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3.0 PROPOSED PROJECT DESCRIPTION

3.1 PROPOSED PROJECT OVERVIEW

SDG&E is a regulated public utility that provides electric service to three million customers within a 4,100 square mile service area, covering parts of two counties and 25 cities in the San Diego area. In an effort to increase the efficiency and supply of renewable generated power to the CAISO grid, CAISO has identified a policy-driven need for a new 230 kV transmission line to connect the existing SDG&E Sycamore Canyon and Peñasquitos Substations. In response to the CAISO Request for Proposal (RFP) for this new 230 kV transmission line, SDG&E proposes to construct and operate a new, approximately 16.7-mile 230 kV transmission line (TL 230XX[1]) between the existing SDG&E Sycamore Canyon and Peñasquitos Substations (Proposed Project)[2]. The Proposed Project would also include the consolidation of two existing 69 kV power lines onto new double-circuit, steel structures that would replace existing, predominantly wood structures. All new transmission line facilities would be located within existing SDG&E ROW or within franchise position[3] within existing public roadways[4].

The Proposed Project would include the following primary components, which are described in more detail in Section 3.3, Proposed Project Facilities:

- Segment A - Construction of approximately 8.31 miles of new 230 kV transmission line on new tubular steel poles all within existing SDG&E ROW located between the existing Sycamore Canyon Substation and Carmel Valley Road;
- Segment B - Install new, approximately 2.84-mile 230 kV underground transmission line in Carmel Valley Road utilizing existing franchise position for almost the entire segment;
- Segment C - Install new 230 kV conductor on the existing 230 kV steel structures and one new tubular steel pole all within existing SDG&E ROW located between Carmel Valley Road and Peñasquitos Junction[5];

[1] Tie-Line number to be assigned at a later date.
[2] The CAISO selected SDG&E's proposal to construct and operate the Proposed Project following their 2012-2013 Transmission Plan Competitive Solicitation Process.
[3] SDG&E has a franchise agreement with the City of San Diego as well as all other cities and counties within its service territory. The Franchise Act of 1937 (Public Utilities Code, Sec 6201) is generally the model for all of these agreements that SDG&E and other utilities have in order to utilize public streets. SDG&E agreements are generally long term contracts, typically 30 to 50 years and have always been renewed. SDG&E pays a percentage of its gross revenue earned in that city to the city as a franchise fee. What determines the elements of the gross revenue are usually defined in the franchise agreement.
[4] Note that one small section of underground rights through existing SDG&E ROW would need to be acquired through an amendment to the existing ROW easement at this location.
[5] The Peñasquitos Junction refers to confluence of existing electric power and transmission lines where existing power lines TL 13804, TL 6920, and TL 675 turn from a north/south alignment and travel west into the Peñasquitos Substation.

- Segment D - Install new 230 kV conductor on existing double-circuit 230 kV steel lattice towers all within existing SDG&E ROW located between the Peñasquitos Junction and the existing Peñasquitos Substation; and
- Minor modifications of the existing Sycamore Canyon and Peñasquitos Substations to allow for connection of the new 230 kV transmission line.

The CPUC will be the lead agency for the Proposed Project under the CEQA. SDG&E is submitting this PEA in support of its Application for a CPCN.

3.2 PROPOSED PROJECT LOCATION, REGIONAL CONTEXT, AND REGIONAL ELECTRIC SYSTEM

3.2.1 Location

As shown in Figure 3-1, Project Vicinity Map, the Proposed Project components are located within the cities of San Diego and Poway, California and on the extreme northern portion of MCAS Miramar. The Proposed Project route traverses both developed residential and commercial areas as well as densely vegetated undeveloped areas. The Proposed Project would result in a new 230 kV transmission line that would connect the existing Sycamore Canyon and Peñasquitos Substations through utilization of a combination of new and existing SDG&E facilities (e.g., poles), existing ROWs, and existing City of San Diego franchise position.

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Sycamore to Peñasquitos 230 kV Transmission Line Project

Project Vicinity Map

Figure 3-1

Proposed Route

Date: 3/13/2014

Sources: SDG&E, 2013; National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC

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BACK OF FIGURE 3-1

3.2.2 Existing and Proposed Electric System

Figure 3-2, Existing System One-Line Diagram, depicts the existing electric system within the Proposed Project ROWs between the Sycamore Canyon and Peñasquitos Substations. As shown in Figure 3-2, there are currently three power lines entering the Peñasquitos Substation from the Proposed Project alignment/ROW and two power lines and one transmission line entering the Sycamore Canyon Substation from the Proposed Project alignment/ROW. Both of these substations are existing 230/138/69 kV substations that also have other transmission and power line connections that are not directly related to the Proposed Project. The Proposed Project would result in one new 230 kV transmission line that would connect to each substation as shown in Figure 3-3, Proposed System One-Line Diagram.

3.3 PROPOSED PROJECT FACILITIES

The Proposed Project includes the construction and operation of a new, approximately 16.7 mile 230 kV transmission line. Table 3-1, Proposed Project Cost Estimate, presents the estimated total cost for construction of the Proposed Project.

Table 3-1: Proposed Project Cost Estimate

Proposed Project Cost Component	Approximate Cost
Engineering, Procurement and Construction	$76,300,000
Substation	$3,500,000
Environmental/Regulatory	$10,200,000
Public/External Affairs	$2,700,000
Other Project Costs	$1,300,000
Overheads	$11,100,000
Allowance for Funds Used During Construction (AFUDC)	$7,000,000
Subtotal Project Cost Estimate	**$112,100,000**
Contingency (20 percent)	$22,400,000
Grand Total Project Cost Estimate	**$134,500,000**

Notes:
[1]All costs are approximate and based on preliminary engineering. Final costs will be determined upon approved final project scope and contracting costs.

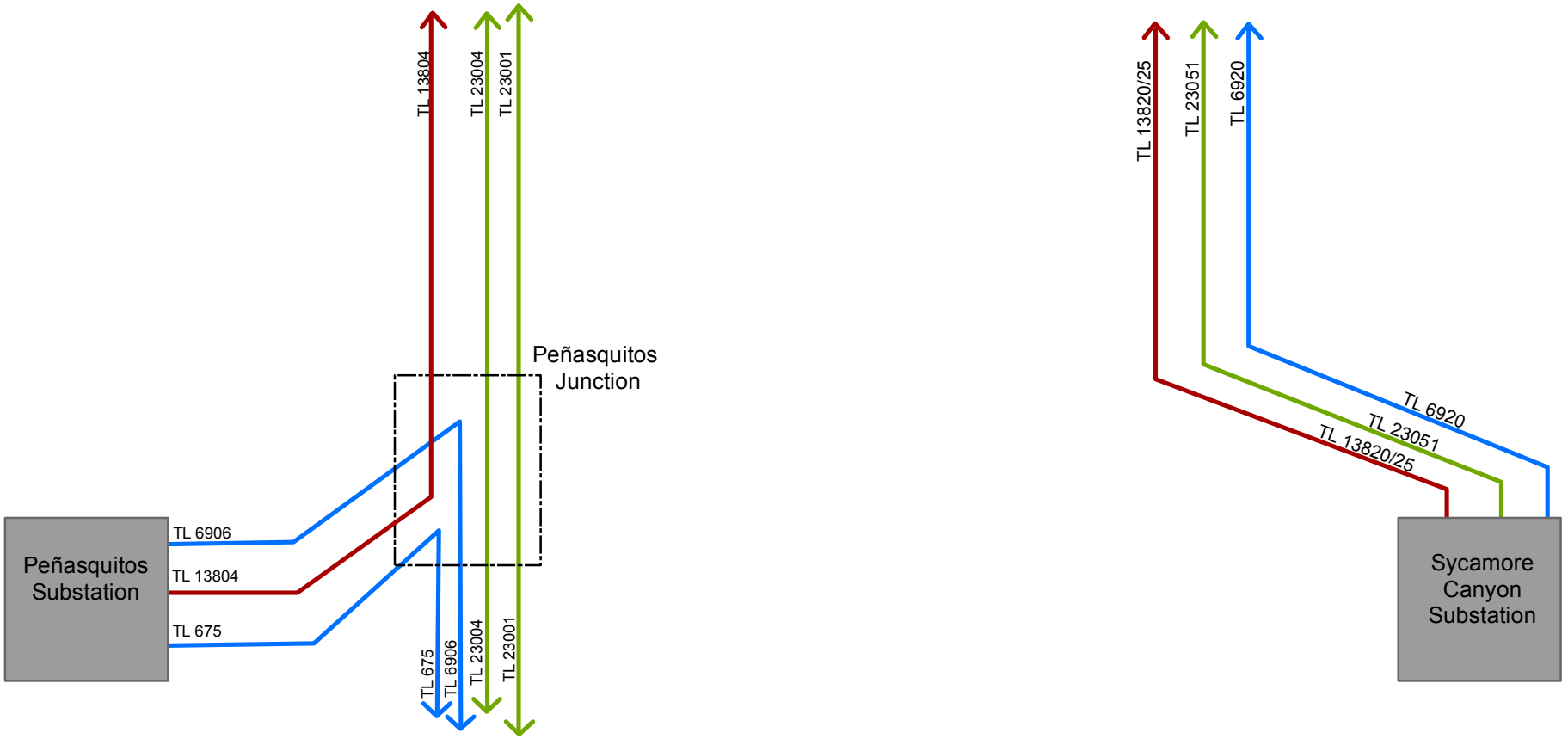
Source: *SDG&E*

For the purposes of this discussion, the Proposed Project is divided into four segments based upon the type and location of proposed facilities. The Proposed Project segments are listed below in Table 3-2, Proposed Project Transmission Line Segments and are depicted on Figure 3-3 and Figure 3-4, Project Overview Map.

Table 3-2: Proposed Project Transmission Line Segments

Segment No.[1]	Length (miles)	Description of Work
A	8.31	Construction of approximately 36 new double-circuit 230 kV and two 138 kV tubular steel poles between the existing Sycamore Canyon Substation and Carmel Valley Road and two new 230 kV tubular steel poles for TL 23041 connection at the Sycamore Canyon Substation. All new poles to be installed are located within existing SDG&E ROW. Install new 230 kV conductor on new double-circuit 230 kV tubular steel poles. Remove approximately 42 wood H-frame structures, two tubular steel poles, one double-circuit cable pole, and two single-circuit wood mono poles. Relocate existing TL 13820 and TL 13825[2] to second position on the new double-circuit 230 kV tubular steel poles. Existing TL 13820 would be installed in an underground position as it enters the Sycamore Canyon Substation, allowing for the removal of two existing 138 kV structures.
B	2.84	Construction of underground transmission line, including trenching and trenchless techniques, within Carmel Valley Road (existing franchise position). Construction of 230 kV tubular steel cable pole structures at two locations. Remove one double-circuit steel lattice tower at the western end.
C	2.19	Installation of new 230 kV conductor on vacated position on existing double-circuit 230 kV steel structures (10 steel lattice towers) and on one new tubular steel pole that would replace an existing steel lattice tower at the Peñasquitos Junction. All structures are located within existing SDG&E ROW between Carmel Valley Road and the Peñasquitos Junction. Existing TL 23001 and TL 23004 would be reconductored and bundled on the east side of the existing structures and would remain designated as TL 23004.
D	3.34	Installation of new 230 kV conductor on vacated position on existing double-circuit 230 kV steel structures (15 steel lattice towers and one tubular steel pole) located between the Peñasquitos Junction and the Peñasquitos Substation. Existing 69 kV power lines (TL 675 and TL 6906) would be consolidated onto approximately 17 new 69 kV, double-circuit tubular steel poles that would replace 16 existing 69 kV wood H-frame structures and five wood monopole structures that currently support TL 675 and TL 6906. Construction of two new 69 kV tubular steel cable poles that would replace existing wood 69 kV cable poles located immediately outside of the Peñasquitos Substation.

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] Refer to Figure 3-4 for segment locations.
[2] TL 13825 was recently renumbered to 13811 independent of the Proposed Project. All references to TL 13825 refer to TL 13811.



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69 kV Transmission Line
138 kV Transmission Line
230 kV Transmission Line

Sycamore to Peñasquitos 230 kV Transmission Line Project

Existing System One-Line Diagram

Figure 3-2

Date: 3/13/2014

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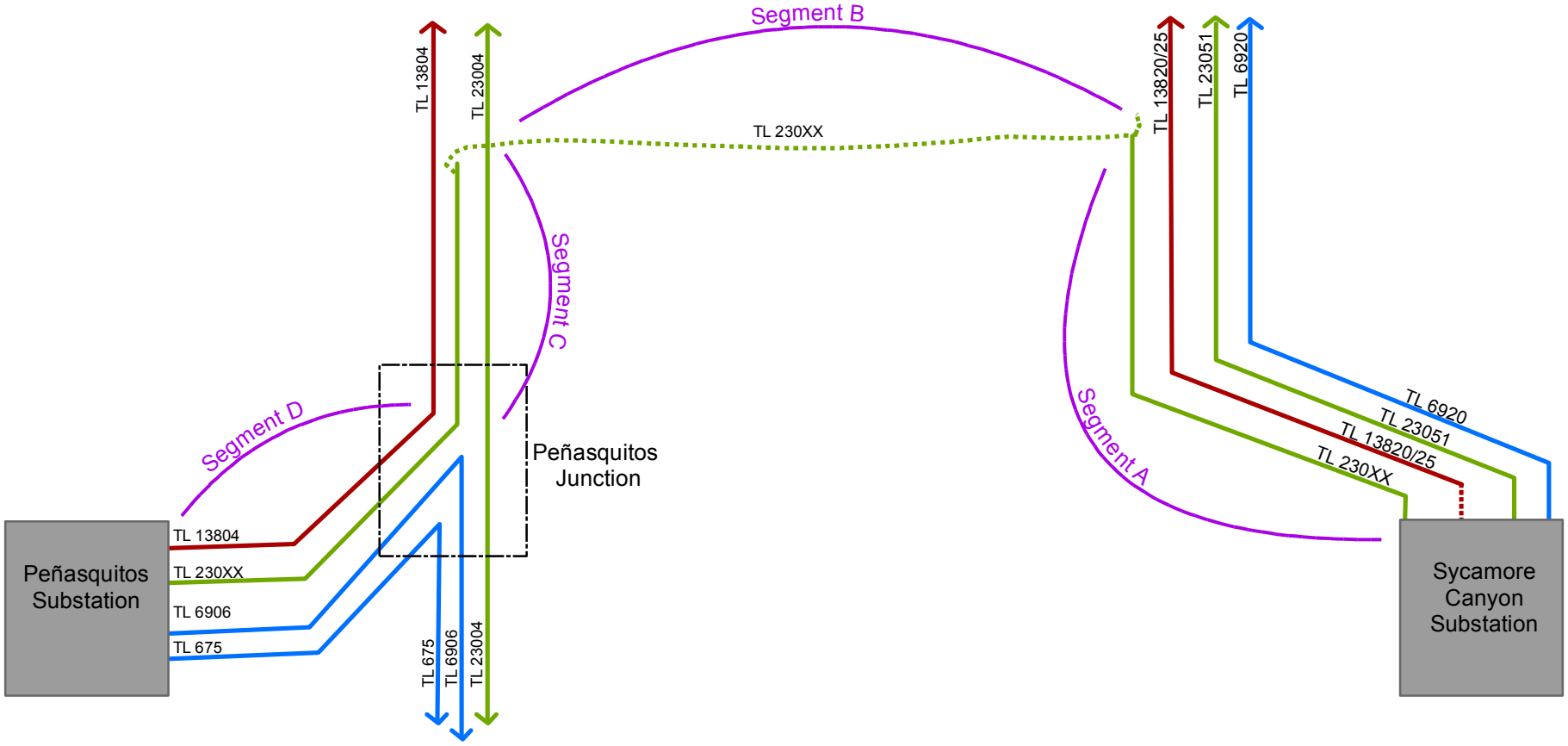
BACK OF FIGURE 3-2



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69 kV Transmission Line
138 kV Transmission Line
138 kV Underground Transmission Line
230 kV Transmission Line
230 kV Underground Transmission Line

Sycamore to Peñasquitos 230 kV Transmission Line Project

Proposed System One-Line Diagram

Figure 3-3

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SDGE A Sempra Energy utility

Date: 3/13/2014

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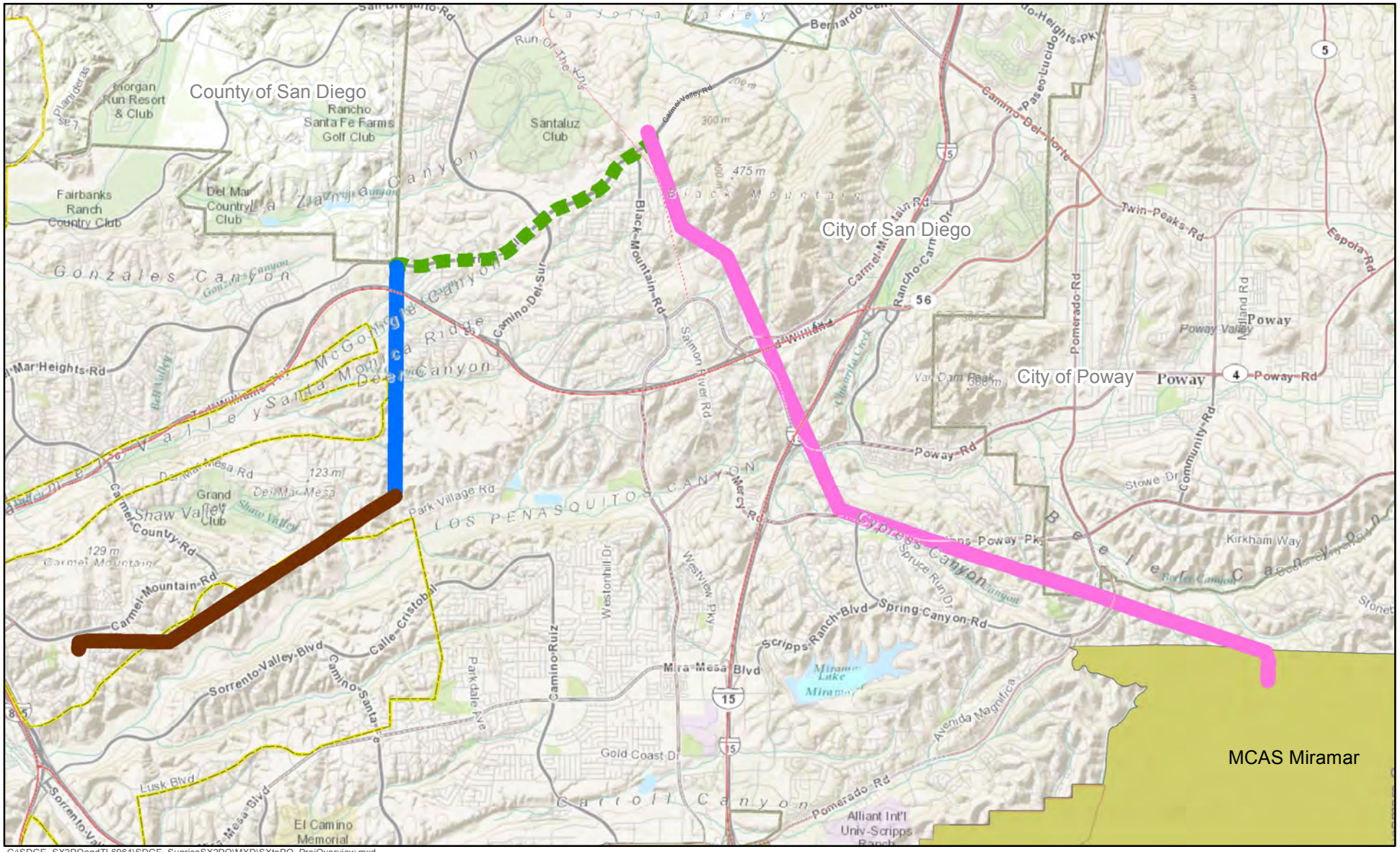

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- California Coastal Zone Boundary
- Segment A - New 230kV Overhead - New Poles and Conductor - 8.31 miles
- Segment B - New 230kV Underground - New Duct and Cable - 2.84 miles
- Segment C - New 230kV Overhead - New Conductor on Existing Structures - 2.19 miles
- Segment D - New 230kV Overhead - New Conductor on Existing Structures - 3.34 miles

0 1 2 3 Miles

Sycamore to Peñasquitos 230 kV Transmission Line Project

Project Overview Map

Figure 3-4

Date: 4/3/2014

Sources: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community, Sources: Esri, DeLorme, USGS, NPS

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BACK OF FIGURE 3-4

The Proposed Project segments are further described in the following subsections.

