PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 15, 2017

Pat Adams, Principal Advisor
Southern California Edison Company
8651 Rush St., 2nd Floor
Rosemead, CA 91770
Email: Patricia.Adams@sce.com

RE: Data Request #3 - Certificate of Public Convenience and Necessity for the Riverside Transmission Reliability Project – Application No. A.15-04-013

Dear Ms. Adams,

The California Public Utilities Commission's (CPUC) Energy Division CEQA Unit has completed its review of Southern California Edison's (SCE's) Application (A. 15-04-013) for a Certificate of Public Convenience and Necessity (CPCN) for the Riverside Transmission Reliability Project (RTRP) and SCE's responses to Data Request #1.

The CPUC has prepared a draft Project Description for the Subsequent Environmental Impact Report (EIR) using information included in SCE's Application and responses to Deficiency Reports and Data Requests. The CPUC is providing the draft Project Description to SCE for review and verification of project details. The CPUC has identified additional data needs within the draft Project Description that are required to complete the project description and environmental resource assessment for the Subsequent EIR. Please note that some of these items may overlap with items in Data Request #2. These data needs are identified in the attached Microsoft Word Document using the comment feature.

Information provided by SCE in response to this Request for Additional Data should be filed as supplements to Application A. 15-04-013. One set of responses should be sent to the Energy Division and one to our consultant, Panorama Environmental, in both hardcopy and electronic format. We request that SCE provide clarification edits and comments to the CPUC using the Microsoft Word track changes feature and comment feature. We further request that SCE respond to this request no later than April 14, 2017. Please let us know if you cannot provide the information by this date. Delays in responding to these data needs will result in associated delays in preparation of the Subsequent EIR.

The Energy Division reserves the right to request additional information at any point in the application proceeding and during subsequent construction of the project should SCE's CPCN be approved.

Please direct questions related to this application to me at (415) 703-5484 or Jensen.Uchida@cpuc.ca.gov.

Sincerely,

Jensen Uchida
Project Manager
Energy Division, CEQA Unit

Jensen Uchida
Project Manager
Energy Division, CEQA Unit

cc: Mary Jo Borak, Supervisor
Jack Mulligan, CPUC Attorney
Jeff Thomas, Panorama Environmental, Inc.

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

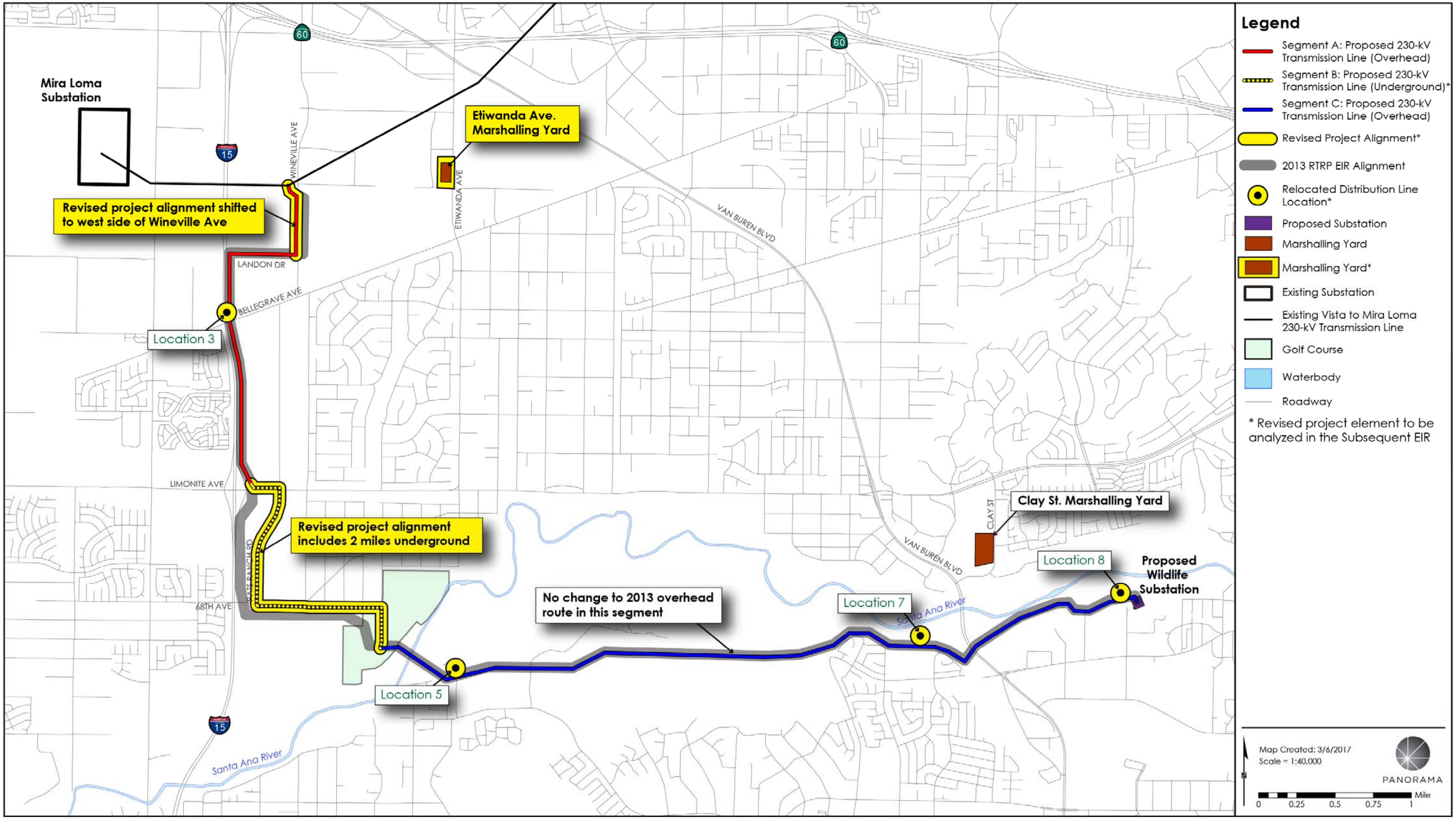
This section provides a description of the revised RTRP project components proposed by SCE, including facilities and equipment, construction methods and schedule, and operations and maintenance (where different from the 2013 RTRP Final EIR descriptions of construction methods or operations and maintenance). This section does not describe project components that are unchanged from the 2013 RTRP Final EIR (e.g., Wildlife Substation, 230-kV transmission line segment south of Santa Ana River, and interconnect to RPU's 230/69-kV substation).

2.2 REVISED PROJECT LOCATIONS

The 230-kV transmission line route has been divided into three segments (i.e., A, B, and C) as described below and shown on Figure 2.2-1. The transmission line route and configuration has not changed in Segment C. For a description of the transmission line in Segment C, refer to the 2013 RTRP Final EIR.

Appendix B contains detailed project route maps for the entire proposed 230-kV alignment, including the revised project components. The Appendix B maps depict the locations of project components such as access and spur roads, stringing sites, work and maintenance pads, marshalling yards, and guard structures. The revised sections of the 230-kV transmission line are located entirely within the City of Jurupa Valley, California.

Figure 2.2-1 Revised Project Overview



Source: (ESRI 2016), (Southern California Edison 2016)

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Segment A - Relocated Overhead Transmission Line

The revised project overhead 230-kV transmission line route would tie-in to the Mira Loma – Vista #1 230-kV transmission line at the same location as the original RTRP route. Instead of installing the overhead 230-kV transmission line on the east side of Wineville Avenue, the revised route would be located on the west side of Wineville Avenue between Cantu-Galleano Ranch Road and Landon Drive, avoiding previous routing conflicts with the Harmony Trails Subdivision and William Lyons TurnLeaf developments. At Landon Drive, the 230-kV line would follow the originally proposed RTRP route until reaching the north side of Limonite Avenue where the overhead line would transition to underground (Figure 2.3-1).

Segment B - New Underground Transmission Line

The revised project includes approximately 2 miles of underground transmission line located within private property and City of Jurupa Valley franchise right-of-way in local streets. The 230-kV transmission line would transition underground north of Limonite Avenue and head east for approximately 1,000 feet, and then turn south following Pats Ranch Road to 68th Street. The line would turn east and continue underground within 68th Street to Lucretia Street where it would turn south and continue underground within the Goose Creek Golf Club for approximately 1,000 feet. The transmission line would then transition back to an overhead position within the Goose Creek Golf course (Figure 2.3-2). From this point, the 230-kV line would follow the originally proposed RTRP route described in the 2013 RTRP Final EIR (i.e., Segment C).

