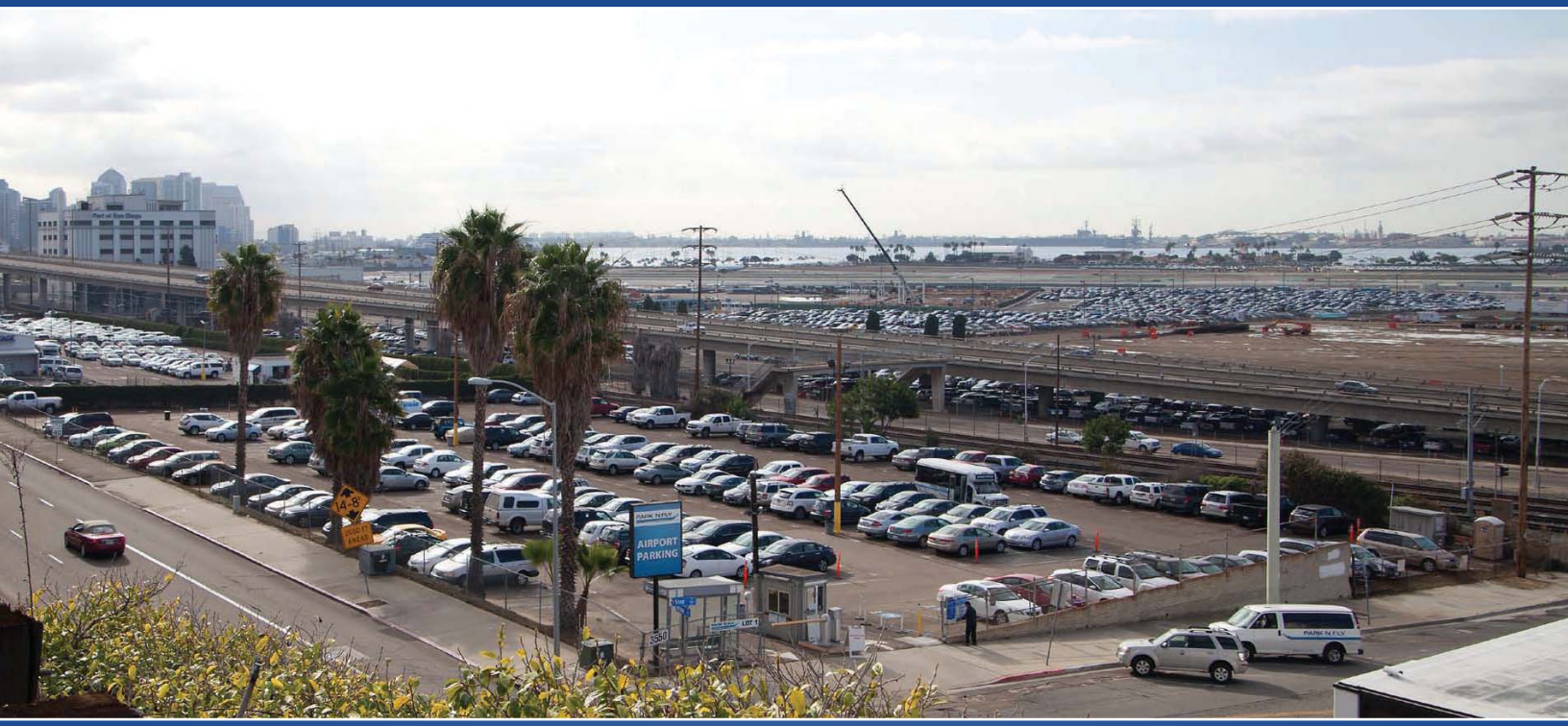
PROPONENT'S ENVIRONMENTAL ASSESSMENT

for the

Vine 69/12 kV Substation Project

Volume II
Application 14-05-___



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SDGE
A Sempra Energy utility

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CHAPTER 1 – PEA SUMMARY

Consistent with California Public Utilities Commission (CPUC) General Order 131-D, this Proponent's Environmental Assessment (PEA) has been prepared by San Diego Gas & Electric Company (SDG&E) to support SDG&E's application for a Permit to Construct the Vine 69/12 Kilovolt (kV) Substation Project (Proposed Project).

1.0 PROJECT COMPONENTS

The Proposed Project involves the construction of a new 69/12 kV substation—Vine Substation. The Proposed Project will also involve the relocation of eight 12 kV distribution circuits, the looping in of an existing 69 kV power line to the Vine Substation, and the extension of an existing telecommunication system.

1.1 PROJECT LOCATION

The Proposed Project site is located within the City of San Diego, California. The proposed Vine Substation, which is the primary component of the Proposed Project, is situated approximately two miles northwest of downtown San Diego, directly adjacent to and east of the San Diego International Airport (also known as Lindbergh Field). The location of the Proposed Project is depicted in Figure 3-1: Project Location Map. The four Proposed Project components are depicted in Figure 3-2: Project Overview Map and described in more detail in Chapter 3 – Project Description.

1.2 PROJECT NEED AND ALTERNATIVES

As described further in Chapter 2 – Project Purpose and Need, the Proposed Project is being proposed to meet the following four objectives:

- Objective 1: Maintain existing substation and distribution system reliability standards.
- Objective 2: Provide substation and circuit tie capacity that will provide additional reliability for existing and future system needs.
- Objective 3: Meet the area's long-term electric distribution capacity needs by constructing a substation near planned load growth.
- Objective 4: Utilize existing SDG&E-owned land previously purchased for substation use to meet the scheduled in-service date.

Various substation site alternatives and existing system alternatives were considered during the development of the Proposed Project. The Proposed Project was ultimately selected because it best meets all of the Proposed Project objectives and is the most cost effective when compared to all alternatives.

1.3 AGENCY COORDINATION

1.3.0 City of San Diego

SDG&E provided an overview of the Proposed Project to the City of San Diego Development Services Office, San Diego Planning Groups, San Diego City Public Utilities Department, and the San Diego City Council. Continuing outreach, including meet and confer meetings will continue to occur upon the request of City personnel.

1.3.1 San Diego Metropolitan Transit System

SDG&E provided an overview of the Proposed Project to the San Diego Metropolitan Transit System (MTS) and will continue to work with MTS to obtain all necessary permits required.

1.3.2 Native American Heritage Commission

The Native American Heritage Commission (NAHC) was contacted by ASM Affiliates on December 13, 2013 for a Sacred Lands Record Search and for a list of the appropriate Native American representatives to contact for input on the Proposed Project. The response from the NAHC on December 19, 2013 indicated that no Native American traditional cultural places had been submitted for the Proposed Project area. However, the NAHC provided a list of local Native American contacts that may be knowledgeable about cultural resources within or near the Proposed Project area. Letters were sent on December 20, 2013 to these representatives, and copies of the letters are included in Attachment 4.5-A: NAHC Correspondence. No replies have been received to date.

1.4 PROPONENT'S ENVIRONMENTAL ASSESSMENT CONTENTS

This PEA was prepared in accordance with the PEA Checklist issued by the CPUC on November 24, 2008, and is divided into the following five sections:

- Chapter 1 – PEA Summary discusses the contents and conclusions of the PEA and describes SDG&E's ongoing and past coordination efforts.

- Chapter 2 – Project Purpose and Need outlines the Proposed Project's four objectives, which have been discussed previously.

- Chapter 3 – Project Description provides a detailed description of the Proposed Project. This discussion includes specifics regarding the following:

    - Proposed Project location
    - The existing system
    - Proposed Project components
    - Permanent and temporary land/right-of-way (ROW) requirements
    - Construction methods
    - Construction schedule
    - Anticipated operation and maintenance activities
    - Federal and local permits that will be obtained for the Proposed Project

  - Summary of all of the applicant-proposed measures (APMs) to be implemented as part of the Proposed Project, as well as justification for each

- Chapter 4 – Environmental Impact Assessment includes an environmental impact assessment summary and a discussion of the existing conditions and potential and anticipated impacts of the Proposed Project for each of the following resource areas:

  - Aesthetics
  - Agriculture and Forestry Resources
  - Air Quality
  - Biological Resources
  - Cultural Resources
  - Geology and Soils
  - Greenhouse Gas (GHG) Emissions
  - Hazards and Hazardous Materials
  - Hydrology and Water Quality
  - Land Use and Planning
  - Mineral Resources
  - Noise
  - Population and Housing
  - Public Services
  - Recreation
  - Transportation and Traffic
  - Utilities and Service Systems

  The CPUC's PEA Checklist indicates that the environmental setting section can be provided separately or combined with the impacts and APMs. SDG&E has elected to combine the existing conditions, impacts, and APMs for each resource area in Chapter 4 – Environmental Impact Assessment. This chapter also includes a Cumulative Analysis, which discusses past, present, and reasonably foreseeable future projects within the Proposed Project area, as well as the Proposed Project's potential to contribute to a significant cumulative effect.

- Chapter 5 – Detailed Discussion of Significant Impacts identifies that there are no potentialy significant impacts that will result from the Proposed Project, evaluates alternatives to the Proposed Project, describes the justification for the preferred alternative, and discusses the Proposed Project's potential to induce growth in the area.

Throughout the PEA, SDG&E addresses all items requested in the CPUC's PEA Checklist. To facilitate confirmation of this and review of the PEA, Table 1-1: PEA Checklist Key has been included at the end of this chapter and identifies the sections in which each checklist item is addressed.

1.5 PEA CONCLUSIONS

The PEA analyzes the potential environmental impacts associated with construction, operation, and maintenance of the Proposed Project. The following 15 resource areas will not be impacted by the Proposed Project or will experience less-than-significant impacts:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Hydrology and Water Quality
- Geology and Soils
- GHG Emissions
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Although the Proposed Project will result in potentially significant impacts to the two remaining resource areas, these impacts will be reduced to a less-than-significant level with the implementation of APMs. These impacts are summarized as follows:

- Cultural Resources – Potential for discovery and damage to unknown cultural resources resulting from grading and excavation activities

- Hazards and Hazardous Materials – Temporary and permanent impacts associated with the transport and use of hazardous materials, as well as the potential release of hazardous materials resulting from the operation of the proposed Vine Substation

APMs will be implemented to reduce impacts to a less-than-significant level and are discussed in detail in their relevant sections. The APMs have been identified by applicability to each Proposed Project component and described in Table 3-8: Applicant-Proposed Measures in Chapter 3 – Project Description. A summary and the justification for each APM are also provided in Table 3-8: Applicant-Proposed Measures in Chapter 3 – Project Description.

1.6 ISSUES TO BE RESOLVED

There are no existing issues that require resolution.

1.7 PUBLIC OUTREACH EFFORTS

A proactive approach to community engagement and collaboration has helped SDG&E identify issues early in the process, which will result in fewer, if any, disruptions to local communities and property owners than if no outreach had occurred. Throughout the approval process, SDG&E will continue to inform area residents and property owners, government officials, Native American tribes, and interested parties about the scope of the Proposed Project through its website, printed materials, one-on-one meetings, and presentations to local organizations. A toll-free phone number and dedicated e-mail address will also be established to allow residents and property owners to make direct contact with the Proposed Project team.

During construction, SDG&E will work to minimize disruptions from construction traffic, and limit dust and noise. SDG&E will establish a community outreach program to continuously communicate with government agencies—including the CPUC, City of San Diego, local Native American tribes, and other government officials—regarding construction impacts. Additional activities will be implemented to keep property owners and the public informed of construction activities to minimize disruptions and address any concerns that arise.

Personalized contacts and the latest technology will be utilized to allow communication with the public and affected stakeholders when necessary. SDG&E will strive to ensure that the local community and property owners receive information to minimize disruptions to their daily lives. Furthermore, efforts to keep all affected agencies and interested parties informed will be pursued.

Table 1-1: PEA Checklist Key

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
Chapter 1 – PEA Summary		
	Include major conclusions of the PEA.	Section 1.5 PEA Conclusions
	List any areas of controversy.	Section 1.6 Issues to be Resolved
	Include a description of inter-agency coordination, if any.	Section 1.3 Agency Coordination
	Include a description of public outreach efforts, if any.	Section 1.7 Public Outreach Efforts
	Identify any major issues that must be resolved, including the choice among reasonably feasible alternatives and mitigation measures, if any.	Section 1.5 PEA Conclusions
Chapter 2 – Project Purpose and Need		
2.1 Overview	Include an analysis of Proposed Project objectives and purpose and need that is sufficiently detailed so that the Commission can independently evaluate the Proposed Project need and benefits in order to accurately consider them in light of the potential environmental impacts.	Section 2.0 Overview Section 2.1 Project Objectives
	Explain the objective(s) and/or purpose and need for implementing the Proposed Project.	Section 2.0 Overview Section 2.1 Project Objectives
2.2 Project Objectives	Include an analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of Proposed Project objectives which will aid any appropriate California Environmental Quality Act alternatives screening process.	Section 2.1 Project Objectives

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
Chapter 3 – Project Description		
3.1 Project Location	Identify geographical location: County, City (provide Proposed Project location map[s]).	Section 3.0 Project Location Figure 3-1: Project Location Map Attachment 3-A: Detailed Project Components Map
	Provide a general description of land uses within the Proposed Project site (e.g., residential, commercial, agricultural, recreation, vineyards, farms, open space, number of stream crossings, etc.).	Section 3.0 Project Location Table 4.10-1: Existing and Designated Land Uses
	Describe if the Proposed Project is located within an existing property owned by the Applicant, traverses existing rights-of-way (ROW), or requires new ROW. Provide the approximate area of the property or the length of the Proposed Project that is in an existing ROW or which requires new ROWs.	Section 3.0 Project Location Section 3.4 Project Components Section 3.5 Right-of-Way Requirements
3.2 Existing System	Describe the local system to which the Proposed Project relates. Include all relevant information about substations, transmission lines, and distribution circuits.	Section 3.1 Existing System
	Provide a schematic diagram and map of the existing system.	Figure 3-3: Existing System Configuration
	Provide a schematic diagram that illustrates the system as it would be configured with the implementation of the Proposed Project.	Figure 3-4: Proposed System Configuration
3.4 Proposed Project	Describe the whole of the Proposed Project. Is it an upgrade, a new line, new substations, etc.?	Section 3.0 Project Location Section 3.4 Project Components
	Describe how the Proposed Project fits into the regional system. Does it create a loop for reliability, etc.?	Section 3.1 Existing System Section 3.2 Project Objectives
	Describe all reasonably foreseeable future phases or other reasonably foreseeable consequences of the Proposed Project.	Section 3.4 Project Components

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.4 Proposed Project (cont.)	Provide the capacity increase in megawatts (MW). If the Proposed Project does not increase capacity, state that.	Chapter 2 – Project Purpose and Need Section 3.3 Project Capacity
	Provide geographic information system (GIS) (or equivalent) data layers for the Proposed Project preliminary engineering, including estimated locations of all physical components of the Proposed Project, as well as those related to construction.	A CD containing the relevant GIS data for the Proposed Project has been submitted under separate cover as part of this PEA package.
3.5 Project Components **3.5.1 Transmission Line**	Describe what type of line exists and what type of line is proposed (e.g., single-circuit, double-circuit, upgrade 69 kV to 115 kV).	Section 3.4 Project Components
	Identify the length of the upgraded alignment, the new alignment, etc.	Section 3.4 Project Components
	Describe whether construction would require one-for-one pole replacement, new poles, steel poles, etc.?	Section 3.4 Project Components
	Describe what would occur to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.).	Section 3.4 Project Components
3.5.2 Poles/Towers	Provide information for each pole/tower that would be installed and for each pole/tower that would be removed.	Section 3.0.2 69 kV Loop-In Section 3.4 Project Components Attachment 3-A: Detailed Project Components Map
	Provide a unique identification number to match GIS database information.	A CD containing the relevant GIS data, which includes unique identification numbers for poles, has been submitted under separate cover as part of this PEA package.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.5.2 Poles/Towers (cont.)	Provide a structural diagram and, if available, photos of existing structure. Preliminary diagram or "typical" drawings and, if possible, photos of proposed structure. Also provide a written description of the most common types of structures and their use (e.g., tangent poles would be used when the run of poles continues in a straight line, etc.). Describe if the pole/tower design meets raptor safety requirements.	Section 3.4 Project Components Figure 3-13: Typical Existing 69 kV Wood Pole Figure 3-14: Typical Existing Stub Guy Pole Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole Section 4.4.3 Impacts
	Provide the type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting, lattice, etc.).	Section 3.4 Project Components Figure 3-13: Typical Existing 69 kV Wood Pole Figure 3-14: Typical Existing Stub Guy Pole Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole
	Identify typical total pole lengths, the approximate length to be embedded, and the approximate length that would be above ground surface; for towers, identify the approximate height above ground surface and approximate base footprint area.	Section 3.4 Project Components Section 3.6.3 Methods Figure 3-13: Typical Existing 69 kV Wood Pole Figure 3-14: Typical Existing Stub Guy Pole Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole
	Describe any specialty poles or towers; note where they would be used (e.g., angle structures, heavy angle lattice towers, stub guys, etc.); make sure to note if any guying would likely be required across a road.	Section 3.4 Project Components Section 3.6.3 Methods Figure 3-13: Typical Existing 69 kV Wood Pole Figure 3-14: Typical Existing Stub Guy Pole Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.5.2 Poles/Towers (cont.)	If the Proposed Project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment.	Section 3.4 Project Components
	Describe any special pole types (e.g., poles that require foundations, transition towers, switch towers, microwave towers, etc.) and any special features.	Section 3.4 Project Components Section 3.6.3 Methods Figure 3-13: Typical Existing 69 kV Wood Pole Figure 3-14: Typical Existing Stub Guy Pole Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole
3.5.3 Conductor/Cable **3.5.3.1 Above-Ground Installation**	Describe the type of line to be installed on the poles/tower (e.g. single-circuit with distribution, double circuit, etc.).	Section 3.4 Project Components
	Describe the number of conductors required to be installed on the poles or tower and the number on each side including applicable engineering design standards.	Section 3.4 Project Components
	Provide the size and type of conductor (e.g., aluminum conductor, steel reinforced, non-specular, etc.) and insulator configuration.	Section 3.4 Project Components Section 3.6.3 Methods
	Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically). Provide specific information at highways, rivers, or special crossings.	Section 3.4 Project Components
	Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant.	Section 3.4 Project Components
	Determine whether other infrastructure would likely be collocated with the conductor (e.g., fiber optics, etc.); if so, provide conduit diameter of other infrastructure.	Section 3.4 Project Components

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.5.3.2 Below Ground Installation	Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables).	Section 3.4 Project Components
	Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system); provide the dimensions of the casing.	Section 3.4 Project Components Section 3.6.3 Methods Figure 3-8: Typical 12 kV Underground Duct Bank Figure 3-9: Typical 12 kV Underground Vault
	Provide an engineering 'typical' drawing of the duct bank and describe what types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).	Figure 3-8: Typical 12 kV Underground Duct Bank Figure 3-9: Typical 12 kV Underground Vault
3.5.4 Substations	Provide "typical" plan and profile views of the proposed substation and the existing substation if applicable.	Figure 3-5: Vine Substation Initial Arrangement Figure 3-6: Vine Substation Ultimate Arrangement Figure 3-7: Vine Substation Profile View
	Describe the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be. Include information such as, but not limited to: mobile substations, transformers, capacitors, and new lighting.	Section 3.4 Project Components Figure 3-5: Vine Substation Initial Arrangement Figure 3-6: Vine Substation Ultimate Arrangement
	Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply.	Section 3.4 Project Components Section 3.6.3 Methods Figure 3-5: Vine Substation Initial Arrangement Figure 3-6: Vine Substation Ultimate Arrangement Figure 3-7: Vine Substation Profile View

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.5.4 Substations (cont.)	Describe the extent of the Proposed Project. Would it occur within the existing fence line, existing property line or would either need to be expanded?	Section 3.0 Project Location Section 3.4 Project Components Section 3.5 Right-of-Way Requirements
	Describe the electrical need area served by the distribution substation.	Chapter 2 – Project Purpose and Need Section 3.2 Project Objectives
3.6 Right-of-Way Requirements	Describe the ROW location, ownership, and width. Would the existing ROW be used or would new ROW be required?	Section 3.5 Right-of-Way Requirements
	If a new ROW is required, describe how it would be acquired and approximately how much land would be required (length and width).	Section 3.5 Right-of-Way Requirements
	List the properties likely to require acquisition.	Section 3.5 Right-of-Way Requirements
3.7 Construction **3.7.1 For All Projects** **3.7.1.1 Staging Areas**	Where would the main staging area(s) likely be located?	Section 3.6.0 Staging Areas Section 3.6.1 Work Areas Attachment 3-A: Detailed Project Components Map
	Approximately how large would the main staging area(s) be?	Section 3.6.0 Staging Areas
	Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.).	Section 3.6.0 Staging Areas Section 3.6.1 Work Areas
	Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.).	Section 3.6.0 Staging Areas Section 3.6.1 Work Areas
	Describe how the staging area would be secured; would a fence be installed? If so, describe the type and extent of the fencing.	Section 3.6.0 Staging Areas Section 3.6.1 Work Areas

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7 Construction **3.7.1 For All Projects** **3.7.1.1 Staging Areas (cont.)**	Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.).	Section 3.6.0 Staging Areas
	Describe any grading activities and/or slope stabilization issues.	Section 3.6.3 Methods
3.7.1.2 Work Areas	Describe known work areas that may be required for specific construction activities (i.e., pole assembly, hill side construction, etc.).	Section 3.6.0 Staging Areas Section 3.6.1 Work Areas
	For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed.	Section 3.6.0 Staging Areas Section 3.6.1 Work Areas Table 3-2: Temporary Workspace Requirements
	Identify the approximate location of known work areas in the GIS database.	Attachment 3-A: Detailed Project Components Map A CD containing the relevant GIS data for the work areas has been submitted under separate cover as part of this PEA package.
	Describe how the work areas would likely be accessed (e.g., construction vehicles, walk-in, helicopter, etc.).	Section 3.6.1 Work Areas Section 3.6.2 Access
	If any site preparation is likely required, generally describe what and how it would be accomplished.	Section 3.6.3 Methods
	Describe any grading activities and/or slope stabilization issues.	Section 3.6.3 Methods
	Based on the information provided, describe how the site would be restored.	Section 3.6.3 Methods

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.1.3 Access Roads and/or Spur Roads	Describe the types of roads that would be used and/or would need to be created to implement the Proposed Project. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements; existing paved road; existing dirt/gravel road; and overland access.	Section 3.6.2 Access
	For road types that require preparation, describe the methods and equipment that would be used.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements
	Identify approximate location of all access roads (by type) in the GIS database.	A CD containing the relevant GIS data for the Proposed Project has been submitted under separate cover as part of this PEA package.
	Describe any grading activities and/or slope stabilization issues.	Section 3.6.3 Methods
3.7.1.4 Helicopter Access	Identify which proposed poles/towers would be removed and/or installed using a helicopter.	Helicopter use is not proposed.
	If different types of helicopters are to be used, describe each type (e.g., light, heavy, or sky crane) and what activities they would be used for.	Helicopter use is not proposed.
	Provide information as to where the helicopters would be staged, where they would refuel, and where they would land within the Proposed Project site.	Helicopter use is not proposed.
	Describe any Best Management Practices (BMPs) that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations.	Helicopter use is not proposed.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.1.4 Helicopter Access (cont.)	Describe flight paths, payloads, hours of operations for known locations, and work types.	Helicopter use is not proposed.
3.7.1.5 Vegetation Clearance	Describe the types of vegetation clearing that may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.).	Section 3.6.1 Work Areas Section 3.6.3 Methods
	Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal.	Section 3.6.1 Work Areas Section 3.6.3 Methods Section 4.4.3 Impacts A CD containing the relevant GIS data for the Proposed Project has been submitted under separate cover as part of this PEA package.
	Describe how each type of vegetation removal would be accomplished.	Section 3.6.1 Work Areas Section 3.6.3 Methods
	For removal of trees, distinguish between tree trimming as required under GO-95 and tree removal.	3.6.1 Work Areas
	Describe the types and approximate number and size of trees that may need to be removed.	3.6.1 Work Areas.
	Describe the type of equipment typically used.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	Describe the areas of soil disturbance including estimated total areas and associated terrain type and slope. List all known permits required. For project sites of less than one acre, outline the BMPs that would be implemented to manage surface runoff. Things to consider include, but are not limited to: Erosion and sedimentation BMPs, vegetation removal and restoration, and/or hazardous waste, and spill prevention plans.	Section 3.9.1 Erosion and Sediment Control and Pollution Prevention During Construction Section 3.6.3 Methods Section 3.8: Anticipated Permits and Approvals Table 3-7: Permit, Approval, and Consultation Requirements Table 3-8: Applicant-Proposed Measures
	Describe any grading activities and/or slope stabilization issues.	Section 3.6.3 Methods
	Describe how construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) would be disposed.	Section 3.9.1 Erosion and Sediment Control and Pollution Prevention During Construction Section 4.17.3 Impacts
3.7.1.7 Cleanup and Post-Construction Restoration	Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods). Things to consider, but are not limited to, restoration of natural drainage patterns, wetlands, vegetation, and other disturbed areas (i.e., staging areas, access roads, etc.).	Section 3.6.3 Methods
3.7.2 Transmission Line Construction (Above Ground) **3.7.2.1 Pull and Tension Sites**	Provide the general or average distance between pull and tension sites.	Section 3.6.1 Work Areas Section 3.6.3 Methods Attachment 3-A: Detailed Project Components Map
	Provide the area of pull and tension sites including the estimated length and width.	Section 3.6.1 Work Areas Section 3.6.3 Methods

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.2 Transmission Line Construction (Above Ground) **3.7.2.1 Pull and Tension Sites (cont.)**	According to the preliminary plan, identify the number of pull and tension sites that would be required, and their locations. Provide the location information in GIS.	Section 3.6.1 Work Areas Section 3.6.3 Methods Attachment 3-A: Detailed Project Components Map A CD containing the relevant GIS data for the Proposed Project has been submitted under separate cover as part of this PEA package.
	Describe the type of equipment that would be required at these sites.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements
	If conductor is being replaced, describe how it would be removed from the site.	Section 3.6.3 Methods
3.7.2.2 Pole Installation and Removal	Describe how the construction crews and their equipment would be transported to and from the pole site locations. Provide vehicle type, number of vehicles, estimated number of trips, and hours of operation.	Section 3.6.2 Access Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements
	Describe the process of removing the poles and foundations.	Section 3.6.3 Methods
	Describe what happens to the holes that the poles were in (i.e., reused or backfilled)?	Section 3.6.3 Methods
	If the holes are to be backfilled, what type of fill would be used and where would it come from?	Section 3.6.3 Methods
	Describe any surface restoration that would occur at the pole sites.	Section 3.6.3 Methods
	Describe how the poles would be removed from the sites.	Section 3.6.3 Methods

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.2.2 Pole Installation and Removal (cont.)	If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, describe the methodology to access and remove the tops of these poles. Describe any special methods that would be required to top poles that may be difficult to access, etc.	Pole topping is not proposed.
	Describe the process of how the new poles/towers would be installed; specifically identify any special construction methods (e.g., helicopter installation) for specific locations or for different types of poles/towers.	Section 3.6.3 Methods
	Describe the types of equipment and their use as related to pole/tower installation.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements
	Describe the actions taken to maintain a safe work environment during construction (e.g., covering of holes/excavation pits, etc.).	Section 3.4 Project Components Section 3.6.2 Access Section 3.6.3 Methods
	Describe what would be done with soil that is removed from a hole/foundation site.	Section 3.6.3 Methods
	For any foundations required, provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc.	Section 3.6.3 Methods
	Describe briefly how poles/towers and associated hardware are assembled.	Section 3.6.3 Methods
	Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off-site and brought in or assembled on site?	Section 3.6.3 Methods

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.2.2 Pole Installation and Removal (cont.)	Provide the following information about pole/tower installation and associated disturbance area estimates; pole diameter for each pole type (e.g., wood, self-supporting steel, lattice, etc.), base dimensions for each pole type, auger hole depth for each pole type, permanent footprint per pole/tower, number of poles/towers by pole type, average work area around poles/towers by pole type (e.g., for old pole removal and new pole installation), and total permanent footprint for poles/towers.	Section 3.6.1 Work Areas Section 3.6.3 Methods Figure 3-13: Typical Existing 69 kV Wood Pole Figure 3-14: Typical Existing Stub Guy Pole Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole Table 3-2: Temporary Workspace Requirements
3.7.2.3 Conductor/Cable Installation	Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable.	Section 3.6.3 Methods
	Generally describe the conductor/cable splicing process.	Section 3.6.3 Methods
	If vaults are required, provide their dimensions and approximate location/spacing along the alignment.	Section 3.6.3 Methods
	Describe in what areas conductor/cable stringing/installation activities would occur.	Section 3.6.1 Work Areas Section 3.6.3 Methods Attachment 3-A: Detailed Project Components Map
	Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing, etc.).	Section 3.6.3 Methods
3.7.3 Transmission Line Construction (Below Ground) **3.7.3.1 Trenching**	Describe the approximate dimensions of the trench (e.g., depth, width).	Section 3.6.3 Methods