Appendix 3-A, Pole Detail Table, provides a list of all proposed new 230 kV, 138 kV and 69 kV poles by type (all new poles will be dulled galvanized steel), all poles to be removed (including replacements), and existing poles to be utilized in place. Appendix 3-B, Detailed Route Map, provides a map with the location of all poles to be installed, removed, and utilized in place. Typical drawings of the types of structures to be installed and removed are included in Appendix 3-C, Typical Structure Diagrams.

3.3.1 Segment A – Sycamore Canyon Substation to Carmel Valley Road

Segment A of the Proposed Project includes two major components, as follows:

1. Construct approximately 8.31 miles of new a 230 kV transmission line between the Sycamore Canyon Substation and Carmel Valley Road, including the construction of approximately 38 new 230 kV and 2 new 138 kV tubular steel poles; and
2. Relocate existing 138 kV power lines (TL 13820 and TL 13825[6]) to second position on new 230 kV steel poles and connect to Sycamore Canyon Substation utilizing an underground alignment that is approximately 850 feet in length.

These two components are further described below. Table 3-3, Segment A Scope of Work, lists the facilities included within Segment A of the Proposed Project, including new overhead transmission line structures to be installed, existing overhead power line structures to be removed, and new underground facilities to be installed.

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[6] TL 13820 will be collocated on the new 230 kV structures between the Sycamore Canyon Substation and the Chicarita Substation, where TL 13820 terminates after Structure No. P30. TL 13825 would leave Chicarita Substation via Structure No. P31 and would be collocated on the new 230 kV structures from Chicarita Substation north until the end of Segment A at Carmel Valley Road.

Table 3-3: Segment A Scope of Work

Structure Type	Installed	Structure Number[1]	Removed
230 kV single-circuit tubular steel poles	1	P1	--
230 kV double-circuit cable pole[2]	1	P3	--
230 kV double-circuit tubular steel poles	36	P2, P4 – P29 & P32 – P40	--
138 kV single-circuit tubular steel poles	2	P30 & P31, R31 & R32	2
138 kV single-circuit wood H-frame structures	--	R4 – R30 & R33 – R46	41[3]
138 kV single-circuit wood pole	--	R2 & R3	2[4]
138 kV double-circuit cable pole	--	R1	1
138 kV underground	850 feet	N/A	--
Totals	**40 poles, 850 feet**	**N/A**	**46 poles**

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] Refer to Appendix 3-B for location of proposed poles. All new structures have a "P" prefix, all existing structure to be removed have an "R" prefix, and any structures to be utilized in place have an "E" prefix.
[2] Structure No. P3 would be a combination pole that would serve as a cable pole for existing TL 13820 and a standard (overhead) pole for the new 230 kV transmission line.
[3] Five of these poles would be topped above the distribution underbuild and not completely removed.
[4] One additional existing 138 kV wood power line pole would be topped above 69 kV circuits.

3.3.1.1 New 230 kV Transmission Line

Within Segment A, the proposed new 230 kV transmission line would be installed on approximately 36 new, double-circuit, dulled galvanized tubular steel poles. These new 230 kV steel poles would be located within an existing 200-foot SDG&E ROW that runs generally north-south from the Sycamore Canyon Substation to Carmel Valley Road where the proposed route turns west. The new 230 kV transmission line would be constructed utilizing bundled (two conductors per phase) 900 thousand circular mills (kcmil) aluminum, steel support/alumoweld (ACSS/AW) (Canary) conductor and polymer insulators. The conductor would be installed in a vertical phase configuration with 18-inch horizontal bundled subconductor configuration. The new insulators would be installed in a V-string configuration. The new 230 kV structures would also have new, 48-count fiber optic OPGW installed along the top of the new 230 kV structures. The vertical conductor spacing is anticipated to be 18 feet and the minimum vertical ground distance to the first conductor would be 30 feet (25 feet where only pedestrian access is present). The new OPGW would serve as a communication cable and shield wire. Vibration dampers would also be installed on the conductors near the structures, as needed. The new 230 kV steel poles would be installed with an average span length of approximately 1,150 feet and would generally be installed in a soldiered[7] alignment with the existing 230 kV structures located within the same ROW.

[7] The term "soldiered" refers to the practice of installing parallel structures in immediately adjacent locations in an effort to maintain electrical clearance between overhead conductors of parallel circuits during wind conditions.

Currently, a 69 kV power line (TL 6920) is co-located with an existing 230 kV transmission line (TL 23051) on existing 230 kV structures (mixture of steel lattice towers and tubular steel poles) located along the eastern edge of the existing ROW (see Figure 3-5, Segment A Existing ROW Cross Section) and existing 138 kV power lines, TL 13820 and TL 13825, are located on wood H-frame structures along the western edge of the ROW. The proposed new 230 kV transmission line would utilize existing structures (Structure Nos. E1, E2 and E3) to connect to the Sycamore Canyon Substation. Two of these structures (Structure Nos. E2 and E3) are currently supporting the existing 230 kV transmission lines (TL 23051) and only one structure (Structure No. E3) would be used to connect the existing line to the Sycamore Canyon Substation.

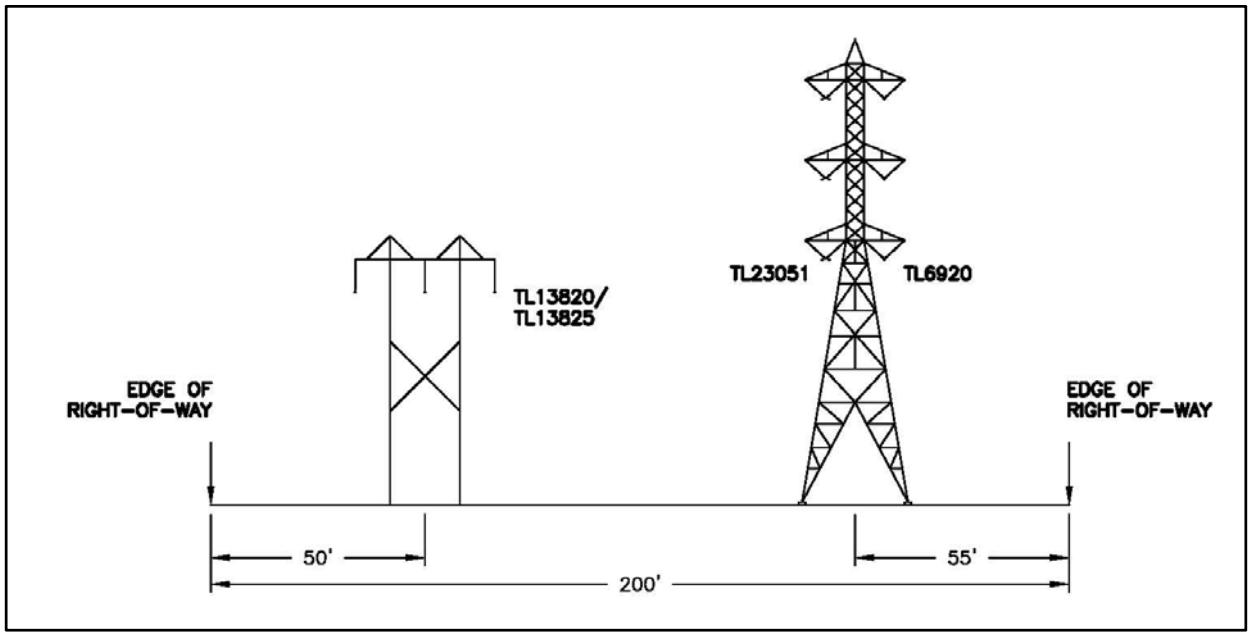

Figure 3-5: Segment A Existing ROW Cross Section (View North)

The existing TL 13820/13825 wood H-frame structures would be removed to make room for the new double-circuit steel 230 kV structures that would support the new 230 kV transmission line and the relocated TL 13820/13825 power lines. The new 230 kV structures would be located between the existing TL 23051 and TL 13820/13825 structures, approximately 30 feet east of the existing centerline of the 138 kV wood H-frame structures. The final ROW configuration is depicted in Figure 3-6, Segment A Proposed ROW Cross-Section.

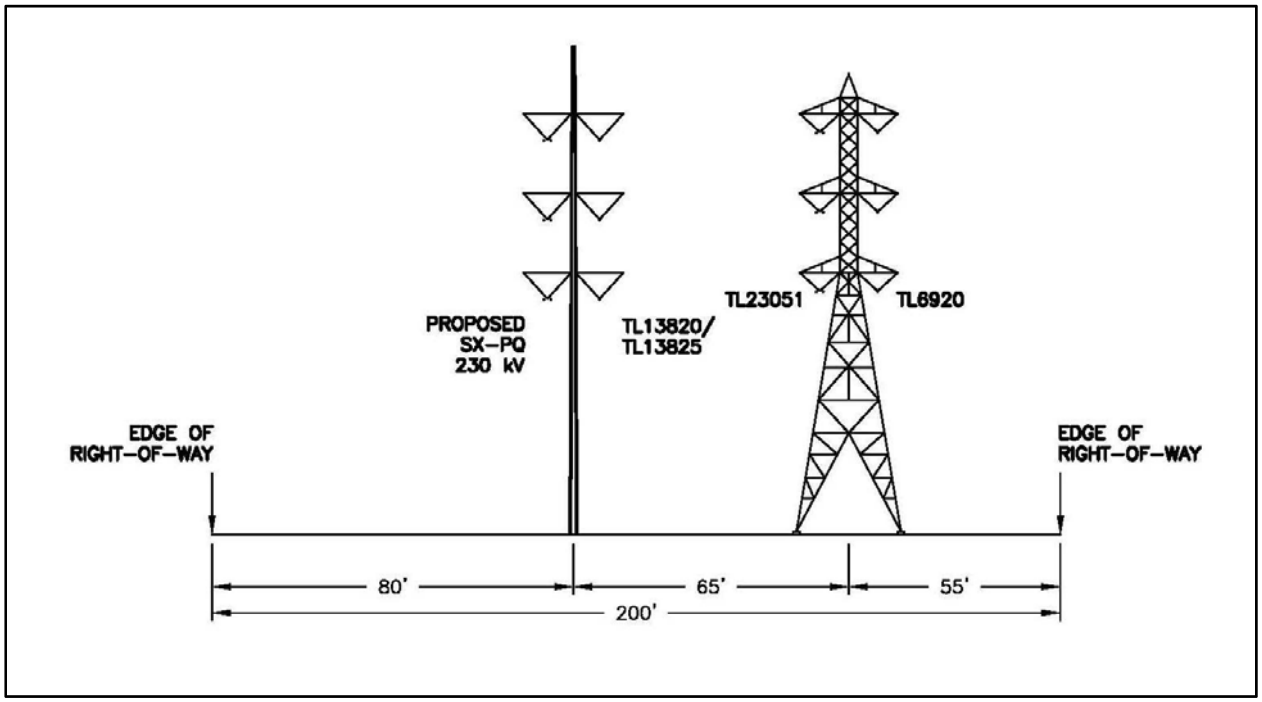

Figure 3-6: Segment A Proposed ROW Cross Section (View North)

3.3.1.2 TL 13820/13825 Relocation

As shown on Figure 3-5, the existing TL 13820/13825 is also located within the ROW, utilizing wood H-frame structures located along the western edge of the ROW. As part of the development of Segment A of the Proposed Project, TL 13820/13825 would be relocated to the second, vacant position of the new 230 kV tubular steel poles (refer to Figure 3-6). The relocated TL 13820/13825 would be installed on the new 230 kV structures utilizing polymer insulators (existing insulators are made with porcelain) and corona rings and dampers would be utilized as needed. In order to allow the connection of the relocated TL 13820/13825 at the Sycamore Canyon Substation with respect to the overhead new and existing 230 kV transmission lines, an approximately 850-foot segment would be installed in an underground position along an existing access road from Structure No. P3 to the Sycamore Canyon Substation.

3.3.1.3 TL 23041 Relocation

In order to create space for the connection of the new 230 kV transmission line at the Sycamore Canyon Substation, existing transmission line 23041 would be moved to two new 230 kV structures (Structure Nos. P1 and P2) immediately within and adjacent to the substation (refer to Appendix 3-B).

3.3.2 Segment B – Carmel Valley Road

Segment B of the Proposed Project includes two major components, as follows:

1. Construction of approximately 2.84 miles of new 230 kV underground transmission line, mainly through existing Carmel Valley Road (franchise position); and

2. Construct new 230 kV cable pole structures at the east and west ends of the proposed new underground transmission line.

Segment B of the Proposed Project includes the construction of new, 230 kV underground transmission line to be located primarily within franchise position[8] in Carmel Valley Road. Segment B also includes the installation of two new 230 kV dulled galvanized steel cable pole structures to provide transition from underground to overhead systems[9] (refer to Appendix 3-C).

The current plan for the new cable pole structure on the west end of Segment B is to replace an existing steel lattice tower (Structure No. R48) with a new double-circuit 230 kV tubular steel pole (Structure No. P42) that would act as a cable pole structure for the new 230 kV circuit and a dead end overhead structure for the existing 23004/01 transmission lines.

The new cable pole on the east end of Segment B (Structure No. P41) would utilize a vertical phase configuration similar to Structure No. P42 on the west end of Segment B and would be located north of Carmel Valley Road, within an existing sports park (refer to Appendix 3-B). The underground transmission line would connect from the median in Carmel Valley Road to Structure No. P41 utilizing the access driveway to the park, with an access vault installed near the park entrance.

Both proposed new 230 kV cable pole structures (Structure Nos. P41 and P42) would be installed with lightning arrestors. It is anticipated that the new 230 kV underground transmission line would utilize a bundled (two cables per phase) configuration. The cables are anticipated to be segmented copper conductor, insulated with cross linked polyethylene (XLPE), 4,000 kcmil in size. The new 230 kV cables would be installed in a new duct bank package. The package would consist of eight 8-inch conduits for electrical cable and four 2-inch conduits for telecommunications cable. A total of twelve ducts would be included in the package. Six of the 8-inch ducts would be utilized for the bundled 230 kV cable (2 cables/phase). The two remaining 8-inch ducts would be installed as spares. One of the 2-inch conduits would be utilized to house a fiber optic communication cable leaving the additional three 2-inch ducts for future telecommunication cables. The duct package would be protected by a 2,000 pounds per square inch (psi) concrete encasement to 6 inches above the ducts. The remainder of the trench would be filled with a flowable thermal backfill slurry up to one foot below finished grade (refer to Appendix 3-C for a typical duct package diagram). Splice vaults would be installed approximately every 1,800 feet along the underground alignment (refer to Appendix 3-C for a diagram of a typical splice vault). The new splice vaults would have approximate dimensions of 24 feet (length), by 10 feet (width), by 10 feet (depth) and would be designed to accommodate all local and federal safety and loading requirements including the American Association of State Highway and Transportation Officials highway loading guidelines.

Table 3-4, Segment B Scope of Work, lists the facilities included within Segment B of the Proposed Project, including new cable pole structures to be installed, existing overhead transmission line structures to be removed, and proposed new underground transmission line packages.

[8] SDG&E has an existing franchise agreement with the City of San Diego.

[9] "Cable poles" are structures that are used to transition electric utility lines from underground position to an overhead position and vice versa.

Table 3-4: Segment B Scope of Work

Structure Type	Installed	Structure Number[1]	Removed
230 kV steel cable pole structures	2	P41 & P42	--
230 kV steel lattice tower	--	R48	1
138 kV single-circuit wood H-frame structures	--	R47	1
230 kV underground package	14,995 feet	N/A	--
230 kV splice vaults	10	V1-V10	--
Totals	**2 poles, 14,995 feet**	**N/A**	**1 tower, 1 pole**

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1]Refer to Appendix 3-B for location of proposed poles.

3.3.3 Segment C – Carmel Valley Road to Peñasquitos Junction

Segment C of the Proposed Project includes four major components, as follows:

1. Reconductor and bundle approximately 2.19 miles of existing 230 kV circuit between Carmel Valley Road and Peñasquitos Junction;
2. Replace one existing double-circuit 230 kV steel lattice tower (Structure No. R49) with a new double-circuit 230 kV tubular steel pole (Structure No. P43) at the Peñasquitos Junction;
3. Remove existing shield wire from steel lattice towers and install new OPGW from new cable pole (Structure No. P42) to proposed new tubular steel pole (Structure No. P43) at Peñasquitos Junction; and
4. Install new bundled 230 kV conductor on vacated position of the existing 230 kV steel lattice towers and new 230 kV tubular steel pole.

