

## Project Study Report – Finding and Recommendations

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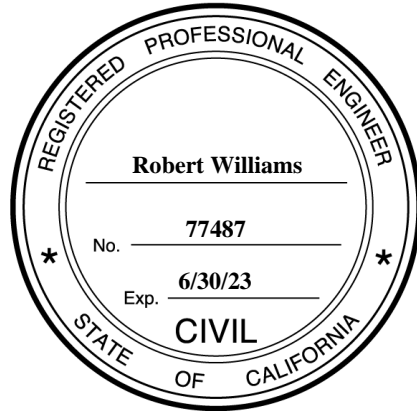
# North Leucadia Pedestrian & Bicycle At-Grade Crossings City of Encinitas



June 6, 2023

**Project Study Report  
Findings and Recommendations**

**North Leucadia Pedestrian & Bicycle At-Grade  
Crossings  
City of Encinitas**



Submitted: \_\_\_\_\_ Date: June 6, 2023  
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This project study report has been prepared under the direction of the above registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

Revision	Author	Organization	Date	Description
0	Lawrence Shaw, Robert Williams	RailPros	04/05/23	Draft PSR Issued
1	Lawrence Shaw Robert Williams	RailPros	05/31/23	Revised Draft PSR Issued
2	Lawrence Shaw, Robert Wiliams	RailPros	06/06/23	Revised Draft PSR Issued

Current Rev.	Approved by:	Organization	Date	Signature
2	Matthew Widelski	City of Encinitas		



## Project Study Report Findings and Recommendations

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## **Project Study Report Findings and Recommendations**

### **Project Description**

The project involves the installation of two pedestrian at-grade railroad crossings on the North County Transit District (NCTD) San Diego Subdivision in North Leucadia in the City of Encinitas along the southern section of the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor. The first crossing will be between the Coral Cove Way and Hillcrest Drive intersections with Vulcan Avenue, providing access across the tracks at the Grandview Street and Coast Highway 101 (Hwy 101) intersection (Grandview Street Crossing). The second crossing is located between Jason Street and Glaucus Street on Vulcan Avenue adjacent to the Phoebe Street and Hwy 101 intersection across the tracks (Phoebe Street Crossing). This Project Study Report (PSR) also considers two configuration alternatives for each location at the request of the City of Encinitas. The rough order of magnitude (ROM) cost estimates for each of these crossings is approximately \$1.5 million based on conceptual understandings and assumptions. Stakeholders involved in review and approval of the project design include the City of Encinitas and North County Transit District (NCTD) as the crossing owners; the California Public Utilities Commission (CPUC) as State Regulatory Authority over crossings; and potentially the Federal Railroad Administration (FRA) as Regulatory Authority over the future Quiet Zone. Other interested or affected agencies including the San Diego Association of Governments (SANDAG) and Tenant Railroads such as BNSF and Amtrak.

A previous PSR was completed for SANDAG in 2012 and updated in 2020 by RailPros for a proposed grade separated pedestrian crossing at Hillcrest Drive based upon the need for pedestrian access identified by the City of Encinitas. It was determined that there is a need for pedestrian crossings at the Grandview/Hillcrest and the Phoebe/Glaucus locations to provide access between the surrounding areas on the east and west sides of the NCTD right-of way. Subsequently, the City of Encinitas determined the most efficient, economical, and expeditious crossing type for these two North Leucadia locations will be at-grade crossings.



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**Figure 1 – Project Area and Crossing Locations**

### Project Locations

The proposed project locations shown above in Figure 1 are in the City of Encinitas at railroad milepost (MP) 235.7 for the Grandview Street crossing and at MP 236.1 for the Phoebe Street crossing on the NCTD San Diego Subdivision, part of the LOSSAN Corridor. Hwy 101 is the west boundary of the projects and Vulcan Avenue is the east boundary of the projects. The proposed railroad at-grade pedestrian crossing near the Coral Cove Way and Hillcrest Drive intersections with Vulcan Avenue east of the tracks will connect to a proposed at-grade pedestrian crossing at the Hwy 101 intersection with Grandview Street west of the tracks. The proposed railroad at-grade pedestrian crossing between Jason Street and Glaucus Street at Vulcan Avenue east of the tracks will connect to an at-grade pedestrian crossing across Hwy 101 at Phoebe Street to the west.

### Project Purpose and Need

#### **Purpose**

The purpose of the Grandview Street/Hillcrest Drive Crossing and the Phoebe/Glaucus Street Crossing Project is to improve pedestrian and rail safety conditions within the project area and improve pedestrian access within the City of Encinitas Leucadia community between beaches, coastal resources, commercial areas, and residential neighborhoods.

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### **Need**

Within the 1.3-mile North Leucadia section of the railroad corridor between Leucadia Blvd and La Costa Avenue, there is no existing legal pedestrian access across the tracks. Currently, to legally cross the tracks, pedestrians must use existing incomplete sidewalks or road shoulders to access either of the two adjacent roadway crossings (Leucadia Boulevard at grade crossing or the La Costa Avenue grade separated crossing). The lack of safe, convenient pedestrian access results in significant pedestrian trespassing across the railroad tracks and may potentially increase vehicle traffic in the community by residents who may choose to drive to destinations west of the tracks rather than walk longer distances or trespass.

Within the project area, the limited number of highway-rail grade crossings and long distances between them act as an incentive for pedestrians to make illegal, hazardous crossings over the rail line. Pedestrian access to schools, recreational areas, residential areas, and businesses is restricted due to lack of access. Trespassing continues to be an issue despite the recent installation of fencing along the railroad Right-of-Way (ROW).

In addition, regional and statewide transportation plans call for increasing the number of trains along this corridor, which will increase risk along this corridor. The future implementation of double tracking from downtown San Diego to the Orange County line, will result in increased train service along the corridor and may also affect the proposed project crossings. The timeline for the start of construction for the double track through Leucadia according to a recent SANDAG estimate is 2030. The existing single main track at the project locations is planned to be upgraded to two main tracks as part of the proposed future La Costa to Swamis Double Track Project.

### **Project Benefits**

The addition of the Grandview Pedestrian Crossing and Phoebe Pedestrian Crossing will reduce illegal track crossings by providing convenient pedestrian access with active railroad warning devices and NCTD standard crossing safety enhancements. The at-grade pedestrian crossings will connect the residences and informal parking on the east side of the tracks with the residences, businesses, sidewalks, future rail trail(s), and Grandview Street and Beacon's Beach access points west of the tracks. These crossings may also help to reduce vehicle traffic and improve parking in the area by providing more convenient, safer, legal access and connection across the tracks.

### **Project Studies, Evaluations and Analysis**

The following subsections provide details on our research, studies, observation, and evaluations for the proposed project crossings and surrounding area. These sections include findings and recommendations specific to the specialized sections and reference details in

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the appendix. A summary of key findings, recommendations and proposed at-grade crossing layout alternatives is also included.

### **Track Pedestrian Crossing Analysis – NCTD San Diego Subdivision**

The purpose of this subsection is to present the findings of pedestrian crossing activities observed along the section of the NCTD San Diego Subdivision track located in the City of Encinitas between Vulcan Avenue and North Coast Highway 101. The study area boundaries are Coral Cove Way to the north and Glaucus Street to the south (**Appendix A – Attachment 1**). This analysis provides an evaluation of existing conditions, discusses findings, and provides recommendations to address pedestrian safety.

#### **Existing Conditions**

The half-mile section of the NCTD San Diego Subdivision track in the study area is located between Coral Cove Way and Glaucus Street and is a single-track that serves Coaster, Amtrak and BNSF trains. This section of the San Diego Subdivision track carries 50 trains/day and has a maximum track speed of 90 MPH. The nearest pedestrian crossings are at the intersections of Leucadia Boulevard and North Coast Highway 101, and La Costa Avenue and North Coast Highway 101. Leucadia Boulevard and North Coast Highway 101 is signalized and located about ¼ mile south of the study area, with Leucadia Blvd crossing the tracks at-grade. La Costa Avenue and North Coast Highway 101 is signalized and about ½ mile north of the study area with La Costa Avenue crossing over the San Diego Subdivision track. The total distance between these two crossing intersections is approximately 1 1/3 miles and they provide the only controlled pedestrian paths for users within the study area traveling between Vulcan Avenue and North Coast Highway 101.

North Coast Highway 101 is a three lane, divided major arterial (two lanes southbound and one lane northbound) with 17,000 Average Daily Traffic (ADT). It is parallel to and west of the NCTD track. Limited fencing, a pedestrian path, and designated parking is located along a portion the east side of North Coast Highway 101 beginning at the intersection of Avocado Street and ending 900 feet to the south. The west side of North Coast Highway 101 is fronted by commercial land uses against residential land uses. There are four pedestrian crosswalks with pedestrian activated rectangular rapid flashing beacons that cross North Coast Highway 101 at the intersections of Grandview Street, Avocado Street, Jason Street, and Phoebe Street. Beach access is available north of Grandview Street, and just north of Leucadia Blvd.

Vulcan Avenue is a two-lane local collector roadway with 3,600 ADT that is parallel to and east of the NCTD track. The east side of Vulcan Avenue is high density residential land use. During Summer 2022, NCTD installed fencing parallel to and east of the track to restrict pedestrian crossings. There is designated parking adjacent to the fencing. The City is pursuing a project to add a pedestrian pathway on the west side of Vulcan Avenue from

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Leucadia Boulevard to La Costa Avenue. The pathway will generally be between the NCTD fencing and the existing parking.

During a September 2022 field visit, it was observed that multiple sections of fencing were cut at the following locations:

- East Side of track near Coral Cove Way and Vulcan Avenue
- West Side of track near Jason Street and North Coast Highway 101
- East Side of track near Glaucus Street and Vulcan Avenue
- East Side of track near Jason Street and Vulcan Avenue
- East Side of track near Phoebe Street and Vulcan Avenue

**Appendix A – Attachment 2** shows the location of the cut fences that were regularly accessed in each study area, as well as the typical origins and destinations of pedestrians based on the video analysis. **Appendix A – Attachment 3** summarizes the pedestrian crossing data in each study area.

### Study Approach

The approach for this study was to identify areas where pedestrians were likely to cross the NCTD tracks, place video cameras on both sides of the tracks, collect video data over a 7-day period, review the video, and identify the peak day and times when the most crossings occurred. The method for targeting likely pedestrian crossing locations was to identify locations where the fence was cut and where marked crosswalks are located on North Coast Highway 101. A ½ mile long segment along the NCTD San Diego Subdivision track bounded by Coral Cove Way to the north and Glaucus Street to the south was identified.

The study area was divided into the following three study areas:

- Hillcrest Drive Area
- Jason Street Area
- Glaucus Street Area

Video cameras were placed and recorded 24-hours/day over a 7-day period from September 12, 2022 to September 18, 2022. A total of eight cameras were placed between the three study areas and were aimed at the railroad tracks.

### Analysis Discussion

After reviewing video of pedestrian activity in the study area, Saturday September 17, 2022, was identified as the peak day of the week and pedestrian counts were collected on 15-minute intervals from sunrise to sunset. Pedestrian data was collected and organized by time of day, study area, and direction of travel (eastbound/westbound). See **Appendix A – Attachment 4** for the details of the pedestrian counts for each study area.

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A total of 265 pedestrians were observed crossing the track between Coral Cove Way and Glaucus Street. Of the three study areas, the Grandview Street/Hillcrest Drive area recorded 117 pedestrian crossings during a 12-hour period, followed by the Glaucus Street area with 75 crossings and the Jason Street area with 73 crossings.

The focus of the video analysis was to identify key locations where pedestrians are crossing and identify patterns in their origins and destinations. See **Appendix A - Attachment 3** for exhibits that summarize the observed origins and destinations of pedestrians on September 17, 2022.

### **Findings and Recommendations**

The finding of this study is that regular pedestrian crossings are occurring along the NCTD San Diego Subdivision track in the study area despite efforts by NCTD to address the issue with fencing. On average, 22 track crossings per hour were observed on a Saturday over a 12-hour period. With a 90 MPH maximum train speed on this section of track, pedestrians crossing the tracks unlawfully is a clear safety issue. Based on the data and video analysis, about 15 percent more pedestrians crossed the tracks in the westbound direction than the eastbound direction. The higher westbound crossings may be a result of people seeking to access the businesses, restaurants, and to access the beach west of the track.

Illegal track crossings by pedestrians are occurring in the 1 1/3-mile study area because of a high demand in an area without convenient legal crossings between La Costa Avenue and Leucadia Boulevard. The demand includes the high-density residential land use east of the track and the commercial land use and beach access on the west side of the track. It is estimated that the walking time to legally cross the tracks at La Costa Avenue or Leucadia Boulevard from the study area east or west of the tracks would take over 30 minutes one-way making the total trip over 60 minutes. For comparison, the estimated walking time to cross the tracks unlawfully takes under 5 minutes one-way, making the total trip around 10 minutes.

A recommendation to limit unlawful pedestrian crossings in this area would be to construct legal pedestrian rail crossings. Installing legal pedestrian crossing(s) would provide safe access for pedestrians, limiting unlawful crossings in this area and the risk of train-pedestrian collisions. From the collected data, it is recommended that two pedestrian crossings be considered within this study area. Based on the distances between the cut fence locations and the volume of unlawful pedestrian crossings, it is recommended that pedestrian crossings be constructed at the Grandview Street/Hillcrest Drive and Phoebe Street/Glaucus Street Areas.

From the collected data, it is evident that the Grandview Street/Hillcrest Drive Area has the most pedestrian crossings within the study area. Based on the video analysis in this area, the northern side of this study area (near the Coral Cove Way and Vulcan Avenue

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intersection) would be a recommended location for pedestrians to cross the track. This location had the most crossings of the cut fence locations. Furthermore, there is an existing crosswalk at the intersection of North Coast Highway 101 and Grandview Street with a pedestrian activated rectangular rapid flashing beacons for pedestrians to cross and access businesses on the west side of the street. The City has a Leucadia Streetscape project that will break ground in Winter 2023/24 that will add also a roundabout and two pedestrian crossings at the North Coast Highway 101/Grandview Street intersection.

A pedestrian crossing is recommended near the Phoebe Street and North Coast Highway 101 intersection. Phoebe Street lies roughly between the two focuses of this study area, Jason Street to the north and Glaucus Street to the south, and provides pedestrian access with a crosswalk at North Coast Highway 101. Providing a pedestrian crossing near this crosswalk may also reduce unsafe pedestrian movements, such as jaywalking across North Coast Highway 101, which was observed near the intersection of Glaucus Street and North Coast Highway 101. As noted, Phoebe Street, and the associated pedestrian crosswalk on North Coast Highway 101, is almost equidistant from Glaucus Street (approximately 415' away with 75 observed area Peak Day crossings) and Jason Street (approximately 425' away with 73 observed area Peak Day crossings), is well within realistic walking distance from both streets, and would provide safe pedestrian access to the surrounding area, including both Jason Street and Glaucus Street east of the tracks.

The need for pedestrian safety improvements along the NCTD San Diego Subdivision between La Costa Avenue and Leucadia Boulevard has been identified in this study. Two new pedestrian crossings should be considered at the Grandview Street/Hillcrest Drive and Phoebe Street/Glaucus Street Areas based on the number of unlawful pedestrian crossings. Pedestrian crossings may also be reduced in this area of the track and by adding parking west of the track.

### **Conceptual Geotechnical Evaluation (Appendix B)**

High-level geotechnical investigations determined that the sites do not have significant geological/geotechnical constraints that would affect the proposed project. The sites are underlain by granular materials that are suitable for reuse as fill and support of the at-grade crossing improvements. In addition, there are not any geoseismic hazards (i.e., faulting, landsliding, liquefaction) that would affect the project.

### **Conceptual Environmental Evaluation (Appendix C)**

Three constraints for a CEQA exemption were identified upon initial desktop project review. Further coordination with city staff, field surveys, subsurface investigations, and preliminary technical reporting may be required to determine the appropriate level of CEQA documentation or to satisfy the CEQA exemption process. This may include:



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- Biological Resources Assessment.
- Soil Management Plan; and,
- Noise Technical Report.

The estimated timeline to prepare the above-listed documents is approximately two months. The estimated timeline for a CEQA Categorical Exemption is approximately two months and the estimated timeline for a CEQA Initial Study Mitigated Negative Declaration (IS-MND) is approximately six months. The timelines for each effort noted above may vary based on City staff availability, workload, and the potential for public controversy.

### **Conceptual Civil Evaluation and Constraints**

Based on observations in the field, several potential impacts and constraints have been identified, most of which are common to both proposed crossing locations.

The rail corridor typically has communication and other utilities that run parallel to the tracks and require protection in place during construction. Specific utilities and locations will be identified in future phases.

East of the tracks there are existing drainage facilities parallel with the railroad ROW that the pedestrian pathway will cross without impacting existing flows. Further hydrology / hydraulic analysis will have to be performed to properly size the opening beneath the pathway.

NCTD recently installed fencing east of the tracks and proposed pathways and channelization will need to incorporate ROW fencing modifications. Existing informal parking east of the tracks, between the fence line and Vulcan Avenue will also be impacted by the pedestrian walkway, potentially eliminating one parking space at each crossing location. Parking along Vulcan Avenue is roughly level with the track.

West of the track, the railroad ROW slopes down to Coast Highway and will require ADA ramps and possibly stairways to connect the crossing to proposed Leucadia Streetscape sidewalks and crosswalks at Coast Highway.

Other considerations that are not currently addressed include ROW fencing along the west side of the Railroad ROW, ADA access, sidewalks, trails, and crosswalks along or across Vulcan Avenue to connect to existing parking and neighborhoods.

The crossings are generally proposed to follow NCTD standards and meet ADA compliance. The Crossing Alternatives Section below contains a detailed description of proposed improvements and crossing layout exhibits.

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### **Conceptual Railroad Signal Evaluation and Constraints**

Pedestrian crossing warning devices (gates, flashers, and bells) will be installed on both the east and west sides of the track(s) along with the pedestrian channelization at each of the proposed crossings within the railroad right-of-way. The pedestrian crossing warning devices must be tied into the NCTD signal system to provide proper warning time to anyone using the crossing. Activation of the devices provides warning of an approaching train. The control of these devices will be through a small (6'x6' minimum) control house or a 114" case along the railroad ROW. Electrical power access is needed at both crossing locations to power the control enclosures and warning devices. Electrical power being available close to the site is a constraint regarding the location of the crossings as the further away from the site the power drop is, the larger the cable needs to be. The houses cannot accommodate a large cable into the power panel.

Coordination with NCTD signals and operations departments will be required to incorporate the crossing warning devices into the overall signal system.

### **Project Stakeholders and Regulatory Agencies**

#### **Community Meeting**

The City of Encinitas held a community meeting as part of a Citizen Participation Plan on January 30, 2023 to discuss the Leucadia At-Grade Railroad Crossings at Grandview/Hillcrest and Phoebe/Jason/Glaucus. Almost 180 community members attended and each were asked to fill out a comment card that contained four questions on their preferences of proposed changes. 160 comment cards were collected from meeting participants and NOWLeucadia on-line submissions. The overwhelming majority were in favor of the crossings with ramp and stairs options. Proposed changes from the community included a quiet zone declaration and starting the project as soon as possible. Overall sentiments of the community were positive. A summary of the community meeting comments are included in Appendix D.

#### **Current Railroad Operations**

The following railroad operators use the Rail Corridor track through the project location:

##### **North County Transit District**

NCTD owns and maintains the railroad ROW and operates weekday Coaster commuter rail services between Oceanside and Downtown San Diego, providing 30 trains per weekday. SANDAG's 2018 Infrastructure Development Plan projects an increase in weekday Coaster service to 36 trains per day by 2025.

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### **Amtrak**

Amtrak operates weekday *Pacific Surfliner* intercity service between Oceanside and Downtown San Diego, providing 26 trains per weekday (Pre-COVID). Major cities served are San Diego, Solana Beach, Oceanside, Santa Ana, Fullerton, Anaheim, Los Angeles, Santa Barbara, and San Luis Obispo. Amtrak plans to increase weekday *Pacific Surfliner* service to 32 trains per day by 2025 and 36 trains per day by 2035.

### **BNSF Railway**

The BNSF Railway operates freight rail service throughout the San Diego portion of the LOSSAN corridor, seven days per week. Typically, three to four freight trains operate per day. The BNSF freight service is both local and national in scope and the LOSSAN Corridor connects to the entire North American rail network.

### **Regulatory Agencies**

#### **CPUC**

The California Public Utilities Commission regulates grade crossings within the State of California. All new proposed crossings are required to follow the CPUC Formal Application process and ideally would include concurrence from stakeholders, including NCTD. The Formal Application process may take up to 18 months or more for approval from an Administrative Law Judge assigned to review the application. The CPUC process requires a stakeholder site diagnostic meeting and development of, at least, preliminary project documentation to be submitted with the Formal Application.

Previous coordination with the CPUC has included discussion surrounding the need for pedestrian access along this corridor, including the potential for 2 new crossings in the general locations identified in this study.

While proposed improvements generally follow NCTD and City standards, the Stakeholder Diagnostic Team recommendations will dictate the ultimate guidance on proposed improvements. A Diagnostic Meeting is proposed to follow the development of this report to collect feedback and recommendations from stakeholders. Formal Application process is currently proposed for the next phase of work in conjunction with the development of preliminary documentation.

#### **FRA**

The City of Encinitas intends to implement a Quiet Zone throughout crossings within the City as part of a separate project. According to FRA definitions, Quiet zone means a segment of a rail line, within which is situated one or a number of consecutive public highway - rail crossings at which locomotive horns are not routinely sounded.

In order to accommodate the potential future establishment of a Quiet Zone, NCTD standards are being followed in developing the pedestrian crossings. Design will also need to address CPUC diagnostic team recommendations. The FRA should be invited to the

## **Project Study Report Findings and Recommendations**

CPUC diagnostic meeting to address potential concerns and recommendations, though a separate diagnostic meeting will also likely take place as part of the City's Quiet Zone Project. The City is considering possible Quiet Zone qualification alternatives which may include coordination with adjacent crossings in the City of Carlsbad, or implementation of a wayside horn system at pedestrian crossings. The project intends to accommodate Quiet Zone recommendations in the future design development.

### **California Coastal Commission**

The Coastal Commission plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that modify land use or public access to coastal waters, generally require a coastal permit from either the Coastal Commission or the local government.

This project may require permitting with the California Coastal Commission. As it is part of the mission of the Coastal Commission to improve access to coastal resources, this project will likely be viewed favorably by the Commission and it is not anticipated that this permitting will delay the project.

### **Adjacent Projects (Current and Planned)**

#### **Encinitas Leucadia Streetscape Project**

For more than a decade, the City of Encinitas has been developing a major streetscape project commonly known as Leucadia Streetscape, to enhance mobility, parking, and add traffic calming measures along the North Coast Highway 101. The Leucadia Streetscape will add in a decomposed granite path between North Coast Highway 101 and the railroad. Any at grade crossings will need to plan to tie into or accommodate the planned path. Figure 2 below shows the streetscape project in gray and the connection to the proposed crossing in red. A similar configuration will be used at the Phoebe crossing, figures are provided in the Alternatives section below. The Leucadia Streetscape project completed segments of construction (further south) in 2022 and 2023, and construction for the segments within the project limits is planned to begin in 2023 and extend into 2024.

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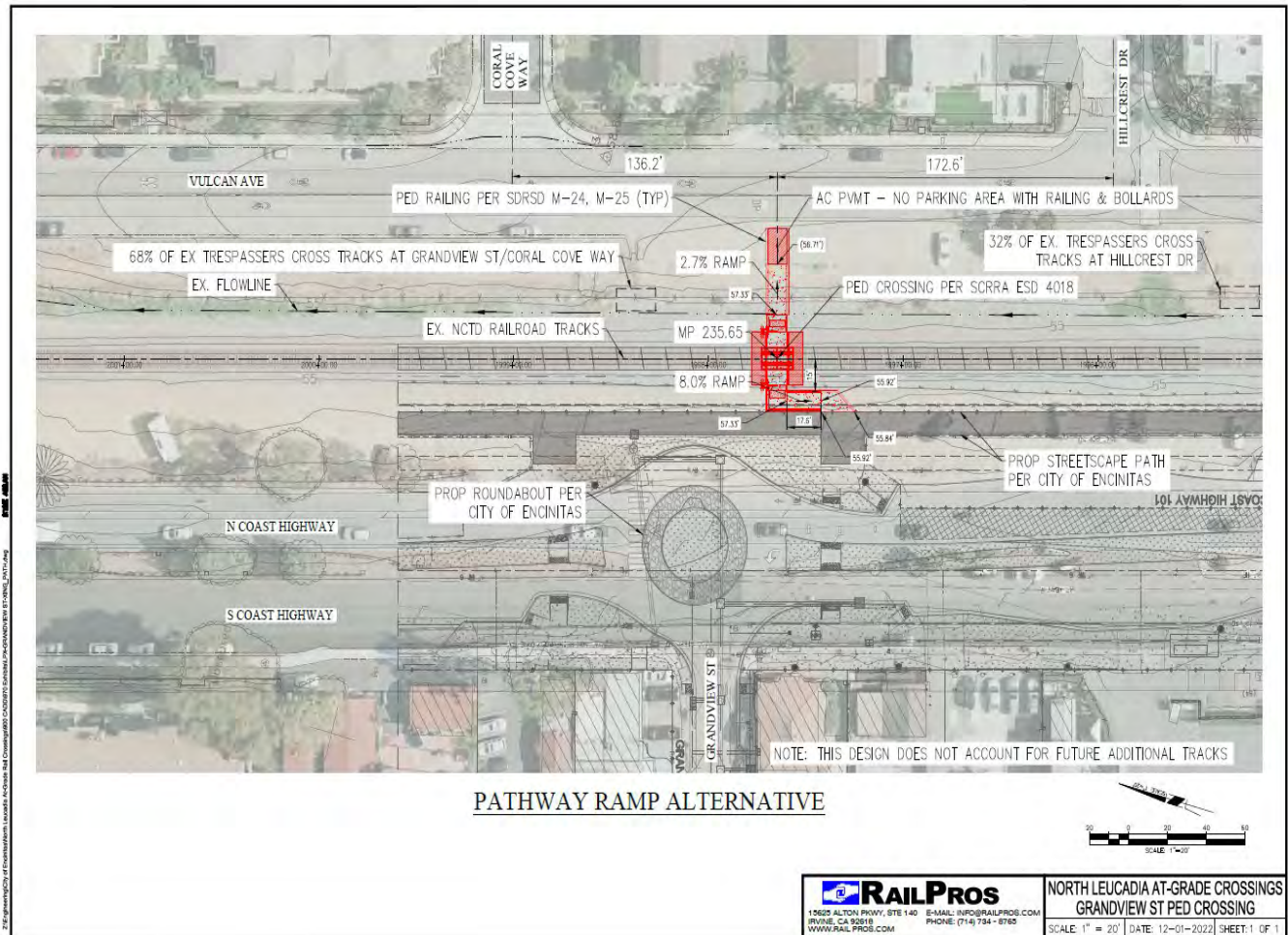


Figure 2: Encinitas Street Scape future plans integrated with Grandview Street Pedestrian Crossing

### Coastal Rail Trail

SANDAG is planning on extending the existing Coastal Rail Trail north through the project and City limits. The Coastal Rail Trail is a Class I bike facility that runs parallel to the railroad. The Rail Trail currently has its northern end at Vulcan Avenue and Santa Fe Street. An extension north to E street is currently designed and seeking construction funding. SANDAG is planning to ultimately extend the Coastal Rail Trail through the remainder of Encinitas to La Costa Avenue, passing through the project limits. The Rail Trail is currently planned on the west side of the tracks and may incorporate portions of the Leucadia Streetscape sidewalk / path and will similarly affect tie ins for the grade crossings. This portion of the Rail Trail is currently unfunded and construction is planned by 2030

### La Costa to Swami's Double Track

SANDAG is currently seeking funding to design the La Costa to Swami's Double Track project. This project would include constructing a second main track through the Encinitas

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portion of the LOSSAN Rail Corridor from La Costa Avenue to just south of the Encinitas Station. The alignment of the track has not yet been determined. The second main track will be constructed adjacent to the existing single track within the NCTD ROW. The second track will ultimately pass through any at-grade crossings in the project limits. The proposed crossings should consider potential accommodations for a future second main track, where feasible. Modifications to the crossings may be required when the future double track project is implemented and should be coordinated with the City of Encinitas and SANDAG. Construction of the double track project is currently planned to begin by 2030.

### **Leucadia Boulevard Grade Crossing**

The SANDAG 2021 Regional Transportation Plan includes the grade separating the existing Leucadia Boulevard Crossing as a planned Capital Improvement to be included as part of the double tracking improvements on the LOSSAN Corridor. This crossing falls within the limits of the La Costa to Swami's Double-Track Project. This project would involve raising the tracks above grade on a viaduct system over Leucadia Boulevard or lowering the tracks into a trench below the street. This would ultimately grade separate portions of the project limits and would require future modifications to the grade crossings at Grandview / Hillcrest and Phoebe / Glaucus. The project is currently unfunded and a schedule for delivery has not been established. An on-site meeting was held with stakeholders including the FRA in Q1 of 2023 to discuss safety concerns at Leucadia Blvd.

### **Crossing Alternatives**

The City identified the two proposed crossing locations as the focus of this study based on previous analysis, stakeholder coordination and community feedback.

Previous studies for railroad crossing alternatives in the project area included the following documents:

- Encinitas Pedestrian Crossings – Hillcrest Drive/RailPros for SANDAG, 2012, Amended 2020.
- Rail Corridor Vision Study/Coastal Mobility & Livability Study/WSP for City of Encinitas, 2018.

These documents were reviewed in preparation of this report. The Encinitas Pedestrian Crossings – Hillcrest Drive report outlines potential grade separated alternatives for a crossing near Hillcrest Drive. RailPros' scope for this at-grade crossings study does not include a grade separated crossing analysis.

The observations, analysis, and studies performed for this conceptual evaluation and discussed in the preceding sections demonstrate the need for improved pedestrian safety and access along the North Leucadia rail corridor. The proposal of two new pedestrian crossings at Grandview Street/Hillcrest Drive and Phoebe Street/Glaucus Street would



## **Project Study Report Findings and Recommendations**

meet the City's goal of providing efficient and effective pedestrian access to the area while enhancing safety. The crossings will also promote walkability and other alternatives to vehicle use along this section of Highway 101 in addition to connectivity across the tracks.

General proposed improvements, shown on the Exhibits, include the following:

- Standard NCTD pedestrian crossing with concrete crossing panels, channelization, and CPUC No. 9 gates and flashers.
- ADA accessible ramps with railings.
- Drainage culvert beneath the pedestrian pathway on the east of the tracks to accommodate existing drainage flows.
- ADA pathway connection to existing fencing and informal parking areas to the east of the tracks, along Vulcan Ave.
- ADA access connection to the proposed sidewalk/pathway west of the tracks (part of the Leucadia Streetscape project).

