PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

October 6, 2014

Ms. Rebecca W. Giles
San Diego Gas and Electric Company
8326 Century Park Court
San Diego, CA 92123-4150

RE: Request for Additional Data #2 – Certificate of Public Convenience and Necessity for the Sycamore-Peñasquitos 230-Kilovolt Transmission Line Project – Application No. A. 14-04-011

Dear Ms. Giles:

The California Public Utilities Commission (CPUC) Energy Division CEQA Unit has completed its review of San Diego Gas and Electric Company's (SDG&E) application (A. 14-04-011) and related Proponent's Environmental Assessment (PEA) for a Certificate of Public Convenience and Necessity (CPCN) for the Sycamore-Peñasquitos 230-Kilovolt Transmission Line Project (Proposed Project).

The CPUC has identified additional data needs that are required to complete the project description, and environmental resource assessment for the Environmental Impact Report (EIR). These data needs are identified in the attached Request for Additional Data #2 which is supported by the following enclosed attachments:

Attachment 1 – Copy of scoping letters received from San Diego Land Lawyers on behalf of Kilroy Realty regarding the Torrey Santa Fe staging yard and the Poway Unified School District regarding the Carmel Valley Road staging yard.

Attachment 2 – Project detail maps with comments cross-referenced to data request table

Attachment 3 – Project overview maps with comments cross-referenced to data request table

Attachment 4 – Photo showing an existing cable south of Poway Road to the Scripps Canyon Business Park

Attachment 5 – Project overview and detail maps indicating where additional biological surveys are required

Attachment 6 – Project overview and detail maps indicating where additional cultural resource surveys are required

Attachment 7 – Figure depicting required noise monitoring locations

Attachment 8 – Copy of the current draft EIR project description with placeholders indicating information needed as documented per this Request for Additional Data

Information provided by SDG&E in response to this Request for Additional Data should be filed as supplements to Application A. 14-04-011. One set of responses should be sent to the Energy Division and one to our consultant, Panorama Environmental, in both hardcopy and electronic format. We request that SDG&E respond to this request no later than November 3, 2014. Please let us know if you cannot provide the information by this date. If you can provide partial responses sooner, please do so for the sake of continuing our work. Delays in responding to these data needs will result in associated delays in preparation of the EIR.

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Please note that the CPUC continues to request information on biology, cultural resources, traffic, and noise that are necessary to define the baseline environmental conditions and analyze the environmental impacts of the Proposed Project. If SDG&E fails or does not want to provide the requested information, CPUC will need to conduct studies to obtain the baseline data required to adequately characterize the environmental setting under CEQA. SDG&E needs to tell us by October 8, 2014 whether or not they are going to do the additional studies identified in this data request, and if so what will be the timeline for completing these studies. SDG&E's failure to provide this information in the Application has already resulted in delays to the CEQA environmental review schedule and any delays in providing the requested data will result in further delays to the CEQA schedule.

The Energy Division reserves the right to request additional information at any point in the application proceeding and during subsequent construction of the Project should SDG&E's CPCN be approved.

Please direct questions related to this application to me at (415) 703-2068 or Billie.Blanchard@cpuc.ca.gov.

Sincerely,

Billie Blanchard

Billie Blanchard
Project Manager
Energy Division, CEQA Unit

cc: Mary Jo Borak, Supervisor
Molly Sterkel, Program Manager
Peter Allen, CPUC Attorney
Jeff Thomas, Project Manager, Panorama Environmental
Susanne Heim, Deputy Project Manager, Panorama Environmental

REQUEST FOR ADDITIONAL DATA: DATA NEEDS #2 FOR THE SYCAMORE-PEÑASQUITOS 230-KILOVOLT TRANSMISSION LINE PROJECT APPLICATION (A. 14-04-011)

REPORT OVERVIEW

The California Public Utilities Commission (CPUC) has identified several areas where more information is needed to prepare a complete and adequate analysis of the potential environmental effects of the Proposed Project and to define a range of alternatives in accordance with the requirements of the California Environmental Quality Act (CEQA). Data needs are identified in bold. Clarifying information is provided below the data need. Referenced attachments follow Table 1.

Table 1: Application No. 14-04-011 Data Needs #2

#	PEA Section, Page #	Data Need
Project Description		
1	Data Request #1, Item 7	**Provide letters of permission from each staging yard property owner documenting that SDG&E may use each site for the proposed uses. Provide additional information regarding staging area use and activities.** The following information is needed to define use and impacts within each staging yard: • Vegetation removal needed • Grading needed • Acreage of each staging yard that is to be used, and the location of the area of proposed use within the larger staging area in GIS • Verification letter from landowner indicating their understanding of intended staging yard use and providing permission for such use • Description of how staging area would be used • Vehicle entrance/exit location and description of potential construction of new or improved vehicle access The CPUC received letters from the landowners of the Carmel Valley and Torrey Santa Fe staging yards stating that these staging yards are not available for use (Attachment 1). SDG&E needs to provide landowner verification that each of the proposed staging yards may be used by SDG&E for Project staging. If SDG&E cannot obtain landowner approval in writing, the staging yard must be removed from the project. Otherwise we do not have feasible yards for the project description to adequately analyze impacts for the whole of the project.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
2	Data Request #1, Item 7	**Provide GIS polygon data and acreage of proposed staging areas within Sycamore Canyon Substation, Peñasquitos Substation, Chicarita Substation, Mission Substation, and San Luis Rey Substation and substation access roads.** Partial data response no. 3 states any of these substations and their access roads may be used for storing equipment. Show the areas that would be used for staging at the substations and the road segments that would be used for staging. The majority of these substation yards are built out and are not available for staging. Staging within the substation access road may restrict substation access. Describe how access to the substation will be maintained if the access road is used for staging.
3	Data Request #1, Item 4 and 57	**Clarify the location of the cable pole at the west end of the Segment B underground alignment. Identify the dimensions and locations of new right-of-way or easement that SDG&E needs to acquire in Segment B for the underground line proposed for Carmel Valley Road.** The preliminary engineering for the underground alignment shows a cable pole south of Carmel Valley Road at the west end of Segment B. The cable pole was previously proposed north of Carmel Valley Road within a new easement. Please clarify the location of the underground line and cable pole at the west end of the alignment and provide updated GIS accordingly. Please also clarify whether any new easements are required for the underground alignment and the dimensions and locations of the new easements.
4	N/A	**Provide representative photographs of the concrete pier and concrete micropile foundations proposed for the Project. The representative photographs need to be taken at close range to visually depict the types of foundation that SDG&E has proposed for this Project.**
5	N/A	**Provide a representative photograph of a bundled 230-kV line. The representative photograph need to be taken at close range to visually depict a bundled line with parallel wires spaced approximately 18 inches apart.**
6	N/A	**Provide schematics for a 69-kV steel cable pole, a 138-kV tubular steel pole (TSP), and a typical splice vault.**
7	Data Request #1, Item 9	**Re-label the topped poles in the GIS data to match the pole IDs in the table provided in response to Item 9 (e.g., H-Frame Steel 1). Add the 69-kV topped 1 pole to the GIS. Provide a schematic or representative photograph of a topped pole with distribution underbuild.** The pole labels in the GIS data provided to CPUC do not match the pole labels in SDG&E's response to Data Request #1. Please reconcile the two data sets so that the pole IDs are consistent and confirm that all poles that are proposed to be topped are included in the GIS data.
8	N/A	**Confirm that the existing 230-kV transmission line is being moved from E3 to P1 and P2 near Sycamore Canyon Substation.**

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
9	Data Request #1, Item #1	**Provide additional detail on the proposed modifications of the Sycamore Canyon, Peñasquitos, Chicarita, San Luis Rey, and Mission Substations.** Additional detail is needed to define the proposed modifications at the Sycamore Canyon, Peñasquitos, Chicarita, San Luis Rey, and Mission Substations. What specifically will be occurring at these substations? Provide a detailed description of the activities involved in constructing the proposed modifications at each of the five substations.
10	N/A	**Identify any areas that may be used for material laydown during construction.** The PEA does not identify any areas for material laydown. Does SDG&E proposed to use access roads, pole work areas, or other areas for material laydown? Please define temporary laydown areas, materials that could be staged in the laydown areas, and duration of use for laydown areas.
11	N/A	**Confirm that helicopter refueling would not be conducted at any of the proposed work areas.** Limiting refueling to off-site airports limits SDG&E's options and increases the time and emissions associated with helicopter operations. If helicopter refueling in the Project area is not included in the Project Description it will not be allowed during construction without an approved petition for modification from the CPUC.
12	N/A	**Provide a detailed description of the activities that would be conducted to prepare the stringing sites. Would grading be required?**
13	Data Request #1, Item 13	**Provide additional details on the amount of cut-and-fill required for the Project.** Provide the amount of estimated cut-and-fill in cubic yards for each of the following project areas: • Structure work areas • Retaining walls • Concrete foundations • Underground duct trenching • Staging yards • Other areas requiring cut and fill The total estimated cut-and-fill does not appear to account for the retaining walls and amount of grading proposed at each structure. Please show the math on how this volume was calculated.
14	N/A	**Describe the potential design for the retaining wall face and provide a representative photograph of a retaining wall using this design and construction method.**

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
15	N/A	**Provide additional information about proposed underground work in Segment B.** Provide the following information related to underground work in Segment B: • GIS data for the limits of the duct and splice vault temporary work areas. • Preparation required for the Segment B underground work area. • Number and location of trees that would be removed within the underground work area. • Impacts to irrigation lines and SDG&E's approach to repairing damaged irrigation lines. • Methods that would be used to install the power line under the bridge on Carmel Valley Road. Would access be required under the bridge? If so, where is the access route and what equipment would be used beneath the bridge?
16	N/A	**Describe any modifications that SDG&E proposes to existing access roads to prevent erosion and channeling.** Does SDG&E propose improvements to any of the existing access roads to prevent future erosion? If so, please define these improvements.
17	N/A	**Identify the landfill(s) that would be used for material disposal including removed vegetation, removed poles, and spoils. Provide the estimated hauling distance to the landfill.**
18	N/A	**Identify the locations of overland access routes and describe the activities to be performed within overland routes.** No overland access routes are defined in the GIS; however, the Project Description in the PEA discusses the use of overland access. Please define where these overland access routes will be located, their dimensions, and the activities (e.g., vegetation removal) that would be conducted within the overland access routes.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
19	Data Request #1, Item 6	**Prepare an Access Road Plan to include revised access road GIS data.** Additional information is needed regarding project access roads and proposed road work. This information is needed to address agency concerns about impacts to vernal pools and habitats. 1. **Updated GIS data:** Update the GIS to include access roads to each workspace and each work pad (existing or proposed), including all temporary overland routes and spur roads. Access routes on public paved roads are not needed. Access routes on private paved surfaces (roads and parking lots) need to be included with the GIS data. The linear access road data need to include accurate classifications for the following attribute designations for each road segment: a. **Status:** Existing or proposed, and if proposed, temporary or permanent b. **Existing surface type:** Paved, graveled, unpaved/dirt, or overland/vegetated c. **Proposed road work:** grading, vegetation removal (surface and tree clearance), or no work proposed d. **Ownership:** SDG&E-owned, private, public, or parks/preserve-managed, including the applicable owner or management entity that would be consulted prior to any proposed road work 2. **Key access points (point data):** Identify key access points (i.e., ingress/egress) to all access roads and staging yards, where traffic control or unloading and loading areas may be needed (e.g., where tracked equipment or materials would be unloaded and loaded onto larger trucks). 3. **Additional access workspace needs (polygon data).** Identify any additional access workspace that would be needed for construction such as unloading and loading areas, passing, parking, turnaround areas, and laydown areas.
20	Section 3.4.8, page 3-42	**Define the activities that would be conducted by helicopter and the duration of helicopter use (hours per day and total number of days).** The PEA states that helicopters may be used for stringing, installing or removing structures, and transporting equipment and personnel. Additional details are needed to analyze the air quality, greenhouse gas emission, and noise emissions from helicopter use. Please provide the locations where helicopters may be used for installing and removing structures and the duration of helicopter use at these locations. Identify the maximum duration of helicopter use in a single location during stringing and equipment and personnel transport. Provide the total duration of helicopter use during the Project and the proposed hours for helicopter use during the day.
21	Deficiency Report, Item #7	**Specify the maximum trench dimensions for the underground trench on Carmel Valley Road.** SDG&E provided minimum trench dimensions, but has not specified the maximum trench width. SDG&E reduced the workspace from 30 feet to 16 feet in the response to Data Request #1. The reduced workspace would only be feasible if the maximum trench width is the same as the minimum trench width.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
22	Data Request #1, Item 63	**Define the location(s) where SDG&E would obtain water for construction and the estimated travel distance to the Project. Would reclaimed water be used for dust control?**
23	N/A	**Clarify the area that is required for permanent maintenance pads.** One part of the PEA states there would be a 50-foot by 75-foot area (3,750 square feet) for permanent maintenance needs, whereas another says that approximately 700 square feet would be needed. These are very different values. Specify which value is correct or why they are different.
24	EMF Management Plan	**Provide existing EMF data at the edge of the right-of-way by transmission line segment (e.g., Segment A West).** SDG&E's EMF Management Plan only includes data for the Proposed Project condition and does not provide the existing EMF or change in EMF.
25	GIS	**Provide GIS attribute data that specify the type of structure type (e.g., pole type, tower, or H-frame) consistent with the detailed route maps in the PEA (e.g. 138-kV, 230-kV, or 69-kV poles) for all existing and proposed structures in the Project corridor.** The maps prepared for the PEA include specific pole types at each pole location. The GIS data provided to the CPUC lack the attribute data required to define the pole types at each location.
26	Data Request #1, Item 62	**Provide GIS data for the revised guard structure locations at SR 56 and ensure that there are sufficient access routes to each structure along the alignment.** SDG&E's response to Data Request #1 generally describes the locations of two guard structures at SR 56; however, CPUC was never provided the GIS showing the locations of these guard structures.
27	GIS	**Provide revised permanent and temporary workspaces for retaining walls.** Retaining walls located adjacent to P2 and P53 fall outside permeant and temporary work areas. Update the GIS data for the permanent work areas to include the footprint of the retaining wall. The retaining wall will be a permanent structure and the permanent workspace areas and calculations need to be revised to reflect the area of permanent impact for these retaining walls. The temporary workspace needs to also be revised to include adequate construction access for construction of the retaining walls.
28	GIS	**Clarify if direct access connections from the work areas to the Stonebridge Staging Yard would be needed.** There are currently no proposed direct access roads to and from the work areas at P2, P3, or P4. If direct access connections are necessary, provide the revised access route data.
Detailed Route Maps – Attachment 2		
29	GIS	**A-1: Clarify if the work area northwest of P4 would be used during access.** The work area is located immediately west of the existing structure. If the work area is needed, include the area in the revised GIS data.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
30	GIS	**A-2: Confirm the ingress/egress route for Stonebridge Staging Yard.** Provide the revised access route data.
31	GIS	**A-3: Identify the purpose of the four dead-end road segments north of P3 and R2.**
32	GIS	**A-4: Provide revised permanent and temporary workspaces for retaining walls.** Retaining walls located adjacent to P2 and P53 fall outside permanent and temporary work areas. Update the GIS data for the permanent work areas to include the footprint of the retaining wall. The retaining wall will be a permanent structure and the permanent workspace areas and calculations need to be revised to reflect the area of permanent impact for these retaining walls. The temporary workspace needs to also be revised to include adequate construction access for construction of the retaining walls.
33	GIS	**A-5: Confirm that GS4 has been removed.** The access route to GS4 previously included with the GIS data was not included with the most recent access roads data. If GS4 has not been removed, revise the access route data to include the access route to GS4.
34	GIS	**A-6: Clarify if the access route between P10 and P11 would be used or needed during construction.** If the access route is needed, include the access route in the revised GIS data.
35	GIS	**A-7: Some access road segments, including the one south along the alignment from P10, extend past public road ending points. Verify that road segments end appropriately in the revised GIS data.**
36	GIS	**A-8: Clarify whether or not GS9 is still needed.** The access route to GS9 previously included with the GIS data was not included with the most recent access roads data. If GS9 is deemed necessary, revise the access route data to include the access route to GS9.
37	GIS	**A-9: Clarify if the work area immediately northwest of P14 would be used during construction.** The work area surrounds the existing structure northwest of P14. If the work area is needed, include the area in the revised GIS data.
38	GIS	**A-10: Clarify if a spur road would be constructed to P17.** If the road would be constructed, include the road in the revised GIS data.
39	GIS	**A-11: Identify the purpose of the two road segments along existing paths west and south of P15.**
40	GIS	**A-12: Identify the purpose of the road segment east of P18.**

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
41	GIS	**A-13: Clarify if access between R23 and R24 would also occur through the private parking lot.** The current access road between R23 and R24 follows a path adjacent to the private parking lot. If access through the parking lot is necessary, include the route in the revised GIS data.
42	GIS	**A-14: Clarify if the area along the access road south of P24 would be used during construction.** The area is a small cleared area on the eastern side of the access road just before the road ends. If the area is needed, include the area in the revised GIS data.
43	GIS	**A-15: Clarify if the cleared area east of P25 would be used during construction.** The area is immediately east of the existing structure east of P25. If the area is needed, include the area in the revised GIS data.
44	GIS	**A-16: Identify the access route connection between GS28 and GS29.** Include the access route in the revised GIS data.
45	GIS	**A-17: Clarify if the access road east of P26 would be needed or used during construction.** There is a cleared path leading east from P26 that connects to a cul-de-sac. The road is a potential access route to the work area surrounding P26. If the access route is needed, include the route in the revised GIS data.
46	GIS	**A-18: Identify access routes to the two work areas surrounding R31, R32, P30, P31, GS31, and R33.** No access routes are currently identified to either of the work areas. Include the access routes in the revised GIS data.
47	GIS	**A-19: Provide the access route to the Chicarita Substation.** The access route to the Chicarita Substation needs to be identified similar to how access was identified to the Peñasquitos Substation. Revise the GIS data to include the route.
48	GIS	**A-20: Clarify if alternate access would be needed to the Chicarita South Staging Yard from the east.** If access from the east is needed, revise the GIS data to include the access route.
49	GIS	**A-21: Identify the ingress/egress route(s) for the Chicarita South Staging Yard.** Include the access route(s) in the revised GIS data.
50	GIS	**A-22: Identify the purpose of the road segment west of R37.**
51	GIS	**A-23: Clarify if the area southeast of P34 would be used during construction.** The area is a cleared area southeast of P34, situated between P34 and an existing structure. If the area would be used, include the area in the revised GIS data.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
52	GIS	**A-24: Identify the purpose of the road segment southeast of R43 that runs east to west.**
53	GIS	**A-25: Identify the purpose of the road segment east of P36 that runs north to south.**
54	GIS	**A-26: Remove the additional road segment at the end of the access route southwest of P36.** The west end of the access road extends a short distance into public road. Revise the GIS data to remove the extra distance.
55	GIS	**A-27: Clarify if the road shoulder areas south of P36 would be used during construction to park, pass, or stage.**
56	GIS	**A-28: Remove the additional road segment at the end of the access route east of R40.** The east end of the access road extends a short distance into public road. Revise the GIS data to remove the extra distance.
57	GIS	**A-29: For clarity, connect the two access roads east of R44 if they intersect.** One access road runs north to south, and the other road forms a bend. Revise the GIS data if the roads intersect.
58	GIS	**A-30: These access roads surrounding R47 and P41 appear to be inaccurate. Verify and revise these roads accordingly.**
59	GIS	**A-31: The workspace and pad south of GS16 were included with the GIS data provided. It is assumed that the inclusion of these areas is a data error, and neither would be part of the proposed project. Confirm that these are errors and should not be included, or provide an explanation for their purpose. If they are errors, remove these objects from future data provided.**
60	GIS	**B-1: Identify the ingress/egress route(s) for the Camino Del Sur Staging Yard.** Include the access route(s) in the revised GIS data.
61	GIS	**B-2: Clarify if access under the bridge east of V8 would be needed. Previous roads data included this access route.**
62	GIS	**B-3: The structure temporary workspace north of R48 appears to be incorrect. Clarify or remove the workspace from future data. Would this stringing area and access route be needed, or is this a data error?**
63	GIS	**C-1: Identify the ingress/egress route(s) for the SR-56 Staging Yard.** Include the access route(s) in the revised GIS data.
64	GIS	**C-2: Identify the drainage features that appear to intersect with the SR-56 Staging Yard. Explain whether or not they could affect use of the area as a staging yard.**
65	GIS	**C-3: Identify the drainage feature along the access road west of Torrey Santa Fe Road and if it could affect access.**

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
66	GIS	**C-4: Clarify if the area along the access road west of Torrey Santa Fe Road would be used during construction.** The area is a cleared area at the junction of two access roads. If the area would be used, include the area in the revised GIS data.
67	GIS	**C-5: Identify the purpose of the road segments north of the western cul-de-sac of Torrey Santa Fe Road.**
68	GIS	**C-6: Remove the additional road segment at the end of the access route that leads into the western cul-de-sac of Santa Fe Canyon Place.** The east end of the access road extends a short distance into public road. Revise the GIS data to remove the extra distance.
69	GIS	**D-1: Identify the purpose of the road segment that leads south from P44.**
70	GIS	**D-2: Additional development not shown in the current aerial photo has occurred. Verify that the road segment that extends into the development area north of P49 would still be used.** The road segment extends into a small outcrop of the development area.
71	GIS	**D-3: Identify the purpose of the road segment south of P49. Clarify if the area along the road segment would be used during construction.** The area is a cleared area immediately south of the current work area. If the area would be used, include the area in the revised GIS data.
72	GIS	**D-4: Identify the purpose of the road segment that leads southeast from P50.**
73	GIS	**D-5: Identify the purpose of the road segment south of P53.**
74	GIS	**D-6: Identify the purpose of the road segment south of R62.**
75	GIS	**D-7: Revise the access route segment north of P55 so that it connects to public road.** Include the access route in the revised GIS data.
76	GIS	**D-8: Identify the purpose of the road segment north of R68. Additional development not shown in the current aerial photo would not allow access from the north.**
77	GIS	**D-9: Identify the purpose of the two road segments that intersect southwest of P57 and south of P56.**
78	GIS	**D-10: Identify the purpose of the extra road segment north of the Peñasquitos Substation. Would extra workspace be needed between the stringing sites?**
79	GIS	**D-11: Revise the three access routes that allow access to the western side of the Peñasquitos Substation. The access routes should extend to the edge of the substation.** Include the access route in the revised GIS data.
80	GIS	**D-12: Identify the purpose of the road segment that extends south from the access road to the Peñasquitos Substation.**

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
81	GIS	**D-13: Revise the eastern end of the access route to the Peñasquitos Substation so that it extends to public road.** Include the access route in the revised GIS data.
Overview Maps – Attachment 3		
82	GIS	**Overview-1.1: Several project access roads do not fully connect to public roads. Ensure that all access roads connect to public paved roads, so any road calculations will be accurate.** Include the access routes in the revised GIS data.
83	GIS	**Overview-1.2: Several project access roads are called out for grading, but appear to be heavily graveled or are paved, and some roads are not classified at all. Please evaluate and provided updated road classifications.**
84	GIS	**Overview-2: The long access route west of Segment A (near P20 through P23) does not connect to any work areas. State the purpose for this access road.**
85	GIS	**Overview-4: Identify the ingress/egress route(s) for the SR-56 Staging Yard.** Include the access route(s) in the revised GIS data.
86	GIS	**Overview-5: The access road that leads south from P44 into the Los Peñasquitos Canyon Preserve dos not connect with another access road that runs east to west through the preserve. State the purpose of these access roads.**
Aesthetics		
87	N/A	**Provide the location of any proposed tangent structures (larger TSPs) that would be used along any of the proposed overhead alignments.** There is an in-line dead-end (anchor) tower structure just north of the first SR 56 crossing (Segment A). These tower types are approximately twice the diameter of tangent towers, which makes them more visually apparent. Please submit the locations (GIS data) and pole number if large-diameter TSPs are proposed.
88	Deficiency Report #1, Item 15	**Clarify the location of proposed marker balls within Segment D.** From our current GIS data set, Segment D east of tower structure E24 shows several spans with marker balls. Will the marker balls be on the shield (guard) wires of the new monopole or the higher shield wires of the existing steel lattice towers?
89	Data Request #1, Item 21	**Please provide a CD of the baseline photos and simulations included in the PEA.** The CPUC requested a CD of the baseline photos and simulation in Data Request #1, Item 21. The response said a CD would be shipped; however, it was never received.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
90	N/A	**There is a large cable strung on the H-frame between the poles just south of Poway Road to the Scripps Summit Business Park (refer to Attachment 4). Its line's catenary is well below the conductor's catenary. What does SDG&E plan to do with this line when the H-frames are removed? Will the line be removed?**
Air Quality/Greenhouse Gas Emissions		
91	Air Quality Model	**Update the air quality modeling to reflect the increased travel distance to staging yards. Verify all other assumptions in the air quality model are consistent with the Project Description as currently proposed.** There have been changes to the project staging yards and Project Description, including construction of large retaining walls, that could affect the assumptions used in the air quality model. The air quality modeling needs to be updated to reflect the current Project Description that accounts for locations of proposed staging yards (with property owner permission) and responses to items in this data request that include, but are not limited to, the total amount of cut-and-fill (import and export of material), locations of landfills, locations of water sources, and duration and type of use of helicopters.
92	Air Quality Model	**Provide vehicle exhaust emissions factors for on-road trucks.** Provide all vehicle exhaust emission factors used for the air quality modeling. Specifically, this should include emissions factors for: • On-road trucks at 30 miles per hour • On-road trucks PM_{10} tire wear and break wear • On-road trucks $PM_{2.5}$ tire wear and break wear • Gasoline-powered light-duty vehicles at 35 miles per hour emissions factor • Any other vehicle exhaust
93	Air Quality Model	**Confirm the use and model/classifications of construction equipment for each segment.** The construction trucks or vehicle models identified for a segment's maximum daily construction emissions, construction heavy equipment use (Table A-1) does not match the construction truck or vehicle models identified in the segment's maximum daily construction emissions, construction trucks (Table A-2). For example, a crane truck is identified as MHDT idling in Table A-1, but is identified as LHDT in Table A-2. Please clarify or correct these discrepancies in the air quality model.
94	Air Quality Model	**Update the PM_{10} and $PM_{2.5}$ paved-road fugitive dust emissions for on-road vehicles and trucks to reflect the updated emissions factors in the EPA's updated AP-42 (2011).** The EPA has updated AP-42 to include new emissions factors for on-road vehicles and trucks. Revise the paved-road emissions factors to reflect this update.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
95	Air Quality Model	**Update the materials handling fugitive dust emissions calculations using a consistent method for all segments.** The materials handling fugitive dust emissions were not calculated consistently across all line segments. Use the same methodology to calculate materials handling fugitive dust emissions across all segments and specify all input values, including the assumptions for constants that are used.
96	Air Quality Model	**Clarify whether the emission for Greenhouse Gases in Table B-1 and Table B-2 are the total for both construction years 2016 and 2017, or if the emissions reflect a single year. If the emissions reflect a single year, do the emissions reflect a 12-month construction period in one year or do they assume construction would start mid-year?**
97	Air Quality Model	**Provide the maximum leak rate and emissions of SF6 for the project's transmission circuit breakers.** The PEA states that the project would generate SF_6 from the project's transmission circuit breakers. SDG&E's response to DR#1 states that a total of approximately 644 pounds of SF_6 would be required during operation and maintenance of the project. Please clarify if this is the total amount required over the lifetime of the project's operation/maintenance or provide the timeframe associated with this amount. Please also prove the potential leak rate and emissions of SF_6.
98	Air Quality Model	**Provide annual air quality emissions calculations for criteria pollutants.** The PEA only includes daily emissions. SDAPCD has annual emissions thresholds. Please provide annual emissions estimates.
99	Air Quality Model	**Address the errors in Table B-1 including the cells for CO_2 total emissions (cell W36), CH_4 total emissions (cell X36), and N_2O total emissions (cell Y36).** The formulas in these cells are incorrect and affect the total GHG emissions from construction equipment use. The incorrect GHG emissions from construction equipment use are also carried over into Table B-5. Correct these errors.
100	PEA page 4.3-16, Table 4.3-5	**Provide 2013 air quality data for $PM_{2.5}$, PM_{10}, NO_2, SO_2, and CO. Clarify the air quality station that was used to obtain data on CO and SO_2.**
101	N/A	**Provide the estimated GHG emissions from the Proposed Project without mitigation.** The CPUC PEA Checklist requires (1) quantifying GHG emissions associated with a Proposed Project if no mitigations are used and (2) quantifying the net GHG emissions after mitigations have been applied. The PEA only presents GHG emissions after mitigation.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
Biological Resources		
102	N/A	**Complete biological surveys in all areas of the Proposed Project that have not been surveyed for biological resources.** SDG&E has proposed use of many miles of access roads, stringing sites, other work areas, and staging yards that have not been surveyed for biological resources. The areas requiring biological surveys are shown on the Biological Survey Maps included in Attachment 5. The overview maps show all project areas requiring survey including the long access roads that remain in the GIS dataset. The detailed maps only show a close up of the areas that require survey along the project corridor. SDG&E must complete surveys for all remaining work areas including access roads, staging yards, and stringing sites that are proposed for Project use. The survey data are required to establish baseline biological resource conditions along proposed roadways and work areas. These data are necessary to analyze the existing conditions and environmental impacts under CEQA; therefore, the CPUC requires this information for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies, in which case the CPUC will conduct the studies. Otherwise, inform us as to when this information will be provided.
103	PEA Appendix 4.4-A Page 58 and Appendix F	**Provide GIS data for Quino checkerspot butterfly (QCB, *Euphydryas editha quino*) localities and Mapped Areas.** The PEA states, "The QCB has a moderate potential to occur within the BSA. Host plants and suitable habitat is present within the BSA and known localities exist just outside of the BSA; however, the Proposed Project is located outside of the SDG&E Quino Mapped Area." Provide GIS data that identify where QCB localities occur "just outside the BSA" (or any within the BSA). Please also provide the most current data for the QCB Mapped Area in the BSA. According to SDG&E's QCB Low-Effect HCP, the USFWS will update the Mapped Areas annually and provide the information to SDG&E. Finally, provide a Project-specific habitat assessment for the QCB for the BSA regardless of whether or not it is within the previously mentioned "Mapped Areas." The assessment needs to include GIS data and mapping of potential QCB habitat. USFWS will require protocol surveys for QCB in suitable habitat areas prior to construction.
104	PEA Appendix 4.4-A Page 65 and Appendix F	**Provide GIS data for the burrowing owl (BUOW, *Athene cunicularia*) habitat assessment.** The PEA states, "The burrowing owl has a moderate potential to nest and winter within the BSA. The BSA is within the known range of this species but there is limited suitable habitat present." Provide GIS data that identify the locations of potential BUOW habitat in the BSA and an explanation as to how those locations were determined. In addition, CDFW has requested protocol surveys for BUOW. Protocol surveys will need to be conducted by SDG&E in the spring. The BUOW survey report needs to be provided to CPUC within 30 days of survey completion.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
105	PEA Appendix 4.4-A Appendix A, Figure 6 Appendix E, Table 3	**Provide a habitat assessment for thread-leaved brodiaea (Bf; *Brodiaea filifolia*).** The PEA indicates that the BSA is outside of the known range of Bf. Several occurrences of Bf were shown on Figure 6 of Appendix A, however, and the June 27, 2014, Special-Status Plant Survey Summary Report for the Project (prepared by Busby and Rocks) documents Bf in the BSA in close proximity to the alignment (page 11 of Figure 3). A habitat assessment for this species needs to be completed to identify areas where the species has potential to occur in the BSA, based on appropriate soils, vegetation communities, and any other habitat requirement for this species. Provide GIS data of the potential Bf habitat areas based on a field assessment and a write-up of how the habitat assessment was completed.
106	PEA Appendix 4.4-A Appendix D Appendix E, Table 2	**Provide a habitat assessment for willowy monardella (Mv; *Monardella viminea*).** The PEA indicates that Mv has very low potential to occur; however, the CNDDB shows locations in drainages that extend into a 1-mile buffer around the alignment. A habitat assessment for this species needs to be completed to identify areas where the species has potential to occur in the BSA based on appropriate habitat requirements for this species. Provide GIS data of the potential Mv habitat areas based on a field assessment and a write-up of how the habitat assessment was completed.
107	PEA Appendix 4.4-A; Appendix A, Figure 6; Appendix E, Table 2; Figure 12 (page 25)	**Provide explanation for "very low" potential for California Orcutt grass (Oc; *Orcuttia californica*).** The PEA indicates that Oc has very low potential to occur and that vernal pool habitat is present, but the BSA is outside the known range of the species in San Diego County. However, the CNDDB shows a location for this species at the western end of the alignment, and a vernal pool is mapped at the western end of the alignment.
108	GIS	**Provide GIS Data From the Jurisdictional Delineation San Diego Gas & Electric Company's Sycamore To Peñasquitos 230 Kilovolt Transmission Line Improvements Project (Environmental Intelligence 2014) including data on "Potential Road Rut Vernal Pools".** The delineation included locations of vernal pools and "potential road rut vernal pools" within project access roads and work areas. This data is needed to analyze potential impacts to vernal pools in the DEIR.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
Cultural Resources		
109	N/A	**Complete cultural resource surveys in all areas of the Proposed Project that have not been surveyed for cultural resources.** SDG&E has proposed use of many miles of access roads, stringing sites, other work areas, and staging yards that have not been surveyed for cultural resources. The areas requiring cultural resource surveys are shown on the Cultural Survey Maps included in Attachment 6. The overview maps include the long access as well as an overview of all areas that require surveys. The detail maps provide greater detail on the areas along the alignment that have been surveyed and that require cultural resource surveys. SDG&E must complete surveys for all remaining work areas that are proposed for Project use that were not previously surveyed. The survey data are required to evaluate the impacts to cultural resources under CEQA; therefore, the CPUC requires this information for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies, in which case the CPUC will conduct the studies. Otherwise, inform us as to when this information will be provided.
110	Deficiency Report #1, Item 26	**Provide additional information on sites 370024244H, Cypress Creek Stagecoach Road, and 37-033557H, Old Highway 395. Specifically, define whether these roads would be used for Project access or occur within the work area. If these roads would be used for the Project, these resources need to be evaluated for California Register of Historic Resources (CRHR) eligibility and any existing SDG&E management or maintenance plans for these roads.** ***In accordance with the outcome of the Madera Oversight Coalition v. County of Madera case, substantial evidence must be provided demonstrating that known sites that have not been evaluated for their eligibility can be avoided, or if they cannot be avoided, they must be evaluated for eligibility for listing in the CRHR so that the results can be included in the EIR analysis.*** Sites 370024244H and 37-033557H appear to be within the Project work area, but have not been evaluated for CRHR eligibility. The PEA did not discuss impacts to these resources; however, it appears these roads may be used for Project access. If SDG&E intends to use these roads, SDG&E must evaluate the eligibility of the resources for listing in the CRHR. The CPUC requires this information for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies, in which case the CPUC will conduct the studies. Otherwise, inform us as to when this information will be provided.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
111	Deficiency Report #1, Item 26	**Evaluate CA-SDI-14131 for CRHR eligibility or specify measures that SDG&E will implement to ensure the resource is avoided.** The PEA did not disclose any impacts to Site CA-SDI-14131; however, it appears this site is located in proximity to the Project work area and could be impacted by the Project. This site was not previously evaluated by SDG&E for CRHR eligibility. This resource must either be evaluated for CRHR eligibility or SDG&E must specify the measures that will be implemented to ensure the resource will be avoided by the Project. The CPUC requires this information for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies, in which case the CPUC will conduct the studies. Otherwise, inform us as to when this information will be provided.
112	Deficiency Report #1, Item 26	**Provide a landscape-level assessment of potential Project impacts to:** • **CA-SDI-11148H, Del Mar Historic Ranch Remains, two earthen dams** • **CA-SDI-11256H, Poway Historic Homestead Remains, cobblestone wall and pits** • **37-033556H, Del Mar Historic Dam and possible associated structure** **If the project would impact these resources based on the landscape-level assessment, then these resources must be evaluated for CRHR eligibility.** Sites CA-SDI-1148H, CA-SDI-11256H, and 37-033556H are landscape-level historic resources. These resources need to be evaluated in a landscape context to determine whether or not the Project would impact the resources. The PEA did not include a landscape-level assessment of the resources and dismissed any impacts to the resources without sufficient evidence. The CPUC requires this information for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies, in which case the CPUC will conduct the studies. Otherwise, inform us as to when this information will be provided.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
Noise		
113	Section 4.10.3.3, page 4.10-7	**Provide additional noise measurements characterizing generalized noise environments where impacts may occur.** The transmission line goes from very quiet locations to louder locations (near transportation noise). Completed noise surveys focused on providing a quiet ambient characterization of noise without any daytime (during construction hours) measurements to provide an environmental characterization. No attempt was made to characterize existing corona noise levels or at least to show the corona noise level as less than typical ambient. Additional daytime measurements are needed in several locations with traffic noise. These should be used with a normal traffic distribution pattern to provide a 24-hour typical noise level for the location. In addition, several simultaneous 24-hour existing power line coronal noise measurements taken with a recording meter are needed. The meter needs to be configured to take measurements every minute or every second, with meters set on the same time standard to show the coronal or other environmental noise floor for a given location. Furthermore, one meter needs to be placed directly below the existing power line and a second at approximately two doublings of the same distance away from the power to show the corona noise and the reduction of noise due to distance. Reference locations are provided for the above measurements in Attachment 7. Provide a map showing the locations of previous noise measurements and these additional noise measurements with appropriate labels that are consistent with the noise measurement tables. The CPUC requires this information for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies, in which case the CPUC will conduct the studies. Otherwise, inform us as to when this information will be provided.
114	PEA Table 4.10-10 Section 4.10.4.3	**Provide data for any grading and compaction equipment that would be used for reestablishing and maintaining access roads, and include a discussion in the noise impacts from use of this equipment.**
115	Data Request #1, Item 40 Section 4.10-3	**Provide a description of the heavy lift helicopter noise that will be generated when tower sections are lifted, including a flight plan, which helicopters will be used for tower lifts, take-off noise, transition noise, level flight noise, and hover noise. Use these noise descriptions to explain how noise will impact a residence.** Response to Item 40 in Data Request #1 stated that helicopter usage at any one location would be very brief as the lines are being strung. Both the noise report section and other PEA components note that the helicopters may be used to set poles. Helicopter activity for material transport and structure erection may have substantial noise and must be captured in our DEIR impact analysis.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
Recreation		
116	N/A	**Define the duration of construction activities along Segment C and how long the transmission corridor trail or any portion of the transmission corridor trail is anticipated to be closed. Please also provide records of any conversations SDG&E has had with the City of San Diego's Park and Recreation Department concerning potential trail detours that will allow trail access during the entire Segment C construction process.** Segment C includes access roads that are used as trails through the Del Mar Mesa Preserve. The transmission line access road/trail is the primary trail that affords north-south access to Los Peñasquitos Canyon Preserve from the north and one of the few trails in the Preserve that remains accessible.
Traffic		
117	Data Request #1, Item 54	**Provide the information requested in Data Request #1, Item 54. Existing traffic count data are needed to characterize the baseline traffic conditions in the area and evaluate impacts to traffic under CEQA. SDG&E's response that the data would be provided in a Traffic Management Plan after the final alignment is complete is not adequate for completing our traffic impact analysis in the DEIR. Should SDG&E fail to provide the requested information, CPUC will conduct studies to obtain these baseline data for the Draft EIR. Let us know by October 8 if you cannot or do not want to conduct these studies. Otherwise, inform us as to when this information will be provided. CPUC still requires the following data:** **2. Current bi-directional ADT counts on all legs of the following intersections:** **a. Black Mountain Road/Carmel Valley Road** **b. Camino Del Sur/Carmel Valley Road** **c. Black Mountain Park Driveway/Carmel Valley Road** **3. Peak hour turning movement counts, including bikes and pedestrians at the following roads:** **a. Black Mountain Road/Carmel Valley Road** **b. Camino Del Sur/Carmel Valley Road** **c. Black Mountain Park Driveway/Carmel Valley Road**
118	N/A	**If SDG&E has obtained permission from the property owner to use this site, SDG&E needs to provide an access plan (including construction ingress/egress) and define the limits of staging within the Torrey Santa Fe staging yard where no construction traffic enters Torrey Santa Fe Road.** The public provided a number of scoping comments regarding the use of the Torrey Santa Fe staging yard and concerns about public safety. Torrey Santa Fe Road is the only access to a community with approximately 1,000 residents. Any impacts to traffic or hazards on Torrey Santa Fe Road pose a serious threat to public safety. If use is approved by the property owner, SDG&E must provide an access plan and define the limits of staging that would allow all traffic to enter and exit the staging yard without any impact on Torrey Santa Fe Road if SDG&E intends to use the Torrey Santa Fe staging yard.

Table 1: Application No. 14-04-011 Data Needs #2		
#	**PEA Section, Page #**	**Data Need**
119	Data Request #1, Items 55 and 60	**Describe how long lane closures, road closure, or other effects to traffic flow would be needed for construction activities on Carmel Valley Road in Segment B.** Construction activities on Carmel Valley Road would impact travelers on Carmel Valley Road. The PEA and SDG&E response to Data Request #1 do not provide adequate information to determine how traffic activities would affect traffic flow, traffic hazards, and emergency vehicle access. Please address the following: 1. Will Project construction require complete closure of the road (i.e., closure in both directions) at any time? Where would these closures occur along Carmel Valley Road? What is the maximum duration and expected frequency of any closures? 2. Will construction require closure of one direction of traffic on Carmel Valley Road (e.g., closure of all eastbound lanes) at any time? Where would these single-lane closures occur along Carmel Valley Road? What is the maximum duration and expected frequency of any single-lane closures? 3. Would construction occur in more than one location at a time along Carmel Valley Road? If so, where would this occur? 4. Would traffic be restricted at the intersections with Black Mountain Road and Camino Del Sur during construction? How would the restriction affect turning? Would the restriction cause single-lane closures? What is the maximum duration of each traffic restriction at the intersection? How often would the restriction be in place? a. Can construction be completed with intersections open in all directions and for all turning movements?
120	N/A	**Describe how long lane closures, road closures, or other traffic restrictions would be needed for construction activities on aboveground transmission segments (Segments A, C, and D).** Construction activities on roadways along Segments A, C, and D would impact travelers on those roadways if any traffic restrictions are required for construction activities, including material delivery and power line stringing. Will construction require complete or single-lane closure of any road or highway (i.e., closure in both directions) at any time? What is the expected roadway/highway, location, duration, and frequency of any complete or single-lane closure during construction?
121	N/A	**Verify that construction equipment and vehicles could be transported on public roadways.** The PEA provided inadequate information to determine whether equipment and vehicles can be operated on narrow roadways or roadways with tight curves in the Project area. Verify that roads meet the widths and turn radii necessary to accommodate Project vehicles. For roads that cannot accommodate Project vehicles, define what alternative methods would be used for delivering the poles and equipment. Identify which poles may require this alternative delivery method.

Attachment 1: Scoping Letters

Robin Madaffer, Esq.
Justine Nielsen, Esq.

Lynne Heidel, Esq.
Of Counsel

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Real Estate • Land Use • Environmental

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robin@sdlandlaw.com

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September 16, 2014

Via Email

Ms. Billie Blanchard (CPUC Project Manager)
California Public Utilities Commission
c/o Panorama Environmental, Inc.
One Embarcadero Center, Suite 740
San Francisco, CA 94111
sycamorepenasquitos@panoramaenv.com

RE: Notice of Preparation Scoping Comments - Sycamore-Penasquitos 230 Kilovolt Transmission Line Project

Dear Ms. Blanchard:

We represent Kilroy Realty ("Kilroy") with respect to its property located south of State Route 56 near Camino del Sur ("Kilroy Property"). In response to the Public Utilities Commission Notice of Preparation of an Environmental Impact Report and Scoping Meeting dated August 11, 2014 ("NOP"), Kilroy has some concerns.

Pursuant to the NOP, San Diego Gas and Electric (SDG&E) is proposing to construct the Sycamore Penasquitos 230 Kilovolt Transmission Line Project, and identifies the Kilroy Property as the Torrey Santa Fe Staging Yard for use as a temporary construction yard. Although Kilroy understands SDG&E's use of the Kilroy Property would be temporary, Kilroy has City-approved land use entitlements to develop the Kilroy Property and intends to move forward with its development plans in the very near future.

Kilroy has not been contacted by SDG&E, nor has it granted SDG&E permission to use the Kilroy Property for construction staging or any other purpose. For these reasons Kilroy objects to SDG&E's proposed use of the Kilroy Property as the Torrey Santa Fe Staging Yard, and suggests SDG&E find an alternative site. If you have any questions, please contact Brian Brady, Development Manager for Kilroy Realty at 858-523-2205.

Very truly yours,

Robin Madaffer

cc: Brian Brady, Development Manager

POWAY UNIFIED SCHOOL DISTRICT

PLANNING DEPARTMENT
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Poway, CA 92064-3034
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sburgoyne@powayusd.com

858-672-3400
FAX 858-672-4324

September 8, 2014

Via UPSP and e-mail @ sycamorepenasquitos@panoramaenv.com

Billie Blanchard, CPUC Project Manager
California Public Utilities Commission
c/o Panorama Environmental, Inc.
One Embarcadero Center, Suite 740
San Francisco, CA 94111

SUBJECT: SAN DIEGO GAS AND ELECTRIC PROPOSED SYCAMORE-PEÑASQUITOS 230-kV TRANSMISSION LINE PROJECT – A.14-04-011 COMMENTS BY POWAY UNIFIED SCHOOL DISTRICT

On behalf of Poway Unified School District ("PUSD") we would like to comment on the Notice of Preparation of an Environmental Impact Report issued for SDG&E's proposed Sycamore-Peñasquitos 230-kV Transmission Line Project (A.14-04-011)

COMMENTS NO. 1 – FAILURE TO COMPLY WITH NOTIFICATION REQUIREMENTS OF CEQA

In accordance with the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations [CCR] Section 15082-83), the lead agency should directly consult anyone that will be concerned with the project's environmental effects through the Notice of Preparation (NOP) process. SDG&E, through the Initial Study and Preliminary Environment Assessment, as well as the Public Utilities Commission, through the current Environmental Impact Report process, failed to notify PUSD. This proposed project not only runs through PUSD's boundaries, which cover over 99 square miles, but the project will also potentially impact many of our school sites that are in close proximity to the planned work. However, in spite of these facts, PUSD was not provided notification of this proposed project by SDG&E or the California Public Utilities Commission ("CPUC"). Instead, the District became aware of the project from a concerned member of the Santaluz Homeowner's Association.

At the public scoping meeting held August 25, 2014, it was verified that PUSD was not included as a property owner on the mailing list even though one of PUSD's surplus properties was identified as a possible staging yard for SDG&E. We request that the notification process be revised and/or re-done to ensure that all public agencies with jurisdiction over property in proximity to the areas of the planned work, including school districts, be added to all future mailing lists regarding this and any other project within its boundaries. It is PUSD's belief that other school districts were not notified including, but not limited to: San Diego Unified, Solana Beach School District, Del Mar Union School District and San Dieguito Union High School District. Maps presented at the scoping meeting clearly show transmission lines close to schools within the above mentioned district boundaries.

COMMENT NO. 2 –PROPOSED STAGING YARD IDENTIFIED AS CARMEL VALLEY ROAD STAGING YARD

The "Temporary Staging Yard" labeled as Carmel Valley Road Staging Yard, identified in Figure No. 1 and Figure No. 3 of the NOP, is PUSD property. This site is a California State Department of Education approved school site for potential future use and, as such, has environmental restrictions. Again PUSD

was not notified nor contacted by SDG&E to discuss the possible use of this PUSD owned property. Any potential use of this site as a staging yard for the project would have significant impacts to PUSD including, but not limited to the following:

1. There is currently an active use agreement on this site.

2. The site was approved as a useable school site by the California Department of Education and the Department of Toxic Substances Control (DTSC). The use of the site as a "temporary staging yard" for vehicle refueling would remove the site from the State classification as suitable land use and would potentially trigger a new EIR and potential cleanup process under the supervision of DTSC – a long and expensive process.

3. Use of the site as a "temporary staging yard" for incidental landing areas for helicopter would not be suitable. PUSD has recently enclosed the site with fencing to eliminate the trespassing of hot air balloons and gliders from accessing the site as a result of complaints from the community. SDG&E's proposal would reactivate those complaints and concerns

During the August 25, 2014, scoping meeting it was stated that this site was temporarily off the table. **PUSD requests written confirmation that this site has been removed from the project as an optional staging yard.**

COMMENT NO. 3 – IMPACT TO CURRENT SCHOOL SITES UNDER CALIFORNIA CODE OF REGULATIONS, TITLE 5, SECTION 14010(c), - HIGH VOLTAGE TRANSMISSION LINE EASEMENTS

Review of NOP Figure No. 3 - Project Elements (Map 2 of 3) showcasing the end of Segment A, the red line citing the removal of old poles and the addition of new poles could have an effect on three of our existing schools sites: Sunset Hills Elementary, Black Mountain Middle and Mt. Carmel High School. While it appears that these poles are just replacing existing poles, in discussion with representatives in attendance at the August 25, 2014 public scoping meeting, and review of the documentation provided, it appears that an additional 230-kV is being added to the existing kV transmission lines being moved. In accordance with California Code of Regulations, Title 5, Section 14010(c), high voltage transmission line easements have a mandatory distance requirement that should be reviewed by SDG&E and PUC during the scoping process. The District requests that the EIR fully review and analyze these standards to ensure that the safety of our students and school facilities is clearly addressed and all appropriate mitigation measures are incorporated into the project.

COMMENT NO. 4 – TRANSPORTATION AND TRAFFIC

In reviewing the proximity of many of our school sites to proposed closure of major arteries during construction, (including but not limited to the following: intersection of Carmel Valley Road and Camino Del Sur; Oviedo Street and Way; and Sundevil Way), there is concern that traffic jams and road closures will have a significant effect on local traffic, especially during school start time in the morning and again at dismissal time in the afternoon. PUSD requests that the EIR and the traffic study prepared for this project contain a thorough analysis of the potential traffic impacts and their effect on the daily operations of our campuses. Again, appropriate mitigation measures should incorporated into the EIR where needed.

COMMENT NO. 5 – PUBLIC SERVICES

The NOP indicates that there is potential for noise, traffic, and air quality (dust) impacts to schools during construction. As SDG&E can understand, PUSD's paramount concern is the safety of its students, staff, and parents. Accordingly, the EIR must thoroughly analyze all of these construction impacts to ensure that there is no impact on safety. In addition, the EIR should also address any potential impacts these items might have on the District's educational programs during and/or after the school day. Here again, appropriate mitigation measures should be incorporated to ensure there are no negative impacts to PUSD's students, staff, and parents as well as PUSD's educational programs and facilities.

Lastly, this section also does not specifically mention any impacts that the operation of the additional transmission line might have on PUSD's students, facilities, and/or education programs. As described in Comment No. 3 above, the EIR should include a thorough analysis of any potential impacts that may be associated with the operation of the additional transmission line.

In conclusion, we would like to once again reiterate our concern that all public agencies were not properly notified for this portion of the environmental process as well as the portion of the project that the scoping meeting described as subject to the review of the CPUC. CEQA has very specific guidelines surrounding notification requirements and processes that must be followed by SDG&E.

Poway Unified School District appreciates the opportunity to continue to participate in the environmental review process of this project. We look forward to receiving future environmental documents related to this project and providing additional assistance at your request.

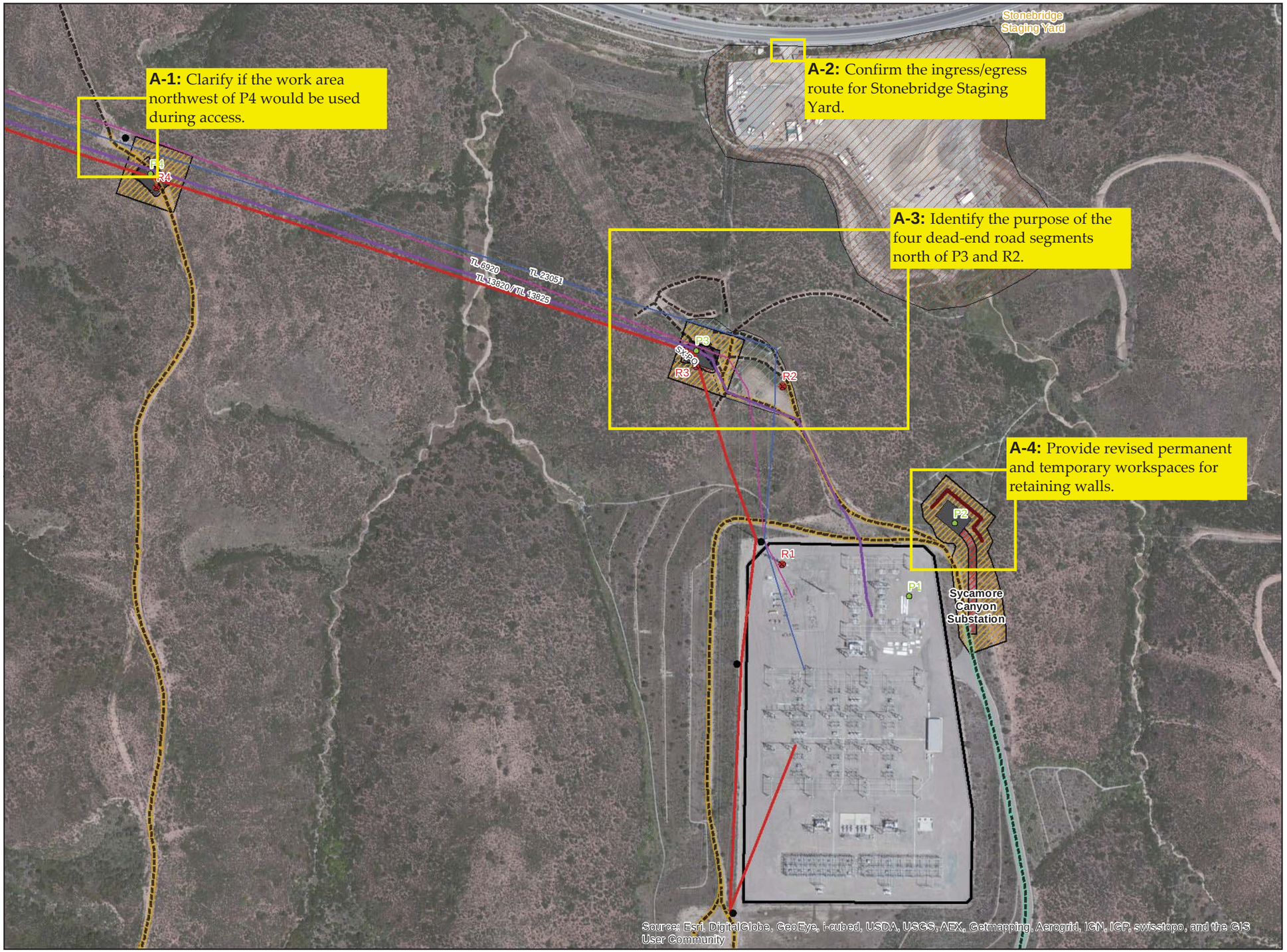
If you have any questions regarding our comments, please contact myself at sburgoyne@powayusd.com or my Senior Planning Analyst, Rheia Vigay at rvigay@powayusd.com. We may also be reached by phone at 858.679.2570.

Sincerely,

Sandi Burgoyne, Director
Planning Department

cc: Dr. John P. Collins, Superintendent, PUSD
Malliga Tholandi, Associate Superintendent, Business Support Services, PUSD
Michael V. Tarantino, Director of Facilities, Maintenance and Operations, PUSD
Tyree Dorward, Best Best and Krieger

Attachment 2: Project Detail Maps with Comments



Sycamore – Peñasquitos Transmission Line Project

Map 1: Project Detail

Date: 9/30/2014 Scale = 1:3,000

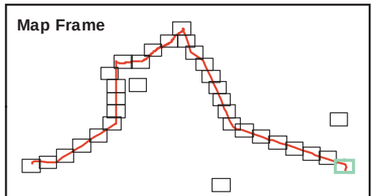
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

A-5: Confirm that GS4 has been removed.