These components are further discussed below. Table 3-5, Segment C Scope of Work, lists the facilities included within Segment C of the Proposed Project, including new overhead transmission line conductor and structures to be installed and existing overhead transmission line conductor and structures to be removed.

Table 3-5: Segment C Scope of Work

Structure Type	Installed	Structure Number[1]	Removed
Double-circuit 230 kV tubular steel poles	1	P43	--
Double-circuit 230 kV steel lattice towers	--	R49	1
Totals	**1 pole**	**N/A**	**1 tower**

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1]Refer to Appendix 3-B for location of proposed structures and conductor.

3.3.3.1 Consolidation of Existing 230 kV Transmission Lines

To facilitate installation of the new 230 kV transmission line through Segment C of the Proposed Project alignment, a vacant position would be created on existing 230 kV steel lattice towers located within a 100-foot existing SDG&E ROW that runs general north-south past Carmel Valley Road and the Peñasquitos Junction. There are currently two 230 kV transmission lines supported by the existing 230 kV steel lattice towers (TL 23001 and 23004) in this area (see Figure 3-7, Segment C Existing Cross Section). These two lines connect the existing San Luis Rey and Mission Substations.

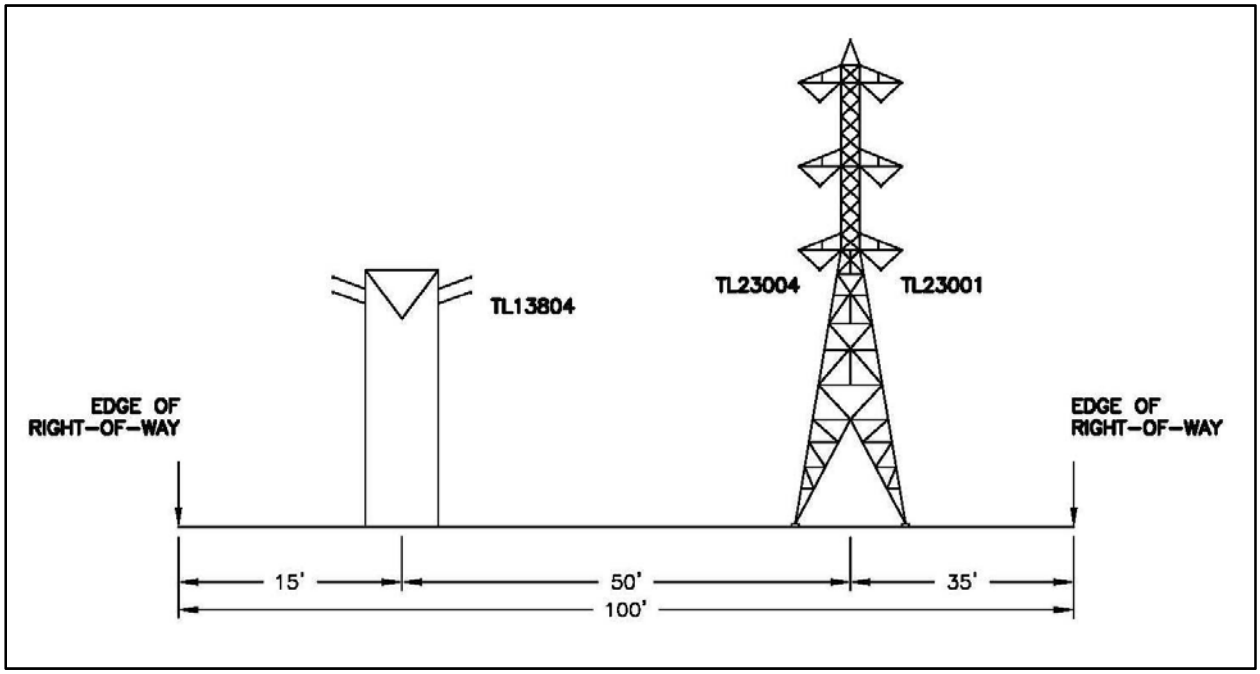

Figure 3-7: Segment C Existing ROW Cross Section (View North)

However, current demand and power flow conditions have significantly changed the net flow on these two lines, and SDG&E is therefore proposing to consolidate them into one bundled transmission circuit. The consolidated 23004/23001 transmission line would result in no net reduction in capacity, and would result in an overall greater utilization of these transmission assets. In order to accomplish this consolidation, the following five steps would be required:

1. Jumper[10] TL 23001 and TL 23004 together to create one bundled 230 kV circuit between San Luis Rey Substation and Carmel Valley Road.
2. Reconductor and bundle approximately 2.19 miles of 230 kV circuit between Carmel Valley Road and Peñasquitos Junction.
3. Jumper TL 23001 and TL 23004 together to create one bundled 230 kV circuit between Peñasquitos Junction and the Mission Substation.

[10] "Jumpered" lines refers to two lines (or sets of conductors) that are connected laterally in order to form an electrical connection.

4. Split existing three terminal TL 23011 at Encina Hub in order to create two 2-terminal lines; one connecting Encina and San Luis Rey Substations and the second connecting Palomar Energy and San Luis Rey Substations.
5. Replace the existing shield wire located on top of the existing steel lattice towers with new OPGW from the new cable pole (Structure No. P42) to the Peñasquitos Junction (Structure No. P43).

The reconductor and bundle between Carmel Valley Road and the Peñasquitos Junction is the specific step that would create a vacant position on the existing 230 kV steel lattice towers. These two 230 kV circuits would be bundled into one functional circuit which would retain the TL 23004 designation. The reconductored TL 23004 between Carmel Valley Road and the Peñasquitos Junction would utilize bundled 1033 Aluminum Conductor Steel Reinforced (ACSR/AW) (Ortolan) or equivalent conductor and new, polymer insulators in a V-string configuration.

3.3.3.2 New 230 kV Transmission Line

Once the consolidation of TL 23001 and TL 23004 is complete, the vacant position on the steel lattice towers would be utilized to support the proposed new 230 kV transmission line (see Figure 3-8, Segment C Proposed ROW Cross Section). At the Peñasquitos Junction, one existing double-circuit 230 kV steel lattice tower would be replaced with a new double-circuit 230 kV tubular steel pole to allow for adequate clearance of the new 230 kV conductor over the adjacent 138 kV power line. As with Segment A, the new 230 kV transmission line installed on Segment C would utilize bundled 900 kcmil ACSS/AW (Canary) conductor. Additionally, a single OPGW would be installed on the existing lattice towers. This OPGW would serve as communications and as lightning shielding for the conductor below.

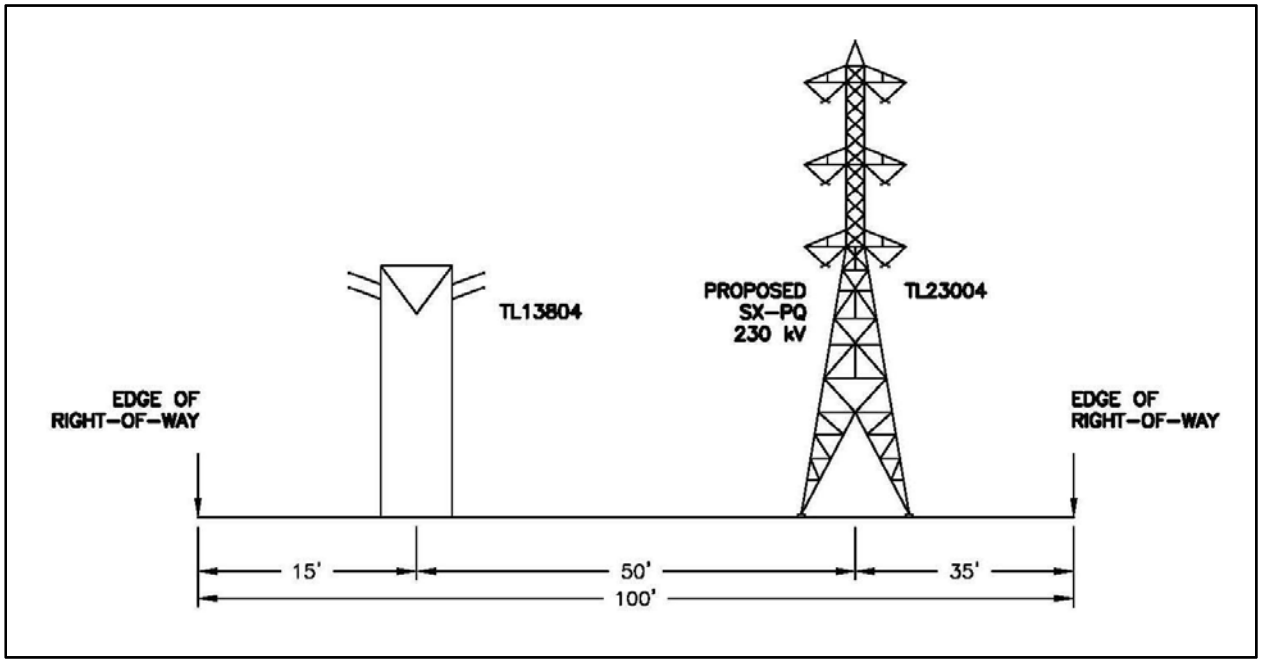

Figure 3-8: Segment C Proposed ROW Cross Section (View North)

3.3.4 Segment D – Peñasquitos Junction to Peñasquitos Substation

Segment D of the Proposed Project includes four major components, as follows:

1. Install approximately 3.34 miles of new 230 kV overhead transmission line on existing 230 kV steel lattice towers located within existing SDG&E ROW;
2. Relocate two existing 69 kV power lines (TL 675 and TL 6906) onto approximately 17 new, double circuit, dulled galvanized tubular steel poles that would replace 20 existing 69 kV wood structures;
3. Replace two existing 69 kV single circuit cable poles with single circuit tubular steel cable poles;
4. Relocate one existing 138 kV power line (TL 13804) from north side of existing steel lattice towers to south side of existing steel lattice towers; and
5. Replace existing shield wire with new OPGW on existing 230 kV steel lattice towers.

These components are further discussed in the following subsections. Table 3-6, Segment D Scope of Work, lists the facilities included within Segment D of the Proposed Project, including new tubular steel poles to be installed, existing overhead power line structures to be removed, new cable pole structures to be installed, and new 230 kV conductor to be installed.

Table 3-6: Segment D Scope of Work

Structure Type	Installed	Structure Number[1]	Removed
69 kV double-circuit tubular steel poles	17	P44 – P60	--
69 kV wood H-frame structures	--	R54 – R69	16
69 kV single-circuit wood poles	--	R50 – R53 & R72	5
69 kV single-circuit steel cable poles	2	P61 & P62	--
69 kV single-circuit wood cable poles	--	R70 & R71	2
Totals	**19 poles**	**N/A**	**23 poles**

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1]Refer to Appendix 3-B for location of proposed poles.

3.3.4.1 Relocation of TL 675 and TL 6906

Existing power line TL 675 is currently located on approximately 16 69 kV wood H-frame structures and five single-circuit monopole structures that connect the Peñasquitos Junction and the Peñasquitos Substation (see Figure 3-9, Segment D Existing ROW Cross Section). TL 675 would be relocated to approximately 17 new, double-circuit dulled galvanized tubular steel poles that would replace the existing wood H-frame and single-pole structures (see Figure 10, Segment D Proposed ROW Cross Section). Existing power line TL 6906 is currently located on the northern position of the existing 230 kV steel lattice towers that also connect the Peñasquitos Junction and Peñasquitos Substation (refer to Figure 3-9). TL 6906 would be relocated to the new double-circuit 69 kV tubular steel poles (refer to Figure 3-10). The relocation of TL 6906 would create a vacant position on the existing 230 kV structures.

3.3.4.2 Relocation of TL 13804

Existing power line TL 13804 is currently located on the south side of the existing 230 kV steel lattice towers (refer to Figure 3-9) that connect the Peñasquitos Junction and the Peñasquitos Substation. As part of the Proposed Project, TL 13804 would be relocated to the north side of the existing 230 kV steel lattice towers (refer to Figure 3-10). This relocation would create a more efficient installation and operation of the new 230 kV transmission line.

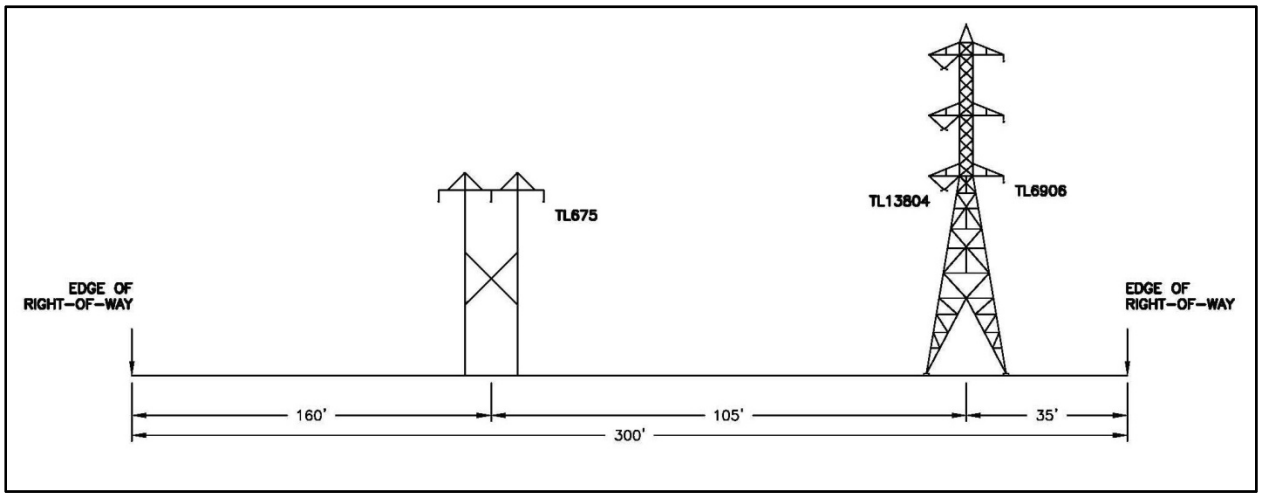

Figure 3-9: Segment D Existing ROW Cross Section (View West)

3.3.4.3 Installation of New 230 kV Conductor and OPGW

New 230 kV conductor would be installed on the vacant position (southern) created on the existing 230 kV steel lattice towers by the relocation of the existing power lines described above (refer to Figure 3-10). As with the other segments of the Proposed Project, the new 230 kV conductor would be bundled 900 ACSS/AW (Canary). Additionally, the existing shield wire would be replaced with a new OPGW at the top of the existing 230 kV steel lattice towers.

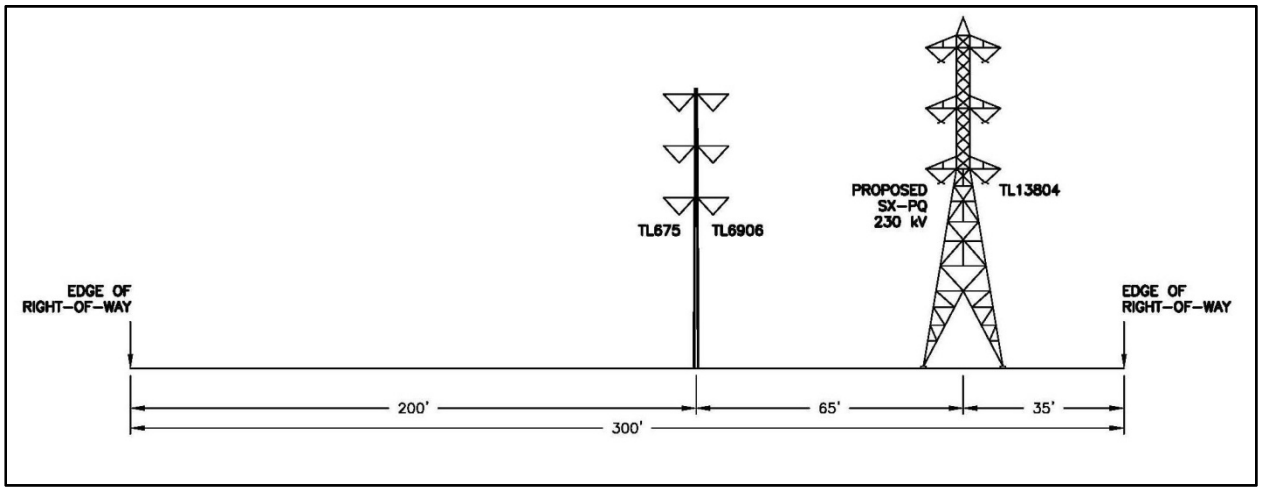

Figure 3-10: Segment D Proposed ROW Cross Section (View West)

3.3.5 Associated Substation Work

Minor alterations, mainly in the form of alterations to substation and bay arrangements, would be required at two existing substations, as further described in the following subsections. The Proposed Project does not include the construction of any new substation facilities.

3.3.5.1 Sycamore Canyon Substation

In order to connect the proposed new 230 kV transmission line to the Sycamore Canyon Substation, the following steps would be required:

- The new 230 kV transmission line would be supported by three existing tubular steel poles (Structure Nos. E1, E2 and E3) to connect to the substation;
- Five existing transmission lines (TL 23021, 23041, 23051, 23054, and 23055) would be transferred from existing bay positions to new bay positions to accommodate the new 230 kV transmission line;
- Approximately two new 230 kV tubular steel poles[11] (Structure Nos. P1 and P2) would be required within and immediately adjacent to the substation to accommodate the transferring of existing 230 kV transmission lines (TL 23041);
- Relocate existing 138 kV power line (TL 13820) to an underground position approximately 850 feet in length from Structure No. P3 to substation connection;
- One existing bay would require the addition of one circuit breaker and two disconnects; and
- One CVT would be installed to be used for synch potential.

3.3.5.2 Peñasquitos Substation

In order to connect the proposed new 230 kV transmission line to the Peñasquitos Substation, the following steps would be required:

- The new 230 kV transmission line would terminate into a vacant position in the substation via a vacant position on an existing tubular monopole steel pole north of the substation fence line;
- The proposed new 230 kV transmission line termination bay would require the addition of two circuit breakers and four disconnects;
- Existing 69 kV power lines TL 675 and TL 6906 would connect to the substation from new steel cable poles and existing ductbanks[12]; and
- One CVT would be installed to be used for synch potential.

[11] Design of the Sycamore Canyon Substation getaways is preliminary, and final design may require additional work at the substation site to accommodate connection of the new 230 kV transmission line.
[12] Design of the Peñasquitos Substation getaways is preliminary, and final design may require additional vaults or trenching if the existing ductbanks cannot be utilized in place.