The Grandview Street and Phoebe Street At-Grade Crossings each have two alternatives. The first alternative includes a combination of stairs with ADA ramps connecting the crossing to the proposed Streetscape improvements and Coast Highway 101 crosswalks west of the tracks (see Figures 3 and 4).

The second alternative for each location uses a wider ADA pathway and ramps without stairs to provide access to the proposed Streetscape improvements and Coast Highway 101 crosswalks (see Figures 5 and 6). Due to the existing grade differentials and lengths of the proposed pathway ramps, the crossing locations are offset slightly from the alternative that includes stairs.

Both alternatives would meet ADA standards and can be constructed within the existing City and NCTD ROW. Full size plans for each alternative are included in Appendix E.

Following the acceptance of this report the City intends to progress the development of studies and design for the proposed crossings. As the project is further developed stakeholder feedback, site conditions and other constraints will be addressed and incorporated into the design and construction. The next steps generally include:

- Site diagnostic
- Detailed site investigations and analysis of constraints and conditions
  - Additional fencing analysis
  - Parking analysis
  - Site lines analysis
- Design and Permitting
- Construction

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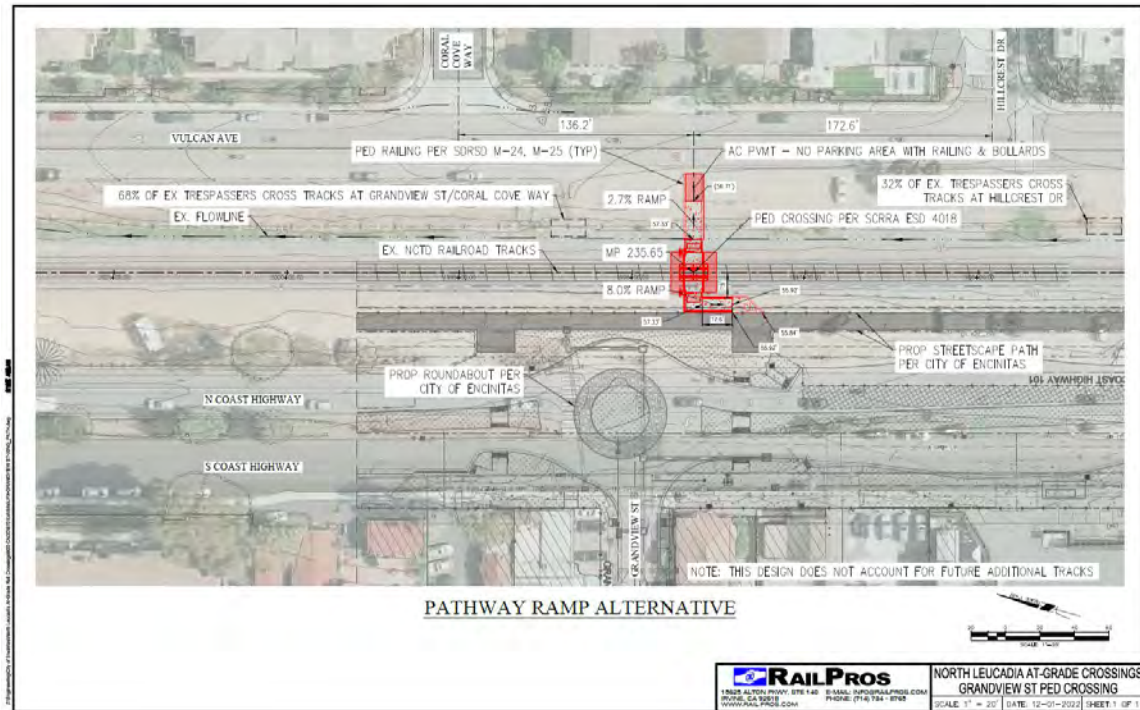


Figure 3 Grandview Street Crossing Ramp Alternative

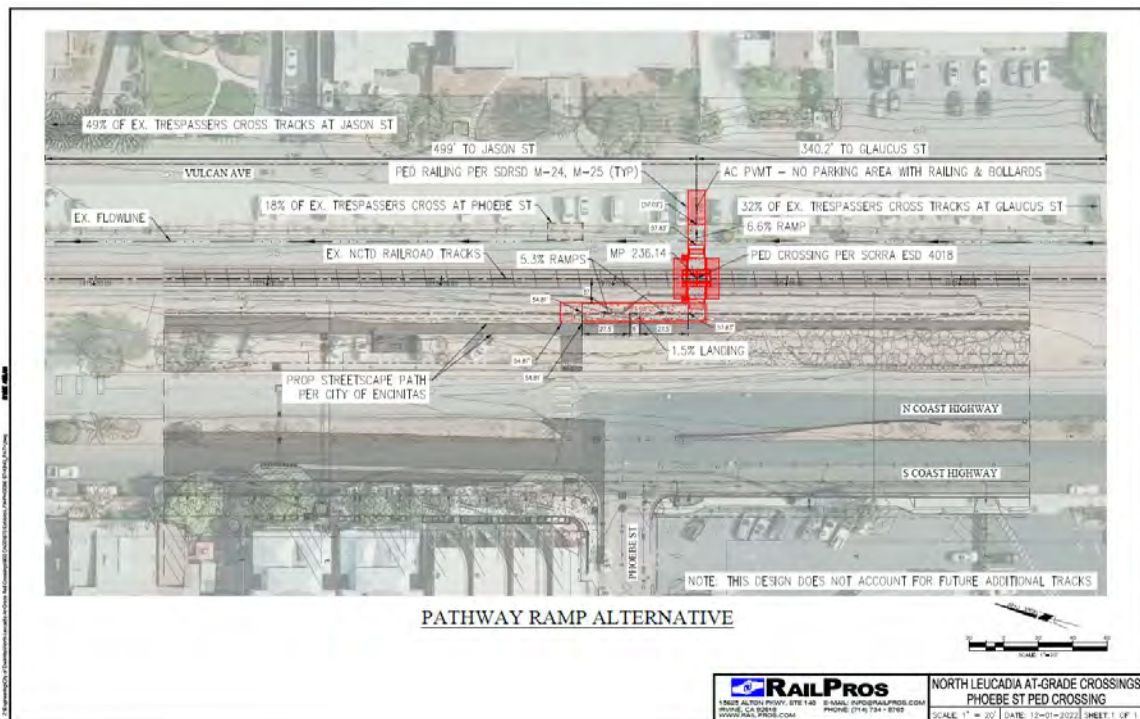


Figure 4 Phoebe Street Crossing Ramp Alternative

## Project Study Report Findings and Recommendations

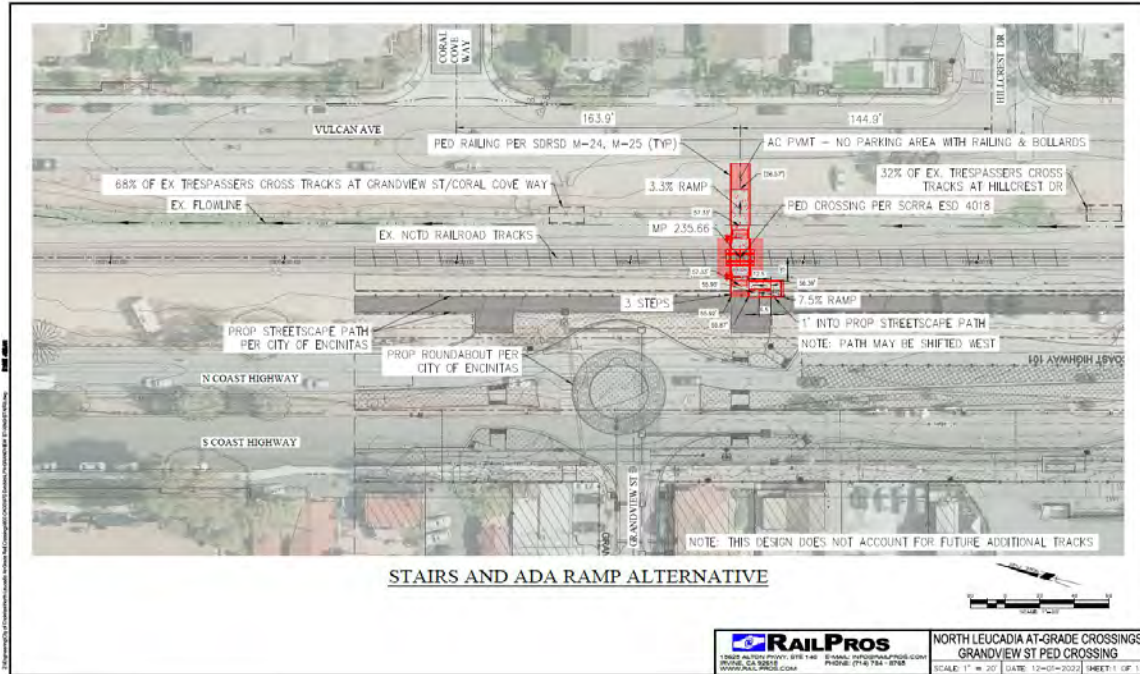


Figure 5 Grandview Street Crossing Stairs and Ramp Alternative

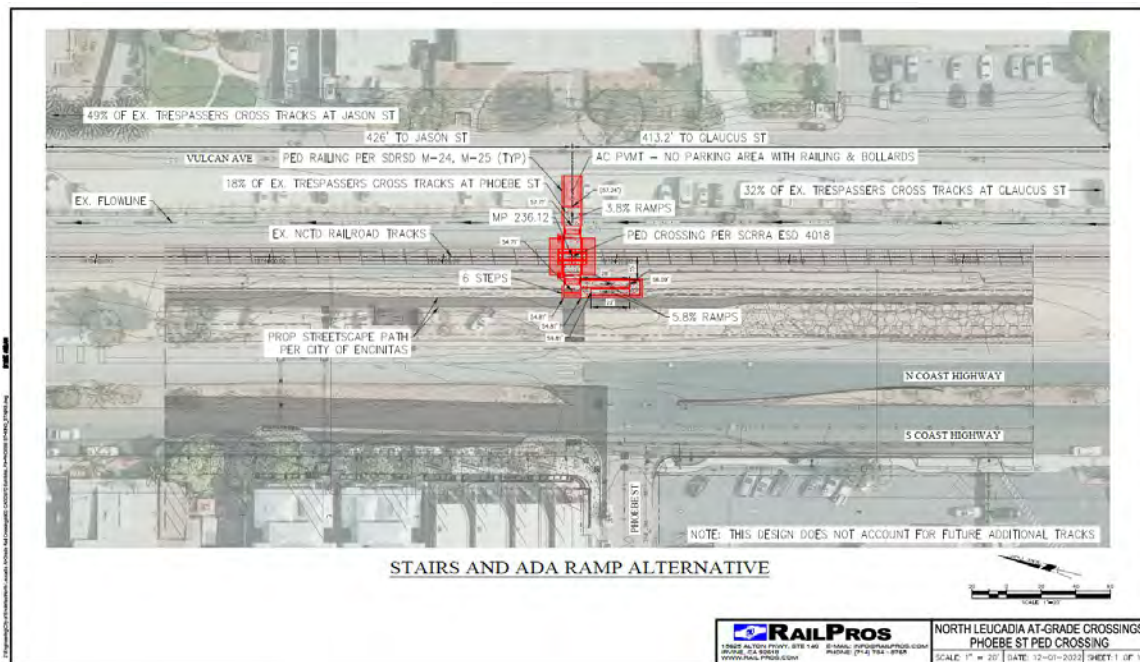


Figure 6 Phoebe Street Crossing Stair and Ramp Alternative



## **Project Study Report Findings and Recommendations**

Design alternatives should consider the effect of future planned projects on the new crossings, see Section “Adjacent Projects” earlier in the report for a description of the planned projects.

### **Cost Estimates**

The proposed Grandview/Hillcrest and Phoebe/Glaucus Crossings have similar project components to be addressed by the designer: drainage, utilities, traffic, railroad signaling, ADA access and incorporating the crossing into existing and planned projects. Additionally, both the stair and the ramp alternatives will vary only slightly in cost, based on the current conceptual understanding and assumptions. The more significant cost components for the crossings are generally anticipated to be the railroad track and signal infrastructure impacts and associated modifications and improvements, which are not fully identified at this stage. The conceptual rough order of magnitude cost for construction is estimated to be approximately \$1.5 million for each crossing. Additional soft costs for project and construction management, review, inspection, oversight, flagging, design services, permits, and other agency costs are estimated to be in the range of \$1.5-2 million for the project.

The total project cost (construction, design, management, etc.) is estimated to be \$4-\$5 million.

### **Project Schedule**

The City anticipates developing the project in phases. The current concept phase includes development and delivery of this Project Study Memo and holding a CPUC site diagnostic meeting, which is key to advancing the project. The next phase will include development of the CPUC application, approval of which may take up to 18 months, and development of preliminary engineering and environmental documentation. The final design phase is expected to follow the preliminary engineering phase and progress concurrently with CPUC application review approval processes. Followed by construction. The general timeline for key elements and phases is outlined below:

<b>Milestone</b>	<b>Date</b>
Hold Site Diagnostic Meeting	June 2023
Finalize Memo	June 2023
Begin Formal CPUC Application	July 2023
Begin Design and Environmental Work	August 2023
CPUC Approve Formal Application	December 2024
Finalize Design and Permitting Work	March 2025
Begin Construction	May 2025
Finish Construction	November 2026

## **APPENDIX A**

### **Track Pedestrian Crossing Analysis**

#### **Attachments 1 - 4**

**Attachment 1**

Study Area Map



City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Study Area Map

3/16/2023



**Attachment 2**

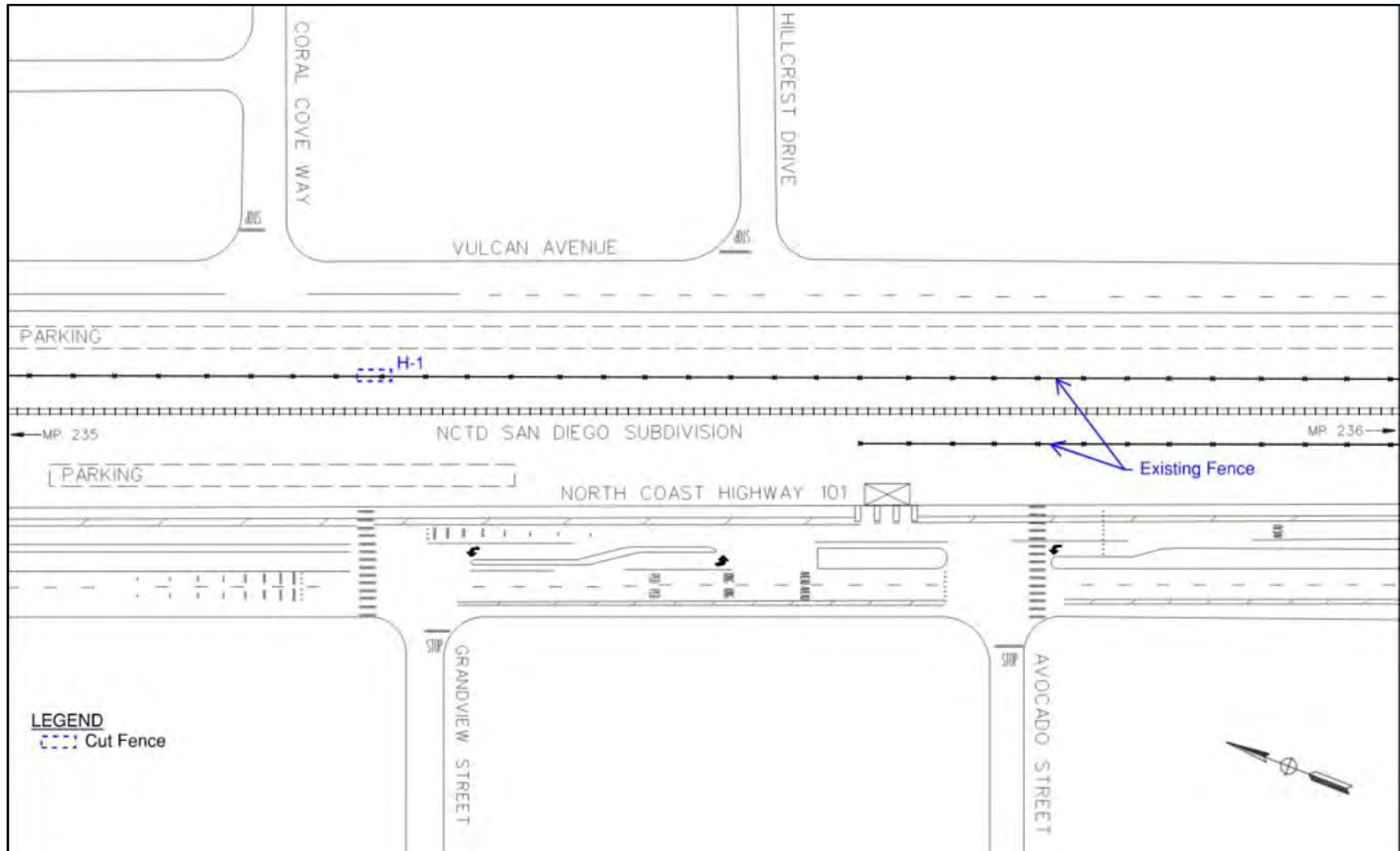
Site Photos (9.2.2022)





City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Hillcrest Drive Area – Cut Fence H-1

3/16/2023



Hillcrest Street Area Cut Fence Exhibit





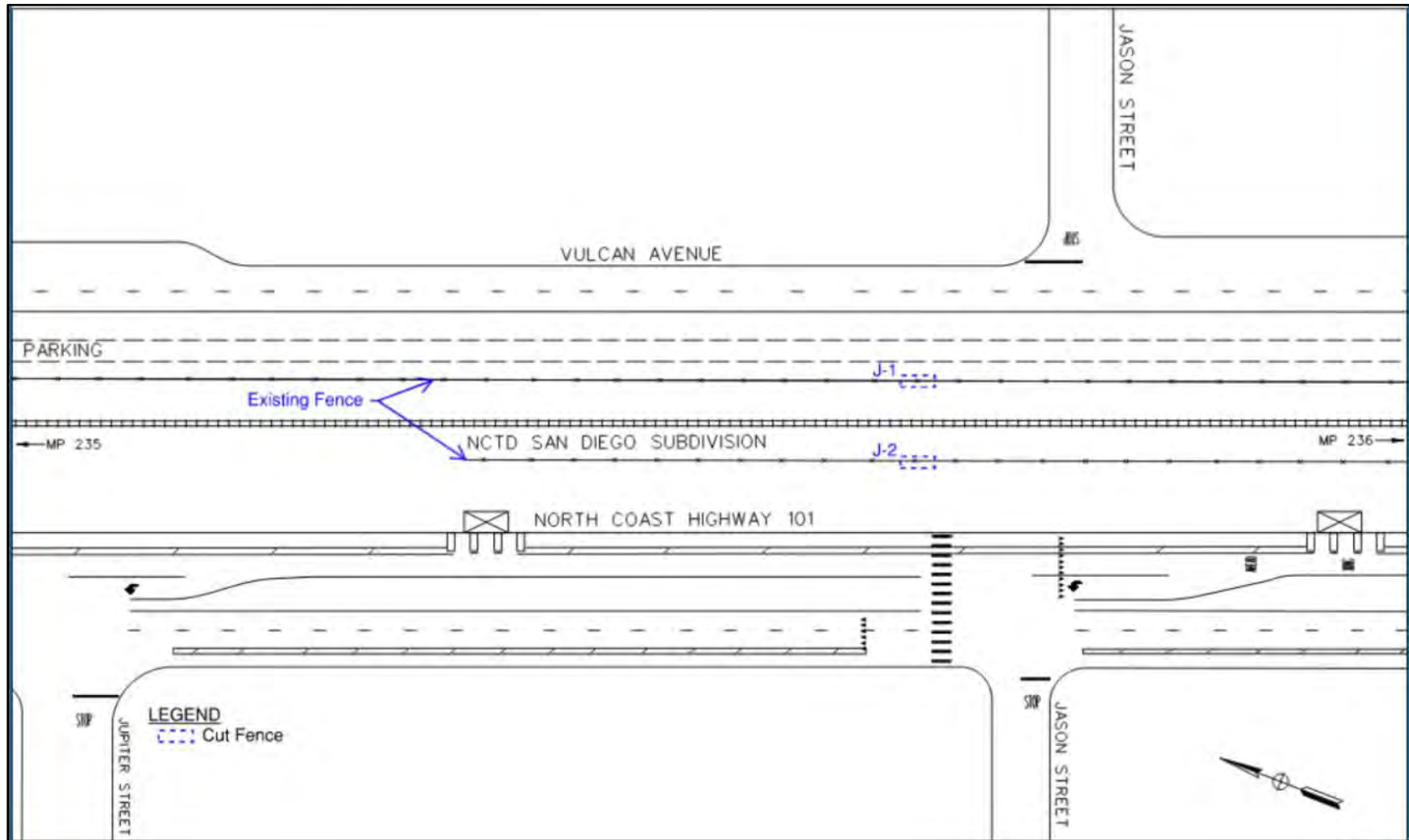






City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Jason Street Area – Cut Fence J-1 and J-2

3/16/2023

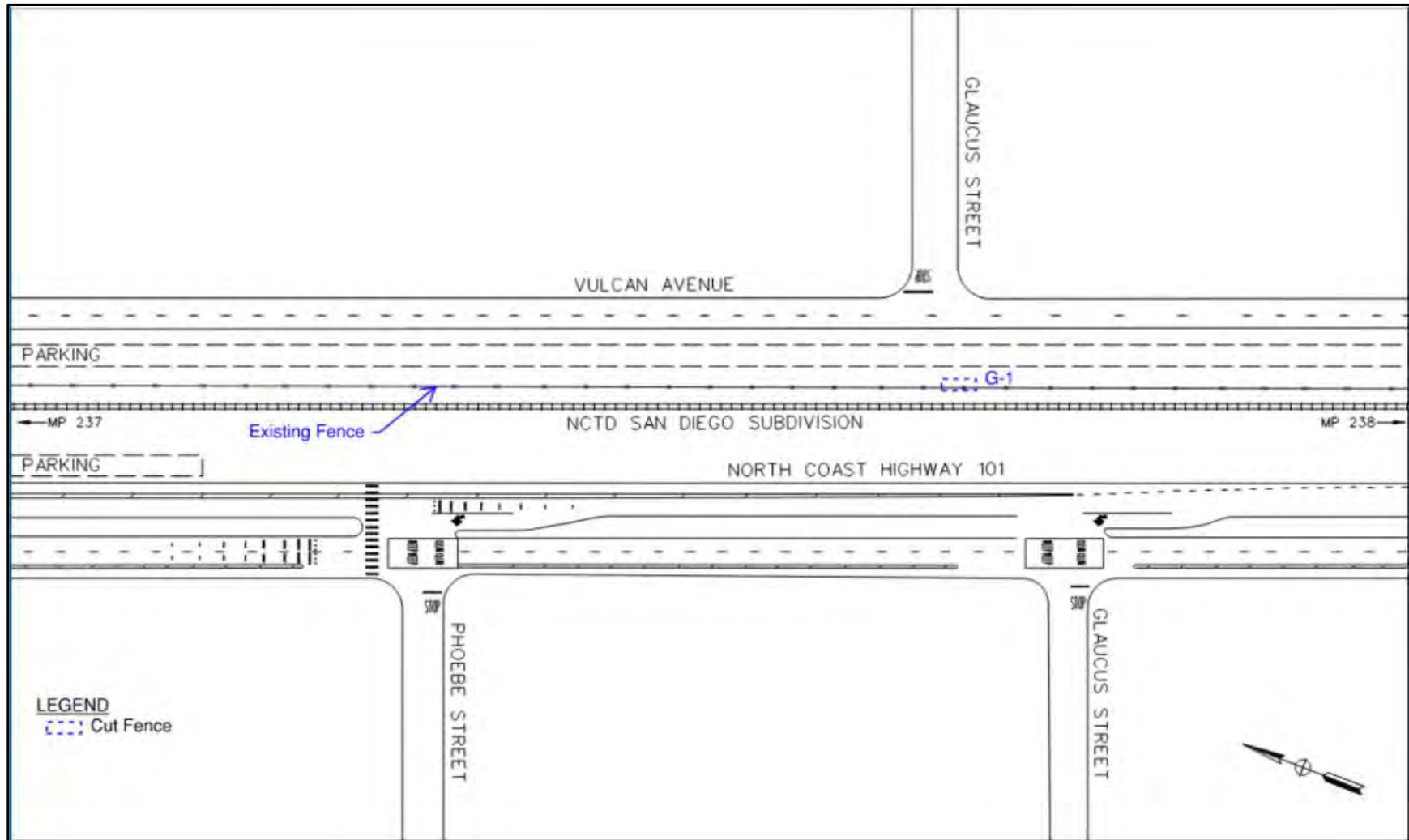


Jason Street Area Cut Fence Exhibit



City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Glaucus Street Area – Cut Fence G-1

3/16/2023



Glaucus Street Area Cut Fence Exhibit

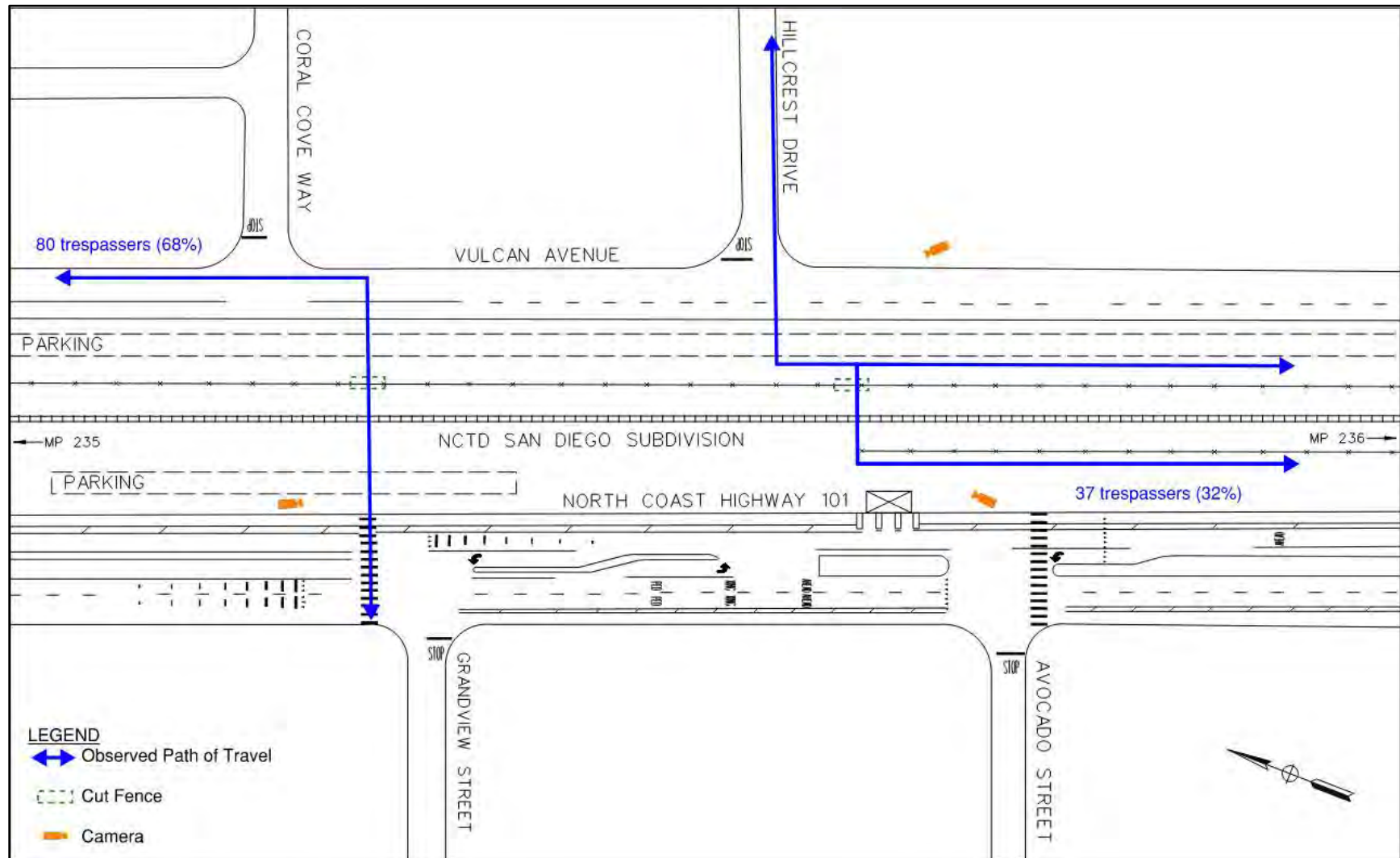
**Attachment 3**

Trespasser Location Exhibits



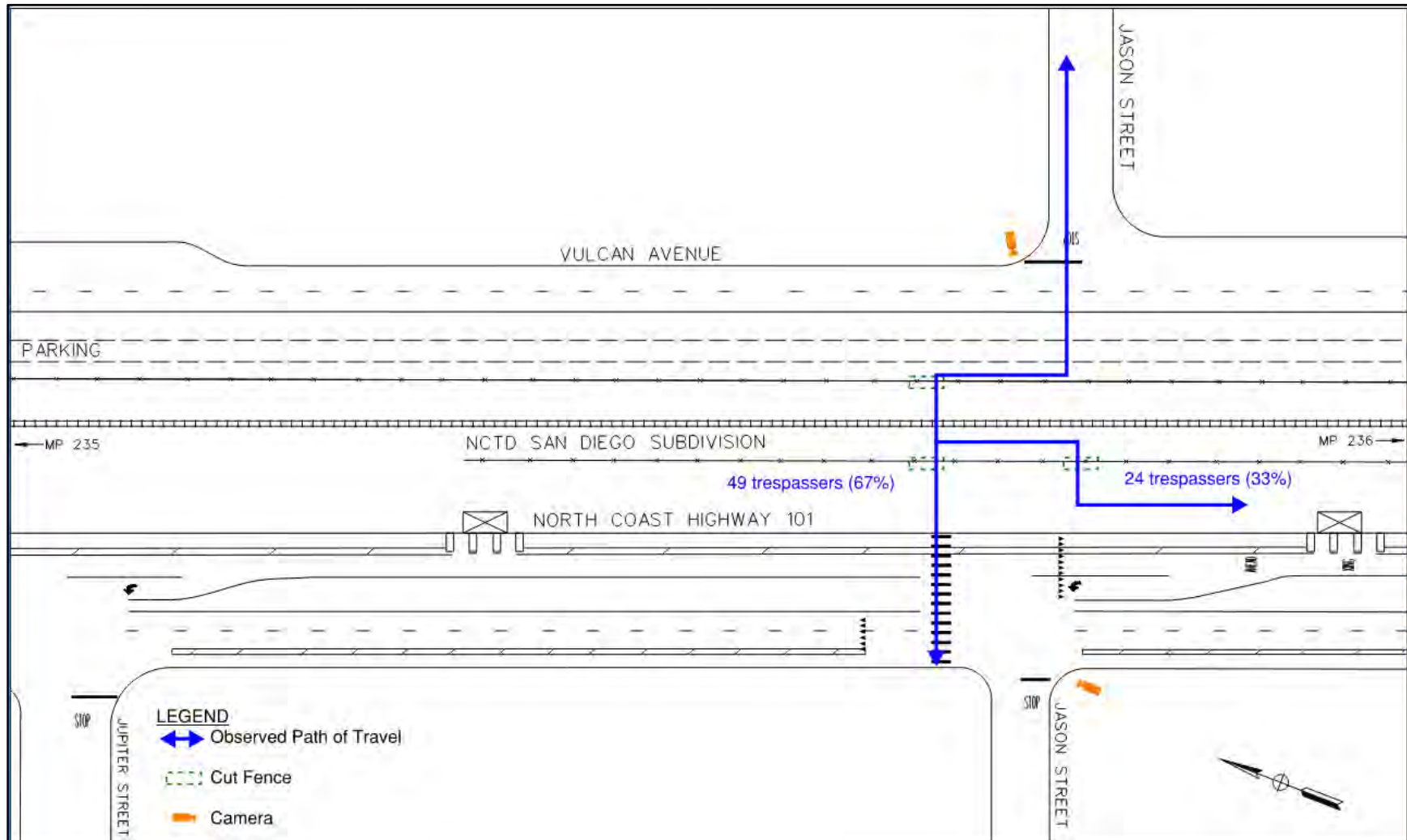
City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Hillcrest Drive Trespasser Exhibit

