

SDG&E October 18, 2011 Response
A. 10-06-007 South Bay Substation Relocation Project PTC
Energy Division Data Request 10 Dated October 7, 2011
SDGE-ED-10: Questions 1 & 2

1. **GIS Alternative:** In response to Question 1 in Data Request No. 8, SDG&E indicated that in order to reduce the overall costs associated with the GIS Alternative; the 138 kV line would remain overhead as long as it is determined to be technologically feasible and provided a proposed schematic showing tie-lines assuming overhead of the existing 138 kV.

Please identify the approximate costs savings for SDG&E that would result in the event the 138 kV transmission line is to remain in the existing overhead configuration.

In Data Response No. 5 received by SDG&E on May 4, 2011, Section 2.1.2 stated the extension of the existing 138 kV alignment would occur in the same fashion for both the Proposed Project and GIS Alternative, which consists of undergrounding the 138 kV transmission line. Please provide a description of the proposed transmission line interconnections assuming undergrounding the 138 kV transmission line is determined to be technologically feasible. Please provide a map and ARC GIS shape files of the location of all transmission line interconnections that would be required with implementation of the GIS Substation Alternative that includes undergrounding the 138 kV transmission line.

SDG&E Response:

The approximate cost savings of not undergrounding the 138kV transmission line is \$9-\$10 Million dollars.

The Gis shape files are attached to this email transmittal.

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2. **Telecommunications Tower:** In response to Question 5 in Data Request No. 1, SDG&E indicated the Telecommunications Tower proposed at the Bay Boulevard Substation would need to be 75 feet tall to provide adequate clearance above the 55-foot-tall 230 kV substation structures. SDG&E further stated a height of 75 feet will allow for a clear path to the existing mountain top to intercept into the existing SDG&E backbone network that would not be blocked with near field obstruction and is a reliable link for providing communication services at the proposed Bay Boulevard substation.

Please indicate whether alternative technology is feasible for providing the required telecommunications that would reduce the tower height and/or eliminate the need for the proposed Telecommunications Tower. Alternative technologies that may be considered feasible should include but not be limited to the following: fiber optic telecommunications, wave trap technology and antennas installed on the 230 kV substation structures.

SDG&E Response:

Installation of telecom antennas on 230kV substation structures is not feasible because of reliability and safety concerns. Any antenna, cabling, or conduit maintenance would require an outage of the 230 kV circuit or bus attached to the structure. The proposed project does not require such outages. Unnecessary outages reduce the reliability of the attached 230 kV circuit or bus.

The Proposed Project already includes the fiber optic system as a secondary means of communication as media diversity for the Bay Boulevard substation. The microwave communication proposed as part of the project serves as the primary communication system to meet the reliability requirement recommended by WECC for a 230kV substation.

Wave trap technology is not ideal for critical communication lines due to its limited bandwidth. In addition, SDG&E is moving away from wave trap technology due to seismic issues.

As to other potential alternative technologies, Incumbent Local Carrier Exchange (ILEC) services and their availability delivered by AT&T or other carriers have not consistently satisfied the utility reliability standard. Other emerging technologies such as Worldwide Interoperability for Microwave Access (WiMax) are not performance proven, so there would be risk associated with using this technology for critical substation communications.