3.3.5.3 Minor Substation Alterations

Minor alterations may be required at the existing Sycamore Canyon, Peñasquitos, San Luis Rey, Encina, Palomar Energy and Mission Substations. Minor alterations may include some combination of the following:

- Adjust relays to project the stubs of any abandoned bus systems;
- Adjust relays in order to maintain protection systems; and
- Upgrade protection on remaining transmission lines to improve reliability.

3.3.6 Proposed Transmission and Power Line Facilities

The Proposed Project includes the construction of several types of transmission and power line facilities, including overhead structures and underground duct packages. Each facility being proposed for installation is briefly described in the following subsections.

3.3.6.1 Transmission and Power Line Structures

It is anticipated that all of the proposed new overhead transmission and power line structures would be tubular steel poles constructed using either placed concrete pier foundations or micropile foundations. Micropile foundations may be utilized based on geologic conditions and/or where access is limited and the sufficient room for construction of concrete pier foundations is not available. All new poles would be fabricated with dulled galvanized steel. Table 3-7, Typical Pole Dimensions, outlines the average dimensions for new poles to be installed as part of the Proposed Project.

Table 3-7: Typical Pole Dimensions

Pole Type	Typical (Average) Height (feet)	Approximate Pole Diameter (feet)	
		Pole Base	Pole Top
230 kV Tubular Steel Pole	120	5-6	2-3
230 kV Steel Cable Pole	160[1]	6-8	2-3
138 kV Tubular Steel Pole	75	4-5	2
69 kV Tubular Steel Pole	95	3-4	1.5
69 kV Steel Cable Pole	70	3-5	1.5

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] This average height is for a vertical configuration, double-circuit cable pole such as Structure No. P41.

Source: *SDG&E*

3.3.6.2 Distribution Underbuild

Approximately five existing 138 kV wood H-frame structures located on the northern end of Segment A currently have distribution underbuild. The wood H-frame structures would be removed and replaced with new tubular steel double-circuit 230 kV structures. The distribution underbuild portion of the existing wood H-frame structures would remain in place; the existing wood H-frame structures would be cut-off above distribution circuits and the remaining portion

of the wood H-frame structure would be removed. No new Proposed Project structures would have distribution underbuild.

3.3.6.3 Reconductoring

As described in Sections 3.3.1 through 3.3.4, the Proposed Project includes the relocation and consolidation of numerous existing SDG&E power and transmission lines within existing SDG&E ROW. Table 3-8, Relocated/Consolidated Power and Transmission Lines, outlines details for each of the existing lines that would be relocated as part of the Proposed Project. For each transmission or power line that would be relocated as part of the Proposed Project, new conductor would be installed that would match the existing conductor, as detailed in Table 3-8.

Table 3-8: Relocated/Consolidated Power and Transmission Lines

Line Designation	Project Segment	Proposed Conductor[1]	Scope of Work
TL 13820 & TL 13825	A	636 ACSR/AW (Rook)	Relocated from existing wood H-frame structures to new double-circuit 230 kV steel poles.
TL 23001 & TL 23004	C	1033 bundled ACSR/AW (Ortolan)	Consolidated on east side of existing double-circuit 230 kV steel lattice towers.
TL 13804	D	636 bundled ACSR/AW (Rook)	Relocated from south side of existing 230 kV steel lattice towers to north side of same structures.
TL 675	D	1033 ACSR/AW (Ortolan)	Relocated from existing 69 kV wood H-frame structures to new double-circuit 69 kV steel poles
TL 6906	D	1033 ACSR/AW (Ortolan)	Relocated from existing double-circuit 230 kV steel lattice towers to new double-circuit 69 kV steel poles

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] Proposed conductor would match existing conductor for size and type.
Source: *SDG&E*

3.3.6.4 Grounding Rods

All of the steel poles, regardless of foundation type, would require the installation of a minimum of two grounding rods buried approximately 6 to 18 inches deep. The number of grounding rods could increase depending on soil conditions identified during construction. The grounding rods are approximately 8 feet in length and would be installed approximately 6 feet apart within the established work areas. Permanent impacts associated with the grounding rod installation would be negligible (e.g., less than 1 square foot per structure).

3.4 CONSTRUCTION METHODS

This section includes an overview of the typical methods that would be used for construction of the Proposed Project. Specifically, this section describes typical construction methods for

overhead and underground facilities, construction equipment, and temporary construction work areas. It is anticipated that construction of the Proposed Project would result in up to approximately 4,500 cubic yards of excavation for concrete foundations. In addition, construction is anticipated to require approximately 15,500 cubic yards of excavation during trenching for the proposed underground transmission line Segment B. Cut and fill would also be required at some structure locations to create construction and line maintenance pads. Detailed civil engineering for these work pads has yet to be completed. Actual cut and fill grading amounts may vary dependent upon actual field conditions and final detailed engineering, but are estimated to be approximately 21,620 cubic yards of cut and 3,720 cubic yards of fill (net 7,900 yards of cut). Soil may be re-used onsite within existing ROWs where extensive grading and excavation is not required in areas of existing access roads, spur roads, and work pads. Excess soil from excavation may also be transported to a local recycling or appropriately permitted waste disposal facility if the soil is not re-used onsite or otherwise recycled. Excess soil would be re-used onsite wherever possible and only transported offsite as the final option. SDG&E's construction methods are subject to implementation of the SDG&E's standard environmental procedures and protocols, including *SDG&E's Subregional Natural Community Conservation Plan (SDG&E's Subregional NCCP),* which is described in greater detail in Section 4.4, Biological Resources, and below (see Sections 3.7 and 3.8). SDG&E has successfully implemented the Natural Community Conservation Plan (NCCP) for pole replacement, upgrade and in-ROW expansion projects similar to the Proposed Project for nearly two decades.

3.4.1 Overhead Transmission Line Construction

The procedures for bringing personnel, materials, and equipment to each structure site, installing the supporting structure foundations, erecting the supporting structure, and stringing the conductors may vary slightly along each segment or at any particular structure site. However, the following steps provide the general methods used to construct an overhead transmission line.

3.4.1.1 Step 1 – Spur Road Construction (as-needed)

The first step in constructing the overhead line is to install the new spur roads required to access the new structure sites. These roads would be graded and would generally be 12 to 14 feet wide for straight sections and up to 20 feet wide at sharp curves when necessary to ensure safe movement of construction equipment and vehicles. Due to the fact the Proposed Project would follow existing transmission corridors; construction access to new structure sites would generally be available by way of existing access roads. Existing access roads may be re-established or otherwise maintained to ensure that construction access is available. Based upon preliminary engineering, approximately one new spur road would be required to access Structure No. P2 along Segment A (refer to Appendix 3-B)[13].

3.4.1.2 Step 2 – Construction and Maintenance Pads

After access to each new structure site has been established, work pads are created that would be utilized for construction, operation and maintenance. Work areas utilized solely for construction are often simply cleared of vegetation, and grading is only undertaken where relatively flat areas

[13] Additional spur roads may be required based upon further detailed engineering and constructability review.

are not already present. Construction activities will often utilize existing flat, cleared areas such as existing access roads and previously disturbed areas. For pole construction within existing utility corridors, including projects that involve pole replacements, the line maintenance pads are also utilized for construction activities. This is the case for the Proposed Project as most of the new poles involve the construction of new poles in close proximity to existing poles that would be removed and replaced. The amount of space needed for construction of new structures varies depending upon the size and type of the structure, the surrounding topography, and the presence of sensitive resources. Section 3.4.6.3 further describes the amount of space typically required for construction of overhead power and transmission line structures.

Transmission line maintenance pads are cleared and graded flat, and are maintained free of vegetation for the operational life of the project. As needed, retaining walls would be installed to ensure safety and stability of the transmission line maintenance pad where geologic and topographic conditions warrant.

3.4.1.3 Step 3 – Installing Structure Foundations

Prior to installing the support structure foundations, vegetation at each of the structure sites would be cleared and the area would be graded either flat or in a terraced fashion, as needed. At some sites, soil may be imported as necessary to raise the elevation of the structure pads, and retaining walls may be needed. Material removed during the process would be spread over existing access roads and work pads as appropriate, or disposed of off-site according to all applicable laws.

Concrete Pier Foundations

A large auger would be used to excavate holes that could range from 6 feet to 11 feet in diameter, but would typically be 9 feet in diameter. Foundation depth would typically range from approximately 20 to 40 feet deep, but could increase due to soil conditions. If unstable soils conditions are encountered, hole excavations may require installation of steel casings to stabilize the sides of the excavation. The casing diameter would approximately match the diameter of the excavation. The length of the casing installed would normally be to the full depth of the excavation. The length of individual sections of casing are typically limited to 20 feet so multiple sections of casing may be used on deeper foundations. Following excavation, a reinforcing steel cage and anchor bolt cage would be installed in each hole. The steel cages would typically be assembled at the materials storage and staging areas and transported to each of the structure sites. The anchor bolt cages would be assembled offsite and delivered to each structure site. Typical foundations would require approximately 45 to 90 cubic yards[14] of excavation and a slightly larger volume of concrete placed into the holes as the foundations would extend one to two feet above the ground surface. Due to their larger diameter, cable pole foundations could require up to approximately 175 cubic yards[15] of concrete. The concrete curing period is approximately one month, during which time workers would remove the concrete forms and place backfill around the foundations as needed.

[14] Assumed a typical 9-foot diameter foundation extended to depths ranging from 20 to 40 feet.
[15] Assumes an 11-foot diameter foundation extended to an extra deep excavation (50 feet) due to unstable soils.

Micropile Foundations

A micropile foundation consists of several small diameter, drilled and grouted reinforced foundations, arranged in a circular pattern. One micropile typically consists of a small hole (approximately 6 to 8 inch diameter) excavated to a depth of approximately 10 to 40 feet depending on the properties of the soil or rock underlying the surface. A steel rod is inserted into the hole and centered, and the surrounding annulus is filled with a non-shrink grout. The steel rod protrudes above grade to be connected to a transition steel plate or to a concrete cap supporting the structure above grade. Loads from the above structure are transferred to the steel rod, and then transferred from the rod to the grout to the surrounding soil. A steel pipe or casing is often inserted in the upper portions of the micropile to add strength for shear transfer and to provide for local upper-portion unbonded axial movement of the rod.

The micropiles are typically installed from a platform situated approximately 6 feet above the ground surface. The platforms and all equipment can be placed by truck-mounted crane or flown to sites by helicopter. The platform is supported on 4 to 6 telescoping legs that can be adjusted to support the platform on slopes. The drilling process takes place from the platform, and drills are powered by generators or compressors that either rest on the platform or are supported nearby on the ground.

For electric transmission and power line structure support, a series of approximately 4 to 16 (or more) individual micropiles are arranged in a circular pattern to take the place of a larger conventional reinforced concrete drilled pier that would typically be approximately 4 to 10 feet diameter and 10 to 40 feet deep. Equipment used for the micropile installations is smaller and more portable than the large drill rigs used for drilled pier excavation and construction and can be flown in to inaccessible areas. Micropile foundations are more suitable for inaccessible areas due to terrain and areas where access may be prohibited due to environmental or agency concerns. Micropile foundations are also suitable for rock areas where excavation of the rock for conventional drilled piers would be difficult and entail the use of blasting or rock breakers with augers, or core barrels. The spoils and local disturbances created by micropiles are much less than that of conventional drilled concrete piers.

Other Considerations during Foundation Construction

It is not currently anticipated that blasting would be required to complete construction of the Proposed Project. However, in some locations where significant or dense rock is present, blasting may be required. Section 3.4.5, Blasting, describes the blasting process, should it be necessary.

Dewatering may also be necessary in some locations. Prior to construction, SDG&E will acquire coverage under the General Permit for Storm Water Discharges Associated with Construction Activity (General Construction Permit) from the SWRCB and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will detail project information, dewatering procedures, storm water runoff prevention control procedures, monitoring and reporting procedures, and best management practices (BMPs). Bentonite or similar stabilizing materials may be used to support foundation installation when water is present within the excavation.

3.4.1.4 Step 4 – Structure Erection

Based upon preliminary engineering and constructability review, it is anticipated that construction of transmission and power line structures would be conducted utilizing ground equipment such as cranes, flatbed trucks, drill rigs and excavators. Helicopters may be used during stringing activities, but are not anticipated to be utilized for pole removal or erection. The proposed alignment contains existing access and work space which would help accommodate ground-based construction equipment.

New steel poles would be delivered to the structure sites in two or more sections via flatbed truck and assembled on-site using a small truck-mounted crane. The poles would typically have six crossarms (for double-circuit poles) that would support one circuit on each side. The crossarms would be bolted to the pole, and the insulators would be bolted to the crossarms. After assembly, a large crane would be used to lift to set the pole sections into place on the anchor bolts that are either embedded in the concrete foundation or attached to the micropile foundations. The nuts on the foundation would then be tightened and secured.

3.4.1.5 Step 5 – Existing Facilities Removal

As previously described, construction of the Proposed Project segments would involve the removal of certain existing power line poles and structures (mainly wood with a few steel structures). Refer to Appendix 3-B for the location of all poles to be removed. First, the existing conductor would be removed from the poles using wire trucks and pulling rigs. Guard structures would be utilized as needed. For segments requiring reconductoring, existing hardware and insulators would be removed and replaced with new polymer insulators and hardware. For structures that would be removed from service (such as existing TL 13820/13825 along Segments A and TL 675 along Segment D), the old poles and components would be dismantled by cranes, bucket truck, or by hand, and would be hauled away by truck. Wood poles to be removed would either be removed to full depth or cutoff approximately 2 feet below grade depending upon environmental constraints at specific locations. After the poles have been removed, any existing concrete foundations would be jack hammered to approximately 2 feet below grade, and debris would be removed. The hole would then be backfilled with soil or materials similar to the surrounding area and the site would be restored. All structural removal would be completed from existing work pads (typically 35 feet by 75 feet) located at each existing pole site or using new structure temporary work areas, as-needed. No new impact areas are anticipated to be required for removals. These areas are kept clear of vegetation for operation and maintenance activities.

3.4.1.6 Step 6 – Guard Structure Installation

Prior to installing the new overhead conductor, SDG&E would utilize temporary guard structures at road crossings and other locations where the new conductor could come in contact with existing electrical and communication facilities, or vehicular and/or pedestrian traffic in the event the line accidentally falls during stringing operations. Different types of guard structures may be used, depending on the site conditions. Guard structures typically consist of directly embedded wood poles with cross-beam attached to side extensions. In some locations, such as paved areas, a boom or bucket truck may be used as a guard structure. Where embedded wood guard structures are used, an auger would be used to excavate the holes where the wood poles

would be installed and a crane or line truck would lift the poles into place. No concrete foundations are required to set the guard poles and no grading or other site work is anticipated. The temporary guard poles would be removed following the completion of conductor stringing operations and the holes would be backfilled with excavated soil.

Alternatively, SDG&E may use flaggers to temporarily hold traffic for brief periods of time while the overhead line is installed at road crossings. Typically, guard structures are utilized at larger crossings such as large roadways, sensitive waterways, and utility crossings. Traffic control is typically utilized for small roadway crossings. For extremely large crossings such as freeways, both guard structures and traffic control may be used, as well as netting connecting the guard structures. SDG&E will acquire all required encroachment permits and road crossing approvals, including implementation of any special guard structure procedures or requirements as directed by each oversight agency.

3.4.1.7 Step 7 – Conductor Stringing

Conductor stringing operations begin with the installation of travelers or "rollers" on the bottom of each of the insulators using helicopters or aerial manlifts (bucket trucks). The rollers allow the conductor to be pulled through each structure until the entire line is ready to be pulled up to the final tension position. Following installation of the rollers, a sock line (a small cable used to pull the conductor) is pulled onto the rollers from structure to structure using helicopters or aerial manlifts traveling along the ROW. Once the sock line is in place, it is attached to the conductor and used to pull or "string" the conductor into place on the rollers using conventional tractor-trailer pulling equipment located at pull and tension sites along the line. The conductor is pulled through each structure under a controlled tension to keep it elevated and away from obstacles, thereby preventing third-party damage to the line and protecting the public. This "stringing" process is conducted using areas referred to as "stringing sites". Stringing sites are typically split into two types during stringing activities; "pull sites" and "reel sites". The reel site is used to park a large spool of conductor on a wire truck while the pull site is used to position the pulling rig that pulls the conductor. Each stringing site can be used as a pull or reel site, as needed. Stringing sites are typically required every 9,000 feet and at locations where the conductor changes direction (i.e. angle points).

After the conductor is pulled into place, the sags between the poles are adjusted to a pre-calculated level. Pursuant to General Order 95, the line would be installed with a minimum ground clearance of 30 feet (25 feet where there is pedestrian access only). The conductor is then clipped into the end of each insulator, the rollers are removed, and vibration dampers and other accessories are installed.

During the conductor stringing, the OPGW (shield wire with fiber optics) is also strung on top of the transmission line poles in a similar fashion to the conductor stringing.

A helicopter would be used during stringing operations to install the sock line that would be used to pull in the conductor. For stringing operations, it would generally take approximately half a day to pull in three phases of conductor for approximately 9,000 feet of transmission line. The helicopter would then not be needed again for two to three weeks until the next section of line is ready to be pulled. Helicopter activities would be staged out of existing airports where possible, and incidental landing areas, as needed.

3.4.1.8 Step 8 – Site Cleanup

SDG&E would restore all areas that are temporarily disturbed by the Proposed Project activities (including pull sites, reel sites, structure removal sites, and staging areas) to near preconstruction conditions following the completion of construction. Restoration would include grading and restoration of sites to original contours and reseeding, as appropriate. Vegetation will be returned to pre-project conditions as required by the SWPPP. In addition, all construction materials and debris will be removed from the Proposed Project area and recycled or properly disposed of off-site. SDG&E will conduct a final survey to ensure that cleanup activities are successfully completed as required.

3.4.2 Underground Transmission Line Construction

The following steps provide the general methods used to construct an underground transmission line as proposed as Segment B of the Proposed Project.

3.4.2.1 Step 1 – Vault Installation

SDG&E would excavate and place precast concrete splice vaults during the trenching operation (refer to Appendix 3-C for typical vault diagram). The vaults would be used initially to pull the cables through the conduits and later to splice cables together. During operation, the vaults would provide access to the underground cables for maintenance inspections, repairs, and replacement if needed. The vaults would be constructed of prefabricated (precast) or cast-in-place, steel-reinforced concrete. Each vault typically has two manhole covers measuring approximately 36 inches in diameter. Installation of each vault would occur over an approximate one-week period with excavation and shoring of the vault pit followed by delivery and installation of the vault, filling, grouting and compacting the backfill, and repaving the excavated area. The backfill may be slurry or concrete.

