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CHAPTER 3 – PROJECT DESCRIPTION

San Diego Gas & Electric Company (SDG&E) is a regulated public utility that provides electric and natural gas service to approximately 3.4 million consumers within an approximately 4,100-square-mile service area, covering 25 cities and unincorporated areas within San Diego County and southern Orange County.

This chapter defines the proposed TL674A Reconfiguration & TL666D Removal Project's (Proposed Project's) location, objectives, and components; describes the existing electric system; and explains how the Proposed Project will be implemented. This chapter also identifies any permits or other approvals that may be needed to implement the Proposed Project. Lastly, this chapter identifies any measures proposed by SDG&E to avoid or minimize potential environmental impacts.

3.0 PROJECT LOCATION

The Proposed Project is located in the northwestern portion of the City of San Diego and in the City of Del Mar. The Proposed Project is also located almost entirely within the coastal zone; and is partially located in the San Dieguito Lagoon, Los Peñasquitos Lagoon, and Torrey Pines State Natural Reserve, as depicted in Figure 3-1: Project Location Map and Figure 3-2: Project Overview Map. The main activity associated with the Proposed Project involves the removal of approximately six miles of existing overhead 69 kilovolt (kV) power line (i.e., TL666D) between the existing Del Mar Substation (located northwest of the intersection of Interstate [I-] 5 and Via De La Valle in the City of San Diego) and an existing steel pole (located near the intersection of Vista Sorrento Parkway and Pacific Plaza Drive in the City of San Diego). In order to remove TL666D from service, an existing 69 kV power line (i.e., TL674A) will be reconfigured, extended to the Del Mar Substation, and renamed as TL6973. In addition, two portions of separate existing 12 kV distribution lines will be converted from an overhead to underground configuration. The first portion (i.e., C510) will be removed from San Dieguito Lagoon and placed underground within San Dieguto Drive and Racetrack View Drive in the cities of Del Mar and San Diego. The second portion (i.e., C738) will be placed underground within the Sorrento Valley Pedestrian/Multi-Use Path.

For the purposes of this document, the Proposed Project is divided into the following four major components:

1. Reconfiguration of TL674A
2. Removal of TL666D from service
3. Converting portions of C510, an existing 12 kV distribution line, from an overhead to underground configuration
4. Converting portions of C738, an existing 12 kV distribution line, from an overhead to underground configuration

A more detailed description of the area within and around the Proposed Project follows.

3.0.0 TL674A Reconfiguration

As described previously, in order to remove TL666D from service, TL674A will be reconfigured to connect to the Del Mar Substation. This process will involve the following three phases:

- Phase 1 will involve installing approximately 1.1 miles of new underground duct bank and approximately four new underground vaults within the eastbound lane of Via De La Valle between the driveway to the existing Del Mar Substation and the existing TL674A overhead crossing, as depicted in Attachment 3-A: Detailed Project Components Map. This alignment is bordered by residential and commercial land uses. The underground duct bank will terminate at a new steel cable pole (Pole 2) that will be installed directly south of Via De La Valle and in line with the existing overhead TL674A crossing. This new steel riser pole[1] will be located approximately 100 feet east of an existing steel riser pole within SDG&E's right-of-way (ROW) and within the northwest corner of the Del Mar Horsepark, an existing equestrian facility.

- Phase 2 will involve reconfiguring the existing tap at Pole 1, which is located on an undeveloped portion of a hillside surrounded by residential development and approximately 500 feet north of Via De La Valle. This tap currently connects three legs of TL674.[2] The tap will be converted from a three-terminal line to a two-terminal line, connecting only the Rancho Santa Fe and Encinitas substations. TL674A, which originates at the North City West Substation, will terminate at the new riser poleinstalled as part of Phase 1 (Pole 2), and the approximately 700-foot overhead span between Pole 1 and Pole 2 will be removed. One additional steel pole (Pole 3) will be installed approximately 630 feet southeast of the new steel cable pole to transition the existing overhead alignment to the proposed 69 kV riser pole (Pole 2). This new steel pole will be located within SDG&E's existing ROW within the southern portion of the Del Mar Horsepark.

- Phase 3 will involve completing the underground portion of this component by installing approximately 600 feet of additional duct bank from Via De La Valle (i.e., within SDG&E's driveway) north to the Del Mar Substation. TL666D will then be de-energized and removed from its position at the Del Mar Substation. The underground line will then terminate at the position vacated by TL666D and will complete TL6973 (North City West-Del Mar Tie Line). This phase will be conducted entirely within SDG&E-owned property.

[1] A riser pole is used to convert a power line from an overhead to underground configuration. Pole 2 will connect the proposed new underground 69 kV line from Del Mar Substation to the existing overhead segment of TL674A that currently connects to North City West Substation.

[2] The three legs of TL674 include TL674A to the North City West Substation, TL674B to the Rancho Santa Fe Substation, and TL674C to the Encinitas Substation.

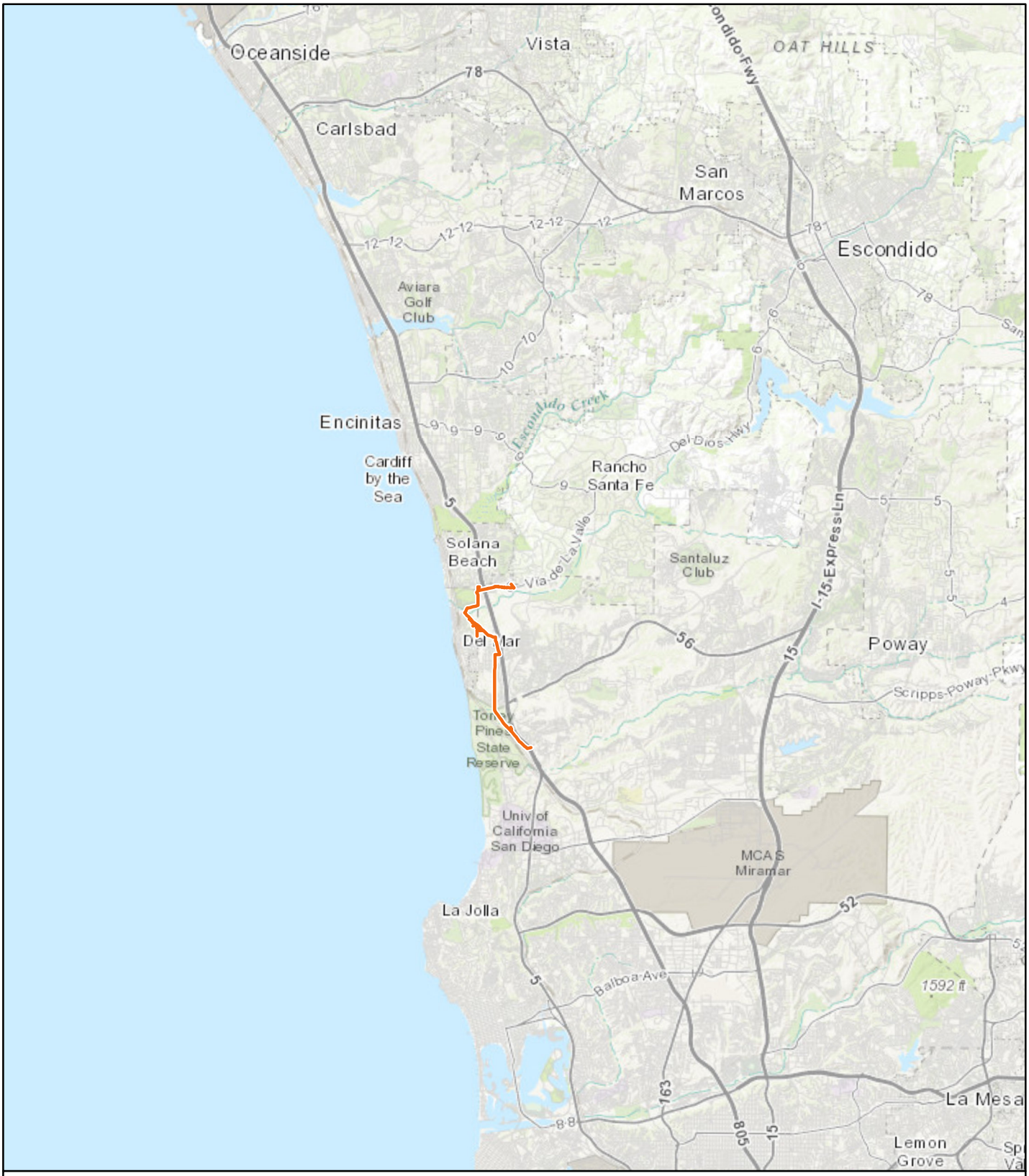

Figure 3-1 Project Location Map **TL674A Reconfiguration & TL666D Removal Project**

Project Location

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Figure 3-2: Project Overview Map

TL674A Reconfiguration & TL666D Removal Project

- Del Mar Substation
- City Boundary
- Torrey Pines State Reserve
- Existing Steel Riser Pole
- Existing Wood Pole
- Reconfigure Wood Pole Hardware
- Temporary Wood Pole
- Top Existing Wood Pole
- New Steel Riser Pole
- New Steel Pole
- New Wood Riser Pole
- New Wood Pole
- Remove Pole from Service
- Existing 12 kV Overhead
- New 12 kV Overhead
- New 12 kV Underground
- New 69 kV Underground
- Remove 12 kV Overhead
- Remove 69 kV Overhead
- Remove 69 kV Overhead, Retain 12 kV Overhead
- Remove 69 kV and 12 kV Overhead
- Existing Overhead Power Line
- Existing Underground Power Line

1:23,400

0 0.25 0.5 Miles

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3.0.1 TL666D Removal

An approximately six-mile-long segment of TL666D—an existing 69 kV power line—will be removed from service between the existing Del Mar Substation and an existing steel pole (located near the intersection of Vista Sorrento Parkway and Pacific Plaza Drive in the City of San Diego), as depicted in Figure 3-2: Project Overview Map. The line begins by exiting the fenced portion of Del Mar Substation to the north and traveling approximately 115 feet west along the substation's parcel line. The line then turns generally south for approximately 690 feet, traveling along the substation's parcel boundary, then crossing Via De La Valle. The line then spans Jimmy Durante Boulevard in two locations (entering the City of Del Mar and returning to the City of San Diego), and continues south for approximately 2,200 feet. The line then turns west for approximately 1,600 feet, entering the City of Del Mar, spanning Jimmy Durante Boulevard again, and entering the parking lot for the Del Mar Fairgrounds. The line then turns southwest for approximately 850 feet, passing the Del Mar Fire Department, spanning Jimmy Durante Boulevard, and spanning the San Dieguito Lagoon. At this point, the line turns to the southeast, passes commercial and light industrial uses, and continues approximately 550 feet before entering the San Dieguito Lagoon. The line continues southeast through the lagoon for approximately 2,400 feet and enters the City of San Diego. The line continues southeast in the lagoon for approximately 820 feet until reaching Racetrack View Drive. The line then travels generally southeast through a residential neighborhood for approximately 2,300 feet. At this point, the line turns south and parallels I-5 for approximately 2,700 feet. This portion of the line is also parallel to a residential neighborhood and Del Mar Hills Elementary School. The line then turns west for approximately 650 feet, traveling parallel to the southern boundary of Del Mar Hills Elementary School and reaching Mango Way.

The line then travels south along Mango Drive for approximately 2,400 feet, passing residences, commercial uses, and Del Mar Hills Nursery School. The line continues south for approximately 1,500 feet within a residential community and reaches the Torrey Pines State Natural Reserve. From this point, the line generally parallels Red Ridge Loop Trail for approximately 1,950 feet to the south. The line then exits the reserve and continues south for approximately 2,100 feet, entering a residential community and reaching Carmel Valley Road.

After crossing Carmel Valley Road, the line enters Torrey Pines State Natural Reserve again and Los Peñasquitos Lagoon, and continues southeast for approximately 3,800 feet. The line then exits the reserve and continues for approximately 600 feet until reaching Sorrento Valley Road. The line continues for approximately 3,600 feet southeast through undeveloped and industrial areas, generally parallel to I-5. The line then turns east and spans I-5 for approximately 650 feet, until it ends at an existing steel pole. A set of detailed route maps of TL666D are provided in Attachment 3-A: Detailed Project Components Map.

TL666D is located entirely within an existing ROW. Because the Proposed Project will involve removing this line from service, no new ROW will be acquired. Section 3.4 Right-of-Way Requirements provides more detailed information about the temporary ROW requirements.

3.0.2 C510 Conversion

A portion of C510—a 12 kV distribution line—is underbuilt[3] on approximately six existing TL666D poles currently located in the San Dieguito Lagoon. Because these six poles will be removed from the lagoon as part of the TL666D removal, the corresponding portion of C510 will be converted to an underground configuration within San Dieguito Drive and Racetrack View Drive. The underground installation will involve constructing approximately 3,600 feet of duct bank, approximately five hand holes, and one pad-mounted transformer and fuse cabinet. The underground conversion will also involve the following:

- Removal of five distribution poles adjacent to Racetrack View Drive
- Installation of two new riser poles (a directly buried wood pole [Pole 28] at the northwest end of the conversion and foundation-mounted steel pole [Pole 35] at the southeast end of the conversion) to connect to the existing overhead line to the new underground duct bank
- Installation of one new wood pole (Pole 26) approximately 100 feet northwest of Pole 28
- Installation of two additional directly buried wood riser poles (Pole 37 and Pole 41) along the underground route to maintain electrical service in the area
- Installation of two temporary wood poles (Pole 122 and Pole 128) to support and spread the existing 12 kV conductors during the installation of Pole 28 and Pole 35

The route is bounded by residential uses to the west and the San Dieguito Lagoon to the east. Attachment 3-A: Detailed Project Components Map depicts the existing and proposed routes for C510. The entirety of the C510 conversion will be installed within SDG&E's existing ROWs and within the franchise position along City of Del Mar and City of San Diego streets. As a result, no new permanent ROW will be required.

3.0.3 C738 Conversion

A portion of C738—a 12 kV distribution line—is underbuilt on approximately three existing TL666D poles currently located in the Los Peñasquitos Lagoon. Prior to the Proposed Project and as part of a separate distribution project, C738 will be relocated from the TL666D poles to new temporary poles located adjacent to the Sorrento Valley Pedestrian/Multi-Use Path. The Proposed Project will convert the relocated section of C738 into an underground configuration within the Sorrento Valley Pedestrian/Multi-Use Path, removing the temporary poles. The underground installation will involve constructing approximately 630 feet of duct bank and utilizing approximately one existing hand hole. The underground conversion will also involve the following:

- Removal of two wood poles (Pole 124 and Pole 125) adjacent to the Sorrento Valley Pedestrian/Multi-Use Path once the installation of the underground duct bank is complete

[3] An underbuilt distribution line is collocated with and installed below a higher voltage power line.

- Installation of one new directly buried wood riser pole (Pole 107) and reconfiguring one existing wood pole as a riser pole (Pole 108) to connect the existing overhead line to the new underground duct bank

- Conversion of one existing foundation-mounted steel distribution pole (Pole 127) to a guy pole

The route is bounded by the Peñasquitos Lagoon to the west and I-5 to the east. Attachment 3-A: Detailed Project Components Map depicts the proposed underground route and temporary and permanent pole locations for C738. The entirety of the C738 conversion will be installed within SDG&E's existing ROWs and within the Sorrento Valley Pedestrian/Multi-Use Path. As a result, no new permanent ROW will be required.

3.1 EXISTING SYSTEM

Figure 3-3: Existing System Configuration and Figure 3-4: Proposed System Configuration provide schematic diagrams of the existing system and the system as it will be configured following construction of the Proposed Project, respectively. As shown in Figure 3-3: Existing System Configuration, three existing tie lines (i.e., TL674A to North City West, TL674B to Rancho Santa Fe, and TL674C to Encinitas) create the Rancho Santa Fe Tap at existing Pole Z119809. Three tie-lines—TL610, TL666D, and TL667—all terminate at the Del Mar Substation. Following the completion of the Proposed Project, TL666D will be removed from the Del Mar Substation. In addition, TL674A will be removed from the Rancho Santa Fe Tap, will be renamed TL6973, and will terminate at the Del Mar Substation.

3.2 PROJECT OBJECTIVES

The Proposed Project has the following two primary objectives:

1. Address the safety, environmental, and reliability concerns in the Del Mar Substation Area
2. Meet mandatory North American Electric Reliability Corporation reliability criteria in the Del Mar Substation Area

Chapter 2 – Project Purpose and Need provides additional details regarding the Proposed Project's objectives.

3.3 PROPOSED PROJECT

As described previously, the Proposed Project includes the following four major components:

- TL674A Reconfiguration – The removal of an approximately 700-foot-long of overhead 69 kV tap and the installation of approximately 1.1 miles of new underground duct bank to connect TL674A (renamed TL6973) to the Del Mar Substation.

- TL666D Removal – The removal of approximately six miles of overhead 69 kV power line between the Del Mar Substation and the intersection of Vista Sorrento Parkway and Pacific Plaza Drive.

- C510 Conversion – The conversion of approximately 3,900 feet of existing overhead 12 kV distribution line to an underground configuration.

- C738 Conversion – The conversion of approximately 630 feet of existing overhead 12 kV distribution line to an underground configuration.

The Proposed Project will not alter the system's existing capacity from a power line or distribution perspective. Each of the four Proposed Project components are discussed in more detail in the subsections that follow.

3.3.0 TL674A Reconfiguration

The portion of TL674A that will be reconfigured is an existing, overhead 69 kV power line. As part of the Proposed Project, approximately 700 feet of the existing overhead alignment will be removed. The remaining conductors will be terminated at a new steel riser pole, and the line will transition to an underground configuration. From the proposed new steel riser pole, approximately 1.1 miles of new, underground 69 kV cable will be installed within a new duct bank and will terminate at the Del Mar Substation. The overhead and underground components are described in the subsections that follow.

Overhead

Poles

To facilitate the reconfiguration of TL674A, two new poles will be installed and one existing pole will be modified as follows:

- Pole 2 – This new, approximately 85-foot-tall, dulled steel riser pole will be installed directly adjacent to and south of Via De La Valle within the Del Mar Horsepark, as depicted in Attachment 3-A: Detailed Project Components Map. This pole will measure approximately three to four feet in diameter at the base and will taper to approximately 1.5 feet at the tip. The pole will be installed on an approximately six- to seven-foot-diameter concrete pier foundation. The foundation will be approximately 22 to 32 feet deep and will include a concrete reveal or stickup of approximately two feet above grade. A drawing of this proposed pole is included in Figure 3-5: Proposed 69 kV Steel Riser Pole Typical Drawing.

