Chapter 2
Project Description

2.1 Introduction

The Proposed Project is a new 42-mile, 7-station passenger rail project that will connect the existing Dublin/Pleasanton Bay Area Rapid Transit (BART) Station in Alameda County to the approved Altamont Corridor Express (ACE) North Lathrop Station in San Joaquin County. Valley Link will use existing transportation corridors: the existing Interstate (I-) 580 corridor (11.7 miles) in the Tri-Valley; the Alameda County Transportation Corridor right-of-way (ROW) through the Altamont Pass (14.5 miles); and the existing Union Pacific Railroad (UPRR) Corridor (16.1 miles) in Northern San Joaquin County.

This chapter provides a detailed description of the Proposed Project that is evaluated in Chapter 3, *Environmental Impact Analysis,* of this Draft environmental impact report (EIR). This includes a description of the proposed:

- Stations: Dublin/Pleasanton, Isabel, Greenville, Mountain House, Downtown Tracy, River Islands, and North Lathrop
- Tracy Operation and Maintenance Facility (OMF)
- Alignment segments: Tri-Valley (within Interstate I-580 median), Altamont (within the Alameda County Transportation Corridor ROW and existing UPRR ROW), Tracy to North Lathrop (within existing UPRR ROW)
- Initial operating segments (IOS)
- Vehicles and vehicle variants: diesel multiple unit (DMU), hybrid battery multiple unit (HBMU), battery-electric multiple unit (BEMU), diesel locomotive haul (DLH)
- Construction
- Conceptual operating plans
- Maintenance activities
- Projected ridership
- Project costs and revenue
- Permits and approvals

This chapter also includes the following project alternatives that have been analyzed at an equal level of detail in Chapter 3, *Environmental Impact Analysis*, of this Draft EIR:

- Southfront Road Station Alternative
- Stone Cut Alignment Alternative
- Mountain House Station Alternative
- West Tracy OMF Alternative
- Downtown Tracy Station Parking Alternative 1

- Downtown Tracy Station Parking Alternative 2

The Proposed Project and alternatives analyzed at an equal level of detail described in this chapter were identified through previous studies and through initial screening, and were determined to have the potential to meet most of the project objectives and be completed within a reasonable timeframe; therefore, they merited full evaluation in this Draft EIR.

2.2 Project Goals and Objectives

The major goals and objectives adopted by the Tri-Valley–San Joaquin Valley Regional Rail Authority (Authority) Board of Directors (Board) for the development of the Valley Link Project and its environmental review in this Draft EIR are described below.

2.2.1 Improve connectivity within the Northern California Megaregion: connecting housing, people, and jobs

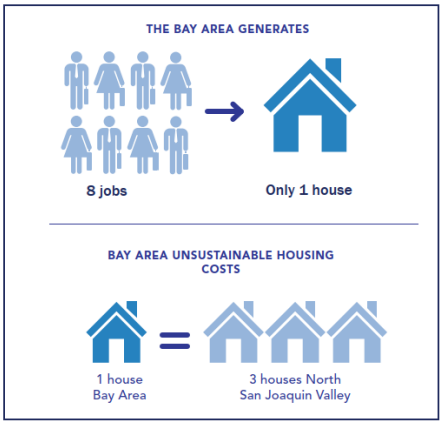
The Proposed Project would provide a reliable alternative to congestion for the more than 93,000 San Francisco Bay Area (Bay Area) workers now commuting daily from their homes in Northern San Joaquin County. Since 2015, San Joaquin County has had the second fastest population growth in the state. Some of the longest commutes in the megaregion originate in the communities of Tracy and Lathrop. San Joaquin County places in the "Top 10" nationally for its percentage of residents with a commute over 90 minutes long. These commuters spent an estimated collective total of over 5,000 hours stuck in traffic in each direction during an average day during 2017. These long commutes can be explained in part by the long distance traveled and by the growing amount of congestion on I-580. Overall traffic is projected to increase by an estimated 75 percent from 2016 to 2040 on I-580 and truck traffic is expected to increase by 58 percent. Adding to this congestion is the jobs-housing imbalance and cost of living in the Bay Area. Bay Area home prices are estimated to be three times higher than the median home price in Northern San Joaquin County.

Car and truck congestion on I-580.

2.2.2 Establish rail connectivity between the Bay Area Rapid Transit District's rapid transit system and the Altamont Corridor Express commuter service in the Tri-Valley

The 42-mile, 7-station Valley Link Project would link the Dublin/Pleasanton BART Station in the Tri-Valley with a major intermodal ACE station in North Lathrop. Currently, there is a 5-mile gap between ACE service and the BART system in the Tri-Valley and, after decades of planning, the BART board made a decision in May 2018 to no longer plan for expansion of the BART system to Livermore.

Housing affordability issues in the Bay Area have been one of the most significant causes of this congestion. Bay Area home prices are estimated to be three times higher than the median home price in Northern San Joaquin County. This is due in large part to the Bay Area's housing shortage.



Source: Bay Area Council Economic Institute

Connecting BART and ACE with frequent, bidirectional service throughout the day, and providing expanded passenger rail connectivity between the San Joaquin Valley and the Bay Area, will increase inter-regional mobility and provide much-needed highway capacity for expanded goods movement to the Bay Area's five seaports and the inland Port of Stockton. The connection of these two intermodal hubs would link nearly 500 miles of commuter and intercity rail with more than 130 stations in the Northern California Megaregion, providing an alternative to congested roads and highways.

2.2.3 Pursue project implementation that is fast, cost-effective, and responsive to the goals and objectives of the communities it will serve

The Authority's adopted transit-oriented development (TOD) policy supports the regional goals of both San Joaquin County and the Bay Area by encouraging the development of station area plans tailored to the goals and objectives of each community. At a minimum, these plans would define the land use plan for the area, zoning, design standards, parking policies, and station access plans. An initial step toward these station area plans included outreach to the local stakeholders and communities along the corridor to identify the high-priority goals and objectives for the station(s) in their community.

The TOD policy, along with the Authority's adopted Sustainability Policy and the Project Feasibility Report, presents strategies to create vibrant and livable station area communities within the proposed station environs.

2.2.4 Be a model of sustainability in the design, construction, and operation of the system

The Proposed Project will operate 74 daily round trips—providing an estimated 33,000 daily rides in 2040. This will result in the reduction of an estimated 99.4 million vehicle miles traveled per year

in 2040 and the reduction of an estimated 32,220 to 42,650 metric tons of greenhouse gas (GHG) emissions, depending on the final Project configuration. In addition, through the Authority Board–adopted Sustainability Policy, Valley Link would further reduce vehicle miles traveled and GHG emissions for the system and within station environs through implementing strategies aimed to achieve a zero emissions system. Sustainable design and construction are also under consideration for the Valley Link Project, including solar panels at several of the proposed stations and the OMF.

2.2.5 Support the vision of the California State Rail Plan to connect the Northern California Megaregion to the State rail system.

The Proposed Project is designed to meet, serve, and expand on regional and State transportation goals as the Proposed Project and other investments in the megaregion are developed over the next two decades. Valley Link closes critical transit gaps and improves connectivity within the Bay Area and the Northern California Megaregion by connecting two designated State Rail Hubs, Stockton Area Hub and the Tri-Valley Hub, and providing a potential early connection to high-speed rail.

2.3 Detailed Project Description

This section includes a detailed description of stations, the OMF, and the Project alignment.

Construction of the Proposed Project would require the acquisition of ROW. Appendix C, *Preliminary Right of Way Requirements*, provides a list of parcels that could be affected by the Proposed Project including by acquisition, permanent easement, or temporary construction easement. Appendix E, *Valley Link 15% Conceptual Engineering Plans*, contains track plans and section drawings, structure plans, roadway plans, utility plans, station plans, construction areas, ROW plans, and temporary construction easement plans for the proposed Valley Link improvements.

2.3.1 Stations

This section provides a description of each of the proposed Valley Link stations. Consistent with implementing strategies identified in the Board adopted Sustainability Policy, as detailed in Chapter 1, *Introduction*, these station facilities are intended to provide the baseline transportation infrastructure needed to:

> Initiate service at earliest possible date and preserve land and right-of-way to allow for the implementation of phased design and infrastructure in support of Sustainable Community Strategies (Senate Bill 375).

The Board-adopted TOD Policy, also detailed in Chapter 1, *Introduction*, provides further direction and guidance regarding the station area plans to be developed by local jurisdictions prior to completion of final design. These plans, in combination with a requirement to meet corridor-level housing thresholds of 2,200 housing units per station, are intended to facilitate transit-oriented, pedestrian-friendly station areas; seamless connections between rail, shuttle buses, and fixed bus service; and promotion of active transportation (bicycling and walking), use of zero emission vehicles, and shared rides.

The Authority will work in partnership with local jurisdictions to support station area planning efforts, but these plans are not a part of the Proposed Project and would be the subject of a separate California Environmental Quality Act (CEQA) evaluation by each sponsoring jurisdiction.

A cross section of the typical station is shown in Figure 2-1. All stations would include passenger amenities such as platform shelters, benches, lighting, security cameras, signage, ticketing machines, bicycle storage facilities, landscaping, and emergency call boxes. Electric car charging stations and photovoltaic panels to offset electricity requirements are identified at specific stations as well as areas for passenger drop off and pick up (kiss and ride) and bus bays. Passenger parking would be provided at all proposed stations with the exception of the Dublin/Pleasanton Station. While the number of station parking spaces described in this section is based on projected demand for 2025 and 2040, the actual number of spaces would be determined in consultation with local jurisdictions.[1] While the Proposed Project does not include new transit services to access the stations, the Authority would work with local transit operators to provide improved transit service to Valley Link stations. Per the Board-adopted Sustainability Policy, all proposed stations (as well as other Project elements) would include sustainable design and construction practices including implementing high efficiency lighting, LED signage, drought-tolerant landscaping, and use of building materials with recycled content.

2.3.1.1 Dublin/Pleasanton Station

The Dublin/Pleasanton Station would be constructed in the median of I-580 north of and adjacent to the existing Dublin/Pleasanton BART Station. As shown in Figures 2-2A and 2-2B, improvements that would be constructed include:

- A 660-foot-long by 25-foot-wide, double-track, at-grade Valley Link station platform
- A Valley Link mainline track north of the existing BART tracks and a siding track north of the proposed platform
- Stairs, escalators, and elevators for vertical circulation within the station
- Overhead catenary system (OCS) and a traction power substation (TPSS) (BEMU variant only)

Valley Link passengers wishing to transfer to and from BART trains at the Dublin/Pleasanton Station would be required to go down to the station concourse level, exit the Valley Link or BART station, and then enter the desired transfer station. The final operating plan for the Dublin/Pleasanton Station will be determined in consultation with BART.

The Proposed Project does not include the construction of additional parking at the Dublin/Pleasanton BART Station. While the number of parking spaces at the station currently exceeds demand, it is anticipated that potential Valley Link passengers who park at the Dublin/Pleasanton BART Station with destinations west of the station would be offset by BART patrons currently parking at the station that would instead park at one of the Valley Link stations rather than driving to and parking at the Dublin/Pleasanton BART Station. Passengers traveling in the reverse commute direction from the Dublin/Pleasanton BART Station (eastbound during AM

[1] 2025 parking demand was based on an assumption that up to approximately 72 percent of Valley Link riders would drive to/from stations. 2040 parking demand was based on a reduced assumption that approximately 50 percent of Valley Link riders would drive to/from stations based on the Authority's adopted TOD policy and potential TODs around the proposed Isabel, Downtown Tracy, and River Islands Stations.

operating hours and westbound during PM operating hours) are projected to be very low and would have a minimal effect on parking at the Dublin/Pleasanton BART Station.

2.3.1.2 Isabel Station

The Isabel Station would be constructed both within the I-580 median and on a 24-acre site currently owned by BART along East Airway Boulevard south of I-580 and east of the Isabel Avenue I-580 overcrossing in Livermore. Access to the station would be provided from the expansion of one existing driveway and the construction of two new driveways along East Airway Boulevard. Improvements to East Airway Boulevard would include restriping for left turn lanes at each of the three station driveways and a traffic signal at the East Airway Boulevard/Rutan Drive intersection. As shown in Figures 2-3A through 2-3C, improvements that would be constructed as part of the Isabel Station include:

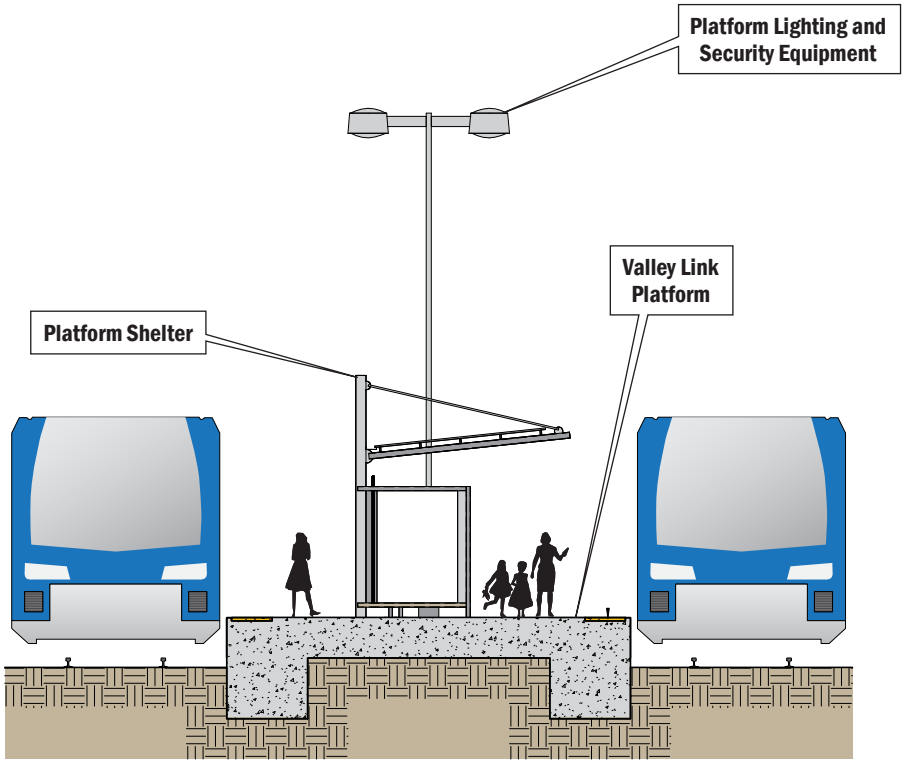
- A 400-foot-long by 30-foot-wide, double-track, at-grade Valley Link station platform in the median of I-580.[2]
- A Valley Link mainline track with an additional station track for passing in the median of I-580.
- Three surface parking lots providing up to approximately 850 parking spaces and five bus bays.
- Areas designated for future surface parking expansion and a potential 2- to 3-level parking garage to meet 2040 parking demand for a total of up to approximately 1,520 parking spaces (Figure 2-3B). This future parking would be within the 24-acre site.
- A pedestrian overcrossing from the parking lots over Arroyo Las Positas and eastbound I-580 to the median station platform, as well as a potential overcrossing of westbound I-580 (depending on available funding), including elevators and stairs to the station platform and at both ends of the bridge.

2.3.1.3 Greenville Station

The Greenville Station would be constructed on a 12-acre site on the north side of I-580 between I-580 and Altamont Pass Road and along a portion of the Alameda County Transportation Corridor ROW south of I-580 in Livermore. Access to the station would be provided by two driveways with left-turn lanes along Altamont Pass Road. The Valley Link alignment would transition from the I-580 median to the station platform via a single-track viaduct crossing over westbound I-580. As shown in Figures 2-4A and 2-4B, improvements that would be constructed as part of the Greenville Station include:

- A 400-foot-long by 30-foot-wide, double-track, elevated Valley Link station platform.
- A Valley Link mainline track with an additional station track for passing.
- Three surface parking lots providing up to approximately 670 parking spaces.

[2] With the exception of the Dublin/Pleasanton Station, all stations included in the Proposed Project would be designed to accommodate the future lengthening of the station platforms from 400 feet to 615 feet to accommodate longer trainsets in response to potential future increases in passenger demand. However, this EIR does not include an evaluation of the potential impacts related to the lengthening of the platforms, which is considered a separate project subject to a separate environmental review.



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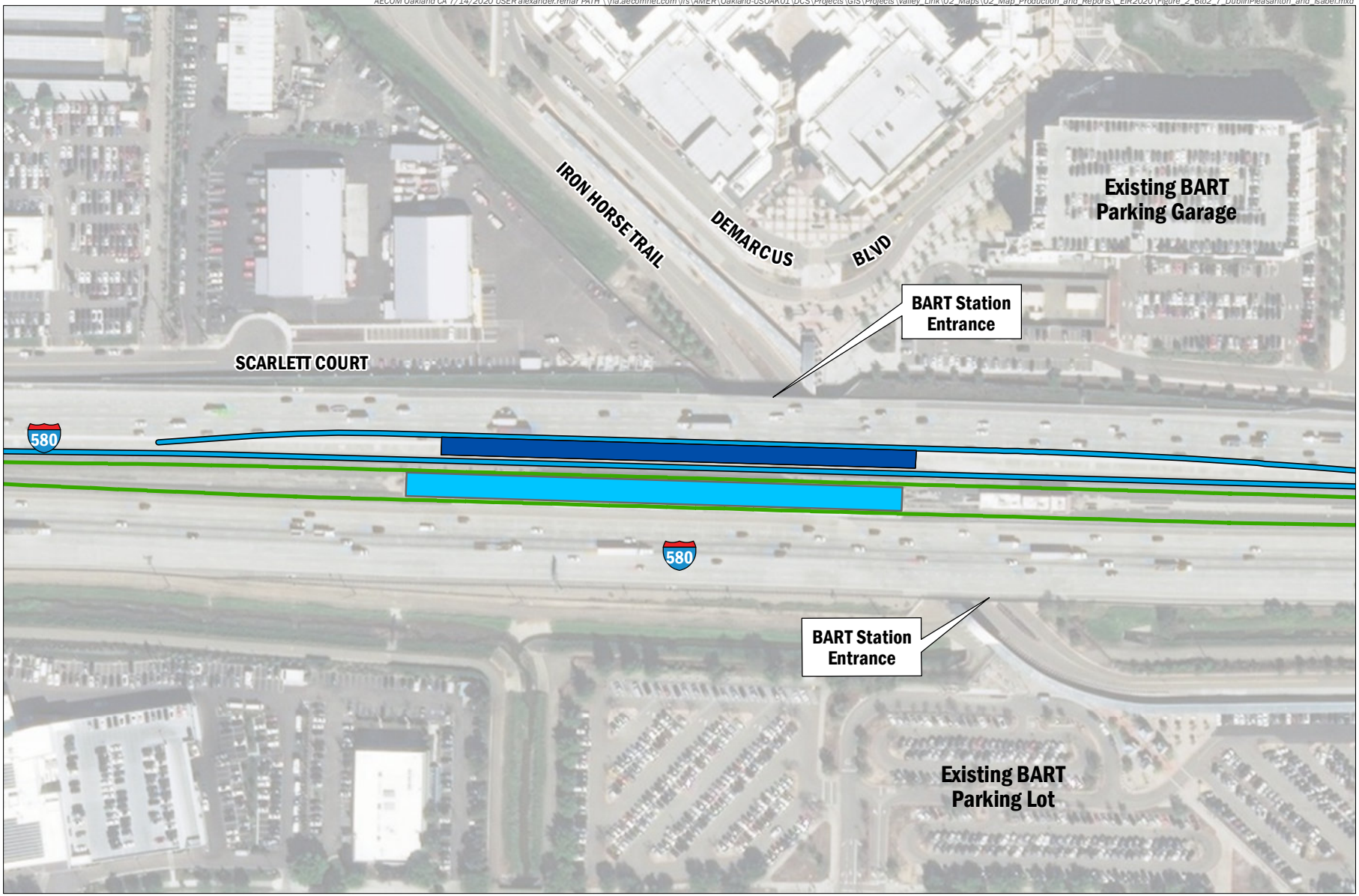
Tri-Valley – San Joaquin Valley Regional Authority

FIGURE 2-1
Typical At-Grade Station Platform Section



Tri-Valley ▲ San Joaquin Valley
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Valley Link Project

FIGURE 2-2A

Dublin/Pleasanton Station

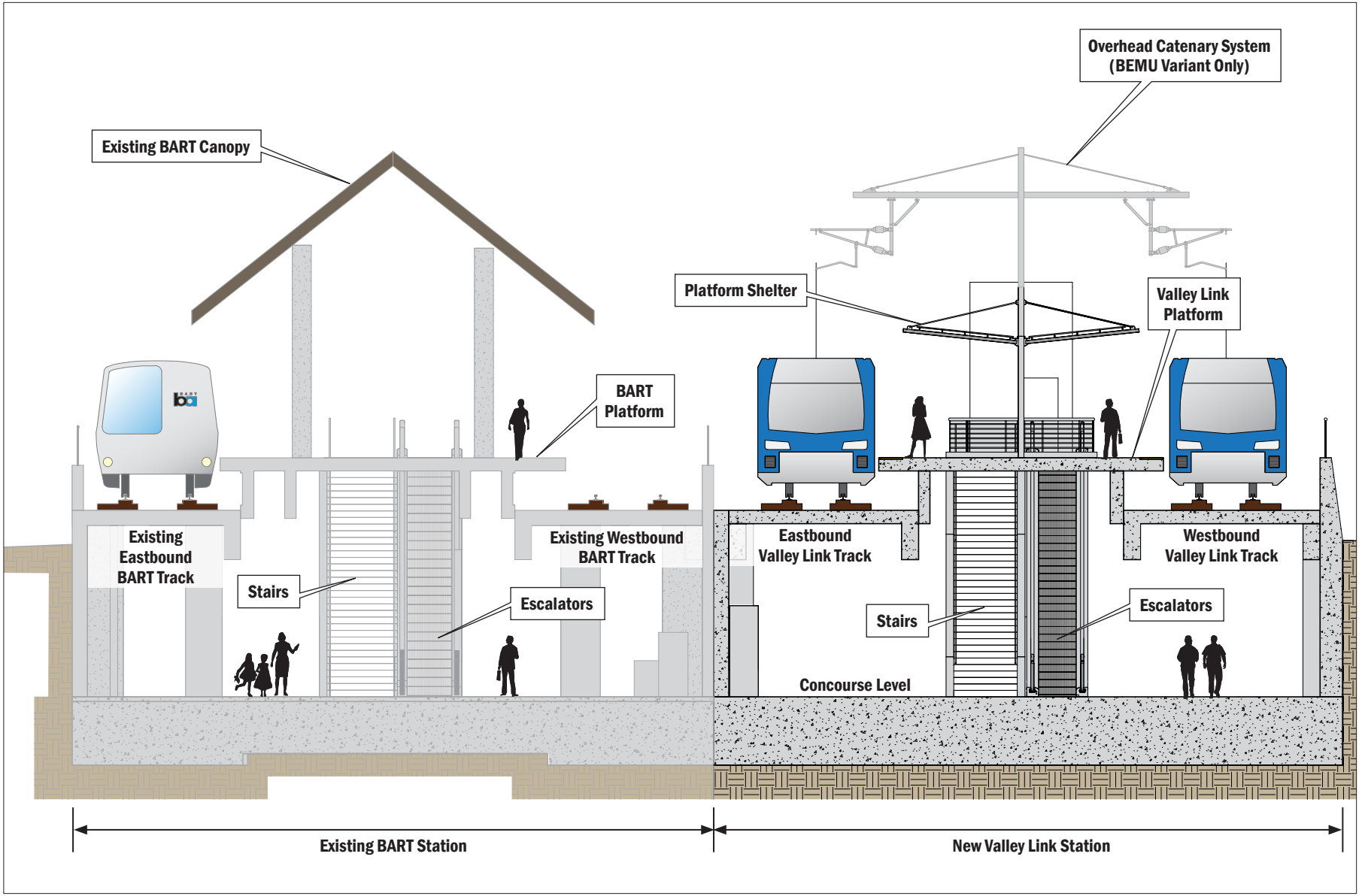

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FIGURE 2-2B

Dublin/Pleasanton Station Platform Section

Valley Link Platform
Valley Link Parking
Pedestrian Overcrossing

Alignment Segmentation

Tri-Valley Alignment
Tri-Valley Segment, Underneath Overpass

Data Sources: Esri, 2019; AECOM, 2020.

