

# SDG&E Vine 69/12-kV Substation Project

## FINAL CONSTRUCTION COMPLETION REPORT

Prepared for  
California Public Utilities Commission



Prepared by



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## 1.0 Introduction and Project Overview

This Final Construction Completion Report has been developed to summarize the construction and compliance activities conducted for the San Diego Gas and Electric (SDG&E) Vine 69/12-kV Substation Project. The Vine Substation Project involved the following:

- Construction of the proposed Vine Substation, located at 3548 Kettner Boulevard at the corner of Vine Street and Kettner Boulevard.
- Relocation of several 12-kV distribution circuits within City of San Diego public streets
- Loop-in of an existing 69-kV power line to the new Substation,
- Upgrade of an existing telecommunication system

The California Public Utilities Commission (CPUC), as the Lead Agency for the Project, conducted the environmental review process and granted final approval of the project. A Mitigated Negative Declaration (MND) was prepared to inform the CPUC and public of the potential project impacts and available mitigation. On January 18, 2016, the CPUC released a Final IS/MND for the Vine Substation Project (Decision 16-05-008) and a Notice of Determination was submitted to the State Clearinghouse (SCH #2015091059). The Mitigated Negative Declaration (MND) was prepared by Aspen Environmental Group under contract to the CPUC, in accordance with the California Environmental Quality Act (CEQA), to inform the public and to meet the needs of local, State, and federal permitting agencies in considering the project proposed by SDG&E. Aspen Environmental Group implemented the Mitigation Monitoring Compliance and Reporting Plan (MMCRP) to ensure compliance with project mitigation measures, compliance plans, and permit conditions during all phases of construction.

Chapter 1, Introduction and Project Overview, provides a brief overview of the Vine Substation Project and project approvals granted by the CPUC. In addition, Chapter 1 outlines the role and responsibility undertaken by Aspen Environmental Group as the mitigation monitoring team, including pre-construction compliance and Notice to Proceed (NTP) request review. The methods established for addressing non-compliance issues, and processing Minor Project Changes (MPCs) are also discussed.

NTP #1 was issued by CPUC on June 8, 2016, for the entirety of the Vine 69/12-kV Substation Project, including construction of the Vine Substation, 12-kV distribution relocation, 69-kV Loop in, and telecom system upgrades.

Chapter 2 of this report discusses the Vine Substation portion of the project. Chapter 3 of this report discusses the 12-kV underground work. Chapter 4 provides a summary of post-construction requirements for the project, and Chapter 5 presents monitoring issues, lessons learned, and recommendations for future mitigation monitoring plans.

Construction of the Vine Substation Project began in August 2016 and is projected to be completed in the first quarter of 2018.





## 1.1 Overview of the SDG&E Vine Substation Project

Increased commercial and residential growth in the downtown area is loading SDG&E's existing substations servicing downtown San Diego to their maximum capacities. Recent load additions in downtown and the surrounding area include an expansion of San Diego International Airport and construction of Ballpark Village, as well as a new mixed-use development which is expected to commence construction at the end of 2015. Of particular concern is Kettner Substation, which 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. SDG&E has determined that the proposed Vine Substation is needed to offload the existing substations and to maintain its current reliability of service to existing and new customers in downtown and the surrounding areas.

## 1.2 Role of Aspen Monitoring Team

The Aspen Monitoring Team was composed of the MND Preparation Manager (Lisa Blewitt), Monitoring Project Manager (Vida Strong), and Environmental Monitors (EM) (Jenny Slaughter and Jamison Miner).

Aspen's MND Preparation Manager, Lisa Blewitt, oversaw the preparation of the MND and was responsible for all contractual matters.

Aspen's Monitoring Project Manager, Vida Strong, supervised all project monitoring activities. She was responsible for direct communication with the CPUC, including preparation of weekly reports. Other responsibilities included managing the field monitoring team, reviewing compliance documentation, reviewing resource buffer reduction requests, coordinating weekly conference calls, and preparing recommendations for CPUC consideration on Project NTPs and MPC Requests.

The CPUC EM, Jenny Slaughter reviewed pre-construction compliance materials for completeness and performed in-field monitoring for compliance with mitigation measures, approved plans, and agency requirements during all construction activities. Resource specialists who assisted in the preparation of the MND provided their assistance when required. In the field, the CPUC EM served as the main point of contact for SDG&E. The CPUC EM prepared and submitted daily and weekly compliance report to the Aspen Project Manager. The CPUC EMs also provided field input on MPC and Temporary Extra Workspace (TEWS) requests. The CPUC EMs have been trained in a number of disciplines, with degrees in biological sciences and CPUC EM, Jenny Slaughter, holds current Qualified SWPPP Practitioner/Developer (QSP/QSD) certificates.

## 1.3 Pre-Construction Compliance Review and Notices to Proceed

As part of the NTP request, SDG&E provided Detailed Project Components Maps (dated 11/20/15) which depicted the activities requested and the temporary workspaces required to construct each component, as approved by the Project's Final MND. The NTP request also included a Pre-Construction Mitigation Measures Status Report Table which provided preconstruction compliance information for the issue areas addressed by the Vine 69/12-kV Substation Project Substation Final MND. These measures were detailed in the MMCRP. In addition, several specific compliance plans, memos and reports were submitted to satisfy local agency requirements, including:

- Complaint-and-resolution documentation for public project hotline (no complaints were received).
- Notice to property owners within 300 ft. of anticipated noise impacts.
- Geotechnical Study
- Final Paleontological Resource Recovery Report

- Traffic Control Plan and Implementation Program
- Training logs/sign in sheets
- Preconstruction biological resource survey results for special status species
- Weed Control Plan
- Storm Water Pollution Prevention Plan (SWPPP)
- Worker Environmental Awareness Program training materials
- Dust Control Plan
- Surface Treatment Plan
- Landscaping Plan for Vine Substation
- Biological, Archaeological, and Paleontological Monitor resumes

These compliance submittals were reviewed by Aspen prior to and during construction to ensure that appropriate environmental protection occurred. In addition, Aspen tracked the necessary permitting requirements to ensure that all the applicable agency permits had been issued prior to construction. Permits issued for the project included:

#### ***State***

- **California Public Utilities Commission (CPUC):** MND Certification; Permit to Construct; Notice to Proceed
- **State Water Resources Control Board (SWRCB):** National Pollutant Discharge Elimination System General Construction Permit.
- **California Department of Transportation (Caltrans):** Encroachment Permit

#### ***Local***

- **City of San Diego:** Grading, noise abatement, and roadway encroachment permits. Substation Landscaping Plan, Traffic Control Plan.
- **North County Transit District:** Right-of-Entry Permit.
- **Metropolitan Transit System:** Right-of-Entry Permit, License Agreement.