- Pole 3 – This new, 65- to 85-foot-tall, dulled steel pole will be installed within the Del Mar Horsepark, directly in line with the existing TL674A overhead alignment, as depicted in Attachment 3-A: Detailed Project Components Map. This direct-buried pole will measure approximately three to four feet in diameter at the base and will taper to approximately 1.5 feet at the tip. A drawing of this pole is included in Figure 3-6: Proposed 69 kV Steel Pole Typical Drawing.

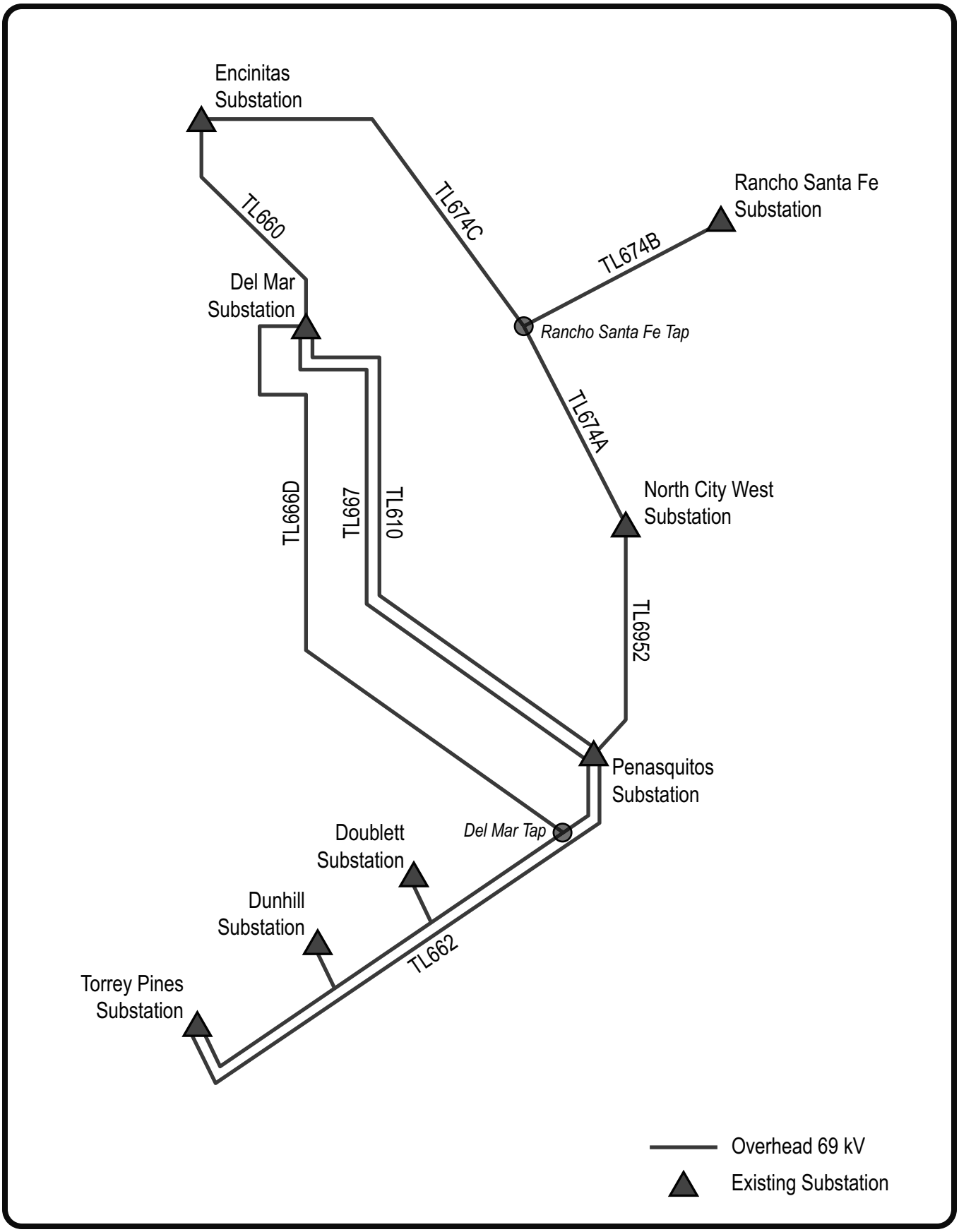

Figure 3-3: Existing System Configuration

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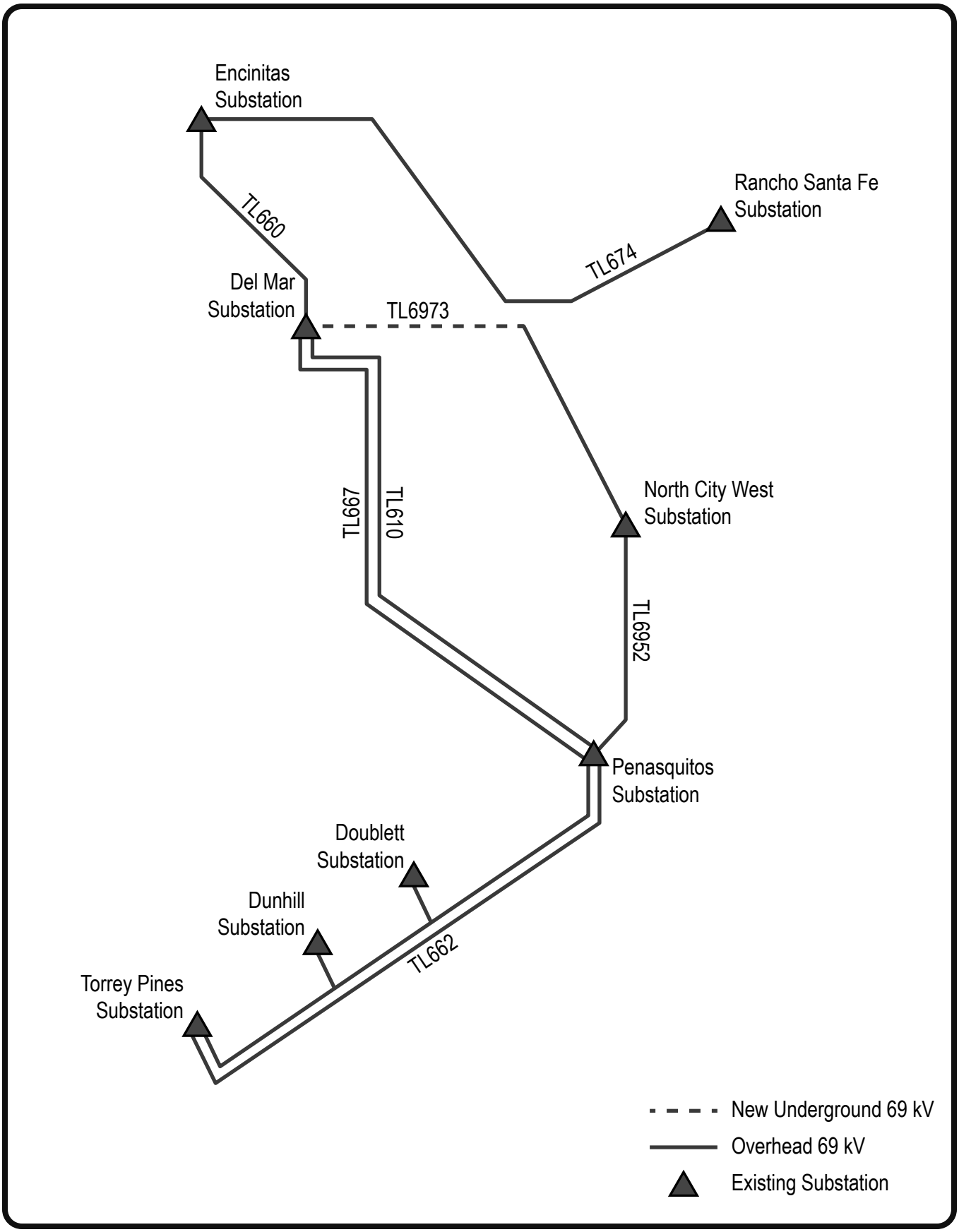

Figure 3-4: Proposed System Configuration

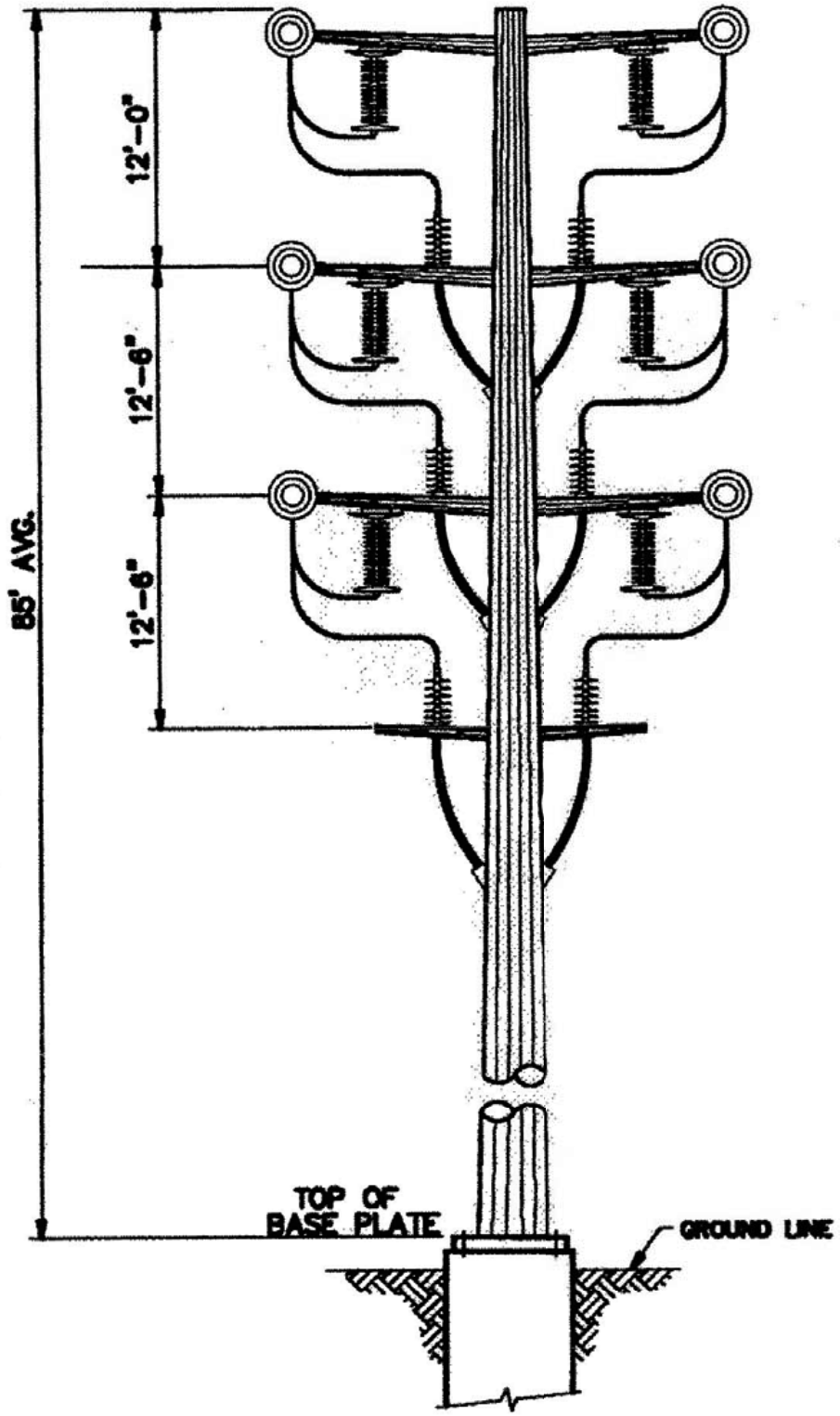

Figure 3-5: Proposed 69 kV Steel Riser Pole
Typical Drawing

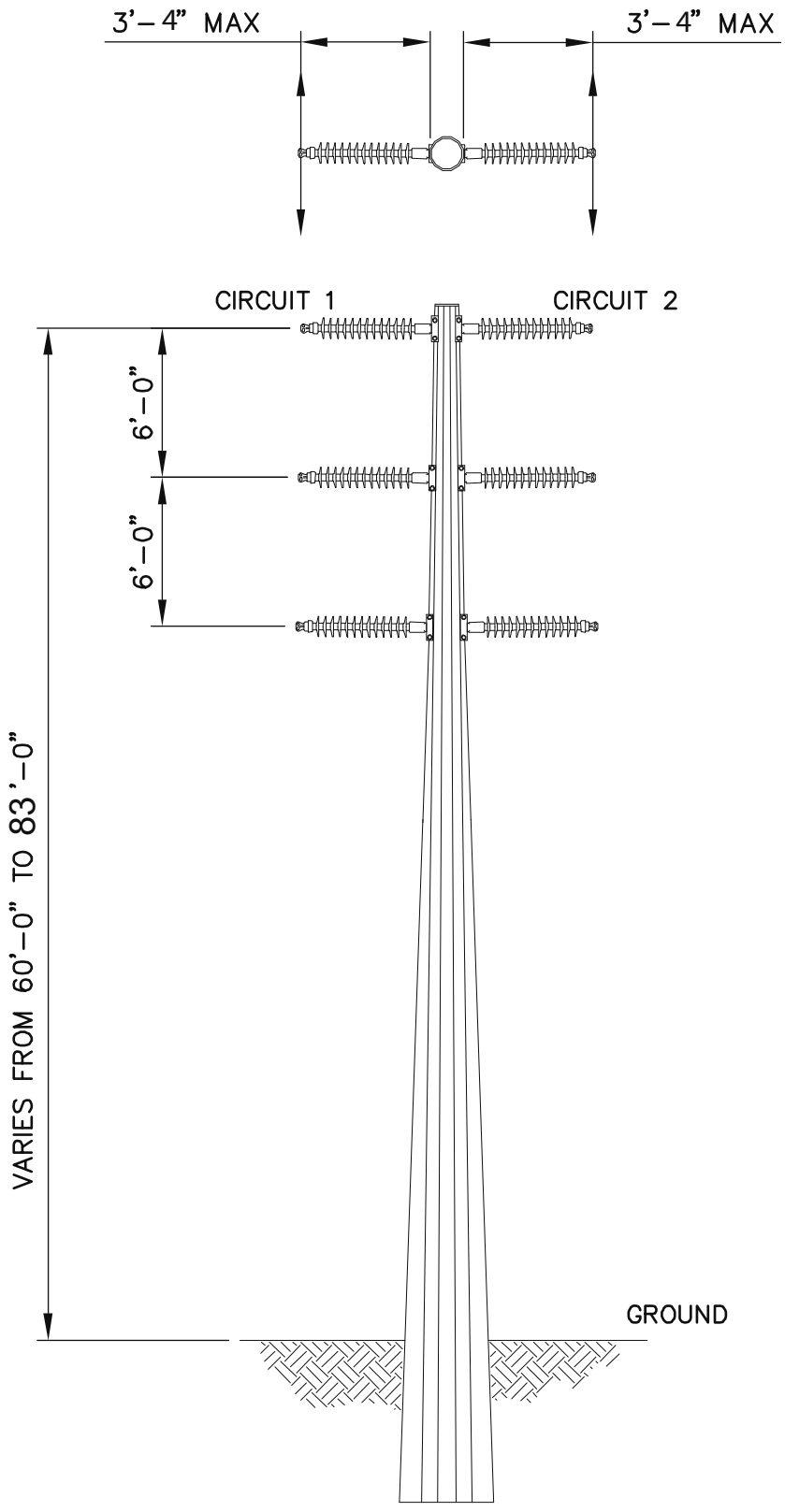

Figure 3-6: Proposed 69 kV Steel Pole
Typical Drawing

- Pole 1 – This existing, approximately 70-foot-tall, tap pole is located in line with TL674A, approximately 500 feet north of Via De La Valle. This pole has a base diameter of approximately 4.5 feet and tapers to a diameter of approximately 2.5 feet at the tip. As depicted in Attachment 3-A: Detailed Project Components Map, this existing pole creates the Rancho Santa Fe Tap, where TL674A, TL674B, and TL674C meet. As part of the Proposed Project, the existing framing, jumpers, and hardware will be reworked/uninstalled to remove the TL674A overhead span between this pole and Pole 2. A drawing of this pole is included in Figure 3-7: Existing 69 kV Tap Pole Typical Drawing.

The dimensions of the proposed poles are summarized in Table 3-1: Modified and Proposed 69 kV Pole Summary.

Table 3-1: Modified and Proposed 69 kV Pole Summary

Pole Type	Proposed Action	Approximate Quantity	Approximate Diameter (feet)		Approximate Height (feet)
			Top	Base	
TL674A Reconfiguration					
New Steel Riser Pole	Install	1	1.5	3 to 4	85
New Steel Pole	Install	1	1.5	3 to 4	65 to 85
Existing Steel Pole	Hardware Reconfigure	1	2.5	4.5	70
TL666D Removal					
Existing Wood Pole	Remove from Service	34	1.0	1.5 to 2.0	65 to 85
	Top	51	1.0	1.5 to 2.0	65 to 85
	Hardware Reconfigure	1	1.0	1.5 to 2.0	65 to 85
Existing Steel Pole	Top	6	1.5	3 to 4	65 to 85
	Hardware Reconfigure	1	1.5	3 to 4	65 to 85

Note: This table is preliminary and subject to change based on final engineering.

Conductor

The overhead portion of TL674A will maintain its current, single-circuit configuration. As a result, each pole will carry three individual conductors. TL674A currently utilizes a horizontal configuration, where all three 636 kcmil[4] aluminum core, aluminum-clad steel reinforced (ACSR/AW) conductors are aligned in the same horizontal plane. The interset steel pole (Pole 3) will help transition the conductors from a horizontal to vertical configuration by having two conductors on one side of the pole and one conductor on the other side of the pole. The pole

[4] kcmil (1,000 circular mils [cmils]) is a quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of cmils. A cmil is the area of a circle with a diameter of 0.001 inch.

conductors will be connected to three grey, polymer post insulators that are mounted directly to the pole. The new steel riser pole (Pole 2) that will be installed adjacent to Via De La Valle will utilize a vertical configuration, with the three conductors located on one side of the pole.