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FIGURE 2-3A

Isabel Station

Tri-Valley ▲ San Joaquin Valley
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FIGURE 2-3B

Isabel Station 2040 Parking

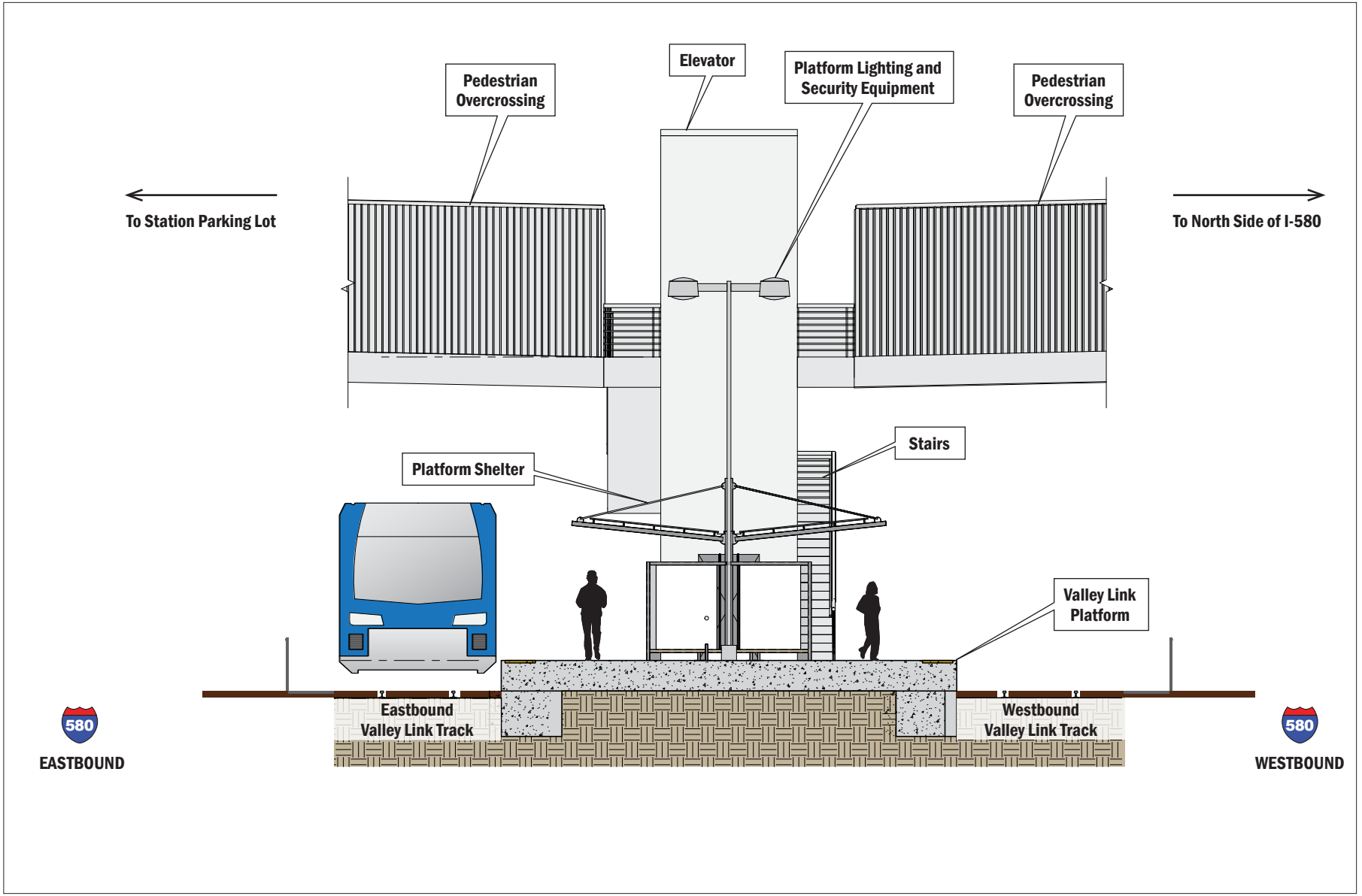

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FIGURE 2-3C
Isabel Station Platform Section

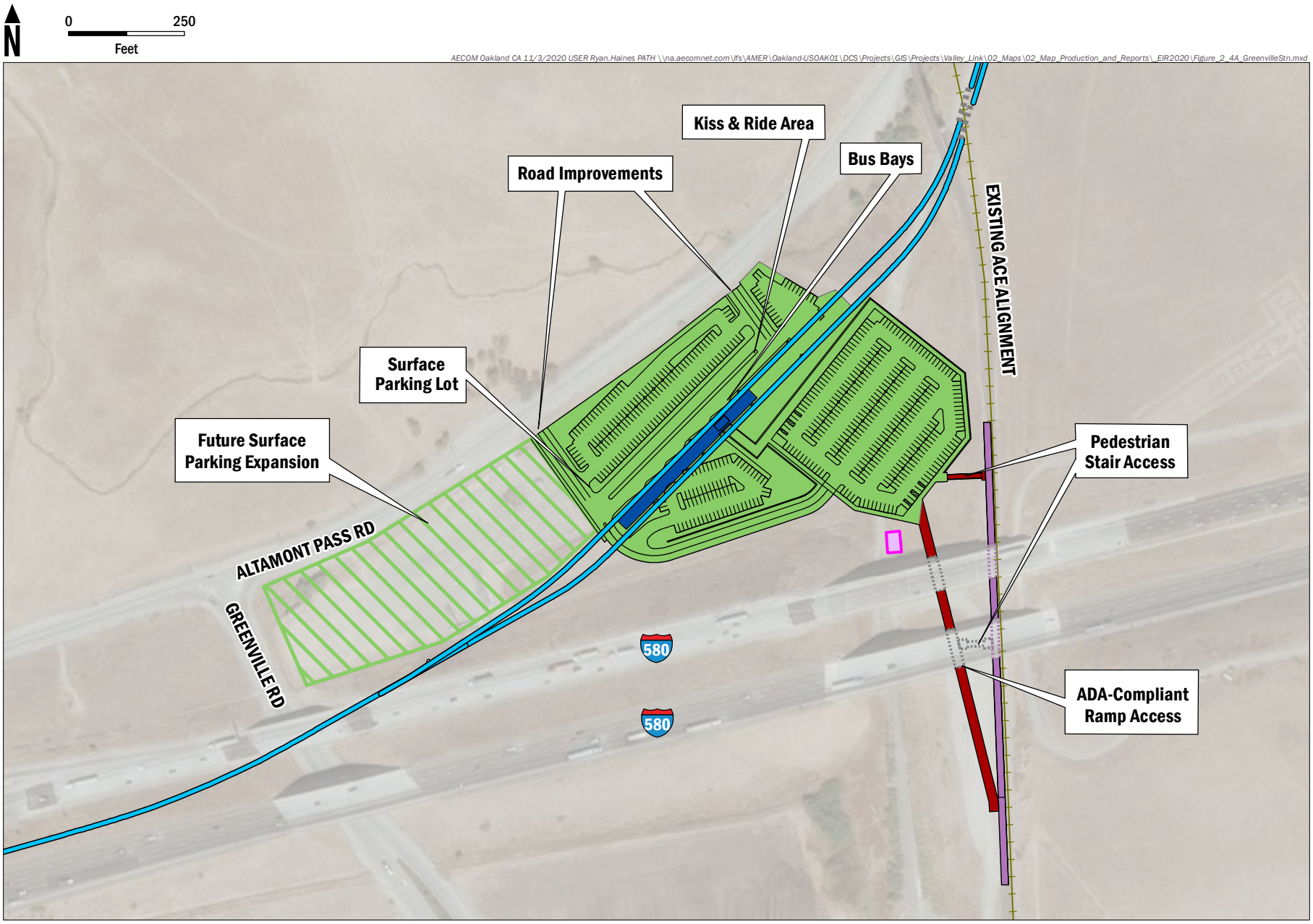

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FIGURE 2-4A

Greenville Station

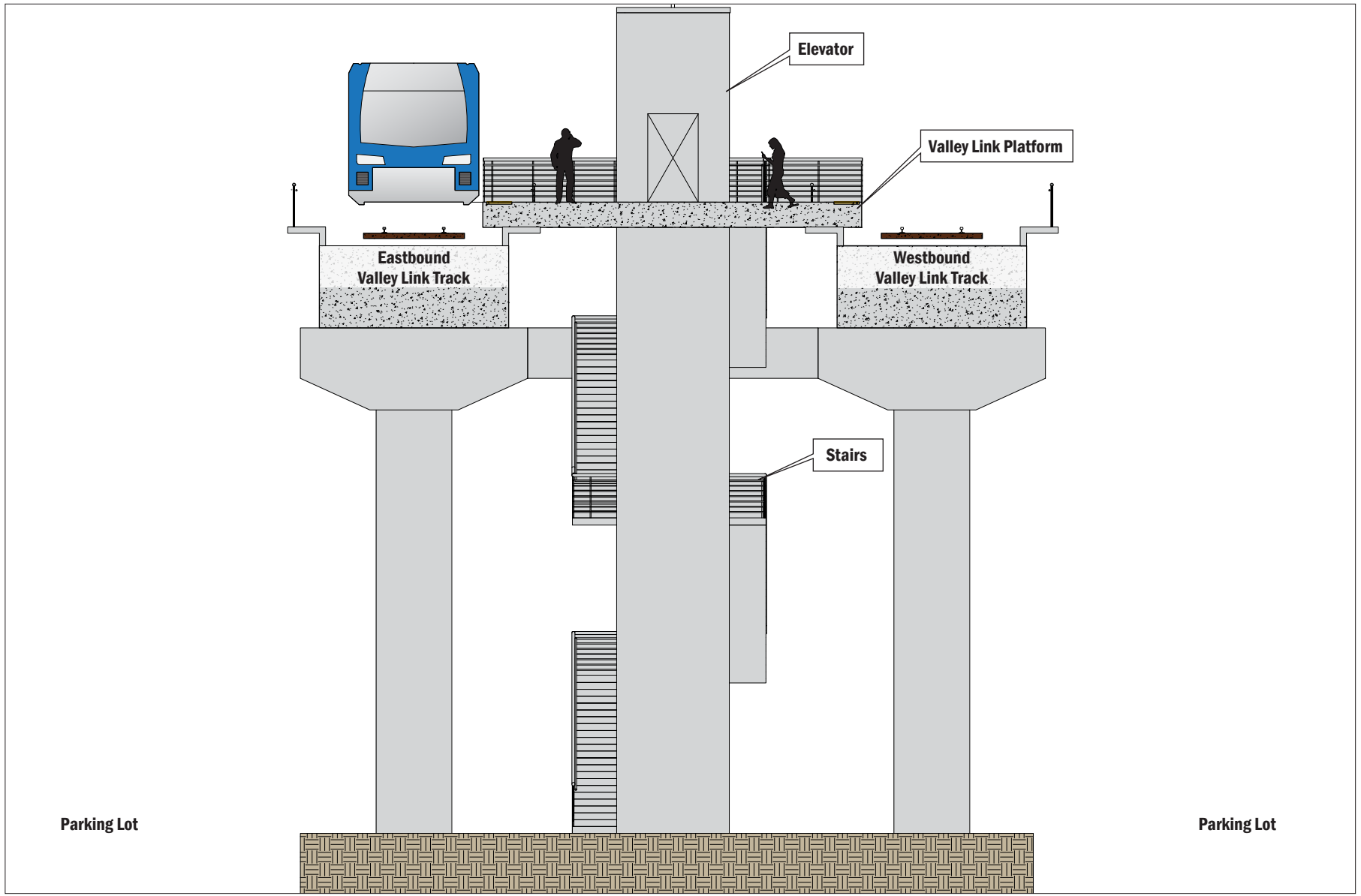

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FIGURE 2-4B
Greenville Station Platform Section

- Areas designated for future surface parking expansion to meet 2040 parking demand for a total of up to approximately 910 parking spaces. This future parking would be within the 12-acre site.
- Approximately 10 kiss and ride parking spaces and four bus bays north of I-580.
- Stairs and an ADA-compliant elevator to access the platform from the parking lots.
- A TPSS (BEMU variant only)

As shown in Figure 2-4A, the Greenville Station would also include the construction of improvements necessary to accommodate transfers to and from ACE trains. As part of the Proposed Project, a new, separate 1,000-foot-long by 15-foot-wide ACE platform would be constructed along the existing UPRR tracks southeast of the proposed Valley Link platform. Access to the ACE platform would be provided by Americans with Disabilities Act (ADA)–compliant ramps and stairs from one of the Valley Link surface parking lots to the ACE platform. With the proposed station at Greenville, it is possible that the San Joaquin Regional Rail Commission (SJRRC) may decide to end ACE service at the Vasco Station which is approximately 2.5 track miles from the proposed Greenville Station. It is also possible that SJRRC may decide to service both stations. Any decision about ACE service to the Vasco Station will be up to the SJRRC, not the Tri-Valley San Joaquin Regional Rail Authority. Given that there is the possibility that SJRRC might choose to no longer provide ACE service to the Vasco Station, the analysis in this Draft EIR has assumed potential closure of the Vasco Station in order to examine the potential effects on the ACE service.

Construction of the Greenville Station would require the acquisition of ROW (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.1.4 Mountain House Station

The Mountain House Station would be constructed southwest of I-580 on a 12.5-acre (4.5 acres of UPRR property) site south of Via Nicolo Road and east of Patterson Pass Road. Access to the station would be provided from a new driveway along Via Nicolo Road south of the existing UPRR tracks near the entrance to the Musco Family Olive Company.

As shown in Figure 2-5A (Owens-Illinois Industrial Lead Variant 1, Single Track) and Figure 2-5B (Owens-Illinois Industrial Lead Variant 2, Double Track), improvements that would be constructed as part of the Mountain House Station include:

- A 400-foot-long by 20-foot-wide at-grade double-track Valley Link station platform.
- A Valley Link mainline track with an additional station track for passing.
- A surface parking lot south of the tracks providing up to approximately 480 parking spaces and three bus bays.
- Areas on an adjacent 2.25-acre site to be designated for future surface parking expansion to meet 2040 parking demand for a total of up to approximately 1,060 parking spaces.
- At-grade pedestrian crossings (including crossing gates, warning lights, and signals) on both ends of the platform across the Valley Link tracks to access the platform from the parking lot.
- Improvements to the existing Via Nicolo Road at-grade crossing, including roadway concrete crossing panels, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar striping.

Other than the above-described driveways and upgrades to the existing at-grade crossing, no roadway improvements to Via Nicolo Road are included as part of the Mountain House Station.

The majority of rail improvements at the Mountain House Station would be constructed within existing UPRR ROW. However, construction of the station would require acquisition of property from adjacent parcels (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.1.5 Downtown Tracy Station

The Downtown Tracy Station would be constructed at the existing Tracy Transit Center at 50 East Sixth Street in downtown Tracy on an 8.7-acre site (7.2 acres of UPRR property and 1.1 acres of City of Tracy property). The existing transit center operates as a hub for local, commuter, and long-distance bus services provided by TRACER, San Joaquin Regional Transit District, and Greyhound Lines. As shown in Figure 2-6A, improvements that would be constructed as part of the Downtown Tracy Station include:

- A 400-foot-long by 20-foot-wide at-grade double-track Valley Link station platform.
- Expansion of the existing surface parking lot plus the construction of a surface parking lot at the southwest corner of the North Central Avenue/West Sixth Street intersection providing approximately 800 parking spaces for a net increase of up to approximately 685 parking spaces
- At-grade pedestrian crossings (including crossing gates, warning lights, and signals) on both ends of the platform across the Valley Link tracks, including stairs and ADA-compliant ramps to access the platform.
- Improvements to the existing North Central Avenue at-grade crossing, including concrete crossing panels for the existing and new track, signal house, a railroad signal guard and gate on both sides of the crossing, and stop bar pavement striping.
- Realignment of a portion of the existing UPRR tracks east of the proposed parking lot expansion.

As shown in Figure 2-6B, 2040 parking demand would be accommodated through the construction of a 3-level parking garage at the site of the existing surface parking lot to provide a total of up to approximately 1,550 parking spaces. This parking garage would be within the 8.7-acre site.

Other than the above-described upgrades to the existing at-grade crossing along North Central Avenue, no improvements are proposed to the roadways in the vicinity of the Downtown Tracy Station.

The Downtown Tracy Station and both parking lots would be constructed within existing UPRR ROW and on ROW to be acquired from adjacent parcels (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.1.6 River Islands Station

The River Islands Station would be constructed on an 18-acre site along the UPRR Tracy Subdivision in the vicinity of the River Islands at Lathrop master-planned community (City of Lathrop 2002).[3, 4]

[3] A *subdivision* is a portion of railroad or railway that operates under a single timetable (authority for train movement in the area).

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FIGURE 2-5A

Mountain House Station - Owens-Illinois Industrial Lead Variant 1, Single Track

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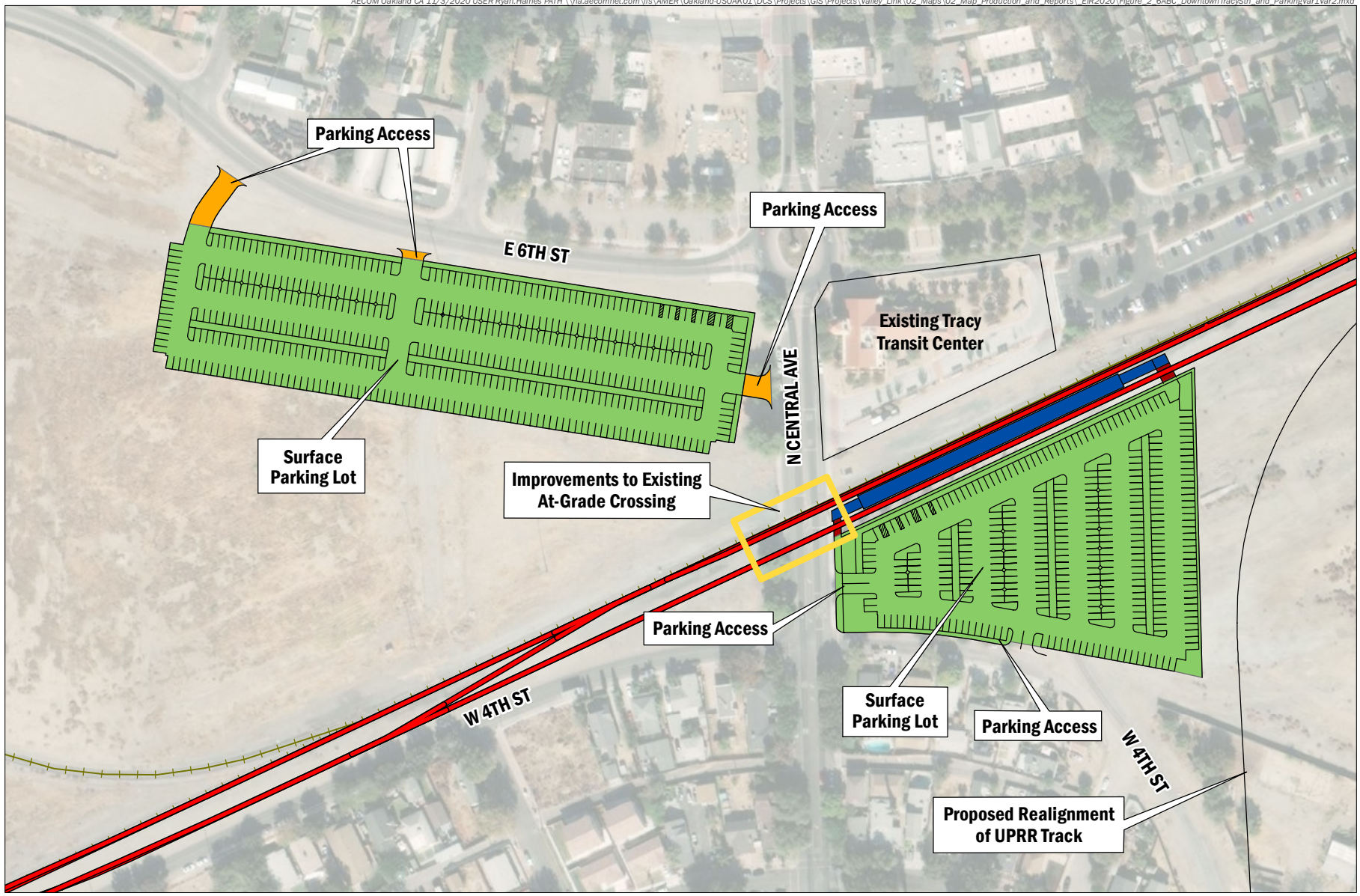
FIGURE 2-5B

Mountain House Station - Owens-Illinois Industrial Lead Variant 2, Double Track



Valley Link Platform
Valley Link Parking
At-Grade Pedestrian Crossing
Access Road
Alignment Segmentation
Tracy to Lathrop Alignment

Data Sources: Esri, 2019; AECOM, 2020.

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FIGURE 2-6A

Downtown Tracy Station

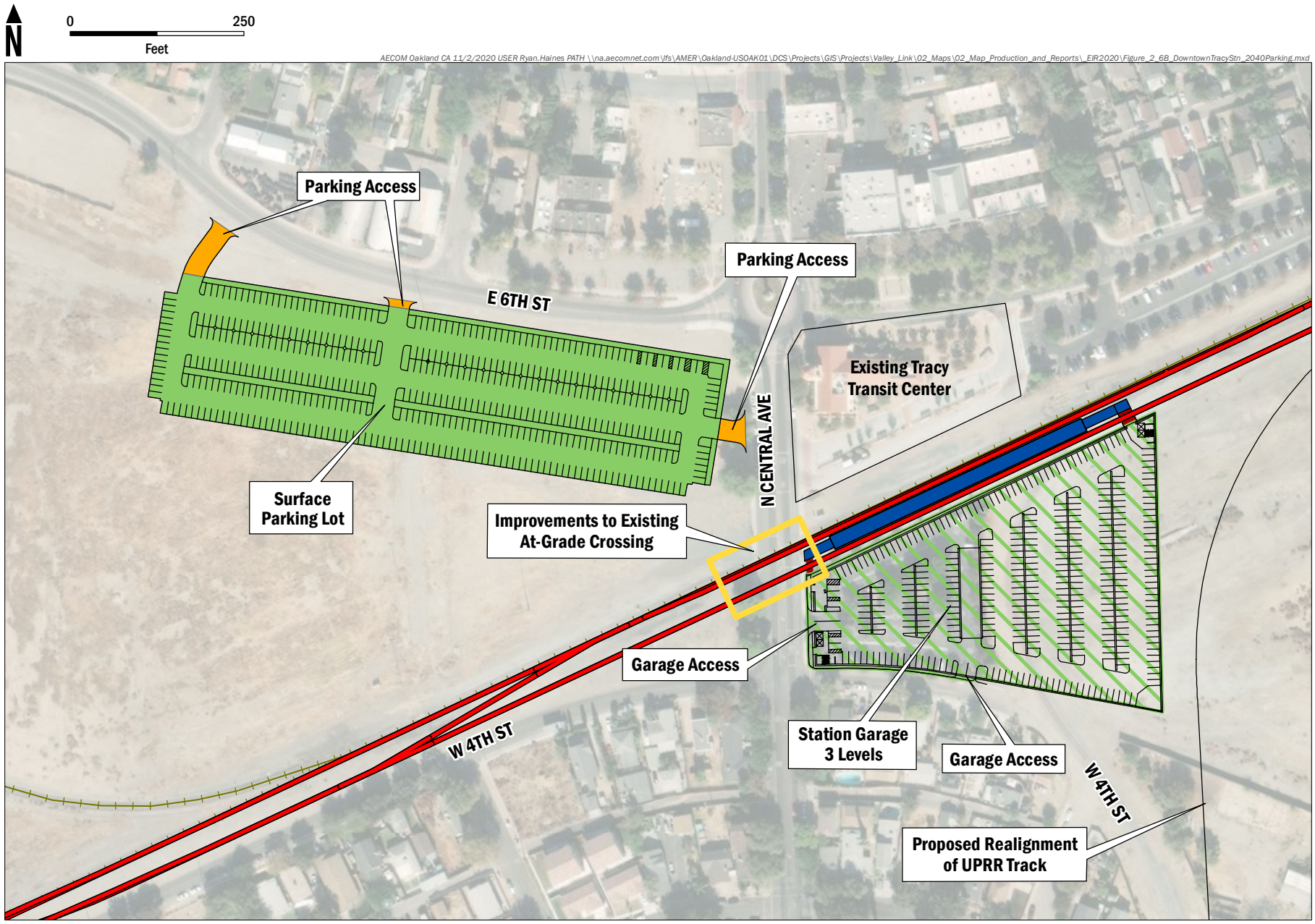

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FIGURE 2-6B

Downtown Tracy Station 2040 Parking

As shown in Figure 2-7A and Figure 2-7B, improvements that would be constructed as part of the River Islands Station include:

- A 400-foot-long by 20-foot-wide at-grade double-track Valley Link station platform.
- A Valley Link mainline track with an additional station track for passing.
- A 13.8-acre surface parking lot and access road, south of the tracks providing up to approximately 430 parking spaces, and five bus bays.
- A second 3.5-acre surface parking lot north of the tracks providing up to approximately 300 parking spaces for a station total of up to approximately 730 parking spaces.
- Areas designated for future surface parking expansion at the lot south of the tracks to meet 2040 parking demand for a total of up to approximately 1,060 parking spaces. This parking expansion would be included within the 18-acre site.
- At-grade pedestrian crossings (including crossing gates, warning lights, and signals) on both ends of the platform across the northern Valley Link tracks to access the platform from the north parking lot.
- A pedestrian overcrossing from the south parking lot over the UPRR tracks to the east end of the station platform north of the tracks including ADA-compliant ramps and stairs on the north and south side access points.

Access to the south parking lot would be provided from a new access road connecting the lot to Manthey Road. Access to the north parking lot would be provided from various internal roadways to be constructed as part of the River Islands master-planned community.

The majority of improvements at the River Islands Station would be constructed outside the UPRR ROW, particularly the parking improvements and access roadway (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.1.7 North Lathrop Station

The North Lathrop Station would be constructed at the same site as the ACE North Lathrop station included in the ACE Extension Lathrop to Ceres/Merced project.[5] The 30-acre site is presently vacant federal land that is part of the U.S. Department of Defense Sharpe Army Depot which is no longer in use. Construction of the station would require a federal transfer of land. As shown in Figures 2-8A and 2-8B, improvements that would be constructed as part of the North Lathrop Station include:

[4] The River Islands at Lathrop project is a mixed-use planned community development that proposes the construction of 11,000 homes, 5 million square feet of commercial space, and recreational areas on approximately 4,905 acres of agricultural land and open space along the eastern edge of the San Joaquin River. The River Islands at Lathrop project identified a potential future station along the Tracy Subdivision in the project area but did not include this element in the River Islands project.

[5] On August 2, 2018, the San Joaquin Regional Rail Commission Board certified the EIR and approved the ACE Extension Lathrop to Ceres/Merced project. The North Lathrop Station would be constructed on the southwest corner of Sharpe Army Defense Distribution Depot San Joaquin, just north of Lathrop Road. Operation of Phase I of the ACE Extension Lathrop to Ceres/Merced project (which includes the North Lathrop Station) is anticipated to begin between 2020 and 2023.

- A 400-foot-long by 30-foot-wide at-grade, double-track Valley Link station platform west of the Valley Link siding track.
- Valley Link station siding tracks.
- A surface parking lot on the northeast corner of the station site providing up to approximately 1,180 parking spaces in addition to those being provided by the ACE Extension Lathrop to Ceres/Merced project. A total of 10 acres of the 30 acre-site would be required for the initial 2025 parking demand.
- Areas designated for future surface parking expansion to meet 2040 parking demand for a total of up to approximately 3,100 parking spaces. A total of 20 acres of the 30 acre-site would be required for the expansion of parking in 2040.
- An extension of the pedestrian overcrossing to be included as part of the ACE project with additional ADA-compliant elevators and stairs to provide access to the Valley Link platform.
- A TPSS (BEMU variant only)
- OCS (BEMU variant only)

The North Lathrop Station would be a transfer station between Valley Link and ACE, providing connecting service to and from Sacramento and Modesto. Passengers wishing to transfer between ACE and Valley Link trains would utilize stairs and ramps at both the Valley Link and ACE platforms to access a pedestrian overcrossing linking the two platforms and the station parking lot.