#### ***Environmental Setting***

**Biological Resources:** The majority of the Project footprint consists of developed land characterized by light to medium-industrial, commercial, and residential land uses. Vegetation is limited to ornamental landscaping and disturbed habitat. There is no habitat for special-status plant species within the Project footprint; no special-status plants were found during field surveys. Special-status wildlife species were not detected during surveys of the Project; however, two special-status wildlife species had a low potential to occur within the Project area: Peregrine falcon and Mexican long-tongued bat. Applicant Proposed Measure (APM) BIO-1 required that nighttime emergent bat surveys be conducted no more than five days prior to the removal of the palm trees located at the Vine Substation site to identify the presence of bats and none were identified.

**Cultural and Paleontological Resources:** As required by APMs CUL-01 and CUL-02, archaeological and paleontological resource monitoring took place. An archaeological monitor(s) familiar with the types of prehistoric and historic resources that could be encountered within the Project area was present during initial ground-disturbing activities associated with the Vine Substation. In addition, an archaeological monitor(s) was present during all trenching activities associated with the underground 12-kilivolt lines along Kettner Boulevard. A paleontological monitor was on site to observe excavation operations that involve the original cutting of deposits to depths greater than 3.5 feet within areas classified as having high paleontological resource sensitivity. A Paleontological Resource Mitigation Plan (PRMP) was prepared by SDG&E

and approved by the CPUC. As part of the Plan, all construction personnel received a Worker's Environmental Awareness training module on paleontological resources.

**Hazards and Hazardous Materials:** During construction, hazardous materials such as cleaning solvents, paints, adhesives, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids were used and stored in construction staging areas. Spills and leaks of hazardous materials during construction activities could result in soil or groundwater contamination. As proposed, all hazardous materials were stored, handled, and used in accordance with applicable regulations, worker training on hazardous material protocols was provided, and best management practices (BMPs) were employed. A project specific Hazardous Materials and Waste Management Plan was prepared by SDG&E and implemented during construction.

**Air Quality:** A Fugitive Dust Control Plan was prepared by SDG&E and approved by the CPUC. The Plan was implemented during construction.

**Noise:** Construction activities associated with 12-kV duct bank construction and vault installation occurred along the Project route near existing residences. Each phase of duct bank construction progressed down the streets. Mitigation Measure N-1 of the Vine 69/12 Kilovolt Substation Project's Final MND required that SDG&E obtain approval of a Construction Noise Control Plan from the City of San Diego and to provide a final copy of the plan to the CPUC. The City of San Diego approved the Project's Construction Noise Control Plan on April 19, 2016, and the Construction Noise Control Plan was provided to the CPUC.

**Transportation/Traffic:** SDG&E submitted Construction Traffic Control Plans (TCPs) to the City of San Diego and California Department of Transportation (Caltrans), as applicable, and provided the City and Caltrans stamped, approved TCPs to the CPUC. The appropriate permits and/or agreements from the City of San Diego, North Coast Transit District (NCTD), and San Diego Metropolitan Transit System (MTS) were obtained prior to construction and provided to the CPUC, as well as documentation demonstrating that coordination with emergency service providers and bus transit authorities was conducted.

## 1.4 Compliance Monitoring

Compliance monitoring by the CPUC EM is intended to chronicle and document SDG&E's compliance with project mitigation measures, compliance plans, and permit conditions. Compliance monitoring is implemented to minimize or eliminate potential significant impacts and to protect environmental resources. Per the MMCRP, there are four levels of compliance:

- **Level A Compliance.** All mitigation measures and permit conditions are being complied with. No corrective action is necessary.
- **Level B Non-Compliance.** One aspect of a mitigation measure is not in compliance, resulting in only partial implementation of a measure or permit condition, but there has been no significant impact as a result.
- **Level C Non-Compliance.** One or more of the aspects of a mitigation measure or permit condition are not in compliance, and the implementation of a mitigation measure is deficient or non-existent, resulting in potentially significant impact(s) or an immediate threat of major, irreversible environmental damage or property loss.
- **Level D Stop Work Order.** The CPUC has the authority to shut down project construction. Stop Work Orders halt construction and are issued when a compliance violation continues over an extended period of time, is repeated several times, or when a violation could cause harm to a resource.



Non-compliance incidents were documented by the CPUC EM, and were communicated to SDG&E. Additionally, SDG&E reported issues/incidents to the CPUC EM and the CPUC as appropriate. The compliance record for the Vine Substation Project is discussed in Chapters 2 and 3.

## 1.5 Coordination and Communications

In-field communications were conducted by the CPUC EM with SDG&E’s Lead Environmental Inspectors (Lead EIs) and other project personnel. Field observations were logged by the CPUC EM. Weekly reports were submitted to the CPUC documenting compliance, requested project changes, construction progress, and applicant submittals.

## 1.6 Minor Project Changes (MPCs)

Five TEWS and three MPC requests were submitted by SDG&E to the CPUC for changes in the approved project description. The requests were first reviewed by Aspen for completeness. When complete, the request was analyzed, including field verification and resource/local agency consultation, to determine if new impacts or an increase in significant impacts would result. After analysis of the request, Aspen prepared a written recommendation of approval for the CPUC. As appropriate, mitigation measures or other agency conditions were required by the CPUC to avoid, or reduce to a less than significant level, any identified impacts. The TEWS and MPCs submitted for the SDG&E Vine Substation Project are summarized in Table 1 below.

**Table 1. Temporary Extra Work Spaces (TEWS) and Minor Project Changes (MPCs)**

| TEWS/<br>MPC                              | Date<br>Requested | Date<br>Issued | Phase             | Description   |
|---|-------------------|----------------|-------------------|---|
| <b>Temporary Extra Work Spaces (TEWS)</b> |                   |                |                   |   |
| TEWS #1                                   | 07/20/16          | 07/20/16       | 12-kV Underground | Requests the use of an existing graveled portion of the Witherby Substation for equipment and materials staging.  |
| TEWS #2                                   | 07/21/16          | 07/21/16       | 12-kV Underground | The use of a paved, private parking area along Laurel Street for the large excavator.                             |
| TEWS #3                                   | 08/15/16          | 08/16/16       | 12-kV Underground | Use of paved, private parking lot (currently empty) for Underground contractor’s equipment and materials storage. |
| TEWS #4                                   | 06/21/17          | 06/22/17       | 12-kV Underground | Use of three areas for equipment storage near the India Street Underground.                                       |
| TEWS #5                                   | 08/29/17          | 08/29/17       | 12-kV Underground | Use of staging area at dead end of Redwood Street.  |
| <b>Minor Project Changes (MPCs)</b>       |                   |                |                   |   |
| MPC #1                                    | 08/31/16          | 09/09/16       | 12-kV Underground | Continued use (beyond 60 days) of Kettner and Witherby yards.   |
| MPC #2                                    | 04/24/17          | 05/12/17       | 66 kV Loop in     | Replacement of wood pole with TSP   |
| MPC #3                                    | 11/07/17          | 11/08/17       | 12-kV Underground | Continued use (beyond 60 days) of Staging area on Redwood Street.   |

## 2.0 Vine 69/12-kV Substation

### 2.1 Description of the Vine Substation

The proposed Vine Substation measured approximately 305 feet by 180 feet, requiring approximately 1.3 acres of a 1.5-acre parcel located on the southwest corner of Kettner Boulevard and Vine Street.