GS4
P6
R6
TL 6920
TL 23051
TL 13820/TL 13825
R5
P5
SX-PQ
GS3
GS2
GS1

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sycamore – Peñasquitos Transmission Line Project

Map 2: Project Detail

Date: 9/30/2014 Scale = 1:3,000

Legend

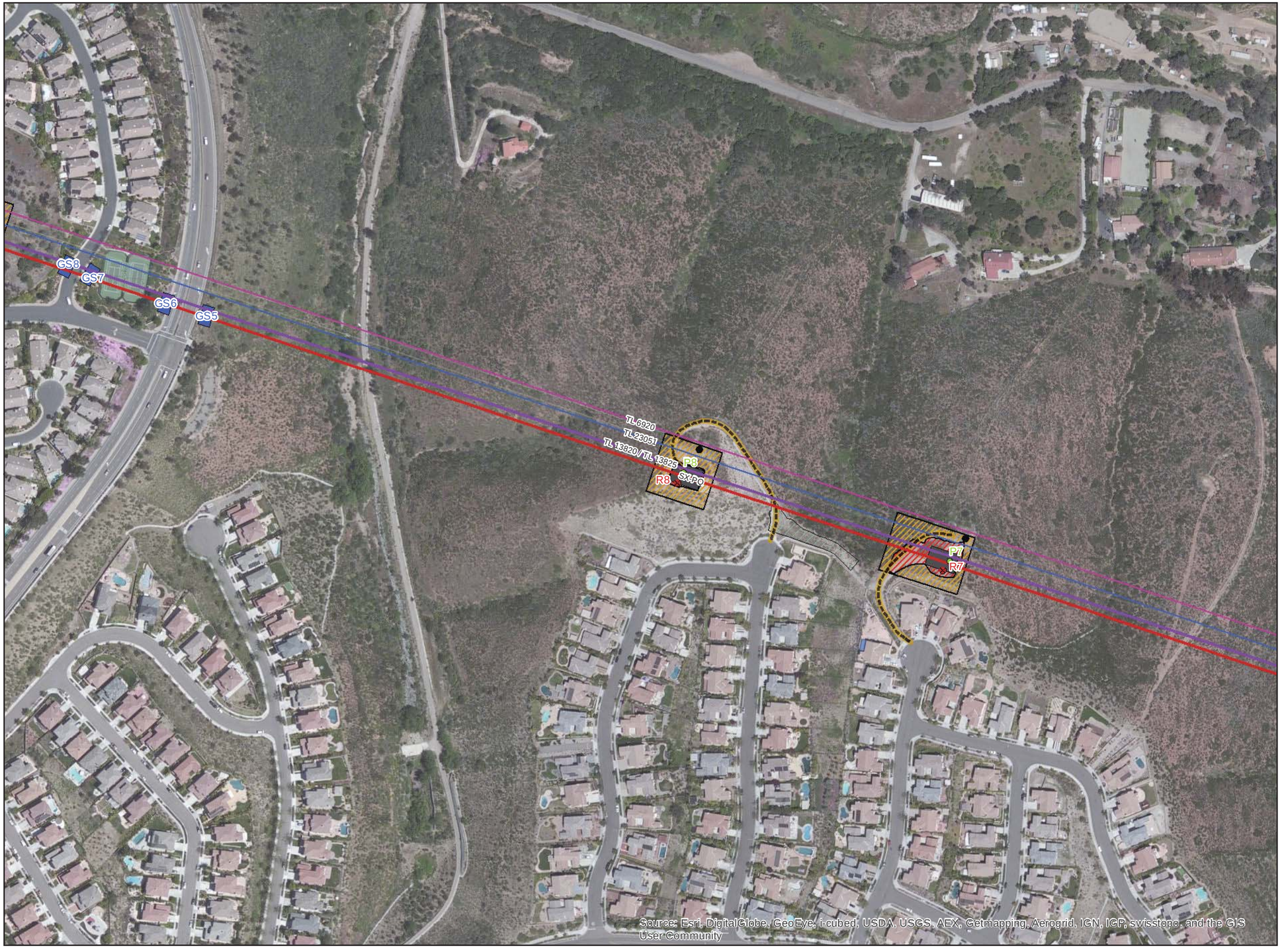
- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 3: Project Detail

Date: 9/30/2014 Scale = 1:3,000

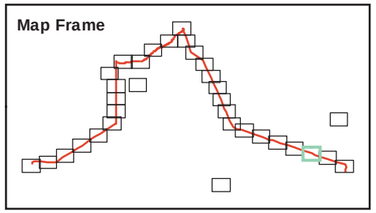
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



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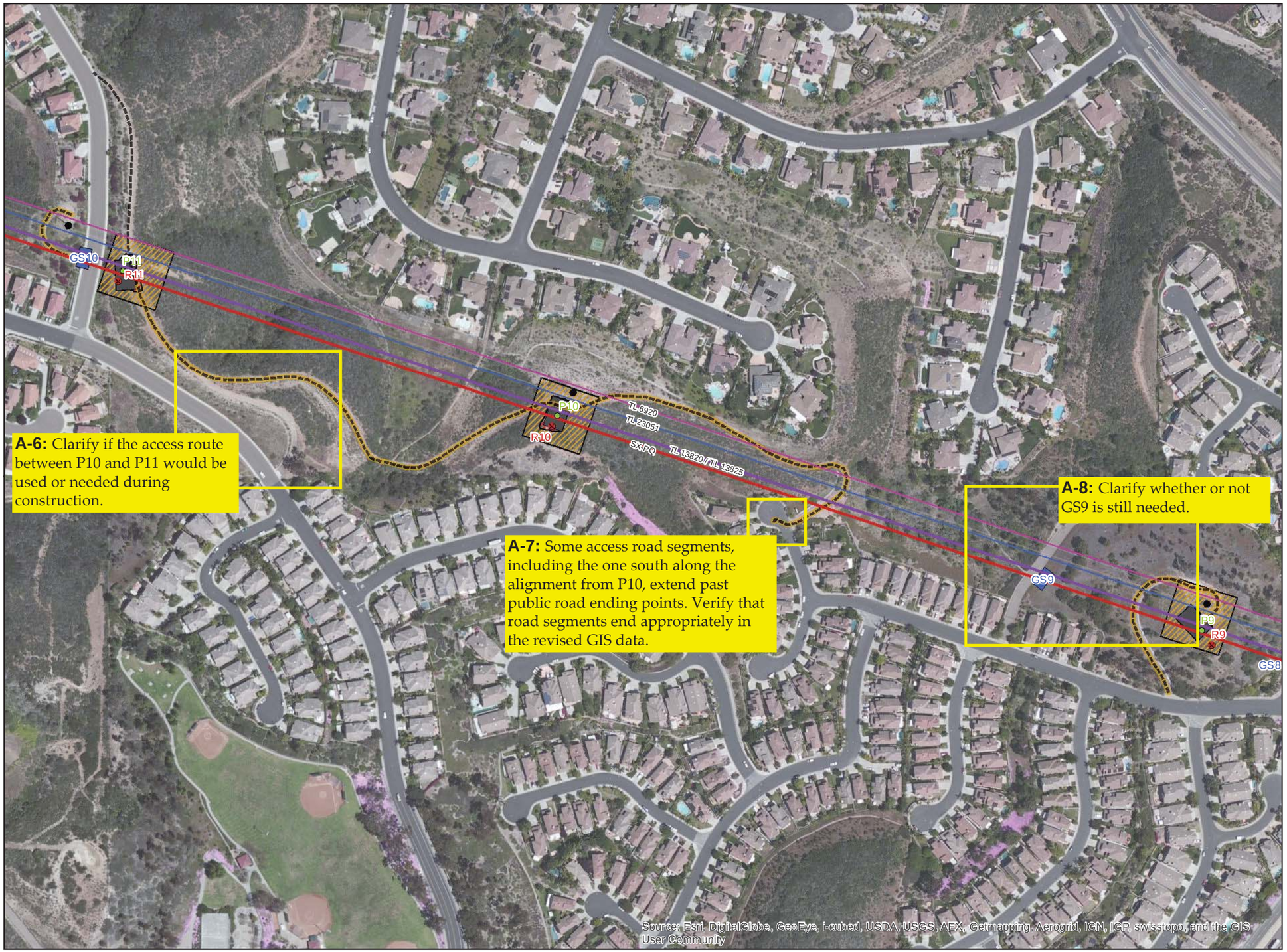


Sycamore – Peñasquitos Transmission Line Project

Map 4: Project Detail

Date: 9/30/2014 Scale = 1:3,000

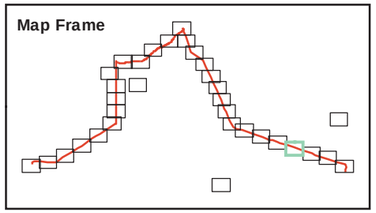
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

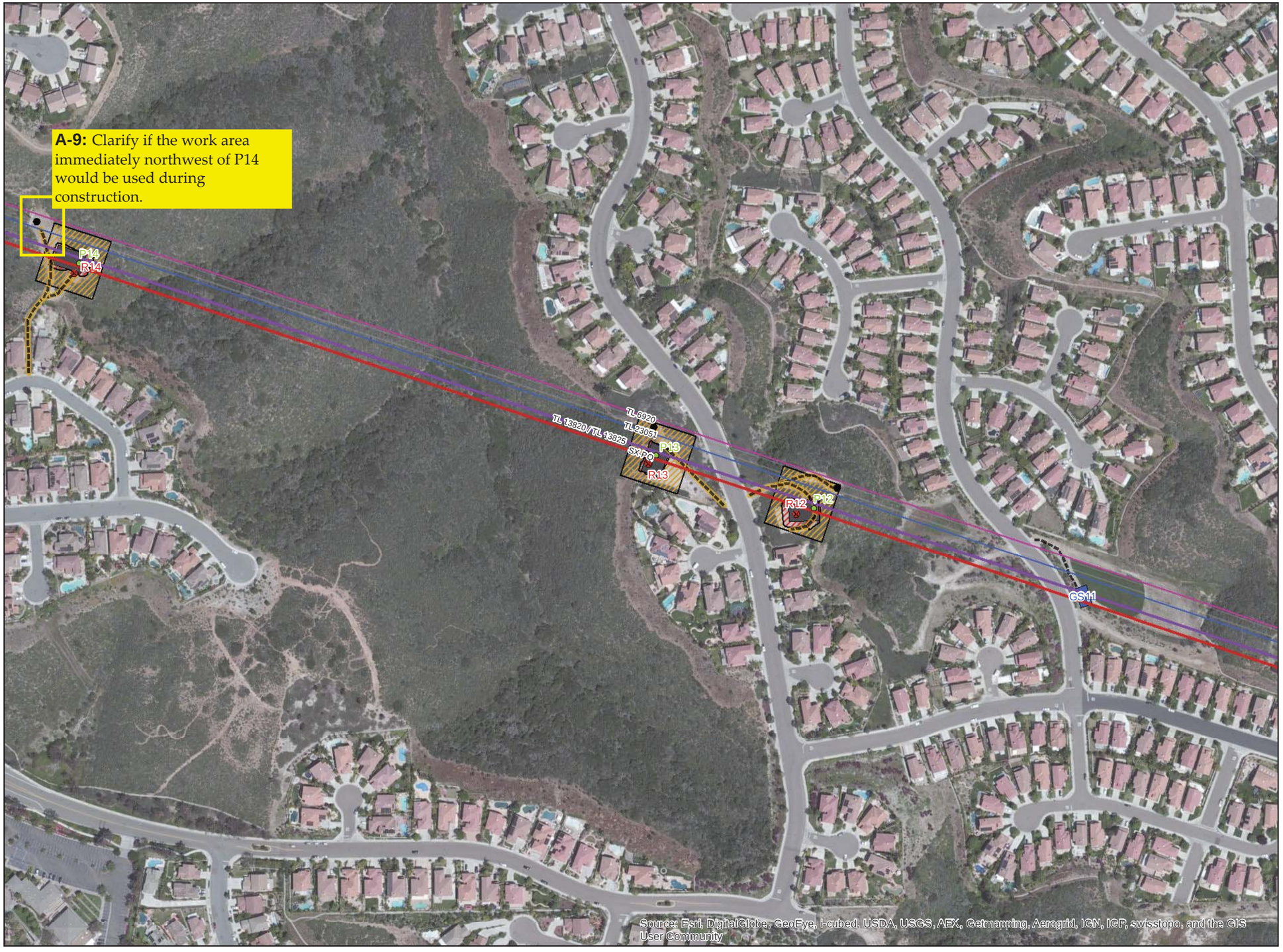
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 5: Project Detail

Date: 9/30/2014 Scale = 1:3,000

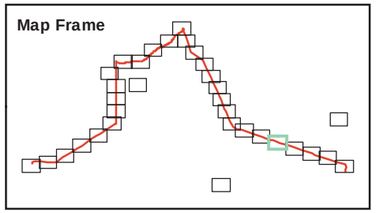
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

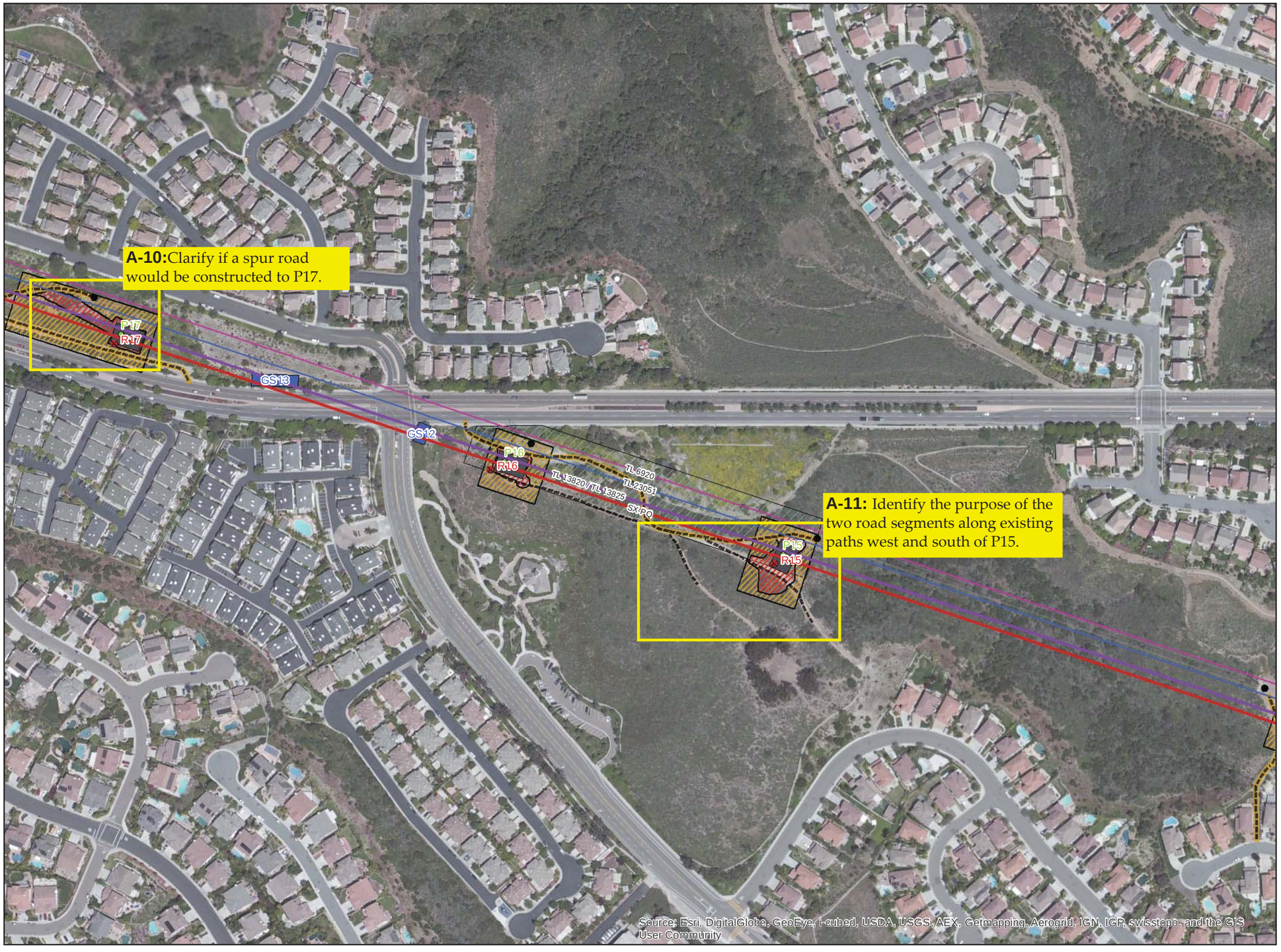
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 6: Project Detail

Date: 9/30/2014 Scale = 1:3,000

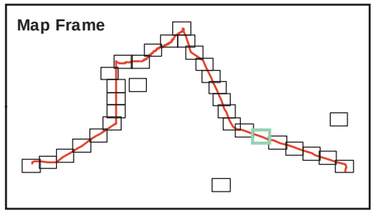
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

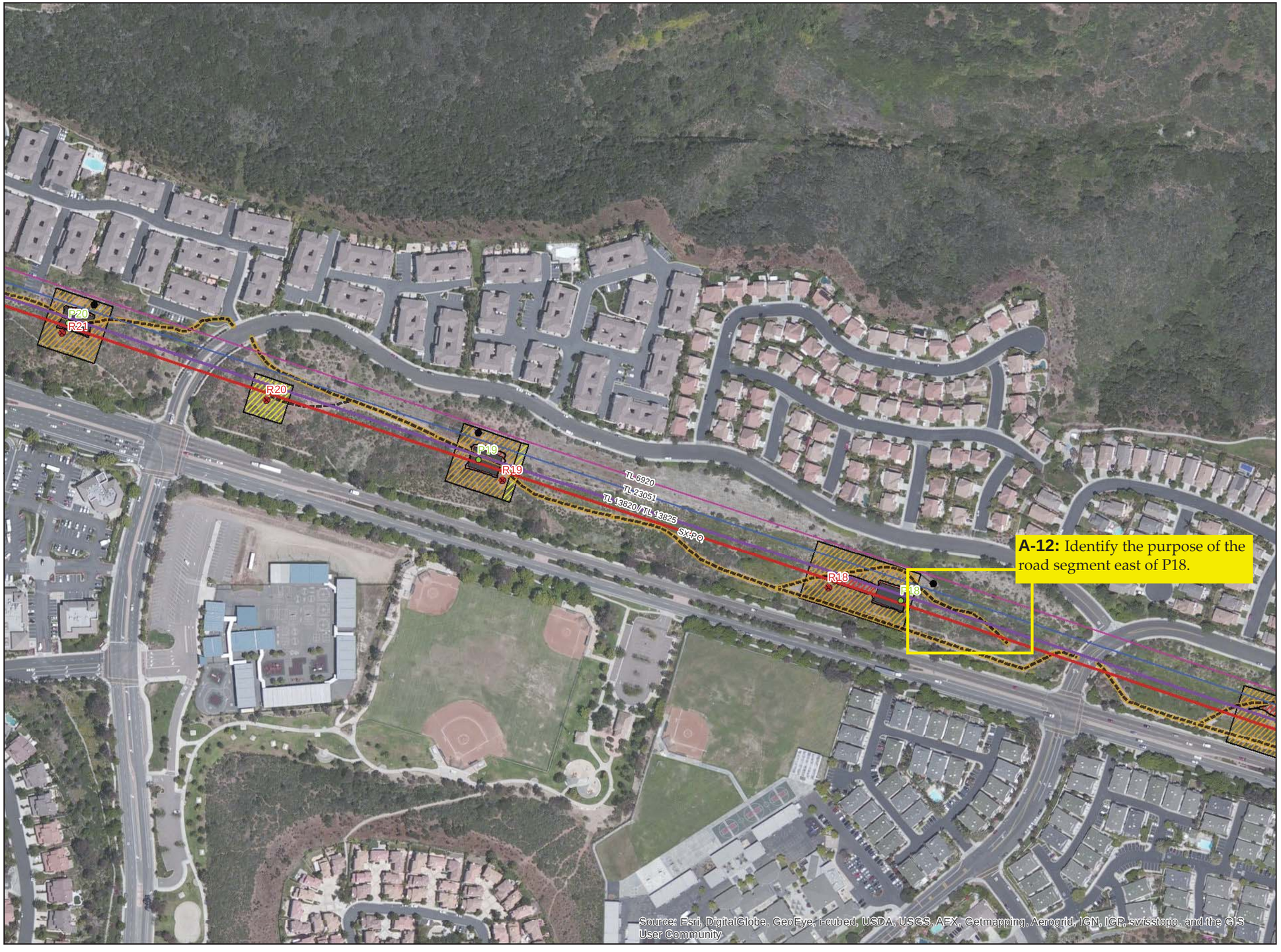
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 7: Project Detail

Date: 9/30/2014 Scale = 1:3,000

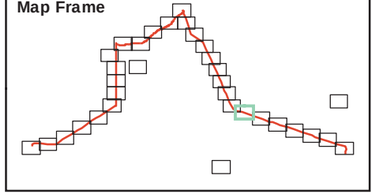
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

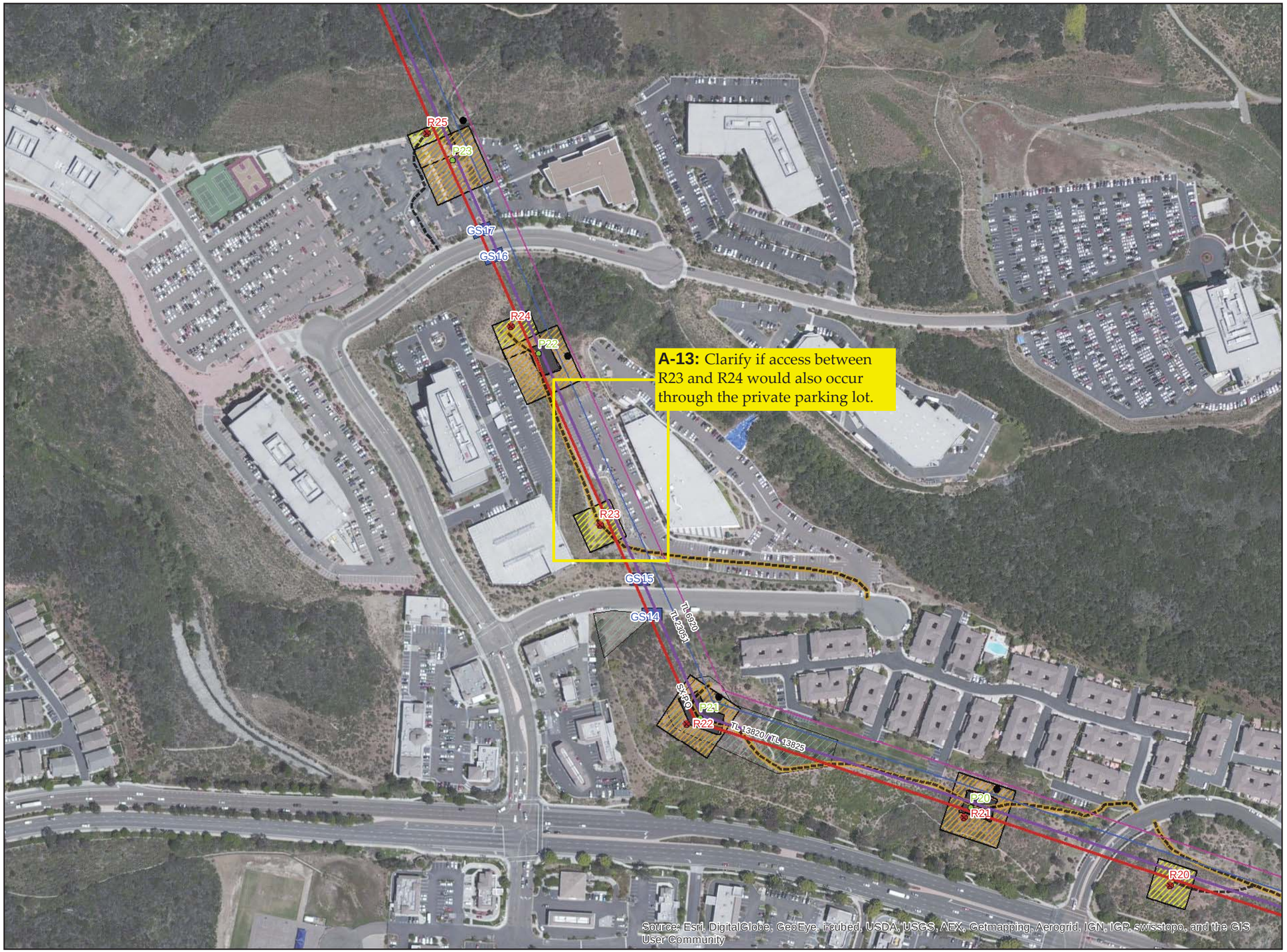
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 8: Project Detail

Date: 9/30/2014 Scale = 1:3,000

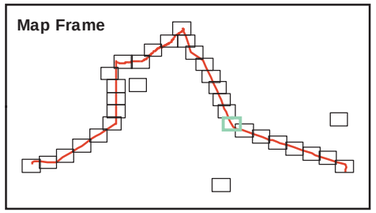
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

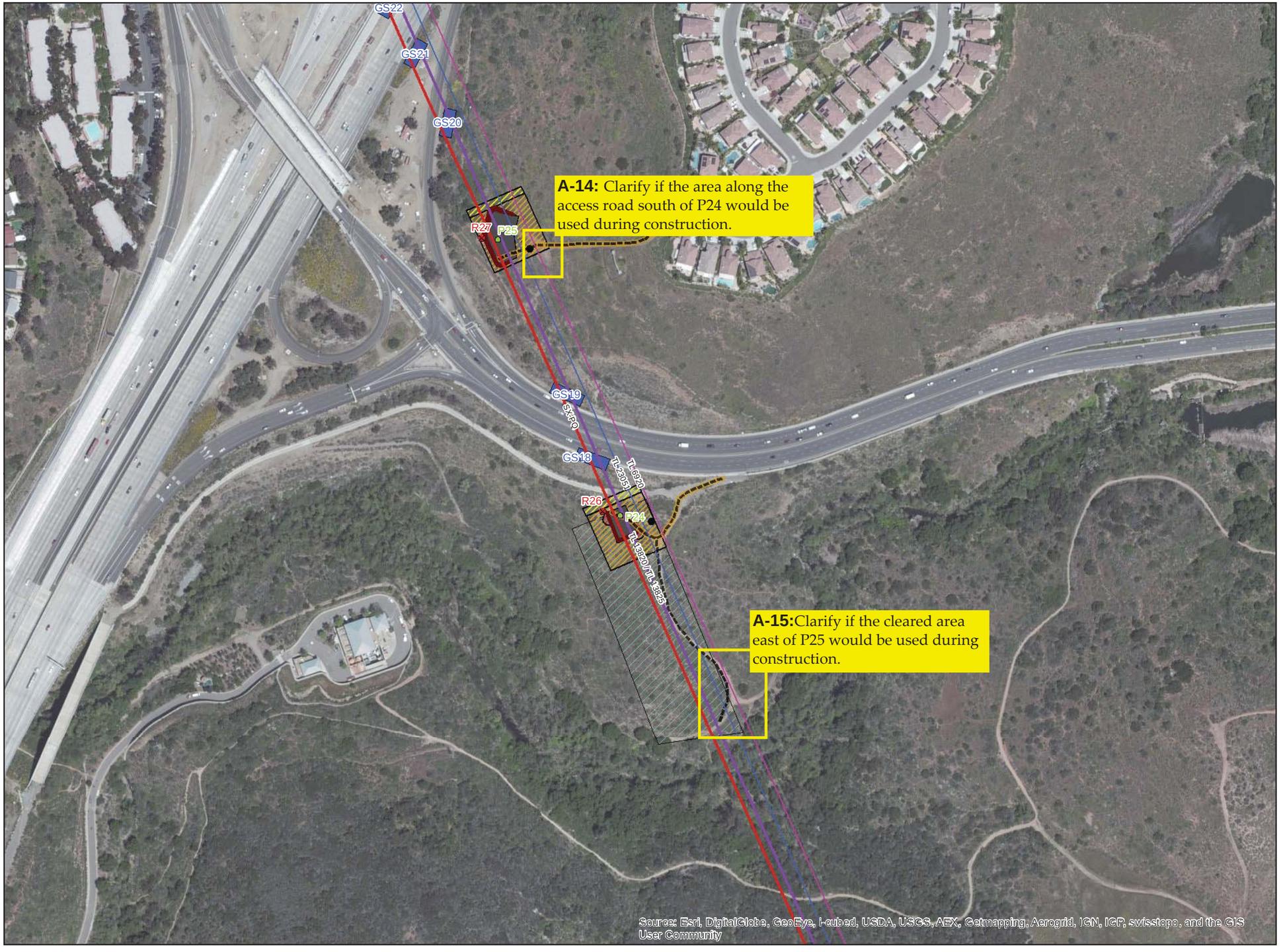
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 9: Project Detail

Date: 9/30/2014 Scale = 1:3,000

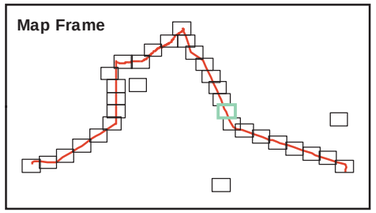
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 10: Project Detail

Date: 9/30/2014 Scale = 1:3,000

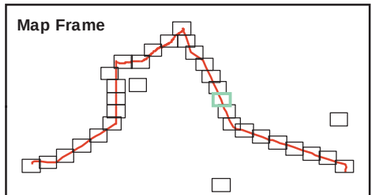
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 11: Project Detail

Date: 9/30/2014 Scale = 1:3,000

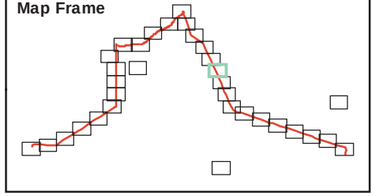
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

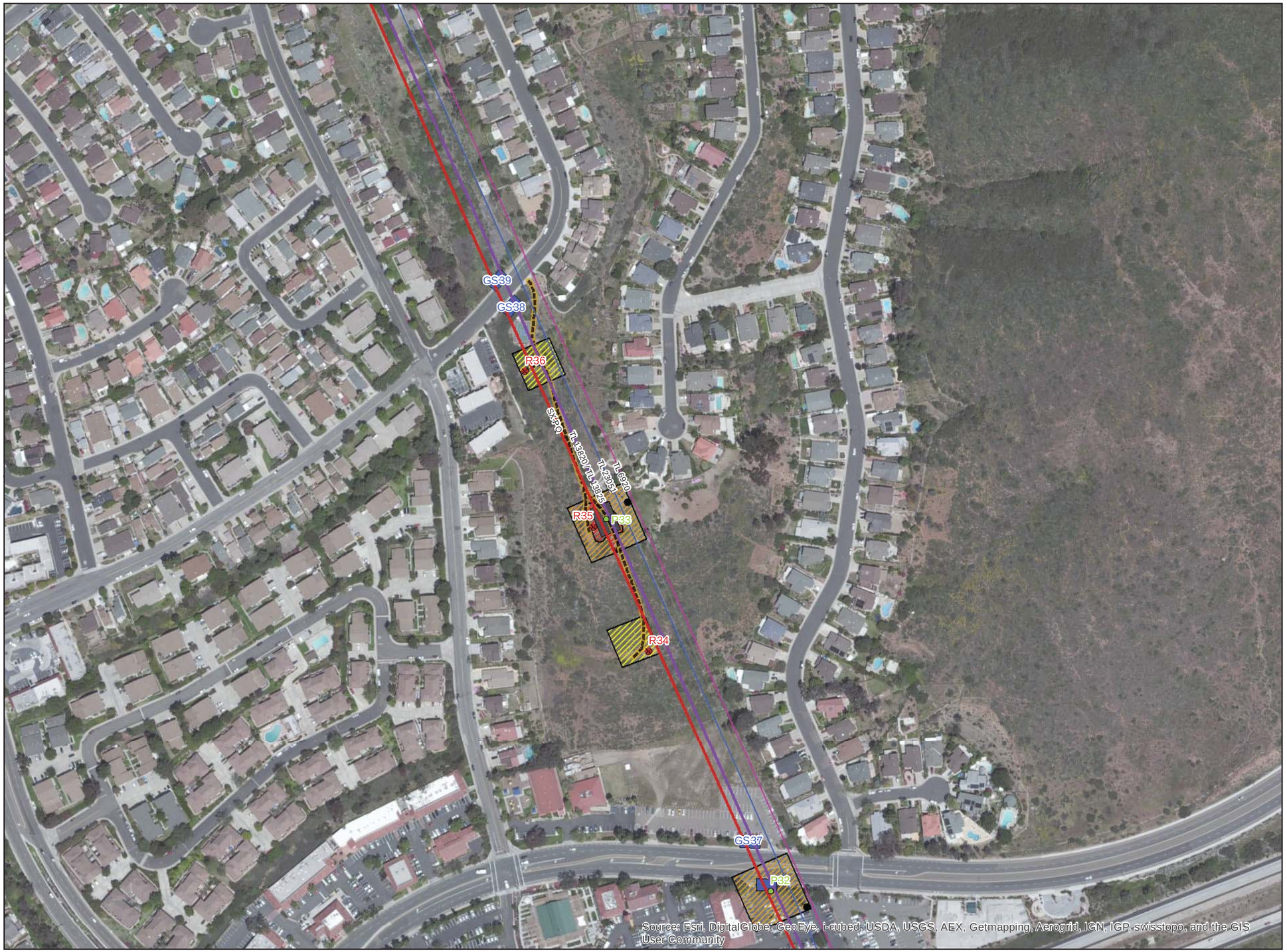
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 12: Project Detail

Date: 9/30/2014 Scale = 1:3,000

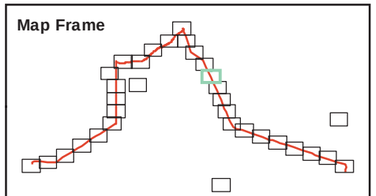
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

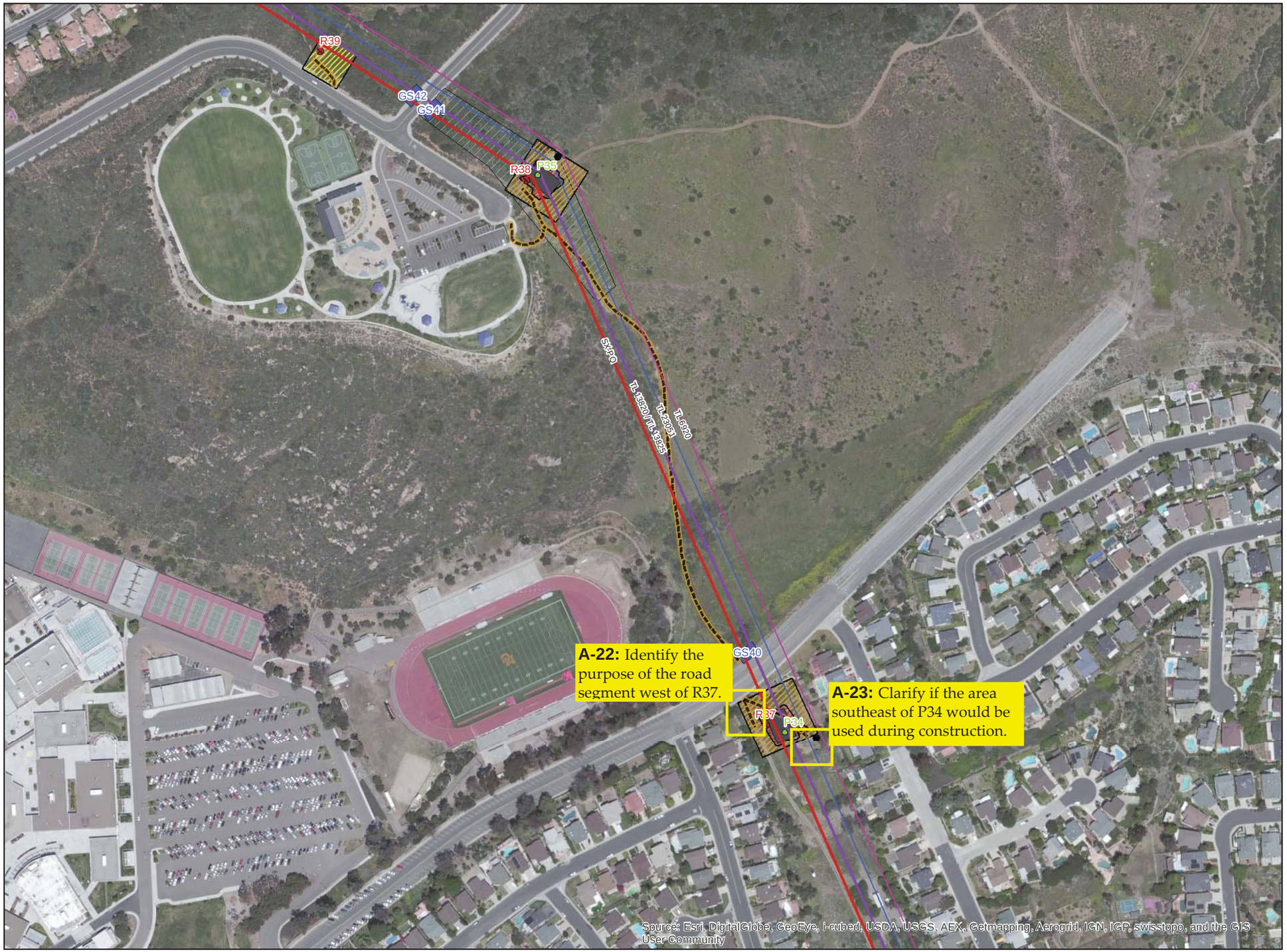
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 13: Project Detail

Date: 9/30/2014 Scale = 1:3,000

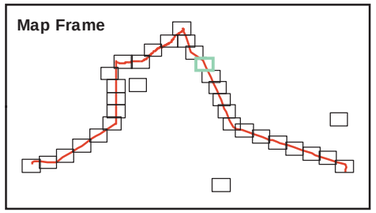
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

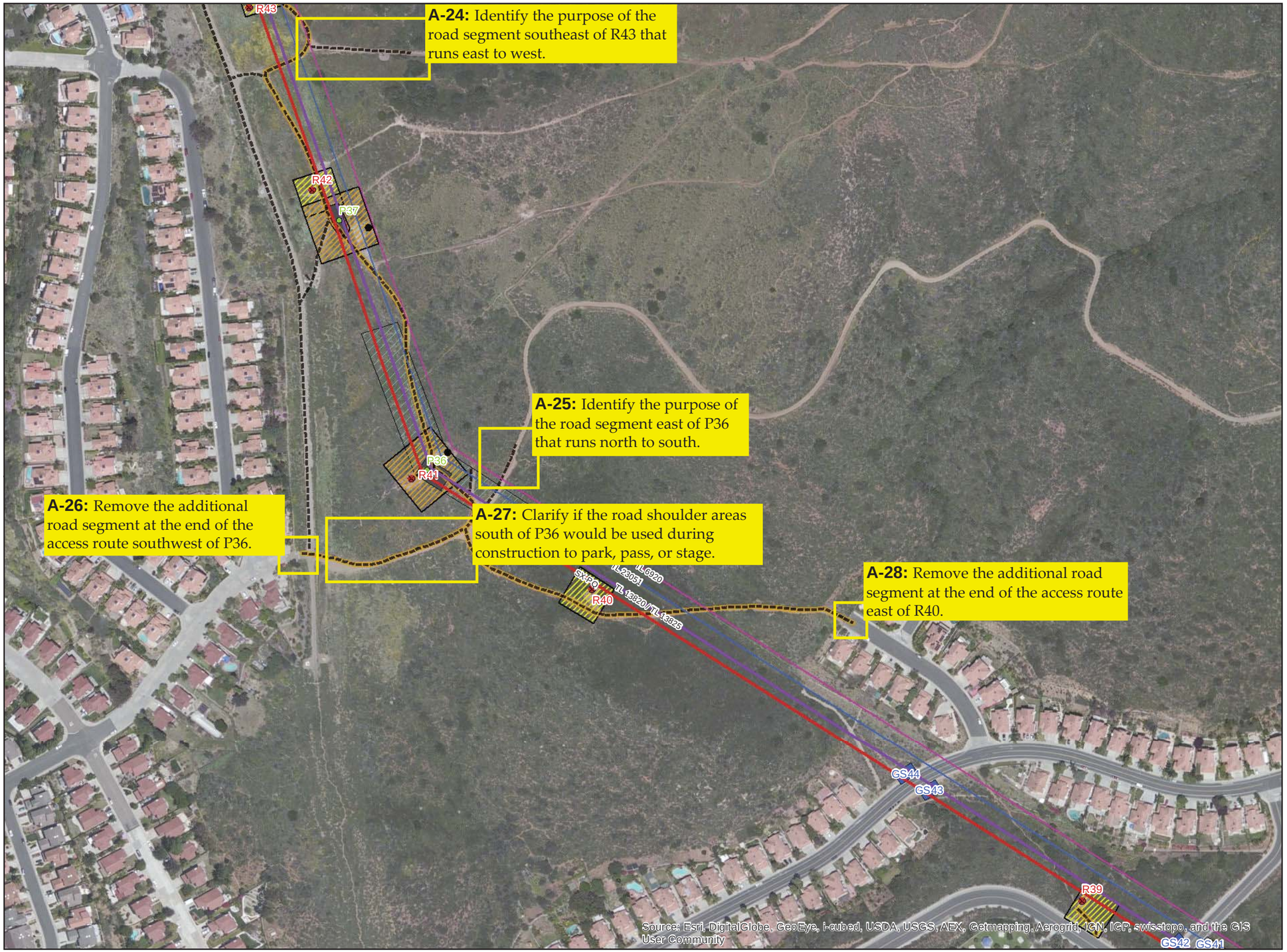
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 14: Project Detail

Date: 9/30/2014 Scale = 1:3,000

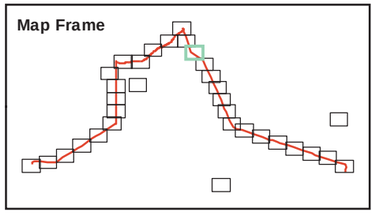
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 15: Project Detail

Date: 9/30/2014 Scale = 1:3,000

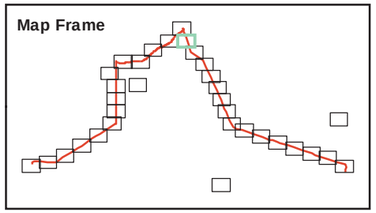
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

R45 P39 TL 13820/TL 13825 S3709 TL 23051 TL 6820 GS45 **A-29:** For clarity, connect the two access roads east of R44 if they intersect. R44 P38 R43

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

A-30: These access roads surrounding R47 and P41 appear to be inaccurate. Verify and revise these roads accordingly.

A-31: The workspace and pad south of GS16 were included with the GIS data provided. It is assumed that the inclusion of these areas is a data error, and neither would be part of the proposed project. Confirm that these are errors and should not be included, or provide an explanation for their purpose. If they are errors, remove these objects from future data provided.

R47
P41
SX-PQ
V1
TL 6920
TL 23051
GS46
TL 13820/TL 13825
R46
P40

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sycamore – Peñasquitos Transmission Line Project

Map 16: Project Detail

Date: 9/30/2014 Scale = 1:3,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 17: Project Detail

Date: 9/30/2014 Scale = 1:3,000

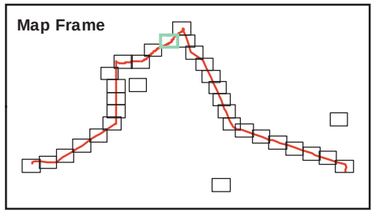
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 18: Project Detail

Date: 9/30/2014 Scale = 1:3,000

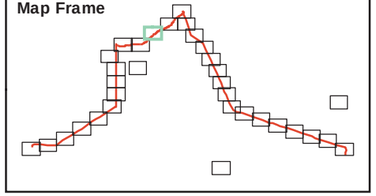
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 19: Project Detail

Date: 9/30/2014 Scale = 1:3,000

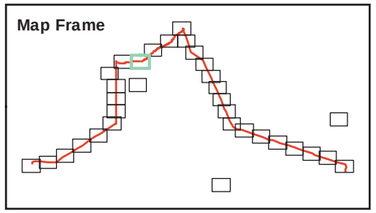
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

B-3: The structure temporary workspace north of R48 appears to be incorrect. Clarify or remove the workspace from future data. Would this stringing area and access route be needed, or is this a data error?

Sycamore – Peñasquitos Transmission Line Project

Map 20: Project Detail

Date: 9/30/2014 Scale = 1:3,000

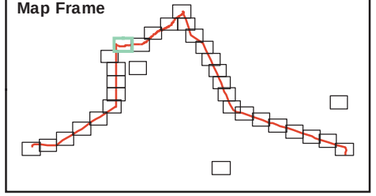
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

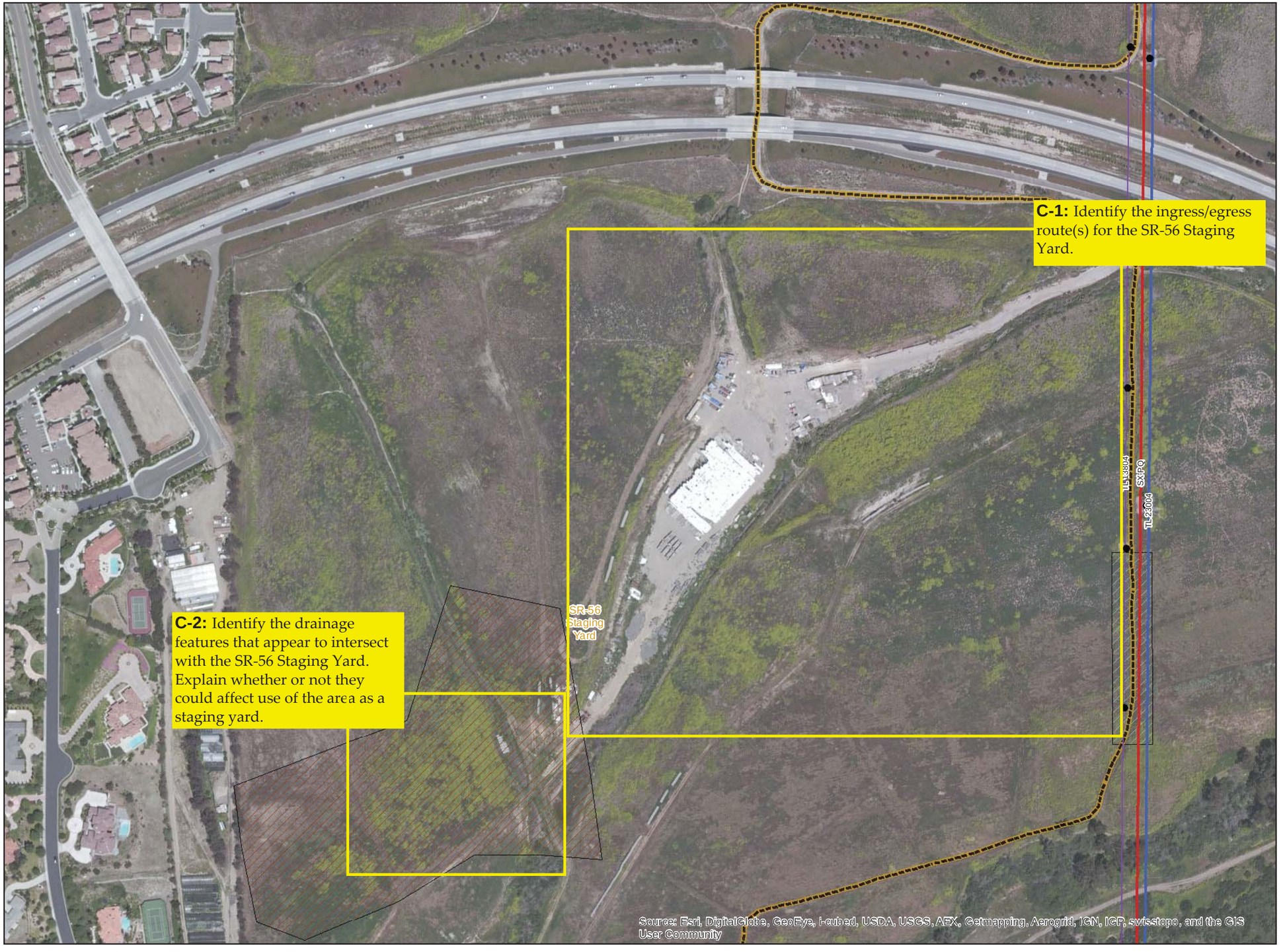
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 21: Project Detail

Date: 9/30/2014 Scale = 1:3,000

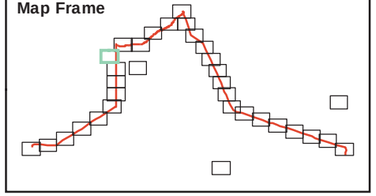
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

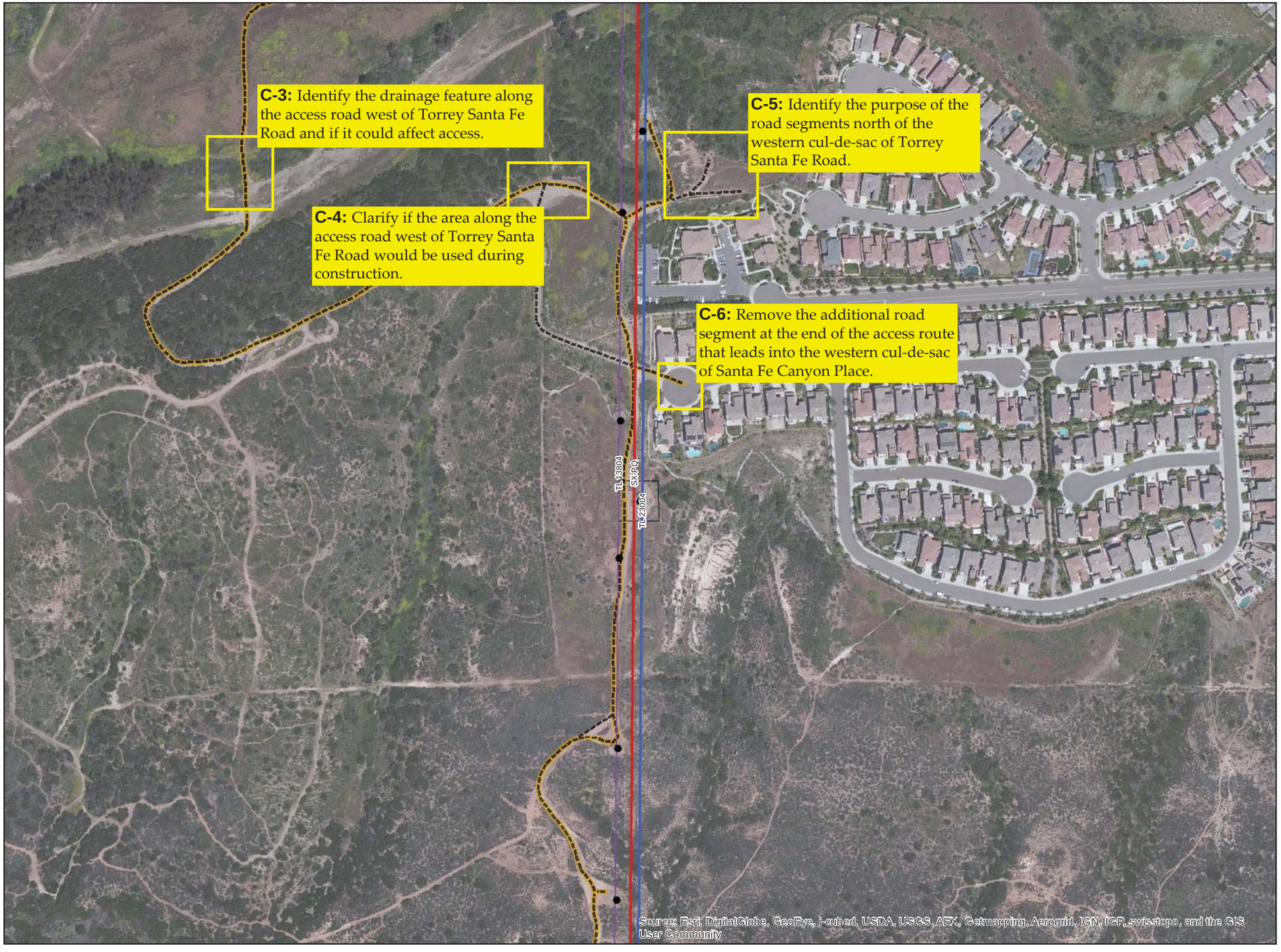
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 22: Project Detail

Date: 9/30/2014 Scale = 1:3,000

Legend

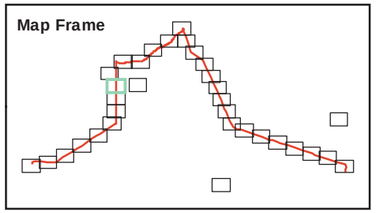
- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

N

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 23: Project Detail

Date: 9/30/2014 Scale = 1:3,000

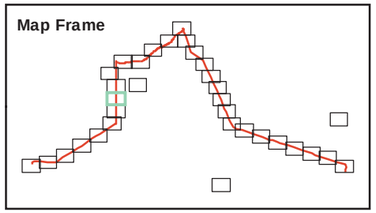
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 24: Project Detail

Date: 9/30/2014 Scale = 1:3,000

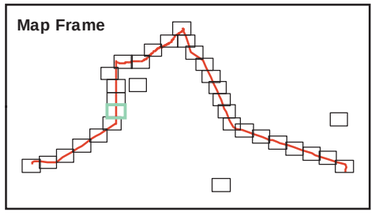
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

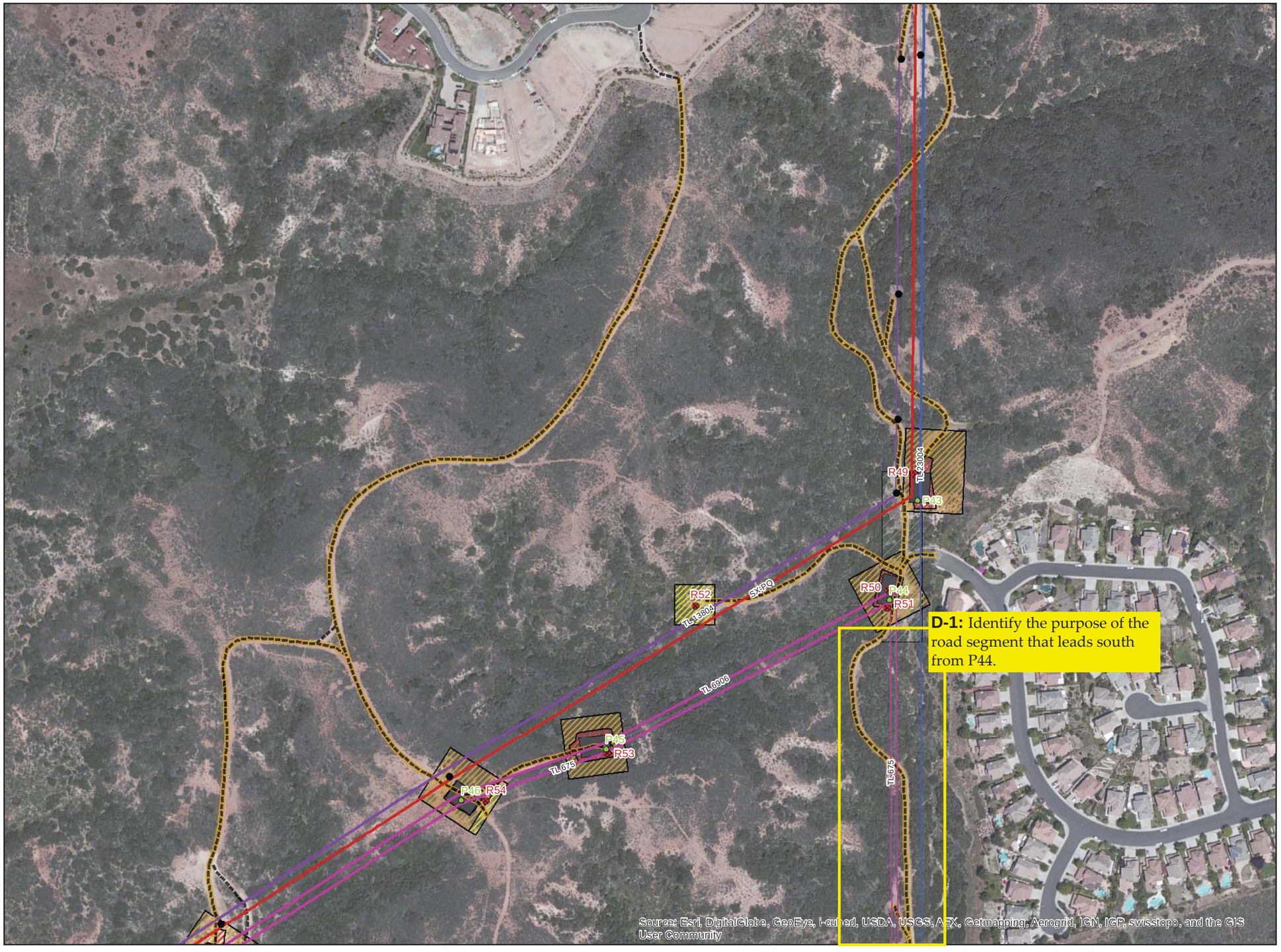
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 25: Project Detail

Date: 9/30/2014 Scale = 1:3,000

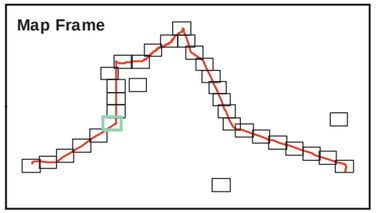
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