3.4.2.2 Step 2 – Trenching and Duct Bank Installation

Trenching

All trenching would utilize an engineered design containing an alignment to follow and plan and profile drawings showing the location and type of existing underground facilities located during the design phase of the project. Prior to trenching, SDG&E or their contractor would notify other utility companies (via Underground Service Alert) to locate and mark existing underground utilities along the proposed underground alignment. SDG&E would conduct exploratory excavations (i.e., potholing) to verify the locations of existing facilities marked out in the field prior to excavating. SDG&E would coordinate with local jurisdictions to secure excavation and encroachment permits for trenching in city streets, as required. Where partial road closures are required, proper traffic controls will be implemented as outlined within individual encroachment permits obtained from the local municipality as required. Specific road or lane closures anticipated during construction of the Proposed Project are discussed in Section 3.4.7, Road Crossings.

The majority of the duct bank would be installed using open-cut trenching techniques. Most of the duct bank would have a double-circuit vertical duct bank configuration, with occasional transitions to a flat configuration to clear existing substructures in highly congested areas or to

fan out to termination structures at the cable pole transition area. The typical trench dimensions for installation of a 230 kV vertical duct bank would be a minimum of 6 feet deep and 3.5 feet wide, although depth may vary to circumvent existing facilities. The trench will be widened and shored where necessary to meet California Occupational Safety and Health Administration safety requirements. Concrete saw cutting slurry produced during trenching would be cleaned from the street and not allowed to reach the curb or storm drain inlet. If trench water is encountered, trenches will be dewatered using a portable pump and disposed of in accordance with acquired permits. General dewatering procedures are described in Section 3.4.4 and similar procedures would be implemented during underground transmission line construction.

Trenching operations would be staged in intervals so that only a maximum of approximately 300 to 500 feet of trench would be left open at any one time or as allowed by permit requirements. This would generate approximately 300 cubic yards per day[16] of excavated material. Steel plating would be placed over the open trenches to maintain vehicular and pedestrian traffic across areas that are not under active construction. Traffic controls will also be implemented to direct local traffic safely around work areas, as stipulated within individual encroachment permit conditions as required. SDG&E would coordinate provisions for emergency vehicle and local access with local jurisdictions, as necessary (further detail is provided within Section 4.14, Transportation and Traffic).

Throughout trench excavation and installation of the duct bank and vaults; asphalt and concrete would be transported to a materials storage yard. Excavated soils not suspected to be impacted would be disposed of at an appropriate facility[17]. Soil that is stained, odorous or otherwise suspect would be sampled in-place, tested, profiled and transported to an appropriately permitted landfill.

Should suspect soil be encountered during trenching activities, SDG&E would sample in–place, test, profile and transport this material to an appropriately permitted disposal facility in accordance with all Federal, State and local laws and regulations.[18] The number of truck trips to transport excavated materials to storage yards and/or disposal facilities would vary based on the rate of the trenching, the area excavated to install the vaults, and proximity of the storage yards/disposal facilities to the ROW. However, approximately 15 to 20 truck trips per day would be required during trenching activities at one site. Truck trips for materials transport would increase for the Proposed Project as a whole when trenching activities occur at multiple locations. Jackhammers may be used sparingly to break up sections of concrete that the saw-cutting and pavement-breaking machines cannot reach. Other miscellaneous equipment may

[16] Assumes two crews trenching approximately 150 feet per day, with average trench dimensions of 8 feet deep by 3.5 feet wide.

[17] The construction contractor would identify a disposal facility for clean soils and an appropriate recycling facility for recyclable construction debris.

[18] SDG&E has identified two potential hazardous and two non-hazardous waste disposal facilities. SDG&E has identified as potential hazardous waste landfills: 1) Waste Management Kettleman Hills Facility, located approximately 290 miles north of the Proposed Project in Kettleman City, California; and 2) Clean Harbor Environmental Services in Buttonwillow, California, which is located approximately 240 miles north of the Proposed Project. For non-hazardous waste, SDG&E has identified Non-Hazardous Waste Landfills Republic Services, Otay Landfill in Chula Vista, California, located approximately 20 miles south of the Proposed Project, and Soil Safe, Inc., Soil Recycler in Adelanto, California, located 135 miles north of the Proposed Project.

include a concrete saw, back hoe, excavator, roller compactor, water truck, various paving equipment, and standard 1-ton pickup trucks.

Duct Bank Installation

As each section of the trench for the underground 230 kV duct banks are completed, SDG&E would install the conduits (separated by spacers) and place 2,000 psi concrete around the conduits to form the duct bank encasement. The ducts would typically consist of 8-inch diameter polyvinyl chloride (PVC) conduits, which house the electrical cables, and 2-inch diameter PVC conduits for the telecommunications cable used for system protection and communication. The dimensions of the duct banks would be approximately 3 feet wide by 3 feet in height and located in the trench at a minimum depth of 3 feet from top of the encasement to the surface. Appendix 3-C contains typical duct bank diagrams and Appendix 3-B depicts the approximate location of proposed trenching.

Once the PVC conduits are installed and encased, a fluidized thermal backfill would be utilized to fill most of the remainder of the trench. Finally, an aggregate road base or backfill or slurry concrete with an Asphalt Concrete cap will be installed to restore the road in compliance with local requirements. While the completed trench sections are being restored, additional trench would be opened further down the street. This process would continue until the entire duct bank is in place. Each duct bank would have a minimum of 36 inches of cover. Larger trenches would be excavated where vaults are installed (refer to Step 1 - Vault Installation).

Where the duct banks cross or run parallel to other utilities, a minimum radial clearance of 18 inches would be required. These utilities include gas lines, telephone lines, water mains, storm drains, and sewer lines. Where the duct banks cross or run parallel to other substructures that have operating temperatures that significantly exceed earth temperature, an increased radial clearance may be required. Such heat-radiating facilities may include other underground transmission circuits, primary distribution cables (especially multiple-circuit duct banks), steam lines, or heated oil lines.

The new 230 kV underground system would cross one existing bridge located along Carmel Valley Road approximately 1.2 miles west of Camino Del Sur. The bridge is composed of single span, box girder construction, approximately 131 feet in length. The proposed new duct system would utilize an empty bridge cell measuring approximately 4.5 feet high by 8.5 feet wide. A 40-inch bore would be required at each end of the bridge to penetrate the abutment back wall and bridge end diaphragms. A 36-inch steel casing will be inserted at both ends and grouted per City of San Diego requirements. Two to four 30-inch by 30-inch openings would be cut in the bridge deck to provide working access to the cell. Duct spacers and supports would be secured at 4- to 6-foot intervals along the length of the cell to support the ducts and maintain spacing. Once the duct package is installed through the bridge and tied into the duct system at both ends outside the bridge, all openings will be closed per City of San Diego Specifications.

3.4.2.3 Step 3 – Cable Pulling, Splicing, and Termination

After installation of the conduit and splicing vaults, SDG&E would install cables in the duct banks. Each cable segment would be pulled into the duct bank, spliced at each of the vaults along the route, and terminated at the transition area where the line transitions to the overhead

sections. To pull the cable through the ducts, a cable reel is placed at one end of the section and a pulling rig is placed at the other end

The electric cables and the communication cable would be pulled through the individual ducts at the rate of approximately two segments between vaults per day. A splice trailer would be positioned adjacent to the vault manhole openings to facilitate cable splicing at the vaults after the cables are pulled through the ducts. Each splice would require approximately three working days to complete. The vaults must be kept dry at all times to keep the unfinished splices dry and prevent other impurities from affecting the cables. At each end of the underground segment, the cables transition from underground to overhead (or vice versa) on the cable pole.

3.4.2.4 Step 4 – Site Cleanup

As part of the final construction activities, SDG&E would:

- Restore all removed curbs, gutters, and sidewalks;
- Repave all removed or damaged paved surfaces;
- Restore landscaping or vegetation as necessary;
- Replace any damaged or removed fencing; and
- Remove all construction materials from the construction site.

3.4.3 Outage Coordination

SDG&E would coordinate line outages in order to maintain system reliability and construction personnel safety. Based upon preliminary engineering, SDG&E does not anticipate any project based interruption of service to customers during construction.

3.4.4 Dewatering

If required, dewatering will be conducted pursuant to applicable SDG&E standard practices and water quality regulations, including National Pollutant Discharge Elimination System (NPDES).

3.4.5 Blasting

If rock is encountered during excavation, a hydraulic rock drilling and splitting procedure (rock-splitting) may potentially be used to minimize trenching or drilling time, depending on site specific conditions. The procedure involves drilling a hole in the rock and inserting a non-blasting cartridge of propellant. The cartridge is mechanically initiated by an impact generation device. This hydro-fracturing effect causes controlled tensile crack propagation in the rock and does not result in flyrock, noxious fumes, or ground vibrations.

In the unlikely event that rock blasting is used during construction where solid rock is present and where the hydraulic rock drilling and splitting procedure would be ineffective, the following procedure would be utilized to minimize both drilling time and noise impacts. The procedure involves drilling approximately 3-inch-diameter blast holes to the full depth of the shaft and inserting explosives. Blasting caps are connected, and a non-electric detonator is employed. Flyrock protection is installed prior to blasting, and seismographs are placed to measure and record peak particle velocity and air blast levels at various distances from the blast site. Dust

control would include a combination of steel plate covering, geo-textile fabric with chain link fence covering, and wetting the blasting surface. If blasting is utilized with the Proposed Project, the blasting contractor would be required to obtain a blasting permit and explosive permit per applicable local regulatory ordinances. The appropriate BMPs would be used before, during, and after all project-related construction activities where necessary to prevent erosion and offsite sedimentation.

3.4.6 Temporary Work Areas

Work areas would be required for construction of new facilities, removal of existing facilities, and storage and staging of construction equipment and materials. Each of these temporary work areas are described below.

During construction, alteration to the temporary work spaces may be required to accommodate construction activities. Any necessary changes will be evaluated per *SDG&E's Subregional NCCP*, the Proposed Project SWPPP, aquatic resources, and for cultural resources in order to avoid impacts to sensitive resources and to identify any necessary changes to the SWPPP.

Table 3-9, Temporary Work Areas Summary, outlines the estimated total work area required for construction of the Proposed Project.

Table 3-9: Temporary Work Areas Summary

Work Area Type	Estimated Number	Estimated Total Area (Acres)[1]
Material Storage and Staging Yards	5 yards	25[2]
Stringing Sites	20 stringing sites	16.5
Structure Work Areas[3]	62 structures	27.1
Guard Structures	48 guard structures	1.7
Underground Construction (230 kV)	2.84 miles	8.8
Underground Construction (138 kV)	850 feet	0.7
Total	**N/A**	**79.81**

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] Work area values do not include overlap. For example, most stringing sites overlap with structure work areas. However, these overlap areas are only counted towards one type of work even though they are utilized for more.
[2] 25 acres is estimated for total staging yard area use. The five potential staging yards identified include a much larger area. It is anticipated that for Staging Yards Nos. 3-5, only a portion of the identified site would actually be utilized. The actual size of the staging yards would be dependent upon the availability at the time of construction.
[3] Includes work area for pole removals. Most poles to be removed are located within the work areas for new structures installation (refer to Appendix 3-B). However, approximately 17 structures to be removed are not located within a structure installation work area. Separate area for the removal of these 17 structures has been included herein.

Source: *SDG&E*

3.4.6.1 Materials Storage and Staging

The Proposed Project includes approximately five temporary construction staging yards (refer to Appendix 3-B), resulting in a total area of approximately 25 acres. The staging areas may be used for refueling areas for vehicles and construction equipment by a mobile fueling truck, pole assemblage, open storage of material and equipment, construction trailers, portable restrooms, parking, lighting and may include generator use for temporary power in construction trailers and incidental landing areas for helicopters. Construction workers typically meet at the staging yard each morning and park their vehicles at the yard. In-ground fencing would be installed at the staging yards wherever it is not already installed. Gravel may be used to line the ground at staging yards to avoid the creation of unsafe mud conditions and unnecessary sediment transport off site.

SDG&E has attempted to identify a reasonable number of staging yards commensurate with the size, location, and scope of the Proposed Project. Past staging yards were identified, as well as large undeveloped areas near one or more portions of the Proposed Project that have been previously disturbed and/or graded. While SDG&E has exercised reasonable diligence in identifying potential construction staging yards, there is no guarantee that the identified staging yards would be available by the time the Proposed Project is set to begin construction. Other potential staging yards may be identified as part of the environmental review process.

Staging Yard No. 1 (Stonebridge)

The potential construction staging yard at Stonebridge Parkway is approximately 4 acres in size and is located approximately 800 feet northeast of the Sycamore Canyon Substation. The Stonebridge staging yard has been utilized on recent past projects by SDG&E and others and the site has been previously disturbed and graded. SDG&E currently anticipates utilizing Staging Yard No. 1 again during construction of the Proposed Project.

Staging Yard No. 2 (Stowe)

The potential construction staging yard at Stowe Road is approximately 4 acres in size and is located approximately 1.6 miles north of the Sycamore Canyon Substation, within the City of Poway. Staging Yard No. 2 has been utilized recently by SDG&E as a construction staging yard and has been previously graded and fenced. SDG&E currently anticipates utilizing Staging Yard No. 2 again during construction of the Proposed Project.

Staging Yard No. 3 (Torrey Santa Fe)

The potential construction staging yard at Torrey Santa Fe Road consists of a total area of approximately 23 acres that have been identified for potential use for staging during construction. Staging Yard No. 3 is located approximately 0.7 mile east of Segment C of the Proposed Project. The entire site has been previously graded. SDG&E would utilize some portion of Staging Yard No. 3, as space is available at the time of construction. It is not currently anticipated that SDG&E would utilize the entire 23 acre site, but that SDG&E could utilize a portion of the 23 acre site. SDG&E has utilized a portion of Staging Yard No. 3 for another project and anticipates utilizing some portion of the site during construction of the Proposed Project.

Staging Yard No. 4 (Carmel Valley Road)

The potential construction staging yard at the intersection of Carmel Valley Road and Camino Del Sur consists of a total area of approximately 26 acres that have been identified for potential use for staging during construction. Staging Yard No. 4 is located immediately adjacent to Segment B of the Proposed Project. The entire site has been previously graded. Staging Yard No. 4 is currently being utilized as a construction staging yard for the construction of another nearby project. SDG&E anticipates utilizing Staging Yard No. 4 if it is available during construction of the Proposed Project. It is not currently anticipated that SDG&E would utilize the entire 26 acre site, but that SDG&E could utilize a portion of the 26 acre site.

Staging Yard No. 5 (Carmel Mountain Road)

The potential construction staging yard on Carmel Mountain Road consists of a total area of approximately 100 acres that have been identified for potential use for staging during construction. Staging Yard No. 5 is located immediately adjacent to Segment D of the Proposed Project. The entire site has been previously graded. SDG&E anticipates potentially utilizing a portion of Staging Yard No. 5 if it is available during construction of the Proposed Project. It is not currently anticipated that SDG&E would utilize the entire 100 acre site, but that SDG&E could utilize a portion of the 100 acre site.

Incidental Landing Areas

Incidental landing areas (ILAs) are used for short term helicopter operations, such as picking up conductor or other equipment. Helicopters would be staged out of local airports (such as McClellan Palomar, Montgomery, and Gillespie) and would utilize construction staging areas as ILAs. Helicopter staging activities, such as refueling and maintenance, would be conducted at the local airport(s).

3.4.6.2 Stringing Sites

Approximately 20 stringing sites[19] may be required and are listed and described below (refer to Appendix 3-B for graphic representation of the proposed stringing sties):

Segment A - Sycamore Substation to Carmel Valley Road (Eastern Cable Pole)

- Stringing Site No. 1 is located near Structure No. P3 as the new 230 kV line exits Sycamore Canyon Substation and traverses to the east. Stringing Site No. 1 is approximately 1 acre in size and would be accessed from the existing access road adjacent to the Sycamore Substation. This stringing site would also be utilized as a stringing site for the proposed OPGW.

[19] It is important to note that areas included for stringing sites include area that could potentially be utilized during stringing activities, but that would not necessarily be directly impacted/disturbed (e.g. cleared of vegetation, if any, for active work). The area of direct impact/disturbance would in actuality be smaller than the listed area, but would typically occur within the identified boundary of each stringing site as described in this section of the PEA and depicted in Appendix 3-B.

- Stringing Site No. 2 is located between Structure Nos. P7 and P8. Stringing Site No. 2 is approximately 0.2 acre in size and would be accessed from existing SDG&E access roads that are accessible via Wild Meadow Place.
- Stringing Site No. 3 is located between, and includes the adjacent area around Structure Nos. P15 and P16. The conductor would need to be snubbed to the ground and spliced together within this span. Therefore, the area of this stringing site would be the entire length between Structure Nos. P15 and P16, including some overlap northwest of P16 and southwest of P15. Stringing Site No. 3 is approximately 3 acres in size and would be accessed from existing SDG&E access roads via the Scripps Poway Parkway. Additionally, Structure No. P16 would serve as a splice location for the OPGW.
- Stringing Site No. 4 is located near Structure No. P21. Stringing Site No. 4 is approximately 1.1 acres in size and would be accessed from existing SDG&E access roads via the access road in the parking lot off of Ivy Hill Drive.
- Stringing Site No. 5 is located near Structure No. P21. Stringing Site No. 5 is approximately 0.2 acre in size and would be accessed from existing SDG&E access roads via the access road in parking lot off of Ivy Hill Drive.
- Stringing Site No. 6 is located near Structure No. P24. Stringing Site No. 6 is approximately 1.2 acres and would be accessed from existing SDG&E access roads via the access road from Poway Road.
- Stringing Site No. 7 is located near Structure No. P26. Stringing Site No. 7 is approximately 0.75 acre in size and would be accessed from existing SDG&E access roads via the private parking lot off of Via Del Sur. Additionally, Structure No. P26 would also serve as a splice location for the OPGW.
- Stringing Site No. 8 is located near Structure No. P35. Stringing Site No. 8 is approximately 1.6 acres in size and would be accessed from existing SDG&E access roads via Sundevil Road.
- Stringing Site No. 9 is located near Structure No. P36. Stringing Site No. 9 is approximately 1.5 acres in size and would be accessed from existing SDG&E access roads via Laurentian Drive.
- Stringing Site No. 10 is located near Structure No. P41. The stringing Site No. 10 is for stringing associated with this cable pole and is approximately 0.25 acre in size and would be accessed from existing SDG&E access roads via private drive from Carmel Valley Road.

Segment C - Carmel Valley Road (Western Cable Pole) to Peñasquitos Junction

- Stringing Site No. 11 is located north of the cable pole option (Structure No. P42), on the north side of Carmel Valley Road at the western termination of the underground alignment. Stringing Site No. 11 is approximately 0.95 acre in size and would be accessed from the access road through Evergreen Nursery via Carmel Valley Road.