Build-out of the Vine Substation would occur in two phases, initial and ultimate build-out. The initial build-out of the proposed substation to provide 90 MVA of capacity included the following major equipment:

- 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

In the future, the Substation is planned to be a 120-MVA, 69/12-kV distribution substation. This work was not conducted as part of the 2016-2018 construction effort. The substation would eventually include the following major equipment (includes the initial equipment noted above):

- 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

#### ***Substation Lighting***

Substation lighting was provided by a mixture of high-pressure sodium and metal halide lights that would be installed to adhere to SDG&E standards.

#### ***Substation Access***

The primary Substation access is from Vine Street which required relocation of the existing driveway approximately 50 feet southwest. An existing driveway from Kettner Boulevard was also be relocated, approximately 125 feet southeast, and provides secondary access to the site. The two gates were installed that are locked and monitored remotely to limit access to only authorized personnel. Warning signs were posted on the Substation wall and gates in accordance with federal, State, and local safety regulations.

The access road within the proposed Vine Substation was asphalt-paved with an approximate width of 30 feet. The road connects the primary and secondary access to the control shelter, located in the southern corner of the proposed Vine Substation. This interior road is approximately 425 feet long, occupying approximately 0.3 acres.

### ***Substation Perimeter***

An approximately 10-foot-tall, “La Paz” brown colored masonry wall was installed that encloses the entire Substation. Two approximately 10-foot-tall and 30-foot-wide sliding gates were installed within the perimeter wall to provide primary and secondary access to the Substation. The gates were constructed from chain-link material and designed to accommodate standard brown slats. Five strands of barbed wire were installed horizontally along the interior of the wall and gates so as to not be visible from the exterior of the substation. Following construction of the proposed Vine Substation wall, landscaping and irrigation was installed. Landscaping around the proposed Vine Substation property was designed to filter views for the surrounding community and other potential sensitive receptors, consistent with SDG&E’s Landscape Plan. The conceptual Landscape Plan called for informal clusters of small and medium height shrubs outside the perimeter wall along Vine Street and Kettner Boulevard (SDG&E, 2014). Water supply for the irrigation will be provided by a permitted municipal service connection to a water supply system that can provide an adequate supply to the site. During construction, the landscape plan was modified to include the artificial ivy along the wall facing the railroad. After the wall facing Kettner Boulevard was tagged with graffiti, the plan was again modified to include installation of the artificial ivy along the entire outside wall, to deter vandalism.

### **33 kV Retrofit/Decommissioning**

As part of the Downs Substation expansion work, existing 33 kV structures were either upgraded or decommissioned. This included removal of two existing 33 kV transformers and one spare 33 kV transformer, and associated structures and underground components. Additionally, existing circuit breakers were swapped out for new, modernized circuit breakers.

## **2.2 Construction of the Vine Substation**

Construction of the Vine Substation began on August 17, 2016, and is expected to be completed in May 2018 after the transformer from the Kettner Substation gets delivered to the Vine Substation. Civil construction activities are being conducted by Patriot Engineering. The below grade structural portion of the Substation construction was conducted by DCX. Above ground construction is being performed by Kearney (SDG&E).

After preconstruction surveys were conducted, crews conducted clearing of vegetation at the site. Several trees were removed from the site and hauled offsite. After that, pavement and asphalt removal occurred and the existing perimeter wall was removed. During the wall removal, construction crews identified a buried foundation located within the Substation site. The foundation was



*Photo 1. Vegetation clearing at the Vine Substation site included the removal of several palm trees*



*Photo 2. Removal of the asphalt from the substation site, previously used as an airport parking lot*

tested for asbestos and once negative results were received, foundation removal began. During removal of a light pole foundation, construction crews encountered possible contaminated soils. The excavation was covered up, marked for avoidance, and was evaluated.

Consistent with APM CUL-02, A paleontological monitor was on site to observe excavation operations that involved the original cutting of deposits with high paleontological resource sensitivity (i.e., Bay Point Formation) to depths greater than 3.5 feet. Some fossils and historic artifacts were identified during the construction and will be provided in final reports once the Project has been completed.



*Photo 3. After the unmarked foundation was evaluated, the crews continued to remove the feature*



*Photo 4. Grading of the substation site*

Construction of the Vine Substation was delayed after an unmarked storm drain was located within the footprint of the grading area. Significant time was spent coordinating with the City of San Diego to determine if the pipe could be relocated or capped. During this time, the contractor had to deal with nuisance water that flooded the site causing delays. Ultimately, Patriot crews capped the drain pipe at the edge of the project limits so that construction could proceed. Once the initial grubbing had been completed, a temporary fence was installed around the property. When grading was completed, construction of the perimeter wall was initiated and the interior was rocked for stabilization. Patriot completed the majority of the civil work and DCX mobilized to the site to install foundations. Once the foundations were completed, construction of the overhead components and transformer delivery took place.





Photo 5. Construction of the perimeter substation wall



Photo 6. Construction of the interior substation components

## 2.3 Environmental Compliance during the Vine Substation Construction

The CPUC EM conducted spot checks of the Vine Substation on a regular basis and reports were submitted to the CPUC to document construction, monitoring, and compliance activities.

Worker Environmental Awareness Trainings were held for new workers to the Project site and sign-in sheets were submitted to the CPUC on a regular basis. SDG&E Environment Inspectors (EI) spot checked construction during construction activities. No special-status species or nesting birds were observed during construction at the Vine Substation.

Compliance incidents observed during construction of the Vine Substation were minor in nature and are summarized in Table 2.

Dust suppression was implemented appropriately during grading activities. Stormwater BMPs were utilized appropriately to protect soil stockpiles and contain work areas. Driveway aprons were inspected for track-out and swept as needed. Spill kits were kept on site and all spills were reported, cleaned up, and disposed of properly. New equipment arriving on site was inspected for leaks and parked in the staging area or substation area. Concrete washouts were properly contained.



Photo 7. Flooding after the accidental hydrant disconnection along Kettner Boulevard

Crews were using water from a nearby hydrant located on Kettner Boulevard which was connected to a hose that reached the substation site. After filling of a water truck located at the substation site, the driver accidentally drove away with the hose still attached which led to the hose breaking off the hydrant, which then sprayed water across Kettner Boulevard, and partially flooded onto the site.

Table 2 provides a summary of environmental incidents that occurred and were reported by the CPUC EM and SDG&E.