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.3 Transmission Line Construction (Below Ground) **3.7.3.1 Trenching (cont.)**	Describe the methodology of making the trench (e.g., saw cutter to cut the pavement, backhoe to remove, etc.).	Section 3.6.3 Methods Figure 3-18: Typical Underground Construction Process within Roadways
	Provide the total approximate cubic yardage of material to be removed from the trench, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Section 3.6.3 Methods
	Provide off-site disposal location, if known, or describe possible option(s).	Section 3.6.3 Methods
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., top two feet would be filled with thermal-select backfill).	Section 3.6.3 Methods
	Describe if dewatering would be anticipated, if so, how the trench would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed.	Section 3.6.3 Methods
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed as a result of trenching operations.	Section 3.6.3 Methods
	If pre-existing hazardous waste was encountered, describe the process of removal and disposal.	Section 3.6.3 Methods Section 4.8.3 Impacts
	Describe any standard BMPs that would be implemented.	Section 3.6.3 Methods Section 3.9.2 Erosion and Sediment Control and Pollution Prevention During Construction Table 3-8: Applicant-Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	Provide the approximate location of the sending and receiving pits.	Trenchless techniques are not proposed.
	Provide the length, width and depth of the sending and receiving pits.	Trenchless techniques are not proposed.
	Describe the methodology of excavating and shoring the pits.	Trenchless techniques are not proposed.
	Describe the methodology of the trenchless technique.	Trenchless techniques are not proposed.
	Provide the total cubic yardage of material to be removed from the pits, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Trenchless techniques are not proposed.
	Describe the process for safe handling of drilling mud and bore lubricants.	Trenchless techniques are not proposed.
	Describe the process for detecting and avoiding "fracturing-out" during horizontal directional drilling operations.	Trenchless techniques are not proposed.
	Describe the process for avoiding contact between drilling mud/lubricants and stream beds.	Trenchless techniques are not proposed.
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., top two feet would be filled with thermal-select backfill).	Trenchless techniques are not proposed.
	If dewatering is anticipated, describe how the pit would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed.	Trenchless techniques are not proposed.
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants.	Trenchless techniques are not proposed.
	If a pre-existing hazardous waste was encountered, describe the process of removal and disposal.	Trenchless techniques are not proposed.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	Describe any grading activities and/or slope stabilization issues.	Trenchless techniques are not proposed.
	Describe any standard BMPs that would be implemented.	Trenchless techniques are not proposed.
3.7.4 Substation Construction	Describe any earth-moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site for both site grading and foundation excavation.	Section 3.6.3 Methods
	Provide a conceptual landscape plan in consultation with the municipality in which the substation is located.	Section 3.6.3 Methods Figure 4.1-4: Conceptual Landscape Plan
	Describe any grading activities and/or slope stabilization issues.	Section 3.6.3 Methods
	Describe possible relocation of commercial or residential property, if any.	No commercial or residential properties will be relocated as part of the Proposed Project.
3.7.5 Construction Workforce and Equipment	Provide the estimated number of construction crew members.	Section 3.6.4 Construction Equipment and Personnel Table 3-5: Construction Personnel Requirements
	Describe the crew deployment, whether crews would work concurrently (i.e., multiple crews at different sites), if they would be phased, etc.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-5: Construction Personnel Requirements Table 3-6: Proposed Construction Schedule

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.7.5 Construction Workforce and Equipment (cont.)	Describe the different types of activities to be undertaken during construction, the number of crew members for each activity (i.e., trenching, grading, etc.), and the number and types of equipment expected to be used for said activity. Include a written description of the activity.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements Table 3-6: Proposed Construction Schedule
	Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment.	Section 3.6.3 Methods Section 3.6.4 Construction Equipment and Personnel Table 3-4: Construction Equipment Requirements
3.7.6 Construction Schedule	Provide a preliminary project construction schedule; include contingencies for weather, wildlife closure periods, etc.	Table 3-6: Proposed Construction Schedule
3.8 Operation and Maintenance	Describe the general system monitoring and control (i.e., use of standard monitoring and protection equipment, use of circuit breakers and other line relay protection equipment, etc.).	Section 3.7 Operation and Maintenance
	Describe the general maintenance program of the Proposed Project including timing of inspections (i.e., monthly, every July, as needed), type of inspection (i.e., aerial inspection, ground inspection), and a description of how the inspection would be implemented. Things to consider: who/how many crew members, how would they access the site (i.e., walk to site, vehicle, all terrain vehicle), would new access be required, would restoration be required, etc.).	Section 3.7 Operation and Maintenance
	If additional full time staff would be required for operation and/or maintenance, provide the number of workers and for what purpose they are required.	Section 3.7 Operation and Maintenance No new full time staff would be required for operation and/or maintenance of the Proposed Project.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
3.9 Applicant-Proposed Measures	If there are measures that the Applicant would propose to be part of the Proposed Project, include those measures and reference plans or implementation descriptions.	Section 3.10 Applicant-Proposed Measures Table 3-8: Applicant-Proposed Measures
Chapter 4 – Environmental Setting		
	For each resource area discussion within the PEA, include a description of the physical environment in the vicinity of the Proposed Project (e.g., topography, land use patterns, biological environment, etc.), including the local environment (site-specific) and regional environment.	Section X.X.2 under each resource area provides a discussion of both the physical environment in the vicinity of the Proposed Project and the regulatory environment.
	For each resource area discussion within the PEA, include a description of the regulatory environment/context (federal, state, and local).	Section X.X.2 under each resource area provides a discussion of both the physical environment in the vicinity of the Proposed Project and the regulatory environment.
Chapter 5 – Environmental Impact Assessment Summary		
5.1 Aesthetics	Provide visual simulations of prominent public view locations, including scenic highways, to demonstrate the views before and after project implementation. Additional simulations are highly recommended.	Figure 4.1-5: Existing View and Visual Simulation – California Street Figure 4.1-6 Existing View and Visual Simulation – Southbound I-5
5.2 Agriculture and Forestry Resources	Identify the types of agricultural resources affected.	Section 4.2.3 Impacts No agricultural resources will be affected by the Proposed Project.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.3 Air Quality	Provide supporting calculations/spreadsheets/technical reports that support emission estimates in the PEA.	Table 4.3-6: Peak Daily Unmitigated Construction Emissions Table 4.3-7: Peak Daily Mitigated Construction Emissions Table 4.3-8: Peak Daily Operational Emissions Table 4.3-9: Maximum Daily Fugitive Dust Emissions from Construction Attachment 4.3-A: CalEEMod Input and Output Files
	Provide documentation of the location and types of sensitive receptors that could be impacted by the Project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors is dependent on type of construction activity.	Section 4.3.2 Existing Conditions Section 4.3.3 Impacts Figure 4.10-1: Land Use Map
	Identify Proposed Project GHG emissions.	Section 4.7.3 Impacts Table 4.7-3: Greenhouse Gas Construction Emissions
	Quantify GHG emissions from a business as usual snapshot. That is, what the GHG emissions will be from the Proposed Project if no mitigations were used.	Section 4.7.3 Impacts
	Quantify GHG emission reductions from every APM that is implemented. The quantifications will be itemized and placed in tabular format.	Proposed Project emissions will be below the annual significance threshold set by the South Coast Air Quality Management District (SCAQMD) and the County of San Diego for industrial projects; therefore, mitigation will not be required. SDG&E's standard operating procedures will be implemented.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.3 Air Quality (cont.)	Identify the net emissions of the Proposed Project after mitigation have been applied.	Section 4.7.3 Impacts Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.
	Calculate and quantify GHG emissions (CO_2 equivalent) for the Proposed Project, including construction and operation.	Section 4.7.3 Impacts Table 4.7-3: Greenhouse Gas Construction Emissions
	Calculate and quantify the GHG reduction based on reduction measures proposed for the Proposed Project.	Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.
	Propose APMs to implement and follow to maximize GHG reductions. If sufficient, CPUC will accept them without adding further mitigation measures.	Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.
	Discuss programs already in place to reduce GHG emissions on a system-wide level. This includes the Applicant's voluntary compliance with the United States (U.S.) Environmental Protection Agency (EPA) SF_6 reduction program, reductions from energy efficiency, demand response, long-term procurement plan, et.al.	Section 4.7.2 Existing Conditions Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.3 Air Quality (cont.)	Ensure that the assessment of air quality impacts is consistent with PEA Sections 3.7.5 and 3.7.6, as well as with the PEA's analysis of impacts during construction, including traffic and all other emissions.	Section 4.3.2 Impacts Section 4.7.2 Impacts Table 4.3-6: Peak Daily Unmitigated Construction Emissions Table 4.3-7: Peak Daily Mitigated Construction Emissions Table 4.3-8: Peak Daily Operational Emissions Table 4.3-9: Maximum Daily Fugitive Dust Emissions from Construction Table 4.7-3: Greenhouse Gas Construction Emissions Attachment 4.3-A: CalEEMod Input and Output Files
5.4 Biological Resources	Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets). If verified, provide supporting documentation. Additionally, GIS data of the wetland features should be provided as well.	A wetland delineation was not prepared for the Proposed Project as no jurisdictional features will be impacted.
	Provide a copy of special-status surveys for wildlife, botanical and aquatic species, as applicable. Any GIS data documenting locations of special-status species should be provided.	Section 4.4.1 Methodology Section 4.4.2 Existing Conditions Attachment 4.4-1: USFWS Species List
5.5 Cultural Resources	Cultural Resources Report documenting a cultural resources investigation of the Proposed Project. This report should include a literature search, pedestrian survey, and Native American consultation.	Attachment 4-A: Cultural Resources Summary

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.5 Cultural Resources (cont.)	Provide a copy of the records found in the literature search.	Table 4.5-1: Previously Recorded Cultural Resources within a 0.25-Mile Radius of the Proposed Area of Potential Effect Table 4.5-2: Previously Recorded Sites Built Resources within a 0.25-mile Radius of the Proposed Area of Potential Effect Attachment 4.5-A: Cultural Resources Summary
	Provide a copy of all letters and documentation of Native American consultation.	Attachment 4.5-B: NAHC Correspondence
5.6 Geology and Soils	Provide a copy of the geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc.	Attachment 4.6-A: Preliminary Geotechnical and Geologic Hazards Investigation
5.7 Hazards and Hazardous Materials	Include an Environmental Data Resources report.	Attachment 4.8-A: Phase I Environmental Site Assessments
	Include a Hazardous Substance Control and Emergency Response Plan, if required.	Section 4.8.3 Impacts
	Include a Health and Safety Plan, if required.	Section 4.8.3 Impacts
	Describe the Worker Environmental Awareness Program.	Section 4.8.3 Impacts
	Describe which chemicals would be used during construction and operation of the Proposed Project. For example, fuels for construction, naphthalene to treat wood poles before installation, etc.	Section 4.8.3 Impacts Table 4.8-1: Hazardous Materials Typically Used for Construction
5.8 Hydrology and Water Quality	Describe impacts to groundwater quality including increased runoff due to construction of impermeable surfaces, etc.	Section 4.9.3 Impacts
	Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	Section 4.9.3 Impacts

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.9 Land Use and Planning	Provide GIS data of all parcels within 300 feet of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address.	The property owner information has been submitted under separate cover due to its confidential nature.
5.10 Mineral Resources	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not Applicable
5.11 Noise	Provide long-term noise estimates for operational noise (e.g., corona discharge noise, and station sources such as substations, etc.).	Section 4.12.3 Impacts Attachement 4.12-A: Noise Technical Report
5.12 Population and Housing	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not Applicable
5.13 Public Services	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not Applicable
5.14 Recreation	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not Applicable
5.15 Transportation and Traffic	Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations.	Section 4.16.3 Impacts
	Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project.	Encroachment permits from local and state jurisdictional agencies will provide guidance on required traffic management measures. It is expected that a Project-specific Traffic Management Plan will be required as part of the encroachment permit submittals.
5.16 Utilities and Services Systems	Describe how treated wood poles would be disposed of after removal, if applicable.	3.6.3 Methods
5.17 Cumulative Analysis	Provide a list of projects (i.e., past, present, and reasonably foreseeable future projects) within the Proposed Project area that the applicant is involved in.	Table 4.18-1: Planned and Proposed Projects within One Mile

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
5.17 Cumulative Analysis (cont.)	Provide a list of projects that have the potential to be proximate in space and time to the Proposed Project. Agencies to be contacted include, but are not limited to, the local planning agency, Caltrans, etc.	Table 4.18-1: Planned and Proposed Projects within One Mile
5.18 Growth-Inducing Impacts, If Significant	Provide information on the Proposed Project's growth-inducing impacts, if any.	Section 5.3 Growth Inducing Impacts Section 4.13.3 Impacts
	Provide information on any economic or population growth in the surrounding environment that will, directly or indirectly, result from the Proposed Project.	
	Provide information on any increase in population that could further tax existing community service facilities (e.g., schools, hospitals, fire, police, etc.), that will directly or indirectly result from the Proposed Project.	
	Provide information on any obstacles to population growth that the Proposed Project would remove.	
	Describe any other activities, directly or indirectly encouraged or facilitated by the Proposed Project, that would cause population growth that could significantly affect the environment, either individually or cumulatively.	
Chapter 6 – Detailed Discussion of Significant Impacts		
6.1 Mitigation Measures Proposed to Minimize Significant Effects	Discuss each mitigation measure and the basis for selecting a particular mitigation measure should be stated.	Section 3.10 Applicant-Proposed Measures Table 3-8: Applicant-Proposed Measures Section 4.X.3 Impacts Section 4.X.4 Applicant-Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.2 Description of Project Alternatives and Impact Analysis	Provide a summary of the alternatives considered that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project.	Section 5.2 Description of Project Alternatives and Impact Analysis Section 5.2.4 System Alternatives Section 5.2.5 Construct a New Substation Alternative Table 5-1: Alternatives Considered Table 5-2: Alternative Site Comparison Summary
	Alternatives considered and described by the Applicant should include, as appropriate, system or facility alternatives, route alternatives, route variations, and alternative locations.	Section 5.2 Description of Project Alternatives and Impact Analysis Section 5.2.4 System Alternatives Section 5.2.5 Construct a New Substation Alternative Table 5-1: Alternatives Considered
	Include a description of a "No Project Alternative" should be included.	Section 5.2.3 No Project Alternative
	If significant environmental effects are assessed, the discussion of alternatives shall include alternatives capable of substantially reducing or eliminating any said significant environmental effects, even if the alternative(s) substantially impede the attainment of the Proposed Project objectives and are more costly.	No significant environmental effects are anticipated after implementation of the APMs.
6.3 Growth-Inducing Impacts	Discuss if the Proposed Project would foster economic or population growth, either directly or indirectly, in the surrounding environment.	Section 5.3 Growth-Inducing Impacts
	Discuss if the Proposed Project would cause an increase in population that could further tax existing community services (e.g., schools, hospitals, fire, police, etc.).	Section 5.3 Growth-Inducing Impacts

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.3 Growth-Inducing Impacts (cont.)	Discuss if the Proposed Project would remove obstacles to population growth.	Section 5.3 Growth-Inducing Impacts
	Discuss if the Proposed Project would encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively.	Section 5.3 Growth-Inducing Impacts
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions	Include a menu of suggested APMs that applicants can consider to address GHG emissions. Suggested APMs include, but are not limited to: 1. If suitable park-and-ride facilities are available in the Project vicinity, construction workers will be encouraged to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker show-up time and the Project's construction schedule. 2. To the extent feasible, unnecessary construction vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up. To the extent feasible, unnecessary construction vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up times following start-up that limit their availability for use following startup. Where such diesel powered	Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions (cont.)	have extended warm-up times following start-up that limit their availability for use following startup. Where such diesel powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. 3. Use low-emission construction equipment. Maintain construction equipment per manufacturing specifications and use low-emission equipment described here. All offroad construction diesel engines not registered under the California Air Resources Board (CARB) Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Sec. 2423(b)(1). 4. Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. 5. Alternative Fuels: CARB would develop regulations to require the use of one to four percent biodiesel displacement of California diesel fuel. 6. Alternative Fuels: Ethanol, increased use of ethanol fuel 7. Green Buildings Initiative. 8. Facility wide energy efficiency audit.	Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions (cont.)	9. Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. 10. Alternative Fuels: CARB would develop regulations to require the use of one to four percent biodiesel displacement of California diesel fuel. 11. Alternative Fuels: Ethanol, increased use of ethanol fuel 12. Green Buildings Initiative. 13. Facility wide energy efficiency audit. 14. Complete GHG emissions audit. The audit will include a review of the GHG emitted from those facilities (substations), including carbon dioxide, methane, CFC, and HFC compounds (SF_6). 15. There is an EPA approved SF_6 emissions protocol (http://www.epa.gov/electricpowersf6/resources/index.html#three). 16. SF_6 program wide inventory. For substations, keep inventory of leakage rates. 17. Increase replacement of breakers once leakage rates exceed one percent within 30 days of detection. 18. Increased investment in current programs that can be verified as being in addition to what the utility is already doing. 19. The SF6 Emission Reduction Partnership for the Electric Power Systems was launched in 1999 and currently includes 57 electric utilities and local governments across the U.S. of applications, including that of dielectric insulating material in electrical transmission and distribution equipment, such as circuit breakers. Electric power systems that join the Partnership must, within 18	Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.

Location in CPUC Checklist	Checklist Item	Location in PEA and Any Associated Notes
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions (cont.)	months, establish an emission reduction goal reflecting technically and economically feasible opportunities within their company. They also agree to, within the constraints of economic and technical feasibility, estimate their emissions of SF6, establish a strategy for replacing older, leakier pieces of equipment, implement SF6 recycling, establish and apply proper handling techniques, and report annual emissions to the EPA. The EPA works as a clearinghouse for technical information, works to obtain commitments from all electric power system operators and will be sponsoring an international conference in 2000 on SF6 emission reductions. 20. Quantify what comes into the system and track programmatically SF6. 21. Applicant can propose other GHG reducing mitigations.	Proposed Project emissions will be below the annual significance threshold set by the SCAQMD and the County of San Diego for industrial projects, and therefore mitigation will not be required.
Chapter 7: Other Process-Related Data Needs		
Noticing	Include an excel spreadsheet that identifies all parcels within 300 feet of any Proposed Project component with the following data: APN number, owner mailing address, and parcels physical address.	The property owner information has been submitted under separate cover due to its confidential nature.

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CHAPTER 2 – PROJECT PURPOSE AND NEED

This section of the Proponent's Environmental Assessment (PEA) identifies the objectives, purpose, and need for San Diego Gas & Electric Company's (SDG&E's) proposed Vine 69/12 Kilovolt (kV) Substation Project (Proposed Project), as required by the California Public Utilities Commission's (CPUC's) PEA Guidelines (CPUC Information and Criteria List, Appendix B, Section V) and the California Environmental Quality Act (CEQA) Guidelines (Section 15126.6[a]).

2.0 OVERVIEW

SDG&E is a regulated public utility that provides electric service to approximately 1.4 million customers within an approximately 4,100-square-mile service area, covering 25 cities and unincorporated areas within San Diego County and a portion of Orange County. The Proposed Project involves the construction of a new substation to meet existing and anticipated customer-driven electrical load growth and to improve distribution equipment reliability that will prevent potential long outages or disruption of service to existing customers in SDG&E's service territory in downtown and the surrounding area.

In providing electrical service to downtown and the surrounding area, SDG&E currently operates four substations: Kettner Substation, Urban Substation, Station B Substation, and Sampson Substation. SDG&E also operates the Grant Hill Substation—an existing facility in the surrounding area that was also evaluated as a potential source to serve load in downtown and the surrounding areas. In particular, Kettner Substation is an aging facility with a variety of reliability concerns that provides service to the San Diego International Airport and the Point Loma Wastewater Treatment Plant. Commercial and residential growth in the downtown area is loading the existing substations to their ultimate capacities. Recent load additions in downtown and the surrounding area include an expansion of San Diego International Airport and construction of Ballpark Village, a new mixed-use development consisting of apartments, condominiums, and commercial and retail space, which is expected to commence construction at the end of 2015. These developments will add additional load to the existing substations serving downtown and the surrounding area. As a result, the proposed Vine Substation is needed to allow offloading of the existing substations and thereby allow SDG&E to maintain its current reliability of service to existing and new customers in downtown and the surrounding areas.

Because the projected load indicates that the Station B and Urban substations will exceed 100 percent of their capacity and the Kettner and Sampson substations will exceed 85 percent of their capacity in 2018, SDG&E has determined that an additional 30 megavolt-amperes (MVA) are needed by mid-2017 to address reliability concerns and serve the projected electric distribution load growth. The optimum maximum substation load is 85 percent, as it allows for transformer bank loads to be transferred in the event of a transformer bank outage. Optimum operating conditions maintain substation reliability and reduce outage times. All of the substations—with the exception of the Grant Hill and Sampson substations—are near capacity and will begin to exceed their 85-percent ratings in 2015 or sooner. The Grant Hill Substation has approximately 33 MVA of remaining capacity; however, expansion of this substation would likely require substantial power line and distribution upgrades. In addition, the Grant Hill Substation is located

outside of the desired coverage area and would result in system inefficiencies. Therefore, the proposed Vine Substation is needed by mid-2017 to eliminate existing reliability concerns at the Kettner Substation and to provide additional capacity to help offload the existing congested substations in downtown and the surrounding area.

The prime driving factors in determining the need to construct a new substation in the area are:

- the need to maintain reliable service to SDG&E commercial and residential customers in the San Diego downtown and surrounding area,
- the expected electrical load growth of 30 MVA by mid-2017, and
- the need to prevent extended outages and disruption of services to new and existing customers in the area.

SDG&E considers additional substation transformer capacity when the loss of a single transformer may cause an interruption to major commercial/industrial load that cannot be restored through use of 12 kV circuit ties to other substations. The downtown and surrounding area is approaching this threshold. Therefore, SDG&E is considering planning and design of the proposed Vine Substation to provide tie capacity in the event of a loss of a single transformer.

2.1 PROJECT OBJECTIVES

The objectives of the Proposed Project include the following:

- Objective 1: Maintain existing substation and distribution system reliability standards.
- Objective 2: Provide substation and circuit tie capacity that will provide additional reliability for existing and future system needs.
- Objective 3: Meet the area's long-term electric distribution capacity needs by constructing a substation near planned load growth.
- Objective 4: Utilize existing SDG&E-owned land previously purchased for substation use to meet the scheduled in-service date.

The Proposed Project components, their locations, preliminary configuration, and the existing and proposed system configuration are presented in Chapter 3 – Project Description. Each of the Proposed Project objectives is more thoroughly described in the subsections that follow.

2.1.0 Objective 1: Maintain Existing Reliability Standards for the Distribution and Substation Systems

The addition of the proposed Vine Substation will help to maintain reliability for existing distribution and substation systems within downtown and the surrounding area—including reliability concerns at the Kettner Substation. The Kettner Substation is an aging substation that provides service to major customers that serve critical regional needs, such as the San Diego International Airport and the Point Loma Wastewater Treatment Plant. The Kettner Substation has a variety of reliability issues including its physical configuration and its aging infrastructure. These issues could become an operations/security/safety issue if not addressed. Construction of the proposed Vine Substation will allow the reliability concerns at the Kettner Substation be addressed by adding operational flexibility and ultimately provide 90 MVA of additional

capacity. The proposed Vine Substation will offload approximately 30 MVA from the Station B Substation and 40 MVA from the Kettner Substation, bringing them within the optimum loading standards.

2.1.1 Objective 2: Provide Improved Substation and Circuit Reliability with Added Tie Capacity

Installation of a new substation provides an increased number of substation transformer banks and circuits that will provide for an increased number of circuit ties. Reliability improves with balanced circuit loading and increased number of circuits to transfer load in the event of a circuit or branch outage.

2.1.2 Objective 3: Meet the Area Electric Capacity Needs

The downtown San Diego area is fed primarily from the Kettner Substation, Urban Substation, Station B Substation, and Sampson Substation. These four substations will exceed their maximum capacity by 2018. Grant Hill Substation, which is outside of the downtown coverage area, has approximately 33 MVA of capacity remaining; however, expansion of this substation would likely require substantial power line and distribution upgrades. In addition, the Grant Hill Substation is located outside of the desired coverage area and therefore, would result in system inefficiencies. The proposed Vine Substation will initially add a 60 MVA increase in capacity to serve downtown San Diego and the surrounding area, including the San Diego International Airport expansion project and development projects, such as Ballpark Village.

2.1.3 Objective 4: Utilize Existing SDG&E-owned Land Previously Purchased for Substation Use to Meet the Scheduled In-service Date

The Vine Substation is proposed to be located on an approximately 1.5-acre parcel currently owned by SDG&E within the Midway/Pacific Highway Corridor Community Plan area. The property was purchased in 1976 in anticipation of constructing the Laurel Street Substation. The Laurel Street Substation was never constructed and in 1988, it was leased as a parking lot. Because the site is already owned by SDG&E, no time to acquire the property will be necessary. As a result, the in-service date will not be compromised.

2.2 CONCLUSION

The Proposed Project will result in the construction of a new 69/12 kV substation to provide additional capacity to serve existing and future area load and to prevent potentially long outages or disruption of service to existing and new customers in downtown and the surrounding area. In doing so, the Proposed Project will meet the four project objectives, which include meeting reliability standards, improving reliability, adding capacity, and meeting the Proposed Project schedule.

2.3 REFERENCES

California Resources Agency. 2014. Title 14 California Code of Regulations, Chapter 3 Guidelines for Implementation of the California Environmental Quality Act. CEQA Guidelines.

City of San Diego. *Midway/Pacific Highway Corridor Community Plan*. Online. http://www.sandiego.gov/planning/community/profiles/midwaypacifichwycorridor/pdf/midwayfullversion.pdf. Site visited December 6, 2013.

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CHAPTER 3 – PROJECT DESCRIPTION

3.0 PROJECT LOCATION

The proposed Vine 69/12 Kilovolt (kV) Substation Project (Proposed Project) is located in the southwestern portion of the City of San Diego (City), California approximately 2 miles northwest of downtown San Diego and directly adjacent to and east of San Diego International Airport (also known as Lindberg Field). The main activity associated with the Proposed Project involves the construction of the proposed Vine Substation, which will be located at the corner of Vine Street and Kettner Boulevard. The Proposed Project will also involve the relocation of distribution circuits and loop in of an existing 69 kV power line.

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

1. Construction of the proposed Vine Substation
2. Installation/relocation of distribution circuits
3. Construction of a 69 kV loop-in
4. Upgrade of an existing telecommunication system

The location of the Proposed Project is depicted in Figure 3-1: Project Location Map and the four Proposed Project components are depicted in Figure 3-2: Project Overview Map. The estimated total cost associated with constructing the Proposed Project will be between $42 million and $45 million with allowance for funds used during construction. A more detailed description of the area within and around the Proposed Project follows.

3.0.0 Proposed Vine 69/12 kV Substation

The proposed Vine Substation site is located at the southwestern corner of the intersection of Vine Street and Kettner Boulevard, just west of Interstate (I-) 5 and east of Pacific Highway. The site is situated on a 1.5-acre parcel that is owned by SDG&E and is currently being leased for long-term airport parking. The parcel is bordered to the north by Vine Street and a commercial printing business across Vine Street, to the south by an Advantage Rental Car facility, to the east by Kettner Boulevard, and to the west by the North County Transit District Coaster and San Diego Metropolitan Transit System (MTS) Trolley rail tracks. The area is characterized by light- and medium-industrial and office uses, parking lots, and rental car facilities. The completed substation will measure approximately 305 feet by 180 feet, requiring approximately 1.3 acres. The proposed substation site is depicted on Figure 3-2: Project Overview Map and in Attachment 3-A: Detailed Project Components Map.