The North Lathrop Station would be constructed within existing UPRR ROW and on ROW to be acquired for the ACE North Lathrop Station.

2.3.2 Operation and Maintenance Facility

2.3.2.1 Tracy Operation and Maintenance Facility

To support train layovers, storage, maintenance, and operation associated with the Proposed Project, a new OMF would be constructed on an approximately 200-acre City of Tracy–owned property along West Schulte Road just west of the Owens-Brockway Glass Container plant (see Figure 2-9). All vehicle storage and maintenance activities would take place at the proposed Tracy OMF. Based on similar facilities, approximately 170 employees would be based at the OMF, including 15 for administration, 15 for dispatch and supervision, 40 for maintenance of equipment and track, and 100 for train crews (assuming two-person train crews). Access to the Tracy OMF would be provided from West Schulte Road.

The Tracy OMF would also handle disposal of Project-related hazardous wastes. Hazardous wastes would be piped to a hazardous waste room where the wastes are separated from water by a centrifuge before being collected and burned in an approved incinerator. The resulting ashes and other non-burnable solid wastes would then be placed in hazardous waste drums for collection by a hazardous waste contractor for final approved disposal.

Some of the improvements at the Tracy OMF would be constructed within existing UPRR ROW. However, construction of the OMF would require acquisition of property from adjacent parcels (see Appendix C, *Preliminary Right of Way Requirements*).

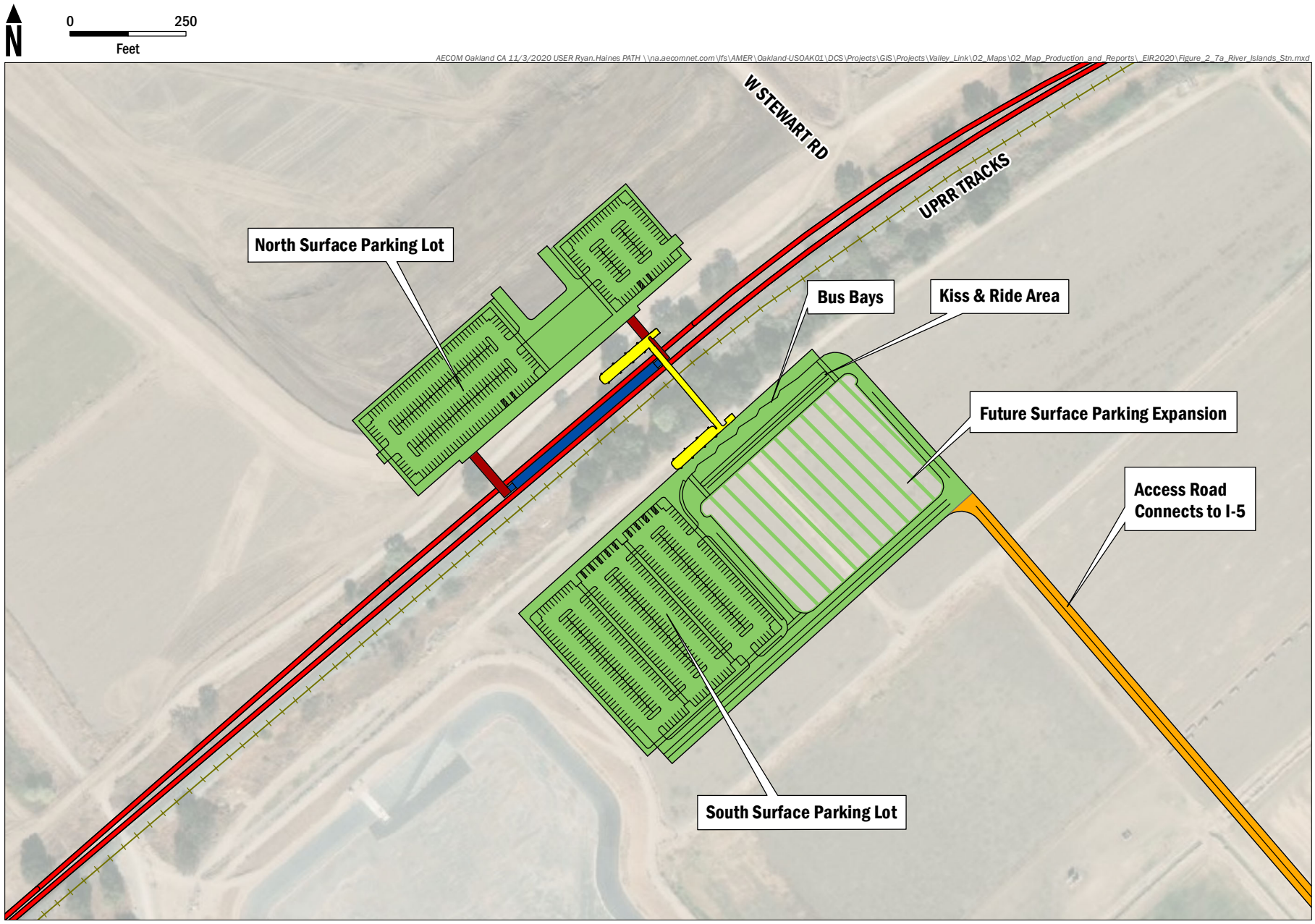

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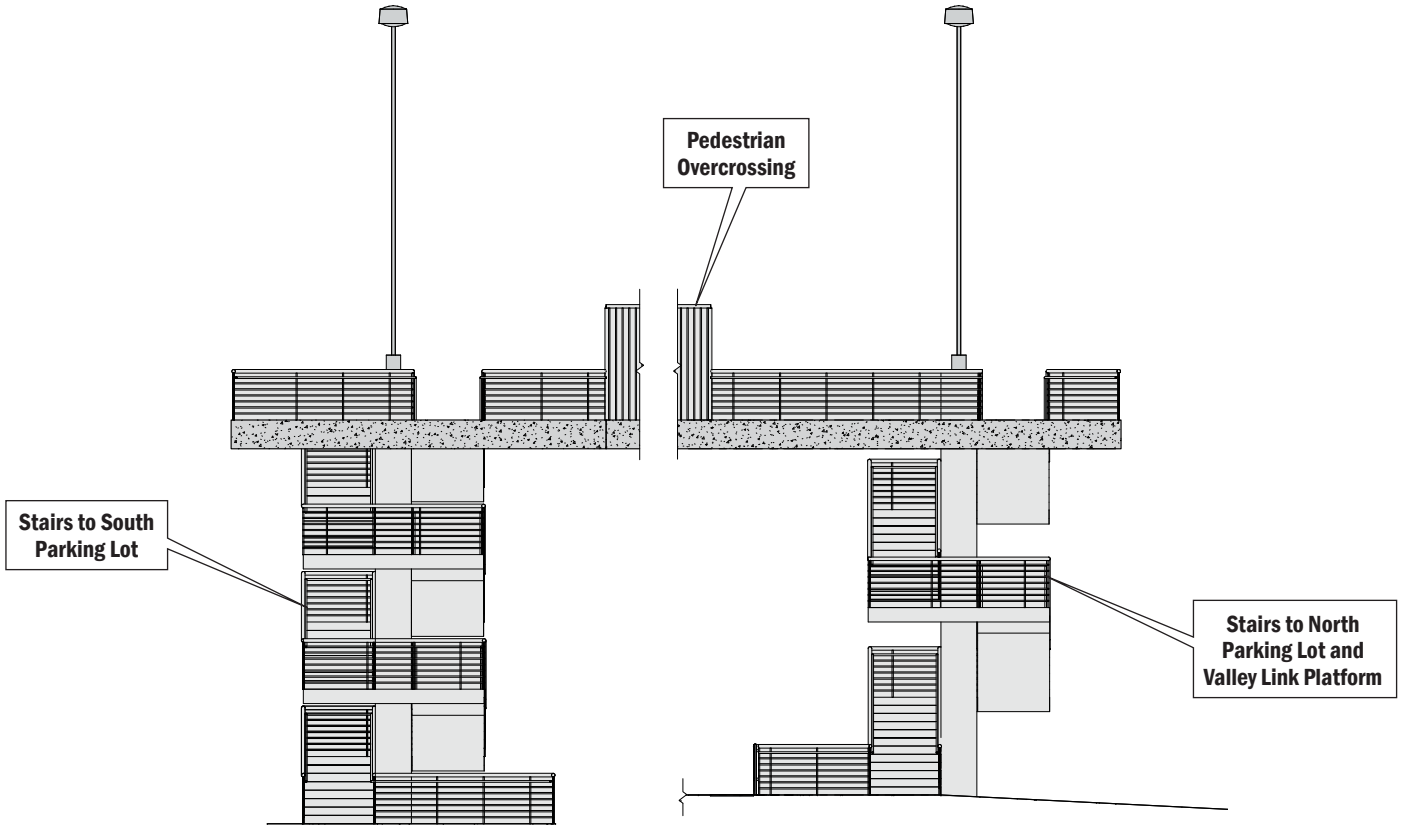
FIGURE 2-7A

River Islands Station



Not to Scale

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FIGURE 2-7B
River Islands Station Section

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FIGURE 2-8A

North Lathrop Station

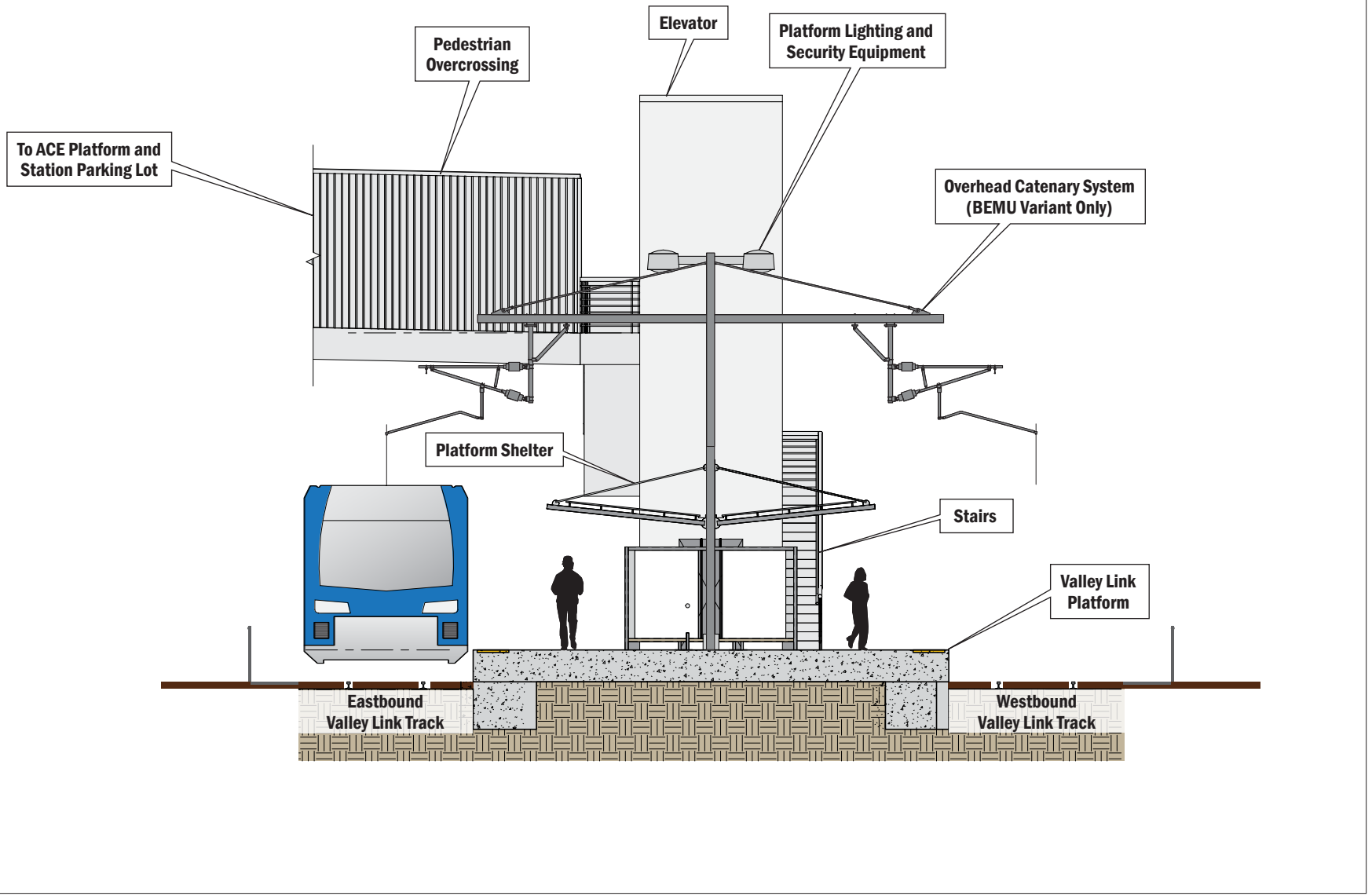

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FIGURE 2-8B

North Lathrop Station Platform Section

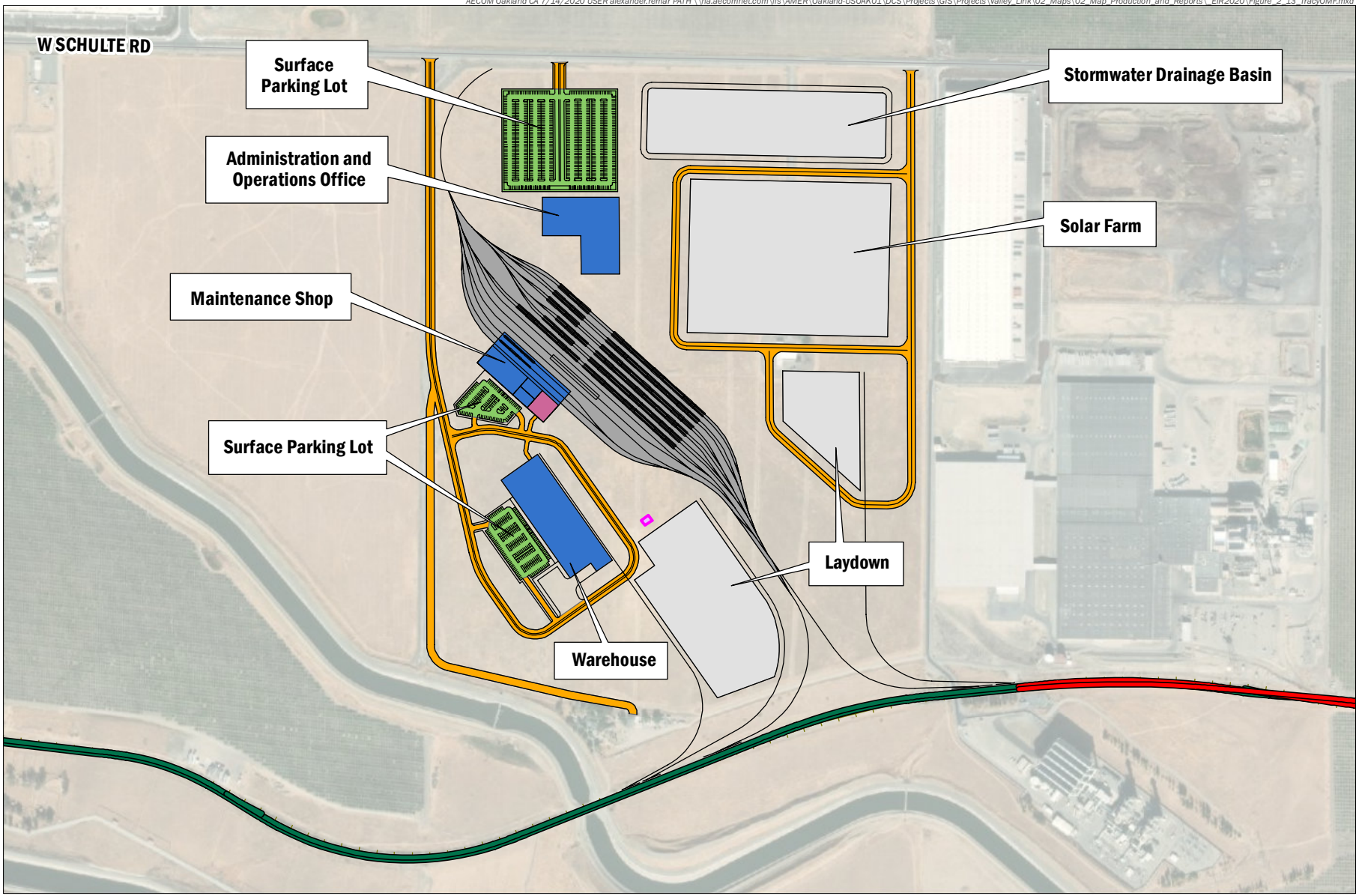

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FIGURE 2-9

Tracy OMF

The design of the Tracy OMF would accommodate the anticipated 2040 Valley Link Service Plan. However, construction of the Tracy OMF may be phased over time as service increases between 2025 and 2040.

The Tracy OMF would include the following tracks, buildings, and maintenance services:

- General
  - 8-foot-high facility perimeter fencing
  - Automatic gates for Valley Link and employee vehicle entrance
  - Yard lighting
  - Access roads and employee parking
  - Emergency generator
  - A photovoltaic panel "Solar Farm" to offset electricity requirements
  - A TPSS (BEMU variant only)
- Yard Tracks
  - 2 service and inspection tracks (one with an inspection pit)
  - Maintenance-of-way track to store maintenance equipment
  - Storage tracks
  - 1 train wash rack on a separate track
  - OCS (BEMU variant only)
- Maintenance Building
  - Two tracks for heavy maintenance
  - One track for light maintenance
  - Bridge crane
  - Shore power and air
  - Diesel fume ventilation
  - Fluid servicing
  - Truck repair shop and cleaning
  - Wheel truing
  - Large and small component rebuild shop
  - Storage, offices, and employee rooms
  - Utilities and fire protection
- Operation Building
  - Maintenance-of-way, security, and supervisory offices
  - Train control and dispatch center
  - Day room

- Utilities and fire protection

- Maintenance Services
  - Interior and exterior vehicle cleaning
  - Vehicle servicing, inspection, sanding, and fueling
  - Toilet sewage disposal
  - Trash collection
  - Potable water supply

2.3.3 Alignment Segments

This section provides a detailed description of the Project alignments within the following geographic segments: Tri-Valley (Dublin, Pleasanton, and Livermore); Altamont; and Tracy to Lathrop (see Figure 2-10). The Tri-Valley segment extends from the western Project limits at the Dublin/Pleasanton BART Station to just east of where the Alameda County Transportation Corridor ROW passes under the UPRR bridge east of Greenville Road in Livermore (see Figure 2-11). The Altamont segment extends from the eastern end of the Tri-Valley segment to approximately 0.5 mile east of the Delta-Mendota Canal west of Tracy (see Figure 2-12). The Tracy to Lathrop segment extends from the eastern edge of the Altamont segment to the eastern project limits at the proposed ACE North Lathrop Station (see Figure 2-13). Proposed improvements within these segments are further described below.

Valley Link service would be operated on a bi-directional, single track line, with passing tracks at strategic locations. Operation would be controlled from a Valley Link Central Control (dispatch) office located at the OMF, using a Centralized Traffic Control System. Current North American railway signaling principles, practices, and products would be applied throughout the Valley Link signal and train control system. Fail-safe design techniques would be used to prevent unsafe occurrences. The functions of the wayside signal and train control system include the protection and control of track switches, the protection and control of bi-directional train operation, the protection for following trains operating in the same traffic direction, protection and control in the tunnel, and operation of the grade crossing warning systems. The proposed signal and train control system would consist of the wayside signal and associated cab signal/speed control system, the at-grade crossing warning systems, and additional positive train control (PTC) functionality as required.

A PTC system equivalent to the Enhanced Automatic Train Control/Interoperable Electronic Train Management System would likely be utilized for Valley Link. The system would utilize cab signals in the vehicles, track circuits for train detection and wayside signals. Automatic Vehicle Location Technology would be employed to allow for real-time monitoring of Valley Link trains. The proposed communication system, Operations Control Center, and the Backup Control Center would provide for transporting data, voice, and video to facilitate the control and monitoring of rail traffic, rail vehicle tracking, signal system (controlled interlocks, PTC, etc.) tunnel systems, passenger station facilities, fare collection system, and OMF shop facilities.

2.3.3.1 Tri-Valley Segment

In the Tri-Valley segment, the Proposed Project would operate in the median of I-580 from the existing Dublin/Pleasanton BART Station to Greenville Road (Figure 2-11). Near Greenville Road,

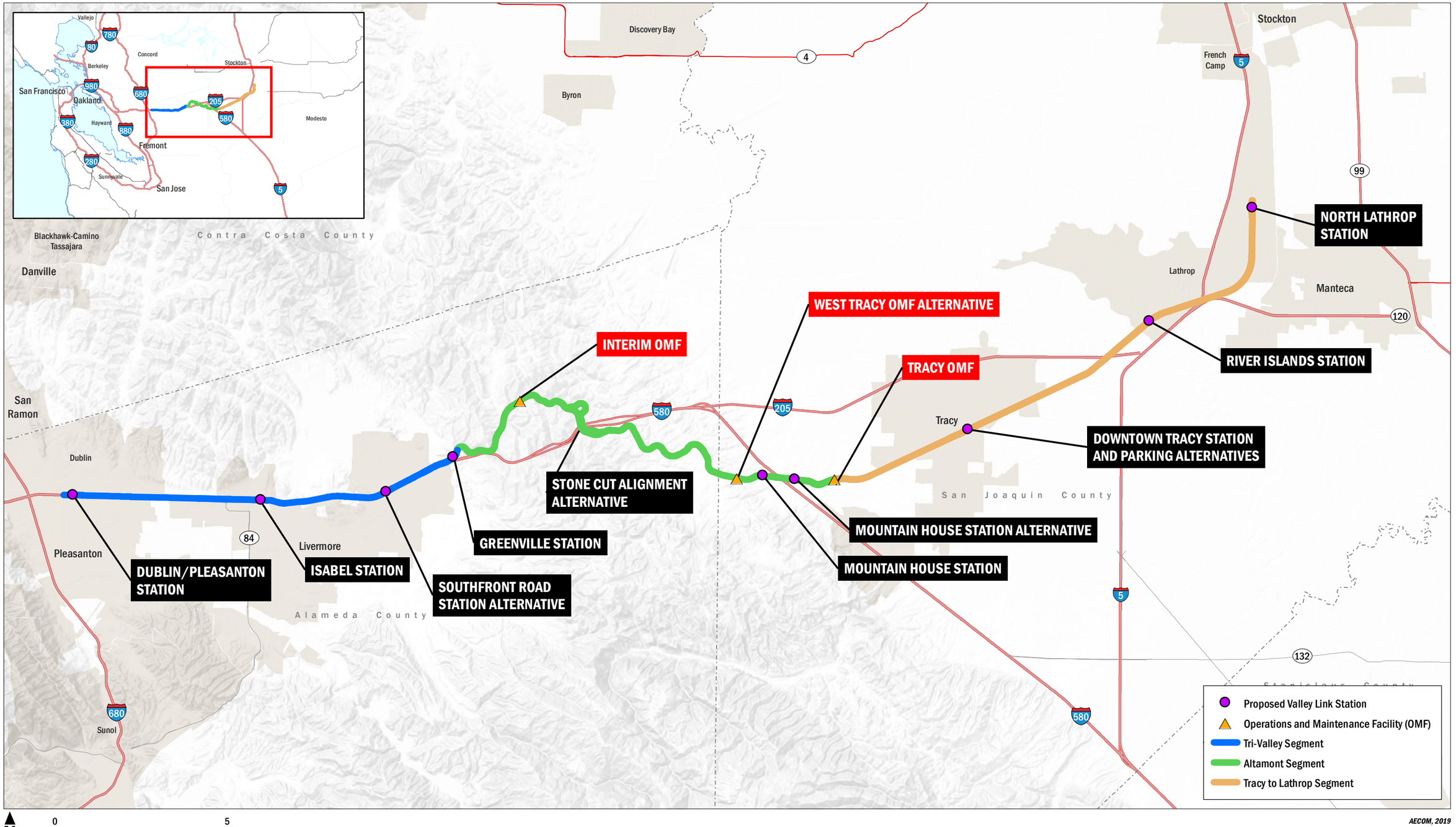

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FIGURE 2.10
Valley Link - Full Alignment

