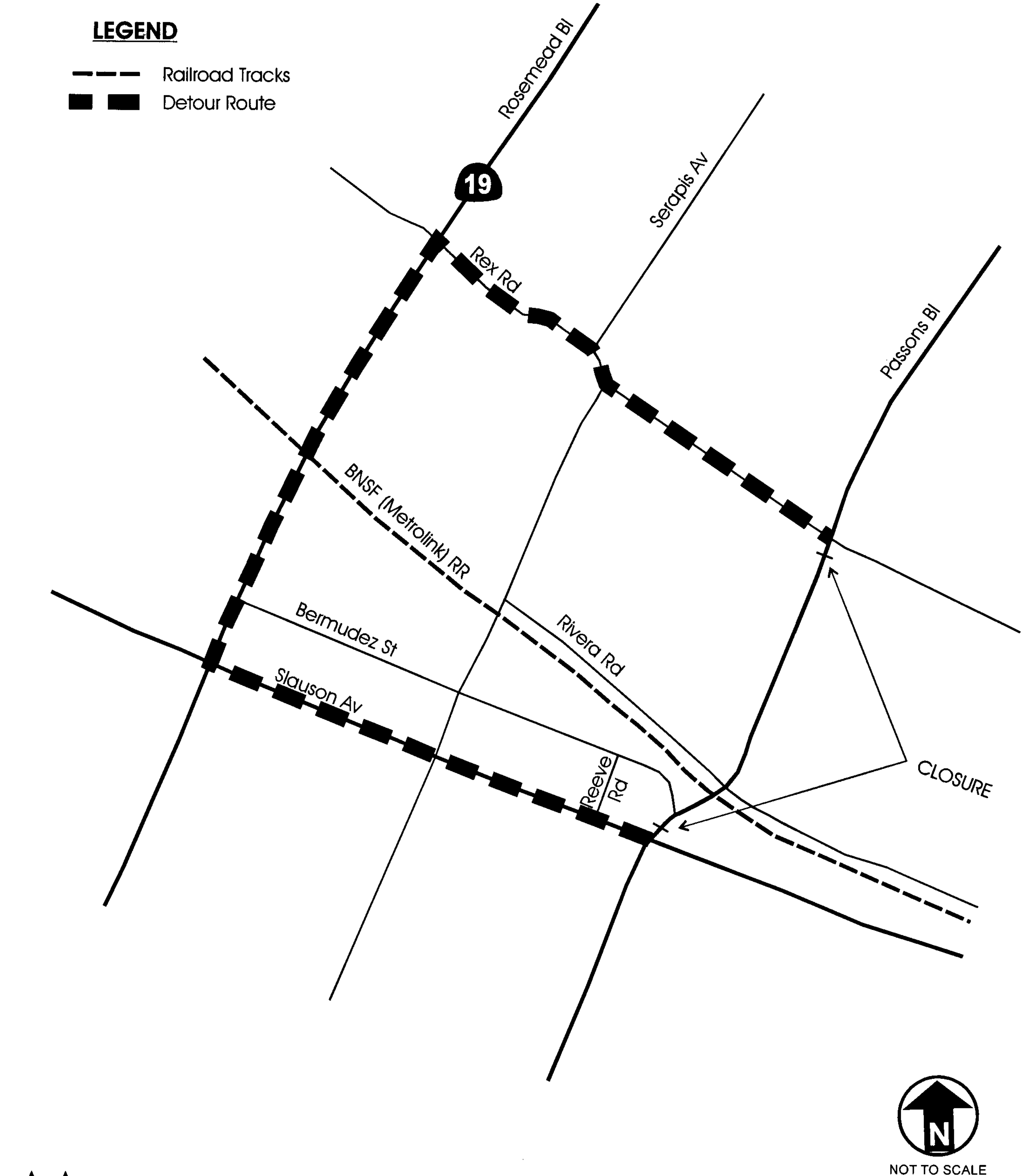
Lakeland Road will be closed during construction of the bridges, retaining system and roadways. Traffic will be diverted to a circular route around the Lakeland underpass via the following streets: Bloomfield Avenue, Florence Avenue, Shoemaker Road, and Imperial Highway. A temporary, emergency crossing will be provided through construction to serve the Fire Station on Greenstone Avenue. Figure 13 shows the detour routes.

Rosecrans Avenue/Marquardt Avenue

Marquardt Avenue north will be closed during construction of the bridges, retaining system and roadways. A temporary road alignment for Rosecrans Avenue will be constructed so as to have a minimum impact on the traffic eastbound and westbound. The Rosecrans detour will have a temporary traffic signal at Marquardt south to maintain safe access to the area to the south. The Rosecrans detour will have an at-grade crossing with the railroad shoofly detour which will require temporary gates and flashers. These gates and flashers will be connected to the temporary traffic signal at Rosecrans and Marquardt south to prevent vehicles from queuing on the tracks. Detoured traffic on Marquardt Avenue north will be routed to Foster and west to Carmenita Road. Detoured traffic will not be allowed on Foster east of Marquardt. Figure 14 shows the detour plans.

Valley View Avenue

Traffic will be routed onto a temporary detour road on private property along the west side Valley View Avenue. The detour road will have an at–grade crossing with the existing tracks and the railroad shoofly. Flashing light signals and gates will be installed at the crossing. Stage Road will remain open with a temporary intersection with the detour road until the railroad bridge is constructed and roadway excavation begins. Stage Road will be closed for the rest of the project. Figure 15 shows the detour plans.



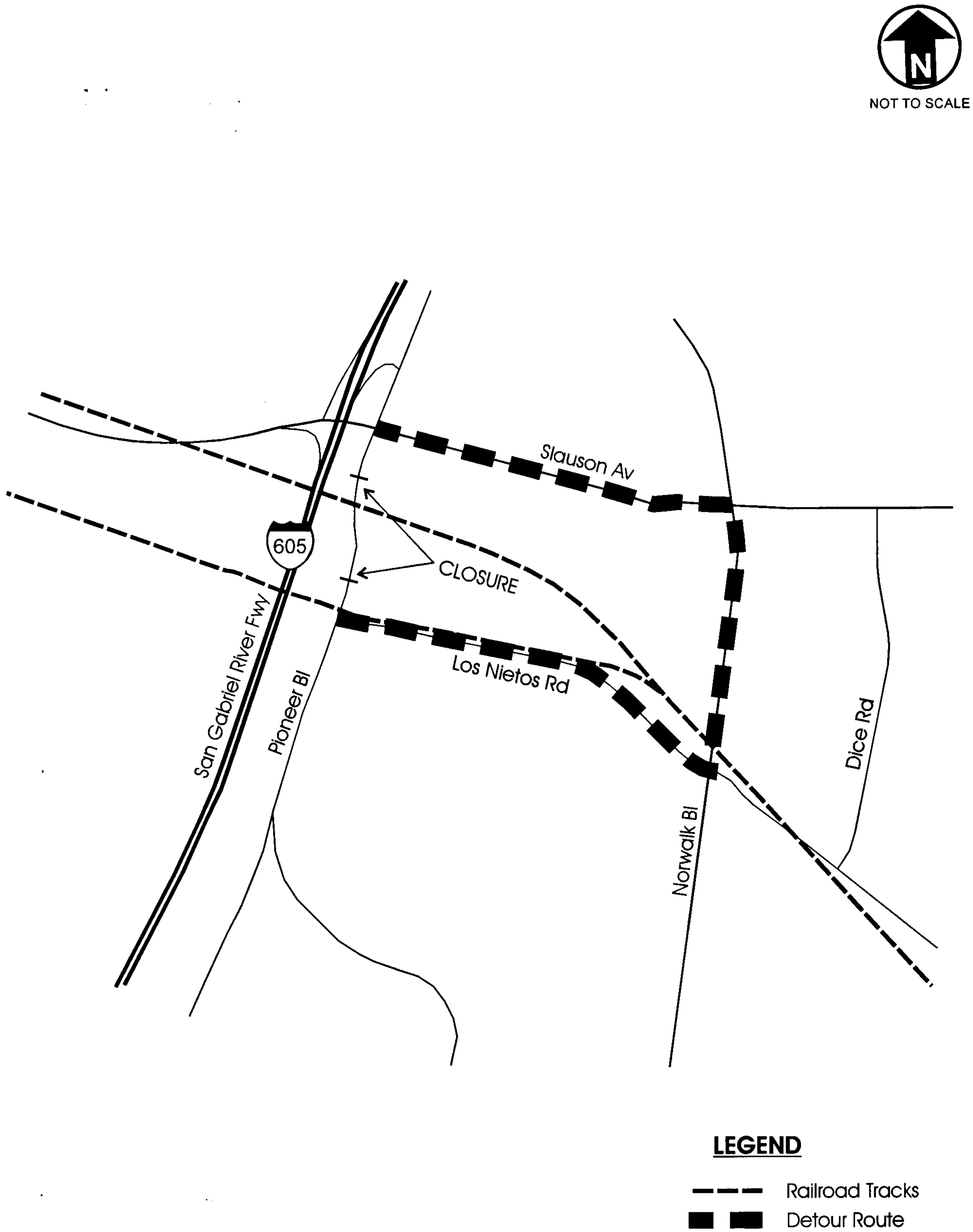
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 12
Passons Boulevard - Construction Detour Plan