3/16/2023



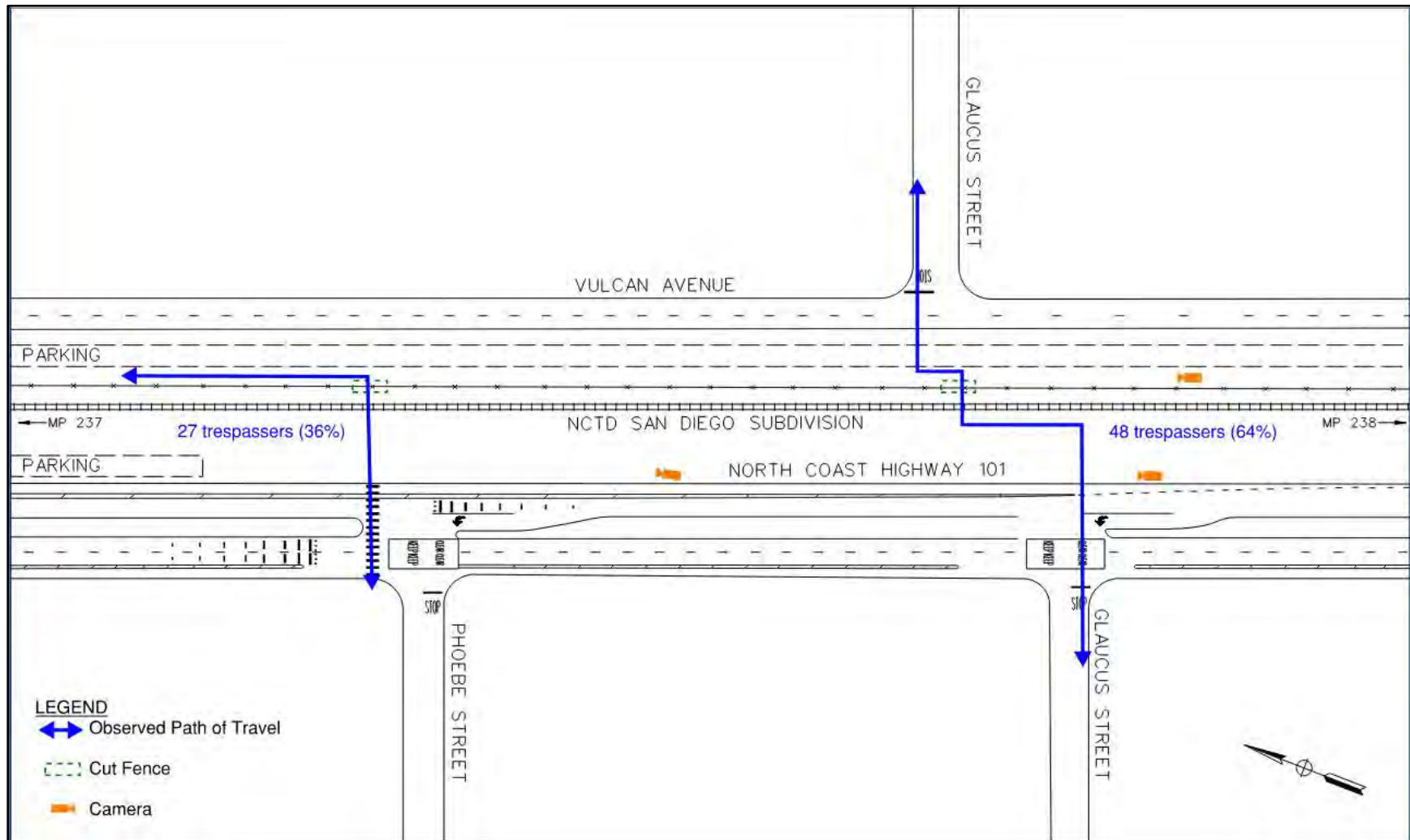
City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Jason Street Trespasser Exhibit

3/16/2023



City of Encinitas – NCTD San Diego Subdivision  
Trespasser Analysis Technical Memorandum  
Glaucus Street Trespasser Exhibit

3/16/2023





**Attachment 4**

Trespasser Data



City: Encinitas  
Location: Crystal Cove Area  
Date: Saturday, September 17, 2022  
Count Type: Pedestrian RR Crossing Count

Hillcrest Drive Area				Jason Street Area				Glaucus Street Area				TOTAL			
Cameras 7, 8, 6				Cameras 4, 5				Cameras 1, 2, 3							
	EB	WB	Total		EB	WB	Total		EB	WB	Total		EB	WB	Total
6:00	0	0	0	6:00	0	0	0	6:00	0	0	0	6:00	0	0	0
6:15	0	0	0	6:15	0	0	0	6:15	0	0	0	6:15	0	0	0
6:30	0	0	0	6:30	0	0	0	6:30	0	0	0	6:30	0	0	0
6:45	2	2	4	6:45	1	1	2	6:45	0	0	0	6:45	3	3	6
7:00	0	0	0	7:00	0	0	0	7:00	0	0	0	7:00	0	0	0
7:15	0	0	0	7:15	0	0	0	7:15	0	0	0	7:15	0	0	0
7:30	2	1	3	7:30	0	0	0	7:30	0	0	0	7:30	2	1	3
7:45	0	2	2	7:45	2	4	6	7:45	0	1	1	7:45	2	7	9
8:00	0	2	2	8:00	0	1	1	8:00	0	0	0	8:00	0	3	3
8:15	4	1	5	8:15	0	0	0	8:15	0	0	0	8:15	4	1	5
8:30	0	1	1	8:30	3	5	8	8:30	0	0	0	8:30	3	6	9
8:45	3	1	4	8:45	1	4	5	8:45	1	2	3	8:45	5	7	12
9:00	2	4	6	9:00	1	0	1	9:00	0	0	0	9:00	3	4	7
9:15	1	1	2	9:15	2	0	2	9:15	1	1	2	9:15	4	2	6
9:30	3	4	7	9:30	0	4	4	9:30	0	0	0	9:30	3	8	11
9:45	1	4	5	9:45	2	1	3	9:45	6	1	7	9:45	9	6	15
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10:15	2	3	5	10:15	0	0	0	10:15	1	0	1	10:15	3	3	6
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20:15	0	0	0	20:15	0	0	0	20:15	0	0	0	20:15	0	0	0
20:30	0	0	0	20:30	0	0	0	20:30	0	0	0	20:30	0	0	0
20:45	0	0	0	20:45	0	0	0	20:45	0	0	0	20:45	0	0	0
TOTAL	60	57	117	TOTAL	28	45	73	TOTAL	35	40	75	TOTAL	123	142	265

**APPENDIX B**

**Limited Geotechnical**

**Analysis Memo**



Leighton Consulting, Inc.

A Leighton Group Company

March 17, 2023

Project No. 13851.001

To: Mr. Robert Williams  
Rail Pros, Inc.  
15625 Alton Parkway, Suite 140  
Irvine, California 92618

Subject: Limited Geotechnical Study  
Leucadia Rail Crossing  
North Vulcan Avenue at Phoebe Street and Grandview Street

As requested, Leighton Consulting (Leighton) has performed a limited geotechnical investigation to support the design and construction of planned improvements for two proposed Railroad Pedestrian Crossings in the Leucadia area of San Diego County, California (see Figure 1). More specifically, the two site locations are between North Vulcan Ave and North Pacific Coast Highway near Phoebe Street and Grandview Street. This report presents the results of our investigation and provides geotechnical conclusions and recommendations relative to the proposed site development.

### Project Description

Based on review of preliminary project plans, it is anticipated the improvements may include at-grade pedestrian walkways, ramps, stairs, and minor retaining walls. The proposed improvements are on the east side of North Pacific Coast Highway.

### Field Exploration

Our field exploration performed on March 8, 2023, consisted of the excavation of 2 test pits to a maximum depth of 4 feet below ground surface. The purpose of our subsurface exploration was to evaluate the underlying stratigraphy, physical characteristics, and specific engineering properties of the soils within the area of the proposed improvements.

Bulk samples were collected for laboratory testing and evaluation. After logging, the test holes were backfilled with soil cuttings to match the existing finished surface.

The Test Pit logs are provided in Appendix B. In addition, the field exploration locations are depicted on Figure 2.

### Laboratory Testing

Laboratory testing performed on representative subgrade soils obtained during the recent subsurface exploration included expansion index and corrosion testing. A summary of the laboratory test results is presented in Appendix C.

Based on the results of the laboratory testing, the onsite materials possess a very low expansion potential. Expansive soils are not anticipated to affect the project.

Although Leighton does not practice corrosion engineering, laboratory test results indicate the soils present on the site have a low potential for sulfate attack on normal concrete. The onsite soils also are considered to have a low potential for corrosion to buried uncoated ferrous metal. A corrosion consultant may be consulted to provide additional recommendations.

### Subsurface Conditions

The project site is generally underlain by shallow undocumented fill soils to a depth of at least 4 feet. The undocumented fill soils generally consisted of loose to medium dense, brown to dark brown silty sand. Based on review of geologic maps, the fill soils are underlain at depth by Old Paralic Deposits (Qop<sub>6-7</sub>).

The logs of the test pits are provided in Appendix B.

### Site Class

Utilizing 2022 California Building Code (CBC procedures), we have characterized the site soil profile to be a Site Class D based on our experience with similar sites in the project area and the results of our subsurface evaluation. It should be noted, per Section 11.4.8 of ASCE 7-16, a ground motion hazard analysis shall be performed in accordance with Section 21.2 for structures having a fundamental period of vibration greater than 0.5s on Site Class D sites where S<sub>1</sub> is greater than or equal to 0.2g. However, although S<sub>1</sub> is greater than 0.2g at the site, it is anticipated that the proposed improvements have a

fundamental period of vibration of less than 0.5s based on our current understanding. Therefore, a site-specific ground motion analysis is assumed to be not required according to ASCE 7-16 Section 11.4.8; however, the project structural engineer needs to confirm this assumption.

#### Building Code Mapped Spectral Acceleration Parameters

The effect of seismic shaking may be mitigated by adhering to the California Building Code and state-of-the-art seismic design practices of the Structural Engineers Association of California. Provided below in Table 1 are the spectral acceleration parameters for the project determined in accordance with the 2022 CBC and the SEA/OSHPD Web Application (2020). Since the site has an  $S_1$  value greater than 0.2g and site specific ground motion hazard analysis has not been performed, increased values of  $C_s$  are required for analysis as summarized in EXCEPTION 2 of ASCE 7-16 Section 11.4.8.

Table 1 - CBC Mapped Spectral Acceleration Parameters	
Site Class	D
Site Coefficients	$F_a = 1.021$
	$F_v = 1.873$
Mapped MCE Spectral Accelerations	$S_s = 1.198g$
	$S_1 = 0.427g$
Site Modified MCE Spectral Accelerations	$S_{MS} = 1.223g$
	$S_{M1} = 0.800g$
Design Spectral Accelerations	$S_{DS} = 0.815g$
	$S_{D1} = 0.533g$

If the requirements of EXCEPTION 2 are found to be a significant design constraint, we recommend using the shear wave velocity measurements be at the site for use in performing site specific ground motion analysis.

Utilizing ASCE Standard 7-16, in accordance with Section 11.8.3, the following additional parameters for the peak horizontal ground acceleration are associated with the Geometric Mean Maximum Considered Earthquake ( $MCE_G$ ). The mapped  $MCE_G$  peak ground acceleration (PGA) is 0.538g for the site. For a Site Class D, the  $F_{PGA}$  is 1.100 and the mapped peak ground acceleration adjusted for Site Class effects ( $PGA_M$ ) is 0.592g for the site.

### Earthwork Recommendations

We anticipate that earthwork at the site will consist of site preparation and remedial grading. We recommend that earthwork on the site be performed in accordance with the following recommendations and the General Earthwork and Grading Specifications for Rough Grading included in Appendix D.

Prior to grading, all areas to receive improvements should be cleared of surface and subsurface obstructions, including any existing debris, topsoil, old slabs, loose, compressible, or unsuitable soils, and stripped of vegetation. Removed vegetation and debris should be properly disposed off-site. In addition, we recommend removal of existing fill soils to at least 2 feet below finished surface or below any proposed foundations, whichever is deeper. All areas to receive fill and/or other surface improvements should be scarified to a minimum depth of 8 inches, brought to optimum or above-optimum moisture conditions, and recompact to at least 90 percent relative compaction based on ASTM Test Method D1557. After the removal of loose soil described above, the existing soils may be replaced as fill compacted to at least 90 percent relative compaction.

### Preliminary Pavement Recommendations

We understand the pedestrian crossing will include an asphalt pavement section that will not be open for vehicle loads. We recommend that this section consist of 3 inches of asphalt over 4 inches of Class 2 Aggregate Base.

Prior to placement of the aggregate base, the upper 12 inches of subgrade soils should be scarified, moisture-conditioned to at least optimum moisture content and compacted to a minimum 95 percent relative compaction based on ASTM Test Method D 1557.

Class 2 Aggregate Base should then be placed and compacted at a minimum 95 percent relative compaction in accordance with ASTM Test Method D 1557. The AB should conform to and be placed in accordance with the approved grading plans, and latest revision of the Standard Specifications Public Works Construction (Greenbook).

The Asphalt Concrete (AC) material should conform to Caltrans Standard Specifications, Sections 39 and 92, with a Performance Grade (PG) of 64-10, and local jurisdiction requirements. The placement of the AC should be in accordance with the approved grading plans, Section 203-6 of the "Greenbook" Standard Specifications for Public Works Construction, and the local jurisdiction requirements.



### Concrete Flatwork

Concrete sidewalks and other flatwork (including construction joints) should be designed by the project civil engineer and should have a minimum thickness of 4 inches. For all concrete flatwork, the upper 12 inches of subgrade soils should be moisture conditioned to at least 2 percent above optimum moisture content and compacted to at least 90 percent relative compaction based on ASTM Test Method D1557 prior to the concrete placement.

Control joints should be provided at a distance equal to 24 times the slab thickness in inches, not exceed 12 feet. Expansion joints should be incorporated where paving abuts a vertical surface, where paving changes direction and at 30 feet maximum spacing. Joints should be laid out so as to create square or nearly square areas.

### Foundation Recommendations

Retaining walls and ancillary structures may be supported by conventional, continuous or isolated spread footings. Footings should extend a minimum of 18 inches beneath the lowest adjacent soil grade. At these depths, footings may be designed for a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) if founded in properly compacted fill soils. The allowable pressures may be increased by one-third when considering loads of short duration such as wind or seismic forces. The minimum recommended width of footings is 18 inches for continuous footings and 24 inches for square or round footings. Footings should be designed in accordance with the structural engineer's requirements.

The recommended allowable-bearing capacity is based on maximum total and differential settlements of 1 inch, and  $\frac{3}{4}$  of an inch, respectively. Since settlements are a function of footing size and contact bearing pressures, some differential settlement can be expected between adjacent columns or walls where a large differential loading condition exists.

### Lateral Resistance and Retaining Wall Design Parameters

Retaining walls should be designed for the lateral soil pressures exerted on them, the magnitude of which depends primarily on the type of soil used as backfill and the amount of deformation the wall can yield under the lateral load. If a retaining wall can yield enough to mobilize the full shear strength of the soil, it can be designed for the 'active' pressure condition. Walls that are under restrained conditions and cannot yield under the applied

load should be designed for the 'at-rest' pressure condition. If a wall tends to move towards the soils, the resulting resistance developed by the soil is the 'passive' resistance.

For design purposes, the following lateral earth pressure values for level or sloping backfill are recommended for walls backfilled with onsite soils of very low to low ( $EI < 50$ ) expansion potential or undisturbed in-place materials.

Table 2 Static Equivalent Fluid Weight (pcf)		
Conditions	Level	2:1 Slope
Active	35	65
At-Rest	55	80
Passive	300 (Maximum of 3 ksf)	150 (sloping down)

If conditions other than those covered herein are anticipated, the equivalent fluid pressure values should be provided on an individual case basis by the geotechnical engineer. Surcharge loading from adjacent structures should also be taken into account during wall design. For other uniform surcharge loads, a uniform pressure equal to  $0.35q$  should be applied to the wall (where  $q$  is the surcharge pressure in psf).

The provided wall pressures assume walls are backfilled with free draining materials and water is not allowed to accumulate behind walls. Specifically, where walls are not designed to consider hydrostatic conditions, in order to mitigate the potential for hydrostatic build-up behind the basement walls, drainage board should be extended from 2 feet below the ground surface to outlet drain or by piping to a sump at the lowest wall elevations. Waterproofing should be designed by the structural engineer and/or architect.

Where wall backfill is utilized, it should be compacted by mechanical methods to at least 90 percent relative compaction (based on ASTM D1557). We recommend compaction effort be increased to 95 percent where backfill will support structural foundations. Wall footings should be designed in accordance with the foundation design recommendations and reinforced in accordance with structural considerations.

Lateral soil resistance developed against lateral structural movement can be obtained from the passive pressure value provided above. Further, for sliding resistance, the friction coefficient of 0.35 may be used at the concrete and soil interface. These values may be increased by one-third when considering loads of short duration including wind

or seismic loads. The total resistance may be taken as the sum of the frictional and passive resistance provided the passive portion does not exceed two-thirds of the total resistance.

The account for potential redistribution of forces during a seismic event, walls should also be checked considering an additional seismic pressure distribution equal to  $9H$  psf applied as a uniform pressure, where  $H$  equals the overall retained height in feet. If conditions other than those covered herein are anticipated, the equivalent fluid pressure values should be provided on an individual case basis by the geotechnical engineer.

### Limitations

The conclusions and recommendations in this letter are based in part upon data that were obtained from a limited number of observations, site visits, excavations, samples, and tests. Such information is by necessity incomplete. The nature of many sites is such that differing geotechnical or geological conditions can occur within small distances and under varying climatic conditions. Changes in subsurface conditions can and do occur over time. Therefore, the findings, conclusions, and recommendations presented in this report can be relied upon only if Leighton has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site.

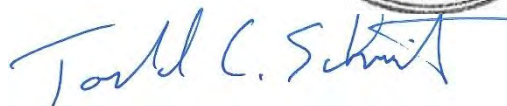
If you have any questions regarding our report, please do not hesitate to contact this office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON CONSULTING, INC.



Nicholas J. Tracy, GE 3058  
Associate Engineer  
Ext: 8499, [ntracy@leightongroup.com](mailto:ntracy@leightongroup.com)



Todd Schmitz, CEG 2510  
Senior Project Geologist  
Ext: 8494, [tschmitz@leightongroup.com](mailto:tschmitz@leightongroup.com)

Attachments: Figure 1 – Vicinity Map  
Figure 2 – Geotechnical Map  
Figure 3 – Regional Geology Map

Appendix A – References  
Appendix B – Test Pit Logs  
Appendix C – Laboratory Test Results  
Appendix D – General Earthwork and Grading Specifications

Distribution (1) Digital Copy

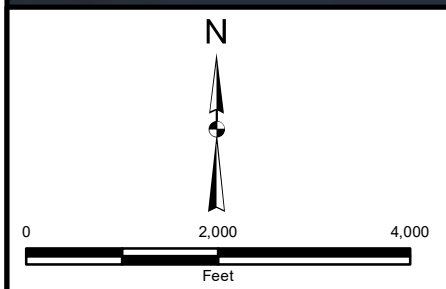
## Figures





Approximate  
Site Location  
Figure 2a

Approximate  
Site Location  
Figure 2b



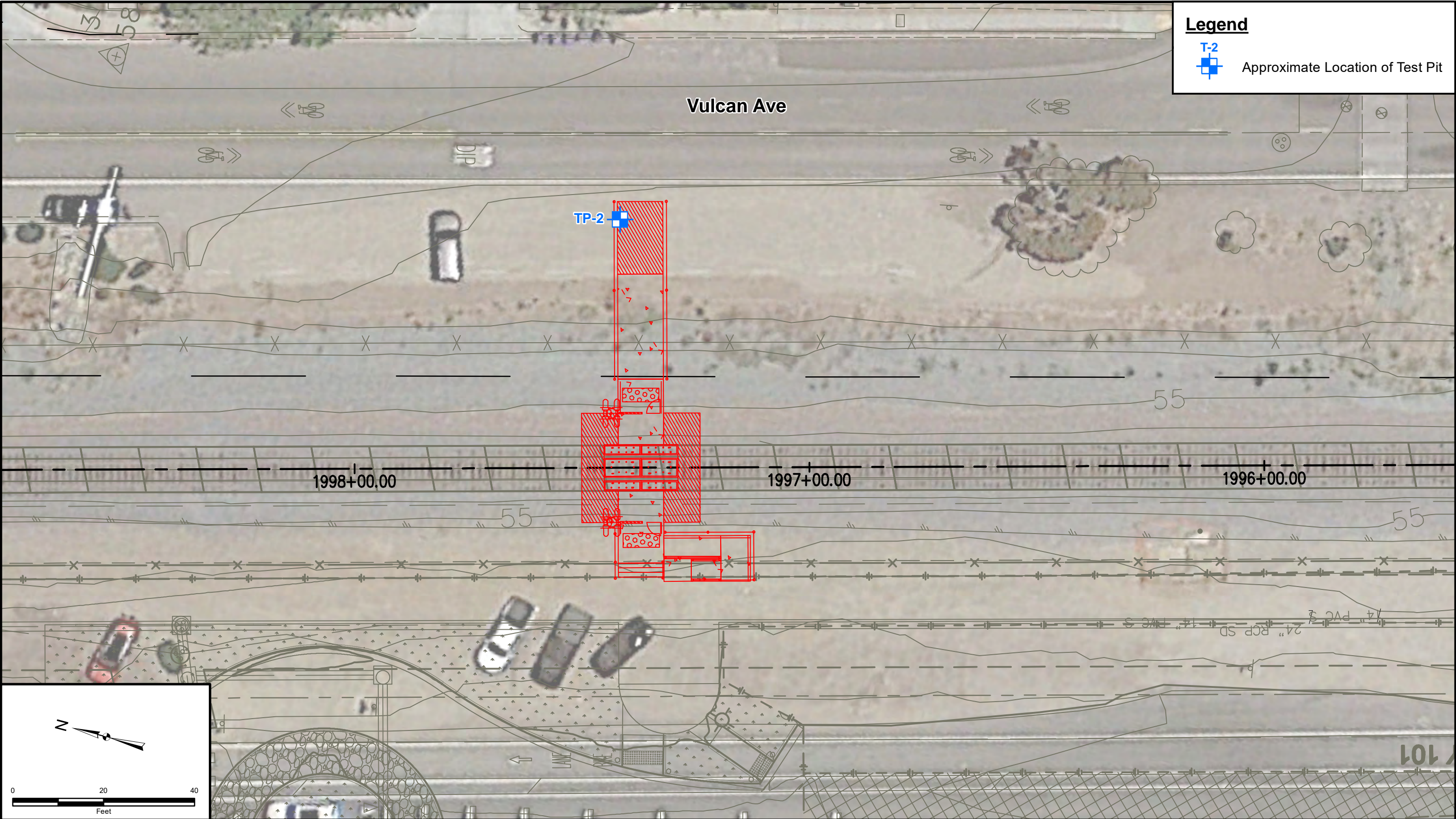
Project: 13851.001	Eng/Geol: NJT/TCS
Scale: 1" = 2,000'	Date: March 2023
Reference: © 2023 Microsoft Corporation © 2022 Maxar ©CNES (2022) Distribution Airbus DS © 2022 TomTom	

# **SITE LOCATION MAP** Leucadia Rail Crossing Encinitas, California

**FIGURE 1**







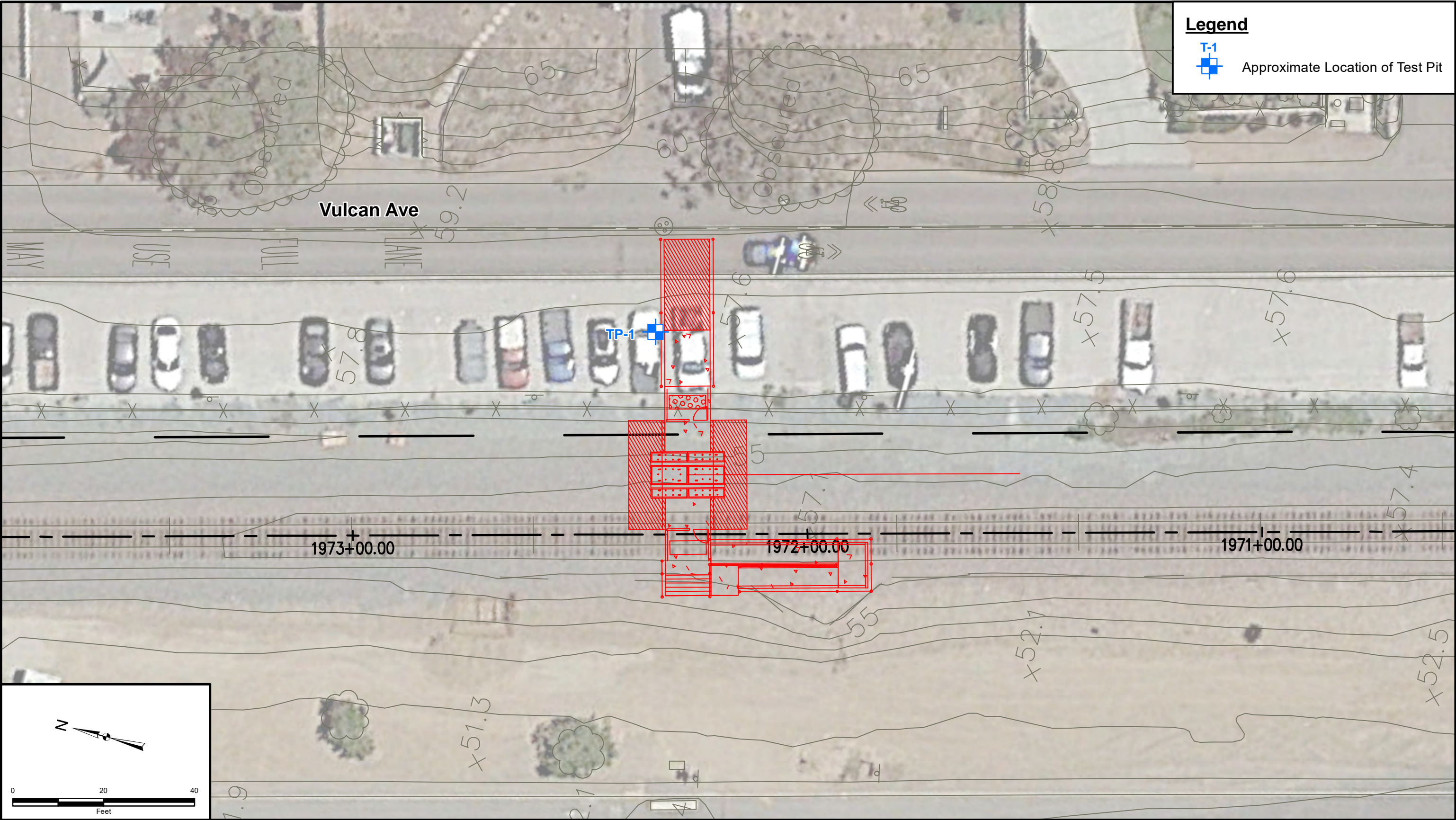
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Base Map: RailPros, 12/1/2022, Google Earth, 2023.			
Author: (mmurphy)			

# GEOTECHNICAL MAP

Leucadia Rail Crossing  
Encinitas, California

FIGURE 2a





Legend

T-1

Approximate Location of Test Pit

N

0

20

40

Feet

Project: 13851.001

Eng/Geol: NJT/TCS

Scale: 1 " = 20 '

Date: March 2023

Base Map: RailPros, 12/1/2022, Google Earth, 2023.