3.0.1 12 kV Distribution Relocation

As indicated in Table 3-1: Distribution Relocation Summary, approximately eight existing distribution circuits will be intercepted and relocated to the proposed Vine Substation. As part of the relocation process, the circuits will be renumbered. The relocated distribution circuits will generally travel along Kettner Boulevard between West Hawthorn Street and Vine Street within public rights-of-way (ROWs). Existing customer uses along the relocated circuits include I-5 to the east and rental car facilities, offices, and airport parking lots to the west. The relocation

process will utilize a combination of existing and new underground distribution conduit, as depicted in Figure 3-2: Project Overview Map and in Attachment 3-A: Detailed Project Components Map.

Table 3-1: Distribution Relocation Summary

Existing Distribution Circuit Number	Approximate Interception Point[1]	Proposed Distribution Circuit Number
135	Adjacent to the Kettner Substation	1476
137	Adjacent to the Kettner Substation	1477
138	Adjacent to the Kettner Substation	1478
139	Adjacent to the Kettner Substation	1479
458	Adjacent to the proposed Vine Substation	1480
108	Kettner Boulevard and West Hawthorn Street	1481
	Pacific Highway and West Hawthorn Street	
113	Kettner Boulevard and West Laurel Street	1482
102	Kettner Boulevard and West Hawthorn Street	1483
139	Adjacent to the Kettner Substation	1484

The distribution circuits will be relocated and/or newly installed entirely within the franchise position of City of San Diego public streets, and no additional ROW will be acquired. Approximately 1,300 feet of new duct bank will be installed within Kettner Boulevard between West Laurel Street and the Kettner Substation. An additional 2,600 feet of two new duct banks will be installed between the Kettner Substation and the proposed Vine Substation. Approximately 20 additional feet of additional duct banks will be installed facilitate the stub out of two new duct packages from the proposed Vine Substation. Up to an additional 400 feet of duct bank will be used to facilitate the connection of these new duct banks with existing underground conduit and aboveground facilities.

In addition to the new underground duct banks, approximately 3,600 feet of existing, empty duct bank will be utilized during the relocation. These existing facilities are located within Pacific Highway, between West Hawthorn Street and West Laurel Street; West Laurel Street, between Pacific Highway and Kettner Boulevard; and Kettner Boulevard, between West Hawthorn Street and West Laurel Street.

[1] The final interception points and duct bank design will be determined upon final engineering of the Proposed Project and are subject to change.

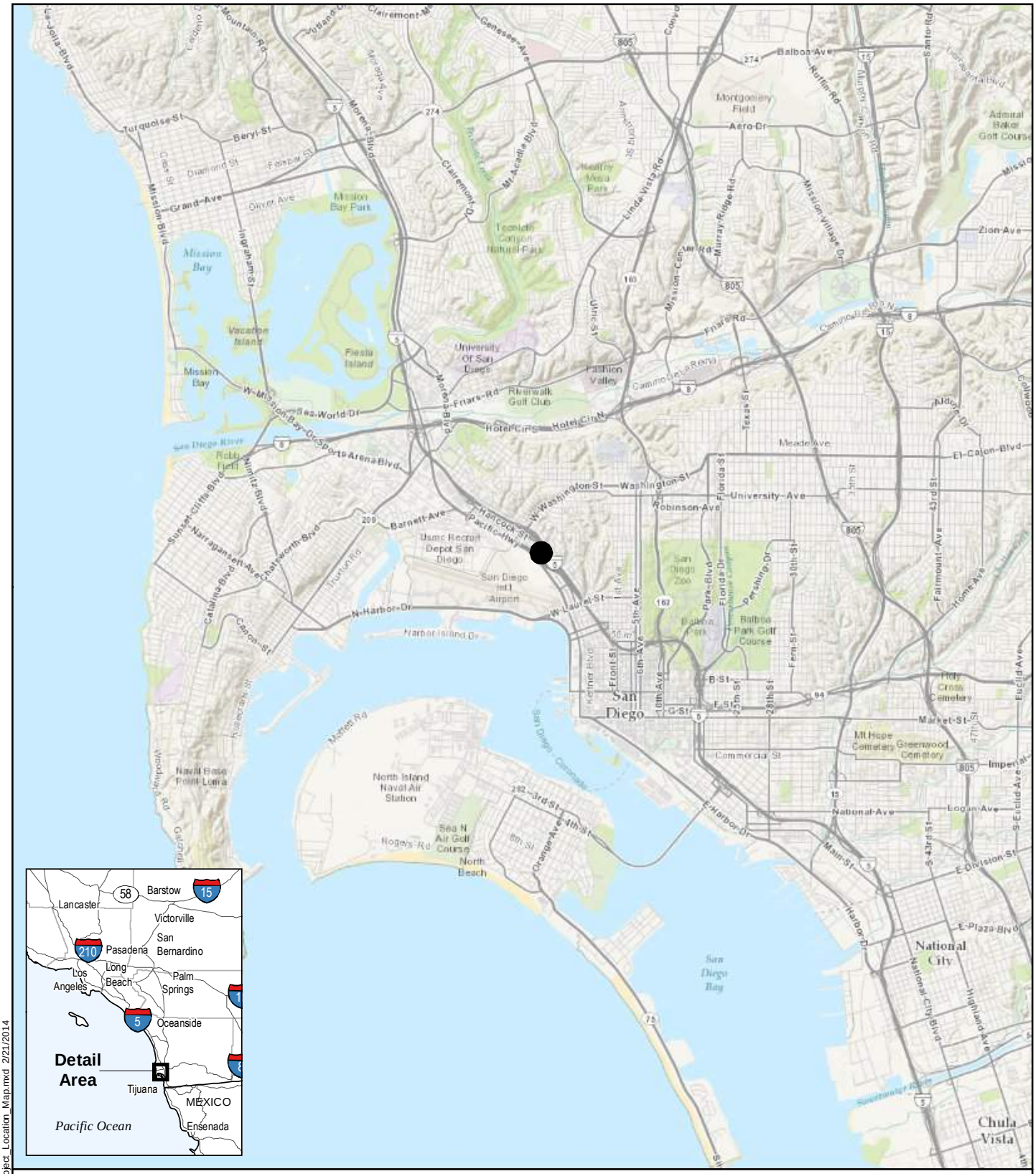

Figure 3-1: Project Location Map **Vine 69/12 kV Substation Project**

● Project Location

1 inch = 2 miles

0 1 2 Miles

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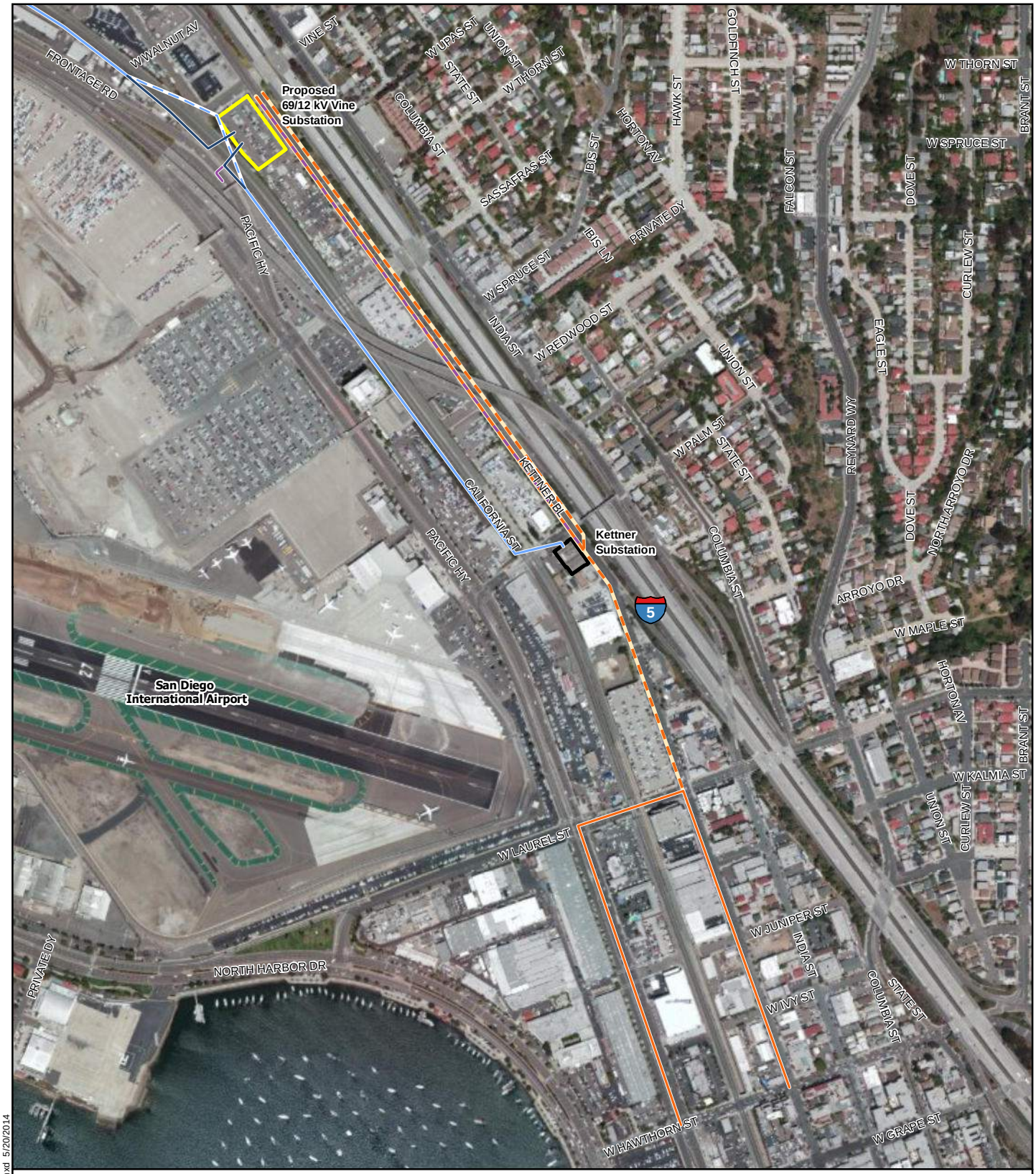

Figure 3-2 Project Overview Map **Vine 69/12 kV Substation Project**

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
- Proposed 69 kV Overhead
- Existing 12 kV Duct Bank
- Proposed 12 kV Duct Bank
- Proposed 12 kV and Telecommunications Duct Bank
- Proposed Telecommunications Duct Bank

1:8,000

0 500 1,000 Feet

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3.0.2 69 kV Loop-In

The power line component of the Proposed Project will consist of looping in an existing 69 kV tie-line—Tie-Line (TL) 604—to the proposed Vine Substation. The existing overhead power line is located adjacent to and to the west of the proposed substation site. TL604 travels generally south from the Old Town Substation by spanning existing railroad tracks and Witherby Street, then traveling southeast along Kurtz Street. The line then spans Noell Street and continues parallel to and adjacent to the south side of the existing railroad tracks. Near the intersection of California Street and Vine Street, the line spans the railroad tracks, reaching the existing wood pole at the intersection of California Street and Vine Street. The line then spans the railroad tracks again and travels southeast parallel to the railroad tracks. After spanning West Palm Street, the line turns northeast, travels along West Palm Street, and terminates at the Kettner Substation.

The 69 kV loop-in will involve removing two existing wood poles near the corner of California Street and Vine Street (along with an existing span guy pole) and installing three new self-supported tubular steel poles (TSPs) directly adjacent to the eastern lane of Pacific Highway, as depicted in Figure 3-2: Project Overview Map. The TSPs will be a maximum of 100 feet tall and will taper from approximately two to three feet in diameter at the top to approximately five to seven feet at the base. New overhead conductor will be used to connect these new poles to the existing power line and the proposed substation, creating the loop-in. The new power line poles will be installed within the franchise position along Pacific Highway. SDG&E will obtain a License Agreement from MTS for the approximately 80 feet of new, approximately 320-foot-wide ROW for the overhead conductors. The remainder of the 69 kV loop-in will be installed within the francise position of City of San Diego public streets.

3.0.3 Telecommunication System Extension

SDG&E's substations typically utilize a telecommunication system composed of SDG&E fiber optic cable and an AT&T telephone line to facilitate off-site monitoring and operation. In order to connect the proposed Vine Substation and Kettner Substation to this system, additional fiber optic cable will be installed as part of the Proposed Project.

In order to bring fiber communication from the proposed Vine Substation to Kettner Substation, approximately 2,850 feet of new underground fiber optic cable will be installed within the previously described underground 12 kV distribution duct banks.[2] The proposed Vine Substation will be connected to the existing telecommunication network by adding approximately 100 feet of fiber optic cable from an existing underground handhole located within Pacific Highway to one of the new 69 kV TSPs that will be installed as part of the loop-in. The fiber optic cable will then travel overhead, across the existing railroad tracks, to the proposed Vine Substation within the power line's ROW.

[2] Telecommunications cable will not enter the underground distribution vaults. As a result, short sections of underground duct bank specific to telecommunication cable will be installed to route around the underground distribution vaults. While located separate from the distribution facilities, the telecommuncations cable will enter underground handholes specific to telecommunication cable. The locations where the telecommunication and distribution duct banks are not conincident are presented in Attachment 3-A: Detailed Project Components Map.

The AT&T phone line will be upgraded and relocated from a current system feeding the existing customer at the site. As depicted in Attachment 3-A: Detailed Project Components Map, one of three potential interconnection points located adjacent to the proposed Vine Substation will be used to facilitate the connection.

3.1 EXISTING SYSTEM

SDG&E is a regulated public utility that provides electric service to approximately 1.4 million customers within an approximately 4,100-square-mile service area, covering 25 cities and unincorporated areas within San Diego County and a portion of Orange County.

Figure 3-3: Existing System Configuration and Figure 3-4: Proposed System Configuration provide schematic diagrams of the existing system and the system as it would be configured following construction of the Proposed Project, respectively. As shown in Figure 3-3: Existing System Configuration, one existing tie-line—TL604—connects the Kettner Substation to the Old Town Substation. Five existing distribution lines—Circuits (C) 135, C137, C138, C139, and C458—currently connect to the Kettner Substation. The remaining three distribution lines that will be relocated—C108, C113, and C102—originate at the Station B Substation. As shown in Figure 3-4: Proposed System Configuration, TL604 will be looped into the proposed Vine Substation from the Old Town Substation, and a new tie-line—TL6976—will be created, connecting the proposed Vine Substation to the Kettner Substation. In addition, all eight of the distribution circuits will be relocated from either the Kettner Substation or the Station B Substation to the proposed Vine Substation, creating Circuits 1476 through 1484.

3.2 PROJECT OBJECTIVES

This project is being proposed to meet several objectives identified by SDG&E. The primary objective of the Proposed Project is to construct a new substation with associated 69 kV loop-in, and to relocate/re-arrange various distribution circuits. The project is designed to eliminate existing reliability concerns at Kettner and to provide additional capacity to serve existing and future area load and to prevent potential long outages or disruption of service to existing and new customers in the San Diego downtown and surrounding area.

Basic objectives of the Proposed Project include the following:

- Objective 1: Maintain existing substation and distribution system reliability standards.
- Objective 2: Provide substation and circuit tie capacity that will provide additional reliability for existing and future system needs.
- Objective 3: Meet the area's long-term electric distribution capacity needs by constructing a substation near planned load growth.
- Objective 4: Utilize existing SDG&E-owned land previously purchased for substation use to meet the scheduled in-service date.

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

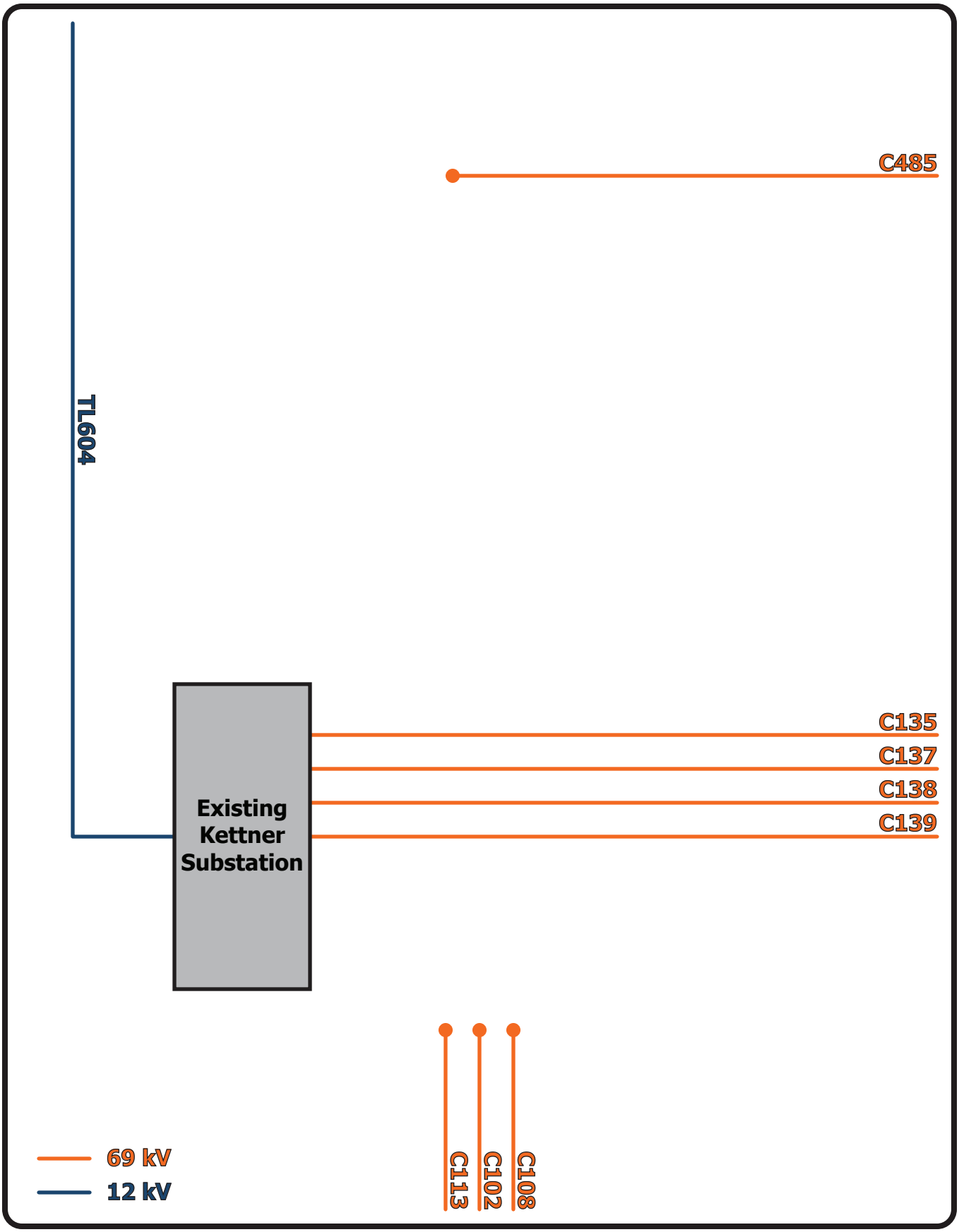

Figure 3-3: Existing System Configuration

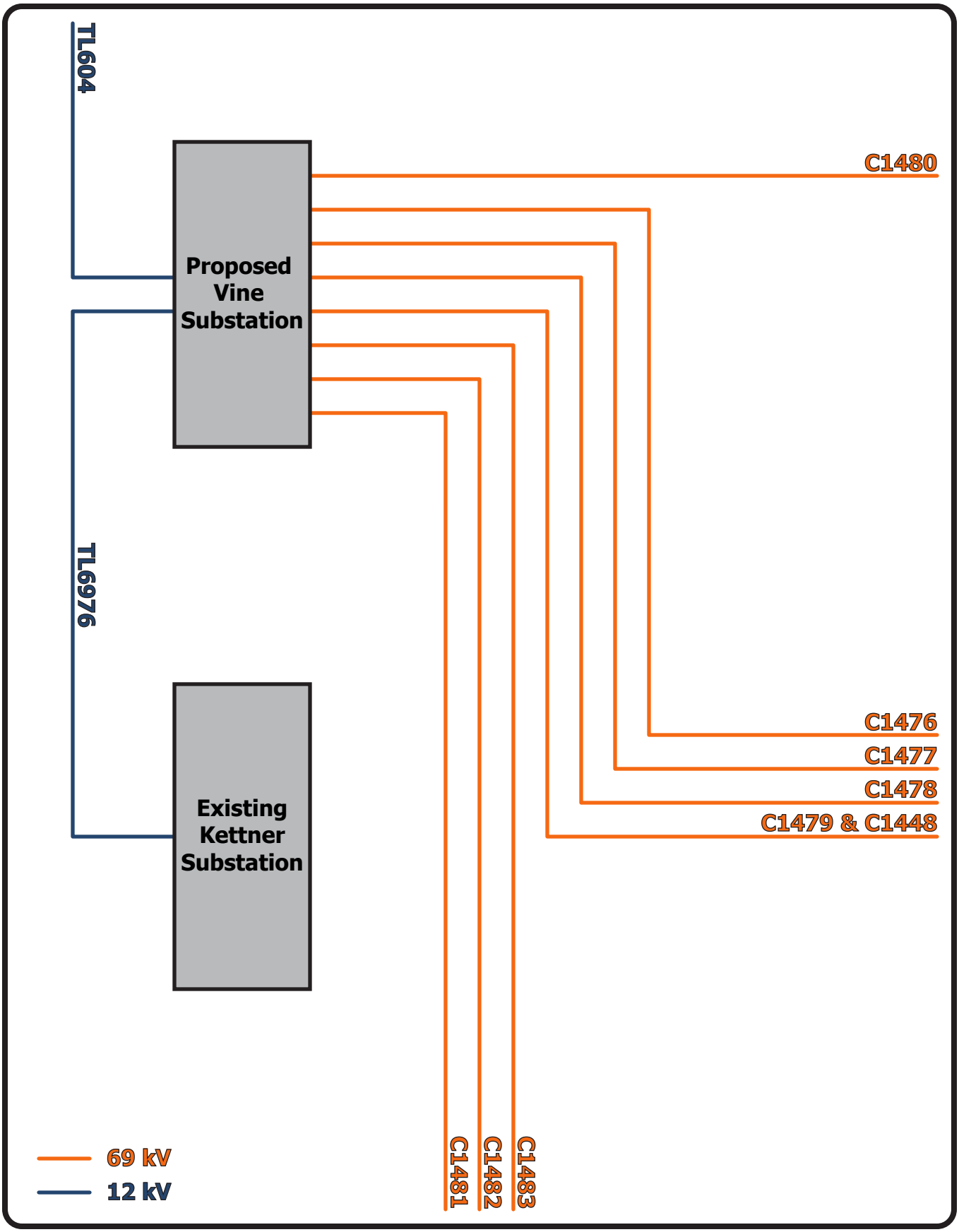

Figure 3-4: Proposed System Configuration

3.3 PROJECT CAPACITY

The power line component of the Proposed Project involves looping in existing TL604 to the proposed Vine Substation, which will serve as the 69 kV source for the new substation. All throughout the 69 kV loop-in portion of the Proposed Project, there will be no added capacity required to facilitate this source feeding the proposed Vine Substation.

The distribution component of the Proposed Project involves relocating existing 12 kV circuits currently served by Kettner and Station B substations (approximately 30 MVA of load) to the proposed Vine Substation. Initially, this will net 60 MVA of capacity to serve downtown San Diego and the surrounding areas. Once the substation is built to its ultimate capacity, an additional 30 MVA will be added. The result will be a net 90 MVA increase in capacity available to serve downtown San Diego and the surrounding area. The increased capacity will serve existing and future load growth that is expected within the vicinity of the substation.

3.4 PROPOSED PROJECT

3.4.0 Proposed Vine 69/12 kV Substation

The proposed Vine Substation is planned to occupy approximately 1.3 acres (approximately 305 feet by 180 feet) within a 1.5-acre parcel. The site will be enclosed by an approximately 10-foot-tall, brown "Lapaz" brown colored, masonry perimeter wall.

With regard to the Proposed Project's phasing, two arrangements—the initial and ultimate—are discussed in this section. The steel structures within the substation will be comprised of galvanized steel, while the transformers, breakers, switchgear, and capacitors will be painted ANSI 70 Grey. The control shelter and screen wall will be constructed from "Lapaz" brown masonry blocks and will include a welded metal roof.

As depicted in Figure 3-5: Vine Substation Initial Arrangement, the proposed substation will include the following pieces of major equipment as part of the initial 90 MVA configuration:

- Two 69 kV tie-line terminations
- Six 69 kV gas circuit breakers
- Three 69 kV potential transformers
- Three 69/12 kV standard profile, low-sound 30 MVA transformers
- Three ¼ sections of switch gear to accommodate twelve 12 kV circuits
- Three 12 kV metal-enclosed capacitor banks
- One 12 kV metal-enclosed reactor bank
- One approximately 30-foot-tall standard steel rack consisting of a 69 kV bus
- One approximately 20-foot-wide by 40-foot-long by 11-foot-tall masonry block control shelter

At its ultimate configuration, the substation is planned to be a 120 MVA, 69/12 kV distribution substation. As depicted in Figure 3-6: Vine Substation Ultimate Arrangement, the substation will include a total of the following components:

- Four 69 kV tie-line terminations
- Nine 69 kV gas circuit breakers
- Three 69 kV potential transformers
- Four 69/12 kV standard profile, low-sound 30 MVA transformers
- Four ¼ sections of switch gear to accommodate sixteen 12 kV circuits
- Four 12 kV metal-enclosed capacitor banks
- Two 12 kV metal-enclosed reactor banks
- One approximately 30-foot-tall standard steel rack consisting of a 69 kV bus
- One approximately 20-foot-wide by 40-foot-long by 11-foot-tall masonry block control shelter

Oil spill containment basins will be installed around the transformers to capture any oil accidentally leaked from these components. The basins will be designed to have a capacity that exceeds the transformer capacity by 10 percent. Under the ultimate arrangement, the four transformers will contain approximately 24,100 gallons of oil (varies slightly by manufacturer).

Substation lighting will be provided by a mixture of high-pressure sodium and metal halide lights that will be installed to adhere to the following SDG&E standards:

- provide enough light for a safe entry and exit from the substation;
- allow for safe driving around busses/racks, corners, and roadways; and
- allow for a preliminary visual inspection of the substation.

With the exception of the gate entry lights, which will remain on at night for safety purposes, the remaining substation lighting will not be turned on unless it is required for nighttime work and/or an emergency. One light will be installed at the main gate, one light will be installed on each side of the control shelter, and a minimum of two lights will be installed on each substation wall. Lights may also be installed on the end of the steel rack if required. All on-site lighting will be oriented downward to minimize glare onto the surrounding property.

As described previously, an approximately 10-foot-tall masonry wall will enclose the entire substation. Two approximately 10-foot-tall and 30-foot-wide sliding gates will be installed within the perimeter wall to provide primary and secondary access to the substation. The gates will be constructed from chain-link material and will be designed to accommodate standard brown slats. Barbed wire will be installed horizontally along the interior of the wall and gates so as to not be visible from the exterior of the substation. The primary access will be from Vine Street and will require relocation of the existing driveway approximately 50 feet southwest. An existing driveway from Kettner Boulevard will be relocated approximately 125 feet southeast and will provide secondary access to the site. The two gates will be locked and monitored remotely to limit access to only authorized personnel. Warning signs will be posted on the substation wall and gates in accordance with federal, state, and local safety regulations.