**Table 2. Incidents and CPUC Project Memoranda and Non-Compliance Reports**

| <b>Incident/<br/>PM/NCR</b> | <b>Date<br/>Issued</b> | <b>Phase</b>    | <b>Description</b>  |
|-----------------------------|------------------------|-----------------|---|
| Incident                    | 09-21-16               | Vine Substation | Patriot crews received a Notice of Violation (NOV) from the City of San Diego regarding the non-storm water release into a storm drain that occurred on September 12 after a water truck drove off while still connected to a nearby hydrant. |
| Incident                    | 09-27-16               | Vine Substation | On September 27, the CPUC EM observed fugitive dust from scraping operations leaving the project site and blowing onto Kettner Blvd. A water truck followed the scraper, but was not able to control the fugitive dust                        |
| Incident                    | 10-11-16               | Vine Substation | The CPUC EM observed a small generator and a fuel container placed onto the ground without secondary containment.   |

## **2.4 Temporary Extra Work Spaces (TEWS) and Minor Project Changes (MPCs) Requested for Vine Substation Construction**

No Temporary Extra Work Space or Minor Project Changes were requested for the Vine Substation construction.

## **2.5 Final Inspection of Vine Substation**

Because Aspen’s contract for the Vine Substation Project ended before the completion of construction, a final inspection could not be conducted.



## 3.0 12-kV Distribution Relocations

### 3.1 Description of the 12-kV Distribution Relocations

As indicated in Table 3 (Distribution Relocation Summary), approximately nine existing distribution circuits were intercepted and relocated to the proposed Vine Substation. As part of the relocation process, some of the circuits were renumbered.

The relocated distribution circuits would generally travel within public right-of-way (ROW) along the following streets:

- Kettner Boulevard between Vine Street and West Hawthorn Street;
- Vine Street between California Street and India Street;
- India Street between Vine Street and West Redwood Street or India Street between Vine Street and West Palm Street (optional alignment to avoid conflicts with a proposed sewer line);
- West Redwood Street (original alignment) or West Palm Street (optional alignment) between India Street and Columbia Street;
- Columbia Street between West Redwood Street (original alignment) or West Palm Street (optional alignment) and State Street;
- West Laurel Street between Kettner Boulevard and State Street; and
- State Street between West Laurel Street and Maple Street.

The distribution circuits were primarily located within the franchise position of City of San Diego public streets; no additional ROW would be acquired. The distribution route crosses the MTS railroad at West Palm Street just west of Kettner Substation, which required a Right-of-Entry Permit. Jack-and-bore construction occurred in this location, therefore railroad closures would not be necessary.

The relocation process utilized a combination of existing and new underground distribution conduit. A total of approximately 9,720 feet of new duct bank will be installed to relocate the 12-kV distribution circuits. Up to an additional 500 feet of new duct bank will be installed to facilitate connecting the new duct banks with existing underground conduit and aboveground facilities (SDG&E, 2015a).

In addition to the new underground duct banks, approximately 10,000 feet of existing duct bank is being utilized to relocate the 12-kV distribution circuits. These existing facilities are located within the following roadways:

- Pacific Highway, between West Palm Street and West Laurel Street;
- Pacific Highway, between West Laurel Street and West Hawthorn Street;
- Kettner Boulevard, between West Palm Street and West Hawthorn Street;
- West Laurel Street, between Kettner Boulevard and State Street; and
- State Street, between West Laurel Street and West Maple Street.

**Table 3. Distribution Relocation Summary**

| Existing Distribution Circuit Number | Approximate Interception Point             | Proposed Distribution Circuit Number |
|--------------------------------------|--|--------------------------------------|
| 135                                  | Kettner Boulevard and Sassafras Street     | 135                                  |
| 138                                  | State Street and Maple Street              | 138                                  |
| 139                                  | Sassafras Street and India Street          | 1479                                 |
|                                      | West Laurel Street and State Street        | 139                                  |
| 367                                  | Adjacent to Kettner Substation             | 367                                  |
| 457                                  | West Laurel Street and Pacific Highway     | 457                                  |
| 458                                  | Adjacent to the proposed Vine Substation   | 458                                  |
| 108                                  | Kettner Boulevard and Ivy Street           | 1481A                                |
|                                      | Pacific Highway and West Hawthorn Street   | 1481B                                |
| 113                                  | Reynard Way and West Maple Street          | 1482                                 |
| 102                                  | Kettner Boulevard and West Hawthorn Street | 1483                                 |

Source: SDG&E, 2014 (Table 3-1), 2015b (Table 2-1, 12-kV distribution relocation).

### ***Underground Duct Banks and Vaults***

As described previously, approximately 10,220 feet (9,720 feet + 500 feet) of new underground duct banks were installed to facilitate relocating the 12-kV distribution circuits from existing substations to the proposed Vine Substation. Each underground duct bank was comprised of eight five-inch diameter polyvinyl chloride (PVC) conduits encased in concrete. In locations where a telecommunications cable was collocated with the distribution cables, an additional pair of four-inch diameter PVC conduits was also placed in the duct bank. The finished duct bank was approximately 32 inches tall and 18 inches wide.

In addition to the underground duct banks, approximately 16 new underground vaults were installed to facilitate pulling and splicing of conduit during the installation process, as well as to facilitate inspections, maintenance, and repairs during operation. The design utilized three sizes of pre-cast concrete vaults, as summarized in Table 4 (Vault Dimensions).

**Table 4. Vault Dimensions**

| Vault Type | Approximate Quantity | Dimensions (feet) |       |       | Approximate Excavation Dimensions (feet) |       |       |
|------------|----------------------|-------------------|-------|-------|--|-------|-------|
|            |                      | Length            | Width | Depth | Length                                   | Width | Depth |
| 3325       | 10                   | 15                | 9     | 10.5  | 17                                       | 10    | 13.7  |
| 3326       | 4                    | 21                | 9     | 10.5  | 23                                       | 10    | 13.7  |
| 3327       | 2                    | 26                | 12    | 10    | 28                                       | 14    | 12.6  |

Source: SDG&E, 2015b (Table 2-2, 12-kV Distribution Relocation)

### ***Distribution Switches and Capacitors***

Approximately eight above ground distribution switches and one aboveground capacitor were installed along the underground duct bank routes to facilitate the relocation of the distribution circuits. Five of the proposed aboveground switches were located adjacent to the proposed Vine Substation on the sidewalk where no additional trenching is required. The remaining three were installed at the following locations:

- On the south side of West Laurel Street near the intersection with State Street.
- On Pacific Highway, approximately 400 feet north of the intersection with West Laurel Street.
- On Harbor Drive near a new parking facility designed to serve the San Diego International Airport.

In addition to the switches, one above ground capacitor was installed at the southwest corner of West Juniper Street and Kettner Boulevard (SDG&E, 2015a). Each distribution switch was installed on a concrete pad measuring approximately 70 inches long by 44 inches wide by 32 inches tall. The switches were contained within a steel enclosure mounted atop the pad that measures approximately 67 inches long by 41 inches wide by 50 inches tall. The single capacitor was installed on a concrete pad, similar in size to those for the switches, and measured approximately 60 inches long by 44 inches wide, by 60 inches tall.

### ***Underground Cable***

All underground distribution circuits will utilize 1,000-kcmil aluminum cross-linked polyethylene insulation (XLPE) cables. 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.