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\cdp_pas.cdr 7/08/02



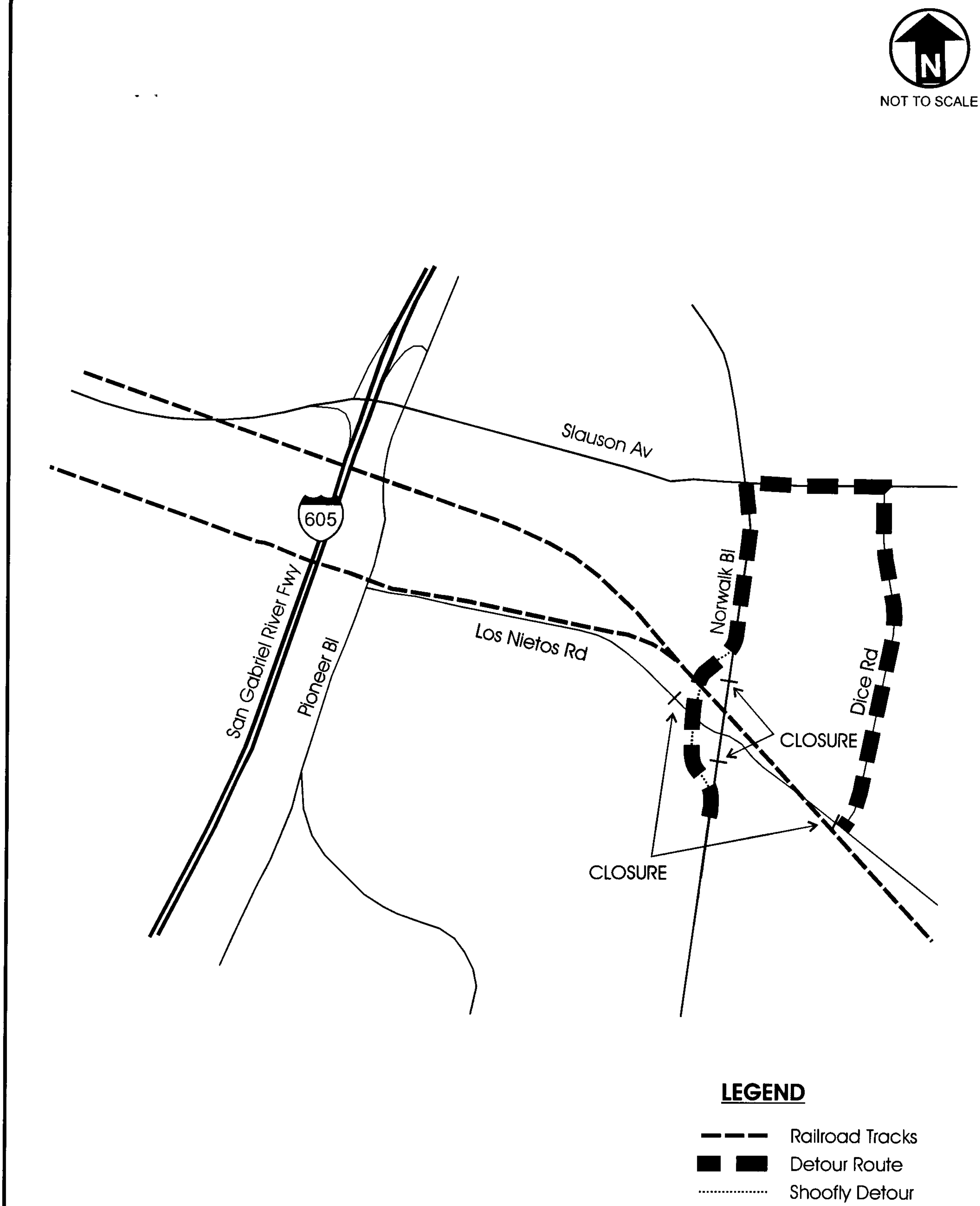
Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 13
Pioneer Boulevard - Construction Detour Plan

G:\USERS\2002\J02-018 BNSF Triple Track\Gra\cdp_pio.cdr 7/08/02

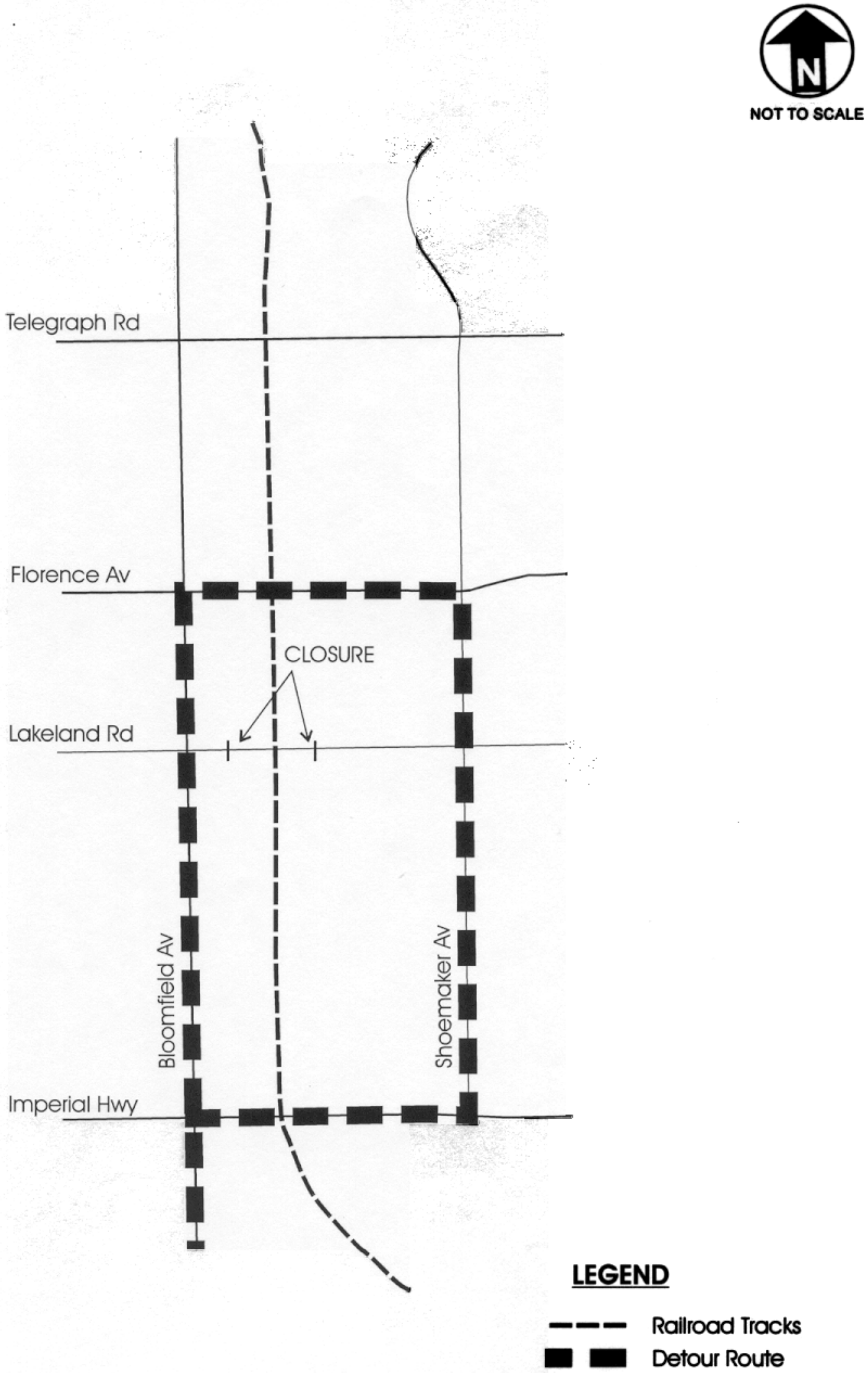


Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 14
Norwalk Boulevard / Los Nietos Road - Construction Detour Plan

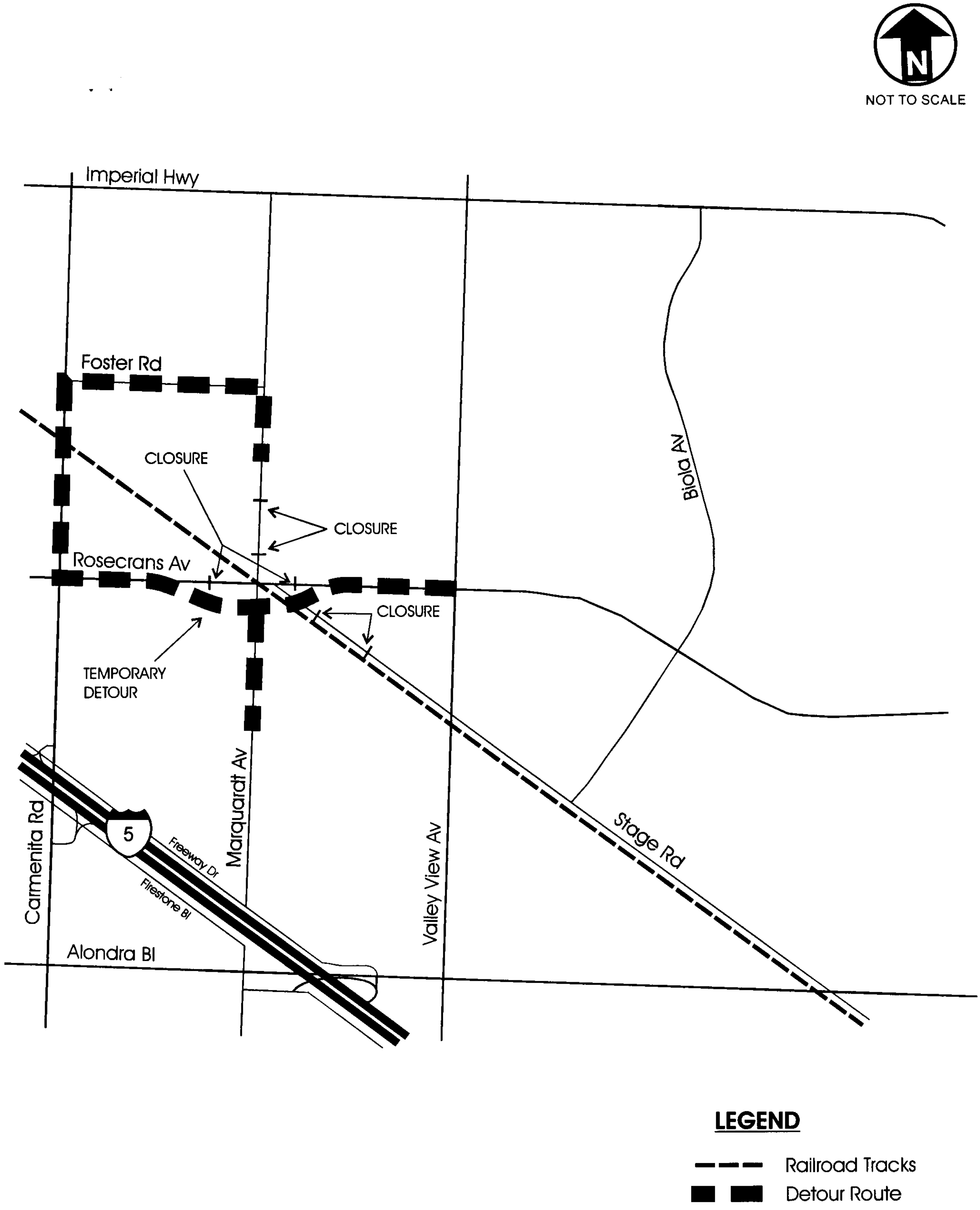


Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 15
Lakeland Road - Construction Detour Plan