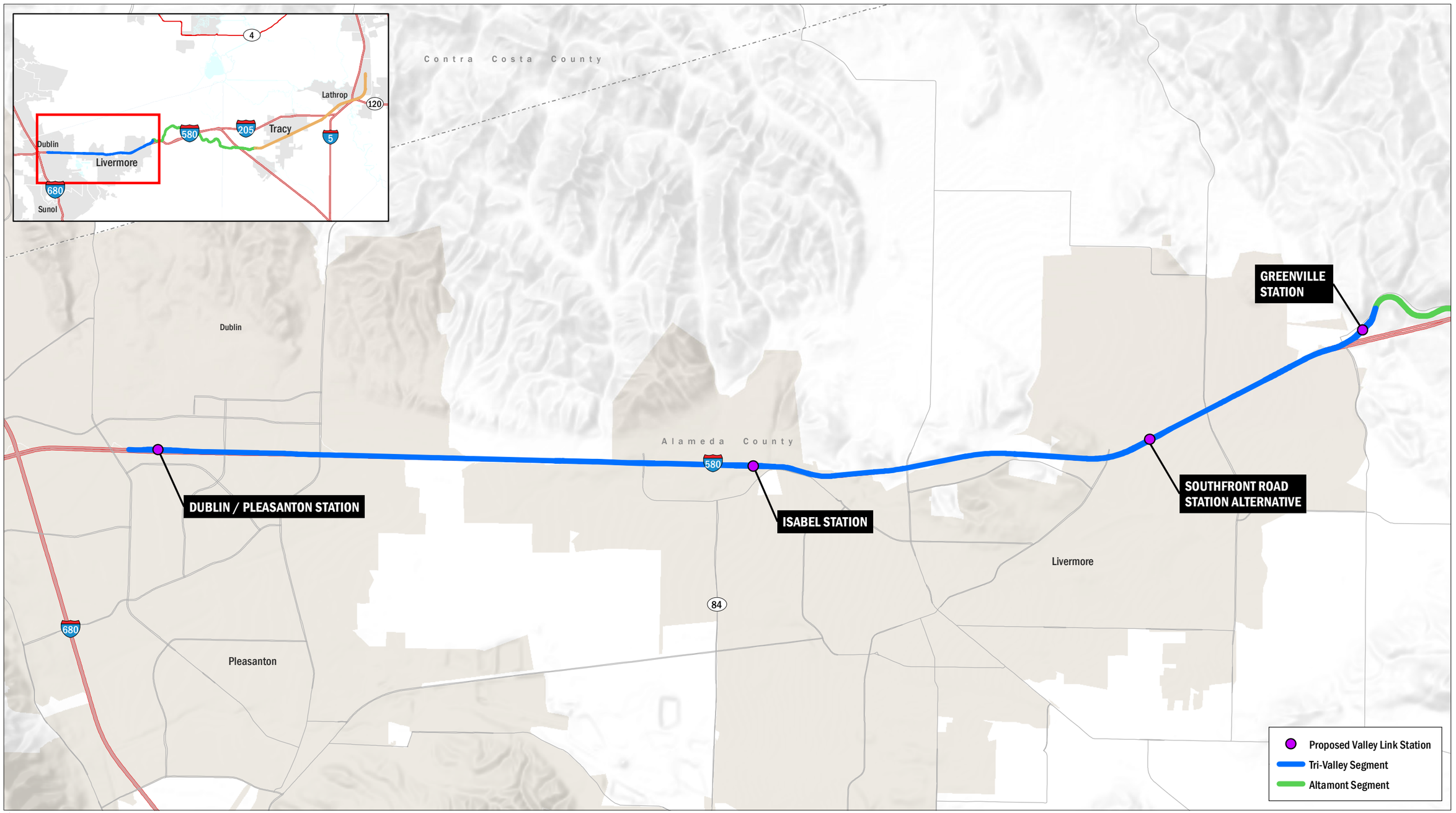

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FIGURE 2.11

Tri-Valley Segment

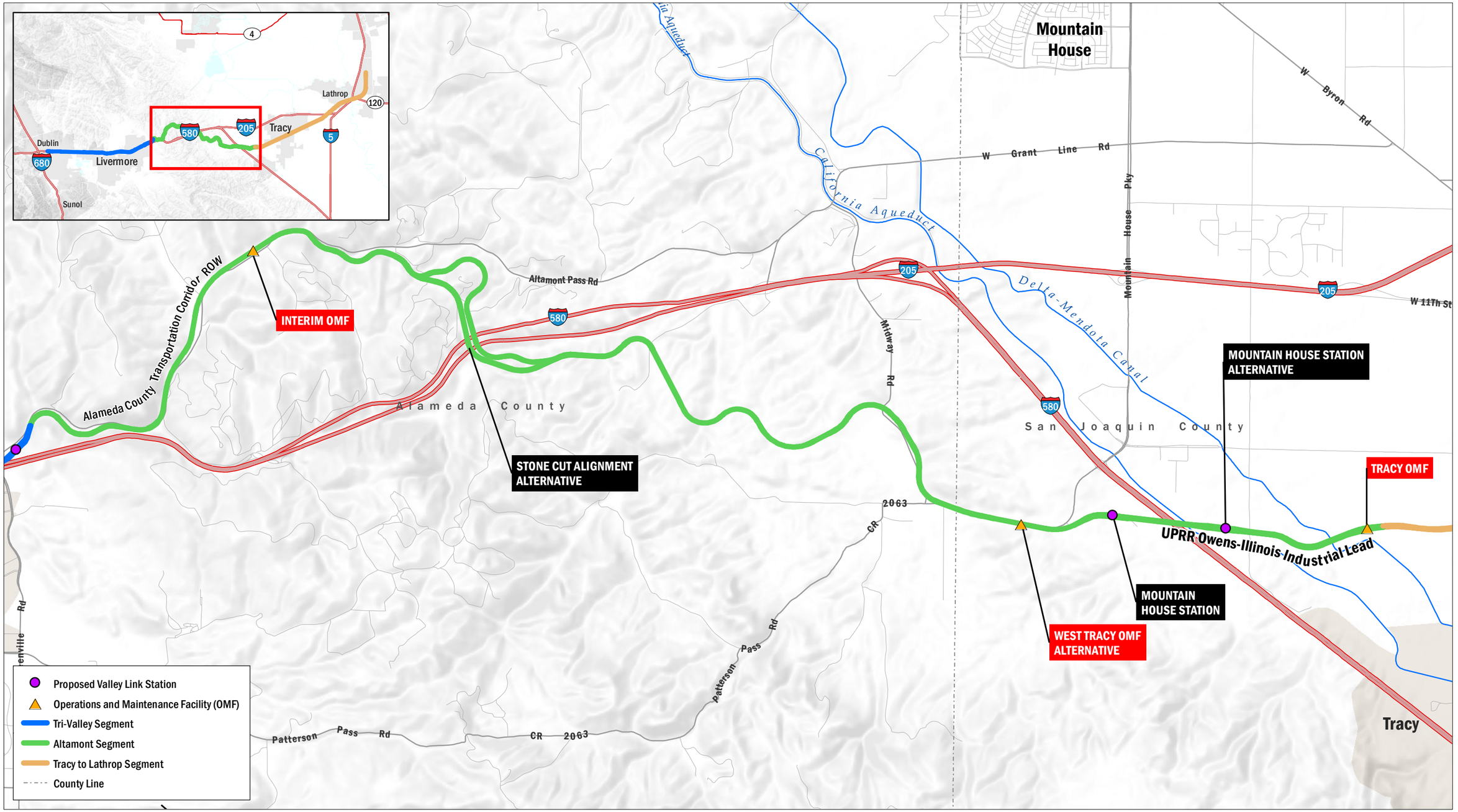

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FIGURE 2.12

Altamont Segment

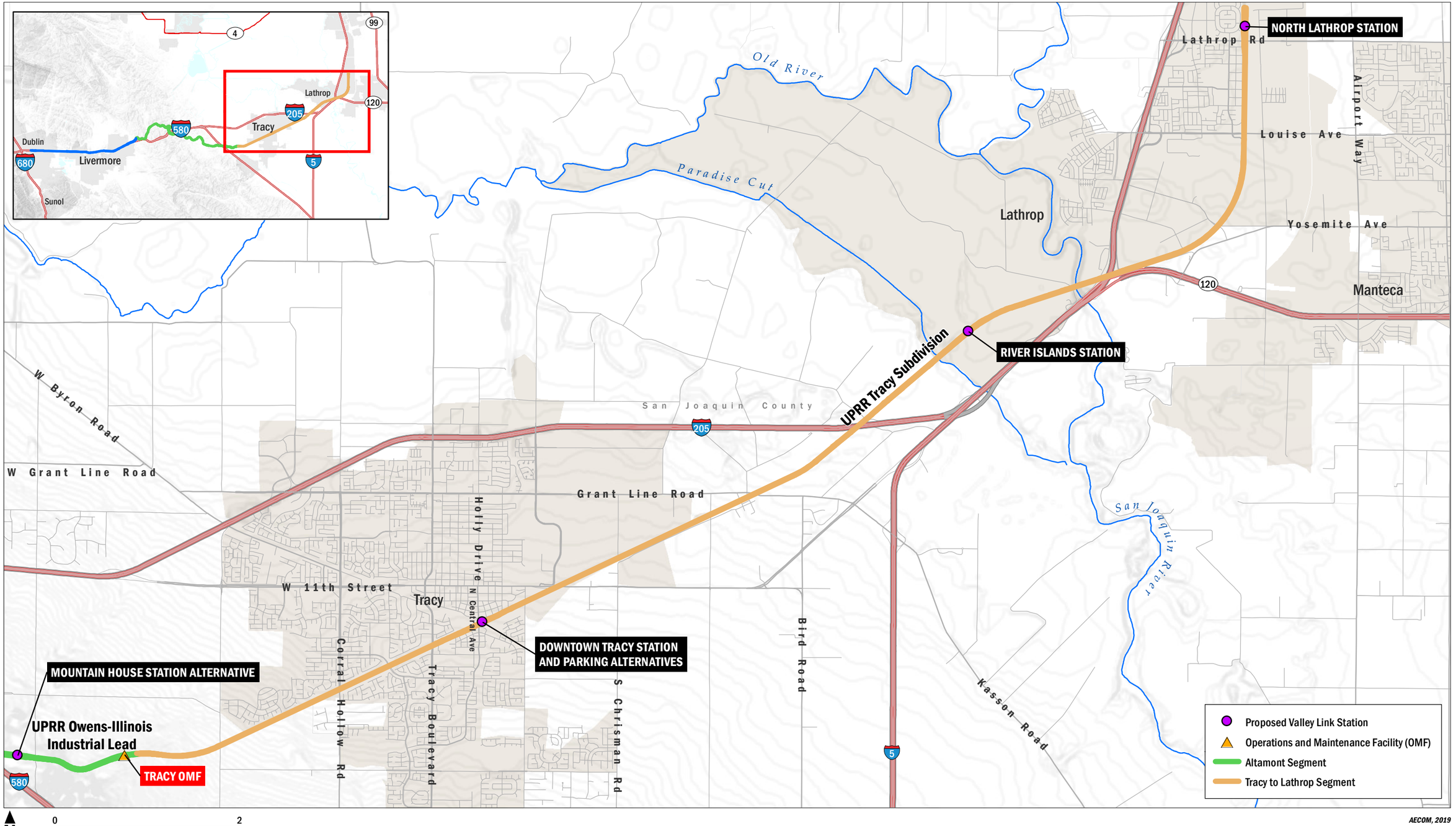

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FIGURE 2.13
Tracy to Lathrop Segment

the alignment would transition from the median of I-580 to the Alameda County Transportation Corridor ROW via an elevated viaduct. I-580 would be widened throughout this segment as necessary to accommodate the Proposed Project while maintaining existing freeway lane and interchange ramp configurations, including all existing express lane facilities. The majority of the Proposed Project alignment would be single-track in this segment to minimize impacts on the existing freeway configuration. However, to facilitate the passing of opposing trains, sidings would be constructed at the proposed stations in the Tri-Valley segment, between the Fallon Road/El Charro Road interchange and east of the proposed Isabel Station, and between the Las Colinas Road Overhead and the Vasco Road Interchange. To transition from the I-580 freeway median into Alameda County Transportation Corridor ROW near Greenville Road, the alignment would utilize an aerial guideway.

Proposed freeway and roadway modifications in the Tri-Valley segment are depicted in Figures 2-14A through 2-14C. More detail is provided in Appendix Q, *Summary of I-580 Modifications*. While the majority of freeway and roadway modifications would be constructed within existing publicly owned ROW, construction of the Proposed Project would require the acquisition of additional ROW and easements (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.3.2 Altamont Segment

Across the Altamont Pass, Valley Link would operate within the Alameda County Transportation Corridor ROW between the Greenville Station and the Alameda County/San Joaquin County line, and then continue east along the UPRR Owens-Illinois Industrial Lead to approximately one-half mile east of the Delta-Mendota Canal (see Figure 2-12).

Project improvements proposed within and adjacent to the Alameda County Transportation Corridor ROW portion of the Altamont segment include the following features:

- Grading within the ROW and the placement of sub-ballast and ballast.
- Installation of track, including concrete ties and continuous welded rail.
- Construction of a new Valley Link undercrossing of Altamont Pass Road west of Carroll Road.
- Construction of new at-grade crossings (including concrete crossing panels, signal equipment house, railroad crossing warning lights and gates on both sides of the crossing, and crossing warning and stop bar pavement markings) at the following locations:[6, 7]
    - Dyer Road
    - Altamont Pass Road west of the UPRR overpass
    - North Midway Road
    - Patterson Pass Road
- Reconfiguration of the Altamont Pass Road/Dyer Road intersection.

[6] Pursuant to the Federal Rail Safety Improvement Act, Title 49 of the Code of Federal Regulations, and California Public Utilities Commission (CPUC) Rules and General Orders, standard at-grade crossing safety features would be incorporated to increase safety and minimize the potential for accidents at all new and modified at-grade crossings.

[7] All new at-grade crossings would be subject to the formal CPUC application process.

- Upgrades to the interior of the existing railroad tunnel under westbound I-580, including fire suppression, ventilation, water, communications, and electrical systems.
- Repair of existing slide areas along the alignment.
- Construction of three sidings within the segment.

All track work would be completed within existing Alameda County Transportation Corridor ROW and UPRR ROW. However, temporary construction easements and improvements to existing access roads would be required (see Appendix C, *Preliminary Right of Way Requirements*).

Under the BEMU variant, OCS would be constructed within the Altamont segment from approximately 1,000 feet east of the Greenville Station to the Tracy OMF to provide electrical power to BEMU trains. The OCS poles would be approximately 20 feet tall and would be installed on concrete foundations. The OCS wire would be supported by a cantilever arm extending from each pole (see Figure 2-15). OCS poles would be spaced approximately 160 to 170 feet apart. One TPSS would be constructed within the Alameda County Transportation Corridor ROW near the intersection of Midway Road and Patterson Pass Road, and one at the Tracy OMF.

As described below, there are two alignment variants for the portion of the Altamont segment in San Joaquin County that would operate along the existing UPRR Owens-Illinois Industrial Lead. These two variants are under consideration to allow for flexibility in operation of the Valley Link service as well as in the final operating agreement between the Valley Link operator and UPRR. Both variants are evaluated to an equal level of detail in this Draft EIR.

Owens-Illinois Industrial Lead Variant 1, Single Track

Under Owens-Illinois Industrial Lead Variant 1, Single Track, the existing Owens-Illinois Industrial Lead track would be upgraded:

- Removal of the existing railroad ties and rail.
- Installation of new concrete ties and continuous welded rail.
- Upgrades (including concrete crossing panels for existing and new track, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar pavement striping) to the existing at-grade crossings at Via Nicolo Road, Hansen Road, and a private roadway crossing.

Owens-Illinois Industrial Lead Variant 2, Double Track

Under Owens-Illinois Industrial Lead Variant 2, Double Track, the existing Owens-Illinois Industrial Lead track would be upgraded between the Alameda County/San Joaquin County line and the proposed Mountain House Station. Owens-Illinois Industrial Lead Variant 2, Double Track includes construction of the following improvements:

- Grading existing facilities within the UPRR ROW and placement of new sub-ballast and ballast.
- Installation of concrete ties and continuous welded rail.
- Upgrades to the existing at-grade crossings (including concrete crossing panels for new track, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar pavement striping) at Via Nicolo Road, Hansen Road, and a private roadway crossing.
- A new railroad bridge across the California Aqueduct north of the existing bridge.

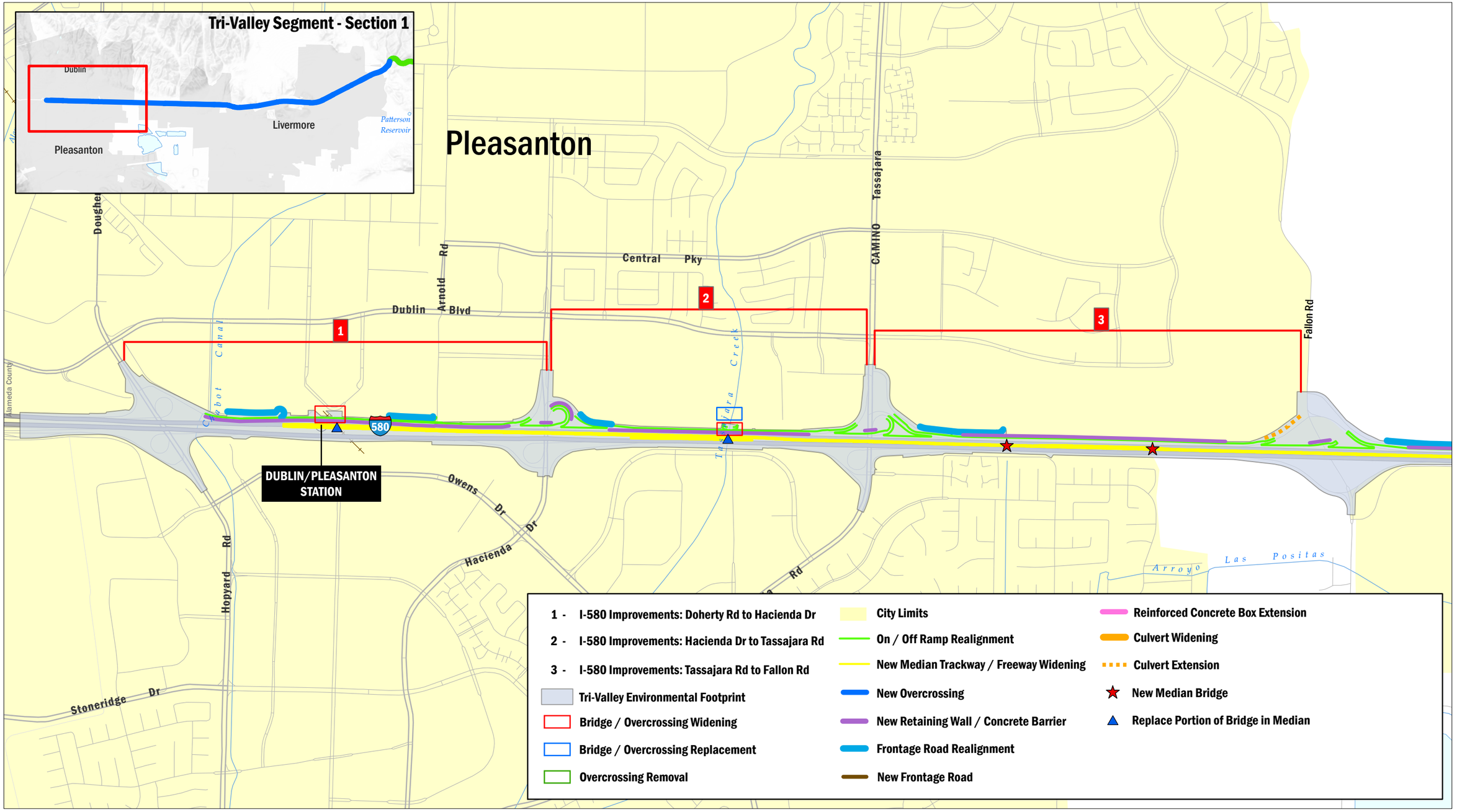

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FIGURE 2-14A

Tri-Valley Segment I-580 Improvements - Section 1

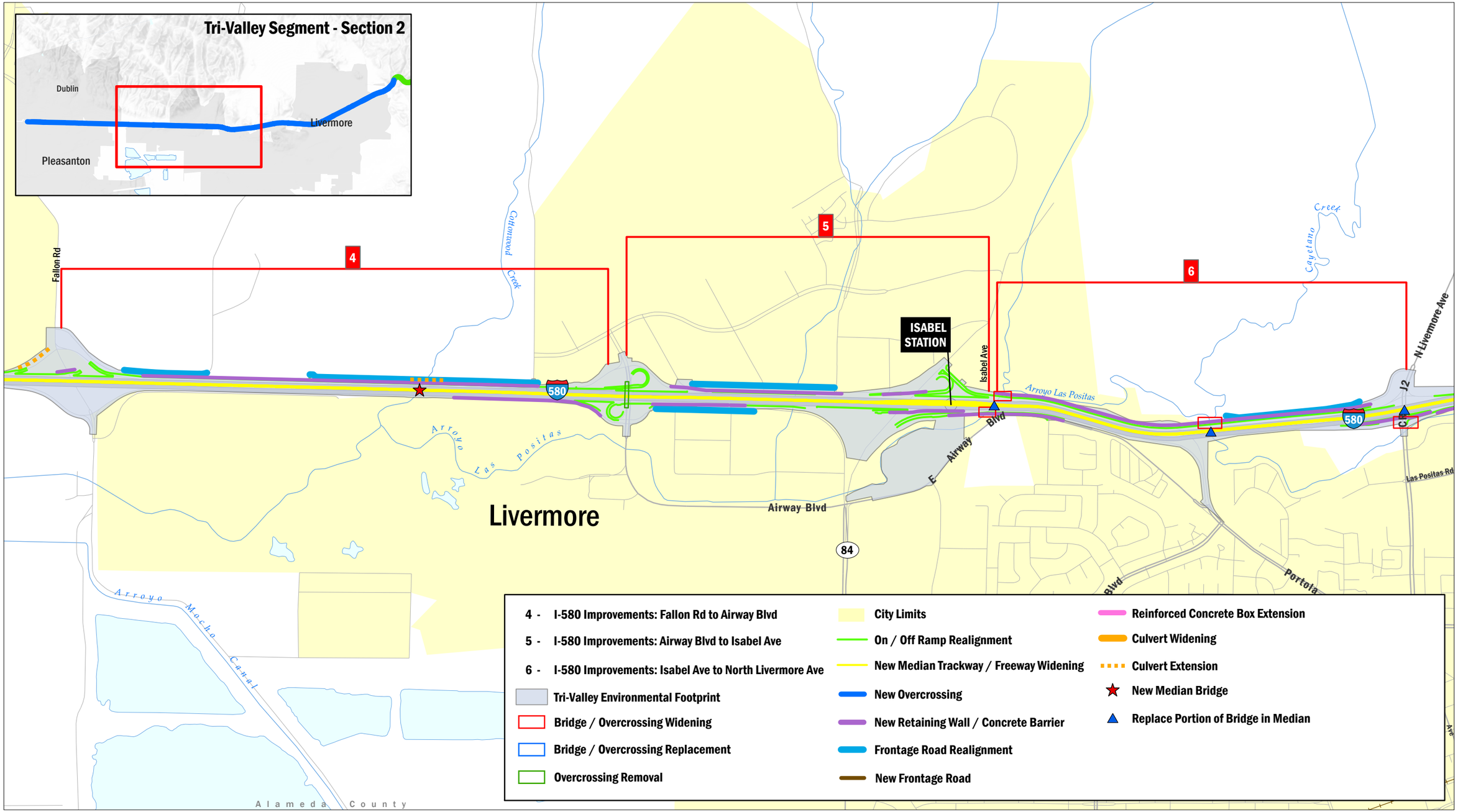

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FIGURE 2-14B

Tri-Valley Segment I-580 Improvements - Section 2

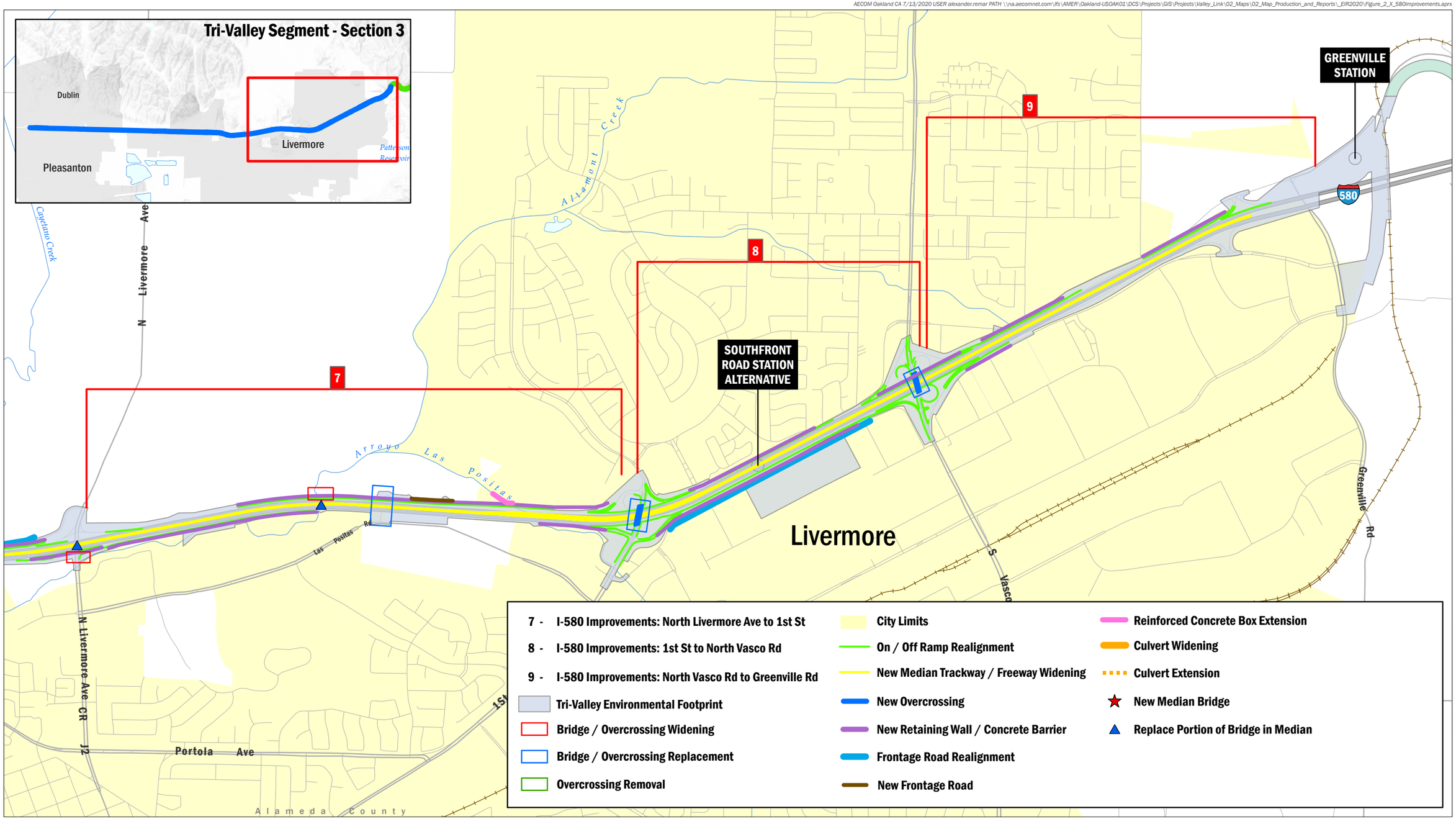

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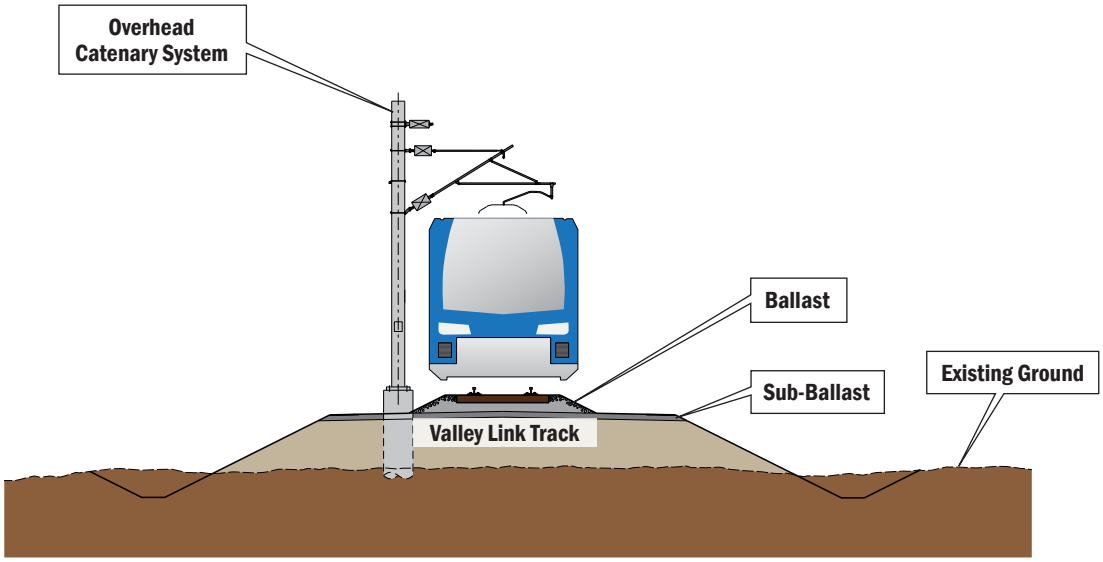
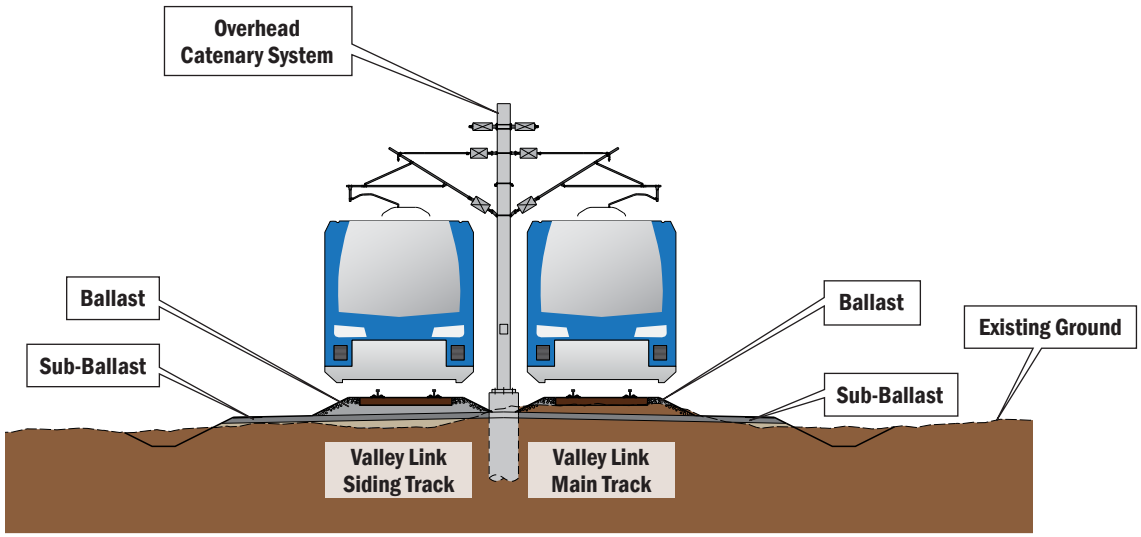
FIGURE 2-14C

Tri-Valley Segment I-580 Improvements - Section 3



Single Track



Double Track

Not to Scale

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FIGURE 2-15
BEMU Variant Typical Track Section

- Widening the box culvert at the Delta-Mendota Canal to the north.