- Stringing Site No. 12 is located at the existing cable pole option south of Carmel Valley Road on the west side of the underground alignment (Structure No. P42). The area required would be the entire span length due to pulling conductor from both directions. Stringing Site No. 12 is approximately 0.78 acre in size and would be accessed from existing SDG&E access roads via Carmel Valley Road.
- Stringing Site No. 13 is located south of existing Structure No. E5. The area required would be the entire span length due to pulling conductor from both directions. Stringing Site No. 13 is approximately 1.1 acres in size and would be accessed from existing SDG&E access roads via Santa Fe Canyon.
- Stringing Site No. 14 is located at existing Structure No. E7. The area required would be used for pulling the OPGW and splicing. Stringing Site No. 14 is approximately 0.23 acre and would be accessed from existing SDG&E access roads via Sante Fe Canyon.

Segment D - Peñasquitos Junction to Peñasquitos Substation

- Stringing Site No. 15 is located at the Peñasquitos Junction between existing Structures Nos. E13 and E14, and includes the area encompassing proposed Structure Nos. P43 and P44. The area required would be used for pulling both the 230 kV conductor from the north and 69 kV conductor to the west. Stringing Site No. 15 is approximately 0.98 acre and would be accessed via access road from Park Village Road.
- Stringing Site 16 is located at existing Structure No. E19 and proposed Structure No. P51. The area required would be used for pulling the OPGW and splicing. Stringing Site No. 16 is approximately 0.28 acre in size and would be accessed from existing SDG&E access roads via Carmel Mountain Road.
- Stringing Site No. 17 is located at existing Structure No. E22 and proposed Structure No. P54. The area required would be used for installing full-tension sleeves for the conductor for all new conductor installations. Stringing Site No. 17 is approximately 1.21 acres and would be accessed from existing SDG&E access roads from Briarlakes Wood Drive.
- Stringing Site No. 18 is located between existing Structure Nos. E24 and E25, and between proposed Structure Nos. P56 and P57. Stringing Site No. 18 is approximately 1.14 acres and would be accessed from existing SDG&E access roads from East Ocean Air Drive.
- Stringing Site No. 19 is located on the west side of Structure No. P60 on the 69 kV lines, and between Structure Nos. E28 and E29 on the reconductored 138 kV and proposed 230 kV (230XX) lines. Stringing Site No. 19 is approximately 1.12 acres and would be accessed from existing SDG&E access roads at Peñasquitos Substation.
- Stringing Site No. 20 is located on the southwest side of existing Structure No. E29 and would be used to string in the new 230 kV and existing TL 13804 lines. Stringing Site No. 20 is approximately 0.44 acre and would be accessed from existing SDG&E access roads from Peñasquitos Substation.

The location of stringing sites may be modified or additional stringing sites may be identified during construction in order to safely and efficiently string wire.

3.4.6.3 Structure Work Areas

Installation of the new 69, 138, and 230 kV steel poles throughout the Proposed Project as described in Section 3.4.1 above would typically require approximately 22,500 square foot work areas (this area may be smaller or larger at various locations). However, because most of the new poles would be located in the immediate vicinity of existing poles, the actual proposed work areas would often be much smaller as existing maintenance pads and access roads would be utilized during construction of new poles as much as possible. These work spaces provide a safe working area for equipment, vehicles, and materials during pole installation and maintenance. A minimum of 15 feet of clearance (approximately 700 square feet) would be maintained around certain new transmission poles for the purposes of maintenance and inspection activities.

In addition to temporary construction work areas, new poles would require a permanent maintenance pad, which is typically approximately 50 by 75 feet in size. These areas are considered a permanent work space and would be kept relatively flat and un-vegetated. It is important to note that the 15 feet of clearance around each pole and the required maintenance pads would often overlap. Any work space not required for safety during operation and maintenance would be restored to as close as possible pre-construction conditions following the completion of the Proposed Project. All pole removal would be completed from existing line maintenance pads and access roads.

The temporary impact areas may vary because the positioning of construction vehicles, equipment, and materials cannot be accurately anticipated prior to construction. The locations of the construction vehicles, equipment, and materials are dependent upon the contractor safely performing the work. The impacts from construction vehicles, equipment, and materials staged outside of delineated temporary work areas would be evaluated by the on-site biological monitor prior to their placement. The monitor, as appropriate, would assist crews in placement of construction vehicles, equipment, and materials to avoid and minimize impacts to sensitive habitat types. In addition, in order to maintain a safe working space for crewmembers working directly under poles, construction vehicles, equipment, and materials may need to be staged off of existing access roads and/or outside of delineated temporary work areas. However, the on-site biological monitor would assist crews in locating appropriate staging areas for construction vehicles, equipment, and materials that avoids and minimizes impacts to sensitive habitat types. Any temporary impacts associated with placement of construction vehicles, equipment, and materials would be recorded by the biological monitor and will be included within the project Post Construction Report and will be mitigated as necessary, pursuant to the *SDG&E Subregional NCCP*.

3.4.6.4 Guard Structures

Bucket trucks are often utilized as guard structures during stringing activities. Where wooden poles are used as guard structures instead, installation requires the temporary use of up to approximately 1,500 square feet of area, depending upon guard structure configuration and location. The temporary work area is located in the immediate vicinity of the guard structure location. No permanent impacts would result from the utilization of guard structures. Guard structure installation utilizing wood poles would include excavation of holes approximately 3 feet in diameter and 10 feet in depth. Excavated soils would be temporarily stock piled and then replaced within the excavation following stringing activities.

3.4.6.5 Temporary Right-of-Way

Construction is anticipated to occur within existing ROW, except for construction staging areas. No temporary construction easements are anticipated to be required.

3.4.6.6 Access

Construction would primarily take place within the existing SDG&E ROW easements and access roads and public roadways. Most work areas are accessible by vehicle on unpaved SDG&E-maintained access roads or by overland travel[20]. To enable crews and equipment to access the associated poles, smoothing or refreshing of the existing access roads and/or vegetation clearing would be necessary to improve some existing access roads and to re-establish unmaintained access roads. Pursuant to *SDG&E's Subregional NCCP*, SDG&E is not required to mitigate for impacts to vegetation resulting from road maintenance (i.e., re-establishing) of existing access roads. Based upon preliminary engineering, one new spur road would be required for access to Structure No. P2. Cleared vegetation would be removed from the project site and disposed of at an approved offsite facility. Vehicles will remain within existing access roads, previously disturbed areas, and designated temporary work areas, where feasible.

In addition, contractors may require additional turn around and vehicle passing locations in order to safely operate construction vehicles and equipment. However, the on-site biological monitor would assist crews in locating vehicle turn around and passing areas that avoids and minimizes impacts to sensitive habitat types. Any temporary impacts associated with turn around and passing areas would be recorded by the biological monitor and would be included within the project Post Construction Report, and will be mitigated as necessary, pursuant to the *SDG&E Subregional NCCP*. At designated drainage crossing locations along the access roads, the blade of smoothing equipment would be lifted 25 feet on either side of the drainage to avoid impacts to the drainage. Temporary bridging of drainage crossings may be utilized wherever feasible.

3.4.6.7 Underground Transmission Line Construction

The majority of the underground transmission line construction included as part of the Proposed Project would utilize the cut and cover construction method, which typically requires approximately 25 feet width of space for construction. At vault locations, approximately 50 feet width of space would be required for installation of the new underground splice vaults along Segment B.

3.4.7 Road Crossings

Typically, guard structures are used for larger road crossings and traffic control is utilized for locations where overhead lines cross smaller roads. Where traffic control is utilized at road crossings, SDG&E will obtain encroachment permits as required by the applicable local municipal agency. Guard structures are discussed in Sections 3.4.1 and 3.4.6.4 above. However, special conditions exist for freeway crossings such as where the Proposed Project route crosses

[20] Overland travel refers to temporary vehicular access across un-improved areas. Overland travel areas are not graded or subjected to other earthwork improvement. Following construction these areas are returned to an approximate pre-construction state.

Highway (Hwy) 56 and Interstate 15 (I-15), which are under the jurisdictional authority of the California Department of Transportation (Caltrans). Crossing at these locations will be conducted pursuant to Caltrans approved methods, which could include traffic control, guard structures, netting, or any combination of these methods as will be outlined within the encroachment permit issued by Caltrans for all highway crossings.

3.4.8 Helicopter Usage during Transmission Line Construction

Helicopters would be utilized as a construction tool for specific activities including (but not necessarily limited to) stringing of overhead conductor, installation or removal of structures, and transportation of equipment associated with the Proposed Project. SDG&E anticipates that light- or medium-duty helicopters (e.g. K-Max and Astar) may be utilized. Helicopters would be utilized during daylight hours, and flight paths would generally be limited to the existing ROW except for ingress and egress from the helicopter landing/staging yards (local airports and incidental landing areas). Any helicopter use would comply with all relevant usage permits including Federal Aviation Administration (FAA) and Caltrans. SDG&E and/or the construction contractor would coordinate with local air traffic control and comply with applicable FAA regulations regarding helicopter use to prevent conflict with air traffic generated by local airports. In addition, a Congested Area Plan (CAP) would be prepared, if required based upon actual helicopter usage, pursuant to FAA regulations (14 Code of Federal Regulations [CFR] 137.51).

3.4.9 Site Cleanup

SDG&E would restore all areas that are temporarily disturbed by the Proposed Project activities (including stringing sites, structure removal sites, and staging areas) to approximate pre-construction conditions following the completion of construction. Restoration could include reseeding, planting of replacement vegetation or replacement of structures (such as fences, curbs, or landscaping), as appropriate. In addition, all construction materials and debris would be removed from the Proposed Project area and recycled or properly disposed of off-site. SDG&E would conduct a final survey to ensure that cleanup activities are successfully completed as required.

3.4.10 Removed Structures/Poles, Materials, and Components

It is SDG&E's practice to re-use or recycle/donate all old structures/poles, materials, and components following the retirement of substations, power lines, and structures/poles. Whatever cannot be re-used or recycled is disposed of at an appropriate facility pursuant to all applicable laws. Table 3-10, Common Destination of Removed Project Components, outlines how some removed project components are often disposed of following construction.

Table 3-10: Common Destination of Removed Project Components

Project Structure, Material, or Component	Common End Use or Destination
Wood power line structures/poles	Donated for re-use or sanitary disposal
Conductor cable	Recycled
Insulators	Sanitary disposal
Scrap steel, copper and other metal	Recycled
Concrete	Recycled
Soils	Re-used onsite or disposed of pursuant to applicable laws
Batteries	Recycled
Source: *SDG&E*	

3.4.11 Construction Equipment and Personnel

3.4.11.1 Construction Personnel

Construction of the Proposed Project may require multiple four- to ten-person crews and associated equipment. Also present throughout construction would be environmental monitors, construction inspectors, and SDG&E personnel. These crews may work simultaneously at various points along the Proposed Project route and affected substations, with up to approximately 100 people (including construction crews, monitors, and all other support staff) working at one time. SDG&E would supplement its workforce as required during construction from a contractor's pool of experienced personnel.

3.4.11.2 Construction Equipment

Table 3-11, Standard Construction Equipment and Usage lists the typical construction equipment that could be utilized for the Proposed Project and their respective uses with respect to the Proposed Project scope.

Table 3-11: Standard Construction Equipment and Usage

Equipment Type	Equipment Use
2-ton flatbed trucks	Haul materials (including new poles)
Aerial bucket trucks	Access poles, string conductor, modify structure arms, provide guard structures, and other various uses
Air compressors	Operate air tools
Backhoe	Excavate trenches
Boom truck	Access poles and other height-restricted items
Bulldozer	Repair access roads
Concrete saw	Cut concrete and asphalt
Concrete truck	Transport and process concrete
Crane truck	Lift, position structures

Table 3-11 (cont.): Standard Construction Equipment and Usage

Equipment Type	Equipment Use
Crane	Lift, position structures
Drilling rig/ Truck-mounted augur	Excavate for direct-bury and micropile poles
Dump truck	Haul excavated materials/import backfill, as needed
Excavator	Excavate soils/materials (trenching)
Flatbed boom truck	Haul and unload materials
Forklift	Transport materials at structure sites and staging yards
Grader	Road construction and maintenance
Helicopter (typically light- and medium-duty)	Transport materials, string conductor, and install and remove travelers, set structures
Hydraulic rock-splitting/ rock-drilling equipment	Drill through rock, as needed
Jackhammer	Break concrete and asphalt
Line truck	Install clearance structures
Mobile fueling trucks	Refuel equipment
Mower	Clear vegetation
Paver	Paving of new asphalt
Pickup trucks	Transport construction personnel
Portable generators	Operate power tools
Pulling rig	Pull conductor
Tool van	Tool storage
Tractor/Trailer Unit	Transport materials at structure sites and staging yards
Vacuum truck	Pump water and liquids, as needed
Water truck	Dust control
Wire truck	Hold spools of wire
Source: *SDG&E*	

3.5 CONSTRUCTION SCHEDULE

SDG&E estimates that construction of the Proposed Project would take a total of approximately 12 months to complete, depending upon unforeseen/unpredictable factors such as weather and required transmission outages. Construction is scheduled to begin in June 2016 and run through May 2017. The complete construction schedule, outlined by task, is summarized in Table 3-12, Proposed Construction Schedule.

Table 3-12: Proposed Construction Schedule

Proposed Project Segment/Task	Approximate Duration (Months)	Anticipated Start Date[1]
Staging Yard Preparation and Mobilization	2	June 2016
Segment A – Site Preparation and Road Construction	2	July 2016
Segment A – Foundation Construction	2	August 2016
Segment A – Wire and Structure Removals	2	September 2016
Segment A – Structure Assembly and Erection	2	November 2016
Segment A – Wire Stringing	3	December 2016
Segment A – Cleanup and Restoration	1	March 2017
Segment B – Excavation Vaults and Trench	6	June 2016
Segment B – Ducts through Bridge	3	August 2016
Segment B – Cleaning and Proving Ducts	1	December 2016
Segment B – Cabling	2	January 2017
Segment B – Cable Testing and Commissioning	2	March 2017
Segment C – Site Preparation and Road Construction	1	September 2016
Segment C – Wire and Structure Removals	1	October 2016
Segment C – Wire Stringing	1	November 2016
Segment C – Cleanup and Restoration	1	December 2016
Segment D – Site Preparation and Road Construction	1	October 2016
Segment D – Foundation Construction	2	October 2016
Segment D – Wire and Structure Removals	1	February 2017
Segment D – Structure Assembly and Erection	1	January 2017

Table 3-12 (cont.): Proposed Construction Schedule

Proposed Project Segment/Task	Approximate Duration (Months)	Anticipated Start Date[1]
Segment D – Wire Stringing	2	March 2017
Segment D – Cleanup and Restoration	1	May 2017
Overhead Testing and Commissioning	1	May 2017

Notes:
[1] Start dates estimated and pending receipt of required approvals. Start dates for individual tasks may vary during construction in order to accommodate minor project refinements, avoidance of adverse effects to sensitive resources, or other unforeseen occurrences. Construction durations are not necessarily continuous.

Source: *SDG&E*

3.6 PERMANENT LAND AND RIGHT-OF-WAY REQUIREMENTS

3.6.1 Permanent ROW and Easement Requirements

Table 3-13, Permanent Land and ROW Requirements, outlines the anticipated new land and ROW required for the Proposed Project segments and a general timetable for required ROW acquisition.

Table 3-13: Permanent Land and ROW Requirements

Proposed Project Segment	Approximate Length (feet)	Approximate Area (acres)	Acquisition Schedule
Segment A – Sycamore Canyon Substation to Carmel Valley Road	None	None	N/A
Segment B – Carmel Valley Road	None	None	N/A
Segment C – Carmel Valley Road to Peñasquitos Junction	100[1]	0.25[1]	March 2015[2]
Segment D – Peñasquitos Junction to Peñasquitos Substation	None	None	N/A

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] SDG&E has existing ROW in this area; however the existing agreement will have to be amended to include underground rights.
[2] SDG&E anticipates amendment of the existing easement agreement by this date, but the final date is considered to be approximate.

Source: *SDG&E*

SDG&E currently has valid easements and franchise agreement rights to construct the proposed new 230 kV transmission line between the Sycamore Canyon and Peñasquitos Substations, with the exception of one very small area associated with the proposed new 230 kV cable pole on the west end of Segment B. For the proposed route, an amendment to the existing overhead transmission easement at the western cable pole location just south of Carmel Valley Road (refer to Appendix 3-B) would be required. The location for the western cable pole structure (Structure No. P42) is proposed outside of the street franchise and on land owned by Pardee

Homes, within an existing SDG&E easement for overhead facilities. Because the cable pole requires underground rights, SDG&E would need to modify this easement.

The total land area of the amended easement would be less than 0.25 acre, which would still allow for flexibility in the precise siting of the western cable pole inside the existing transmission corridor. Construction access and permanent access is currently provided by existing SDG&E easements and SDG&E franchise rights with the City of San Diego and therefore no additional land acquisition for access purposes is anticipated.

3.6.2 Permanent Work Areas

The Proposed Project is located predominantly within existing utility corridors and franchise areas that currently feature permanent work pads and access roads. Operation and maintenance of the Proposed Project would utilize these existing work areas and roads, as well as limited additional permanent work areas that would remain following completion of construction activities. Table 3-14, Summary of Permanent Work Areas, outlines the anticipated permanent work areas that would be created as a result of the proposed Project. It is important to note that the permanent work areas described in Table 3-14 would be contained within the temporary work areas describe in Section 3.4.6 and Table 3-9.

Table 3-14: Summary of Permanent Work Areas

Work Area	Approximate Number	Approximate Area (acres)
New Structure Operation Work Pads[1]	62	7.758
New Permanent Spur Roads[2]	1	Included within work pad area
Splice Vault Man Holes[3]	10	94

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] Note that permanent structure operation work pads would be contained within the temporary structure installation work areas described in Section 3.4.6.3 and Table 3-8. Retaining walls and other area required to create a safe operations work pad are also included within this calculation. Areas are only included here where new work pads would be required. Therefore, the number of new work pads is less than the total number of new structures.
[2] The Proposed Project is located within existing utility corridors with extensive existing access and spur roads. Operation and maintenance of the Proposed Project would utilize these existing roads for the vast majority of access requirements. Only newly required spur roads are included within this table as the existing access road network is considered part of the existing environment.
[3] The vast majority of splice vaults are located below ground and therefore only the size of man hole opening is counted above as part of the permanent work area.

