TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

3.0 PROPOSED PROJECT DESCRIPTION

San Diego Gas & Electric Company (SDG&E) is a regulated public utility that provides electric service to 3.4 million customers within a 4,100-square mile service area that covers 25 cities and unincorporated areas in San Diego County and in a portion of Orange County. In an effort to eliminate a North American Electric Reliability Corporation (NERC) Category B violation and to improve service reliability and fire safety, SDG&E proposes the Tie-Line (TL) 695 and TL 6971 Reconductor Project (i.e., the Proposed Project), which will replace existing conductor, remove existing wood pole structures, and install new steel pole structures along an approximately 10-mile long, 69 kilovolt (kV) power line in northern San Diego County and southern Orange County. The power line is located primarily on federal military lands in the western portion of Marine Corps Base (MCB) Camp Pendleton with a small portion being located in the City of San Clemente.

SDG&E originally began to evaluate the potential environmental impacts of the Proposed Project by creating a Project Study Area (PSA), which is a "survey corridor" centered on the proposed power line alignment and extending 150 feet on either side.[1] This Proponent's Environmental Assessment (PEA) provides a detailed analysis of the potential environmental impacts of Proposed Project activities that will occur within this 300-foot PSA, and within the proposed staging yards. After the PSA was created and after the conclusion of the spring survey windows for sensitive plant and wildlife species, numerous components were added to the Proposed Project. Not all such components are within the 300-foot PSA. Twelve pole structures, six helicopter Incidental Landing Areas (ILAs), a portion of the Talega Staging Yard, and three stringing sites are situated outside of the 300-foot PSA and will require supplemental biological resources, cultural resources, and/or jurisdictional wetlands surveys and analyses to determine whether these additional components of the Proposed Project will create any impacts. Furthermore, additional resource surveys will be conducted on access roadway segments and nine work/staging/turnaround areas adjacent to the roads, that may be utilized for the Proposed Project and that lie outside of the 300-foot PSA. The results of these surveys and analyses will be provided to the California Public Utilities Commission (CPUC).

The CPUC will be the lead agency for the Proposed Project under the California Environmental Quality Act (CEQA). SDG&E is submitting this PEA to the CPUC in support of its Application for a Permit to Construct.

3.1 PROPOSED PROJECT LOCATION

As shown in Figure 3-1, Proposed Project Vicinity Map, the Proposed Project components are located primarily in the westerly portion of MCB Camp Pendleton, in San Diego County. The total length of the Proposed Project is approximately 10 miles. While the majority of the Proposed Project is contained within MCB Camp Pendleton, two segments of the power line alignment extend into the City of San Clemente, in Orange County.

[1] The PSA is an area that extends outward from the Proposed Project alignment within which various environmental surveys are conducted. The PSA encompasses the Proposed Project area, which includes the various areas of Proposed Project-related ground disturbance.

In addition, the western segment running from Cristianitos Road to San Onofre Nuclear Generating Station (SONGS) Mesa is located within the California Coastal Commission's Coastal Zone boundary. Appendix 3-A contains a Regional System Map which shows the location of existing 69kV alignments and substations in San Diego County. As shown, TL 695 and TL 6971 are situated to the north and west of all other 69kV facilities in the county.

As depicted in Figure 3-2, Proposed Project Overview Map, the northern limit of the reconductor project is located outside MCB Camp Pendleton, to the north and west of the Talega Substation. From this point, the Proposed Project area runs west before turning south into MCB Camp Pendleton toward the San Mateo Junction (i.e., west of the Sierra Training Area), along the ridge tops of steep hills located to the north and west of Cristianitos Road. The hills in this area lie along the border of San Diego and Orange Counties, and occur on lands that have been leased by the federal government to the California Department of Parks and Recreation. From San Mateo Junction, the Proposed Project runs in a southeasterly direction towards the northwestern corner of SONGS Mesa. From this point, the Proposed Project extends to the northwest to the Basilone Substation and to the southwest to the Japanese Mesa Substation.

The Proposed Project is located within an existing power line alignment that passes through or adjacent to a variety of existing land uses within MCB Camp Pendleton and the City of San Clemente. Surrounding land uses include existing electric utilities running along parallel or intersecting alignments, undeveloped land, paved and unpaved roadways, paved parking lots, recreational trails, a golf course, and single-family residences. Within MCB Camp Pendleton, the Proposed Project is located within military training areas, cantonment areas (i.e., administrative, residential, and other non-training related land uses), and military family housing areas.

Approximately 9 miles of the Proposed Project alignment is located within existing easements. A new underground easement from the Department of the Navy (DoN) will be obtained by SDG&E in order to complete the underground portion of the project, which covers a distance of approximately 400 feet within an existing SCE right-of-way. In addition, an easement modification will be required for an approximately 1 mile project segment at SONGS Mesa. This easement modification is required in order to incorporate the existing power line alignment along the perimeter of SONGS Mesa within existing easements.

3.2 EXISTING SYSTEM

3.2.1 Existing Power Line Alignment

Figure 3-3, Existing System Configuration, is a schematic diagram that shows the existing 69kV power lines in the Proposed Project area. As shown, TL 695 currently runs between the Cristianitos, Talega, and Basilone Substations along a generally north/south alignment. Between the Talega Substation and San Mateo Junction, TL 695 is within an existing utility corridor that includes SDG&E facilities (i.e., 138kV and 230kV) and a Southern California Edison (SCE) utility line. Existing SDG&E power and transmission lines in this area include TL 13835, TL 13846, TL 23007, and TL 23052. This segment includes numerous wood H-frame structures with interset distribution circuit 204 placed below the transmission lines supported by both the H-frames and by interset distribution structures. The distribution underbuild in the present day alignment mainly includes circuits 203 and 204, but part of circuit 568 is also attached to the last TL 6971 structure outside of Japanese Mesa Substation.

Figure 3-1
Proposed Project Vicinity Map

LEGEND

- Project Area
- County Boundary
- MCB Camp Pendleton Boundary
- Cleveland National Forest Boundary
- Interstates and State Routes

Kilometers
0 10
0 10
Miles

THIS PAGE IS INTENDED TO BE LEFT BLANK

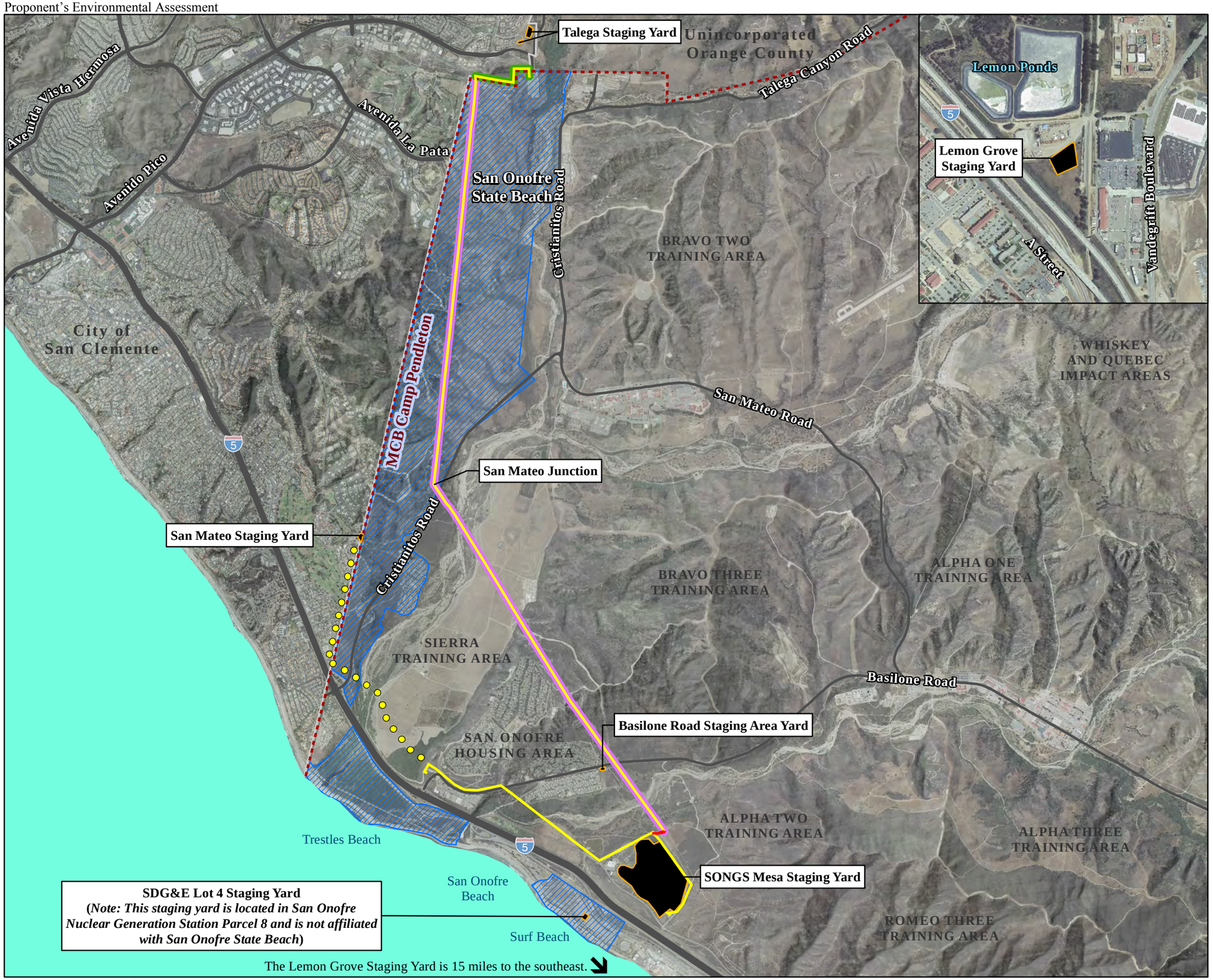

Figure 3-2
Proposed Project Overview Map

LEGEND

- MCB Camp Pendleton Boundary
- Proposed Project Reconductor Route
- Proposed Project Underground Route
- Proposed Project Power Line Removal Segment
- Staging Yard
- State Parks Lease Area
- Existing Utility Corridor Also Containing Other SDG&E Facilities (138kV and 230kV)
- Existing Utility Corridor Also Containing Other SDG&E Facilities (138kV and 230kV) and SCE Facilities
- City of San Clemente Boundary