Author: (mmurphy)

GEOTECHNICAL MAP

Leucadia Rail Crossing

Encinitas, California

FIGURE 2b

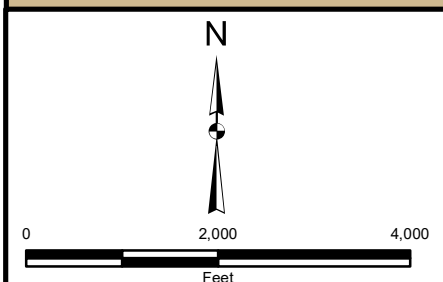
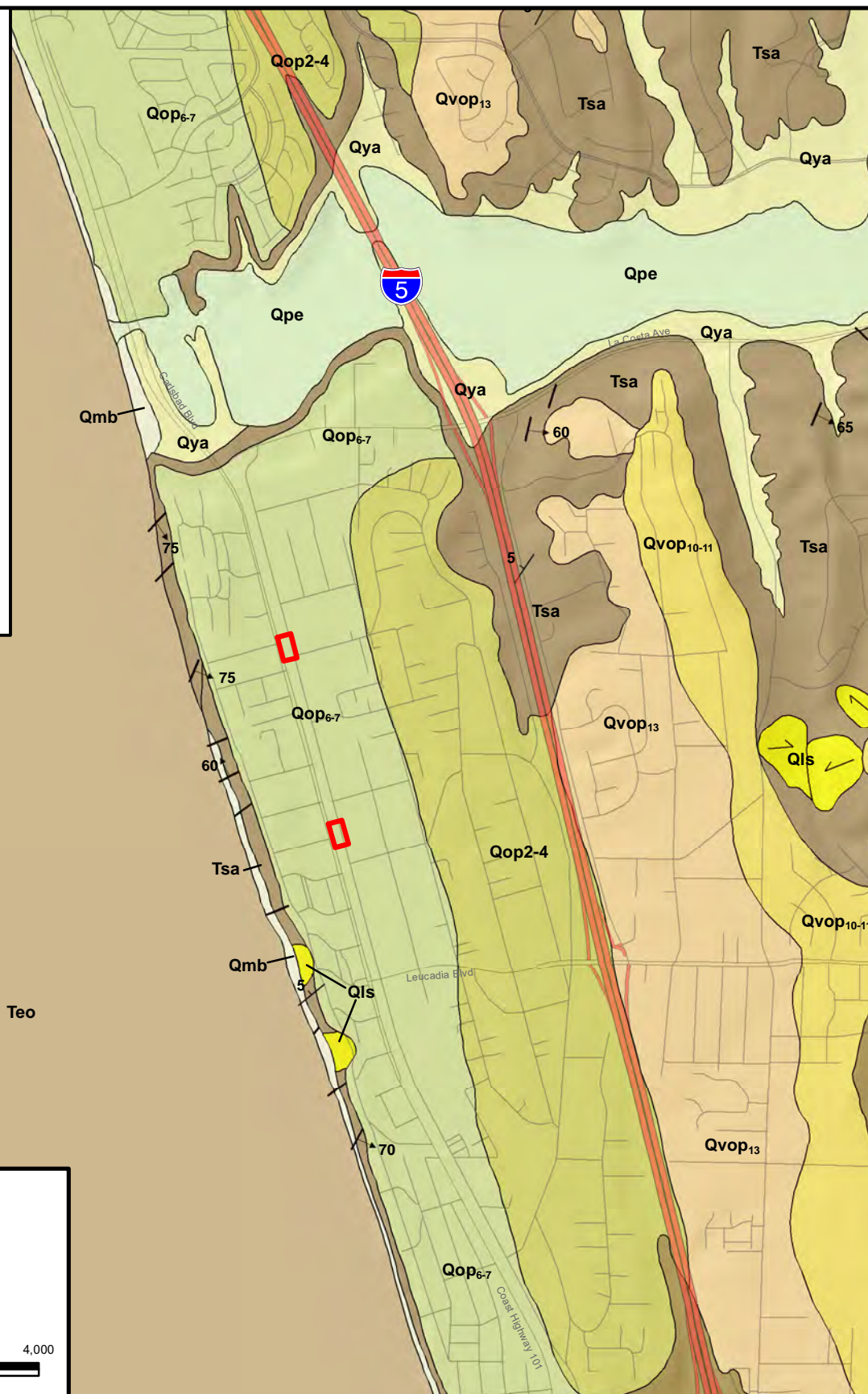


Map Saved as V:\Drafting\13851\001\Maps\13851-001\_F02b\_GM\_2023-03-13.mxd on 3/13/2023 2:27:31 PM



## Legend

- Approximate Site Locations
- 3 Bedding
- 75 ↑ Dip of fault surface
- Fault
- Qya - Young alluvial flood-plain deposits
- Qls - Landslide deposits, undivided
- Qmb - Marine beach deposits
- Qop6-7 - Paralic old deposits, units 6-7
- Qop2-4 - Paralic old deposits, units 2-4
- Qpe - Paralic estuarine deposits
- Qvop13 - Very old paralic deposits, Unit 13
- Qvop10-11 - Very old paralic deposits, units 10-11
- Td - Delmar Formation
- Teo - Undivided Eocene rocks in the offshore area
- Tsa - Santiago Formation
- Tt - Torrey Sandstone



Project: 13851.001 Eng/Geol: NJT/TCS

Scale: 1" = 2,000' Date: March 2023

Reference: Map of the Oceanside 30'x60' quadrangle, California, compiled by Michael P. Kennedy and Siang S. Tan, 2008

## SITE LOCATION MAP

Leucadia Rail Crossing  
Encinitas, California

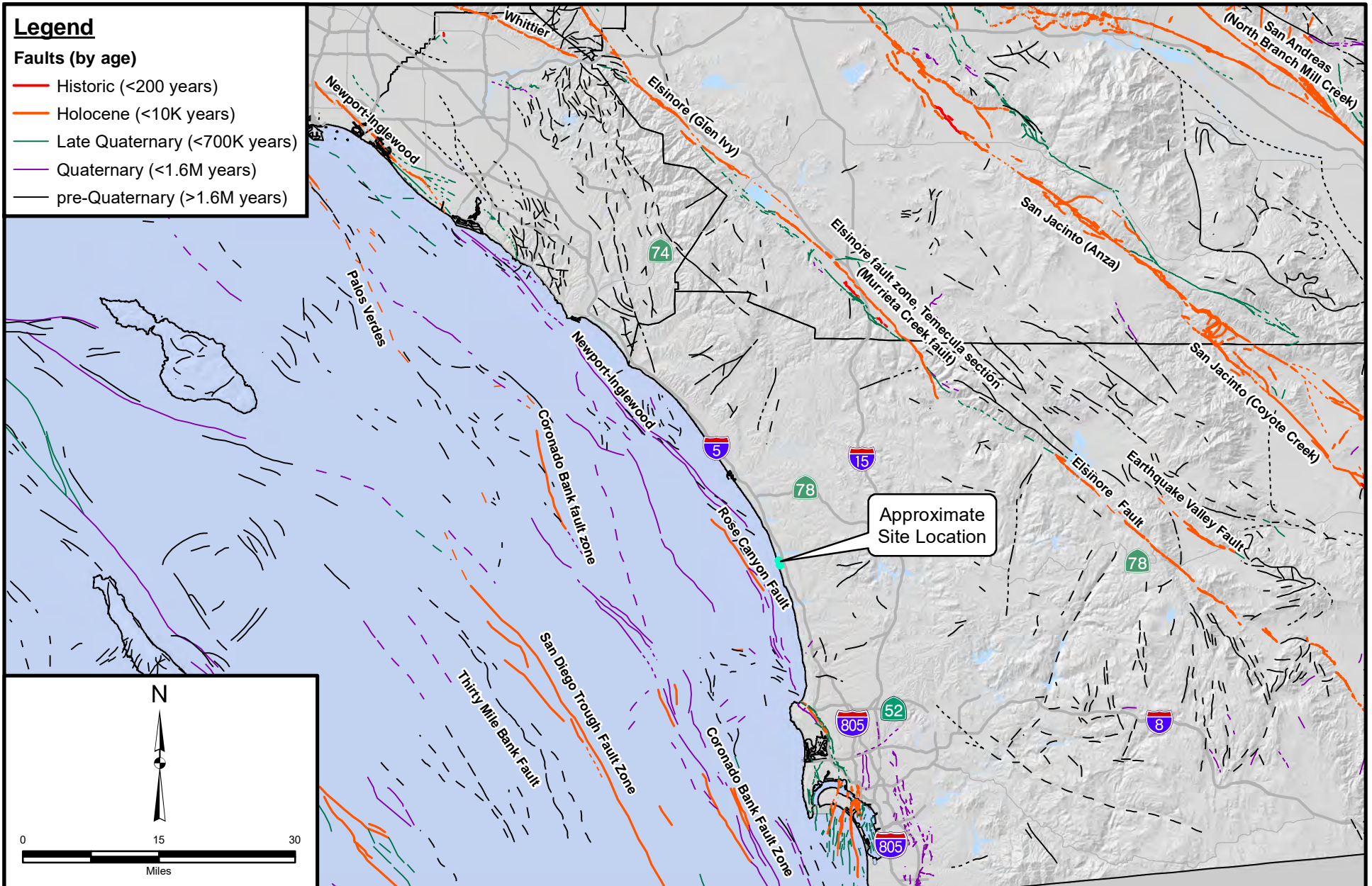
FIGURE 3



## Legend

### Faults (by age)

- Historic (<200 years)
- Holocene (<10K years)
- Late Quaternary (<700K years)
- Quaternary (<1.6M years)
- pre-Quaternary (>1.6M years)



Project: 13851.001 Eng/Geol: NJT/TCS

Scale: 1" = 15 miles Date: March 2023

Faults: Bryant, Bryant CGS 2010

Author: Leighton Geomatics (mmurphy)

## REGIONAL FAULT MAP

Leucadia Rail Crossing  
Encinitas, California

FIGURE 4



## Appendix A – References



## APPENDIX A

### REFERENCES

- American Concrete Institute, 2014, Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary.
- Associated Society of Civil Engineers (ASCE), 2016, ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures.
- California Building Standards Commission (CBSC), 2022, California Building Code, Volumes 1 and 2.
- Caltrans, 2021, Corrosion Guidelines, Version 3.0, March 2021
- Kennedy, M.P., and Tan, S.S., 2008, Geologic Map of the Oceanside Quadrangle, California, California Geologic Survey, 1:100,000 scale.
- RailPros, 2022, North Leucadia At-Grade Crossings, Plan Set, dated December 1, 2022.
- SEAOC, 2023, USGS Seismic Design Data via SEAOC/OSHPD Seismic Design Maps Web Application, accessed February 3, 2023 at <https://seismicmaps.org>.



## Appendix B –Test Pit Logs

# GEOTECHNICAL TEST PIT LOG TP-1

<b>Project No.</b>	13851.001
<b>Project</b>	Leucadia Rail Crossing
<b>Drilling Co.</b>	N/A
<b>Drilling Method</b>	Hand Auger
<b>Location</b>	See Figure 2

Date Excavated	3-8-23
Logged By	CA
Hole Diameter	3.25"
Ground Elevation	57.5' msl
Sampled By	CA

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0	N S		B-1 (0-4')				GM	<i>This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.</i>  <b>UNDOCUMENTED ARTIFICIAL FILL (Afu)</b> @ 0-3": Silty GRAVEL with SAND, medium dense, gray, dry, fine to medium SAND, fine to coarse gravel. @ 3": Silty SAND, loose to medium dense, dark brown, moist, fine to medium SAND, trace fine gravel.	EI, CR
								SM		
55										
							</			

# GEOTECHNICAL TEST PIT LOG TP-2

Project No.	13851.001	Date Excavated	3-8-23
Project	Leucadia Rail Crossing	Logged By	CA
Drilling Co.	N/A	Hole Diameter	3.25"
Drilling Method	Hand Auger	Ground Elevation	57.5' msl
Location	See Figure 2	Sampled By	CA

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0	N S		B-1 (0-4')				SM	<p><i>This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.</i></p> <p><b>UNDOCUMENTED ARTIFICIAL FILL (Afu)</b>            @ 0-6": Silty SAND, loose to medium dense, brown, damp, fine to medium SAND, trace fine to coarse gravel.</p> <p>@ 6": Becomes dark brown, moist, trace fine gravel.</p>	
55										
									<p>Total Depth = 4 Feet (bgs)            No Groundwater or Seepage Encountered            Backfilled on 03/8/2023</p>	
5										

**SAMPLE TYPES:**

B BULK SAMPLE  
C CORE SAMPLE  
G GRAB SAMPLE  
R RING SAMPLE  
S SPLIT SPOON SAMPLE  
T TUBE SAMPLE

**TYPE OF TESTS:**

-200 % FINES PASSING  
AL ATTERBERG LIMITS  
CN CONSOLIDATION  
CO COLLAPSE  
CR CORROSION  
CU UNDRAINED TRIAXIAL

DS DIRECT SHEAR  
EI EXPANSION INDEX  
H HYDROMETER  
MD MAXIMUM DENSITY  
PP POCKET PENETROMETER  
RV R VALUE

SA SIEVE ANALYSIS  
SE SAND EQUIVALENT  
SG SPECIFIC GRAVITY  
UC UNCONFINED COMPRESSIVE STRENGTH



## Appendix C – Laboratory Test Results

## APPENDIX C

### Laboratory Testing Procedures and Test Results

**Expansion Index Test:** The expansion potential of a selected material sample was evaluated by the Expansion Index Test, ASTM Test Method D4829. The specimen was molded under a given compactive energy to approximately 50 percent saturation. The prepared 1-inch thick by 4-inch diameter specimen was loaded to an equivalent 144 psf surcharge and inundated with water until volumetric equilibrium was reached. The result of the test is presented in the table below:

Sample Location	Sample Description	Expansion Index	Expansion Potential
TP-1 at 1 - 4 Feet	Brown Silty Sand (SC)	0	Very Low

**Minimum Resistivity and pH Tests:** Minimum resistivity and pH tests were performed in general accordance with Caltrans Test Method CT643 and standard geochemical methods. The results are presented in the table below:

Sample Location	Sample Description	pH	Minimum Resistivity (ohms-cm)
TP-2 at 1 - 4 Feet	Silty Sand (SM)	7.08	2,700

**Chloride Content:** Chloride content was tested in accordance with Caltrans Test Method CT422. The results are presented below:

Sample Location	Sample Description	Chloride Content, ppm
TP-2 at 1 - 4 Feet	Silty Sand (SM)	40



## APPENDIX C (Continued)

Soluble Sulfates: The soluble sulfate content of a selected sample was determined by standard geochemical methods (Caltrans Test Method CT417). The test results are presented in the table below:

Sample Location	Sample Description	Sulfate Content, ppm	Exposure Class*
TP-2 at 1 - 4 Feet	Silty Sand (SM)	165	S0

\*Based on the 2014 edition of American Concrete Institute (ACI) Committee 318R, Table No. 19.3.1.1

## Appendix D – General Earthwork and Grading Specifications

## 1.0 General

### 1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

### 1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ the Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultants shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all key bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to determine the attained level of compaction. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

### 1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the plans and specifications.

The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified.

## 2.0 Preparation of Areas to be Filled

### 2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent of organic matter. Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

## 2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

## 2.3 Overexcavation

In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

## 2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for the fill.

## 2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant



prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

### 3.0 Fill Material

#### 3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

#### 3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

#### 3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

### 4.0 Fill Placement and Compaction

#### 4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

#### 4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

#### 4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

#### 4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

#### 4.5 Compaction Testing

Field-tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

#### 4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

#### 4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

#### 5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

#### 6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

#### 7.0 Trench Backfills

##### 7.1 Safety

The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations.

7.2 Bedding and Backfill

All bedding and backfill of utility trenches shall be performed in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified. Backfill shall be placed and densified to a minimum of 90 percent of relative compaction from 1 foot above the top of the conduit to the surface.

The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.

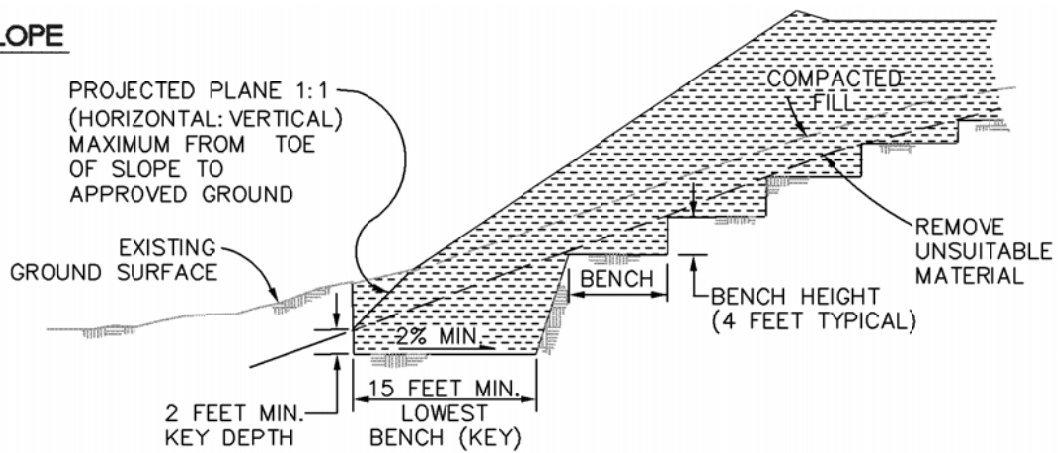
7.3 Lift Thickness

Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

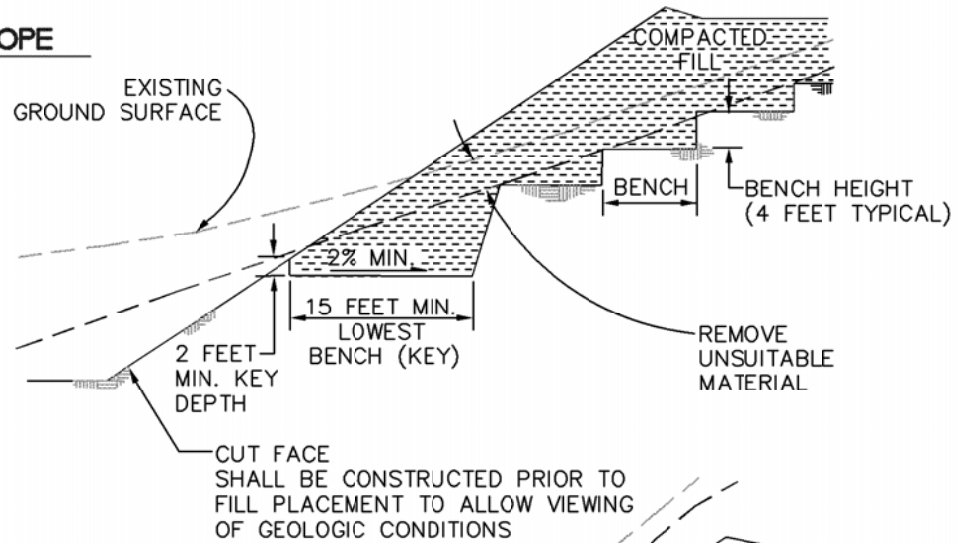
7.4 Observation and Testing

The densification of the bedding around the conduits shall be observed by the Geotechnical Consultant.

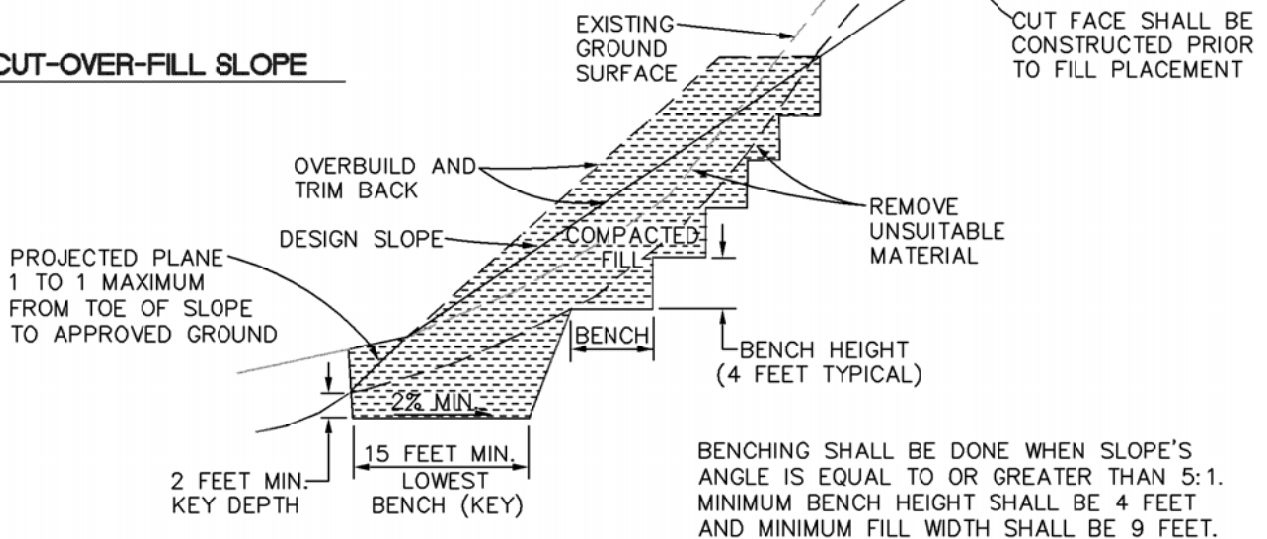
## FILL SLOPE



## FILL-OVER-CUT SLOPE



## CUT-OVER-FILL SLOPE

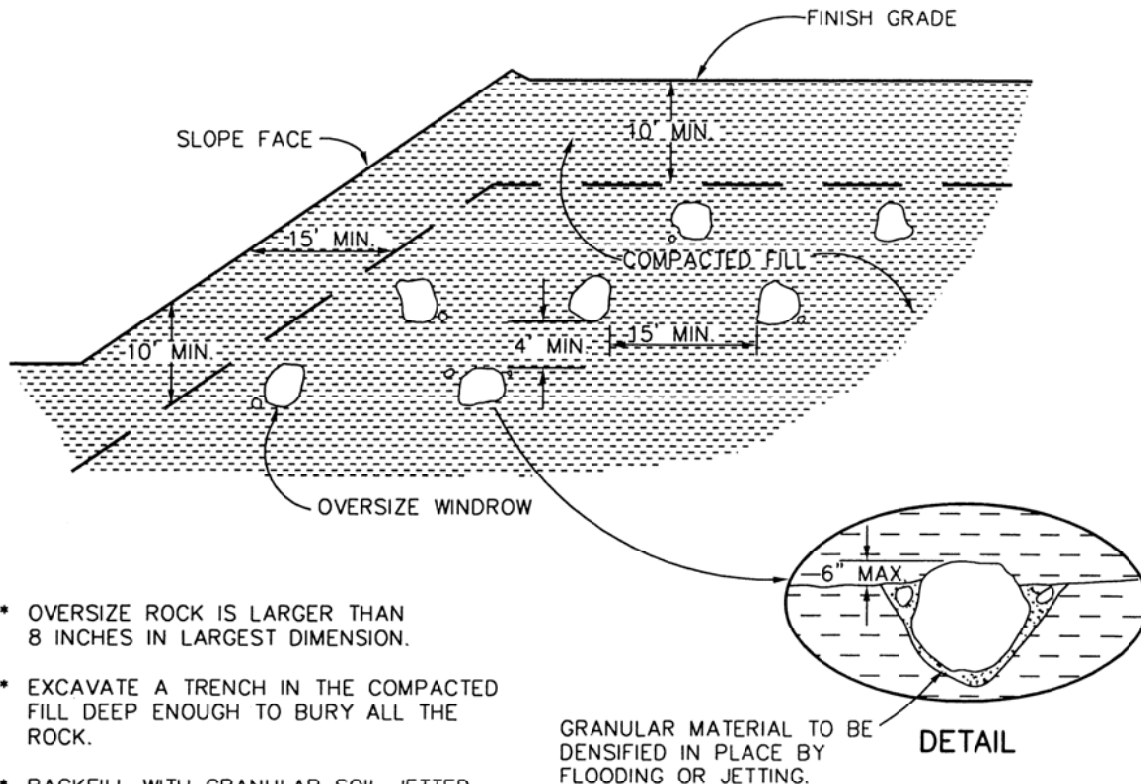


# KEYING AND BENCHING

GENERAL EART WORK AND  
GRADING SPECIFICATIONS  
STANDARD DETAIL A



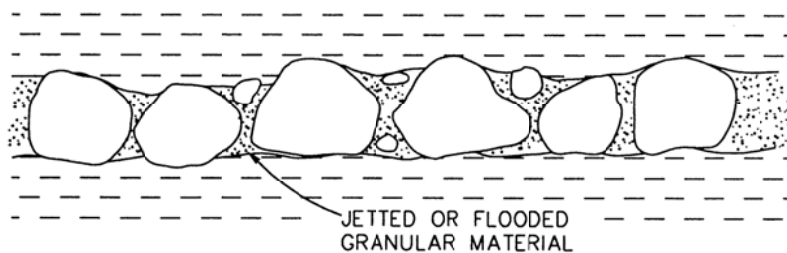




- \* OVERSIZE ROCK IS LARGER THAN 8 INCHES IN LARGEST DIMENSION.
- \* EXCAVATE A TRENCH IN THE COMPACTED FILL DEEP ENOUGH TO BURY ALL THE ROCK.
- \* BACKFILL WITH GRANULAR SOIL JETTED OR FLOODED IN PLACE TO FILL ALL THE VOIDS.
- \* DO NOT BURY ROCK WITHIN 10 FEET OF FINISH GRADE.
- \* WINDROW OF BURIED ROCK SHALL BE PARALLEL TO THE FINISHED SLOPE.

GRANULAR MATERIAL TO BE DENSIFIED IN PLACE BY FLOODING OR JETTING.

DETAIL

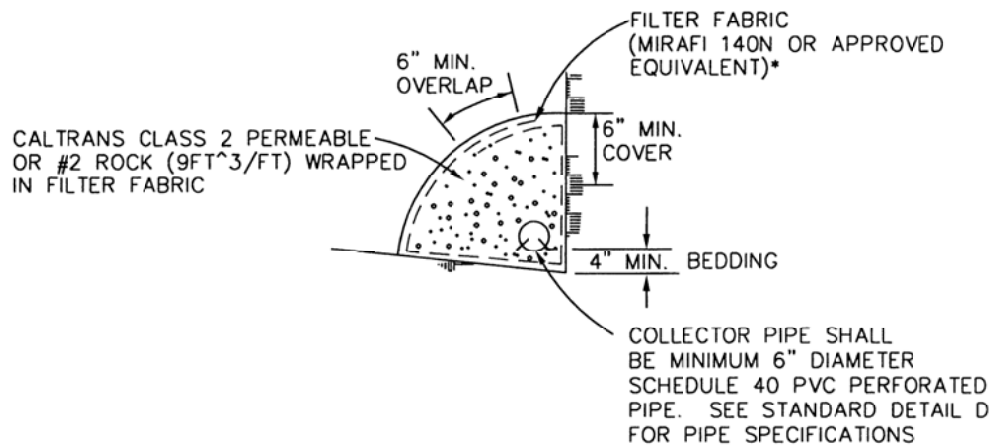
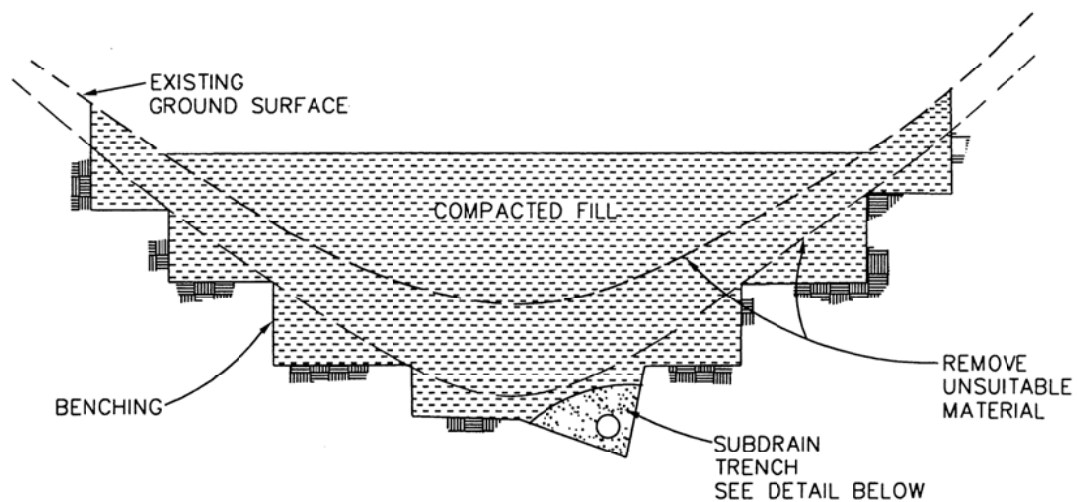


TYPICAL PROFILE ALONG WINDROW

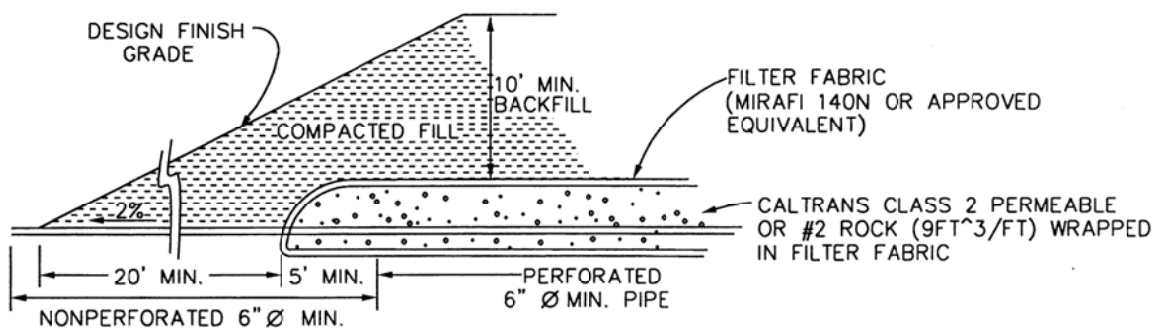
## OVERSIZE ROCK DISPOSAL

GENERAL EARTHWORK AND  
GRADING SPECIFICATIONS  
STANDARD DETAIL B





### SUBDRAIN DETAIL

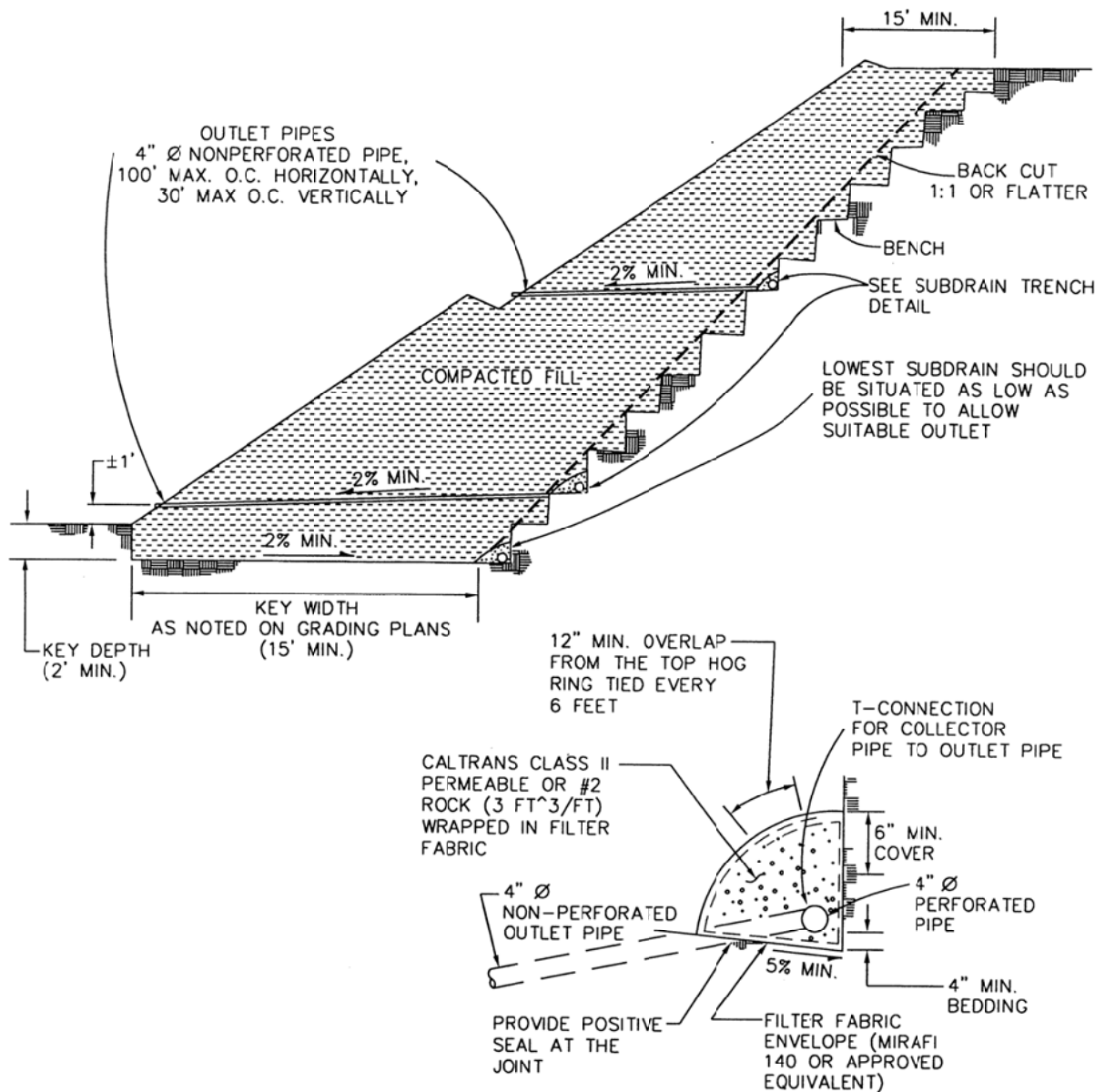


### DETAIL OF CANYON SUBDRAIN OUTLET

## CANYON SUBDRAINS

GENERAL EARTHWORK AND  
GRADING SPECIFICATIONS  
STANDARD DETAIL C





#### SUBDRAIN TRENCH DETAIL

**SUBDRAIN INSTALLATION** – subdrain collector pipe shall be installed with perforation down or, unless otherwise designated by the geotechnical consultant. Outlet pipes shall be non-perforated pipe. The subdrain pipe shall have at least 8 perforations uniformly spaced per foot. Perforation shall be 1/4" to 1/2" if drill holes are used. All subdrain pipes shall have a gradient of at least 2% towards the outlet.