Source: *SDG&E*

3.7 OPERATION AND MAINTENANCE (EXISTING AND PROPOSED)

The Proposed Project would replace and relocate existing electric transmission and power line facilities within existing utility corridors and franchise position within city streets. The Proposed Project would also add one new transmission line that would also be located within existing utility corridors and within franchise position. All proposed new and relocated facilities are located in existing SDG&E ROWs that currently contain similar facilities that are operated and maintained, except for the new segment of 230 kV transmission line that would be installed

underground within Carmel Valley Road. SDG&E currently operates and maintains existing facilities consistent with the ordinary operating restrictions described in Section 3.8, Project Design Features and Ordinary Construction/Operating Restrictions. These ordinary operating restrictions include standard protocols and procedures, such as *SDG&E's Subregional NCCP*, which is described in greater detail in Section 4.4, Biological Resources, as well as other measures that have been developed and implemented by SDG&E over time to avoid and minimize environmental impacts and to comply with applicable environmental laws and regulations. No change in SDG&E's operations and maintenance practices and restrictions along the Proposed Project route is anticipated, except along Segment B, where a new 230 kV line will be installed underground in a location where SDG&E does not currently operate or maintain facilities. As noted in Section 3.8, the existing operating practices and restrictions have been incorporated into the design of the Proposed Project and are also reflected in the baseline from which impacts of the Proposed Project have been evaluated.

SDG&E would continue to regularly inspect, maintain, and repair the new and reconstructed transmission line, power line, and distribution line facilities and substations following completion of Proposed Project construction. Operations and maintenance activities would not significantly increase in intensity, frequency or duration with implementation of the Proposed Project and would be substantially similar to existing operations and maintenance activities. Typical activities involve both routine inspections and preventive maintenance to ensure service reliability, as well as emergency work to maintain or restore service continuity. SDG&E performs aerial and ground inspections of Proposed Project facilities and patrols aboveground components annually. Inspection for corrosion, equipment misalignment, loose fittings, and other common mechanical problems is performed at least every three years (per General Order 165) for transmission and power lines.

SDG&E uses helicopters in the inspection of overhead facilities annually, or as otherwise required. SDG&E may also use helicopters to position aerial markers, as required by FAA regulations, deliver equipment, and position poles, structures and string lines. SDG&E's Transmission[21] departments use helicopters for patrolling power lines during trouble jobs (e.g., outages/service curtailments) in areas that have no vehicle access or rough terrain. For patrolling during such jobs, the helicopter picks up the patrolman at the district yard. The size of the crew varies from four to 10 crewmembers, two helicopter staff, and a water truck driver to apply water for dust control at the ILA. Most operations and maintenance related helicopter operations take only one day.

SDG&E maintains a clear working space area around certain poles pursuant to requirements found within General Order 95 and Public Resources Code (PRC) 4292. SDG&E keeps these areas clear of shrubs and other obstructions for fire prevention purposes. In addition, vegetation that has a mature height of 15 feet or taller are not allowed to grow within 10 horizontal feet of any conductor within the ROW for safety and reliability reasons.

Typical power line operation and maintenance activities include security and other inspections, ROW and access repairs, pole brushing in accordance with fire break clearance requirements,

[21] The term "Transmission" as used within this section of the PEA refers to internal SDG&E operating departments and is not intended to suggest that this department works only on electric utility lines with operational ratings at or above 200 kV.

herbicide application, emergency and non-emergency repairs and replacements, insulator washing, and tree trimming. These activities are performed on an as needed basis.

The new 230 kV underground transmission line proposed in Segment B of the Proposed Project would be inspected consistent with SDG&E's existing underground inspection and maintenance program. The line would be accessed from ten new vaults during the annual underground transmission inspection program. The inspection requires traffic control to access the vault safely, opening the vault covers and performing a visual survey from above (entry into vault with energized cables is not permitted), and use of infra-red, partial discharge monitoring, or other diagnostic instrumentation which may be available. The total time to inspect each vault is expected to be less than one day under normal operating conditions. The inspection of the underground transmission line would be the same for all existing underground inspection currently completed by SDG&E within the City of San Diego and throughout SDG&E's service territory. The Proposed Project includes approximately 2.84 miles of new underground transmission line which would result in a less than three percent increase in the total mileage of underground transmission and power lines.

As for substation operations and maintenance, both affected substations (Sycamore Canyon and Peñasquitos) would continue to be operated and maintained consistent with current substation operations. Typical maintenance activities include equipment testing, equipment monitoring and repair, and emergency and routine procedures for service continuity and preventive maintenance. A major maintenance inspection would typically take place annually, lasting approximately one week.

Routine vegetation clearing would continue to occur at each substation on an as-needed basis for purposes of safety, access, and aesthetics. Vegetation clearing activities would typically involve the presence of one to two small maintenance vehicles and one or more employees to clear or trim vegetation to achieve the minimum working space around the substation facilities.

3.8 PROJECT DESIGN FEATURES AND ORDINARY CONSTRUCTION/ OPERATING RESTRICTIONS

The Proposed Project includes design features and ordinary construction and operating restrictions that avoid and minimize environmental impacts. The design features and ordinary construction and operating restrictions incorporated into the Proposed Project include measures that are routinely implemented by SDG&E on other projects that involve ground disturbance. Many of these features and restrictions have been developed over time to avoid and minimize environmental impacts, to comply with *SDG&E's Subregional NCCP*, and to comply with applicable environmental laws and regulations. Consistent with its existing operations and maintenance practices, SDG&E will implement these operating restrictions as appropriate during construction, operation, and maintenance to avoid and minimize potential environmental impacts.

Many of the design features and ordinary construction and operating restrictions incorporated into all phases of the Proposed Project are described below.

- **Safety and Environmental Awareness Program.** SDG&E will prepare a Safety and Environmental Awareness Program (SEAP) for project-personnel. The SEAP may include training for relevant topics such as:
    - General safety procedures,
    - General environmental procedures,
    - Fire safety,
    - Biological resources,
    - Cultural resources,
    - Paleontological resources,
    - Hazardous materials protocols and BMPs, and
    - SWPPP.
- **Dulled galvanized steel structures.** New structures are designed utilizing dulled galvanized steel to avoid potential adverse effects relating to fire and fire damage, as well as adverse effects due to high moisture content in coastal areas. The dulled aspect of the steel poles also minimizes the potential for visual impacts relating to glare.
- **Aerial marking.** SDG&E will consult with the FAA and MCAS Miramar concerning aerial marking and lighting requirements for all new overhead facilities. As required, lighting and aerial marking will be added to applicable overhead facilities, including new structures, and OPGW.
- **Sycamore to Peñasquitos Project Fire Plan.** A project-specific fire prevention plan has been drafted for the Proposed Project consistent with *Electric Standard Practice 113.1* and the *SDG&E Fire Prevention Plan*. The project-specific fire plan identifies project-specific risk-related activities as well as measures (including tools and procedures) to address said risks.
- **Geotechnical report.** A geotechnical study will be conducted for the Proposed Project under the direction of a California-licensed Geotechnical Engineer or Certified Engineering Geologist, and recommendations identified in the geotechnical report will be carried out.
- **Construction scheduling.** To the greatest extent practical, SDG&E will plan construction of the Proposed Project such that any potential overlap with other SDG&E projects will be coordinated such that net impacts will be minimized.
- **Hazardous materials.** SDG&E shall address potential impacts relating to the handling and use of hazardous materials through compliance with numerous state and federal regulations, including, but not limited to:
    - Federal Occupational Safety and Health Administration (OSHA) regulations for worker safety in hazardous material remediation and hazardous waste operations (29 CFR Section 1910.120),
    - Federal OSHA regulations hazard communication for workers (29 CFR Section 1910.1200),

- Federal OSHA regulations for toxic air contaminants for workers (29 CFR Section 1910.1000),
- CalOSHA regulations for worker safety in hazardous material remediation and hazardous waste operations (8 California Code of Regulations [CCR] 5192),
- CalOSHA regulations for hazard communication for workers (8 CCR 5194), and
- Department of Toxic Substances Control (DTSC) regulations implementing Resource Conservation and Recovery Act of 1976 (RCRA) and the California Hazardous Waste Control Law (HWCL) (22 CCR Division 4.5).

- **SDG&E Subregional NCCP.** The Proposed Project will avoid and minimize impacts to biological resources through implementation of the *SDG&E Subregional NCCP*. The *SDG&E Subregional NCCP* establishes a mechanism for addressing biological resource impacts incidental to the development, maintenance, and repair of SDG&E facilities within the *SDG&E Subregional NCCP* coverage area. The Proposed Project is located within the *SDG&E Subregional NCCP* coverage area.

  The *SDG&E Subregional NCCP* includes a Federal Endangered Species Act (ESA) Section 10(A) permit and a California ESA Section 2081 memorandum of understanding (for incidental take) with an Implementation Agreement with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW – formerly the California Department of Fish and Game), respectively, for the management and conservation of multiple species and their associated habitats, as established according to the Federal and State ESAs and California's NCCP Act. The NCCP's Implementing Agreement confirms that the mitigation, compensation, and enhancement obligations contained in the Agreement and the *SDG&E Subregional NCCP* meet all relevant standards and requirements of the California ESA, the Federal ESA, the NCCP Act, and the Native Plant Protection Act with regard to SDG&E's activities in the Subregional Plan Area.

  Pursuant to the *SDG&E Subregional NCCP*, SDG&E will conduct pre-construction studies for all activities occurring off of existing access roads in natural areas. An independent biological consulting firm will survey all Proposed Project impact areas and prepared a Pre-activity Study Report (PSR) outlining all anticipated impacts related to the Proposed Project. The Proposed Project will include monitoring for all project components, as recommended by the PSR and outlined in the *SDG&E Subregional NCCP*, as well as other avoidance and minimization measures outlined in the NCCP's Operational Protocols. The PSR will be submitted to the CDFW and USFWS for review. Prior to the commencement of construction, a verification survey will be conducted of the Proposed Project disturbance areas, as required by the *SDG&E Subregional NCCP*.

  Biological monitors will be present during construction to assure implementation of the avoidance and minimization measures. If the previously-delineated work areas must be expanded or modified during construction, the monitors will survey the additional impact area to determine if any sensitive resources will be impacted by the proposed activities, to identify avoidance and minimization measures, and to document any additional impacts. Any additional impacts are included in a Post-construction Report (PCR) for purposes of calculating the appropriate mitigation, which generally includes site enhancement or

credit withdrawal from the SDG&E mitigation bank. When construction is complete, the biological monitor will conduct a survey of the entire line to determine actual impacts from construction. The PCR will determine how much site enhancement and credit withdrawal from the SDG&E mitigation bank will be required to address impacts from project related activities. These impact and mitigation credit calculations are submitted to the USFWS and the CDFW as part of the NCCP Annual Report pursuant to requirements of the NCCP and the NCCP Implementing Agreement.

Specific operating restrictions that are incorporated into the Proposed Project design to comply with the *SDG&E Subregional NCCP* include the following:

- Vehicles would be kept on access roads and limited to 15 miles per hour (Section 7.1.1, 1[22].).
- No wildlife, including rattlesnakes, may be harmed, except to protect life and limb (7.1.1, 2.).
- Feeding of wildlife is not allowed (Section 7.1.1, 4.).
- No pets are allowed within the ROW (Section 7.1.1, 5.).).
- Plant or wildlife species may not be collected for pets or any other reason. (Section 7.1.1, 7).
- Littering is not allowed, and no food or waste would be left on the ROW or adjacent properties (Section 7.1.1, 8.).
- Measures to prevent or minimize wild fires would be implemented, including exercising care when driving and not parking vehicles where catalytic converters can ignite dry vegetation (Section 7.1.1, 9.).
- Field crews shall refer all environmental issues, including wildlife relocation, dead, or sick wildlife, or questions regarding environmental impacts to the Environmental Surveyor. Biologists or experts in wildlife handling may be necessary to assist with wildlife relocations (Section 7.1.1, 10.).
- All SDG&E personnel would participate in an environmental training program conducted by SDG&E, with annual updates (Section 7.1.2, 11.).
- The Environmental Surveyor shall conduct preactivity studies for all activities occurring in natural areas, and will complete a preactivity study form including recommendations for review by a biologist and construction monitoring, if appropriate. The form will be provided to CDFW and USFWS but does not require their approval (Section 7.1.3, 13.).
- The Environmental Surveyor shall flag boundaries of habitats to be avoided and, if necessary, the construction work boundaries (Section 7.1.3, 14.).
- The Environmental Surveyor must approve of activity prior to working in sensitive areas where disturbance to habitat may be unavoidable (Section 7.1.4, 25.).).

[22] References to Section Nos. is from the *SDG&E Subregional NCCP*.

- In the event SDG&E identifies a covered species (listed as threatened or endangered by the federal or state) of plant within the temporary work area (10 foot radius) surrounding a power pole, SDG&E would notify the USFWS (for Federal ESA listed plants) and CDFW (for California ESA listed plants) (Section 7.1.4, 28.).
- The Environmental Surveyor shall conduct monitoring as recommended in the preactivity study form (Section 7.1.4, 35.).
- Supplies, equipment, or construction excavations where wildlife could hide (e.g., pipes, culverts, pole holes, trenches) shall be inspected prior to moving or working on/in them (Section 7.1.4, 37, and 38.).
- Fugitive dust will be controlled by regular watering and speed limits (Section 7.1.4, 39.).
- During the nesting season, the presence or absence of nesting species (including raptors) shall be determined by a biologist who would recommend appropriate avoidance and minimization measures (Section 7.1.6, 50).
- Maintenance or construction vehicle access through shallow creeks or streams is allowed. However no filling for access purposes in waterways is allowed (Section 7.1.7, 52).
- Staging/storage areas for equipment and materials shall be located outside of riparian areas (Section 7.1.7, 53.).

- **SDG&E Water Quality Construction BMP Manual.** SDG&E's *Water Quality Construction BMPs Manual* (*BMP Manual*) organizes and presents SDG&E's standard water quality protection procedures for various specific actions that routinely occur as part of SDG&E's ongoing construction, operations, and maintenance activities. The primary focus of most BMPs is the reduction and/or elimination of potential water quality impacts during construction of linear projects such as the Proposed Project. The BMPs described within the *BMP Manual* were derived from several sources including the State of California guidelines as well as the Caltrans Water Quality BMPs. The *BMP Manual* will be utilized during construction (by way of preparation and implementation of the SWPPP), operation, and maintenance of the Proposed Project to ensure compliance with all relevant SDG&E and government-mandated regulatory water quality standards.
- **Electric Standard Practice 113.1 – Wildland Fire Prevention and Fire Safety.** The Proposed Project will be constructed consistent with *Electric Standard Practice 113.1 – Wildland Fire Prevention and Fire Safety*. *Electric Standard Practice 113.1* outlines practices and procedures for SDG&E activities occurring within areas of potential wildland fire threat within SDG&E's service territory. The Proposed Project design includes replacement of wood poles with steel poles, increased conductor spacing to maximize line clearances, installation of steel poles to withstand an extreme wind loading case and known local conditions, and undergrounding of a portion of the power line. These design components of the Proposed Project minimize the fire risk through enhanced safety and reliability of the power line system, particularly during extreme weather conditions. The standard practices in *Electrical Standard Practice 113.1* include avoidance and minimization measures to comply with state and local fire ordinances.

- **Temporary Lighting.** Temporary lighting at staging and storage areas will be directed on site and away from any sensitive receptors.
- **New Chain Link Fence.** New fencing installed as part of the Proposed Project including fencing around new cable poles will be a dull, non-reflective finish to reduce potential glare.
- **Visual screening of staging yards.** Where staging yards are visible to the public, opaque mesh or slats (or equivalent material) will be installed along the fence that will soften the view of the staging yard from public vantage points such as roads, residences, and public vantage points.
- **Cable Pole Final Design and Screening.** Final design of the eastern and western cable poles will consider design measures, such as landscaping installed outside of new perimeter chainlink fencing, decreased pole diameters, or increased setback from adjacent roadways, to reduce the visibility of each structure.
- **Materials.** Non-specular conductor and dulled galvanized steel poles will be used in order to reduce potential glare.
- **Restoring appearance of temporarily disturbed areas.** When Proposed Project construction has been completed, all temporarily disturbed terrain will be restored, as needed and as appropriate, to approximate preconstruction conditions. Re-vegetation would be used, where appropriate (re-vegetation in certain areas is not possible due to vegetation management requirements related to fire safety) to re-establish a natural appearing landscape and reduce potential visual contrast between disturbed areas and the surrounding landscape.
- **Soil disturbance.** Ground and soil disturbance will be minimized through the use of existing access routes, to the extent feasible.
- **Soil stabilization.** Once temporary surface disturbances are complete, areas that would not be subject to additional disturbance will be stabilized to control soil erosion. Disturbed areas must be stabilized per the project SWPPP.
- **Generators.** Generator use will be limited to less than 50 horsepower (HP) at all staging yards. Any generators used at the staging yards will be located away from noise sensitive areas, and positioned on the property to comply with local noise ordinances.
- **Mufflers.** Functioning mufflers will be maintained on all equipment.
- **Helicopter use.** Any helicopter use will comply with all relevant usage restrictions including those imposed by the FAA and Caltrans. SDG&E and/or the construction contractor will coordinate with local air traffic control and comply with applicable FAA regulations regarding helicopter use to prevent conflict with air traffic generated by local airports. Helicopter usage will conform to acceptable hours for construction activities, as outlined within the applicable local noise codes and ordinances.
- **Congested Area Plan.** As required, a CAP will be prepared, based upon actual helicopter usage, pursuant to FAA regulations (14 CFR 137.51).
- **Resident notification.** Residents within 50 feet of Proposed Project alignment will receive notification of the start of construction at least one week prior to the start of construction activities within that area.

- **Construction noise.** For the few locations where the Proposed Project would exceed the noise ordinances, as discussed previously, SDG&E would meet and confer with the appropriate City to discuss temporarily deviating from the requirements of the Noise Code, as described in the construction noise variance process (see Section 4.10.3.1).
- **Blasting.** In the unlikely event that rock blasting is used during construction, a noise and vibration calculation will be prepared and submitted to SDG&E Environmental Programs and Transmission Engineering and Design for review before blasting at each site. The construction contractor will ensure compliance with all relevant local, state, and federal regulations relating to blasting activities, as well as SDG&E's blasting guidelines.
- **Coordination and measures within parks and preserves**. Appropriate safety measures will be implemented where trails and parks are located in close proximity to construction areas to provide a safety buffer between recreational users and construction areas. Construction schedule and activities will be coordinated with the authorized officer for each affected recreation area.
- **Temporary trail detours.** Where feasible, temporary detours will be provided for trail users. Signs will be provided to direct trail users to the temporary trail detours.
- **Standard Traffic Control Procedures.** SDG&E will implement traffic control plans to address potential disruption of traffic circulation during construction activities and address any safety issues. These traffic control plans will be prepared by the project engineer or contractor and subject to approval by the appropriate jurisdictional agency, such as the City of San Diego and Caltrans.
- **Encroachment permits.** SDG&E will obtain the required encroachment permits from the City of San Diego for crossings at city streets and Caltrans for work near I-15 and Hwy 56, and will ensure that proper safety measures are in place while construction work is occurring near public roadways. These safety measures include flagging, proper signage, and orange cones to alert the public to construction activities near the roadway.