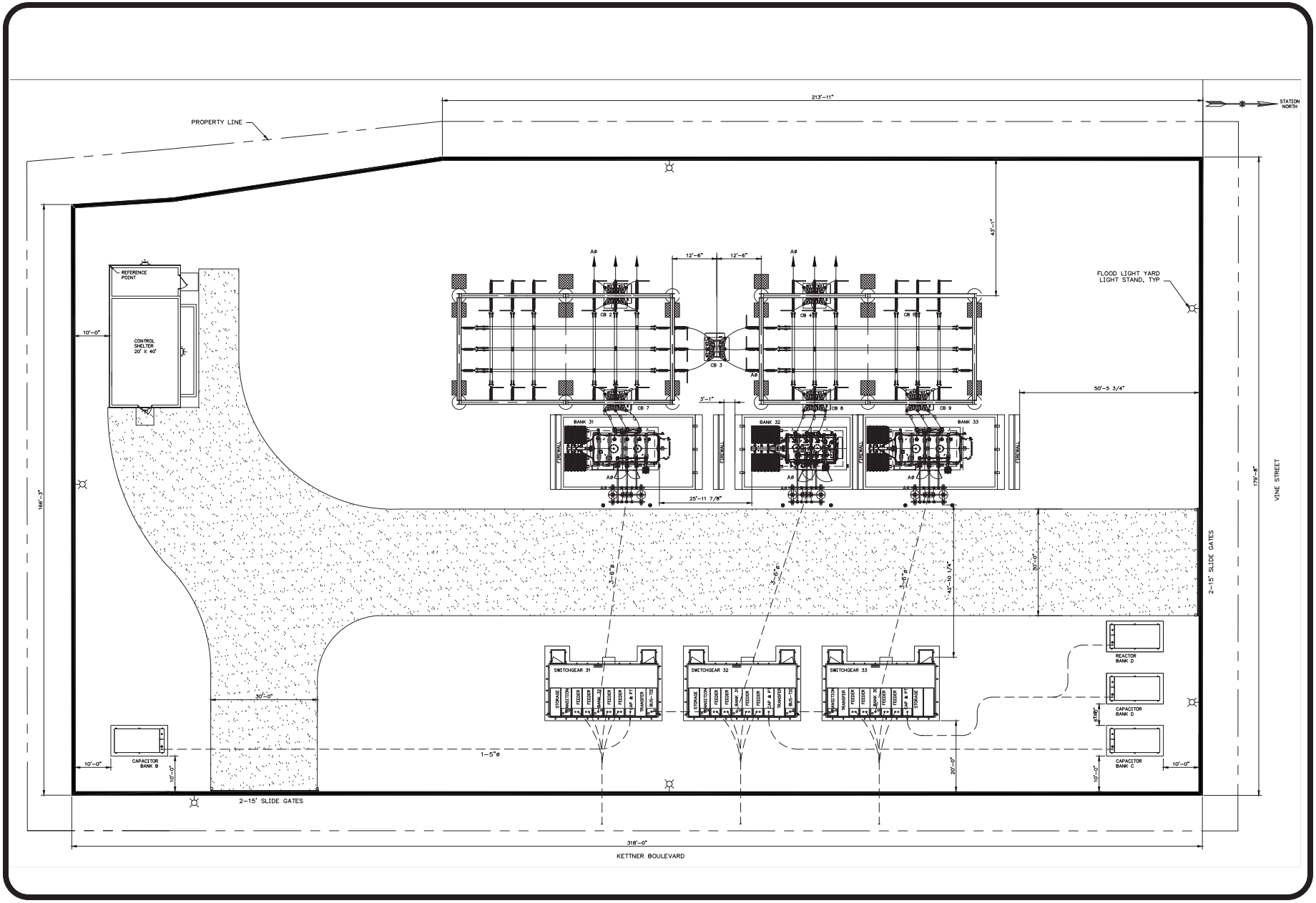

Figure 3-5: Vine Substation Initial Arrangement

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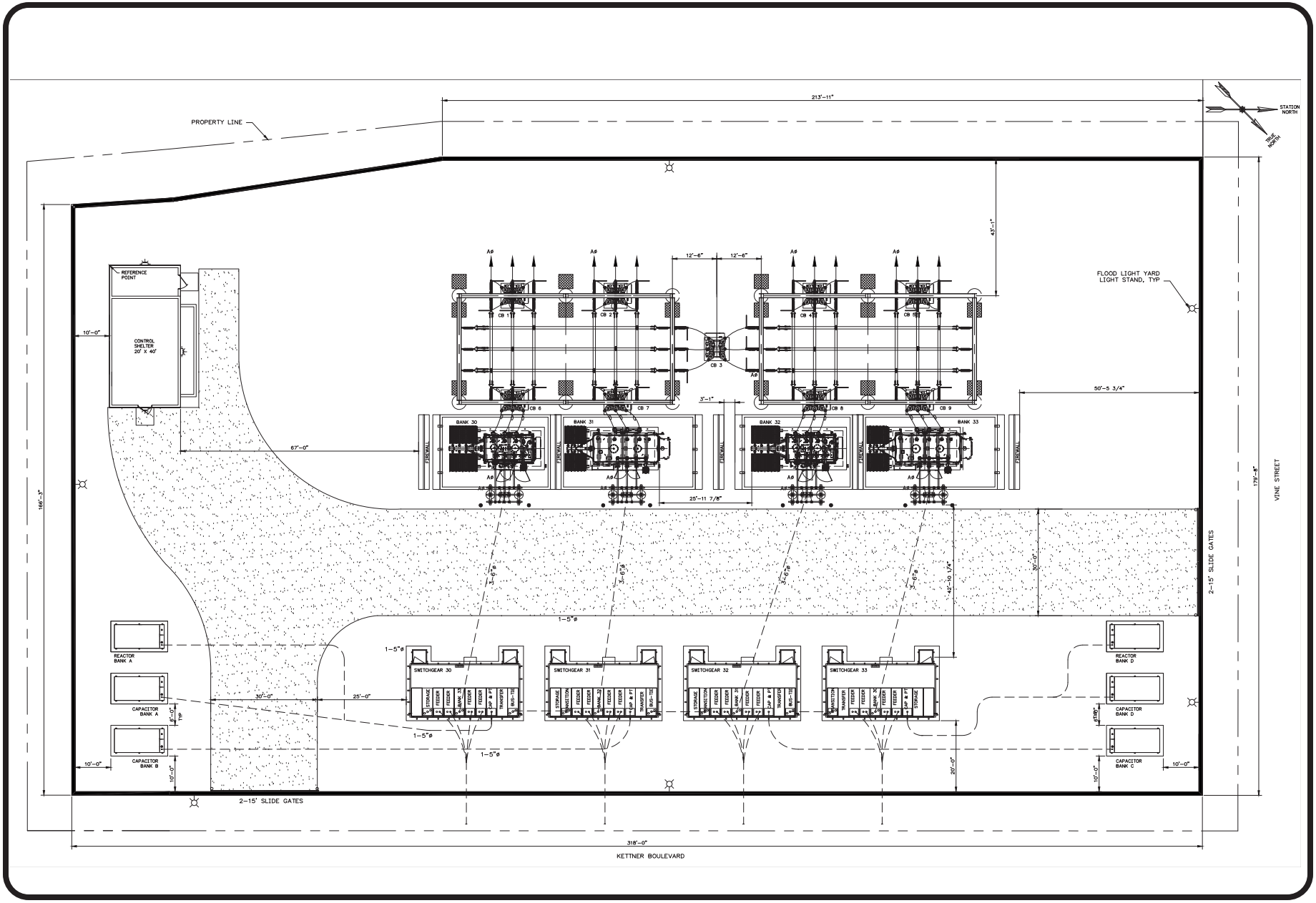

Figure 3-6: Vine Substation Ultimate Arrangement

SDGE
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The access road within the proposed Vine Substation will be asphalt-paved with an approximate width of 30 feet. The road will connect the primary and secondary access to the control shelter, located in the southern corner of the proposed Vine Substation. This interior road will be approximately 425 feet long, occupying approximately 0.3 acre. A detailed drawing—which depicts the proposed Vine Substation layout, planned access routes, driveways, and interior access road—is included as Figure 3-5: Vine Substation Initial Arrangement and Figure 3-6: Vine Substation Ultimate Arrangement. Figure 3-7: Vine Substation Profile View provides two profile views of the proposed substation.

3.4.1 12 kV Distribution Relocation

Underground Duct Bank

As described previously, approximately 3,900 feet of new underground duct banks will be installed to facilitate the relocation of eight distribution circuits from existing substations to the proposed Vine Substation. Each underground duct bank will be comprised of eight approximately five-inch-diameter polyvinyl chloride (PVC) conduits encased in concrete. The finished duct bank will be approximately 32 inches tall and 18 inches wide. A typical drawing of the proposed underground duct bank has been included as Figure 3-8: Typical 12 kV Underground Duct Bank. In addition to the underground duct banks, approximately five underground vaults will be installed to facilitate pulling and splicing during installation and inspection, maintenance, and repair during operation. The precast concrete vaults measure approximately 26 feet long, eight feet wide, and six feet deep. A typical drawing of the proposed 12 kV underground vaults has been included as Figure 3-9: Typical 12 kV Underground Vault. The proposed locations of these facilities are depicted in Attachment 3-A: Detailed Project Components Map.

Distribution Switches and Capacitors

Approximately nine aboveground distribution switches and one aboveground capacitor will be installed along the underground duct bank routes to facilitate the relocation of the distribution circuits. Each distribution switch will be installed on a concrete pad measuring approximately 70 inches long by 44 inches wide by 32 inches tall. The switches will be contained within a steel enclosure mounted atop the pad that will measure approximately 67 inches long by 41 inches wide by 50 inches tall. The single capacitor will be installed on a concrete pad, similar in size to those for the switches, and will measure approximately 60 inches long by 44 inches wide by 60 inches tall. Typical drawings of the concrete pad, switch, and capacitor have been included as Figure 3-10: Typical Switch and Capacitor Pad, Figure 3-11: Typical 12 kV Switch, and Figure 3-12: Typical 12 kV Capacitor. The proposed locations of these facilities are depicted in Attachment 3-A: Detailed Project Components Map.

Underground Cable

All underground distribution circuits will utilize 1,000 kcmil aluminum cross-linked polyethylene insulation (XLPE) cables.[3] The distribution getaways—located between the proposed Vine Substation and the two adjacent underground vaults located in Kettner Boulevard—will contain 1,000 kcmil copper XLPE cables.

3.4.2 69 kV Loop-In

Poles

As described previously, SDG&E is proposing to loop the existing double-circuit TL604 into the proposed Vine Substation. This will require the removal of two approximately 70-foot-tall, directly buried, dead-end wood pole; the removal of one approximately 28-foot-tall, self-supported stub guy pole; and the installation two new, approximately 100-foot-tall, self-supported, dead-end TSPs.[4] These new poles range in diameter from five to seven feet at the base and two to three feet at the top. The new TSPs will be equipped with six dead-end insulators to carry the three bundled conductors from the existing steel poles to the proposed Vine Substation. One existing wood distribution pole will also be replaced by a new approximately 100-foot-tall self-supported TSP. The replacement TSP will be equipped with six insulators to support the 69 kV conductors. Typical drawings of the existing wood pole, stub guy pole, and new TSPs have been included as Figure 3-13: Typical Existing 69 kV Wood Pole, Figure 3-14: Typical Existing Stub Guy Pole, and Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole.

Overhead Conductor

TL604 is currently configured as a bifurcated-circuit (two conductors per phase) power line, where six individual conductors are supported by the associated poles. To facilitate the loop-in of this power line, these six conductors will travel from the existing and replacement steel poles to the new TSPs. From each new TSP, three individual conductors will traverse the railroad tracks and terminate within the substation. TL604 currently utilizes 1,033 kcmil aluminum-clad steel reinforced (ACSR) conductor, and the new loop-in will also use 1,033 kcmil ACSR. The overhead span lengths between poles will vary, but will generally be between 100 and 300 feet. The distance from the ground to the lowest conductor will be at least 35 feet, and the conductors' vertical spacing will be approximately nine feet. As described in Section 3.4.3 Telecommunication System, fiber optic telecommunication cables will also be collocated on the 69 kV loop-in poles.

[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 circular mils. A cmil is the area of a circle with a 0.001-inch-diameter.

[4] Dead-end structures are typically used in locations where the conductor alignment changes direction. This pole configuration can also be used at the end of a conductor pull section and/or in locations where additional ground clearance is required.

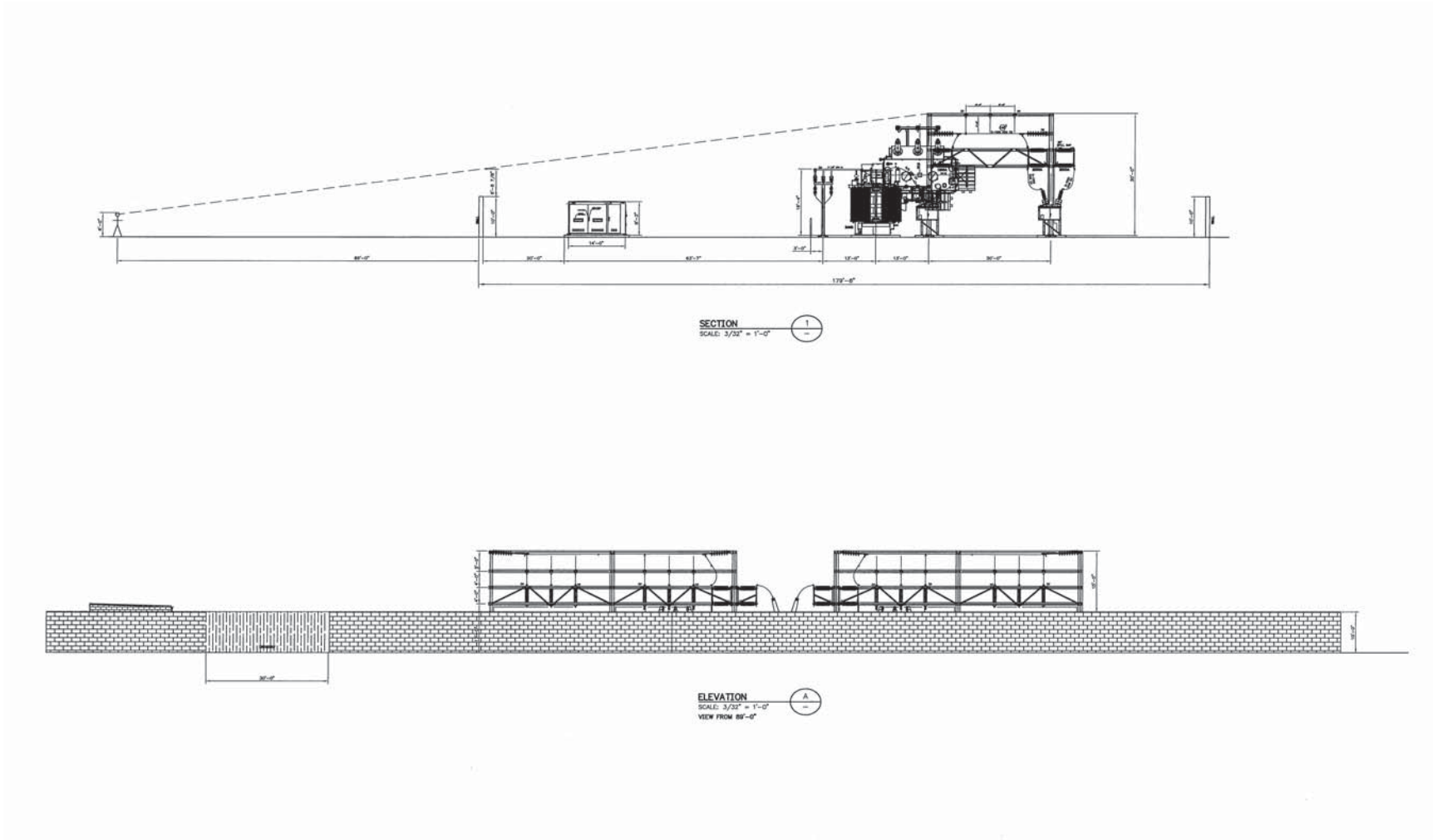
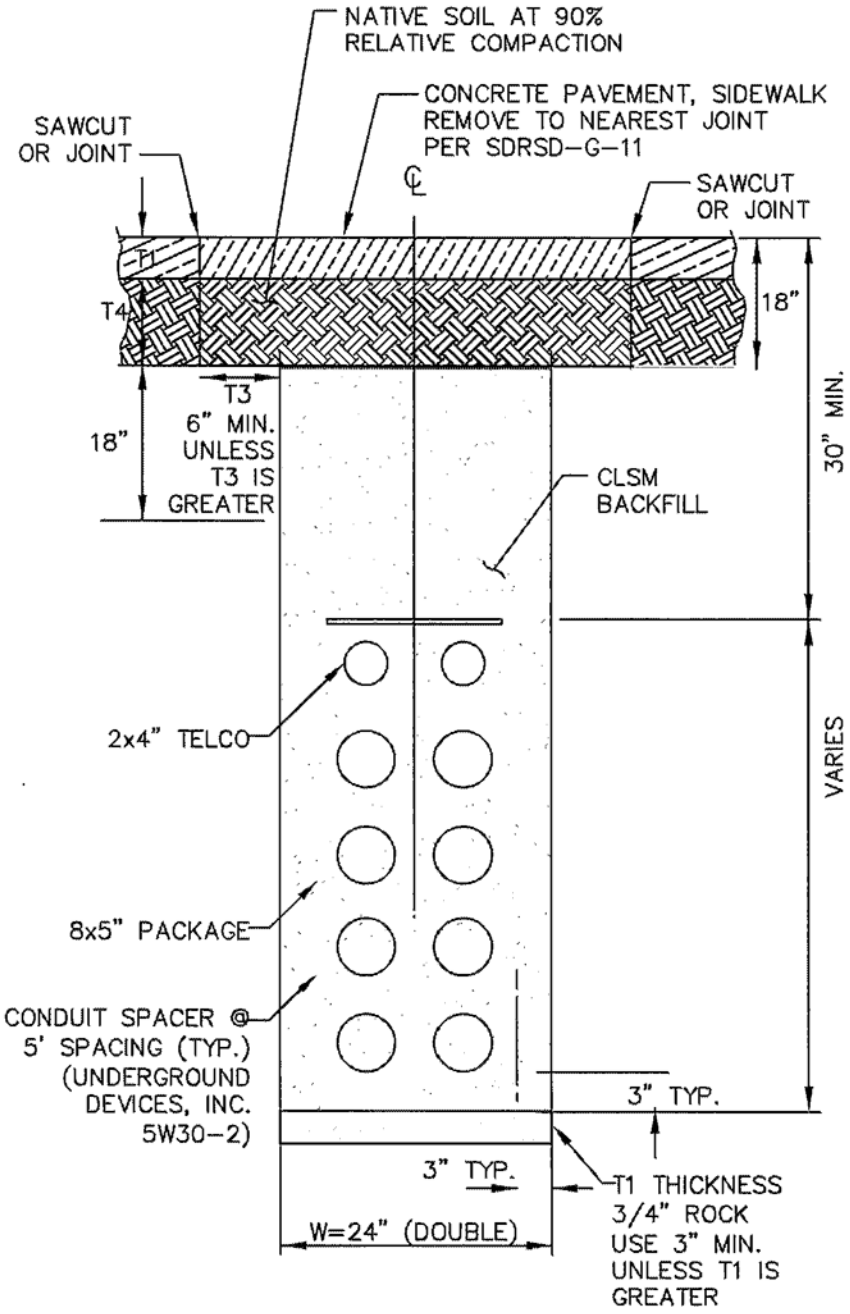


Figure 3-7: Vine Substation Profile View



DETAIL O

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

Figure 3-8: Typical 12 kV Underground Duct Bank

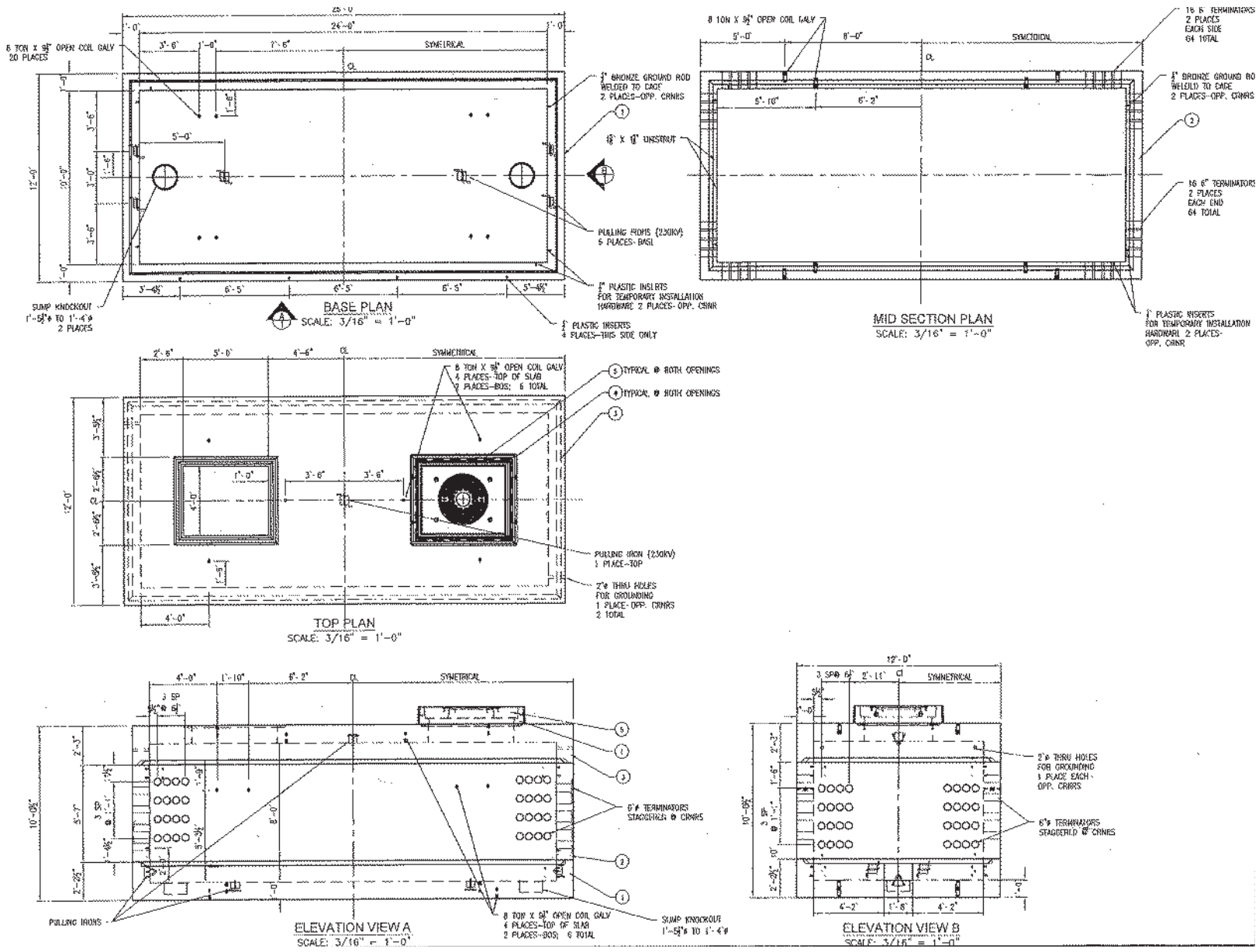
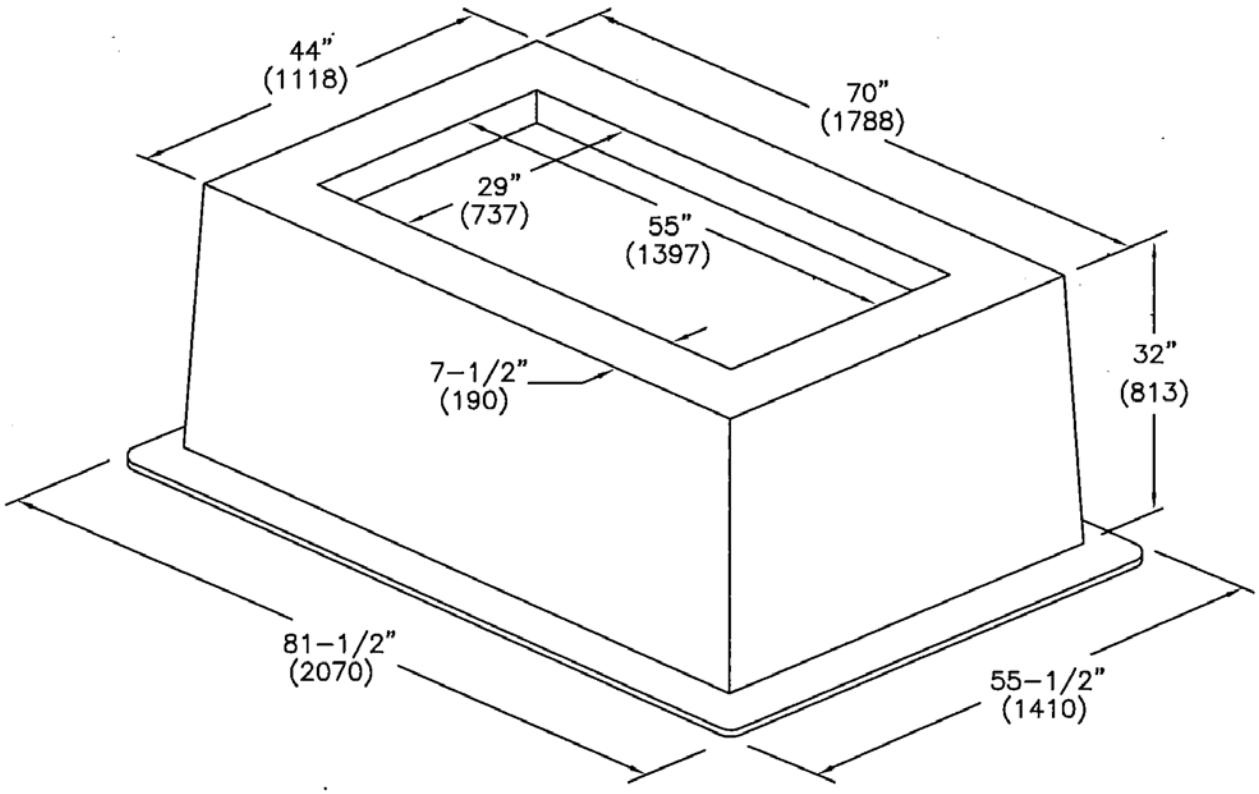


Figure 3-9: Typical 12 kV Underground Vault

WEIGHT: 195 LB (88 KG)
DIMENSIONS 70" X 44" X 32" (1778 X 1118 X 813)