2.3.3.3 Tracy to Lathrop

The Tracy to Lathrop segment would follow portions of several active ROWs currently used by freight trains. From the eastern end of the Altamont segment, Valley Link would continue on the Owens-Illinois Industrial Lead to Tracy Junction, the junction with the "Mococo" (short for Mountain Copper Company) Line which is part of UPRR's Tracy Subdivision. East of Tracy Junction, the Valley Link would follow UPRR's Tracy Subdivision to the Lathrop Wye, where the Tracy Subdivision merges into UPRR's Fresno Subdivision. From there, the route would continue for a short distance on the Fresno Subdivision to the proposed terminus at the North Lathrop Station (see Figure 2-13).

As described below, there are two variants under consideration for the Valley Link alignment in the Tracy to Lathrop segment. These two variants are under consideration to allow for flexibility in operation of the Valley Link service as well as in the final operating agreement between the Valley Link operator and UPRR. Both variants are evaluated to an equal level of detail in this Draft EIR. Under both variants, the majority of work would occur within existing UPRR ROW (see Appendix C, *Preliminary Right of Way Requirements*).

Tracy to Lathrop Alignment Variant 1, Single Track

Under Tracy to Lathrop Alignment Variant 1, Single Track, the existing Owens-Illinois Industrial Lead and Tracy Subdivision would be upgraded by construction of the following improvements:

- Removal of the existing primary operating track.
- Installation of new replacement track including ballast, concrete ties, turnouts, and continuous welded rail.
- Upgrades (including concrete crossing panels for existing and new track, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar pavement striping) to the existing at-grade private crossings and at the existing Lammers Road at-grade crossing in Tracy.
- Modifications to the existing at-grade crossing at Central Avenue in Tracy, including installation of concrete crossing panels for the existing tracks, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar pavement striping.
- Construction of new sidings at the following location:
    - West of Lammers Road
    - Northeast of the UPRR undercrossing of I-205
    - East of the UPRR undercrossing of I-5 bridge.
- Construction of a new UPRR bridge across Paradise Cut north of the existing UPRR bridge

Tracy to Lathrop Alignment Variant 2, Double Track

Under Tracy to Lathrop Alignment Variant 2, Double Track, the existing Owens-Illinois Industrial Lead, and the Tracy Subdivision would be double tracked. Variant 2 includes construction of the following improvements:

- Grading for a new track on the north side of the existing primary operating UPRR track

- Installation of new track to include sub-ballast, ballast, concrete ties, crossovers, and continuous welded rail
- Installation of new railroad signal and train control systems for the new track
- Construction of an additional track at the existing at-grade crossings (including roadway concrete crossing panels for new track, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar striping) parallel to the existing single-track at the following locations:
    - Lammers Road
    - Corral Hollow Road
    - Schulte Road
    - Tracy Boulevard
    - Central Avenue
    - MacArthur Drive
    - Chrisman Road
    - Banta Road
    - 6th Street
    - 7th Street
    - Grant Line Road
    - Stewart Road
    - D'Arcy Parkway
    - Louise Avenue
- Construction of new sidings at the following locations:
    - West of Lammers Road
    - Northeast of the UPRR undercrossing of I-205
    - East of the UPRR undercrossing of I-5 bridge
- Construction of a new UPRR bridge across Paradise Cut north of the existing UPRR bridge
- Construction of a new UPRR bridge across the San Joaquin River north of the existing UPRR bridge
- Construction of a new UPRR bridge across Manthey Road north of the existing UPRR bridge

2.3.4 Alternatives Analyzed at an Equal Level of Detail

The section describes the station alternatives, station parking alternatives, alignment alternatives, and the OMF alternatives under consideration. All these project alternatives are analyzed at the same level of detail as the Proposed Project in this Draft EIR.

2.3.4.1 Station Alternatives

Southfront Road Station Alternative

An alternative to the Greenville Station is under consideration and is fully evaluated in this Draft EIR. The Southfront Road Station Alternative would be constructed south of I-580 on a 7.3-acre site along Southfront Road between McGraw Avenue and Franklin Lane in Livermore. Access to the station would be provided from Southfront Road. The Southfront Road Station Alternative would include the same passenger amenities and sustainable design features as described for the Proposed Project. As shown in Figures 2-16A and 2-16B, improvements that would be constructed as part of the Southfront Road Station Alternative include:

- A 400-foot-long by 30-foot-wide double-track at-grade Valley Link station platform in the median of a widened I-580.
- A surface parking lot providing up to approximately 680 parking spaces and 4 bus bays.
- Areas designated for future surface parking expansion of the station on an adjacent 3.3-acre site to meet 2040 parking demand for a total of up to approximately 1,070 parking spaces.
- A pedestrian overcrossing from the parking lots over Southfront Road and eastbound I-580 to the median station platform, including elevators and stairs at both ends of the bridge.
- Realignment of Southfront Road to accommodate the I-580 median widening, including new driveways for buses and vehicles into the station.

Access to the parking lot would be provided from Southfront Road. Construction of the Southfront Road Station Alternative would require the acquisition of ROW (see Appendix C, *Preliminary Right of Way Requirements*). Construction of the Southfront Road Station Alternative would also require the following changes to I-580 and the roadways in the vicinity of the proposed station:

- Widening of the I-580 freeway median and realignment of the eastbound lanes.
- Realignment of the eastbound I-580 on-ramp from First Street and the eastbound I-580 off-ramp to Vasco Road.
- Construction of new concreate barriers and retaining walls along eastbound I-580 in the vicinity of the station.
- Realignment of Southfront Road in the vicinity of the station.

Mountain House Station Alternative

An alternative to the Mountain House Station is under consideration and is fully evaluated in this Draft EIR. The Mountain House Station Alternative would be constructed on an approximately 8-acre site (6 acres of UPRR property) west of Hansen Road between the Owens-Illinois Industrial Lead and the California Aqueduct. Access to the station would be provided by new station driveways along Hansen Road. The Mountain House Station Alternative would include the same passenger amenities and sustainable design features as described for the Proposed Project. As shown in Figure 2-17A (Owens-Illinois Industrial Lead Variant 1, Single Track) and Figure 2-17B (Owens-Illinois Industrial Lead Variant 2, Double Track), improvements that would be constructed as part of the Mountain House Station Alternative include:

- A 400-foot-long by 20-foot-wide at-grade Valley Link station platform.

- A Valley Link mainline track with an additional station track for passing.
- A surface parking lot south of the tracks providing up to approximately 890 parking spaces and three bus bays.
- Areas designated for future surface parking expansion north of the tracks to meet 2040 parking demand for a total of up to approximately 1,060 parking spaces on a 2.5-acre site (UPRR property).
- At-grade pedestrian crossings on both ends of the platform across the southern Valley Link track, including stairs and ADA-compliant ramps to access the platform from the parking lot.
- Improvements to the existing Hansen Road at-grade crossing, including roadway concrete crossing panels, signal house, railroad signal guards and gates on both sides of the crossing, and stop bar striping.

Other than the above-described station driveways and upgrades to the existing at-grade crossing, no roadway improvements to Hansen Road are included in this alternative.

The majority of improvements at the Mountain House Station Alternative would be constructed within existing UPRR ROW. However, construction of the station would require acquisition of property from adjacent parcels (see Appendix C, *Preliminary Right of Way Requirements*).

Downtown Tracy Station Parking Alternative 1

As shown in Figure 2-18, Downtown Tracy Station Parking Alternative 1 would include construction of a three-level parking structure at the site of the existing Tracy Transit Center surface parking lot (4-acre site) at the corner of North Central Avenue and West 4th Street, providing approximately 1,040 parking spaces for a net increase of approximately 925 spaces over the existing 115-space surface lot. This alternative does not include the construction of a surface parking lot at the southwest corner of the North Central Avenue/West 6th Street intersection; parking for the station would only be provided at the new parking structure. Downtown Tracy Station Parking Alternative 1 is fully evaluated in this Draft EIR. However, construction of this alternative is not part of baseline project funding and is dependent on completion of station area plans and funding from the City of Tracy or other local funding partners.

Downtown Tracy Station Parking Alternative 2

As shown in Figure 2-19, Downtown Tracy Station Parking Alternative 2 would include the construction of a three-level parking structure (5-acre site) at the southwest corner of the North Central Avenue/West 6th Street intersection providing approximately 930 parking spaces. No changes to the existing Tracy Transit Center parking lot are proposed as part of this alternative. Downtown Tracy Station Parking Alternative 2 is fully evaluated in this Draft EIR. However, construction of this alternative is not part of baseline project funding and is dependent on completion of station area plans and funding from the City of Tracy or other local funding partners.

2.3.4.2 Operation and Maintenance Facility Alternative

West Tracy Operation and Maintenance Facility Alternative

An alternative to the proposed Tracy OMF is also under consideration and is fully evaluated in this Draft EIR. The West Tracy OMF Alternative would be constructed on an approximately 27-acre site

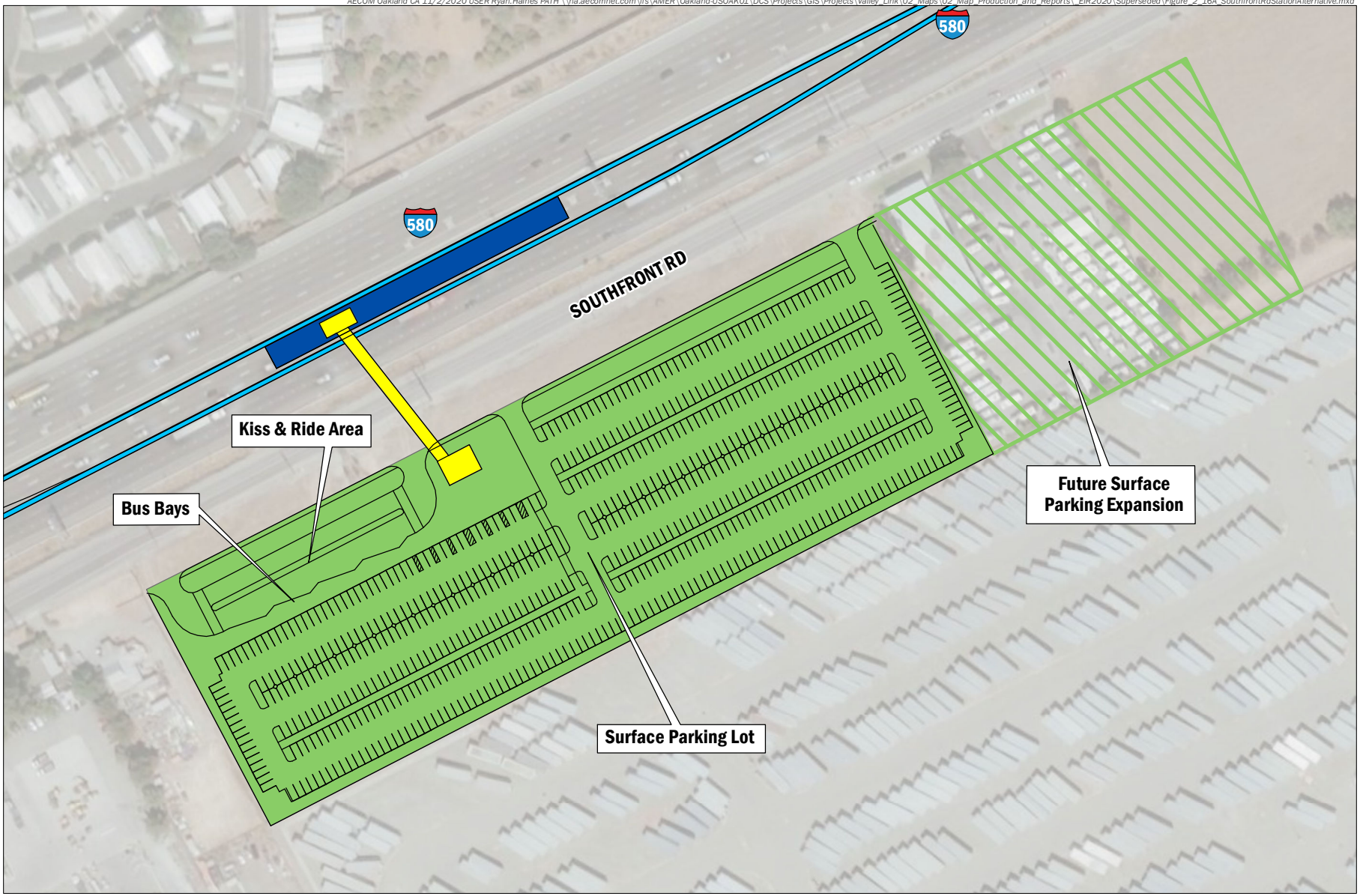

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FIGURE 2-16A

Southfront Road Station Alternative

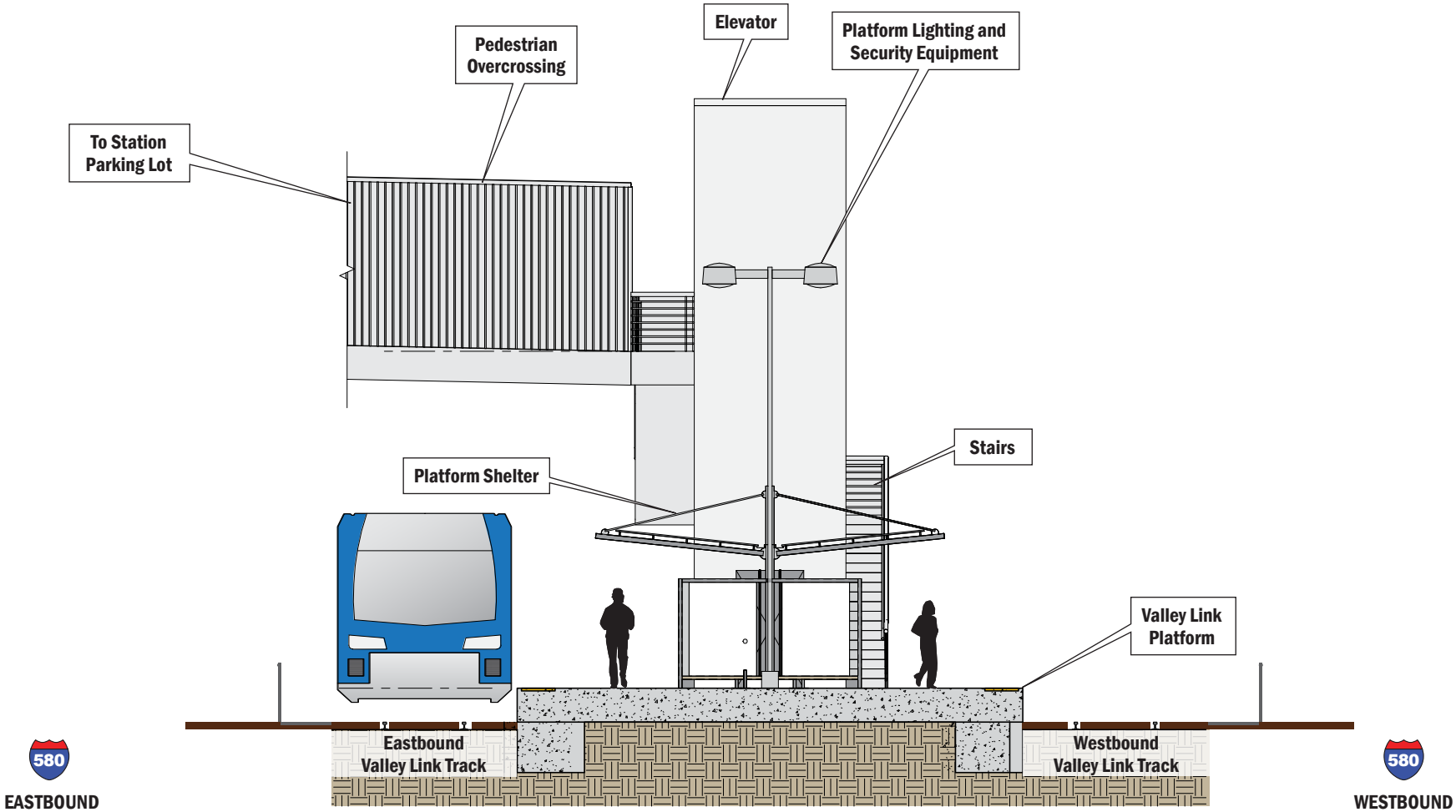

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FIGURE 2-16B

Southfront Road Station Platform Section

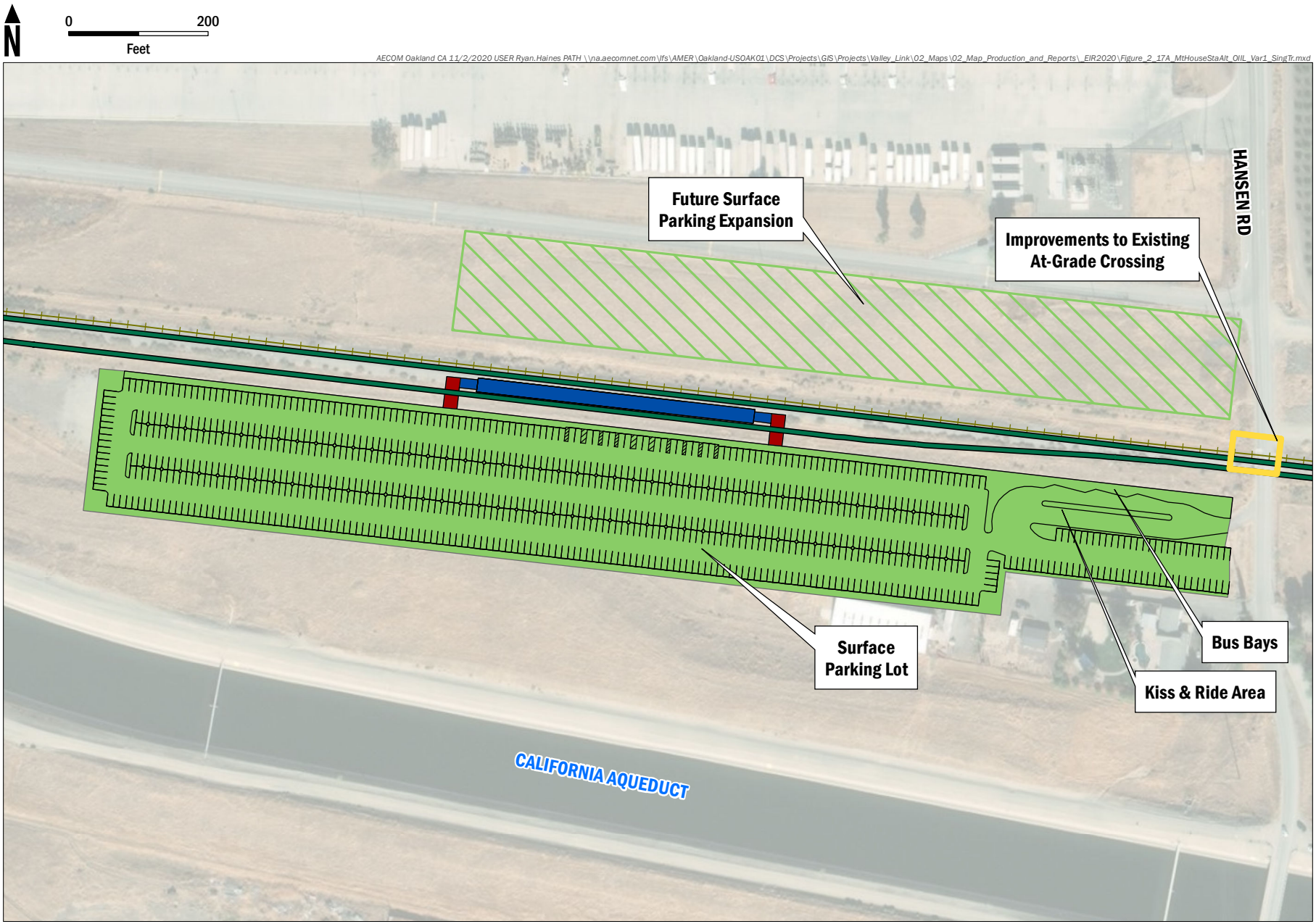

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FIGURE 2-17A

Mountain House Station Alternative - Owens-Illinois Industrial Lead Variant 1, Single Track

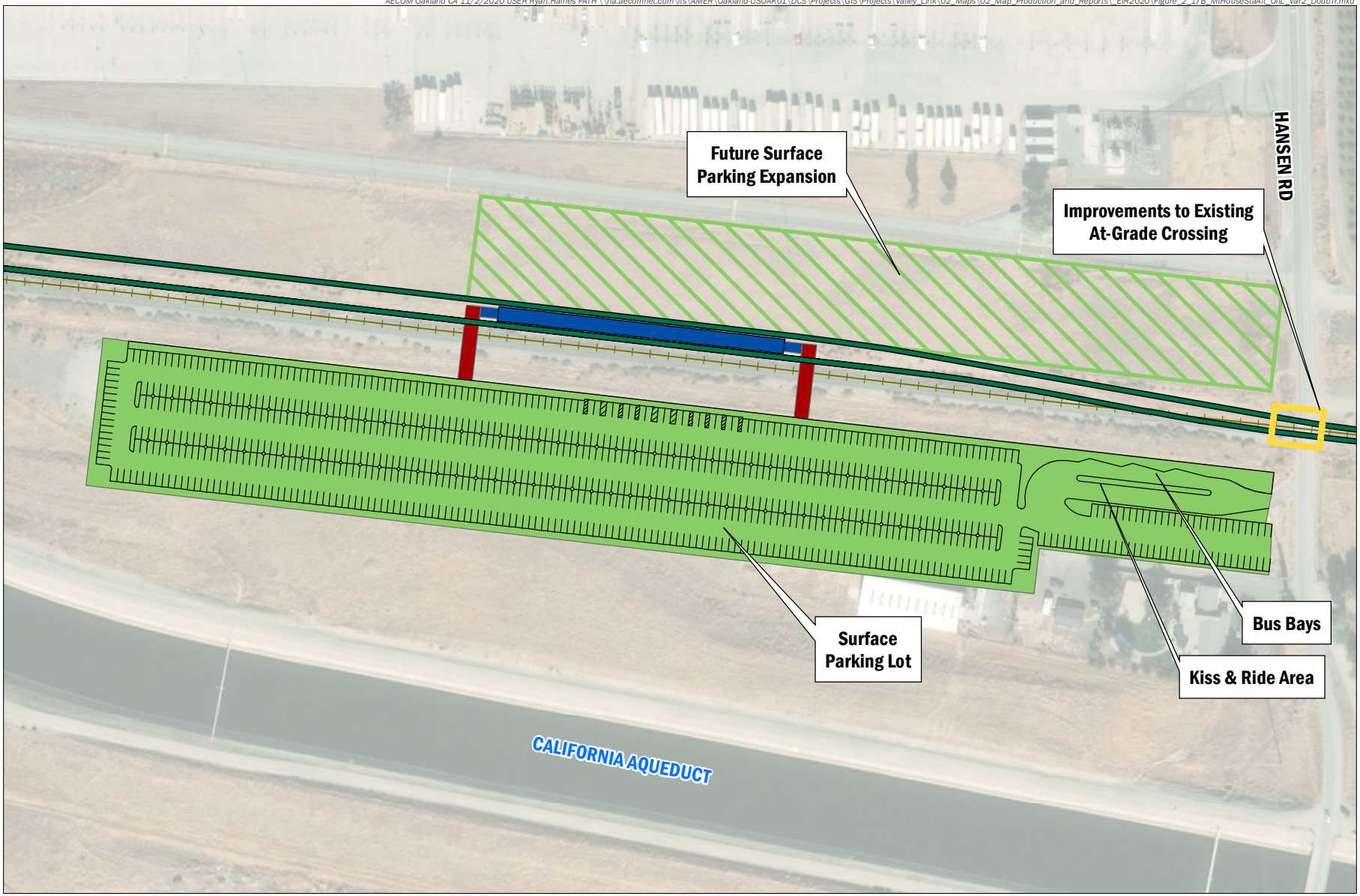

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FIGURE 2-17B

Mountain House Station Alternative - Owens-Illinois Industrial Lead Variant 2, Double Track