2.3 REVISED PROJECT COMPONENTS

This section describes the transmission and distribution line infrastructure included in the revised project.

2.3.1 Revised 230-kV Transmission Line

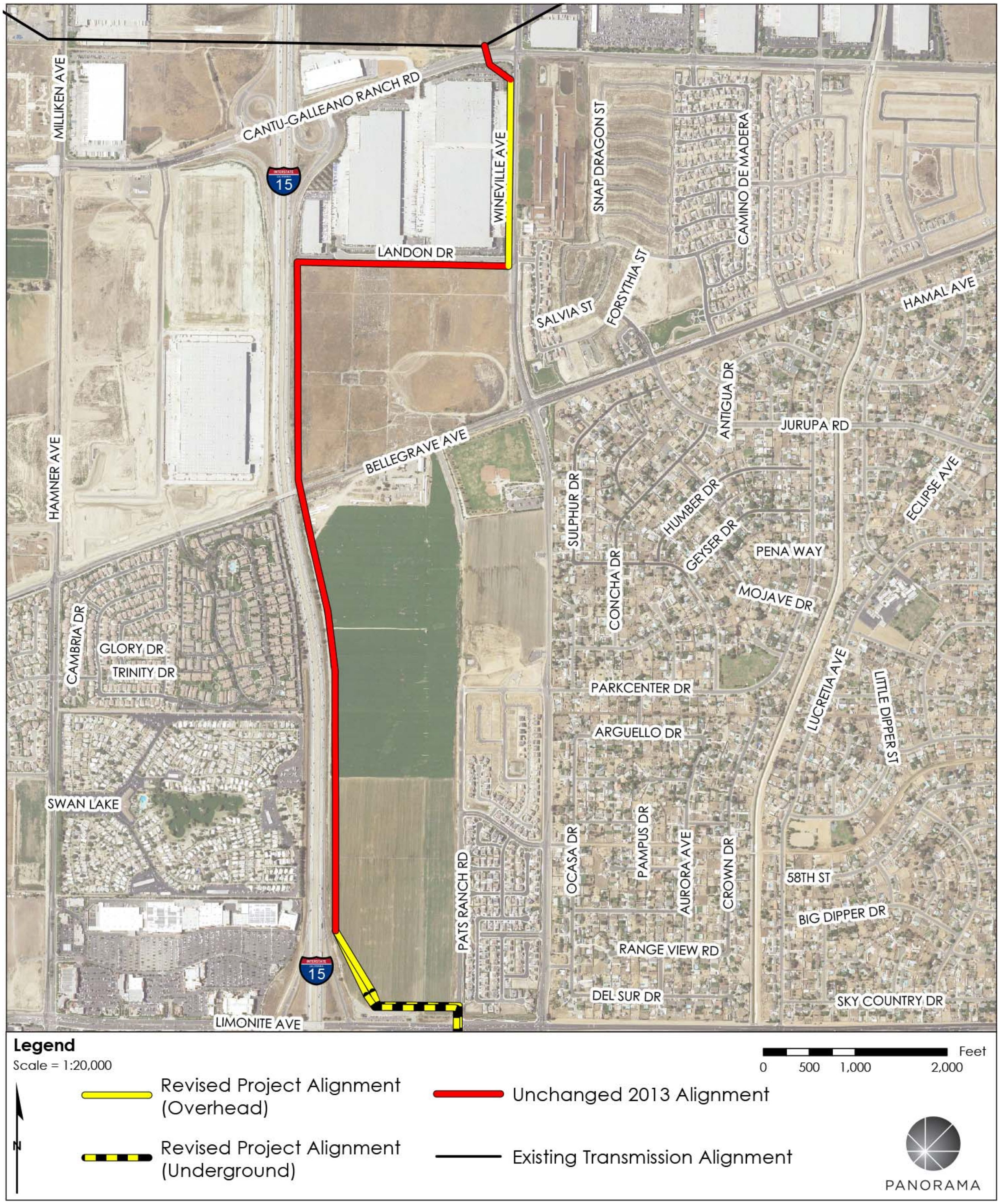
The revised 230-kV transmission line components are summarized in Table 2.3-1 below. Refer to Figure 2.3-3, Figure 2.3-4, and Figure 2.3-5 for a diagrams of lattice steel towers (LSTs), tubular steel poles (TSPs), and riser pole structures, respectively. Figure 2.3-6 shows a typical underground duct bank configuration.

Table 2.3-1 Summary of Revised Project Transmission Infrastructure

Infrastructure	Number	Description
Segment A: Overhead Transmission Line (Wineville Avenue realignment)		
TSPs	2	Double-circuit galvanized TSPs with V-string or I-string insulators. TSPs would be 90 feet and 170 feet tall. (Original project alignment on Wineville Avenue included 2 TSPs)
LSTs	2	Double-circuit galvanized LSTs with V-string or I-string insulators. LSTs would be 115 feet and 120 feet tall. (Original project alignment on Wineville Avenue included 2 LSTs)

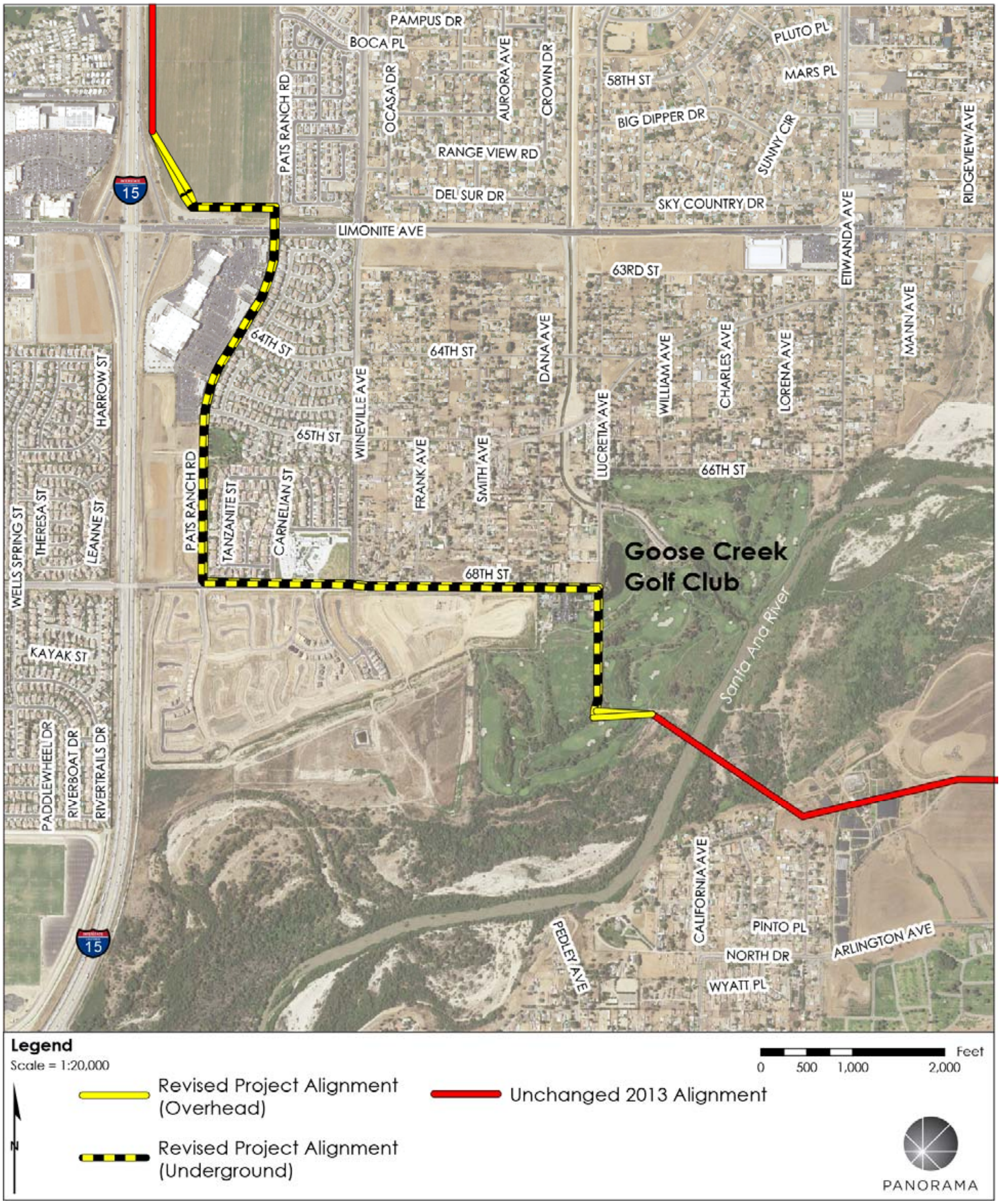
Infrastructure	Number	Description
Segment B: Underground Transmission Line		
Riser poles	4	A dead-end engineered steel pole that has special attachments for transitioning the transmission line conductors from an overhead position into an underground duct bank, and vice versa. The transmission line conductors would run along the outside of the riser pole. A shroud made of thick sheet metal is constructed around the riser pole to provide a protective barrier for the conductor cable from the base of the riser pole up to about 30 feet. The riser poles would be 165 feet tall and xx feet in diameter.
Duct banks	2	Two miles of concrete-encased duct bank containing six transmission line conductor cables and three telecommunication cables. Each duct bank substructure would be nearly 4 feet 6 inches wide and 3 feet 6 inches high and would house up to nine 8-inch polyvinyl chloride (PVC) transmission conduits and three 5-inch telecommunication conduits.
Vaults	32	Concrete vault structures encasing conductor cable splices. Vaults would be approximately 42 feet long by 8 feet deep and 8 feet wide. Vaults would be spaced in approximately 1,500-foot increments.