3.9 APPLICANT PROPOSED MEASURES

In addition to the above project design features and ordinary construction/operating restrictions included as part of the Proposed Project description, SDG&E will also incorporate the APMs that have been identified and developed specifically for the Proposed Project during the preparation of the PEA. Table 3-15, Applicant Proposed Measures by Resource Area identifies the APMs that are applicable to each resource area and Table 3-16, Applicant Proposed Measures, details the complete APMs. The various resource sections of this document outline how and when the APMs will be applied to avoid or minimize impacts to a less than significant level.

Linear electric infrastructure projects, such as this one, typically traverse multiple jurisdictional boundaries, natural resource features, and habitat types. Until final design, and in some cases until installation, utility projects must remain more flexible in the definition of their ultimate configuration and placement than most non-linear projects. The Proposed Project may encounter unique topographical and natural features or site-specific engineering challenges along the transmission line ROW that could not be reasonably foreseen and specifically planned for in advance. The APMs take into consideration the potential for the Proposed Project to encounter

such features and enhance SDG&E's ability to avoid or minimize future potential impacts to sensitive environmental resources.

The APMs allow for limited project design flexibility while avoiding or minimizing environmental impacts, to the extent feasible. As defined in CEQA, "feasible" is defined as being "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" while attaining the project's basic objectives and its purpose and need.

SDG&E would be responsible for overseeing the assembly of the construction and environmental teams that would implement and evaluate the Proposed Project APMs. SDG&E maintains an environmental compliance management program to allow for implementation of the APMs to be monitored, documented, and enforced during each Proposed Project phase, as appropriate. All of those contracted by SDG&E to perform this work would be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects. Table 3-16 details each of the 17 APMs that will be implemented during construction, operation, and maintenance of the Proposed Project.

Table 3-15: Applicant Proposed Measures by Resource Area

Resource Area	Relevant Applicant Proposed Measures
Aesthetics	none
Agriculture and Forestry Resources	none
Air Quality and Greenhouse Gases	none
Biological Resources	APM BIO-1
Cultural Resources	APM CUL-1 through CUL-8
Geology, Soils, and Minerals	none
Hazards and Hazardous Materials	none
Hydrology and Water Quality	none
Land Use and Planning	none
Noise	none
Population and Housing	none
Public Services	APM PS-1, PS-2, PS-3, PS-4 and PS-5
Recreation	none
Transportation and Traffic	APM TR-1
Utilities and Service Systems	none
Cumulative Impacts	APM CUM-1 and CUM-2

Table 3-16: Applicant Proposed Measures

APM Number	Description
BIO-1	Special-Status Plant Species: Implementation of the following measures will ensure impacts to special-status plant species remain less than significant: • Prior to construction, SDG&E shall retain a qualified biologist to conduct focused, special-status plant surveys during the spring and summer 2014 in all habitats that may support the special-status plant species with a potential to occur in the Proposed Project Survey Area. • Locations of special-status plants shall be identified and inventoried. • The qualified biologist shall supervise construction activities within the vicinity of areas identified as having special-status plant species. • Impacts to special-status plant species shall be avoided to the maximum extent possible by installing fencing or flagging, marking areas to be avoided in construction areas, and limiting work in areas identified as having special-status plant species to periods of time when the plants have set seed and are no longer growing. Where impacts to special-status plant species are unavoidable, the impact shall be quantified and compensated though off-site land preservation, plant salvage, transplantation, or other appropriate methods as determined by the qualified biologist. Alternatively, if the special-status plant species in question is a *SDG&E Subregional NCCP* covered species, mitigation consistent with measures established in the NCCP and discussed in the *SDG&E Subregional NCCP*, above, shall be provided.
CUL-1	A qualified archaeologist would attend preconstruction meetings, as needed, and a qualified archaeological monitor would monitor activities in the vicinity of all known cultural resources within the Proposed Project area. The requirements for archaeological monitoring would be noted on the construction plans. The archaeologist's duties would include monitoring, evaluation of any finds, analysis of collected materials, and preparation of a monitoring results report conforming to Archaeological Resource Management Reports guidelines.
CUL-2	Known cultural resources that will be avoided would be demarcated as Environmentally Sensitive Areas. Construction crews would be instructed to avoid disturbance of these areas.

Table 3-16 (cont.): Applicant Proposed Measures

APM Number	Description
CUL-3	In the event that cultural resources are discovered, the archaeologist would have the authority to divert or temporarily halt ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. If the resource was discovered on MCAS Miramar, the base archaeologist would also be contacted by SDG&E. The archaeologist, in consultation with SDG&E's Cultural Resource Specialist, would determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program would be prepared and carried out to mitigate impacts.
CUL-4	All collected cultural remains would be cataloged, and permanently curated with an appropriate institution. All artifacts would be analyzed to identify function and chronology as they relate to the history of the area. Faunal material would be identified as to species.
CUL-5	An archaeological monitoring results report (with appropriate graphics), which describes the results, analyses, and conclusions of the monitoring program, would be prepared and submitted to SDG&E's Cultural Resource Specialist and Environmental Project Manager following termination of the program. Any new cultural sites or features encountered would be recorded with the South Central Information (SCIC).
CUL-6	Native American monitoring may be implemented if transmission line construction has the potential to impact identified and mapped traditional locations or places. The role of the Native American monitor shall be to represent tribal concerns and communicate with the tribal council. Appropriate representatives will be identified based on the location of the identified traditional location or place.
CUL-7	A paleontological monitor would work under the direction of a qualified Project paleontologist and would be on site to observe excavation operations that involve the original cutting of previously undisturbed deposits for the eight poles located within paleontologically sensitive formations (i.e., Friars, Mission Valley, Scripps and the Ardath Shale Formations). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.

Table 3-16 (cont.): Applicant Proposed Measures

APM Number	Description
CUL-8	In the event that fossils are encountered, the paleontological monitor would have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. The paleontologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The paleontologist, in consultation with SDG&E's Cultural Resource Specialist would determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on site. If fossils are discovered, the paleontologist (or paleontological monitor) would recover them along with pertinent stratigraphic data. In most cases, this fossil salvage can be completed in a short period of time. Because of the potential for recovery of small fossil remains, such as isolated mammal teeth, recovery of bulk-sedimentary-matrix samples for off-site wet screening from specific strata may be necessary, as determined in the field. Fossil remains collected during monitoring and salvage would be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections, and a paleontological monitoring report would be written.
PS-1	Where construction within existing public parks, preserves, and open space areas would not completely restrict access through these areas, and where necessary, SDG&E will create temporary foot and bicycle paths along with appropriate advanced notice and signage to direct and allow for the pedestrian and bicycle access through each affected park.
PS-2	SDG&E will provide the public with advance notification of construction activities. Concerns related to dust, noise, and access restrictions with construction activities will be addressed within this notification.
PS-3	All construction activities will be coordinated with the authorized officer for each affected park, trail, or recreational facility prior to construction in these areas.
PS-4	As needed, signs will be posted directing vehicles to alternative park access and parking, if available, in the event construction temporarily affects parking near trailheads.
PS-5	All parks, trails, and recreational facilities that are physically impacted during construction activities and are not directly associated with the new permanent facilities, will be returned to an approximate pre-construction state, while still allowing for SDG&E to safely operate and maintain the facilities, following the completion of the Proposed Project. SDG&E will replace or repair any damaged or removed public equipment, facilities, and infrastructure in a timely manner.

Table 3-16 (cont.): Applicant Proposed Measures

APM Number	Description
TR-1	SDG&E will coordinate with local emergency response agencies during all construction within Carmel Valley Road. Coordination with local emergency response agencies (in addition to project design features and ordinary construction/operating restrictions detailed in Section 3.8) would ensure that impacts to emergency access are less than significant.
CUM-1	If any SDG&E system upgrade projects develop the potential to overlap with the Proposed Project, coordination of construction will be undergone to reduce cumulative impacts and minimize overall disruption to adjoining land uses.
CUM-2	If any City of San Diego CIP projects have the potential to directly conflict with Proposed Project construction activities, SDG&E shall coordinate with the City of San Diego CIP to ensure construction activities can be coordinated such that construction would not occur concurrently at the same location.

3.10 REQUIRED APPROVALS

The CPUC is the lead California agency for the Proposed Project. SDG&E must comply with the CPUC's General Order 131-D, which contains the permitting requirements for the construction of the Proposed Project. This PEA is being prepared as support for an application to obtain a CPCN for the Proposed Project.

In addition to the CPCN, SDG&E will obtain approval for the Proposed Project from other Federal, State, and local agencies, as required. Table 3-17, Anticipated Potential Permit, Approval, and Consultation Requirements identifies these other permits, approvals, and licenses that SDG&E anticipates to be required for the Proposed Project. Some of these anticipated required approvals are further detailed in the following subsections.

3.10.1 MCAS Miramar

The existing Sycamore Canyon Substation and approximately 1,150 feet of the new 230 kV transmission line route are located on MCAS Miramar (refer to Appendix 3-B). Therefore, construction of the Proposed Project would require approval from MCAS Miramar in the form of a Tier 1 Approval from the Committee for Land and Airspace Management Policy, or CLAMP. The Proposed Project would also need to comply with the National Environmental Policy Act (NEPA). MCAS Miramar staff would determine the appropriate NEPA compliance action following SDG&E's submittal of a Tier 1 application and supporting documentation.

Table 3-17: Anticipated Potential Permit, Approval, and Consultation Requirements

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose	Permit Status
Federal Agencies			
NEPA Compliance, Tier 1 Approval	MCAS Miramar/ CLAMP	Construction on MCAS Miramar.	To be submitted
Federal Endangered Species Act Consultation	United States Fish & Wildlife Service	Impacts to listed species during installation of new facilities	Consultation complete and valid Habitat Conservation Plans apply; SDG&E to coordinate with USFWS prior to and following construction.
Clean Water Act Section 404[1]	United States Army Corps of Engineers	Impacts to waters of the U.S.	Not anticipated to be required
Lighting and Aerial Marking	FAA and MCAS Miramar	Construction of overhead facilities potentially requiring aerial marking	To be submitted
CAP	FAA	Use of helicopters within populated areas	To be submitted
State Agencies			
CPCN	CPUC	Overall project approval and CEQA review	PEA submitted concurrent with CPCN application
NPDES–General Construction Permit	State Water Resources Control Board	Stormwater discharges associated with construction activities disturbing more than one acre of land.	To be submitted
Section 401 Water Quality Certification[1]	RWQCB	Impacts to waters of the U.S.	Not anticipated to be required

Table 3-17 (cont.): Anticipated Potential Permit, Approval, and Consultation Requirements

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose	Permit Status
California Endangered Species Act Consultation	CDFW	Impacts to listed species during installation of new facilities	Consultation complete and valid *SDG&E Subregional NCCP* applies; SDG&E to coordinate with CDFW prior to and following construction.
Section 1602 of the California Fish and Game Code[1]	CDFW	Impacts to waters of the State of California	Not anticipated to be required
Encroachment Permit	Caltrans	Construction, operation, and maintenance within, under, or over state highway ROW	To be submitted
Local Agencies[2]			
Encroachment Permit and Traffic Control Plan(s)	City of San Diego	Construction within, under, or over city roadways (Carmel Valley Road)	To be submitted
Coastal Development Permit (if required)	City of San Diego	Construction of facilities within California Coastal Zone	To be submitted
Temporary Use Permit	City of Poway	Utilization of Stowe Staging Yard	To be submitted

Notes:
Table contents based upon preliminary engineering and are subject to change.
[1] Permit is not currently anticipated to be required, but may be required as a result of further refined project design or direct consultation with regulatory agencies.
[2] Noise variance approvals are not included herein as SDG&E will meet and confer with local agencies where construction is anticipated to exceed noise limits published within the applicable local noise codes. Actual noise variances would not be procured and therefore this process is not listed within this table.

3.10.2 CDFW and USFWS Coordination and Implementation of the SDG&E Subregional NCCP

Potential impacts to protected species and sensitive habitat, including (but not necessarily limited to) the California gnatcatcher and associated coastal sage scrub habitat, could occur during construction of the Proposed Project (refer to Section 4.4, Biological Resources). These impacts are anticipated to be covered under the *SDG&E Subregional NCCP* and the *SDG&E Low-Effect Habitat Conservation Plan for the Quino Checkerspot Butterfly* (*SDG&E QCB HCP)*. Because the Proposed Project includes new structures and facilities, SDG&E would coordinate with both the CDFW and USFWS prior to construction regarding potential impacts to covered species.

3.10.3 Coastal Zone Compliance

A portion of the proposed transmission line route is located within the Coastal Zone. In general, any development within the Coastal Zone requires a coastal development permit, either from the California Coastal Commission or a local agency that has been delegated the authority to issue coastal development permits. Some development activities do not require coastal development permits, either because they are excluded from permit requirements or because the permit requirement is waived. SDG&E anticipates that a coastal development permit could be required to construct a segment of the Proposed Project within the City of San Diego North City Local Coastal Program. In the event a coastal development permit is required, the City of San Diego would review the activities proposed within the Coastal Zone for compliance with the North City Local Coastal Program.

3.11 IMPLEMENTATION PLAN

3.11.1 Introduction

The Proposed Project will be managed on a Project Management matrix basis, with a dedicated Project Manager from SDG&E's Major Projects department. Given the large project scope, cost, long material lead time, and abbreviated construction period, procurement of major long lead time materials must be authorized to begin prior to regulatory approval. Extensive engineering support will be required during the regulatory process and will continue through the end of construction of the Proposed Project.

Construction cannot begin until after regulatory approval. Any required ministerial and resource permits identified in the regulatory approval process, must also be obtained before construction can begin in the affected areas.

3.11.2 Project Management Team

The Project Manager will have the overall responsibility and commensurate authority for successful completion of the Proposed Project. Responsibilities may include, but are not limited to: planning, obtaining regulatory approvals, cost management, scheduling, execution (final engineering, procurement, and construction), and the overall quality of the project. Project work will be conducted using a matrix based Project Management model. All personnel assigned to the Proposed Project functionally report to the Project Manager for all project-related work. During the life of the Proposed Project, the Project Team will consist of a number of specialized teams and support personnel with special areas of expertise. Because of the changing nature of

project needs as it progresses through the development, regulatory approval, and construction phases, the Project Team may also change to meet the Proposed Project needs. SDG&E creates Project Teams for major projects that typically include the following key positions, as applicable[23]:

- Project Manager (Major Projects Group staff)
- Environmental Lead (Environmental Services Group staff) – Pre-Construction
- Environmental Project Manager and Compliance Lead (Environmental Project Management staff) – Construction and Post-Construction
- Transmission Lead, including as applicable a lead overhead and underground designer (Transmission Engineering and Design Group staff)
- Substation Lead (Substation Engineering and Design Group staff)
- Public Affairs Lead (Public Affairs and Project Communication Group staff)
- Land and ROW (Corporate Real Estate and Planning Group staff)
- Legal and Regulatory Leads (Environmental Law, Regulatory Law, and Regulatory Group staff)

The Project Manager is responsible for the formation and management of the Project Team. The Project Manager coordinates with the Group Team Leaders and Managers to ensure that the proper staff members are available to support each project. The assigned lead technical staff (e.g. Environmental Lead or Transmission Lead) are responsible for the aspects of the Proposed Project applicable to their respective discipline. The duties for the assigned technical staff include assisting the Project Manager with the engagement and management of any consultants and contractors that are utilized.

The Major Projects Group will use a combination of project management, scheduling, and cost tracking software tools which would be applied to common business processes to work more efficiently. SDG&E has developed and maintains a Major Projects Project Governance Guide, which outlines the use of project management software tools and key staff responsibilities. Projects of this size generally use various types of software either for specific processes and/or functional areas and it's not uncommon to see a software platform used across many functional areas in an attempt to integrate and maximize information sharing and reporting.

3.11.3 Project Construction Management Plan

The complexities of the Proposed Project may necessitate the use of alternative construction management approaches. The construction management option to be selected will be based on SDG&E's need to optimize its use of "in-house" resources and expertise in the most effective manner. SDG&E may utilize an Engineering, Procurement, and Construction (EPC) contract for the Proposed Project or some variation of this type of contracting. Under an EPC contract, an

[23] Key project team members and the extent of involvement of each team member is determined based upon the individual needs of each project. For example, a project that does not involve substation work might not have a substation lead assigned to the project.

SDG&E contractor completes the final designs, procures the necessary SDG&E specified materials and constructs the project, either directly or by subcontracting portions of the work. The selected contractor therefore would potentially carry the risk for the schedule and budget related to the engineering, procurement and construction of the Proposed Project. This would result in more known and agreed upon pricing prior to final engineering. The SDG&E Project Team and SDG&E Contract Administrators would provide cost, schedule, quality control and progress oversight during construction.

In addition, SDG&E may utilize its Environmental Project Management structure to ensure compliance during construction. An Environmental Project Manager would be assigned to the Proposed Project to oversee all permit and environmental compliance management during construction. Under the Environmental Project Manager, SDG&E typically utilizes an Environmental Compliance Lead and a Lead Environmental Inspector. The key purposes of the Environmental Management structure is to ensure compliance throughout construction including coordination with applicable resource and oversight agencies, coordination with the CPUC's environmental compliance consultant, coordination of all specialty monitoring requirements, and coordination with the construction management team for all matters relating to permit and environmental compliance.

3.12 REFERENCES

California Independent System Operator (CAISO). March 4, 2014. Sycamore-Penasquitos Project – Project Sponsor Selection Report.

San Diego Gas & Electric Company (SDG&E). December 15, 1995. *Subregional Natural Community Conservation Plan*.

San Diego Gas & Electric Company (SDG&E). July 2009. *Electric Standard Practice No. 113.1 – Wildland Fire Prevention and Fire Safety*.

San Diego Gas & Electric Company (SDG&E). December 2012. *Fire Prevention Plan*.

San Diego Gas & Electric Company (SDG&E). June 3, 2013 (revised July 9, 2013). Transmission Project Sponsor Proposal Application Submitted to California ISO.