APPEARANCE AND DIMENSIONS MAY VARY SLIGHTLY BETWEEN MANUFACTURERS

Figure 3-10: Typical Switch and Capacitor Pad

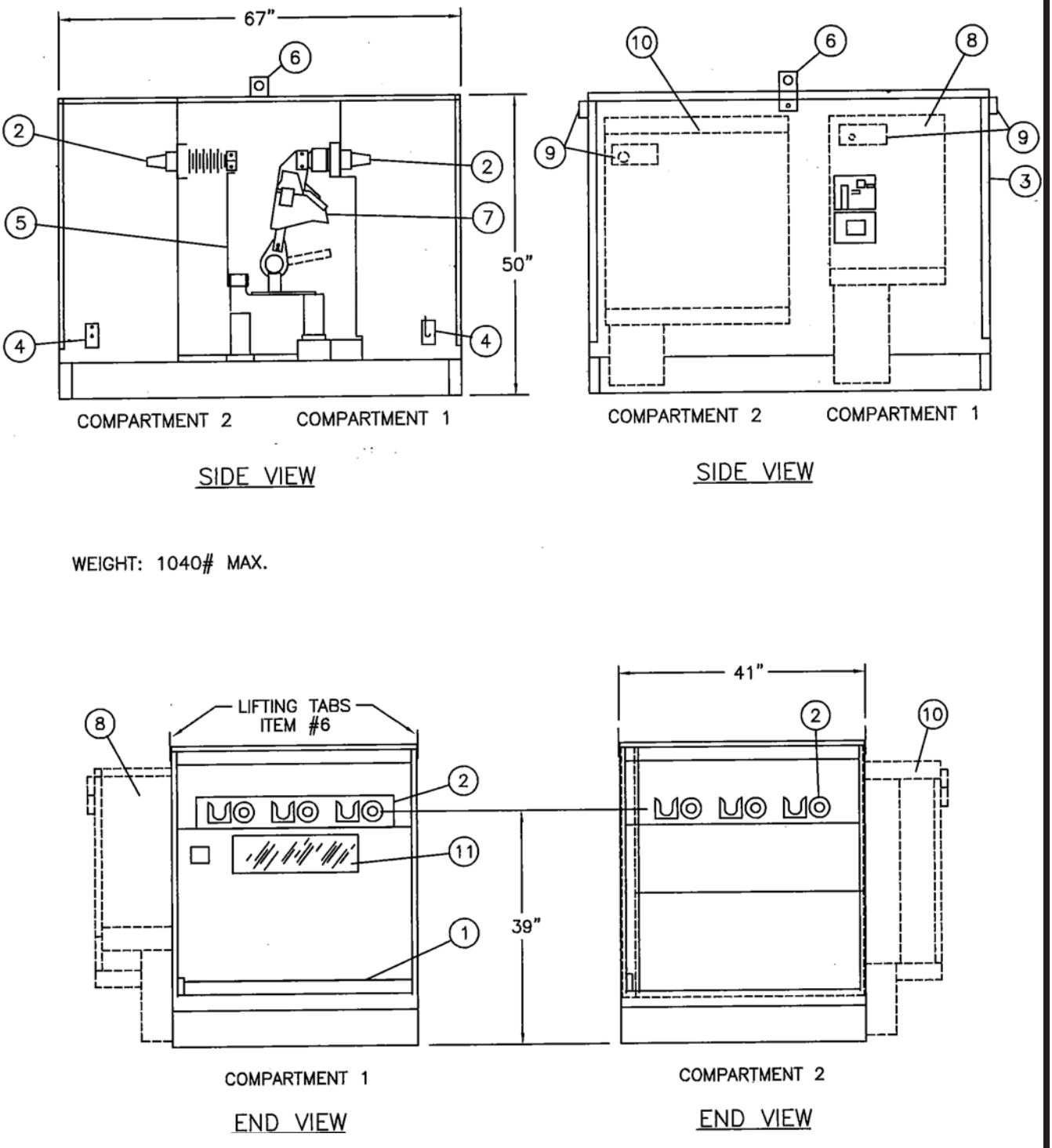


Figure 3-11: Typical 12 kV Switch

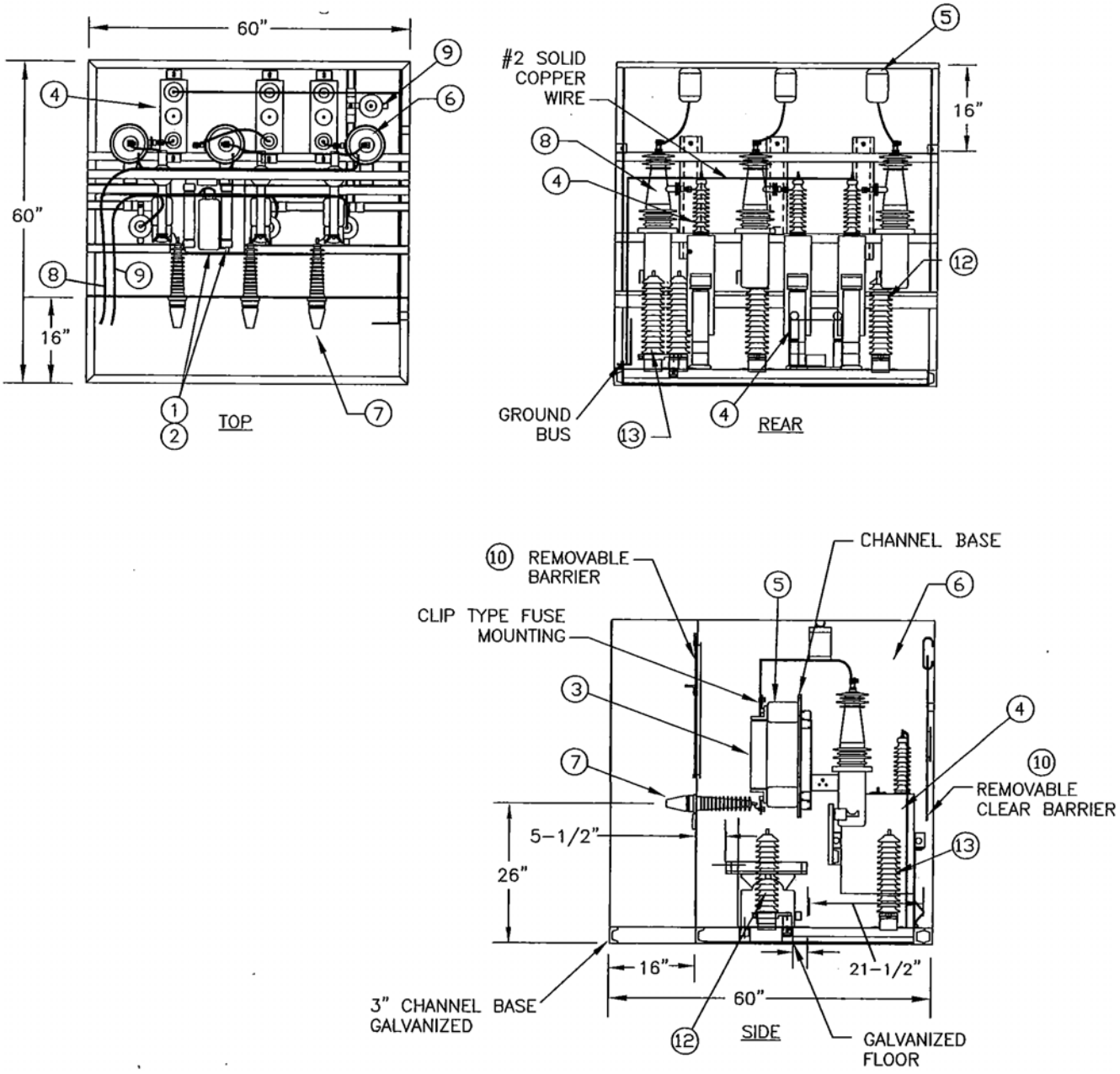


Figure 3-12: Typical 12 kV Capacitor

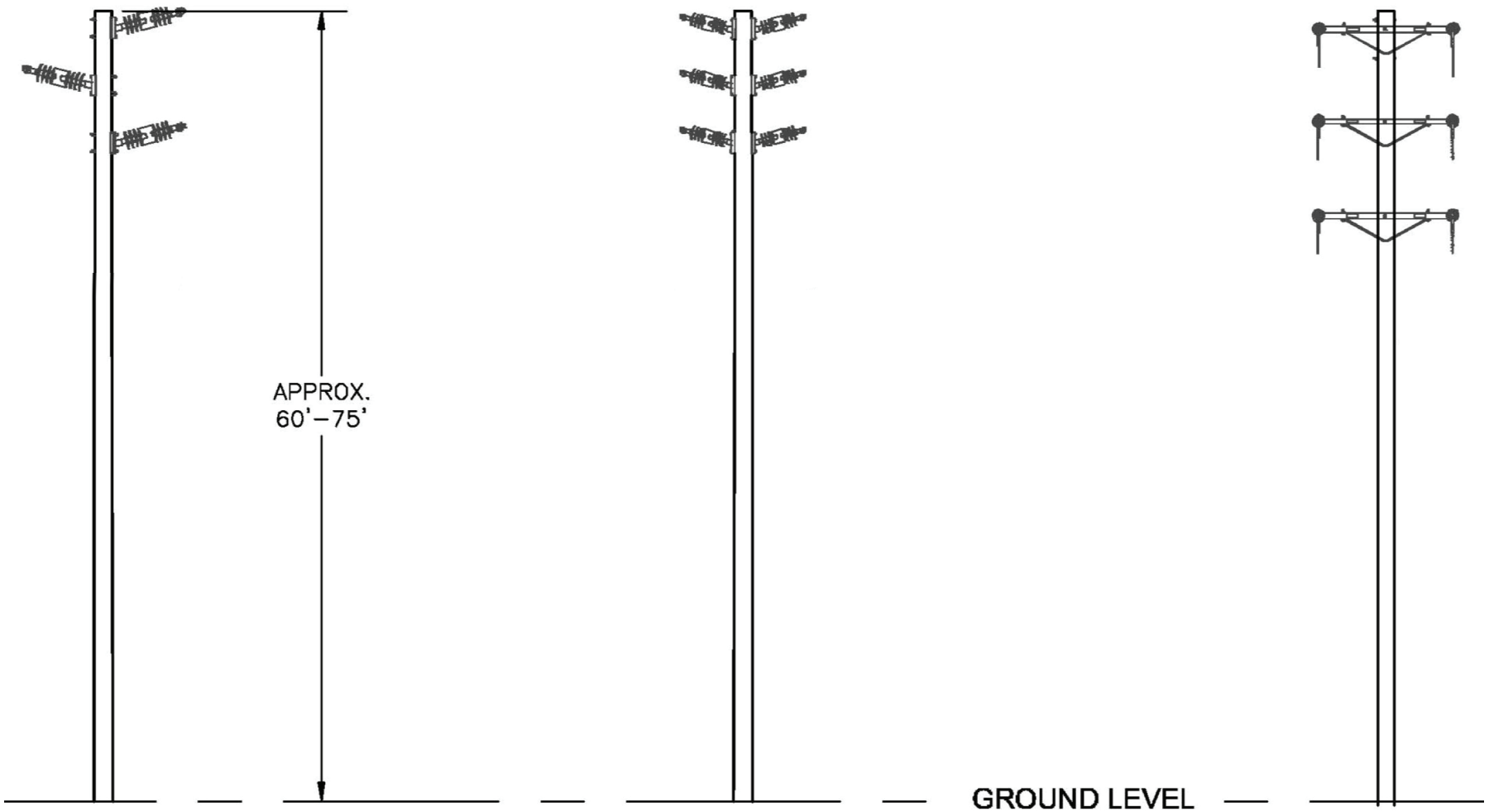
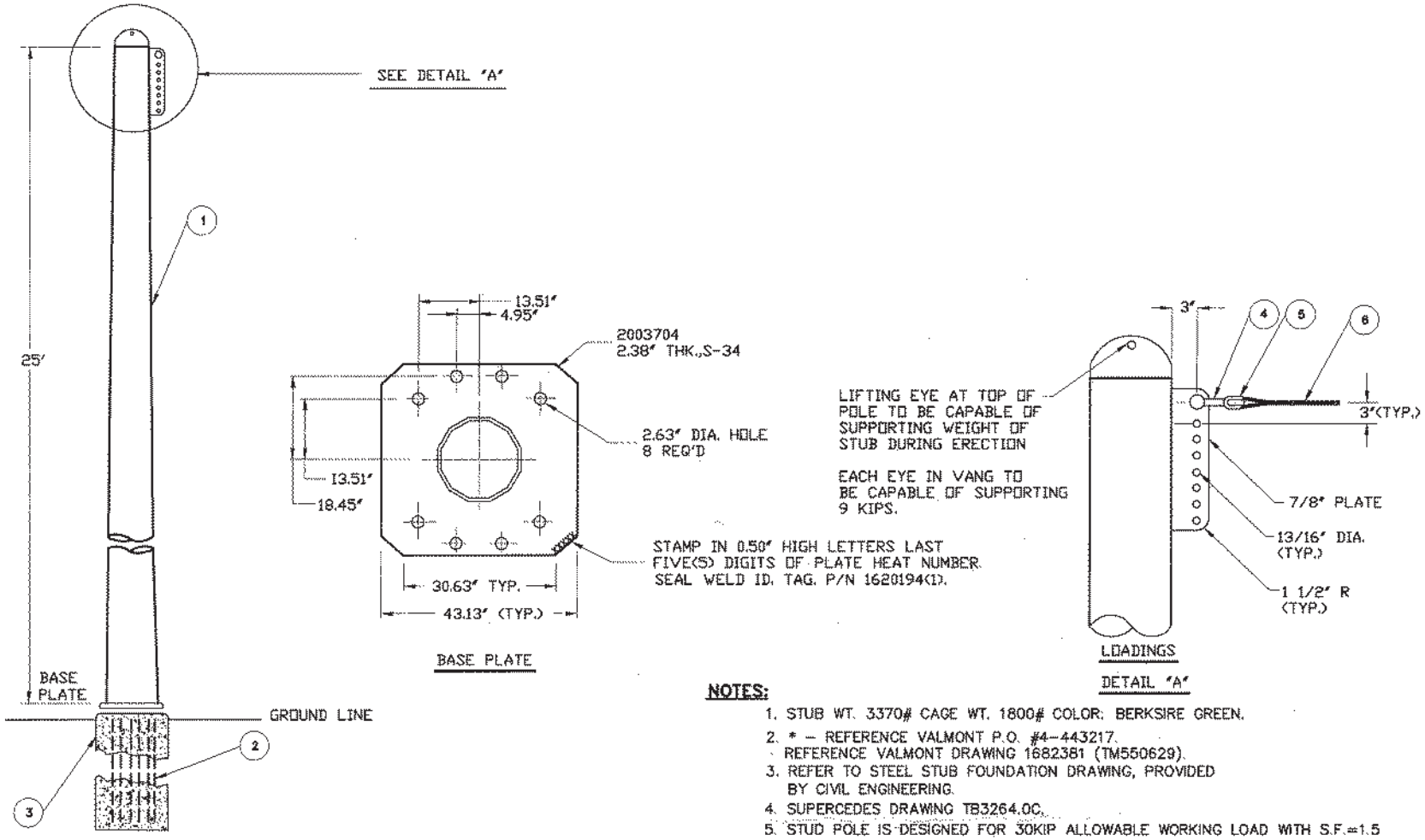


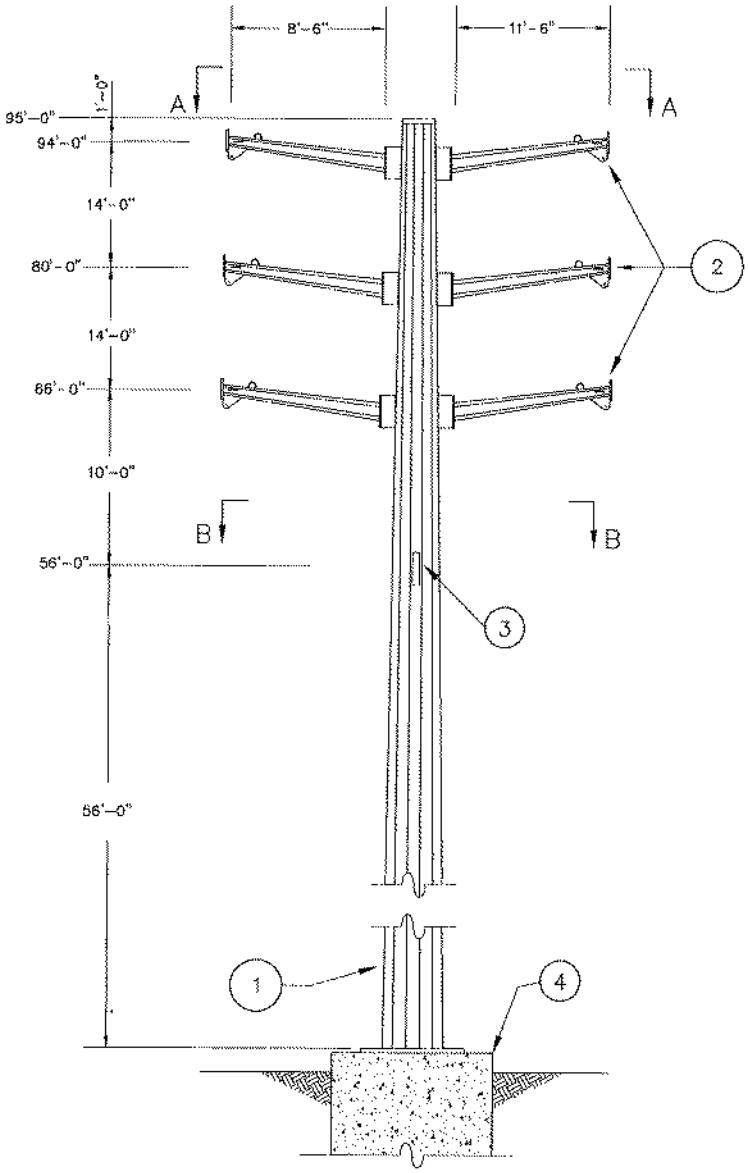
Figure 3-13: Typical Existing 69 kV Wood Pole



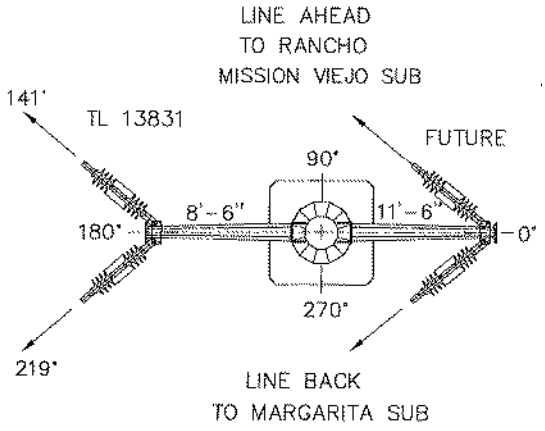
NOTES:

1. STUB WT. 3370# CAGE WT. 1600# COLOR: BERKSIRE GREEN.
2. * – REFERENCE VALMONT P.O. #4–443217.
   REFERENCE VALMONT DRAWING 1682381 (TM550629).
3. REFER TO STEEL STUB FOUNDATION DRAWING, PROVIDED BY CIVIL ENGINEERING.
4. SUPERCEDES DRAWING TB3264.0C.
5. STUD POLE IS DESIGNED FOR 30KIP ALLOWABLE WORKING LOAD WITH S.F.=1.5

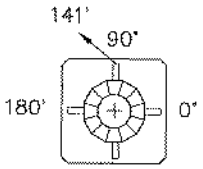
Figure 3-14: Typical Existing Stub Guy Pole



DEADEND STEEL POLE



VIEW B-B (138 kV)
102 degree line angle



VIEW B-B (FIBER OPTIC VANGS)
51 degree line angle

Figure 3-15: Typical Proposed 69 kV Tubular Steel Pole

SDGE
A Sempra Energy utility

3.4.3 Telecommunication System Extension

As described in Section 3.0.3 Telecommunication System Extension, new fiber optic cable will be installed from an existing underground vault located on Pacific Highway to the proposed Vine Substation, and from the proposed Vine Substation to the Kettner Substation. The connection from Pacific Highway to the proposed Vine Substation will occur in an overhead configuration along the new power line ROW, while the connection between the proposed Vine Substation and Kettner Substation will occur via a new underground duct bank. This component is described further in the subsections that follow.

An existing AT&T telephone line will be upgraded and relocated from the existing service to the new substation. The connection will originate from one of three locations located along the perimeter of the proposed Vine Substation site as depicted in Attachment 3-A: Detailed Project Components Map. The final location of the telephone line connection will be determined during final engineering and through additional coordination with AT&T.

Underground Duct Bank

As part of the 12 kV distribution relocation, approximately 2,850 feet of new underground duct banks will be installed along Kettner Boulevard between the proposed Vine Substation and Kettner Substation. Approximately 100 additional feet of new underground duct bank will be installed between an existing handhole located within Pacific Highway and one of the new TSPs that will be installed as part of the 69 kV loop-in. These underground duct banks will include two additional four-inch diameter PVC conduits as depicted in Figure 3-8: Typical 12 kV Underground Duct Bank. In locations where this duct bank will enter 12 kV underground vaults, a separate underground duct bank, comprised of two four-inch-diameter PVC conduits encased in a slurry mixture, will be used to route the telecommunication cable separate from the distribution vaults. This separate underground telecommunication duct bank will be approximately three feet tall and 1.5 feet wide. A typical drawing of the proposed underground duct bank has been included as Figure 3-16: Typical Telecommunication Underground Duct Bank. In addition to the underground duct banks, approximately four underground handholes will be installed to facilitate pulling and splicing during construction and inspection, maintenance, and repair during operation. These precast concrete handholes measure approximately 44 inches long, 32 inches wide, and 24 inches deep. A typical drawing of the proposed telecommunication handhole has been included as Figure 3-17: Typical Telecommunication Underground Handhole. The proposed locations of these facilities are depicted in Attachment 3-A: Detailed Project Components Map.

Underground and Overhead Cable

The telecommunication system extension will utilize all dielectric self-supporting-48 fiber optic cable that measures approximately 0.685 inch in diameter.

3.5 RIGHT-OF-WAY REQUIREMENTS

As described previously, SDG&E currently owns the approximately 1.5-acre parcel on which the proposed Vine Substation will be constructed; therefore, no new ROW will be required to install this Proposed Project component. Because the new and relocated 12 kV distribution circuits and

underground portions of the telecommunication system extension will be placed entirely within City of San Diego public streets, they will occupy the francise position and no new ROW will be obtained. SDG&E will obtain a License Agreement from MTS for the approximately 80 feet of new, approximately 320-foot-wide ROW for the overhead 69 kV loop-in conductors. The remainder of the 69 kV loop-in will be installed within the francise position of City of San Diego public streets.

3.6 CONSTRUCTION

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

3.6.0 Staging Areas

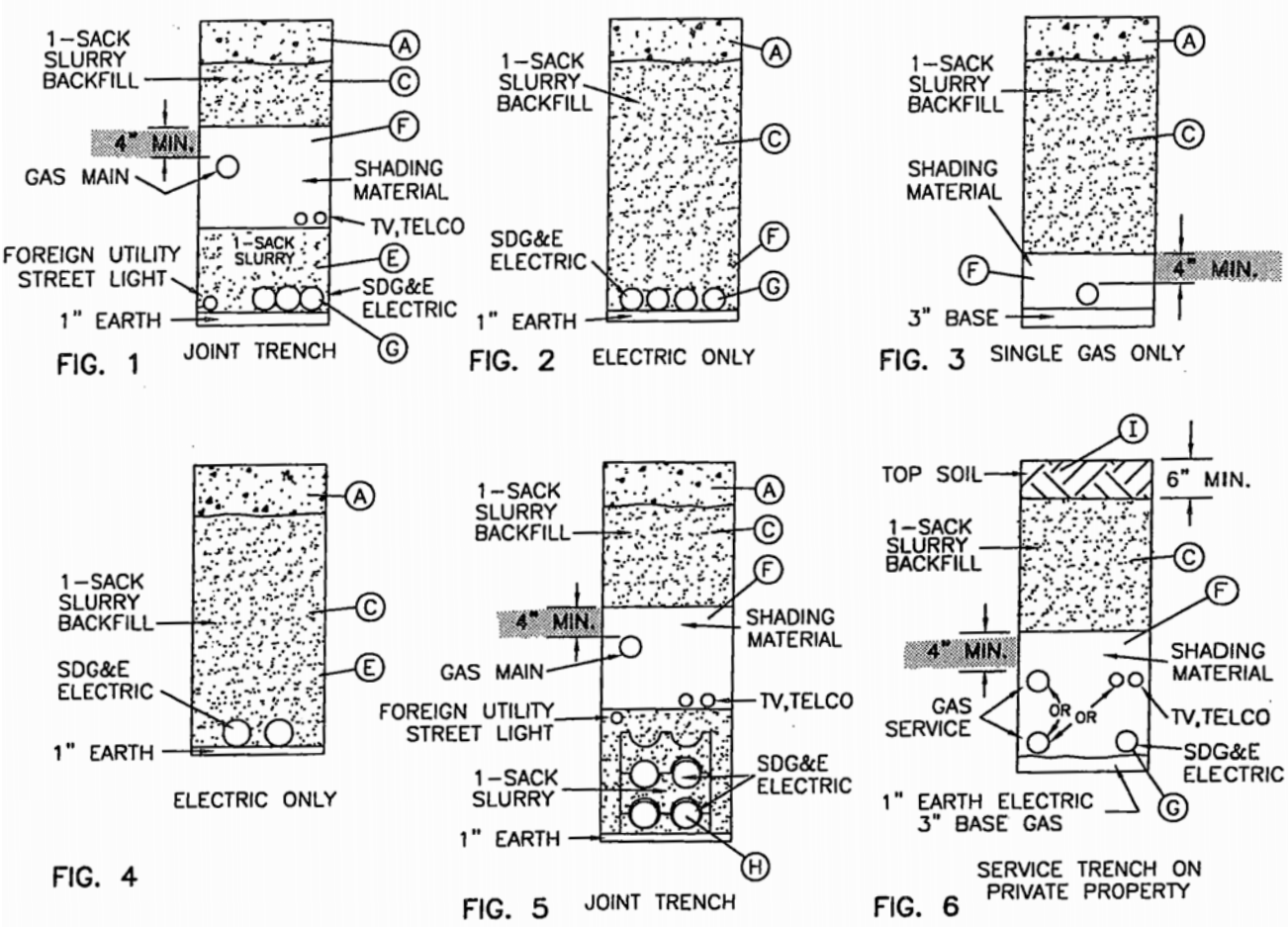
The majority of construction equipment, vehicles, personnel, and material staging areas will be accommodated within the property lines of the proposed substation property and within the work areas described in Section 3.6.1 Work Areas. Equipment staging will also be conducted at existing SDG&E facilities. Because each of these staging areas is currently used by SDG&E for other projects, no additional improvements at these sites will be required prior to construction. Additional existing SDG&E facilities or disturbed areas may be identified for use following the completion of final engineering. Temporary parking of some vehicles along Vine Street may be required depending on actual construction activities occurring at the proposed Vine Substation.

3.6.1 Work Areas

In addition to the staging areas discussed in the previous section, temporary workspace will be required for each Proposed Project component in order to facilitate construction. These anticipated workspace requirements are described in detail in the following subsections, summarized in Table 3-2: Temporary Workspace Requirements, and depicted in Attachment 3-A: Detailed Project Components Map. Temporary work areas will all be accessed by construction equipment using existing access roads, except for a small area to be cleared and graded for the 69 kV loop-in, which may require access by overland travel. All work areas will be restored to pre-construction conditions to the extent practical following the completion of construction. Further discussion of the restoration process is provided in Section 4.4 Biological Resources. Because the new telecommunication system facilities will be installed adjacent to the proposed distribution circuits or will be collocated with the overhead 69 kV loop-in, minimal additional workspace will be required.

Proposed Vine 69/12 kV Substation

As described previously, the majority of construction equipment, vehicles, personnel, and material staging will be accommodated within the property lines of the proposed Vine Substation site. The substation pad will be utilized for staging materials and equipment used in the construction of the substation facilities. Because the site is currently paved, no clearing of vegetation will be required for construction. Six palm trees located along Kettner Boulevard will be removed during the site preparation activities. The proposed Vine Substation will include adequate space for equipment, materials, temporary office trailers, and most—if not all—vehicle parking.



INSTALLATION:

(A) ALL TRENCH RESURFACING SHALL BE DONE ACCORDING TO GOVERNMENTAL AGENCIES REQUIREMENTS.

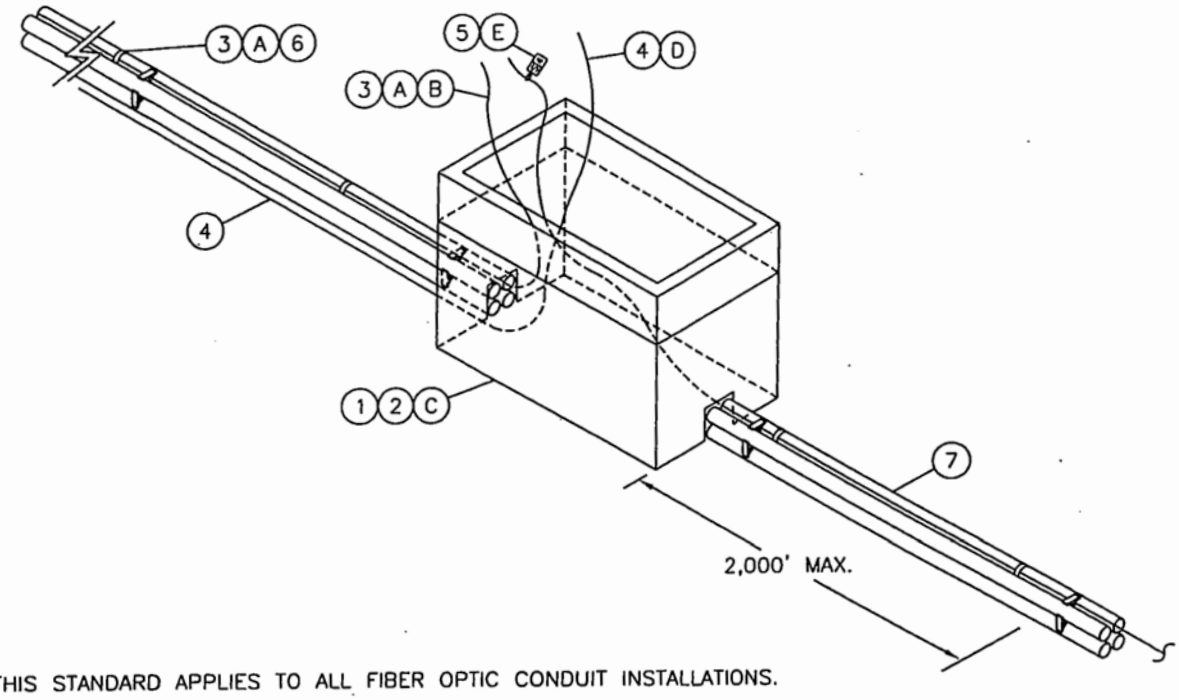
B. SHADING MATERIAL SHALL MEET GAS STANDARD 7405 OR UNDERGROUND 3370/3371 SPECIFICATIONS AND MUST BE APPROVED BY AN SDG&E AUTHORIZED INSPECTOR.