The conductors will be connected to three grey, polymer insulators that are mounted to three individual crossarms. The overhead span length between Pole 2 and Pole 3 will be approximately 550 feet, and the conductors will be installed with a horizontal and vertical spacing of six to seven feet.

Underground

Duct Bank and Splice Vaults

TL674A will transition from an overhead to underground configuration at the new steel riser pole (Pole 2). From this point, approximately 1.1 miles of new underground duct bank will be installed to connect the 69 kV line to the Del Mar Substation. The underground duct package will be comprised of six approximately six-inch-diameter and one approximately four-inch-diameter polyvinyl chloride (PVC) conduits encased in concrete. A typical drawing of the proposed underground duct bank package is included in Figure 3-8: Proposed 69 kV Underground Duct Bank Typical Drawing. In addition to the underground duct banks, approximately four underground splice vaults will be installed to facilitate pulling and splicing during installation and inspection, maintenance, and repair during operation. The precast concrete vaults will measure approximately 17.2 feet long, 9.2 feet wide, and 11.1 feet deep. A drawing of the proposed 69 kV underground splice vaults is included in Figure 3-9: Proposed 69 kV Splice Vault Typical Drawing.

Cable

Three individual 3,000 kcmil copper cables will be installed within the duct bank and will connect the new riser pole to the Del Mar Substation.

3.3.1 TL666D Removal

Poles

As described previously, SDG&E is proposing to remove an approximately six-mile-long portion of TL666D from service. This portion of TL666D is currently supported by a combination of approximately 93 existing wood and steel single-circuit poles. Approximately 61 of the 93 poles also support underbuilt 12 kV distribution conductors. Third-party telecommunications cables are also collocated in various locations along the removal section.

Angle poles are typically used where the alignment changes directions. In areas where the alignment is generally straight, tangent poles are generally used. In areas where poles require additional stability due to the localized terrain or where the line tension at angle poles dictate the need for more stability, stub wood poles and/or guy wires[5] may be connected to the poles. In some instances, steel poles with concrete foundations have been installed, thereby eliminating the need for stub poles and guy wires.

[5] Guy wires are tensioned wires that are used to maintain tension between structures.

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Figure 3-7: Existing 69 kV Tap Pole
Typical Drawing

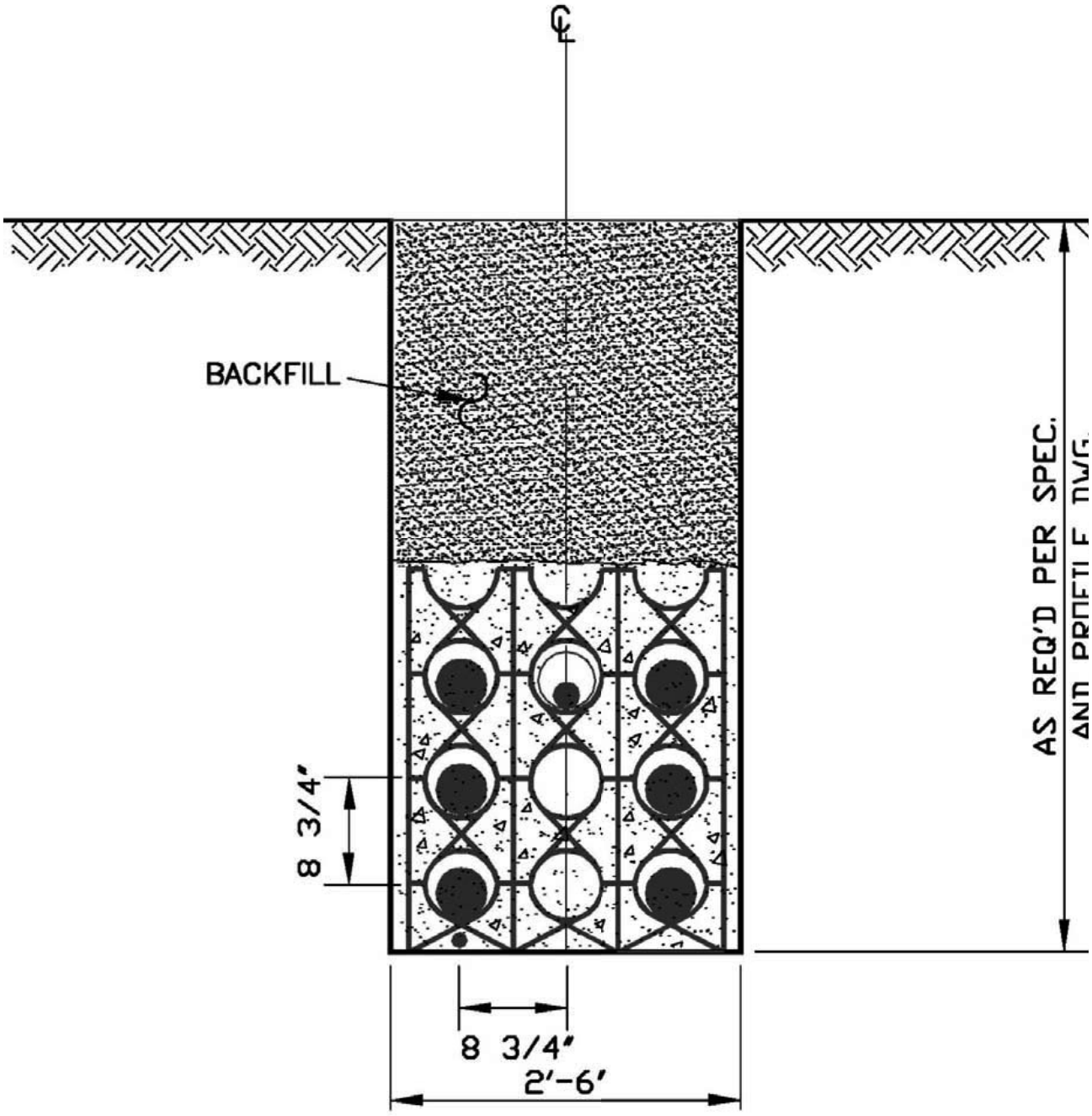
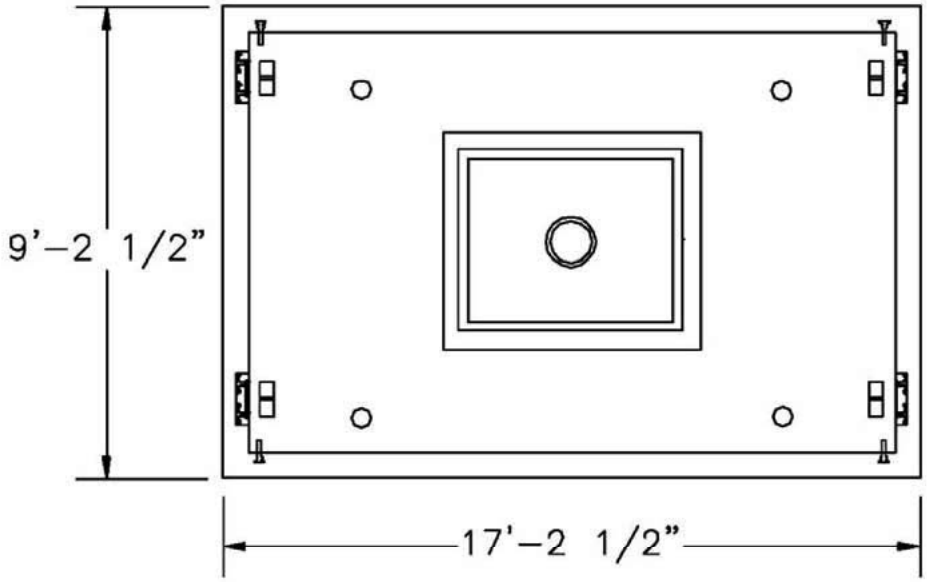
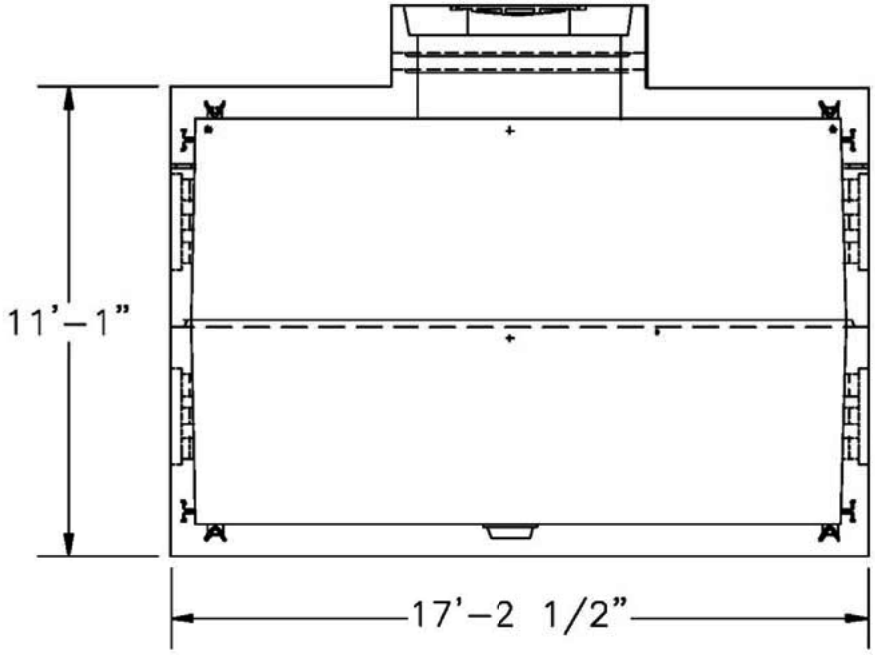


Figure 3-8: Proposed 69 kV Underground Duct Bank
Typical Drawing



PLAN



ELEVATION

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Figure 3-9: Proposed 69 kV Splice Vault
Typical Drawing

The existing wood poles are typically between 65 and 85 feet tall, measure 1.5 to two feet in diameter at the base, and taper to approximately one foot at the tip. The existing steel poles range in height between 65 feet and 85 feet, measure three to four feet in diameter at the base, and taper to approximately 1.5 feet at the tip. The dimensions of the existing poles are summarized in Table 3-1: Modified and Proposed 69 kV Pole Summary. Drawings of the existing 69 kV poles have been included as Figure 3-10: Existing 69 kV Wood and Steel Pole Typical Drawings.

All existing 69 kV poles that also support 12 kV distribution will be topped approximately one foot above the distribution level.[6] The remaining poles will be removed entirely.[7] Poles located within the San Dieguito and Peñasquitos Lagoons and the Torrey Pines State Natural Reserve Extension will be cut off near ground level, and the pole bases will be left in place to reduce the potential for impact to the surrounding area.

Conductor

TL666D is currently configured as a single-circuit power line, where three individual conductors are supported by the associated poles. In locations where the alignment is generally straight, the tangent poles are configured to support one conductor on each side of the pole with a third conductor directly above the pole. In locations where the alignment changes direction, the conductors are generally aligned vertically with all three conductors on the same side of the angle pole. TL666D currently utilizes a combination of 4/0 stranded bare copper, 1,033.5 ACSR conductor, and 336.5 kcmil ACSR conductor. The conductors are typically attached to the poles using between three and six grey, polymer or porcelain insulators. The overhead span lengths between poles currently vary, but average approximately 330 feet. As described previously, all conductor associated with TL666D will be removed as part of the Proposed Project.

3.3.2 C510 Conversion

Overhead

Poles

As described previously, SDG&E is proposing to convert approximately 3,900 feet of C510 from an overhead to underground configuration. Approximately 2,800 feet of C510 is supported by poles associated with TL666D. The remaining approximately 1,100 feet is supported by four existing wood distribution poles. These poles are approximately 40 to 55 feet tall, and taper from approximately 1.5 feet at the base to approximately 0.75 feet at the tip. These five existing poles will be removed as part of the conversion process.

[6] Preliminary engineering indicates that select poles may need to be replaced following the removal of TL666D to reliably support the existing 12 kV distribution conductors. If replacement is necessary, it will be conducted within the work area identified for pole topping in Section 3.5.0 Temporary Work Areas. The replacement poles will be installed using similar methods as the proposed direct-bury wood poles, as described in Section 3.5.5 Methods. A final list of replacement poles will not be determined until final engineering has been completed.

[7] If complete pole removal is not practical (e.g., if the pole cannot be pulled from the ground or it will result in environmental impacts), it will be cut into sections to a depth of six to 24 inches below grade. The base of the pole will be abandoned in place, and the void will be backfilled and compacted with native soil.

One new, approximately 41.5-foot-tall, wood riser pole[8] (Pole 28) will be directly buried at the northwest end of the conversion segment and one new, approximately 50-foot-tall, dulled steel riser pole (Pole 35) will be installed on a foundation at the southeast end of the conversion segment. Additionally, one new, approximately 80-foot-tall, temporary direct-buried wood pole (Pole 122), will be installed near the steel riser pole to provide clearance for the existing wire. This temporary pole will be removed once the wood riser pole is installed. These poles will connect the existing overhead portions of C510 to the new underground duct bank. The poles will measure approximately 1.5 feet in diameter at the base and will taper to approximately 0.75 feet at the tip. The foundation-mounted pole will be installed on an approximately six- to seven-foot-diameter concrete pier foundation. The foundation will be approximately 20 to 30 feet deep and will include a concrete reveal or stickup of approximately two feet above grade. As depicted in Attachment 3-A: Detailed Project Components Map, Pole 28 will be installed adjacent to an existing 69 kV wood pole east of San Dieguito Road, and Pole 35 will be installed where the current TL666D alignment spans Racetrack View Drive on the east side of the street. A drawing of these proposed poles is included in Figure 3-11: Proposed 12 kV Steel Riser Pole Typical Drawing.

Two new, approximately 50-foot-tall, wood riser poles (Pole 38 and Pole 41) will also be installed to connect the new underground duct bank to existing overhead 12 kV distribution poles. The poles will measure approximately 1.5 feet in diameter at the base, and will taper to approximately 0.75 feet at the tip. The approximate locations of these poles have been depicted in Attachment 3-A: Detailed Project Components Map. A drawing of these proposed poles is included in Figure 3-12: Proposed 12 kV Wood Riser Pole Typical Drawing.

Conductor

C510 is currently configured with four individual conductors that are supported by the associated poles in a horizontal configuration. C510 currently utilizes a combination of 1-1/0 and 3-4/0 bare, stranded, copper conductors. The conductors are typically attached to the poles using four individual, grey, polymer insulators. The overhead span lengths between poles currently vary, but average approximately 275 feet. This existing conductor will be transferred to the new wood riser poles in the vicinity of the new duct bank, where appropriate. The existing conductor may be replaced, if necessary. The remainder of the existing conductor will be removed.

Underground

Duct Bank and Hand Holes

C510 will transition from an overhead to underground configuration at the two riser poles installed along San Dieguito Drive and Racetrack View Drive at each end of the conversion segment. Between these two poles, approximately 3,600 feet of new underground duct bank will be installed to maintain distribution service in the area. Each underground duct bank will be comprised of four five-inch-diameter PVC conduits and one four-inch-diameter PVC conduit encased in concrete. The finished duct bank will be approximately 32 inches tall and 18 inches

[8] The wood riser pole (Pole 28) will initially be approximately 70 feet tall and configured to support TL666D and C510. Upon removal of TL666D, Pole 28 will be topped to its final approximate height of 41.5 feet.