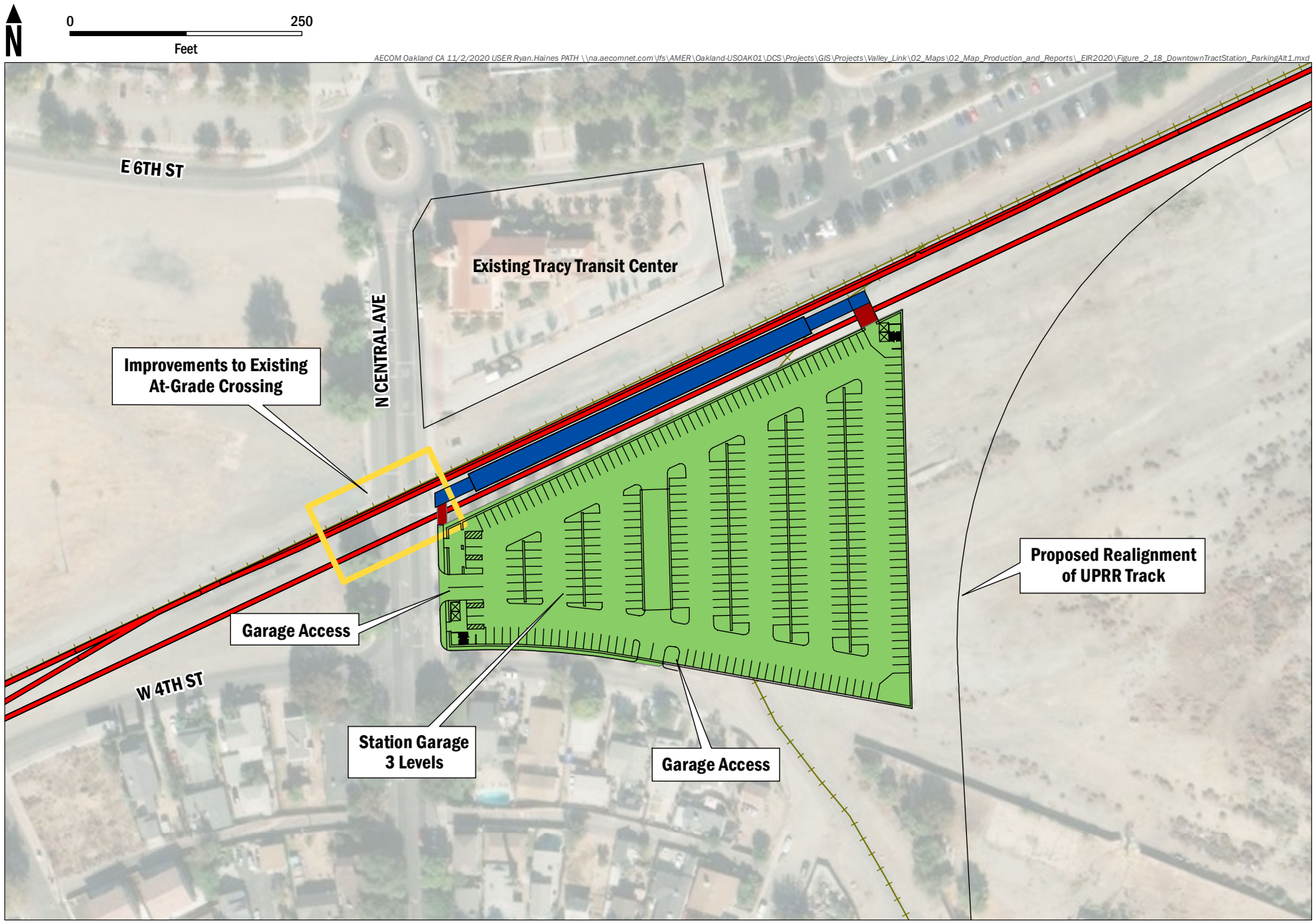

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FIGURE 2-18

Downtown Tracy Station - Parking Alternative 1

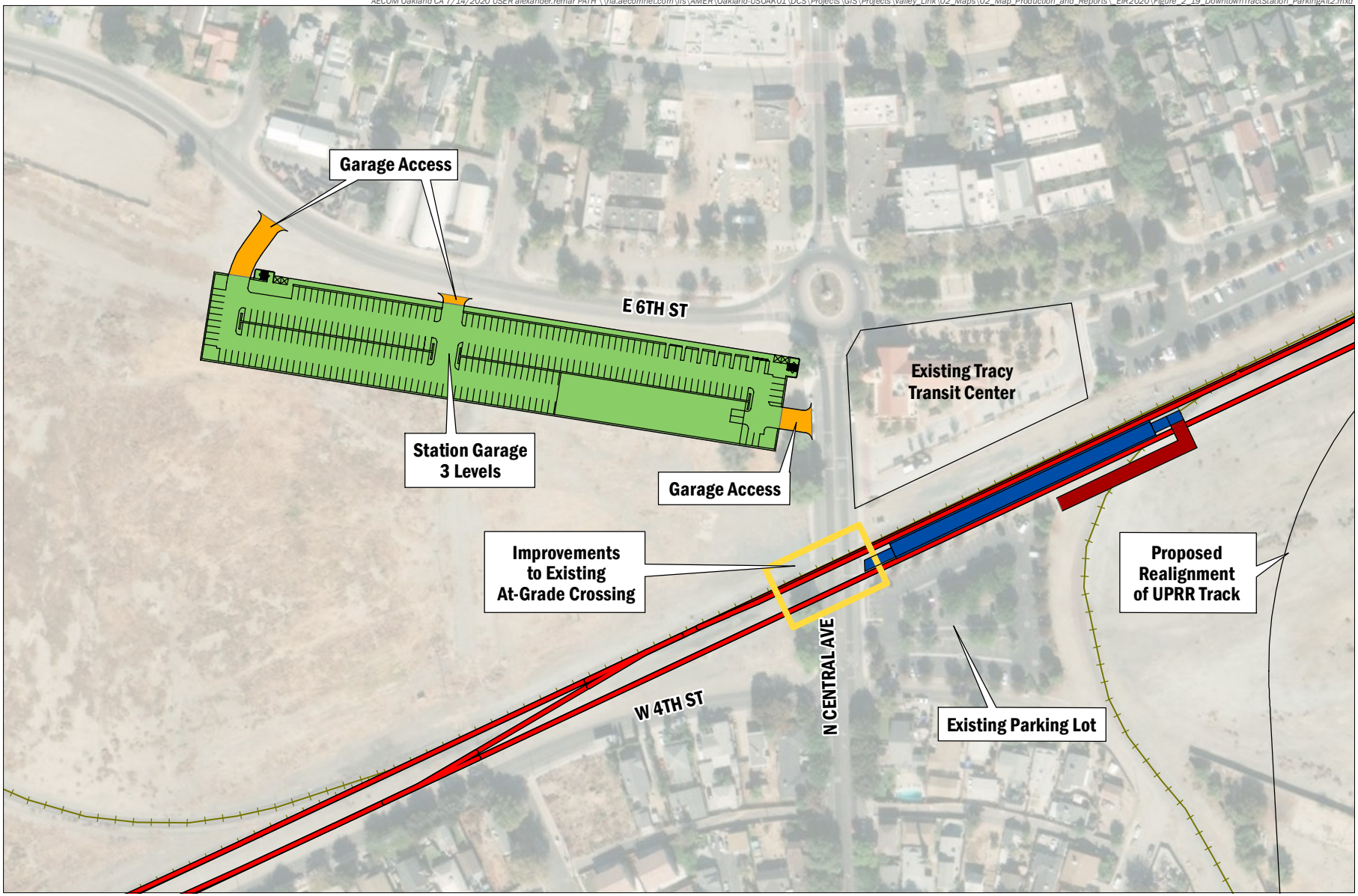

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FIGURE 2-19

Downtown Tracy Station - Parking Alternative 2

south of Patterson Pass Road west of the proposed Mountain House Station. Access to the West Tracy OMF would be provided from Via Nicolo Road. As shown in Figure 2-20, the West Tracy OMF Alternative would include tracks, buildings, and maintenance services similar to those described above for the proposed Tracy OMF. However, the West Tracy OMF Alternative would likely include a septic system for sewage disposal. This alternative would require significant site grading due to the rolling topography of the site.

Some of the improvements at the West Tracy OMF Alternative would be constructed within the existing UPRR ROW. However, construction of the West Tracy OMF Alternative would require acquisition of property from adjacent parcels (see Appendix C, *Preliminary Right of Way Requirements*).

Similar to the Tracy OMF, the design of the West Tracy OMF Alternative would accommodate the anticipated 2040 Valley Link Service Plan. However, construction of the West Tracy OMF Alternative may be phased over time as service increases between 2025 and 2040.

2.3.4.3 Alignment Alternative

Stone Cut Alignment Alternative

An alternative to a portion of the proposed Altamont Alignment is under consideration and fully evaluated in this Draft EIR. The Stone Cut Alignment Alternative is an approximately 2.25-mile-long bypass of the existing railroad tunnel which passes under westbound I-580 along the Altamont Alignment (see Figure 2-21). As shown, under the Stone Cut Alignment Alternative, a short segment of the Altamont Alignment would transition from the Alameda County Transportation Corridor ROW to the UPRR ROW, parallel the existing UPRR tracks to cross I-580, and transition back to the Alameda County Transportation Corridor ROW. The entire length of the Stone Cut Alignment Alternative would be double tracked.

The Stone Cut Alignment Alternative includes a new single-span bridge approximately 180 feet long over eastbound I-580 east of the existing UPRR bridge. The proposed alignment would then cross under westbound I-580 parallel to and east of the existing UPRR tracks. Two retaining walls (one approximately 200 feet long and one approximately 140 feet long, each 10 to 20 feet high) would be constructed along the alignment where its crosses under westbound I-580.

No changes to the existing UPRR track are proposed as part of the Stone Cut Alignment Alternative. Valley Link trains would not operate on any UPRR freight tracks along the bypass. Construction of the Stone Cut Alignment Alternative would require the acquisition of ROW (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.5 Initial Operating Segments

Full implementation of the Proposed Project would be subject to available funding and design considerations. As such, two IOS are also under consideration: one limited to the establishment of initial service between the Dublin/Pleasanton BART Station and the proposed Greenville Station (or Southfront Road Station Alternative); and one limited to the establishment of initial service between the Dublin/Pleasanton BART Station and the proposed Mountain House Station (or Mountain House Station Alternative). This phased approach to construction would allow service improvements to be implemented based on funding availability. As such, the Proposed Project has been designed to accommodate implementation of one or both of the potential IOSs. The operating plan for either IOS

would be similar to that described below in Section 2.5, *Conceptual Operating Plan*. The design of the four potential IOS stations is described below.

2.3.5.1 Greenville Station IOS

Under the Greenville Station IOS, the size of the Greenville Station parking lot would be increased to accommodate an increase in parking demand associated with being an interim end-line station. As shown in Figure 2-22, the Greenville Station site would be increased to approximately 30 acres and include four surface parking lots providing up to approximately 1,025 parking spaces north of I-580, and three surface parking lots providing up to approximately 1,475 parking spaces south of I-580, up to approximately 2,500 parking spaces in total. Access to the station would be provided by three driveways along Altamont Pass Road and one driveway along Greenville Road opposite Las Positas Road. All other station features would be similar to those described above in Section 2.3.1, *Stations,* for the Greenville Station.

Construction of the Greenville Station IOS would require the acquisition of additional ROW (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.5.2 Southfront Road Station Alternative IOS

Under the Southfront Road Station Alternative IOS, the size of the parking lot would be increased to accommodate an increase in parking demand associated with being an interim end-line station. As shown in Figure 2-23, the size of the parking lot would be expanded to accommodate up to approximately 3,310 parking spaces. Access to the station would be provided along Southfront Road. All other station features would be similar to those described above in Section 2.3.1, *Stations,* for the Southfront Road Station Alternative.

Construction of the Southfront Road Station Alternative IOS would require the acquisition of additional ROW (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.5.3 Mountain House Station IOS

Under the Mountain House Station IOS, the size of the parking lot would be increased to accommodate an increase in parking demand associated with being an interim end-line station. As shown in Figure 2-24, the size of the station would be increased to approximately 23.75 acres to accommodate a parking lot of up to approximately 2,820 parking spaces. Access to the station would be provided along Via Nicolo Road. All other station features would be similar to those described above in Section 2.3.1, *Stations,* for the Mountain House Station.

Construction of the Mountain House Station IOS would require the acquisition of additional ROW (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.5.4 Mountain House Station Alternative IOS

Under the Mountain House Station Alternative IOS, the size of the parking lot would be increased to accommodate an increase in parking demand associated with being an interim end-line station. As shown in Figure 2-25, the size of the parking lot would be expanded to accommodate up to approximately 3,310 parking spaces. Access to the station would be provided along two station driveways along Hansen Road. All other station features would be similar to those described above in Section 2.3.1, *Stations,* for the Mountain House Station Alternative.

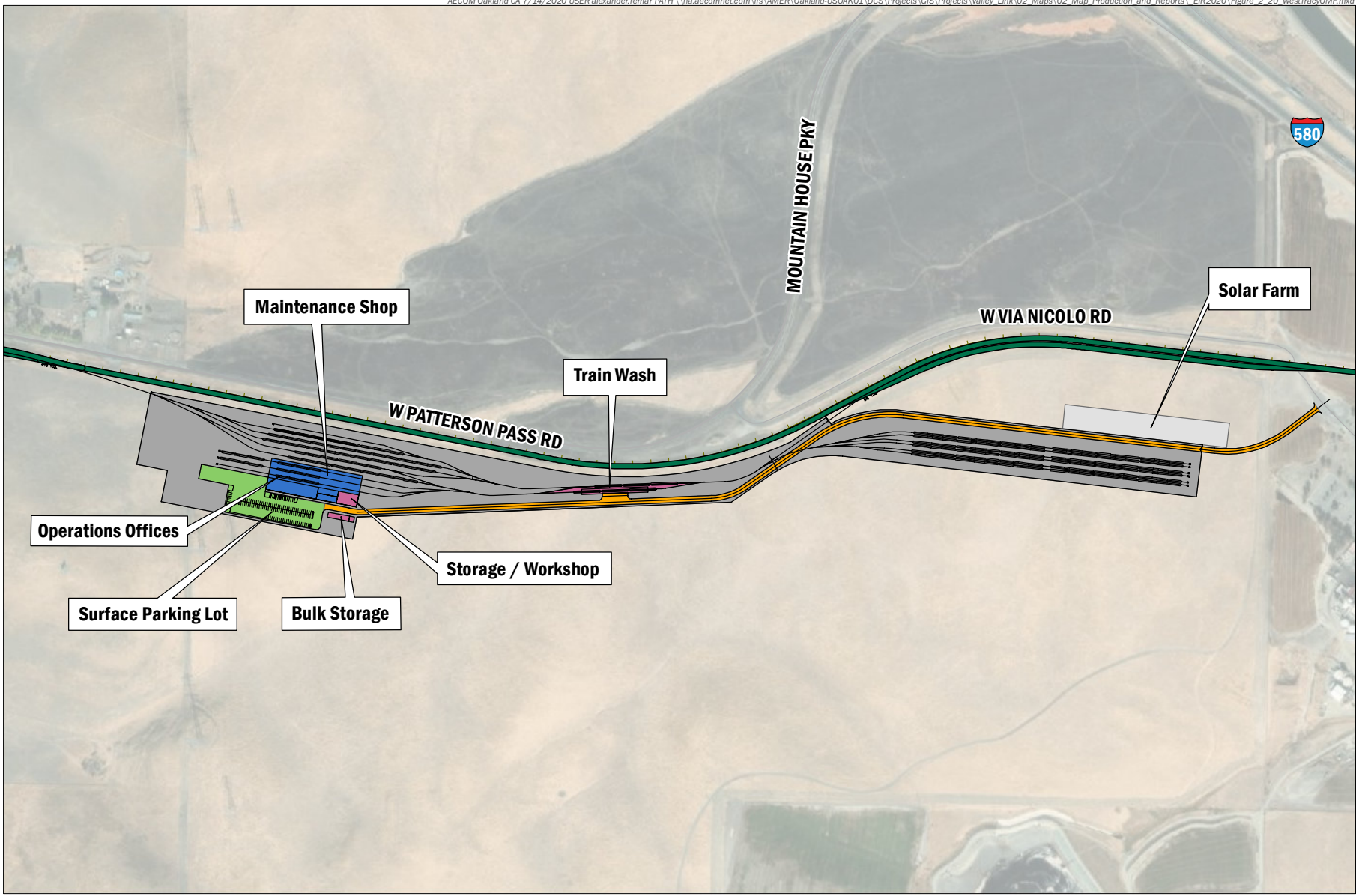

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FIGURE 2-20

West Tracy OMF Alternative

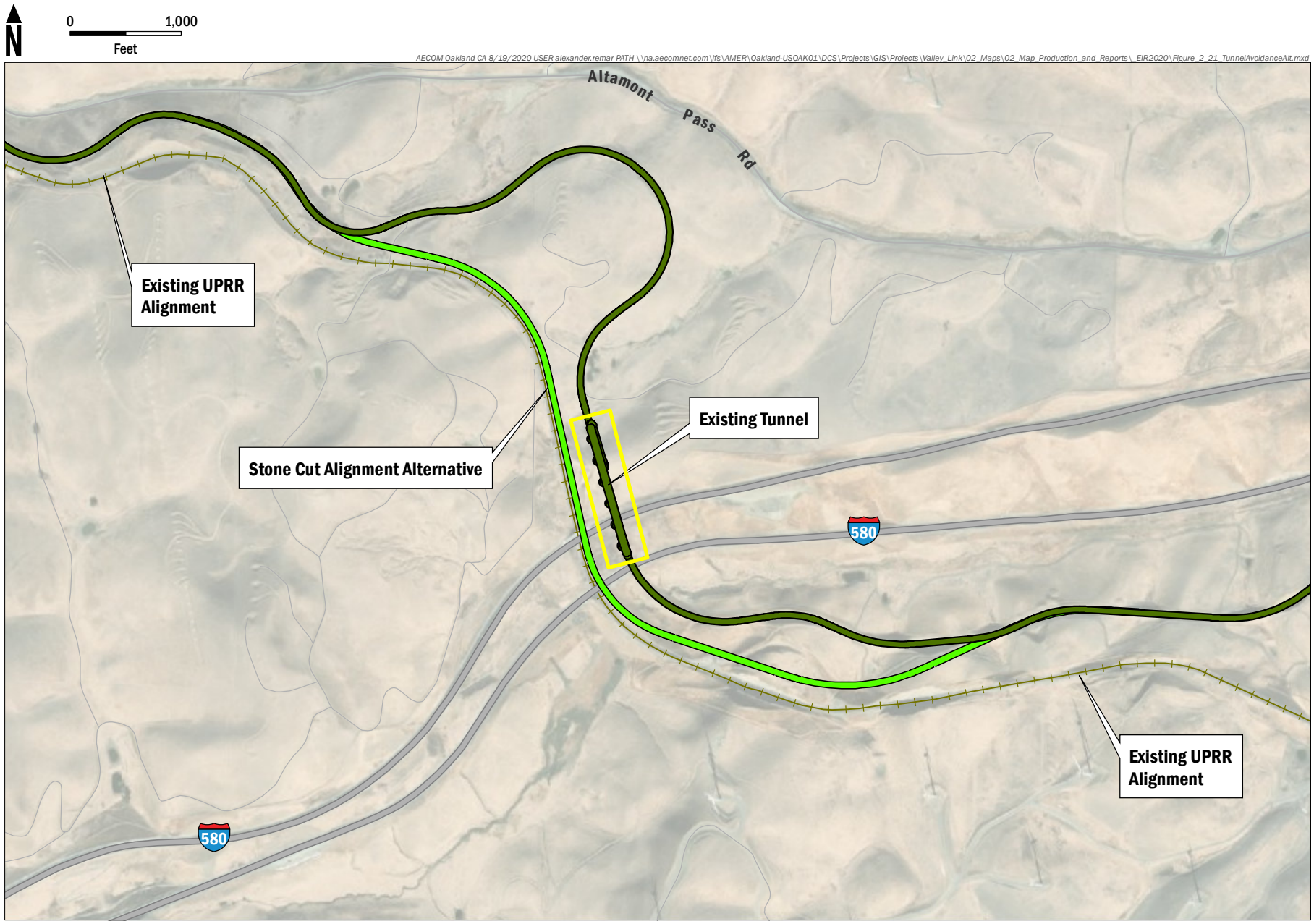

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FIGURE 2-21

Stone Cut Alignment Alternative

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FIGURE 2-22

Greenville Station Initial Operating Segment

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FIGURE 2-23

Southfront Road Station Alternative IOS

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FIGURE 2-24

Mountain House Station Inital Operating Segment

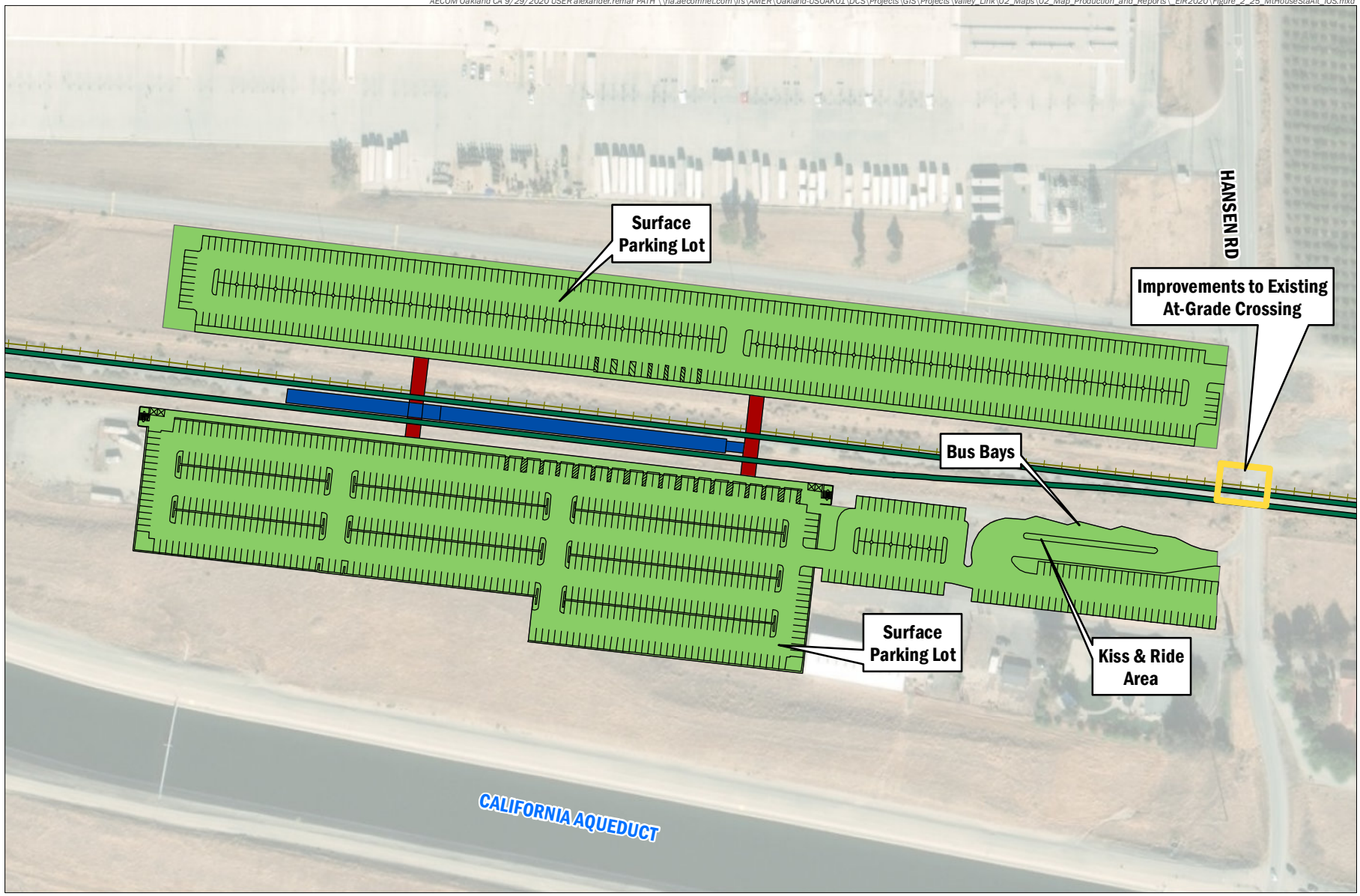

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FIGURE 2-25

Mountain House Station Alternative Initial Operating Segment

Construction of the Southfront Road Station Alternative IOS would require the acquisition of additional ROW (see Appendix C, *Preliminary Right of Way Requirements*).