(C) BACKFILL MATERIAL SHALL MEET THE GOVERNMENTAL (PERMITTING) AGENCIES REQUIREMENTS AND SDG&E STANDARDS. THE SAND USED FOR THE ONE SACK SLURRY OR TWO SACK, IF REQUIRED BY GOVERNMENTAL AGENCIES, MUST MEET THE CONCRETE SAND SPECIFICATION LISTED IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) AND CONTAIN NO GRAVEL. SLURRY MUST BE FIRM BEFORE A PAVEMENT CONCRETE CAP IS INSTALLED. SLURRY IS TYPICALLY USED FOR BACKFILLING AROUND SUBSTRUCTURES, UNDER EQUIPMENT PADS, FOR TRENCHES IN EXISTING PAVED AREAS, AND UNDER CONCRETE OR PAVED DRIVEWAYS.

IT MAY NOT BE APPROPRIATE TO USE ONE SACK SLURRY UNDER THE THE FOLLOWING CIRCUMSTANCES:

- GOVERNMENTAL AGENCIES DO NOT ALLOW ONE SACK OR MAY REQUIRE TWO SACK SLURRY BACKFILL.
- INACCESSABILITY OF CONCRETE TRUCKS DELIVERING SLURRY.
- WHEN SLURRY IS NOT COST EFFECTIVE.
- NEW RESIDENTIAL SUBDIVISIONS, SINGLE FAMILY RESIDENCE SERVICE TRENCH
- SHALLOW WELD HOLES, POT HOLES, ETC.

Figure 3-16: Typical Telecommunication Underground Duct Bank



NOTE:

– THIS STANDARD APPLIES TO ALL FIBER OPTIC CONDUIT INSTALLATIONS.

– REFER TO THE SPECIFIC TRANSMISSION PROJECT FOR INSTRUCTIONS ON THE USE OF TRACER WIRE IN THE TRANSMISSION TRENCH.

II. ALLATION:

(A) YELLOW TRACER WIRE SHALL BE INSTALLED IN THE TRENCH ALONGSIDE CONDUIT WHICH IS DESIGNATED FOR FIBER OPTIC CABLE. THE WIRE SHALL BE TAPED TO THE CONDUIT 8 TO 10 FOOT INTERVALS.

(B) THE TRACER WIRE SHALL BE LOOPED INSIDE THE HANDHOLE WITH ENOUGH SLACK TO EXTEND 12" BEYOND THE TOP OF THE BOX. CUT THE TRACER WIRE, SEAL AND TAPE THE ENDS.

(C) LOCATE ACCESS POINTS (HANDHOLES) TO THE TRACER WIRE AT 2000' INTERVALS.

(D) EXTEND GROUND WIRE 12 INCHES BEYOND THE TOP OF BOX.

(E) ATTACH AN "S4" TAG TO ALL TRACER WIRE AT ACCESS POINTS.

Figure 3-17: Typical Telecommunication Underground Handhole

Table 3-2: Temporary Workspace Requirements

Proposed Project Component	Workspace Type	Required Improvements	Quantity	Approximate Dimensions (feet)	Total Approximate Area (acres)
Proposed Vine 69/12 kV Substation	Substation Pad Installation Area	Grading, excavation, boundary wall and gate installation, substation component installation, and driveway installation	1	340 by 190	1.48
12 kV Distribution Relocation	Underground Work Area	Excavation, duct bank installation, and cable installation	1	3,900 by 30	2.69
	Vault Installation Work Area	Excavation, vault installation, and cable installation	5	60 by 40 each	0.25
	Pull Site	None	2	50 by 30	0.07
	Switch and Capacitor Installation Work Area	Excavation and pad installation	10	50 by 30	0.34
69 kV Loop-In	Work Area	Excavation, and pole and foundation installation	1	225 by 55	0.28
		Pole and foundation removal	1	140 by 50	0.16
		Pole removal	1	100 by 50	0.11
		Pole removal and installation	1	130 by 50	0.15
		Conductor installation and removal	1	80 by 40	0.07
			1	70 by 40	0.07

Proposed Project Component	Workspace Type	Required Improvements	Quantity	Approximate Dimensions (feet)	Total Approximate Area (acres)
Telecommunication System Extension	Underground Work Area	Excavation, duct bank installation, and cable installation	1	625 by 30	0.43
	Handhole Installation Work Area	Excavation, handhole installation, and cable installation	4	50 by 30	0.14
Total	**--**	**--**	**--**	**--**	**6.24**

Note: This information is preliminary and subject to adjustment based on final engineering, ground conditions at the time of construction, and other factors. The total workspace area required will be less than the total indicated due to overlapping workspaces.

12 kV Distribution Relocation

The installation of new duct banks and vaults will require temporary workspace within Kettner Boulevard. The underground trench work area will be approximately 20 to 30 feet wide and will be generally centered on the distribution circuit alignments. The underground trench work area will be adjusted to comply with traffic control permits to maintain traffic flow through construction areas as necessary. In locations where vaults will need to be installed, additional workspace will be established and will measure approximately 150 feet by 25 feet centered on the vault location. All trenching and vault work areas will be located within City of San Diego streets and public areas. These work areas will also support all cable installation activities, as well as the associated construction equipment to perform the work. A total of approximately 6,460 linear feet of workspace, which requires approximately 4.45 acres, will be established prior to construction. Site preparation for an underground trench work area and vault installation work areas will involve a survey mark out with offsets of the proposed trench alignment, as well as setting up traffic controls prior to construction. Additional temporary work spaces measuring approximately 50 feet by 30 feet will be established to facilitate the installation of switches and capacitors.

The cable installation process will require a network of pull sites located adjacent to the proposed and existing underground vaults. These pull sites will be approximately 50 feet long by 20 to 30 feet wide. With the exception of the two pull sites that will be established near the intersections of Kettner and West Hawthorn Street and Pacific Highway and West Hawthorn Street, all pull sites will be located within the underground trench work area. All pull sites will be located within the paved portion of existing City streets; therefore, no improvement will be required prior to use.

69 kV Loop-In

To accommodate construction equipment and activities during the removal of the existing wood power line pole and associated guy pole, an approximately 150-foot-long by 40-foot-wide temporary workspace will be established along Vine Street. A second work area, approximately 100 feet long by 40 feet wide, will be established along California Street to remove a second wood pole. Because the poles are located within the existing sidewalk, no grading or vegetation removal is anticipated.

In order to install the three new poles that will facilitate the loop-in of TL604, two additional work areas will be established. The first will measure approximately 250 feet long by 55 feet wide and will be placed along Pacific Highway. The work area will be located directly adjacent to the existing fence that separates Pacific Highway from the existing railroad ROW. As a result, up to two lanes of traffic along the northbound direction of Pacific Highway will be closed during installation of the new poles and during conductor installation and removal activities. The existing vegetation within this pole work area may be cleared to establish safe operating conditions for construction equipment. The second work area will be located adjacent to the existing distribution pole. This work area will be used to facilitate the installation of a new power line pole for the 69 kV loop-in. This work area will measure approximately 130 feet long by 50 feet wide and will be placed within an existing parking lot along Pacific Highway.

Conductor installation and removal will require two additional work areas. The first work area will be located along Frontage Road and will measure approximately 80 feet long by 40 feet wide. The second work area will measure approximately 75 feet long by 40 feet wide. The work area will be located along Pacific Highway.

3.6.2 Access

Access to the proposed Vine Substation will be accomplished from Vine Street during construction via the relocated driveway. Access to the 69 kV loop-in will primarily occur from Vine Street, California Street, and Pacific Highway. The 12 kV distribution relocation activities will be accessed from Kettner Boulevard. As described previously, secondary access to the proposed Vine Substation will be from Kettner Boulevard for use during operation and maintenance activities. No new permanent access roads will be constructed.

3.6.3 Methods

Construction methods for the proposed Vine Substation, 12 kV distribution relocation, and 69 kV loop-in are described in this section. The methods used to extend the telecommunication system are similar to those that will be used to relocate the 12 kV distribution circuits. As a result, they are not discussed further. Refer to Section 4.6 Hazards and Hazardous Materials for information regarding handling and disposal of contaminated materials. A summary of the number of truck trips required to construct each of the Proposed Project's components has been provided as Table 3-3: Construction Truck Trip Summary.

Table 3-3: Construction Truck Trip Summary

Proposed Project Component	Approximate Truck Trips Required
Proposed Vine 69/12 kV Substation	2,650
12 kV Distribution Relocation and Telecommunication System Extension	1,350
69 kV Loop-In	400

Proposed Vine 69/12 kV Substation

Site Development

Site development activities will commence with the removal of the existing paved parking lot surface, which will require the use of excavators, front-end loaders, concrete saws, and/or bulldozers. Once cleared, remedial grading will take place based on the recommendations of the geotechnical investigation, which will determine the appropriate on-site pad elevation and foundation support that also maintains adequate site drainage. On-site material will be reused to the extent possible, as recommended by a Geotechnical Engineer. These activities are anticipated to generate approximately 4,200 cubic yards (CY) of material for off-site disposal. Approximately 4,600 CY of select fill will be imported to help achieve the conceptual design elevation. Site grading will be accomplished primarily with bulldozers and backhoes, which will condition, cut and fill, and blend the native soil and imported material to the desired pad elevations.

Construction of the boundary walls will begin once grading is complete. At this time, an approximately 12-inch layer of Class II aggregate base (approximately 2,100 CY) will also be installed over the building pad area for the finished surface.

Construction of the proposed Vine Substation will require approximately 6,700 CY—or an estimated 1,470 haul truckloads—of imported fill to develop the proposed substation site. Haul trucks will operate periodically, as needed, during the grading phase of construction. In general, an average of no more than 20 truck trips per day for an estimated five months will be required to complete the proposed substation grading and boundary wall installation. In addition, approximately five additional trips per day are anticipated for the delivery of materials and equipment for the duration of construction.

Below-Grade Construction

Following site development, below-grade work will begin, which will inclue the construction of structure and equipment foundations, underground ducts, the ground grid, and erection of the control shelter. The construction of the distribution circuits and tie lines surrounding proposed Vine Substation will start while the substation is under construction. Concrete trucks, backhoes, ditch-witches, and skid steer loaders will be used for the below-grade work.

Above-Grade Construction

Once the grading activities and below-grade construction are complete, major equipment and structures will be installed and anchored on their respective foundations. The following steps will be taken to install the above-grade equipment:

- The 69 kV rack will be erected.
- The 69 kV circuit breakers will be installed on their foundations.
- The control shelter will be constructed, and relay panels, controls, battery, and station lighting and power will be installed.
- The ground grid, control, communication, and power ducts will be installed and wiring of the equipment controls and protection devices will follow.
- The 69/12 kV transformers will be installed on their foundations, assembled, and filled with oil.
- The 12 kV switchgear, capacitors, and reactor will be installed on their foundations.

Power lines and distribution circuits will be completed and connected inside the substation following final installation of the substation structures and equipment. Communication equipment, will be connected inside the control shelter. Testing will be performed on all equipment after the equipment is installed and wired, and before placing it in service. Equipment will be placed in service once the 12 kV circuits and 69 kV loop-in are ready to be energized and are tested outside the substation.

Portable cranes and heavy hauling trucks will be employed to bring in the 69/12 kV transformers. Substation crews, assist vehicles, forklifts, man lifts, and boom trucks will be used to construct the substation. Oil-processing equipment and vacuum pumps will be used to fill transformers with oil. Pickup trucks and vans will be used for the wiring and control testing of

the substation equipment. Line trucks, assist vehicles, and cable dolly trailers will be used for construction of the power line and distribution circuits.

A temporary tap to an existing distribution line may be installed to provide electrical service to the substation staging area during construction. This temporary tap may be used to power construction trailers, lighting, or small hand-held machinery or tools until the substation is energized. The temporary tap may require up to three directly buried wood poles (approximately 20 feet in height) to connect a distribution line from an existing underground distribution transformer located adjacent to the substation site.

Cleanup and Post-Construction Activities

All areas that are temporarily disturbed during construction activities will be restored to pre-construction conditions, to the extent practicable, once construction of the substation is complete. Cleanup efforts will include removal of all construction debris for recycling and/or disposal off site. In addition, landscaping will be installed consistent with SDG&E's Landscape Plan, which is described further in Section 4.1 Aesthetics.

12 kV Distribution Relocation

Trenching

Prior to trenching, other utility companies will be notified to locate and mark existing underground utilities along the proposed underground alignment. Exploratory excavations (i.e., potholing) will also be conducted to verify the locations of existing facilities in the ROW. Coordination with the City will also occur in order to secure encroachment permits for trenching in the City's ROW, as required. It is anticipated that between one and two lanes of Kettner Boulevard will occasionally be closed during trenching activities. During these closures, traffic controls will be implemented as required by the Encroachment Permit.

Trenching operations will be staged in intervals so that only a maximum of 500 feet of trench will be left open at any one time, or as allowed by permit requirements. The fill generated by excavation activities will be transported to an SDG&E approved disposal site. At any one time, open trench lengths will not exceed that required to facilitate the installation of the duct bank. Steel plating will be placed over the trenches to maintain vehicular and pedestrian traffic across areas that are not under active construction. A typical drawing of the proposed underground construction activities has been included as Figure 3-18: Typical Underground Construction Process within Roadways.

The duct bank will be installed using open-cut trenching techniques. Most of the duct bank will have a single-circuit vertical configuration, as shown in Figure 3-8: Typical 12 kV Underground Duct Bank. Transitions to a flat configuration may be required in certain areas to clear substructures in highly congested areas, or to fan out to termination structures at the transition area.

The typical trench dimensions for installation of each duct bank will be three to six feet deep and two to seven feet wide, depending on the duct bank configuration. Depths may vary depending on soil stability and the presence of existing substructures. The trench will be widened and shored where necessary to meet California Occupational Safety and Health Administration

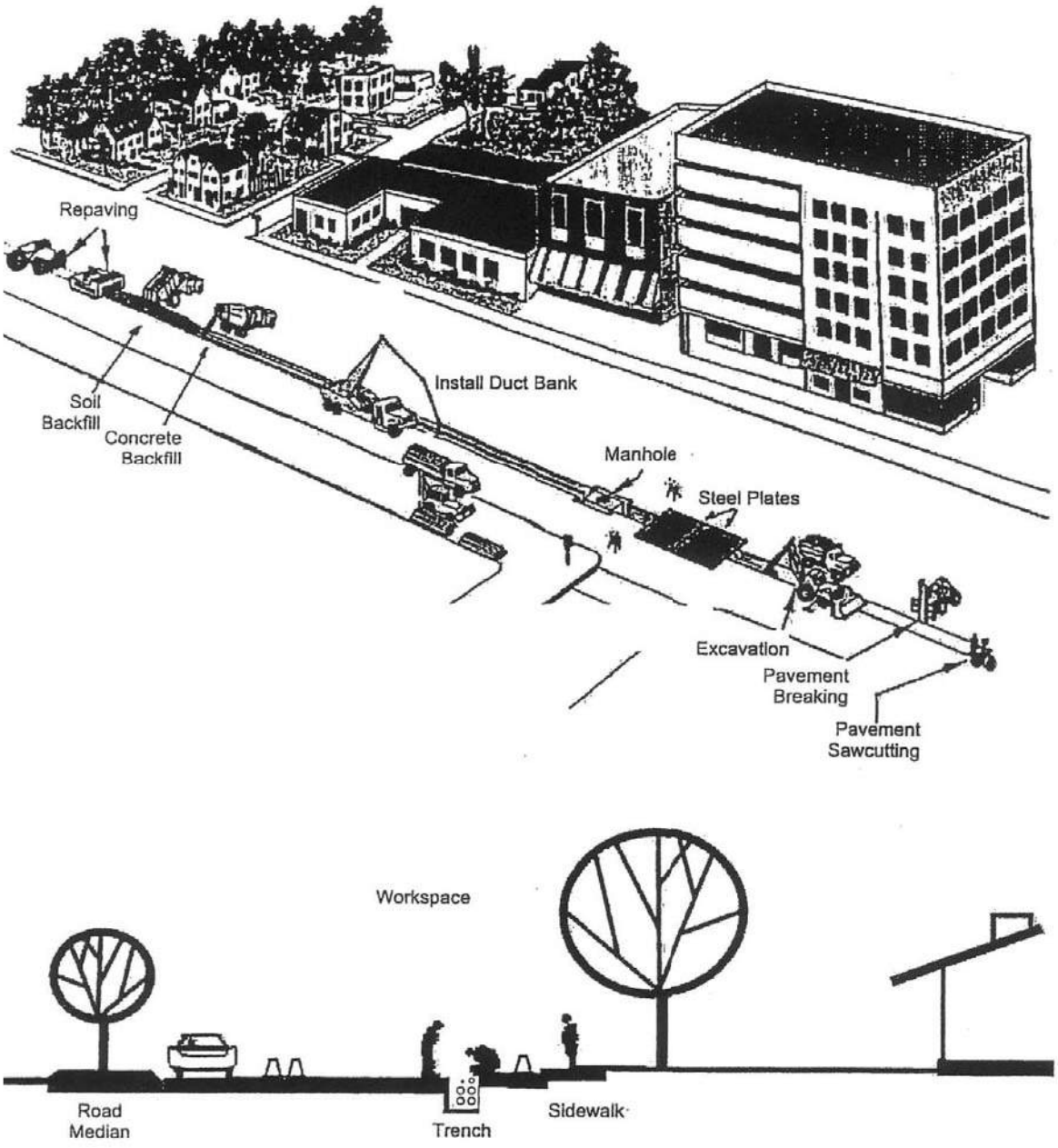


Figure 3-18: Typical Underground Construction Process within Roadways

requirements. If trench water is encountered, trenches will be dewatered using a portable pump and the water will be disposed of in accordance with acquired permits.

As described previously, traffic controls will also be implemented to direct local traffic safely around work areas. SDG&E will coordinate provisions for emergency vehicle and local access with local jurisdictions as necessary.

Duct Bank Installation

As the trenches for the underground 12 kV duct banks are completed, SDG&E will install the cable conduits (separated by spacers) and pour concrete around the conduits to form the duct banks. The duct banks will typically consist of eight five-inch-diameter PVC conduits, which house the electrical cables. The dimensions of the duct banks will be approximately 1.5 feet wide by 2.7 feet tall for a vertical configuration. The duct package will consist of a single 12 kV distribution circuit. As described previously, two four-inch conduits will be installed within the distribution duct bank between the proposed Vine substation and Kettner Substation for telecommunication purposes.

Once the PVC conduits are installed, engineered slurry backfill will be imported, placed, and compacted. A road base backfill or slurry concrete cap will be installed and the disturbed road surface will be restored in compliance with local permits. While the completed trench sections are being restored, additional trench will be opened farther down the street. This process will continue until the distribution circuits are completed. Each duct bank will have a minimum of 30 inches of cover. Larger trenches will be excavated where vaults are installed, as described in the subsection that follows.

Where the distribution duct bank will cross other substructures that operate at normal soil temperature (e.g., gas lines, telephone lines, water mains, storm drains, and sewer lines), a minimal radial clearance of 12 inches will be required. In instances where the duct bank will be installed parallel to other substructures, a minimum radial clearance of 24 inches will be required. Ideal clearances of two to five feet are preferred. Where the duct banks cross or run parallel to substructures that operate at temperatures significantly exceeding normal soil temperature (e.g., other underground power line circuits, primary distribution cables, steam lines, and heated oil lines), additional radial clearance may be required. All work will be done in conformance with SDG&E's current construction and operating practices.

Vault Installation

SDG&E will excavate and install pre-formed concrete splice vaults during trenching for the 12 kV circuit duct banks. The proposed trench alignment and vault locations are shown on Figure 3-2: Project Overview Map. The installation of each vault will require an excavation measuring approximately 11 feet by 7.5 feet by 29 feet. Initially, the vaults will be used to pull cable through the conduits and splice the cables together during construction. During operation, the vaults will provide access to the underground cables for maintenance, inspections, and repairs.

Vaults will be constructed of prefabricated, steel-reinforced concrete and designed to withstand the maximum credible earthquake in the area and traffic loading. The installation process for each vault will occur over a one-week period, beginning with the excavation and shoring of the

vault pit, followed by delivery and installation of the vault, filling and compacting the backfill, and repaving the excavated area where necessary.

Cable Pulling, Splicing, and Termination

After installation of the conduit, SDG&E will install three cables per distribution circuit in the duct banks. Each cable segment will be pulled into the duct bank, spliced at each of the vaults along the route, and terminated at the proposed Vine Substation. To pull the cable through the ducts, a cable reel will be placed at one end of the section and a pulling rig will be placed at the other end. A larger rope will then be pulled into the duct using a pull line and will be attached to the cable-pulling eyes to pull the cable into the duct. A lubricant will be applied to the cable as it enters the duct to decrease friction during pulling. The electric cables and the communication cable will be pulled through the individual ducts at the rate of two or three segments between vaults per day.

The vaults must be kept dry at all times to keep the unfinished splices dry and prevent other impurities from affecting the cables. Splicing typically takes 12 to 16 hours per day to complete. At each end of the underground segment, the cables will rise out of the ground and terminate within the substation.

Cleanup and Post-Construction Restoration

All areas that are temporarily disturbed by the 12 kV distribution relocation activities will be restored to pre-construction conditions, to the extent practicable, following completion of construction. Restoration will involve the removal of all construction debris for recycling or disposal off site and repaving, as appropriate.

69 kV Loop-In

Clearing and Grading

Because the power line poles will be located adjacent to Pacific Highway, minimal grading and vegetation removal are anticipated. If vegetation removal is required, mowers will be used to clear the area required for pole installation. Material removed during the process or the subsequent excavation will be spread over the existing area as appropriate, or will be disposed of off site in accordance with all applicable laws. The vegetation and habitat communities that exist at the potential clearing sites are discussed in Section 4.4 Biological Resources. Access to the temporary work area will be provided by overland travel from California Street and Vine Street within the newly acquired ROW.

Steel Pole Installation

Foundations

The three steel poles that will be installed as part of the Proposed Project will be placed on new concrete foundations, consisting of drilled concrete piers. Following the preparation of the pole work areas, the foundation process will begin with the excavation of a hole using a truck-mounted excavator with augers of various diameters to match the diameter and depth requirements of the foundation.

Each foundation hole will measure approximatey nine feet in diameter and approximately 40 feet deep, requiring the excavation of 95 CY of soil, depending on the conditions. Following the excavation of the foundation hole, a reinforcing steel cage and anchor bolts will be assembled at one of the Proposed Project's staging areas, transported to the foundation site, and installed. Following the cage installation, a form will be built and concrete will be poured to a height of approximately two feet above grade. Each foundation will require approximately 80 CY of concrete to be delivered to the foundation location. Concrete will be delivered directly to the pole's location in concrete trucks with a capacity of up to 12 CY. Steel plating will be placed over excavated areas, where appropriate, to maintain vehicular and pedestrian traffic.

Pole Installation

Steel poles will be delivered in one or more sections to the pole site via flatbed truck and assembled on site using a small, truck-mounted crane. The poles will typically have three crossarms, supporting one circuit on one side of the pole. The crossarms will be bolted to the pole, and the insulators will be bolted to the crossarms. After assembly, a large crane will be used to lift and set the poles into place on the anchor bolts embedded in the concrete foundation. The nuts on the foundation will then be tightened and secured.

Overhead Conductor Installation

Conductor-stringing operations will be facilitated with the installation of sheaves or "rollers" on the structure crossarms during structure installation, using aerial manlifts (e.g., bucket trucks). The sheaves will 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 sheaves, a sock line (i.e., a small cable used to pull the conductor) will be pulled onto the sheaves using a helicopter. Once the rope is in place, it will be attached to a steel cable and pulled back through the sheaves. The conductor will then be attached to the cable and pulled back through the sheaves using conventional tractor-trailer pulling equipment located at the pull site. This process will be repeated for each conductor.

The work areas located along Pacific Highway will be used to facilitate the pulling activities. These work areas will be used to load the tractors and trailers with reels of conductors, and the trucks with tensioning equipment. These sites will also be used to collect conductor after it is removed from the existing lines and placed onto reels for transport off site. Attachment 3-A: Detailed Project Components Map details the locations of the work areas.

After the conductor is pulled into place, the sags between the structures will be adjusted to a pre-calculated level. The line will be installed with a minimum ground clearance of 35 feet from the ground to the lowest conductor. The conductor will then be clipped into the end of each insulator, the sheaves will be removed, and vibration dampers and other accessories will be installed. This process will be repeated for each conductor. A typical drawing of the conductor installation procedure is provided as Figure 3-19: Typical Overhead Conductor Installation.

Wood Pole Removal

The existing wood pole removal will begin with crews dismantling the hardware on the existing poles using cranes and aerial manlifts. The old poles will then be cut off at ground level and

transported off site by flatbed truck for disposal at an approved facility. The base of the poles will be abandoned in place if they cannot be removed. If the base of the poles are removed, then the voids will be backfilled and compacted with native soil, and the surrounding area will be restored.

Steel Pole Removal

The existing steel guy pole and associated guy wires will be dismantled and removed by cranes and aerial manlifts. The pole and guy cables will be transferred to a flatbed truck using a small, truck-mounted crane. The material will then be transported off site for recycling or disposal at an approved facility. Once the pole has been removed, the associated reinforced concrete foundation will be jack-hammered to approximately 12 to 18 inches below grade. All debris located near the vicinity of the foundation will be removed from the site and will be recycled or disposed of at an approved facility. The remaining hole will then be backfilled with material similar to the surrounding area and the site will be restored.

Dewatering

No dewatering is anticipated during construction. However, in the event that groundwater is encountered, it will occur during construction of the duct bank, handhole installation for the relocated distribution circuits and telecommunication system extension, or foundation excavation for the 69 kV loop-in. Should dewatering be necessary, the following construction dewatering procedures will be implemented during construction:

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

Cleanup and Post-Construction Restoration

With the exception of areas around all poles that will be kept clear of shrubs and other obstructions for inspection and maintenance purposes, all other areas that are temporarily disturbed will be restored to pre-construction conditions, to the extent practicable, following the completion of the 69 kV loop-in. Restoration will include grading to original contours, reseeding, and repairing the current pavement, as appropriate.