Sources: City of San Clemente 2015, ESRI 2015

THIS PAGE IS INTENDED TO BE LEFT BLANK

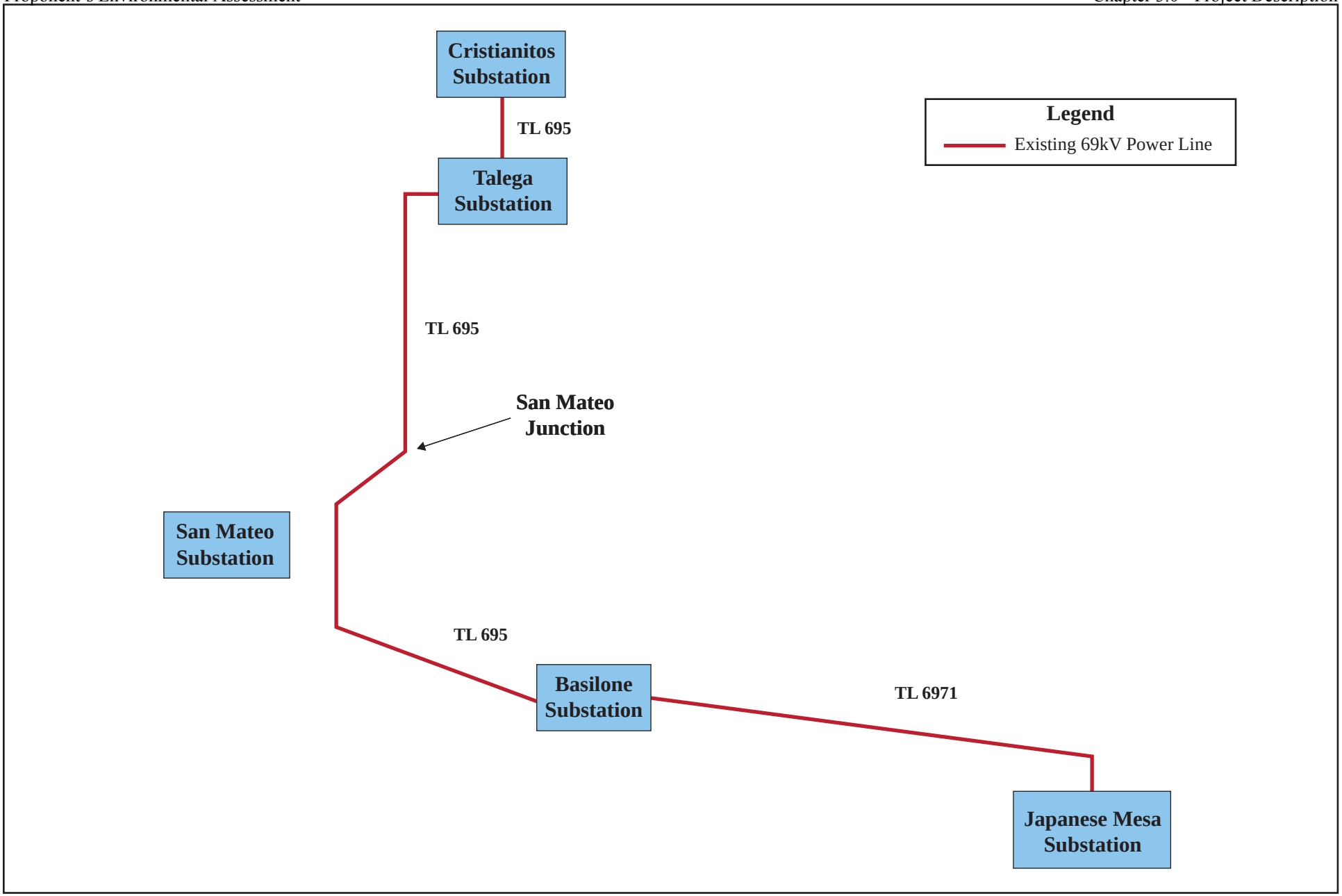

Figure 3-3
Existing System Configuration

The present day portion of TL 695 running to the south and west of San Mateo Substation with circuit 203 underbuild is the transmission line segment where the structures will be topped and the transmission lines removed. Circuit 203 will remain in place on those same structures. At San Mateo Junction, TL 695 turns to the southwest toward the San Mateo Substation. In this segment, TL 695 runs parallel to two existing SDG&E 138kV power lines (i.e., TL 13835 and TL 13846) that connect to the San Mateo Substation. TL 695 then runs southward adjacent to the western boundary of MCB Camp Pendleton.

Several pole structures along this segment are situated outside of MCB Camp Pendleton on land within the City of San Clemente. Near the Interstate 5 (I-5)/Cristianitos Road interchange, TL 695 moves in a southeasterly direction across San Mateo Creek and the Sierra Training Area to its terminus at the Basilone Substation.

TL 6971 runs between Basilone Substation and the Japanese Mesa Substation along a generally west/east alignment. From the Basilone Substation, TL 6971 runs eastward along the north side of Basilone Road, then turns southeasterly, and wraps around the perimeter of SONGS Mesa to its terminus at Japanese Mesa Substation. Both TL 695 and TL 6971 primarily serve MCB Camp Pendleton's electricity demand.

3.2.2 Existing Substations

The Talega Substation is an existing 230kV/138kV/69kV substation located approximately 3.2 miles northeast of the San Mateo Junction. The Japanese Mesa Substation is an existing 69kV/12kV substation located on the southern boundary of SONGS, approximately 1.9 miles southeast of the Basilone Substation. The Basilone Substation is an existing 69kV/12kV substation located approximately 1.6 miles south of the San Mateo Junction and 1.8 miles northwest of the Japanese Mesa Substation.

3.3 PROPOSED PROJECT OBJECTIVES

Refer to Chapter 2.0, Project Purpose and Need, for a detailed description of the objectives of the Proposed Project.

3.4 PROPOSED PROJECT

The Proposed Project will involve reconductoring, pole structure removal, and pole structure installation within areas currently used for electric utilities. Reconductoring will also take place at existing substations. The new dull galvanized steel pole structures will consist of both direct-bury and foundation pole structures. New pole structures will be placed in new holes and/or set in existing holes. The Proposed Project will also involve removing existing conductor; topping existing pole structures above distribution and/or communication lines; stringing new conductor onto existing structures; installing new cable pole structures; and placing conductor in a new underground alignment. Construction activities will be facilitated through the use of various temporary facilities, including stringing sites, guard structures, work/staging/turnaround areas, helicopter ILAs, and staging yards. Access for construction activities will be provided by existing dirt access roads, overland travel routes, and footpaths. One new dirt access road segment, approximately 50 feet in length, will be required to access a proposed pole structure. Helicopters will also be used for construction, and will land as needed at ILAs and/or staging yards. Refer to Section 3.7, Construction, for a detailed description of construction activities.

As shown in Appendix 3-A, the Proposed Project is a component of the existing SDG&E 69kV power line system in northwestern San Diego County and involves reconductoring, removal of existing wood pole structures, and the installation of new steel pole structures within existing power line alignments between the Talega, Basilone, and Japanese Mesa Substations. The Proposed Project will not change the voltage of the power or distribution lines. There are no reasonably foreseeable future phases of the Proposed Project, as it will fulfill all of the objectives described in Chapter 2.0, Project Purpose and Need.

3.5 PROJECT COMPONENTS

3.5.1 Power Line

Figure 3-4, Proposed System Configuration, depicts the proposed TL 695 and TL 6971 Reconductor Project. The existing TL 695 and TL 6971 single circuit 69kV power lines will be reconductored, and a portion of TL 695 will be removed from existing pole structures and placed on existing lattice pole structures. The Proposed Project will create a new double circuit power line consisting of portions of TL 695 and TL 6971 between the Japanese Mesa and Basilone Substations. Existing distribution circuits that are underbuilt on the existing TL 695 and TL 6971 pole structures will also be reconductored. As discussed in Section 3.5.2, Pole Structures, existing wood pole structures will be replaced by new steel pole structures at an approximately one-for-one basis. New steel pole structures will be placed in new holes and/or set in existing holes. Existing telecommunication cables and other cables (e.g., cable television, Internet, telephone) will be transferred from the existing wood pole structures to the new steel pole structures. The length of the Proposed Project, including the reconductoring and power line removal portions, is approximately 10 miles.

SDG&E will install a new SDG&E owned and operated fiber optic cable between the Talega, Basilone and Japanese Mesa Substations. This new fiber optic line will be installed on the new steel pole structures and existing lattice tower structures, and will be utilized to transfer information between the three substations. The fiber optic line will allow for the use of the latest substation relay technology and communication, allowing for quicker trip operations and improved relay coordination.

3.5.2 Pole Structures

The steel pole structures will typically be placed in line with the existing conductor and on average approximately 12 feet from the existing pole structure locations. The steel pole structures will range from approximately 35 to 110 feet in length, and direct-bury pole structures will be embedded at an approximate depth of between 5 and 30 feet. The approximate height above ground, including 2 feet of foundation reveal above ground level (excluding a 9-foot light pole structure to be located near SONGS Mesa) will range from approximately 25 to 105 feet. Power line pole structures will be constructed in compliance with SDG&E standards for avian protection. Steel pole structures will include galvanized steel pole steps if the pole structure locations are not accessible by a 24-hour, all-weather access road.

SDG&E will use tangent pole structures when the pole structure alignment continues in a generally straight line and angle pole structures when the run of pole structures changes direction. Approximately 94 pole structures will be installed to support an average conductor span length of approximately 500 feet. SDG&E will also install all necessary guys and anchorage.