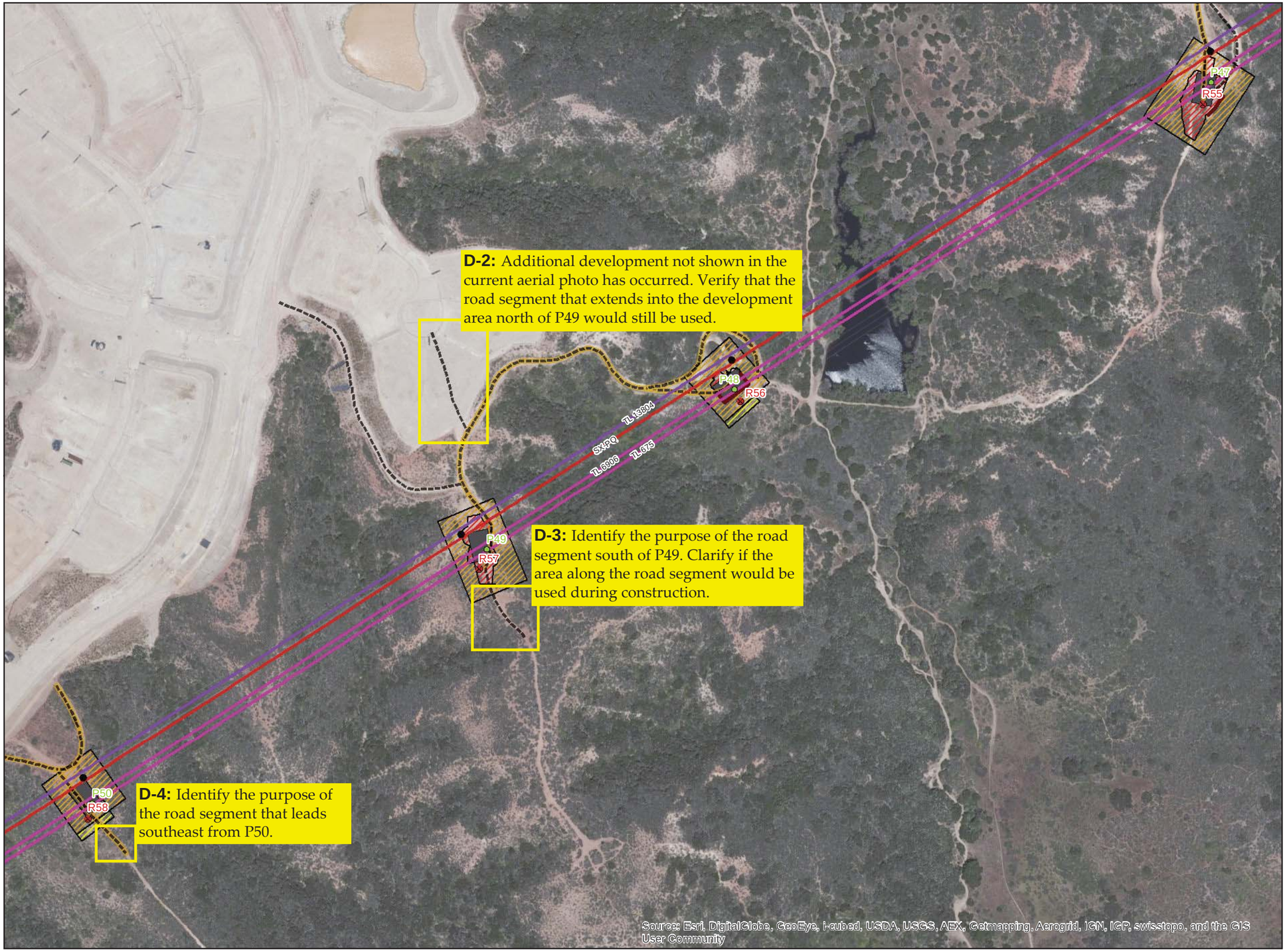
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 26: Project Detail

Date: 9/30/2014 Scale = 1:3,000

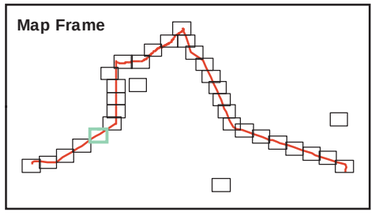
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

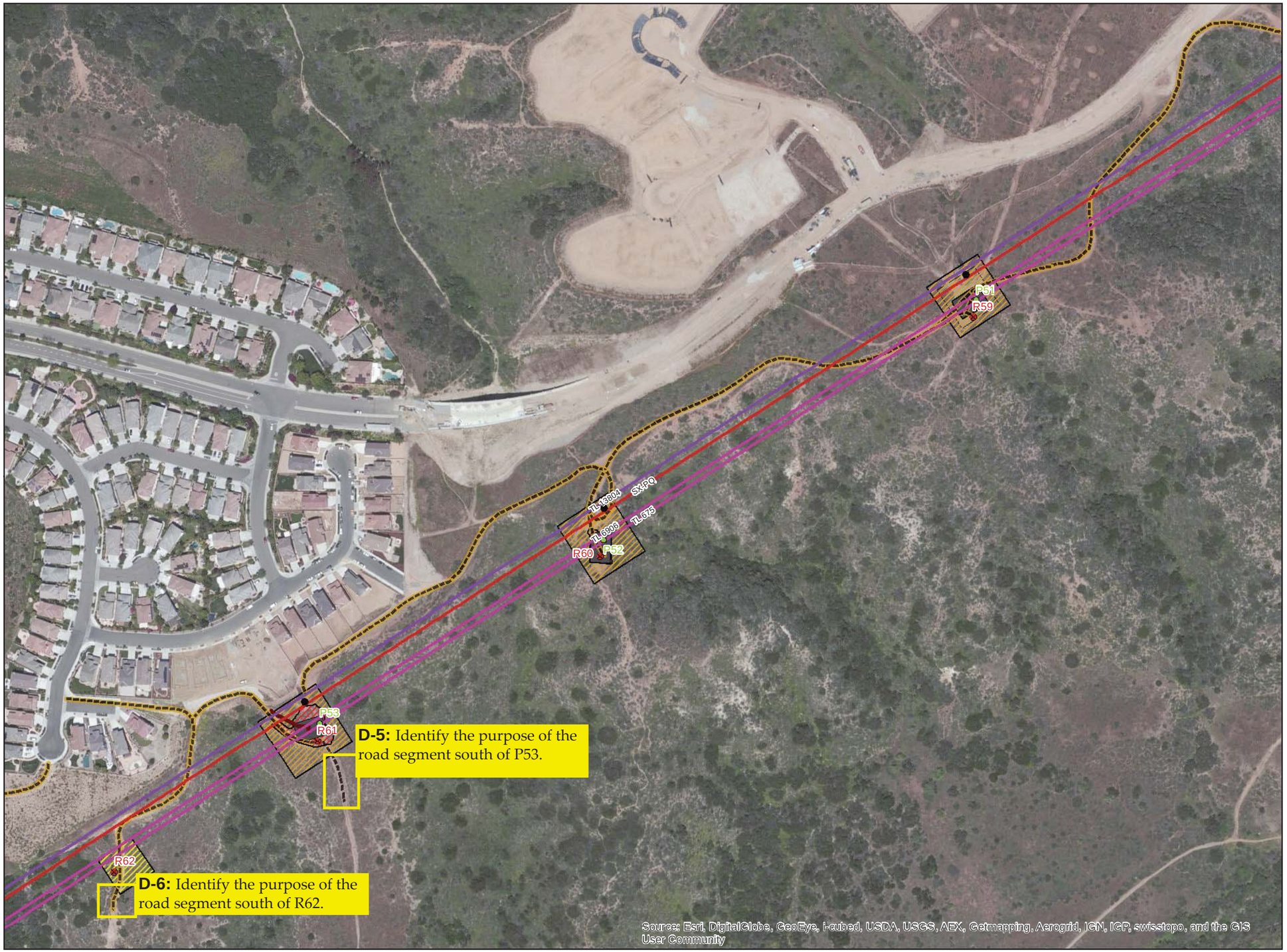
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 27: Project Detail

Date: 9/30/2014 Scale = 1:3,000

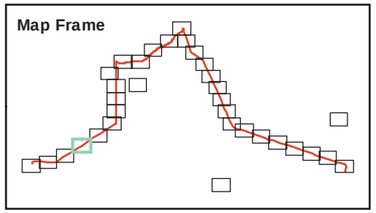
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

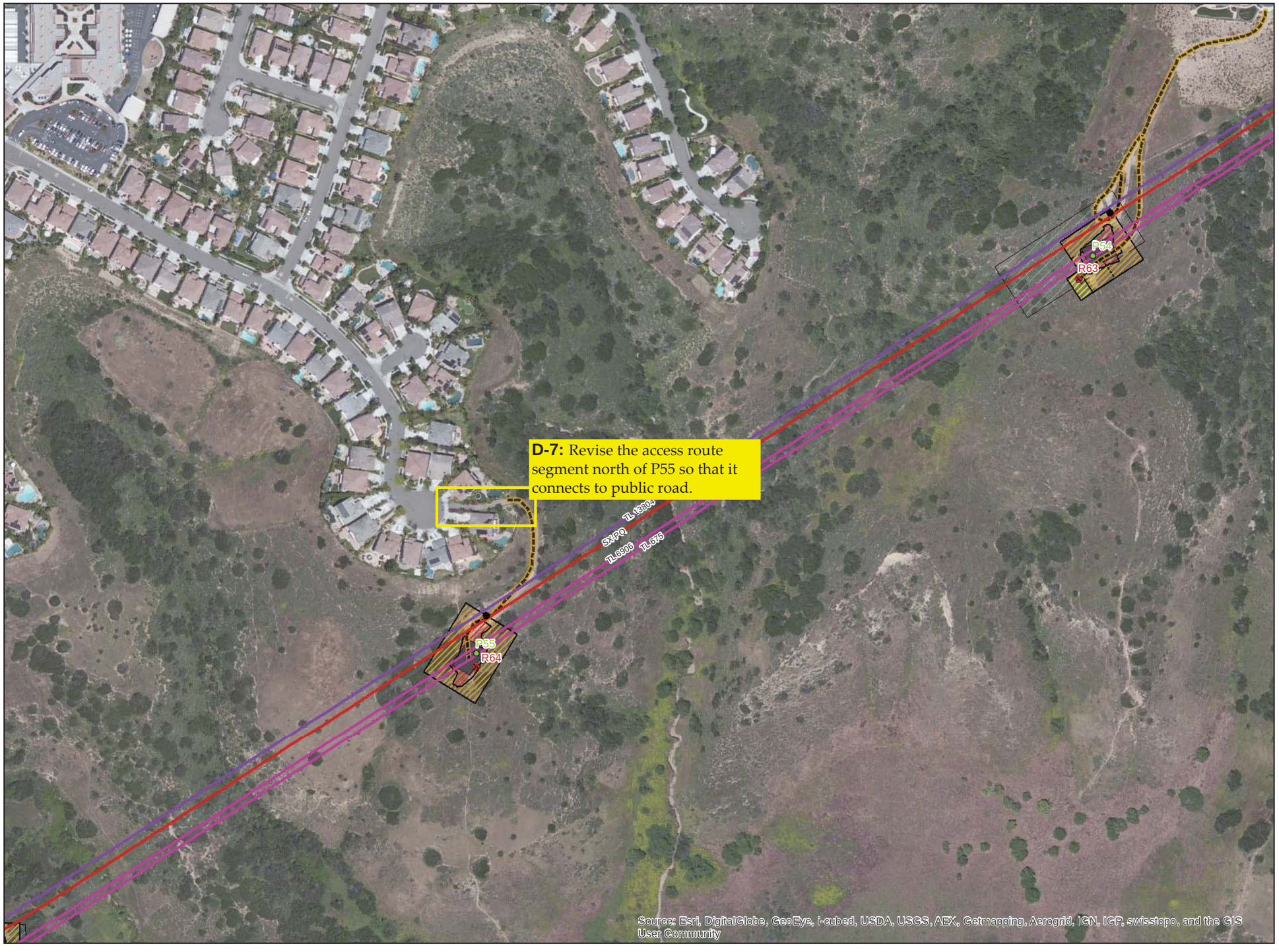
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 28: Project Detail

Date: 9/30/2014 Scale = 1:3,000

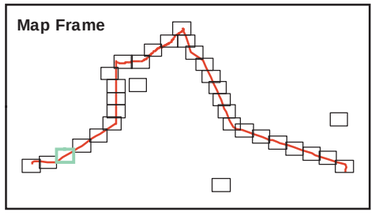
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

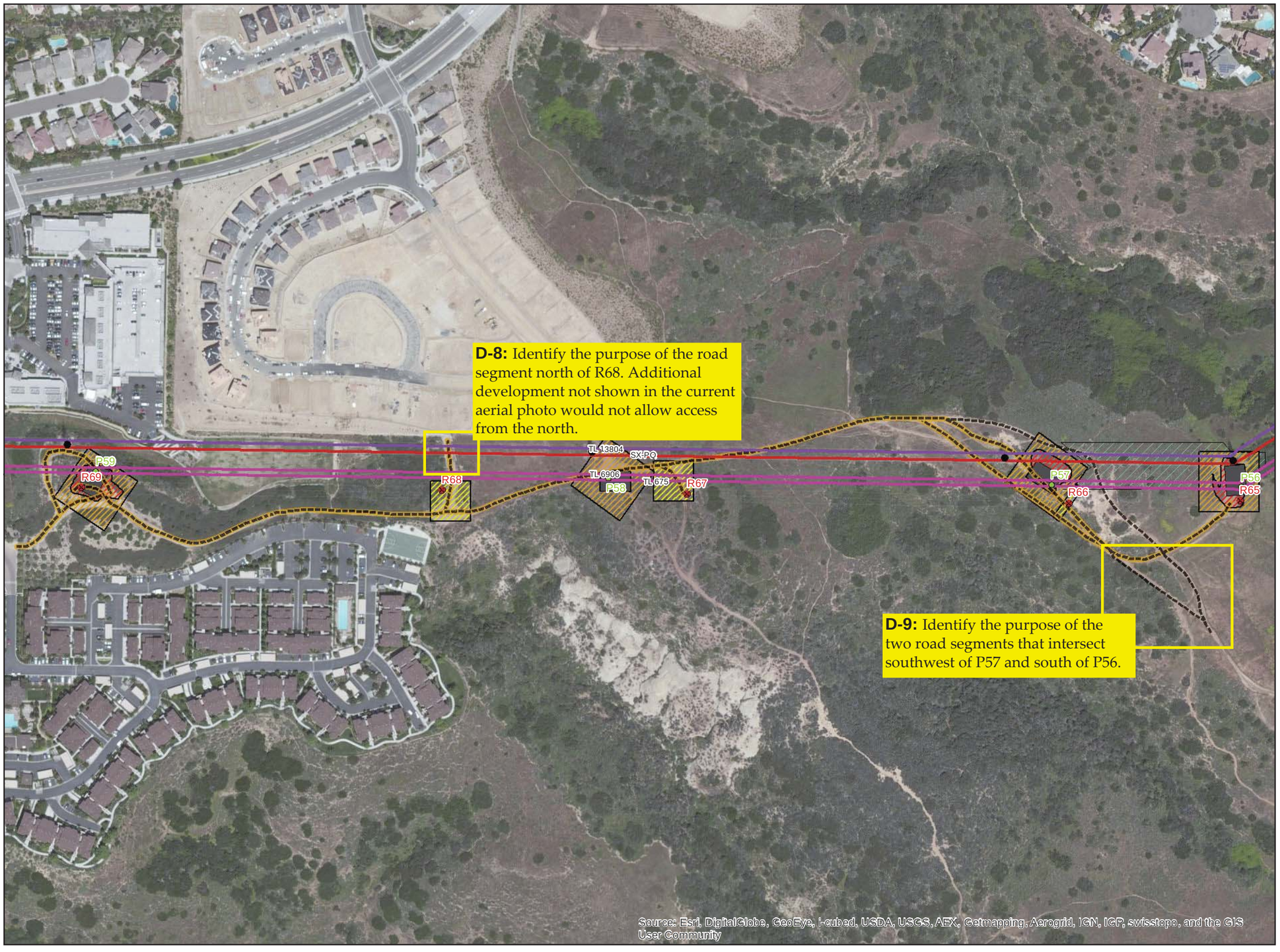
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 29: Project Detail

Date: 9/30/2014 Scale = 1:3,000

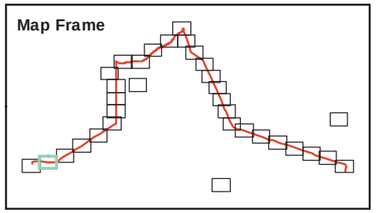
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

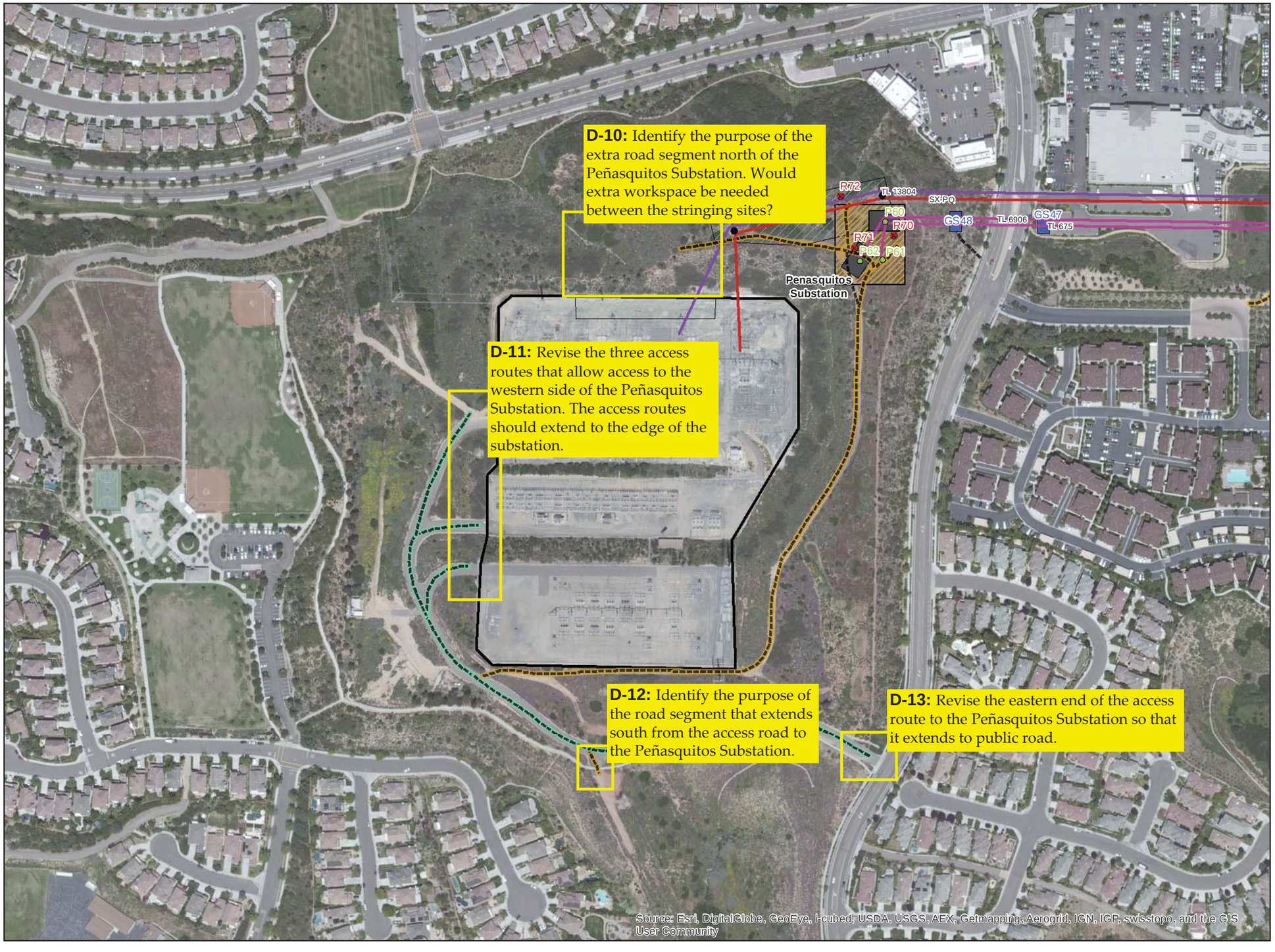
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 30: Project Detail

Date: 9/30/2014 Scale = 1:3,000

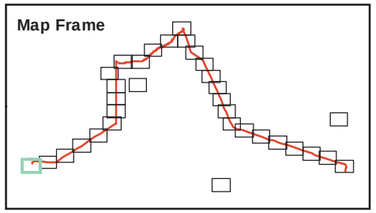
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 31: Project Detail

Date: 9/30/2014 Scale = 1:3,000

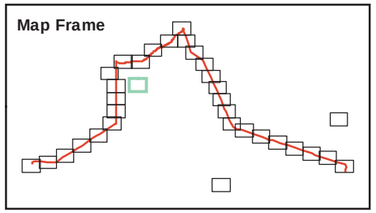
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 32: Project Detail

Date: 9/30/2014 Scale = 1:3,000

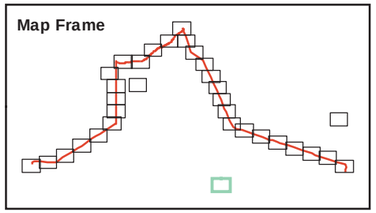
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 33: Project Detail

Date: 9/30/2014 Scale = 1:3,000

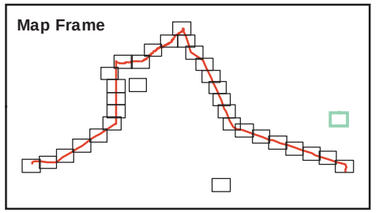
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 50 100 200 300 400 Feet

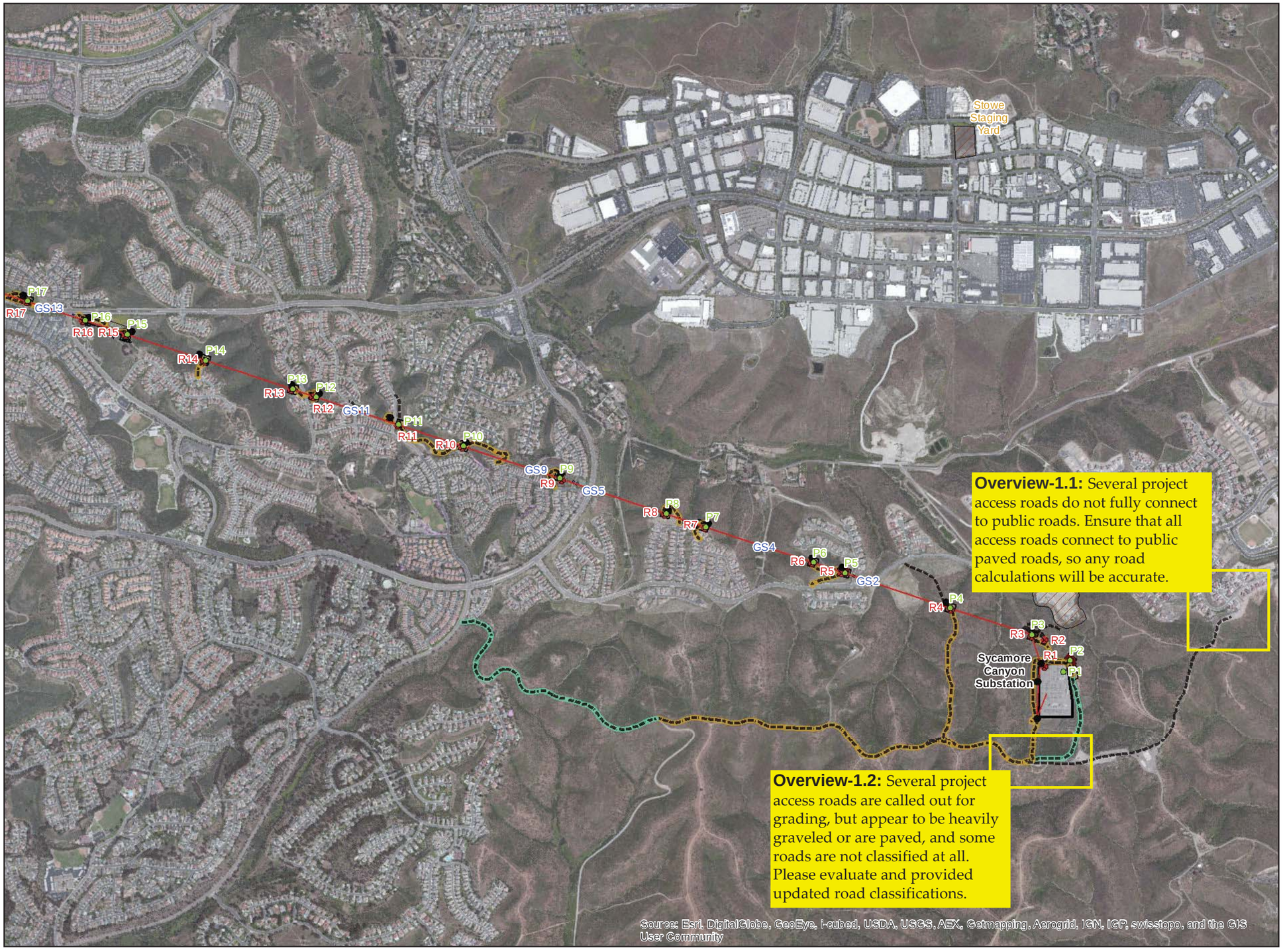
0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Attachment 3: Project Overview Maps with Comments



Sycamore – Peñasquitos Transmission Line Project

Map 1: Segment Overview

Date: 9/30/2014 Scale = 1:20,000

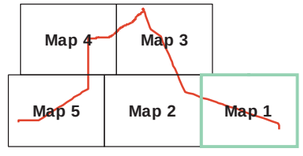
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

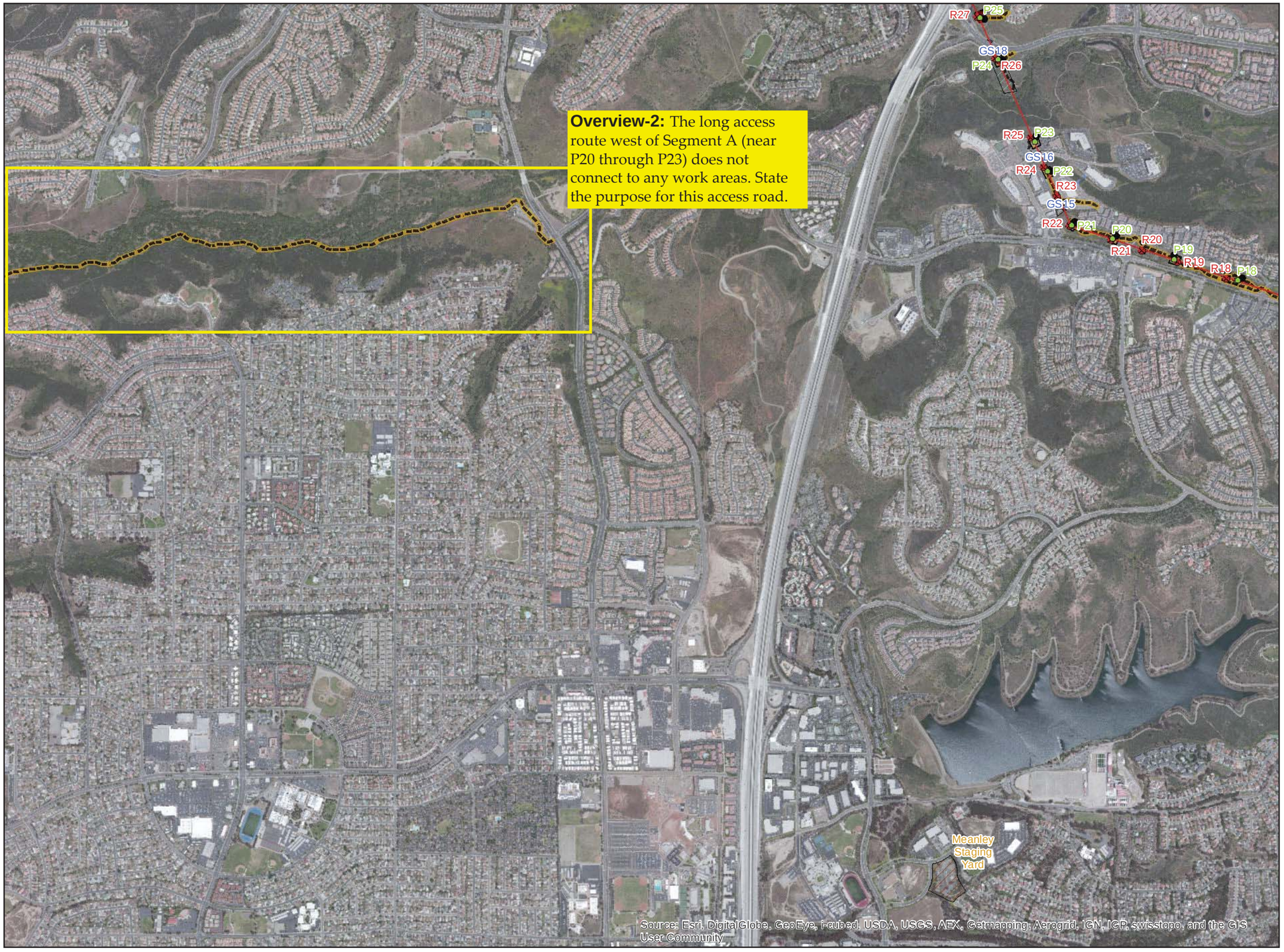
0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Overview-2: The long access route west of Segment A (near P20 through P23) does not connect to any work areas. State the purpose for this access road.

Sycamore – Peñasquitos Transmission Line Project

Map 2: Segment Overview

Date: 9/30/2014 Scale = 1:20,000

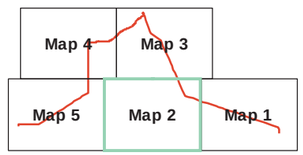
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

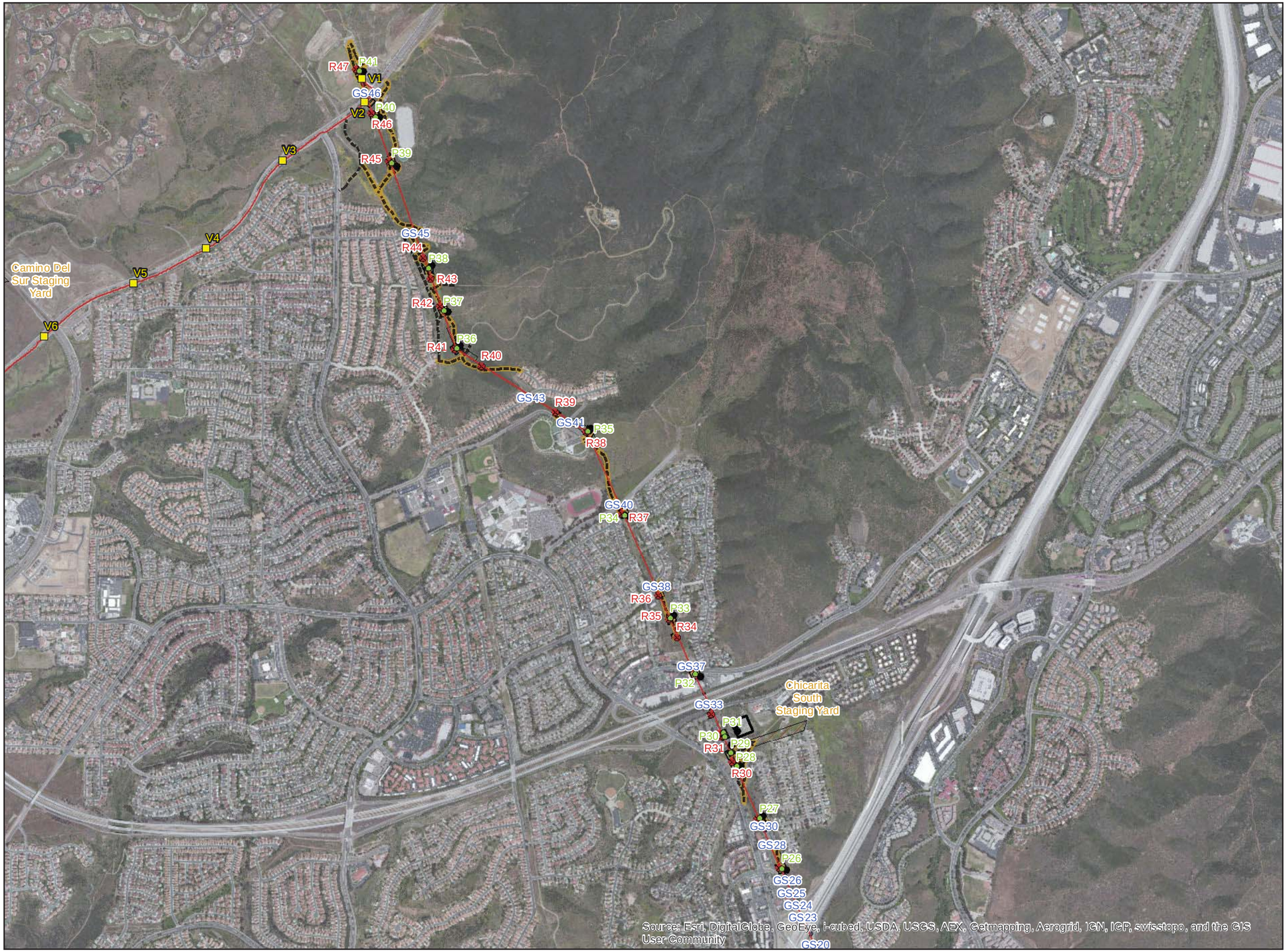
0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 3: Segment Overview

Date: 9/30/2014 Scale = 1:20,000

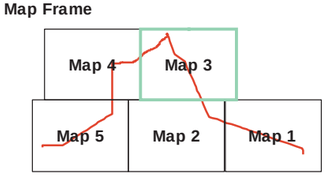
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 4: Segment Overview

Date: 9/30/2014 Scale = 1:20,000

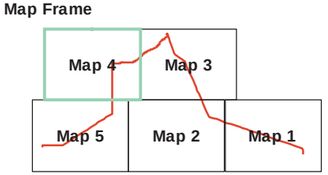
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 5: Segment Overview

Date: 9/30/2014 Scale = 1:20,000

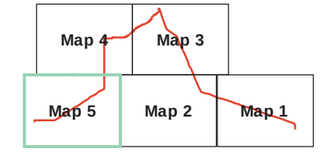
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Road (Grading Proposed)
- Project Access Road (No Grading Proposed)
- Project Access Roads
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Overview-5: The access road that leads south from P44 into the Los Peñasquitos Canyon Preserve dos not connect with another access road that runs east to west through the preserve. State the purpose of these access roads.

P43 R49 P44 R52 R51 R50 P45 R53 P46 R54 P47 R55 P48 R56 P49 R57 P50 R58 P51 R59 P52 R60 P53 R61 R62 P54 R63 P55 R64 P56 R65 P57 R66 R67 P58 R68 P59 R69 R72 P60 P61

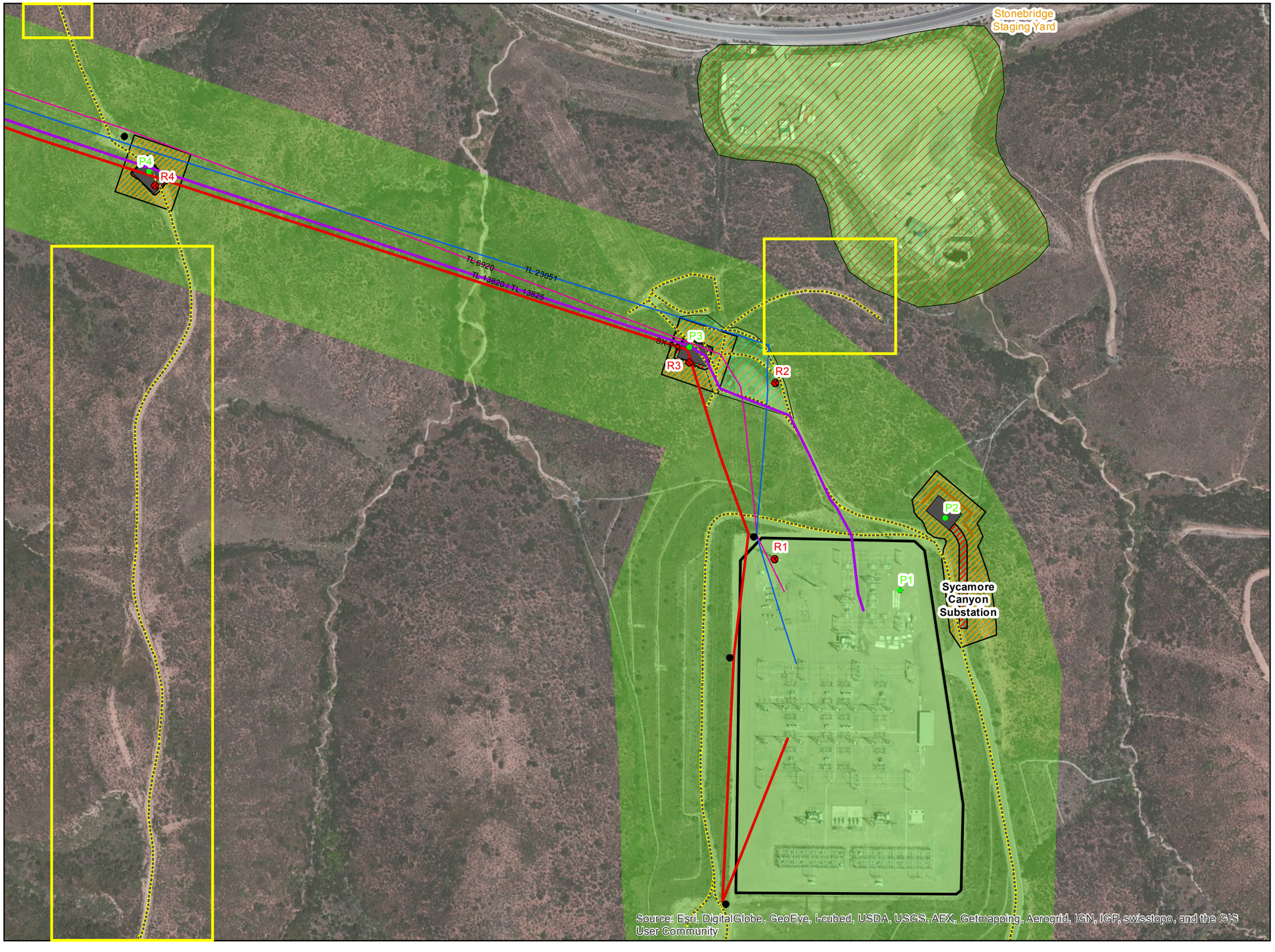
Penasquitos Substation

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Attachment 4: Photo Support for Aesthetics Comment 95

ATTACHMENT 4

Attachment 5: Biological Resource Survey Maps



Sycamore – Peñasquitos Transmission Line Project

Map 1: Project Detail

Date: 9/29/2014 Scale = 1:3,000

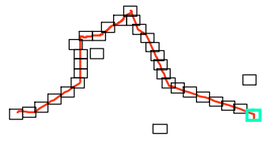
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 2: Project Detail

Date: 9/29/2014 Scale = 1:3,000

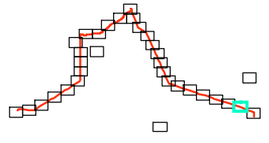
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 3: Project Detail

Date: 9/29/2014 Scale = 1:3,000

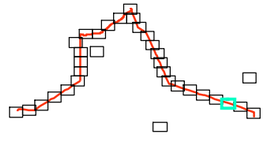
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 4: Project Detail

Date: 9/29/2014 Scale = 1:3,000

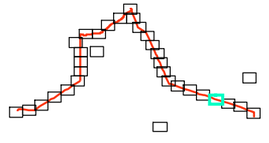
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

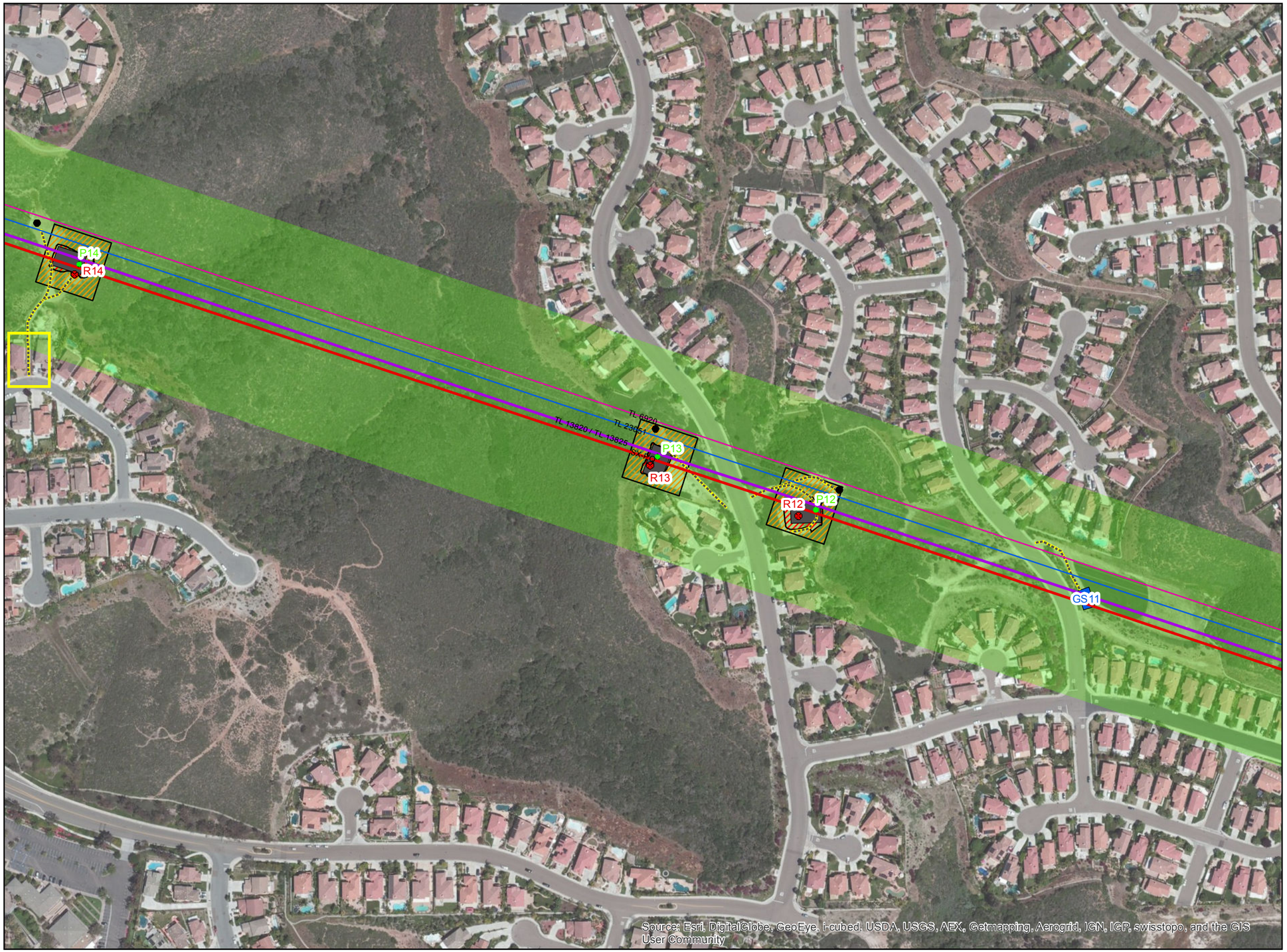
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 5: Project Detail

Date: 9/29/2014 Scale = 1:3,000

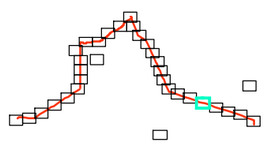
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 6: Project Detail

Date: 9/29/2014 Scale = 1:3,000

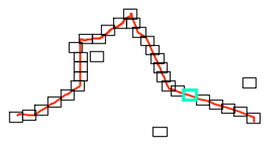
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 7: Project Detail

Date: 9/29/2014 Scale = 1:3,000

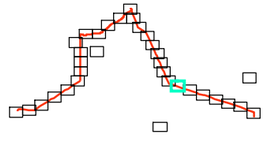
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

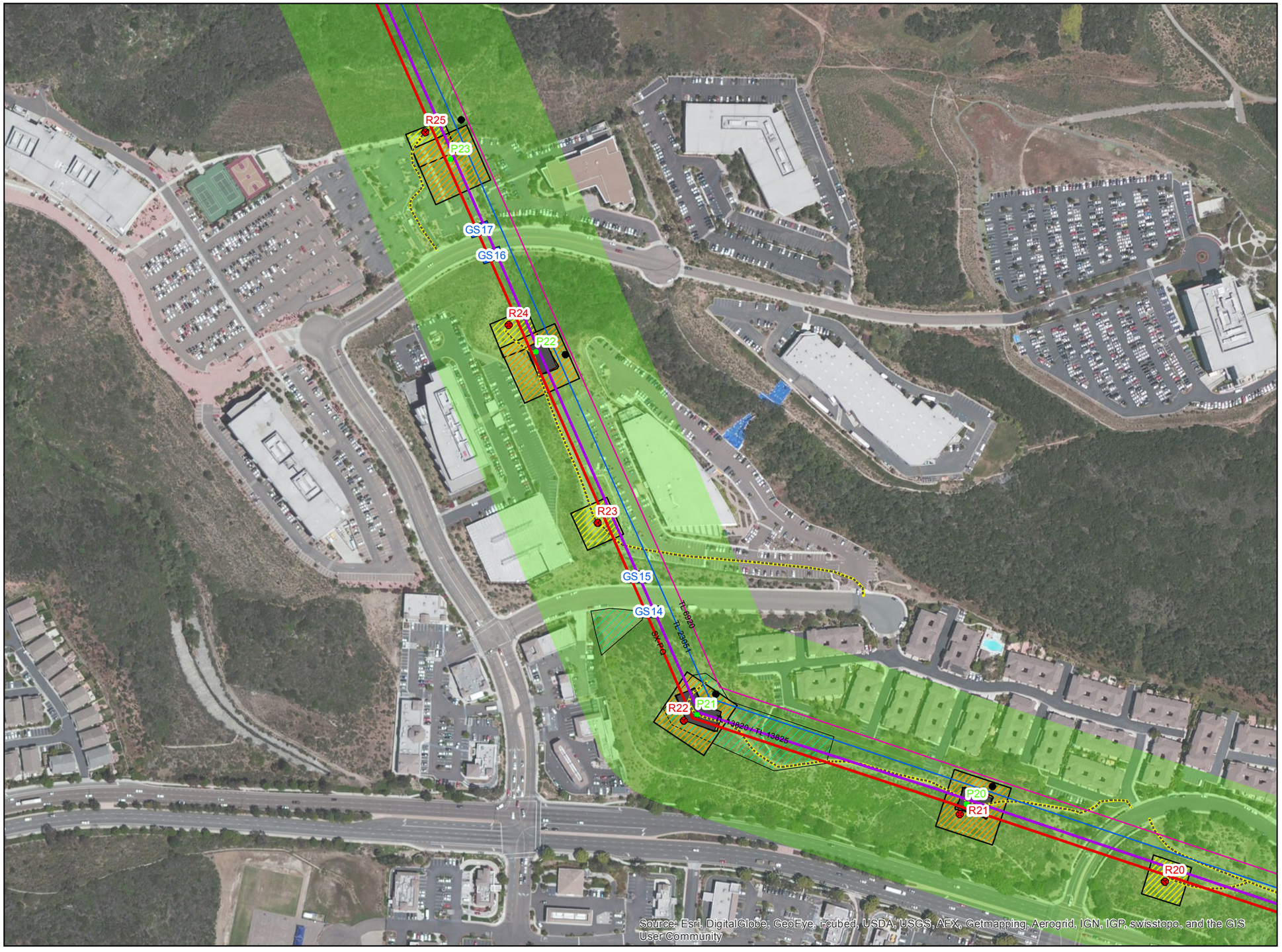
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 8: Project Detail

Date: 9/29/2014 Scale = 1:3,000

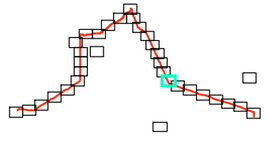
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 9: Project Detail

Date: 9/29/2014 Scale = 1:3,000

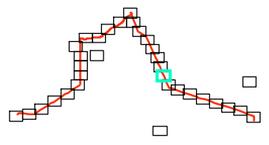
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 10: Project Detail

Date: 9/29/2014 Scale = 1:3,000

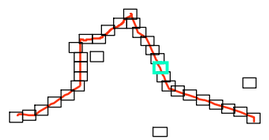
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 11: Project Detail

Date: 9/29/2014 Scale = 1:3,000

Legend

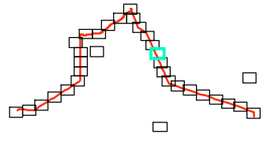
- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

N

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 12: Project Detail

Date: 9/29/2014 Scale = 1:3,000

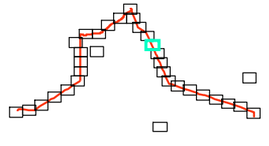
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 13: Project Detail

Date: 9/29/2014 Scale = 1:3,000

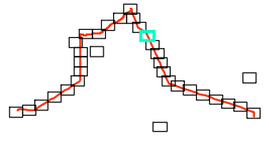
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 14: Project Detail

Date: 9/29/2014 Scale = 1:3,000

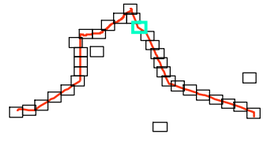
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 15: Project Detail

Date: 9/29/2014 Scale = 1:3,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

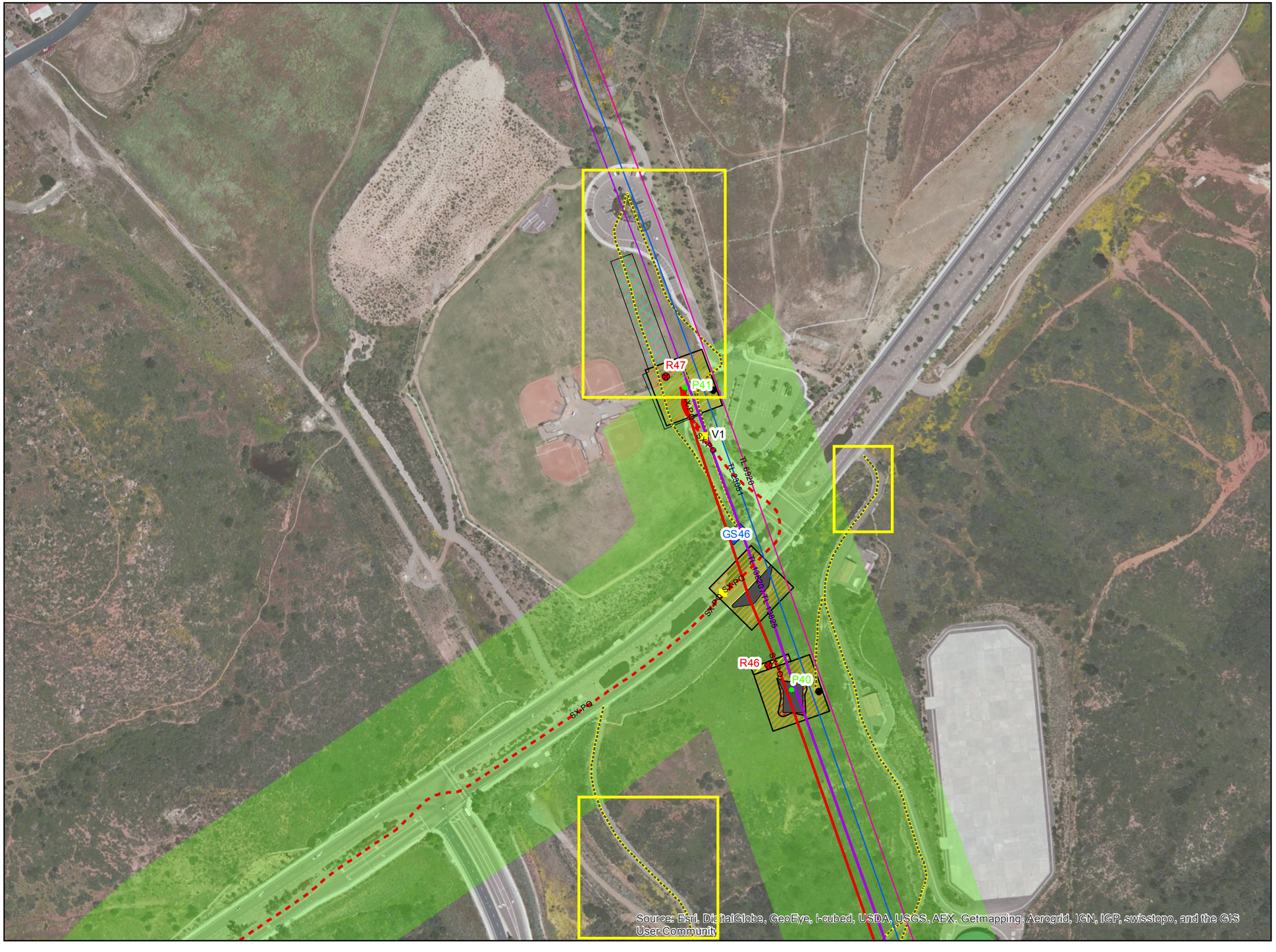
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Sycamore – Peñasquitos Transmission Line Project

Map 16: Project Detail

Date: 9/29/2014 Scale = 1:3,000

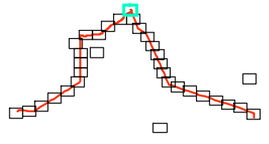
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 17: Project Detail

Date: 9/29/2014 Scale = 1:3,000

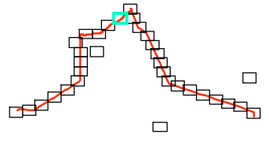
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

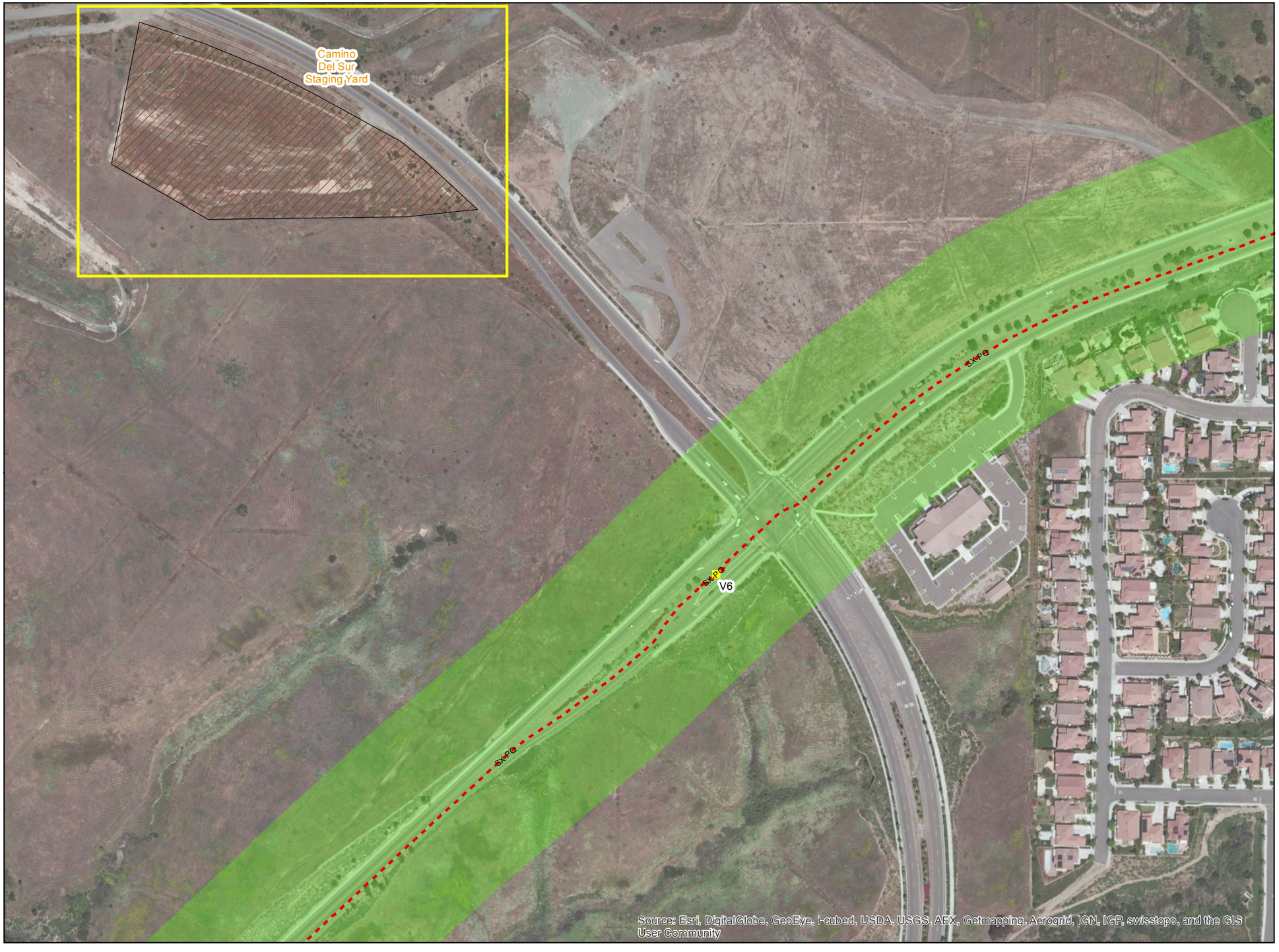
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 18: Project Detail

Date: 9/29/2014 Scale = 1:3,000

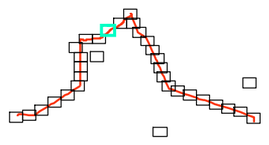
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 19: Project Detail

Date: 9/29/2014 Scale = 1:3,000

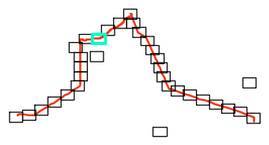
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 20: Project Detail

Date: 9/29/2014 Scale = 1:3,000

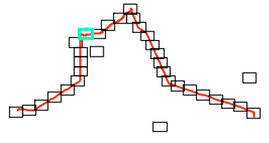
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 21: Project Detail

Date: 9/29/2014 Scale = 1:3,000

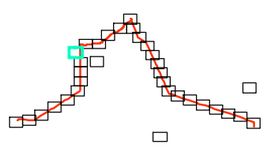
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