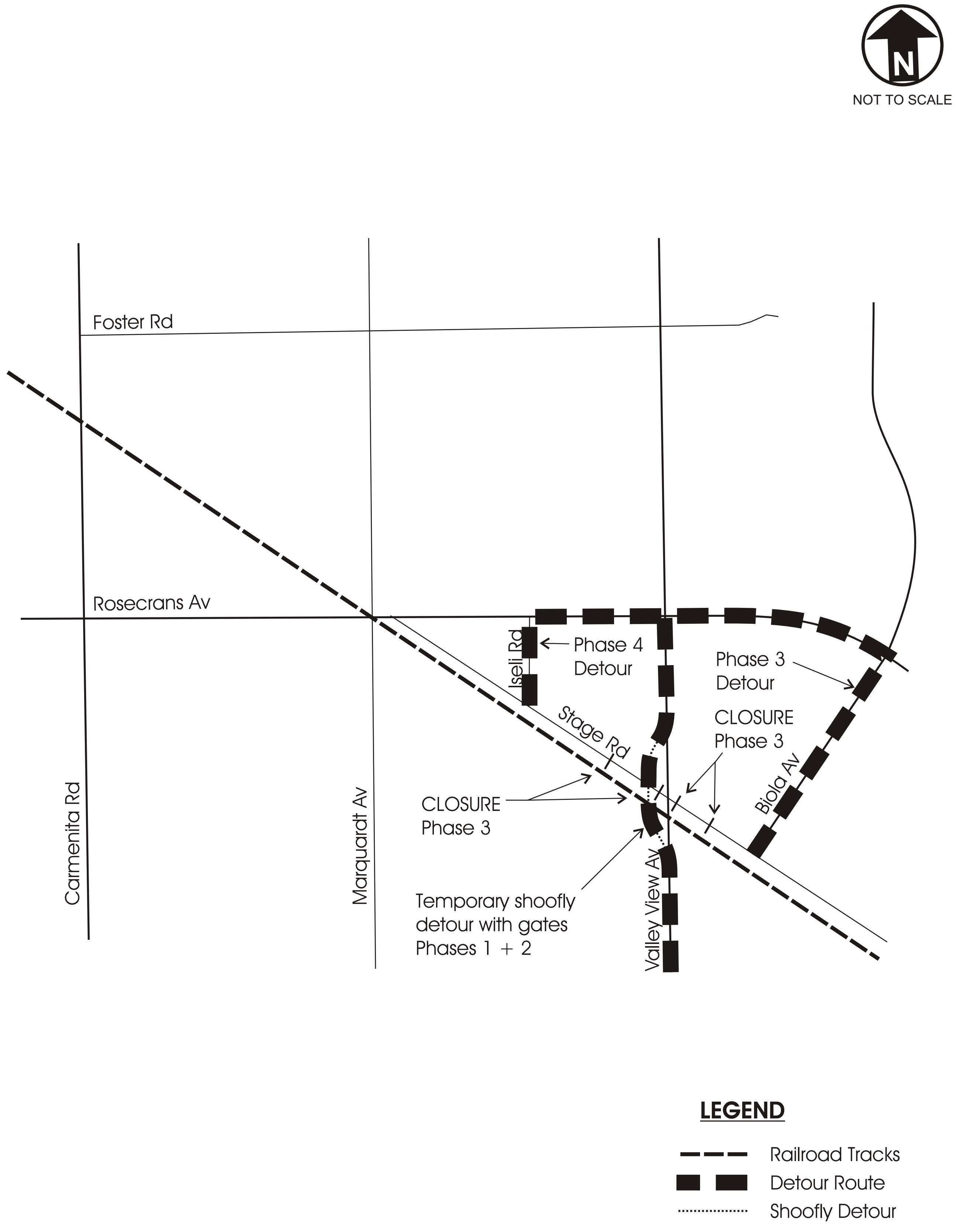


Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR
Traffic Impact Study

FIGURE 16
Rosecrans Avenue / Marquardt Avenue - Construction Detour Plan



Meyer, Mohaddes Associates, Inc.

An Iteris Company

BNSF Triple Track EIR

Traffic Impact Study

FIGURE 17

Valley View Avenue - Construction Detour Plan

REFERENCES

Institute of Transportation Engineers, "Trip Generation – 6TH Edition", 1997.

U.S. Department of Transportation, "Manual on Uniform Traffic Control Devices for Streets and Highways", 1988.

State of California Department of Transportation, "Standard Specifications", July 1995.

City of Los Angeles – Department of Transportation, "Traffic Study Policies and Procedures", November, 1993.

Los Angeles County - Metropolitan Transportation Authority, "Congestion Management Program", 1999.

Leachman and Associates LLC – "Los Angeles – Inland Empire Trade Corridor Cost-Benefit Study", November 6, 2001

Transportation Research Board – "Highway Capacity Manual – 2000"

NOISE BARRIER ANALYSIS

Noise Barrier Analysis
for the Railroad along Rivera Road
Pico Rivera, California

Prepared for

City of Pico Rivera
Pico Rivera, California

Prepared by

ENVIRON International Corporation
Irvine, California

May 15, 2002

Prepared by:

ENVIRON International Corporation
2010 Main Street, Suite 900
Irvine, California 92614
(949) 261-5151

Joseph W. Hower, P.E., DEE
Principal

David K. Liu, Ph.D.
Principal

for Yi Tian, C.I.H., Q.E.P., R.E.A.
Manager

Robert Chang, M.P.H.
Associate

CONTENTS

TABLES

TABLES (Continued)

FIGURES

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\Noise Barrier Report [04-9557A]-new.doc

1.0 EXECUTIVE SUMMARY

Residents living on and near Rivera Road, particularly between Pico Vista Road and Serapis Avenue in the City of Pico Rivera, have raised concerns due to the noises emanating from the railroad that runs along Rivera Road. In order to address these concerns, the City of Pico Rivera (the City) retained ENVIRON International Corporation (ENVIRON) to conduct noise monitoring and to evaluate the potential noise reduction from a proposed noise barrier.

Noise monitoring was conducted in April 2001 using a sound level meter to record the noise data for a period of 24 hours. The results show that various parameters for a noise barrier were evaluated and their values were estimated using a Fresnel equation and the monitored noise data. The City instructed ENVIRON to consider cinder blocks only as the material for the barrier. The evaluation concluded that a noise barrier of 25 feet above the street level, located at the present chain-link fence between the railroad and the residences, will reduce the Community Noise Equivalent Level (CNEL) to 65 decibels (dB) or less. However, since the CNEL of 65 dB has been challenged by several communities in California, it is recommended that a noise barrier of up to 30 feet be built to reduce the noise exposure of the nearby residences down to the level between 53.5 dB and 61.5 dB.

2.0 INTRODUCTION

Residents who live on and near Rivera Road, particularly between Pico Vista Road and Serapis Avenue in the City of Pico Rivera, have raised concerns due to the noises from the railroad located on the south side of Rivera Road. The City of Pico Rivera (the City) retained ENVIRON International Corporation (ENVIRON) to conduct noise monitoring of the railroad traffic, and to evaluate the potential noise reduction from a proposed noise barrier. The City specified that a noise barrier wall be made of cinder blocks. This report presents the noise monitoring results and the estimation of the design parameters for the noise barrier using the site-specific data, including the noise monitoring results.

Section 3.0 of this report briefly discusses the health effects associated with noise exposure.

Section 4.0 presents the regulatory guidelines followed by most California local governments when preparing their General Plans, specifically the noise element. In this report, the Community Noise Equivalent Level (CNEL) is used to evaluate the effectiveness of the proposed noise barrier.

Section 5.0 explains the methodology of noise monitoring and the various parameters of a barrier, such as distance to the noise source, height of the barrier, noise frequency, and barrier materials. An actual CNEL value was calculated using the sound pressure levels obtained from the noise monitoring conducted by ENVIRON on April 19 and 20, 2001. The predicted CNEL values were calculated for the proposed barrier using different combinations of the barrier parameters.

Section 6.0 summarizes the results and conclusions of ENVIRON's evaluation.

Section 7.0 discusses additional, but significant, considerations when installing a noise barrier.

Section 8.0 lists the references cited in this report.

3.0 HEALTH EFFECTS OF NOISE EXPOSURE

Exposure to noise can result in a number of adverse health effects on humans. For example, noise-induced hearing loss can involve damage to the cochlea of the inner ear, and noise can interfere with oral communication and causes stressful annoyance.[Ref. 1] More commonly, excessive exposure to noise produces hearing loss by injuring the hair cells of the inner ear.

Temporary threshold shift (TTS) of the hearing level can be produced by a brief exposure to high-level sound. TTS occurs at a maximum level immediately after exposure to excessive noise and diminishes with increasing rest time as the ear recovers. [Ref. 1] A noise capable of causing significant TTS from brief exposures is capable of causing a significant permanent threshold shift (PTS) with prolonged or recurrent exposure.

PTS resembles TTS except that the recovery of hearing is incomplete. Important variables in the development of TTS and PTS include the following:

- Sound level: Typically the sound levels must exceed 80 decibels (dB) for someone to experience TTS.
- Frequency distribution of sound: Sounds having most of their energy in the speech frequencies (i.e., 125 to 5000 Hz) are more likely to cause a threshold shift than sounds having most of their energy outside the speech frequencies.
- Duration of sound exposure: The longer the sound exposure, the greater the threshold shift.
- Temporal distribution of sound exposure: The longer and more numerous the quiet periods between periods of sound exposure, the lower the potential for threshold shift.

The long term cumulative effects of repeated and prolonged hazardous noise exposure can result in permanent pathological changes in the cochlea and irreversible threshold shifts in hearing acuity. This is called noise-induced hearing loss.

Engineering controls, such as the installation of a sound barrier, is the preferred and recommended remedy to solve noise problems.

4.0 COMMUNITY NOISE GUIDELINES

The California Department of Health Services (DHS), Office of Noise Control has studied the correlation of ambient noise levels to the health effects for various land uses, and has published the land use compatibility guidelines to be followed by local government agencies in preparing the Noise Element in their General Plans.[(Ref. 2)] The recommended maximum acceptable noise levels, expressed as the day-night average sound level (L_{DN}) for various land uses, are shown in Table 1. L_{DN} is a standard noise measurement that takes into account the noise levels of all events that occur during a 24-hour period and the number of times those events occur. It applies a 10 dB "penalty" to noise levels occurring between 10:00 p.m. and 7:00 a.m., thus accounting for increased community sensitivity to nighttime noise levels.

A variant of the L_{DN}, which is widely used in California, is the Community Noise Equivalent Level (CNEL), which incorporates a 5-dB penalty for evening noise events (7 p.m. to 10 p.m.), and the 10-dB nighttime penalty (from 10 p.m. to 7 a.m.) [(Ref. 3)]. It is generally agreed that community perception of evening-time noise levels is 5 dB higher, and perception of nighttime noise levels is 10 dB higher.

As shown in Table 1, a suggested maximum L_{DN} of 65 dB or lower in a high-density residential land use is considered acceptable. The use of CNEL in this report as the criterion to evaluate the proposed sound barrier is a more conservative approach because it integrates the adjusted evening noise in addition to nighttime noise of L_{DN}.

5.0 METHODOLOGY

5.1 Noise Monitoring

ENVIRON performed a site reconnaissance on April 17, 2001 to observe the surroundings near the railroad tracks along Rivera Road, and conducted a 24-hour noise monitoring event from April 19 to 20, 2001. A sound level meter (SLM) manufactured by Quest Technologies (Model 2900) was used to collect the sound pressure data. The SLM was calibrated using a Quest Calibrator, which meets the requirements of the National Institute of Standards and Technology, with the setup options of A-weighting, slow response, and 5-dB exchange rate.

The monitoring began at approximately 9 a.m. on April 19, 2001. The SLM was initially set up at 9613 Rivera Road, and was moved to 9539 Rivera Road at approximately 10 a.m. of the same day so the SLM could be secured at night. The SLM was positioned at approximately 120 feet from the railroad tracks at both properties. The SLM monitored and recorded 10-second average sound pressure levels, the maximum and peak (un-weighted) sound pressure levels within each 10-second interval, and other descriptive statistics for the entire monitoring period. The monitoring event ended the next morning on April 20, 2001, after approximately 24 hours of monitoring.