Figure 2.3-1 Revised Project within Segment A



Source: (Southern California Edison, 2016)

Figure 2.3-2 Revised Project within Segment B



Source:

Figure 2.3-3 Typical Lattice Steel Tower

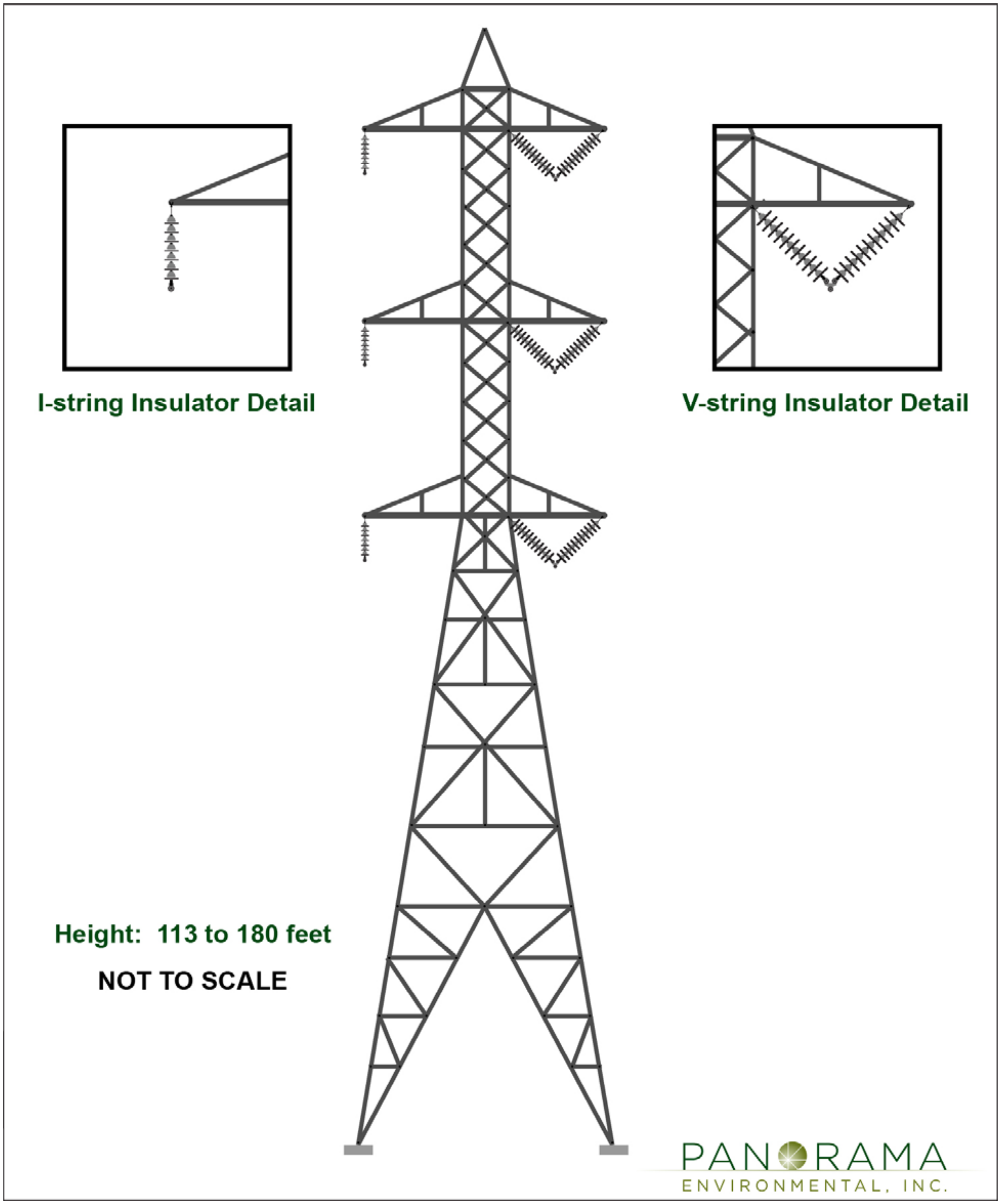


Figure 2.3-4 Typical Tubular Steel Pole

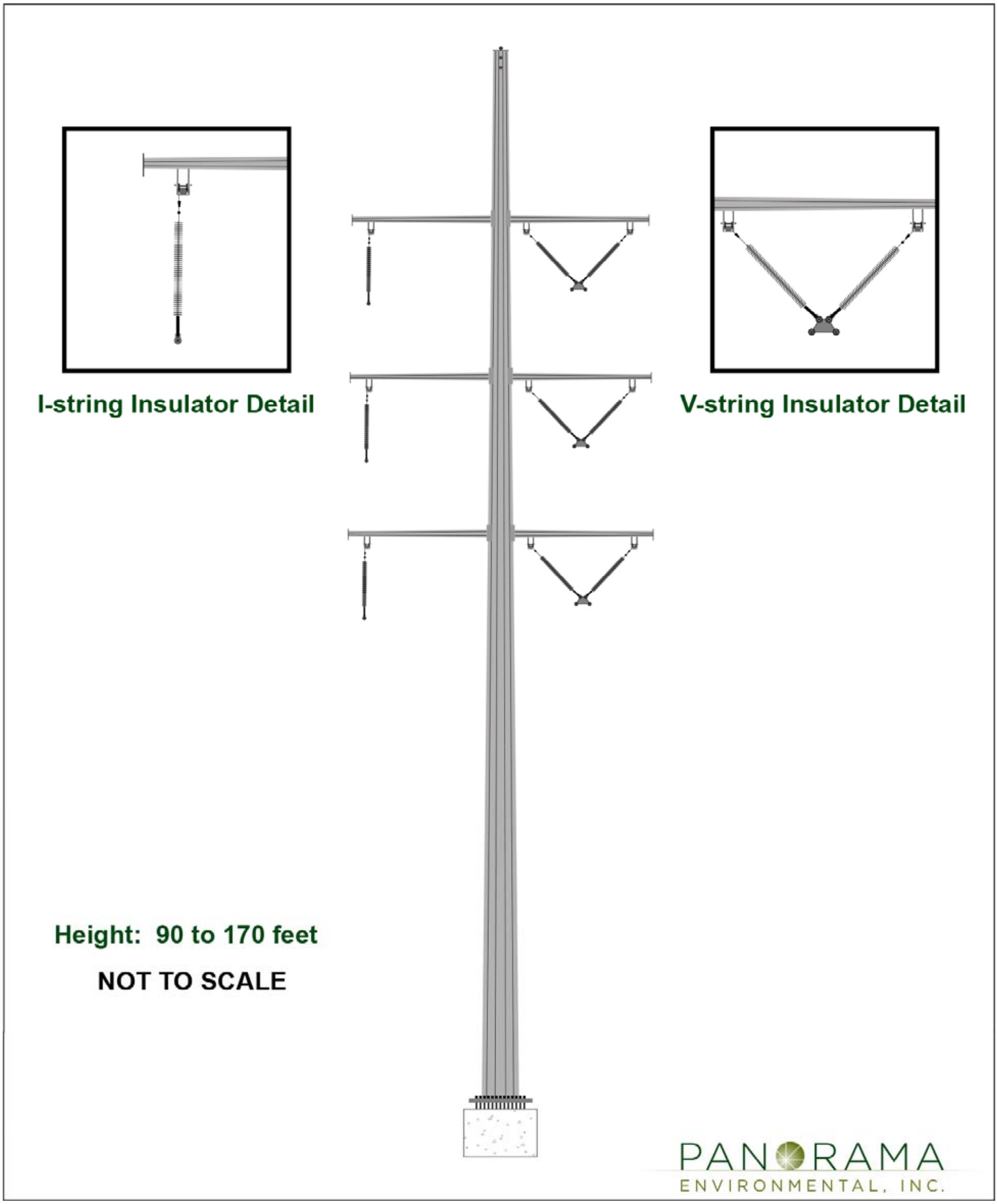
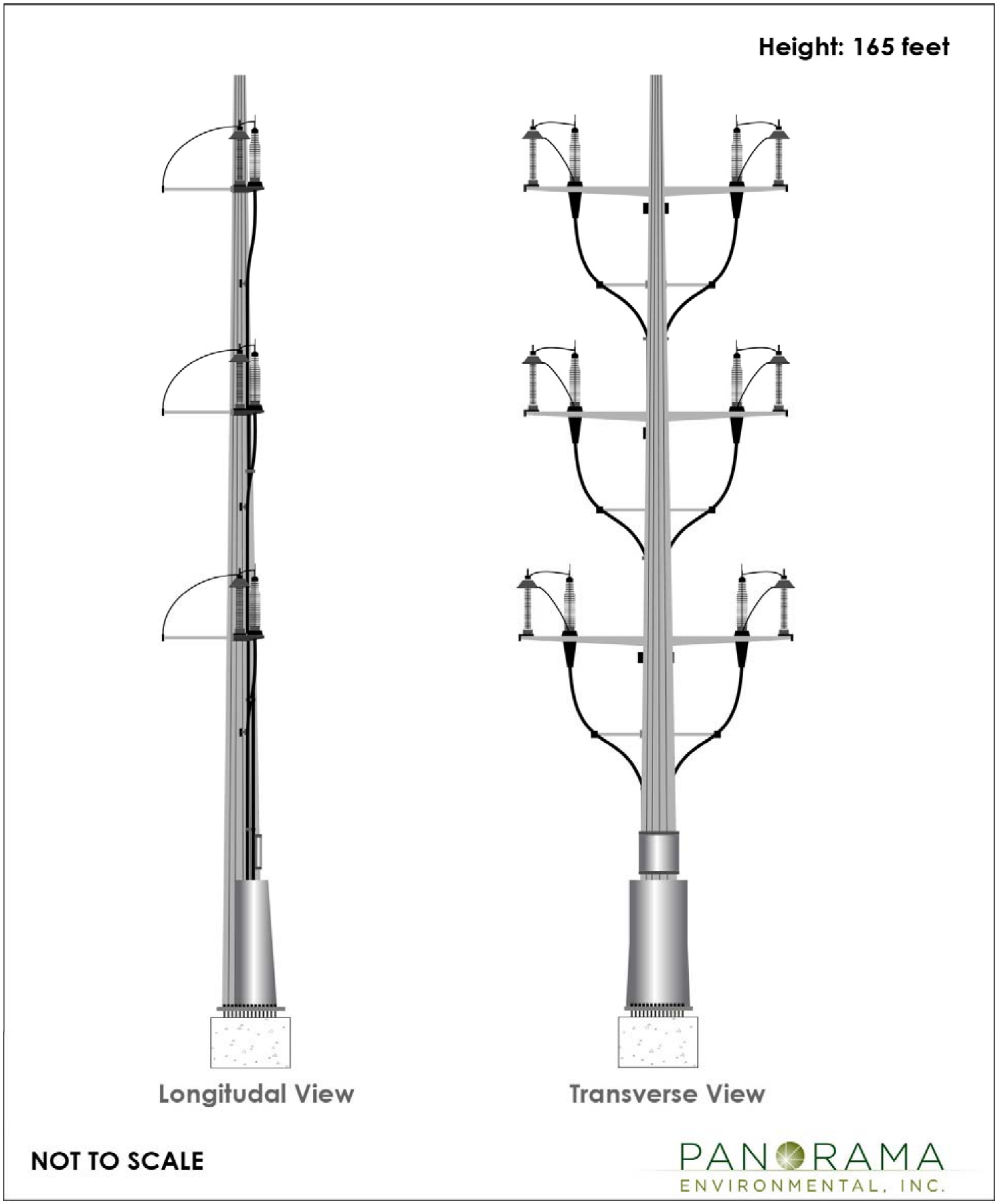
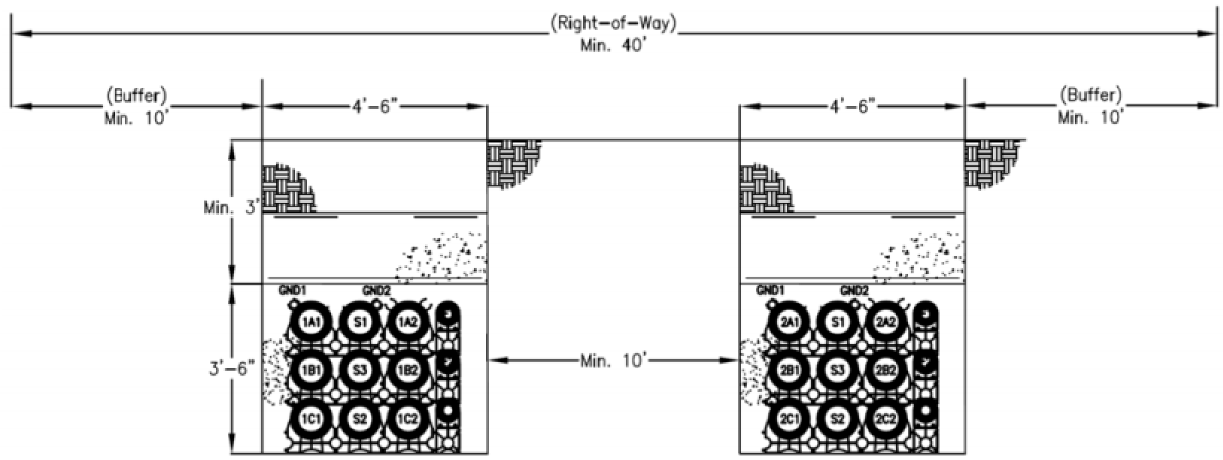


Figure 2.3-5 Typical Riser Pole



Source: (T&D Engineering, 2015)

Figure 2.3-6 Typical 230-kV Double Circuit Underground Duct Bank



Source: (T&D Engineering, 2015)

2.3.2 Distribution Line Modifications

As described in the 2013 RTPR Final EIR, the proposed 230-kV transmission line would cross SCE-owned existing low voltage local overhead distribution lines creating clearance or reliability issues[1] that could not be addressed through simple realignment of the proposed transmission line. To accommodate the proposed 230-kV transmission line, the distribution lines would require relocation to comply with clearance requirements. SCE has proposed modifications to the distribution lines as described in Table 2.3-2. Distribution line modifications were identified in the 2013 RTRP Final EIR; however, further design refinements have been completed since that time. In most cases, distribution line refinements would be consistent with 2013 RTRP Final EIR modification descriptions and would not result in greater impacts than what was proposed and analyzed in the 2013 RTRP Final EIR. Distribution line modifications are not considered further in this Subsequent EIR in such instances. Distribution line modifications are considered in this Subsequent EIR where refinements would result in an expanded or different footprint from what was considered in the 2013 RTRP Final EIR. Table 2.3-2 summarizes distribution line refinements and identifies the locations that will be further analyzed as part of the revised project in this Subsequent EIR.

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1 Minimum horizontal and vertical clearances between transmission and power lines are required for safety purposes. Contact between two energized lines can result in electrical arcing, which could result in damage to the electrical infrastructure, possible power outages, and potential ignition of nearby vegetation that may lead to a wildfire.