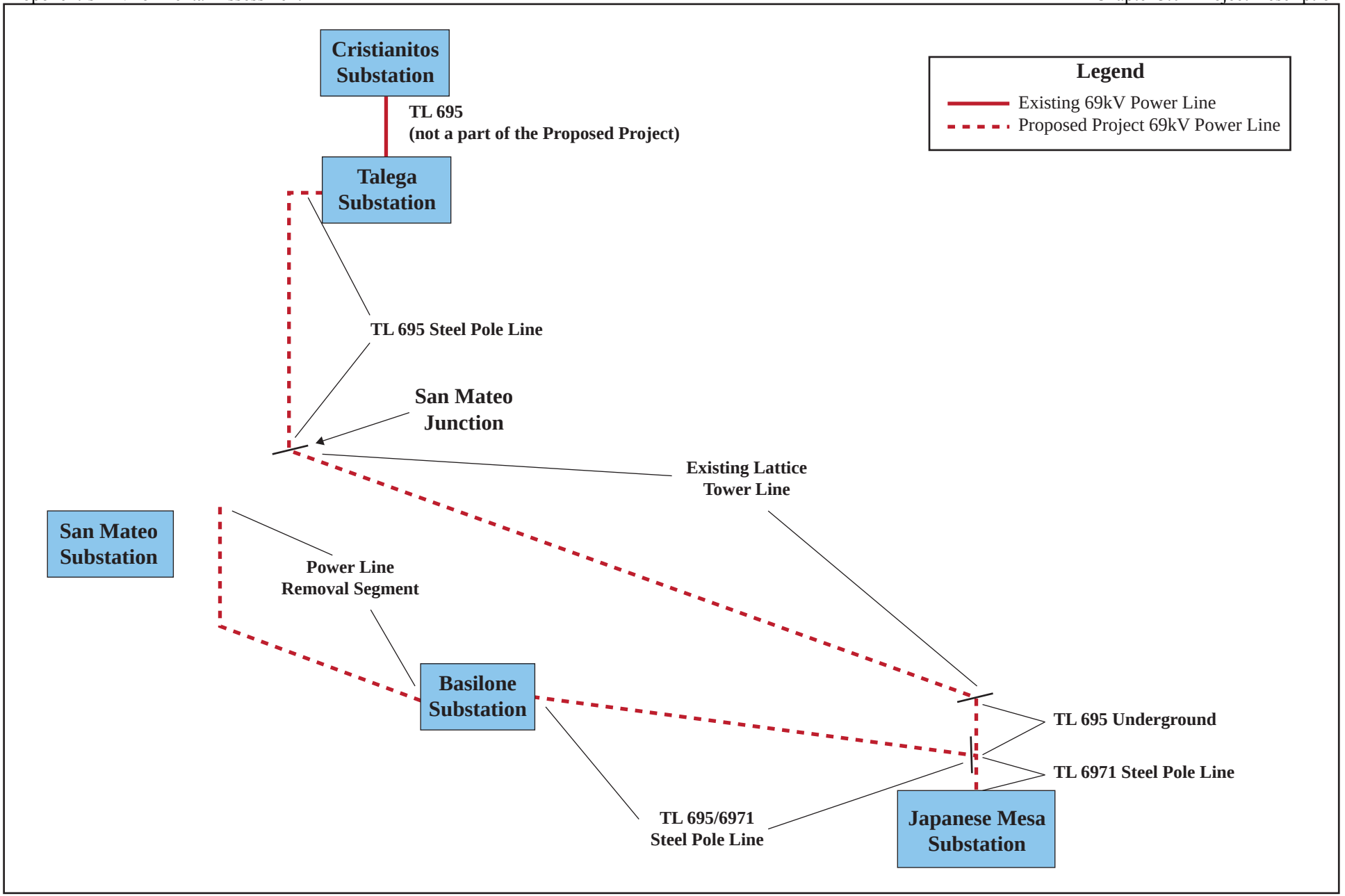

Figure 3-4
Proposed System Configuration

All pole structure locations and dimensions are based on preliminary engineering data and will not be finalized until Proposed Project engineering has been completed and the Proposed Project has been approved by the CPUC. Attachment 3-B, Typical Drawings provides typical drawings of each type of pole structure that will be removed or installed, as well as an example photograph of an existing guard structure. A detailed discussion of pole structure installation methods is provided in Section 3.7, Construction.

3.5.2.1 Pole Structures by Segment

The following subsections describe construction activities by segment. Refer to Figure 3-4 for the approximate locations of the segments described below.

TL 695 Steel Pole Line

The TL 695 steel pole line segment begins at the Talega Substation, and moves north for two spans before turning west and travelling along the northern boundary of MCB Camp Pendleton. The line then turns south and proceeds to Cristianitos Road where, at the San Mateo Junction, it will connect onto an existing 138kV steel lattice tower line. Construction of the TL 695 steel pole line segment will involve the removal of approximately 34 wood pole structures and the installation of approximately 38 steel pole structures along the existing power line alignment. Of the 38 new steel pole structures, approximately six will have concrete foundations, and approximately 32 will be direct-bury pole structures. Construction activities along this segment will also involve the removal of three existing pole structures from service, and overhead work only at three pole structures.

Power Line Removal Segment

This segment of the present-day TL 695 alignment runs from near the San Mateo Substation to the Basilone Substation. The existing 69kV power line will be removed from the structures along this segment, and 24 power line pole structures will be cut down above the distribution or communication lines. Work on this segment will also include removing two existing wood pole structures, installation of two new steel pole structures, overhead work only at six pole structures, and the removal of one existing wood pole structure from service. The new steel pole structures will be direct-bury pole structures.

Existing Lattice Tower Line

The 11 existing steel lattice towers from the San Mateo Junction to the northeastern area of SONGS Mesa will be used for the Proposed Project. The TL 695 69kV power line will be added to one of the three positions along the west side of these 138kV lattice towers. Construction along this segment of the Proposed Project will also involve the removal of four existing wood pole structures and the installation of four new steel pole structures, which will be direct-bury structures.

TL 695 Underground

This segment runs along a generally east/west alignment between two new cable pole structures situated within the existing SCE utility corridor that runs along the eastern side of SONGS Mesa. The underground portion will be approximately 400 feet long.

TL 695 and TL 6971 Double Circuit Steel Pole Line

The double circuit steel pole line segment extends from the western cable pole structure of the underground segment described above to the Basilone Substation. Construction on this segment involves reconductoring, the removal of approximately 26 wood pole structures, and the installation of approximately 27 steel pole structures along the same centerline as the existing line. Construction along

this segment will also include removal of three existing pole structures from service and overhead work only on three existing pole structures. Of these 27 new steel pole structures, approximately 10 will have concrete foundations and approximately 17 will be direct-bury structures.

TL 6971 Steel Pole Line

This segment begins at the western cable pole structure of the underground segment to Japanese Mesa Substation. Construction of this segment will involve reconductoring, the removal of approximately 21 wood pole structures, and the installation of approximately 21 steel pole structures. Construction will also involve overhead work only at one existing pole structure. Of the 21 new steel pole structures, approximately four will have concrete foundations and approximately 17 will be direct-bury structures.

3.5.3 Conductor

3.5.3.1 Above-Ground Installation

As discussed above, the Proposed Project will include both single circuit and double circuit 69kV and 12kV conductor that will be installed as described below by segment.

- **TL 695 Steel Pole Line:** For this segment of the power line, the existing conductor, hardware and porcelain insulators will be replaced with new hardware, polymer insulators and three aluminum-clad Invar[2]-reinforced conductors. For the distribution line, the existing conductor, hardware and porcelain insulators will be replaced with new hardware, polymer insulators and four aluminum-clad steel-reinforced conductors.
- **TL 695 and TL 6971 Double Circuit Steel Pole Line**: The new steel pole structures will include the installation of new hardware, six aluminum-clad Invar-reinforced conductors for the power line, and four aluminum-clad steel reinforced conductors for distribution.
- **TL 6971 Steel Pole Line:** The existing conductor, hardware and porcelain insulators will be replaced with new hardware including polymer insulators; three aluminum-clad Invar-reinforced conductors for power lines; and four aluminum-clad steel-reinforced conductors for distribution.

The new 69kV power line will use 336 kcmil[3] (0.72 inch) aluminum-clad Invar-reinforced conductor, while the distribution line will use 636 kcmil (0.977 inch) aluminum-clad steel-reinforced conductor. Clearance will be in accordance with current CPUC General Order (GO) 95 requirements.

3.5.4 Substations

Reconductoring will take place within the Talega, Basilone, and Japanese Mesa Substations. No work will be performed at the San Mateo Substation.

3.5.4.1 Below Ground Installation

The 400-foot 69kV underground segment will be placed in a concrete encased duct bank. The ducts will typically consist of 6-to-8-inch diameter polyvinyl chloride conduits, which house the electrical cables and 2-to-4 inch diameter polyvinyl chloride conduits for the telecommunications cable used for system

[2] A special steel alloy consisting of iron and nickel.
[3] 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.

protection and communication. The dimensions of the duct banks will be approximately 3 feet wide by 3 feet in height and located in the trench at a minimum depth of 3 feet from top of the encasement to the surface.

3.6 RIGHT-OF-WAY REQUIREMENTS

3.6.1 Right-of-Way Requirements

An approximately 0.5-mile long segment of TL 695 to the north and west of Talega Substation one privately held parcel in the City of San Clemente within a 60-foot wide easement. This segment of TL 695 also passes through one parcel owned by a public agency, the Foothill Eastern/Transportation Corridor Agency. The TL 695 segment between San Mateo Substation and the I-5/Cristianitos Road interchange is approximately 0.8 miles long and passes through 48 privately held parcels in the eastern area of the City of San Clemente. This segment of TL 695 also is located within a franchise position along a City of San Clemente street right-of-way. An approximately 1-mile long segment of TL 6971 located along the perimeter of SONGS Mesa is located on land owned by the U.S. federal government (i.e., the DoN), but is not currently contained within any existing easement (see discussion in the following paragraph). The remaining segments of TL 695 and TL 6971, plus the existing lattice tower line, are located within existing 20-foot wide easements within MCB Camp Pendleton on land owned by the U.S. federal government. The existing easements within MCB Camp Pendleton are approximately 8.5 miles long in total.

A 20-foot wide easement modification will be required for the project segment between SONGS Mesa and the Japanese Mesa Substation (along the perimeter of SONGS Mesa). This easement modification is required in order to incorporate the existing power line alignment within existing easements. The easement modification is located on land owned by the U.S. federal government. Also, a new 20-foot wide underground easement from the U.S. federal government will be obtained by SDG&E in order to complete the underground portion of the project, which covers a distance of approximately 400 feet. The new underground easement is located on land owned by the U.S. federal government.