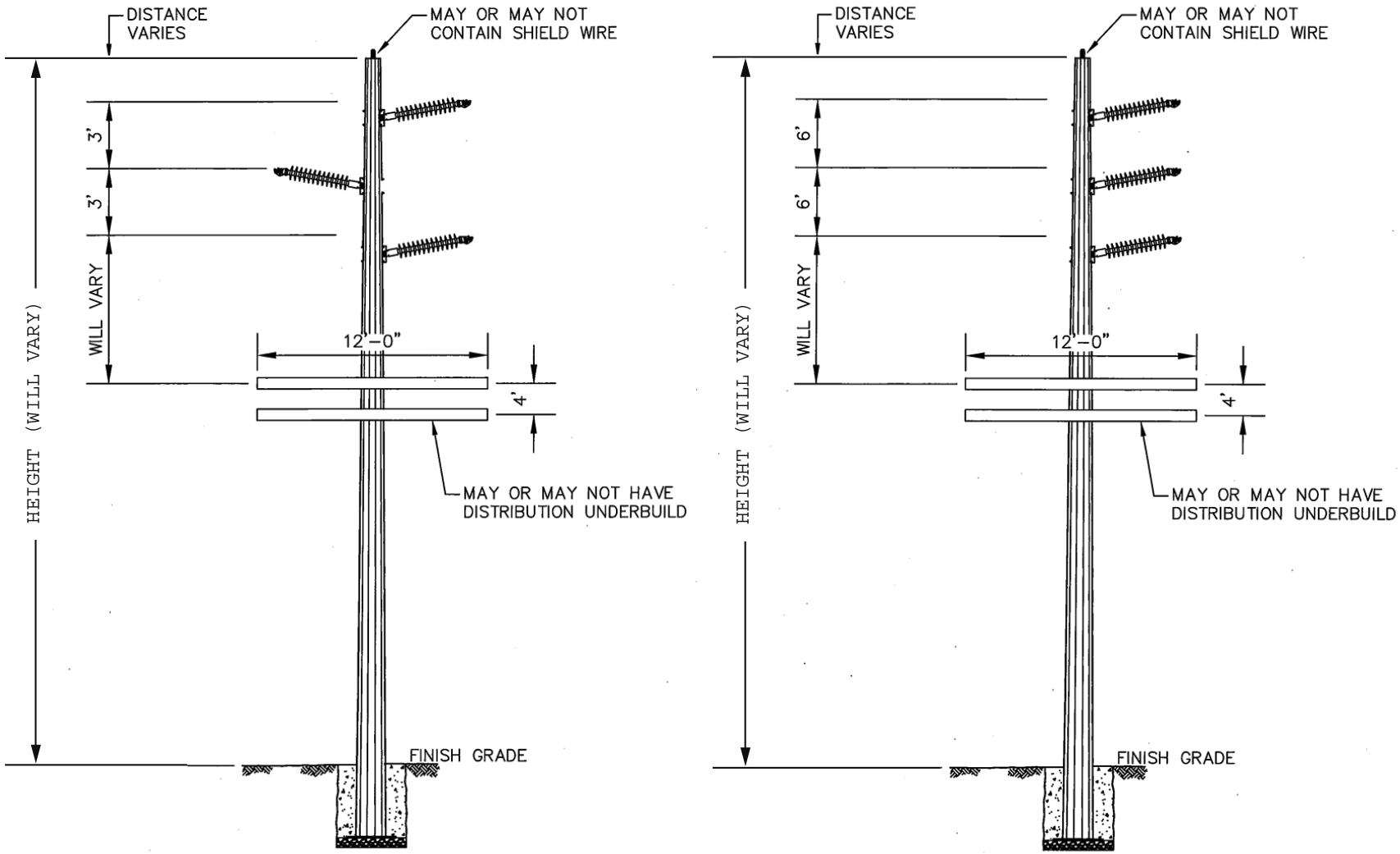


Figure 3-10: Existing 69 kV Wood and Steel Pole Typical Drawings

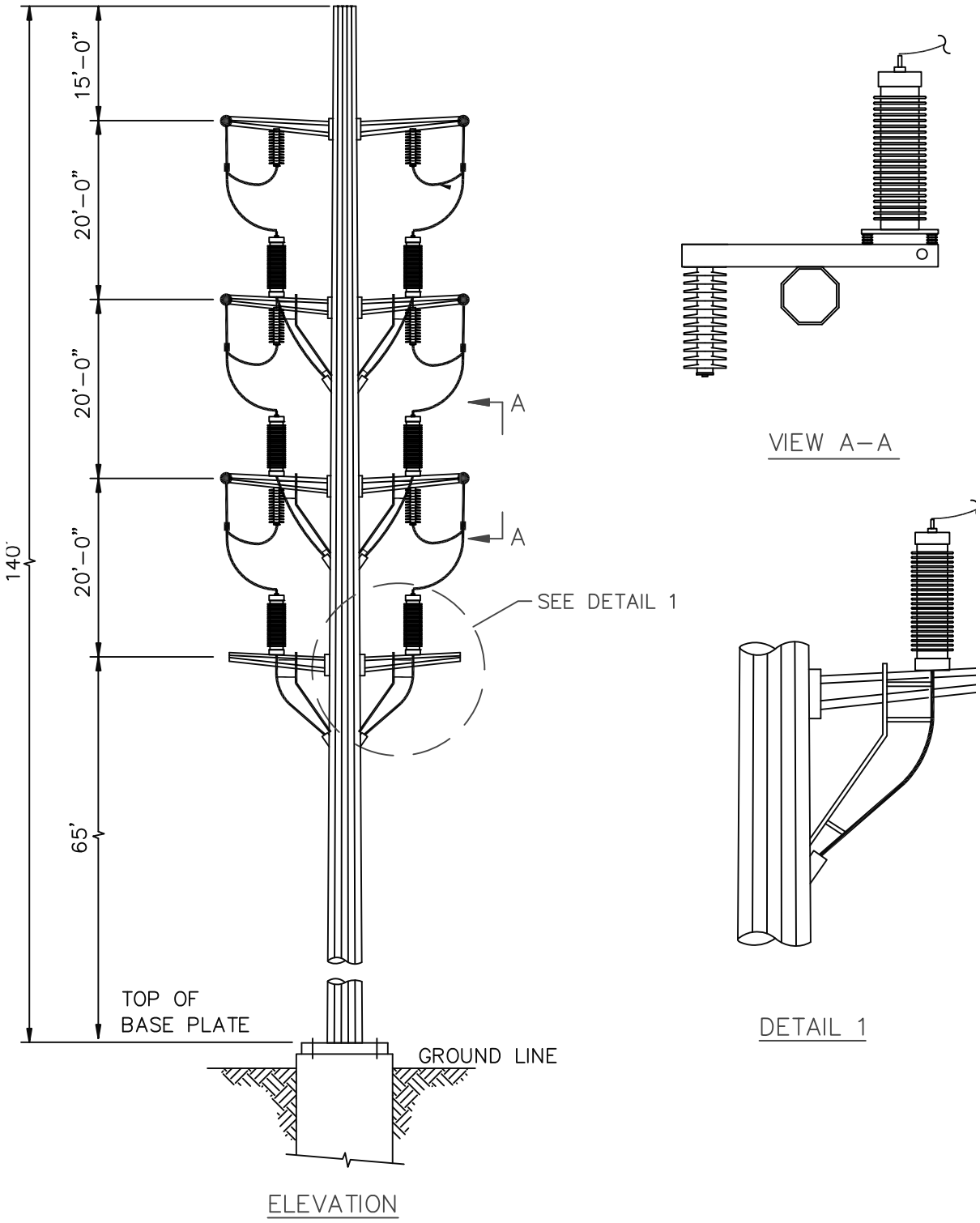


Figure 3-11: Proposed 12 kV Steel Riser Pole
Typical Drawing

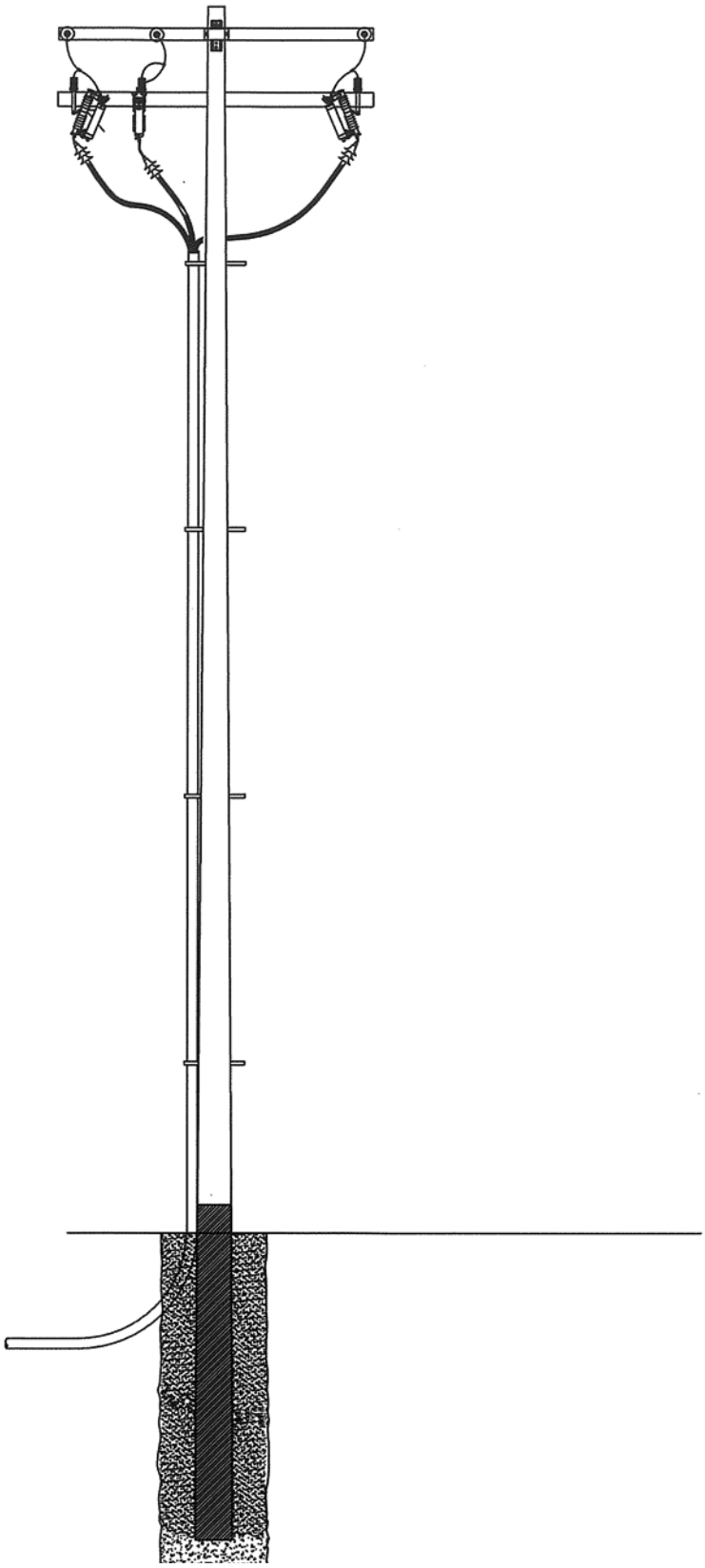


Figure 3-12: Proposed 12 kV Wood Riser Pole
Typical Drawing

wide. A drawing of the proposed underground duct bank package is included in Figure 3-13: Proposed 12 kV Underground Duct Bank Typical Drawing. In addition to the underground duct banks, approximately five underground hand holes with traffic covers will be installed along the new underground alignment to facilitate pulling and splicing during installation and inspection, maintenance, and repair during operation. The precast concrete hand holes measure approximately six feet long, 9.5 feet wide, and seven feet deep. A drawing of the proposed 12 kV underground hand holes is included in Figure 3-14: Proposed 12 kV Hand Hole Typical Drawing.

Pad-Mounted Transformer

Approximately one aboveground transformer will be installed along the underground duct bank route to facilitate the conversion of C510. The transformer will be installed on a concrete pad measuring approximately 78 inches long by 59 inches wide by six inches tall. The transformer will be contained within a steel enclosure that is mounted atop the pad, which will measure approximately 46 inches long by 46 inches wide by 50 inches tall. Drawings of the concrete pad and transformer have been included as Figure 3-15: Proposed 12 kV Transformer Pad Typical Drawing and Figure 3-16: Proposed 12 kV Pad-Mounted Transformer Typical Drawing. The proposed location of the transformer is depicted in Attachment 3-A: Detailed Project Components Map.

Cable

One individual aluminum cables (one 1,000 kcmil polyethylene insulated, concentric neutral, polyethylene jacket [PECN-PEJ]; one three-conductor 2/0-gauge PECN-PEJ; and one three-conductor 2-gauge PECN-PEJ, and one one-conductor 2-gauge PECN-PEJ) will be installed within the duct bank, connecting the two new riser poles and adjacent equipment.

3.3.3 C738 Conversion

Overhead

Poles

As described previously, SDG&E is proposing to convert approximately 630 feet of existing overhead distribution within SDG&E's ROWs and the Sorrento Valley Pedestrian/Multi-Use Path to an underground configuration. This work will involve the installation of one new approximately 50-foot-tall, direct-buried wood riser pole (Pole 107) at the start of the conversion segment, converting one existing direct-buried TL666D wood pole to a riser pole (Pole 108) at the end of the conversion segment, and removing two existing direct-buried wood poles from service (Pole 124 and Pole 125). The poles will measure approximately 1.5 feet in diameter at the base and will taper to approximately 0.75 feet at the tip. A drawing of the proposed riser pole is included as Figure 3-12: Proposed 12 kV Wood Riser Pole Typical Drawing.

One existing, foundation-mounted steel distribution pole (Pole 127) will receive hardware modifications, converting it to a stub pole to support the new, adjacent riser pole. This pole is approximately 45 feet tall, has a diameter of approximately four feet at the base, and tapers to approximately 1.5 feet at the tip.

Conductor

C738 is currently configured with four individual conductors that are supported by the associated poles in a horizontal configuration. C510 currently utilizes a combination of 1-1/0 and 3-4/0 bare, stranded, copper conductors. The conductors are typically attached to the poles using four individual grey, polymer insulators. The overhead span lengths within Peñasquitos Lagoon that will be removed currently vary, but average approximately 190 feet.

Underground

Duct Bank and Hand Holes

C738 will transition from an overhead to underground configuration at the two riser poles installed along Sorrento Valley Pedestrian/Multi-Use Path at each end of the conversion segment. Between these two poles, approximately 630 feet of new underground duct bank will be installed to maintain distribution service in the area. Each underground duct bank will be comprised of two five-inch-diameter PVC conduits encased in concrete. The finished duct bank will be approximately eight inches tall and 18 inches wide. A drawing of the proposed underground duct bank package is included in Figure 3-13: Proposed 12 kV Underground Duct Bank Typical Drawing. In addition to the underground duct bank, one existing underground hand hole will be used along the new underground alignment to facilitate pulling and splicing during installation and inspection, maintenance, and repair during operation.

Cable

One individual aluminum cable (one 1,000 kcmil PECN-PEJ) will be installed within the duct bank, connecting the two new riser poles.

3.4 RIGHT-OF-WAY REQUIREMENTS

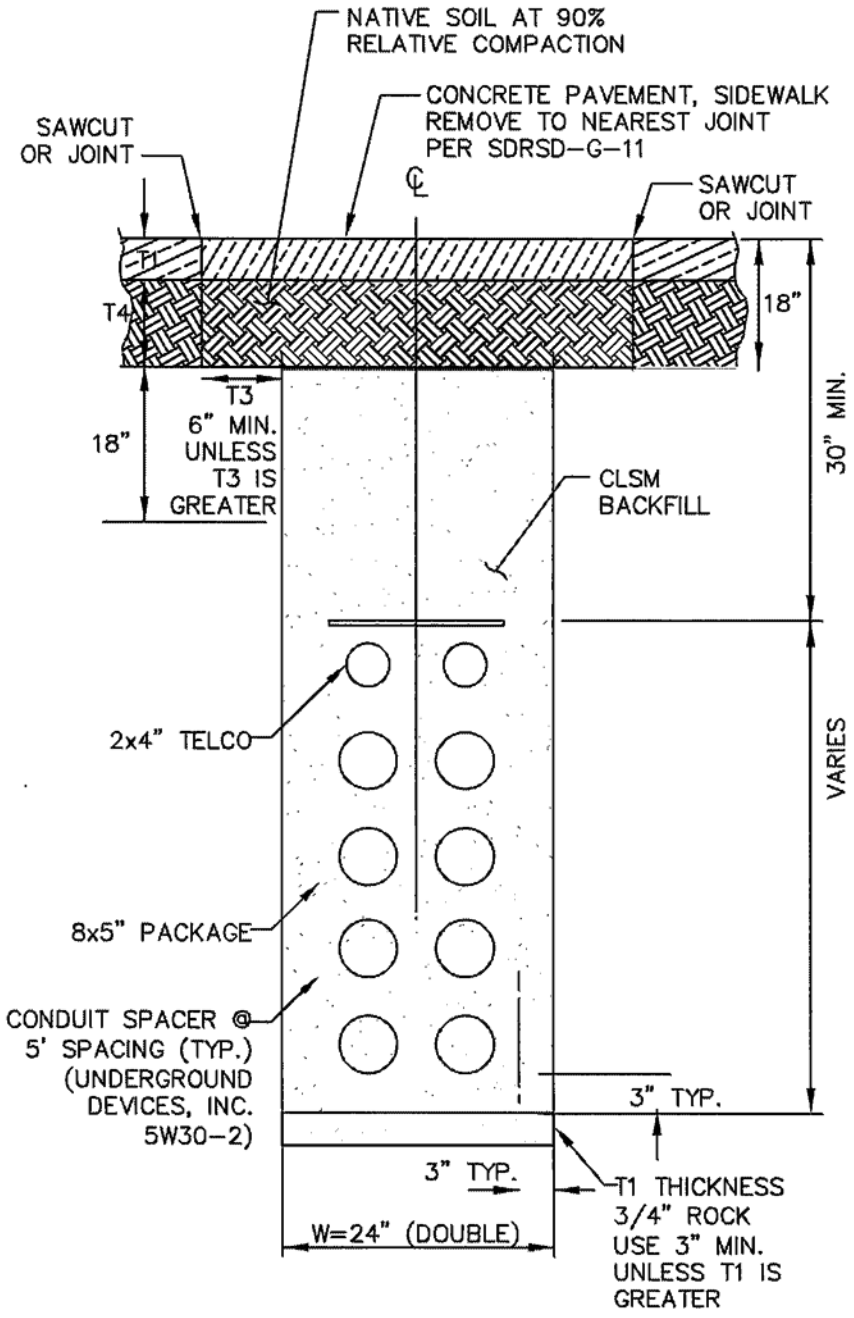
As described previously, the entirety of the Proposed Project will be conducted within SDG&E's existing ROWs or within the franchise position of City of Del Mar and City of San Diego streets. As a result, no new permanent ROW will be required for the Proposed Project.

3.5 CONSTRUCTION

This section describes the required temporary workspace, access, and methods that will be employed to construct the Proposed Project.

3.5.0 Temporary Work Areas

Temporary work areas will be required for the installation of new poles, new underground duct bank (and associated facilities); the removal and modification of existing poles; the installation/removal of conductor and cable; and storage and staging of construction equipment and materials. Each of these temporary work areas is described in detail in the following subsections, and are summarized in Table 3-2: Temporary Work Area Requirements.



DETAIL O

ASPHALT THICKNESS ENCOUNTERED IN THE
POTHOLING VARIED BETWEEN x & x" THICK,
UNDERLYING CONCRETE FOUND APPROXIMATELY x & x" THICK.