The field technician observed and recorded information on his field log between 9 a.m. and 5 p.m. on April 19, 2001, and retrieved the SLM in the morning of April 20, 2001. The noise data were downloaded to a computer using the software provided by Quest.

The monitored data and the field technician's observations revealed that the peak noise levels were typically associated with the trains' whistles or horns. Hence, the barrier analyses presented below focus on the train horns.

The noise monitoring results on April 19 and 20, 2001 in Table 4 present the calculated CNEL, 71.5 dB, of the nearby residences, which is approximately 6.5 dB higher than the proposed criterion of 65dB, as described in Section 4 of this report. The goal of the noise barrier design at this project is to reduce the noise level for at least 6.5 dB or more to meet the community noise guideline.

5.2 Noise Barrier Parameter Calculations

5.2.1 Noise Frequency Range

As shown on Figure 1, a noise barrier reduces sound originated from a point source by either absorbing it, transmitting it, reflecting it back, or forcing it to take a longer path, which is referred to as the diffracted path. (Ref. 4)

Due to the nature of sound waves, diffraction does not bend all frequencies uniformly. Higher frequencies are diffracted to a lesser degree, while lower frequencies are diffracted deeper into the "shadow" zone behind the barrier. As a result, a barrier is generally more effective in attenuating the higher frequencies as compared with the lower frequencies. (Ref. 5)

Noises generated from a train include engine noise, friction noise between the wheels and the rails, and noise from the train horn. Engine and friction of wheels generate low frequency noise (usually 125 Hz [1] to 1000 Hz), whereas the sound frequency from the train horn usually ranges from 800 Hz to 2500 Hz (Ref.6). Therefore, four different frequency levels (125, 800, 2500, and 3000 Hz) were selected and used in this evaluation to represent the range of frequency associated with railroad noise.

5.2.2 Barrier Location and Height

The distances between the railroad and the residences along Rivera Road between Pico Vista Road and Serapis Avenue range from 120 feet to 155 feet. A fence is currently located 23 to 86 feet from the rails on the residential side. Four different locations, (A) intersection of Pico Vista Road and Rivera Road; (B) intersection of Cord Street and Rivera Road; (C) intersection of Passion Street and Rivera Road; and (D) intersection of Lemoran Street and Rivera Road), were selected to estimate the noise attenuation ability of the barrier. The areas inside the fence are the railroad's right-of-way, and it is very unlikely that a noise barrier can be built inside the right-of-way. The City has requested that ENVIRON assume the barrier will be built where the currently located fence is. Therefore, the distance between the barrier and the rail is a variable (ranging from approximately 23 to 86 feet), and the distance between the barrier and the residence is also a variable (ranging from 61 feet to 87 feet).

[1] Hz: An abbreviation of Hertz, unit of frequency that is equivalent to one cycle per second.

The railroad is approximately 8 feet above the street level from the intersection of Pico Vista Road to Passion Street, and approximately 1.7 feet above street level from the intersection of Lemoran Street to Serapis Avenue. The train horn, which is the tallest noise source among all possible sources, is normally positioned about 10 feet high on a train[(Ref.7)]. Thus, the height of the train horn was assumed to be 11.7 and 18 feet, respectively, in the analyses. The height of the barrier was also a variable in the calculations. A range of 20 to 50 feet was used in this study for the noise barrier heights to sufficiently diffract the noise, thus, reducing the noise level at the receiver location.

5.2.3 Path Length Difference (δ_0) and Fresnel Number (N_0) Calculation

Figure 2 shows the path length difference (δ_0), which was used to compute the Fresnel number (N_0). A Fresnel number (N_0) is a dimensionless value used in predicting the attenuation provided by a noise barrier positioned between a source and a receiver.[(Ref. 7)] It is used to estimate the sound transmission loss without taking the barrier material into consideration, and can be computed as follows:

$$N_0=2(f\delta_0/C).$$

Where:

f is the noise frequency (Hz).

δ_0 is the path length difference = a+b-c, feet, as illustrated on Figure 2.

C is the speed of sound (at 25°C, 50% relative humidity, C = 1145.1 ft/sec)

a, b, and c were calculated by simple trigonometry from variables of train horn height, receiver's height, barrier's height, and distance between barrier, railroad, and residence.

The Fresnel number calculations are illustrated in Table 2. For example, on the first row in Table 2:

Height of train horn: 18 ft
Height of residence: 6 ft
Distance between barrier and railroad: 33 ft
Distance between barrier and residence: 87 ft
Height of barrier: 20 ft

Variable a = $\sqrt{(20\text{-}18)^2 + 33^2} = 33.1$
Variable b = $\sqrt{(87^2 + (20\text{-}6)^2} = 88.0$
Variable c = $\sqrt{(18\text{-}6)^2 + (33+87)^2} = 120.5$
Path length difference (δ_0) = a+b-c = 33.1+88.0-120.5 = 0.6 ft

Fresnel number (N_0) = 2 (f * δ_0 /C)
N_0 at 125 Hz = 2 (125*0.6/1145.1) = 0.1
N_0 at 800 Hz = 2 (800*0.6/1145.1) = 0.8
N_0 at 2500 Hz = 2 (2500*0.6/1145.1) = 2.5
N_0 at 3000 Hz = 2 (3000*0.6/1145.1) = 3.0

Table 2 shows that Fresnel number decreases as the distance between barrier and residence increases. Also, the Fresnel number increases when both barrier height and frequency increase.

Table 3 summarizes the barrier attenuation values at four different frequencies (125, 800, 2500, and 3000 Hz) and at various barrier heights. These values were converted from Figure 3, Fresnel Number Versus Barrier Attenuation. [Ref. 7]

All values in Tables 2 and 3 were calculated in the same manner as discussed above.

5.2.4 Community Noise Equivalent Level (CNEL) Calculation

As stated previously, CNEL was used as the criterion to evaluate the proposed noise barrier. The actual CNEL was calculated using the maximum sound pressure levels (L_{max}) obtained by the SLM on-site. Following the definition of CNEL, the sound pressure level for each 10-second interval was calculated by adding 5 dB to the L_{max} for the evening noise (7 p.m. to 10 p.m.) and 10 dB for the nighttime noise (10 p.m. to 7 a.m.).[Ref. 2] The 24-hour actual CNEL was then calculated by summing up all the adjusted sound pressure levels. The equation for calculating the actual CNEL is as follows:

$$CNEL = q * \log [1/24 \int_0^{24} (Xn/N) * 10^{L_{max}(t)/16.61} dt]$$

Where:

q = exchange rate / log2 = 5/log2 = 16.61

Xn = weight of total sampling time in 24 hours, in this case, 1 sample/ 10 second, thus, 8615 samples out of possible 8640 samples at a 24-hour period, equal to $8615/8640 * 24 = 23.93$

N = total samples = 8615

The CNEL calculations are illustrated in Tables 4 through 7. As shown in Table 4, $CNEL = 16.61 * \log [1/24 \int_0^{24} (23.93/8615) * 10^{L_{max}(t)/16.61} dt] = 71.5$ dB [2]

5.2.5 Predicted CNEL

The predicted CNEL values were calculated by subtracting the estimated barrier attenuation values presented in Table 3 from the actual CNEL of 71.5 dB at different barrier heights and noise frequencies. The predicted CNEL values are summarized in Table 8.

For example, using the noise barrier height of 20 feet at the intersection of Pico Vista and Rivera roads with a frequency at 125 Hz, the estimated noise attenuation value from the corresponding column in Table 3 is 5.0 dB. Thus, the predicted CNEL on Table 8 = 71.5 - 5.0 = 66.5 dB.

All values in Table 8 were calculated in the same manner as discussed above.

5.2.6 Barrier Materials

In the evaluations presented thus far, the materials of the noise barrier had not been considered when calculating the sound attenuation, only the transmission loss was considered. Transmission loss is an indication of the barrier's inherent ability to block sound due to its height. The method used to calculate the transmission loss was analyzing the Fresnel number, which is dependent on frequency and distances.(Ref. 7)

Sound attenuation measurements were made for differing types of common building materials. Generally, most materials transmit low-frequency sound more efficiently than high-frequency sound, therefore, the sound attenuation is better for higher frequency sound. Materials that are effective in attenuating sound energy are dense, such as concrete, one of

[2] This value is higher than the CNEL calculated by the Quest SLM, which was 67.3 dB and was previously reported to the City. ENVIRON contacted Quest Technologies and was informed that the SLM uses the instantaneous sound pressure levels to calculate the CNEL and may introduce an error when the data are not collected for exactly 24 hours.

the most common and versatile construction materials.(Ref. 6) The City has proposed the use of a cinder block wall as the noise barrier, which is similar to concrete blocks.

As a rule of thumb, any material weighing 20 kg/m^2 (4 lb/ft^2) [3] or more has a transmission loss of at least 20 dB. (Ref. 4) Such material would provide a noise attenuation of at least 10 dB due to diffraction in a real-world environment. Note that a weight of 20 kg/m^2 (4 lb/ft^2) can be attained by using lighter and thicker or heavier and thinner materials. The 10-dB noise attenuation would be additive to the transmission loss calculated using the Fresnel number.

[3] kg/m^2 and lb/ft^2: kilogram per square meter and pound per square foot. Unit of weight density that is the weight of the object divided by the volume of space that the object occupies.

6.0 RESULTS AND CONCLUSIONS

As indicated in Table 3, building a noise barrier along Rivera Road without considering the type of material is expected to reduce the noise from 5.0 dB to 20 dB, depending on the noise frequencies, barrier heights, and locations. Also shown in Table 3, the taller the barrier the better the noise attenuation. However, the noise attenuation does not change significantly once the barrier reaches 40 feet in both low and high frequencies.

In Table 4, the actual CNEL was calculated to be 71.5 dB without the barrier. The predicted CNEL values, as shown in Table 8, ranged from 51.5 to 66.5 dB depending on the noise frequencies, barrier heights, and locations. A cinder-block wall with at least 20 kg/m^2 (4 lb/ft^2) density would provide another 10-dB "safety margin" to the theoretical Fresnel design. If using the CNEL of 65 dB as the criterion, a barrier height of 25 feet from the street level would be sufficient. However, since the CNEL of 65 dB has been constantly challenged by several communities/cities in California, using a 30-foot barrier wall to attenuate noise level down to 54 - 62 dB may be more adequate.

In conclusion, a cinder block barrier wall, preferably with a density of at least 20 kg/m^2 (4 lb/ft^2), between 25 and 30 feet above the street level, positioned at the present chain-link fence ` between the railroad and the residences, is recommended.