3.7 CONSTRUCTION

This section includes an overview of the typical methods that will be used for construction of the Proposed Project, including construction methods for overhead and underground facilities and temporary construction work areas.

3.7.1 Overhead Power Line Construction

3.7.1.1 Step 1 – Access Road Improvements (as needed)

Because the Proposed Project will follow existing power line alignments, construction access to structure sites will generally be available via existing access roads. Maintenance of existing access roads may be required during construction, depending upon the condition of existing roads at the time of construction. Re-establishment and/or regrading of existing roads may be necessary. Such road maintenance will be performed using a grader. One 50 foot long permanent access road will be constructed near the Japanese Mesa Substation to provide access to pole structure 102. This dirt road will be graded and will be approximately 12 to 14 feet wide. In the northern part of the Proposed Project alignment, public roads

will be used to access power line structures. Refer to Section 4.16, Traffic and Transportation, for additional discussion of access roads.

3.7.1.2 Step 2 – Construction Work Areas

After access to each new pole structure site has been established, work areas will be created that will be used for construction. Work areas used solely for construction are often simply cleared of vegetation, and minor grading is only undertaken where relatively flat areas are not already present. Cleared vegetation would be removed from the project site and disposed of at an approved offsite facility. Construction activities will often use existing flat, cleared areas such as existing access roads and previously disturbed areas.

3.7.1.3 Step 3 – Installing Structure Foundations

Construction workers will typically drive to the staging yards to park their personal vehicles, organize into construction crews, and then proceed to the construction areas in off-road construction vehicles that are stored at the staging yards. Refer to Section 3.7.5, Excavation for additional details regarding the subsequent use and/or disposal of excavated material.

Concrete Pier Foundations

A large auger will be used to excavate holes that could range from 6 feet to 8 feet in diameter. Foundation depth will typically range from approximately 30 to 40 feet deep on average, but could increase due to soil conditions. Following excavation, a reinforcing steel cage and anchor bolt cage will be installed in each hole. The steel cages will typically be assembled at the staging yards and transported to each of the structure sites. The anchor bolt cages will be assembled offsite and delivered to each structure site. Typical foundations will require approximately 43 cubic yards of excavation. The foundations will extend approximately two feet above the ground surface.

Direct-Bury Pole Structures

Direct-bury pole structures will be placed in a hole that is approximately 4.5 feet in diameter and approximately 17 feet deep on average. Each pole structure will involve approximately 10 cubic yards of excavation. The lower portion of the direct-bury pole structure will be placed in the hole, which will be backfilled with concrete. After the concrete has cured, the top portion of the direct-bury pole structure will be attached. The diameter of direct-bury pole structures at ground level will vary between approximately 20 and 30 inches.

Other Considerations during Construction

Blasting may be required in locations where significant or dense rock is present where excavation will occur. Section 3.7.4, Blasting describes the blasting process.

Discharges of groundwater to land or surface water and/or municipal storm water systems may require obtaining coverage under an applicable State Water Resources Control Board (SWRCB) or San Diego Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDRs), Waiver of WDRs, or National Pollution Discharge Elimination System (NPDES) permit. In the event that groundwater is encountered during excavation, the following general construction dewatering procedures will be implemented in accordance with local, state, and federal dewatering requirements:

1. A submersible pump will be installed.

2. If the groundwater will be discharged to an upland area, as necessary, it will be pumped to a desiltation tank (i.e., baker tank) for sediment filtering. If the groundwater is pumped to a baker tank, baffles will be installed in the tank to increase sedimentation, and the water in the tank will be tested in accordance with any applicable permit or other requirement.
3. If the groundwater is pumped to a baker tank for discharge to surface waters, the water will be tested to ensure compliance with the applicable RWQCB or SWRCB NPDES permit 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.
4. If the groundwater will not be discharged to an upland area or surface waters in the area, or if the water quality does not meet permit requirements, the water will be disposed of at an approved SDG&E disposal site that is licensed to handle wastewater.

3.7.1.4 Step 4 – Structure Installation

Based upon preliminary engineering and constructability review, it is anticipated that construction of power line structures will use ground equipment such as cranes, flatbed trucks, drill rigs and excavators. Helicopters will be used during stringing activities, and may also be used for pole structure removal or pole structure installation. The proposed alignment contains existing access and work spaces, which will help accommodate ground-based construction equipment. Plywood boards will cover the excavated hole if pole installation activities do not occur within the same day. The plywood boards will be anchored and the sides sealed with gravel or sand bags.

New steel pole structures will be delivered to the structure sites in two or more sections via flatbed truck and assembled on-site using a small truck-mounted crane.

Although it is not anticipated at this time, temporary pole structures or anchors may be necessary based on site conditions during construction. If necessary, temporary pole structures will be installed adjacent to the existing pole structures in order to provide adequate electric power reliability during construction. These temporary pole structures will be utilized until construction of the new power line is complete and the existing pole structures can be removed. Once the new steel pole structures are installed, the conductor will be transferred from the temporary pole structure to the new steel pole structure. The temporary pole structure is then removed. Installation may consist of temporary pole structures, temporary anchors and utilization of concrete block sleds for temporary guying.

3.7.1.5 Step 5 – Guard Structure Installation

Prior to installing the new overhead conductor, SDG&E will use temporary guard structures at road crossings and other locations where the new conductor could come in contact with existing electrical and communication facilities, or vehicular and/or pedestrian traffic in the event the line accidentally falls during stringing operations. The anticipated guard structure locations are shown on the detailed route map in Appendix 3-B. Different types of guard structures may be used, depending on the site conditions. Guard structures typically consist of directly embedded wood pole structures with cross-beam attached to side extensions (refer to Appendix 3-C for a photograph of a typical wood-pole guard structure). In some locations, such as paved areas, a boom or bucket truck may be used as a guard structure (refer to Appendix 3-C). No concrete foundations are required to set the guard structures and no grading or other site work is anticipated other than potential vegetation trimming. The temporary guard structures will be removed following the completion of conductor stringing operations and the holes will be backfilled with

excavated soil. Alternatively, SDG&E may use flaggers to temporarily hold traffic for brief periods of time while the overhead line is installed at road crossings. Typically, guard structures are used at larger crossings such as large roadways, waterways, and utility crossings. Traffic control is typically used for small roadway crossings. SDG&E will acquire all required permits and road crossing approvals.

3.7.1.6 Step 6 – Conductor Stringing

Reconductoring activities begin with the installation of travelers or "rollers" on the bottom of each of the insulators using helicopters or aerial manlifts (bucket trucks). The rollers allow the conductor to be pulled through each structure until the entire line is ready to be pulled up to the final tension position. Following installation of the rollers, a sock line (a small cable used to pull the conductor) is pulled onto the rollers from structure to structure using helicopters or aerial manlifts traveling along the right-of-way. Once the sock line is in place, it is attached to the conductor and used to pull or "string" the conductor into place on the rollers using conventional tractor-trailer pulling equipment located at pull and tension sites along the line. The conductor is pulled through each structure under a controlled tension to keep it elevated and away from obstacles. This "stringing" process is conducted using areas referred to as "stringing sites." Stringing sites are typically split into two types during stringing activities; "pull sites" and "reel sites." The reel site is used to park a large spool of conductor on a wire truck while the pull site is used to position the pulling rig that pulls the conductor. Each stringing site can be used as a pull or reel site, as needed. The anticipated stringing sites are shown on the detailed route map in Appendix 3-B. After the conductor is pulled into place, the sags between the pole structures are adjusted to a pre-calculated level. Pursuant to CPUC GO 95, the line will be installed with a minimum ground clearance of 30 feet. The conductor is then clipped into the end of each insulator, the rollers are removed, and vibration dampers and other accessories are installed.

A helicopter may be used during stringing operations to install the sock line that will be used to pull in the conductor. Helicopter activities will be staged out of existing airports where possible, staging yards and ILAs, as needed. Helicopter operations will be subject to applicable Federal Aviation Administration (FAA) and MCB Camp Pendleton regulations and requirements.

3.7.1.7 Step 7 – Existing Facilities Removal

Construction of the Proposed Project will involve the removal of existing wood power line pole structures. First, the existing conductor will be removed from the pole structures using wire trucks and pulling rigs. Guard structures will be used, as needed. For structures that will be removed from service or replaced (refer to Appendix 3-B), the old pole structures and components will be dismantled by boom and bucket trucks, and will typically be hauled away by truck. Wood pole structures to be removed will either be removed to full depth or cut off approximately 2 feet below grade depending upon environmental constraints at specific locations. After the pole structures have been removed, any existing concrete foundations will be jack hammered to approximately 2 feet below grade, and debris will be removed. The hole will then be backfilled with native soil or imported materials similar to the surrounding area and the site will be restored to approximate pre-existing conditions. Structural removal will typically be completed from existing work areas located at each existing pole structure site. No new impact areas are anticipated to be required for removals as work would occur within the existing work areas.

3.7.1.8 Step 8 – Power Line Removal

SDG&E will top approximately 24 existing pole structures by between 1.5 and 2 feet above existing distribution lines or communication lines. Approximately 12 of the existing pole structures to be topped

are located to the west of the MCB Camp Pendleton fence line. SDG&E will access these pole structures using an existing access road that runs along the eastern side of the fence. Crews will use a line truck or a bucket truck to reach and top these pole structures. Topping activities may also be completed using hand tools brought into the construction area by foot.

3.7.1.9 Step 9 – Site Cleanup

SDG&E will restore all areas that are temporarily disturbed by the Proposed Project activities (including stringing sites, work areas, structure removal sites and staging yards) to approximate preconstruction conditions following the completion of construction. Restoration may include minor grading and restoration of sites to original contours and reseeding, as appropriate and as consistent with fire break clearance requirements. All post-construction restoration will be in compliance with the Proposed Project's Stormwater Pollution Prevention Plan (SWPPP) that will be prepared pursuant to applicable stormwater regulations (refer to Sections 4.6, Geology and Soils and 4.9, Hydrology and Water Quality for additional information). In addition, all construction materials and debris will be removed from the Proposed Project area and recycled or properly disposed of off-site. SDG&E will conduct a final survey to ensure that cleanup activities are completed as required.