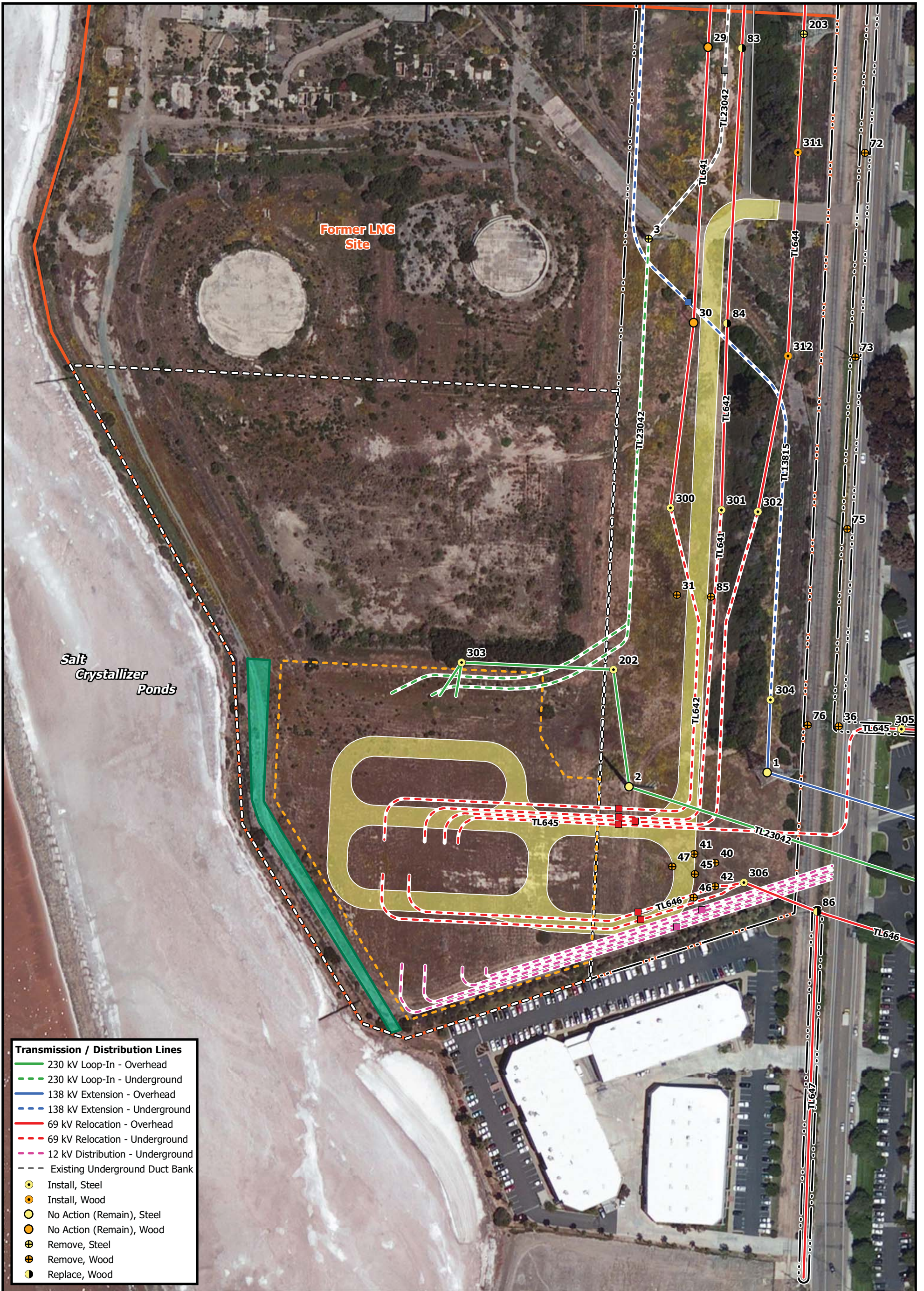
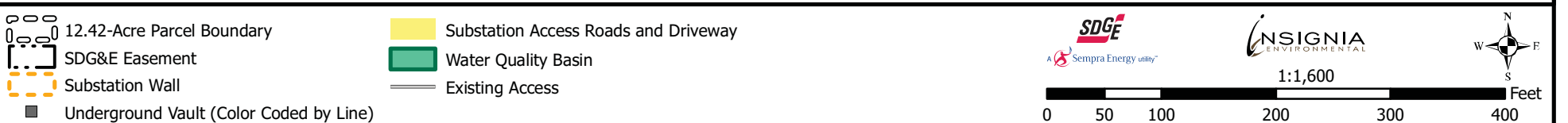