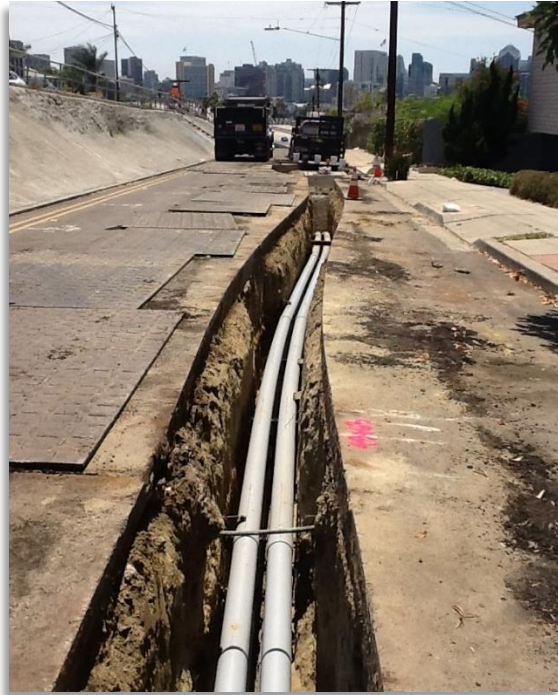
## **3.2 Construction of the 12-kV Distribution Relocations**

Work on the 12-kV distribution relocation began in July 2016 and is projected to be completed in February 2018. The construction contractor selected for the 12-kV scope of work was NPL Construction. NPL crews began working along the Columbia Segment, which went from Laurel Street to Columbia Street and then

to Palm Street. Allowable working hours for this portion were 8:30 to 3:30 Monday through Friday. Traffic controls were installed where needed and were removed at the end of each work day. Portions of both Laurel and Columbia Streets are closed during the construction of the 12-kV Underground. Both Archaeological and Paleontological monitoring took place when ground disturbance was occurring.

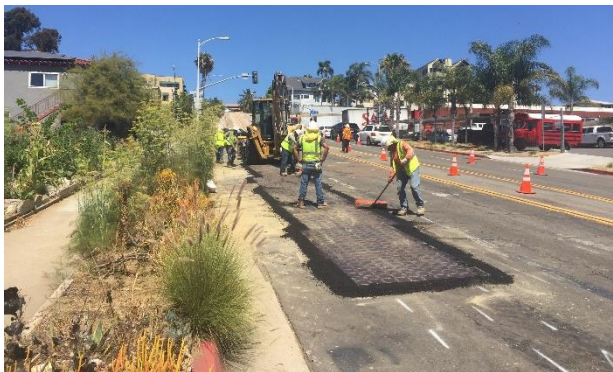


*Photo 8. Trenching operations along Columbia Street occurred during daylight hours*



*Photo 9. Conduit placed in the trench along Columbia Street*

Utility potholing followed by saw-cutting of asphalt were the first things to take place. These activities were followed by trenching, shoring installation, and conduit installation. Once conduit was installed, trenches were backfilled. Any excavations left overnight were covered and secured with steel plates. Material and equipment storage took place along Columbia Street and at the Vine Substation Site until alternative storage areas could be acquired. Three Temporary Extra Workspace (TEWS) requests were reviewed for contractor staging areas for the Columbia scope of work. Two TEWS were approved and one did not meet the criteria outlined in the MMCRP. See Table 1 for approved TEWS. Final paving of the Columbia Street Segment was completed in October 2016.



*Photo 10. Trench plates were used to cover open trenches at the end of each workday*



*Photo 11. Paving of the trenchline after construction along Columbia Street*



Construction of the 12-kV distribution relocation resumed on May 8, 2017, at the Palm Street railroad crossing. NPL and its subcontractor mobilized equipment to the work location on Palm Street. The City permits allowed for a lane closure and 24-hour construction to accommodate the jack and bore underneath the railroad tracks. Traffic control for the 24-hour lane closure was in place.

Also in May 2017, NPL resumed work on the underground distribution along India Street. Work along India Street took place between 9:00 pm and 5:00 am, consistent with traffic control permits. Utility potholing and saw-cutting took place in work areas surrounded by traffic control. Initially, some delays in construction occurred due to another utility project working in the same area.

Work along India Street continued through July, then progressed down Vine Street and onto Kettner Boulevard. The Underground work continued to occur at night, either beginning at 7:00 pm or at 9:00 pm, depending on jurisdiction (Caltrans or City of San Diego). Underground work along Kettner continued through December 2017 and is expected to be completed in March 2018. As of December, the construction percentage of completion for the 12-kV scope of work is; Columbia Segment – 97%, India/Kettner Segment – 71%, and the Jack and Bore Segment – 98%. Most of the remaining work includes trench/vault tie-ins and final paving.

A separate contractor, Henkels and McCoy, was used to install the cable into the newly installed underground conduit. This work continues to occur as progress is made by NPL.

### 3.3 Environmental Compliance during 12-kV Distribution Relocations Construction

The CPUC EM conducted spot checks of the 12-kV alignments and substation areas on a regular basis and reports were submitted to the CPUC to document construction, monitoring, and compliance activities.

The vast majority of compliance incidents observed during construction of the Vine Substation Project were observed during the 12-kV Underground work. Although these most of these incidents were corrected when the construction crews were made aware of them, the sheer number of incidents recorded showed a trend in non-compliances which didn't improve until late 2017 when the CPUC directed SDG&E to cease construction activities after Project Memorandum #2 was issued to address a serious safety concern. Compliance incidents observed during construction of the 12-kV Distribution Relocation are summarized in Table 5.