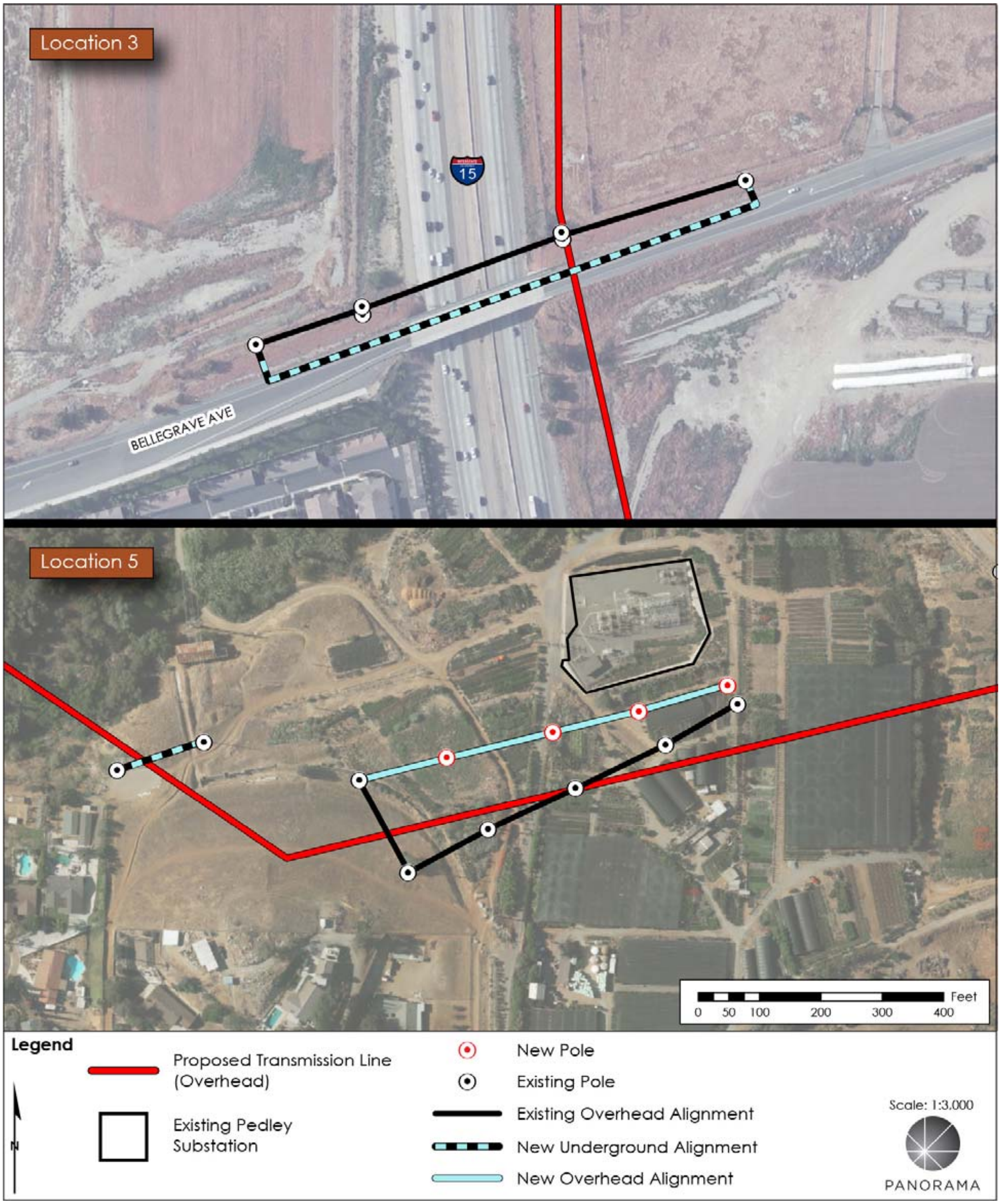
Table 2.3-2 Proposed Modifications to Existing Distribution Facilities

Location	2013 RTRP Final EIR		Revised Project		Described in 2013 RTRP Final EIR?
Location 3: Tower Location at Bellegrave Avenue and I-5	• Remove overhead distribution lines • Install underground distribution lines.	16,215 square feet	• Remove distribution lines	1,500 square feet	Yes
Location 5: Crossing Location at Pedley Substation off Arlington Avenue	• Relocated existing overhead distribution line to another overhead location	6,000 square feet	• Option A: Lower distribution line on the existing poles • Option B: Remove two existing power poles, install two new power poles approximately 20 feet north of the existing poles, and relocate distribution line.	• Option A: 0 square feet • Option B: 6,000 square feet	Yes
Location 5: Crossing at Pedley Substation Road	• Remove existing overhead distribution facilities • Install underground line	35,952 square feet	• Option A: Remove the 66-kV facilities and lower the 12-kV distribution facilities on the existing structures • Option B: Remove existing12-kV line and relocate overhead on new poles north of the new 230-kV line (approximately 30 to 175 feet north of the existing distribution line)	• Option A: 0 square feet • Option B: 6,750 square feet	No

Location	2013 RTRP Final EIR		Revised Project		Described in 2013 RTRP Final EIR?
Location 7: Tower Location West of Rutland Avenue	• Relocate existing overhead distribution line to another overhead location	3,750 square feet	• Remove existing overhead facilities • Install the distribution line underground on the north side of the Santa Ana River Trail for approximately 1,000 feet. • Remove four poles and backfill with native soil. • Convert two poles to cable riser poles	47,832 square feet	No
Location 8: Wildlife Substation	• Relocate existing overhead distribution line to another overhead location • Install new underground distribution line	23,065 square feet	• Remove existing overhead distribution lines • Remove five poles and backfill with native soil. • Install four new poles and associated distribution line within new right-of-way (ROW). • Install new underground distribution line for approximately XX feet.	6,750 square feet	No

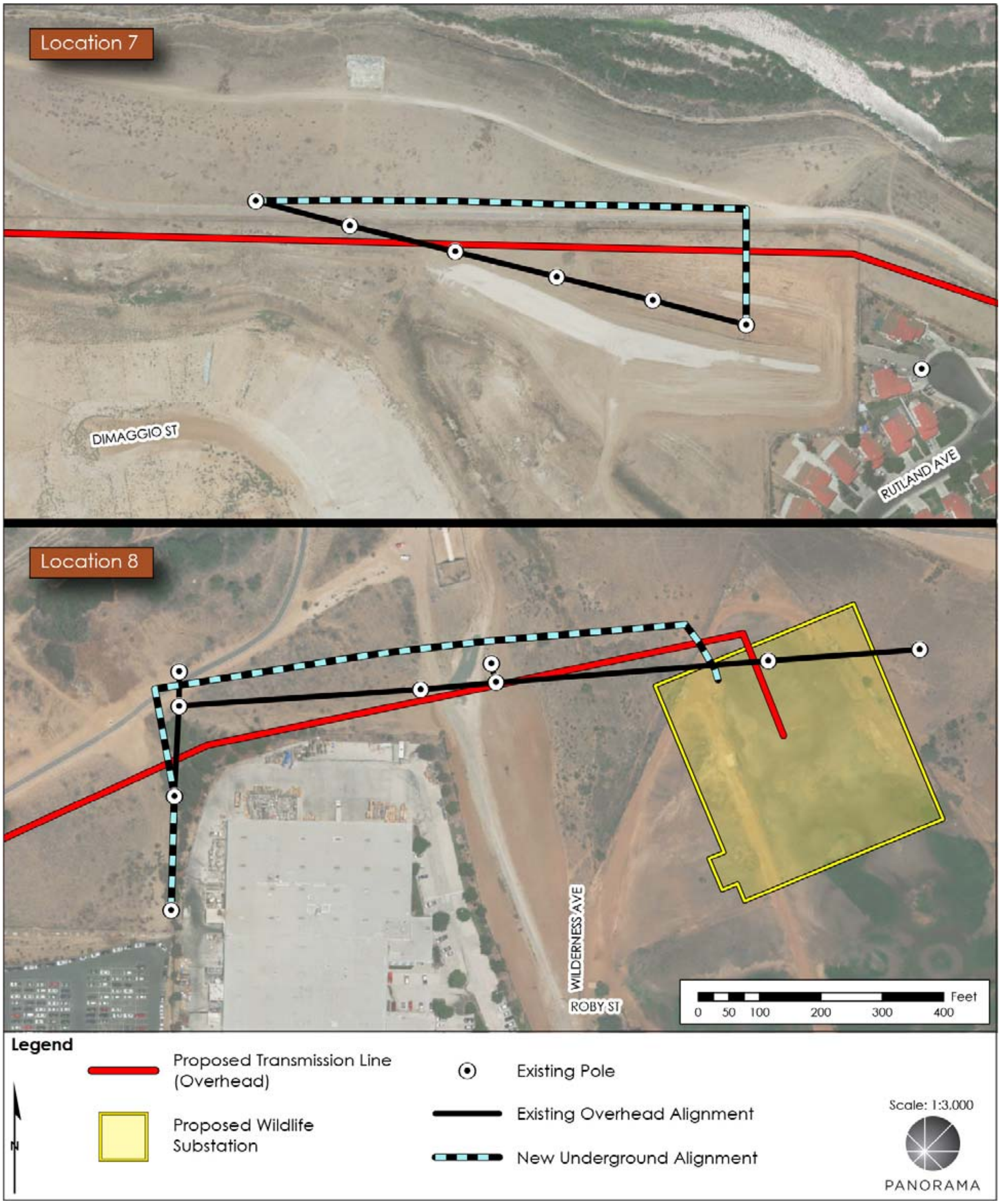
* Where options are presented, SCE would select a design option during final engineering and design.