3.7.2 Underground Power Line Construction

The underground portion of the Proposed Project will be approximately 400 feet in length. The depth of the conduit package will be approximately 5 feet and the width will be approximately 3 feet. A new underground easement from the DoN will be obtained by SDG&E. The following steps provide the general methods used to construct an underground power line.

3.7.2.1 Step 1 – Vault Installation

SDG&E will excavate and place a precast concrete splice vault during the trenching operation. The location of this vault can be seen in the Detailed Route Map (Appendix 3-B). Appendix 3-C includes a schematic drawing of a typical vault. The vault will be approximately 17 feet long and 9 feet wide. The vault will be used to pull the cables through the conduits and later to splice cables together. During operation, the vault will provide access to the underground cables for maintenance inspections, repairs and replacement if needed. The vault will be constructed of prefabricated (precast) or cast-in-place, steel-reinforced concrete. The vault typically has one 4-foot by 5-foot manhole. Installation of each vault will occur over an approximate one-week period with excavation and shoring of the vault pit followed by delivery and installation of the vault, filling, grouting and compacting the backfill.

3.7.2.2 Step 2 – Trenching and Duct Bank Installation

Trenching

All trenching will use an engineered design specifying an alignment to follow, including plan and profile drawings showing the location and type of existing underground facilities located during the design phase of the Proposed Project. Prior to trenching, SDG&E (or their contractor) will notify other utility companies (via Underground Service Alert) to locate and mark existing underground utilities along the proposed underground alignment. SDG&E may conduct exploratory excavations (i.e., potholing) to verify the locations of existing facilities marked out in the field prior to excavating. SDG&E will secure excavation and encroachment permits for trenching, as required.

The duct bank will be installed using open-cut trenching techniques. No trenchless techniques (such as jack-and-bore or horizontal directional drilling) are anticipated to be used during construction of the Proposed Project. Most of the duct bank will have a single-circuit vertical duct bank configuration, with occasional transitions to a flat configuration to clear substructures in highly congested areas or to fan out to termination structures at cable pole structure transition areas. The typical trench dimensions for installation of a 69kV vertical duct bank will be a minimum of approximately 6 feet deep and 3 feet wide, although depth may vary depending on soil stability and the presence of existing substructures. The trench will be widened and shored where necessary to meet the requirements of California Code of Regulations, Title 8, Section 1541.1. If groundwater is encountered, trenches will be dewatered using a portable pump and disposed of in accordance with applicable permits. General dewatering procedures will be implemented during underground power line construction.

Trenching operations will generate approximately 89 cubic yards per day[4] of excavated material. Steel plating will be placed over the open trenches to maintain vehicular traffic across areas that are not under active construction.

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 vault, and proximity of the storage yards/disposal facilities to the right-of-way. However, up to 12 truck trips per day will be required during trenching activities at the site. Equipment may include a backhoe, dump truck, water truck and standard 1-ton pickup trucks.

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 applicable federal, state and local laws and regulations.

Duct Bank Installation

As each section of the trench for the underground 69kV duct banks is completed, SDG&E will install the conduits (separated by spacers) and place concrete (at 2,000 pounds per square inch strength) around the conduits to form the duct bank encasement. The ducts will typically consist of 6-to-8-inch diameter polyvinyl chloride conduits, which house the electrical cables and 2-to-4 inch diameter polyvinyl chloride conduits for the telecommunications cable used for system protection and communication. The dimensions of the duct banks will be approximately 3 feet wide by 3 feet in height and located in the trench at a minimum depth of 3 feet from top of the encasement to the surface. Appendix 3-C contains typical duct bank diagrams and Appendix 3-B depicts the approximate location of proposed trenching.

Once the polyvinyl chloride conduits are installed and encased in concrete, a slurry with a minimum compressive strength of 200 pounds per square inch will be placed above the encasement for approximately 1 foot. Compacted native soil will be used for the remaining two feet of backfill[5]. Each duct bank will have a minimum of 36 inches of cover. Larger trenches will be excavated where a vault is installed (refer to Step 1 – Vault Installation).

[4] Assumes one crew trenching approximately 135 feet per day, with average trench dimensions of 6 feet deep by 3 feet wide.
[5] The contractor may request to use 3 feet of native backfill and eliminate the slurry.

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

3.7.2.3 Step 3 – Cable Pulling, Splicing and Termination

After installation of the conduit and splicing vault, SDG&E will install cables in the duct banks. Each cable segment will be pulled into the duct bank, spliced at the vault along the route, and terminated at the transition area where the line transitions to the overhead sections. To pull the cable through the ducts, a cable reel will be placed at one end of the section and a pulling rig will be placed at the other end.

The electric cables and the communication cable will be pulled through the individual ducts. A splice trailer will be positioned adjacent to the vault manhole openings to facilitate cable splicing at the vault after the cables are pulled through the ducts. Each splice will require approximately three working days to complete. The vault must be kept dry at all times to keep the unfinished splices dry and prevent other impurities from affecting the cables. At each end of the underground segment, the cables will rise out of the ground and terminate on cable pole structures.

3.7.2.4 Step 4 – Site Cleanup

Site cleanup will be as described in Section 3.7.1.9, Step 9 – Site Cleanup.

3.7.3 Outage Coordination

Based upon preliminary engineering, SDG&E does not anticipate any project-based interruption of service to customers during construction; however, SDG&E will provide advance notice of anticipated line outages in order to maintain system reliability and construction personnel safety.

3.7.4 Blasting

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

In the event that rock blasting is used during construction where solid rock is present and where the hydraulic rock drilling and splitting procedure will be ineffective, the following procedure will be used to minimize both drilling time and noise impacts. The procedure involves drilling approximately 3-inch-diameter blast holes to the full depth of the shaft and inserting explosives. Blasting caps are connected, and a non-electric detonator is employed. Flyrock protection is installed prior to blasting, and seismographs are placed to measure and record peak particle velocity and air blast levels at various distances from the blast site. Dust control will include a combination of steel plate covering, geo-textile fabric with chain link fence covering and wetting the blasting surface. If blasting is used with the

Proposed Project, the blasting contractor will be required to obtain a blasting permit and explosive permit per applicable regulatory ordinances, and will ensure compliance with all applicable local, state and federal regulations (including MCB Camp Pendleton requirements, if necessary) relating to potential blasting activities, as well as SDG&E's blasting guidelines.

3.7.5 Excavation

It is anticipated that construction of the Proposed Project will result in up to approximately 3,000 cubic yards of excavation. Soil may be re-used onsite, in areas of existing access roads and pole structure sites. Excess soil from excavation may also be transported to a local recycling or appropriately permitted waste disposal facility if the soil is not re-used onsite or otherwise recycled. Soil will be re-used onsite wherever possible, provided that it does not alter topography or cause erosion/sedimentation.

3.7.6 Staging Yards

The Proposed Project includes six temporary construction staging yards (refer to Appendix 3-B), encompassing a total area of approximately 89.5 acres. Although the 84-acre SONGS Mesa facility is identified as a staging yard, only a portion of the facility would be used during construction activities. The final location will be determined at the time of construction. The Talega Staging Yard consists of two separate areas. Site preparation activities at staging yards will involve mowing, implementation of applicable Best Management Practices (BMPs) identified in the SWPPP[6], and installing chain-link fence around the staging yard, if required. The staging yards may be used as refueling areas for vehicles and construction equipment by a mobile fueling truck, helicopter operations, pole structure assemblage, open storage of material and equipment, construction trailers, portable restrooms, parking, lighting and may include generator use for temporary power in construction trailers. Construction workers typically meet at the staging yard each morning and park their vehicles at the yard. SDG&E has attempted to identify a reasonable number of staging yards commensurate with the size, location, and scope of the Proposed Project (Table 3-1).

Table 3-1. Construction Staging Yards

Staging Yard	Acres
Lemon Grove	1.50
Basilone Road	0.25
Talega (two locations)	2.0
SDG&E Lot 4 (paved)	1.00
San Mateo	0.75
SONGS Mesa (paved/disturbed)[1]	84.00

Notes:
[1] Only a portion of the 84-acre SONGS Mesa area (2 to 3 acres) may be utilized for staging. This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

[6] Examples of staging yard BMPs include fiber rolls and rumble plates to minimize tracking of dust.

3.7.7 Helicopter Incidental Landing Areas

The Proposed Project includes six temporary helicopter ILAs encompassing a total area of approximately 16 acres (refer to Appendix 3-B) ILAs are used for short term helicopter operations, such as picking up conductor or other equipment. Helicopters may be staged out of local airports (such as Oceanside Municipal and McClellan-Palomar), construction staging yards, and/or ILAs. Helicopter staging activities, such as maintenance and repair, will be conducted at the local airport(s). Helicopter refueling may be required at Proposed Project ILAs.

3.7.8 Stringing Sites

Approximately 33 stringing sites will be necessary during construction of the Proposed Project. In general, stringing sites will cover an area of approximately 150 feet by 150 feet, although dimensions will vary by location. It is not anticipated that grading of the stringing sites will be necessary. Stringing sites will be spaced approximately 3,000 feet apart and will generally be located at the end of a straight power line segment where the line changes direction. The location of stringing sites may be modified or additional stringing sites may be identified during construction in order to safely and efficiently string wire. In these cases, in accordance with its standard practices, SDG&E will identify the specific locations and improvements that are required, and complete an internal environmental review that analyzes and minimizes potential impacts to sensitive environmental resources, if present.

3.7.9 Pole Structure Work Areas

In order to accommodate construction equipment and activities during pole structure installation and removal, temporary construction areas will be required at each pole structure location. Site preparation at pole structure work areas may include vegetation trimming and minor earthwork, if necessary. The temporary impact areas may vary because the positioning of construction vehicles, equipment and materials cannot be accurately anticipated prior to construction. The locations of the construction vehicles, equipment and materials will be dependent upon the contractor safely performing the work. In accordance with SDG&E's standard practices, the monitor(s), as appropriate, will assist crews in placement of construction vehicles, equipment and materials to avoid and minimize impacts to sensitive resources, if present. The impacts from construction vehicles, equipment and materials will be evaluated by the on-site biological and other environmental monitors prior to their placement. In addition, in order to maintain a safe working space for crewmembers working directly under pole structures, construction vehicles, equipment and materials may be staged off existing access roads. However, the on-site monitors will assist crews in locating appropriate staging areas for construction vehicles, equipment and materials that avoid and minimize impacts to sensitive habitat types if present, military training, and recreational areas facilities.