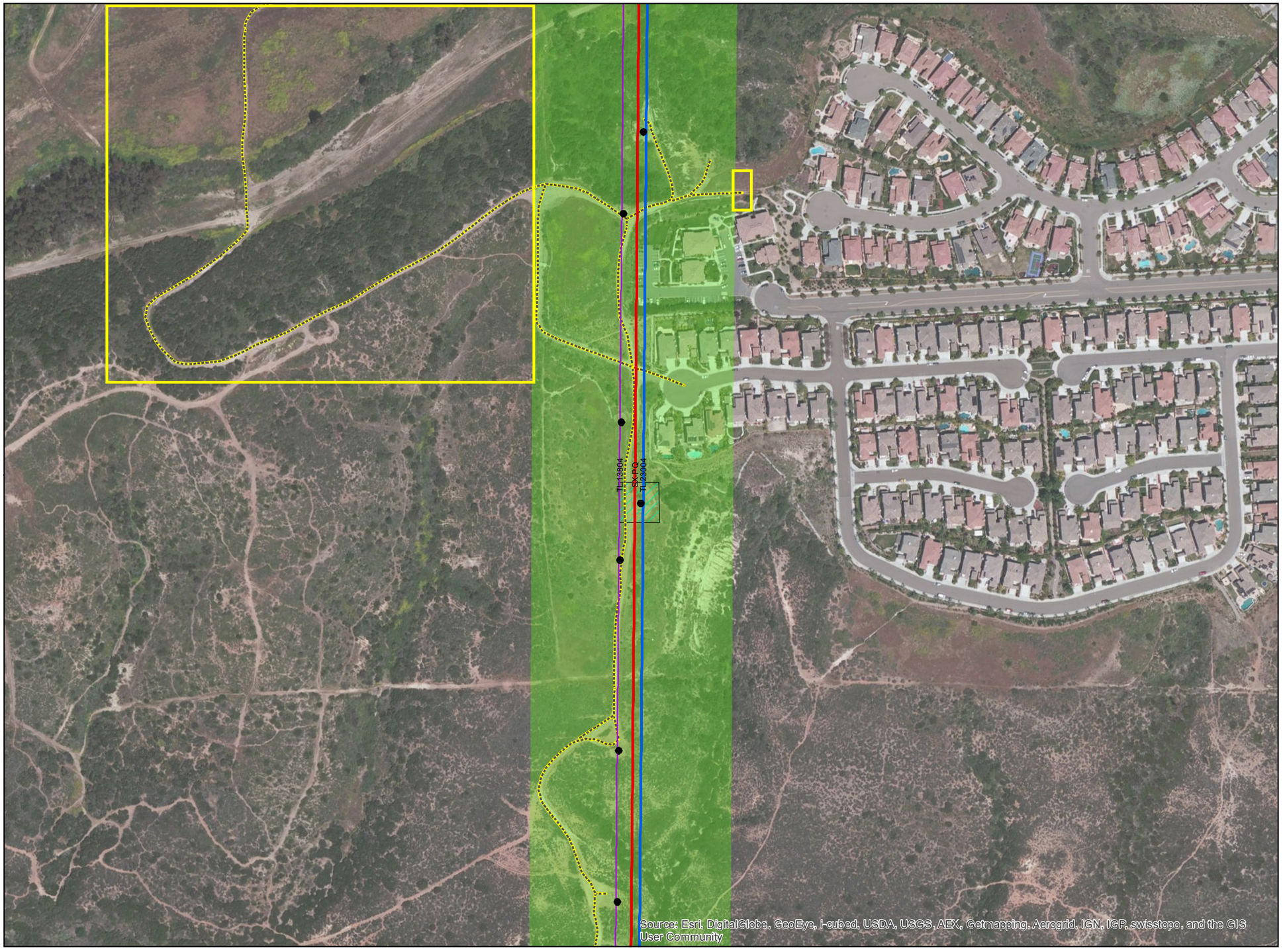
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sycamore – Peñasquitos Transmission Line Project

Map 22: Project Detail

Date: 9/29/2014 Scale = 1:3,000

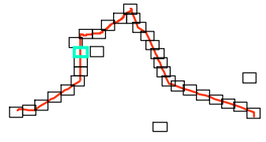
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 23: Project Detail

Date: 9/29/2014 Scale = 1:3,000

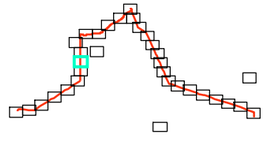
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

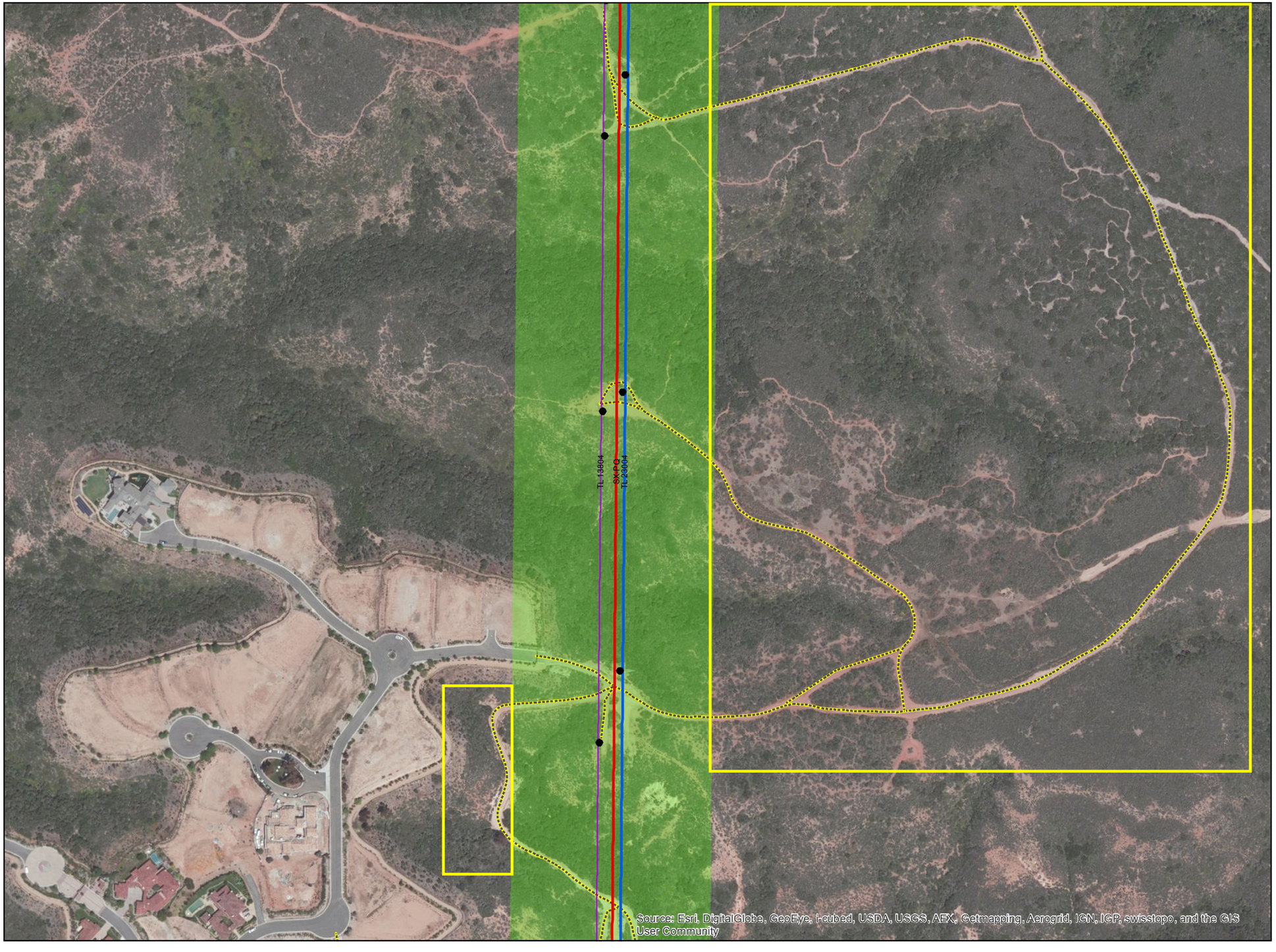
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 24: Project Detail

Date: 9/29/2014 Scale = 1:3,000

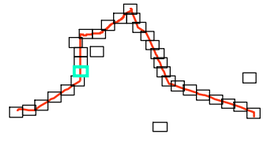
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

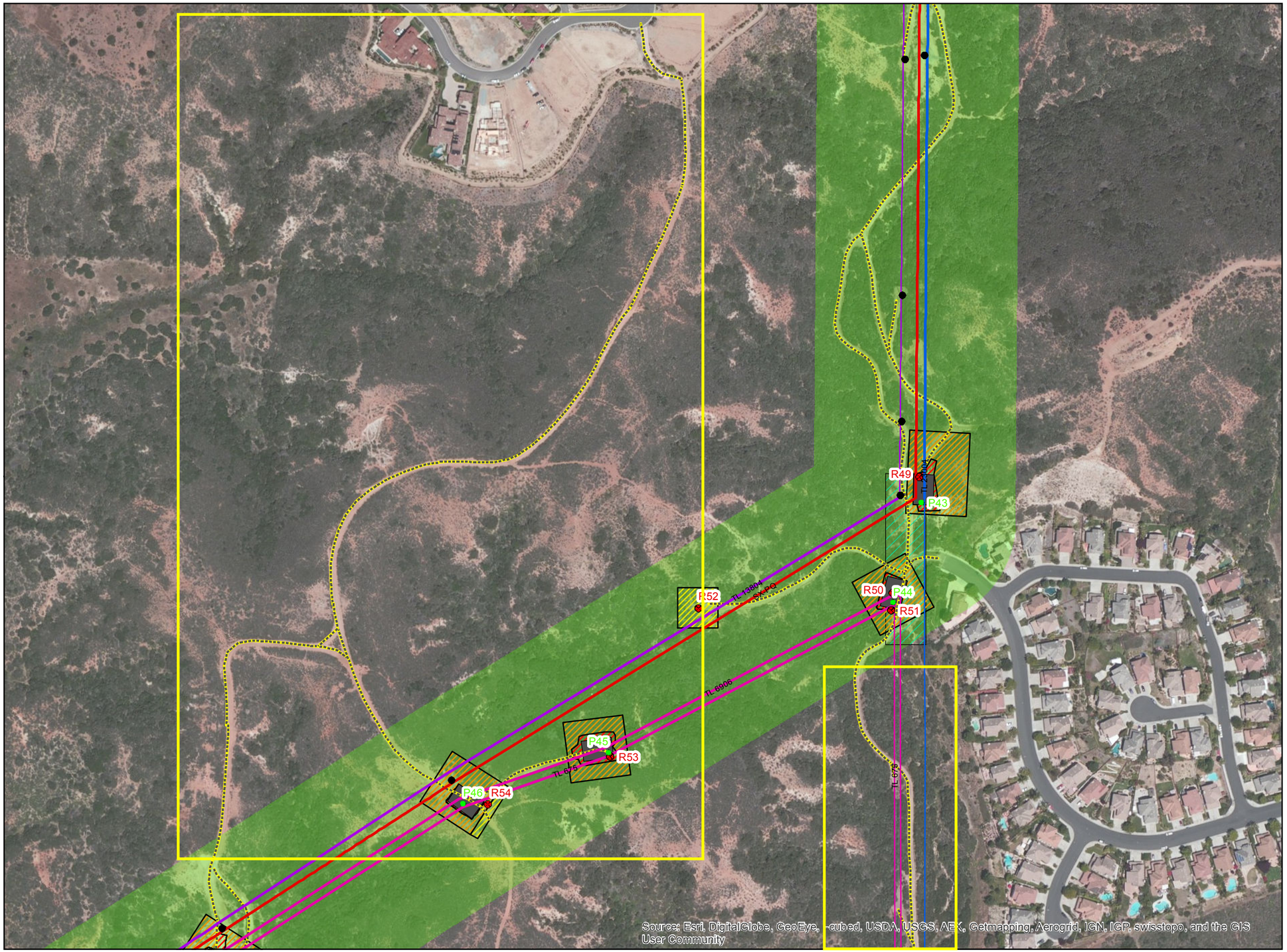
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 25: Project Detail

Date: 9/29/2014 Scale = 1:3,000

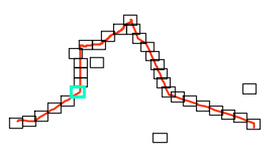
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

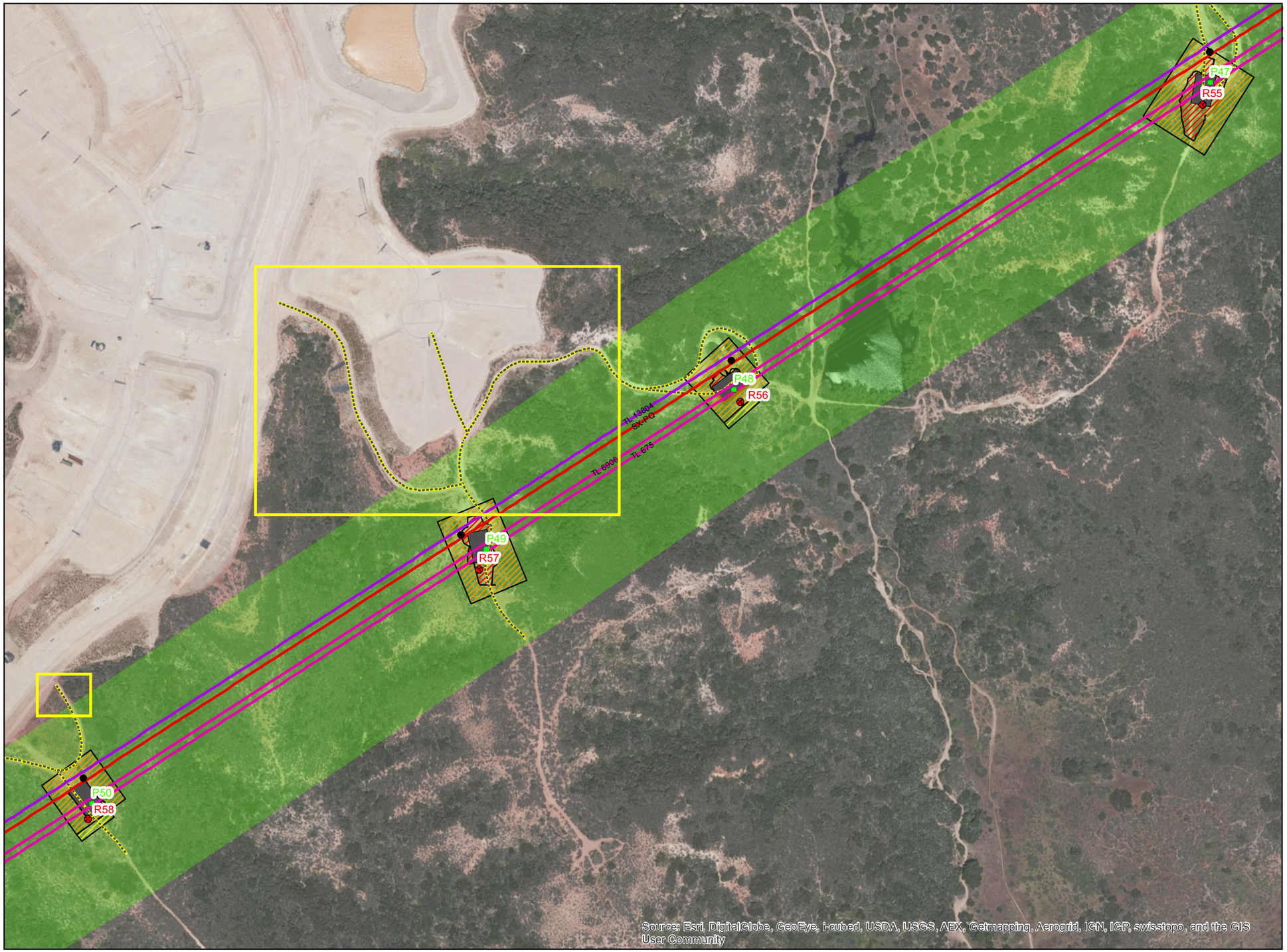
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 26: Project Detail

Date: 9/29/2014 Scale = 1:3,000

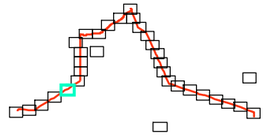
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 27: Project Detail

Date: 9/29/2014 Scale = 1:3,000

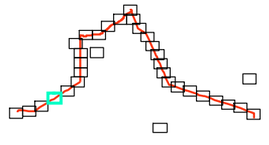
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 28: Project Detail

Date: 9/29/2014 Scale = 1:3,000

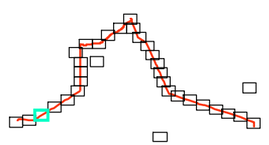
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

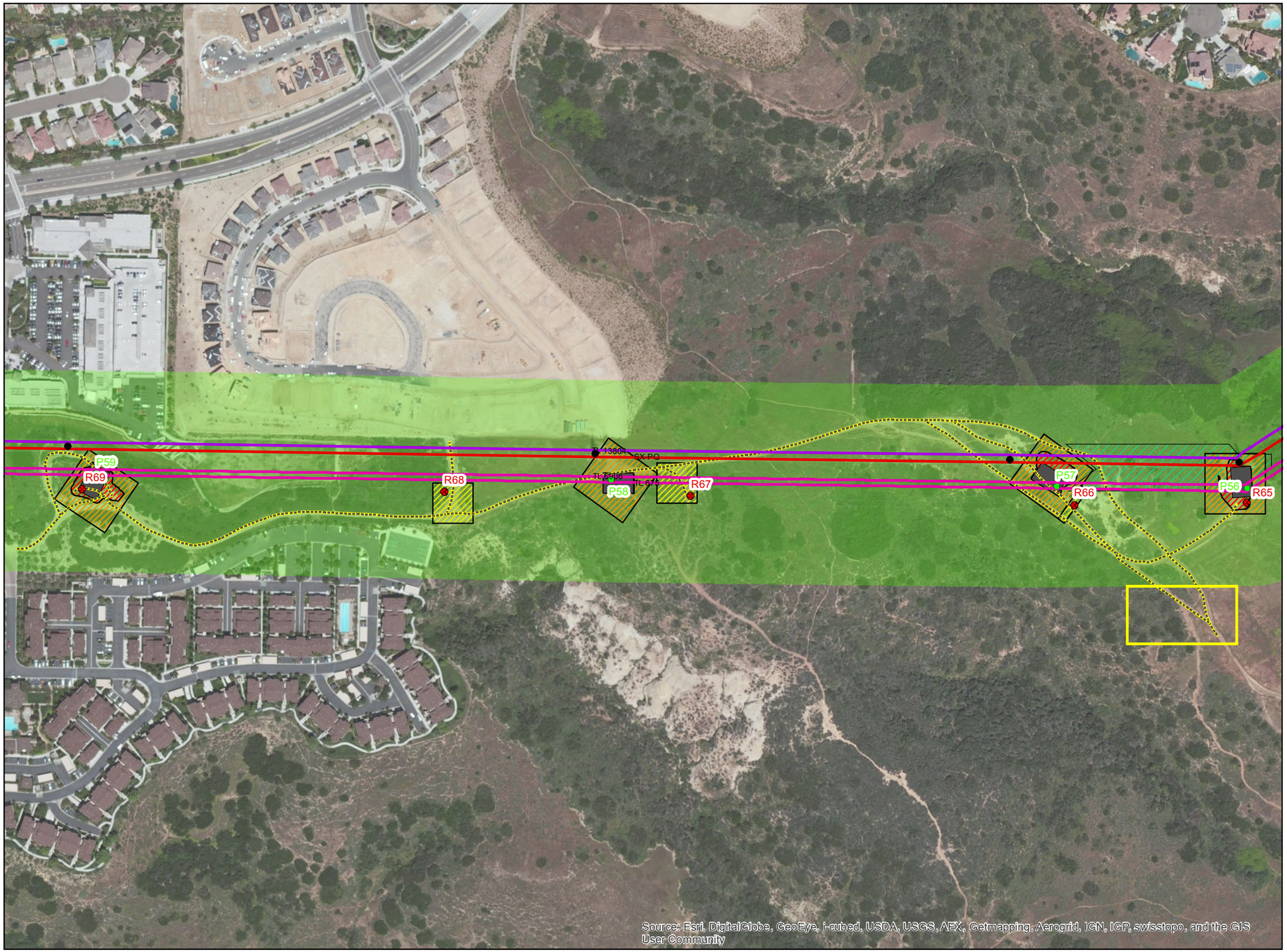
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 29: Project Detail

Date: 9/29/2014 Scale = 1:3,000

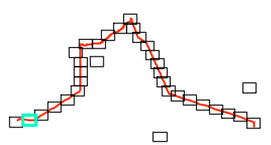
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 30: Project Detail

Date: 9/29/2014 Scale = 1:3,000

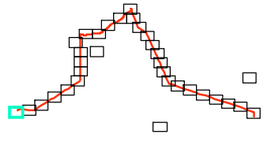
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 31: Project Detail

Date: 9/29/2014 Scale = 1:3,000

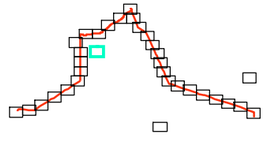
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 32: Project Detail

Date: 9/29/2014 Scale = 1:3,000

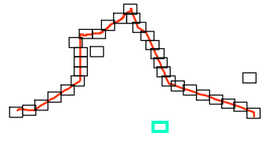
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 33: Project Detail

Date: 9/29/2014 Scale = 1:3,000

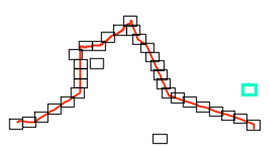
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame

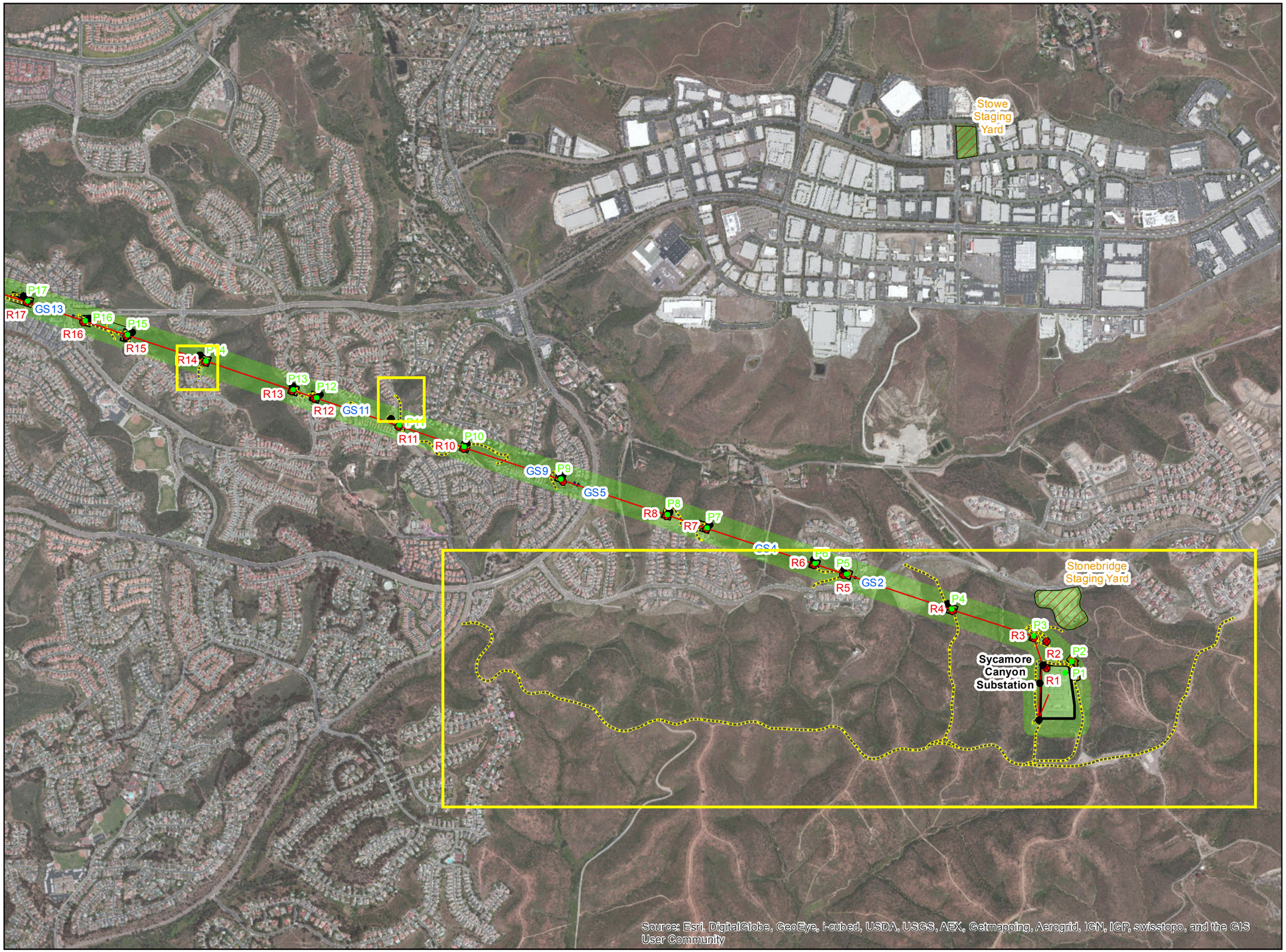


PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 1: Segment Overview

Date: 9/29/2014 Scale = 1:20,000



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 2: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

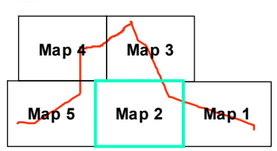
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

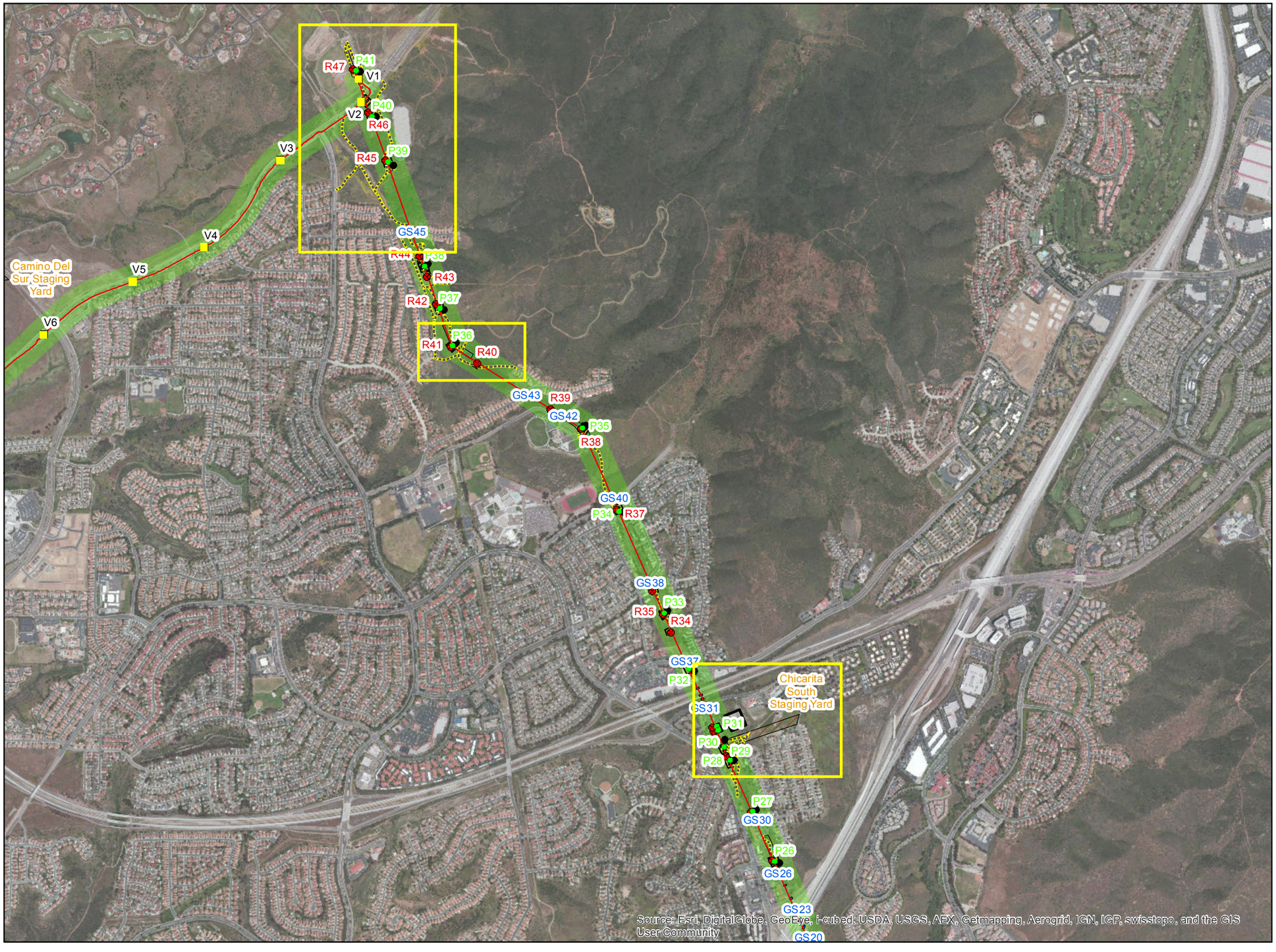
0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 3: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

Legend

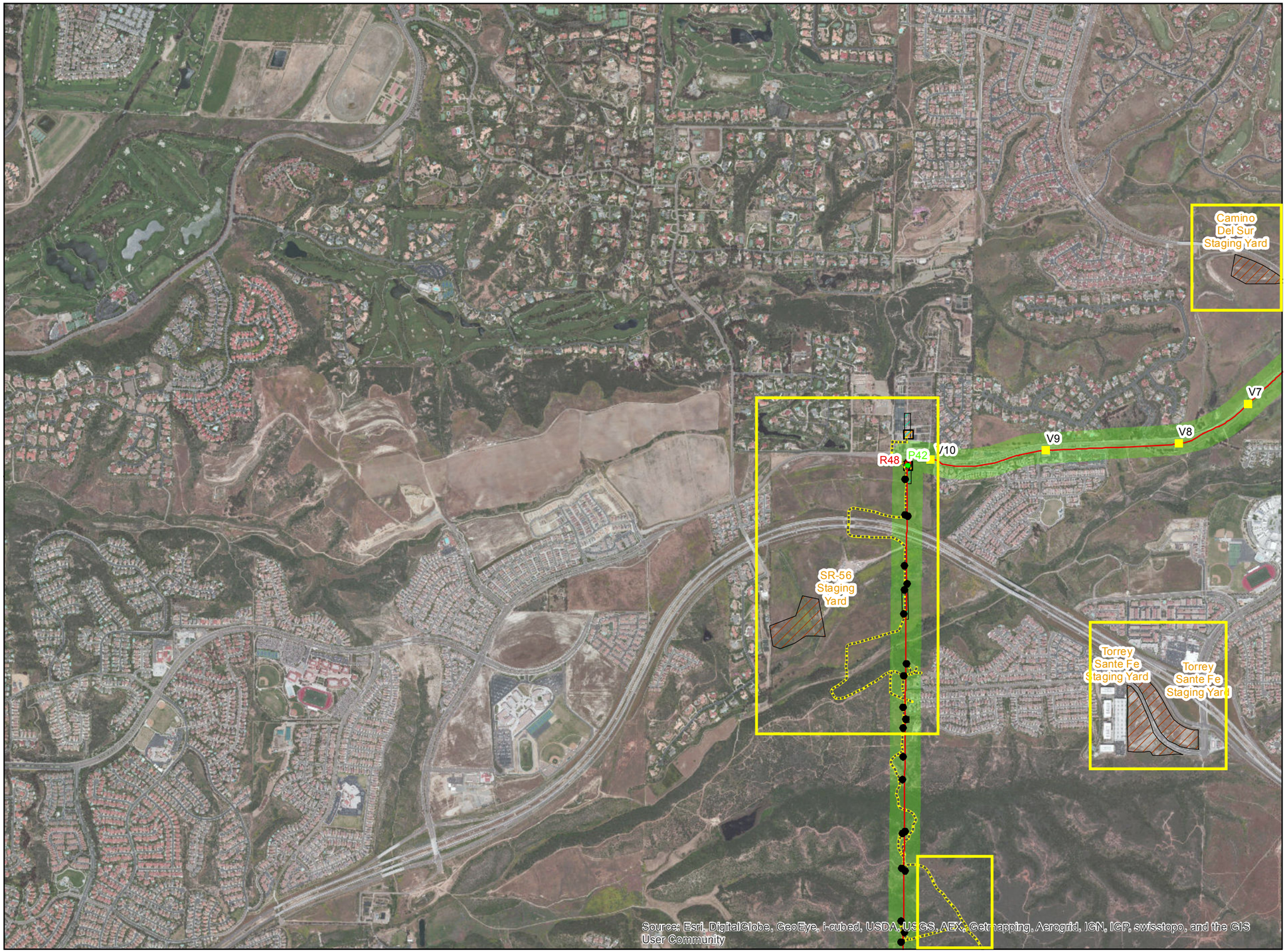
- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 4: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

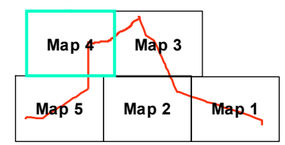
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 5: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Biological Survey

0 250 500 1,000 1,500 2,000 Feet

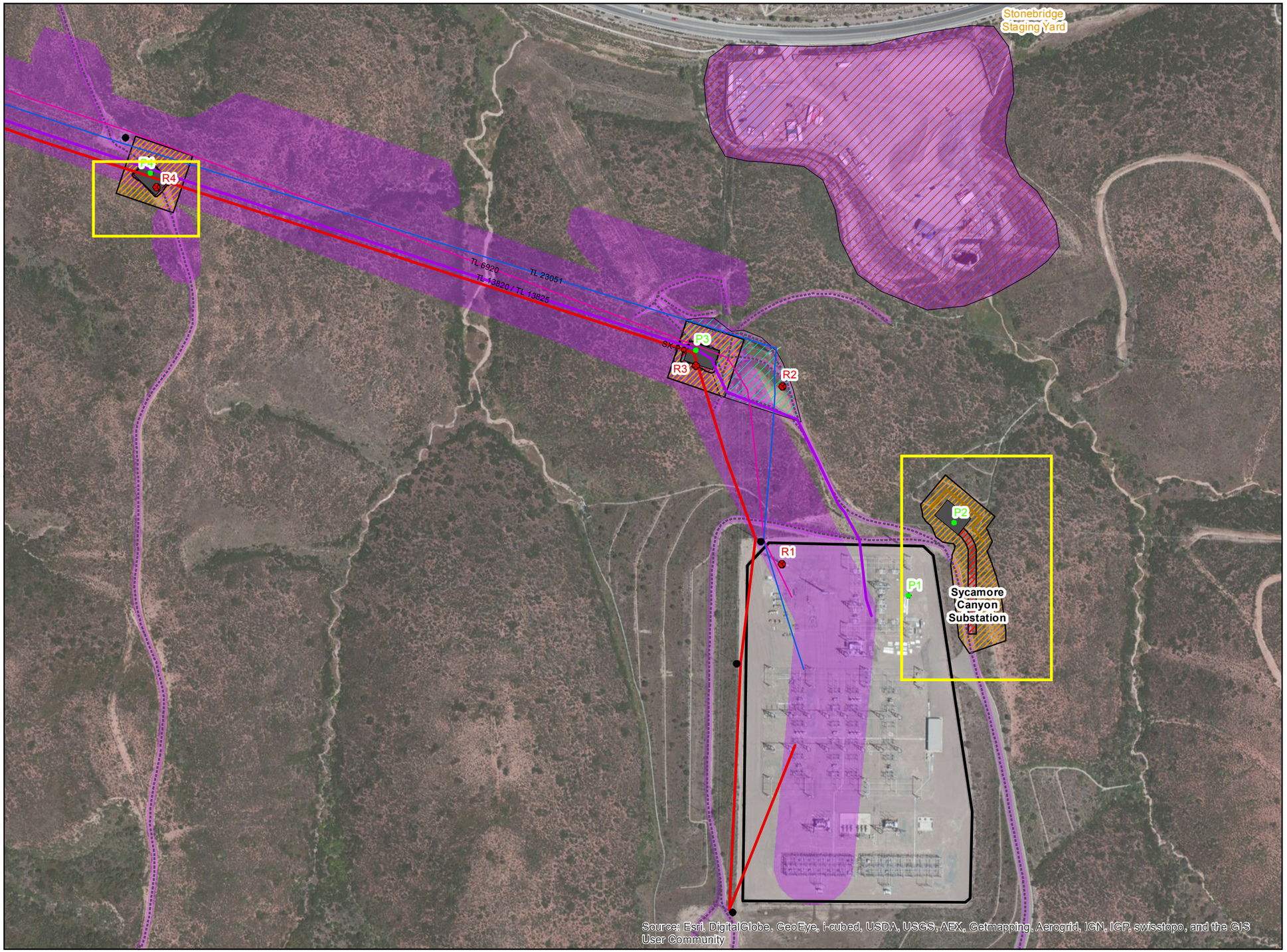
0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Attachment 6: Cultural Resource Survey Maps



Sycamore – Peñasquitos Transmission Line Project

Map 1: Project Detail

Date: 9/29/2014 Scale = 1:3,000

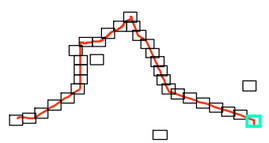
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

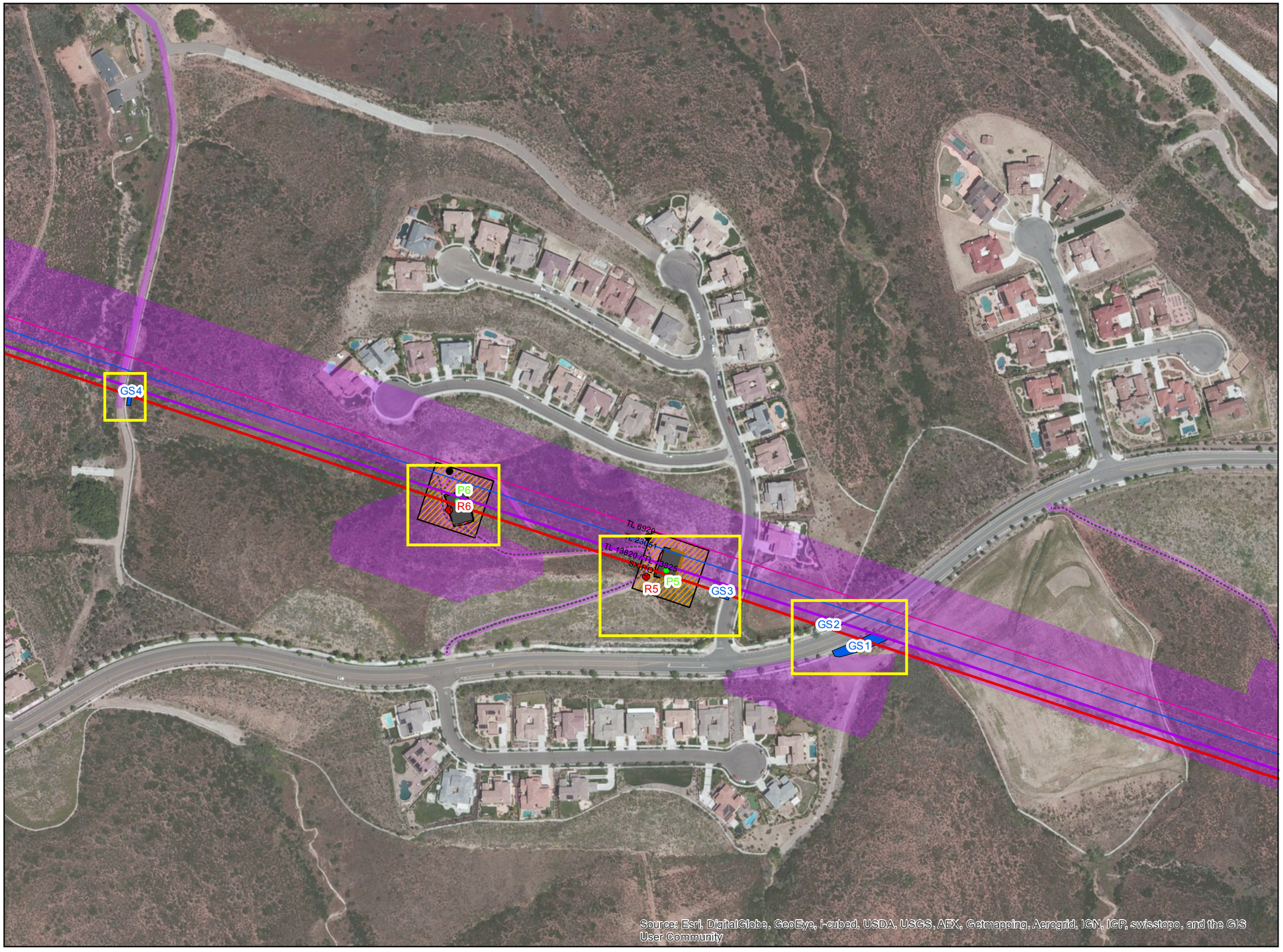
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 2: Project Detail

Date: 9/29/2014 Scale = 1:3,000

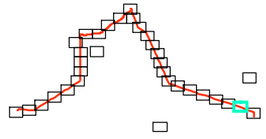
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

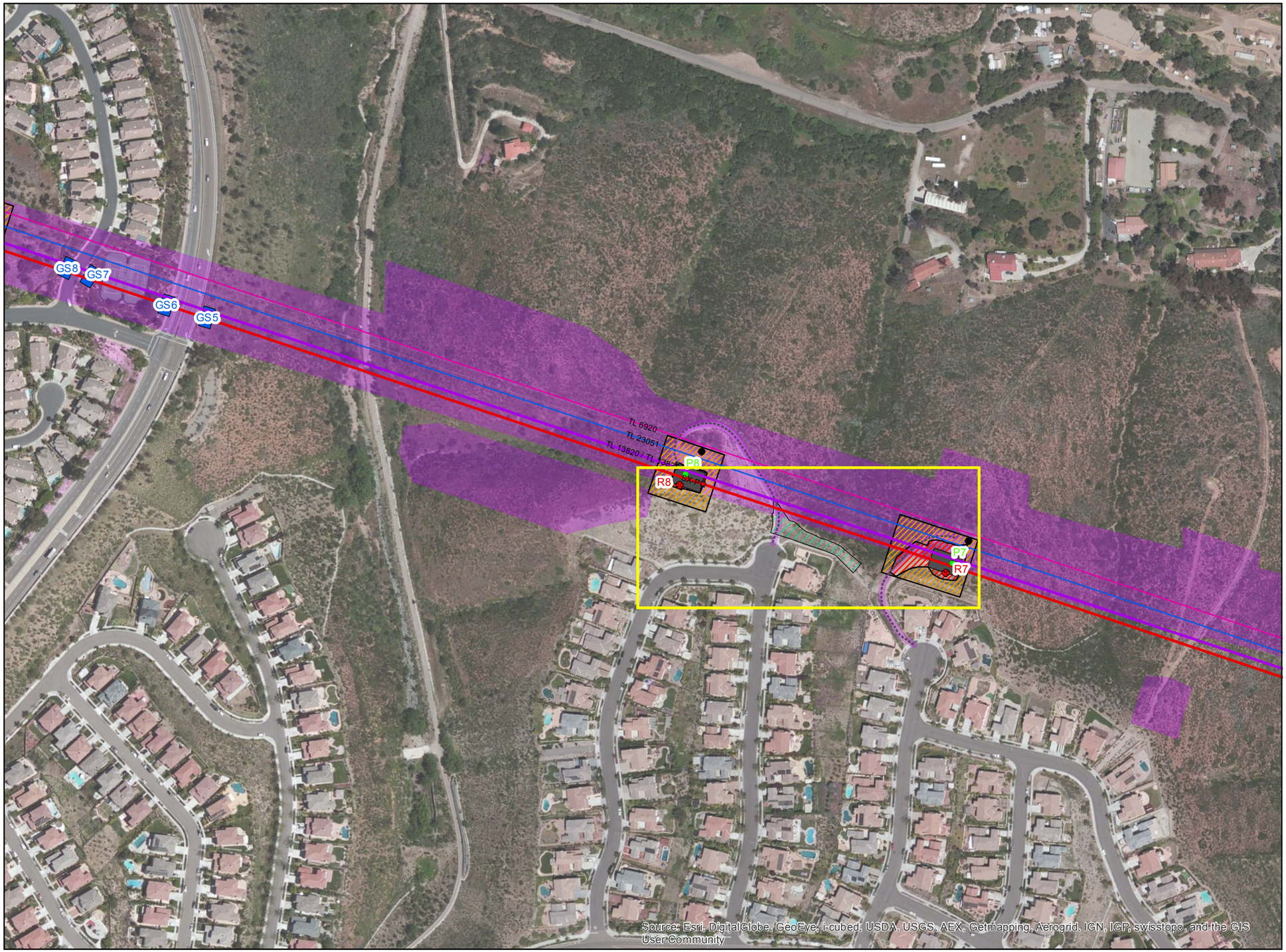
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 3: Project Detail

Date: 9/29/2014 Scale = 1:3,000

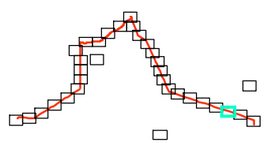
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

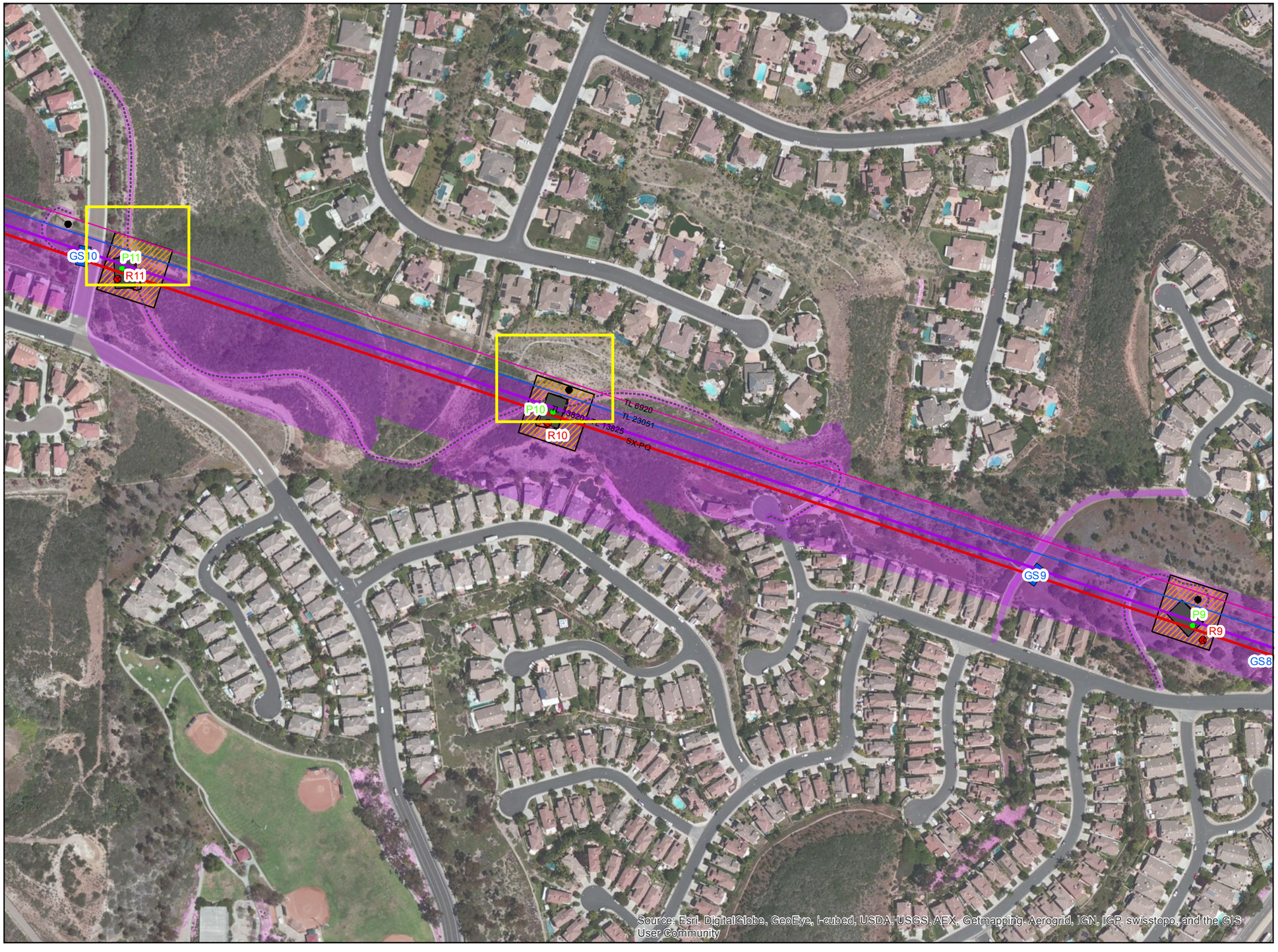
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 4: Project Detail

Date: 9/29/2014 Scale = 1:3,000

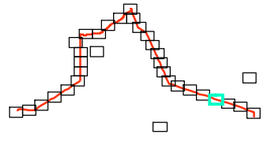
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

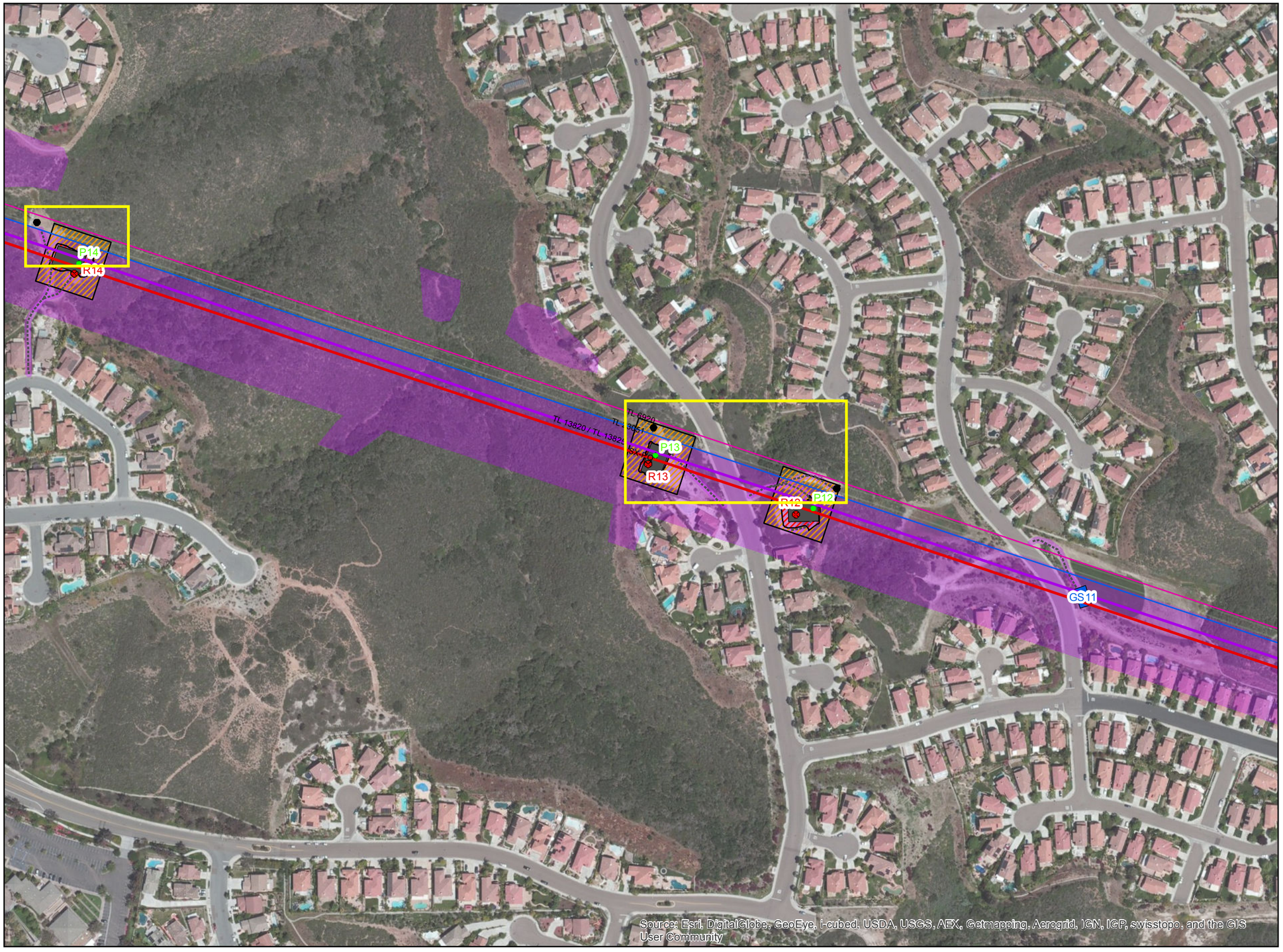
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 5: Project Detail

Date: 9/29/2014 Scale = 1:3,000

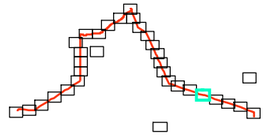
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

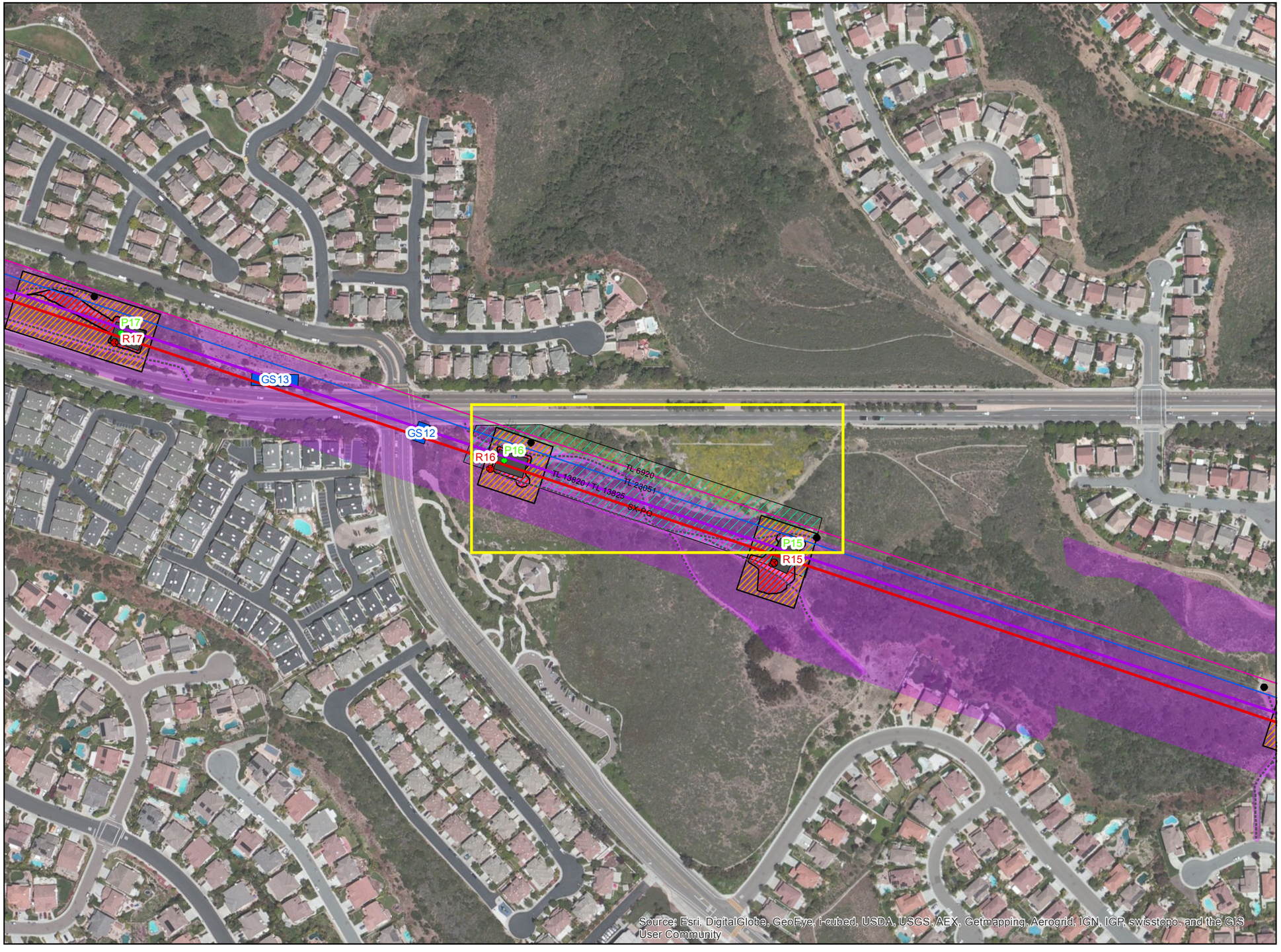
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 6: Project Detail

Date: 9/29/2014 Scale = 1:3,000

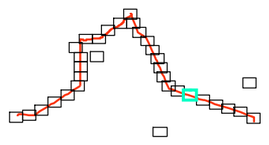
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