Figure 3-13: Proposed 12 kV Underground Duct Bank
Typical Drawing

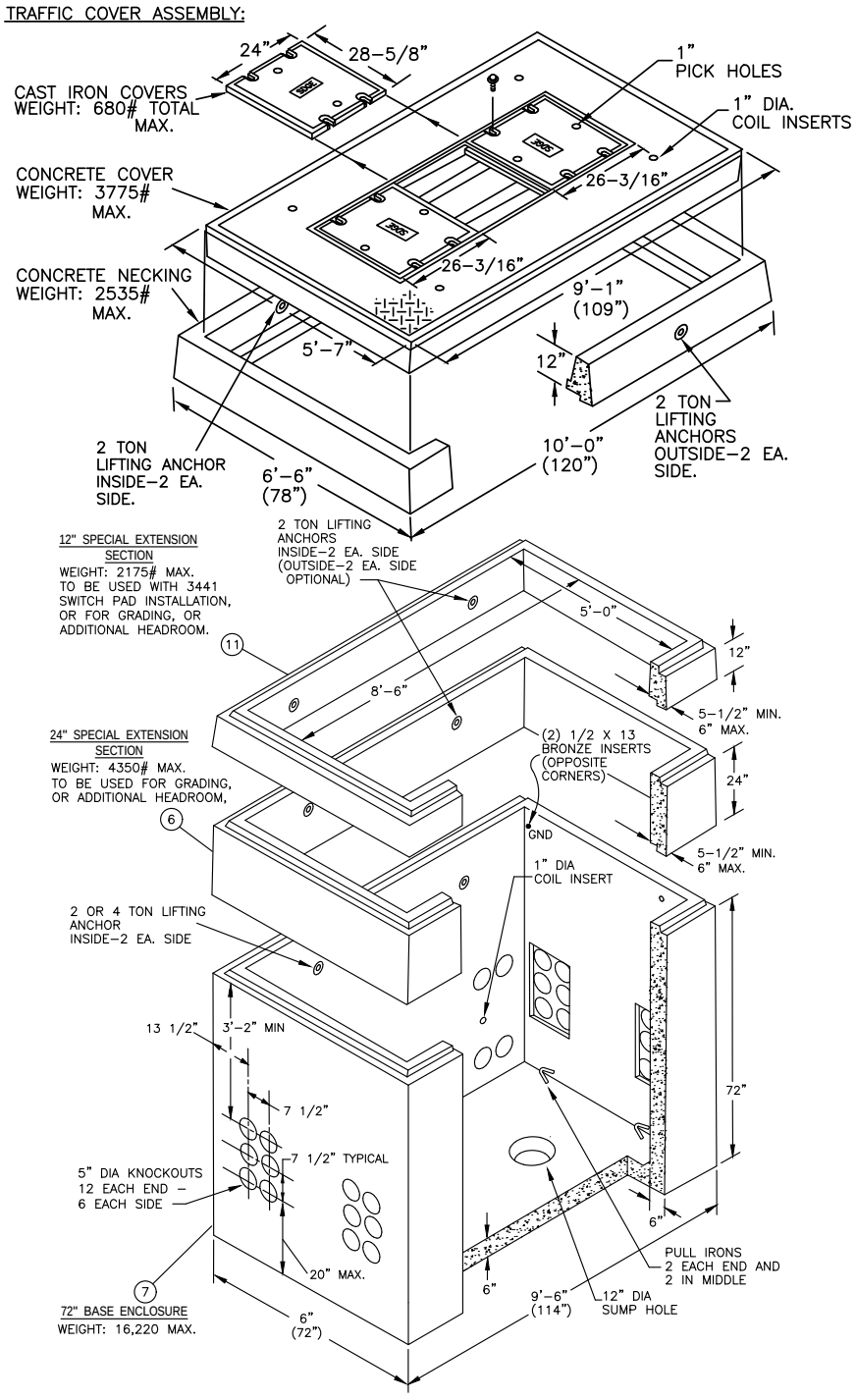


Figure 3-14: Proposed 12 kV Hand Hole Typical Drawing

PAD
WEIGHT: 619# MAX.

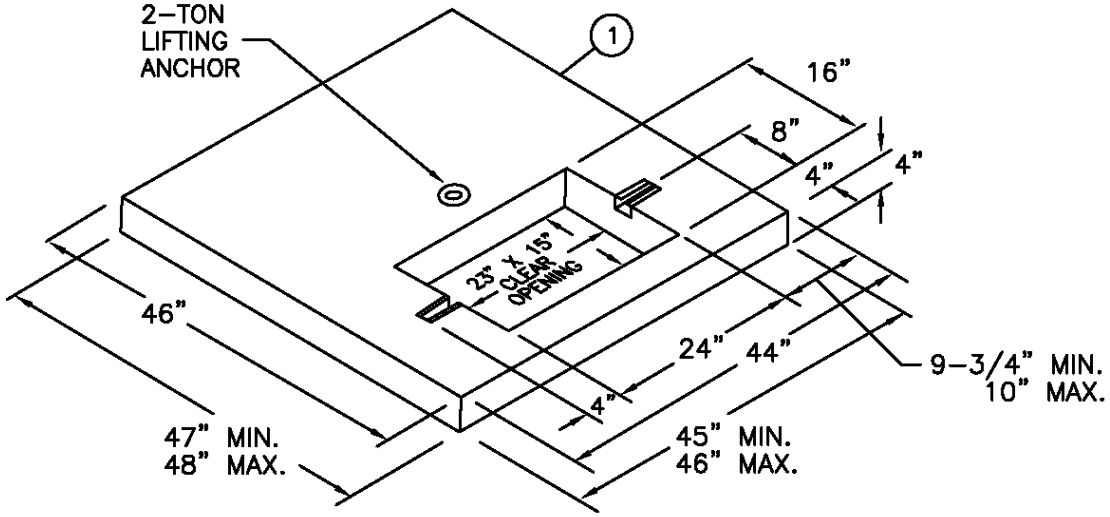


Figure 3-15: Proposed 12 kV Transformer Pad
Typical Drawing

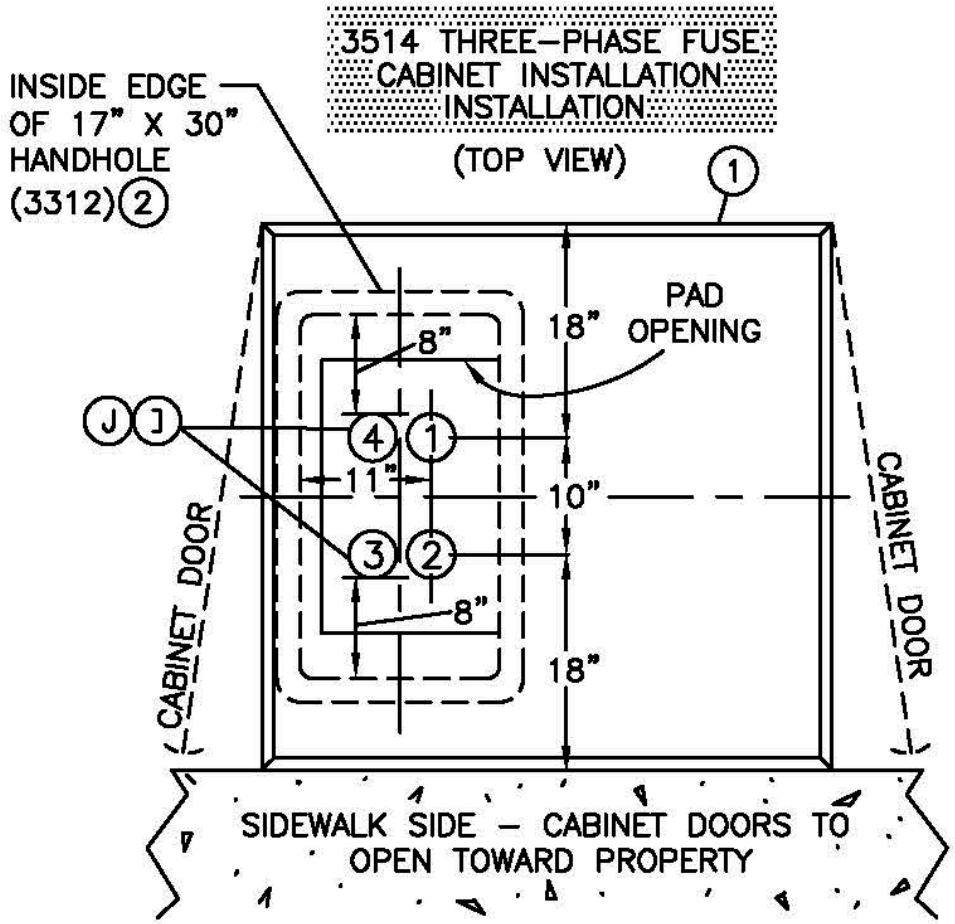


Figure 3-16: Proposed 12 kV Pad-Mounted Transformer Typical Drawing

Table 3-2: Temporary Work Area Requirements

Proposed Project Component	Workspace Type	Quantity	Approximate Dimensions (feet)	Total Approximate Area (acres)
TL674A Reconfiguration	Pole Work Area	1	250 by 100	0.36
		1	230 by 50	0.23
	Overhead Stringing Site	1	100 by 15	0.03
	Underground Stringing Site	4	150 by 25	0.34
	Underground Work Area	1	6,000 by 30	4.13
TL666D Removal	Pole Work Area	94	20 (diameter)	0.68
	Stringing Site	22	100 by 50	2.53
		1	50 by 50	0.06
	Guard Structure Work Area	17	50 by 20	0.39
	Helicopter Drop Zone	6	16 by 16	0.04
		10	10 by 10	0.02
C510 Conversion	Pole Work Area	1	3 (diameter)	< 0.01
		1	4 (diameter)	< 0.01
		6	20 (diameter)	0.04
		1	215 by 30	0.15
		1	150 by 60	0.21
	Underground Work Area	1	3,600 by 20	1.65
	Pad-Mounted Transformer/Fuse Cabinet Installation Area	1	100 by 20	0.05

Proposed Project Component	Workspace Type	Quantity	Approximate Dimensions (feet)	Total Approximate Area (acres)
C738 Conversion	Pole Work Area	5	20 (diameter)	0.04
	Underground Work Area	1	630 by 20	0.29
All	Staging Area/Fly Yard	1	390 by 200	1.1
		1	400 by 400	3.67
		1	250 by 250	1.43
		1	200 by 200	0.92
Total	**--**	**180**	**--**	**18.19**

Notes:
1. This information is preliminary and subject to adjustment based on final engineering, ground conditions at the time of construction, and other factors.
2. The total workspace area required will be less than the total indicated due to overlapping workspaces.
3. The stringing sites associated with the TL674A reconfiguration will also be used to install the underground vaults.
4. The underground work area associated with the C510 conversion will also be used to install the hand holes and install/remove cable/conductor.

The precise location, configuration, and number of temporary work areas may change, as necessary, at the time of construction due to site conditions and to ensure a safe and adequate work area is present for construction workers. Work areas may also be adjusted to avoid and minimize potential impacts to sensitive resources. The preliminary locations are depicted in Attachment 3-A: Detailed Project Components Map. All temporary work areas will be accessed by construction equipment using a combination of existing access roads, overland travel, all-terrain vehicle (ATV) paths, or on-foot access, as described in Section 3.5.1 Access. All work areas will be restored as described in Section 3.5.5 Methods.

Stringing Sites

Approximately 24 stringing sites will be established to provide a safe working space for the installation and removal of overhead conductors. The stringing sites will typically be approximately 100 feet long and 50 feet wide; however, in some locations, smaller sites may be utilized. The stringing sites will be located adjacent to existing or proposed poles and will generally be placed in line with the overhead alignment. As a result, the approximately 24 stringing sites will require approximately 2.62 acres of land in total. Grading of the stringing sites is not anticipated.

Approximately four stringing sites will be established for the installation of new underground conductors associated with the TL674A reconfiguration. Each stringing site will measure approximately 150 feet long and 25 feet wide, and will be centered on each new vault location. The pull sites will require approximately 0.34 acre of land. Grading of these sites is not expected; however, excavation for the trench and vaults will occur in these locations.

Due to site conditions and construction requirements, the locations of the stringing sites may be modified and/or additional stringing sites may be identified during construction to provide a safe and adequate work area for construction workers, and to avoid and minimize impacts to sensitive resources.

Pole Work Areas

To accommodate construction equipment and activities during the installation, topping, and removal of the power line and distribution poles, temporary work areas will be established at each pole location. A total of approximately 111 work areas, totaling approximately 1.72 acres, will be required as summarized in Table 3-2: Temporary Work Area Requirements.

The pole work areas will generally be centered on the existing or proposed pole location; however, the actual workspace will vary in shape and size, and will be determined based on-site conditions and access requirements in order to provide a safe and adequate work area for construction workers. The on-site biological monitor, as appropriate, will assist construction crews in locating pole work areas. In addition, construction vehicles, equipment, and materials may need to be staged away from existing access roads and/or outside of delineated temporary work areas to maintain a safe working space for crewmembers working directly under poles. The on-site biological monitor will assist crews in locating appropriate staging areas for construction vehicles, equipment, and materials.

Underground Construction Areas

To accommodate the installation of the underground duct banks and vaults/hand holes associated with the TL674A reconfiguration, C510 conversion, and C738 conversion, underground construction areas will be established and centered on each duct bank alignment. The underground construction area for C510 will also be used to install the associated hand holes and remove/install the conductor/cable. The 69 kV duct bank will require an approximately 30-foot-wide workspace, and the 12 kV duct banks will require an approximately 20-foot-wide workspace. A total of approximately 5.8 acres of space, predominantly within existing streets and disturbed areas, will be established prior to construction.

Guard Structures

Prior to removing the existing conductor and installing the new overhead conductor, SDG&E will utilize temporary guard structures at road crossings and other locations where the existing or new conductor could come in contact with existing electrical and communication facilities, or with 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, including boom and bucket trucks and wood poles. Where wood poles will be used as guard structures, they typically consist of directly embedded wood poles with a cross-beam, as depicted in Figure 3-17: Proposed Guard Structure Typical Drawing. In some locations (e.g., paved areas), a boom or bucket truck may be used as a guard structure.

Guard structure installation will require an approximately 50-foot by 20-foot temporary workspace, depending on the guard structure configuration and location. Approximately 17 guard structures will be used, requiring a total of approximately 0.39 acre of land in total.

Temporary Poles

It is anticipated that at least two temporary poles will be used during the C510 conversion, as depicted in Attachment 3-A: Detailed Project Components Map. These poles will be used to temporarily hold conductor while new riser poles are installed to facilitate the C510 conversion. It is anticipated that each temporary pole will require an approximately 20-foot-diameter work area (approximately 0.01 acre in total).

Staging Areas/Fly Yards

As depicted in Attachment 3-A: Detailed Project Components Map, the Proposed Project includes four temporary construction staging areas/fly yards, requiring approximately 7.1 acres. These sites will range in size from approximately 200 feet by 200 feet to 400 feet by 400 feet. Because they are all located in flat, previously disturbed or developed areas, it is unlikely that these sites will be graded. These sites may be used for the following purposes:

- refueling areas for vehicles, helicopters, and construction equipment by a mobile fueling truck;
- equipment wash stations;
- pole assemblage;
- storage of material and equipment;
- storage containers;

Figure 3-17: Proposed Guard Structure
Typical Drawing

- construction trailers;
- portable restrooms;
- parking;
- lighting; and
- generator use for temporary power in construction trailers

The four staging areas/fly yards will also be used for helicopter staging, refueling, and to store, assemble, and pick up construction equipment and materials. Helicopters will be used to support the conductor removal process and the pole removal and modification processes in areas where access limitations will preclude the use of ground-based crews. Helicopters will also be used to support the pole removal and modification processes within the San Dieguito and Peñasquitos Lagoons. Helicopters will be staged out of local airports (e.g., Montgomery Field, Gillespie Field, or Palomar Airport) and will also utilize construction staging areas as landing zones.

Helicopter flights will generally be limited to SDG&E's existing ROW, to the greatest extent practical. In instances where helicopters must depart the ROW, they will take the most direct and feasible path between the ROW and supporting staging area/fly yard. Helicopter activities are anticipated to require up to 10 days of total operation. SDG&E best management practices (BMPs) will be implemented at the staging areas/fly yards to reduce potential impacts to air quality, hazards and hazardous materials, and noise. These specific measures are discussed in detail in Section 4.3 Air Quality, Section 4.8 Hazards and Hazardous Materials, and Section 4.12 Noise.

Construction workers will typically meet at the staging areas/fly yards each morning and park their vehicles. Perimeter fencing will be installed if it is not already installed. The perimeter fence may surround the entire site boundary or be limited to portions of the site to match the planned construction activities within the site while providing safe construction conditions and adequate security. Gravel may be used to cover the ground at the staging area to avoid the creation of unsafe surface conditions and unnecessary sediment transport off site.

While SDG&E has exercised reasonable diligence in identifying potential construction staging areas/fly yards, there is no guarantee that the identified sites will be available by the time the Proposed Project is set to begin construction. As a result, other potential staging areas/fly yards may be identified as part of the environmental review process.

Helicopter Drop Zones

Approximately 16 drop zones will be established to support helicopter operations during construction, as depicted in Attachment 3-A: Detailed Project Components Map. The drop zones will be used for the delivery and removal of equipment, materials, and construction crewmembers during the removal and topping of poles within the San Dieguito and Peñasquitos Lagoons. The drop zones will be located in dry, upland areas and will measure between 10 feet by 10 feet and 16 feet by 16 feet. As a result, the drop zones will require approximately 0.1 acre of land.

3.5.1 Access

Access to the Proposed Project will be provided by existing public roadways and a network of existing access roads, ATV roads, and footpaths. To enable crews and equipment to access the associated poles, smoothing or refreshing of the access road surface and/or vegetation clearing may be required prior to use. Any cleared vegetation will be removed from the Proposed Project site and disposed of at an approved off-site facility. Vehicles will remain within existing access roads, previously disturbed areas, and designated temporary work areas, where feasible. A network of temporary footpaths will be used in the San Dieguito and Peñasquitos Lagoons to provide access from adjacent road ways and helicopter drop zones to pole locations. The temporary footpaths generally will not require any vegetation trimming or removal prior to use, and they will be approximately two feet wide. The existing and temporary access roads and paths are depicted in Attachment 3-A: Detailed Project Components Map. The planned access roads and paths are also summarized in Table 3-3: Access Characteristics.

In addition, contractors may require additional turnaround and vehicle passing locations in order to safely operate construction vehicles and equipment. The on-site biological monitor will assist crews in locating vehicle turnaround and passing areas that avoid and minimize impacts to sensitive resources.

Table 3-3: Access Characteristics

Type of Road	Description	Typical Width (feet)	Approximate Length (feet)	Approximate Area (acres)
Existing Dirt/Gravel Road	Typically, a double-track road that may have been graded previously. No other preparation required, although a few sections may need to be re-graded and crushed rock may be applied in very limited areas for traction.	12	4,030	1.11
Existing ATV Road	Vegetation trimming/removal may be required.	8	1,400	0.26
Existing Footpath	No preparation required. Typically, grassy areas that are relatively flat. No restoration will be necessary.	2	5,350	0.25
Temporary Footpath	Vegetation trimming/removal may be required.	2	7,700	0.35

Note: This information is preliminary and subject to adjustment based on final engineering, ground conditions at the time of construction, and other factors.

3.5.2 Permanent Work Areas

The Proposed Project will be located predominantly within existing utility corridors and paved franchise areas that are currently maintained. Operations and Maintenance (O&M) of the Proposed Project will utilize these existing work areas and roads, as well as a limited number of additional permanent work areas that will remain following construction. Table 3-4: Permanent Work Area Summary outlines the anticipated permanent work areas that will be created as a result of the Proposed Project. The permanent work areas described in Table 3-4: Permanent Work Area Summary will be contained within the temporary work areas described in Section 3.5.0 Temporary Work Areas and summarized in Table 3-2: Temporary Work Area Requirements.