In general, it is anticipated that each of the direct-bury steel pole structures would require a 10-foot radius work area (approximately 314 square feet). Overhead work only and pole structure removal from service will require an approximately 10-foot-radius work area (approximately 314 square feet). Each of the pier foundation steel pole structures will require an approximately 75 foot by 75 foot work area (approximately 5,625 square feet). The work area around the lattice towers are generally an approximately 10-foot radius around one of the four tower legs.

The work areas for each type of pole structure foundation will generally be centered on the existing pole structure location. However, actual work areas 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, and to avoid and minimize impacts to sensitive resources, if present. The on-site biological monitor, as appropriate, will assist construction crews in locating pole structure work areas that avoid and minimize impacts to sensitive resources, if present. For purposes of analysis, temporary impact areas for direct-bury steel pole structures, include the work areas as previously described, and an additional potential impact area (approximate total of 1,260 square feet) to account for minor modifications made in the field during construction.

The positioning of construction equipment (typically bucket trucks, and crane trucks) will involve the placement of approximately four outriggers (per vehicle) with dimensions of approximately two feet wide by three feet long (6 square feet) per outrigger for line trucks, and 4 feet wide by 4 feet long (16 square feet) per outrigger for crane trucks. The location of the outriggers will be evaluated by the onsite monitors prior to their placement in order to avoid and minimize impacts to sensitive resources, if present.

3.7.10 Guard Structures

A total of approximately nine guard structure sites will be used during the reconductoring of the power line. These structures may consist of a single wood pole structure with a cross-beam attached to side extensions, or a two-pole wood structure with a cross-beam, or a boom truck.

3.7.11 Project Study Area

The PSA is a 300–foot wide survey corridor centered along the TL 695 and TL 6971 alignment, and extending 150 feet from the centerline. Additional areas within the PSA include stringing sites, staging yards, and ILAs, plus an additional 50-foot area around the perimeter of these components. For access roads located outside of the 300-foot survey corridor described above, the PSA also includes a 20-foot survey area on both sides of the access roads.

3.7.12 Access

Most work areas are accessible by vehicle on unpaved SDG&E-maintained access roads (approximately 46 acres), footpaths (approximately 0.03 acres), or by overland travel (approximately 0.33 acres).[7] To enable crews and equipment to access the associated pole structures, maintenance including grading and/or vegetation clearing may be necessary to re-establish the use of certain existing access roads. Vehicles will remain within existing access roads, previously disturbed areas, and designated temporary work areas, where feasible. Use of additional existing roads and areas around existing utility structures beyond those that have been identified may be required during construction, or access roads may require improvement outside the existing footprint of the roadway (e.g., decreasing a turning angle on a hairpin curve to accommodate construction vehicles' turning radii). In addition, minor adjustments to the access requirements for roads, overland travel routes, footpaths and turnaround areas may be necessary at the time of construction due to site conditions, construction requirements, and other factors. In these cases, in accordance with its standard practices, SDG&E will identify the specific locations and improvements that

[7] Overland travel refers to temporary vehicular access across unimproved areas. Overland travel areas are not graded or subjected to other earthwork improvement. Vegetation may be trimmed to provide safe access. Following construction, these areas are returned to an approximate pre-construction state.

are required, and complete an internal environmental review that analyzes and minimizes potential impacts to sensitive environmental resources, if present.

Where existing roads are damaged, typical repairs (e.g., smoothing the road, stabilizing loose areas, and improving the surface quality of the road) may be made by blading, importing and compacting more stable materials in loose areas, or applying additional surface materials to improve access conditions. The extent of road repairs will be determined prior to construction and is contingent on road conditions (e.g., erosion and road use that the roads experience prior to construction).

In addition, SDG&E may utilize overland travel routes, in order to avoid and minimize impacts to sensitive environmental resources or provide access to locations that do not have existing access. Vegetation trimming may be required in order to reduce the fire risk; however, no grading will be required for overland travel routes. The overland travel routes are approximate locations and may be shifted based on site conditions, sensitive environmental resources, and access requirements at the time of construction. Additional overland travel routes to work areas may be required during construction.

Turnaround areas will be required along the alignment. The number of turnarounds and locations are estimates and subject to change based on site conditions and access requirements at the time of construction. Turnaround areas may also be used for staging and parking during construction. Existing areas around utility structures may also be used for construction staging, parking and turnaround areas.

Temporary work and staging areas will be required in order to facilitate construction. The precise location and number of temporary work and staging areas may change as necessary at the time of construction due to site conditions, construction requirements, and other factors. In these cases, in accordance with standard practices, SDG&E will identify the specific locations and improvements that are required, and complete an internal environmental review that analyzes and minimizes potential impacts to sensitive environmental resources, if present.

3.7.12.1 Road Crossings

Where traffic control is used at road crossings, SDG&E will obtain permits as required. Guard structures are discussed in Sections 3.7.1 and 3.7.10.

3.7.12.2 Helicopter Usage during Construction

Helicopters will be used during construction for such activities including (but not necessarily limited to) stringing of overhead conductor and installation or removal of structures, and transportation of equipment associated with the Proposed Project. SDG&E anticipates that light- to heavy-duty helicopters may be used. Helicopters will be used during daylight hours, and flight paths will generally be limited to the existing alignment except for ingress and egress from the helicopter landing areas (including local airports, staging yards, and ILAs). Any helicopter use will comply with all relevant requirements including MCB Camp Pendleton and FAA. SDG&E and/or the construction contractor will coordinate with local air traffic control and comply with applicable FAA regulations regarding helicopter use to prevent conflict with air traffic generated by local airports.

3.7.13 Retired Pole Structures, Materials and Components

It is SDG&E's practice to re-use or recycle all old pole structures, materials and components following the retirement of substations, power lines and pole structures. Whatever cannot be re-used or recycled will be disposed of at an appropriate facility pursuant to all applicable laws. Table 3-2, Common Destination

of Retired Project Components, outlines how some removed project components are often disposed of following construction.

Table 3-2. Common Destination of Retired Project Components

Project Structure, Material, or Component	Common End Use or Destination
Wood power line pole structures	Sanitary disposal
Conductor cable	Recycled
Insulators	Sanitary disposal
Scrap steel, copper and other metal	Recycled

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

3.7.14 Construction Workforce and Equipment

3.7.14.1 Construction Personnel

It is estimated that the Proposed Project will involve approximately 81 construction crew members. Construction activities will involve several crews working concurrently at different locations (e.g., preparing staging yards). Power line construction will be conducted using stringing crews to string the conductor, foundation crews to work on the power line structure, and grading crews to prepare the structure sites for construction. In addition, construction crews for the installation of underground power lines will also be used. For the Proposed Project, up to approximately 29 to 36 workers could be used at one time during power line construction, assuming that pier foundation construction is concurrent with direct-bury construction (refer to Table 3-5, Proposed Construction Schedule). Refer to Table 3-3, Estimated Construction Personnel and Equipment, for a complete list of construction equipment and personnel.

Table 3-3. Estimated Construction Workers and Equipment

Activity	Number of Workers	Quantity of Equipment
Staging Yard Setup, Road Refreshing, Vegetation Trimming, BMP Installation	5-7	2 graders 2 water trucks 2 mowers 2 tractor trailers 1 dump truck
Pier Foundation Construction	5-6	2 water trucks 2 drilling rigs 3 air compressors 3 forklifts 10 cement trucks 3 crew trucks
Direct Bury Construction and Pole Structure Installation	20-25, plus 4-5 for hand digging	3 water trucks 3 drilling rigs 3 air compressors 3 tractor trailers 3 aerial bucket trucks 3 cranes

Activity	Number of Workers	Quantity of Equipment
Conductor Stringing	10-12	3 water trucks 1 wire truck 1 pulling rig 3 crew trucks 3 boom trucks 3 aerial bucket trucks 3 pickup trucks
Underground Work	Trenching: 6-8; cable work: 6-8	3 backhoes 1 water truck 1 drilling rig 2 aerial bucket trucks 1 wire dolly
Demobilization	5-7	1 grader 1 loader 1 water truck 1 crew truck 1 pickup truck 1 spray struck

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

3.7.14.2 Construction Equipment

Table 3-4, Standard Construction Equipment and Usage, describes how the equipment described above in Table 3-3 will likely be used for the Proposed Project.

Table 3-4. Standard Construction Equipment and Usage

Equipment Type	Equipment Use
Aerial bucket trucks	Access pole structures, string conductor, modify structure arms, provide guard structures and other various uses
Air compressors	Operate air tools
Back hoe	Excavate trenches
Boom truck	Access pole structures and other height-restricted items, used to unload pole structures, transformers, and other items
Cement truck	Transport and process cement
Crane	Lift, position structures
Crew truck	Transport construction personnel and a limited amount of equipment
Drilling rig/ Truck-mounted auger	Excavate for direct-bury pole structures, and engineered steel pole structure piers
Dump truck	Haul excavated materials/import backfill, as needed
Flatbed boom truck	Haul and unload materials
Forklift	Transport materials at structure sites and staging yards
Grader	Road construction and maintenance
Helicopter (typically light- to heavy-duty)	Transport materials, string conductor and install and remove travelers, set structures
Loader	Loading materials, such as fill, onto trucks for transport
Mower	Clear vegetation
Pickup trucks	Transport construction personnel
Pulling rig	Pull conductor
Spray Truck	Distribute aggregate for filling potholes

Equipment Type	Equipment Use
Tractor/Trailer Unit	Transport materials at structure sites and staging yards
Water truck	Dust control
Wire dolly	Cable pulling and tensioning
Wire truck	Hold spools of wire

Note: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

3.7.15 Construction Schedule

The Proposed Project's construction schedule is presented in Table 3-5, Proposed Construction Schedule. Construction activities will generally be limited to not more than 12 hours per 24-hour period, 6 days per week, as needed. On occasion, construction activities may be required at night or on weekends to minimize impacts to schedules, and as required by other property owners or agencies. If construction occurs outside of the hours allowed by the City of San Clemente, SDG&E will meet and confer with the City[8] as needed. MCB Camp Pendleton does not have construction hour restrictions.