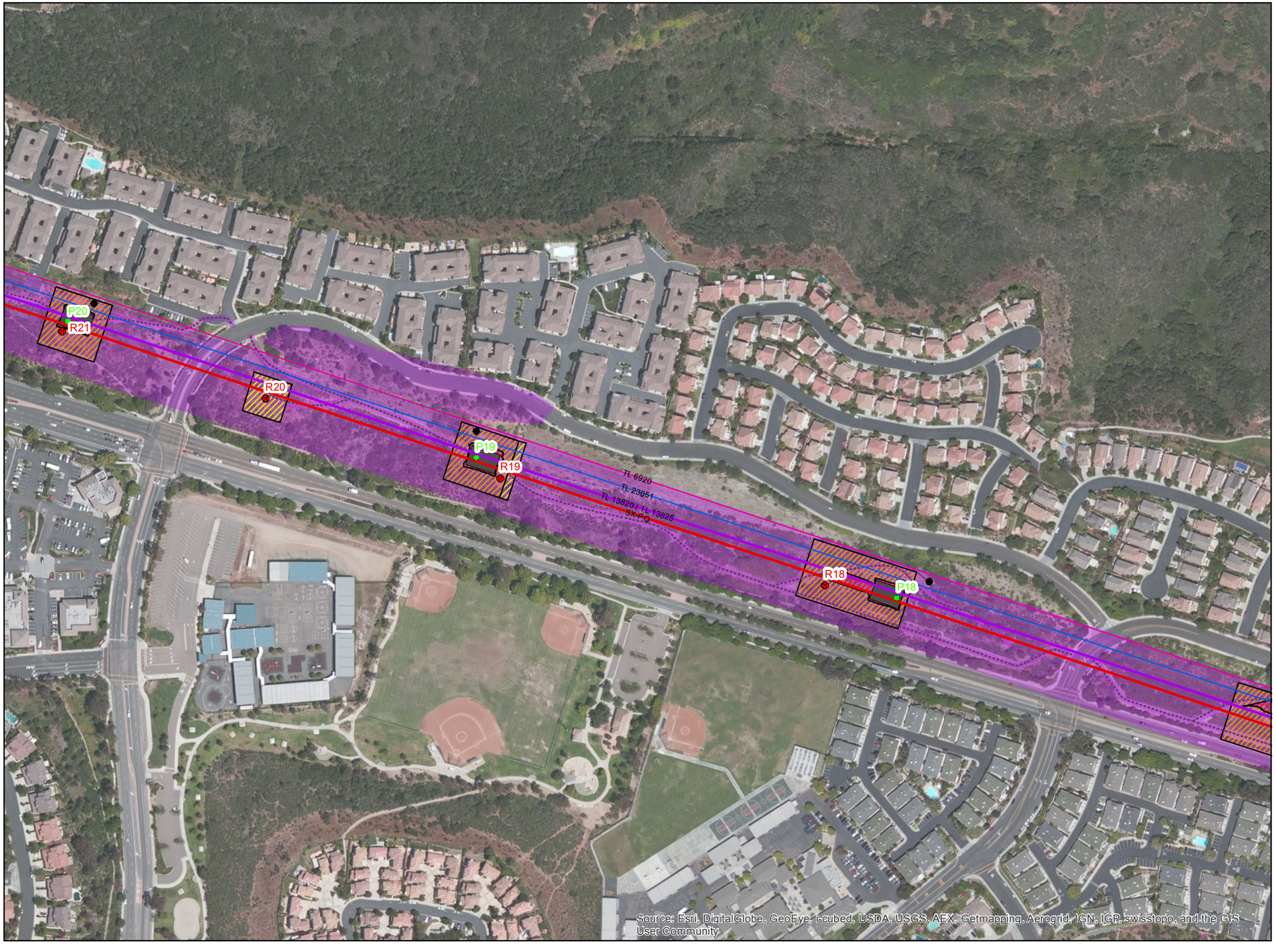
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 7: Project Detail

Date: 9/29/2014 Scale = 1:3,000

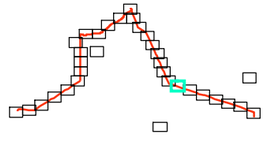
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

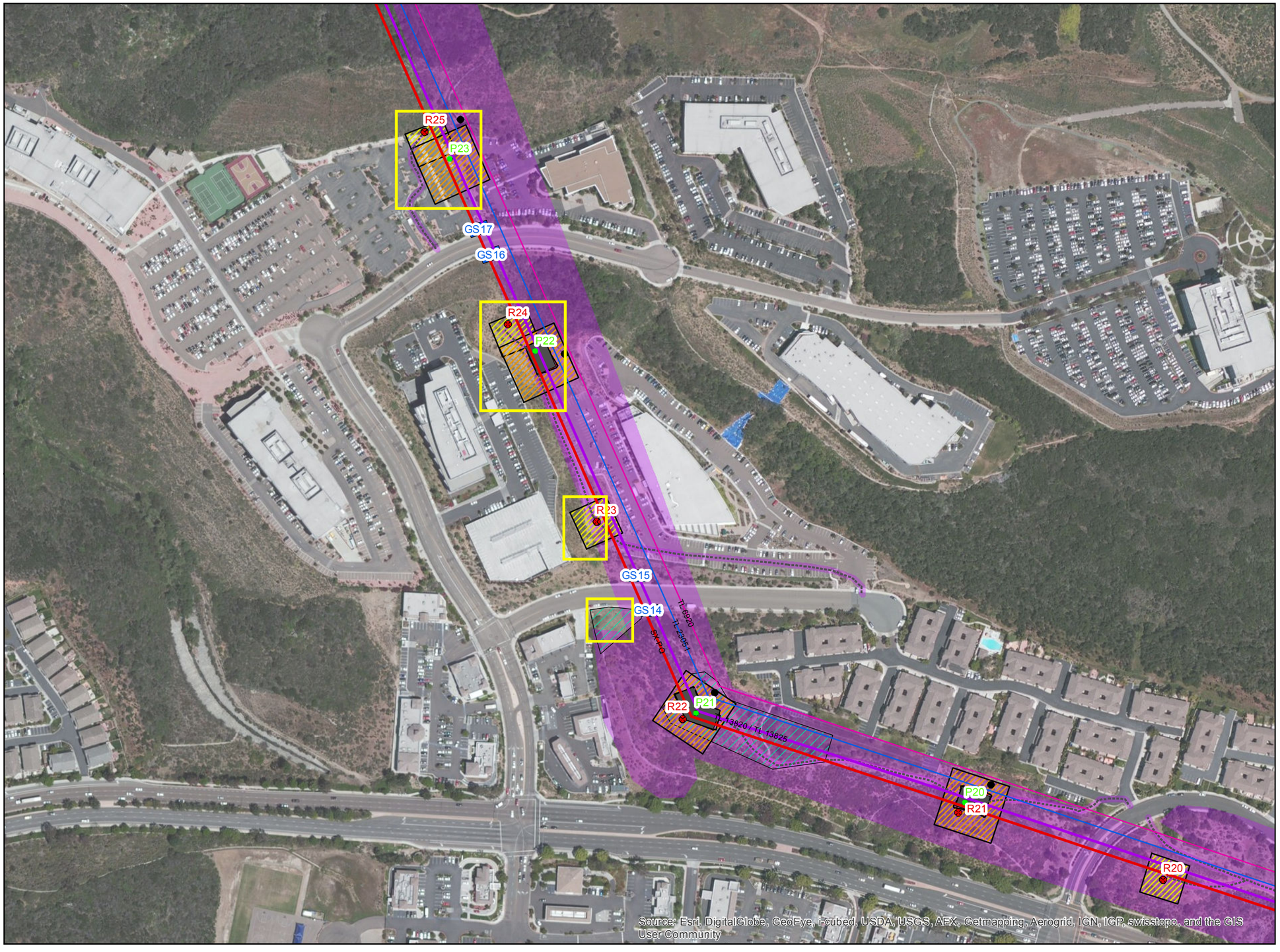
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 8: Project Detail

Date: 9/29/2014 Scale = 1:3,000

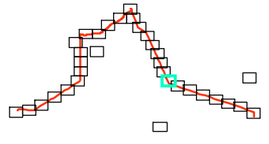
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

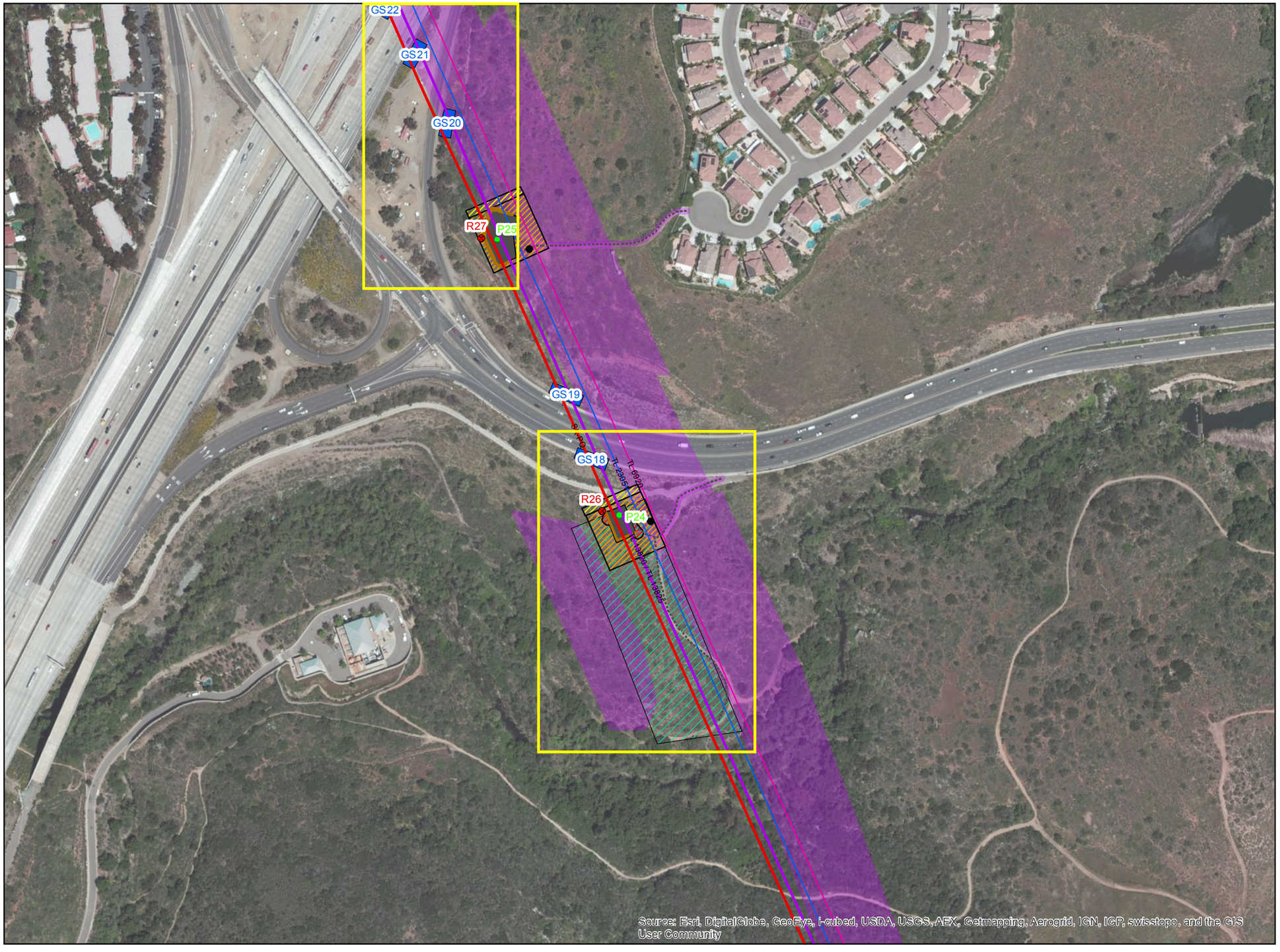
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 9: Project Detail

Date: 9/29/2014 Scale = 1:3,000

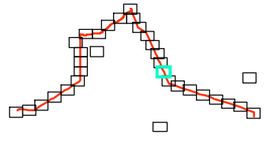
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 10: Project Detail

Date: 9/29/2014 Scale = 1:3,000

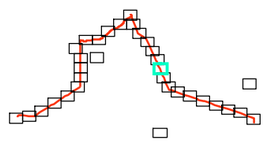
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

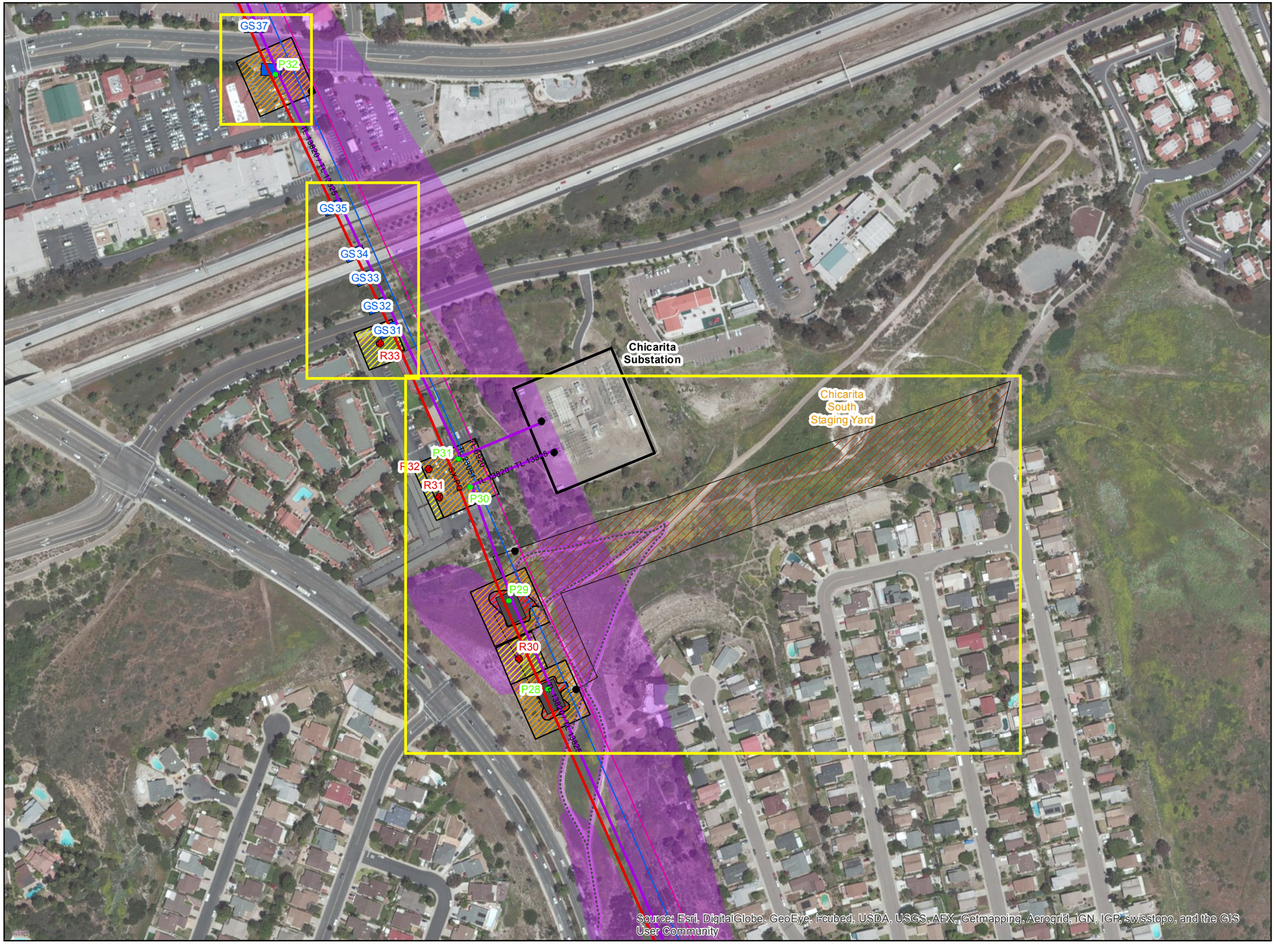
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 11: Project Detail

Date: 9/29/2014 Scale = 1:3,000

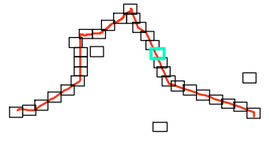
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 12: Project Detail

Date: 9/29/2014 Scale = 1:3,000

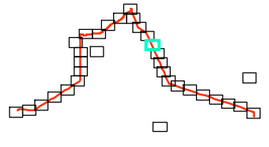
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 13: Project Detail

Date: 9/29/2014 Scale = 1:3,000

Legend

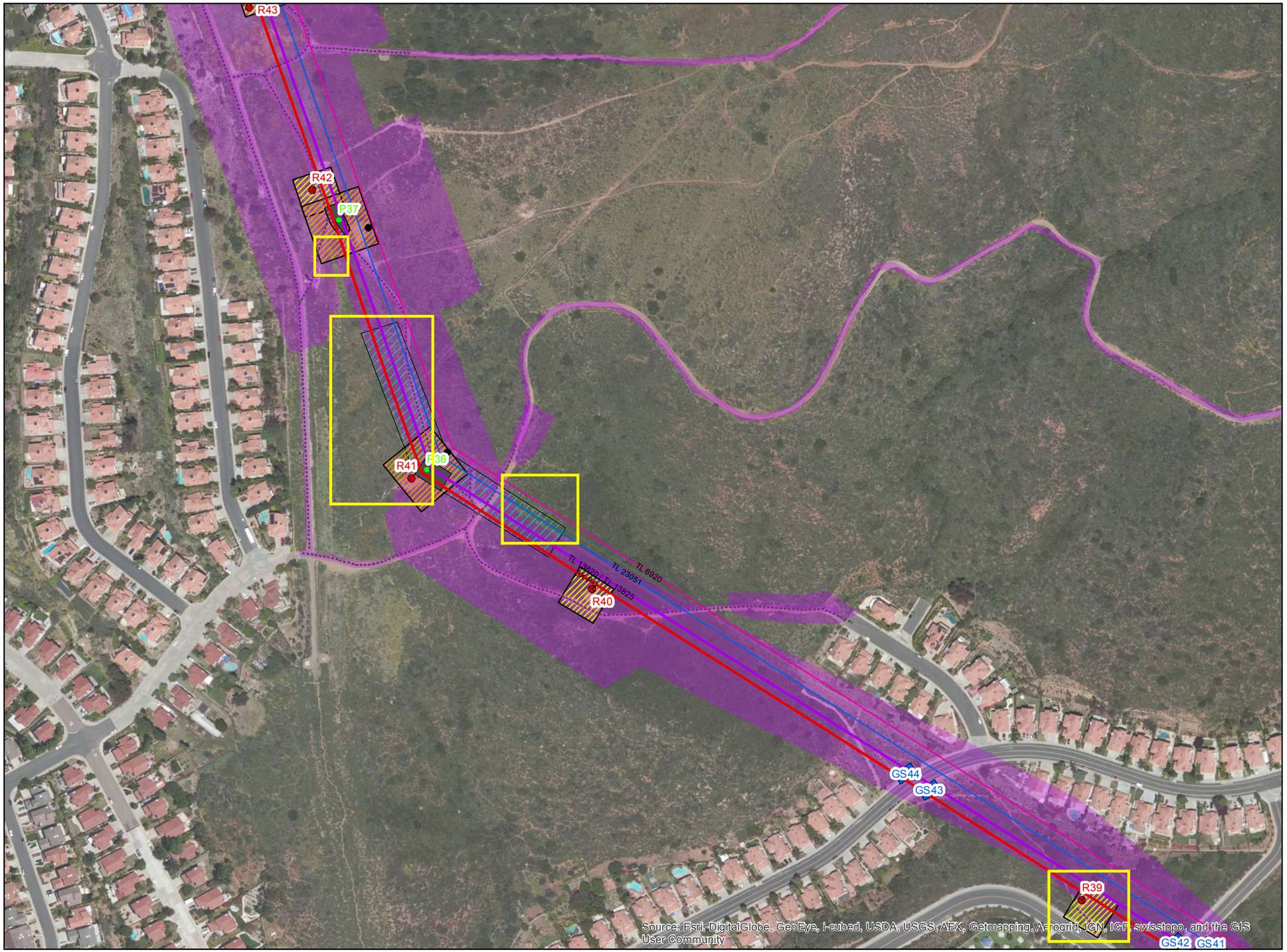
- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 14: Project Detail

Date: 9/29/2014 Scale = 1:3,000

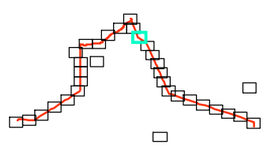
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

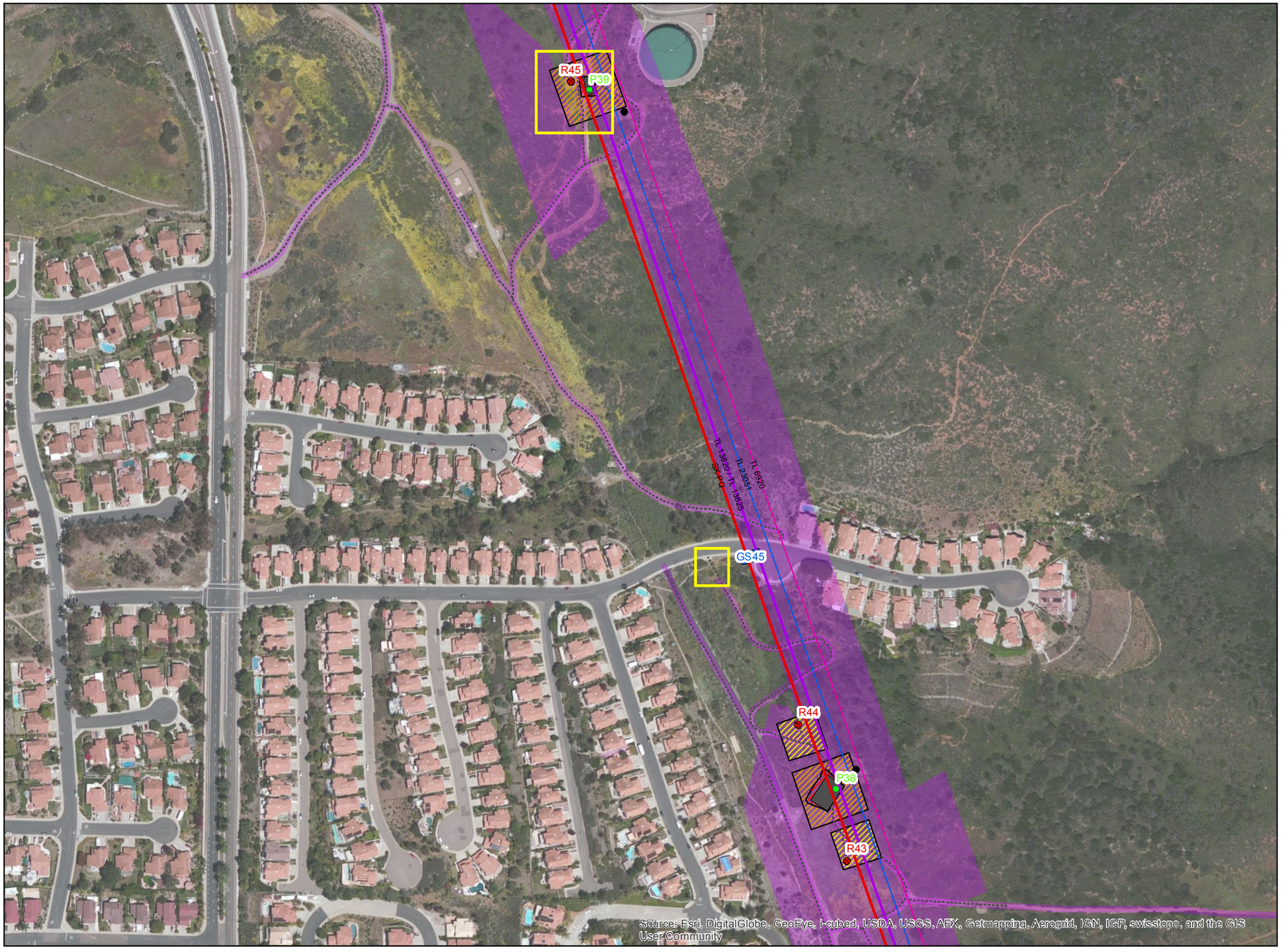
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 15: Project Detail

Date: 9/29/2014 Scale = 1:3,000

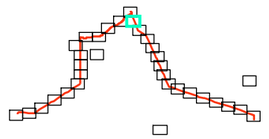
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

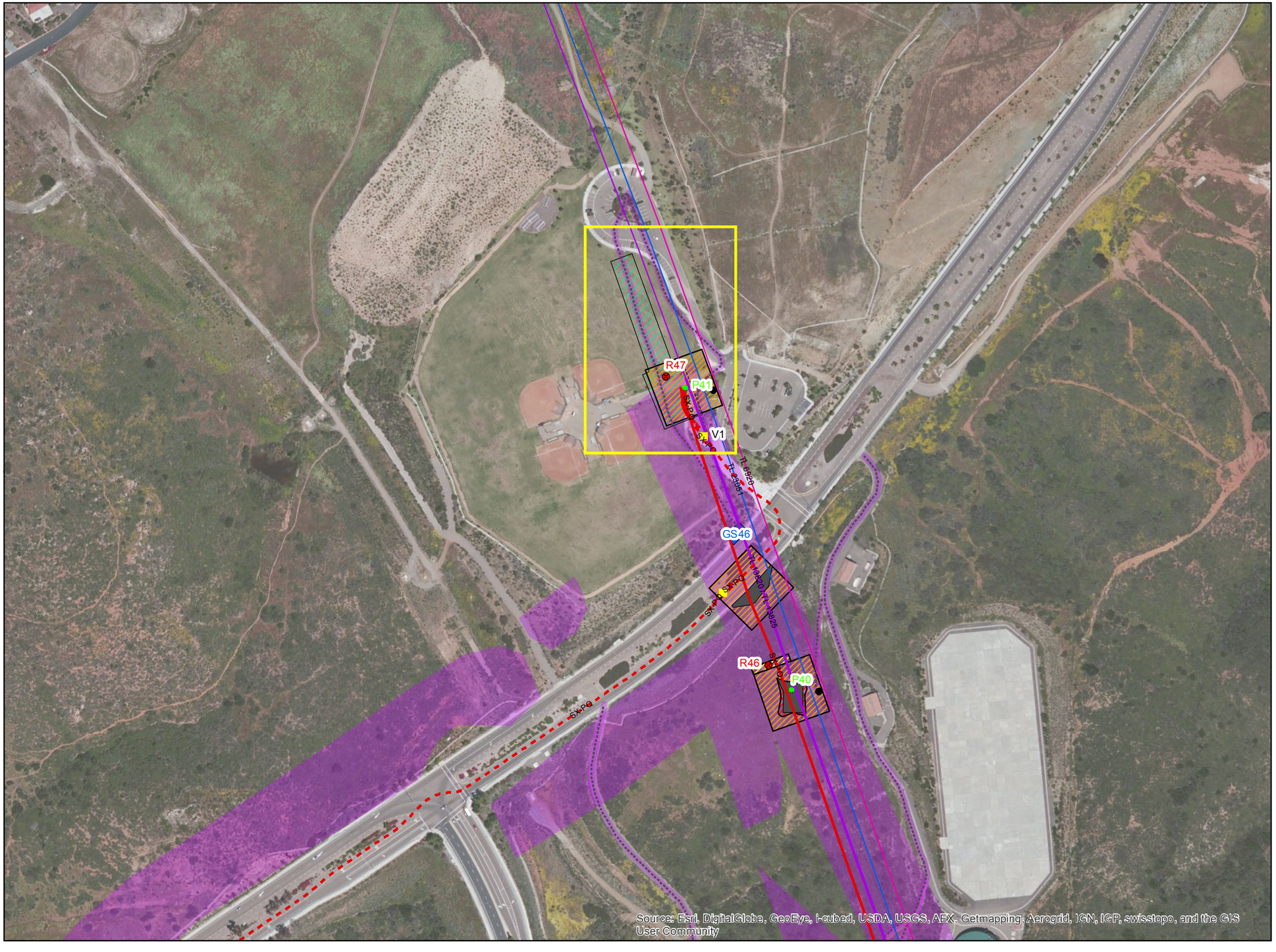
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 16: Project Detail

Date: 9/29/2014 Scale = 1:3,000

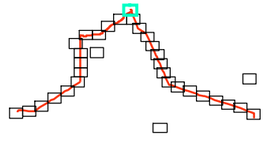
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 17: Project Detail

Date: 9/29/2014 Scale = 1:3,000

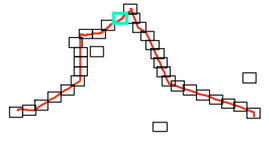
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

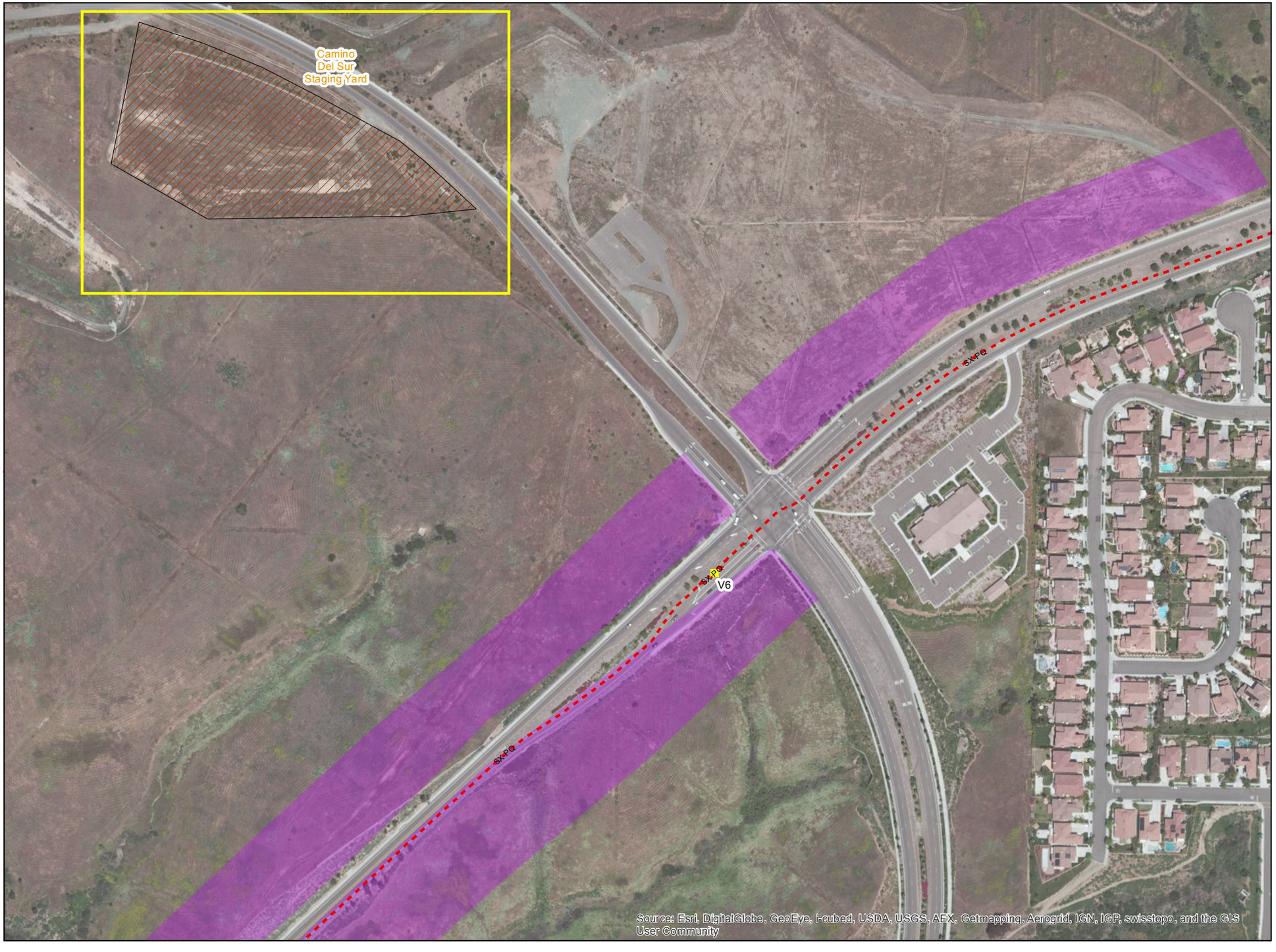
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 18: Project Detail

Date: 9/29/2014 Scale = 1:3,000

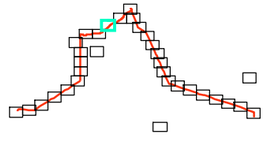
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

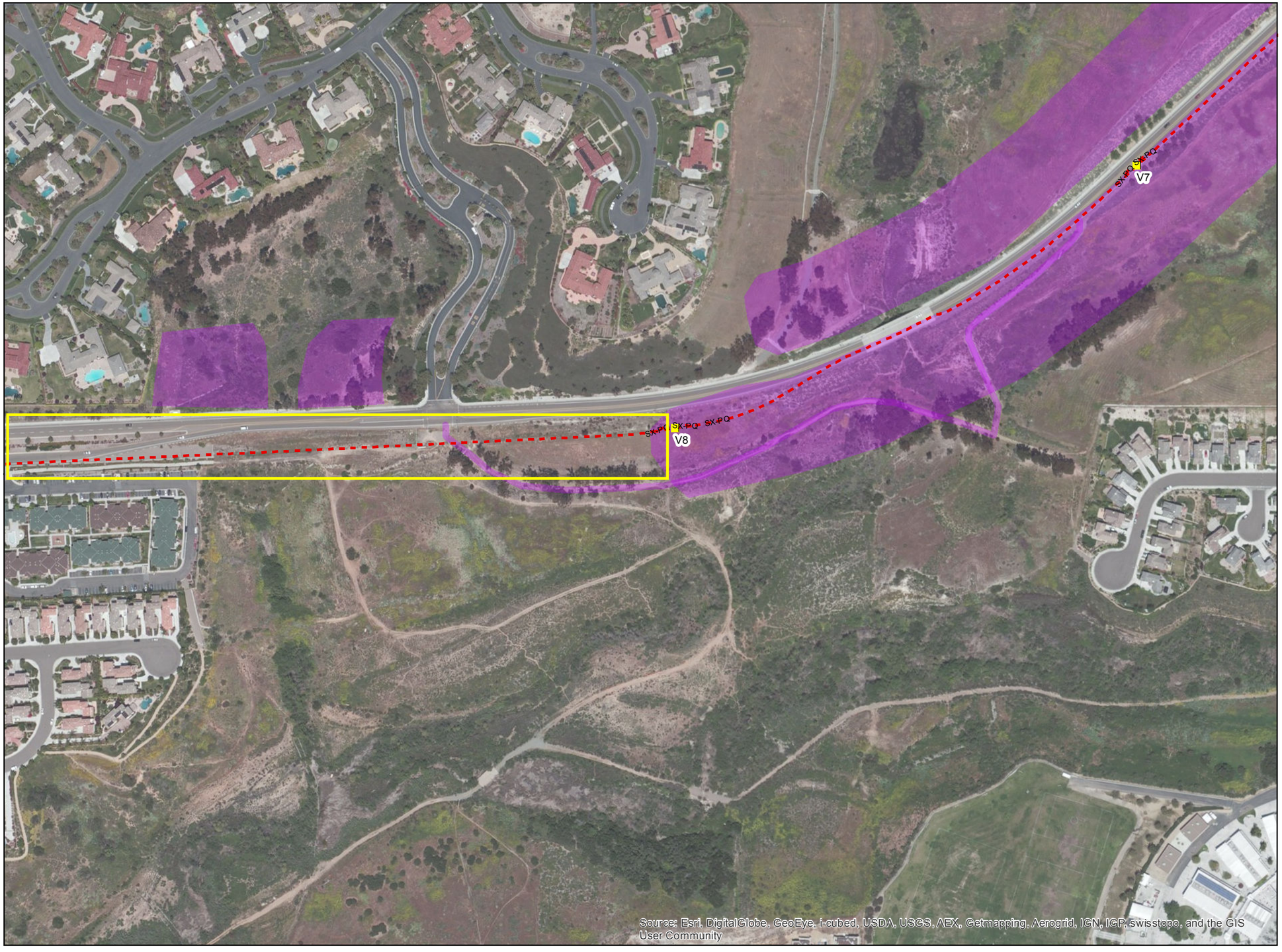
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 19: Project Detail

Date: 9/29/2014 Scale = 1:3,000

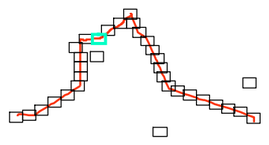
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

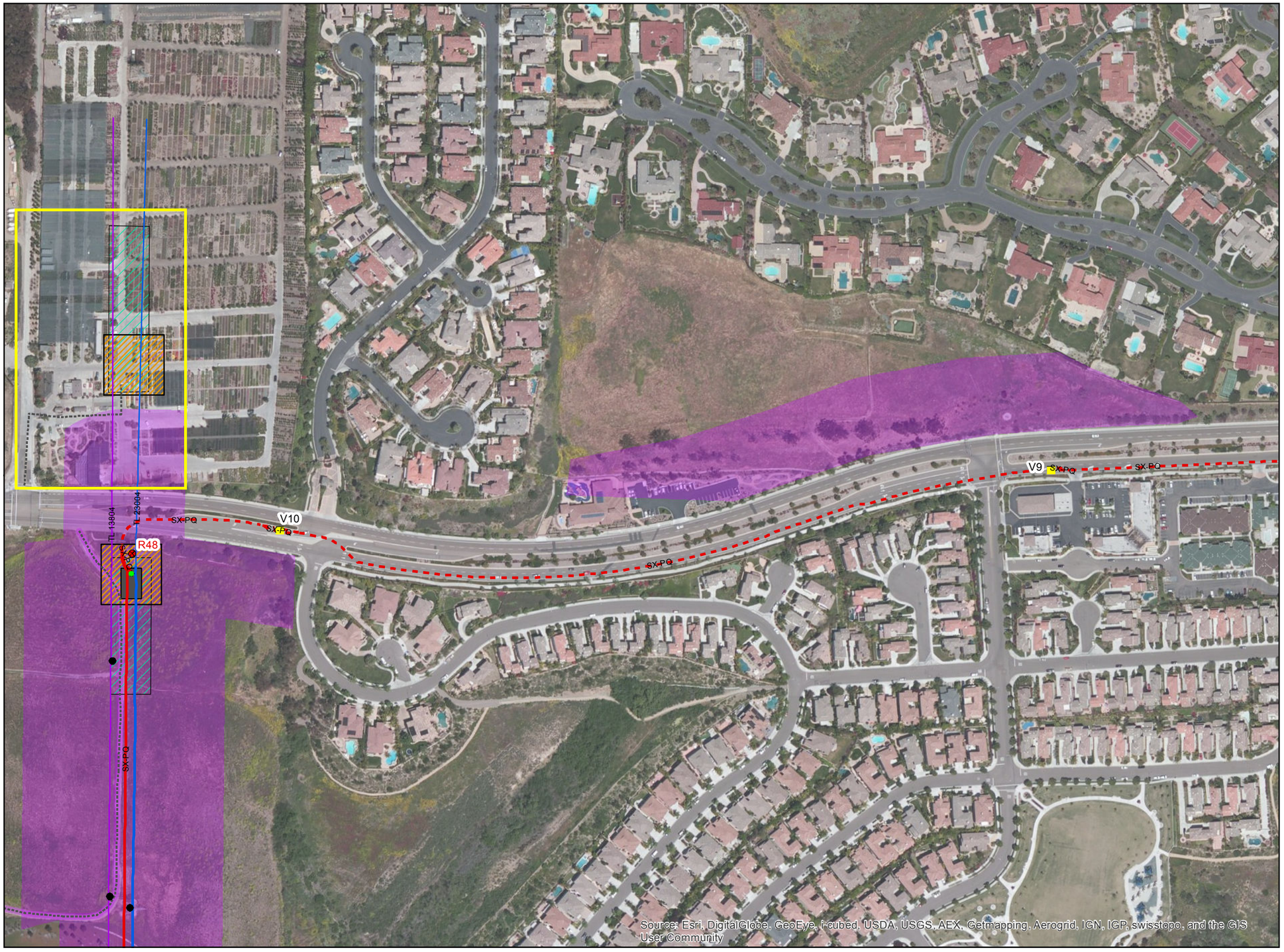
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 20: Project Detail

Date: 9/29/2014 Scale = 1:3,000

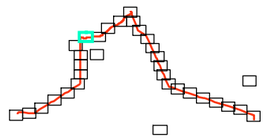
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 21: Project Detail

Date: 9/29/2014 Scale = 1:3,000

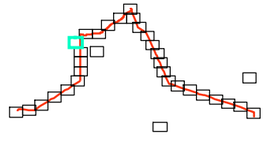
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

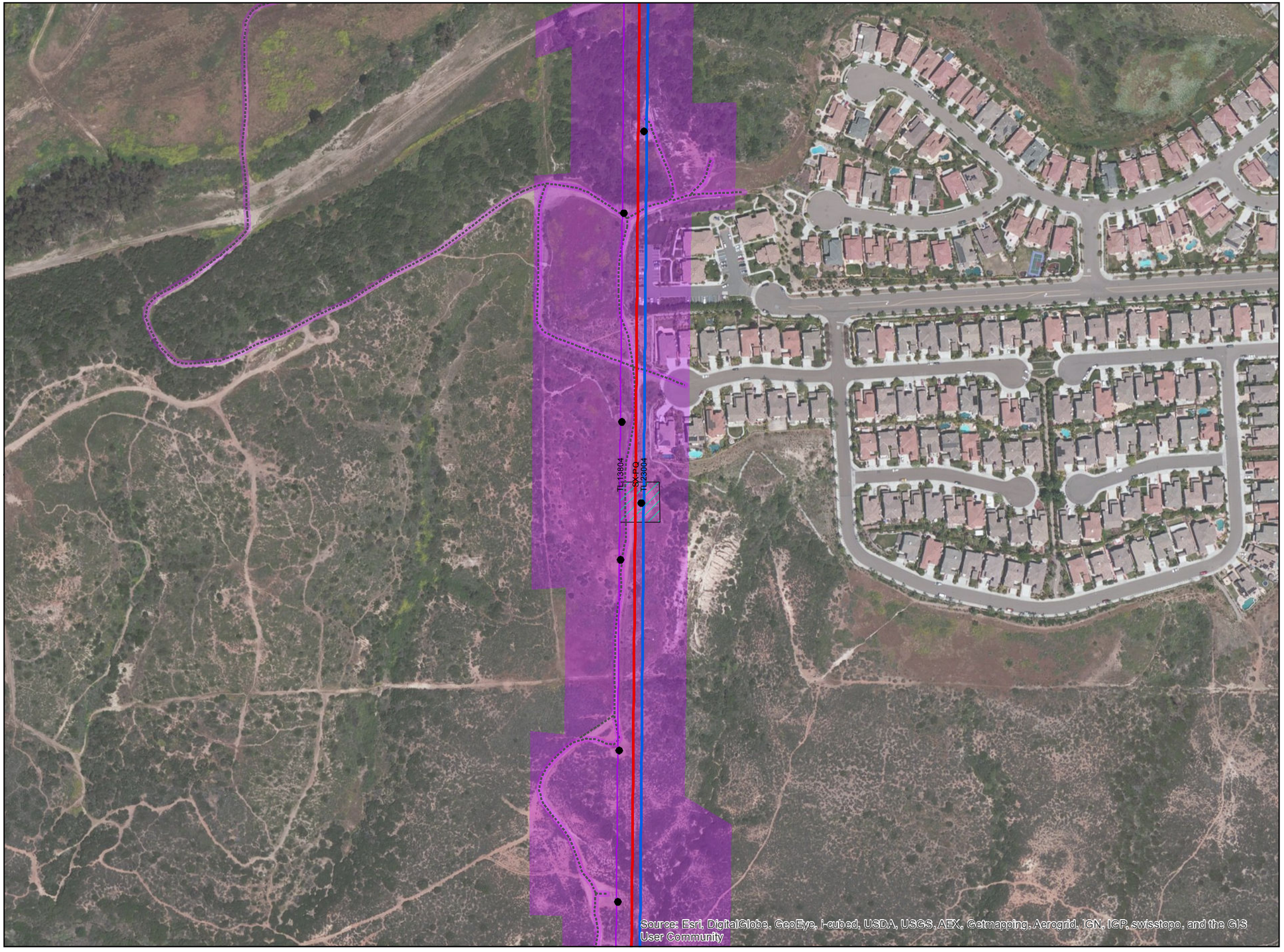
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 22: Project Detail

Date: 9/29/2014 Scale = 1:3,000

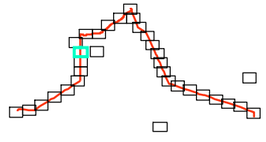
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

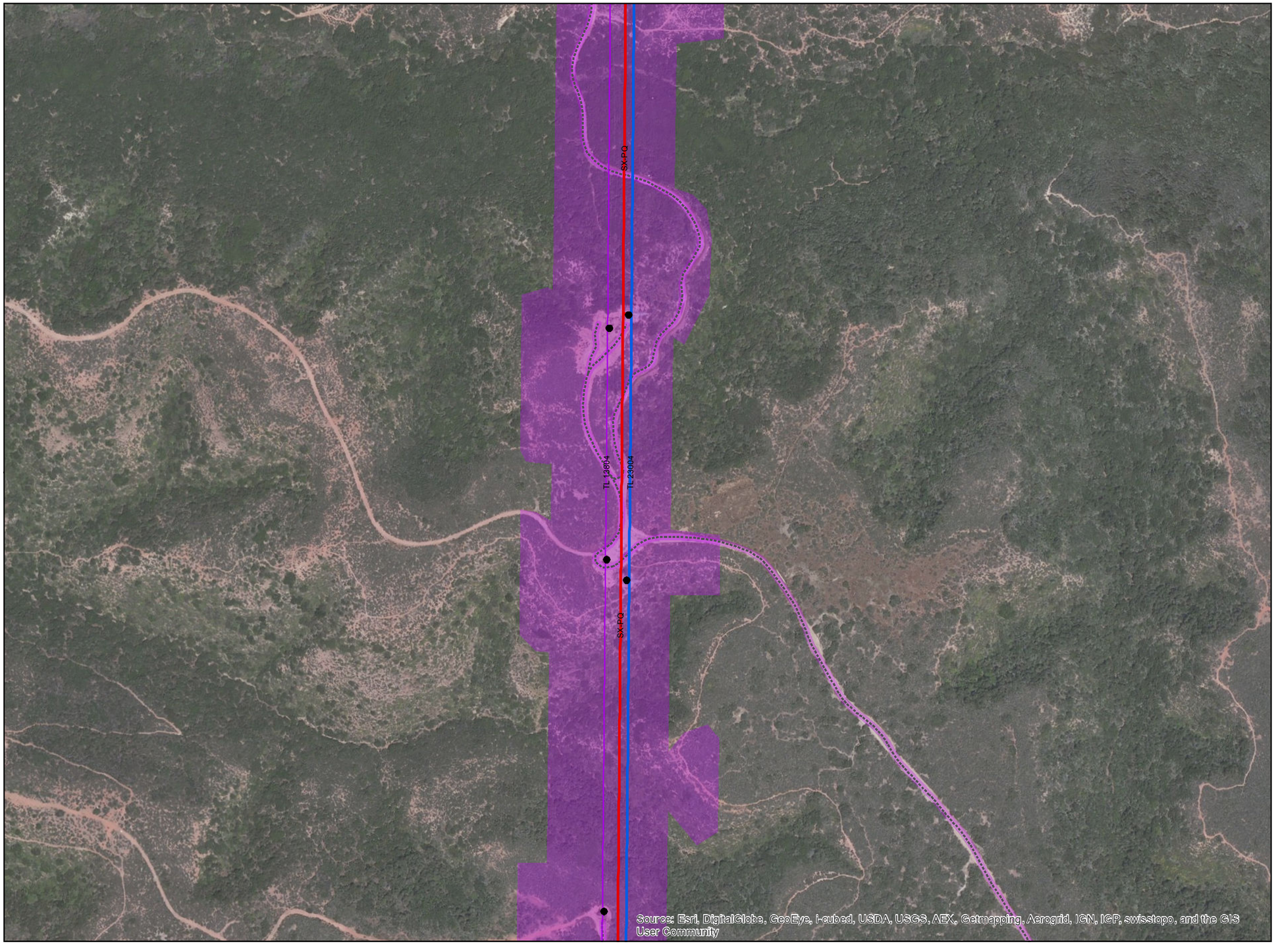
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 23: Project Detail

Date: 9/29/2014 Scale = 1:3,000

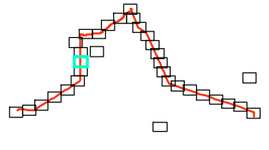
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

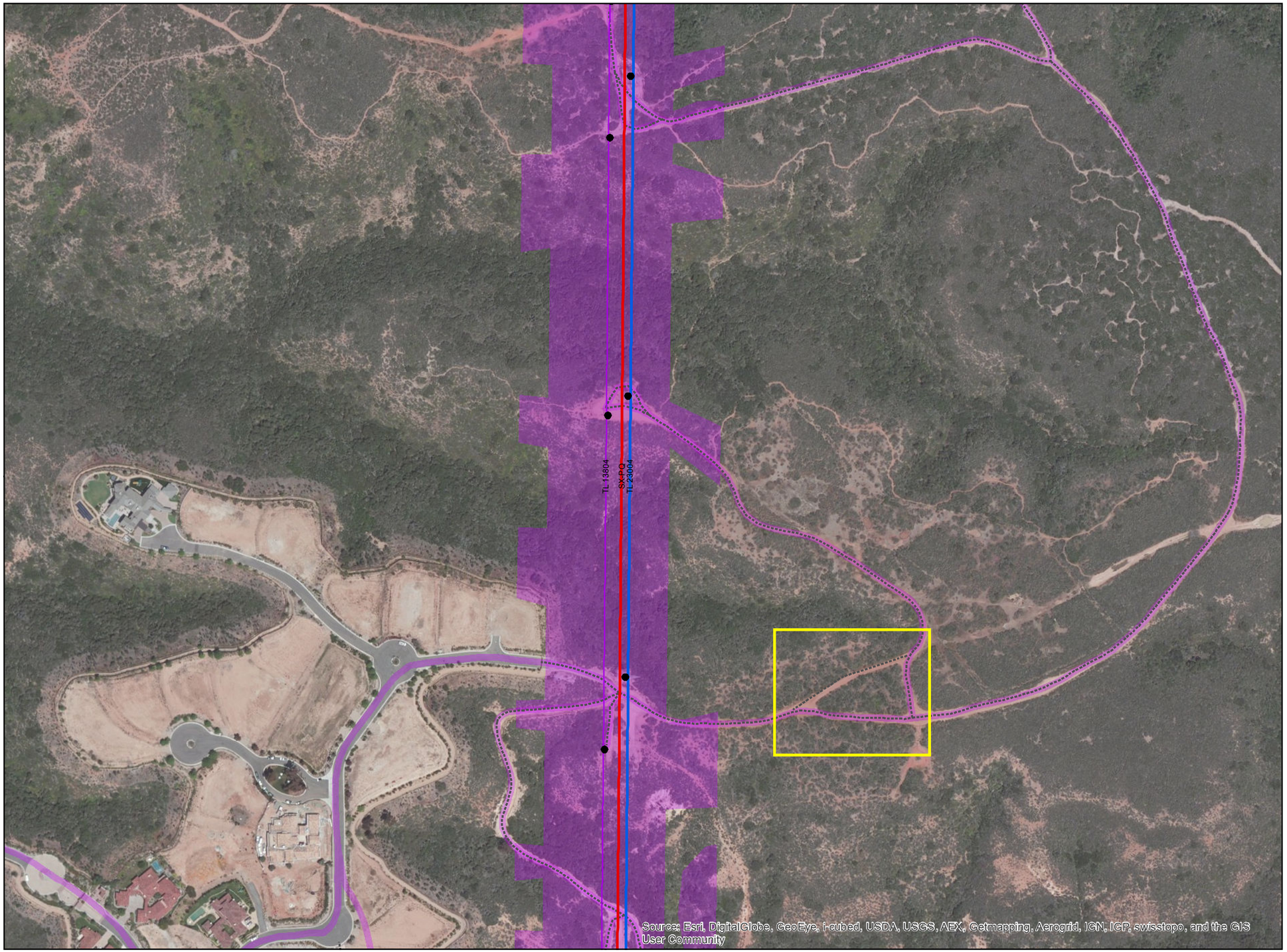
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 24: Project Detail

Date: 9/29/2014 Scale = 1:3,000

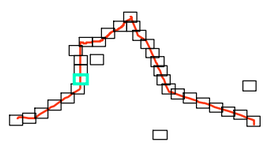
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

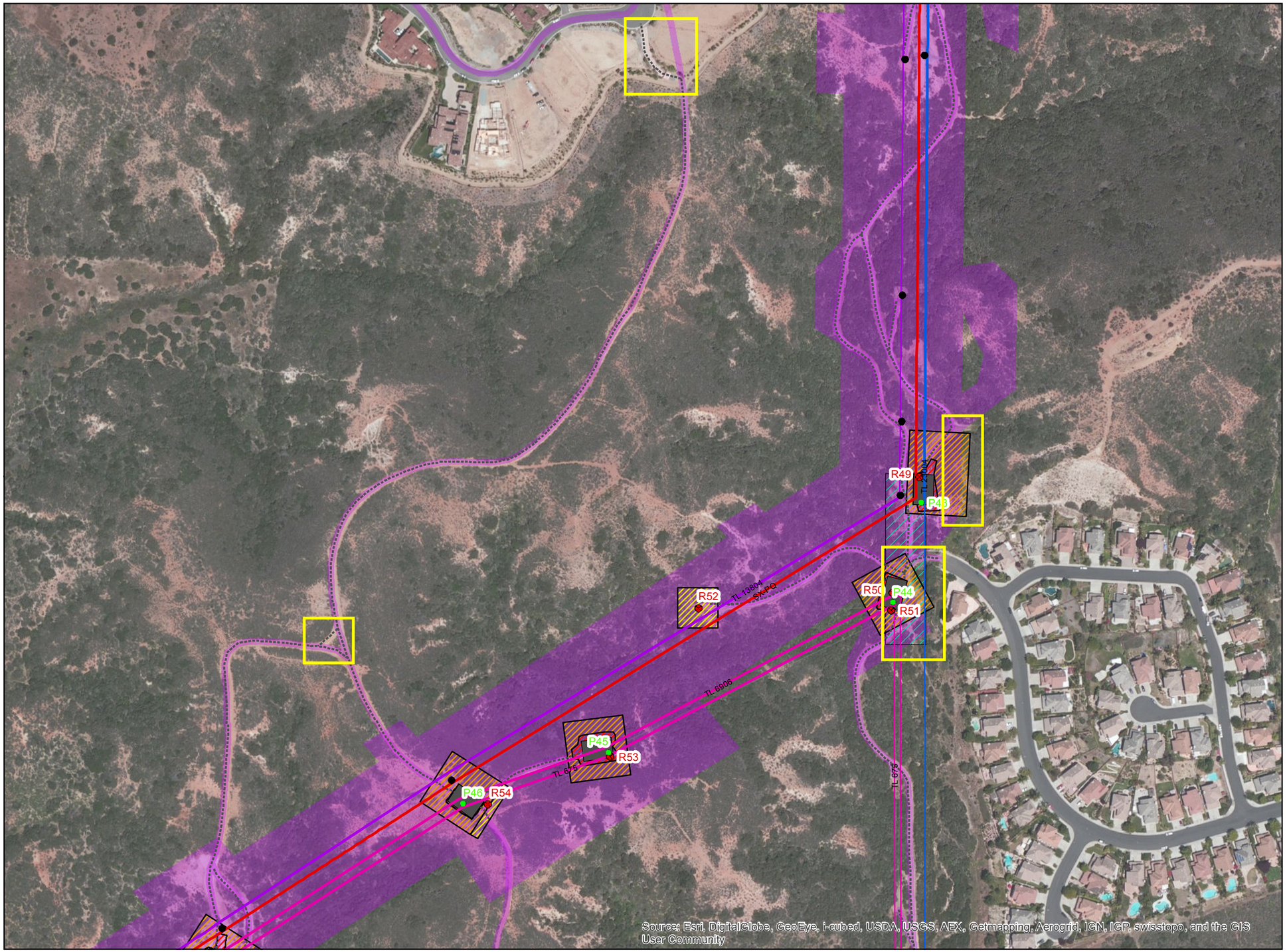
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 25: Project Detail

Date: 9/29/2014 Scale = 1:3,000

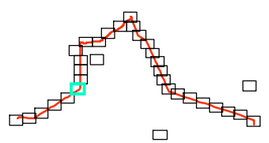
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