2.3.5.5 Interim Operation and Maintenance Facility

Should an IOS be implemented that only includes service between the Dublin/Pleasanton Station and the Greenville Station (or the Southfront Road Station Alternative), an Interim OMF would be constructed on a 5-acre portion of the Alameda County Transportation Corridor ROW approximately 2,250 feet east of Dyer Road (see Figure 2-26). All vehicle storage and maintenance activities associated with the implementation of service between the Dublin/Pleasanton Station and the Greenville Station (or the Southfront Road Station Alternative), would take place at the Interim OMF.

Under this scenario, improvements within the Altamont segment would be limited to the construction of a single track and one siding within the Alameda County Transportation Corridor ROW between the Greenville Station (or the Southfront Road Station Alternative) and approximately 2,250 feet east of Dyer Road. This single track would provide non-revenue train equipment access to the Interim OMF. Construction of this single track would include the reconfiguration of the Altamont Pass Road/Dyer Road intersection and improvements to the existing at-grade crossings (including concrete crossing panels, signal equipment house, railroad crossing warning lights and gates on both sides of the crossing and crossing warning and stop bar pavement markings). However, construction of the single track would not include a new Valley Link undercrossing of Altamont Pass Road west of Carroll Road, nor would it include track or other improvements east of the Interim OMF.

The Interim OMF would be designed to accommodate the operation and maintenance requirements of Valley Link service between the Dublin/Pleasanton Station and the Greenville Station (or the Southfront Road Station Alternative) and would, therefore, include facilities similar to those described for the Tracy OMF. However, the Interim OMF would be scaled to serve the fewer number of trains required for the Dublin/Pleasanton Station to Greenville Station (or Southfront Road Station Alternative) IOS, including a reduction in the number of employees from 170 to 100. Toilet sewage disposal would likely utilize an onsite holding tank. Following the implementation of full Valley Link service to North Lathrop, the Interim OMF would be decommissioned, and all operation and maintenance activities would take place at either the Tracy OMF or the West Tracy OMF Alternative. However, the Interim OMF could continue to be used as a train layover facility.

2.3.6 Vehicles

Valley Link service would employ either multiple-unit train equipment or diesel locomotives hauling carriages. A multiple unit train is a self-propelled train composed of one or more passenger carriages joined, which when coupled to another multiple unit, can be controlled by a single driver. Proposed trains would be capable of operating at speeds of up to 79 miles an hour (mph). Top speeds along the alignment would be limited by track geometry. Along the straighter sections of track within the I-580 median or along UPRR ROW, trains would approach their top speed of 79 mph. On the more curved alignment through the Altamont Pass, however, top speeds would be reduced accordingly.

Multiple units are classified by their power source. The preferred power source for the Authority would be one that would minimize air quality degradation and GHG emissions and would meet the

desired performance criteria (including train speed and acceleration/deceleration rate). The choice of rolling stock that would be used for the Proposed Project depends on multiple factors, including the availability of the technology in the marketplace, the number of potential vehicle providers (e.g., the ability to obtain competitive bids), whether certain power sources can meet desired performance criteria (including transit over the Altamont Pass), and air quality, noise, and GHG emission considerations. Thus, the Authority is considering four train technology variants, identified below.

2.3.6.1 Diesel Multiple Unit (DMU) Variant

A DMU is a passenger rail vehicle that is self-propelled by on-board diesel engines. These diesel engines generate electricity which powers electric motors that drive the vehicle. The DMU train technology is a proven technology in widespread use worldwide and in a number of locations in the U.S., including for SMART rail, e-BART, and other U.S. passenger rail services. DMUs are expected to be able to meet Valley Link's performance criteria given that their in-service operational characteristics are known. DMUs used for Valley Link would meet the U.S. Environmental Protection Agency (USEPA) Tier 4 requirements, which would have lower criteria pollutant emissions than lower-tier equipment.[8]

The DMU variant could utilize traditional ultra-low-sulfur diesel fuel (ULSD) or use renewable diesel fuel. According to the California Air Resources Board, the "carbon intensity" of renewable diesel ranges from 50 to 85 percent lower than ULSD.[9] DMU trains would require approximately 915,000 gallons of ULSD per year or approximately 952,000 gallons of renewable diesel per year under 2040 Full Build operation.

2.3.6.2 Hybrid Battery Multiple Unit (HBMU) Variant

The HBMU train technology includes on-board diesel engines as well as on-board batteries for electrical power. The diesel engines can generate electricity for the electric motors directly or can charge on-board batteries that can also power the electric motors. HBMU model concepts often incorporate regenerative braking (like that in hybrid cars) to charge the electric batteries. Some HBMU concepts are designed to only use the electric batteries in close proximity to stations or depots; others are designed to use batteries more widely and then use diesel engines when under load (such as when climbing).

At present, HBMU technology is in limited use for regular passenger service but vehicle manufacturers and rail service providers are exploring the technology. Hitachi has employed an HBMU in Japan since 2007; Deutsche Bahn and SNCF and Alston are employing related systems in Germany and France. There are no known HBMUs in regular passenger service on the U.S. rail system at present.

It is currently unknown whether this HBMU technology could meet the performance criteria for the project site. If the performance criteria could be met by hybrid technology, the Authority could

[8] Tier 4 refers to the latest emission milestone established by USEPA and the California Air Resources Board applicable to new engines found in off-road equipment including locomotives.

[9] *Carbon intensity* is a measure of the weighted potency of GHG emissions that are emitted when an engine undergoes its combustion process.

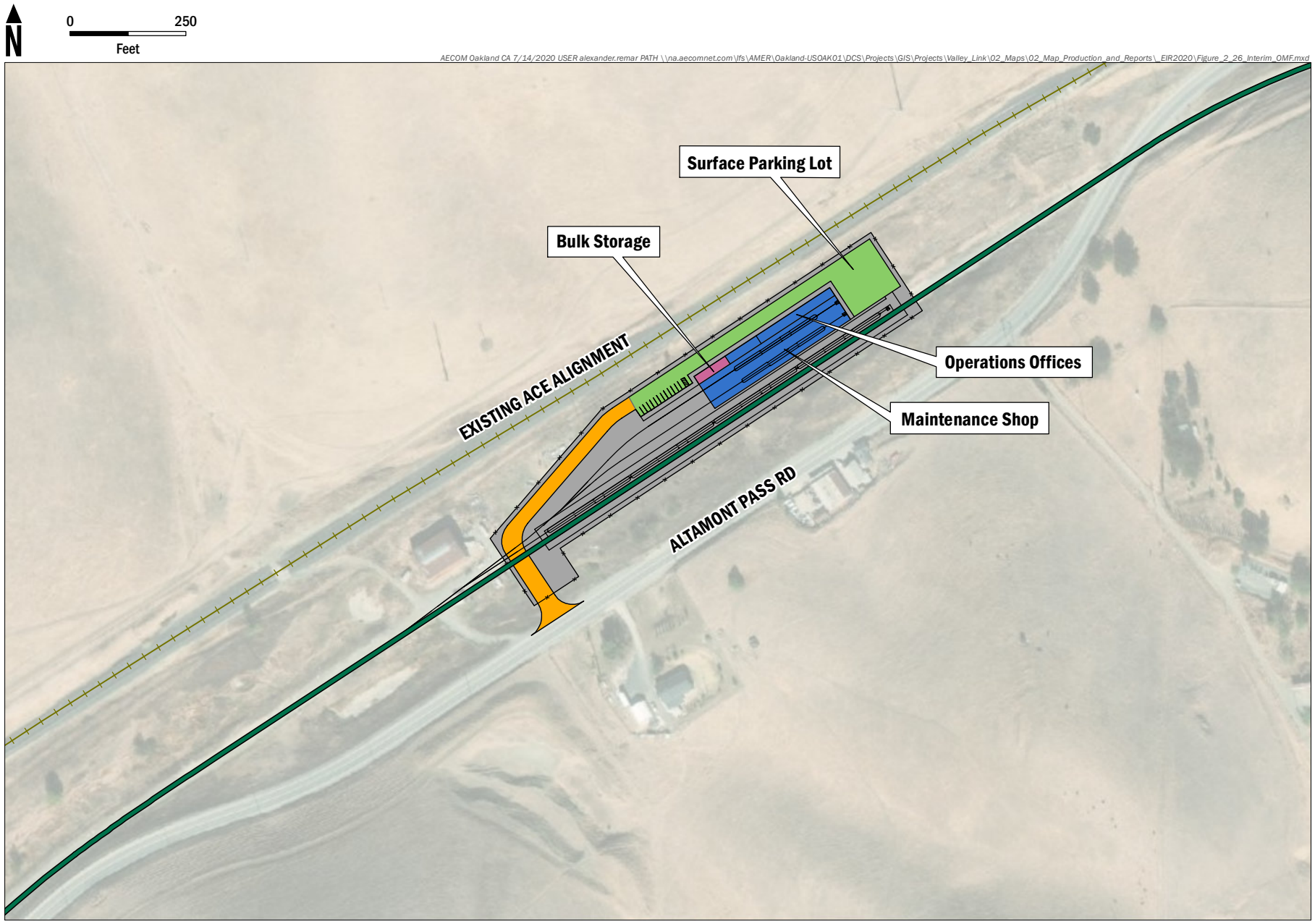

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FIGURE 2-26
Interim OMF

either procure vehicles utilizing this technology or if DMUs were procured initially, the Authority could transition to this technology as it evolves.

Like the DMU variant, the HBMU variant could utilize ULSD or renewable diesel fuel for its diesel engines. HBMU trains would consume less diesel fuel than DMU trains. HBMU trains would require approximately 811,000 gallons of ULSD per year or approximately 843,000 gallons of renewable diesel per year under 2040 Full Build operation.

2.3.6.3 Battery-Electric Multiple Unit (BEMU) Variant

Full BEMUs is a technology that solely uses on-board batteries for electrical power. This technology is currently in use for streetcar and light rail passenger services in the U.S. There are no known BEMUs in regular rail passenger service on the U.S. rail system at present. However, they are being developed for possible deployment in the next few years. BEMUs have been in pilot testing in Europe in recent years, substantial orders for BEMUs have been made by several European rail services with rail vehicle manufacturers including Alstom and Stadler to commence service as early as 2022, and other rail vehicle manufacturers, like Bombardier have developed BEMU designs recently as well (Alstom 2020; Bombardier 2019; Railway Gazette 2020).

It is currently unknown whether the BEMU technology could meet the performance criteria for the Proposed Project. If the performance criteria could be met by the BEMU technology, the Authority could procure vehicles utilizing this technology; or if DMUs or HBMUs were procured initially, the Authority could transition to this technology as it evolves.

The BEMU variant includes construction of OCS along the Altamont Alignment. As described above, OCS would be constructed within the Altamont segment to provide electrical power to BEMU trains from approximately 1,000 feet east of the Greenville Station to the Tracy OMF. The OCS poles would be approximately 20 feet tall and would be installed on concrete foundations. The OCS wire would be supported by a cantilever arm extending from each pole (see Figure 2-15). OCS poles would be spaced approximately 160 to 170 feet apart. OCS would also be installed at the Dublin/Pleasanton Station and the North Lathrop Station to charge BEMU trains while at the stations.

Five TPSSs would also be constructed along the Valley Link corridor to accommodate the BEMU variant. A TPSS is an electrical substation that receives power from the utility and transforms and distributes the power for the OCS. A TPSS typically consists of a fenced outdoor yard, normally unpaved gravel to allow water infiltration, a parking/equipment layout area for maintenance, open air utility transformer lineup, metal clad switchgear, and controlee enclosure for traction power transformer and distribution. The site may also include peak shaving batteries, an auxiliary transformer, and a possible storage shed. One TPSS would be constructed at the Dublin/Pleasanton Station; one at the Greenville Station; one within the Alameda County Transportation Corridor ROW near the intersection of Midway Road and Patterson Pass Road; one at the Tracy OMF; and one at the North Lathrop Station.

During final design, the Authority would work with Pacific Gas & Electric Company (PG&E; the electric power provider) to provide the TPSS power supply. A route from an appropriate PG&E power source to each TPSS site through public and Project ROW would be determined. PG&E would evaluate the power needs and determine the source and destination that will meet the facility needs. For overhead power, pole height would be based on current PG&E facilities. Changes to the existing PG&E pole heights are not anticipated. Where power supplies are overhead, it is anticipated that

PG&E would provide the power source overhead. Where PG&E power supplies are underground it is anticipated that PG&E would provide the power source underground.

BEMU trains would consume approximately 15,885,530 kilowatt hours of electricity per year under 2040 Full Build operation.

The goal for the Proposed Project would ultimately be to deploy BEMUs in Valley Link service, which would not require diesel and would result in zero emissions. As described above, it is not known whether BEMUs are technically feasible because there are no known BEMUs in regular rail passenger service on the U.S. rail system at present.

2.3.6.4 Diesel Locomotive Haul (DLH) Variant

The DLH variant would employ trainsets with (non-powered) passenger cars pulled or pushed by a diesel-electric locomotive, similar to conventional commuter rail operations such as ACE and Amtrak. Under this variant, operation of the Proposed Project would use engines that meet or exceed Tier 4 emissions standards. Tier 4 locomotives are compliant with the latest U.S. Environmental Protection Agency (EPA) emissions standards to reduce particulate matter and nitrogen oxide emissions compared to older locomotives.

Similar to the DMU variant and the HBMU variant, the DLH variant could utilize ULSD or renewable diesel fuel for their diesel engines. However, diesel-electric locomotives would consume more diesel fuel than DMU or HBMU trains. Under the DLH variant, trains would require approximately 1,271,000 gallons of ULSD per year or approximately 1,322,000 gallons of renewable diesel per year under 2040 Full Build operation. For passenger-only locomotive driven consists, California Public Utilities Commission (CPUC) General Order 26D specifies a minimum vertical clearance of 19 feet. Therefore, a waiver would be required to operate in the I-580 corridor due to the presence of existing freeway overcrossings.

2.3.7 Safety Warning Devices

FRA regulations (49 C.F.R. Part 222) require that trains sound their horns while approaching public at-grade crossings until the lead locomotive or train car fully occupies the crossing. In general, the regulations require locomotive engineers to begin to sound the train horn for a minimum of 15 seconds, and a maximum of 20 seconds, in advance of public at-grade crossings. Engineers must also sound the train horn in a standardized pattern of two long, one short, and one long blast and the horn must continue to sound until the lead locomotive or train car occupies the grade crossing. However, the FRA Train Horn Rule does not apply to trains transiting through stations. Operational safety warning requirements concerning warnings at stations are determined by the host railroad. As such, Valley Link train horns would not necessarily be used when transiting through stations. Instead, Valley Link trains would include safety warning devices such as a horn or warning bell with similar sound levels as those used by BART or ACE trains for their station entry.

2.4 Construction

Appendix B, *Environmental Footprint* and Appendix E, *Valley Link 15% Preliminary Engineering Plans*, include specific details regarding the areas of disturbance associated with each improvement, potential utility conflicts and whether the utility would be protected or relocated, and construction

staging areas and access for the Proposed Project. Construction activities that would be undertaken, and construction durations based on preliminary engineering are provided in the following subsections.

Construction methods, sustainability features, and construction schedules and durations are described in this section.

2.4.1 Construction Methods

2.4.1.1 Roadways

Construction and widening of local roadways, freeways, the realignment of freeway ramps, and replacement of bridges would include removal of existing features such as concrete barriers, retaining walls, portions of bridge structures, curbs and gutters, sidewalks, signs (roadway and overhead), street lights, express lane electronic toll system, and traffic signals. Work may also include relocation of existing overhead and underground utilities. Proposed work would include clearing and grubbing, embankment construction, earthwork excavation, grading and compaction, aggregate base, hot mix asphalt, and pavement marking and striping. Proposed structural work would include construction of new bridges and the extension of box culverts. Retaining walls would be constructed in several locations within the project limits to minimize ROW impacts to avoid impacts on existing interchange overcrossing structures and to support the ramp approaches and roadway embankments. Concrete barriers would be constructed in the center median for about 12 miles on both sides of Valley Link rail alignment and also California Department of Transportation (Caltrans) standard concrete barriers would be constructed as part of freeway outside widening between local roads and the freeway. Median concrete barriers would be modified to accommodate overhead signs, dynamic message signs, variable toll message signs and toll gantry structures to carry electronic toll system (ETS) equipment. The location of variable toll message signs and toll gantries for ETS would require close coordination with Alameda County Transportation Commission and Caltrans. The train signal and system equipment would also be installed on the median concrete barrier. Construction site preparation activities would include installation of environmentally sensitive area fencing; vegetation removal; and installation of water quality construction best management practice features such as slit fence, fiber rolls, drainage inlet protection systems, etc.

Special haul roads would not be required for the I-580 widening and improvement. A detailed stage construction and traffic handling plans would be developed in the final design phase along with transportation management plans (TMP) for contractor use. The TMP would include lane closure charts, detour plans, and nighttime and weekend lane and ramp closures to support various construction activities. Temporary K-rail with other traffic control devices would be used to separate the work area from the moving traffic and to close travel lanes, sidewalks, and other areas as needed to provide construction staging areas. The following four potential staging areas have been identified in the Tri-Valley segment:

- North of I-580 between Campus Drive and Hacienda Drive in Dublin
- South of I-580 east of the Las Colinas Road overcrossing in Livermore
- Along Northfront Road adjacent to the westbound I-580 on-ramp from North Vasco Road
- Along Southfront Road adjacent to the eastbound I-580 off-ramp to South Vasco Road

The contractor would be responsible for identifying and obtaining environmental clearance for additional staging areas as needed outside of the Project-identified construction staging area.

During the final design phase, a TMP would be prepared in accordance with Caltrans requirements and guidelines to minimize the construction-related delays and inconvenience for travelers in the Project area. The TMP would address the potential traffic impacts as they relate to staged construction, detours, and other traffic handling concerns associated with construction of the Proposed Project. It would include:

- Distribution of press releases and other documents as necessary to notify local jurisdictions, agencies, and the public of upcoming road closures and detours; in addition to public meetings to notify motorists of traffic impacts.
- Coordination with the California Highway Patrol and local law enforcement on contingency plans.
- Use of portable Changeable Message Signs, Highway Advisory Radio, Caltrans information network, California Highway Patrol Construction Zone Enhanced Enforcement Program, and Freeway Service Patrol where possible to minimize delays.

Access would be maintained for emergency response vehicles and express lanes maintenance vehicles.

The temporary traffic control devices used for construction would comply with California Manual for Uniform Traffic Control Devices.

Due to the high traffic volumes and existing delays, any construction activity on I-580 require that a detailed stage construction be considered to minimize impacts on the traveling public. Through a multi-stage approach, the existing number of lanes would be maintained, and shoulder widths would vary from a minimum of 2 feet to 10 feet, where feasible. Any damage to the existing ETS elements that is caused by the Proposed Project will be repaired and maintained in good operating conditions during construction. Temporary concrete railing (K-rail) and temporary traffic screens would be used for traffic and worker safety. During construction, temporary or long-term shoulder closures are expected to occur in both directions during daytime or nighttime, while travel lane and ramp closures would only occur during nighttime and weekends.

The Proposed Project improvements within I-580 include reconstruction of three interchange structures and one overcrossing structure. The widening of I-580 would require reconfiguration of all the on- and off-ramps in the westbound direction and several ramps in the eastbound direction. The proposed pavement section for widening and excavation depth would be similar to the existing pavement section.

The I-580 corridor currently experiences noticeable traffic congestion during both AM and PM peak hours. To ensure that traffic operation (including all existing express lane facilities) are not further affected during Project construction, detour and construction staging plans would be developed that would preserve or minimize the impact to the existing number of traffic lanes on I-580 in each direction throughout the construction period, except during critical short-term construction activities. Twenty-four-hour traffic counts would be performed to assess the impact of any needed lane closures. Preliminary information concerning lane closures would be used to develop feasible staging plans. Impacts to pedestrian and bicyclist movements, as well as access to local business properties, would be carefully considered in the staging plans. Pedestrian and bicycle access across I-580 and along the Iron Horse Trail would be maintained during construction stages, with the

possible exception to nighttime closures. If nighttime closures are required, acceptable detours would need to be put in place.

All construction-related materials including the environmentally sensitive area fencing would be removed after construction activities are complete. The temporarily disturbed areas and staging areas would be cleaned up, re-contoured to original grade, and revegetated with appropriate native species, as necessary. Permanent erosion control, including soil stabilization measures such as hydro seeding and coir netting, would be applied to all temporarily affected Project areas to minimize erosion after construction.

2.4.1.2 Track Work

Construction of new track or reconstruction of existing track would include grading and compaction of the track subgrade and installation of trackway drainage and systems raceway before placement of sub-ballast and an initial placement of ballast. Concrete ties are then laid out on the ballast. Continuous welded rail (1,000-foot-long rail strings) is installed on the ties with rail fasteners and then the rail strings are welded together. Using on-track equipment, additional ballast is unloaded onto the track and compacted along with making final adjustments to the track alignment using on-track equipment.

Construction of a new track within the UPRR ROW would occur in segments; once the subgrade, ballast, and main track are installed for one segment, construction would continue down the alignment. The duration of construction activities for a new track generally lasts approximately a few days to a week for a given location.

Track construction could conflict with existing utility lines, and these lines would be relocated or protected. Appendix D, *Utilities,* lists the potential utility conflicts and whether the utility would be protected or relocated.

2.4.1.3 Track and Roadway Support Structures

Track and roadway work would also involve the construction of track and roadway supporting structures, such as new bridges (track or roadway over waterway) and construction of grade separation structures, such as underpasses and overheads to separate rail and roadway or undercrossings or overcrossings to separate roadways.

Waterway Crossings at Paradise Cut and San Joaquin River

Both Tracy to Lathrop Alignment Variant 1, Single Track, and Tracy to Lathrop Alignment Variant 2, Double Track include the construction of a bridge over the waterway at Paradise Cut as well as a new bridge over the San Joaquin River. Both bridges would be constructed north of and parallel to the existing UPRR bridges at these two locations.

The typical bridge (waterway crossing) shown in the preliminary engineering plans consists of a combination of short spans supported on driven steel H-pile bents with precast concrete bent caps. Structures that require longer spans to avoid obstacles or provide adequate opening to pass design flows would likely be supported on cast-in-place reinforced concrete (RC) pier caps and columns extended from RC cast-in-drilled-hole (CIDH) pile shafts. The short spans consist of either precast concrete slab beams or double-cell box girders, and the longer spans would typically consist of

either single-cell precast concrete box girders, steel-plate girders, steel-plate through-girders, or a steel through-truss.

The installation of the bridge over Paradise Cut would require two abutments founded on driven piles, three piers made of 6-foot diameter RC columns on 8-foot diameter RC CIDH piles, and 25 piers consisting of three steel H-piles per pier as summarized in Table 2-1.

Table 2-1. Construction Details for the Bridge over Paradise Cut

Abutment or Pier No.	No. Piles	Pile Type	On Land or In Water?	Installation Method	Distance from Water's Edge (feet)	Days of Construction
Abut 1	10	H-pile	Land	Driven	200	2
2	2	CIDH	Land	Drilled	100	10
3	2	CIDH	Water	Drilled	10	10
4	2	CIDH	Water	Drilled	10	10
5–26	126	H-pile	Land	Driven	40 min to 660 max	30
Abut 27	10	H-pile	Land	Driven	690	2

Note: Days of construction refers to days required to install piling for the listed abutment or pier.

The installation of the bridge over the San Joaquin River would require two abutments on driven piles and two RC piers, each with two 6-foot-diameter RC columns on 8-foot-diameter RC CIDH piles, as summarized in Table 2-2. Construction will include installation of a steel casing extending approximately 20 feet into the ground. The top of the casing would extend above the water surface to isolate the shaft construction. Casings for the construction of CIDH piles would be installed using the vibration method, while piling required at the abutments would be installed using impact driving equipment. There may be some local dewatering of the casing prior to drilling; however, the construction method would be slurry displacement, which would eliminate the need for dewatering during construction. This method uses slurry in the hole during drilling and concrete placement to keep the groundwater out of the excavation. As the final concrete is poured, the concrete is heavier than the slurry, and the slurry is removed at the top of the hole as concrete fills the bottom. The portion of the casing above the top of the CIDH pile will be removed once the column is poured.

Table 2-2. Construction Details for the Potential Bridge over the San Joaquin River

Abutment or Pier No.	No. Piles	Pile type	On Land or In Water?	Installation Method	Distance from Water's Edge (feet)	Days of Construction
Abut 1	5	H-pile	Land	Driven	90	5
2	2	CIDH	Water	Drilled	10	10
3	2	CIDH	Water	Drilled	10	10
Abut 27	5	H-pile	Land	Driven	130	5

Note: Days of construction refers to days required to install piling for the listed abutment or pier.

The permanent impact from installation of the bridges would be approximately 1.4 square feet per H-pile and 30 square feet per 6-foot-diameter column; the abutments would be outside the limits of the floodway in both cases.

As shown in Table 2-2, two piers, each consisting of one 6-foot-diameter column, would be constructed at the perimeter of the active waterway at Paradise Cut; therefore, construction of the bridge over Paradise Cut may result in a potential permanent impact within the waterway of approximately 60 square feet.

As shown in Table 2-2, two piers, each consisting of two 6-foot-diameter columns, supported by 8-foot-diameter CIDH piles would potentially be constructed at the perimeter of the active waterway of the San Joaquin River; therefore, construction of the bridge would potentially result in a permanent impact in the river of 120 square feet.

Pile driving would be required for the installation of the abutment for the bridge over Paradise Cut. Pile driving will occur on land and would entail a total of 68 piles, 6 to 10 piles installed per day, 50 to 200 strikes per pile, and a 1- to 3-second interval between strikes, depending on the foundation material.

Abutment and pier foundations outside the waterway are typically accessed by temporary dirt roads with the construction equipment working in a temporary construction easement that extends about 50 feet from the edges of the bridge deck on both sides. Wherever possible the main waterway is crossed by a single span placed by cranes operating on both banks reaching out and passing the girders across, with the new pier foundations located just outside of the active waterway.

Pier foundations within the waterway may be accessed from the ground by pushing clean fill into the waterway on top of temporary pipe culverts or narrowing or diverting the waterway, then restoring the original condition when done. For the standard railroad trestle consisting of short spans on H-pile bents, it is possible to construct in a top-down, span-by-span process with a crane on the back span reaching out to build the next pier and place the next span. The reach and lifting capacity of the crane limits the feasibility of the span-by-span top-down method for longer spans. An alternative way of accessing pier foundations in the waterway is to build a temporary work trestle bridge from which the construction equipment can work.