Photo 12. Equipment set of for the jack and bore under the railroad right of way

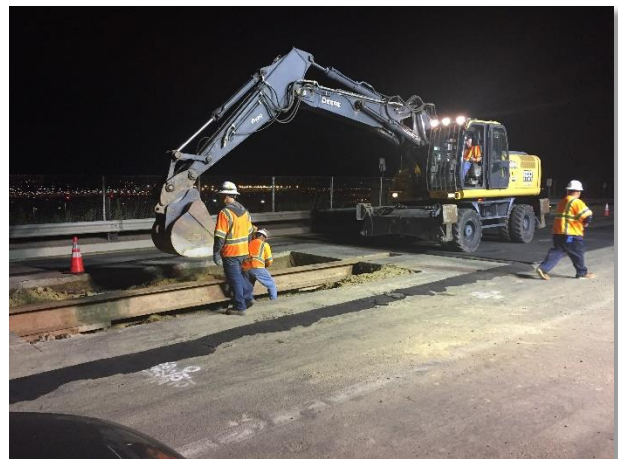


Photo 13. Night trenching along India Street

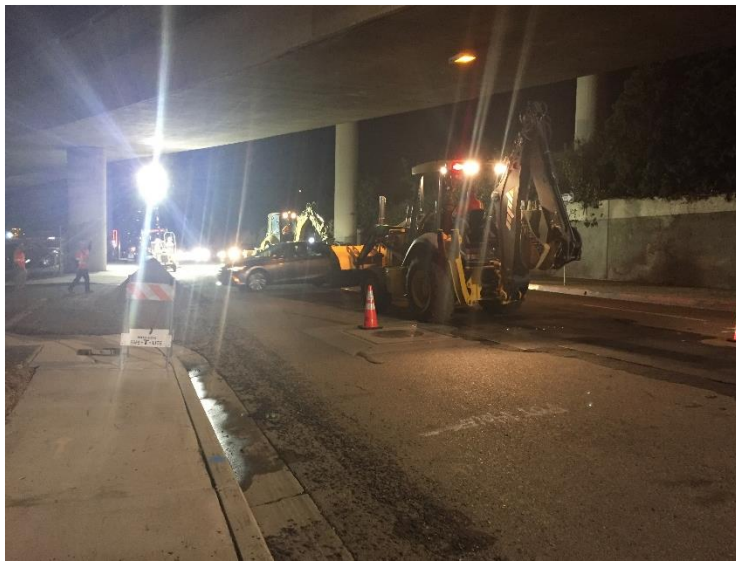
SDG&E's Environmental Inspectors routinely monitored construction and any compliance concerns were recorded. Weekly reports were submitted to the CPUC and included a thorough description of work and compliance activities observed. Whenever the CPUC's Environmental Monitors made a compliance observation, it was reported to SDG&E's EI.

Although most compliance incidents observed by the CPUC EM were minor in nature, a few incidents resulted in additional action by the CPUC.

On the night of July 20, NPL crews conducted potholing activities along portions of Kettner Boulevard to verify the location of subsurface, historic trolley tracks. This work was conducted without a cultural resource monitor present. In accordance with APM CUL-1, an archaeological monitor must be present during initial ground-disturbing activities associated with the underground 12-kV distribution line along Kettner Boulevard. SDG&E documented this incident as a Level B compliance incident. Because of this incident and other recent, chronic, compliance incidents (not related to cultural resources-but demonstrating a trend in increased, non-compliance activity) a CPUC Project Memorandum (PM) was issued to SDG&E on July 27, 2017. Corrective actions included in the PM intended to provide better communication between crews and monitors. Since the incident, SDG&E has conducted retraining for the construction crews, added additional environmental oversight monitoring, and distributed daily lookahead schedules with better construction activity details.

On October 5, the CPUC EM observed unsafe conditions during night work along Kettner Boulevard. Traffic control was set up and NPL crews were removing plates to begin trenching activities on Kettner crossing the intersection of W. Redwood Street. The CPUC EM observed several vehicles leaving parking lots located on W. Redwood Street drive directly into the work area on Kettner. There were no flaggers, signs, or cones

present to stop traffic from entering the active work area. In addition, NPL crews had blocked the access to W. Redwood Street with traffic control cones, but cars needing to access W. Redwood Street were turning into the coned area (with open trenches) to access W. Redwood Street. Again, no flaggers were present to assist public traffic. Upon inspection of the approved Traffic Control Permits, it was determined that NPL had not set up traffic controls consistent with the permits. Access to W. Redwood Street was shown on the approved permits, and did not reflect what was set up in the field on October 5. The CPUC EM notified the SDG&E site representative of the concerns and the SDG&E representative directed the NPL crews to shut



*Photo 14. Vehicle entering construction work areas due to inadequate traffic control measures along Kettner*

down at that location. CPUC Project Memorandum #2 was issued to SDG&E on October 9 for the significant safety concerns relating to the traffic control problems, and construction was ordered to stand down by the CPUC until a Remedial Action Plan was submitted by SDG&E. The Remedial Action Plan included steps taken by NPL and SDG&E to ensure that the Traffic Control Permits were reviewed each day prior to the onset of work. Remedial Action Plan was provided to the CPUC on October 13 and construction was authorized to recommence on October 17.

On October 6, SDG&E provided notification of an incident that occurred on the night of October 4 at the Kettner Yard. A portable generator sparked a fire to straw wattles in the back of a work truck. Emergency response was dispatched to the scene to extinguish hot spots. As outlined in the Mitigation, Monitoring, Compliance Reporting Plan (MMCRP), SDG&E is required to immediately notify the CPUC for certain safety incidents, including when emergency response is required. Because immediate notification did not occur, the lack of timely notification was included in the Project Memorandum #2.

Since construction was allowed to start again, significant improvements in safety and planning were apparent. The Traffic Control Permits are reviewed each night prior at the daily tailboard meeting and additional staff has been assigned to the project. Full-time safety and Environmental staff were added and construction has limited the amount of active work areas open each night to focus on one area at a time.

Significant work was required immediately outside of the Vine Substation along Kettner. Large vaults and electrical tie-ins were placed to connect the distribution circuits to the substation. Because work is limited to 4 nights a week and work hours began at 9:00 pm, work had been ongoing at this location for months. Steel plates were placed over the excavations at the end of each work shift and traffic controls were removed. This section of Kettner receives a great deal of traffic and some problems with the integrity of the steel plates were noted. On Friday October 20, SDG&E notified the CPUC EM of emergency work on Kettner to stabilize steel plates which had become loose. The high traffic speeds over the steel plates caused them to become loose. Traffic control was set up and crews reset the plates over the excavations. The plates were monitored over the weekend to make sure they were holding up and were later replaced by larger plates.

Due to the archaeological and paleontological sensitivity in the underground trenching area, cultural and paleontological monitors were present during construction. Many fossils and artifacts were identified and evaluated including historic trolley rails that were expected to be within the alignment. On August 3, 2017, SDG&E reported that an archaeological feature was discovered during potholing activities along Kettner Boulevard. All Mitigation Measures and notification protocols were followed after the discovery (i.e., halt construction in the area, contact SDG&E's Cultural Resource Specialist/Environmental Project Manager, and discuss the significance of the resource). Notifications were also made to the CPUC. The find was determined not to be significant and construction activities were allowed to resume. On August 9, SDG&E reported that an archaeological feature was discovered during trenching activities along Vine Street. All Mitigation Measures and notification protocols were followed after the discovery (i.e., halt construction in the area, contact SDG&E's Cultural Resource Specialist/Environmental Project Manager, and discuss the significance of the resource). Notifications were also made to the CPUC. The find was determined not to be significant and construction activities were allowed to resume.



*Photo 15. Salvage of historic trolley tracks encountered during excavation on Kettner*

An archaeological 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. A Final Paleontological Mitigation Report (PMR) will be completed that presents the results of the



implementation of this PRMP, for projects that recover fossils and also for projects where no fossils are discovered.

During construction of the 12-kV Distribution Relocation, two public complaints were recorded. On June 7, 2016, SDG&E received a complaint from a customer living near the India Street 12-kV work. The resident was upset that the work was being conducted during the night and keeping him awake. SDG&E arranged for the resident to be relocated temporarily to a nearby hotel during construction near the residence. On June 14, 2017, SDG&E received a complaint from a business located on India Street concerned about the no parking signs for the 12 kV construction and the potential impact on the business’s customer parking. Contact was made with the business manager to answer and address their questions and concerns.

Table 5 provides a summary of environmental incidents that occurred and were reported by the CPUC EM and SDG&E.