7.0 ADDITIONAL CONSIDERATIONS FOR A NOISE BARRIER

7.1 Barrier Length

A noise barrier should be long enough so that very little sound diffracts around the edges. If a barrier is not long enough, up to 5 dB less than the barrier design may be observed by the receivers near the barrier ends. For instance, if the barrier must be segregated to allow for the intersection of the surface streets, the sound attenuation will be compromised near the intersection. A rule-of-thumb is that a barrier should be long enough such that the distance between a receiver and a barrier end is at least four times the perpendicular distance from the receiver to the barrier (see Figure 4). (Ref. 8)

Occasionally, due to the community and roadway geometry, there is not enough space to ensure the proper length for a barrier. In those cases, the barrier can be constructed with the ends curved toward the community (Figure 5).

7.2 Safety Consideration

Safety is a factor that must be given appropriate consideration in the design of any noise barrier system.

- Barrier stability: A geological survey should be conducted prior to construction of the barrier to investigate the soil conditions near the railroad. A barrier can be reinforced by attaching its components to a more stable object, as shown on Figure 6. The barrier should be located where it is less vulnerable to vehicular impact.

- Emergency access: Noise barriers interrupt the path between the railroad and adjacent local roadways. During emergencies (accidents, spills, fires, etc.) access from these local roadways is often necessary and/or desirable. Barrier access points for emergency or maintenance situations are typically shaped as shown on Figures 7 and 8. Noise barriers may also interrupt the path between the railroad and a source of water required to be accessed in the event of a fire or spill on the railroad. Since fire hoses cannot be practically draped over a noise barrier, special design considerations are required. Emergency access openings or valves can be incorporated directly into the design of the noise wall panels. Figures 9 and 10 show the hose couplers directly incorporated into the noise barrier panels, which allows the connection of fire hoses on both sides of the noise barrier, and effectively eliminates any kinks in the hose. A critical consideration with this type of design is to have the correct size of connection (diameter, thread size, etc.) for all fire companies that may need to access the connection. Also, strength of the wall and the adjacent posts must be analyzed to assure that they are capable of withstanding the thrust loads generated by the force of the moving water in the hose lines.

8.0 REFERENCES

1. E.H. Berger et al., The Noise Manual, 5th edition, American Industrial Hygiene Association Press, 2000.

2. Guideline for the preparation and Content of the Noise Element of the General Plan, Appendix A, General Plan, Office of Planning & Research, State of California, 1990.

3. Chapter 6, Division 2.5, Title 21, California Code of Regulations.

4. Hendriks, R.W. Field Evaluation of Acoustical Performance of Parallel Highway Noise Barriers Along Route 99 in Sacramento, California. Report No. FHWA/CA/TL-91/01. Sacramento, CA: California Department of Transportation, Division of New Technology, Materials and Research, January 1991.

5. Hendriks, Rudolf. Technical Noise Supplement-A Technical Supplement to the Traffic Noise Analysis Protocol. Sacramento, CA: California Department of Transportation, October 1998.

6. Criteria for a Recommended Standard, Occupational Noise Exposure. U.S. Department of Health and Human Services, Public Health Service, Center for Disease control and Prevention, National Institute for Occupational Safety and Health, Cincinnati, Ohio, 1998.

7. Pederson, Soren, Harvey S. Knauer, Cynthia S.Y. Lee, Gregg G. Fleming. FHWA Traffic Noise Model, Version 1.0: User's guide. Report No. FHWA-PD-96-009 and DOT-vntsc-fhwa-98-1. Cambridge, MA: John A. Volpe National Transportation System Center, Acoustics Facility, February 1998.

8. Acoustics and Your Environment-The Basics of Sound and Highway Traffic Noise. Cambridge, MA: John A. Volpe National Transportation System Center, Acoustics Facility, February 1999.

TABLES

Nietos Road near the rail crossing. As shown, Los Nietos Road carries approximately 1,037 vehicles (313 eastbound and 724 westbound) during the AM peak hour, 827 vehicles (309 eastbound and 518 westbound) during the midday peak hour, and 1,427 vehicles (402 eastbound and 725 westbound) during the PM peak hour.

Lakeland Road

Lakeland Road near the rail crossing is a two-lane roadway which runs in the east-west direction fronted primarily by industrial use. Figure 4 shows the local traffic circulation system and the existing traffic volumes along major streets within the area. As shown in Figure 4, Lakeland Road carries approximately 719 vehicles (308 eastbound and 411 westbound) during the AM peak hour, 566 vehicles (282 eastbound and 284 westbound) during the midday peak hour, and 699 vehicles (359 eastbound and 340 westbound) during the PM peak hour.

Rosecrans Avenue/Marquandt Avenue

The BNSF railroad tracks cross through the intersection of Rosecrans Avenue and Marquandt Avenue diagonally. Within the study area, Rosecrans Avenue is a four-lane roadway aligned in the east-west direction. Marquandt Avenue is a four-lane roadway aligned in the north-south direction. Both roadways are fronted by commercial and industrial land uses. Figure 5 shows the local traffic circulation system and existing traffic volumes along major streets within the area.

West of the BNSF railroad tracks, Rosecrans Avenue carries approximately 2,170 vehicles (992 eastbound and 1,178 westbound) during the AM peak hour, 1,790 vehicles (725 eastbound and 984 westbound) during the midday peak hour, and 2,171 vehicles (1,304 eastbound and 867 westbound) during the PM peak hour. East of the BNSF railroad tracks, Rosecrans Avenue carries approximately 1,921 vehicles (604 eastbound and 1,317 westbound) during the AM peak hour, 1,475 vehicles (740 eastbound and 735 westbound) during the midday peak hour, and 1,586 vehicles (847 eastbound and 739 westbound) during the PM peak hour.

North of the rail crossing, Marquandt Avenue carries approximately 555 vehicles (283 northbound and 272 southbound) during the AM peak hour, 535 vehicles (349 northbound and 186 southbound) during the midday peak hour, and 732 vehicles (462 northbound and 270 southbound) during the PM peak hour. South of the rail crossing, it carries approximately 344 vehicles (86 northbound and 258 southbound) during the AM peak hour, 327 vehicles (164 northbound and 160 southbound) during the midday peak hour, and 471 vehicles (274 northbound and 197 southbound) during the PM peak hour.

Valley View Avenue

Within the study area, Valley View Avenue is a four-lane roadway aligned in the north-south direction. South of the rail crossing, Valley View Avenue is fronted by commercial land use. To the north of the crossing, it is fronted by residential use. Figure 6 shows the local traffic circulation system for the portion of the study area and existing traffic volumes along the major streets within the study area. As can be seen, Valley View Avenue carries approximately 2,605 vehicles (1,050 northbound and 1,555 southbound) during the AM peak hour, 1,910 vehicles (991 northbound and 919 southbound) during the midday peak hour, and 2,632 vehicles (1,552 northbound and 1,080 southbound) during the PM peak hour.

Table 1: Maximum Allowable Ambient Noise Exposure for Various Land Uses

Land Use	Suggested Maximum L_{DN} (1)
Residential – Low Density	60
Residential – High Density	65
Transient Lodging	65
Schools, Libraries, Churches,	70
Hospitals	-
Auditoriums	70
Playgrounds, Parks	70
Commercial	70
Industrial	75

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\Noise Barrier Report [04-9557A]-new.doc

(1) L_{DN} = Day-night average sound level, is the 24-hour average sound level, in decibels (dB), with the addition of 10 dB to sound levels in the night from 10 p.m. to 7 a.m. Noises occurring at night generally produce greater annoyance than the same levels that occur during the day.

Table 2

Fresnel Number Calculations

														Fresnel Number N_0 [5]			
Location	Height of Train Horn (ft)	Height of Residence (ft)	Distance Between Barrier and Railroad (ft)	Distance Between Barrier and Residence (ft)	Height of Barrier (ft)	Variable "a"	Variable "b"	Variable "c"	Path Length Difference	Noise Frequency (Hz)	Noise Frequency (Hz)	Noise Frequency (Hz)	Noise Frequency (Hz)	at 125 Hz	at 800 Hz	at 2500 Hz	at 3000 Hz
A[(1)]	18	6	33	87	20	33	88	120	0.6	125	800	2500	3000	0.1	0.8	2.5	3.0
B[(2)]	18	6	23	83	20	23	85	107	0.6	125	800	2500	3000	0.1	0.8	2.5	3.0
C[(3)]	18	6	76	78	20	76	80	155	0.8	125	800	2500	3000	0.2	1.1	3.5	4.2
D[(4)]	12	6	86	61	20	86	63	147	1.9	125	800	2500	3000	0.4	2.6	8.2	9.8
A	18	6	33	87	25	34	89	120	2.2	125	800	2500	3000	0.5	3.1	9.6	11.5
B	18	6	23	83	25	24	86	107	2.5	125	800	2500	3000	0.5	3.5	10.9	13.1
C	18	6	76	78	25	76	81	155	2.1	125	800	2500	3000	0.5	3.0	9.3	11.2
D	12	6	86	61	25	87	64	147	3.8	125	800	2500	3000	0.8	5.3	16.6	19.9
A	18	6	33	87	30	35	90	120	4.8	125	800	2500	3000	1.0	6.7	20.8	25.0
B	18	6	23	83	30	26	87	107	5.7	125	800	2500	3000	1.2	7.9	24.7	29.6
C	18	6	76	78	30	77	82	155	4.1	125	800	2500	3000	0.9	5.7	17.8	21.3
D	12	6	86	61	30	88	66	147	6.4	125	800	2500	3000	1.4	8.9	27.8	33.3
A	18	6	33	87	35	37	92	120	8.2	125	800	2500	3000	1.8	12	36	43
B	18	6	23	83	35	29	88	107	9.8	125	800	2500	3000	2.1	14	43	51
C	18	6	76	78	35	78	83	155	6.6	125	800	2500	3000	1.4	9	29	35
D	12	6	86	61	35	89	68	147	9.5	125	800	2500	3000	2.1	13	42	50
A	18	6	33	87	40	40	93	120	12.5	125	800	2500	3000	2.7	17	54	65
B	18	6	23	83	40	32	90	107	14.8	125	800	2500	3000	3.2	21	65	78
C	18	6	76	78	40	79	85	155	9.7	125	800	2500	3000	2.1	14	42	51
D	12	6	86	61	40	91	70	147	13.2	125	800	2500	3000	2.9	19	58	69
A	18	6	33	87	45	43	95	120	17.4	125	800	2500	3000	3.8	24	76	91
B	18	6	23	83	45	35	92	107	20.5	125	800	2500	3000	4.5	29	89	107
C	18	6	76	78	45	81	87	155	13.4	125	800	2500	3000	2.9	19	58	70
D	12	6	86	61	45	92	72	147	17.5	125	800	2500	3000	3.8	24	76	92
A	18	6	33	87	50	46	97	120	22.9	125	800	2500	3000	5.0	32	100	120
B	18	6	23	83	50	39	94	107	26.6	125	800	2500	3000	5.8	37	116	140
C	18	6	76	78	50	82	90	155	17.5	125	800	2500	3000	3.8	24	76	92
D	12	6	86	61	50	94	75	147	22.2	125	800	2500	3000	4.9	31	97	116

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 2

(1) A is the intersection of Pico Vista Road and Rivera Road (2) B is the intersection of Cord Street and Rivera Road
(3) C is the intersection of Passion Street and Rivera Road (4) D is the intersection of Lemoran Street and Rivera Road

(5). Fresnel number (N_0) is a dimensionless value used in predicting the attenuation provided by a noise barrier positioned between a source and receiver; it is computed as follows: $N_0=2(f_0/C)$
Where:
f is the frequency of sound emanating from the source;
N_0 is the path length difference along the path determined by a particular source-barrier-receiver geometry;
C is the speed of sound (here we assume at the condition of 25C, RH at 50%, using 1145.1ft/sec.