**SUBDRAIN PIPE** – Subdrain pipe shall be ASTM D2751, SDR 23.5 or ASTM D1527, Schedule 40, or ASTM D3034, SDR 23.5, Schedule 40 Polyvinyl Chloride Plastic (PVC) pipe.

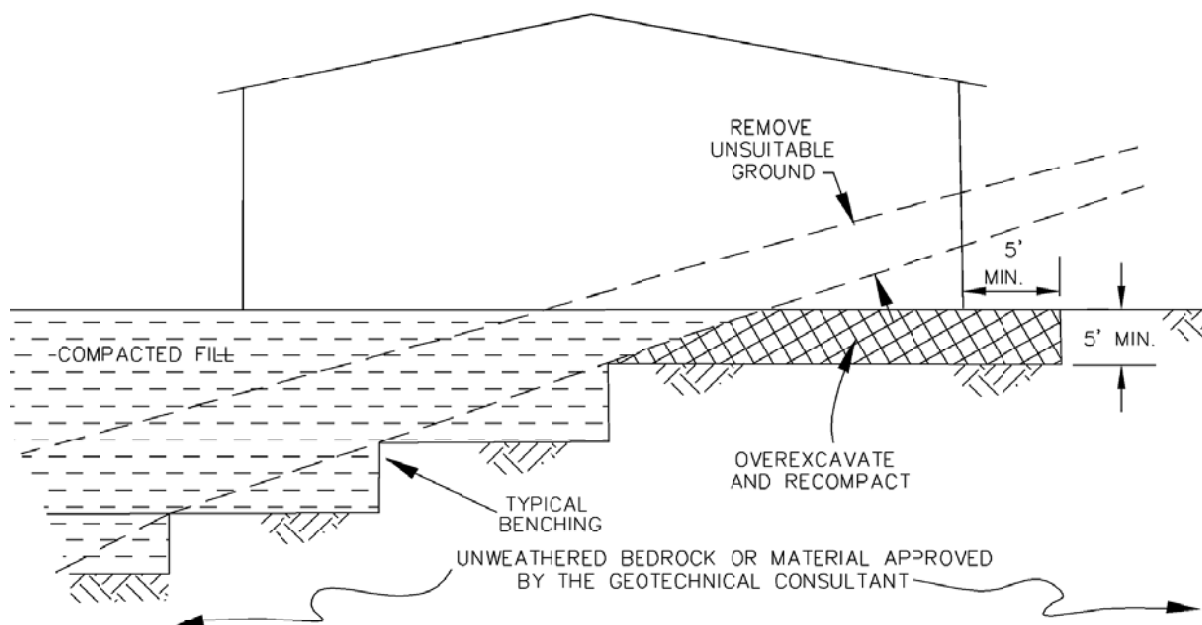
All outlet pipe shall be placed in a trench no wider than twice the subdrain pipe.

**BUTTRESS OR  
REPLACEMENT  
FILL SUBDRAINS**

**GENERAL EARTHWORK AND  
GRADING SPECIFICATIONS  
STANDARD DETAIL D**



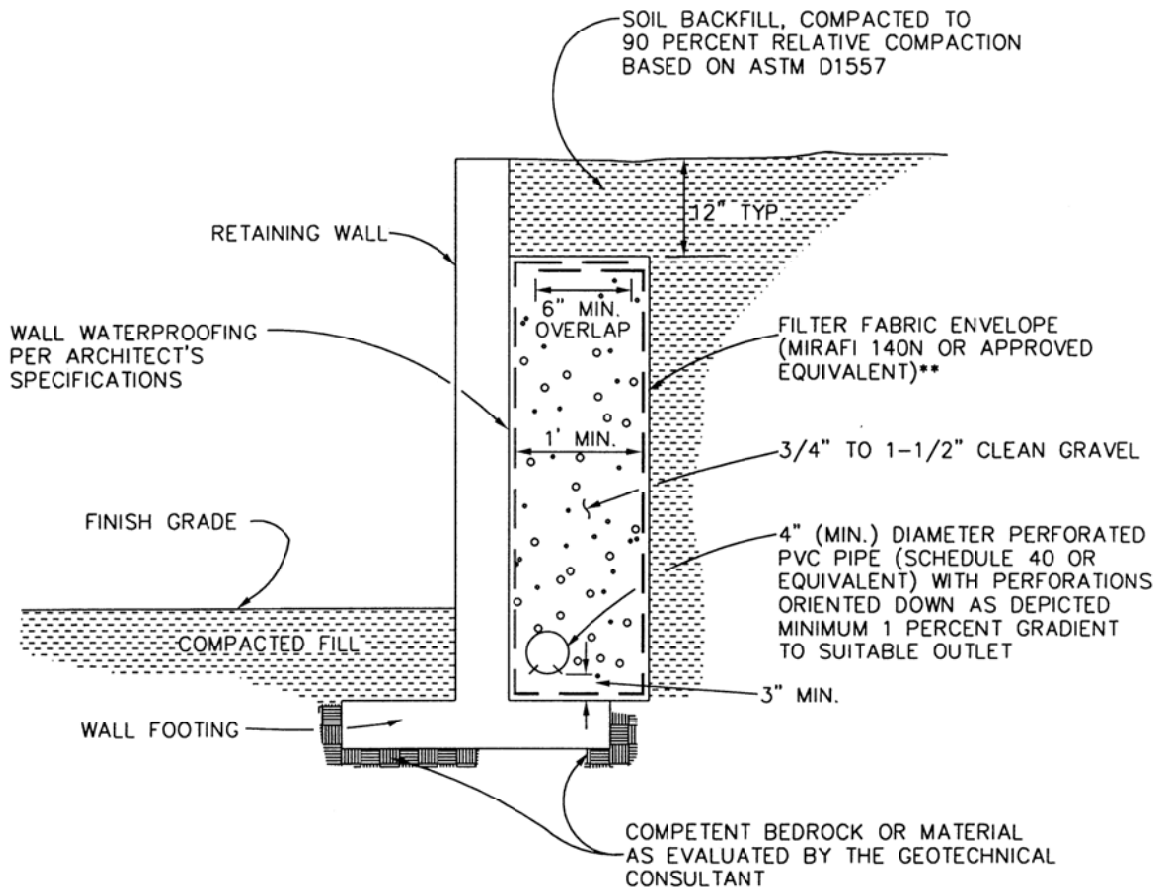
### CUT-FILL TRANSITION LOT OVEREXCAVATION



TRANSITION LOT FILLS

GENERAL EARTHWORK AND  
GRADING SPECIFICATIONS  
STANDARD DETAIL E





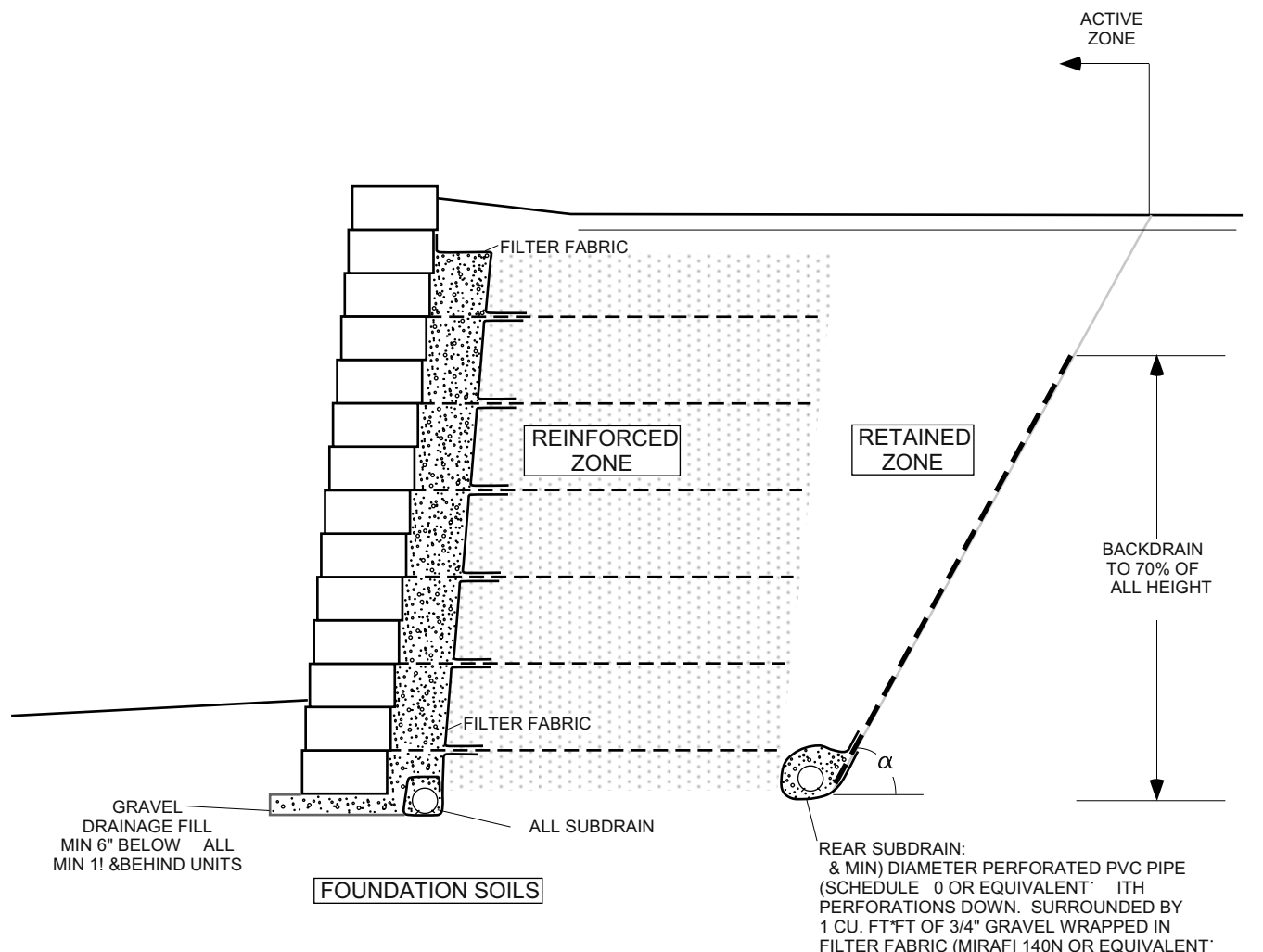
NOTE: UPON REVIEW BY THE GEOTECHNICAL CONSULTANT, COMPOSITE DRAINAGE PRODUCTS SUCH AS MIRADRAIN OR J-DRAIN MAY BE USED AS AN ALTERNATIVE TO GRAVEL OR CLASS 2 PERMEABLE MATERIAL. INSTALLATION SHOULD BE PERFORMED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL  
DRAINAGE

GENERAL EARTHWORK AND  
GRADING SPECIFICATIONS  
STANDARD DETAIL F







#### NOTES

#### MATERIAL GRADATION AND PLASTICITY INDEX

##### REINFORCED ZONE:

SIEVE SIZE	% PASSING
1/2" INCH	100
NO. 4	20-100
NO. 40	0-60
NO. 200	0-5%

FOR WALL HEIGHT / 10 FEET, PLASTICITY INDEX / 20  
 FOR WALL HEIGHT 10 TO 20 FEET, PLASTICITY INDEX / 10  
 FOR TIERED WALLS, USE COMBINED WALL HEIGHTS

ALL DESIGNER TO REQUEST SITE-SPECIFIC CRITERIA FOR WALL HEIGHT 0 20 FEET

##### GRAVEL DRAINAGE FILL:

SIEVE SIZE	% PASSING
1/2" INCH	100
3/4" INCH	75-100
NO. 4	0-60
NO. 40	0-50
NO. 200	0-5%

1. CONTRACTOR TO USE SOILS WITHIN THE RETAINED AND REINFORCED ZONES THAT MEET THE STRENGTH REQUIREMENTS OF WALL DESIGN.

2. GEOGRID REINFORCEMENT TO BE DESIGNED BY WALL DESIGNER CONSIDERING INTERNAL+EXTERNAL+AND COMPOUND STABILITY

3. GEOGRID TO BE PRETENSIONED DURING INSTALLATION.

4. IMPROVEMENTS WITHIN THE ACTIVE ZONE ARE SUSCEPTIBLE TO POST-CONSTRUCTION SETTLEMENT. ANGLE  $\alpha = \phi - \phi'$  HERE  $\phi$  IS THE FRICTION ANGLE OF THE MATERIAL IN THE RETAINED ZONE.

5. BACKDRAIN SHOULD CONSIST OF J-DRAIN 302 (OR EQUIVALENT) OR 6-INCH THICK DRAINAGE FILL WRAPPED IN FILTER FABRIC. PERCENT COVERAGE OF BACKDRAIN TO BE PER GEOTECHNICAL REVIEW

## SEGMENTAL RETAINING WALLS

## GENERAL EARTH WORK AND GRADING SPECIFICATIONS STANDARD DETAIL G



## **APPENDIX C**

### **Environmental Constraints Analysis**



Rincon Consultants, Inc.

8825 Aero Drive  
Suite 120  
San Diego, California 92123

760 918 9444

info@rinconconsultants.com  
www.rinconconsultants.com

March 16, 2023  
Project No: 22-13229

Robert Williams, PE  
RailPros  
15265 Alton Parkway, Suite 140  
Irvine, California 92618  
Via email: [robert.williams@railpros.com](mailto:robert.williams@railpros.com)

**Subject: Environmental Constraints Analysis for the North Leucadia Pedestrian and Bicycle Rail Crossing Project in the City of Encinitas, San Diego County, California**

Dear Mr. Williams,

This letter presents an Environmental Constraints Analysis prepared by Rincon Consultants, Inc. (Rincon) for the North Leucadia Pedestrian and Bicycle Rail Crossing Project (project), located in the City of Encinitas (city), San Diego County, California.

The North County Transit District's (NCTD) Los Angeles-San Diego-San Luis Obispo (LOSSAN) rail corridor, which runs north-south through the downtown and coastal areas of the city, bisects the community of Leucadia and creates a physical impediment to safe pedestrian and bicycle crossing. Existing pedestrian and bicycle crossings are available at La Costa Avenue to the north and Leucadia Boulevard to the south, but there are no legal crossings in the 1.2-mile section between these two locations. The proposed project would result in the construction of new at-grade rail crossings for bicyclists and pedestrians at two locations along the corridor known for unsafe and unauthorized crossings. The first crossing would span from Vulcan Avenue between Coral Cove Way and Hillcrest Drive to Highway 101 south of Grandview Street. The second crossing would span from Vulcan Avenue between Jason Street and Glaucus Street to Highway 101 south of Phoebe Street.

## Environmental Constraints Analysis

Rincon conducted a desktop environmental constraints analysis for the project to broadly identify any known environmental concerns and describe the likely environmental compliance process to clear the project through the California Environmental Quality Act (CEQA). The desktop analysis consisted of a review of relevant background literature and a query of resource agency databases. The analysis focused on evaluating potential impacts to biological resources, hazardous materials considerations, impacts to scenic resources, exacerbated transportation hazards, and other issue areas identified in CEQA Guidelines Appendix G that could result in constraints to project implementation. The methods, results, and potential impacts for each environmental consideration are provided below by resource.

### Biological Resources

Rincon conducted queries of several relevant scientific databases that provide information about the potential occurrence of sensitive biological resources. The analysis presented herein is based on the result of these queries and Rincon's expert biological knowledge of the project region.



Rincon queried the following special status species databases:

- California Department of Fish and Wildlife (CDFW): California Natural Diversity Database (CNDDDB)<sup>1</sup> and Biogeographic Information and Observation System (BIOS);<sup>2</sup>
- U.S. Fish and Wildlife Service (USFWS): Critical Habitat Portal and Information, Planning, and Conservation (IPaC) System Query<sup>3</sup> and National Wetlands Inventory (NWI);<sup>4</sup>
- United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) Web Soil Survey;<sup>5</sup> and
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California.<sup>6</sup>

The queries included the *Encinitas, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle and the USGS quadrangles that surround it (Oceanside, San Luis Rey, San Marcos, Rancho Santa Fe, and Del Mar). Other sources of information used to evaluate the project site include topographic and geologic maps.

The literature search identified 65 special status plant species and 25 special status wildlife species within the project vicinity (Attachment 2). Of these 90 species, 86 species were determined as not expected to occur based on the absence of suitable habitat at the site. One species (California glossy snake) was determined as unlikely to occur based on marginal habitat on and in the vicinity of the project site and based on the most recent observation for this species in the area, which dates to 1946. Three species (Southern California legless lizard, coastal California gnatcatcher and California least tern) were determined as likely to occur within the project area based on the presence of potential habitat. All three species have been observed within a mile of the project area and, in the case of the coastal California gnatcatcher, critical habitat is also found within a mile of the project site.

Rincon evaluated the potential of special status species to occur based on information available for a desktop analysis. However, specific site conditions could result in modifications to the preliminary results presented herein. This analysis assumes a high level of disturbance on the project site, and that no natural vegetation communities occur on the site.

Based on the NWI query, there are no United States Army Corps of Engineers, Regional Water Quality Control Board, or CDFW jurisdictional features within the project site. Although the project may have constraints related to the presence of special status species, the project would not have constraints related to the presence of wildlife corridors, sensitive vegetation communities, habitat conservation plans, or other conservation areas.

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<sup>1</sup> CDFW. 2023. California Natural Diversity Database. <https://wildlife.ca.gov/Data/CNDDDB> (accessed March 2023).

<sup>2</sup> CDFW. 2023. Biogeographic Information and Observation System. <https://wildlife.ca.gov/Data/BIOS> (accessed March 2023).

<sup>3</sup> USFWS. 2023. Information for Planning and Consultation. <https://ipac.ecosphere.fws.gov/> (accessed March 2023).

<sup>4</sup> USFWS. 2023. National Wetlands Inventory. *Wetlands Mapper*. <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper> (accessed March 2023).

<sup>5</sup> NRCS. 2023. Web Soil Survey. <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> (accessed March 2023).

<sup>6</sup> CNPS. 2023. Rare Plant Inventory. <https://rareplants.cnps.org/> (accessed March 2023).



## Hazards and Hazardous Materials

Rincon reviewed the following sources to evaluate the potential for past releases of hazardous materials within 0.25 mile of the project site:

- State Water Resources Control Board (SWRCB) online GeoTracker database
- Department of Toxic Substances Control's (DTSC) online EnviroStor database
- DTSC online Hazardous Waste and Substances Sites (Cortese) List

Based on a review of these resources, the project is not located on a site known to contain hazardous materials. Two closed Leaking Underground Storage Tank (LUST) locations and four inactive DTSC cleanup program sites are located within 0.25 mile of the project near Grandview Street; one closed LUST location and one inactive DTSC cleanup program site are located within 0.25 mile of the project near Phoebe Street.<sup>7</sup> Neighborhood Market, a previous business located near the corner of Phoebe Street and Highway 101, is the closest LUST location and cleanup program site to the proposed project. The cleanup program site was closed in January 1991 and the LUST case was closed in July 1996. Hazardous materials records indicate that no free-phase petroleum product was observed in the groundwater wells near the LUST site, and no aromatic volatile organic compounds were detected in groundwater except for low benzene and ethylbenzene levels identified in a single well in May 1995. These compounds were not detected in the most recent groundwater samples collected in August 1995. Based on soil sample data and field observations, it is estimated that soil with low levels of petroleum hydrocarbons may be present beneath the area of the former underground tanks, between approximately two feet and ten feet below ground surface.<sup>8</sup> As the rail crossing would be constructed at-grade, the project would not require substantial excavation at a depth greater than a few feet and ground disturbance would only occur within imported and non-native fill material. Therefore, it is not anticipated that contaminated soils or groundwater would be encountered during project construction.

No sites in the vicinity of the proposed rail crossings were found on the DTSC EnviroStor database<sup>9</sup> or on the online Hazardous Waste and Substances Sites (Cortese) List.<sup>10</sup>

Due to the common treatment of rail ties with creosote and the treatment of rail corridors with pesticides or herbicides to prevent weed growth, contaminants such as (but not limited to) hydrocarbons, pesticides, and metals are often associated with railroads. There is a potential for construction workers to be exposed to these contaminants through dust and/or soil on the project site. Additionally, if offsite disposal of soils from the project site would occur during project construction, the soil may require special handling or disposal as a waste. A shallow subsurface (soil) investigation within the construction footprint at the project site would more definitively determine whether contamination

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<sup>7</sup> SWRCB. 2023. GeoTracker.

<https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=encinitas%2C+ca> (accessed March 2023).

<sup>8</sup> Ibid.

<sup>9</sup> DTSC. 2023. EnviroStor Database.

<https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Highway+101+%26+Grandview+St%2C+Encinitas> (accessed March 2023).

<sup>10</sup> DTSC. 2023. Hazardous Waste and Substances Site List (CORTESE). <https://dtsc.ca.gov/dtscs-cortese-list/> (accessed March 2023).



is present in on-site soils. Based on the results of the subsurface investigation, a Soil Management Plan may be required as a condition of approval to address handling and management of contaminated soils or other contaminated wastes, if encountered on the project site, to reduce hazards to construction workers and offsite workers during construction, and to reduce hazards to future workers and pedestrians.

Based on this preliminary desktop review, the project may create a significant hazard to the public or the environment related to mapped hazardous materials sites. Therefore, the project would potentially have constraints related to hazards or hazardous materials.

## Scenic Resources

To determine potential impacts on designated scenic resources, Rincon reviewed the City of Encinitas General Plan and the California Department of Transportation (Caltrans) State Scenic Highways database. No portion of the project site, including Highway 101 and Vulcan Avenue, is designated as a scenic resource in the City of Encinitas General Plan.<sup>11</sup> According to Caltrans, the nearest officially designated state scenic highway is State Route 78 through Anza-Borrego Desert State Park, located approximately 50 miles east of the proposed rail crossings. Interstate (I)-5, located approximately 0.5-mile east of the proposed rail crossings, is eligible for listing as a scenic highway but has not been officially designated as such.<sup>12</sup> The project would not be visible from any portion of I-5 due to topography, vegetation, and existing development. No other state scenic highways are located in proximity to the project. The at-grade rail crossing would connect to existing adjacent roadways; as such, the project would not result in impacts or damage to trees, historic buildings, rock outcroppings, or similar scenic resources, including within the viewshed of an officially designated state scenic highway. The project design would be consistent with the existing rail crossings along the LOSSAN corridor, and no portion of the project or project features would block existing views from passenger trains. Therefore, the project would not have constraints related to scenic resources.

## Transportation Hazards

The NCTD rail corridor currently creates a physical impediment to safe pedestrian and bicycle crossing from Vulcan Avenue to Highway 101. As shown on the project exhibits in Attachment A, 68 percent of existing illegal rail crossings in the Leucadia community occur near Grandview Street and 32 percent of existing illegal rail crossings in the Leucadia community occur near Hillcrest Drive. These illegal crossings occur along the LOSSAN rail corridor that currently accommodates more than 60 trains per day, a number expected to increase by 2035 based on the current service plans of each train operator.<sup>13</sup> The maximum design speed for passenger train service along the LOSSAN corridor is 90 miles per hour (mph) and the maximum design speed for freight train service is 60 mph, unless constrained by curves, grade,

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<sup>11</sup> City of Encinitas. 2022. General Plan. <https://archive.encinitasca.gov/WebLink/browse.aspx?startid=665622> (accessed March 2023).

<sup>12</sup> California Department of Transportation (Caltrans). 2023. California State Scenic Highways. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways> (accessed March 2023).

<sup>13</sup> San Diego Regional Rail Corridor Working Group. 2021. Final Report from the LOSSAN San Diego Regional Rail Corridor Working Group. <https://calsta.ca.gov/-/media/calsta-media/documents/sdregailcorridorfinalreportfinala11y.pdf> (accessed March 2023).

or right-of-way (ROW) limits.<sup>14</sup> As such, illegal rail crossings currently pose substantial safety risks to trespassers.

Implementation of the project is not expected to result in an increase in bicyclists or pedestrians crossing the rail corridor. Rather, the project would provide two legal rail crossing locations to accommodate existing bicyclist and pedestrian users with additional safety measures proposed, reducing the number of unauthorized rail crossings in places along the corridor that do not have adequate safety mechanisms. Proposed safety measures include additional ROW fencing, pedestrian railings, and standard active rail crossing warning devices with flashers, lights, and bells. The project would also comply with all safety measures required by the California Public Utilities Commission (CPUC), including the California Public Utilities Code Sections 1201-1205 related to public railroad crossings and the California Manual on Uniform Traffic Control Devices related to traffic controls for bicycle facilities at rail crossings.<sup>15</sup> Therefore, implementation of the project and associated safety measures would reduce existing hazards along the rail corridor, and the project would not have constraints related to transportation hazards.

## Other Issues Areas

### *Cultural Resources*

The project is not expected to require substantial excavation, as the rail crossing would be constructed at-grade and would connect to existing paved roadways adjacent to the rail line. As such, ground disturbance would only occur within imported and non-native fill material. Although physical rail lines and rail corridors are often considered historical resources, construction of an at-grade pedestrian and bicycle crossing across the tracks would not be likely to impact the historic value or integrity of the rail corridor. Therefore, the project is not expected to disturb archeological or historical resources during construction, and the project would not have constraints related to cultural resources.

### *Noise*

All passenger and freight trains are equipped with air-powered horns to sound a warning of the train's approach to a crossing. Pursuant to 49 CFR § 229.129 and current Federal Railroad Administration (FRA) standards, locomotives are required to equip horns that can produce a minimum sound level of 96 decibels and a maximum sound level of 110 decibels at 100 feet forward. As such, the potential for additional train horns associated with the proposed rail crossings may create additional temporary high noise levels. However, based on federal rule, local government agencies can restrict the usage of train horns at rail crossings following implementation of safety improvements that provide the same level of risk reduction as would otherwise be provided by the horn.<sup>16</sup> If implemented, such crossings are

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<sup>14</sup> San Diego Association of Governments (SANDAG). 2017. Design Criteria. *LOSSAN Corridor in San Diego County*. <https://lfportal.nctd.org/WebLink/0/edoc/118387/LOSSAN%20Corridor%20Design%20Criteria%20Manual,%20Version%201.0%202017-08-22.pdf> (accessed March 2023).

<sup>15</sup> California Department of Transportation (Caltrans). 2014. Manual on Uniform Traffic Control Devices. Revised March 30, 2021. <https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev6/camutcd2014-rev6.pdf> (accessed March 2023).

<sup>16</sup> CPUC. 2023. Quiet Zone. <https://www.cpuc.ca.gov/industries-and-topics/rail-safety/rail-crossings-and-engineering/quiet-zone> (accessed March 2023).



considered Quiet Zones. The city may pursue a Quiet Zone within the Leucadia community to reduce or eliminate noise impacts associated with the existing and proposed rail crossings. Therefore, it is unknown at this time whether the project would have constraints related to noise impacts.

## CEQA Recommendations

Implementation of the project would require environmental review under CEQA. The City of Encinitas would be the lead agency under CEQA (Public Resources Code Section 21067) and is responsible for complying with its requirements. Unless exempt, the project's CEQA document would need to be adopted or certified by the City of Encinitas.

This project may be exempt from CEQA under a Class 3 Categorical Exemption, which covers the construction and location of limited numbers of new, small facilities or structures. However, CEQA Guidelines Section 15300.2 contains exceptions to the listed Categorical Exemptions. CEQA Guidelines Section 15300.2(c) specifically states: "A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to *unusual circumstances*." This is a determination of whether the project has some feature that distinguishes it from others in the exempt class, such as its size or location, and whether the unique circumstances might result in significant environmental impacts.

As discussed in this memorandum, the project site has sensitivity for biological resources. Furthermore, the project could create a hazard to the public or the environment, and could result in noise impacts associated with train horns unless additional information is available that demonstrates a net reduction in train horn use with the project, and/or a Quiet Zone is implemented by the city. As such, the occurrence of special status species on the project site, the potential presence of hazardous materials on the project site, and the addition of train horns along the rail corridor could constitute unusual circumstances that may result in environmental impacts. In addition, coastal permitting agencies may also be responsible for independently reviewing and approving the CEQA document for the project, and may require a more thorough environmental analysis. Therefore, an Initial Study-Mitigated Negative Declaration (IS-MND) may be the appropriate level of CEQA documentation for the project when considering these factors.

Ultimately, the City of Encinitas, as CEQA lead agency, would be responsible for determining the appropriate level of CEQA documentation.