Table 3-4: Permanent Work Area Summary

Work Area Type	Approximate Quantity	Approximate Dimensions (feet)	Approximate Area (acres)
New Structure Operation Work Pads[9]	8	30 (diameter)	0.13
69 kV Vaults[10]	4	50 by 20	0.10
12 kV Hand Holes[10]	5	6.5 by 2	< 0.01

Notes: The table contents are based on preliminary engineering and are subject to change. All new structure work pads will be located within SDG&E's existing power line corridors. All permanent work areas associated with the underground vaults and hand holes will be located within City of Del Mar and City of San Diego streets.

3.5.3 Vegetation Clearance

Due to the predominantly urban/developed nature of the Proposed Project's alignment, extensive vegetation clearance is not anticipated as part of construction activities. Approximately 0.05 acre of on-site, natural vegetation will be removed to prepare construction areas for use. Clearing activities would be accomplished through the use of mowers, excavators, and/or hand tools. Section 4.4 Biological Resources contains a detailed discussion of the vegetation clearing requirements for the construction of the Proposed Project.

No trees will be removed as part of the Proposed Project; however, a limited number of trees may require trimming to prepare construction areas for use. This trimming will serve to reduce the potential for any trees to come in contact with electrical lines, potentially resulting in power outages. As needed, tree trimming activities will be conducted utilizing a two-man crew, a one-man aerial lift truck, and a chipper trailer.

[9] Permanent structure operation work pads will be contained within the temporary structure installation work areas.
[10] The vast majority of the underground vaults and hand holes will be located below ground; therefore, only the size of the opening is considered a permanent work area.

3.5.4 Erosion and Sediment Control and Pollution Prevention during Construction

Projects that disturb one acre or more of soil are required to obtain coverage under the State Water Resources Control Board's (SWRCB's) General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (General Permit). To obtain coverage under the General Permit, Permit Registration Documents—including a Notice of Intent, Storm Water Pollution Prevention Plan (SWPPP), risk assessment, site map, certification, and annual fee—must be submitted electronically to the SWRCB prior to initiating construction activities. The SWPPP will include the following:

- Identification of pollutant sources and non-storm water discharges associated with construction activity.
- Specifications for BMPs that will be implemented, inspected, and maintained during construction to minimize erosion and the potential for accidental releases, and to minimize pollutants in the runoff from the construction areas, including pollutants from storage and maintenance areas and building materials laydown areas.
- Specifications for spill response and implementation.
- A record of training provided to persons responsible for implementing the SWPPP.
- Reporting and record-keeping requirements.
- A plan for sampling and analysis of pollutants to ensure that the Numeric Action Levels are met and that Numeric Effluent Limitations are not exceeded.

In addition, as the weather dictates, a specific Rain Event Action Plan will be prepared for all phases of construction. During construction, the San Diego Regional Water Quality Control Board (RWQCB) will oversee and inspect for compliance with the SWRCB's General Permit. In addition, a Hazardous Waste and Spill Prevention Plan will be prepared prior to Proposed Project construction, and will be implemented to ensure that any potential release or spill of hazardous materials during construction of the proposed facilities is properly handled to reduce potential impacts to the less-than-significant level. All non-hazardous soil and grub material that will be transported off site may be disposed of at Miramar Landfill, Sycamore Landfill, or Otay Landfill, located between six and 25 miles from the Proposed Project. All other construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) will be disposed of properly and in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste disposal through transport to an authorized landfill.

3.5.5 Methods

Construction methods for the Proposed Project are described in this section. The procedures for construction may vary slightly along each Proposed Project component's alignment or at any particular site. However, the general methods used to construct overhead and underground power lines are described in the subsections that follow. Prior to excavation or trenching, SDG&E or its contractor will notify other utility companies (via Underground Service Alert) to locate and mark existing underground utilities within the Proposed Project temporary work areas.

Overhead Power Line Construction

Foundation-Mounted Pole Installation

Site Preparation

Prior to installing the pole foundations, vegetation at each of the pole sites will be cleared and the area will be graded either flat or in a terraced fashion, as needed. Material removed during the process will be spread over existing access roads and work pads as appropriate, or disposed of off-site according to all applicable laws.

Foundation Construction

Concrete pier foundations will be constructed by using a large auger to excavate an approximately six- to seven-foot-diameter hole that is approximately 20 to 30 feet deep. If unstable soil conditions are encountered, hole excavations may require installation of steel casings to stabilize the sides of the excavation.[11] Following excavation, a reinforcing steel cage and anchor bolt cage will be installed in each hole. The steel cages will typically be assembled at a staging area/fly yard and transported to the pole site. The anchor bolt cages will be assembled at one of the Proposed Project's staging areas/fly yards and delivered to each pole site. The foundations will require approximately 20 to 45 cubic yards (CY) of excavation, and a slightly larger volume of concrete will be placed into the holes, as the foundations will extend approximately two feet above the ground surface. Once poured, the concrete foundation will be left to cure for seven days to one month. During this time, workers will remove the concrete forms and place backfill around the foundations, as needed.

Steel Pole Installation

Once each foundation has cured, the new steel pole will be delivered to the sites in one or more sections via flatbed truck and will typically be assembled on site using a small, truck-mounted crane. The planned single-circuit riser poles will typically have three crossarms, supporting one circuit on one side of the pole. The crossarms will be bolted to the pole, and the insulators will be bolted to the crossarms. After assembly, a large crane will be used to lift and set the pole sections into place on the anchor bolts that are embedded in the concrete foundation. Nuts will then be threaded onto the anchor bolts and tightened.

Direct-Bury Pole Installation

Installation of direct-bury poles will begin with the excavation of holes measuring approximately three feet in diameter and approximately eight to 12 feet deep, depending on the type and height of the pole. Holes will typically be drilled using a truck-mounted auger or similar equipment, and will excavate between 2.1 and 3.1 CY of soil. New poles will then be delivered to the site and placed in the excavation with a small crane. The annular space (annulus) between the poles and holes will then be backfilled with concrete. Any remaining excavated material will be placed around the poles, spread at adjacent areas, or disposed of off site at an approved facility.

[11] The casing will be selected with a diameter that is an approximate match for the excavation. The casing will be installed along the full depth of the excavation. Individual casing sections are typically limited to 20 feet; therefore, multiple sections of casing may be required for deeper foundations.

Guard Structure Installation

As described previously, SDG&E will utilize temporary guard structures at road crossings and other locations where the existing or new conductor could come in contact with existing electrical and communication facilities, or vehicular and/or pedestrian traffic in the event that the line accidentally falls during stringing operations. Guard structures will be installed using the same methods employed for direct-bury wood poles. As a result, concrete foundations will not be required, and grading or other site work is not anticipated. The temporary guard structure poles will be removed following the completion of conductor stringing operations, and the holes will be backfilled with excavated soil. Staged boom or bucket trucks may be used as a substitute for embedded wood guard structures.

Alternatively, SDG&E may use flaggers to temporarily hold traffic for brief periods of time while the overhead line is installed at road crossings. Traffic control will typically be utilized for small roadway crossings. The Proposed Project route will cross over I-5 between Pole 105 and Pole 106, which is under the jurisdiction of the California Department of Transportation (Caltrans). Crossing I-5 will be conducted pursuant to Caltrans' approved methods, which could include traffic control, guard structures, netting, or any combination of these methods; these approved methods will be outlined within the encroachment permit issued by Caltrans for all highway crossings. SDG&E will acquire encroachment permits and road crossing approvals, if required, and will implement the requirements of these authorizations, including implementation of any special guard structure procedures, as directed by each authorizing agency.

Conductor Removal

Following guard structure installation, SDG&E will coordinate with the California Independent System Operator (CAISO) to obtain all the necessary line clearances prior to beginning conductor removal/installation. This will ensure that the existing power lines can be taken out of service and that power can be redistributed to service centers and customers. SDG&E will coordinate line outages to maintain system reliability and construction personnel safety. Based on preliminary engineering, SDG&E does not anticipate any Proposed Project-based interruption of service to customers during construction.

Conductor removal will begin with the installation of travelers or "rollers" on the bottom of each of the existing insulators using helicopters or aerial manlifts (i.e., bucket trucks). The travelers will allow the conductor to be pulled through each pole until the existing line is removed. After the installation of the travelers, the old conductor will be pulled onto the travelers from pole to pole using helicopters or aerial manlifts traveling along the ROW. Once in place, the old conductor will be attached to a steel cable, pulled through the travelers using conventional tractor-trailer pulling equipment located at the stringing sites, and stored on conductor reels. Temporary anchors may be required to be placed to stabilize the pulling equipment. Alternatively, specialized equipment may be utilized by helicopters for areas with limited access. Figure 3-18: Typical Overhead Conductor Stringing Process depicts the typical conductor stringing process.

In some cases, sleeves or splices may be installed on the power line. This may occur in locations where the existing conductor has been repaired, or if the conductor was not long enough during installation and was joined to another segment. In some instances, it may not be feasible to pull

these splices through the travelers due to their size or integrity. In these instances, the spliced section may be lowered to the ground and the splice will be replaced. The replacement will involve removing the old splice, wrapping a repair sleeve around the outside of the conductor, and pressing it into place to protect the conductor. Full-tension splices, or compression splices, will be utilized if the conductor is too damaged for a repair sleeve. During full-tension splices, the two ends of the conductor will be connected with the use of heavy-duty vices. Alternatively, a small, engineered, implosive charge will be wrapped around a specially designed metallic sleeve, creating a controlled implosive compression that connects the two conductors.[12] The on-site biological monitor will be consulted to select the location and access to the install a repair sleeve or splice. The site and access will be chosen to minimize potential impacts to special-status species, their habitat, and other sensitive resources (e.g., jurisdictional hydrological features).

Approximately 24 designated stringing sites will be required to stage the required heavy equipment and to collect the removed conductor onto reels for transport off site. Attachment 3-A: Detailed Project Components Map depicts the locations of the Proposed Project's stringing sites. Each stringing site will require clearing approximately 0.1 acre. As described previously, depending on topography, some incidental grading may be required at stringing sites to create level pads for equipment. In some locations (e.g., where short distribution spans will be transferred to the new poles or replaced), stringing will be done by hand. These activities will be conducted within the previously identified pole work areas.

Existing Facilities Removal/Modification

As described previously, the Proposed Project will involve the removal or topping of certain existing power line poles. Once the conductor is removed, the existing poles will be removed or topped as described in the subsections that follow.

Wood Pole Removal

Crews will begin the pole removal process by dismantling the existing pole hardware by using boom trucks or bucket trucks in areas with vehicular access. Helicopters will be used in environmentally sensitive areas or in areas without vehicular access. Canoes may also be used to assist with the pole removal process in the San Dieguito and Peñasquitos Lagoons. The wood poles will then be removed completely and transported off site by flatbed truck or helicopter for disposal at an approved facility. If complete pole removal is not practical (e.g., if the pole cannot be pulled from the ground or it will result in environmental impacts), it will be cut into one or more sections to a depth of six to 24 inches below grade. The base of the pole will be abandoned in place and the void will be backfilled and compacted with native soil. In some locations, the poles may be cut off near ground level to avoid impacts to sensitive resources or private property. All associated anchors and stub poles will be removed. Old poles, associated hardware, and any other debris generated from Proposed Project activities will be removed from the Proposed Project site, and recycled or disposed of properly at an approved facility.

[12] Full-tension splices may also be installed if the new conductor is not long enough to span dead-end structures or when stringing locations are spread too far apart. These splices will be installed at the proposed stringing sites.

Pole Topping

As described previously, power line poles that contain a distribution circuit in the underbuild position will be topped approximately one foot above the distribution circuit. Pole-topping work will begin with the removal of the existing hardware, as described previously. A crewmember will then climb each pole and cut it approximately one foot above the distribution infrastructure. Wood poles will be cut with a chain saw, and steel poles will be cut with a mechanical saw and a new top cover plate will be welded to the top of the pole. The pole-top will then be removed and transported to an approved facility for recycling or disposal. Boom/bucket trucks will be used for pole topping in areas that can be accessed by ground-based vehicles traveling on existing developed areas, paved roads, or access roads. Helicopters will be used where vehicular access is not available.

Underground Power Line Construction

The typical underground power line construction process is described in the subsections that follow and is depicted in Figure 3-19: Typical Underground Construction Process within Roadways.

Trenching

SDG&E will conduct exploratory excavations (i.e., potholing) to verify the locations of existing facilities marked out in the field prior to excavation. SDG&E will coordinate with local jurisdictions to secure excavation and encroachment permits for trenching in city streets, as required. Where lane closures are required, proper traffic controls will be implemented as outlined within individual encroachment permits obtained from the local municipality, as required. The duct banks will be installed using open-cut trenching techniques. As depicted in Figure 3-8: Proposed 69 kV Underground Duct Bank Typical Drawing and Figure 3-13: Proposed 12 kV Underground Duct Bank Typical Drawing, most of the duct banks will have a 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 riser pole transition areas. The typical trench dimensions for the installation of a duct bank are six to nine feet deep and 24 to 30 inches wide, depending on the circuit voltage class. The excavation may expand in width to accommodate a flat configuration, if required. Depth may also vary depending on soil stability and the presence of 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 will 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.

Trenching operations will be staged in intervals so that only approximately 300 to 500 feet of trench will be left open at any one time or as allowed by permit requirements. This will generate between 200 and 333 CY of excavated material per day. At any one time, open trench length will not exceed what is required to facilitate the installation of the duct banks. Steel plating will be placed over the open trenches, where appropriate, to maintain vehicular and pedestrian traffic across areas that are not under active construction. Traffic controls will also be implemented to

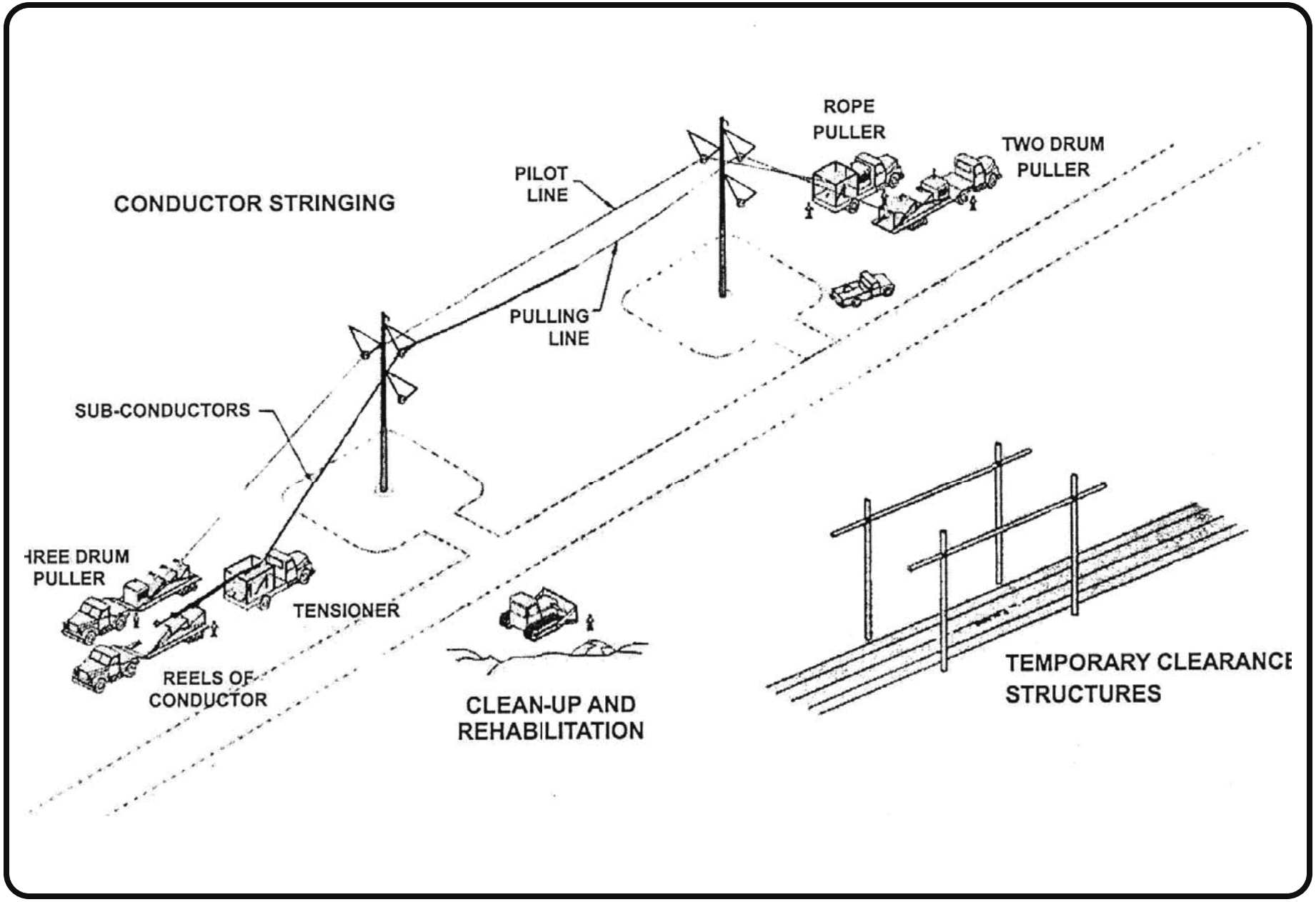


Figure 3-18: Typical Overhead Conductor Stringing Process

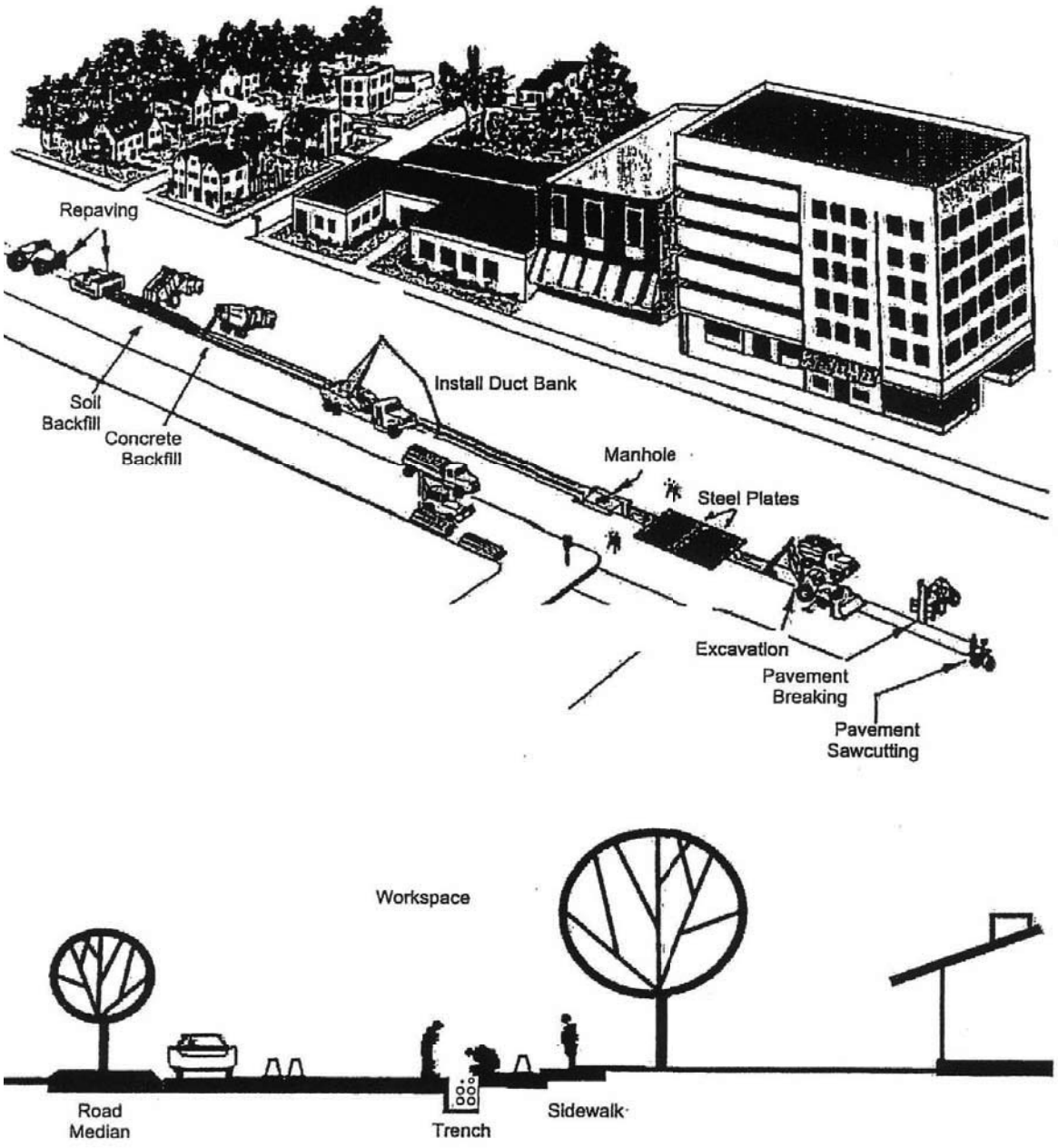


Figure 3-19: Typical Underground Construction Process within Roadways

direct local traffic safely around work areas, as stipulated by required individual encroachment permits. SDG&E will coordinate provisions for emergency vehicle and local access with local jurisdictions, as necessary and discussed further in Section 4.16 Transportation and Traffic.