Table 3

Barrier Attenuation Estimates at Various Barrier Heights

	Variables					Fresnel Number				Barrier Attenuation (dB)			
	Location	Height of Train Horn (ft)	Height of Residence (ft)	Distance Between Barrier and Railroad (ft)	Distance Between Barrier and Residence (ft)	at 125 Hz	at 800 Hz	at 2500 Hz	at 3000 Hz	Noise Frequency at 125 Hz	Noise Frequency at 800 Hz	Noise Frequency at 2500 Hz	Noise Frequency at 3000 Hz
Height of Barrier 20 ft	A	18	6	33	87	0.1	0.8	2.5	3.0	5.0	8.0	12	13
	B	18	6	23	83	0.1	0.8	2.5	3.0	5.0	8.0	12	13
	C	18	6	76	78	0.2	1.1	3.5	4.2	6.0	10	13	13
	D	12	6	86	61	0.4	2.6	8.2	9.8	8.0	12	16	18
Height of Barrier 25 ft	A	18	6	33	87	0.5	3.1	10	11	8.0	13	17	18
	B	18	6	23	83	0.5	3.5	11	13	8.0	13	18	18
	C	18	6	76	78	0.5	3.0	9	11	8.0	13	17	18
	D	12	6	86	61	0.8	5.3	17	20	9.0	13	18	18
Height of Barrier 30 ft	A	18	6	33	87	1.0	6.7	21	25	10	14	18	18
	B	18	6	23	83	1.2	7.9	25	30	10	15	18	18
	C	18	6	76	78	0.9	5.7	18	21	10	13	18	18
	D	12	6	86	61	1.4	8.9	28	33	11	16	18	18
Height of Barrier 35 ft	A	18	6	33	87	1.8	12	36	43	11	18	18	18
	B	18	6	23	83	2.1	14	43	51	12	18	18	19
	C	18	6	76	78	1.4	9.2	29	35	11	17	18	18
	D	12	6	86	61	2.1	13	42	50	12	18	18	19
Height of Barrier 40 ft	A	18	6	33	87	2.7	17	54	65	12	18	19	20
	B	18	6	23	83	3.2	21	65	78	13	18	19	20
	C	18	6	76	78	2.1	14	42	51	12	18	18	19
	D	12	6	86	61	2.9	19	58	69	13	18	20	20
Height of Barrier 45 ft	A	18	6	33	87	3.8	24	76	91	13	18	20	20
	B	18	6	33	83	3.8	24	76	91	13	18	20	20
	C	18	6	23	78	4.5	29	89	107	13	18	20	20
	D	12	6	76	61	2.9	19	58	70	13	18	19	20
Height of Barrier 50 ft	A	18	6	33	87	5.0	32	100	120	13	18	20	20
	B	18	6	23	83	5.8	37	116	140	14	18	20	20
	C	18	6	76	78	3.8	24	76	92	13	18	20	20
	D	12	6	86	61	4.9	31	97	116	13	18	20	20

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 3

EXISTING TRAFFIC CONDITIONS

This section describes in detail existing traffic conditions at the seven proposed grade separation locations. Discussion includes current traffic volumes, roadway geometrics and current operating conditions.

Passons Boulevard

Passons Boulevard is a two-lane facility which runs in the north-south direction. Figure 2 shows the study area and the local traffic circulation system. In the vicinity of the rail crossing, Passons Boulevard is fronted primarily with residential and neighborhood commercial uses. Based on recent traffic counts, Passons Boulevard near the BNSF rail crossing currently carries approximately 1,160 vehicles (315 northbound and 845 southbound) during the AM peak hour. During the PM peak hour, Passons Boulevard carries approximately 855 vehicles (445 northbound and 410 southbound). Figure 2 also shows the existing peak hour traffic volumes.

As part of the proposed Triple Track/Grade Separation project, the current at-grade crossing at Serapis Avenue is proposed to be permanently closed to vehicular traffic. Serapis Avenue is a two-lane local roadway which runs parallel to and west of Passons Boulevard. Within the study area, Serapis Avenue is fronted primarily by residential uses north of the rail crossing and commercial uses south of the rail crossing. Traffic counts along Serapis Avenue show that the facility carries approximately 215 AM peak hour vehicles (75 northbound and 140 southbound) and 305 PM peak hour vehicles (160 northbound and 145 southbound). Figure 2 also shows the AM and PM peak hour traffic volumes along other key roadways within the study area.

Pioneer Boulevard

Within the study area, Pioneer Boulevard is a four-lane roadway aligned in the north-south direction. Land uses along Pioneer Boulevard near the rail crossings are primarily residential with some commercial. Figure 3 shows the local traffic circulation system within the study area and existing traffic volumes along the major roadways. As can be seen, Pioneer Boulevard carries approximately 1,532 vehicles (584 northbound and 948 southbound) during the AM peak hour, 978 vehicles (478 northbound and 500 southbound) during the midday peak hour, and 1,544 vehicles (755 northbound and 789 southbound) during the PM peak hour.

Norwalk Boulevard

Within the study area, Norwalk Boulevard is a four-lane roadway aligned in the north-south direction. Land uses along this roadway are primarily commercial. Figure 3 also shows existing traffic volumes along Norwalk Boulevard near the BNSF rail crossing. As shown, Norwalk Boulevard carries approximately 1,688 vehicles (736 northbound and 952 southbound) during the AM peak hour, 1,539 vehicles (752 northbound and 787 southbound) during the midday peak hour, and 2,262 vehicles (1,157 northbound and 1,105 southbound) during the PM peak hour.

Los Nietos Road

Los Nietos Road, within the study area, is a four-lane roadway that is aligned in the east-west direction and is fronted by commercial use. Figure 3 shows existing traffic volumes along Los

Table 4

CNEL Calculations Using the Sound Pressure Level Obtained from 8:56:40 AM to 7:00:00 PM on April 19, 2001

CNEL (dB) of Total Monitoring Period (8:56:20 am, April 19 - 8:52:20 am, April 20, 2001)				71.5
Time	**Lavg**	**Lmax**	**Lmax-CNEL**	**Lmax-CNEL Calculation**
8:56:40 AM	57.2	63.6	63.6	0.78
8:56:50 AM	48.5	49.7	49.7	0.11
8:57:00 AM	50.3	52.3	52.3	0.16
8:57:10 AM	57.1	62.9	62.9	0.71
8:57:20 AM	63.6	65.5	65.5	1.02
8:57:30 AM	67.2	71.5	71.5	2.33
8:57:40 AM	59.8	63.0	63.0	0.72
8:57:50 AM	58.4	61.2	61.2	0.56
8:58:00 AM	72.0	74.6	74.6	3.59
8:58:10 AM	67.3	74.0	74.0	3.30
8:58:20 AM	55.0	59.1	59.1	0.42
8:58:30 AM	51.0	51.8	51.8	0.15
8:58:40 AM	52.7	54.7	54.7	0.23
8:58:50 AM	55.8	58.1	58.1	0.36
8:59:00 AM	58.9	61.1	61.1	0.55
8:59:10 AM	61.0	63.2	63.2	0.74
8:59:20 AM	58.7	61.2	61.2	0.56
8:59:30 AM	55.3	59.1	59.1	0.42
8:59:40 AM	51.2	56.2	56.2	0.28
8:59:50 AM	47.9	49.8	49.8	0.12
9:00:00 AM	46.6	47.4	47.4	0.08
9:00:10 AM	45.4	46.1	46.1	0.07
9:00:20 AM	46.4	47.4	47.4	0.08
9:00:30 AM	46.6	47.2	47.2	0.08
9:00:40 AM	46.9	48.1	48.1	0.09
9:00:50 AM	48.7	50.0	50.0	0.12
9:01:00 AM	54.5	63.0	63.0	0.72
9:01:10 AM	49.5	51.4	51.4	0.14
9:01:20 AM	52.5	54.7	54.7	0.23
9:01:30 AM	49.6	51.6	51.6	0.15
9:01:40 AM	48.0	49.3	49.3	0.11
9:01:50 AM	47.0	48.7	48.7	0.10
9:02:00 AM	48.2	49.8	49.8	0.12
9:02:10 AM	50.3	52.3	52.3	0.16
9:02:20 AM	51.0	52.5	52.5	0.17
9:02:30 AM	49.7	52.4	52.4	0.17
9:02:40 AM	50.6	53.0	53.0	0.18
9:02:50 AM	48.8	50.6	50.6	0.13
9:03:00 AM	57.4	63.5	63.5	0.77
9:03:10 AM	52.3	56.3	56.3	0.28
9:03:20 AM	50.7	51.7	51.7	0.15
9:03:30 AM	48.9	50.0	50.0	0.12
9:03:40 AM	46.7	48.3	48.3	0.09

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 4

Additional monitoring data are truncated at this table, and will be provided upon request.

Table 5

CNEL Calculations Using the Sound Pressure Level Obtained from 7:00:00 PM to 10:00:00 PM on April 19, 2001

Time	Lavg	Lmax	Lmax-CNEL	Lmax-CNEL Calculation
7:00:00 PM	51.6	52.1	57.1	0.32
7:00:10 PM	52.8	53.3	58.3	0.37
7:00:20 PM	54.0	56.4	61.4	0.58
7:00:30 PM	56.0	59.0	64.0	0.83
7:00:40 PM	64.1	67.0	72.0	2.50
7:00:50 PM	64.0	67.2	72.2	2.57
7:01:00 PM	59.0	62.9	67.9	1.42
7:01:10 PM	54.3	55.9	60.9	0.54
7:01:20 PM	52.1	54.8	59.8	0.46
7:01:30 PM	52.9	54.8	59.8	0.46
7:01:40 PM	54.9	56.0	61.0	0.54
7:01:50 PM	56.8	57.8	62.8	0.70
7:02:00 PM	55.7	57.0	62.0	0.63
7:02:10 PM	54.1	55.2	60.2	0.49
7:02:20 PM	57.9	62.1	67.1	1.27
7:02:30 PM	64.4	66.6	71.6	2.37
7:02:40 PM	62.4	64.1	69.1	1.67
7:02:50 PM	58.8	60.9	65.9	1.07
7:03:00 PM	57.0	59.3	64.3	0.86
7:03:10 PM	58.6	63.3	68.3	1.50
7:03:20 PM	63.3	65.4	70.4	2.00
7:03:30 PM	61.7	65.1	70.1	1.92
7:03:40 PM	60.5	64.2	69.2	1.70
7:03:50 PM	63.9	70.6	75.6	4.12
7:04:00 PM	54.1	54.8	59.8	0.46
7:04:10 PM	53.7	54.9	59.9	0.47
7:04:20 PM	52.2	53.3	58.3	0.37
7:04:30 PM	52.1	53.5	58.5	0.38
7:04:40 PM	54.5	54.9	59.9	0.47
7:04:50 PM	58.2	60.0	65.0	0.95
7:05:00 PM	60.0	62.0	67.0	1.25
7:05:10 PM	59.4	61.3	66.3	1.14
7:05:20 PM	57.5	63.1	68.1	1.46
7:05:30 PM	53.1	58.1	63.1	0.73
7:05:40 PM	50.9	51.8	56.8	0.30
7:05:50 PM	50.5	51.1	56.1	0.28
7:06:00 PM	52.4	54.3	59.3	0.43
7:06:10 PM	56.1	58.5	63.5	0.77
7:06:20 PM	57.8	59.8	64.8	0.92
7:06:30 PM	56.3	58.1	63.1	0.73
7:06:40 PM	55.6	56.8	61.8	0.61
7:06:50 PM	53.4	54.4	59.4	0.44
7:07:00 PM	52.9	54.1	59.1	0.42
7:07:10 PM	53.7	54.8	59.8	0.46
7:07:20 PM	53.3	54.2	59.2	0.42
7:07:30 PM	54.5	56.5	61.5	0.58

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 5

Additional monitoring data are truncated at this table, and will be provided upon request.