**Table 5. Incidents and CPUC Project Memoranda (PM) and Non-Compliance Reports**

| Incident/<br>PM/NCR | Date<br>Issued | Phase                | Description  |
|---------------------|----------------|----------------------|--|
| Incident            | 07-18-16       | 12-kV<br>Underground | Several pieces of equipment and material was left overnight in public parking spaces along Columbia Street. In one case, an excavator was parked partially on the curb and did not have a drip pan placed underneath.  |
| Incident            | 07-18-16       | 12-kV<br>Underground | Cold mix was observed on July 18 being stored on Columbia without the necessary containment.   |
| Incident            | 07-19-16       | 12-kV<br>Underground | Crews were observed installing traffic controls prior to the approved 8:30 am start time along Laurel Street.  |
| Incident            | 07-21-16       | 12-kV<br>Underground | SDG&E reported a Level B non-compliance when crews did not complete work by 3:30pm on July 21 due to a shoring jack malfunction.   |
| Incident            | 08-02-16       | 12-kV<br>Underground | The CPUC EM observed that the NPL contractors were using a street sweeping attachment which was not in compliance with local air quality rules.  |
| Incident            | 08-02-16       | 12-kV<br>Underground | The CPUC EM noted that a motorized trailer staged at the Vine Substation site was observed to be leaking onto the pavement and no drip pan had been placed underneath.   |
| Incident            | 08-02-16       | 12-kV<br>Underground | The CPUC EM observed uncontained construction waste being stored at the Vine Substation site. No dumpsters were located at the site.   |
| Incident            | 08-15-16       | 12-kV<br>Underground | SDG&E reported that NPL Underground crews worked 20 minutes beyond the allowed work hours on W. Laurel Street.   |
| Incident            | 08-25-16       | 12-kV<br>Underground | SDG&E reported that on August 25, Henkels and McCoy crews began distribution cable installation within the Columbia Segment without obtaining the required Worker Environmental Awareness Training.  |
| Incident            | 05-17-17       | 12-kV<br>Underground | SDG&E Environmental Inspectors observed two leaking hydraulic hoses lying on a steel plate on the ground at the jack and bore location. The crane staged at this location was also observed to be staged without secondary containment. NPL was notified the same day. On 05-18-17, the CPUC EM observed that crews used dirt to soak up the hydraulic leak instead of using appropriate spill response materials. |
| Incident            | 05-22-17       | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on May 22 for the contractor’s use of a street sweeper which was not compliant per the SDAPCD rules.  |
| Incident            | 05-22-17       | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on May 22 for the absence of drip pans placed under staged equipment at the jack and bore location along Palm Street.   |

**Table 5. Incidents and CPUC Project Memoranda (PM) and Non-Compliance Reports**

| <b>Incident/<br/>PM/NCR</b> | <b>Date<br/>Issued</b> | <b>Phase</b>         | <b>Description</b>  |
|-----------------------------|------------------------|----------------------|---|
| Incident                    | 05-31-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on May 31 for inadequate street sweeping after construction was completed for the day along India Street.  |
| Incident                    | 06-13-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident for the contractor's storage of steel plates along India Street between the hours of 5:00 am and 9:00 pm.  |
| Incident                    | 06-15-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident when traffic control remained in place outside of the approved Traffic Control Permit.   |
| Incident                    | 06-16-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident for the contractor's storage of steel plates along India Street between the hours of 5:00 am and 9:00 pm.  |
| Incident                    | 06-19-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident for the contractor's storage of steel plates along India Street between the hours of 5:00 am and 9:00 pm.  |
| Incident                    | 06-20-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on June 20 for inadequate sediment controls around soil stockpiles stored at the Kettner Staging Yard.   |
| Incident                    | 06-20-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on June 20 for the storage of two shoring boxes within public parking spaces along West Redwood Street.  |
| Incident                    | 06-23-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on June 23 for an uncovered soil stockpile at the Kettner Staging Yard.  |
| Incident                    | 07-06-17               | 12-kV<br>Underground | The CPUC EM documented a Level B compliance incident on July 6 for an excavator stored within the Vine Street TEWS area without secondary containment. An SDG&E Level B compliance incident was issued on July 6 for the same incident.             |
| Incident                    | 07-06-17               | 12-kV<br>Underground | The CPUC EM documented a Level B compliance incident on July 6 for an uncovered and overflowing trash can located at the Sassafras TEWS area after work had ended. An SDG&E Level B compliance incident was issued on July 6 for the same incident. |
| Incident                    | 07-07-17               | 12-kV<br>Underground | SDG&E reported a Level B compliance incident on July 7 for the same trash issue at the Sassafras TEWS area.   |
| PM #1                       | 07/27/17               | 12-kV<br>Underground | Potholing along Kettner without the required monitors and a general trend in non-compliance incidents.  |
| Incident                    | 08-23-17               | 12-kV<br>Underground | A Level B incident was reported by SDG&E for crews not finishing work and having traffic control in place after the city permit allowable time of 5:00 am.  |
| Incident                    | 08-24-17               | 12-kV<br>Underground | A Level B incident was reported by SDG&E for crews not finishing work and having traffic control in place after the city permit allowable time of 5:00 am.  |
| Incident                    | 09-06-17               | 12-kV<br>Underground | A Level B incident was reported by SDG&E for crews not finishing work and having traffic control in place after the city permit allowable time of 5:00 am.  |
| Incident                    | 09-21-17               | 12-kV<br>Underground | A Level B incident was reported by SDG&E for crews not finishing work and having traffic control in place after the city permit allowable time of 5:00 am.  |
| Incident                    | 10-04-17               | 12-kV<br>Underground | A Level B incident was reported by SDG&E for crews not finishing work and having traffic control in place after the city permit allowable time of 5:00 am.  |

**Table 5. Incidents and CPUC Project Memoranda (PM) and Non-Compliance Reports**

| Incident/<br>PM/NCR | Date<br>Issued | Phase                | Description  |
|---------------------|----------------|----------------------|--|
| PM #2               | 10-09-17       | 12-kV<br>Underground | Non-Compliance with Traffic Control Permits and untimely incident reporting.   |
| Incident            | 11-22-17       | 12-kV<br>Underground | A Level B incident was reported by SDG&E for crews not finishing work and having traffic control in place after the city permit allowable time of 5:00 am. |

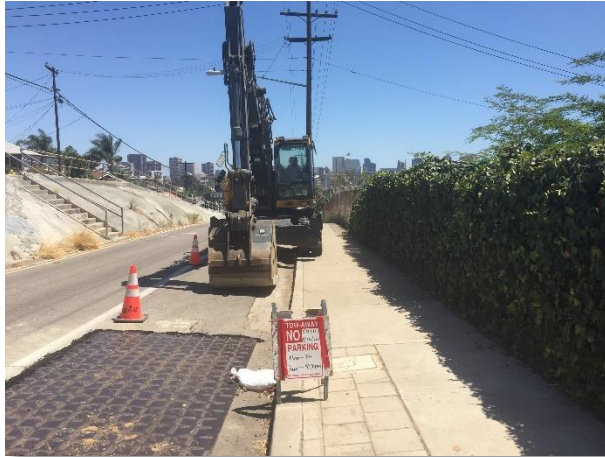


Photo 16. Contractor stored excavator on public street and partially blocking sidewalk along Columbia



Photo 17. Improper storage of cold mix paving material during construction of Columbia Segment



Photo 18 (above). Leaking hydraulic hoses at the jack and bore location



Photo 19 (right). Once notified of the leaking hoses, the underground contractor did not use appropriate materials for containment or clean-up





Photo 20. Uncovered and overflowing trash container stored for the 12 kV underground crews along India Street

### **3.4 Temporary Extra Work Spaces (TEWS) and Minor Project Changes (MPCs) Requested for 12-kV Distribution Relocations Construction**

Several TEWS and MPCs were requested during construction of the 12-kV Distribution Relocation work. All requests were for the use of additional work and storage areas. Please see Table 1 in Chapter 1.