## Conclusion

In summary, three constraints for a CEQA exemption were identified upon initial desktop project review. Further coordination with city staff, field surveys, subsurface investigations, and preliminary technical reporting may be required to determine the appropriate level of CEQA documentation or to satisfy the CEQA exemption process. This may include:

- Biological Resources Assessment;
- Soil Management Plan; and,
- Noise Technical Report.

The estimated timeline for the above is approximately two months, although this may vary based on city staff availability, workload, and the potential for public controversy. The estimated timeline for a CEQA Categorical Exemption is approximately two months and the estimated timeline for a CEQA IS-MND is



approximately six months, although this may also vary based on city staff availability, workload, and the potential for public controversy.

We appreciate the opportunity to assist RailPros with this memorandum. If you have questions about this analysis or if we can further assist you throughout this process, please contact the undersigned.

Sincerely,  
Rincon Consultants, Inc.

A handwritten signature in black ink, reading "Taylor Freeman".

Taylor Freeman, MEERM  
Environmental Planner/Project Manager

A handwritten signature in blue ink, reading "Richard Daulton".

Richard Daulton, MURP  
Principal/Vice President

#### Attachments

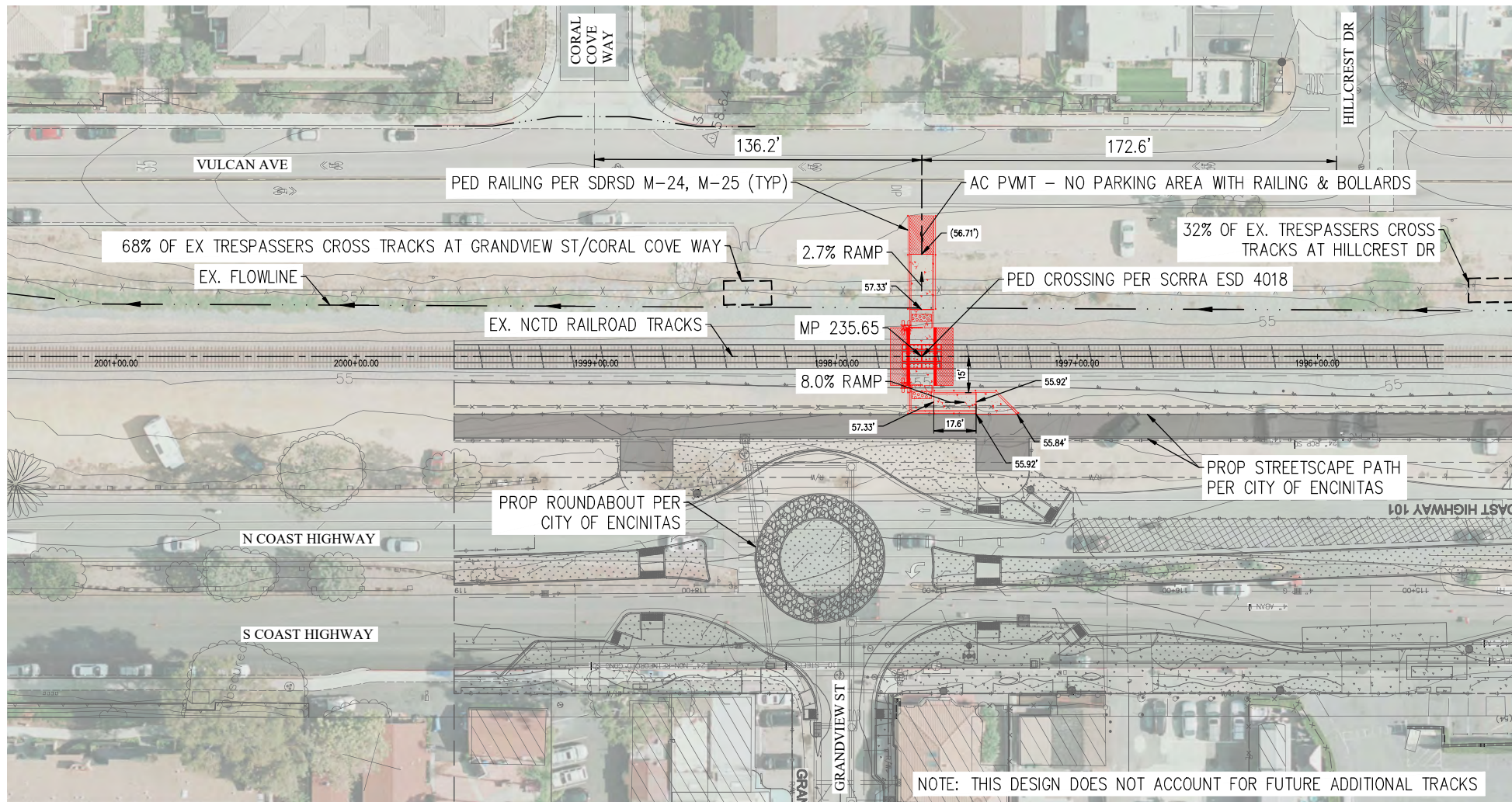
Attachment 1 – Project Exhibits

Attachment 2 – Sensitive Species Potential to Occur Table

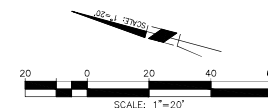


## **Attachment 1 – Project Exhibits**

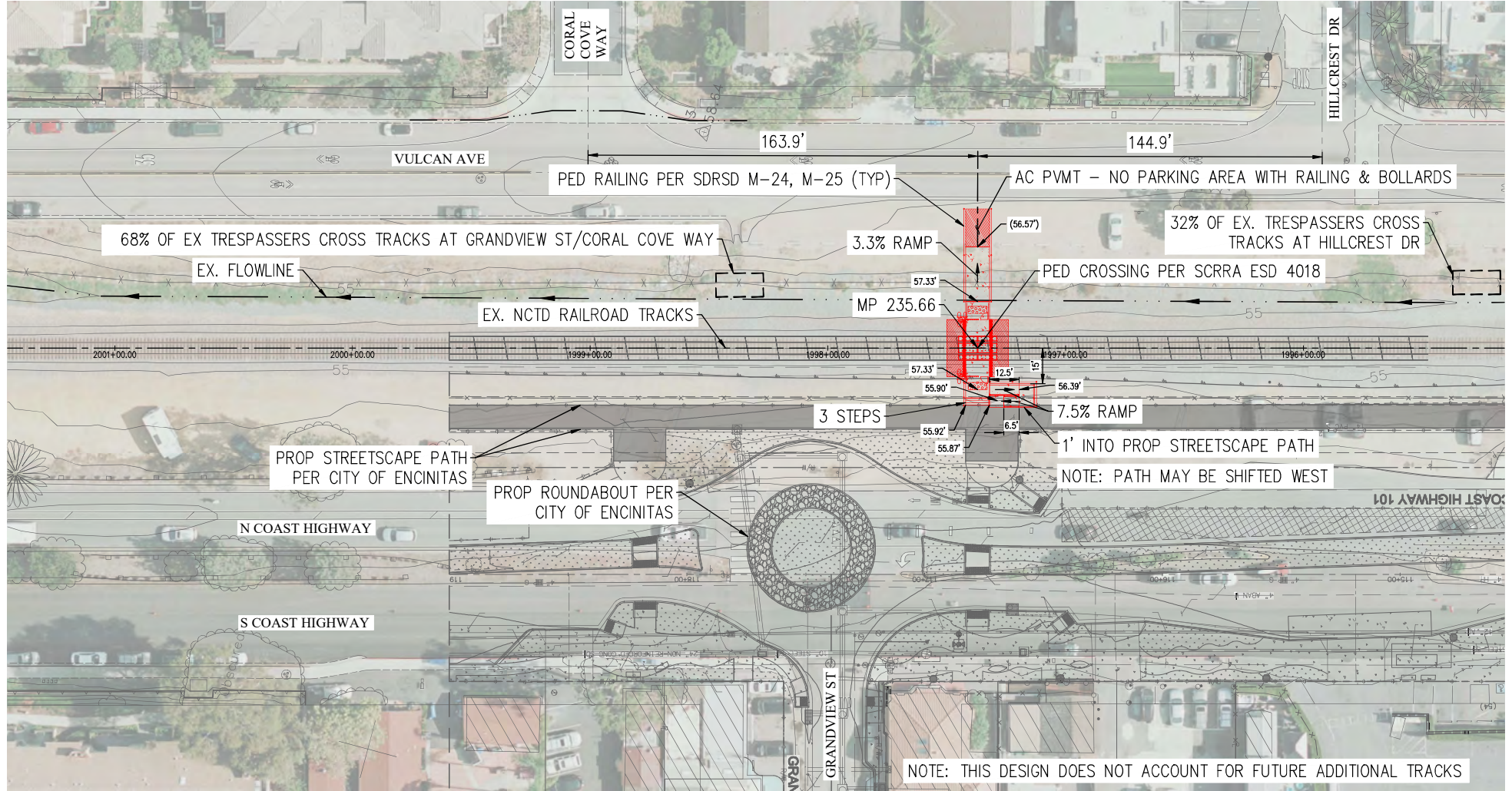




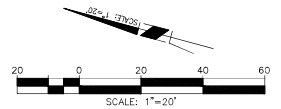
## PATHWAY RAMP ALTERNATIVE



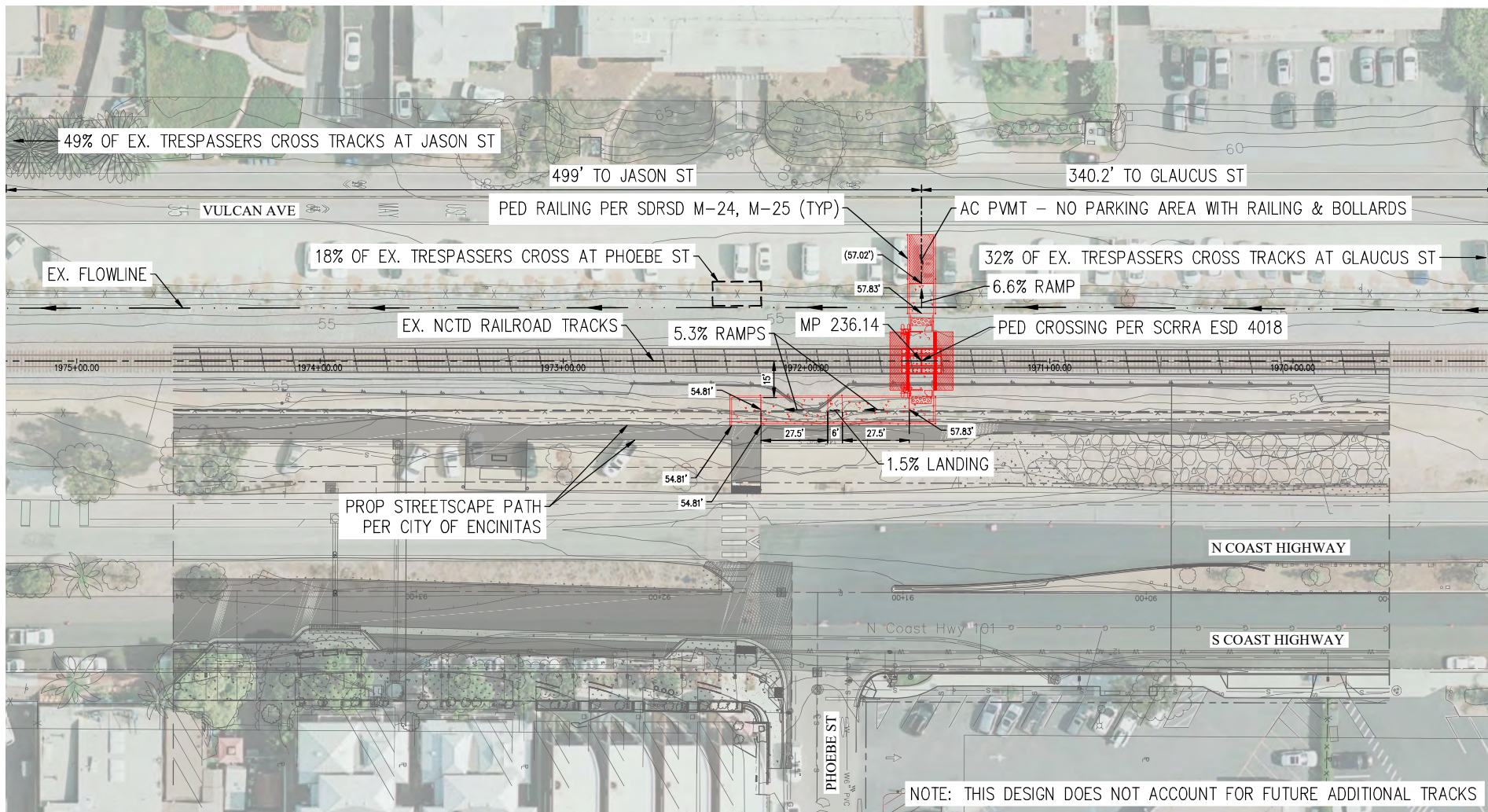




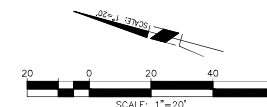
## STAIRS AND ADA RAMP ALTERNATIVE







## PATHWAY RAMP ALTERNATIVE



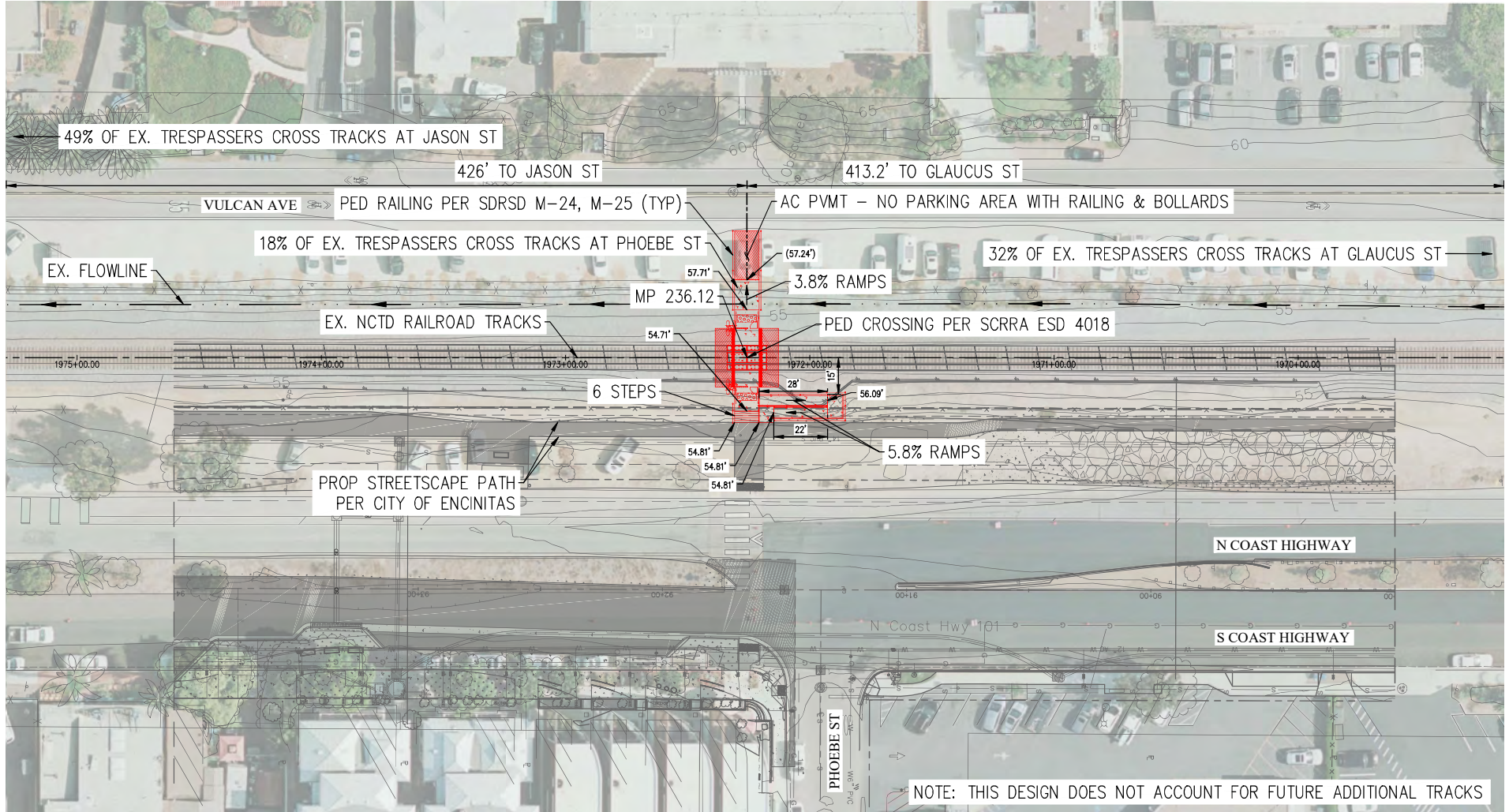
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**NORTH LEUCADIA AT-GRADE CROSSINGS  
 PHOEBE ST PED CROSSING**  
 SCALE: 1" = 20' | DATE: 12-01-2022 | SHEET: 1 OF 1

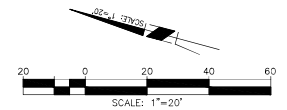


RAIL AREA

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## STAIRS AND ADA RAMP ALTERNATIVE



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IRVINE, CA 92618  
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PHONE: (714) 734 - 8765

**NORTH LEUCADIA AT-GRADE CROSSINGS  
PHOEBE ST PED CROSSING**

SCALE: 1" = 20' | DATE: 12-01-2022 | SHEET: 1 OF 1



**Attachment 2 - Sensitive Species Potential to Occur Table**





Common Name	Scientific Name	Species Status	Potential to Occur
Plants			
San Diego Thorn-Mint	<i>Acanthomintha ilicifolia</i>	CRPR1B.1	Does not Occur
Nuttall's Acmispon	<i>Acmispon prostratus</i>	CRPR1B.1	Does not Occur
California Adolphia	<i>Adolphia californica</i>	CRPR2B.1	Does not Occur
Shaw's Agave	<i>Agave shawii</i> var. <i>shawii</i>	CRPR2B.1	Does not Occur
San Diego Ambrosia	<i>Ambrosia pumila</i>	CRPR1B.1	Does not Occur
Aphanisma	<i>Aphanisma blitoides</i>	CRPR1B.2	Does not Occur
Del Mar Manzanita	<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	CRPR1B.1	Does not Occur
Coastal Dunes Milk-Vetch	<i>Astragalus tener</i> var. <i>titi</i>	CRPR1B.1	Does not Occur
Coulter's Saltbush	<i>Atriplex coulteri</i>	CRPR1B.2	Does not Occur
South Coast Saltscale	<i>Atriplex pacifica</i>	CRPR1B.2	Does not Occur
Encinitas Baccharis	<i>Baccharis vanessae</i>	CRPR1B.1	Does not Occur
Golden-Spined Cereus	<i>Bergerocactus emoryi</i>	CRPR2B.2	Does not Occur
San Diego Goldenstar	<i>Bloomeria clevelandii</i>	CRPR1B.1	Does not Occur
Thread-Leaved Brodiaea	<i>Brodiaea filifolia</i>	CRPR1B.1	Does not Occur
Orcutt's Brodiaea	<i>Brodiaea orcuttii</i>	CRPR1B.1	Does not Occur
Lakeside Ceanothus	<i>Ceanothus cyaneus</i>	CRPR1B.2	Does not Occur
Wart-Stemmed Ceanothus	<i>Ceanothus verrucosus</i>	CRPR2B.2	Does not Occur
Southern Tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	CRPR1B.1	Does not Occur
Smooth Tarplant	<i>Centromadia pungens</i> ssp. <i>laevis</i>	CRPR1B.1	Does not Occur
Orcutt's Pincushion	<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	CRPR1B.1	Does not Occur
Orcutt's Spineflower	<i>Chorizanthe orcuttiana</i>	CRPR1B.1	Does not Occur
Long-Spined Spineflower	<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	CRPR1B.2	Does not Occur
Summer Holly	<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	CRPR1B.2	Does not Occur
San Diego Sand Aster	<i>Corethrogyne filaginifolia</i> var. <i>incana</i>	CRPR1B.1	Does not Occur
Del Mar Mesa Sand Aster	<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	CRPR1B.1	Does not Occur
Wiggins' Cryptantha	<i>Cryptantha wigginsii</i>	CRPR1B.2	Does not Occur
Snake Cholla	<i>Cylindropuntia californica</i> var. <i>californica</i>	CRPR1B.1	Does not Occur
Blochman's Dudleya	<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	CRPR1B.1	Does not Occur
Short-Leaved Dudleya	<i>Dudleya brevifolia</i>	CRPR1B.1	Does not Occur
Variegated Dudleya	<i>Dudleya variegata</i>	CRPR1B.2	Does not Occur
Sticky Dudleya	<i>Dudleya viscida</i>	CRPR1B.2	Does not Occur
Palmer's Goldenbush	<i>Ericameria palmeri</i> var. <i>palmeri</i>	CRPR1B.1	Does not Occur
San Diego Button-Celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	CRPR1B.1	Does not Occur
Pendleton Button-Celery	<i>Eryngium pendletonense</i>	CRPR1B.1	Does not Occur



Common Name	Scientific Name	Species Status	Potential to Occur
Sand-Loving Wallflower	<i>Erysimum ammodophilum</i>	CRPR1B.2	Does not Occur
Cliff Spurge	<i>Euphorbia misera</i>	CRPR2B.2	Does not Occur
San Diego Barrel Cactus	<i>Ferocactus viridescens</i>	CRPR2B.1	Does not Occur
Campbell's Liverwort	<i>Geothallus tuberosus</i>	CRPR1B.1	Does not Occur
Orcutt's Hazardia	<i>Hazardia orcuttii</i>	CRPR1B.1	Does not Occur
Beach Goldenaster	<i>Heterotheca sessiliflora ssp. sessiliflora</i>	CRPR1B.1	Does not Occur
Ramona Horkelia	<i>Horkelia truncata</i>	CRPR1B.3	Does not Occur
San Diego Sunflower	<i>Hulsea californica</i>	CRPR1B.3	Does not Occur
Decumbent Goldenbush	<i>Isocoma menziesii var. decumbens</i>	CRPR1B.2	Does not Occur
San Diego Marsh-Elder	<i>Iva hayesiana</i>	CRPR2B.2	Does not Occur
Coulter's Goldfields	<i>Lasthenia glabrata ssp. coulteri</i>	CRPR1B.1	Does not Occur
Sea Dahlia	<i>Leptosyne maritima</i>	CRPR2B.2	Does not Occur
Felt-Leaved Monardella	<i>Monardella hypoleuca ssp. lanata</i>	CRPR1B.2	Does not Occur
Willowy Monardella	<i>Monardella viminea</i>	CRPR1B.1	Does not Occur
Mud Nama	<i>Nama stenocarpa</i>	CRPR2B.2	Does not Occur
Spreading Navarretia	<i>Navarretia fossalis</i>	CRPR1B.1	Does not Occur
Coast Woolly-Heads	<i>Nemacaulis denudata var. denudata</i>	CRPR1B.2	Does not Occur
Slender Cottonheads	<i>Nemacaulis denudata var. gracilis</i>	CRPR2B.2	Does not Occur
California Orcutt Grass	<i>Orcuttia californica</i>	CRPR1B.1	Does not Occur
Brand's Star Phacelia	<i>Phacelia stellaris</i>	CRPR1B.1	Does not Occur
Torrey Pine	<i>Pinus torreyana ssp. torreyana</i>	CRPR1B.2	Does not Occur
San Diego Mesa Mint	<i>Pogogyne abramsii</i>	CRPR1B.1	Does not Occur
Nuttall's Scrub Oak	<i>Quercus dumosa</i>	CRPR1B.1	Does not Occur
Munz's Sage	<i>Salvia munzii</i>	CRPR2B.2	Does not Occur
Chaparral Ragwort	<i>Senecio aphanactis</i>	CRPR2B.2	Does not Occur
Salt Spring Checkerbloom	<i>Sidalcea neomexicana</i>	CRPR2B.2	Does not Occur
Bottle Liverwort	<i>Sphaerocarpos drewiae</i>	CRPR1B.1	Does not Occur
Prairie False Oat	<i>Sphenopholis interrupta ssp. californica</i>	CRPR1B.1	Does not Occur
Purple Stemodia	<i>Stemodia durantifolia</i>	CRPR2B.1	Does not Occur
Estuary Seablite	<i>Suaeda esteroa</i>	CRPR1B.2	Does not Occur
Parry's Tetracoccus	<i>Tetracoccus dioicus</i>	CRPR1B.2	Does not Occur
<b>Wildlife</b>			
<b>Invertebrates</b>			
San Diego Fairy Shrimp	<i>Branchinecta sandiegonensis</i>	FE	Does not Occur
Monarch Butterfly	<i>Danaus plexippus plexippus</i>	FC	Does not Occur
Riverside Fairy Shrimp	<i>Streptocephalus woottoni</i>	FE	Does not Occur
<b>Amphibians</b>			
Western Spadefoot	<i>Spea hammondi</i>	SSC	Does not Occur
<b>Reptiles</b>			



Common Name	Scientific Name	Species Status	Potential to Occur
Southern California Legless Lizard	<i>Anniella stebbinsi</i>	SSC	Likely
California Glossy Snake	<i>Arizona elegans occidentalis</i>	SSC	Unlikely
Orange-Throated Whiptail	<i>Aspidoscelis hyperythra</i>	WL	Does not Occur
Coastal Whiptail	<i>Aspidoscelis tigris stejnegeri</i>	SSC	Does not Occur
Coast Horned Lizard	<i>Phrynosoma blainvillii</i>	SSC	Does not Occur
Two-Striped Gartersnake	<i>Thamnophis hammondi</i>	SSC	Does not Occur
<b>Birds</b>			
Southern California Rufous-Crowned Sparrow	<i>Aimophila ruficeps canescens</i>	WL	Does not Occur
Coastal Cactus Wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	SSC	Does not Occur
Western Snowy Plover	<i>Charadrius nivosus nivosus</i>	FT, SSC	Does not Occur
California Black Rail	<i>Laterallus jamaicensis coturniculus</i>	ST, FP	
Belding's Savannah Sparrow	<i>Passerculus sandwichensis beldingi</i>	SE	Does not Occur
Coastal California Gnatcatcher	<i>Poliopitila californica californica</i>	FT, SSC	Likely
Light-Footed Ridgway's Rail	<i>Rallus obsoletus levipes</i>	FE, SE, FP	Does not Occur
California Least Tern	<i>Sternula antillarum browni</i>	FE, SE, FP	Likely
Least Bell's Vireo	<i>Vireo bellii pusillus</i>	FE, SE	Does not Occur
<b>Mammals</b>			
Dulzura Pocket Mouse	<i>Chaetodipus californicus femoralis</i>	SSC	Does not Occur
Northwestern San Diego Pocket Mouse	<i>Chaetodipus fallax fallax</i>	SSC	Does not Occur
Northwestern San Diego Pocket Mouse	<i>Chaetodipus fallax fallax</i>	SSC	Does not Occur
Mexican Long-Tongued Bat	<i>Choeronycteris mexicana</i>	SSC	Does not Occur
San Diego Desert Woodrat	<i>Neotoma lepida intermedia</i>	SSC	Does not Occur
Pocketed Free-Tailed Bat	<i>Nyctinomops femorosaccus</i>	FE, SSC	Does not Occur
<b>Status Key:</b>		<b>California Rare Plant Ranks:</b>	
FE = Federal Endangered		1B = Rare, Threatened or Endangered in California and elsewhere	
FT = Federal Threatened		2B = Rare, Threatened or Endangered in California, but more common elsewhere	
FP = CDFW Fully Protected		.1 = seriously threatened in California	
SE = California Endangered		.2 = fairly threatened in California	
ST = State Threatened		.3 = not very threatened in California	
SSC=California Special Concern Species			
SC = State Candidate			
WL = CDFW Watch List			

# **APPENDIX D**

## **City of Encinitas**

### **Responses to Community Questions**

**City of Encinitas - Leucadia At-grade RR Crossings at Grandview/Hillcrest & Phoebe**

*Which option at Grandview/Hillcrest did you prefer and why?*

Option	Comments	Tabulation
Either or No Preference	<ul style="list-style-type: none"> <li>Any option is great. Access across is the most important.</li> <li>Both options are great. Either is needed ASAP.</li> <li>I would be overjoyed to have either option. We have waited so long for this, prefer any option! Just get it done.</li> <li>Any option that can be implemented quickly. Please move forward with action. Do not delay, pick the option that will pass.</li> <li>Whichever one is more doable and will get built the quickest.</li> <li>I am in favor of ANY safe option that can be completed efficiently &amp; safely as soon as possible! The fence is a waste of everything.</li> <li>I prefer the one that has no extra train horns.</li> <li>The one that you will pass and put into place now, not 10 yrs from now.</li> <li>Most cost effective and speed of completion option.</li> <li>Fastest to completion!! Safest &amp; quiet.</li> <li>Prefer the one that will cost the least.</li> <li>Either, both - please just do it.</li> <li>Either option is fine if you walk less on one side you walk more on the other. I just want to be able to get across the tracks!</li> <li>Whichever is cheaper and more doable.</li> <li>We don't care about the exact location. We need multiple crossings as quickly as possible. I've seen multiple people hit by the train.</li> <li>I don't have any terribly strong opinions either way.</li> <li>Easiest and quickest to build, make it blend with streetscape from a street art perspective (columns w/blue glass) - get the community back together.</li> <li>The best solution is up to the designers both work and connect to crosswalks on 101 and streetscape.</li> <li>Best solution addressing communication with streetscape and is conducive to a quiet zone.</li> <li>Either of the two are acceptable, however I would expect that the ramp/ramp (no stairs) would be the best for ADA compliance/bicycles, etc.</li> <li>Whichever one can be finished most quickly.</li> <li>Whichever one can be built sooner.</li> <li>Either works for us.</li> <li>Least construction as possible.</li> <li>I prefer the option that places pedestrians at the crosswalks on the 101. That prioritizes mobility for the elderly and children.</li> <li>Each option is fine. Stairs might be hard for bikes/wheelchairs. In each location, drainage will have to be considered, so whichever is more efficient.</li> <li>Whichever can get implemented sooner.</li> <li>No preference - both are fine.</li> <li>I was unable to attend the 1/30/23 meeting so did not receive an explanation of the difference between the options. I do not have a strong preference other than a huge preference for forward momentum on any at grade crossing option that is feasible at the earliest possible time period.</li> <li>Either of the at grade options are highly desirable compared to current conditions.</li> </ul>	40
Ramp	<ul style="list-style-type: none"> <li>because a ramp will be useful for both but stairs will be a problem.</li> <li>More natural, simpler, no stairs.</li> <li>Drawaings were unclear - prefer ramp, no stairs.</li> <li>I prefer the ramp only option so I can ride my bike over. I also ask for a quiet zone like they have in Del Mar.</li> <li>Ramp only is fine. All about alignment of 101 crossing.</li> <li>The option without stairs, less space required, less construction cost.</li> <li>Alternative ramp - larger ramp for ADA.</li> <li>Pathway or whatever is most popular. No horns.</li> <li>Pathway ramp alternative - easier for bikes and surfboards.</li> <li>I prefer the ramp only plan, better plan without the two way ramp.</li> <li>Prefer the ramp with no stairs. The wider ramp is better.</li> <li>I prefer the option with 2 ramps only, no stairs. The stairs seem superfluous when you already have a ramp.</li> <li>Prefer the pathway ramp option. Seems easier to get across with a bike. No stairs.</li> <li>All ramp option - no stairs - seems like it would be fun to launch a kickflip down that little set of stairs on to the 101.</li> <li>Full ramp option vs steps alternative. Full ramp would feed directly with even flow vs splitting the flow between ramp &amp; stairs.</li> <li>We prefer the pathway ramp with no stairs.</li> <li>Option 1 (option without steps) IMHO, Most people crossing the tracks will be on a bike, pushing a stroller, carrying a surfboard, carrying bags from a store, on a scooter or skateboard. The ramp only option has no sharp turns and is more user friendly.</li> <li>Ramp so we can ride bikes or use strollers.</li> <li>Honestly, I reviewed the draft drawing-very difficult to tell what the design is without written (more than one liners) for those of us who are not in that industry. With that</li> </ul>	36