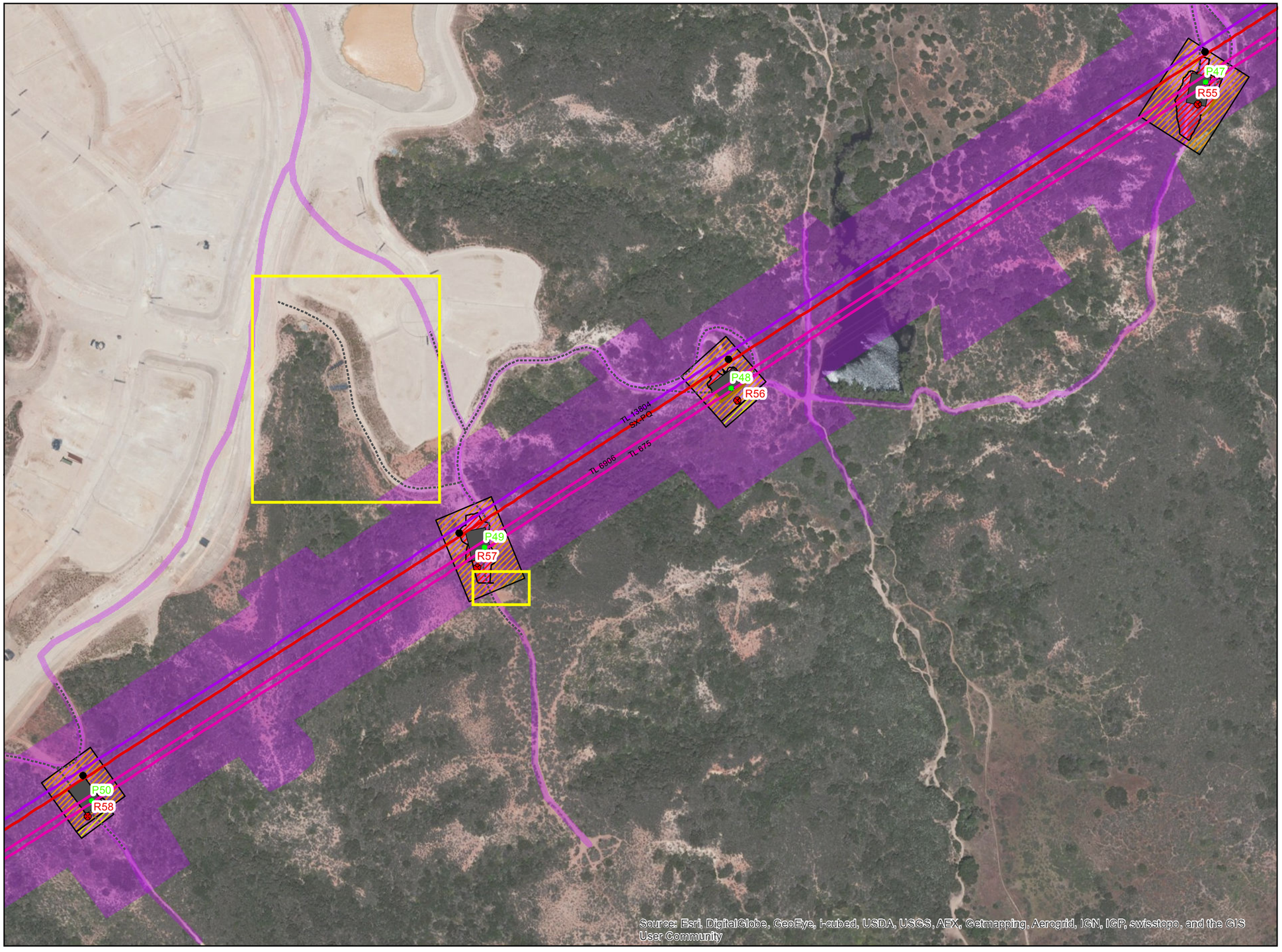
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 26: Project Detail

Date: 9/29/2014 Scale = 1:3,000

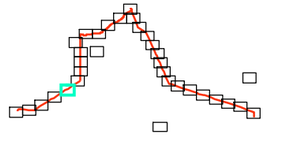
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 27: Project Detail

Date: 9/29/2014 Scale = 1:3,000

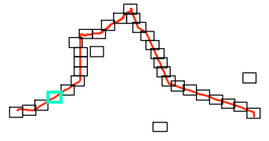
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

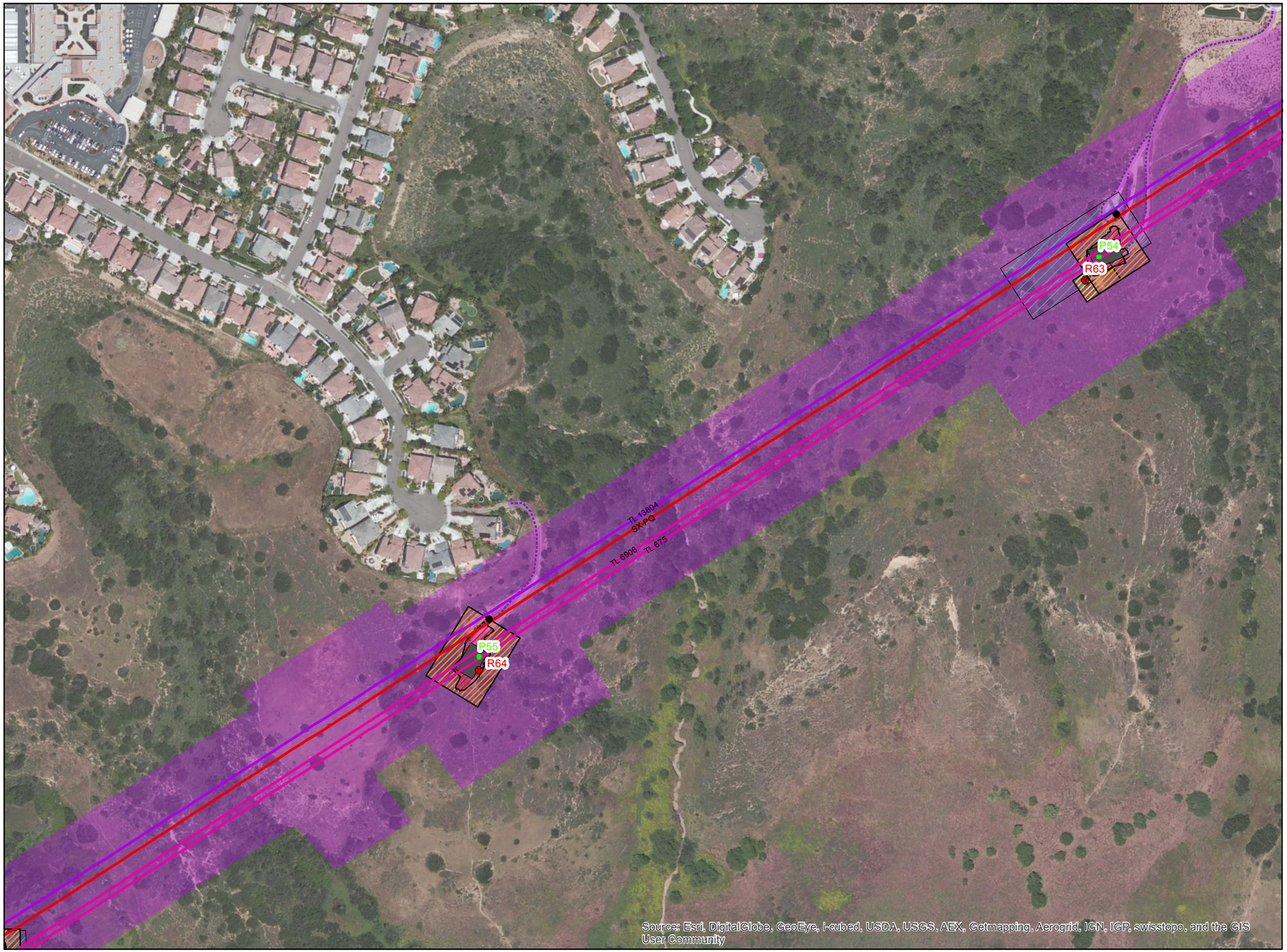
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 28: Project Detail

Date: 9/29/2014 Scale = 1:3,000

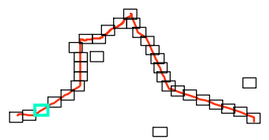
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

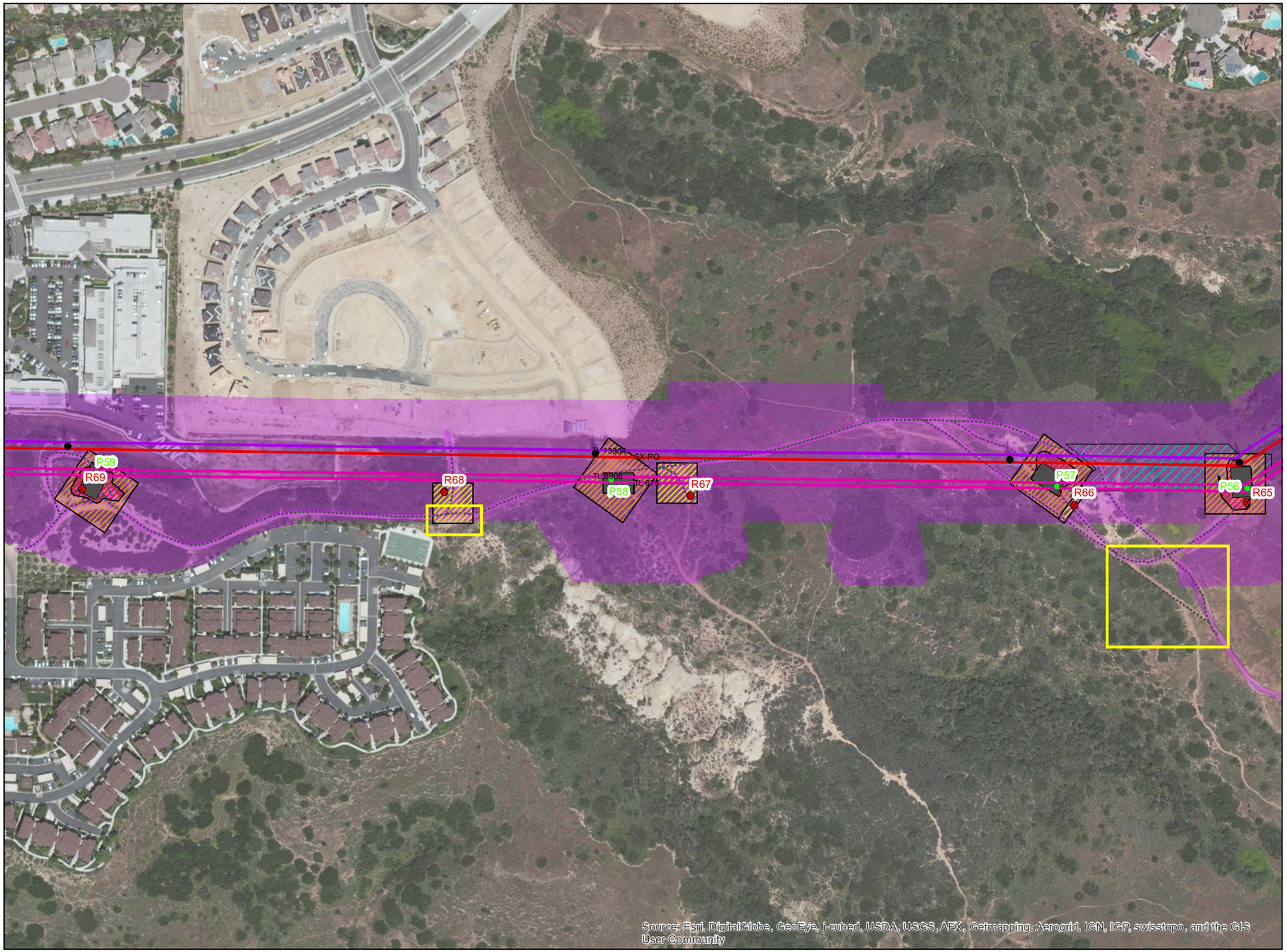
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 29: Project Detail

Date: 9/29/2014 Scale = 1:3,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
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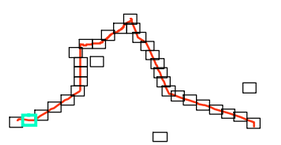
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

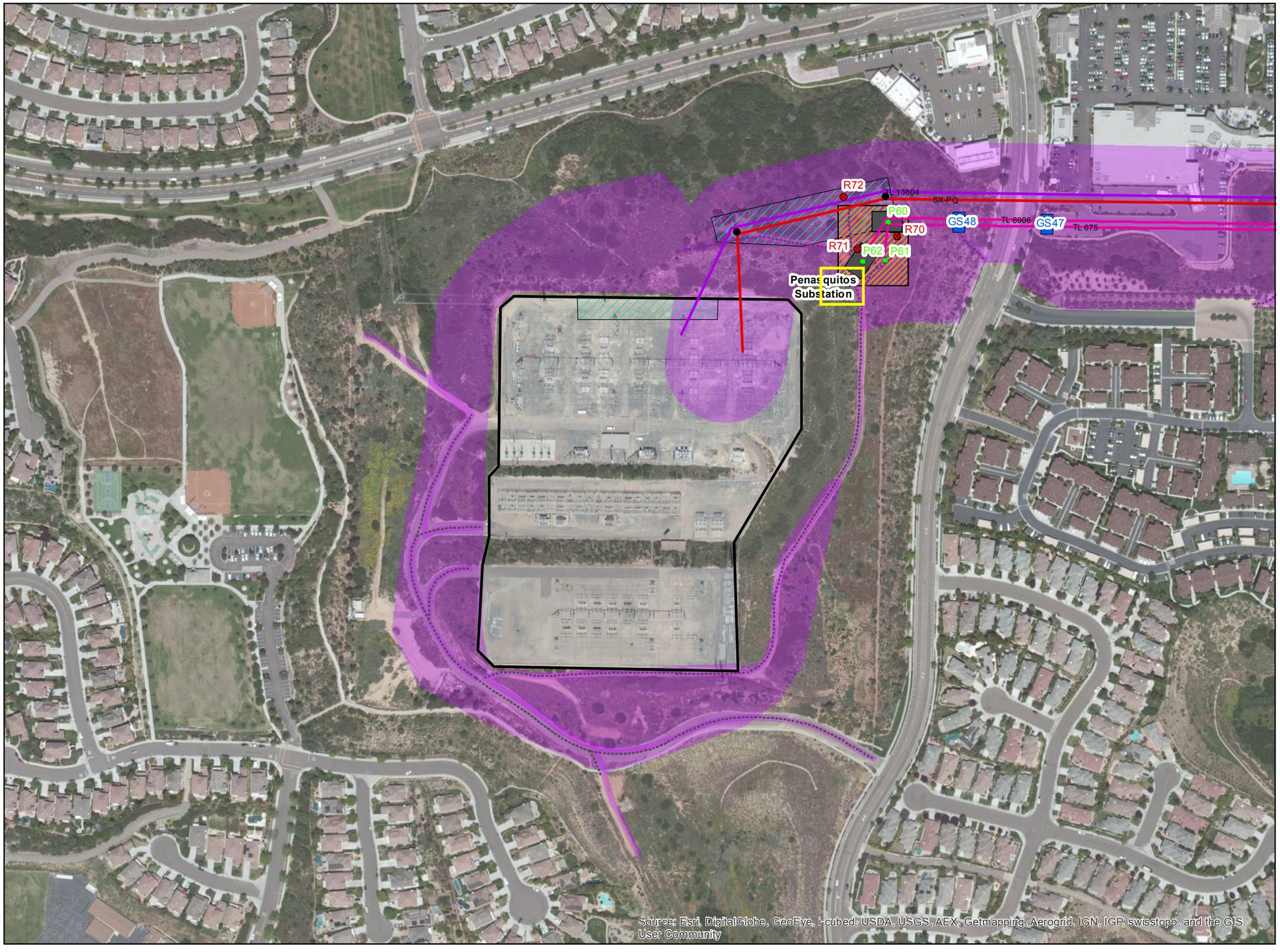
0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 30: Project Detail

Date: 9/29/2014 Scale = 1:3,000

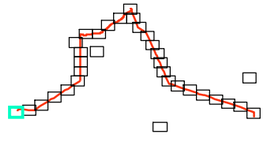
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above)
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 31: Project Detail

Date: 9/29/2014 Scale = 1:3,000

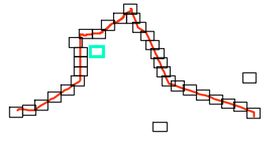
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 32: Project Detail

Date: 9/29/2014 Scale = 1:3,000

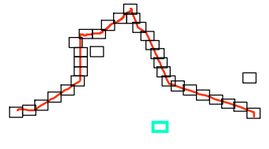
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sycamore – Peñasquitos Transmission Line Project

Map 33: Project Detail

Date: 9/29/2014 Scale = 1:3,000

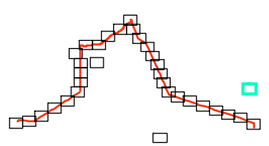
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- 230-kV (Proposed Above
- 230-kV (Proposed Underground)
- 230-kV (Reconductor)
- 230-kV (Existing)
- 138-kV (Reconductor)
- 138-kV (Existing)
- 69-kV (Reconductor)
- 69-kV (Existing)
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 50 100 200 300 400 Feet

0 0.01 0.02 0.04 0.06 0.08 Miles

Map Frame

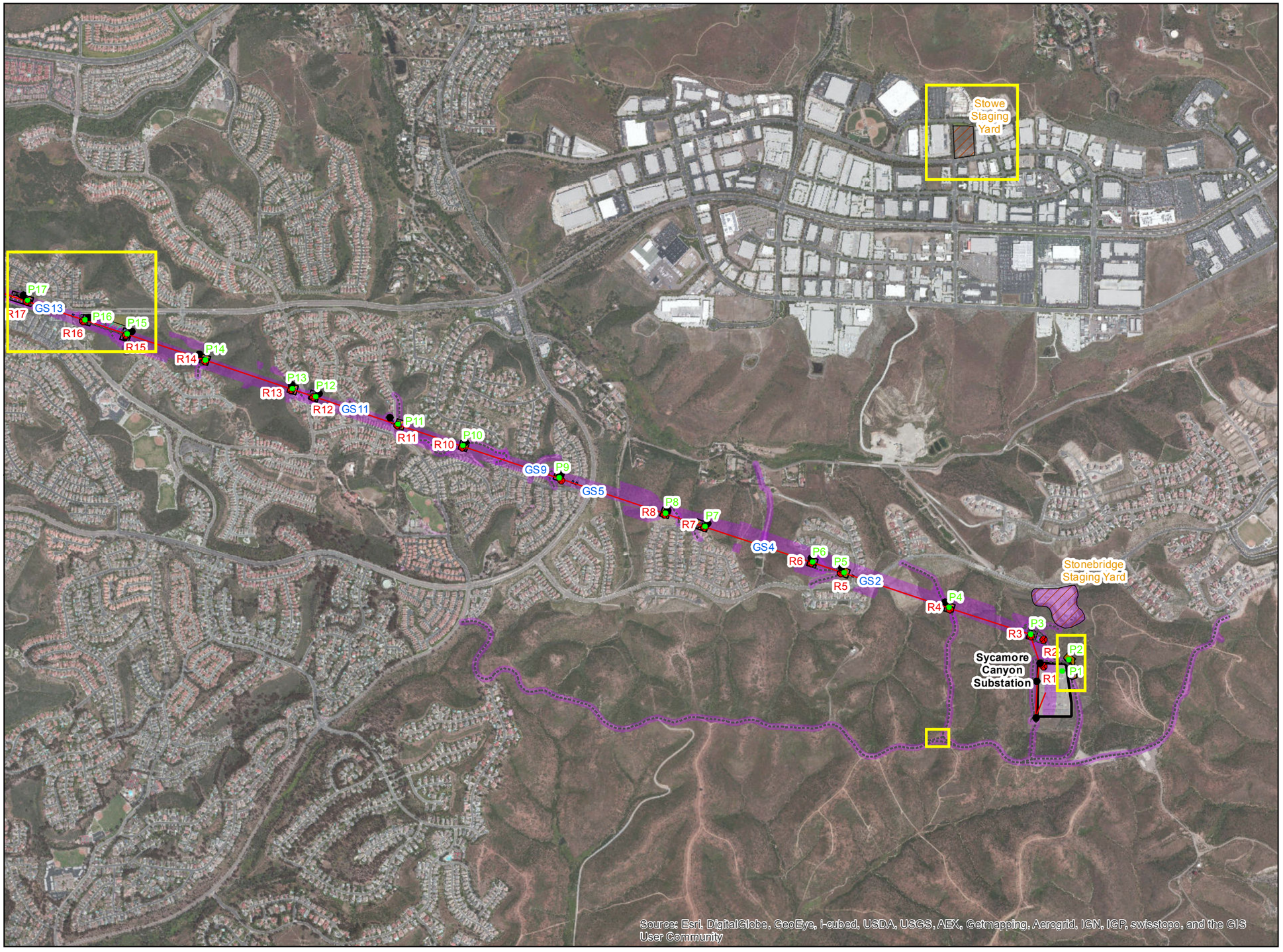


PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 1: Segment Overview

Date: 9/29/2014 Scale = 1:20,000



Legend

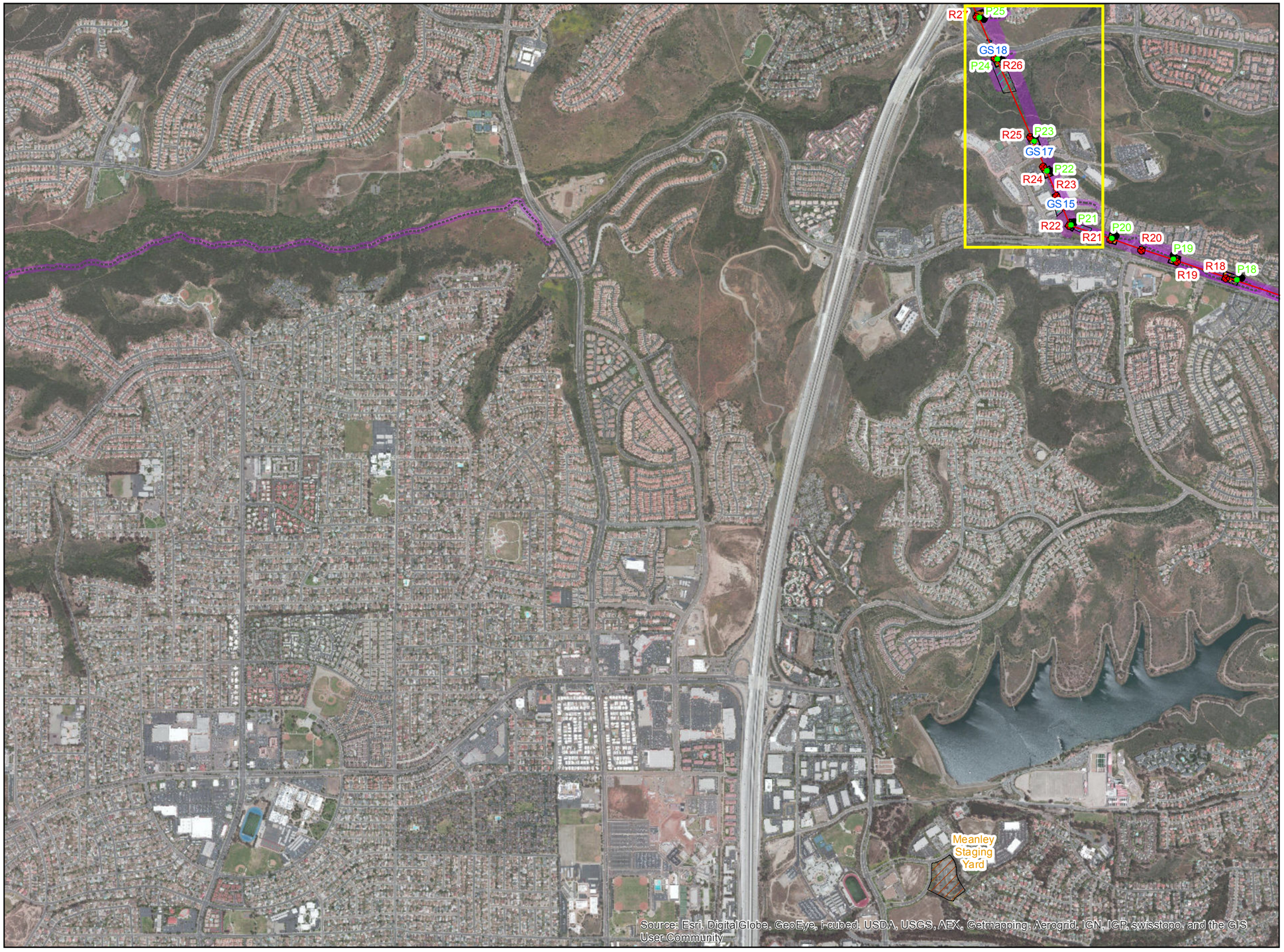
- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.



Sycamore – Peñasquitos Transmission Line Project

Map 2: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 3: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

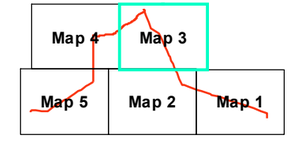
Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 4: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

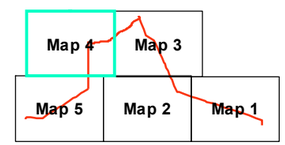
Camino Del Sur Staging Yard
V7
V8
V9
V10
P42
R48
SR-56 Staging Yard
Torrey Sante Fe Staging Yard
Torrey Sante Fe Staging Yard

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame



PANORAMA ENVIRONMENTAL, INC.

Sycamore – Peñasquitos Transmission Line Project

Map 5: Segment Overview

Date: 9/29/2014 Scale = 1:20,000

Legend

- Proposed Structure
- Existing Structure
- Proposed Removal Structure
- Splice Vault
- Project
- Retaining Walls
- Project Access Roads (DR1-
- Substation
- Guard Structure
- Power Pole Pad
- Work Area
- Work Area
- Structure Removal Sites (Temporary)
- Wire Stringing Site (Temporary)
- Staging Yard (Temporary)
- Cultural Survey Roads (ASM 2014 and Unidentified)
- Cultural Suvey Area (AECOM 2012, ASM 2012, ASM 2014)

0 250 500 1,000 1,500 2,000 Feet

0 0.075 0.15 0.3 0.45 0.6 Miles

Map Frame

PANORAMA ENVIRONMENTAL, INC.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Attachment 7: Noise Measurement Locations

Daytime Measurement

Daytime Measurement

Daytime Measurement

24-hour Measurement

24-Hour Measurement

Area for 24-hour Corona Measurements

Daytime Measurement

24-hour Measurement

G:\SDGE_SX2PQandTL6961\SDGE_SunriseSX2PQ\MXD\SXtoPQ_Noise.mxd

Sycamore to Peñasquitos 230 kV Transmission Line Project

Noise Monitoring Location Map

Figure 4.10-1

Noise Monitoring Location

Proposed Route

0 1 2 3 Miles

3/13/2014

TRC

SDGE

A Sempra Energy utility

Service Layer Credits: Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC

Attachment 8: Current EIR Project Description

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

This section of the Environmental Impact Report (EIR) describes SDG&E's Sycamore-Peñasquitos 230-kV Transmission Line Project (Proposed Project) in detail.

2.1.1 Project Overview

The Proposed Project involves construction of a new 230-kV transmission line between the Sycamore Canyon Substation and the Peñasquitos Substation. The Proposed Project would be located in the cities of San Diego and Poway and partially on Marine Corps Air Station (MCAS) Miramar (Figure 2.1-1). The Proposed Project consists of four transmission segments as well as modifications to existing substations, as shown in Figure 2.1-2:

- **Segment A:** Proposed construction of 8.31 miles of new 230-kV transmission line on new tubular steel poles (TSPs) between Sycamore Canyon Substation and Carmel Valley Road.
- **Segment B:** Proposed construction of 2.84 miles of new 230-kV transmission line underground in Carmel Valley Road, from Black Mountain Ranch Community Park, approximately at the intersection of Carmel Valley Road with Black Mountain Park Way, to about 250 feet east of the intersection of Carmel Valley Road with Via Abertura.
- **Segment C:** Proposed installation of 2.19 miles of new 230-kV conductor on existing transmission structures and one new TSP from about 250 feet east of the intersection of Carmel Valley Road with Via Abertura to Peñasquitos Junction.
- **Segment D:** Proposed installation of 3.34 miles of new 230-kV conductor on existing double-circuit steel lattice towers from Peñasquitos Junction to the Peñasquitos Substation.
- **Substation Modifications:** Proposed minor modifications to the Sycamore Canyon, Peñasquitos, Chicarita, San Luis Rey, and Mission Substations.

Figure 2.1-1: Project Location

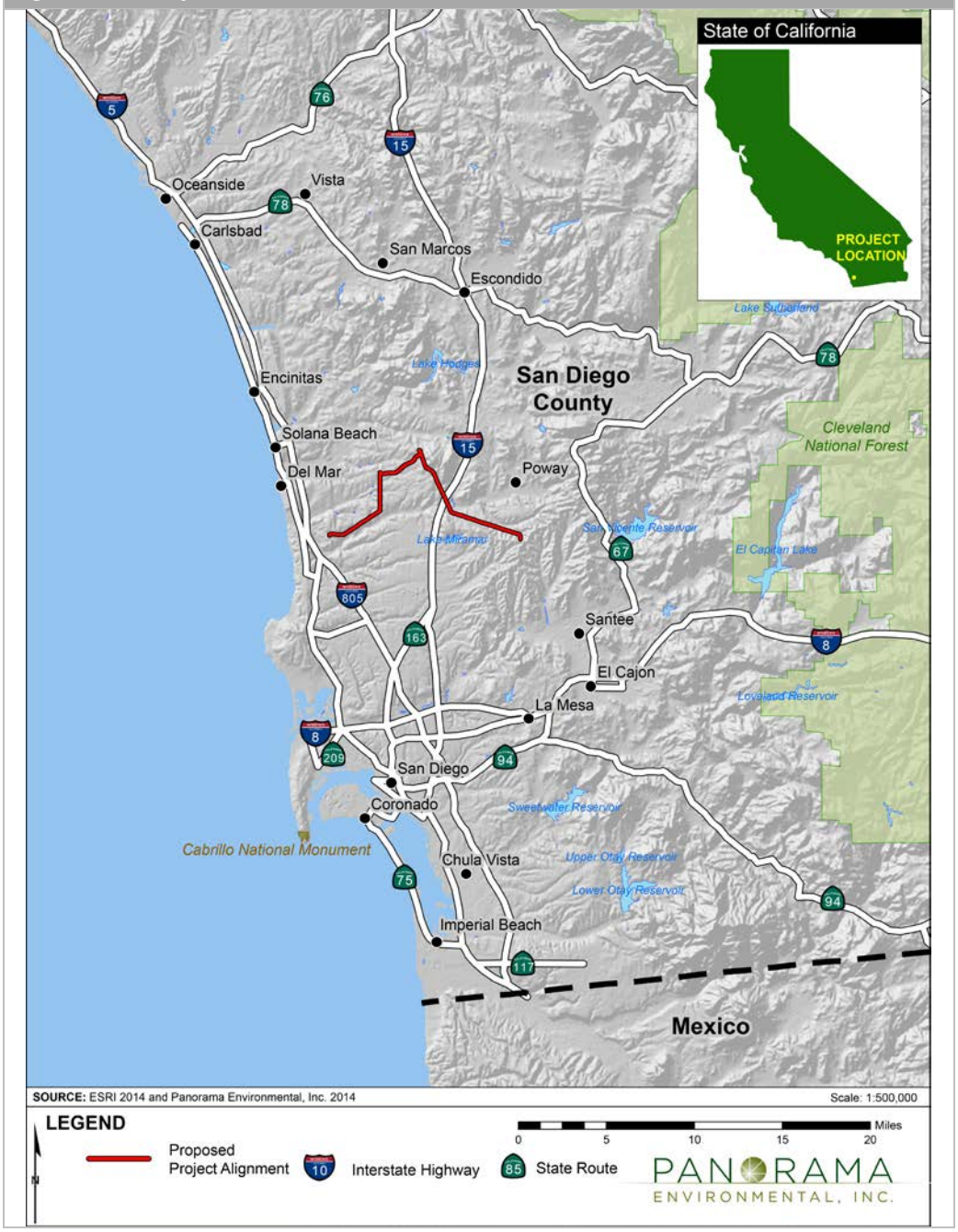
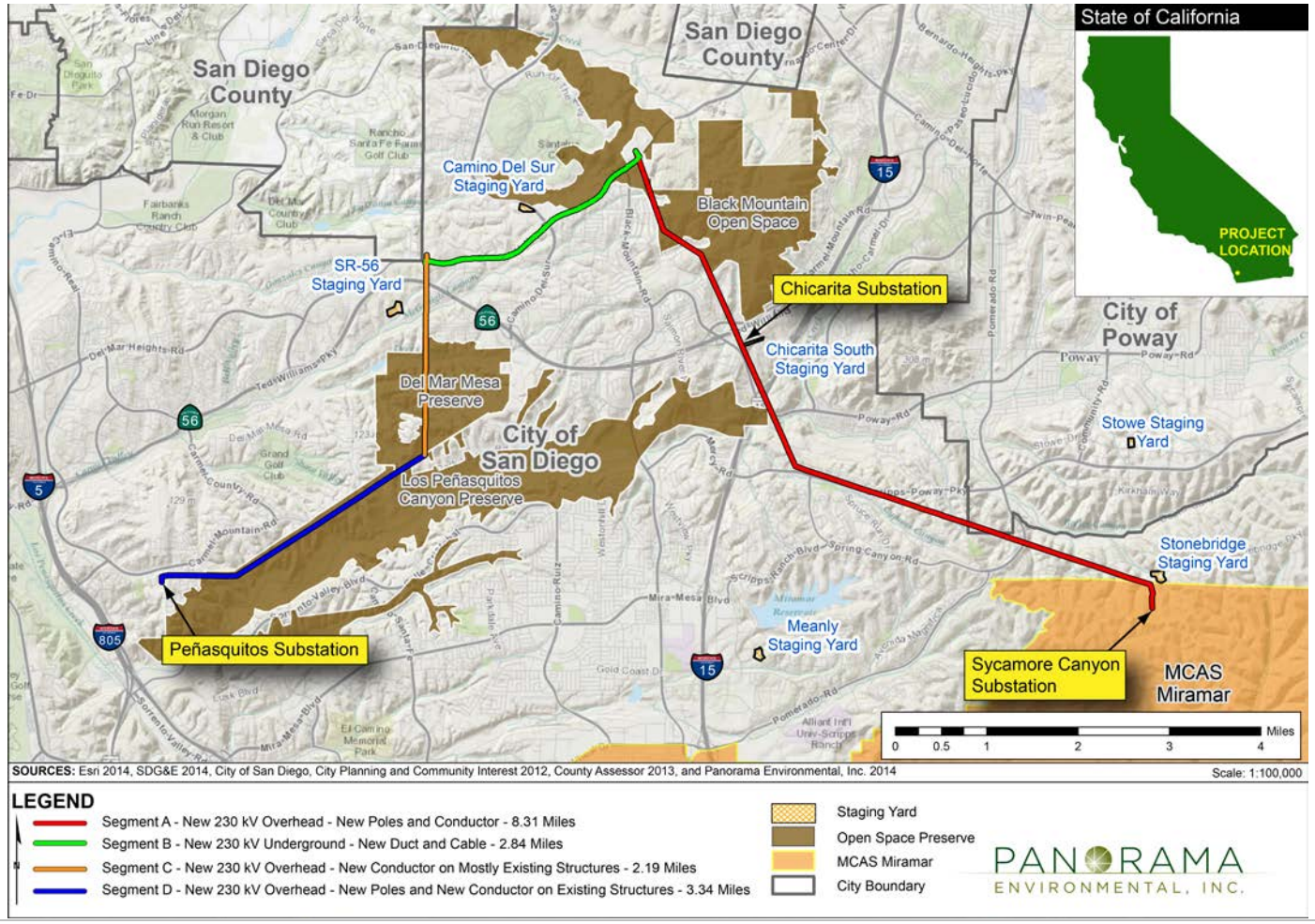


Figure 2.1-2: Project Alignment Overview



2.1.2 SDG&E Project Objectives

The Proposed Project is needed to meet state environmental and energy policy goals, and to ensure the bulk power system is in compliance with applicable North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC) and California Independent System Operator (CAISO) transmission planning criteria.

The objectives of the Proposed Project were defined by the Project Applicant. SDG&E's objectives are to:

1. Meet the CAISO 2012–2013 Transmission Plan Functional Specifications for a new 230-kV transmission line between the Sycamore Canyon Substation and Peñasquitos Substation by:
    a. Ensuring the SDG&E bulk electric system continues to meet NERC, WECC, and CAISO reliability criteria
    b. Promoting compliance with State of California policy goals related to renewable integration and Once-Through Cooling retirement
    c. Economically and reliably meeting the San Diego metropolitan area's forecasted load growth
    d. Delivering energy more efficiently to the load center in San Diego
2. Locate the proposed facilities in existing transmission and power line corridors, SDG&E right-of-way (ROW), SDG&E-owned property, and San Diego franchise ROWs.

2.2 PROJECT LOCATION, REGIONAL CONTEXT, AND ELECTRICAL SYSTEM

2.2.1 Project Location and Regional Context

The Proposed Project would be located in the west-central area of San Diego County, in the cities of San Diego and Poway and partially on MCAS Miramar (Figures 2.1-1 and 2.1-2). Topography in the project area varies from rolling hills to flat terrain, with the western part of the project located on gentle sloping mesas interrupted by canyons and valleys. The project area (all segments) includes residential, commercial, and open space or undeveloped areas.

2.2.2 Existing Electrical Transmission Infrastructure in the Area

There is existing electrical transmission infrastructure in corridors for Segments A, C, and D:

- **Segment A:** The Segment A corridor currently contains four existing transmission lines. There are two 138-kV lines located on one 95-foot tall steel cable pole, two 90-foot tall TSPs, two wood monopoles that have an average height of 72.5 feet, and 42 H-frame wood poles that have an average height of 66 feet. There is one existing 230-kV line and one existing 69-kV line on a mix of XX steel lattice towers and XX TSPs that have an average height of XX feet.
- **Segment C:** The Segment C corridor currently contains three existing transmission lines and one shield wire. There is an existing 138-kV line on XX H frame wood

Comment [KB1]: Data Need: We need the heights of the existing transmission infrastructure in the corridor, as highlighted below. Please also confirm numbers provided are correct.

poles that have an average height of XX feet. There are two existing 230-kV lines on XX existing steel lattice towers that have an average height of XX feet. The shield wire is on the top of the steel lattice towers.

- **Segment D:** The Segment D corridor currently contains three existing transmission lines and one shield wire. There is an existing 69-kV line on six wood monopoles that have an average height of 60.3 feet, 15 H-frame wood poles that have an average height of 70.3 feet, and two wood cable poles that have an average height of 62.8 feet. There is an existing 138-kV line and an existing 69-kV line on XX steel lattice towers that have an average height of XX feet. The shield wire is on the top of the steel lattice towers.

The Segment B corridor currently does not contain electrical transmission infrastructure.

2.2.3 Electrical System and Loading

There are three major energy gateways in SDG&E's bulk electric transmission system that serves electricity customer load in the San Diego metropolitan area:

1. Miguel 500/230-kV Substation
2. Sycamore Canyon 230-kV Substation
3. Path 44
    a. Three 230-kV lines from the San Onofre Nuclear Generating Station (SONGS) Switchyard to the San Luis Rey Substation
    b. Two 230-kV lines from the SONGS Switchyard to the Talega Substation

According to SDG&E, their ability to operate a bulk electric transmission system reliably and efficiently has become constrained, particularly at gateway substations. In times of high electricity demand and high energy imports, including periods of high renewable energy generation in the Imperial Valley, imported energy flows toward San Diego on the 500-kV Southwest Powerlink transmission line to the Miguel Substation and on the Sunrise Powerlink transmission line into the Sycamore Canyon Substation. These heavy electricity flows into the Miguel and Sycamore Canyon Substations can result in congestion and violation of NERC reliability criteria in the downstream transmission and power lines. SDG&E, in such a situation, dispatches generated energy less efficiently, which increases costs to ratepayers.

Reliability has been further compromised because of the early SONGS retirement and the projected eventual retirement of the coastal once-through cooling generation units in San Diego and Los Angeles.

SDG&E has further indicated that these system constraints are projected to worsen over time. As the San Diego metropolitan area load continues to increase, the imports into Miguel and Sycamore Canyon Substations will also increase. The California Energy Commission (CEC) has forecasted that the 1-in-10 peak customer load served by SDG&E will increase by 390 megawatts (MW) from 2013to 2017, for a peak 2017 load of 5510 MW. In addition, significant renewable generation is expected to be developed in the Southeastern United States, which will further increase flows on the Sunrise Powerlink and into Sycamore Canyon Substation.

The Governor of California assembled a task force in summer 2013 to determine how to address reliability issues stemming from retirement of SONGS and once-through cooling generation sources. The task force included CPUC, California Energy Commission (CEC), and CAISO staff. They created a Preliminary Reliability Plan for the Los Angeles Basin and San Diego. The task force identified the Proposed Project as necessary mitigation in Section 2 of the plan:

> Sycamore Canyon – Peñasquitos Transmission Line – To address local transmission overloads in the northern region of San Diego system, some of which are exacerbated by the absence of San Onofre, the [CA]ISO-approved a new 230 kV transmission line from the Sycamore Canyon to Peñasquitos Substations to improve power flows from east to west. The online date is targeted to 2017, although permitting and construction risk may delay the final operating date. There are multiple applicants seeking to build this line. As the CPUC is the lead siting agency for all of the applicants seeking to build this line, the CPUC is responsible for selecting the project sponsor to build the line. To meet the 2017 in-service date, the selected sponsor will need to be determined in early 2014 and file for a CPCN with the CPUC in mid-2014. The CPUC should process and approve the application by mid-2015.

Subsequent to the release of the Governor's task force report, CAISO became responsible for selecting the project sponsor to build the line. CAISO also identified the Proposed Project as assumed to be in service by 2017 in its 2013–14 Transmission Plan.

As part of the policy process, the CAISO issued a Functional Specification for the Project that stated the need for a transmission line with at least 1175 megavolt-amperes (MVA) of capacity. The purpose of the Proposed Project is to meet this capacity need by providing an additional 230 kV high-voltage outlet at Sycamore Canyon Substation. Installing this outlet would allow the delivery of power directly to the coastal load center rather than forcing it onto the 138 kV and 69 kV networks. As a result, the Project would relieve congestion on these lower-voltage facilities.

2.3 PROPOSED PROJECT COMPONENTS

The Proposed Project is composed of four electric transmission segments and modifications to five substations. This section describes project components for each of the segments and substations. A summary of each component is provided in Table 2.3-1. Figure 2.1-2 provides an overview of the Proposed Project. Appendix A contains detailed route maps. Construction and operation and maintenance activities are described in Sections 2.4 and 2.5, respectively.

2.3.1 Right-of-Way Requirements

All of the Proposed Project transmission alignment would be located within SDG&E easements and franchise agreement rights. Easement widths within the Proposed Project segments are 200 feet in Segment A, 100 feet in Segment C, and 300 feet in Segment D. Franchise agreement rights in Segment B would accommodate a 16-foot wide construction corridor. There is one exception along a 0.25-acre area that spans 100 feet of Segment B. SDG&E's agreement for this location

Table 2.3-1: Summary of Proposed Project Components by Location

Component	Description
Segment A (Sycamore Canyon Substation to Carmel Valley Road)	• **New 230-kV Aboveground Transmission and Communication Lines.** SDG&E would construct an approximately 8.31-mile-long, 230-kV transmission line on 36 new double-circuit 230-kV and two 138-kV TSPs (120-foot and 75-foot average heights, respectively) from the Sycamore Canyon Substation to Carmel Valley Road. Optical ground wire (OPGW) would be installed along the top of the new structures and would function as a communication cable and new shield wire. • **Relocation of Existing Transmission Lines and Underground Connections.** Two existing 138-kV transmission lines would be relocated to the new TSPs between the Sycamore Canyon Substation and the Chicarita Substation. Approximately 42 wood H-frame structures, two TSPs, one double-circuit cable pole, and two single-circuit wood monopoles associated with the two existing transmission lines would be removed. A portion of the two relocated 138-kV transmission lines would be undergrounded as they enter the Sycamore Canyon Substation. An existing 230-kV transmission line (TL 23041) would be relocated to two new 230-kV structures within and immediately adjacent to the Sycamore Canyon Substation to make room for the new 230-kV connection at the substation. ➢ **Result:** One new aboveground 230-kV transmission line segment would be constructed on new TSPs from the Sycamore Canyon Substation to Carmel Valley Road. Two existing transmission lines would be transferred to the new TSPs; the existing structures for these lines would be removed.
Segment B (Carmel Valley Road)	• **New 230-kV Underground Transmission and Communications Line.** SDG&E would construct an approximately 2.84-mile-long, 230-kV underground transmission line in Carmel Valley Road. One cable pole structure (160-foot average height) for underground/overhead transmission conversion would be placed at each end of the undergrounded segment (two total). One double-circuit steel lattice tower would be removed at the western reach of the segment. One single-circuit 138-kV wood H-frame structure would also be removed. Fiber optic cable would be installed with the underground transmission line. ➢ **Result:** One new underground 230-kV transmission line segment would be constructed under a 2.84-mile-long portion of Carmel Valley Road between the northern ends of Segment A and Segment C.
Segment C (Carmel Valley Road to Peñasquitos Junction)	• **New 230-kV Aboveground Transmission Line**. SDG&E would install approximately 2.19 miles of 230-kV conductor on existing steel lattice structures and one new TSP between Carmel Valley Road and Peñasquitos Junction. One steel lattice tower would be removed at Peñasquitos Junction. • **Consolidation of Existing Aboveground Transmission Lines and Replacement of Communication Line.** Two existing 230-kV transmission lines (TL 23001 and TL 23004) would be reconductored and bundled on the existing structures. Existing shield wire on top of existing 230-kV steel lattice towers would be replaced with new OPGW. ➢ **Result:** Two existing aboveground 230-kV transmission lines located on the same existing structures would be reconductored and bundled, creating an open position for the new 230-kV transmission line that would be constructed between Carmel Valley Road and Peñasquitos Junction.

Table 2.3-1: Summary of Proposed Project Components by Location	
Component	**Description**
Segment D (Peñasquitos Junction to Peñasquitos Substation)	• **New 230-kV Aboveground Transmission Line**. SDG&E would install approximately 3.34 miles of 230-kV conductor on existing double-circuit lattice towers and one TSP between Peñasquitos Junction and the Peñasquitos Substation. • **Consolidation of Existing Aboveground Distribution Lines and Replacement of Communication Line.** SDG&E would also consolidate two existing 69-kV power lines onto 17 new 69-kV TSPs (95-foot average height) that would replace 16 existing 69-kV wood H-frame structures and five wood monopoles. Two TSPs would replace two existing wood cable poles outside the Peñasquitos Substation. Existing shield wire on top of existing 230-kV steel lattice towers would be replaced with new OPGW. ➢ **Result:** One new 230-kV transmission line would be installed on existing structures between Peñasquitos Junction and the Peñasquitos Substation. Two parallel existing 69-kV distribution lines would be consolidated and installed on new TSPs adjacent to their existing location and the existing structures would be removed.
Substation Modifications	• **Sycamore Canyon Substation**. SDG&E would modify Sycamore Canyon Substation to facilitate the new 230-kV transmission line connection. Modifications would include transferring five existing transmission lines from existing bay positions to new bay positions, and adding a new circuit breaker. • **Peñasquitos Substation**. SDG&E would modify Peñasquitos Substation to facilitate the new 230-kV transmission line connection. Modifications would include adding two circuit breakers and four disconnects. • **Chicarita, San Luis Rey, and Mission Substations**. Minor alterations may be made to these substations, including adjusting relays and upgrading protection on remaining lines. ➢ **Result:** The substations would be configured to accept the new 230-kV transmission line connection.

only covers overhead rights and would need to be amended to include underground rights to accommodate placement of a proposed 230-kV cable pole south of Carmel Valley Road. All access would be via SDG&E easements and franchise rights. SDG&E would also utilize a number of additional sites for construction staging (described below in *Section 2.4.2 - Temporary Work Areas*).

2.3.2 New Components

Transmission Poles

Approximately 62 new poles would be installed across the entire project alignment. Poles would be TSPs or cable poles fabricated of dulled galvanized steel. Table 2.3-2 contains average dimensions of new poles. Pole heights and details for each pole that is being removed and each pole that is being installed are provided in Appendix X. Figures 2.3-1a, 2.3-1b, and 2.3-1c present diagrams of pole structures that would be used for the Proposed Project. TSPs would be used for aboveground transmission support. Cable poles would be used where electric utility lines transition from overhead to underground.

Table 2.3-2: Pole Characteristics

Pole Type	Average Height (feet)	Quantity	Pole Diameter (feet)	
			Base	Top
230-kV TSP	120	38	5 to 6	2 to 3
230-kV Steel Cable Pole	160	3	6 to 8	2 to 3
138-kV TSP	75	2	4 to 5	2
69-kV TSP	95	17	3 to 4	1.5
69-kV Steel Cable Pole	70	2	3 to 5	1.5

Comment [KB2]: Data Need: The GIS should specify pole types.

Foundations

Comment [JThomas3]: Data Need: Provide close-up representative photos of what these foundation types would look like for the project.

Two types of foundations (concrete pier or micropile) may be used for the TSPs and cable poles.

Concrete Pier Foundation

Concrete pier foundations would be used in most instances. This foundation type would be 20 to 40 feet deep, but potentially deeper if needed due to soil conditions. Unstable soil may require use of steel casings to stabilize the excavated hole, which would be from 6 to 11 feet in diameter. The foundations would extend about 1 to 2 feet above the ground surface.

Concrete Micropile Foundation

Micropile foundations would be used where the substrate is rocky and excavation would be difficult or would require blasting or rock breakers. Micropile foundations would also be used where access is limited, such that concrete pier foundations cannot be constructed due to space constraints. Micropile foundations consist of several small-diameter, drilled, grouted, and reinforced foundations that are arranged in a circular pattern. Micropiles would be approximately 6 to 8 inches in diameter and 10 to 40 feet deep. Each foundation would have 4 to 16 micropiles in a circle that would be 4 to 10 feet in diameter.

Conductor

Proposed conductor would be aluminum-clad, steel-reinforced wire. Conductor would be non-specular (i.e., mechanically or chemically treated to produce reduced reflectivity). Bundled lines would consist of two parallel wires spaced approximately 18 inches apart.

Comment [JThomas4]: Data Need: Provide representative photo of bundling.

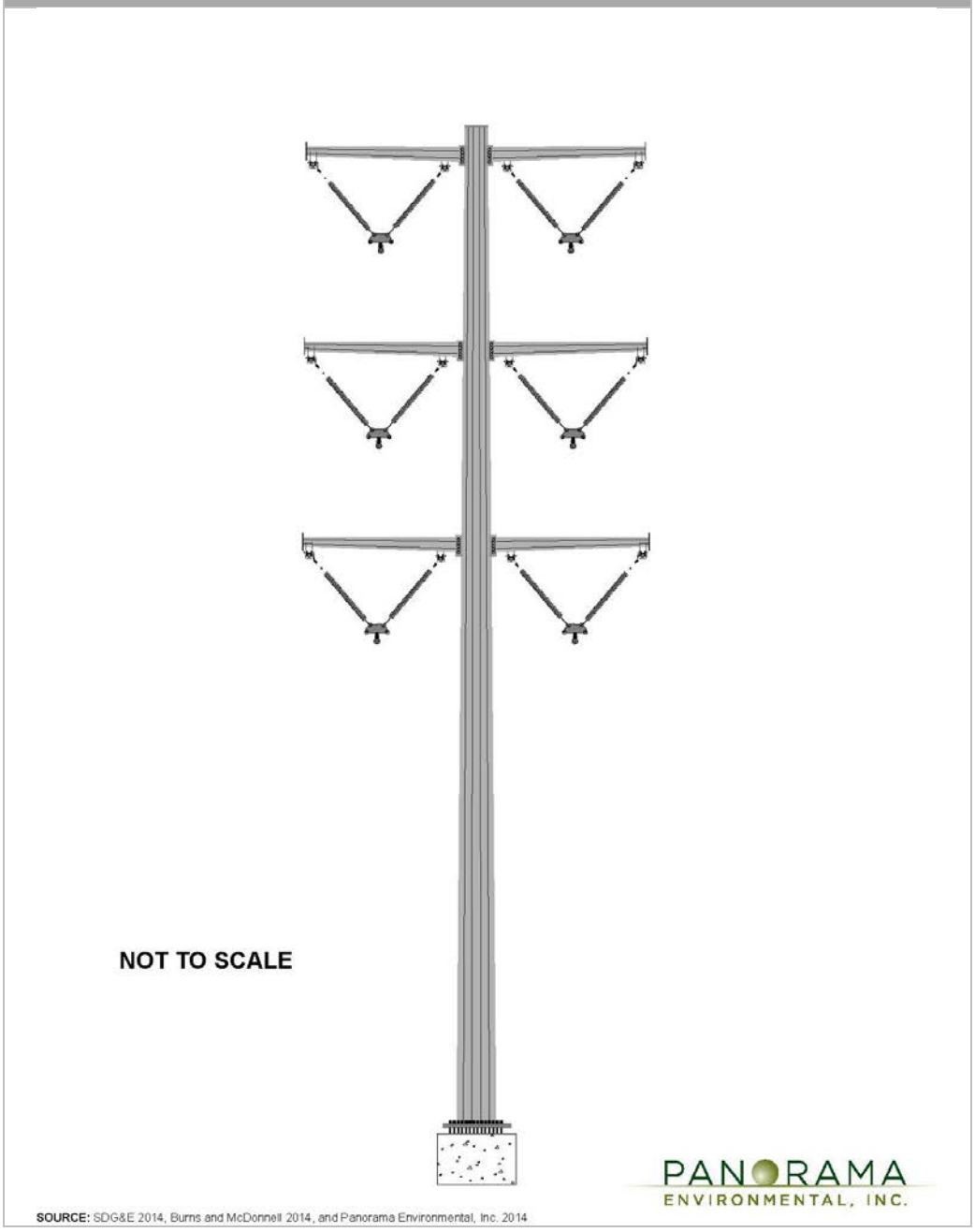
Underground Duct Bank

The proposed underground transmission line in Segment B would be installed in duct banks with approximately ten splice vaults, with vaults placed approximately every 1,800 feet along the undergrounded segment.

Splice Vaults

Concrete splice vaults would be constructed of prefabricated or cast-in-place, steel-reinforced concrete. Splice vaults facilitate pulling of cables through the duct bank and connecting pieces of cable. Each vault would have two manhole covers about 36 inches in diameter. The splice

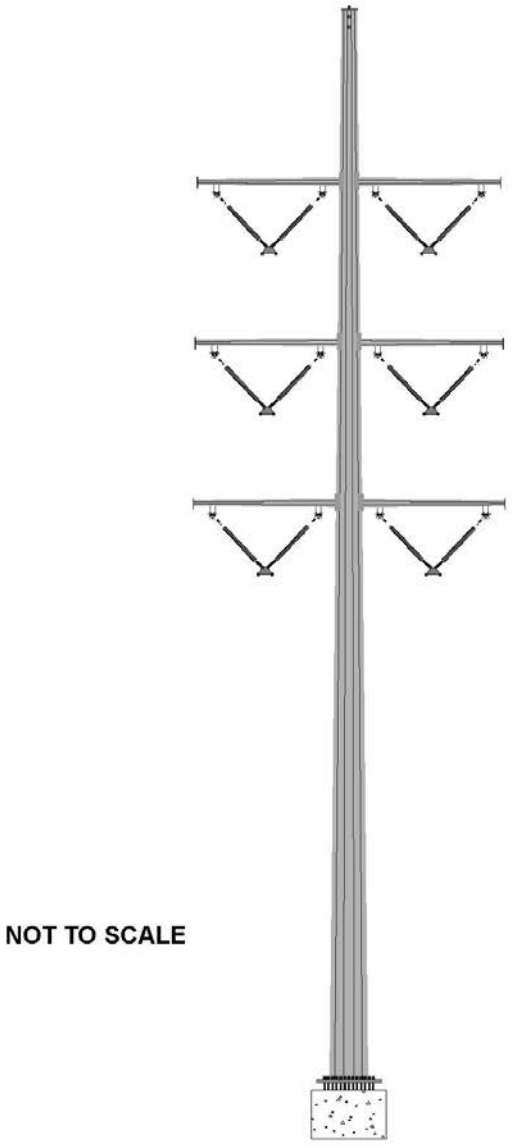
Figure 2.3-1a: Diagram of Proposed 69-kV TSP



SOURCE: SDG&E 2014, Burns and McDonnell 2014, and Panorama Environmental, Inc. 2014

Comment [KB5]: Data Need: Additional pole diagrams needed from SDG&E for 69-kV steel cable pole and 138kV TSP.

Figure 2.3-1b: Diagram of Proposed 230-kV Tangent Double-Circuit TSP

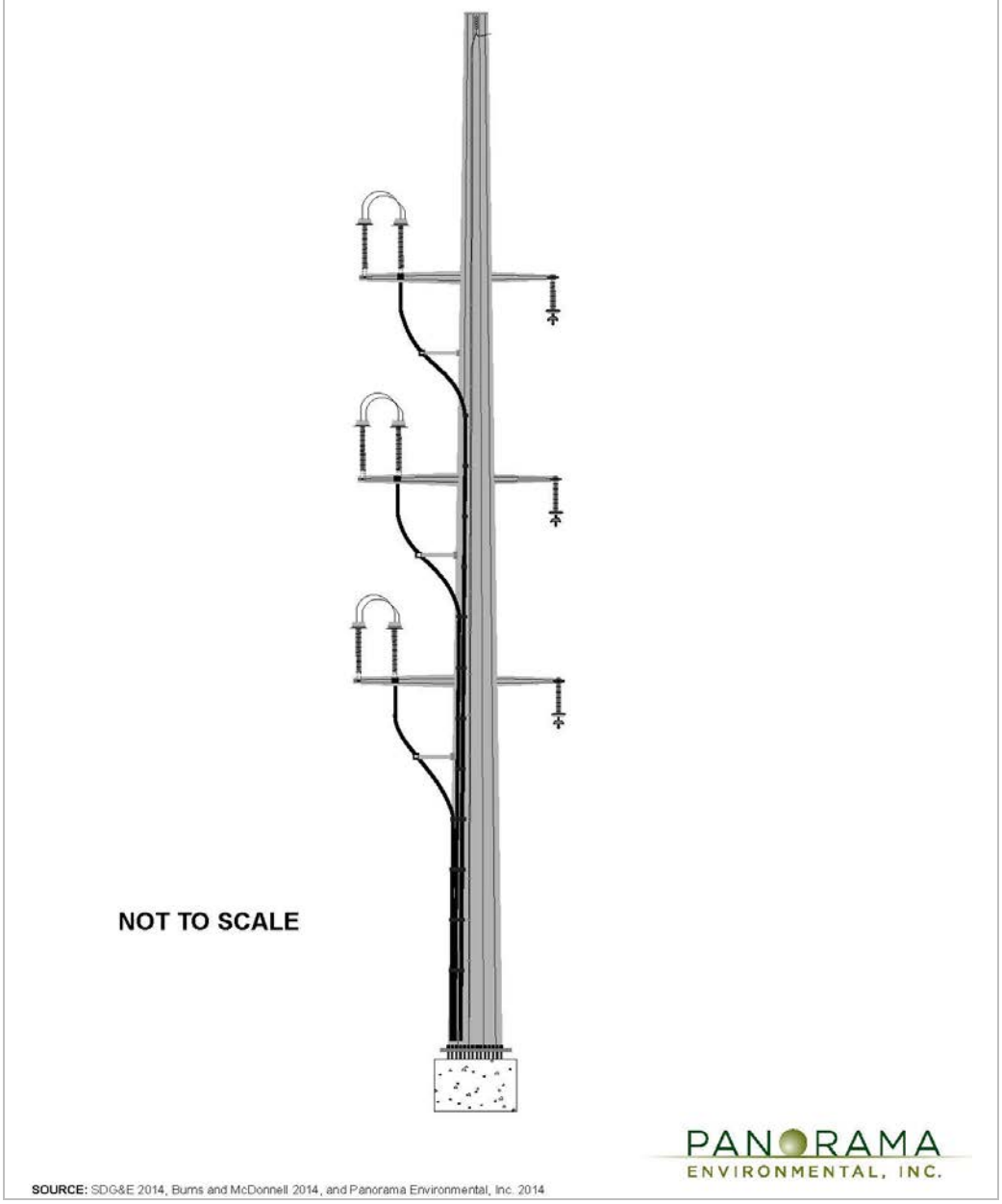


NOT TO SCALE

PANORAMA ENVIRONMENTAL, INC.