Figure 1: Detailed GIS Substation Project Components Map 1 of 3

South Bay Substation Relocation Project



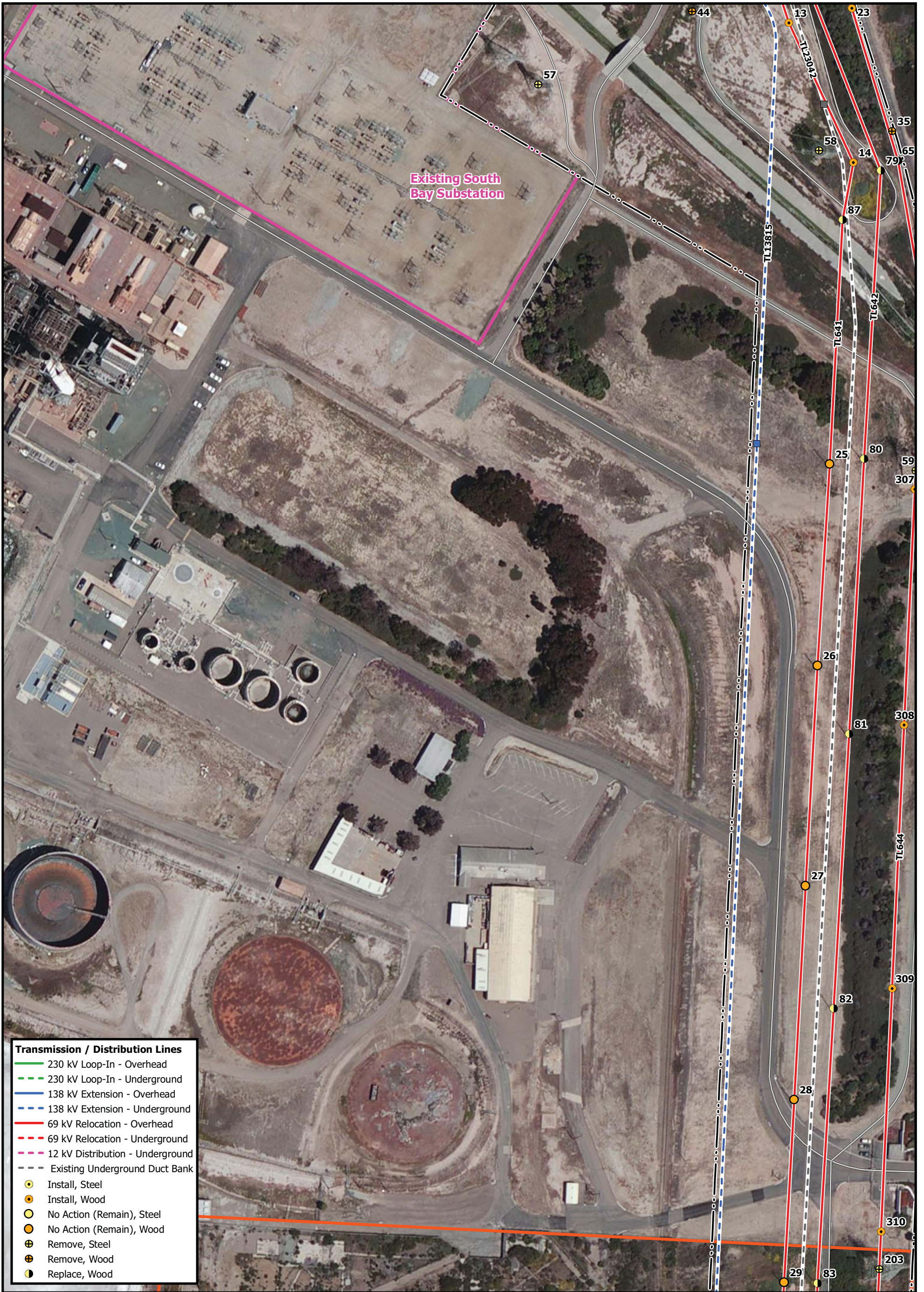
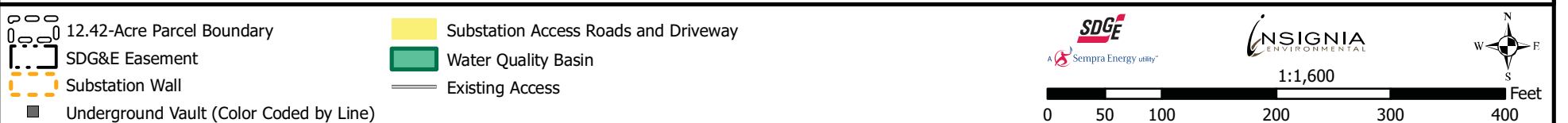
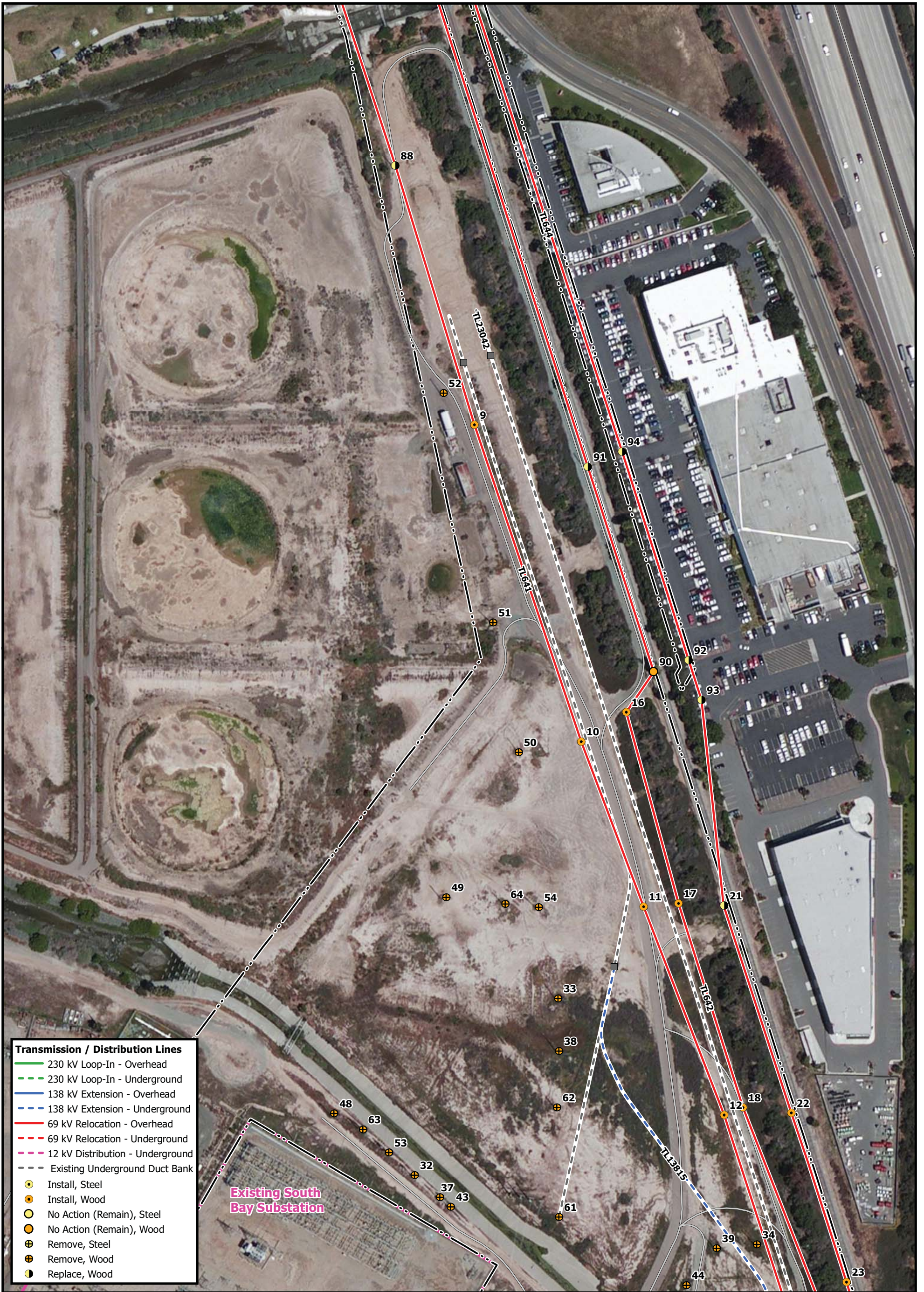