Stairs and Ramp	<ul style="list-style-type: none"> <li>·Give people the option of going more directly if they so desire.</li> <li>·I like both options, and shorter ramp may be cheaper. But really I want whatever will get built!</li> <li>·Those who don't need the ramps can cross more quickly, on the stairs, and it will leave more room on the ramps for those who need them.</li> <li>·More accessible</li> <li>·Safer and less noise</li> <li>·I prefer stair and ramp options because it seems to have a smaller footprint.</li> <li>·For those that are able to use them, I think the stairs will be needed and useful. I also think w/o the stairs, people will just hop the gate on the long ramp anyways.</li> <li>·I think stairs &amp; ramp at both locations is effective &amp; efficient.</li> <li>·Stairs and ADA ramp, I prefer because less walking if you can walk.</li> <li>·Only going to do this over the roundabouts, need all the options. Some folks will just walk thru open areas - take shortcuts.</li> <li>·Better design and access.</li> <li>·This is the safest option and provides the easiest access.</li> <li>·I prefer ramp and stairs, so everyone can use it.</li> <li>·Stairs &amp; ramp or just ramp if people are unrelently jumping or cutting the fence so taking steps/ramp should be easier. Seems to align wisely with Grandview.</li> <li>·Aesthetically and for safety reasons, I prefer the ramp, stair option. Sense of safety and permanence plus more attractive.</li> <li>·I like stairs/ramps/bike access.</li> <li>·Stairs and ramp - can accommodate wheeled and pedestrian.</li> <li>·Steps and ramps unless that increases costs significantly, then the ramps are fine.</li> <li>·I like the design with the step and ramp option.</li> <li>·Stairs and ADA ramp.</li> <li>·Ramp and stairs - chances are 80% or more of users would use stairs.</li> <li>·Ramp w/stairs vs ramp only. Direct street access via stairs makes sense.</li> <li>·Ramp &amp; stairs.</li> <li>·If you can do both wide and stairs and ramps that would make everyone happy!</li> </ul>	35
Stairs	<ul style="list-style-type: none"> <li>·Simpler for most users and exercise if you want it (if it's like Swamis, but I think it will be more shallow) Allows an additional option for most people walking who might not want to dodge bikes &amp; strollers on the ramp.</li> <li>·It is closer to me.</li> <li>·We own property at 1549 N Vulcan Ave, cross street is Hillcrest.</li> <li>·Options with the stairs, but best option is take down the fence and help all the businesses and Leucadia by making it more walkable.</li> <li>·Hillcrest - more centered between Leucadia/La Costa.</li> <li>·Stairs - hopefully less parking impacted.</li> <li>·Hillcrest - just used to it. Donut shop access.</li> <li>·It appears the addition of steps is the only difference between the two. Steps would be fine unless they would be more to maintain.</li> </ul>	11
N/A or Blank	·Could not get close enough to compare	11
None/Neither	<ul style="list-style-type: none"> <li>·The xing is too direct, must be a dog leg.</li> <li>·I'm really dissapointed to see limited thinking going into this project. Please seek more innovative public/private partnerships to generate greater funds to execute a design that promotes a quite zone and safe crossing.</li> <li>·Here I would look at the cost difference. Generally I prefer stairs/ramp option, but here the ramp is so short it may not be worth an extra expenditure.</li> <li>·Neither - why are the crossings not where streets meet Vulcan? No safe walking path on Vulcan for walkers.</li> <li>·Remove the fence. No crossings. Save money. If above is not possible, above/below grade crossing.</li> </ul>	7
No stairs	<ul style="list-style-type: none"> <li>·Add dark sky lighting to avoid local bright lights-should line up with street. Please keep train horn noise to less not more during sleeping hours.</li> <li>·1 no stairs which could be difficult for bikes and strollers.</li> <li>·Grandview / Hillcrest Option 1: Because the crossing is closer to Grandview St / Beach, which is the main route everyone crossing on either side is going to and coming from.</li> <li>·Option 1, there are no need for stairs its not that steep.</li> <li>·1. Prefer no stairs so you can walk a bike more easily.</li> <li>·Option 1, no steps (stairs).</li> </ul>	5
Grandview crossing	<ul style="list-style-type: none"> <li>·X-ing is needed</li> <li>·Grandview without limit if quite zone similar to Del Mar option.</li> <li>·Crossings at Grandview and hillcrest</li> <li>It is the easiest access to beaches snd stores and post office for north Leucadians. Would also be safest route.</li> </ul>	4
Unsure	<ul style="list-style-type: none"> <li>·Not sure what the two options are - just excited to have them!</li> <li>·Pro: Grandview to North Leucadia is in need of a way to get to the beach and shops (also to go to Post office just peachy)</li> <li>·If there is going to be a new crossing, shouldn't it be on a street that already has a light?</li> </ul>	3

Walk through option/Path	<ul style="list-style-type: none"> <li>·We prefer this option as it is less destructive to the land.</li> <li>·The flat option. It would be faster and easier to build this. It is not just convenience. A lot of surfers all over the railroad line to get to the beach</li> <li>·Cannot make an informed decision here as it is very difficult to tell the difference between the two plans provided to the public without a 3D rendering. If one yields a wider path for walkers and cyclists, then that version would have my vote.</li> </ul>	3
Stairs and Roundabout	·More direct. I'm not disabled or w/stroller. Bicyclists have an alternative either way.	1
Line up the crossings w/traffic lights	·How could they get to the crossings safely if they don't line up with the traffic lights?	1
Phoebe	·I live on Grandview.	1
Path & Path with stairs	·For added variety	1

**City of Encinitas - Leucadia At-grade RR Crossings at Grandview/Hillcrest & Phoebe**

*Which option at Phoebe/Jason & Glaucus did you prefer and why?*

Option	Comments	Tabulation
Either or No Preference	<ul style="list-style-type: none"> <li>-I would like to see the crossing closer to East Glaucus-it's a major collector for peds. Either works though.</li> <li>-Any option is great. Access across is the most important.</li> <li>-Of course Jason is closest to me but I also like Phoebe.</li> <li>-Both options are great. Either is needed ASAP.</li> <li>-No preference-leave it to the neighbors who will use daily.</li> <li>-No preference here-just glad to have a crossing.</li> <li>-No preference-any option that can be implemented quickly. Please move forward with action. Do not delay. Pick the option that will pass.</li> <li>-No preference outside of no limit and quiet zone.</li> <li>-No strong opinion.</li> <li>-Either one, just do it please!</li> <li>-Fastest to completion!! Safest + quiet.</li> <li>-I prefer the lowest budget option in order to more quickly secure funding.</li> <li>-Either option is fine. Which costs less.</li> <li>-The one we can do!</li> <li>-Whichever is cheaper and more doable.</li> <li>-Whatever option can be built quickest!</li> <li>-Just do it quickly please and thank you!</li> <li>-Pathway or whatever is most popular. No horns.</li> <li>-Easiest and quickest to build, make it blend with streetscape.</li> <li>-The best solution is up to the designers both work and connect to crosswalks on 101 and streetscape.</li> <li>-Best solution addressing communication with streetscape &amp; is conducive to a quiet zone.</li> <li>-Whichever can be done fastest.</li> <li>-They both look good.</li> <li>-Least construction as possible.</li> <li>-Each option is fine. Stairs might be hard for bikes/wheelchairs. In each location, drainage will have to be considered, so whichever is more efficient.</li> <li>-No preference. Both better than a "jail" of wire fence.</li> <li>-I'd be either with either one, as they both serve the purpose of connecting the east side and the west side of the tracks with businesses, residents, bike lanes, streetscape, etc.</li> <li>-No preference - both are fine.</li> <li>-I was unable to attend the 1/30/23 meeting so did not receive an explanation of the difference between the options. I do not have a strong preference other than a huge preference for forward momentum on any at grade crossing option that is feasible at the earliest possible time period.</li> <li>-Either of the at grade options are highly desirable compared to current conditions.</li> <li>-Doesn't matter as long as the Grandview crossing gets done.</li> </ul>	44
Stairs and Ramp	<ul style="list-style-type: none"> <li>-Ramp &amp; stairs alternative, like the ability to walk straight across w/o using ramp.</li> <li>-Ramp &amp; stairs option as the ramp is too long. This gives options for everyone.</li> <li>-Stairs + Ramp more practical-provides both ability to walk straight across as well as accommodates those who need the ramp for stroller/wheelchair etc. (this ramp is really long, needs stair option too).</li> <li>-Those who don't need the ramps can cross more quickly on the stairs, and it will leave more room on the ramps for those who need them.</li> <li>-Stairs &amp; ramp alternative, safer and less noise.</li> <li>-I prefer stair and ramp options because it seems to have a smaller footprint.</li> <li>-People need a short and quick and safe way across the tracks, and if the ramp is extra long people will continue to hop the fence or hop the gate on the ramp.</li> <li>-I think stairs &amp; ramp at both locations is effective &amp; efficient.</li> <li>-Ramp and stairs. Do what we need and do it ASAP.</li> <li>-I like stairs/ramps/bike access.</li> <li>-Stairs and ramps unless that significantly increases costs then just ramps are fine.</li> <li>-I like the design with the step and ramp option.</li> <li>-Ramp &amp; stairs-chances are most crossing would use stairs and bikes could use ramp.</li> <li>-Ramp w/stairs. Direct straight access via stairs makes sense.</li> <li>-Unsurprisingly stairs and ADA ramp alternative. More trespassers at Jason. Easier access to Points North (Corner Pizza, Haggos, Just Peachy, Fish 101, Royal, Leucadian) while still allowing access to Points South (4ti4, Papagayo, Little Moore, etc.) before Laucadia Blvd. Closet to half way betwn Jason &amp; Glaucus. Do not understand the rationale behind the pathway ramp alternative.</li> <li>-Ramp &amp; stairs.</li> </ul>	31

Ramp(s)	<ul style="list-style-type: none"> <li>-I like option one on this as well "keep it simple" The ramp is great for bikes and pedestrians. I would only say we don't need stairs because a ramp will be useful for both but stairs will be a problem.</li> <li>-No stairs, just at grade w/ramp. Keep it simple.</li> <li>-Pathway ramp seems to be more natural, fits into environment better.</li> <li>-I like the pathway ramp option.</li> <li>-Pathway-more natural-on par with Leucadia Blvd. No stairs.</li> <li>-Drawings were unclear-prefer ramp, no stairs.</li> <li>-No stairs for better access for all.</li> <li>-I prefer the ramp without stairs.</li> <li>-The option without stairs. Less space required. Less construction cost.</li> <li>-Yes, with steeper ramp. There are more people crossing at Glaucus.</li> <li>-I prefer the ramp only, plan better. Plan w/out the two way ramp.</li> <li>-Prefer ramp with no stairs. Single ramp with no switchback is wider and no turn for biccles. The wider option is better for pedestrians/bicycle/strollers when meeting going in opposite directions on the ramps.</li> <li>-I prefer the option with 2 ramps only, no stairs. The stairs seem superfluous when you already have a ramp. Also, the option of ramp + stairs would be difficult for a bicycle, as the ramp is narrower and includes a 180 turn.</li> <li>-Prefer the pathway ramp option. Seems easier to get across with a bike (no stairs).</li> <li>-All ramp option-no stairs-seems like it would be fun to bunch a kickflip down that little set of stairs onto the 101.</li> <li>-Direct ramp over back and forth ramp. I don't see the point in doubleing back the ramp if we can just go direct.</li> <li>-Pro&gt;Jason: North Leucadians need a way to get to the post office &amp; stores. Smallest access possible, ramp only?</li> <li>-The long winding option leading to crosswalk by post office.</li> <li>-Pathway ramp alternative-easier for bikes.</li> <li>-Pathway ramp-closer to Glaucus.</li> <li>-Option 3 (option without steps) IMHO, Most people crossing the tracks will be on a bike, pushing a stroller, carrying a surfboard, carrying bags from a store, on a scooter or skateboard. The ramp only option has no sharp turns and is more user friendly.</li> <li>-Ramp so we can ride bikes or use strollers.</li> <li>-Again, would prefer ramp all the way, no stairs.</li> <li>-Option 2, Ramps are more inclusive and enables bikes with surf boards, strollers etc.</li> <li>-Option 2.</li> </ul>	31
N/A or Blank	<ul style="list-style-type: none"> <li>-Could not get close enough to compare.</li> <li>-It is too crowded here and I am only 5' 3" so I can't see it.</li> <li>-I would assume both Grandview and Phoebe/Jason are the same.</li> <li>-This location is ideal. It's about half way between Leucadia Blvd and La Costa Avenue.</li> </ul>	23
Neither/None	<ul style="list-style-type: none"> <li>-Again, this does not feel like a thought out process. What is the human experience of these crossings-they go across Phoebe and have to dodge traffic to get across the 101, then walk through puddles because there is no stormwater capture infrastructure. Please think systemically about this.</li> <li>-Please revisit the plans, neither #1 or #2 have options that are preferable.</li> <li>-None - too close to Leucadia Blvd.</li> <li>-Neither-why are the crossings not where streets meet Vulcan? No safe walking path on Vulcan for walkers.</li> <li>-If there is going to be a new crossing, shouldn't it be on a street that already has a light? I think these need to go back to the drawing board. These seem like the cheapest options without foresight of how they will play into overall design.</li> </ul>	7
Stairs	<ul style="list-style-type: none"> <li>-Simpler for most users and exercise if you want it (it it's like Swami's, but I think it will be more shallow). Allows an additional option for most people walking who might not want to dodge bikes &amp; strollers on the ramp.</li> <li>-Stairs-hopefully less parking impacted.</li> <li>-It appears the addition of steps is the only difference between the two. Steps would be fine unless they would be more to maintain.</li> </ul>	4
Glaucus crossing	<ul style="list-style-type: none"> <li>-Glaucus X-ing is needed! Two are needed.</li> <li>-Glaucus we frequently walk or bike to local businesses.</li> <li>-Glaucus seems to make the most sense because it goes right up through the neighborhood to the streets towards the 5.</li> <li>-We prefer a crossing at Glaucus since that is where we and many of our neighbors would like to cross to have access to the stores, restaurants, post office and beach.</li> </ul>	4
No stairs	<ul style="list-style-type: none"> <li>-I no stairs which could be difficult for bikes &amp; strollers.</li> <li>-Option 1, there are no need for stairs its not that steep.</li> <li>-Option 1, no steps (stairs).</li> </ul>	3
Other	<ul style="list-style-type: none"> <li>-Least concrete</li> <li>-I prefer the one that has no extra train horns through Leucadia.</li> <li>-Remove the fence, no crossings, save money. If above is not possible, above/below grade crossing.</li> </ul>	3
Wider Path	<ul style="list-style-type: none"> <li>-If you can do both wide and stairs and ramps that would make everyone happy!</li> <li>-Cannot make an informed decision here as it is very difficult to tell the difference between the two plans provided to the public without a 3D rendering. If one yields a wider path for walkers and cyclists, then that version would have my vote.</li> </ul>	2
Walk through option/Path	<ul style="list-style-type: none"> <li>-We prefer the walk through option as it is less destructive to the land.</li> </ul>	2

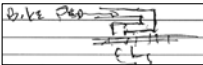
Path with Stairs	·Path + path w/stairs more variance. ·The shorter path w/steps.	2
Shorter ramp/switchback	·The option with the shorter ramp/switchback. Lines up better.	1
Phoebe		1
Alternative		1



**City of Encinitas - Leucadia At-grade RR Crossings at Grandview/Hillcrest & Phoebe**

*Do you have any proposed changes at either location you would like to see pursued?*

Option	Comments	Tabulation
N/A or Blank	<ul style="list-style-type: none"> <li>-I think they look great!</li> <li>-None as long as the flooding on Vulcan doesn't get worse!</li> <li>-No looks beautiful. Walking path.</li> <li>-The simpler the better.</li> <li>-No, I prefer the current options!</li> <li>-No, I think the evenly spaced locations are good.</li> <li>-Can barely read the map-LOL, so have no input to provide.</li> <li>-No proposed changes.</li> </ul>	70
Quiet Zone	<ul style="list-style-type: none"> <li>-Must have quiet zone declared, otherwise the train horn noise will become unbearable/with two additional crossings</li> <li>-I'd like the City to aggressively move forward with the quiet zone (like Cardiff). I do not wish to have more noise related to this plan. I need the City to consider bridge option or tunnel.</li> <li>-Utilize quiet crossings, it's quite disturbing to have any stops with the constant horns.</li> <li>-Would like quiet zone at at-grade crossings.</li> <li>-Only support if there is a train quiet zone.</li> <li>-Quiet crossing mandatory!!! By any means.</li> <li>-Make Leucadia a "quiet zone" why is Cardiff quiet and Leucadia is not. No new train horns.</li> <li>-Ideally an underpass-for longterm beautification plus additional land use. Quiet zone is important.</li> <li>-To ensure there's a quiet zone so the trains don't blare their horns late at night or early in the mornings.</li> <li>-Remove fence. Quiet zone.</li> <li>-Quiet zone at time of building.</li> <li>-Either project should not go forward without full funding of quiet zone improvements and all regulatory approvals are secured before a project starts.</li> <li>-Quiet crossing: taken into consideration at the time of design. Don't tell us you'll do it later!!</li> <li>-Landscape. Quiet! Quiet! Quiet!</li> <li>-Quiet zone and crossings.</li> </ul>	15
Get it going ASAP	<ul style="list-style-type: none"> <li>-I'm in my sixties. Would like to cross the tracks legally before I die!</li> <li>-Can't say right now. Will I see this in my lifetime?? I am 65 y.o.!</li> <li>-Just needs to happen sooner rather than later.</li> <li>-No-I do not want any more delay on forward movement with the crossings.</li> <li>-Just do it ASAP please.</li> <li>-Whatever we need to get crossings sooner.</li> <li>-No. Please put multiple crossings as soon as possible. We have a two year old and this would make the neighborhood safer.</li> <li>-The option that can be expedited is preferable.</li> </ul>	9
Landscaping	<ul style="list-style-type: none"> <li>-None, landscaping. Walking path along Vulcan.</li> <li>-Hopefully not as guy presented. Need plantings and trees.</li> <li>-Improve landscaping</li> <li>-Just some greenery and a way to get there - via a pathway on the Vulcan side. There seems to be a good amount of space in front of the cars/parking along the East side. Can we put a dg path there?</li> <li>-Landscape. Quiet! Quiet! Quiet!</li> <li>-Priority is to have a legal, at grade, pedestrian crossing top priority with the city, approved and started as quick as possible; a secondary thought would be landscaping around the crossing, to beautify it.</li> <li>-Properly finished grounds with landscape and walkways/ parking on the east side of the tracks Hillcrest-Glaucus. Also deterrents to prevent vagrants parking their vehicles in the area. I have teenage girls and don't like having the potential of harm to them. Megan's Law list offenders who reside but don't account for vagrants in the area. I saw on the report about cameras to observe pedestrian traffic but kind of like that they can also pick up vehicle activity too!</li> </ul>	9
Great proposed locations!	<ul style="list-style-type: none"> <li>-Great plans with low cost and minimal visual impact!</li> <li>-These look pretty decent.</li> </ul>	4
Above grade crossing	<ul style="list-style-type: none"> <li>-Bridge over railroad</li> <li>-I would like an above or below grade option to be pursued so that the train horn doesn't have to be blown as often. Leucadia has a lot of trailer/tiny home communities (houses w/thin walls) and the horn will really affect those people. BUT any crossing option is awesome, thank you!</li> <li>-A pre-fab bridge. Need 30 feet of airspace &amp; easement for ramps. Bridgebros.com 100 feet = \$3 million. No need for train to blow whistle, no fatalities during crossing.</li> <li>-Long run-thoughtful look at a cool overpass-think Highline in NYC, 5 Circles in Denmark, Webb Bridge in Melbourne. We can afford nice things.</li> </ul>	4
Sidewalks on Vulcan	<ul style="list-style-type: none"> <li>-Integrate sidewalks along Vulcan into the design. Along with detention seeds for drainage &amp; landscaping along the vulcan corridor.</li> </ul>	3
Noise concerns	<ul style="list-style-type: none"> <li>-I am extremely concerned about the additional noise associated with the at-grade concept. I would not support horns or additional train horns triggered by the crossings. I would rather walk around than have the extra noise.</li> <li>-Yes!! I'm very worried about the sound of the gate going down every 10 minutes! I live very close to the proposed gates. Is it possible to build only one of the proposed crossings but make it an underpass to eliminate noise from the gate going ding ding ding every 10 minutes. This would also eliminate the need for the train horn.</li> <li>-Zero noise pollution. No horns!!</li> </ul>	3
Crosswalks alignment	<ul style="list-style-type: none"> <li>-Better alignment with crosswalks on PCH</li> <li>-Vent monitor and as long as it would not cause a delay. I would like to see crossings align to crosswalks as closely as possible.</li> <li>-At Grandview have the ramp exit/stair exit align more with the crosswalk or at least point that direction.</li> </ul>	3

Lighting for crossings	<ul style="list-style-type: none"> <li>Are there lights for nighttime crossing?</li> <li>Sidewalks and lighting please.</li> <li>In that the ramp on Vulcan side ends adjacent to the busy street, a lighted street crossing similar to those on PCH &amp; at Sanford at Vulcan would be appropriate.</li> </ul>	3
Line up crossing(s) to the street(s)	<ul style="list-style-type: none"> <li>For the Phoebe/Jason option, please consider lining the East side access to either Phoebe or Jason street, putting it in the middle of the block seems to be difficult for pedestrians crossing West.</li> <li>Make street line-up from West side to make it easier. Use other sounds to prevent more train horn noise.</li> <li>In that the ramp on Vulcan side ends adjacent to the busy street, a lighted street crossing similar to those on PCH &amp; at Sanford at Vulcan would be appropriate.</li> </ul>	3
Below grade crossing	<ul style="list-style-type: none"> <li>Would prefer below grade crossing</li> <li>Ideally an underpass-for longterm beautification plus additional land use. Quiet zone is important.</li> </ul>	3
Consider underground crossings	<ul style="list-style-type: none"> <li>Please consider underground crossings to automatically enable a quiet zone for the crossings. As a part of the design phase-do a wayfinding analysis to determine flow of people and bikes/traffic- this project as it stands today has treated the crossings as isolated from the urban fabric of Encinitas/Leucadia. For example, why would you not pair crossings with roadway 101 lights so that as people cross the tracks and 101 they have safe access.</li> <li>Below ground crossing.</li> </ul>	2
At-grade crossing	<ul style="list-style-type: none"> <li>At grade crossings would be great. So we can walk or bike more easily to local businesses.</li> <li>Priority is to have a legal, at grade, pedestrian crossing top priority with the city, approved and started as quick as possible; a secondary thought would be landscaping around the crossing, to beautify it.</li> </ul>	2
Walking Trail/Path	<ul style="list-style-type: none"> <li>Like to have walking trail - on East side of railroad tracks also!</li> <li>It would be great to add a walking path along Vulcan Blvd for pedestrians to feel safe. Maybe just continue the rail trail all the way to La Costa.</li> </ul>	2
Better aesthetics	<ul style="list-style-type: none"> <li>Both currently look extremely ugly. Please design so it matches character of Leucadia.</li> </ul>	2
Path in front of parking lot	<ul style="list-style-type: none"> <li>I think it would be advantageous to have a stamped DG pathway walkway in front of the parked cars that runs the length of the fence to keep people from walking in the street behind parked vehicles. There seems to be plenty of room and plans added bonus!</li> <li>Just some greenery and a way to get there - via a pathway on the Vulcan side. There seems to be a good amount of space in front of the cars/parking along the East side. Can we put a dg path there?</li> </ul>	2
Ramp needed	<ul style="list-style-type: none"> <li>It's hard to tell how the crossing will contribute to the overall design of the streets and traffic flow. There definitely needs to be a ramp so to increase access for community elders.</li> <li>Any design that includes a ramp for bikes and strollers would be wonderful!</li> </ul>	2
Other	<ul style="list-style-type: none"> <li>Need crosswalks at Vulcan for safety-make sure lots of space-walking &amp; bike path to ensure safe access to the crosswalk to create a flow. Having a nice walk path/bike path along Vulcan will really create a nice alternate mobility flow!</li> </ul>	1
	<ul style="list-style-type: none"> <li>Need good access to the crossings along both sides of Vulcan &amp; Coast Highway</li> </ul>	1
	<ul style="list-style-type: none"> <li>Glaucus goes all the way to the freeway, crossings should be same</li> </ul>	1
	<ul style="list-style-type: none"> <li>Avoid additional horns</li> </ul>	1
	<ul style="list-style-type: none"> <li>Install gates like in Cardiff</li> </ul>	1
	<ul style="list-style-type: none"> <li>No stairs, they're just a waste of space and money.</li> </ul>	1
		1
	<ul style="list-style-type: none"> <li>Bike Ped - DRAWING</li> </ul>	
	<ul style="list-style-type: none"> <li>Make sure fence not cut</li> </ul>	1
	<ul style="list-style-type: none"> <li>Remove fence</li> </ul>	1
	<ul style="list-style-type: none"> <li>Train noise no factor for me</li> </ul>	1
	<ul style="list-style-type: none"> <li>Location at Grandview is ideal</li> </ul>	1
	<ul style="list-style-type: none"> <li>Use directional horns at the crossings instead of the trains blowing their horns</li> </ul>	1
	<ul style="list-style-type: none"> <li>No lights</li> </ul>	1
	<ul style="list-style-type: none"> <li>I'd like to see them not grey. Maybe hire an artist to paint them or an elementary school. Make it more interesting. Show some community through the art. Also, why not an above grade crossing so the train doesn't have to sound the horn.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Help with the flooding</li> </ul>	1
	<ul style="list-style-type: none"> <li>No more all bike lanes on Vulcan &amp; 101 - too many.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Closer alignment with Hillcrest Dr. so as to be closer to the park (Leucadia Oaks Park).</li> </ul>	1
	<ul style="list-style-type: none"> <li>Proposed change on either Grandview option: have the ramp go the other direction on Vulcan so you don't have to go away from the PCH crosswalk at Grandview.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Stairs &amp; Ramps</li> </ul>	1
	<ul style="list-style-type: none"> <li>I think there should be more attention to the future double track that will happen at some point.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Yes. Crossings should not rely on streetscape project. They should be at Hillcrest on East side of tracks.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Both locations have the ramp on the Vulcan side coming right to the edge of a quite busy street, Vulcan. Perhaps a turn in the ramp would be good so the entrance isn't right on the street.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Benches and Bike racks</li> </ul>	1
	<ul style="list-style-type: none"> <li>Better design-more local/native materials, colors (ie handrails). Be certain it is wide enough for bikes/strollers. Better native landscape/enhance landscape.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Beautify the railings; approve these plans ASAP! We want to visit downtown Leucadia by foot!!! No more workshops-just build.</li> </ul>	1
	<ul style="list-style-type: none"> <li>You need to consider ADA requirements for ramps and incline. Stairs would not seem to be an option. What happens when double tracking comes?</li> </ul>	1

<p>·Drainage and crosswalks or flashing light for pedestrian safety on Vulcan-also since wheelchairs may access at grade x-ing-what provisions for sidewalk and x-walks/safety will there be? I understand budget issues are a consideration-however it seems a necessity to plan for at grade x-ings and pedestrian safety at the same time. Obviously, best immediate plan might limit sidewalks, but x-walks with yellow flashing lights (butto) would be advisable. My understanding is that the train horn test a year ago (maybe longer) was not necessarily the actual horn that would be sounded at the time of a train running on the rail.</p>	1
<p>·Solar foot path lights like at underpass at P.EC.</p>	1
<p>·Simplify. Cut the wires and pour concrete up to tracks. Put up lots of "danger" "look both ways" and "suicide prevention" signage. Trust people with their own safety.</p>	1
<p>·Cannot see on plans, but there should be signaled/hawk pedestrian crosswalks installed on both sides of new rail crossings to provide safe passage to the rail crossing.</p>	1

# City of Encinitas - Leucadia At-grade RR Crossings at Grandview/Hillcrest & Phoebe

Please list any other comments you have

General Category	Comments	Tabulation
Other Comments	More info that at grade won't happen w/o the quiet zone. The drawings look good. Let's get it done!!	78
	A cost comparison would have been nice. If adding stairs is notably more expensive or will cause installation prolongment then forget the stairs.	
	Residents near existing pedestrian crossing gates indicates that the gates themselves are much too loud. Please pursue quieter hardware for the gates.	
	Ramps are good	
	We have enjoyed the underpass by the school and use it with our bikes to cross so these ideas are great if you cannot drop the train lower and build green space over the top.	
	Please keep us informed of when the application to the CPUC is sent. Can you advise on how to lobby Howard Huie as private citizens?	
	Could there be a button to push-like at the pedestrian crossings on the 101?	
	Many good railroad crossings in the works. These don't work.	
	These crossings are a must for this community. People are crossing as it currently is. Let's make it safe!!	
	It would be nice to see the city demonstrate how these crossings relate to the broader street scaping plan for Leucadia. These are low cost and simple crossings, if budget is an issue there may be alternative funding sources available if the project can demonstrate storm water capture and habitat restoration/as well as increased recreation. My main comment is this plan lacks a vision/imagination for Leucadia and is falling short.	
	Please do a pedstrian flow analysis to determine the demand of the proposed options. Also, utilize quiet crossings. A peaceful Leucadia over everything.	
	Please build as fast as possible. Please build to be compliant with quiet zone.	
	These are essential. For safety as well as survival of establishments, flow of pedestrian traffic and less motor traffic/pollution issues.	
	This is badly needed, we appreciate your efforts to get this done! Will there be sidewalks added to access crossings?	
	We own a restaurant on Coast Hwy and have had many customers and more importantly, team members that have been affected by the fence that was put up.	
	These would be great-BUT!!! Only if we have some noise mitigation w/the train horns.	
	Please move forward effectively and efficiently.	
	I have time to help with this as a neighborhood contact or whatever you need.	
	Fast and now is better than perfect not drawn out. Fence is destroyed because of poor planning (cart before the horse). People just want their beach and access to 101 businesses back.	
	Drainage and quiet zones!	
	(2) at grade crossings at #1M each vs (2) up or under crossings at \$10M each. Leaves \$18M for affordable housing.	
	The addition of these crossings will enhance the community and environment.	
	Noise, noise, noise. Fix our roads.	
	Why is there concern about adding stairs.	
	Stop the noise, noise, noise!!!! We want what Cardiff gets!!!! Fix Vulcan ave!!!!	
	More noise should not be an option!! Please. We in Leucadia are tired of being a step-child.	
	Quiet zone critical, but understand need to approve directional, in-line horns at crossing if needed. Underground all of Encinitas and sell new land to finance it.	
	We should add one more in Cardiff.	
	Please give us 2 crossings along this stretch.	
	Consider better lighting/sidewalks to Vulcan Ave. Very dangerous place to walk.	
	Will Encinitas be designated as a quiet zone? Will these crossings increase train honks?	
	Both crossings need lights. It would be nice to incorporate art from the community into both builds.	
	Train horn noise, why during 11pm-7am? Airport has restrictions, why are train exempt? I think lights and local sounds can be used to warn public of trains.	
	It would be great to have two at grade crossings evenly spaced between Leucadia Blvd & La Costa Ave.	
	Just want the 2 at grade crossings.	
	Beautiful trees and flowers.	
	Please hurry and the trash and potholes on Vulcan between La Costa Ave and Enc. Blvd are terrible.	
	The design of the handrail should be improved and be less chunky. Turning radius for bikes to be accommodated especially w/cargo bikes w/kids.	
	Trees and flowers.	
	Let's give us access to beach please!!	
	Make sure it is also easy to cross PCH because the goal is to get way over across, not just on the other side of the tracks. Quiet zone.	
	Grandview crossing could be 1/2 block farther North. Must be quiet zone!	
	We have needed these-actually we need three of them.	
	What will happen when you double track?	
	This is a huge deal to your residents and businesses.	
	Examining best practices in neighboring cities and European cities which have many at grade, over and underpass crossings.	
	Need crossing for business. No horns if available for residents.	
	I'm interested in seeing if the Grandview/Hillcrest crossing can occur first. There isn't a North Leucadia crossing, greatly needed.	
	Haven't been to Leucadia Donuts, The Leucadian, Papagello, etc. Business suffers as do we.	
	The "at grade" proposals are suffering for reasons of cost, speed on construction, maintenance and safety (visibility ie no tunnel).	
	With a quiet zone developed in paralld is the best solution. Please preserve in this design for mobility and safety of our residents and visitors.	
	AGX and Q2 solutions.	
	Your "bridge" design probably won't meet ADA requirements.	
	Better/safer separation from ramp (East side) + Vulcan - many are kids going down ramp into street.	
	We have been attending meetings and wanting a way to cross the RR tracks legally for a long time. Kids have grown! Grandkids love.	
	Question: what happens when at grade x-ings are installed and a later decision is made to double track?	
	I would add that I support whatever designs that would be the fastest to get done. These are a long time coming and if my above design may cause delay then I opt for the fastest.	
	We need a crossing as soon as possible which does not require people to climb over a fence. We need access to our community-both sides of the track.	
	Fast track ASAP these crossings. Thank you for the clear explanations from staff/consultants.	
	We're extremely concerned about the train horns if the crossings aren't over or under the tracks.	
	The fence made it more dangerous. Businesses suffered. Elderly suffered. NCTD lied about waiting on the fence.	
	Please consider the children and families who cannot accept horns across 1.3 miles in front of our homes. Please no horns!	
	The crossings are needed. Please accelerate the process as much as feasible.	
	I missed the train horn tests, could another one w/Amtrak freight and Coaster trains be repeated?	
	Simplify, do ASAP. Save everyone lots of \$\$\$.	
	Will the Leucadia train quiet zone be in place before these crossings are built? 8 more horns per train is a lot.	
	At grade crossings are desperately needed. It seems like Leucadia always takes a back seat to our neighbors in Cardiff.	