SOURCE: SDG&E 2014, Burns and McDonnell 2014, and Panorama Environmental, Inc. 2014

Figure 2.3-1c: Diagram of Proposed 230-kV Underground Double-Circuit Cable Pole



SOURCE: SDG&E 2014, Burns and McDonnell 2014, and Panorama Environmental, Inc. 2014

vaults would measure about 24 feet long by 10 feet wide by 10 feet deep. A diagram of a typical splice vault is provided in Figure 2.3-2.

Ducts
Precast concrete duct would be installed approximately 3 feet underground. The duct dimensions would range from approximately 1.5 to 3.5 feet high, and between 2.5 and 9 feet wide. The duct configuration would be designed based on soil conditions and the location of existing underground utility lines.

2.3.3 Segment A: Sycamore Canyon Substation to Carmel Valley Road

Segment A of the Proposed Project consists of four elements (see Figures 2.3-3a, 2.3-3b, and 2.3-3c):

1. Construction of 8.31 miles of 230-kV transmission line from the Sycamore Canyon Substation to Carmel Valley Road; install 38 new 230-kV TSPs and two new 138-kV TSPs.
2. Relocation of two existing 138-kV power lines to the new 230-kV steel poles for the length of the alignment.
3. Placement of two existing 138-kV lines underground for approximately 850 feet to connect to the Sycamore Canyon Substation.
4. Relocation of an existing 230-kV transmission line to the new 230-kV structures at the Sycamore Canyon Substation.

Appendix A shows details of the Segment A alignment. Table 2.3-3 presents details of the structures that would be installed and removed during Segment A construction. Figures 2.3-4a and 2.3-4b show the existing and proposed structures in Segment A for segments that include existing transmission towers and TSPs, respectively.

Table 2.3-3: Segment A Infrastructure to be Installed and Removed

Infrastructure Type	Installed	Removed
230-kV single-circuit TSP	1	0
230-kV double-circuit cable pole	1	0
230-kV double-circuit TSP	36	0
138-kV single-circuit TSP	2	2
138-kV single-circuit wood H-frame structure	0	41
138-kV single-circuit wood pole	0	2
138-kV double-circuit cable pole	0	1
138-kV underground package	850 feet	0
Total	***40 poles 850 feet underground***	***46 structures***

Figure 2.3-2: Typical Splice Vault

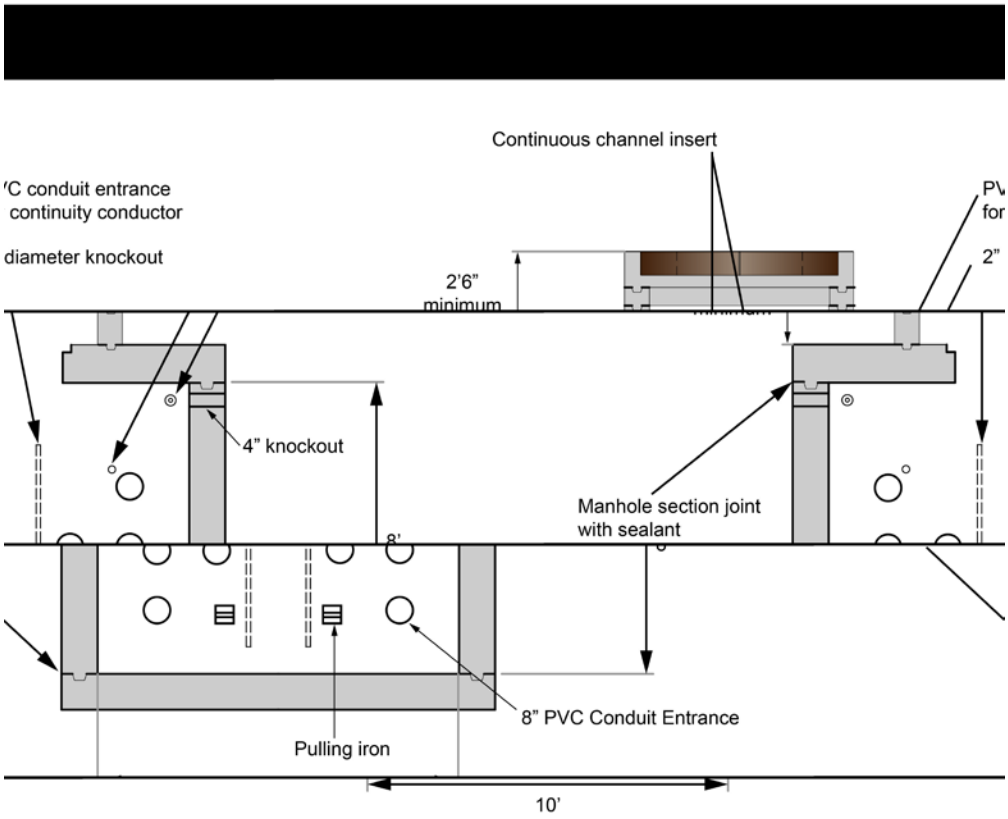


Figure 2.3-3a: Detailed Map of Project Alignment

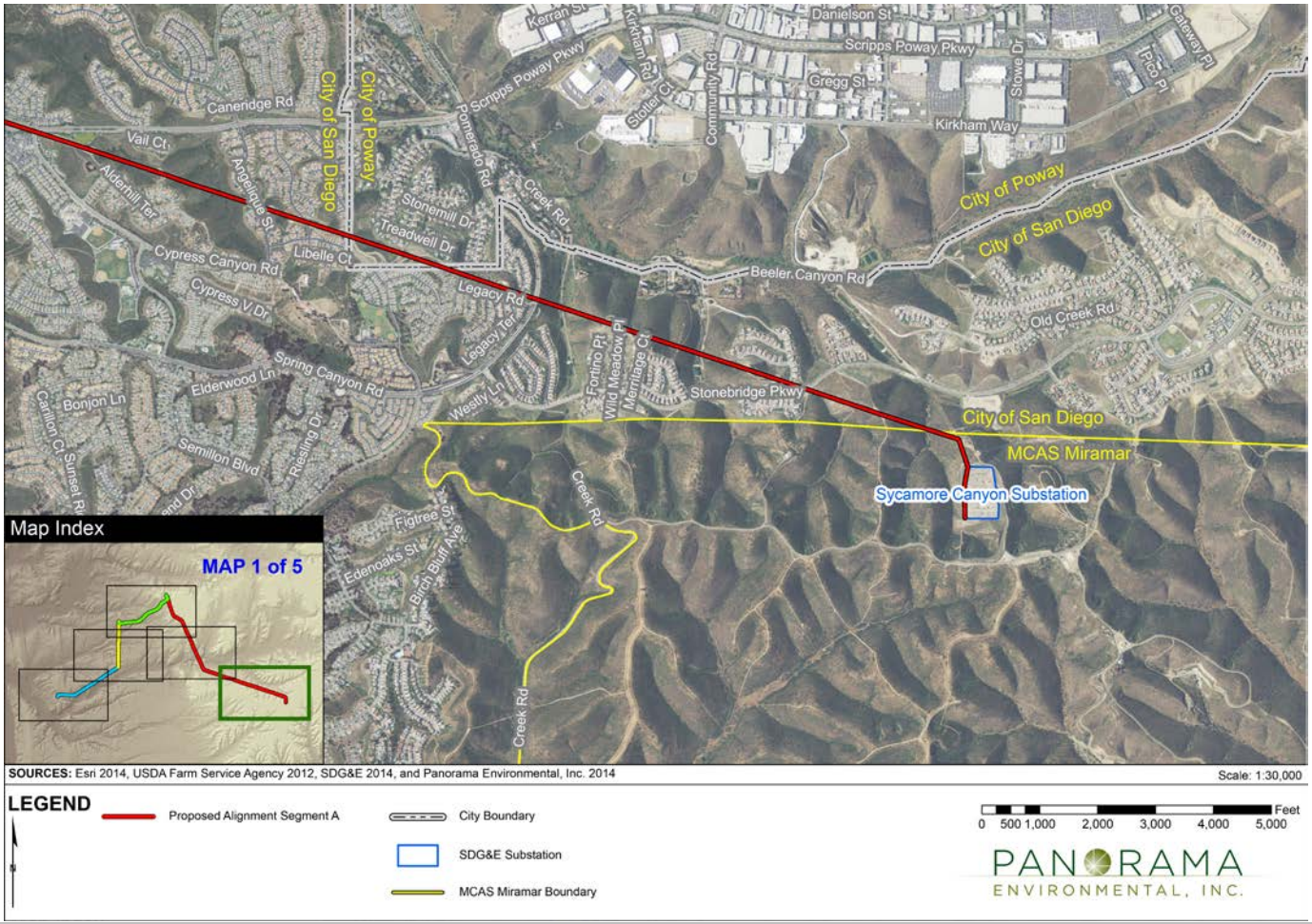


Figure 2.3-3b: Detailed Map of Project Alignment

Figure 2.3-3c: Detailed Map of Project Alignment

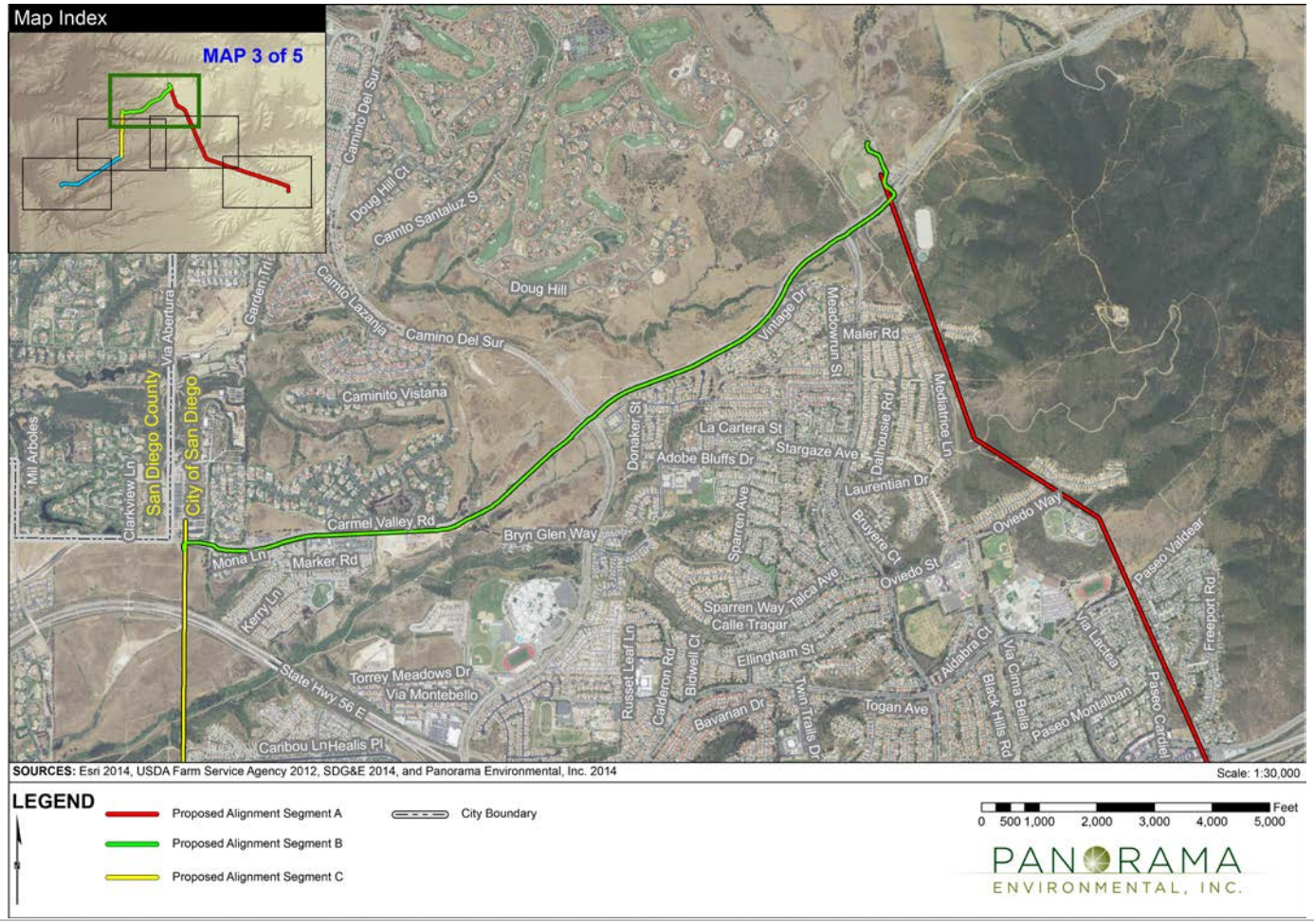


Figure 2.3-3d: Detailed Map of Project Alignment

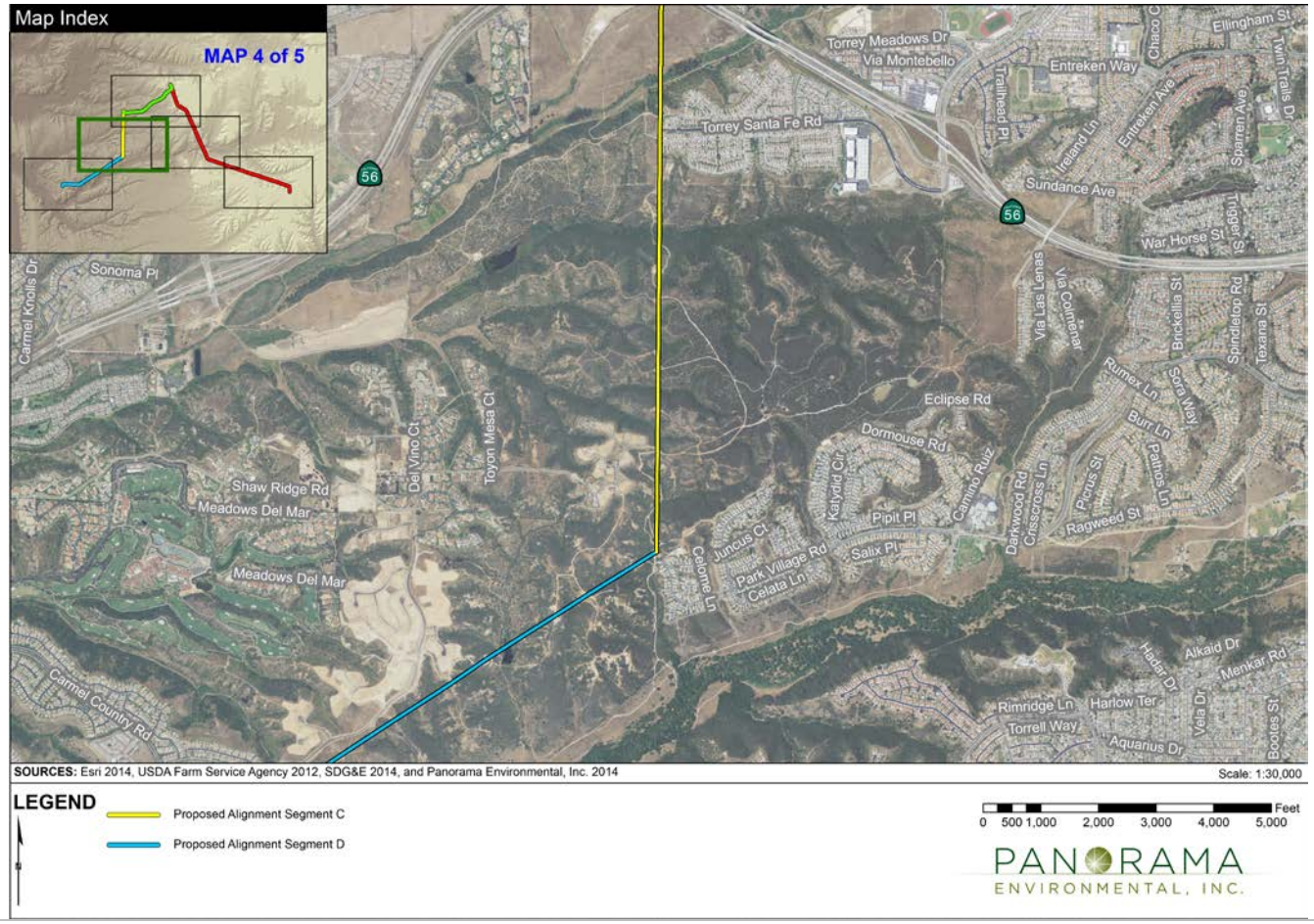
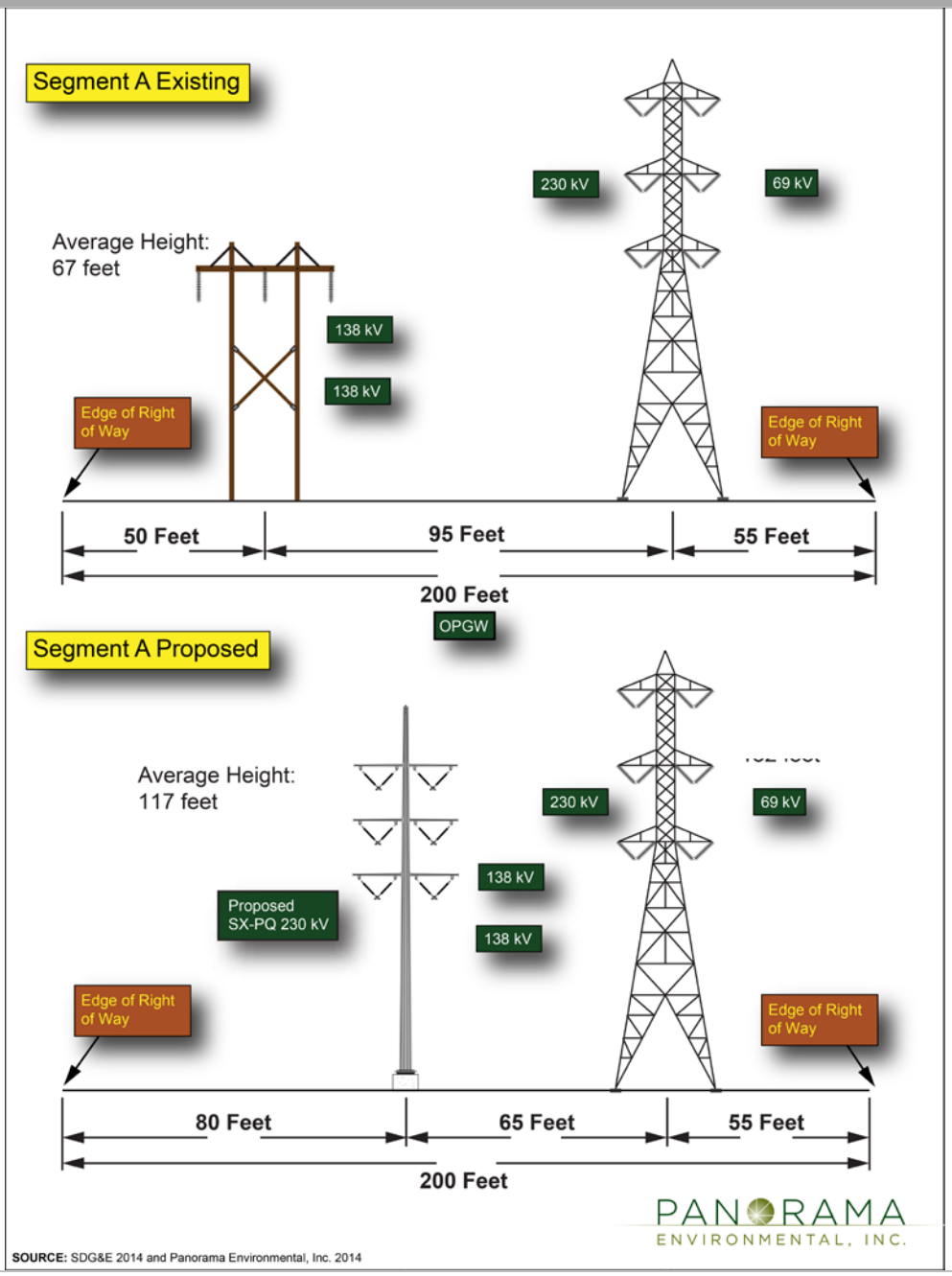


Figure 2.3-3e: Detailed Maps of Project Alignment

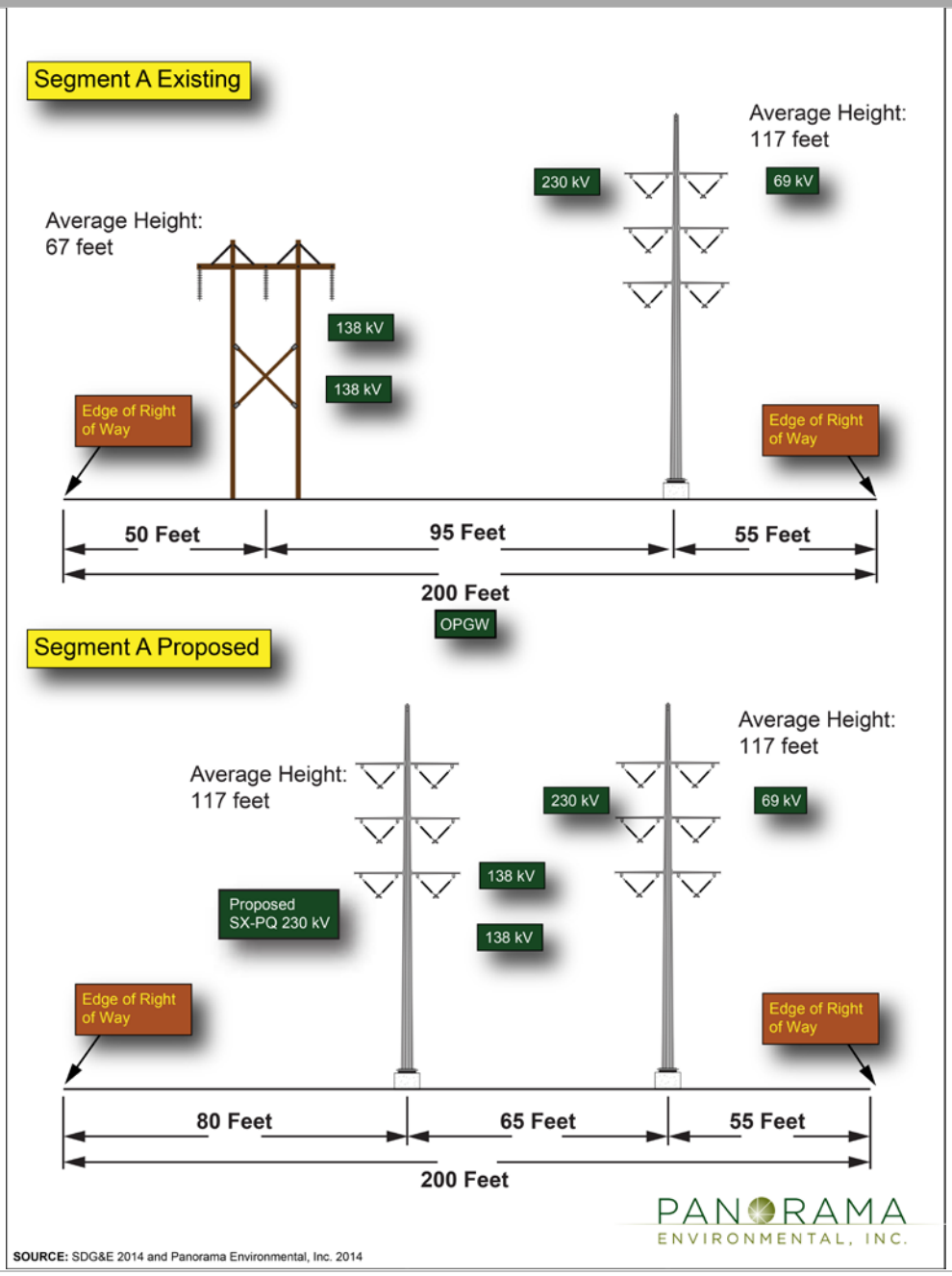
Figure 2.3-4a: Segment A Existing and Proposed Configurations



SOURCE: SDG&E 2014 and Panorama Environmental, Inc. 2014

Comment [JThomas6]: Data Need: Need average height of existing lattice towers.

Figure 2.3-4b: Segment A Existing and Proposed Configurations



SOURCE: SDG&E 2014 and Panorama Environmental, Inc. 2014

New 230-kV Transmission Line

The proposed 230-kV transmission line in Segment A would be installed on 36 new, double-circuit, dulled galvanized TSPs. The new 230-kV TSPs would be located within the existing 200-foot SDG&E ROW that runs generally north-south from the Sycamore Canyon Substation to Carmel Valley Road. TSPs would be installed parallel to existing 230-kV structures in the ROW and approximately 30 feet east of the existing H-frame structures. Aluminum conductor and polymer insulators would be used on the transmission line. OPGW would be installed on the top of the 230-kV structures. Conductor would be located a minimum of 25 feet aboveground where only pedestrian access is present, and at least 30 feet aboveground in other cases. Spacing between conductors on the TSPs would be a minimum of 18 horizontal feet. Spacing between TSPs would be approximately 1,150 feet. Figures 2.3-4a and 2.3-4b show the proposed configuration of the new 230-kV TSPs in the segment. About 44 existing 138-kV wood H-frame structures would be removed to make space for the new double-circuit steel 230-kV structures. Five of the 138-kV structures currently have distribution underbuild. The distribution portion of the existing wood H-frame structures would remain in place. The existing H-frame structures would be cut off above the distribution circuits and the upper portion of the wood H-frame structure would be removed. The structure appearance after H-frame structures are cut off is shown on Figure 2.3-5.

Comment [KB7]: Data Need: These poles should be identified in the GIS as topped poles. We also need a drawing of what they look like for Figure 2.3-4 on next page. Additionally, the vertical 69-kV Topped 1 pole identified in partial response 3 to data request 1 is missing from the GIS and should be added. The topped poles share locations with R43, R44, R45, R46, R47, and R47A; verify if they are the same and please re-label in the GIS attributes to show they are topped and not completely removed.

Relocation of Existing 138-kV Power Lines

SDG&E would relocate two existing 138-kV power lines from existing wood H-frame structures to a position on the new 230-kV TSPs. Aluminum conductor and polymer insulators would be used for both lines. Figure 2.3-4 shows the proposed configuration of these power lines on Segment A.

Underground Connection of Existing 138-kV Power Lines to Sycamore Canyon Substation

The two existing 138-kV power lines would be installed underground for approximately 800 feet along an existing access road from Structure P3 to the Sycamore Canyon Substation (refer to Appendix A, page 2).

Relocation of Existing 230-kV Transmission Line

An existing 230-kV transmission line would be moved to structures P1 and P2 next to Sycamore Canyon Substation to open a position for connection of the new 230-kV transmission line at the substation.

Comment [KB8]: Data Need: Confirm that the line is being moved from E3 to P1 and P2.

New Conductor Configuration

The current conductor configuration within the Segment A transmission corridor is as follows:

Comment [JThomas9]: Data Need: Provide number of wires, including conductor, shield wire ,and communication wires, on existing and proposed structures, including designations of which wires are bundled and which position the wires occupy on the transmission structures.

- **H-frame** Structures**:** [insert number and type of wires on H-frame structures]
- **Steel Lattice Towers/TSPs:** [insert number and type of wires on steel lattice towers]
- Total Number of Conductors in Corridor:

After implementation of the Proposed Project, conductor configuration within the Segment A transmission corridor would be as follows:

- TSPs**:** [insert number and type of wires on TSPs]
- **Steel Lattice Towers/TSPs:** [insert number and type of wires on steel lattice towers]
- Total Number of Conductors in Corridor:

2.3.4 Segment B: Carmel Valley Road

Segment B of the Proposed Project consists of two elements (see Figure 2.3-3c):

1. Installation of about 2.84 miles of 230-kV transmission line underground on Carmel Valley Road, from Black Mountain Ranch Community Park, approximately at the intersection of Carmel Valley Road with Black Mountain Park Way, to about 250 feet east of the intersection of Carmel Valley Road with Via Abertura.
2. Installation of two 230-kV cable pole structures, one at each end of the proposed 230-kV undergrounded line segment.

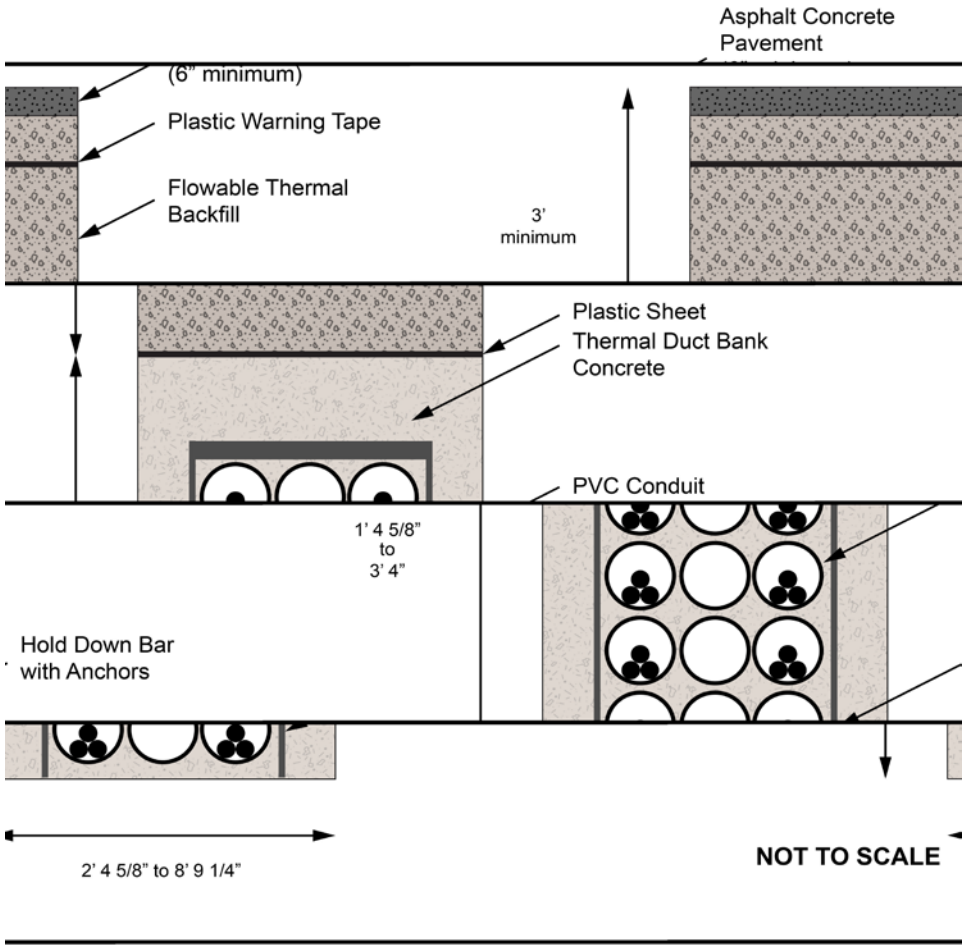
Appendix A shows the alignment of Segment B within Carmel Valley Road. Table 2.3-4 presents details of the structures that would be installed and removed during Segment B construction. Figure 2.3-6 shows the proposed line configuration within an underground duct bank in Segment B.

Table 2.3-4: Segment B Infrastructure to be Installed and Removed

Infrastructure Type	Installed	Removed
230-kV steel cable pole structure	2	0
230-kV steel lattice tower	0	1
138-kV single-circuit wood H-frame structure	0	1
230-kV underground package (i.e., duct bank and vault distance)	14,995 feet	0
230-kV splice vault	10	0
Total	***2 structures*** ***14,995 feet***	***2 structures***

Figure 2.3-5: Topped H-Frame Structure Diagram

Figure 2.3-6: Segment B Duct Bank Diagram



New 230-kV Underground Transmission Line

The 230-kV underground transmission line would be primarily located in SDG&E's franchise position within Carmel Valley Road. The new 230-kV conductor would be located in a new duct bank package. The duct bank would have eight 8-inch conduits for electrical cable and four 2-inch conduits for telecommunications cable. The new 230-kV conductor would be distributed among six of the 8-inch conduits, with the remaining two conduits left vacant. One of the communications conduits would hold a fiber optic cable, which would leave three conduits vacant. A 6-inch concrete encasement would be placed on top of the duct bank to protect the duct package. The remainder of the trench would be filled with a flowable thermal backfill slurry in lieu of compacted soil, which is typically a mixture of soil and cementing materials. There would be splice vaults approximately every 1,800 feet along the alignment as shown in Appendix A.

Comment [sh10]: Data Need: Does this only extend out of franchise at the nursery or does this extend out of franchise elsewhere along the alignment? Is this now extending south of Carmel Valley Road and entirely within ROW?

Cable Pole Structures

Two cable pole structures would be installed at either end of the undergrounded 230-kV segment to transition the segment between underground and aboveground. The cable pole structure on the west end of Segment B is proposed within a nursery near Via Abertura and would be a double-circuit 230-kV TSP. It would replace an existing steel lattice tower at that location. The structure would also serve as a dead-end overhead structure for two existing 230-kV transmission lines. The cable pole structure on the east end of Segment B is proposed within Black Mountain Ranch Community Park and would also be a double-circuit 230-kV TSP.

Comment [JThomas11]: Data Need: Preliminary engineering provided in response to Data Request #1 shows this within Segment C and no longer within the nursery. Please confirm location and provide updated GIS.

2.3.5 Segment C: Carmel Valley Road to Peñasquitos Junction

Segment C of the Proposed Project consists of two major elements (see Figure 2.3-3c and 2.3-3d):

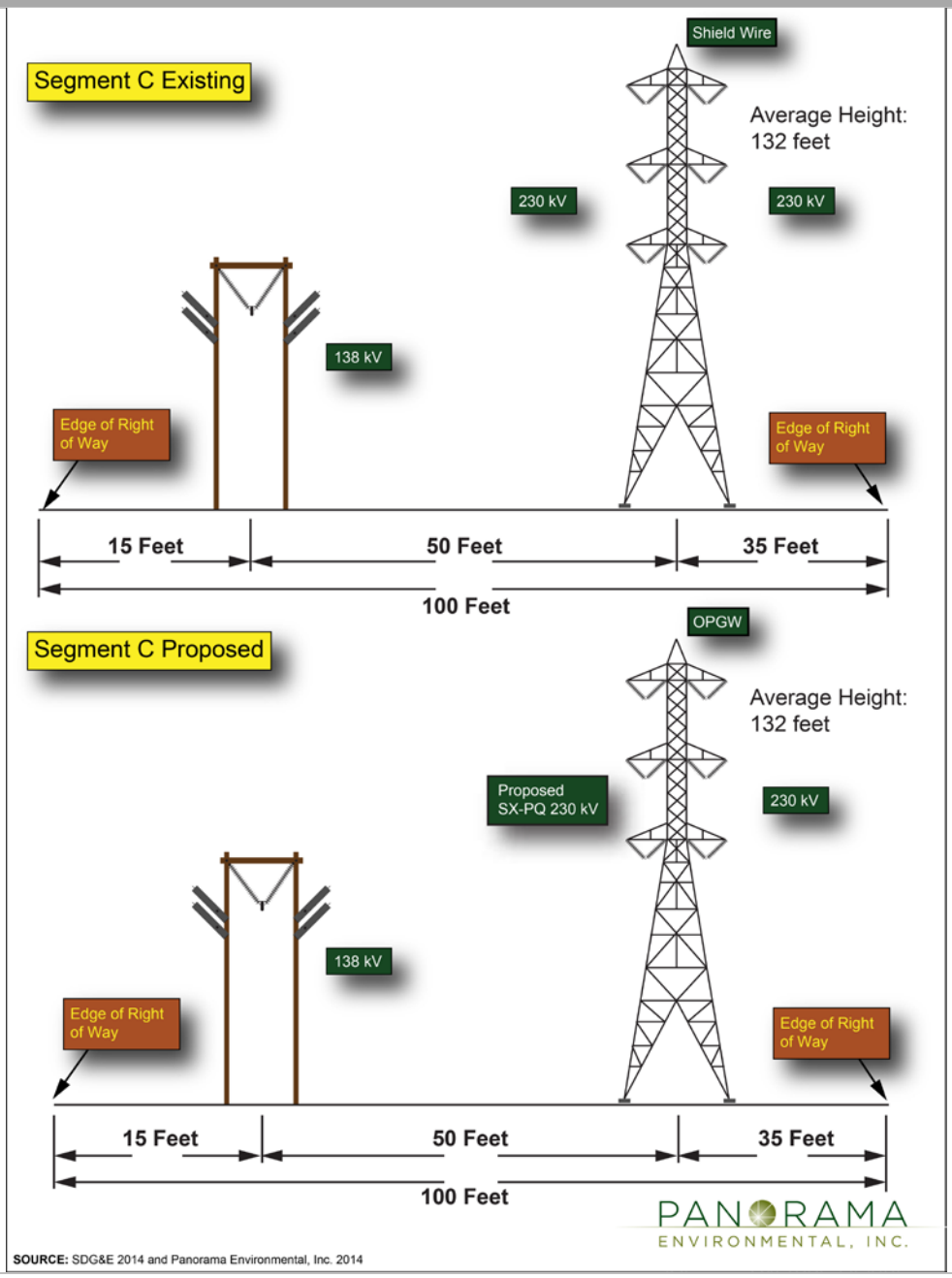
1. Consolidation of two existing 230-kV transmission lines currently located on 230-kV steel lattice towers and placement on one position on the same 230-kV steel lattice tower.
2. Placement of new 230-kV aluminum conductor on mostly existing 230-kV steel lattice towers.

Appendix A shows detail of the Segment C alignment. Table 2.3-5 details the structures that would be installed and removed during Segment C construction. Figure 2.3-7 shows the existing and proposed configurations of Segment C. The existing lattice towers and H-frame pole structures would remain in Segment C. The only change to the transmission line structures would occur north of Peñasquitos Junction where an existing steel lattice tower would be replaced with a TSP.

Table 2.3-5: Segment C Infrastructure to be Installed and Removed

Infrastructure Type	Installed	Removed
Double-circuit 230-kV TSP	1	0
Double-circuit 230-kV steel lattice tower	0	1
Total	***1 structure***	***1 structure***

Figure 2.3-7: Segment C Existing and Proposed Configurations



SOURCE: SDG&E 2014 and Panorama Environmental, Inc. 2014

Comment [JThomas12]: Data Need: Need average height of existing 138kV H frame poles. Confirm average height of lattice towers.

Consolidation of Existing 230-kV Transmission Lines

Two existing 230-kV transmission lines on existing 230-kV steel lattice towers would be bundled and placed on one position on the same 230-kV steel lattice tower. Consolidation would occur in five steps:

1. Connect two existing 230-kV transmission lines together laterally to create one bundled 230-kV circuit between the San Luis Rey Substation and Carmel Valley Road.
   1. Reconductor (with aluminum conductor and polymer insulators) and bundle about 2.19 miles of two existing 230-kV transmission lines from Carmel Valley Road to Peñasquitos Junction to create a vacant position on the existing 230-kV steel lattice towers.
   2. Connect two existing 230-kV transmission lines together laterally to create one bundled 230-kV circuit between Peñasquitos Junction and the Mission Substation.
   3. Split an existing three-terminal line at Encina Hub to create two 2-terminal lines: one connecting Encina Substation and San Luis Rey Substation and the second connecting Palomar Energy Substation and San Luis Rey Substation.
   4. Replace the existing shield wire located on top of the existing steel lattice towers with new OPGW from the new cable pole (Structure P42) to Peñasquitos Junction (Structure P43).

New 230-kV Transmission Line

New 230-kV aluminum conductor would be placed on existing 230-kV steel lattice towers and one new TSP with positions made vacant by the previously described consolidation of existing 230-kV transmission lines. OPGW would be installed at the top position on the existing steel lattice towers to serve as communications and as lightning shielding for the aluminum conductor. One existing double-circuit 230-kV steel lattice tower at Peñasquitos Junction would be replaced with a new double-circuit 230-kV TSP to provide sufficient clearance of the new 230-kV conductor over the adjacent 138-kV power line.

New Conductor Configuration

The current conductor configuration within the Segment C transmission corridor is as follows:

- **H-frame Structures:** [insert number and type of wires on H-frame structures]
- **Steel Lattice Towers:** [insert number and type of wires on steel lattice towers]
- **Total Number of Conductors in Corridor:**

After implementation of the Proposed Project, conductor configuration within the Segment C transmission corridor would be as follows:

- **H-frame Structures:** [insert number and type of wires on H-frame structures]
- **Steel Lattice Towers:** [insert number and type of wires on steel lattice towers]
- **Total Number of Conductors in Corridor:**

Comment [JThomas13]: Data Need: Provide number of wires, including conductor, shield wire ,and communication wires, on existing and proposed structures, including designations of which wires are bundled and which position the wires occupy on the transmission structures.

2.3.6 Segment D: Peñasquitos Junction to Peñasquitos Substation

Segment D of the Proposed Project consists of two major elements (see Figure 2.3-3d and 2.3-3e):

1. Installation of about 3.34 miles of new 230-kV overhead transmission line on existing 230-kV steel lattice towers after relocating an existing 138-kV power line from the north side of the steel towers to the south side of the steel towers.
2. Relocation of two existing 69-kV power lines onto 17 new double-circuit TSPs; removal of 20 existing 69-kV wood structures; and replacement of two 69-kV wood cable poles with steel cable poles.

Appendix A shows detail of the Segment D alignment. Table 2.3-6 presents details of the structures that would be installed and removed during Segment D construction. Figure 2.3-8 shows the existing and proposed configurations of Segment D.

Relocation of Existing Transmission

An existing 69-kV power line would be relocated from approximately sixteen 69-kV wood H-frame structures and five single-circuit monopole structures between Peñasquitos Junction and the Peñasquitos Substation. The structures would be removed, and approximately 17 new TSPs would be installed approximately 30 feet north of the existing H-frame structures within the 300-foot-wide transmission corridor. The existing 69-kV power line would be placed onto the new TSPs. An existing 69-kV line would be relocated from the 230-kV steel lattice towers to the new double-circuit 69-kV TSPs to create a vacant position on the 230-kV structures.

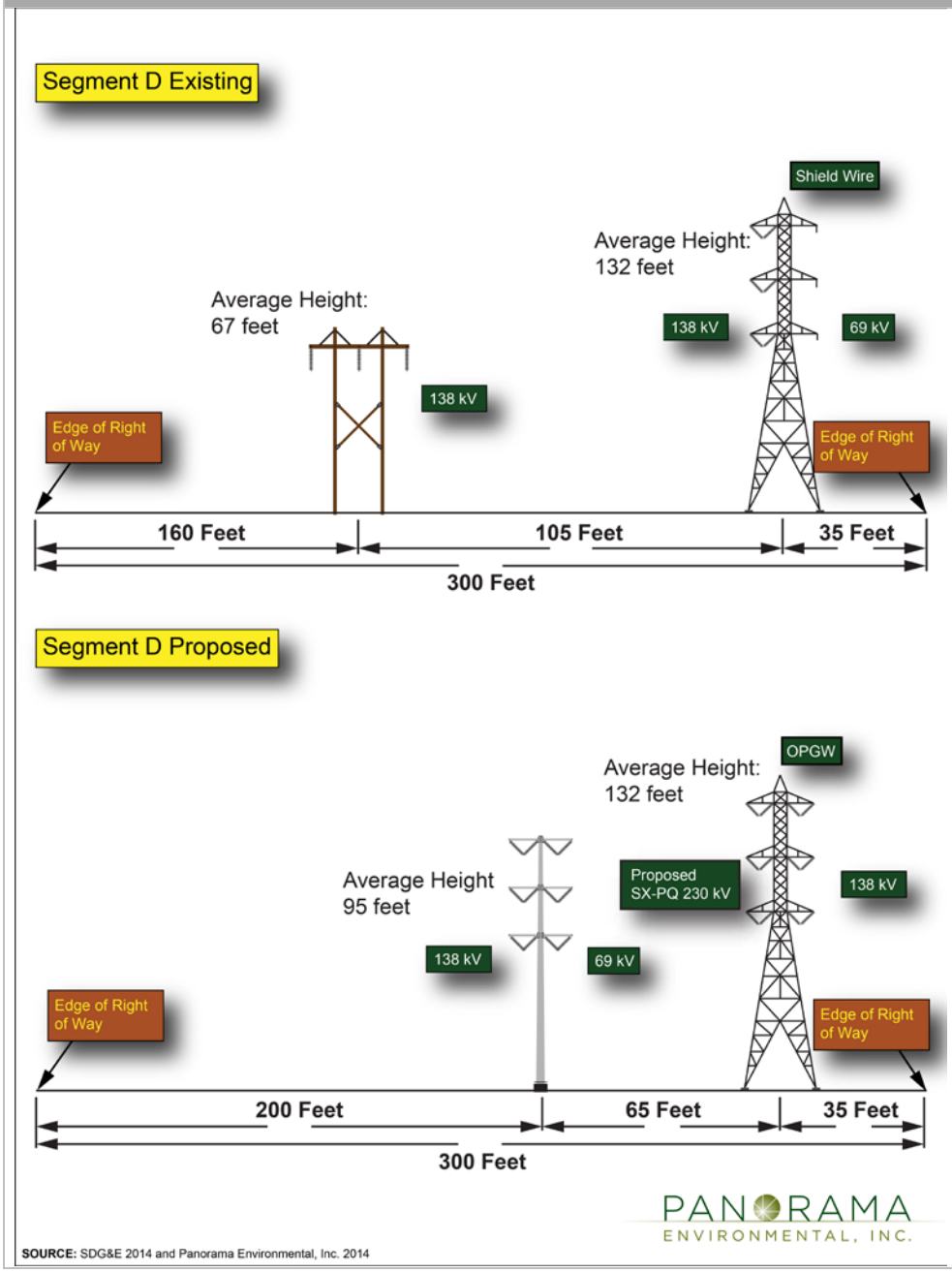
Table 2.3-67: Segment D Infrastructure to be Installed and Removed

Infrastructure Type	Installed	Removed
69-kV double-circuit TSP	17	0
69-kV wood H-frame structure	0	16
69-kV single-circuit wood pole	0	5
69-kV single-circuit steel cable pole	2	0
69-kV single-circuit wood cable pole	0	2
Total	***19 structures***	***23 structures***

Reconductoring

An existing 138-kV transmission line would be moved from the south side of the 230-kV steel lattice towers to the north side of the 230-kV steel lattice towers. New 230-kV aluminum conductor would be installed in the newly vacant southern position. OPGW would replace the existing shield wire at the top of the 230-kV towers.

Figure 2.3-8: Segment D Existing and Proposed Configurations



SOURCE: SDG&E 2014 and Panorama Environmental, Inc. 2014

Comment [JThomas14]: **Data Need:** Confirm average heights of both lattice towers and H frame poles.

New Conductor Configuration

The current conductor configuration with the Segment D transmission corridor is as follows:

- **H-frame Structures:** [insert number and type of wires on H-frame structures]
- **Steel Lattice Towers:** [insert number and type of wires on steel lattice towers]
- **Total Number of Conductors in Corridor:**

After implementation of the Proposed Project, conductor configuration within the Segment D transmission corridor would be as follows:

- **TSPs:** [insert number and type of wires on TSPs]
- **Steel Lattice Towers:** [insert number and type of wires on steel lattice towers]
- **Total Number of Conductors in Corridor:**

Comment [JThomas15]: **Data Need:** Provide number of wires, including conductor, shield wire, and communication wires, on existing and proposed structures, including designations of which wires are bundled and which position the wires occupy on the transmission structures.

2.3.7 Substation Modifications

Sycamore Canyon Substation

Several modifications would be made to the Sycamore Canyon Substation to connect the proposed 230-kV transmission line to the substation:

- Transfer five existing transmission lines from their current bay positions to new bay positions.
- Add one circuit breaker and two disconnects to an existing bay.
- Install one capacity voltage transformer.

Peñasquitos Substation

Several modifications would be made to the Peñasquitos Substation to connect the proposed 230-kV transmission line to the substation:

- Add two circuit breakers and four disconnects to the termination bay for the proposed 230-kV transmission line.
- Install one capacity voltage transformer.

Chicarita, San Luis Rey, and Mission Substations

Minor modifications would be required at the Chicarita, San Luis Rey, and Mission Substations. Activities would include adjusting the configuration of transmission and power lines at the three substations.

Comment [KB16]: **Data Need:** provide more specifics, such as for the other two substations, as to what these modifications would be.

2.4 CONSTRUCTION ACTIVITIES AND PROCEDURES

This section describes the construction activities associated with the following elements of the Proposed Project:

- Safety and Environmental Awareness Program
- Summary of Land Disturbance
- Temporary Work Areas
- Access Roads
- Substations
- Helicopter Use
- Water Use
- Traffic Management
- Site Cleanup and Waste Disposal

- Aboveground Transmission
- Underground Transmission

2.4.1 Safety and Environmental Awareness Program

SDG&E would prepare a Safety and Environmental Awareness Program (SEAP). The SEAP would outline training for project workers on topics including:

- General safety procedures
- General environmental procedures
- Fire safety
- Biological resources
- Cultural resources
- Paleontological resources
- Hazardous materials protocols and best management practices (BMPs)
- Stormwater Pollution Prevention Plan (SWPPP) requirements

2.4.2 Summary of Land Disturbance

Approximately 102.45 acres would be temporarily disturbed and 10.51 acres would be permanently disturbed during project construction. Areas of project disturbance are summarized in Table 2.4-1, and described in more detail in following sections below.

Table 2.4-1: Areas of Temporary and Permanent Project Disturbance

Proposed Project Component	Disturbance Area (acres)[1, 2]		
	Permanent	Temporary	Total
Segment A (Sycamore Canyon Substation to Carmel Valley Road)			
Work Area and Spur Road	4.62	21.9	26.5
Power Pole Pad	1.48	0	1.48
Guard Structure	0	1.73	1.73
Wire Stringing Site	0	15.5	15.5
Access Roads			
Segment A Subtotal	***6.12***	***39.13***	***45.21***
Segment B (Carmel Valley Road)			
Work Area	0	5	5
Vault covers	0.002	0	0.002
Segment B Subtotal	***0.002***	***5***	***5.002***
Segment C (Carmel Valley Road to Peñasquitos Junction)			
Work Area	.23	1.42	1.65
Power Pole Pad	0.08	0	0.08

Comment [JThomas17]: Data Need: Access road refinements needed so that we can calculate this for Segments A, C, and D.

Table 2.4-1: Areas of Temporary and Permanent Project Disturbance

Proposed Project Component	Disturbance Area (acres)[1, 2]		
	Permanent	Temporary	Total
Stringing Site	0	4.04	4.04
Guard structures	0	0	0
Access Roads			
Segment C Subtotal	***0.32***	***5.46***	***5.77***
Segment D (Peñasquitos Junction to Peñasquitos Substation)			
Work Area	2.82	8.64	11.46
Power Pole Pad	1.25	0	1.25
Stringing Site	0	3.74	3.74
Guard Structure	0	0.07	0.07
Access Roads			
Segment D Subtotal	***4.07***	***12.45***	***16.52***
Sycamore Canyon Substation			
None	0	0	0
Sycamore Canyon Substation Subtotal	***0***	***0***	***0***
Peñasquitos Substation			
Stringing Site	0	0.44	0.44
Peñasquitos Substation Subtotal	***0***	***0.44***	***0.44***
Chicarita, San Luis Rey, and Mission Substations			
None	0	0	0
Chicarita, San Luis Rey, and Mission Substations Subtotal	***0***	***0***	***0***
Staging Yards	***0***	***39.97***	***39.97***
TOTAL	**10.51**	**102.45**	**112.96**

1 Based on preliminary engineering. Estimates may change based on final design and construction.

2 Overlapping areas were removed to avoid double-counting impact acreage (e.g., if a staging area or access road intersected with a stringing site area).

Comment [JThomas18]: Data Need: Provide acreage and GIS depiction of any staging proposed at the Sycamore Canyon Substation.

Comment [JThomas19]: Data Need: Provide acreage and GIS depiction of any staging proposed at the Penasquitos Substation.

Comment [JThomas20]: Data Need: Provide acreage and GIS depiction of any staging proposed at the Chicarita Substation.

2.4.3 Temporary Work Areas

SDG&E would use several types of temporary work areas to construct the Proposed Project. The types of work areas, their quantities, and total acreages are identified in Table 2.4-2. The

preparation (e.g., site clearing, vegetation removal, and grading) and use of temporary work areas are described below.

Table 2.4-2: Temporary Work Areas

Temporary Work Area Type	Quantity	Total Acreage
Materials Storage and Staging Yards	12 sites	40
Stringing Sites	20 sites	23
Structure Work Areas	62 sites	42
Guard Structures	48 sites	2
Underground Construction (230 kV)	2.84 miles	5
Underground Construction (138 kV)	850 feet	1
	Total	113

Comment [sh21]: Data Need: Need acreage of staging within SDG&E substations as noted in prior comments.

Staging Yards

In the PEA application, SDG&E identified five temporary materials storage and staging yards (Stonebridge, Stowe, Torrey Santa Fe, Carmel Valley Road, and Carmel Mountain Road); however, three of the proposed staging yards (Torrey Santa Fe, Carmel Valley Road, Carmel Mountain Road) have been determined not to be viable since SDG&E could not obtain approval from property owners for their use. SDG&E has since researched and identified additional locations for a total of 12 staging yards, five of which would be within existing substations. Letters of permission have been obtained from property owners for each proposed staging yards.

Comment [KB22]: Data Need: Describe the following for each staging yard:
--Vegetation removal needed
--Grading needed
--Actual acres of each staging yard that are to be used, and the location of the utilized area in the larger staging area in GIS.
--Verification letter from land owner indicating their understanding of intended staging yard use and providing permission for such use.
--How staging area would be used.
--Vehicle entrance/exit and potential construction of new or improved vehicle access

Comment [JThomas23]: Data Need: SDG&E needs to provide these. Be advised that a comment letter was received regarding the Torrey Santa Fe staging yard from the property owner's legal representative indicating that this staging yard location is not available for SDG&E's use.

Proposed staging yards are shown on Figure 2.4-1. The following activities and facilities would be conducted at the staging yards:

- Refueling areas for vehicles and construction equipment
- Pole assemblage
- Storage of materials and equipment
- Short-term helicopter operations
- Portable restrooms
- Parking
- Lighting
- Generator use
- Worker meet up
- Construction trailers

In-ground fencing would be installed at the staging yards around the perimeter of the area actively used for staging if the staging yard does not already have fencing. SDG&E would place gravel and use other BMPs as necessary to control sedimentation and prevent stormwater runoff from leaving the site. Table 2.4-3 describes the 12 identified staging yards. The detailed route maps in Appendix A also depict staging yard locations.

Figure 2.4-1: Staging Yards for Proposed Project

Table 2.4-3: Staging Yards

Staging Yard	Description and Proposed Use	Approximate Acreage[1]
Stonebridge	• Located 800 feet northeast of the Sycamore Canyon Substation • Previously disturbed and graded • INSERT proposed uses from bullet list in text above	9.01
Stowe	• Located 1.6 miles north of the Sycamore Canyon Substation • Previously graded and fenced • INSERT proposed uses from bullet list in text above	3.98
Segment B	• Along underground alignment on Carmel Valley Road • INSERT proposed uses from bullet list in text above	1.6
Camino Del Sur	• South of Camino del Sur and north of Carmel Valley Road • Previously disturbed • INSERT proposed uses from bullet list in text above	5.91
Chicarita South	• South of SDG&E's Chicarita Substation • INSERT proposed uses from bullet list in text above	5.17
Meanly	• Located near Hoyt Park Drive and Meanly Drive • Previously disturbed and graded • INSERT proposed uses from bullet list in text above	5.6
SR-56	• Located south of Highway 56 and approximately 0.25 miles west of Segment C • Mass grading is currently being conducted on the site • INSERT proposed uses from bullet list in text above	10.3
Sycamore Canyon Substation	• INSERT proposed uses from bullet list in text above	
Peñasquitos Substation	• INSERT proposed uses from bullet list in text above	
Chicarita Substation	• INSERT proposed uses from bullet list in text above	
San Luis Rey Substation	• INSERT proposed uses from bullet list in text above	
Mission Substation	• INSERT proposed uses from bullet list in text above	
	Total	39.97

Note
1 Approximate acreage is for the total site; SDG&E would likely use only a portion of some of the sites.