Throughout trench excavation, asphalt, concrete, and excavated materials will be transported off site for disposal. All non-hazardous materials will be transported to a landfill. Should hazardous materials be found, SDG&E will transport these materials to an appropriately permitted and approved disposal facility. Excavated materials will be tested and may be used as backfill if the material is deemed geotechnically suitable. Testing is not required if the soil is used as backfill for the trench where it was excavated. In the locations where existing concrete will be removed to facilitate trenching activities, concrete saws and other pavement-breaking machines will be used. If this equipment is unable to access the required removal areas, jackhammers will be used on an as-needed basis to break up concrete.

Should suspect soil be encountered during trenching activities, SDG&E will 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. The number of truck trips to transport excavated materials to storage yards and/or disposal facilities will vary based on the rate of the trenching, the area excavated to install the vaults, and the proximity of the storage yards/disposal facilities to the ROW. It is anticipated that approximately 15 to 20 truck trips per day will be required during trenching activities at one site. Other miscellaneous equipment may include a concrete saw, backhoe, excavator, roller compactor, water truck, various paving equipment, and standard one-ton pickup trucks.

Duct Bank Installation

As each section of the trench for the underground duct banks is completed, cable conduits (separated by spacers) will be installed and concrete will be poured around the conduits to form the duct bank encasement. The ducts will typically consist of five- to six-inch-diameter PVC conduits, which will house the electrical cables; and four-inch-diameter PVC conduits for the telecommunications cable used for system protection and communication. The dimensions of the duct banks will be approximately three feet wide by three feet high, and they will be located in the trench at a minimum depth of three feet from top of the encasement to the surface, as depicted in Figure 3-8: Proposed 69 kV Underground Duct Bank Typical Drawing and Figure 3-13: Proposed 12 kV Underground Duct Bank Typical Drawing.

Once the PVC conduits are installed and encased, engineered backfill or the excavated native soil will be imported, placed, and compacted. Each duct bank will have a minimum of 36 inches of cover. A road base backfill or slurry concrete cap will be installed to restore the road in compliance with local requirements. As discussed previously, all non-hazardous soil and grub material that is transported off site may be disposed of at Miramar Landfill, Sycamore Landfill, or Otay Landfill, and material found to contain hazardous material will be disposed of at an approved facility. While the completed trench sections are being restored, additional trench will be opened farther down the alignment. This process will continue until the entire duct bank is in place.

Where the duct banks cross or run parallel to other substructures that operate at normal soil temperature (e.g., gas lines, telephone lines, and water mains), a minimum radial clearance of 12 to 24 inches will be required. Where the duct banks cross or run parallel to other substructures with operating temperatures that significantly exceed the Earth's temperature (e.g., other underground transmission circuits, primary distribution cables, steam lines, and heated oil lines), an increased radial clearance may be required. Clearances and depths will meet requirements set forth in Rule 33.4 of California Public Utilities Commission (CPUC) General Order (G.O.) 128.

Vault/Hand Hole Installation

To facilitate the pulling and splicing of the underground cables, vaults will be installed in line with the 69 kV duct banks, and hand holes will be installed in line with the 12 kV duct banks, as depicted in Attachment 3-A: Detailed Project Components Map. During operation, these structures will provide access to the underground cables for maintenance inspections, repairs, and replacement, if needed. During the trenching activities, the trench will be widened at the underground vault and hand hole locations. The pre-formed, steel-reinforced, pre-cast concrete splice vaults and hand holes will be delivered to the Proposed Project site on flatbed trucks and will be lowered into place using cranes. They will then be connected to the underground duct banks before being covered with the appropriate level of compacted fill. The surface above the vaults and hand holes will be repaved or restored as appropriate. These structures will be designed to withstand heavy truck traffic loading, if within a roadway.

Cable Pulling, Splicing, and Termination

After installation of the conduit and splicing vaults, the cables will be installed in the duct banks. Each cable segment will be pulled into the duct bank, spliced at each of the vaults/hand holes along the route, and terminated at a transition area. To pull the cable through the ducts, a cable reel will be placed at one end of the section and a pulling rig will be placed at the other end. A large rope will then be pulled into the duct using a fish line, and attached to the cable pulling eyes. The cable pulling eyes will then be attached to the conductor, and the cable will be pulled through the duct. A lubricant will be applied to the cable as it enters the duct to decrease friction during pulling.

The electric cables will be pulled through the individual ducts at the rate of approximately two to three segments between vaults/hand holes per day. A splice trailer will be positioned adjacent to the vault/hand hole openings to facilitate cable splicing after the cables are pulled through the ducts. Each splice will require approximately three working days to complete. The vaults/hand holes must be kept dry at all times to keep the unfinished splices dry and to prevent other impurities from affecting the cables.

Dewatering

While not anticipated, in the event that groundwater is encountered during excavation, the following dewatering procedures will be implemented during construction:

- A submersible pump will be installed.
- The groundwater will then be pumped to a desiltation tank (i.e., a Baker tank) at one end for sediment and filtering. Baffles will be installed in the tank to increase sedimentation, and the water in the tank will be allowed to flow out from the opposite end for testing.
- The water will then be tested to ensure compliance with RWQCB National Pollutant Discharge Elimination System requirements. If the water quality does not meet permit requirements, additional Baker tanks will be used, and/or additional treatment or filtering will be performed until the applicable requirements are met.
- The water will be disposed of at an approved SDG&E disposal site.

Cleanup and Post-Construction Restoration

Removed wood poles will be re-used, recycled, or disposed of at an approved facility. Non-reusable treated wood will be disposed of in a composite-lined portion of a municipal solid waste landfill approved by the RWQCB. In San Diego County, the Otay Landfill is currently the only composite-lined landfill that will accept utility poles and treated wood. This facility is located approximately 35 miles south of the Proposed Project in the City of Chula Vista.

SDG&E will restore all areas that are temporarily disturbed by the Proposed Project activities (e.g., stringing sites, pole work areas, and staging areas) to near pre-construction conditions and as consistent with fire break requirements. Restoration could include reseeding; planting replacement vegetation; restoring removed curbs, gutters, and sidewalks; repaving all removed or damaged paved surfaces; or replacing structures (e.g., fences), as appropriate. In addition, all construction materials and debris will be removed from the Proposed Project area and will be recycled or properly disposed of offsite. SDG&E will conduct a final survey to ensure that cleanup activities are successfully completed as required.

3.5.6 Construction Equipment and Personnel

Construction equipment will include excavators, drill rigs, bucket/boom trucks, and trucks for hauling materials and equipment. All exported soil and new fill will be transported using street-legal dump/loader trucks. Overhead and underground line trucks, assist vehicles, and cable dolly trailers will be used for the construction of the power line and distribution circuits. Table 3-5: Construction Equipment Requirements provides the anticipated construction equipment that will be used for each construction activity. It is anticipated that up to 125 workers will be employed for the Proposed Project during peak construction periods. A summary of the anticipated construction personnel by Proposed Project component is included in Table 3-6: Construction Personnel Requirements.

Table 3-5: Construction Equipment Requirements

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
TL674A Reconfiguration				
General Construction	¾-ton or 1-ton Pickup Truck	Transport construction personnel	2	2
	Mechanic Truck	Maintain and refuel equipment	1	1
	Air Compressor	Operate air tools	2	4
	Water Truck	Suppress dust	1	8
Duct Bank Construction and Vault Installation	Dump/Haul Truck	Transport excavated materials and import backfill	3	8
	Small Mobile Crane (12-ton)	Lift and place materials	1	4
	Backhoe	Excavate trenches	1	8
	Concrete Truck	Pour Concrete	5	8
	Drill Rig with Augers	Excavate trenches	1	6
	Handheld Compactor	Compact backfill within the trench	2	8
Foundation Installation	Crane Truck	Lift and place materials	1	6
	Concrete Truck	Pour Concrete	1	3
	Drill Rig with Augers	Foundation Construction	1	6
	Backhoe	Foundation Construction	1	6

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
Foundation Installation (cont.)	Dump/Haul Truck	Haul excavated materials and import backfill	2	4
	Handheld Compactor	Compact soil around structure foundations	1	4
Underground Cable Installation	Bucket Truck/Manlift	Tower Erection and Conductor Installation	2	6
	Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	8
	Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	8
	Splice Trailer	Store splicing supplies	1	NA
Pole Installation	2-ton Flatbed Truck	Deliver pole to site	1	2
	Large Crane	Erect pole	1	6
	Bucket Truck/Manlift	Erect pole and install hardware	2	8
Reconfigure Tap	Bucket Truck/Manlift	Access poles and install/remove conductor	2	6
	Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	8
	Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	8
	Splice Trailer	Store splicing supplies	1	NA

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
TL666D Removal				
General Construction	¾-ton or 1-ton Pickup Truck	Transport construction personnel	2	2
	Air Compressor	Operate air tools	1	4
	Maintenance Truck	Maintain and refuel equipment	1	1
	Water Truck	Suppress dust	1	8
Conductor Removal	Bucket Truck/Manlift	Access poles and install/remove hardware	2	6
	Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	8
	Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	8
	Splice Trailer	Store splicing supplies	1	NA
Pole Removal/ Modification	2-ton Flatbed Truck	Deliver and remove poles to and from site	1	2
	Large Crane	Pole/pole section removal	1	6
	Drill Rig with Augers	Excavate holes for pole installation	2	5
	Small Mobile Crane (12-ton)	Load and unload materials	2	5
	Backhoe	Excavate pole bases	1	5
	Handheld compactor	Compact soil around poles	1	5

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
Pole Removal/ Modification (cont.)	Chainsaw	Cut existing poles	2	2
	Air Compressor	Operate air tools	4	4
	Bucket Truck/Manlift	Access poles and remove hardware	2	8
	Helicopter	Remove poles/pole segments	1	8
C510 Conversion				
General Construction	¾-ton or 1-ton Pickup Truck	Transport construction personnel	2	2
	Air Compressor	Operate air tools	1	4
	Maintenance Truck	Maintain and refuel equipment	1	1
	Water Truck	Suppress dust	1	8
Duct Bank Construction and Hand Hole Installation	Dump/Haul Truck	Transport excavated materials and import backfill	3	8
	Small Mobile Crane (12-ton)	Lift and place materials	1	4
	Backhoe	Excavate trenches	1	8
	Concrete Truck	Pour concrete	5	8
	Drill Rig with Augers	Excavate trenches	1	6
	Handheld Compactor	Compact backfill within the trench	2	8

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
Foundation Installation	Crane Truck	Lift and place materials in excavation	1	6
	Concrete Truck	Pour concrete	1	3
	Drill Rig with Augers	Excavate for foundation	1	6
	Backhoe	Excavate for foundation	1	6
	Dump/Haul Truck	Haul excavated materials and import backfill	2	4
	Handheld compactor	Compact soil around foundations	1	5
Pole Installation and Removal	2-ton Flatbed Truck	Deliver and remove poles to and from site	1	2
	Large Crane	Pole erection/removal	1	6
	Drill Rig with Augers	Excavate holes for pole installation	2	5
	Small Mobile Crane (12-ton)	Load and unload materials	2	5
	Backhoe	Excavate pole bases	1	5
	Compactor	Compact soil around structure	1	5
	Chainsaw	Cut existing poles	2	2
	Air Compressor	Operate air tools	4	4
	Bucket Truck/Manlift	Tower Erection and Conductor Installation	2	8
	Handheld compactor	Compact soil around poles	1	5

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
Conductor/Cable Installation/Removal	Bucket Truck/Manlift	Tower Erection and Conductor Installation	2	6
	Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	8
	Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	8
	Splice Trailer	Store splicing supplies	1	NA
C738 Conversion				
General Construction	¾-ton or 1-ton Pickup Truck	Transport construction personnel	2	2
	Air Compressor	Operate air tools	1	4
	Maintenance Truck	Maintain and refuel equipment	1	1
	Water Truck	Suppress dust	1	8
Duct Bank Construction and Hand Hole Installation	Dump/Haul Truck	Transport excavated materials and import backfill	3	8
	Small Mobile Crane (12-ton)	Lift and place materials	1	4
	Backhoe	Excavate trenches	1	8
	Concrete Truck	Pour concrete	5	8
	Drill Rig with Augers	Excavate trenches	1	6

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
Duct Bank Construction and Hand Hole Installation (cont.)	Handheld Compactor	Compact backfill within the trench	2	8
Foundation Installation	Crane Truck	Lift and place materials in excavation	1	6
	Concrete Truck	Pour concrete	1	3
	Drill Rig with Augers	Excavate for foundation	1	6
	Backhoe	Excavate for foundation	1	6
	Dump/Haul Truck	Haul excavated materials and import backfill	2	4
	Handheld compactor	Compact soil around foundations	1	5
Pole Installation and Removal	2-ton Flatbed Truck	Deliver and remove poles to and from site	1	2
	Large Crane	Pole erection/removal	1	6
	Drill Rig with Augers	Excavate holes for pole installation	2	5
	Small Mobile Crane (12-ton)	Load and unload materials	2	5
	Backhoe	Excavate pole bases	1	5
	Compactor	Compact soil around structure	1	5
	Chainsaw	Cut existing poles	2	2
	Air Compressor	Operate air tools	4	4

Construction Activity	Vehicle/Equipment Type	Use	Quantity Required	Hours Operating at Site/Day (per vehicle)
Pole Installation and Removal (cont.)	Bucket Truck/Manlift	Tower Erection and Conductor Installation	2	8
	Handheld compactor	Compact soil around poles	1	5
Conductor/Cable Installation/Removal	Bucket Truck/Manlift	Tower Erection and Conductor Installation	2	6
	Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	8
	Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	8
	Splice Trailer	Store splicing supplies	1	NA

Table 3-6: Construction Personnel Requirements

Activity	Position	Approximate Number
TL674A Reconfiguration		
Duct Bank Construction and Vault Installation	General Foremen (Supervisor)	1
	Inspector	1
	Field Supervisor	1
	Operator	4
	Laborer	13
Foundation Installation	Field Supervisor	1
	Operator	2
	Laborer	4
Underground Cable Installation	General Foreman	1
	Foreman	3
	Journeyman/Lineman	6
	Apprentice	3
Pole Installation	Foreman	1
	Lineman	4
Reconfigure Tap	Foreman	2
	Journeyman	4
	Apprentice	2
TL666D Removal		
Conductor Removal	Foreman	3
	Journeyman	6
	Apprentice	3
Pole Removal/Modification	Foreman	1
	Lineman	4
C510 Relocation		
Duct Bank Construction and Hand Hole Installation	Foremen	1
	Inspector	1
	Journeyman	1
	Operator	4
	Laborer	13

Activity	Position	Approximate Number
Foundation Installation	Foreman	1
	Laborer	4
Pole Installation and Removal	Foreman	1
	Lineman	4
Conductor/Cable Installation/Removal	Foreman	3
	Journeyman	6
	Apprentice	3
C738 Relocation		
Duct Bank Construction and Hand Hole Installation	Foremen	1
	Inspector	1
	Journeyman	1
	Operator	4
	Laborer	13
Foundation Installation	Foreman	1
	Laborer	4
Pole Installation and Removal	Foreman	1
	Lineman	4
Conductor/Cable Installation/Removal	Foreman	3
	Journeyman	6
	Apprentice	3

3.5.7 Construction Schedule

The Proposed Project is anticipated to require approximately 12 months to complete, and is anticipated to begin in January 2019 with below-grade construction at the Del Mar Substation. The new pole and underground duct bank installation for TL674A is anticipated to occur between February and November 2019. Once TL674A is reconfigured, the removal of TL666D will begin and is anticipated to be completed in January 2020. It is anticipated that C510 will be relocated during February and March 2019. Construction is anticipated to take place during normal work hours from Monday through Saturday pending jurisdictional requirements. A detailed construction schedule is included in Table 3-7: Proposed Construction Schedule.