Figure 2.3-7 Locations 3 and 5 Distribution Line Relocation



Source: (Southern California Edison, 2016)

Figure 2.3-8 Locations 7 and 8 Distribution Line Relocation



Source: (Southern California Edison, 2016)

2.4 RIGHT-OF-WAY

A 100-foot-wide easement would be required for the revised overhead 230-kV transmission line ROW along the west side of Wineville Avenue in Segment A. Add here a description the right-of-way required for Segment B and Locations 7 and 8 based on SCE data request #2 responses. Easement width is dictated by maintenance and safety requirements, and for the swing of the conductors caused by wind (sometimes referred to as "blowout"). SCE generally purchases easements from property owners for ROWs. Typically, final ROW determination and the property acquisition process are not initiated until after project approval.

2.5 CONSTRUCTION ACTIVITIES AND PROCEDURES

This section describes the construction activities associated with installation of the revised project components including:

- Summary of Land Disturbance
- Riser Pole and Underground Transmission (Segment B)
- Water Use
- Traffic Management
- Site Cleanup and Waste Disposal
- Construction Equipment and Workforce Estimates
- Construction Schedule

The construction activities for the overhead transmission line in Segment A would be consistent with the construction activities for the overhead transmission line described in the 2013 RTRP Final EIR. The revised project includes a new location for the overhead transmission line in Segment A, but does not change the construction activities and procedures. For a description of the overhead transmission line construction activities and procedures, refer to Section 2.5 of the 2013 RTRP Final EIR.

2.5.1 Summary of Land Disturbance with Revised Project

230-kV Transmission Line

Areas of disturbance resulting from the revised project are summarized in Table 2.5-1 and described further in the sections below. Table 2.5-2 shows how the revised project affects the overall land disturbance from construction of the entire project proposed in SCE's CPCN Application. Areas of temporary disturbance would be restored following construction. Permanent disturbance areas would include permanent project features (e.g., poles, spur roads).

Table 2.5-1 Revised Project Areas of Temporary and Permanent Disturbance

		Disturbance Area (acres)[1, 2]		
Revised Project Component	Quantity	Permanent[3]	Temporary[4]	Total
Segment A: Revised Overhead 230-kV Transmission Line				
LSTs	2	0.4	1.4	1.8
TSPs	2	0.12	0.8	0.92

Revised Project Component	Quantity	Disturbance Area (acres)[1, 2] Permanent[3]	Temporary[4]	Total
Subtotal		0.52	2.2	3.72
Segment B: Underground 230-kV Transmission Line				
TSP Riser Pole	4	0.3	3.4	3.7
Underground Vault	32	0.03	11.0	11.03
Underground Conduit Bank	22,000 feet	0.0	15.2	15.2
Subtotal		*0.33*	*29.6*	*29.93*
Material and Equipment Staging Areas				
Etiwanda Yard [5]	1	0.0	5.5	5.5
Subtotal		*0*	*5.5*	*5.5*
TOTAL		**0.85**	**37.3**	**38.15**

Notes:

1 Based on preliminary engineering. Estimates may change based on final design and construction.

2 Overlapping areas were removed to avoid double-counting impact acreage (e.g., if a material storage area or structure access site intersected with a stringing site area).

3 Permanent disturbance would occur at proposed structure pad locations (including retaining walls), splice vault covers, and permanent access and spur roads. Permanent disturbance also includes existing unpaved access improvements (i.e., establishment of a minimum road width of 14 feet plus a 2-foot wide buffer) to support construction vehicles and equipment. A 25-foot radius around each LST and TSP would remain permanently cleared of vegetation.

4 Temporary disturbance would occur at all other work areas including material storage yards, structure installation and removal sites, line configuration sites, stringing sites, and guard structure sites. Temporary disturbance areas include existing developed or paved areas within substations. The Etiwanda Yard is located in a previously disturbed area.

5 Areas within the ROW that may be used as staging areas are already accounted for under 230-kV Transmission Line and 230-kV Substation. Other staging areas located outside of the 230-kV Substation Modification areas are accounted for under this category. The Etiwanda Yard is located in a previously disturbed area.

TSP = tubular steel pole

LST = lattice steel tower

Table 2.5-2 Total Land Disturbance Compared to 2013 RTRP EIR

Project Feature	Site Quantity		Disturbed Acreage Calculation (L x W in feet)		Construction Disturbance (acres)		Temporary Disturbance (acres)		Permanent Disturbance (acres)	
Guard Structures	16	14	150 x 100	100 x 50	5.5	1.6	5.5	1.6	0	0
Construct New LST[1]	16	12	200 x 200	200 x 200	14.7	11.0	11.5	8.6	3.2	2.4
Construct New TSP[2]	59	47	200 x 100	200 x 100	27.1	21.6	23.5	18.8	3.5	2.8
Construct New Riser Pole[2]	--	4	200 x 100	200 x 100	--	3.7	--	3.4	--	0.3
Modify Existing LST[3]	1	1	200 x 200	200 x 200	0.7	0.9	0.7	0.9	0	0
230 kV Conductor & OPGW Stringing Setup Area - Puller[4]	17	11	300 x 100	300 x 100	11.7	7.6	11.7	7.6	0	0
230 kV Conductor & OPGW Stringing Setup Area - Tensioner[4]	17	11	400 x 100	400 x 100	15.6	10.1	15.6	10.1	0	0
230 kV Conductor Field Splice Area[5]	2	2	50 x 50	50 x 50	0.1	0.1	0.1	0.1	0	0
New Roads (Downline, Access, & Spur)[6]	7.5	4.1	Linear miles x 18 feet wide	Linear miles x 18 feet wide	16.4	8.9	0	0	16.4	8.9
Install Underground Vault	--	32	150 x 100	150 x 100	--	11.0	--	11.0	--	0.03
Install Underground Conduit Bank	--	22,000	Linear miles x 30 feet wide	Linear miles x 30 feet wide	--	15.2	--	15.2	--	0

Project Feature	Site Quantity		Disturbed Acreage Calculation (L x W in feet)		Construction Disturbance (acres)		Temporary Disturbance (acres)		Permanent Disturbance (acres)	
Yard-1 - Material & Equipment Staging Area[7]	1	1	15 acres	15 acres	--	--	--	--	0	0
Yard-2 - Material & Equipment Staging Area[7]	1	1	5.5 acres	5.5 acres	--	--	--	--	0	0
Total Estimated Disturbance Acreage [8]					**91.8**	**91.7**	**68.6**	**77.3**	**23.1**	**14.4**

Notes:

1 Includes foundation installation, structure assembly & erection, conductor & OPGW installation; area to be restored after construction, portion of ROW within 25 feet of the LST to remain cleared of vegetation, approximately 0.2 acre would be permanently disturbed for each LST.

2 Includes foundation installation, structure assembly & erection, conductor & OPGW installation; area to be restored after construction, portion of ROW within 25 feet of the TSP to remain cleared of vegetation, approximately 0.06 acre would be permanently disturbed for each TSP.

3 Includes structure modification & assembly, and OPGW installation; area to be restored after construction, existing portion of ROW within 25 feet of the LST footings to remain cleared of vegetation; this structure has pre-existing permanently disturbed area for ongoing O&M access by SCE.

4 Based on 9,000 feet conductor reel lengths, number of circuits, and route design.

5 Includes anchoring and dead-end hardware and/or equipment needed to temporarily secure conductor wire to the correct tension.