Table 6

CNEL Calculations Using the Sound Pressure Level Obtained from 10:00:00 PM to 07:00:00 AM on April 19 to 20, 2001

Time	Lavg	Lmax	Lmax-CNEL	Lmax-CNEL Calculation
10:00:00 PM	53.7	55.2	65.2	1.0
10:00:10 PM	54.5	56.4	66.4	1.2
10:00:20 PM	58.5	63.5	73.5	3.1
10:00:30 PM	62.6	64.6	74.6	3.6
10:00:40 PM	59.5	61.4	71.4	2.3
10:00:50 PM	57.2	58.9	68.9	1.6
10:01:00 PM	54.4	56.4	66.4	1.2
10:01:10 PM	59.1	66.8	76.8	4.9
10:01:20 PM	58.6	65.5	75.5	4.1
10:01:30 PM	55.1	56.7	66.7	1.2
10:01:40 PM	55.0	56.9	66.9	1.2
10:01:50 PM	60.7	65.5	75.5	4.1
10:02:00 PM	65.1	66.5	76.5	4.7
10:02:10 PM	63.7	65.2	75.2	3.9
10:02:20 PM	60.6	64.0	74.0	3.3
10:02:30 PM	54.4	56.5	66.5	1.2
10:02:40 PM	54.6	56.2	66.2	1.1
10:02:50 PM	56.6	63.4	73.4	3.0
10:03:00 PM	55.5	61.9	71.9	2.5
10:03:10 PM	55.1	57.0	67.0	1.3
10:03:20 PM	53.1	54.7	64.7	0.9
10:03:30 PM	53.4	55.8	65.8	1.1
10:03:40 PM	55.0	61.4	71.4	2.3
10:03:50 PM	58.6	63.1	73.1	2.9
10:04:00 PM	59.5	60.1	70.1	1.9
10:04:10 PM	60.6	64.5	74.5	3.5
10:04:20 PM	55.3	57.4	67.4	1.3
10:04:30 PM	53.5	54.5	64.5	0.9
10:04:40 PM	53.6	54.1	64.1	0.8
10:04:50 PM	52.0	53.4	63.4	0.8
10:05:00 PM	50.9	51.4	61.4	0.6
10:05:10 PM	52.2	53.1	63.1	0.7
10:05:20 PM	53.2	54.8	64.8	0.9
10:05:30 PM	57.3	62.1	72.1	2.5
10:05:40 PM	82.3	91.8	101.8	155.7
10:05:50 PM	91.2	99.5	109.5	452.8
10:06:00 PM	80.5	84.6	94.6	57.4
10:06:10 PM	75.6	77.6	87.6	21.7
10:06:20 PM	73.6	76.7	86.7	19.2
10:06:30 PM	73.0	76.1	86.1	17.7
10:06:40 PM	74.3	76.6	86.6	18.9
10:06:50 PM	73.3	74.6	84.6	14.3
10:07:00 PM	75.6	79.0	89.0	26.4
10:07:10 PM	74.0	77.7	87.7	22.1
10:07:20 PM	79.3	82.0	92.0	40.0
10:07:30 PM	71.9	78.2	88.2	23.6

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 6

Additional monitoring data are truncated at this table, and will be provided upon request.

Table 7

CNEL Calculations Using the Sound Pressure Level Obtained from 7:00:00 AM to 8:52:20 AM on April 20, 2001

Time	Lavg	Lmax	Lmax-CNEL	Lmax-CNEL Calculation
7:00:00 AM	54.5	55.2	55.2	0.24
7:00:10 AM	55.5	57.7	57.7	0.34
7:00:20 AM	54.9	56.8	56.8	0.30
7:00:30 AM	59.5	64.1	64.1	0.84
7:00:40 AM	56.2	58.7	58.7	0.40
7:00:50 AM	57.4	60.6	60.6	0.52
7:01:00 AM	55.0	55.5	55.5	0.25
7:01:10 AM	54.4	55.6	55.6	0.26
7:01:20 AM	54.7	55.8	55.8	0.26
7:01:30 AM	54.7	56.3	56.3	0.28
7:01:40 AM	54.6	55.1	55.1	0.24
7:01:50 AM	54.4	55.4	55.4	0.25
7:02:00 AM	54.7	55.6	55.6	0.26
7:02:10 AM	54.4	55.1	55.1	0.24
7:02:20 AM	54.6	55.8	55.8	0.26
7:02:30 AM	54.9	55.9	55.9	0.27
7:02:40 AM	54.2	55.9	55.9	0.27
7:02:50 AM	54.0	55.7	55.7	0.26
7:03:00 AM	54.3	55.2	55.2	0.24
7:03:10 AM	54.8	55.2	55.2	0.24
7:03:20 AM	54.9	57.3	57.3	0.33
7:03:30 AM	58.8	62.8	62.8	0.70
7:03:40 AM	56.5	57.1	57.1	0.32
7:03:50 AM	56.3	57.8	57.8	0.35
7:04:00 AM	55.4	57.3	57.3	0.33
7:04:10 AM	55.5	56.2	56.2	0.28
7:04:20 AM	55.4	55.9	55.9	0.27
7:04:30 AM	64.7	71.9	71.9	2.47
7:04:40 AM	69.0	74.8	74.8	3.69
7:04:50 AM	68.2	75.6	75.6	4.12
7:05:00 AM	58.1	60.5	60.5	0.51
7:05:10 AM	62.3	64.2	64.2	0.85
7:05:20 AM	60.9	62.6	62.6	0.68
7:05:30 AM	56.1	58.4	58.4	0.38
7:05:40 AM	55.1	55.8	55.8	0.26
7:05:50 AM	54.1	55.0	55.0	0.24
7:06:00 AM	54.6	56.0	56.0	0.27
7:06:10 AM	54.1	55.8	55.8	0.26
7:06:20 AM	53.8	55.2	55.2	0.24
7:06:30 AM	54.4	55.6	55.6	0.26
7:06:40 AM	54.7	55.6	55.6	0.26
7:06:50 AM	55.5	56.4	56.4	0.29
7:07:00 AM	55.2	56.2	56.2	0.28
7:07:10 AM	55.1	55.8	55.8	0.26
7:07:20 AM	55.6	56.8	56.8	0.30
7:07:30 AM	57.9	59.3	59.3	0.43

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 7

Additional monitoring data are truncated at this table, and will be provided upon request.

Table 8

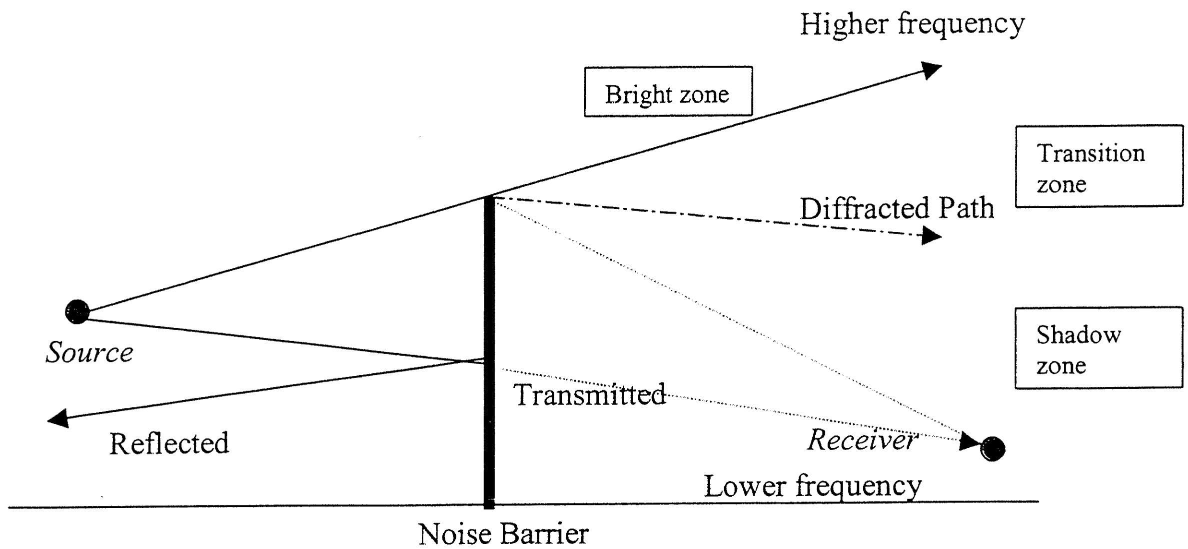
Predicted CNEL Values (dB) for Various Noise Barrier Heights at Different Frequencies

	Location	Noise Frequency at 125 Hz	Noise Frequency at 800 Hz	Noise Frequency at 2500 Hz	Noise Frequency at 3000 Hz
Height of Barrier 20 ft	A	67	64	60	59
	B	67	64	60	59
	C	66	62	59	59
	D	64	60	56	54
Height of Barrier 25 ft	A	64	59	55	54
	B	64	59	54	54
	C	64	59	55	54
	D	63	59	54	54
Height of Barrier 30 ft	A	62	58	54	54
	B	62	57	54	54
	C	62	59	54	54
	D	61	56	54	54
Height of Barrier 35 ft	A	61	54	54	54
	B	60	54	54	53
	C	61	55	54	54
	D	60	54	54	53
Height of Barrier 40 ft	A	60	54	53	52
	B	59	54	53	52
	C	60	54	54	53
	D	59	54	52	52
Height of Barrier 45 ft	A	59	54	52	52
	B	59	54	52	52
	C	59	54	52	52
	D	59	54	53	52
Height of Barrier 50 ft	A	59	54	52	52
	B	58	54	52	52
	C	59	54	52	52
	D	59	54	52	52