3.6 OPERATION AND MAINTENANCE

As part of the TL674A reconfiguration, approximately 1.1 miles of new underground duct bank and two new 69 kV poles will be installed. SDG&E currently operates and maintains TL610 and TL667, which are installed parallel to the proposed underground duct banks within Via De La Valle. In addition, the two new 69 kV poles will be installed within an established power line corridor. As a result, O&M activities are already being conducted in the area on overhead and underground 69 kV power lines and therefore any increases in O&M activities will be considered negligible.

The TL666D removal will eliminate all future O&M activities associated with this line. The poles that are topped to allow for the existing overhead distribution conductors to be retained will continue to be operated and maintained in the same manner as they were prior to Proposed Project construction.

Conversion of C510 will eliminate the O&M requirements associated with approximately 3,900 feet of existing overhead distribution line. The proposed riser poles will all be placed within close proximity to existing poles that will be removed; therefore, no new O&M requirements will be required in these locations. This Proposed Project component will also include approximately 3,600 feet of new underground duct bank. SDG&E currently owns and operates existing underground distribution facilities in the vicinity of this Proposed Project component; therefore, the required O&M activities are currently conducted in the area and any increases in O&M activities will be considered negligible.

The power line facilities associated with the Proposed Project will be inspected, maintained, and repaired following completion of the Proposed Project. O&M activities will involve both routine preventive maintenance and emergency procedures to maintain service continuity. Aerial and ground inspections of Proposed Project facilities will be performed. Aboveground components will be inspected annually (at a minimum) for corrosion, equipment misalignment, loose fittings, and other common mechanical problems.

Table 3-7: Proposed Construction Schedule

Proposed Project Component	Activity	Approximate Duration (months)	Anticipated Start Date
General	Site Development and Yard/Trailer Setup	0.25	01/10/19
TL674A Reconfiguration	Duct Bank Construction and Vault Installation	3.5	02/02/19
		0.5	02/02/19
	Foundation Installation	3.5	02/02/19
	Underground Cable Installation	2	09/03/19
	Pole Installation	2	09/03/19
	Reconfigure Tap	0.25	11/01/19
TL666D Removal	Conductor Removal	1	11/06/19
	Pole Removal/ Modification	1.5	12/02/19
C510 Conversion	Duct Bank Construction and Hand Hole Installation	1.75	02/02/19
	Foundation Installation	1	01/20/19
	Pole Installation and Removal	2	01/20/19
	Conductor/Cable Installation/Removal	2	02/15/19
C738 Conversion	Duct Bank Construction	1	01/20/19
	Pole Installation and Removal	1	01/20/19
	Conductor/Cable Installation/Removal	1	02/15/19

SDG&E will maintain an approximate 30-foot minimum (from edge to pole/foundation) working space around all new steel power line structures and an approximate 10-foot minimum working space around all new wood poles. These areas will be kept clear of shrubs and other obstructions for inspection and maintenance purposes. In addition, vegetation that has a mature height of at least 15 feet will not be allowed to grow within 10 horizontal feet of any conductor within the ROW for safety and reliability reasons.

3.7 ANTICIPATED PERMITS AND APPROVALS

The CPUC is the Lead Agency for the Proposed Project. SDG&E must comply with CPUC G.O. 131-D Section III-B, which contains the permitting requirements for the construction of the Proposed Project. This Proponent's Environmental Assessment (PEA) is being prepared as part of an application to obtain a Permit to Construct (PTC) for the Proposed Project.

In addition to the PTC, SDG&E is required to obtain a number of other permits from state and local agencies. Table 3-8: Anticipated Permits and Authorizations lists the permits, approvals, and licenses that SDG&E anticipates obtaining from jurisdictional agencies.

3.8 PROJECT DESIGN FEATURES AND ORDINARY CONSTRUCTION RESTRICTIONS

SDG&E currently owns and maintains TL674A, TL666D, C510, and C738. Consequently, SDG&E's existing O&M practices for these facilities are incorporated as part of the environmental setting and baseline for the Proposed Project.

These practices—as well as all other currently enacted internal guidance pertaining to access roads and facility construction—are included as part of the baseline for the Proposed Project and are therefore considered part of the Proposed Project's existing conditions. As part of SDG&E's preliminary engineering design for the Proposed Project, potential impacts to biological, cultural, hydrological, and other environmental resources were considered with respect to removing and topping existing poles, installing new poles, and installing new underground facilities. SDG&E conducted literature searches, desktop-level research, and field surveys to identify and map these resources prior to completing the preliminary engineering design for the Proposed Project as described in Chapter 4 – Environmental Impact Assessment. Information obtained from this research was reviewed in conjunction with the Proposed Project's preliminary design to avoid and minimize potential impacts while achieving the Proposed Project's goals and objectives. Where possible, proposed facilities were designed to avoid potential sensitive resources.

The Proposed Project includes Project Design Features and Ordinary Construction Restrictions that avoid and minimize environmental impacts. The Project Design Features and Ordinary Construction 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 Project Design Features and Ordinary Construction Restrictions have been developed over time to avoid and minimize environmental impacts, to comply with SDG&E's Subregional Natural Community Conservation Plan (NCCP), and to comply with applicable environmental

Table 3-8: Anticipated Permits and Authorizations

Permit/Authorization	Agency	Jurisdiction/Purpose
State Agencies		
PTC	CPUC	Overall project approval and California Environmental Quality Act (CEQA) review
General Permit	SWRCB	Storm water discharges associated with construction activities disturbing more than one acre of land
Coastal Development Permit	California Coastal Commission	Development within the coastal zone
Right-of-Entry Permit	California Department of Parks and Recreation	Construction within a state park
Encroachment Permit	Caltrans	Construction, operation, and maintenance within, under, or over a state road ROW
Local Agencies		
Encroachment Permit	City of San Diego	Construction, operation, and maintenance within, under, or over a city or county road ROW
Traffic Control Permit		Construction work within the public ROW
Access Permit	City of Del Mar	Construction, operation, and maintenance within, under, or over a city road ROW

laws and regulations. To be consistent with its existing practices, SDG&E will implement these Project Design Features and Ordinary Construction Restrictions as appropriate during construction to avoid and minimize potential environmental impacts.

The Project Design Features and Ordinary Construction Restrictions that will be incorporated into all phases of the Proposed Project are described as follows:

- **Fugitive Dust Control.** All unpaved construction areas will be watered, as necessary, during construction to reduce dust emissions and to meet San Diego County Air Pollution Control District Rule 55 requirements. SDG&E or its contractor will keep the construction area sufficiently dampened to control dust caused by construction and hauling, and will provide at all times reasonable dust control in areas subject to windblown erosion.

- **Bulk Material Transport.** All loads will be secured by covering them or by sufficiently watering and using at least two feet of freeboard to avoid carry-over.

- **Equipment Emissions.** SDG&E or its contractor will maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after five minutes when not in use. Construction activities will be phased and scheduled to avoid emission peaks, and equipment use will be curtailed during second-stage smog alerts.

- **Volatile Organic Compound (VOC) Reduction.** Low- and non-VOC-containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings will be used to reduce VOC emissions.

- **Cultural Resource Monitoring.** A qualified archaeologist will monitor ground-disturbing activities in all cultural resource sites identified within Proposed Project impact areas. The requirements for archaeological monitoring will be noted in the construction plans. The archaeologist's duties will include monitoring, evaluation of any finds, analysis and curation of materials, and preparation of a monitoring results report conforming to Archaeological Resource Management Reports guidelines.

- **Cultural Resource Training.** Prior to construction, all SDG&E, contractor, and subcontractor personnel on the Proposed Project will receive training regarding the appropriate work practices necessary to effectively implement SDG&E's Project Design Features and Ordinary Construction Restrictions relating to cultural resources to comply with the applicable environmental laws and regulations, including the potential for exposing subsurface cultural resources and paleontological resources and to recognize possible buried resources. This training will include presentation of the procedures to be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains, as well as paleontological resources.

- **Cultural Resource Discovery.** In the event that cultural resources are discovered, SDG&E's Cultural Resource Specialist and Environmental Project Manager will be contacted at the time of discovery. SDG&E's Cultural Resource Specialist will

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 in the vicinity of the discovery are allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program will be prepared and carried out to mitigate impacts. All collected cultural remains will be cleaned, cataloged, and permanently curated at an appropriate institution. All artifacts will be analyzed to identify their function and chronology as they relate to the prehistory or history of the area. Faunal material will be identified as to species.

- **Local Noise Standards.** In the event construction noise is anticipated to exceed 75 A-weighted decibels at adjacent residential properties or other sensitive land uses, SDG&E will meet and confer with the City of San Diego and/or City of Del Mar to discuss temporarily deviating from the local noise standards.

- **Construction Hours.** SDG&E will meet and confer with the City of San Diego and City of Del Mar, as needed, regarding activities that will be conducted outside of the hours permitted by the relevant noise ordinances.

3.9 APPLICANT-PROPOSED MEASURES

In addition to the Project Design Features and Ordinary Construction Restrictions, SDG&E will incorporate the applicant-proposed measures (APMs) that have been identified and developed specifically for the Proposed Project during the preparation of the PEA. Table 3-9: Applicant-Proposed Measures identifies the APMs and indicates to which Proposed Project component they apply. The applicable resource sections within Chapter 4 – Environmental Impact Assessment outline how and when the APMs will be applied to avoid or minimize impacts to a less-than-significant level.

Until the final design is complete—and in some cases until installation occurs—utility projects must remain more flexible in the definition of their ultimate configuration and placement than most non-utility projects. The Proposed Project may encounter unique man-made and natural features or site-specific engineering challenges 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 or challenges, and enhance SDG&E's ability to avoid or minimize future potential impacts to sensitive environmental resources.

3.9.0 Implementation of Applicant-Proposed Measures

SDG&E will be responsible for overseeing the assembly of construction and environmental teams that will 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 those contracted by SDG&E to perform this work will be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects.

Implementation of the proposed APMs will be the responsibility of the environmental compliance team. The team will include an environmental project manager, resource specialists, and environmental monitors. All APMs will be implemented consistent with applicable federal, state, and local regulations. The environmental compliance team will be responsible for the inspection, documentation, and reporting of SDG&E compliance with all APMs as proposed. As needed, environmental specialists will be retained to verify that all APMs are properly implemented during the construction phase.

If conditions occur where construction may potentially adversely affect a known or previously unknown environmentally sensitive resource, or if construction activities significantly deviate from Proposed Project requirements, SDG&E monitors and/or contract administrators will have the authority to halt construction activities, if needed, until an alternative method or approach can be identified. Any concerns that arise during implementation of the APMs will be communicated to the appropriate authority to determine if corrective action is required, or the concerns will be addressed on site, as applicable.

As the proposed APMs are implemented, environmental monitors from SDG&E will be responsible for the review and documentation of such activities. Field notes and digital photographs will be used to document and describe the status of APMs, as necessary.

Table 3-9: Applicant-Proposed Measures

APM Number	Description	Proposed Project Component			
		TL674A Reconfiguration	TL666D Removal	C510 Conversion	C738 Conversion
BIO-01	During the appropriate phenological (i.e., blooming) periods, pre-construction surveys for special-status plants (specifically, federally listed, state-listed, and California Rare Plant Rank 1 and 2 plants) will be conducted within one year prior to the start of construction in areas that have the potential for special-status plants to occur. A hand-held Global Positioning System unit with submeter accuracy will be used to record the locations of special-status plant occurrences. Prior to construction, any occurrences of special-status plants that SDG&E determines to be avoidable will be marked with fencing or flagging, for avoidance during construction activities. Where disturbance to these areas cannot be avoided, SDG&E will restore temporarily impacted areas, as described in APM-BIO-05.	✓	✓	✓	✓
BIO-02	Biological monitors will be present during all activities within special-status species habitat and sensitive natural communities. The biological monitors will conduct a pre-construction clearance survey of the work area and will verify that activities are in compliance with the Project APMs and SDG&E's Subregional NCCP Operational Protocols.	✓	✓	✓	✓
BIO-03	To minimize the spread of noxious and invasive weeds during construction, SDG&E will ensure that construction vehicles arrive to work sites clean and weed-free prior to entering the ROW in cross-country areas, ensure straw wattles (non-plastic) used to contain storm water runoff are weed-free, and document the extent of noxious weeds within the construction areas prior to construction. Noxious weeds are defined as species rated as High on the California Invasive Plant Inventory Database, published by the California Integrated Pest Council.	✓	✓	✓	✓
BIO-04	Impacts to oak trees, Torrey pines, and other native trees will be avoided and/or minimized to the extent possible during construction. In the event that any native trees are required to be removed, SDG&E will comply with all applicable City of San Diego and/or City of Del Mar requirements for tree preservation and mitigation.	✓	✓	✓	✓
BIO-05	All areas disturbed as a result of construction activities will be re-contoured and restored to the original conditions to the extent feasible including using soil salvaging and special-status plant protections as described in SDG&E's Habitat Enhancement Measures. These areas will be allowed to revegetate naturally.	✓	✓	✓	✓
BIO-06	A Nesting Bird Management Plan will be prepared to outline procedures for minimizing impacts to nesting birds protected by the Migratory Bird Treaty Act during construction. The plan will address how to avoid direct or indirect impacts to nesting birds through various measures, including: • conducting pre-construction nesting bird surveys during specified breeding times within a certain distance of the construction areas; • establishing avoidance and minimization buffers for active nests based on species-specific noise tolerances; • describing construction activities that can occur within avoidance and minimization buffers; • implementing procedures for reducing buffers as appropriate; and • monitoring protocols to document compliance with the Nesting Bird Management Plan, including daily nesting bird reports, during construction. The Nesting Bird Management Plan will be implemented during construction for all potentially affected bird species.	✓	✓	✓	✓
BIO-07	If a special-status wildlife species is identified on site during construction, crews will temporarily stop work in the immediate vicinity of the animal and immediately contact the biological monitor or designated SDG&E representative. Work will not proceed until the animal has moved out of harm's way on its own or has been relocated by a qualified biologist.	✓	✓	✓	✓
BIO-08	Nighttime construction lighting in suitable habitat for special-status wildlife and nesting birds will be minimized to the extent feasible. Exterior lighting within and adjacent to potential special-status wildlife habitats will utilize the lowest illumination allowed for human safety and will be selectively placed, shielded, and directed away from suitable special-status species habitat, to the maximum extent practicable.	✓	✓	✓	✓

APM Number	Description	Proposed Project Component			
		TL674A Reconfiguration	TL666D Removal	C510 Conversion	C738 Conversion
BIO-09	Prior to construction, a habitat survey for potential bat roosts that may be impacted by construction activities will be conducted. During the survey, potential roost sites will be searched for signs of bat use, such as urine streaking, grease marks and droppings, moth wings, and dead bats. Up to two weeks prior to construction, a qualified biologist will conduct bat surveys at roost sites identified as potentially active from signs of bat use identified during the survey. If bats are detected, SDG&E will avoid conducting construction activities that may directly impact the active roost site. If an active maternal roost is identified, no construction will occur within 200 feet of the maternal roost during the pupping season (typically April 1 through August 31).		✓		
BIO-10	To the maximum extent feasible, construction vehicles and equipment will be refueled, maintained, and repaired at least 100 feet away from a wetland or water feature. If refueling, maintaining, or repairing equipment and vehicles in or within close proximity to wetlands is unavoidable, appropriate secondary spill containment will be used to prevent spills in sensitive habitats.	✓	✓	✓	✓
GEO-01	SDG&E will consider the recommendations and findings of a final geotechnical investigation and the contractor's Geotechnical Engineer regarding the potential for seismic activity, landslides, expansive soils, slope instability and differential settling. SDG&E will incorporate those recommendations, as appropriate, into the final design of the Proposed Project. The final Proposed Project design will be reviewed and approved by a Professional Engineer registered in the State of California prior to construction.	✓	✓	✓	✓
PS-01	No less than 60 days prior to beginning construction, SDG&E will coordinate with schools (or the appropriate school district) that are located within 250 feet of Proposed Project activities. These schools include the following: • Therapeutic Learning Center • Del Mar Hills Elementary School • Del Mar Hills Nursery School • Brighter Future Preschool and Child Development Center • Del Mar Heights Elementary School SDG&E and the schools (or school district) will determine the best time to conduct construction activities that have the potential to impact schools in an effort to avoid major school events and to minimize any disruption to learning. Where feasible, SDG&E will conduct construction activities outside of the scheduled school year, during seasonal breaks, outside of peak drop-off and pick-up hours for the standard school day, at night, or during weekends to reduce potential impacts to local schools.	✓	✓		
REC-01	SDG&E will post signage at access points to recreational facilities that may be subject to access restrictions due to the Proposed Project no less than four weeks prior to the beginning of construction activities within or adjacent to the facilities. These facilities will include Torrey Pines State Natural Reserve, Torrey Pines State Beach, Del Mar Horsepark, and Sorrento Valley Pedestrian/Multi-Use Path. This signage will notify users of the impending construction activities; construction impacts (e.g., increased noise and dust); the affected locations; and the estimated duration of any necessary temporary closures or access restrictions. Contact information for the Proposed Project's public liaison will be provided on the signage, and the public liaison will address any complaints related to dust, noise, and access restrictions.	✓	✓	✓	✓
REC-02	Authorities for recreational facilities that may be subject to access restrictions (i.e., the California Department of Parks and Recreation and the City of San Diego) will be directly contacted and given advance notice of Proposed Project activities no less than four weeks prior to construction. SDG&E will also coordinate with the 22nd District Agricultural Association that manages and operates the Del Mar Horsepark at least four weeks prior to construction to minimize potential impacts to the facility and its users during construction.	✓	✓	✓	✓
TRA-01	At least 30 days prior to construction of the Proposed Project, SDG&E will coordinate with the Del Mar Fire Department and the San Diego County Sherriff's Department to inform them of the planned lane closures along Jimmy Durante Boulevard and to minimize potential disruptions to emergency vehicle response times.		✓		

APM Number	Description	Proposed Project Component			
		TL674A Reconfiguration	TL666D Removal	C510 Conversion	C738 Conversion
TRA-02	At least 30 days prior to construction, SDG&E will coordinate with the North County Transit District on the planned construction activities, including the timing and duration of construction in the vicinity of existing bus stops along Via De La Valle. This coordination will include the identification of potential temporary relocation of bus stops in order to maintain service during construction. At least 10 days prior to the bus stop closure, SDG&E will post signs near any affected bus stops to notify bus riders of any potential modifications the standard bus schedule, alternate stops in the area, and a phone number to call to obtain more information.	✓			