6 Based on length of road in miles x road width of 14 feet with 2 feet of shoulder on each side of road.

7 Material/Staging yards are located in previously disturbed areas.

8 The disturbed acreage calculations are estimates based upon SCE's preferred area of use for the described project feature, the width of the existing ROW, or the width of the proposed ROW; they are subject to revision based upon final engineering and review of the project by SCE's Construction Manager and/or contractor awarded project.

Footing Volume and Area Calculations:

LST depth +/- 60 ft deep, 4-ft diameter, qty 4 per LST: earth removed for footing = +/- 28 cu. yds. x 4 = 112 cu. yds.; surface area = 12.57 sq. ft. x 4 = 50.28 sq. ft.

TSP depth +/- 60 ft deep, 10-ft diameter, qty 1 per TSP: earth removed for footing = +/- 175 cu. yds.; surface area = 78.54 sq. ft.

Source: (SCE, 2016)

Modification to Existing Distribution Lines

Table 2.5-3 shows the revised land disturbance acreage resulting from modifications to existing distribution lines as part of the revised project. Land disturbance acreages previously estimated at each modification location are provided in Table 2.3-1 of the 2013 RTRP EIR Project Description.

Table 2.5-3 Land Disturbance from Distribution Line Modifications

Distribution Line Modification Location	Quantity	Disturbance Area (acres)		
		Permanent	Temporary	Total
Location 5, Option B: Distribution Pole Removal				
Location 5, Option B: Distribution Pole Installation				
Location 7: Distribution Pole Removal				
Location 7: Underground Distribution Vault				
Location 7: Underground Distribution Conduit Bank				
Location 8: Distribution Pole Removal				
Location 8: Distribution Pole Installation				
Total				

2.5.2 Temporary Work Areas

SCE would use several types of temporary work areas to construct the revised project. Temporary work areas required for the overhead transmission line (Segment A) are described in the 2013 RTRP Final EIR. In addition to the facilities described in the RTRP Final EIR, SCE would require one new marshalling yard and underground construction work areas. These temporary work areas are described below.

Marshalling Yards

SCE identified one new marshalling yard in the revised project as a replacement for Marshalling Yard 2, which has been developed and is no longer available. The Etiwanda Yard would be located at the northwest corner of Etiwanda Avenue and Cantu Galleano Ranch Road and would be 5.5 acres in size. The anticipated use of the Etiwanda Marshalling Yard would be the same as that described in Section 2.5.2 of the 2013 RTRP Final EIR for Marshalling Yard 2, including material storage, refueling of vehicles, routine and major maintenance of construction vehicles and equipment, temporary staging of helicopters, offices for supervisory and clerical personnel, and a reporting location for workers. Preparation of the marshalling yard would include application of road base, depending on the existing ground conditions at the yard. Perimeter fencing would be installed to demarcate the yard.

Underground Construction Work Areas

Construction of the underground transmission line and distribution line segments would require a work area up to 50 feet wide for the transmission line and 32 feet wide for distribution lines. Vault installation would require a work area up to 100 feet wide by 150 feet long for the transmission line vaults and 40 feet wide by XX feet long for distribution line vaults. A portion of the work area would be used for the open trench and excavated material. The rest of the work area would be reserved for haul truck loading. Vehicular traffic would be directed around temporary work areas on roads where underground construction would occur.

2.5.3 Riser Pole Construction

Four riser poles would be required, two at each end of the underground route, in order to transition the overhead transmission line to underground near the park-and-ride on Limonite Avenue and back to overhead again in the Goose Creek Golf Club. Riser poles would be spaced approximately 150 feet apart. The construction methods for the riser poles are described below. This information supplements the overhead transmission line construction methods provided in Section 2.5.2 of the 2013 RTRP Final EIR.

2.5.4 Underground Transmission Construction

Open-trench, concrete-encased duct bank construction would be used for the majority of underground transmission line installation. Concrete encased duct bank installation involves opening several hundred feet of trench, placing conduit ducts into the trench with plastic spacers every 10 feet to maintain conductor cable spacing. Concrete is then poured around the conduit ducts and the trench is backfilled with native soil or a special thermal backfill.

The underground ROW would require a minimum width of 40 feet to allow appropriate spacing between ducts and from external heat sources. To construct the underground transmission line a backhoe would excavate two 6-foot, 6-inch wide by 6-foot, 6-inch deep trenches in preparation for duct bank installation. Trenches would be spaced approximately 10 feet apart. Each trench would house six conductor cables and three telecommunication fiber optic cables. Each cable pull would be approximately 1,500 feet in length, resulting in an estimated 16 splice vaults for each circuit. In total, approximately 126,720 feet of conductor cable would be required to construct the approximately 2-mile underground transmission line.

Vaults and manholes would be required along the underground alignment for maintenance and inspection during transmission line operation. Vault construction would require an approximately 50 feet long by 12 feet wide by 15 feet deep excavation. The vault would be lowered into place and connected to the conduit, and the hole would be backfilled with cement and excavated soil and compacted. For manholes, a hole 8 feet long by 5 feet wide by 5 feet deep would be excavated. Thirty-two vaults and 16 manholes are anticipated to be required along the underground transmission line.

To install the fiber optic cable inside underground conduits, a high-density polyethylene smooth-wall innerduct would be used to facilitate installation and to protect and help identify the cable. The innerduct would be installed first inside the conduit, and then the fiber optic cable would be installed inside the innerduct.

2.5.5 Relocation of Distribution Lines

Location 5

Pole Removal and Installation
Insert description of activities here.

Location 7

Pole Removal and Installation
Insert description of activities here.

Underground Distribution
Insert description of activities here.

Location 8

Pole Removal and Installation
Insert description of activities here.

Underground Distribution
Insert description of activities here.

2.5.6 Water Use

Water use would be on an as-needed basis during construction to apply water to access roads to control fugitive dust, as described in Section 2.5.2 of the 2013 RTRP Final EIR.

2.5.7 Traffic Management

Construction activities completed within public roadway ROWs would require the use of a traffic control service. All lane closures would be conducted in accordance with local ordinances and city permit conditions. These traffic control measures are typically consistent with those published in the 2010 California Joint Utility Traffic Control Manual.

2.5.8 Site Cleanup and Waste Disposal

Construction of the revised project would result in the generation of various waste materials that can be recycled and salvaged. These items would be gathered by construction crews and separated into roll-off boxes. Salvageable items (i.e., conductor, steel, and hardware) would be transported to the marshalling yards, sorted, baled, and then sold through available markets. Items that may be recycled include: nuts, bolts, washers, and other small hardware; conductor wire; and larger hardware (i.e., shackles, clevises, yoke plates, links, or other connectors used to support the conductor).

Construction of the revised project would also generate waste materials that cannot be reused or recycled (i.e., wood, soil, vegetation, and sanitation waste). Refuse and trash would be properly contained and covered. Refuse would be regularly removed from all staging areas. Local waste management facilities would be used for the disposal of these types of construction waste.

All construction materials and debris would be removed from the area and recycled or properly disposed of off-site according to applicable regulations. SCE would conduct a final inspection to ensure that cleanup activities are successfully completed.

2.5.9 Site Restoration

Disturbed areas within the revised overhead alignment would be graded and reseeded or stabilized to control water and wind erosion. Roadways will be repaved following construction of the underground alignment. Efforts would be made to restore the land to the original contours and to restore natural drainage along the ROW as required. EPEs contain measures to restore marshalling yards and other temporary work areas to preconstruction conditions. Reseeding and other erosion control may be installed mechanically (e.g., hydroseeding, imprinting, seed drilling) or by hand (e.g., erosion control blankets, jute sandbags).

2.5.10 Construction Equipment and Workforce Estimates

The estimated number of personnel and equipment required for construction of each component of the revised project are summarized in Table 2.5-4.

Construction of the revised project would be performed by either SCE construction crews or contractors depending on the availability of utility construction personnel at the time of construction. If SCE construction crews are used, they would likely be based out of local facilities within Riverside County. Contractor construction personnel would be managed by SCE construction management personnel.