P:\P\Pico Rivera\Noise 04-9557A\SBW Design\[Noise barrier Report Table (04-9557A)-new.xls]Table 8

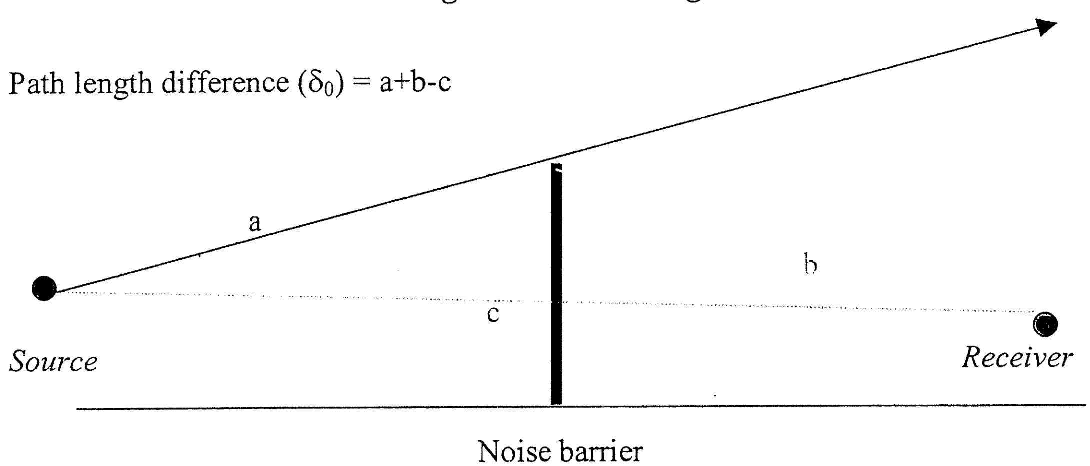
FIGURES

Figure 1. Noise Barrier and Sound Transmission Path



P:\P\Pico Rivera\Noise 04-9557A\SBW Design\Noise Barrier Report [04-9557A]-new.doc

Figure 2. Path Length Difference



P:\P\Pico Rivera\Noise 04-9557A\SBW Design\Noise Barrier Report [04-9557A]-new.doc

Figure 3. Fresnel Number Versus Barrier Attenuation

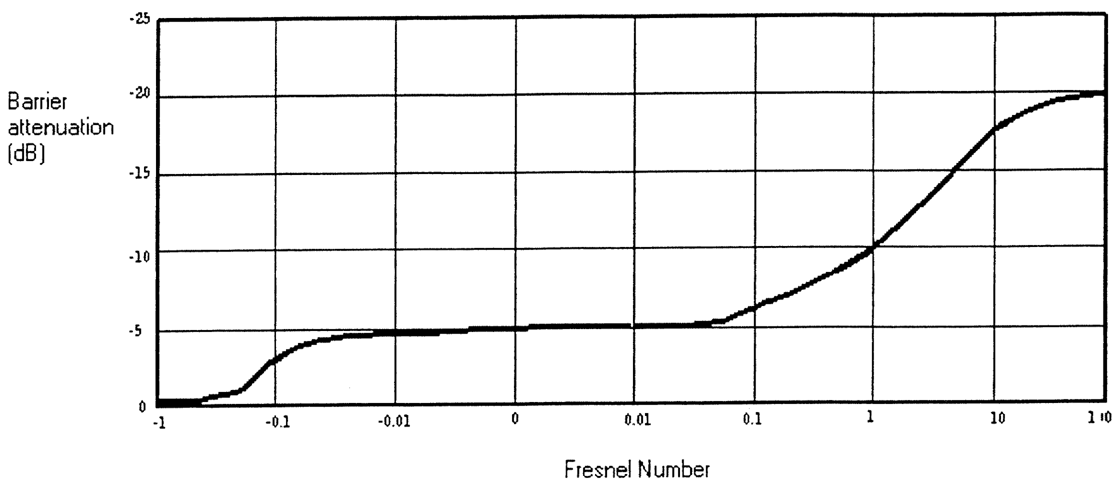


Figure 4. Barrier Length Versus Distance of Receiver

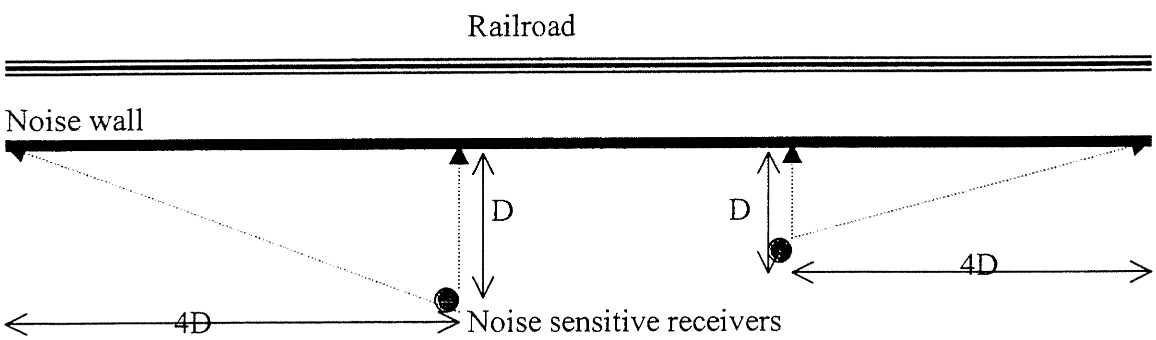


Figure 5. Barrier Ends Curved Toward Community

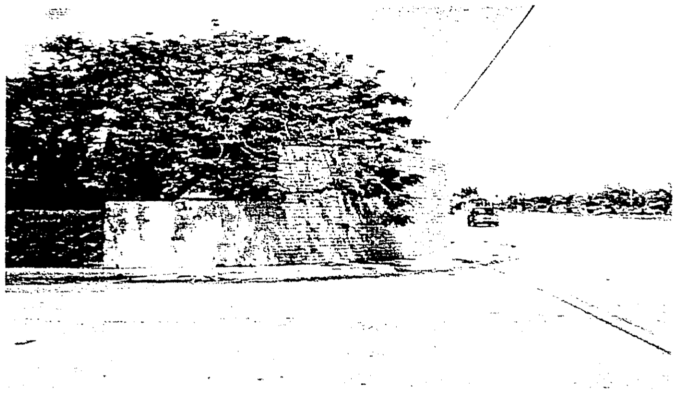


Figure 6. Barrier Attachments/Reinforcement Details

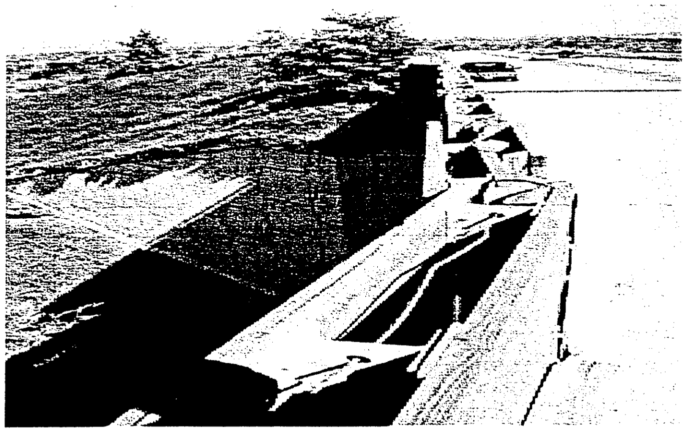


Figure 7. Example of Access Door

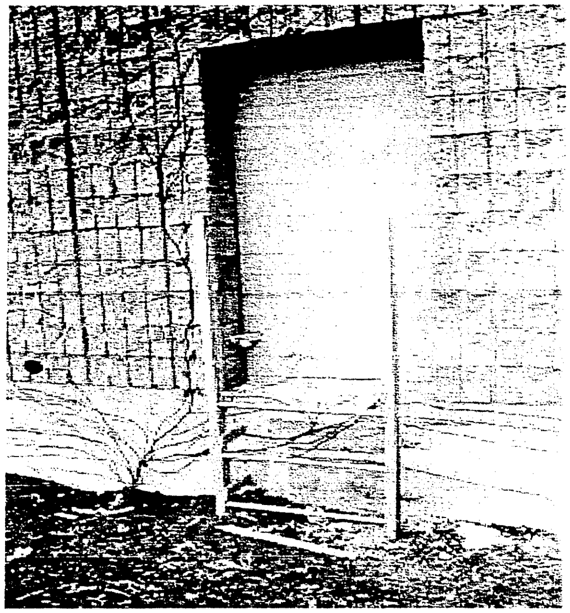


Figure 8. Example of Access Door

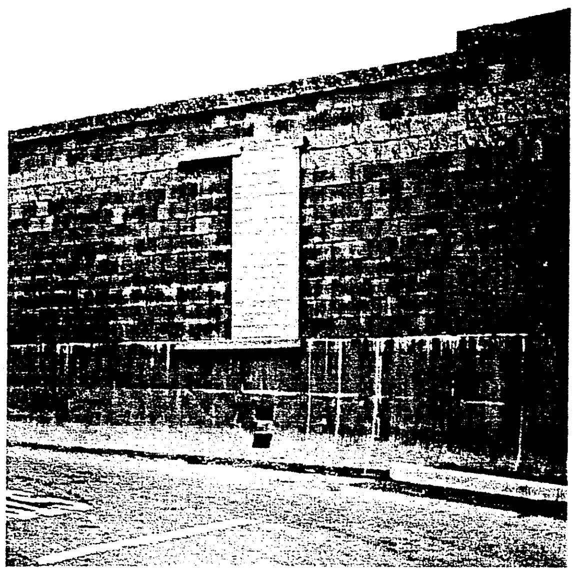


Figure 9. Example of Fire Hose Connection

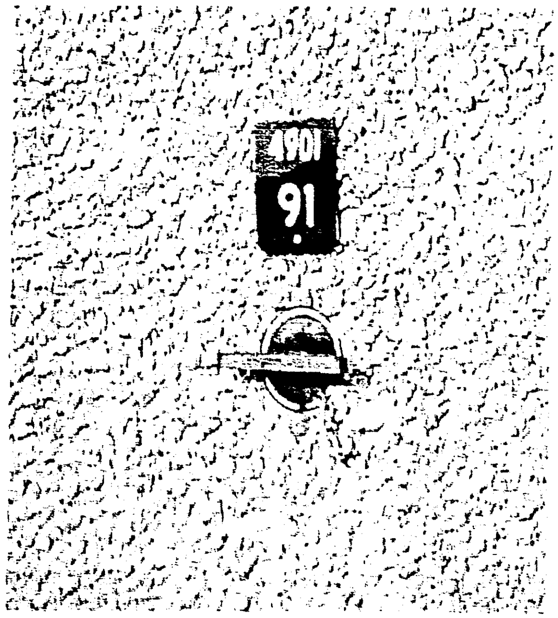


Figure 10. Example of Fire Hose Connection