Figure 1: Detailed GIS Substation Project Components Map 2 of 3

South Bay Substation Relocation Project





- Transmission / Distribution Lines**
- 230 kV Loop-In - Overhead
 - - 230 kV Loop-In - Underground
 - 138 kV Extension - Overhead
 - - 138 kV Extension - Underground
 - 69 kV Relocation - Overhead
 - - 69 kV Relocation - Underground
 - - 12 kV Distribution - Underground
 - - Existing Underground Duct Bank
 - Install, Steel
 - Install, Wood
 - No Action (Remain), Steel
 - No Action (Remain), Wood
 - ⊕ Remove, Steel
 - ⊕ Remove, Wood
 - Replace, Wood

Existing South Bay Substation

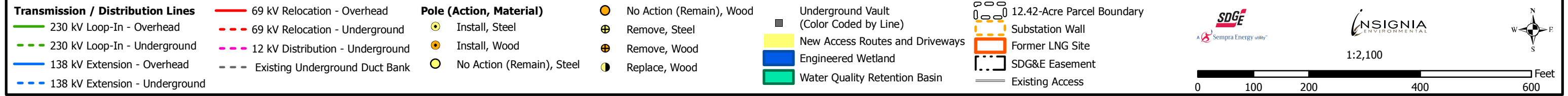
Figure 1: Detailed GIS Substation Project Components Map 3 of 3

South Bay Substation Relocation Project

<ul style="list-style-type: none"> ▭ 12.42-Acre Parcel Boundary ▭ SDG&E Easement ▭ Substation Wall ▭ Underground Vault (Color Coded by Line) 	<ul style="list-style-type: none"> ▭ Substation Access Roads and Driveway ▭ Water Quality Basin ▭ Existing Access 	 1:1,600	 Feet
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Figure 2: GIS Versus AIS Interconnection Comparison Map



South Bay Substation Relocation Project