Installation of a temporary work trestle may be required to minimize/mitigate potential impacts to environmental resources at water crossings. The temporary work trestle would be used to support equipment that is required to install the piers located within the active waterway. Thus, no equipment would be located within the water itself and no damming or temporary diversion of the water is anticipated.

A temporary work trestle typically consists of the installation of 18- to 24-inch diameter steel pipe piles, including some that would be located within the water. These piles would be installed using a vibratory hammer. The piles support steel pile caps and steel beams or stringers that span between the caps. Heavy timber crane mats are used to form the deck of the trestle and support the equipment required to construct the foundations. The piles, along with the trestle would be removed once construction is completed. Thus, the only temporary impact on Paradise Cut and the San Joaquin River would be from the installation of these temporary piles within the water. The actual surface area of the temporary work trestle at either location will depend on the contractor's equipment and access requirements. A conservative estimate of 9,000 square feet of surface area of the temporary work trestle at each location would provide access to the foundations on either side of the main waterway without creating a complete temporary crossing. The temporary impact on Paradise Cut and the San Joaquin River is estimated to be 125 square feet at each location; this assumes 40 2-foot-diameter temporary steel pipe piles would be installed. The actual impacts on

these waterways would be lower because the temporary impact area would be limited to the areas where the piles would be installed within the water for the construction of the temporary work trestle. No dewatering would be required for the installation of a temporary work trestle.

A typical construction sequence for the bridges (track over water) follows.

- Prepare temporary construction access road(s).
- Construct temporary work trestle within the waterway.
- Install proposed cast-in-drilled-hole pile shafts.
- Form and cast RC columns.
- Form and cast RC pier caps.
- Place and install precast concrete box girders or steel girders with steel deck.
- Drive steel H-piles for standard railroad trestle bents.
- Place precast concrete bent caps and field weld connections to the piles.
- Place precast concrete abutment wing walls.
- Place precast beams with attached curbs and sidewalks.
- Install deck waterproofing, ballast, and track.
- Restore landscaping (revegetation).

Typical equipment used in the bridge construction may include the following.

- Excavator with bucket or breaker
- Bulldozer with blade or ripper
- Backhoe
- Loader
- Dump truck
- Crane with pile driving rig
- Crane with pile drilling rig
- Trucks with flatbed trailers and large crane(s) to haul, pick, and place rebar cages, pile casings, column forms, girders, etc.
- Concrete mixer and pump trucks for cast-in-place concrete

Based on similar projects, construction of a railroad bridge crossing the river could last approximately 14 to 36 months, depending on the access and in-water work windows.

Grade Separations—Underpasses and Overheads

The structure types for underpasses usually conform to the current version of the American Railway Engineering and Maintenance-of-Way Association and the standards of the railroad they are carrying, while overheads follow the code/design guidelines promulgated by either the local or state department of transportation (in this case Caltrans).

The types of structures used to create the separation of grades between rail and vehicular traffic utilize most of the same types of construction techniques and equipment employed to construct bridges over waterways.

The significant difference between these track support structure projects is that separations usually have more complex vehicular temporary traffic control/staging issues than do waterway crossings, requiring temporary detours of the vehicular traffic and the use of shoofly structures for the rail traffic.

Modifications to existing overhead structures generally require clearing, grubbing, and rough grading for the installation of pier protection along the existing piers supporting the overhead roadway structure and retaining walls along the length of existing abutment slopes. Based on similar projects, construction associated with modified overhead structure undercrossings would last approximately 30 to 120 working days, with an average of 60 working days.

Modifications to existing at-grade crossings would include installation of concrete panels over the new tracks across the roadway, replacement of the railroad signal guards and gates, and pavement marking on the side with the new track. Modifications could also include updating the profile of the road to match the new track crossing. Based on similar projects, construction associated with modified at-grade crossings would last approximately 7 to 15 working days, with an average of 9 working days.

Highway Structures—Undercrossings and Overcrossings

The structure types for undercrossings and overcrossings within the project limits will conform to the current Caltrans Bridge Design Specifications and the associated standards of the local agency having jurisdiction at a given location.

Construction techniques used in the modification of existing structures or the construction of new structures is similar to those described for typical bridge construction above.

2.4.1.4 Stations

Station improvements would include the construction of new station facilities, such as station platforms with amenities, station and station tail tracks, and passenger amenities including surface parking lots, bus pullouts, parking garages (depending on alternative selected), and pedestrian connections between the parking areas and station platforms.

Construction activities associated with station platforms include clearing and grubbing, rough grading, structural excavation for walls, forming and pouring concrete for the walls, access stairs and ramps, platform surface, installation of signage, shelters, lighting, security, railings, benches and trash receptacles. Based on similar projects, construction of a station platform would last approximately 3 months. Where more complex station facilities within I-580 that include a pedestrian overcrossing access structure, the construction duration may extend to 6 to 9 months, running concurrent with the track and other structure work.

Construction activities associated with station tracks (including at the Dublin/Pleasanton BART Station) would be similar to track work activities described above.

Construction activities associated with surface parking areas include clearing and grubbing, rough grading, installation of drainage and utilities, final grading, installation of aggregate base, installation

of curb and gutter, paving, landscaping, installation of lighting and security, and installation of signage and striping.

Construction activities associated with parking garages include site clearing and grubbing, rough grading, structural excavation for foundation, installation of drainage and utilities, pouring of the concrete foundation, installation of precast concrete sections or forming and pouring cast-in-place concrete sections, installation of lighting, security and fire suppression, installation of elevators, and installation of signage and striping.

Construction activities associated with pedestrian overcrossings and undercrossings or overheads include clearing and grubbing, rough grading, installation of utilities, installation of CIDH piles, installation of ramp footings, placing column reinforcing steel, pouring structural concrete for columns, placing falsework for ramps and abutments, pouring structural concrete for ramps and abutments, placing reinforcing steel and pouring structural concrete for decks, placing handrails for ramps, erecting steel superstructure, and installation of lighting.

Construction activities associated with the Dublin/Pleasanton Station would include cutting into the wall of the BART station concourse to install the Valley Link fare gates. Activities would be closely coordinated with BART and would include all applicable BART Facilities Standards for construction and design to minimize construction-related impacts to the operation of the station. Construction activity would mainly take place adjacent to the existing Dublin/Pleasanton BART station and would be less intrusive than typical BART projects. The construction activities associated with the Dublin/Pleasanton Station that would be within the BART system envelope would require the preparation of a Site Specific Work Plan (SSWP) to be approved by BART. The SSWP would accurately describe and illustrate the manner in which the Station work would be accomplished. The approved SSWP Station work would be performed either under a daily allocated time frame or unlimited time frame where approved barriers between the station work and the existing operating area would be installed.

2.4.1.5 Operation and Maintenance Facility

Construction activities associated with the selected OMF include clearing and grubbing, grading, installation of new service utilities, paving, drainage, area lighting, track and special trackwork, and buildings with associated mechanical, electrical, and plumbing.

2.4.1.6 Utilities

Track construction could conflict with existing utility lines, and these lines would be relocated or protected. Appendix D, *Utilities*, lists the potential utility conflicts and whether the utility would be protected or relocated.

2.4.2 Sustainability

All construction methods would include recycling policies and solid waste reduction in compliance with the Integrated Waste Management Act (Assembly Bill 939). Construction would also comply with Title 24, Part 11 of the California Code of Regulations (also known as CALGreen), which sets standards for sustainable building design for residential and nonresidential buildings in California. The code sets forth sustainable construction practices applicable to planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CALGreen's sustainable building design standards and construction and

demolition recycling and reuse policies would be implemented during construction and operation of the Proposed Project.

2.4.3 Construction Schedule and Durations

The Authority proposes to implement the Valley Link service from Dublin/Pleasanton to North Lathrop possibly as soon 2028. Table 2-3 identifies the duration for construction of each Project improvement. The construction durations presented are not sequential; construction could occur simultaneously at several locations. The durations noted below are for actual construction activity. Project improvements would require permitting, contractor selection, and final design prior to construction and thus the total duration could be longer than the construction durations noted in the table.

Table 2-3. Construction Durations

Improvement	Construction Duration (Months)
Tri-Valley Segment	
Track Work	36
I-580 Modifications	42
Dublin/Pleasanton Station	24
Isabel Station	18
Greenville Station Base/IOS	16/18
Southfront Road Station Alternative Base/IOS	16/18
Altamont Segment	
Track Work (including Stone Cut Alignment Alternative)	30
Mountain House Station Base/IOS	12/16
Mountain House Station Alternative Base/IOS	12/24
Tracy OMF	36
West Tracy OMF Alternative	36
Interim OMF	18
Tracy to Lathrop Segment	
Track Work	36
Downtown Tracy Station	12
Downtown Tracy Station Parking Alternative 1	18
Downtown Tracy Station Parking Alternative 2	18
River Islands Station	16
North Lathrop Station	18

2.5 Conceptual Operating Plan

At its western end, Valley Link would terminate at the existing Dublin/Pleasanton BART Station. BART operates daily with frequent, bi-directional service (multiple departures per hour). At its eastern terminus at the proposed North Lathrop Station and at the proposed Greenville Station (via

the proposed ACE platforms adjacent to the station), Valley Link would connect with ACE, a commuter rail system operating during weekday peak periods only, with directional, approximately hourly service.

On weekdays, BART currently operates to and from the Dublin/Pleasanton Station at 15-minute headways until 8 p.m. BART intends to implement 12-minute headways (instead of 15-minute headways) at some time after 2025.[10] In 2025, Valley Link would also operate at 12-minute headways during peak periods between the Dublin/Pleasanton and Mountain House Stations, thereby meeting every BART train at Dublin/Pleasanton Station in the peak direction of travel. Valley Link would operate at 24-minute headways during peak periods between the North Lathrop Station and the Dublin/Pleasanton Station in 2025. In 2040, Valley Link would operate at 12-minute headways during peak periods within the entire Dublin/Pleasanton to North Lathrop corridor. The conceptual operating plans for 2025 and 2040 operation are summarized in Table 2-4 and Table 2-5, respectively.

Table 2-4. Valley Link 2025 Conceptual Operating Plan

Hours of Service			Headways (minutes) Dublin/Pleasanton Station to Mountain House Station						
					Weekdays				Weekends and Holidays
Weekdays	Saturdays	Sundays and Holidays	Morning (Start to 5 a.m.)	AM Peak (5 a.m. to 8 a.m.)	Midday (8 a.m. to 4 p.m.)	PM Peak (4 p.m. to 7 p.m.)	Evening (7 p.m. to 8 p.m.)	Late Evening (8 p.m. to 1 a.m.)	
5 a.m. to 8 p.m.	8 a.m. to 8 p.m.	8 a.m. to 8 p.m.	N/A	12	36	12	24	N/A	36
			Headways (minutes) Dublin/Pleasanton Station to North Lathrop Station						
			N/A	24	72	24	48	N/A	72

[10] San Francisco Bay Area Rapid Transit District, *BART to Livermore Extension Project Draft Environmental Impact Report (State Clearinghouse No. 2012082104)*, July 2017, Volume 1 of 3, p. 88.

Table 2-5. Valley Link 2040 Conceptual Service Plan

Hours of Service			Headways (minutes) Dublin/Pleasanton Station to Mountain House Station						
Weekdays	Saturdays	Sundays and Holidays	Weekdays						Weekends and Holidays
4 a.m. to 1 a.m.	6 a.m. to 1 a.m.	8 a.m. to 1 a.m.	Morning (Start to 5 a.m.)	AM Peak (5 a.m. to 8 a.m.)	Midday (8 a.m. to 4 p.m.)	PM Peak (4 p.m. to 7 p.m.)	Evening (7 p.m. to 8 p.m.)	Late Evening (8 p.m. to 1 a.m.)	
			24	12	24	12	24	24	36
			Headways (minutes) Dublin/Pleasanton Station to North Lathrop Station						
			48	12	48	12	48	48	72

In 2025, the Proposed Project would facilitate peak period service at 24-minute headways across the full Valley Link route (meeting every other BART train at the Dublin/Pleasanton Station) and twice the frequency (12-minute headways) within the Tri-Valley area (service across the full Valley Link route would remain at 24-minute headways). In 2040, the Proposed Project would facilitate peak period service at 12-minute headways across the full Valley Link route (meeting every BART train at the Dublin/Pleasanton Station). Peak period service would operate from 5 a.m. to 8 a.m. and from 4 p.m. to 7 p.m. on weekdays. During off-peak periods (morning start, midday, weekday evening, late evening, and weekends and holidays), the operating plan assumes varying headways across the full route, as shown in the tables. The total travel time between the North Lathrop Station and the Dublin/Pleasanton Station is estimated at approximately 65 minutes.

2.6 Maintenance Activities

2.6.1 Track Maintenance

In portions of the alignment that would not be owned by the Authority, the Authority would enter into trackage rights agreements with the host railroad (UPRR) to operate on portions of their tracks. Maintenance of way is typically the responsibility of the host railroad(s). In general, maintenance of way is the ongoing maintenance of track (e.g., tie replacement, switch greasing, ballast recontouring), track structures, bridges, drainage features, signal apparatus, and other signal infrastructure. Maintenance activities are both ongoing responses to daily issues and planned preventive maintenance. Depending on the corridor, host railroads would have other maintenance activities that are required, specific to the features located in the corridor.

Maintenance activities include annual vegetation trimming and herbicide application. UPRR would continue to conduct maintenance activities associated with their rail corridor in accordance with their current practices.

2.6.2 Station Maintenance

Final station maintenance plans have not been adopted. The proposed multimodal stations at Dublin/Pleasanton, Greenville, and North Lathrop could be maintained cooperatively with other transit entities served by these stations. Maintenance crews would be located at the selected OMF and would be dispatched as needed to the various stations. Typical maintenance activities include trash pickup, landscaping, painting, minor concrete work, and light bulb replacement. Contractors would be hired for more extensive maintenance activities, such as major concrete work, platform extension, and paving. Certain stations may be maintained under specific agreements with the local jurisdictions regarding maintenance activities that would be the responsibility of the local jurisdiction.

New stations would be established, including the following: Dublin/Pleasanton Station, Isabel Station, Greenville Station (or Southfront Road Station Alternative), Mountain House Station (or Mountain House Station Alternative), Downtown Tracy Station, River Islands Station, and North Lathrop Station. These stations are either co-located at existing transit centers (such as at the proposed Dublin/Pleasanton and Downtown Tracy Stations) and the local jurisdiction owns the parcels identified for surface parking, property would be obtained for parking, or on-street parking would be utilized. Details regarding the maintenance of parking areas at these stations will be agreed to with the local jurisdictions or transit agencies during final design of the Proposed Project.

2.6.3 Fleet Maintenance

As described above, the Authority's proposed fleet maintenance activities for Valley Link would be conducted at the selected OMF. Regular train maintenance would consist of daily inspections of equipment (as required by the Federal Railroad Administration), cleaning, and servicing activities such as fueling, filling of sand boxes, emptying of toilet tanks, and replenishing of fluids, supplies, and consumables (including trail crew supplies). Train washing could occur up to several times per week, or as required for any special event trains. Preventive and periodic maintenance, including light and heavy repairs of passenger coaches and locomotives, would be conducted as needed.

2.7 Projected Ridership

2.7.1 Ridership

The ridership forecasts for the Proposed Project are summarized in Tables 2-6, 2-7, and 2-8 using multiple metrics to describe the directionality of trips and station-level activity. Total boardings are the number of riders who get on trains at each station throughout the day, which is equivalent to the total one-way riders. The ridership at each station is also described with productions and attractions at each station, which indicates the directionality of the trips. Productions are the total number of trips that are produced at each station, or the home end of the trip. Attractions are the other end of the trip, and typically refers to the non-home end of the trip, such as work location. In this way, each round-trip comprises two productions at the home end of the trip and two attractions at the non-home end of the trip. Describing trips in this manner helps connect residential and employment areas, and allows for an accurate calculation of parking requirements, as parking is tied to the home end of the trip. Ridership for the Proposed Project is presented in more detail in Appendix F, *Valley Link Ridership Technical Memorandum - Revised*.

Table 2-6. Valley Link Average Weekday Ridership—2025 IOS Scenarios

	Average Weekday (2025 IOS Scenarios)											
	IOS – Greenville (constrained)			IOS - Southfront Road Station Alternative			IOS - Greenville + Mountain House			IOS - Southfront Road Station Alternative + Mountain House		
Station	Boardings	Productions	Attractions	Boardings	Productions	Attractions	Boardings	Productions	Attractions	Boardings	Productions	Attractions
Dublin/Pleasanton	4,100	155	8,045	4,931	242	9,619	4,795	224	9,365	5,413	327	10,498
Isabel Avenue	1,130	2,051	209	538	846	230	589	892	286	639	942	336
Southfront Road	N/A	N/A	N/A	4,588	8,967	209	N/A	N/A	N/A	1,493	2,719	267
Greenville	3,142	6,165	118	N/A	N/A	N/A	683	1,072	293	N/A	N/A	N/A
Mountain House	N/A	N/A	N/A	N/A	N/A	N/A	3,878	7,755	0	3,557	7,113	0
Downtown Tracy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
River Islands	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
North Lathrop	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	**8,372**	**8,371**	**8,372**	**10,057**	**10,055**	**10,058**	**9,944**	**9,943**	**9,944**	**11,101**	**11,101**	**11,101**

Table 2-7. Valley Link Average Weekday Ridership—2025 Full Project Implementation

	Average Weekday (2040 Full Runs)					
	Proposed Project			Southfront Road Station Alternative		
Station	Boardings	Productions	Attractions	Boardings	Productions	Attractions
Dublin/Pleasanton	5,907	413	11,401	6,507	456	12,558
Isabel Avenue	816	1,178	454	832	1,186	478
Southfront Road Station Alternative				1,177	2,073	281
Greenville	1,030	1,248	811			
Mountain House	1,231	2,461	0	921	1,841	0
Downtown Tracy	1,107	2,213	0	1,067	2,134	0
River Islands	865	1,729	0	871	1,741	0
North Lathrop	1,750	3,459	41	1,982	3,924	40
Total	**12,704**	**12,701**	**12,707**	**13,356**	**13,355**	**13,357**

Table 2-8. Valley Link Average Weekday Ridership—2040 Full Project Implementation

	Average Weekday (2040 Full Runs)					
	Proposed Project			Southfront Road Station Alternative		
Station	Boardings	Productions	Attractions	Boardings	Productions	Attractions
Dublin/Pleasanton	15,160	692	29,627	16,051	750	31,351
Isabel Avenue	3,532	6,064	1,000	3,561	6,015	1,106
Southfront Road Station Alternative				1,926	3,372	479
Greenville	1,814	2,601	1,027			
Mountain House	1,392	2,784	0	1,460	2,920	0
Downtown Tracy	3,006	6,011	0	3,095	6,190	0
River Islands	2,100	4,200	0	2,108	4,216	0
North Lathrop	4,707	9,359	54	4,793	9,530	56
Total	**31,710**	**31,711**	**31,708**	**32,993**	**32,993**	**32,992**

2.8 Project Costs and Revenues

2.8.1 Capital Costs

Project cost is based on 2018 pricing and includes contingency and markup. The preliminary cost estimate for the Proposed Project would be approximately $2.335 billion to $2.919 billion. For more detailed information on capital costs, please refer to Appendix G, *Valley Link Capital Cost Memorandum – Revised*.

2.8.2 Operation and Maintenance Costs and Revenues

Anticipated annual operation and maintenance costs associated with project operation are shown in Table 2-9. As shown, annual operation and maintenance cost would range from approximately $10.283 million to $34.504 million in 2028; and from approximately $55.344 million to $85.581 million in 2040, depending on the operational scenario. These costs are based on contracted services and fuel costs based on hybrid multiple unit operation with an annual escalation of 3.2 percent. While not yet determined, potential sources of revenue include farebox recovery (estimated at 50 percent by year three of operation), parking revenue, Congestion Mitigation and Air Quality Improvement funds, and Federal Transit Administration Section 5307/5337 Funds.

Table 2-9. Annual Operation and Maintenance Cost Projections by Service Scenario ($ Year of Expenditure)

Operating Frequency (Minutes Peak Hour)	Service Scenario	Year of Expenditure	
		2028	2040
12/24	IOS - Greenville	$12,430,000	N/A
	IOS - Southfront	$10,283,000	N/A
	IOS - Greenville + Mountain House	$25,783,000	N/A
	IOS - Southfront + Mountain House	$25,783,000	N/A
12/12	Full Build - Greenville	$34,504,000	$55,344,000
	Full Build - Southfront	$34,504,000	$55,344,000
	Full Build - Greenville	N/A	$85,581,000
	Full Build - Southfront	N/A	$85,581,000

2.9 Permits and Approvals

The Authority prepared this Draft EIR in compliance with the requirements of CEQA (California Public Resources Code § 21000 et seq.) and the CEQA Guidelines (14 California Code of Regulations § 15000 et seq.). As provided under CEQA, an EIR is a tool for disclosing to the general public, the local community, responsible agencies, trustee agencies and other interested public agencies impacts resulting from implementation of the Proposed Project, as well as possible measures to mitigate those significant effects and alternatives to the Proposed Project that could avoid significant impacts. This Draft EIR is not intended to serve as a recommendation of either approval or denial of the Proposed Project. As lead agency, the Authority is responsible for the adequacy and objectivity of the Draft EIR.

This Draft EIR provides the primary source of environmental information for the Authority and other public agencies to consider when exercising any permitting authority or approval power directly related to implementation of this Proposed Project. As stated in CEQA Guidelines, Section 15121(a):

> An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of the project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall

consider the information in the EIR along with other information which may be presented to the agency.

Table 2-10 lists the potential permits and approvals that could be required for the Proposed Project. The Authority would continue to coordinate with all local, regional, and state agencies to ensure that all necessary permits and approvals are received to support the schedule for Project improvements. Additional details on the permits and approvals required for the Proposed Project are provided in the pertinent sections of Chapter 3, *Environmental Impact Analysis*.

Table 2-10. Permits, Funding, and Other Approvals Anticipated for the Proposed Project

Agencies	Funding, Approval, or Permit
Federal Agencies	
Federal Railroad Administration (FRA)	Potential NEPA review and approval if federal funding available for project
National Marine Fisheries Service	Concurrence of effects on listed fish species under the federal Endangered Species Act (ESA) Section 7 consultation process; issuance of a biological opinion, compliance with the Magnuson-Stevens Fishery Conservation and Management Act
State Historic Preservation Office	Concurrence of effects on historic resources under Section 106 of the National Historic Preservation Act consultation process; potential development of a memorandum of agreement
U.S. Army Corps of Engineers (USACE)	Permit for effects on wetlands and other waters of the United States under Section 404 of the Clean Water Act (CWA)
U.S. Coast Guard	Bridge permit for new structures crossing over San Joaquin River and Paradise Cut
U.S. Department of Defense	Approval required for North Lathrop Station at Sharpe Army Depot
U.S. Fish and Wildlife Service (USFWS)	Concurrence of effects on listed terrestrial wildlife and plant species under ESA Section 7 consultation process: issuance of a biological opinion
State Agencies	
California State Transportation Authority (CalSTA)	Potential source of funding
California Department of Fish and Wildlife (CDFW)	Permits for the placement of structures affecting waterways under Section 1602 streambed alteration agreement: incidental take permits for effects on listed state wildlife and plant species under the California Endangered Species Act Section 2081
California Department of Toxic Substances Control (DTSC)	Review of worker health and safety plan
California Department of Transportation (Caltrans)	Encroachment permit for encroachment on state roadways and highways; potential source of funding
California Department of Water Resources (DWR)	Encroachment permit for construction activities within the State Water Project ROW
California High Speed Rail Authority (CAHSRA)	Potential source of funding
California Public Utilities Commission (CPUC)	Approvals required for all improvements and rail crossing improvements
California State Lands Commission	Approval required for structures crossing over San Joaquin

Agencies	Funding, Approval, or Permit
(SLC)	River and Paradise Cut
Central Valley Flood Protection Board (CVFPB)	Encroachment permit for encroachment on CVFPB jurisdiction
Native American Heritage Commission	Consultation with Native American Tribes; conducting Sacred Lands File search
State Water Resources Control Board (State Water Board)	General construction activity storm water permit under Section 402 National Pollutant Discharge Elimination System (NPDES)
Regional Agencies and Transportation Agencies	
Tri-Valley San Joaquin Valley Regional Rail Authority (Authority)	Certification of CEQA environmental document; project proponent; project funding
Alameda County Transportation Commission (ACTC)	Concurrence on project plans in the I-580 corridor prior to approval of Caltrans encroachment; potential source of funding
Regional Water Quality Control Board (Regional Water Board) - Central Valley	Permits under the CWA Section 401 water quality certification/waste discharge requirements for placement of structures affecting waterways and under the Porter-Cologne Water Quality Control Act
San Joaquin Council of Governments (SJCOG)	Funding coordination
Metropolitan Transportation Commission (MTC)	Funding coordination
Bay Area Rapid Transit District (BART)	Coordination of station connections with BART
San Joaquin Regional Rail Commission (SJRRC)	Coordination of station connections with ACE
Delta Stewardship Council	Certificate of Consistency with the Delta Plan
Local Agencies	
Alameda County	Encroachment permit for construction in county ROW Use and building permits for improvements outside rail ROW
City of Pleasanton	Encroachment permit for construction in city ROW Use and building permits for improvements outside rail ROW
City of Livermore	Encroachment permit for construction in city ROW Use and building permits for improvements outside rail ROW
Dublin San Ramon Services District	Approval required for utilities relocation
Zone 7	Approval required for utilities relocation
Cal Water	Approval required for utilities relocation
San Joaquin County	Encroachment permit for construction in county ROW Use and building permits for improvements outside rail ROW
City of Tracy	Encroachment permit for construction in city ROW Use and building permits for improvements outside rail ROW
City of Manteca	Encroachment permit for construction in city ROW Use and building permits for improvements outside rail ROW
City of Lathrop	Encroachment permit for construction in city ROW Use and building permits for improvements outside rail ROW
Other Parties	
Pacific Gas & Electric Company (PG&E)	Approval required for electrical and gas utilities relocation

Agencies	Funding, Approval, or Permit
East Bay Municipal Utility District (EBMUD)	Approval required for water utilities relocation
Sprint	Approval required for communications utilities relocation
AT&T	Approval required for communications utilities relocation
FTR Energy Services	Approval required for gas utilities relocation
Comcast	Approval required for communications utilities relocation
Union Pacific Railroad (UPRR)	Project approval: right of entry permit(s) for work conducted within UPRR ROW; design and installation permits/construction maintenance agreements for structures and facilities