Table 2.5-4 Construction Equipment and Workforce Estimates for the Revised Project

Activity	Workers	Equipment	Quantity	Equipment	Quantity
TSP Foundations	**6**	Backhoe/Front Loader	1		
		R/T Crane (M)	1	Water Truck	1
		Dump Truck	1	Concrete Truck	4
		1-Ton Truck, 4x4	2	Drill Rig	1
TSP Haul	**4**	1-Ton Truck, 4x4	1	Flat Bed Truck	1
		R/T CrL)	1		
TSP Assembly	**8**	1-Ton Truck, 4x4	2	R/T Forklift	1
		R/T Crane (L)	1	Compressor Trailer	1
TSP Erection	**8**	Compressor Trailer	1	Manlift/Bucket Truck	2

Activity	Workers	Equipment	Quantity	Equipment	Quantity
		1-Ton Truck, 4x4	2	Crane	1
LST Foundations	**7**	1-Ton Truck, 4x4	2	Dump Truck	1
		Crane/Boom Truck	1	Water Truck	1
		Backhoe/Front Loader	1	Drill Rig	1
		Concrete Truck	3		
LST Steel Haul	**4**	1-Ton Truck, 4x4	1	Flat Bed Truck	1
		Fork Lift	1		
LST Steel Assembly	**10**	¾ -Ton Pick-up Truck, 4x4	2	R/T Crane (L)	1
		1-Ton Truck, 4x4	3	Compressor Trailer	1
		Crane	1		
LST Erection	**12**	R/T Crane (L)	1	Compressor Trailer	1
		1-Ton Truck, 4x4	4	Crane	1
Underground Vault Installation	**20**	1-Ton Truck, 4x4	4	Backhoe/Front Loader	2
		Excavator	2	Dump Truck	6
		Water Truck	2	Crane (L)	2
		Concrete Truck	12	Flat Bed Truck	6
		Lowboy Truck/Trailer	2		
Duct Bank Installation	**20**	1-Ton Truck, 4x4	4	Compressor Trailer	2
		Backhoe/Front Loader	2	Excavator	2
		Dump Truck	6	Pipe Truck/Trailer	2
		Water Truck	2	Concrete Truck	8
		Lowboy Truck/Trailer	2		
Underground Cable Installation	**10**	1-Ton Truck, 4x4	2	Puller	1
		Cable Dolly/Truck	1	Flat Bed Material Truck	1
		Crane (L)	1	R/T Forklift	1
Cable Splicing	**16**	1-Ton Truck, 4x4	4	Splicing Truck/Trailer	2
		Flat Bed Material Truck	2		
Riser Pole Preparation	**5**	1-Ton Truck, 4x4	2	Flat Bed Material Truck	2

Activity	Workers	Equipment	Quantity	Equipment	Quantity
Cable Terminating	**8**	1-Ton Truck, 4x4	2	Flat Bed Material Truck	1
		Crane (L)	1	R/T Forklift	1
Trench Restoration/Paving	**6**	1-Ton Truck, 4x4	2	Skip Loader	1
		Dump Truck	2	Bobcat	1
		Compaction Roller	1		

2.5.11 Construction Schedule

SCE anticipates that construction of the entire proposed project, including the revised project, would begin in 2020. Construction would last approximately X months and end in 2023. Construction would commence following CPUC and regulatory agency approval, final engineering, and procurement activities. The revised project includes LST, TSP, and riser pole construction and installation, and underground construction activities. Table 2.5-5 provides the anticipated construction durations for individual construction activities.

Table 2.5-5 Duration of Construction Activities

Activity	Duration
LST Foundation Installation [1]	3 days/LST
LST Steel Haul	0.5 day/LST
LST Steel Assembly	4 days/LST
LST Erection	3 days/ LST
TSP Foundation Installation [1]	3 days/TSP
TSP Haul	0.3 day/TSP
TSP Assembly	1 days/TSP
TSP Erection	2 days/TSP
Riser Pole Preparation [2]	5 days/Riser Pole
Underground Vault Installation	224 days
Underground Duct Bank Installation	110 days
Underground Cable Installation	96 days
Trench Restoration/Paving	30 days
Cable Splicing	160 days
Cable Terminating	120 days

Note:

1 LSTs and TSPs are constructed on concrete foundations. The foundations require approximately 20 days of "cure time" that is not reflected in the construction duration. LST and TSP construction cannot occur until the foundations have cured.

2 Riser poles are TSPs and would require the same foundation, haul, assembly, and erection construction time.

Source: (SCE, 2016)

Construction efforts would primarily occur in accordance with accepted construction industry and SCE standards. Construction activities would generally be scheduled during daylight hours: 6 AM to 6 PM (June to September) and 7 AM to 6 PM (October to May), Monday through Friday. In the event construction activities would need to occur outside these timeframes, SCE would obtain a noise variance from the Cities of Jurupa Valley, Norco, or Riverside as necessary. All materials associated with construction efforts would be delivered by truck to established marshalling yards. Delivery activities requiring major street use would be scheduled to occur during off-peak traffic hours.

2.6 OPERATION AND MAINTENANCE

The revised project would not require any personnel during operation of the new transmission facilities. Inspection and maintenance of the revised project overhead alignment would involve periodic inspections by SCE personnel as described in Section 2.6 of the 2013 RTRP Final EIR. Maintenance of the 230-kV transmission line would be performed on an as-needed basis and could include maintenance of access roads and erosion control measures.

The underground vaults would be routinely inspected to ensure structural integrity of the conductor and vault. Qualified electricians would periodically perform routine testing and check on the condition of the voltage limiting arresters, grounding connection, splices, terminations, lightning arrestors, and conductor.

2.7 ENVIRONMENTAL PROTECTION ELEMENTS AND MITIGATION MEASURES

SCE employs best management practices (BMPs) and environmental protection elements (EPEs) to minimize potential impacts on the environment. The 2013 RTRP Final EIR lists the EPEs and mitigation measures applicable to the SCE portion of the RTRP. The EPEs and mitigation measures were approved when the City of Riverside adopted the 2013 Final RTRP EIR. Applicable RTRP EPEs and mitigation measures included in the 2013 RTRP Final EIR would be implemented for the revised project. For the purposes of assessing potential impacts of the revised project, approved EPEs and mitigation measures are referenced where appropriate in Chapter 3 of this Subsequent EIR, and new mitigation measures are introduced in instances where existing mitigation would not be sufficient to reduce impacts from the revised project to a less than significant level.

2.8 ELECTRIC MAGNETIC FIELDS

The CPUC does not consider electric magnetic fields (EMF) to be an environmental issue in the context of CEQA because there is no agreement among scientists that EMF creates a potential health risk and because CEQA does not define or adopt standards for defining any potential risk from EMF. Recognizing that there is a great deal of public interest and concern regarding potential health effects from exposure to EMFs from power lines, additional information regarding EMF associated with electric utility facilities and the potential EMF resulting from the proposed project is presented in Appendix X. EMF information is presented for the benefit of the public and decision makers, but is not considered within the context of CEQA.

Other concerns related to power line[2] fields include nuisance (corona and audible noise; radio, television, electronic equipment interference) and potential health risk impacts (induced currents and shock hazards and effects on cardiac pacemakers). These field issues are addressed in Chapter 7: Additional CEQA Considerations. The effects of audible corona noise are evaluated in Section 4.12: Noise. Environmental impacts are defined for these issues, and mitigation measures are recommended.

2.9 REFERENCES

IRPA/INIRC (International Radiation Protection Association/International Non-Ionizing Radiation Committee). 1990. Interim guidelines on limits of exposure to 50/60Hz electric and magnetic fields. Health Physics 58: 113-122.

Morgan, M.G. 1991. 60 Hz Electric and Magnetic Fields. An Overview of the Issues, Carnegie Mellon University.

SCE (Southern California Edison). 2016. EMF Analysis for the Underground Segment. Attachment to California Public Utilities Commission Deficiency Report #4 (Supplemental) Response #19. November 10, 2016.

Severson et al. 1988. Acute Nonlymphocytic Leukemia and Residential exposure to Power Frequency Magnetic Fields. American Journal of Epidemiology.

Silva et al. 1988. Power Frequency Magnetic Fields in the Home. Institute of Electrical and Electronics Engineers, No. 88 WM 101-8.

WHO (World Health Organization). 1984. Environmental Health Criteria 35. Extremely Low Frequency Fields.

______. 1987. Environmental Health Criteria 69. Magnetic Fields.

______. 2001. World Health Organization, Fact Sheet No. 263, October 2001, Electromagnetic Fields and Public Health, Extremely Low Frequency Fields and Cancer.

______. 2007. WHO Environmental Health Criteria 238. Extremely Low Frequency Fields.

[2] The term “power line” in this section refers generally to electric lines of all voltage classes operating in SCE's electric system. However, CPUC GO 131-D distinguishes between distribution lines (“designed to operate under 50 kV”), power lines (“designed to operate between 50 and 200 kV”), and transmission lines (“designed to operate at or above 200 kilovolts”).