Table 3-5. Proposed Construction Schedule

Proposed Project Component	Approximate Duration (Days)	Anticipated Start Date
Staging Yard Setup, Road Refreshing, Vegetation Trimming/Best Management Practices Installation	30	January 2018
Pier Foundation Construction	50	February 2018
Direct Bury Construction and Pole Structure Installation	90	February 2018
Trenching for Installation of Underground Cables	10	May 2018
Stringing Activities/Transfer Conductor/Sagging Activities	60	May 2018
Demobilization/Clean Up/Road Refreshing	40	August 2018

Note: This table is preliminary and subject to change based on CPUC requirements and approvals, final engineering, and other factors. Construction durations are not necessarily continuous.

3.8 OPERATION AND MAINTENANCE

3.8.1 General Project Operation and Maintenance Activities and Practices

This section describes the standard operation and maintenance activities and procedures that SDG&E currently conducts and will continue to conduct along the proposed power line route. For decades, SDG&E has continuously operated the facilities that will be modified by the Proposed Project. Following construction of the Proposed Project, SDG&E will continue to conduct these activities to be consistent with SDG&E's standard operating procedures, including SDG&E's Subregional Natural Community Conservation Plan (NCCP), which is described in greater detail in Section 4.4, Biological Resources. No change in SDG&E's operation and maintenance protocols and procedures is anticipated or included as part of the Proposed Project. Furthermore, maintenance will decrease slightly due to the removal of wood pole structures and the installation of steel pole structures.

[8] MCB Camp Pendleton does not have a noise ordinance or other restrictions regarding construction noise (refer to Section 4.12, Noise).

SDG&E will continue to regularly inspect, maintain, and repair TL 695 and TL 6971 pending agency review of the Proposed Project and following completion of Proposed Project construction. These activities involve both routine preventive maintenance and emergency procedures to maintain service continuity. SDG&E performs aerial and ground inspections of Proposed Project facilities and patrols above ground components annually. Inspection for corrosion, equipment misalignment, loose fittings, and other common mechanical problems is performed at least every three years (per CPUC GO 165) for power lines.

3.8.2 Road Maintenance

Road maintenance includes grading of existing access roads, installation of BMPs specified in the SWPPP[9], spot-repair of erosion sites, and vegetation trimming, as needed. SDG&E performs road maintenance as necessary. Road maintenance may require the use of the following equipment: a motor grader, water truck, and pickup trucks.

3.8.3 Pole Structure Brushing and Tree Trimming

In accordance with fire break clearance requirements in Public Resources Code 4292 and Title 14, Section 1254 of the California Code of Regulations (CCR), SDG&E will trim or remove flammable vegetation in the area surrounding subject power line pole structures to reduce potential fire and other safety hazards. One-person crews typically conduct this work using mechanical equipment consisting of chain saws, weed trimmers, rakes, shovels, and leaf blowers. SDG&E typically inspects pole structures on an annual basis to determine if brushing is required.

In accordance with tree and power line clearance requirements in Public Resources Code 4293, Title 14, Section 1256 of the CCR and CPUC GO 95, SDG&E will trim trees and vegetation to manage fire, electrical reliability, and safety hazards. Regular inspection, regardless of habitat type, is necessary to maintain proper line clearances. SDG&E conducts tree-trimming activities with a two-person crew in an aerial bucket truck. SDG&E typically inspects trees in its service area for trimming needs on an annual basis.

3.8.4 Application of Herbicides

Application of herbicides may follow the mechanical trimming of vegetation to prevent vegetation from recurring. This activity generally requires one person in a pickup truck and takes only minutes to spray around the base of the pole structure within a radius of approximately 10 feet. The employee either walks from the nearest access road to apply the herbicide or drives a pickup truck directly to each pole structure location as access permits.

3.8.5 Equipment Repair and Replacement

Pole structures may support a variety of equipment, such as conductors, insulators, switches, transformers, lightning arrest devices, line junctions, and other electrical equipment. SDG&E may need to

[9] The specific BMPs to be installed will be determined based on site conditions, but typical BMPs for road maintenance may include fiber rolls, sand bag barriers, diversion berms, and drainage swales.

add, repair, or replace equipment in order to maintain uniform, adequate, safe, and reliable service. SDG&E may remove and replace an existing structure with a larger/stronger structure at the same location or at a nearby location due to damage or changes in conductor size. Equipment repair or replacement requires crew access to the equipment to be repaired or replaced.

3.8.6 Use of Helicopters

SDG&E uses helicopters in the visual inspection of overhead facilities and routinely patrols power lines. SDG&E's Transmission Department uses helicopters for patrolling power lines during trouble jobs (e.g., outages/service curtailments) and conducting maintenance activities in areas that have no vehicle access or in rough terrain. For patrolling during such jobs, the helicopter picks up the patrolman at the district yard and lands within a reasonable and safe walking distance of the structures targeted for service. The helicopter needs a flat staging yard for fueling and picking up material, equipment, and personnel. The area required for small helicopter staging is generally 100 feet by 100 feet. The size of the crew needed varies from four to 10 crew members, two helicopter staff, and a water truck driver to apply water for dust control at the staging yard. Most helicopter operations take only one day.

The new underground power line near SONGS Mesa will be inspected consistent with SDG&E's existing underground inspection and maintenance program. The line will be accessed from new vault during the annual underground power line inspection program. The inspection requires opening the vault covers and performing a visual survey from above (entry into vault with energized cables is not permitted), and use of infra-red, partial discharge monitoring, or other diagnostic instrumentation which may be available. The total time to inspect the vault is expected to be less than one day under normal operating conditions. The inspection of the underground power line will be the same for all existing underground inspection currently completed by SDG&E within its service territory.

3.9 APPLICANT-PROPOSED MEASURES

Applicant-Proposed Measures (APMs) are proposed to avoid or minimize impacts to environmental resources, as described below.

3.9.1 Biological Resources

APM BIO-01. Supplemental Surveys

SDG&E will conduct supplemental biological resources surveys to address the impacts, if any, associated with components that were subsequently added to the Proposed Project, but which lie outside of the PSA covered in the Biological Technical Report.

APM BIO-02. Migratory Birds

Trimming or removal of vegetation during the peak-breeding season (February 15 to August 31) will require a pre-construction survey by a qualified biologist to confirm that active nests will not be affected. If an active nest is detected within the construction area during the survey, work will be halted and redirected away from the site. The qualified biologist in the field will determine a no-work buffer zone around the nest that is of sufficient size and dimensions that construction activities will not result in disturbance or direct removal of the active nest, or will not cause a breeding bird to abandon its nest. The no-work buffer zone will remain in effect until the young have fledged, or the qualified biologist has determined that the nest is no longer active.

APM BIO-03. Coastal California Gnatcatcher

- Prior to construction, SDG&E shall retain a qualified coastal California gnatcatcher biologist to conduct surveys for the coastal California gnatcatcher in suitable coastal sage scrub habitat, to determine if any active nests are within or in the immediate vicinity of the Proposed Project.
- If it is anticipated that construction on the Proposed Project may continue into the peak breeding season (February 15 to August 31), construction activities conducted in occupied coastal California gnatcatcher habitat during the breeding season will require monitoring by a qualified biologist to minimize the potential to impact this species. If an active coastal California gnatcatcher nest is found within the construction area at any time, work will be halted and redirected away from the site. A qualified coastal California gnatcatcher biologist will determine in the field a no-work buffer zone around the nest that is of sufficient size and dimensions that construction activities will not result in the disturbance to or direct removal of the active nest, or will cause a breeding gnatcatcher to abandon its nest. The no-work buffer zone will remain in effect until the young have fledged, or the qualified biologist has determined that the nest is no longer active.

APM BIO-04. Pacific Pocket Mouse

- Prior to construction, SDG&E shall retain a qualified Pacific pocket mouse biologist to conduct pre-construction surveys for Pacific pocket mouse in suitable habitat (in coordination with MCB Camp Pendleton and the U.S. Fish and Wildlife Service [USFWS]), to avoid a mortality of the species from any Proposed Project activity.
- A qualified biologist, approved by the USFWS and experienced with Pacific pocket mouse, will be assigned to monitor all construction activities conducted within occupied Pacific pocket mouse habitat. The qualified Pacific pocket mouse biologist will have the authority to halt or redirect construction activities that may impact the Pacific pocket mouse.

APM BIO-05. Arroyo Toad

- Prior to conducting soil disturbing or vegetation removal activities at sites in proximity to arroyo toad breeding habitat (riparian areas) within the Proposed Project, a qualified biologist will survey the site for any sign of arroyo toad in the anticipated impact area. If arroyo toads and/or potential burrows are found, steps will be taken to avoid the toads and/or burrow sites to the extent possible.
- For sites immediately adjacent to or within suitable riparian habitat, impacts to arroyo toad shall be avoided by installing fencing, flagging, and/or signage, or marking the areas to be avoided. If individual arroyo toads are encountered during construction, sites located within or immediately adjacent to suitable riparian habitat shall be monitored by a qualified biologist to minimize potential impacts to the arroyo toad. The biological monitor will have the authority to stop or redirect construction activities to minimize or avoid impacts to this species.
- Since this species is considered nocturnal, construction activities shall be conducted during daylight hours, in order to minimize impacts to active arroyo toads.
- To prevent the trapping of toads or other wildlife, plywood boards should cover the excavated hole if pole structure installation activities do not occur within the same day. The plywood boards

should be anchored and the sides sealed with gravel or sand bags. A proper seal with appropriate materials shall prevent wildlife from moving into the hole/trench and becoming trapped.

APM BIO-06. Impacts to Federally and State Listed Species

- Federally listed species with potential to occur onsite include coastal California gnatcatcher, Pacific pocket mouse, thread-leaved brodiaea, San Diego fairy shrimp, Riverside fairy shrimp, southern steelhead, arroyo toad, least Bell's vireo, southwestern willow flycatcher and western yellow-billed cuckoo. Impacts to potential or known habitat for these species should not proceed without consultation under Section 7 of the Endangered Species Act (ESA). Construction and operation of the Proposed Project shall proceed according to conditions outlined in the relevant take authorizations.
- Mitigation for impacts to federally listed species and/or their habitat would be determined through Section 7 ESA consultation between MCB Camp Pendleton and the USFWS. Additional Project specific measures developed during Section 7 consultation would also be implemented as directed by the USFWS.
- State listed species with potential to occur onsite include: bank swallow, least Bell's vireo, southwestern willow flycatcher and western yellow-billed cuckoo. Impacts to potential or known habitat for these species should not proceed without consultation with the appropriate agencies including CDFW and MCB Camp Pendleton.