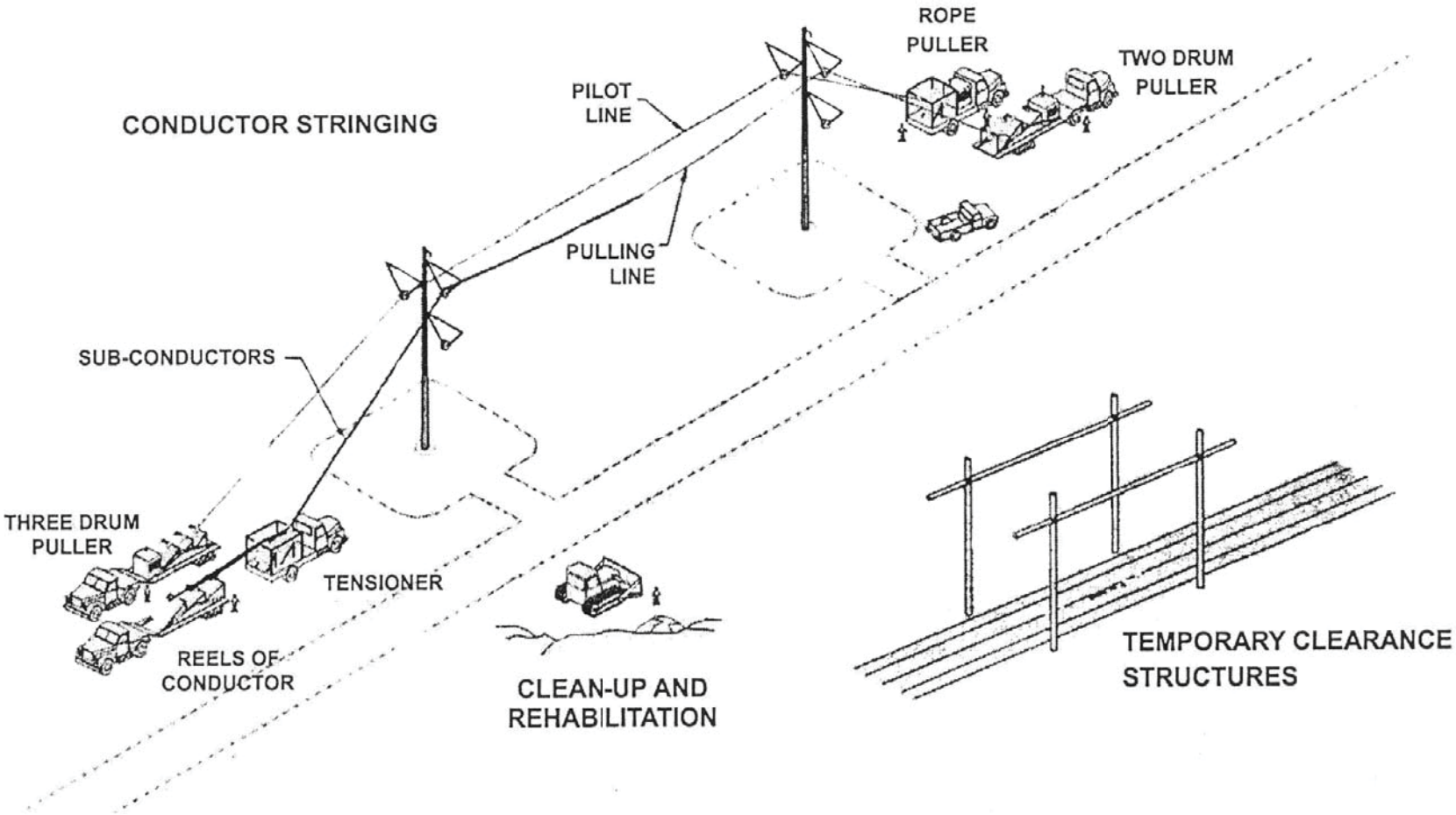


Figure 3-19: Typical Overhead Conductor Installation

3.6.4 Construction Equipment and Personnel

Construction equipment will include bulldozers, excavators, loaders, graders, and trucks for excavating, compacting, and hauling. All exported soil and new fill will be transported using street-legal dump/loader trucks. Concrete trucks, backhoes, ditch-witches, and skid steers will be used for the foundation and below-grade work. Portable cranes and heavy hauling trucks will be employed to bring in the 69/12 kV transformers. Substation crews, assist vehicles, forklifts, man lifts, and boom trucks will be used to construct the substation, along with pickup trucks and vans for the wiring and control testing of the substation equipment. Overhead and underground line trucks, assist vehicles, and cable dolly trailers will be used for the construction of the power line and distribution circuits. Table 3-4: Construction Equipment Requirements provides the anticipated construction equipment that will be used for each construction activity.

It is anticipated that up to 33 workers will be employed for the site development phase of the Proposed Project. Between 12 and 24 workers are expected during the foundation and below-grade work, as well as the construction of the proposed substation. The relocation of the 12 kV distribution circuits will require between 12 and 20 workers. Final testing and checkout will require nine electricians and/or engineers. A summary of the anticipated construction personnel by Proposed Project component has been included as Table 3-5: Construction Personnel Requirements.

3.6.5 Construction Schedule

Total construction time—including grading, construction, energizing and testing—is expected to take approximately 19 months, starting in January 2016. Substation construction will generally take place during normal work hours from Monday through Saturday. Due to the potential traffic impacts related to relocation of the distribution circuits, construction within Kettner Boulevard will occur during the evenings. In addition, some concrete pours may take place during an extended day, depending on the size of the pour. Transformer oil filling may also require vacuum pulls and oil installation, which in turn may require continuous work through the night. Actual cutovers of the power line and distribution circuits to the substation will be dependent on loading requirements and will be done in a manner that maintains uninterrupted service to customers. This may require part or all of this work to be done after normal business hours or on the weekend and/or nights. A detailed construction schedule has been included as Table 3-6: Proposed Construction Schedule.

3.7 OPERATION AND MAINTENANCE

3.7.0 Proposed Vine 69/12 kV Substation

Once the proposed Vine Substation is constructed and placed in service, it will be unmanned. The proposed Vine Substation will be monitored and controlled by SDG&E's Remote Control Center.

Ongoing maintenance will involve testing, monitoring, and repair of the equipment, as well as emergency and routine procedures to enable efficient provision of SDG&E services. As described previously, a boundary wall will be provided around the proposed Vine Substation and

Table 3-4: Construction Equipment Requirements

Vehicle/Equipment Type	Use	Hours Operating at Site/Day (per vehicle)	Quantity Required
Proposed Vine 69/12 kV Substation			
Site Development and Grading			
Scraper	Grade pads and access roads	7	4
Front-end loader	Load dump trucks and stockpile	6	2
Dump truck (12 CY)	Transport import/export material	7	25
Dozer (D6 or D8 or D9)	Grade pads and access roads	6	2
Excavator	Excavate and load materials	6	1
Water truck	Suppress dust	7	1
Compactor (824 or 834)	Compact soil	7	2
Skid steer loader	Move materials	3	2
Backhoe	Excavate and load materials	6	2
Ditch-witch	Excavate trenches	6	1
Maintenance truck	Maintain and refuel equipment	1	2
Paver	Pave access roads	6	1
Asphalt trucks	Deliver asphalt	1	8
Drum roller compactor	Compact access roads	6	2
Car/Pickup truck	Transport construction personnel	0	15
Retaining/Boundary Wall Construction			
Front-end loader (IT28)	Load dump trucks and stockpile	9	3
Excavator	Excavate and load materials	9	1
Water truck	Suppress dust	9	1

Vehicle/Equipment Type	Use	Hours Operating at Site/Day (per vehicle)	Quantity Required
Compactor (563 Ride-On)	Compact soil	9	1
Motor grader (blade)	Grade pads and access roads	9	1
Walk-behind compactor	Compact soil	9	3
Car/Pickup truck	Transport construction personnel	1	5
Delivery truck	Deliver materials	1	3
Maintenance truck	Maintain and refuel equipment	3	1
Below-Grade Construction			
Backhoe	Excavate and load materials	6	1
Loader	Move bulk material	6	2
Dump Truck (20 CY)	Transport impact/export material	3	2
Skid steer loader	Move rebar, equipment, masonry, and other materials	4	1
Water truck	Supress dust	3	1
Concrete truck	Deliver and pour concrete	0.5 (2 days per week for 4 months)	15
Ditch-witch	Excavate trenches	6	1
Car/Pickup truck	Transport construction personnel	0	15
Substation Equipment Installation			
Crew truck	Transport construction personnel	0	5
Boom truck	Place material and set steel	6	2
Manlift	Set steel and install equipment	6	1
Bucket truck	Set steel and install equipment	5	4
Car/Pickup truck	Transport construction personnel	0	8

Vehicle/Equipment Type	Use	Hours Operating at Site/Day (per vehicle)	Quantity Required
Cable dolly (trailer)	Transport reels of conductor	No Engine	1
Stringing rig (trailer)	Assist with conductor installation	No Engine	2
Oil rig (trailer w/generator)	Process transformer oil	24 (10 days for manufacturer setup)	1
Water truck	Supress dust	2	1
12 kV Distribution Relocation			
Duct Bank Construction and Vault Installation			
Crane 60 Ton	Lift and place materials	6	1
Crane Support	Support crane use	1	1
Bobcat	Excavate, move, and load materials	6	4
Backhoe	Excavate and load materials	8	3
Trackhoe	Excavate and load materials	8	1
Dump/Haul Truck	Transport impact/export material	1	9
Construction Truck	Transport construction personnel	2	3
Pickup Truck	Transport construction personnel	1	5
Pickup w/saw cutter trailer	Cut pavement	1	2
Concrete trucks	Deliver and pour concrete	1	7
Surface Machine	Repair pavement	6	1
Asphalt dump truck	Deliver and place asphalt	1	5
Dump Truck w/compressor & emulsion sprayer	Repair pavement	7	2
Roller	Compact pavement	4	2

Vehicle/Equipment Type	Use	Hours Operating at Site/Day (per vehicle)	Quantity Required
Cable Installation and Cutover			
Line Truck	Pull cable into position	1	1
Puller	Pull cable into position	2	1
Reel Trailer	Feed new cable to the puller or collect old cable	1	1
Splice Truck	Store splicing supplies	1	1
Pickup Truck	Transport construction personnel	1	1
69 kV Loop-In			
Foundation Installation			
Drill rig	Excavate soil	8	1
Forklift	Place materials	4	1
Pickup truck	Transport construction personnel	0	2
Concrete truck	Deliver and pour concrete	4	5
Boom truck	Place rebar cage	3	1
Dump truck	Haul excavated materials	4	1
Backhoe	Excavate soil	4	1
Generator	Provide power to the work area	4	1
Pole Installation and Removal			
Boom truck	Erect poles	8	1
Bucket truck	Erect poles and install conductor	8	1
Flatbed truck	Deliver poles and hardware	6	1
Jack hammer	Break up existing foundation	8	1

Vehicle/Equipment Type	Use	Hours Operating at Site/Day (per vehicle)	Quantity Required
Compressor	Power air tools	8	1
Conductor Installation and Cutover			
Pulling rig	Pull conductor into position	7	1
Wire truck/split reel	Deliver conductor reels	7	1
Boom truck	Move materials and install conductor	7	1
Bucket truck	Move materials and install conductor	7	2
Telecommunication System Extension			
Duct Bank Construction and Vault Installation			
Backhoe or Rockwheel	Excavate trenches	3	1
Dump truck (20 CY)	Haul excavated materials	3	2
Skid steer loader	Excavate, move, and load materials	3	1
Concrete/asphalt truck	Deliver concrete and asphalt	3	4
Cable Installation			
Line Truck	Pull cable into position	1	1
Puller	Pull cable into position	2	1
Reel Trailer	Feed new cable to the puller or collect old cable	1	1
Splice Truck	Store splicing supplies	1	1
Pickup Truck	Transport construction personnel	1	1

Vehicle/Equipment Type	Use	Hours Operating at Site/Day (per vehicle)	Quantity Required
Energization			
Testing and Commissioning			
Relay/telecommunication van	Test relay and telecommunications devices	3	3

Notes: Telecommunication cable installation will use the same equipment as the distribution cable installation; vehicles with an operating time of zero will be driven to the site and parked

Table 3-5: Construction Personnel Requirements

Activity	Position	Approximate Number
Proposed Vine 69/12 kV Substation		
Site Development and Grading Construction	Construction Manager	1
	Superintendent	1
	Foreman	2
	Operator	15
	Laborer	10
	Inspector	2
	Grade Checker/Surveyor	2
Retaining/Boundary Wall Construction	Construction Manager	1
	Superintendent	1
	Operator	4
	Laborer	8
	Inspector	1
Below-Grade Construction	Foreman	1
	Laborer	4
	Concrete Finisher	2
	Equipment Operator	1
	Haul Truck Driver	1
	Concrete Truck Driver	1
	Water Truck Driver	1
	Standby Electrician	1
Substation Equipment Installation	Crew Foreman	2
	Journeyman	8
	Apprentice	2
	Assistant	1
	Operator	2
	Wiring Foreman	1
	Wiremen	2
	Relay Inspector	2
	Relay Technician	4

Activity	Position	Approximate Number
12 kV Distribution Relocation		
Duct Bank Construction and Vault Installation	Foremen	1
	Inspector	1
	Journeyman	1
	Operator	4
	Laborer	13
Cable Installation and Cutover	Foreman	3
	Journeyman	6
	Apprentice	3
69 kV Loop-in		
Foundation Installation	Foreman	1
	Laborer	4
Pole Installation and Removal	Foreman	1
	Lineman	4
Conductor Installation and Cutover	Foreman	1
	Lineman	4
Telecommunication System Extension[5]		
Cable Installation	Foreman	1
	Inspector	1
	Journeyman	1
	Laborer	4
	Splicer	2
Energization		
Testing and Commissioning	Foreman	2
	Journeyman	6
	Engineer	1

[5] Construction personnel responsible for the installation of the 12 kV distribution relocation underground duct banks will also construct the underground duct banks required for the telecommunications system extension.

Table 3-6: Proposed Construction Schedule

Proposed Project Component	Activity	Approximate Duration (months)	Anticipated Start Date
Proposed Vine 69/12 kV Substation	Site Development and Grading	3	January 2016
	Retaining/Boundary Wall Construction	2	March 2016
	Below-Grade Construction	6	April 2016
	Substation Equipment Installation	10	September 2016
12 kV Distribution Relocation	Duct Bank Construction and Vault Installation	6	October 2016
	Cable Installation and Cutover	3	April 2017
69 kV Loop-In	Foundation Installation	0.5	November 2016
	Pole Installation and Removal	3.5	Mid-November 2016
	Conductor Installation and Cutover	2	January 2017
Telecommunication System Extension	Duct Bank Construction and Vault Installation	1	April 2017
	Cable Installation	1	May 2017
Energization	Testing and Commissioning	5	February 2017
	Energization	0.5	July 2017

all access gates will be locked to prevent the entry of unauthorized individuals. In addition, signage will be posted on the substation's exterior and at the entryway to restrict entry to authorized SDG&E personnel.

Routine maintenance is expected to require approximately six trips per year by a two- to four-person crew. Routine operations will require one or two workers in a light utility truck to visit the substation on a daily or weekly basis. It is anticipated that one annual major maintenance inspection will occur, requiring an estimated 10 personnel. It is anticipated that this inspection will take approximately one week to complete. Nighttime maintenance activities are not expected to occur more than once a year.

Landscape maintenance will occur on an as-needed basis for purposes of enhancing the streetscape along the perimeter of the substation and for safety and/or access. Such activities will generally require the presence of one to two maintenance vehicles and one or more employees to clear and/or trim vegetation to ensure that an adequate working space is maintained around the substation facilities.

3.7.1 12 kV Distribution Relocation

Maintenance may include replacement of damaged cables or connectors. Maintenance crews may consist of four to six personnel and require a tool truck, cable truck, assist truck, and/or trouble shooter truck. Routine inspections will occur annually to identify connection problems or inspection for equipment degradation.

3.7.2 69 kV Loop-In

It is anticipated that the power line circuit that loops into the substation will be inspected once per year. Non-emergency major maintenance may include the replacement of damaged insulators or other equipment. Maintenance crews may consist of as many as four people and may require a tool truck, an assist vehicle, and a large bucket lift truck. Insulators may require washing up to three times a year to prevent flashovers, equipment damage, and outages.

Operations and maintenance activities for the 69 kV loop-in will include routine inspection, maintenance, and repair activities. Both routine preventive maintenance and emergency procedures will occur in order to ensure that integrity of the system is maintained over the long term. Inspections may occur through ground patrols visiting the facilities. At a minimum, such routine inspections will occur annually to identify potential corrosion, equipment misalignment, loose fittings, and/or other mechanical problems.

3.7.3 Telecommunication System Extension

Typically, on-going or routine maintenance activities for fiber optic telecommunications cable is not required. As a result, the only activities associated with the operation and maintinence of this Proposed Project component will stem from emergency repairs or future changes to the fiber optic network design.

3.8 ANTICIPATED PERMITS AND APPROVALS

The CPUC is the lead California agency for the Proposed Project. SDG&E must comply with the CPUC's GO No. 131-D Section III-B, which contains the permitting requirements for the construction of the Proposed Project. This Proponent's Environmental Assessment is being prepared as part of an application to obtain a Permit to Construct (PTC) for the Proposed Project.

In addition to the PTC, SDG&E is required to obtain a number of other permits from federal, state, and local agencies. Table 3-7: Permit, Approval, and Consultation Requirements lists the permits, approvals, and licenses that SDG&E anticipates obtaining from jurisdictional agencies.

3.9 PROJECT DESIGN FEATURES AND ORDINARY CONSTRUCTION/OPERATING RESTRICTIONS

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

A description of many of the design features and ordinary construction and operating restrictions incorporated into all phases of the Proposed Project follows.

- **Safety and Environmental Awareness Program.** SDG&E will prepare a Safety and Environmental Awareness Program (SEAP) for project-personnel. The SEAP may include training for relevant topics such as:

    - General safety procedures,
    - General environmental procedures,
    - Fire safety,
    - Biological resources,
    - Cultural resources,
    - Paleontological resources,
    - Hazardous materials protocols and BMPs, and
    - Storm Water Pollution Prevention Plan (SWPPP).

    The program will include a multi-level approach that is commensurate to each worker's role on the Proposed Project. Supervisors, including construction foremen, will be required to actively participate in a training session to identify the specific requirements of the Proposed Project. SDG&E crews and other staff will also be given training and a review of the Proposed Project requirements prior to the commencement of any grading or construction work.

Table 3-7: Permit, Approval, and Consultation Requirements

Permit, Approval, or Consultation	Agency	Jurisdiction/Purpose
Federal Agencies		
Implementation of SDG&E's NCCP	USFWS	Activities within NCCP coverage areas that impact biological resources (required only for review of the Proposed Project, and no approval or permit is involved)
State Agencies		
Permit to Construct	CPUC	Overall project approval and California Environmental Quality Act (CEQA) review
National Pollutant Discharge Elmination System General Construction Permit	State Water Resources Control Board (SWRCB)	Storm water discharges associated with construction activities disturbing more than one acre of land
Implementation of SDG&E's NCCP	CDFW	Activities within NCCP coverage areas (required only for review of Proposed Project, no approval or permit is involved)
Local Agencies		
Right-of-Entry Permit	North County Transit District (NCTD)	Access to NCTD property during construction
Right-of-Entry Permit	MTS	Access to MTS property during construction
License Agreement	MTS	Operation and maintenance within, under, or over a railroad ROW
Temporary Occupancy Agreement	BNSF Railway	Access to BNSF property during construction
Utility Agreeement License	BNSF Railway	Operation and maintenance within, under, or over a railroad ROW
Encroachment Permit	City of San Diego	Construction, operation, and maintenance within, under, or over city or county road ROW
Grading Permit	City of San Diego	On-site grading activities

- **Galvanized Steel Structures.** New structures will utilize galvanized steel to avoid potential adverse effects due to high moisture content in coastal areas. The dulled aspect of the galvanized steel poles will also minimize the potential for visual impacts relating to glare.

- **Aerial Marking.** SDG&E will consult with the FAA concerning aerial marking and lighting requirements for all new overhead facilities. As required, lighting and aerial marking will be added to applicable overhead facilities, including new structures.

- **Construction Scheduling.** To the greatest extent practical, SDG&E will plan construction of the Proposed Project such that any potential overlap with other SDG&E projects will be coordinated such that net impacts will be minimized.

- **Hazardous Materials.** SDG&E will address potential impacts relating to the handling and use of hazardous materials through compliance with numerous state and federal regulations, including, but not limited to:

    - Federal Occupational Safety and Health Administration (OSHA) regulations for worker safety in hazardous material remediation and hazardous waste operations (29 CFR Section 1910.120),

    - Federal OSHA regulations hazard communication for workers (29 CFR Section 1910.1200),

    - Federal OSHA regulations for toxic air contaminants for workers (29 CFR Section 1910.1000),

    - CalOSHA regulations for worker safety in hazardous material remediation and hazardous waste operations (8 California Code of Regulations [CCR] 5192),

    - CalOSHA regulations for hazard communication for workers (8 CCR 5194), and

    - Department of Toxic Substances Control (DTSC) regulations implementing Resource Conservation and Recovery Act of 1976 (RCRA) and the California Hazardous Waste Control Law (HWCL) (22 CCR Division 4.5).

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

- **SDG&E Water Quality Construction BMP Manual.** SDG&E's Water Quality Construction BMPs Manual (BMP Manual) organizes and presents SDG&E's standard water quality protection procedures for various specific actions that routinely occur as part of SDG&E's ongoing construction, operation, and maintenance activities. The primary focus of most BMPs is the reduction and/or elimination of potential water quality

impacts during construction. The BMPs described within the BMP Manual were derived from several sources including the State of California guidelines as well as the California Departement of Transportation (Caltrans) Water Quality BMPs. The BMP Manual will be utilized during construction (by way of preparation and implementation of the SWPPP), operation, and maintenance of the Proposed Project to ensure compliance with all relevant SDG&E and government-mandated regulatory water quality standards.

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

    - Identification of pollutant sources and non-storm water discharges associated with construction activity

    - Specifications for BMPs that will be implemented, inspected, and maintained during Proposed Project construction to minimize erosion, the potential for accidental releases, and pollutants in the runoff from the construction areas (including pollutants from storage and maintenance areas, as well as laydown areas for building materials)

    - Specifications for spill response and implementation

    - A record of training provided to persons responsible for implementing the SWPPP

    - Reporting and record-keeping requirements

- During construction, the San Diego RWQCB would oversee and inspect for compliance with the Construction General Permit for the SWRCB, which is described further in Section 4.7 Hydrology and Water Quality. In addition, a Hazardous Waste and Spill Prevention Plan will be prepared prior to construction of the Proposed Project, and will be implemented during construction to ensure that any potential release or spill of hazardous materials is properly handled to reduce potential impacts to the less-than-significant level. All non-hazardous soil and grub material that will be transported off site may be disposed of at the Miramar Landfill, located approximately 7.2 miles northeast of the proposed Vine Substation.[6] All other construction waste (i.e., refuse,

[6] The Miramar Landfill is located at 5180 Convoy Street in the City of San Diego. The one-way truck trip distance required to access this facility is approximately 12.4 miles.

spoils, trash, oil, fuels, poles, pole structures, etc.) will be disposed of properly and in accordance with all applicable federal, state, and local laws regarding solid and hazardous waste disposal.

- **Temporary Lighting.** Temporary lighting at staging and storage areas will be directed on site and away from any sensitive receptors.

- **Visual Screening of Staging Yard.** Where the proposed Vine Substation site is visible to the public, opaque mesh or slats (or equivalent material) will be installed along a temporary construction fence that will soften the view of the site from roads, residences, and other public vantage points.

- **Materials.** Non-specular conductor and galvanized steel poles will be used in order to reduce potential glare.

- **Restoring Appearance of Temporarily Disturbed Areas.** When Proposed Project construction has been completed, all temporarily disturbed terrain will be restored, as needed and as appropriate, to approximate pre-construction conditions.

- **Soil Stabilization.** Disturbed areas must be stabilized per the SWPPP.

- **Fugitive Dust Control.** All unpaved construction areas will be watered up to two times daily during construction to reduce dust emissions and to meet SDAPCD Rule 55 requirements. SDG&E or its contractor will keep the construction area sufficiently dampened to control dust caused by construction and hauling, and will provide at all times reasonable dust control of areas subject to windblown erosion.

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

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

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

- **Mufflers.** Functioning mufflers will be maintained on all equipment.

- **Resident Notification.** Residents within 300 feet of the Proposed Project will receive notification of the start of construction at least one week prior to the start of construction activities within that area.

- **Construction Noise.** For the few locations where the Proposed Project could exceed the noise ordinances, as discussed previously, SDG&E would meet and confer with the City of San Diego to discuss temporarily deviating from the requirements of the Noise Ordinance (see Section 4.12.3 Impacts).

- **Standard Traffic Control Procedures.** SDG&E will implement traffic control plans to address potential disruption of traffic circulation during construction activities and address any safety issues. These traffic control plans will be prepared by the project engineer or contractor and subject to approval by the appropriate jurisdictional agency, such as the City of San Diego.

- **Encroachment Permits.** SDG&E will obtain the required encroachment permits from the City of San Diego for work within city streets and will ensure that proper safety measures are in place while construction work is occurring within and near public roadways. These safety measures include the use of flagging, proper signage, and orange cones to alert the public to construction activities near and within the roadway.

3.10 APPLICANT-PROPOSED MEASURES

In addition to the above project design features and ordinary construction/operating restrictions included as part of the Proposed Project, SDG&E will also incorporate the APMs that have been identified and developed specifically for the Proposed Project during the preparation of the PEA. Table 3-8: Applicant-Proposed Measures identifies the APMs and indicates which Proposed Project component they apply to. The applicable resource sections within Chapter 4 – Environmental Impact Assessment outline how and when the APMs will be applied to avoid or minimize impacts to a less-than-significant level.

Until final design is complete, and in some cases until installation occurs, utility projects must remain more flexible in the definition of their ultimate configuration and placement than most non-utility projects. The Proposed Project may encounter unique man-made and natural features or site-specific engineering challenges that could not be reasonably foreseen and specifically planned for in advance. The APMs take into consideration the potential for the Proposed Project to encounter such features or challenges and enhance SDG&E's ability to avoid or minimize future potential impacts to sensitive environmental resources.

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

3.10.0 Implementation of Applicant-Proposed Measures

SDG&E will be responsible for overseeing the assembly of construction and environmental teams that will implement and evaluate the Proposed Project APMs. SDG&E maintains an environmental compliance management program to allow for implementation of the APMs to be monitored, documented, and enforced during each Proposed Project phase, as appropriate. All

those contracted by SDG&E to perform this work will be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects.

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

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

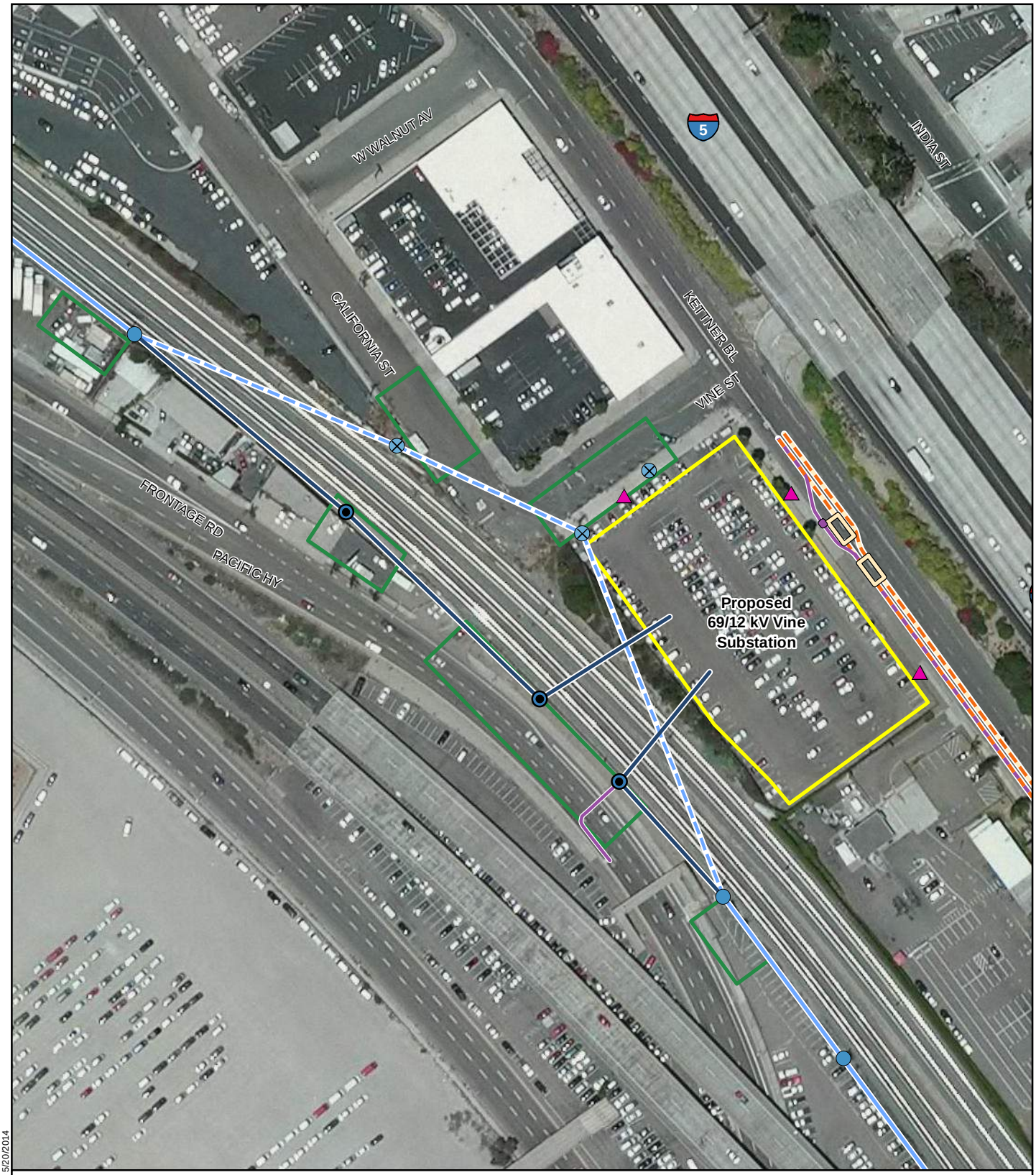
As the proposed APMs are implemented, environmental monitors from SDG&E will be responsible for the review and documentation of such activities. Field notes and digital photographs will be used to document and describe the status of APMs as necessary.