### **3.5 Final Inspection of 12-kV Distribution Relocations**

Because Aspen's contract for the Vine Substation Project ended before the completion of construction, a final inspection of the entire underground route could not be conducted. Areas where construction has been completed were inspected on December 21, 2017. No concerns were noted.

## 4.0 69-kV Loop-in

### 4.1 Description of the 69-kV Loop-in

The power line component of the Proposed Project consists of looping in an existing 69-kV tie-line, TL604, to the Vine Substation. The existing overhead power line is located adjacent to and west of the 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.

#### *Poles*

As part of the Project, the existing double-circuit TL604 will be looped into the proposed Vine Substation. This will require the removal of two approximately 70-foot-tall, directly buried, dead-end wood poles; 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. These new poles range in diameter from five to seven feet at the base and two to three feet at the top. New 69-kV 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 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, for a total of three new TSPs. All pole designs comply with the requirements of G.O. 95, and meet or exceed the designated safety factors (SDG&E, 2015a). 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 franchise position of City of San Diego public streets.

All towers and poles will be built and replaced in accordance with Avian Power Line Interaction Committee guidelines. This is achieved by either getting 60 inches of separation between phases or by using avian protection/cover-ups (SDG&E, 2015a).

#### *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, six conductors will traverse the railroad tracks and terminate within the Vine Substation (SDG&E, 2015a). 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 would be approximately nine feet. Fiber optic telecommunication cables will also be collocated on the 69-kV loop-in poles.

## **4.2 Construction of the 69-kV Loop-in**

Surveying, staking, and potholing took place in September 2017 and trenching across Pacific Highway was completed in November 2017. The remainder of the work is scheduled for 2018 and is expected to be complete by February 2018.

## **4.3 Environmental Compliance during the 69-kV Loop-in Construction**

The CPUC EM conducted spot checks of the Vine Substation on a regular basis and reports were submitted to the CPUC to document construction, monitoring, and compliance activities. No compliance incidents were noted or reported during the 69-kV Loop-in work.

## **4.4 Temporary Extra Work Spaces (TEWS) and Minor Project Changes (MPCs) Requested for the 69-kV Loop-in Construction**

One MPC was requested to change out an existing wood pole for a steel pole.

## **4.5 Final Inspection of the 69-kV Loop-in**

Because Aspen's contract for the Vine Substation Project ended before the completion of construction, a final inspection could not be conducted.



## 5.0 Telecommunication System Extension

### 5.1 Description of the Telecommunication System Extension

Once operational, the Vine Substation will be unmanned. 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 Vine Substation and Kettner Substation to this system, additional fiber optic cable will be installed as part of the Project.

In order to bring fiber communication from the 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 (see discussion below). The 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 69-kV 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. The connection between the existing underground vault located in Pacific Highway and the new 69-kV TSP will be located within new underground conduit. Once at the new 69-kV TSP, the telecommunications line will transition from an underground to overhead configuration. The telecommunications line will then travel overhead from the 69-kV TSP to the Vine Substation.

The AT&T phone line will be upgraded and relocated from a current system feeding the existing customer at the site. One of three potential interconnection points located adjacent to the Vine Substation will be used to facilitate the connection.

#### ***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 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. 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 3 feet tall and 1.5 feet wide. 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.

#### ***Underground and Overhead Cable***

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

### 5.2 Construction of the Telecommunication System Extension

Construction of the telecommunications system extension was incorporated into the underground 12-kV distribution relocation and 69-kV Loop-in work discussed in Chapters 3 and 4. Fiber installation will occur once the conduit and poles supporting it have been installed.

### **5.3 Environmental Compliance during the Telecommunication System Extension**

The CPUC EM conducted spot checks of the Vine Substation on a regular basis and reports were submitted to the CPUC to document construction, monitoring, and compliance activities. No compliance incidents were noted or reported during the telecommunication system extension work.

### **5.4 Temporary Extra Work Spaces (TEWS) and Minor Project Changes (MPCs) Requested for the Telecommunication System Extension**

No TEWS or MPCs were requested specific to the telecommunication work.

### **5.5 Final Inspection of the Telecommunication System Extension**

Because Aspen's contract for the Vine Substation Project ended before the completion of construction, a final inspection could not be conducted.

## 6.0 Post-Construction Requirements

The following summarizes the post-construction mitigation measure requirements:

- APM CUL-01**    **Monitoring Report:** 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 and to the City of San Diego Development Services Department.
- PRMP**            **Final Report:** A Final Paleontological Mitigation report (PMR) will be completed that presents the results of the implementation of this PRMP, for projects that recover fossils and also for projects where no fossils are discovered. For projects that recover fossils, the report will include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of the recovered fossils relative to the research themes and questions. A complete inventory of salvaged, prepared, and curated fossils will be included. For projects where no fossils are recovered, an abbreviated technical report that summarizes the field methods used and stratigraphy exposed should be completed. All PMR’s will be submitted to SDG&E and/or CPUC for review and approval.

## 7.0 Lessons Learned

### *Traffic Control*

Because the majority of the Vine Substation Project involved street closures for construction and night work, careful planning and review of the approved permits was critical to the safety of construction team and the public. After the CPUC Project Memorandum was issued and construction was halted due to the CPUC EM noticing that crews were conducting road closures inconsistent with approved Traffic Control Permits and the safety concerns that resulted, SDG&E and its contractor increased their review of the traffic control permits to ensure that the road closures were conducted in a safe manner consistent with City approvals. Monitoring of the Traffic Control Plans was critical to ensure the safe construction of the Vine Substation Project.

### *Incident Notification*

Incident notification and compliance monitoring were important to keep the CPUC informed of the construction activities and compliance trends. Incident reporting was incorporated as a requirement into the Project MMCRP; however, timely notification was still problematic. Because the 12-kV construction contractor was responsible for a trend of non-compliances, it was critical that the CPUC be informed whenever a safety incident occurred. The CPUC EM discovered that a fire started in the 12-kV construction yard by Project personnel during a routine monitoring inspection of the Project, but official notification didn't occur until two days later.