3.9.2 Cultural Resources

APM CUL-01. Supplemental Surveys

SDG&E will conduct supplemental cultural resources surveys to address the impacts, if any, associated with components that were subsequently added to the Proposed Project, but which lie outside of the survey area covered in the Cultural Resources Survey report.

APM CUL-02. Stub Pole Structure in San Mateo Archaeological District (SMAD)

SDG&E will conduct additional surveys and testing and evaluation to assess whether or not the proposed stub pole structure will affect buried cultural deposits in the SMAD. A qualified archaeologist and Native American monitor will monitor all overhead work within the SMAD to ensure no impact is made during the ingress and egress of large vehicles. All ground disturbance work within the SMAD will be monitored by a qualified archaeologist and Native American monitor. As necessary and as feasible, SDG&E will investigate and implement additional design adjustments to avoid and/or minimize impacts to this resource.

APM CUL-03. Additional Avoidance and Minimization

SDG&E will implement additional avoidance and minimization recommendations described in the Recommendations for Cultural Resources Protection and Avoidance for the TL 695 and TL 6971 Reconductor Project Report. This document describes avoidance and minimization recommendations at each Proposed Project component that may have an adverse effect on cultural resources. The recommendations include no access roadway improvements within specified cultural sites, use of a truck mounted guard structure at guard structure 3, periodic archaeological and Native American spot-checking of construction activities, and other recommendations.

APM CUL-04. Cultural Resources Sensitivity Training

Prior to construction or ground disturbing activities, all SDG&E, contractor, and subcontractor personnel will receive training regarding the appropriate work practices necessary to effectively implement standard operating procedures and APMs relating to cultural resources, including the potential for exposing subsurface cultural resources and paleontological 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 of paleontological resources. A qualified archaeologist will demarcate work areas prior to the start of construction so as to minimize impacts to Environmentally Sensitive Areas. Construction crews will be instructed to work within designated work areas.

APM CUL-05. Archaeological Monitoring

A qualified archaeologist and Native American monitor will attend preconstruction meetings, as needed, and a qualified archaeological and Native American monitor will monitor all activities in the vicinity of all known cultural resources within the Proposed Project area. The requirements for archaeological and Native American monitoring will be noted on the construction plans. The archaeologist's duties will include monitoring, evaluation of any finds, analysis of materials, and preparation of a monitoring results report conforming to Archaeological Resource Management Reports guidelines.

In the event that cultural resources are discovered, the archaeologist would have the authority to divert or temporarily halt ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist would contact SDG&E's Cultural Resource Specialist, the Environmental Project Manager, and MCB Camp Pendleton Archaeologist immediately at the time of discovery. The archaeologist, in consultation with SDG&E's Cultural Resource Specialist, and MCB Camp Pendleton Archaeologist shall determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist the Environmental Project Manager, and MCB Camp Pendleton Archaeologist would have to concur with the evaluation procedures to be performed before construction activities would be allowed to resume. For significant cultural resources, preservation in place would be the preferred manner of mitigating impacts. For resources that could not be preserved in place, a Research Design and Data Recovery Program would be prepared and upon approval from MCBCP would be carried out to lessen impacts. A cultural resources curation plan would be developed and implemented if resources cannot be preserved in place, and are considered to be unique and important. All collected cultural remains would be cataloged, and permanently curated with an appropriate institution. All artifacts would be analyzed to identify function and chronology as they relate to the history of the area. Faunal material would be identified as to species.

APM CUL-06. Unanticipated Discovery of Human Remains

If human remains are encountered during construction, SDG&E will comply with California State law (Health and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98 and 5097.99). This law specifies that work will stop immediately in any areas where human remains or suspected human remains are encountered. The appropriate agency and SDG&E will be notified of any such discovery. SDG&E will contact the Office of the Medical Examiner. The Medical Examiner has two working days to examine the remains after being notified by SDG&E. Under some circumstances a determination may be made without direct input from the Medical Examiner (e.g., when the remains can be positively identified by the archaeologist as being non-human). When the remains are determined to be Native American, the Medical Examiner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will immediately notify the identified most likely descendant (MLD) and the MLD has 24 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the remains and grave goods. If the MLD does not make recommendations within 24 hours, the area of

the property must be secured from further disturbance. If there are disputes between the landowner and MLD, the NAHC will mediate the dispute to attempt to find a resolution. If mediation fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

APM CUL-07. Paleontological Monitoring

A paleontological monitor will work under the direction of a qualified Project paleontologist and will be on site to observe excavation operations that involve the original cutting of previously undisturbed deposits for the eight pole structures located within paleontologically sensitive formations (i.e., Pomerado Conglomerate, Late Pleistocene to Holocene-age channel deposits). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.

APM CUL-08. Unanticipated Discovery of Fossils

In the event that fossils are encountered, the paleontological monitor would have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. The paleontologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The paleontologist, in consultation with SDG&E's Cultural Resource Specialist would determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager would have to concur with the evaluation procedures to be performed before construction activities would be allowed to resume. Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on site. If fossils are discovered, the paleontologist (or paleontological monitor) would recover them along with pertinent stratigraphic data. In most cases, this fossil salvage can be completed in a short period of time. Because of the potential for recovery of small fossil remains, such as isolated mammal teeth, recovery of bulk sedimentary-matrix samples for off-site wet screening from specific strata may be necessary, as determined in the field. Fossil remains collected during monitoring and salvage would be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections, and a paleontological monitoring report would be prepared.

3.9.3 Hydrology and Water Quality

APM HYD-01. Supplemental Surveys

SDG&E will conduct supplemental jurisdictional delineation surveys to address the impacts, if any, associated with components that were subsequently added to the Proposed Project, but which lie outside of the PSA covered in the Jurisdictional Delineation Report.

APM HYD-02. Work within and near Jurisdictional Wetlands

Pole structures 124 and 125 are located within a jurisdictional wetland. Activities within a jurisdictional wetland will be limited to overhead work only. No digging, filling or other ground disturbing activity shall occur at these locations. Minor vegetation trimming to create an access footpath is permitted.

3.9.4 Noise

APM NOI-01. Construction Notification

Residents within 50 feet of Proposed Project activities will receive notification of the start of construction at least one week prior to the start of construction activities in that area.

APM NOI 02. Meet and Confer with City of San Clemente

SDG&E will meet and confer with the City of San Clemente, as needed, to discuss any anticipated deviations from the requirements of the City's noise ordinance.

APM NOI 03. Helicopter Use

Helicopter takeoffs and landings conducted at the two ILAs along Avenida Pico and at the Talega Staging Yard will be restricted to the furthest distance from residences as practicable. Helicopter usage will conform to acceptable hours for construction activities, as outlined within the City of San Clemente Noise Ordinance.

3.9.5 Recreation

APM REC-01. Construction Notification

Signage will be posted at least four weeks prior to the start of construction in parks and near trails that are adjacent to or cross the Proposed Project. The signage will describe the location and duration of construction activities. The signage will also include contact information for the Proposed Project's public liaison. Recreational mangers will also be notified in advance to coordinate at least four weeks prior to the beginning of construction.

3.10 REQUIRED APPROVALS

Under CEQA, the CPUC will be the lead agency for the Proposed Project. SDG&E must comply with the CPUC's GO 131-D. This PEA is being prepared as support for an application to obtain a Permit to Construct for the Proposed Project. In addition to the CPUC, SDG&E will obtain approval for the Proposed Project from other federal, state and local agencies, as required. Table 3-6, Anticipated Potential Permit, Approval and Consultation Requirements identifies these other permits, approvals and licenses that may be required for the Proposed Project.

MCB Camp Pendleton will perform an environmental review of the Proposed Project to fulfill their obligations under the National Environmental Policy Act (NEPA). The level of NEPA review (i.e., Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement) will be determined by MCB Camp Pendleton based on Marine Corps Order P5090.2A and other applicable regulations and guidance. SDG&E will coordinate with and support MCB Camp Pendleton during the NEPA process and will comply with any avoidance, minimization, and mitigation measures that may be identified.

3.11 REFERENCES

No references are cited in this section.

Table 3-6. Anticipated Potential Permit, Approval and Consultation Requirements

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose	Permit Status
Federal Agencies			
Easement	DoN	Issuance of proposed underground easement and proposed easement modification	To be issued by MCB Camp Pendleton
NEPA	DoN	NEPA review of proposed work on federal land	To be prepared by MCB Camp Pendleton
Training Area Request	MCB Camp Pendleton	Permission for access to training areas for construction personnel and equipment, including helicopters	To be prepared by SDG&E and issued by MCB Camp Pendleton
Federal Endangered Species Act	United States Fish & Wildlife Service	Impacts to listed species during installation of new facilities	Consultation to be led by MCB Camp Pendleton, with support from SDG&E
Airspace Obstruction Analysis	FAA	Construction of overhead facilities potentially requiring appropriate aerial lighting and marking measures	To be submitted by SDG&E
State Agencies			
Permit to Construct	CPUC	Overall project approval and CEQA review	To be submitted by SDG&E
Consistency Determination or Negative Determination	California Coastal Commission	Construction of facilities in the Coastal Zone	To be prepared by MCB Camp Pendleton
NPDES–General Construction Storm Water Permit	State Water Resources Control Board	Stormwater discharges associated with construction activities disturbing more than one acre of land.	To be submitted by SDG&E
California Endangered Species Act	California Department of Fish and Wildlife	Impacts to listed species	To be submitted by SDG&E
Local Agencies			
Traffic Control Plan(s)	City of San Clemente U.S. Marine Corps	Construction within, under, or over city roadways and roads on MCB Camp Pendleton	To be submitted by SDG&E

Notes: Table contents based upon preliminary engineering and are subject to change.