	<p>The big concern is the noise. You can control this. From the start.</p> <p>Decreasing train noise needs to be part of the plan even if the ramps are at-grade.</p> <p>We were able to attend the meeting but did not stay due to the size of the crowd. Though we might favor the stairs and ADA ramp alt directly across from Phoebe, we support any alternative that provides safe sensible access to/from West Coast Hwy and Beacons/Grandview beaches.</p> <p>There needs to be improved pedestrian safe walking options east of the rails between leucadua oaks park and the proposed crossing at grandview. Please get rid of the parking on the dirt east of railroad and put a walking trail there. As it is, there are families darting out onto vulcan from between parked cars. With a crossing to the beach this will be even worse. Please make this safer. If we build a crossing it needs to be packaged with a safe landing place on both sides. Not a death trap for pedestrians.</p> <p>Quiet Zone like Cardiff cousins! Fix Vehicle and Pedestrian Safety on Vulcan. Now that railway has been fenced, blocking (yes illegal) crossing, the pedestrian path alternate route is more dangerous that carefully crossing the tracks as there is no pedestrian pathway! This means the business and owners we love and frequent are getting less business or we are not driving 1-2 miles to get to a business several hundred feet away!</p> <p>I think these crossings are desperately needed. The beach parking lot can't handle more parking &amp; finding street parking can be challenging. They have also lost access to restaurants, grocery store &amp; liquor store. Hopeful we can get a quiet zone. That 4:30 am north bound Amtrak really lays on the horn.</p> <p>Excited for this well needed upgrade!</p> <p>I'm happy there is traction with this movement; I've been following for over 10 years, and it's been frustrating to see the mayor and city council consistently push it down the priority list to choose projects they can accomplish in their term, but don't impact residents of Encinitas as much as a legal crossing. The At Grade crossing, has proof of concept in other cities, is the most affordable and practical and I hope there's momentum to keep this going until the finish line. Thanks for all your efforts, James.</p> <p>It is imperative that then crossings do NOT create additional train noise. If the trains need to blow their horns everytime they hit the path, this is a non starter the community would be better off without. These crossings need to be implemented in a way that they do not create additional train noise. It is imperative to people that live in the neighborhood that train noise be managed. Extra train horns at all hours would be a very bad outcome and if that were the case we would be better off with no crossing.</p> <p>A written paragraph description of each crossing would be beneficial for complete understanding of proposal. I spent over an hour last night on city website trying to find a link from City Council or Traffic and Mobility and was not able to locate meeting minutes or video presentation- a live one (not the power point), the powerpoint is very limited. Hard to understand %grade and all the markings w/o a drafted larger photo to go with.</p> <p>These rail crossings are essential to all residents of NW Leucadia to safely navigate throughout our community. This infrastructure is long overdue.</p>	
None	No Comments or N/A	36
Get It Done!	<p>Please work as fast as possible.</p> <p>Please do this ASAP! Thank you!!</p> <p>Just build it!</p> <p>Please, please, please. Begging. Do not delay. Make it safe for everyone to play!</p> <p>Whatever is decided has to be done ASAP!</p> <p>I hope this will be important enough so it's done immediately. I have been here only 7 yrs. I can't imagine neighbors that have ased for this over 20 yrs.</p> <p>N. Leucadia has been waiting long enough!</p> <p>A speedy completion is my main objective.</p> <p>We have been wanting this since we moved here 30 years ago! Please please make this happen.</p> <p>Sooner the better.</p> <p>Just do it!</p> <p>Please expedite the construction, we're not getting any younger.</p> <p>Please complete as soon as possible. We would love to walk to the businesses and restaurants on the West side of the tracks!!!</p> <p>Look at this crowd. We have been asking for this for 20 years! We need access.</p> <p>We really need a crossing around Jason &amp; Glaucus. We need it as soon as possible. It's very dangerous without a crossing.</p> <p>Get it done!</p> <p>Either option at both locations are satisfactory. Priority is to get them done soon!</p> <p>I honestly think that residents would be happy with either option. Pick one and get it done!</p> <p>It's time now to unfence in the citizens of Leucadia. Just do it ASAP.</p> <p>Let's do this!</p> <p>Please push this through ASAP.</p>	21
Thank you	<p>Thanks for doing this. Hopefully you saw how much interest and support there is for these crossings.</p> <p>Great to see this is moving forward.</p> <p>Thank you for doing this!</p> <p>Thank you.</p> <p>Appreciate all the hard work the City employees have put in on this!!</p> <p>Thanks to everyone who has brought this project closer to reality.</p> <p>Thanks for getting this moving!!</p> <p>Thanks for including us!</p> <p>Thank you for all the work to make these happen. They will be a great enhancement for the community-tying together neighborhoods on both sides of the tracks.</p> <p>Thank you for this incredibly informative workshop. You guys rule!</p> <p>Thank you to all of you who are working on this project. We've lived here for 35 years and cherish access to the other side of the tracks!</p> <p>Very grateful that the city is moving forward with these critical projects. It will benefit residences and businesses alike.</p> <p>Thank you for moving this project along, we are excited. People first.</p> <p>Thanks for working on this! We REALLY want a proper crossing to get to the beaches and businesses on the 101.</p> <p>Thank you for listening to the needs of the community on this issue!!!! I</p> <p>am in favor of both proposed locations and a ramp is preferred over stairs but only if that does not cause any delay in moving forward.</p> <p>Thank you for planning the crossings at Hillcrest and Glaucus!</p> <p>As a resident living in the Coral Cove community I appreciate your time and efforts... and I look forward to seeing this completed someday soon :)</p>	17
Quiet Zone	<p>Would love to see the quiet zone happen in conjunction with the grade crossing. Would like to hear a typical horn not like 2 years ago! I look forward to hearing how we can help get this project approved. Having a nice walk path/bike path along Vulcan will ideally create a nice alternate mobility flow!</p> <p>This is a long time coming and I would just like crossings to happen. Quiet crossing would be great.</p> <p>Will only support train quiet zone put in place.</p> <p>Quiet zone a must. Quiet for motorcycles too.</p> <p>Please coordinate at grade crossings in connections with an implementation of a quiet zone, at least in the Leucadia Blvd to La Costa Avenue corridor.</p>	7

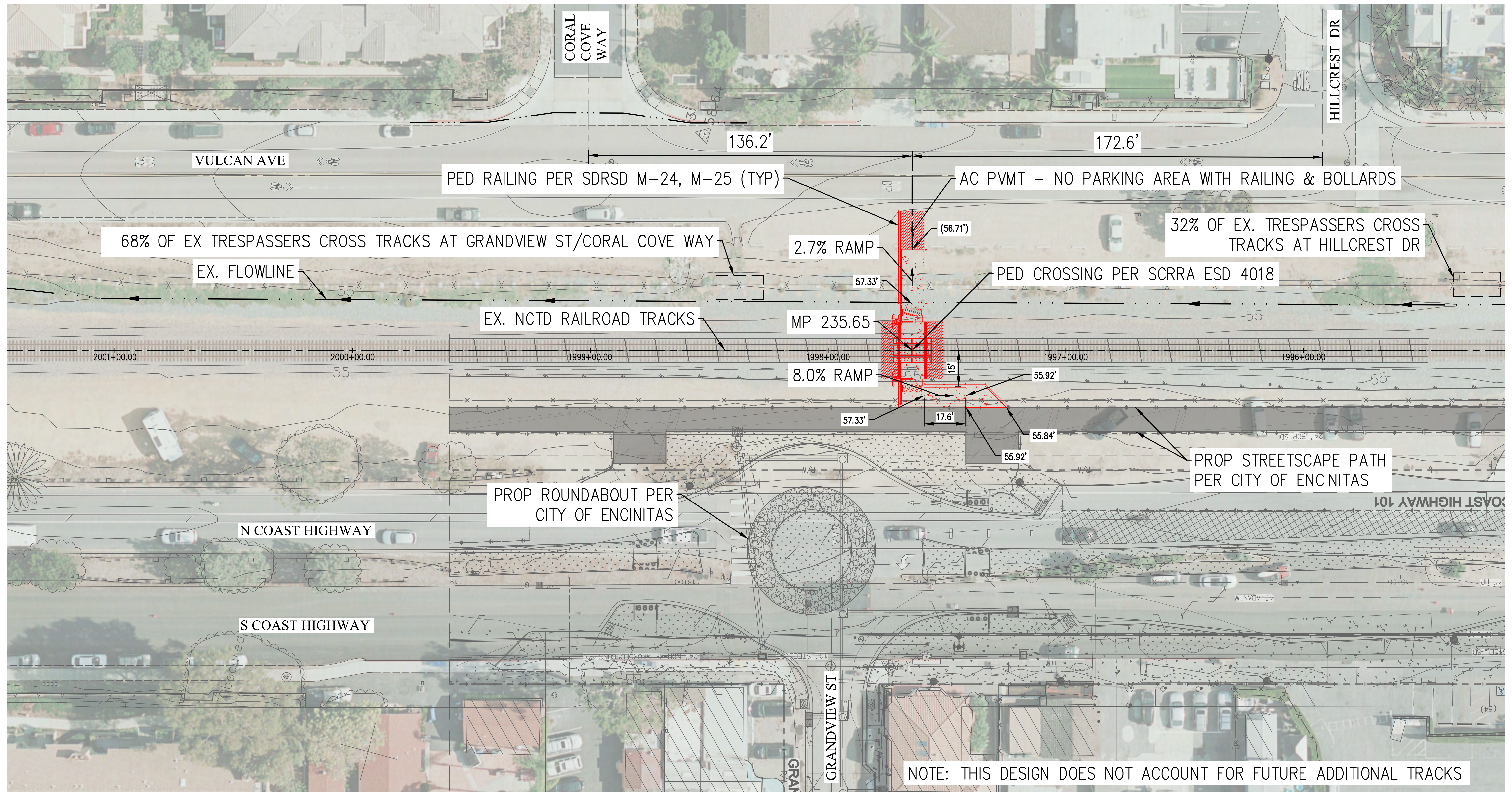


# **APPENDIX E**

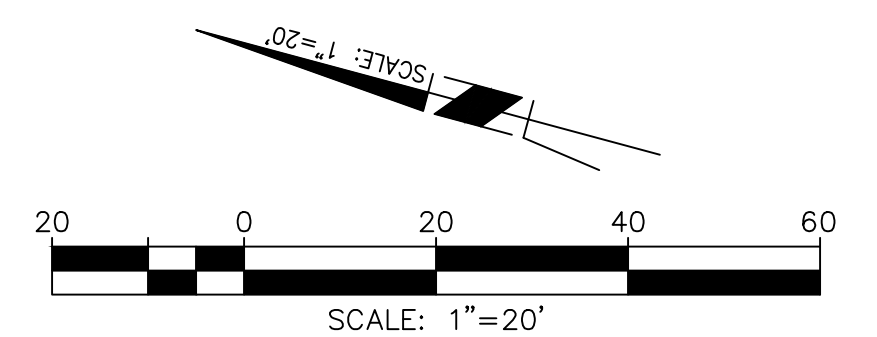
## **Crossing Alternatives**

### **Full Size Plan Sheets**





## PATHWAY RAMP ALTERNATIVE



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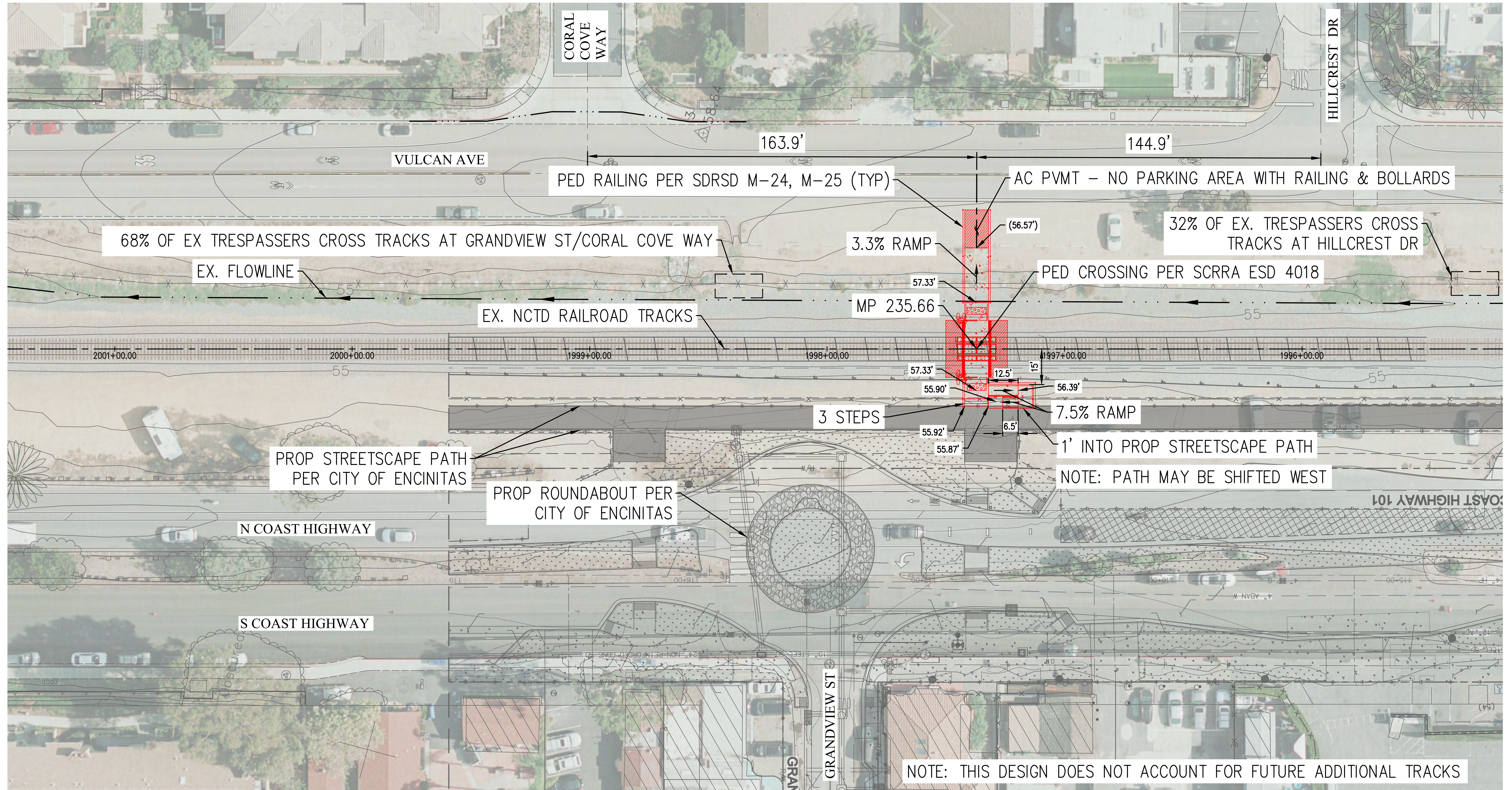
15625 ALTON PKWY, STE 140  
IRVINE, CA 92618  
WWW.RAILPROS.COM

E-MAIL: INFO@RAILPROS.COM  
PHONE: (714) 734 - 8765

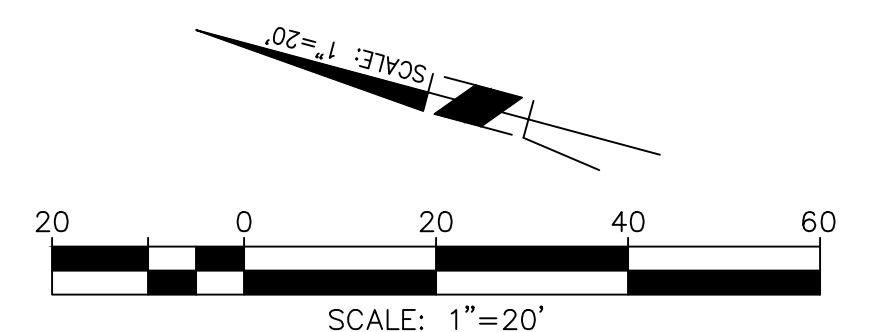
**NORTH LEUCADIA AT-GRADE CROSSINGS  
GRANDVIEW ST PED CROSSING**

SCALE: 1" = 20' | DATE: 12-01-2022 | SHEET: 1 OF 1





## STAIRS AND ADA RAMP ALTERNATIVE



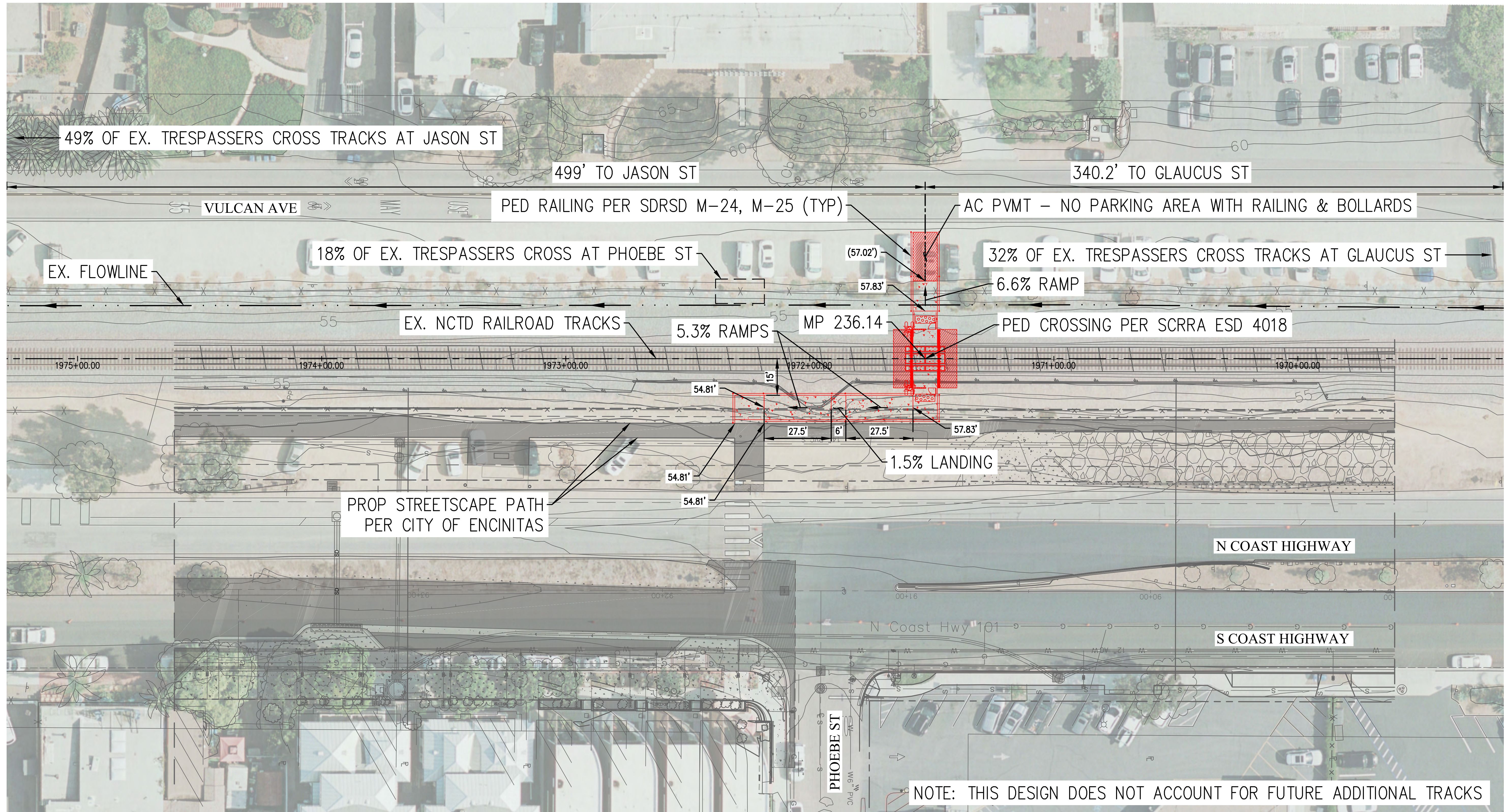
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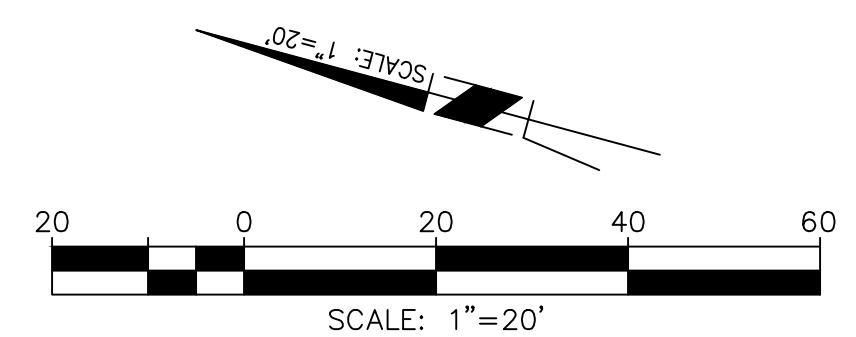
NORTH LEUCADIA AT-GRADE CROSSINGS  
GRANDVIEW ST PED CROSSING

SCALE: 1" = 20' DATE: 12-01-2022 SHEET: 1 OF 1





## PATHWAY RAMP ALTERNATIVE



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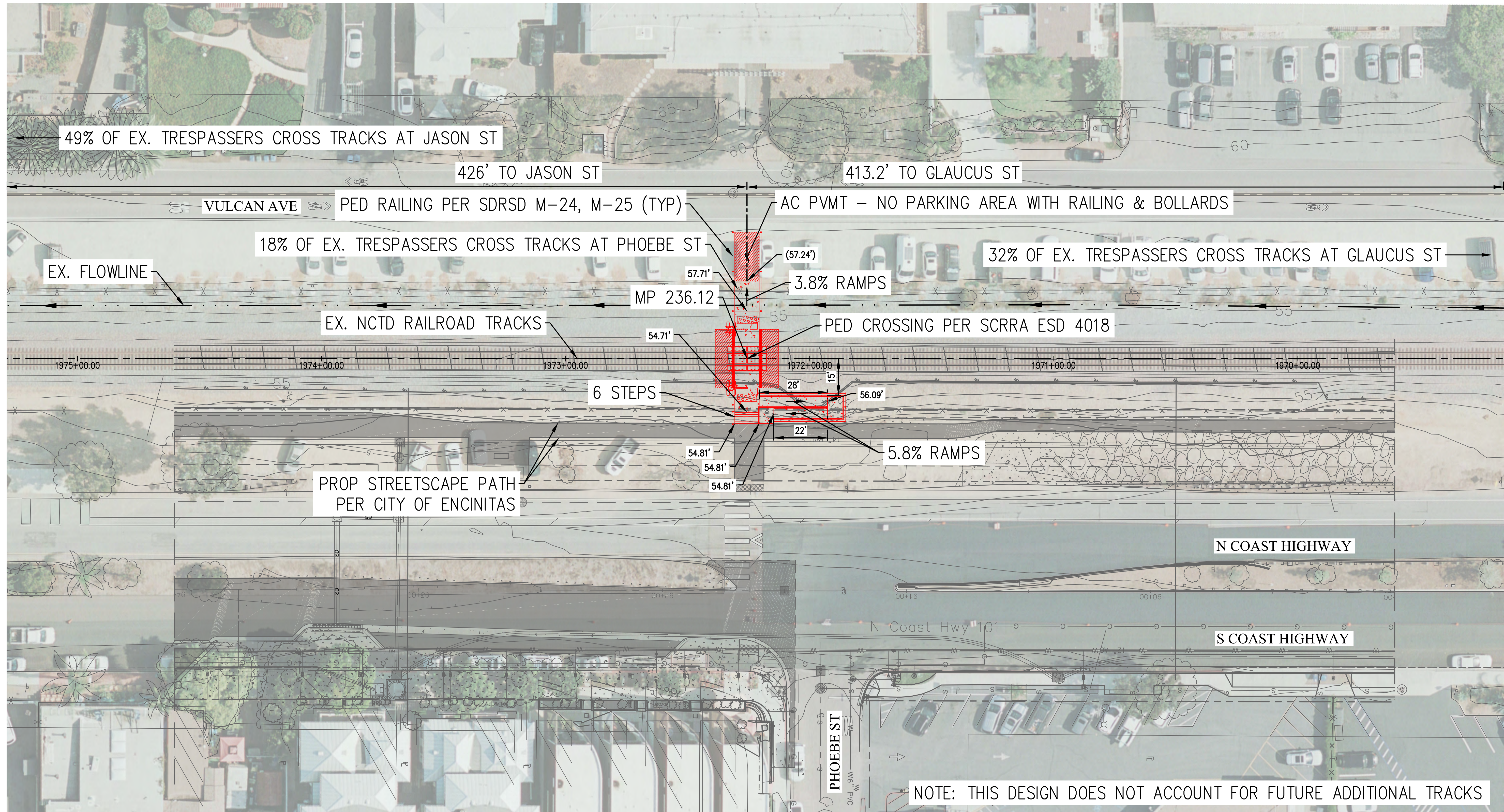
**NORTH LEUCADIA AT-GRADE CROSSINGS  
PHOEBE ST PED CROSSING**

SCALE: 1" = 20' | DATE: 12-01-2022 | SHEET: 1 OF 1

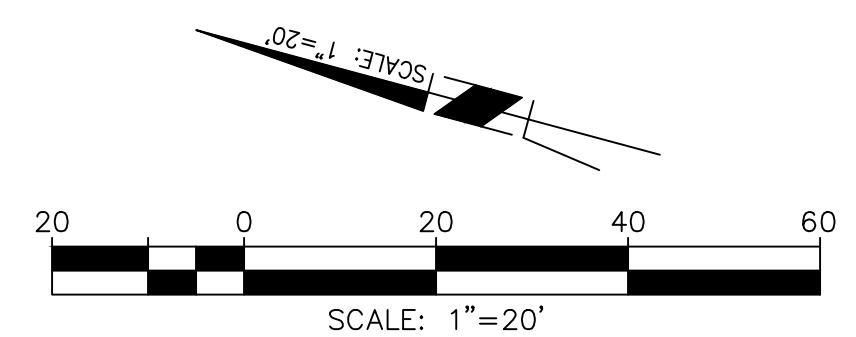


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## STAIRS AND ADA RAMP ALTERNATIVE



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**NORTH LEUCADIA AT-GRADE CROSSINGS  
PHOEBE ST PED CROSSING**

SCALE: 1" = 20' | DATE: 12-01-2022 | SHEET: 1 OF 1