Table 3-8: Applicant-Proposed Measures

APM Number	Description	Justification	Proposed Project Component			
			Proposed Vine 69/12 kV Substation	12 kV Distribution Relocation	69 kV Loop-In	Telecommunication System Extension
CUL-01	An archaeological monitor will be present during ground-disturbing activities. In the event that cultural resources are discovered, the archaeological monitor will have the authority to divert or temporarily halt ground disturbance to allow evaluation of the potentially significant cultural resources. The archaeological monitor will contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The archaeological monitor, in consultation with SDG&E's Cultural Resource Specialist, will determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities in the vicinity of the discovery are allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program will be prepared and carried out to mitigate impacts. All collected cultural remains will be cleaned, cataloged, and permanently curated with an appropriate institution. All artifacts will be analyzed to identify function and chronology as they relate to the history of the area. Faunal material will be identified to the species level. A monitoring results report—which includes appropriate graphics and describes the results, analyses, and conclusions of the monitoring program—will be prepared and submitted to SDG&E's Cultural Resource Specialist and Environmental Project Manager following completion of the program. Any cultural sites or features encountered will be recorded on appropriate Department of Parks and Recreation forms. All forms and reports will be submitted to the SCIC at San Diego State University.	This measure will ensure that ground-disturbing activities are monitored so that impacts can be mitigated through proper investigation and recovery of cultural resources.	✓	✓	✓	✓
CUL-02	A paleontological monitor will be on site to observe excavation operations that involve the original cutting of deposits with high paleontological resource sensitivity (i.e., Bay Point Formation) to depths greater than 3.5 feet. In the event that fossils are encountered, the paleontological monitor will have the authority to divert or temporarily halt construction activities in the area of discovery to allow the recovery of fossil remains. The paleontological monitor will 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, will determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. When fossils are discovered, a paleontologist (or the paleontological monitor) will recover them, along with pertinent stratigraphic data. Fossil remains collected during monitoring and salvage will be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections. A final	This measure will ensure that excavation in areas containing Pleistocene-age deposits of the Bay Point Formation and Lindavista Formation are monitored so that impacts can be mitigated through proper investigation and recovery of cultural resources.	✓	✓	✓	✓

APM Number	Description	Justification	Proposed Project Component			
			Proposed Vine 69/12 kV Substation	12 kV Distribution Relocation	69 kV Loop-In	Telecommunication System Extension
	summary report will be completed that outlines the results of the mitigation program. The report will discuss the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils.					
HAZ-01	Prior to approval of the final construction plans for the Proposed Project, a project-specific Hazardous Materials and Waste Management Plan will be prepared for the construction phase of the Proposed Project to ensure compliance with all applicable federal, state, and local regulations. The Hazardous Materials and Waste Management Plan will reduce or avoid the use of potentially hazardous materials for the purposes of worker safety, protection from groundwater contamination, and proper disposal of hazardous materials. The plan will include the following information related to hazardous materials and waste, as applicable: • A list of the hazardous materials that will be present on site during construction, including information regarding their storage, use, and transportation; • Any secondary containment and countermeasures that will be required for onsite hazardous materials, as well as the required responses for different quantities of potential spills; • A list of spill response materials and the locations of such materials at the Proposed Project site during construction; • A list of the adequate safety and fire suppression devices for construction activities involving toxic, flammable, or exposure materials; • A description of the waste-specific management and disposal procedures that will be conducted for any hazardous materials that will be used or are discovered during construction of the Proposed Project; and • A description of the waste minimization procedures to be implemented during construction of the Proposed Project.	The Hazardous Materials and Waste Management Plan will reduce or avoid the use of potentially hazardous materials for the purposes of worker safety, protection from groundwater contamination, and proper disposal of hazardous materials.	✓			

ATTACHMENT 3-A: DETAILED PROJECT COMPONENTS MAP



Attachment 3-A: Detailed Project Components Map 1 of 6

Vine 69/12 kV Substation Project

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Transmission Work Area
- Proposed 12 kV Distribution Vault
- Proposed Telecommunication Handhole
- Existing 69 kV Pole
- Existing 69 kV Pole to be Removed
- Proposed 69 kV Pole
- Potential AT&T Interconnection Point
- Proposed 12 kV Underground
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
- Proposed 69 kV Overhead
- Existing 12 kV Duct Bank
- Proposed 12 kV and Telecommunications Duct Bank
- Proposed Telecommunications Duct Bank

Note: Underground alignments area preliminary and will not be finalized until final engineering is complete.

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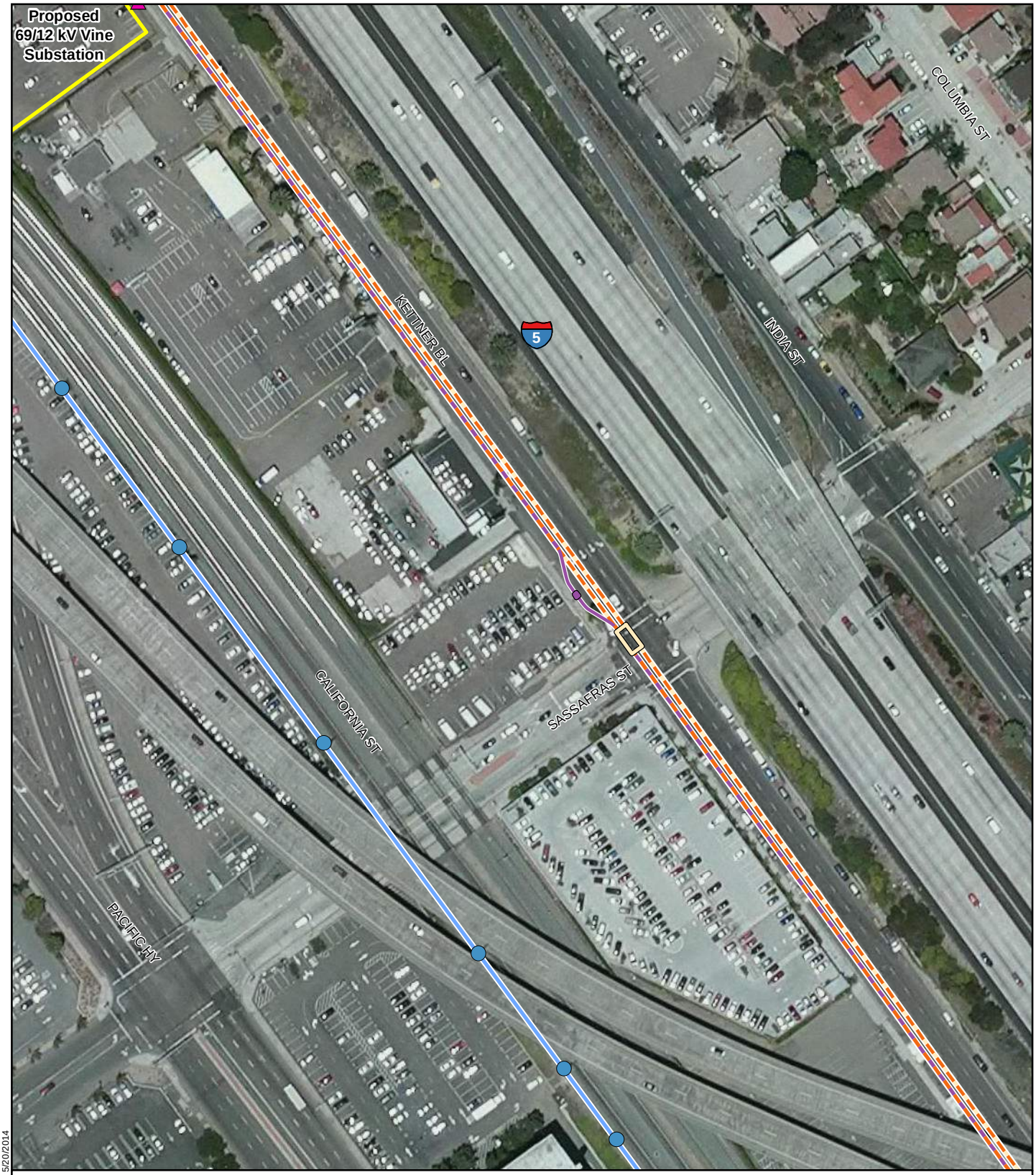

Attachment 3-A: Detailed Project Components Map 2 of 6

Vine 69/12 kV Substation Project

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Transmission Work Area
- Proposed 12 kV Distribution Vault
- Proposed Telecommunication Handhole
- Existing 69 kV Pole
- Existing 69 kV Pole to be Removed
- Proposed 69 kV Pole
- Potential AT&T Interconnection Point
- Proposed 12 kV Underground
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
- Proposed 69 kV Overhead
- Existing 12 kV Duct Bank
- Proposed 12 kV and Telecommunications Duct Bank
- Proposed Telecommunications Duct Bank

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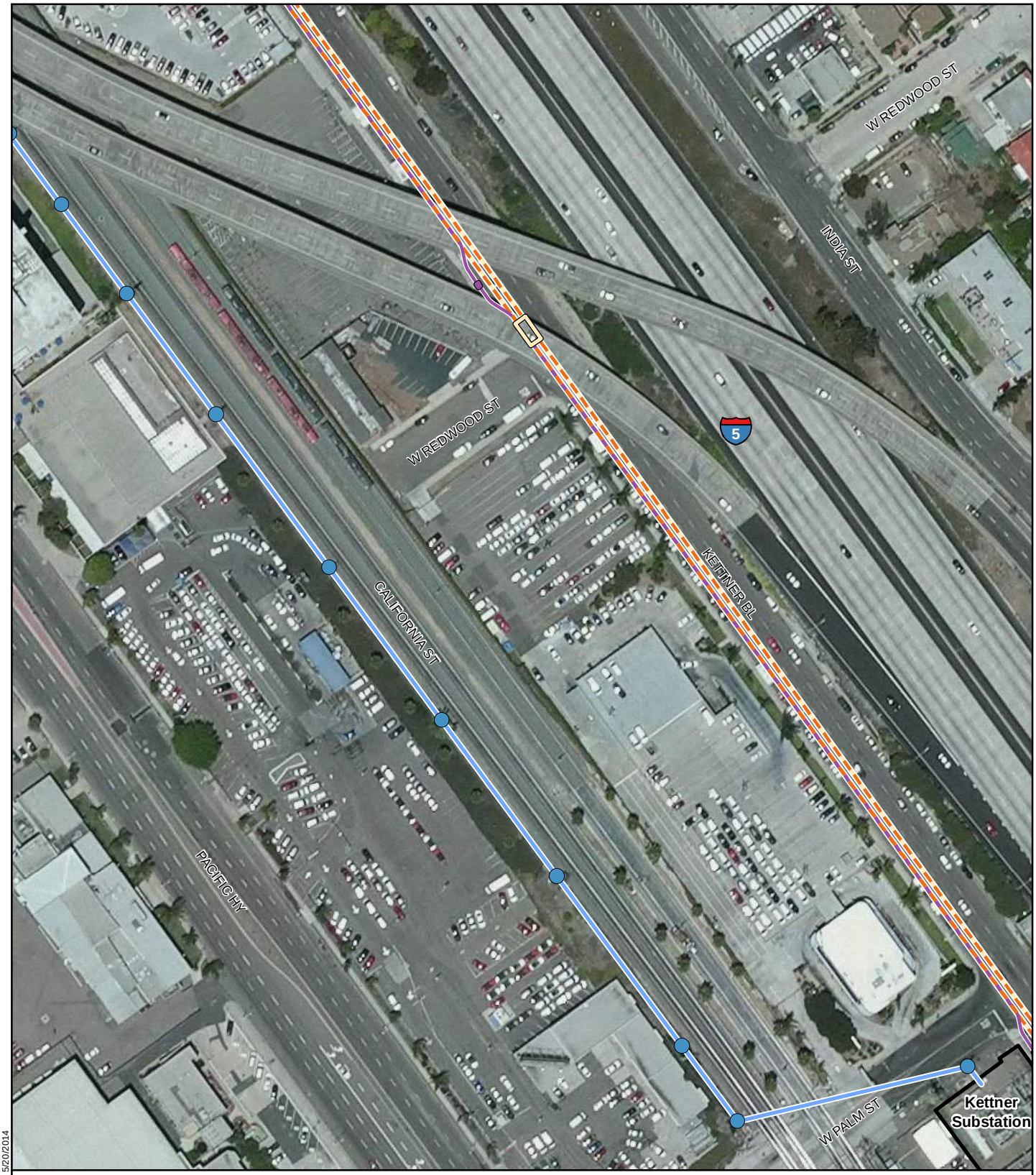

Attachment 3-A: Detailed Project Components Map 3 of 6

Vine 69/12 kV Substation Project

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Transmission Work Area
- Proposed 12 kV Distribution Vault
- Proposed Telecommunication Handhole
- Existing 69 kV Pole
- Existing 69 kV Pole to be Removed
- Proposed 69 kV Pole
- Potential AT&T Interconnection Point
- Proposed 12 kV Underground
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
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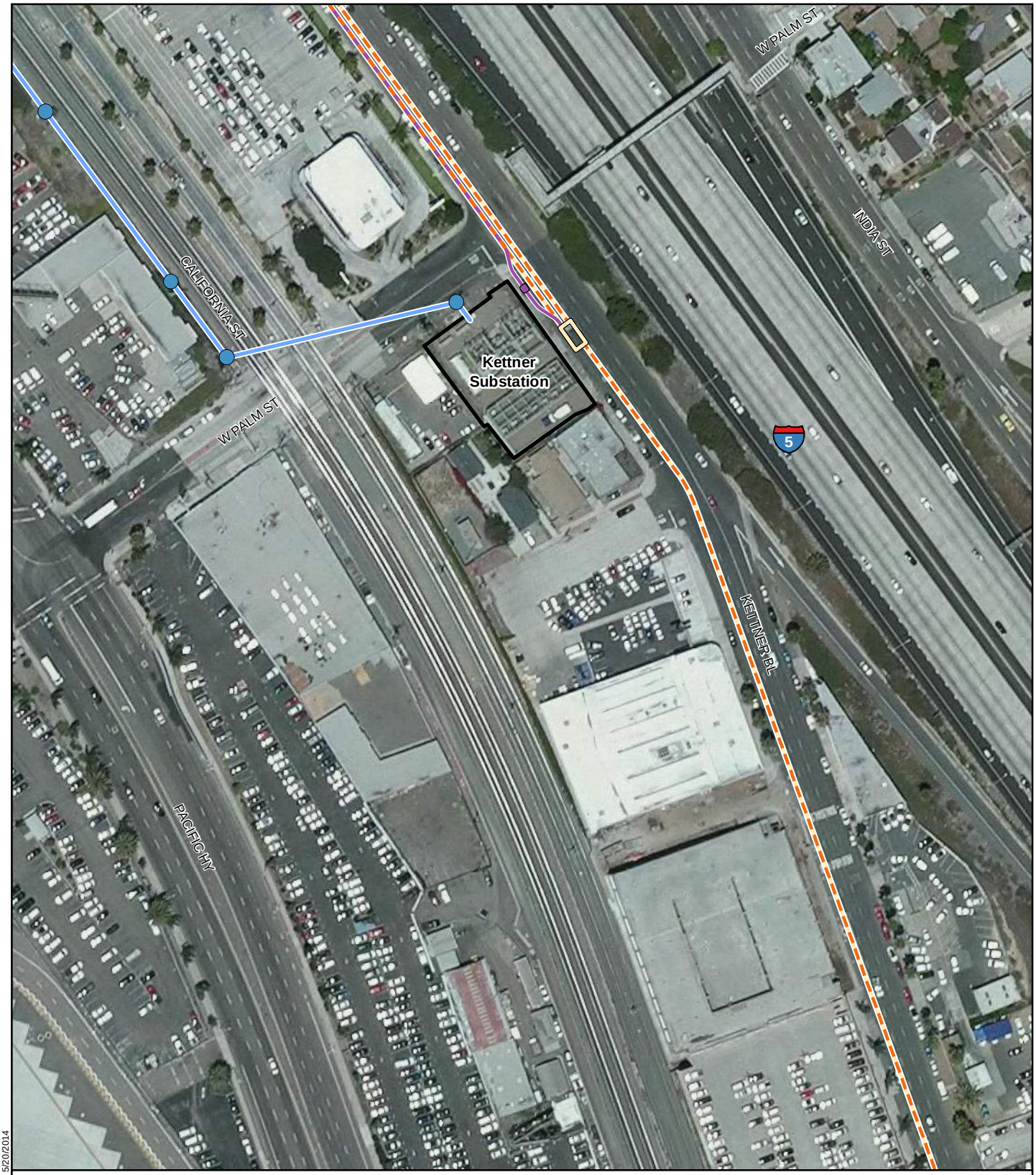

Attachment 3-A: Detailed Project Components Map 4 of 6

Vine 69/12 kV Substation Project

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Transmission Work Area
- Proposed 12 kV Distribution Vault
- Proposed Telecommunication Handhole
- Existing 69 kV Pole
- Existing 69 kV Pole to be Removed
- Proposed 69 kV Pole
- Potential AT&T Interconnection Point
- Proposed 12 kV Underground
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
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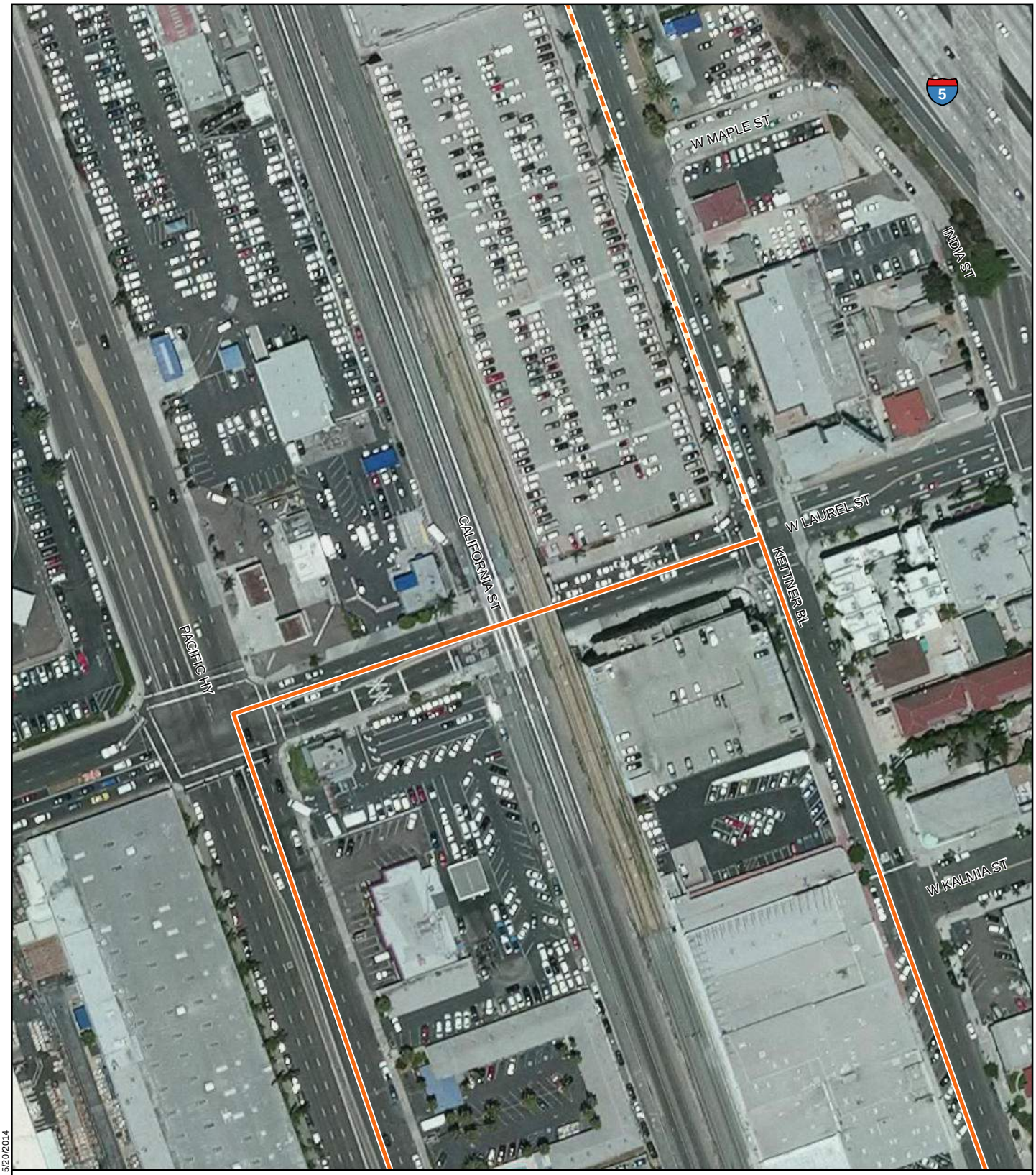

Attachment 3-A: Detailed Project Components Map 5 of 6

Vine 69/12 kV Substation Project

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Transmission Work Area
- Proposed 12 kV Distribution Vault
- Proposed Telecommunication Handhole
- Existing 69 kV Pole
- Existing 69 kV Pole to be Removed
- Proposed 69 kV Pole
- Potential AT&T Interconnection Point
- Proposed 12 kV Underground
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
- Proposed 69 kV Overhead
- Existing 12 kV Duct Bank
- Proposed 12 kV and Telecommunications Duct Bank
- Proposed Telecommunications Duct Bank

Note: Underground alignments area preliminary and will not be finalized until final engineering is complete.

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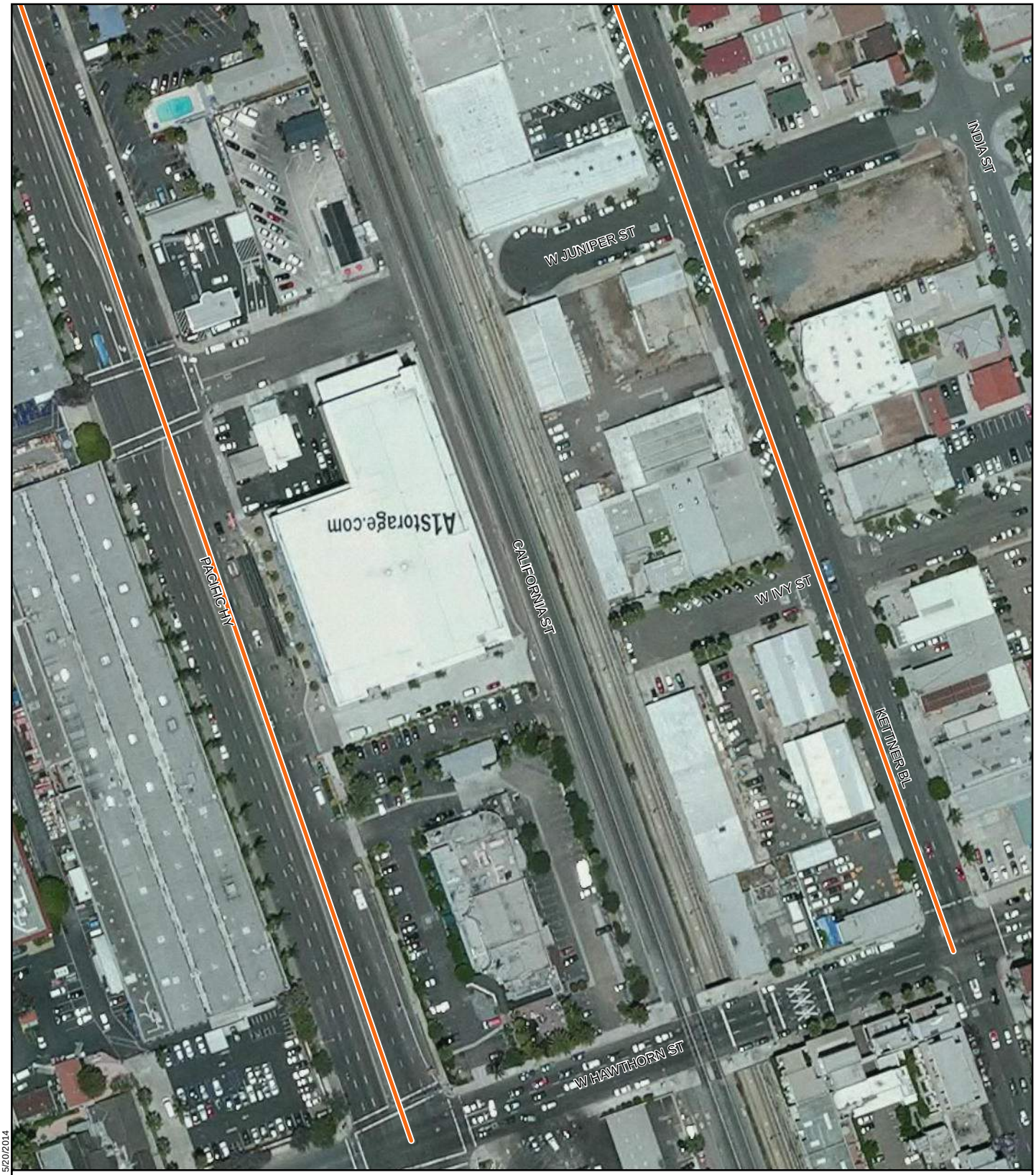

Attachment 3-A: Detailed Project Components Map 6 of 6

Vine 69/12 kV Substation Project

- Proposed Vine 69/12 kV Substation
- Existing Kettner Substation
- Transmission Work Area
- Proposed 12 kV Distribution Vault
- Proposed Telecommunication Handhole
- Existing 69 kV Pole
- Existing 69 kV Pole to be Removed
- Proposed 69 kV Pole
- Potential AT&T Interconnection Point
- Proposed 12 kV Underground
- Existing 69 kV Overhead
- Existing 69 kV Overhead to be Removed
- Proposed 69 kV Overhead
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- Proposed 12 kV and Telecommunications Duct Bank
- Proposed Telecommunications Duct Bank

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CHAPTER 4 – ENVIRONMENTAL IMPACT ASSESSMENT SUMMARY

4.0 INTRODUCTION

The following sections (4.1 through 4.17) evaluate the potential environmental impacts from construction and operation of the San Diego Gas & Electric Company Vine 69/12 Kilovolt (kV) Substation Project (Proposed Project). In accordance with the California Environmental Quality Act, the environmental impacts associated with the Proposed Project components are evaluated for the following resource areas:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Sections 4.1 through 4.17 include discussions of the existing conditions as they pertain to each resource area, as well as the Proposed Project's potential impacts to these resources. In addition, at the beginning of each section, a checklist summarizing the level of impact (i.e., No Impact, Less-than-Significant Impact, Less-than-Significant Impact with Mitigation Incorporated, and Potentially Significant Impact) to these resource areas, according to the significance criteria used for analysis, has been included. Section 4.18 Cumulative Analysis discusses past, present, and reasonably foreseeable future projects within the Proposed Project area and the Proposed Project's potential to contribute to a significant cumulative effect.

The Proposed Project will result in no impacts to the following resource areas:

- Agriculture and Forestry Resources
- Land Use and Planning
- Minerals
- Population and Housing
- Public Services

- Recreation

The Proposed Project will result in less-than-significant impacts to the following resource areas:

- Aethetics
- Air Quality
- Biological Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Transportation and Traffic
- Utilities and Service Systems
- Cumulative Impacts

The Proposed Project will result in potentially significant impacts to the remaining two resource areas; however, with the implementation of applicant-proposed measures (APMs), these impacts will be reduced to a less-than-significant level. A brief summary of these resource areas and the primary impacts that will result from the Proposed Project are provided as follows:

- Cultural Resources – Potential for discovery and damage to unknown cultural resources resulting from grading and excavation activities

- Hazards and Hazardous Materials – Temporary and permanent impacts associated with the transport and use of hazardous materials, as well as the potential release of hazardous materials resulting from the operation of the proposed Vine Substation

APMs will be implemented to ensure that all potential impacts are reduced to a less-than-significant level and are discussed in their relevant sections. In addition, these APMs are summarized in Table 3-8: Applicant-Proposed Measures in Chapter 3 – Project Description.