Comment [KB24]: Data Need: Partial data response 3 states any of these substations and their access roads may be used for storing equipment. Describe what areas would be used for staging at the substations and which road segments would be used for staging. Also need acreages of areas potentially used for staging. Similar data request comments above in description.

Comment [KB25]: Data Need: Which portions of the sites would SDG&E use? See data request comments above in description.

Helicopter Landing

Helicopters would be staged out of local airports (i.e., McClellan Palomar, Montgomery, and Gillespie). Activities such as helicopter refueling and maintenance would be conducted at local airports. Staging areas would be used for short-term helicopter operations, such as picking up conductor.

Stringing Sites

Stringing sites would be used to install conductor on support structures. The 20 conductor stringing sites are shown in Appendix A. Four of these could also be used to string OPGW. Vegetation removal and xxx activities would occur within the stringing sites.

Structure Work Areas

Installation of new transmission structures would require an approximately 0.52-acre work area around each structure. The structure work areas would be used for equipment, vehicles, and materials during pole installation. Most of the new poles would be located near existing poles, which already include a maintained work area. Thus, many structure work areas would use portions of existing work areas. New work areas would be subject to grading and vegetation trimming or removal. Grading at each site would typically be less than 300 cubic yards of cut or fill, with the maximum cut or fill needed being approximately 2,300 cubic yards. The estimated cut-and-fill quantities required for construction of each project component are summarized in Table 2.4-4. Most vegetation clearing activities would involve overgrown brush removal, trimming, and mowing. A mowing skid steer, weed whackers, blading equipment, and hand tools would be used for vegetation removal and trimming activities. Removed vegetation would be disposed of appropriately off site or cut into small pieces and distributed nearby. No tree removal would occur within structure work areas.

Retaining walls would be installed at several locations where the proposed pad elevation is higher than the existing surrounding terrain. Details are shown in Table 2.4-5.

Retaining walls would be designed using a mechanically stabilized earth retaining wall approach. Alternating layers of compacted soil and stabilizing geogrid fabric would be installed, with the fabrics attached to stabilize the wall. The face of the wall would be designed based on local aesthetic needs.

Existing disturbed areas surrounding each existing pole would be used during removal of the existing structures. Some of the temporary work space around structures would be maintained during the operation and maintenance period; permanent work areas are discussed in Section 2.5.

Underground Construction Work Area

Construction of the underground transmission line would require an approximately 16-foot-wide work area. The work area would increase to 30 feet wide and 120 feet long at vault locations. The work area would be demarcated by orange cones and Type II barricades or by the median of Carmel Valley Road. Part of the work area would contain the trench and the

Comment [KB26]: Data Need: Confirm that refueling would not be done at any of the proposed work areas. Refueling at offsite airports only would limit options and increase time and emissions associated with helicopter operations.

Comment [sh27]: Data Need: Clarify the activities that would be conducted to prepare the stringing sites. Would grading be required.

Comment [SC28]: Data Need: Is this a total or would this be for one particular work area? Clarify.

Comment [KB29]: Data Need: Please describe potential face designs for retaining walls.

Comment [KB30]: Data Need: what prep, if any, would be needed for underground work area? Tree removal? Irrigation impacts?

trenching area, whereas the rest of the work area would be reserved for truck loading. Vehicular traffic on Carmel Valley Road would be directed outside the work area.

2.4.4 Access Roads

Construction access to most sites would use existing roads; two new spur roads are proposed along Segment A.

Table 2.4-4: Estimated Cut-and-Fill Quantities

Project Element	Cut (Cubic Yards)	Fill (Cubic Yards)
Structure Work Areas		
Retaining Walls		
Concrete Foundations	4,500	
Underground Duct Trenching	15,500	
Staging Yards		
Total	21,620	3,720

Comment [sh31]: Data Need:
1) Show the work on how these volumes of cut and fill were calculated. The concrete foundations and underground trenching account for 20,000 cubic yards of cut. It states in this section that cut and fill could be 300 to 2,300 cubic yards at each work area. This appears to be underestimated. Similarly, the 26 foot retaining walls may require quite a bit of fill. Please fill in the details.

2) Where would excess material be disposed and what is the travel distance for trucking that excess material?

Table 2.4-5: Retaining Wall Details

Segment	Structure	Maximum Height (feet)	Length (feet)
A	P2	23	239.7
	P5	10	141.2
	P24	24	125.0
	P25	26	476.8
D	P47	7	60.4
	P48	12	135.3
	P53	5	115.8

Existing Access Roads

Comment [KB32]: Data Need: Would SDG&E make any modifications to road drainage to prevent erosion and channeling on existing access roads?

Most work sites would be accessed via existing unpaved roads. Existing roads would be restored as needed to facilitate their use for construction access. SDG&E would conduct the following activities to maintain and re-establish existing access roads:

- Clear, trim, or mow overgrown vegetation using a mowing skid steer, weed whacker, and hand tools. Remove vegetation material and dispose of off-site or cut and spread nearby.
- Resurface and smooth where necessary with a grader.

Comment [sh33]: Data Need: What landfill would be used for disposal of material and what is the distance to the landfill.

- Transfer, add, or compact fill material (e.g., soil or gravel) with earth-moving equipment.
- Water the roadway with a water truck to compact the road and control dust.

New Spur Roads

A new, approximately 290-foot-long, spur road would be required to access proposed structure P2 along Segment A (see Appendix A) adjacent to the Sycamore Canyon Substation. Vegetation would be removed and the land would be graded to create a road about 12 to 14 feet wide in the straight segment and up to 20 feet wide in the curved section.

A new, approximately 200-foot-long, spur road would be required to access proposed structure P17 along Segment A (see Appendix A). Vegetation would be removed and the land would be graded to create a straight road about 12 to 14 feet wide.

Overland Travel

Some work areas would be accessed by overland travel.

Comment [KB34]: **Data Need:** GIS for the overland travel routes. Describe activities within overland travel route. Would SDG&E clear vegetation prior to use? How wide is the overland travel access route?

2.4.5 Aboveground Transmission

This section describes the steps involved in constructing the aboveground transmission segments.

Installation of New Transmission Structures

New transmission structures would be installed on all segments. For each new aboveground transmission structure, a foundation would be installed and then the transmission structure would be erected on the foundation. Concrete pier foundations or micropile foundations would be used, depending on geologic conditions. Blasting and dewatering may be necessary if hard rock or water, respectively, are encountered. Soil may be imported if it is necessary to raise the elevation of structure pads; material removed from excavations and not needed would be spread over existing access roads and work pads or disposed of if dispersal is not feasible. Retaining walls would be installed as previously described.

Concrete Pier Foundations

Concrete pier foundations would be installed using a large auger. The steps for installing a concrete pier foundation are as follows:

1. Excavate 6- to 11-foot-diameter holes to 20 to 40 feet deep.
2. If soil is unstable, install steel casing to stabilize the sides of the excavation.
3. Install a reinforcing steel cage and anchor bolt cage in each hole.
4. Pour concrete into the excavation.
5. Allow concrete to cure over a 1-month period, during which time concrete forms would be removed and backfill would be placed around the foundations.

Micropile Foundations

Micropile foundations are typically installed from a platform about 6 feet aboveground that is put in place either by a truck-mounted crane or a helicopter. The platform is supported by four to six adjustable legs and contains the drill and generators or compressors to power the drill.

The steps for installing a micropile foundation are as follows:

1. Drill from the platform 4 to 16 small, 6- to 8-inch-diameter holes to 10 to 40 feet deep.
2. Insert a steel rod and center it in each excavation.
3. Fill the excavation with a non-shrink grout.

The platform would be removed once installation is complete.

Blasting

If rock is encountered when excavating foundation holes, SDG&E may use rock splitting or rock blasting to minimize the time it takes to excavate the foundation hole. Rock splitting involves drilling a hole in the rock and inserting a non-blasting propellant cartridge. An impact generation device then initiates the cartridge, causing the rock to crack without causing airborne rock pieces, noxious fumes, or ground vibrations.

Rock blasting would be used in situations where solid rock is encountered but the rock splitting technique would be ineffective. Blast holes (about 3 inches in diameter) would be drilled to the full depth of the excavation. Explosives would be detonated in the blast holes. SDG&E would use flyrock protection and dust control during rock blasting.

Dewatering

Dewatering may be necessary if water is encountered during excavation for structure foundations. A project-specific SWPPP would contain dewatering procedures. SDG&E may also use bentonite (water-absorbing clay) or another stabilizing material for foundation installation if water is present in the foundation excavation.

Structure Erection

Cranes, flatbed trucks, drill rigs, and excavators would be used to install transmission and power line structures. Flatbed trucks would deliver the poles in two or more sections to structure sites. A small truck-mounted crane would be used to assemble the poles on site. A crane would lift the pole and set it in place onto the anchor bolts in the pole foundation, and the pole would be attached to the foundation.

Comment [sh35]: Data Need: Would any structures be delivered by helicopter? If yes, define specific structure locations.

Removal of Existing Facilities

Existing facilities would be removed in the case of relocating existing transmission lines and in the case of removing existing pole structures.

Conductor Removal

Conductor would be removed from poles using wire trucks and pulling rigs; guard structures would be used where needed. For segments that would only be reconductored, existing hardware and insulators would be removed and replaced with new polymer insulators and hardware.

Pole Removal

For segments that would be removed from service, old metal poles and attached components would be dismantled using cranes, bucket trucks, and hand tools. Wood poles would be removed fully or cut about 2 feet below grade. Any remaining concrete foundations would be jackhammered to approximately 2 feet below grade, and the debris would be removed. The remaining hole would be backfilled with soil or materials similar to the surrounding area. Five of the existing wood H-frame structures on Segment A currently have distribution underbuild. The structure would be cut above the distribution circuits and the distribution portion of the existing wood H-frame structures would remain in place. Excess materials would be hauled away with trucks.

Comment [sh36]: **Data Need:** Where would removed poles be disposed of and how far is the disposal location.

Conductor Stringing and Reconductoring

Conductor would be installed on new structures and replaced on existing structures where called for, as described in Section 2.3. Bundled lines would be placed onto structures using the same methods as described for reconductoring of a single line.

Guard Structures

Guard structures would be used during conductor stringing to prevent any dropped conductor from coming into contact with pedestrians, vehicles, or utilities (e.g., distribution lines and communication facilities) located beneath the stringing activities. Guard structures would also be used at crossings for large roadways and sensitive waterways. Anticipated guard structure locations are shown in Appendix A.

Two types of guard structures would be used. A guard structure may be constructed of wood poles embedded in the ground with a cross-beam. In this case, holes would be augered into the ground for the wood poles. A crane or a line truck would then lift the wood poles into place. Netting may be suspended between guard structures for larger crossings. Wood guard structures would be removed after stringing, and the augered holes would be backfilled with the excavated soil. Alternatively, a boom truck or bucket truck may be used as a guard structure; this option is typically used in paved areas. No foundations would be needed and no grading would occur for guard structures.

In lieu of guard structures, traffic control would be used during conductor stringing at road, freeway, and pedestrian crossings. Traffic control would involve flaggers temporarily holding traffic for short time periods while overhead line is installed. Larger crossings where traffic control is used could require closure of the road for longer periods of time. A combination of traffic control and guard structures with netting may be used for very large crossings, such as freeway crossings. Freeway crossings would be conducted according to California Department of Transportation (Caltrans) requirements, which could include traffic control, guard structures, netting, or any combination of these methods; methods would be outlined in the Caltrans encroachment permit that SDG&E would need to obtain for these parts of the project.

Conductor and OPGW Stringing
SDG&E would use aerial manlifts (e.g., bucket trucks) or helicopters to install sheaves or "rollers" on the pole structure prior to conductor installation. The sheaves would allow the conductor to be pulled past each structure prior to being pulled up to the final tension position. Following installation of the sheaves, a pull rope (a small cable used to pull the conductor) would be pulled onto the sheaves using a helicopter. Once the pull rope is in place, it would be attached to a steel cable and pulled back through the sheaves. The conductor would be attached to the cable and pulled back through the sheaves using conventional tractor-trailer pulling equipment located at the pull sites. This process would be repeated for each conductor and line segment (pull site to pull site).

After the conductor is pulled into place, the sags between the structures would be adjusted to a pre-calculated level at each stringing site. The line would be installed with minimum ground clearances, typically 30 feet of vertical clearance above drivable surfaces and 25 feet above non-drivable surfaces. The conductor would then be clipped into the end of each insulator, the sheaves would be removed, and vibration dampers and other accessories would be installed. This process would be repeated for each conductor and line segment.

Bundling
Conductor bundling would be achieved by adding an additional cable referred to as a "jumper" connecting both circuits together and spacing the conductor by a horizontal distance of 18 inches.

Grounding Rods
All steel poles would have at least two grounding rods, with the top of the rod buried 6 to 18 inches below ground. Additional grounding rods may be installed if required by the soil conditions. The rods would be approximately 8 feet long and would be spaced about 6 feet apart in work areas. Permanent impacts from grounding rod installation would be less than 1 square foot per transmission structure.

Marker Balls
Marker balls would be required on some conductor spans, depending on the Federal Aviation Administration's (FAA) determination of whether the structure would propose a hazard to air navigation. Anticipated marker ball locations are shown in Appendix A. Final marker ball locations will be determined by FAA.

2.4.6 Underground Transmission

Trenching
SDG&E would notify other utility companies to locate and mark existing underground utilities along the proposed underground alignment prior to trenching. SDG&E would also conduct exploratory excavations (potholing) to verify the locations of existing facilities in the ROW. Vegetation would be removed in the trench areas. Some trees would need to be removed from the median of Carmel Valley Road.

Comment [KB37]: Data Need: Identify whether any trees would be removed from Carmel Valley Road. Data response said some may have to be removed, but it looks like this could be avoided with the newest alignment.

Typical trench dimensions would be a minimum of 6 feet deep and 3.5 feet wide, though the trench would be widened and shored if necessary to meet California Occupational Safety and Health Administration (CalOSHA) requirements or to avoid existing facilities. If trench water is encountered, trenches would be dewatered using a portable pump and recovered water would be disposed of in accordance with existing regulations and requirements.

Comment [KB38]: Data Need: What are the maximum trench dimensions?

Vault Installation
SDG&E would install the precast vaults in the trench. Backfill would be placed, grouted, and compacted. The excavated area would then be repaved if it was paved prior to excavation of the trench.

Duct Bank Installation
SDG&E would install the majority of the duct bank using open-cut trenching techniques. Most of the duct bank would have a double-circuit vertical duct bank configuration, with occasional transitions to a flat configuration to clear existing structures in highly congested areas or to fan out to termination structures at the cable pole transition area.

SDG&E would install the conduits and place concrete around the conduits to form the duct bank encasement as each section of the trench for the duct banks is completed. The duct banks would be, at a minimum, 3 feet below the ground surface. A fluidized thermal backfill would be placed to fill almost all of the remainder of the trench. Soil, an aggregate road base, or concrete slurry with an asphalt concrete cap would be installed to restore the road in compliance with local requirements. As trenches are being filled in one segment, additional trench would be opened further down the street, with the process continuing until the entire duct bank is in place.

The undergrounded portion of the Proposed Project (Segment B) would cross an existing bridge about 1.2 miles west of Camino Del Sur on Carmel Valley Road. At the bridge, the duct bank would be placed in an empty bridge cell. A 40-inch-diameter bore would be completed at each end of the bridge so that the line could be pulled through the abutment wall and bridge end diaphragms. Two 30-inch-square openings would be cut into the bridge to provide working access to the cell. Duct spacers and supports would be installed at 4- to 6-foot intervals along the length of the cell to support the ducts and maintain spacing. The openings in the bridge deck would be closed after the duct package is installed and tied into the duct system.

Cable Pulling, Splicing, and Termination
SDG&E would install cables in the duct bank once the duct banks and vaults are installed. Each cable segment would be pulled into the duct bank, spliced at each end of the vaults along the route, and terminated at the transition area where the lines transition to the overhead sections. A cable reel and a pulling rig, each item placed at opposing ends of the cable segment, would be used to pull the cable through the ducts. It is anticipated that two cable segments would be pulled through the ducts per day. After cables are pulled through the ducts, a splice trailer would be used to splice cables together.

2.4.7 Substations

Sycamore Canyon Substation

Peñasquitos Substation

Chicarita, San Luis Rey, and Mission Substations

Comment [KB39]: Data Need: Provide description of how substation modifications would be made to each of the four substations.

2.4.8 Helicopter Use

Helicopters would be used on the Proposed Project for stringing overhead conductor, installing or removing structures, and transporting equipment and personnel. Helicopters would be light- or medium-duty. Helicopter use would occur during the day, and flight paths would typically follow the existing ROW, except when accessing the project ROW and work areas from adjacent landing areas and airports. Helicopters would be used for approximately x days and for x hours per day.

Comment [sh40]: Data Need: Clarify where helicopters will be used and for what purpose. In some parts of the PEA it states that helicopters would only be used for stringing. In other places additional uses are discussed. We need additional information on the specific helicopter uses and their duration during construction of the project.

Helicopter use would comply with FAA requirements. SDG&E would also coordinate with local air traffic control prior to all flights to prevent conflict with local airport air traffic. A Congested Area Plan (CAP) would be prepared if required per FAA regulations.

2.4.9 Water Use

Water will be used for dust control, increasing moisture content in soil used as compacted fill, and irrigation for seeded/planted areas requiring revegetation. The estimated water demand from construction is approximately 25 million gallons over 12 months. The estimated quantity of water is based on an assumed number of water trucks and the frequency of watering that would be required during construction. In general, it has been assumed that during construction watering would occur every 2 to 4 hours using approximately three water trucks along the ROW and at the staging yards. Factors such as wind speed, precipitation, temperature, and moisture content of fill material could impact (increase or decrease) the quantity of water required for the project.

Comment [sh41]: Data Need: What is the location(s) where SDG&E would obtain water and what is the travel distance. Could reclaimed water be used for dust control?

2.4.10 Traffic Management

Standard traffic control methods would be employed to minimize traffic impacts during construction along Carmel Valley Road. These may include, but are not limited to, flagging, signage, detours, Type II barricades, K-rails, cones, and adjusted working hours. The final alignment will consider both traffic impacts during construction as well as ongoing operation and maintenance activities. A traffic control plan would be completed and approved by the local agency prior to the start of any portion of construction of Proposed Project Segment B that requires traffic control.

Traffic Management/Control Plans would be developed by SDG&E and approved by Caltrans prior to the start of construction for the SR-56 or I-15 locations where the conductor crosses over

the roadway. Typical measures that could be included within the Traffic Control Plan(s) include:

- All traffic control plans would be developed, reviewed, and approved by the authority having jurisdiction of the specific roadway being impacted (Caltrans). Traffic control plans would include vehicular and non-vehicular traffic.
- Typically, for overhead transmission construction, traffic would be temporarily stopped when the sock line is flown over the SR-56 and I-15 highway crossings.
- Guard structures would be used on both sides of conductor crossings at the SR-56 and I-15 locations during the entire duration of stringing operations at that particular section of the project. Netting may be installed between the guard structures.
- Traffic would be stopped in the event that an external load, such as a structure section, is being flown over a public road including the SR-56 and I-15 highway crossings. The temporary stops would be no more than a few minutes.

2.4.11 Site Cleanup and Waste Disposal

As part of final construction activities, SDG&E would:

- Restore all removed curbs, gutters, and sidewalks.
- Repave all removed or damaged paved surfaces.
- Restore landscaping or vegetation as necessary.
- Replace any damaged or removed fencing.
- Remove all construction materials from the construction site.

SDG&E would restore all temporarily disturbed areas used during construction and that would not be maintained for operation and maintenance purposes (see Section 2.5 for a discussion of areas maintained during the operation and maintenance phase). Areas would be restored to approximate preconstruction conditions. Restoration activities may include reseeding, planting, and structure replacement.

All construction materials and debris would be removed from the project areas and recycled or otherwise disposed of off-site. SDG&E would conduct a survey to ensure and document that cleanup activities were successfully completed.

Stormwater Pollution Prevention Plan

To obtain coverage under the Construction General Permit, SDG&E would submit Permit Registration Documents, including a Notice of Intent, to the State Water Resources Control Board (SWRCB) and develop a SWPPP that complies with the Construction General Permit requirements. SDG&E would also receive a SWRCB-issued Waste Discharger Identification number before starting construction activities. SDG&E would implement the SWPPP during construction, which would include requirements for inspections and monitoring, BMPs, and requirements to revise the SWPPP and implement revisions as needed to protect stormwater quality.

The SWPPP describes:

- The project location, site features, area of disturbance, dates of construction, and types of materials and activities that may result in pollutant discharges.
- BMPs to implement during construction. The BMPs are selected to control erosion, discharge of sediments, and other potential impacts associated with construction activities.
- An inspection and maintenance program for BMPs.
- A sampling and analysis plan for monitoring pollutant discharges to water bodies, if required.

SDG&E must submit a Notice of Termination (NOT) to the SWRCB after completing a project subject to the Construction General Permit in order to be relieved of the permit requirements. Final soil stabilization throughout the project area must be achieved before the SWRCB will approve the NOT.

Hazards and Hazardous Materials

Hazardous wastes that could be used during project construction include:

- Gasoline
- Diesel
- Propane
- Insulating oil
- Brake fluid
- Hydraulic fluid
- Engine oils
- Battery acid
- Methyl alcohol
- Contact cleaner 2000
- Sulfur hexafluoride

Waste Management

SDG&E would attempt to reuse, recycle, or donate all old structures, poles, materials, and components not needed for the Proposed Project. Materials that could not be reused, recycled, or donated would be disposed of at an appropriate facility. Table 2.4-6 describes the likely end use of waste generated during the project.

Table 2.4-6: Typical End Destination of Removed Materials

Material	End Destination
Wood power line structures and poles	Donated for reuse or disposed of at appropriate facility
Conductor	Recycled
Insulators	Disposed of at appropriate facility
Scrap metal	Recycled
Concrete	Recycled
Soils	Reused on site or disposed of at appropriate facility
Batteries	Recycled

2.4.12 Workforce and Equipment

SDG&E personnel on the project would include construction crews, environmental monitors, construction inspectors, and SDG&E personnel. Crews may be working simultaneously along the project alignment and substations, with up to 100 people working at one time. Workers, monitors, and inspectors needed for each construction activity are listed in Table 2.4-7. Table 2.4-7 also lists the equipment that would be needed for each project activity.

Table 2.4-7: Construction Equipment Use and Workers

Segment	Activity	Equipment, Workers	Quantity	Equipment, Workers	Quantity
All	Yard preparation, mobilization	**Workers**	**4 to 16**	Forklift	4
		Environmental Monitors and Construction Inspectors	2	Grader	2
		2-ton flatbed truck	2	Line truck	2
		Air compressor	4	Mobile fueling truck	2
		Backhoe	2	Mower/brush hog	2
		Boom truck	2	Pickup truck (regular cab)	4
		Bulldozer	2	Pickup truck (crew cab)	2
		Crane Truck	1	Portable generator	4
		Crane	1	Tool van	2
		Dump truck	4	Tractor/trailer unit	4
		Flatbed boom truck	2	Water truck	2
A, C, D	Overhead testing and commissioning	**Workers**	**7 to 9**	Pickup truck (regular cab)	4
		Environmental Monitors and Construction Inspectors	2	Pickup truck (crew cab)	2
		Aerial bucket truck	2	Portable generator	1
		Line truck	2	Water truck	1
A	Wire and structure removals	**Workers**	**9 to 11**	Line truck	2
		Environmental Monitors and Construction Inspectors	3	Mobile fueling truck	1
		2-ton flatbed truck	2	Mower/brush hog	1
		Aerial bucket truck	3	Pickup truck (regular cab)	5
		Air compressors	1	Pickup truck (crew cab)	2
		Backhoe	1	Portable generator	1
		Crane	2	Pulling rig/wire puller	1

Table 2.4-7: Construction Equipment Use and Workers					
Segment	**Activity**	**Equipment, Workers**	**Quantity**	**Equipment, Workers**	**Quantity**
		Dump truck	2	Wire tensioner	1
		Flatbed boom truck	2	Water truck	1
	Site Preparation and Road Construction	**Workers**	**4 to 10**	Grader	1
		Environmental Monitors and Construction Inspectors	3	Mobile fueling truck	1
		Air compressor	1	Mower/brush hog	1
		Backhoe	1	Pickup truck (regular cab)	5
		Bulldozer	1	Pickup truck (crew cab)	2
		Dump truck	1	Water truck	1
	Foundation construction	**Workers**	**6 to 11**	Dump truck	2
		Environmental Monitors and Construction Inspectors	4	Flatbed boom truck	1
		2-ton flatbed truck	1	Hydraulic rock splitting/rock drilling equipment	1
		Air compressor	1	Mobile fueling truck	1
		Concrete truck	10	Pickup truck (regular cab)	6
		Crane truck	1	Pickup truck (crew cab)	2
		Crane	1	Portable generator	2
		Drill rig/truck-mounted auger	2	Water truck	2
	Structure Assembly and Erection	**Workers**	**6 to 10**	Pickup truck (regular cab)	4
		Environmental Monitors and Construction Inspectors	2	Pickup truck (crew cab)	2
		Air compressor	1	Portable generator	1
		Crane	2	Tractor/trailer unit	2
		Line truck	2	Water truck	1
		Mobile fueling truck	1		
	Wire stringing	**Workers**	**10 to 27**	Pickup truck (regular cab)	1
		Environmental Monitors and Construction Inspectors	4	Pickup truck (crew cab)	9

Table 2.4-7: Construction Equipment Use and Workers

Segment	Activity	Equipment, Workers	Quantity	Equipment, Workers	Quantity
		Aerial bucket truck	3	Portable generator	6
		Air compressors	1	Pulling rig/wire puller	1
		Bulldozer	2	Wire tensioner	1
		Crane	1	Tool van	1
		Light helicopter	1	Tractor/trailer unit	1
		Line truck	1	Wire boat (wire trailer)	6
		Mobile fueling truck	1	Water truck	1
	Cleanup and restoration	**Workers**	**4 to 10**	Grader	1
		Environmental Monitors and Construction Inspectors	2	Mower/brush hog	1
		2-ton flatbed truck	1	Pickup truck (regular cab)	4
		Backhoe	1	Pickup truck (crew cab)	2
		Bulldozer	1	Water truck	2
		Dump truck	1		
B	Excavation and Install Vaults and Trench	**Workers**	**36 to 62**	Jackhammer	4
		Environmental Monitors and Construction Inspectors	4	Mobile fueling truck	1
		Air compressors	1	Paver	2
		Backhoe	2	Pickup truck (regular cab)	12
		Bulldozer	2	Pickup truck (crew cab)	12
		Concrete saw	2	Tool van	1
		Concrete trucks	9	Tractor/trailer unit	4
		Crane	1	Vacuum truck	2
		Dump truck	26	Water truck	2
	Ducts through bridge	**Workers**	**6 to 10**	Flatbed boom truck	1
		Environmental Monitors and Construction Inspectors	2	Pickup truck (regular cab)	4
		Air compressor	1	Pickup truck (crew cab)	2
		Boom truck	2		
	Cleaning and	**Workers**	**7 to 9**	Pickup truck (regular cab)	4

Table 2.4-7: Construction Equipment Use and Workers

Segment	Activity	Equipment, Workers	Quantity	Equipment, Workers	Quantity
	proving ducts	Environmental Monitors and Construction Inspectors	2	Pickup truck (crew cab)	2
		Line truck	1	Pulling Rig/Wire puller	1
	Cabling	**Workers**	**16 to 18**	Pickup trucks (crew cab)	5
		Environmental Monitors and Construction Inspectors	2	Pulling Rig/Wire puller	2
		Boom truck	1	Wire tensioner	2
		Line truck	1	Tool van	1
		Mobile Fueling truck	1	Tractor/trailer unit	2
		Pickup truck (regular cab)	6	Wire boat (wire trailer)	6
	Cable Testing and Commissioning	**Workers**	**7 to 9**	Pickup truck (crew cab)	2
		Environmental Monitors and Construction Inspectors	2	Portable generator	1
		Pickup truck (regular cab)	4	Tool van	1
C	Wire and Structure Removals	**Workers**	**9 to 10**	Line truck	1
		Environmental Monitors and Construction Inspectors	3	Mobile fueling truck	1
		2-ton flatbed truck	2	Mower/brush hog	1
		Aerial bucket truck	3	Pickup truck (regular cab)	5
		Air compressor	1	Pickup truck (crew cab)	2
		Backhoe	1	Portable generator	1
		Crane	1	Pulling rig/wire puller	1
		Dump truck	1	Wire tensioner	1
		Flatbed boom truck	1	Water truck	1
	Site Preparation and Road Construction	**Workers**	**4 to 10**	Grader	1
		Environmental Monitors and Construction Inspectors	2	Mower/brush hog	1
		Air compressor	1	Pickup truck (regular cab)	2

Table 2.4-7: Construction Equipment Use and Workers

Segment	Activity	Equipment, Workers	Quantity	Equipment, Workers	Quantity
		Backhoe	1	Pickup truck (crew cab)	2
		Bulldozer	1	Portable generator	1
		Dump truck	1	Water truck	1
	Wire stringing	**Workers**	**10 to 27**	Pickup truck (regular cab)	9
		Environmental Monitors and Construction Inspectors	3	Pickup truck (crew cab)	6
		Aerial bucket truck	3	Portable generator	1
		Air compressor	1	Pulling rig/wire puller	1
		Bulldozer	2	Wire tensioner	1
		Crane	1	Tool van	1
		Light helicopter	1	Tractor/trailer unit	1
		Line truck	1	Wire boat (wire trailer)	6
		Mobile fueling truck	1	Water truck	1
	Cleanup and restoration	**Workers**	**4 to 10**	Grader	1
		Environmental Monitors and Construction Inspectors	2	Mobile fueling tank	1
		2-ton flatbed truck	1	Mower/brush hog	1
		Backhoe	1	Pickup truck (regular cab)	4
		Bulldozer	1	Pickup truck (crew cab)	2
		Dump truck	1	Water truck	1
D	Wire and Structure Removals	**Workers**	**9 to 11**	Line truck	2
		Environmental Monitors and Construction Inspectors	4	Mobile fueling truck	1
		2-ton flatbed truck	2	Mower/brush hog	1
		Aerial bucket truck	3	Pickup truck (regular cab)	5
		Air compressor	1	Pickup truck (crew cab)	2
		Backhoe	1	Portable generator	1
		Crane	2	Pulling rig/wire puller	1
		Dump truck	2	Wire tensioner	1
		Flatbed boom truck	2	Water truck	1

Table 2.4-7: Construction Equipment Use and Workers

Segment	Activity	Equipment, Workers	Quantity	Equipment, Workers	Quantity
	Site Preparation and Road Construction	**Workers**	**4 to 10**	Mobile fueling truck	1
		Environmental Monitors and Construction Inspectors	2	Mower/brush hog	1
		Air compressor	1	Pickup truck (regular cab)	5
		Backhoe	1	Pickup truck (crew cab)	2
		Bulldozer	1	Portable generator	1
		Dump truck	1	Water truck	1
		Grader	1		
	Foundation construction	**Workers**	**3 to 8**	Dump truck	1
		Environmental Monitors and Construction Inspectors	2	Flatbed boom truck	1
		2-Ton flatbed truck	1	Mobile fueling truck	1
		Air Compressor	1	Pickup truck (regular cab)	4
		Concrete truck	10	Pickup truck (crew cab)	2
		Crane Truck	1	Portable generator	1
		Crane	1	Water truck	1
		Drill rig/truck-mounted auger	1		
	Structure Assembly and Erection	**Workers**	**6 to 10**	Pickup truck (regular cab)	4
		Environmental Monitors and Construction Inspectors	2	Pickup truck (crew cab)	2
		Air Compressor	1	Portable generator	1
		Crane	2	Tractor/trailer unit	2
		Line Truck	2	Water truck	1
		Mobile fueling tank	1		
	Wire stringing	**Workers**	**10 to 27**	Pickup truck (regular cab)	9
		Environmental Monitors and Construction Inspectors	3	Pickup truck (crew cab)	6
		Aerial bucket truck	3	Portable generator	1
		Air compressor	1	Pulling rig/wire puller	1

Table 2.4-7: Construction Equipment Use and Workers					
Segment	**Activity**	**Equipment, Workers**	**Quantity**	**Equipment, Workers**	**Quantity**
		Bulldozer	2	Wire tensioner	1
		Crane	1	Tool van	1
		Light helicopter	1	Tractor/trailer unit	1
		Line truck	1	Wire boat (wire trailer)	6
		Mobile fueling truck	1	Water truck	1
	Cleanup and restoration	**Workers**	**4 to 10**	Grader	1
		Environmental Monitors and Construction Inspectors	2	Mower/brush hog	1
		2-ton flatbed truck	1	Pickup truck (regular cab)	4
		Backhoe	1	Pickup truck (crew cab)	2
		Bulldozer	1	Water truck	2
		Dump truck	1		

Table 2.4-8 describes the typical use of equipment for the Proposed Project.

Table 2.4-8: Equipment Use			
Type	**Use**	**Type**	**Use**
2-ton flatbed truck	Haul materials (including new poles)	Helicopter	Transport materials, string conductor, install and remove travelers, set structures
Aerial bucket truck	Access poles, string conductor, modify structure arms, provide guard structures, etc.	Hydraulic rock-splitting/rock-drilling equipment	Drill through rock
Air compressor	Operate air tools	Jackhammer	Break concrete and asphalt
Backhoe	Excavate trenches	Line truck	Install clearance structures
Boom truck	Access poles and other height-restricted items	Mobile fueling truck	Refuel equipment
Bulldozer	Repair access roads	Mower	Clear vegetation
Concrete saw	Cut concrete and asphalt	Paver	Paving new asphalt
Concrete truck	Transport and process concrete	Pickup truck	Transport construction personnel
Crane truck	Lift and position structures	Portable generator	Operate power tools

Table 2.4-8: Equipment Use			
Type	**Use**	**Type**	**Use**
Crane	Lift and position structures	Pulling rig	Pull conductor
Drilling rig/truck-mounted auger	Excavate for direct-bury and micropile poles	Tool van	Tool storage
Dump truck	Haul excavated materials/import backfill	Tractor/trailer van	Transport materials at structure sites and staging yards
Excavator	Excavate soils/materials (trenching)	Vacuum truck	Pump water and liquids
Flatbed boom truck	Haul and unload materials	Water truck	Transport and apply water for dust control
Forklift	Transport materials at structure sites and staging yards	Wire truck	Hold spools of wire
Grader	Road construction and maintenance		

2.4.13 Construction Schedule

The project is anticipated to take approximately 12 months to complete. Construction would begin in June 2016 and would end in May 2017. Table 2.4-9 summarizes the likely construction schedule.

Table 2.4-9: Proposed Construction Timetable		
Segment	**Task**	**Estimated Work Dates**
All	Staging Yard Preparation and Mobilization	June through July 2016
A	Site Preparation and Road Construction	July through August 2016
	Foundation Construction	August through September 2016
	Wire and Structure Removal	September through October 2016
	Structure Assembly and Erection	November through December 2016
	Wire Stringing	December 2016 through February 2017
	Cleanup and Restoration	March 2017
B	Excavation Vaults and Trench	June through November 2016
	Ducts through Bridge	August through October 2016
	Cleaning and Proving Ducts	December 2016
	Cabling	January through February 2017
	Cable Testing and Commissioning	March through April 2017

Table 2.4-9: Proposed Construction Timetable		
Segment	**Task**	**Estimated Work Dates**
C	Site Preparation and Road Construction	September 2016
	Wire and Structure Removal	October 2016
	Wire Stringing	November 2016
	Cleanup and Restoration	December 2016
D	Site Preparation and Road Construction	October 2016
	Foundation Construction	October through November 2016
	Wire and Structure Removal	February 2017
	Structure Assembly and Erection	January 2017
	Wire Stringing	March through April 2017
	Cleanup and Restoration	May 2017
A, C, D	Overhead Testing and Commissioning	May 2017

2.5 OPERATION AND MAINTENANCE

SDG&E currently operates and maintains similar transmission facilities along all of the Proposed Project alignment except the undergrounded Segment B. SDG&E would continue to regularly inspect, maintain, and repair the new and reconstructed transmission line, power line, and distribution line facilities and substations following completion of Proposed Project construction. Operation and maintenance of the aboveground and underground facilities are described in greater detail below.

2.5.1 Aboveground Facilities (Segments A, C, and D; Substations)

Permanent Work Areas

Permanent work areas would need to be maintained around some structures. Operation and maintenance would use existing work areas and roads, but some additional permanent work areas would need to be maintained to operate the Proposed Project. Table 2.5-1 summarizes new permanent work areas, all of which are within the temporary work areas described in Section 2.4.3 and Table 2.4-2.

Table 2.5-1: New Permanent Work Areas		
Work Area	**Quantity**	**Approximate Area (acres)**
New Structure Operation Work Pads	62	7.758
New Permanent Spur Roads	1	Included in pad work area

New poles would require a permanent maintenance pad that is typically about 50 feet by 75 feet in size. These areas would be maintained flat and free from vegetation. Pole maintenance pads would commonly overlap with those of adjacent poles. Approximately 15 feet of clearance (approximately 700 square feet) would be maintained around certain new transmission poles for maintenance and inspection activities.

Comment [KB42]: Data Need: One part of the PEA states there would be a 50 by 75 foot area (3,750 sf) for permanent maintenance needs, while another says that approximately 700 square feet would be needed. These are very different values. Specify which is correct or why they are different.

A clear working space would also be required to be maintained around certain poles per CPUC General Order 95 and California Public Resources Code 4292. SDG&E would therefore keep the areas clear of shrubs and other obstructions for fire prevention purposes. SDG&E would trim vegetation that grows within 10 horizontal feet of any conductor within the ROW, if that vegetation has a mature height of 15 feet or greater. Herbicides would be used for some vegetation maintenance activities.

Inspections and Maintenance

SDG&E operations and maintenance on Segments A, C, and D would be substantially the same in intensity, frequency, duration, and type as existing operations and maintenance activities, given that there are existing facilities along all of these proposed aboveground segments. Typical activities include routine inspections and preventative maintenance. SDG&E would use helicopters for annual inspections of the overhead facilities; this activity would take about one day. Ground patrols would also be used. Inspections are used to identify corrosion, equipment misalignment, loose fittings, and other common mechanical problems. Typical maintenance would include access repairs, repairs and replacements of equipment, and insulator washing. Helicopters would be used in the case of an outage or service curtailment to patrol power lines in areas with no vehicle access or with rough terrain.

2.5.2 Underground Facilities (Segment B)

Permanent Work Areas

Permanent work areas would need to be maintained around the two cable poles installed on Segment B. The splice vault manholes would also be permanently maintained areas. Table 2.5-2 summarizes new permanent work areas, all of which are within the temporary work areas described in Section 2.4.3 and Table 2.4-2.

Table 2.5-2: New Permanent Work Areas

Work Area	Quantity	Approximate Area (acres)
New Structure Operation Work Pads	2	5
Splice Vault Manhole	20	0.002

Inspections and Maintenance

Inspections of the undergrounded segment would be conducted annually from the ten new vaults. SDG&E would implement traffic control to access the vaults. Inspections would be done visually, as entry into the vaults with energized lines is not permitted. Inspections could also be

performed with infrared, partial discharge monitoring, and other diagnostic instrumentation. Each vault inspection would take less than one day. Maintenance could include cable repair and cable connection repair.

2.5.3 Substations

The affected substations would be operated and maintained as they are presently. Typical maintenance activities include equipment testing, equipment monitoring and repair, and emergency and routine procedures for service continuity and preventative maintenance. A major maintenance inspection would typically take place annually, lasting approximately one week.

Routine vegetation maintenance such as clearing and landscaping would continue to occur at each substation on an as-needed basis for purposes of safety, access, and aesthetics. Vegetation clearing activities would typically involve the presence of one or two small maintenance vehicles and one or more employees to clear or trim vegetation to achieve the minimum necessary working space around the substation facilities.

2.6 APPLICANT PROPOSED MEASURES AND NCCP/HCP OPERATIONAL PROTOCOLS

2.6.1 Applicant Proposed Measures

SDG&E included Project Design Features and Ordinary Construction/Operation Restrictions as well as Applicant Proposed Measures (APMs) in its April 2014 PEA. Both types of environmental commitments are referred to here as APMs. SDG&E proposes to implement these measures during the design, construction, and operation of the Proposed Project to avoid or minimize potential environmental impacts. APMs are considered part of the Proposed Project in the evaluation of environmental impacts. The APMs are presented in Table 2.6-1.

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
Aesthetics	
APM AES-1: Visual Screening	Where staging yards are visible to the public, including the Stonebridge and Torrey Santa Fe Staging Yards, opaque mesh or slats (or equivalent material) will be installed along the fence that will soften the view of the staging yards from public vantage points, such as roads and residences.
APM AES-2: Re-vegetation	When Proposed Project construction has been completed, all temporarily disturbed terrain will be restored, to the extent practical, to approximate preconstruction conditions while maintaining adequately safe work areas for operation and maintenance activities, as needed. Re-vegetation will be used, where appropriate (re-vegetation in certain areas is not possible due to vegetation management requirements related to fire safety) to re-establish a natural appearing landscape and reduce potential visual contrast between disturbed areas and the surrounding landscape. In addition, all construction materials and debris will be removed from the Proposed Project area and recycled or properly disposed of off-site.

Comment [JThomas43]: **Data Need:** APM needs to be updated to reflect verified staging yards.

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
APM AES-3: Cable Pole Screening	Final design of the eastern and western cable poles will consider design measures, such as landscaping installed outside of new perimeter chain-link fencing, decreased pole diameters, or increased setbacks from adjacent roadways, to reduce visibility of each structure.
APM AES-4: Temporary Lighting	Temporary security lighting at staging and storage areas will be directed on site and away from any sensitive receptors.
APM AES-5: Glare	New pole structures are designed utilizing dulled galvanized steel to minimize the potential for visual impacts relating to glare. Non-specular conductors are used to reduce potential glare. New fencing installed as part of the Proposed Project, including fencing around new cable poles, will be a dull, non-reflective finish to reduce potential glare.
Air Quality and Greenhouse Gas Emissions	
APM AIR-1: Dust Control	All unpaved demolition and construction areas shall be wet/ watered at least three times daily during construction, and temporary dust covers shall be used to reduce dust emissions and meet SDAPCD Rule 55 requirements. All construction areas shall be sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable dust control of areas subject to windblown erosion. All loads shall be secured by covering or use of at least 2 feet of freeboard to avoid carryover. All materials transported off-site shall be either sufficiently watered or securely covered. All earthmoving or excavation activities shall be discontinued during periods of winds greater than 25 miles per hour (mph) to prevent excessive amounts of fugitive dust generation.
APM AIR-2: Vehicle and Equipment Exhaust	All equipment shall be properly tuned and maintained in accordance with manufacturer specifications. An Idling Restrictions Program shall be implemented. SDG&E or its contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues shall have their engines turned off after 5 minutes when not in use. Construction activities shall be phased and scheduled to avoid emissions peaks, and equipment use shall be curtailed during second-stage smog alerts. This will also result in a significant decrease in impacts from Diesel Particulate Matter. All areas where construction vehicles are typically parked, staged, or operating shall be visibly posted with signs stating “No idling in excess of 5 minutes.” Catalytic converters shall be installed on all heavy construction equipment, where feasible. To the extent possible, power shall be obtained from power or distribution poles (i.e., from the electrical grid) rather than through the use of large generators on-site. Deliveries shall be scheduled during off-peak traffic periods to reduce trips during the most congested periods of the day, where feasible. SDG&E would encourage carpooling to reduce worker trips where feasible. Construction sites shall be posted with signs providing a contact number for complaints. All complaints shall be addressed in a timely and effective manner.
APM AIR-3: VOC Emissions	Low- and non-VOC containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings shall be used to reduce VOC emissions.
APM AIR-4: Equipment Emission Standards	All equipment will meet a minimum of USEPA Tier 2 emission standards. For the purpose of this evaluation, equipment would be comprised of a mix of 70 percent Tier 2 equipment and 30 percent Tier 3 equipment. All on-road heavy-duty vehicles, off-road construction vehicles, and portable equipment used in the project will comply with CARB’s Airborne Diesel Air Toxic Measures (ATCMs).

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
APM AIR-5: Greenhouse Gases	Equipment and vehicles supporting construction of the Proposed Project would comply with the requirements implemented by CARB to reduce GHG emissions and would be consistent with AB 32's goals. Additionally, SDG&E would implement ongoing standard internal programs and practices that ensure compliance with CARB's SF_6 regulations and maximum emission rates.
Biological Resources	
APM BIO-1: Special-Status Plant Species	Implementation of the following measures will ensure impacts to special-status plant species remain less than significant: • Prior to construction, SDG&E shall retain a qualified biologist to conduct focused, special-status plant surveys during the spring and summer 2014 in all habitats that may support the special-status plant species with a potential to occur in the Proposed Project Survey Area. • Locations of special-status plants shall be identified and inventoried. • The qualified biologist shall supervise construction activities within the vicinity of areas identified as having special-status plant species. • Impacts to special-status plant species shall be avoided to the maximum extent possible by installing fencing or flagging, marking areas to be avoided in construction areas, and limiting work in areas identified as having special-status plant species to periods of time when the plants have set seed and are no longer growing. Where impacts to special-status plant species are unavoidable, the impact shall be quantified and compensated though off-site land preservation, plant salvage, transplantation, or other appropriate methods as determined by the qualified biologist. Alternatively, if the special-status plant species in question is a *SDG&E Subregional NCCP* covered species, mitigation consistent with measures established in the NCCP and discussed in the *SDG&E Subregional NCCP*, above, shall be provided.
APM BIO-2: 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. The Proposed Project is located within the SDG&E Subregional NCCP coverage area. The SDG&E Subregional NCCP includes a Federal Endangered Species Act (ESA) Section 10(A) permit and a California ESA Section 2081 memorandum of understanding (for incidental take) with an Implementation Agreement with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW – formerly the California Department of Fish and Game), respectively, for the management and conservation of multiple species and their associated habitats, as established according to the Federal and State ESAs and California's NCCP Act. The NCCP's Implementing Agreement confirms that the mitigation, compensation, and enhancement obligations contained in the Agreement and the SDG&E Subregional NCCP meet all relevant standards and requirements of the California ESA, the Federal ESA, the NCCP Act, and the Native Plant Protection Act with regard to SDG&E's activities in the Subregional Plan Area. Pursuant to the SDG&E Subregional NCCP, SDG&E will conduct pre-construction studies for all activities occurring off of existing access roads in natural areas. An independent biological consulting firm will survey all Proposed Project impact areas

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
	and prepared a Pre-activity Study Report (PSR) outlining all anticipated impacts related to the Proposed Project. The Proposed Project will include monitoring for all project components, as recommended by the PSR and outlined in the SDG&E Subregional NCCP, as well as other avoidance and minimization measures outlined in the NCCP's Operational Protocols. The PSR will be submitted to the CDFW and USFWS for review. Prior to the commencement of construction, a verification survey will be conducted of the Proposed Project disturbance areas, as required by the SDG&E Subregional NCCP. Biological monitors will be present during construction to assure implementation of the avoidance and minimization measures. If the previously-delineated work areas must be expanded or modified during construction, the monitors will survey the additional impact area to determine if any sensitive resources will be impacted by the proposed activities, to identify avoidance and minimization measures, and to document any additional impacts. Any additional impacts are included in a Post-construction Report (PCR) for purposes of calculating the appropriate mitigation, which generally includes site enhancement or credit withdrawal from the SDG&E mitigation bank. When construction is complete, the biological monitor will conduct a survey of the entire line to determine actual impacts from construction. The PCR will determine how much site enhancement and credit withdrawal from the SDG&E mitigation bank will be required to address impacts from project related activities. These impact and mitigation credit calculations are submitted to the USFWS and the CDFW as part of the NCCP Annual Report pursuant to requirements of the NCCP and the NCCP Implementing Agreement. Specific operating restrictions that are incorporated into the Proposed Project design to comply with the SDG&E Subregional NCCP include the following: • Vehicles would be kept on access roads and limited to 15 miles per hour (Section 7.1.1, 1.). • No wildlife, including rattlesnakes, may be harmed, except to protect life and limb (7.1.1, 2.). • Feeding of wildlife is not allowed (Section 7.1.1, 4.). • No pets are allowed within the ROW (Section 7.1.1, 5.).). • Plant or wildlife species may not be collected for pets or any other reason. (Section 7.1.1, 7). • Littering is not allowed, and no food or waste would be left on the ROW or adjacent properties (Section 7.1.1, 8.). • Measures to prevent or minimize wild fires would be implemented, including exercising care when driving and not parking vehicles where catalytic converters can ignite dry vegetation (Section 7.1.1, 9.). • Field crews shall refer all environmental issues, including wildlife relocation, dead, or sick wildlife, or questions regarding environmental impacts to the Environmental Surveyor. Biologists or experts in wildlife handling may be necessary to assist with wildlife relocations (Section 7.1.1, 10.). • All SDG&E personnel would participate in an environmental training program conducted by SDG&E, with annual updates (Section 7.1.2, 11.). • The Environmental Surveyor shall conduct pre-activity studies for all activities occurring in natural areas, and will complete a proactivity study form including recommendations for review by a biologist and construction monitoring, if appropriate. The form will be provided to

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
	CDFW and USFWS but does not require their approval (Section 7.1.3, 13.). • The Environmental Surveyor shall flag boundaries of habitats to be avoided and, if necessary, the construction work boundaries (Section 7.1.3, 14.). • The Environmental Surveyor must approve of activity prior to working in sensitive areas where disturbance to habitat may be unavoidable (Section 7.1.4, 25.).). • In the event SDG&E identifies a covered species (listed as threatened or endangered by the federal or state) of plant within the temporary work area (10 foot radius) surrounding a power pole, SDG&E would notify the USFWS (for Federal ESA listed plants) and CDFW (for California ESA listed plants) (Section 7.1.4, 28.). • The Environmental Surveyor shall conduct monitoring as recommended in the pre-activity study form (Section 7.1.4, 35.). • Supplies, equipment, or construction excavations where wildlife could hide (e.g., pipes, culverts, pole holes, trenches) shall be inspected prior to moving or working on/in them (Section 7.1.4, 37, and 38.). • Fugitive dust will be controlled by regular watering and speed limits (Section 7.1.4, 39.). • During the nesting season, the presence or absence of nesting species (including raptors) shall be determined by a biologist who would recommend appropriate avoidance and minimization measures (Section 7.1.6, 50). • Maintenance or construction vehicle access through shallow creeks or streams is allowed. However no filling for access purposes in waterways is allowed (Section 7.1.7, 52). • Staging/storage areas for equipment and materials shall be located outside of riparian areas (Section 7.1.7, 53.).
APM BIO-3: SDG&E QCB HCP	SDG&E will implement the SDG&E QCB HCP, which was developed to protect the Quino Checkerspot Butterfly and its habitat through implementation of both general and Quino Checkerspot Butterfly-specific operational protocols that were designed to avoid or minimize take of the species.
Cultural Resources	
AMP CUL-1: Cultural Resources Training	A qualified archaeologist would attend preconstruction meetings, as needed, and a qualified archaeological monitor would monitor activities in the vicinity of all known cultural resources within the Proposed Project area. The requirements for archaeological monitoring would be noted on the construction plans. The archaeologist's duties would include monitoring, evaluation of any finds, analysis of collected materials, and preparation of a monitoring results report conforming to Archaeological Resource Management Reports guidelines.
APM CUL-2: Environmentally Sensitive Areas	Known cultural resources that will be avoided would be demarcated as Environmentally Sensitive Areas. Construction crews would be instructed to avoid disturbance of these areas.
APM CUL-3: Qualified	In the event that cultural resources are discovered, the archaeologist would have the authority to divert or temporarily halt ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist would contact SDG&E's

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
Archeologist	Cultural Resource Specialist and Environmental Project Manager at the time of discovery. If the resource was discovered on MCAS Miramar, the base archaeologist would also be contacted by SDG&E. The archaeologist, in consultation with SDG&E's Cultural Resource Specialist, would determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program would be prepared and carried out to mitigate impacts.
APM CUL-4: Cultural Remains	All collected cultural remains would be cataloged, and permanently curated with an appropriate institution. All artifacts would be analyzed to identify function and chronology as they relate to the history of the area. Faunal material would be identified as to species.
APM CUL-5: Cultural Resources Monitoring	An archaeological monitoring results report (with appropriate graphics), which describes the results, analyses, and conclusions of the monitoring program, would be prepared and submitted to SDG&E's Cultural Resource Specialist and Environmental Project Manager following termination of the program. Any new cultural sites or features encountered would be recorded with the South Central Information (SCIC).
APM CUL-6: Native American Monitoring	Native American monitoring may be implemented if transmission line construction has the potential to impact identified and mapped traditional locations or places. The role of the Native American monitor shall be to represent tribal concerns and communicate with the tribal council. Appropriate representatives will be identified based on the location of the identified traditional location or place.
APM CUL-7: Paleontological Monitoring	A paleontological monitor would work under the direction of a qualified Project paleontologist and would be on site to observe excavation operations that involve the original cutting of previously undisturbed deposits for the eight poles located within paleontologically sensitive formations (i.e., Friars, Mission Valley, Scripps and the Ardath Shale Formations). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.
APM CUL-8: Paleontological Screen-Washing	In the event that fossils are encountered, the paleontological monitor would have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. The paleontologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The paleontologist, in consultation with SDG&E's Cultural Resource Specialist would determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on site. If fossils are discovered, the paleontologist (or paleontological monitor) would recover them along with pertinent stratigraphic data. In most cases, this fossil salvage can be completed in a short period of time. Because of the potential for recovery of small fossil remains, such as isolated mammal teeth, recovery of bulk-sedimentary-matrix samples for off-site wet screening from specific strata may be necessary, as determined in the field. Fossil remains collected during monitoring and salvage would be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections, and a paleontological monitoring report would be written.

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
APM CUL 9: Discovery of Human Remains	If human remains are encountered during the course of construction, SDG&E staff would halt work in the vicinity of the find and would implement the appropriate notification processes as required by law (California Health and Safety Code 7050.5, Public Resource Code 5097.98-99, and NAGPRA).
Geology, Soils, and Mineral Resources	
APM GEO-1: Seismic Shaking	Design and construction of overhead facilities would conform to CPUC General Order 95, industry practice, and SDG&E internal structural design requirements to minimize damage from seismic shaking.
AMP GEO-2: Geotechnical Recommendations	A geotechnical study will be conducted for the Proposed Project under the direction of a California-licensed Geotechnical Engineer or Certified Engineer Geologist, and recommendations identified in the geotechnical report will be carried out.
APM GEO-3: Soil Disturbance	Ground and soil disturbance will be minimized through the use of existing access routes, to the extent feasible. Soil erosion and topsoil loss would be controlled by implementing SDG&E's *BMP Manual* during the construction of the Proposed Project. Additionally, the Proposed Project would comply with the Construction General Permit, which would include the preparation of SWPPP. Topsoil would be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil would be used to reclaim areas of temporary construction disturbance.
Hazards and Hazardous Materials	
APM HAZ-1: 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 • SWPPP
APM HAZ-2: Hazardous Materials	SDG&E shall 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

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
	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 would implement standard operational procedures for the transport, use, storage, and disposal of hazardous materials. This includes, but is not limited to the use of absorbent pads for spill containment, specified locations for construction vehicle refueling, and a daily vehicle inspection schedule designed to identify leaking fuels and/or oils as early as possible.
APM HAZ-3: Compliance Management Program	The construction contractors would implement (in addition to regulatory and SDG&E requirements) their own compliance management programs to ensure that regulatory requirements are adhered to and that worker and public safety are secured.
APM HAZ-4: Herbicide Application	All herbicides utilized during maintenance around transmission and power line structures would follow SDG&E's existing procedures for application of herbicides.
APM HAZ-5: Wildland Fire Prevention and Fire Safety Practices	A project-specific fire prevention plan has been drafted for the Proposed Project consistent with Electric Standard Practice 113.1 and the SDG&E Fire Prevention Plan. Electric Standard Practice 113.1 outlines practices and procedures for SDG&E activities occurring within areas of potential wildland fire threat within SDG&E's service territory. The Proposed Project design includes replacement of wood poles with steel poles, increased conductor spacing to maximize line clearances, installation of steel poles to withstand an extreme wind loading case and known local conditions, and undergrounding of a portion of the power line. These design components of the Proposed Project minimize the fire risk through enhanced safety and reliability of the power line system, particularly during extreme weather conditions. The standard practices in Electrical Standard Practice 113.1 include avoidance and minimization measures to comply with state and local fire ordinances. The project-specific fire plan identifies project specific risk-related activities as well as measures (including tools and procedures) to address said risks.
Hydrology and Water Quality	
APM HYDRO-1: Water Quality	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, operations, and maintenance activities. The primary focus of most BMPs is the reduction and/or elimination of potential water quality impacts during construction of linear projects such as the Proposed Project. The BMPs described within the BMP Manual were derived from several sources including the State of California guidelines as well as the 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. Additionally SDG&E will follow the BMPs in the SDG&E Subregional NCCP.
APM HYDRO-2: Storm Water	Once temporary surface disturbances are complete, areas that would not be subject to additional disturbance will be stabilized to control soil erosion. Disturbed

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
Prevention Program	areas must be stabilized per the project SWPPP.
APM HYDRO-3: Jurisdictional Drainages	To avoid impacts to jurisdictional drainages during road refreshing or reestablishment activities, the following minimization measures would be implemented: • Any excess soil would be spread on site outside of jurisdictional drainages to match existing contours and property compacted or hauled off site. • Graded areas would be stabilized to promote infiltration and reduce run-off potential. • Erosion protection and sediment control BMPs would be implemented in compliance with the General Construction General Permit, Stormwater Pollution Prevention Plan (SWPPP), SDG&E Water Quality Construction BMPs Manual (BMP Manual), and the SDG&E Subregional Natural Community Conservation Program (NCCP). • At designated jurisdictional drainage crossings locations along the access roads, the blade of the smoothing equipment would be lifted 25 feet on either side of the drainage to avoid impacts.
Noise	
APM NOISE-1: Generators	Generator use will be limited to less than 50 horsepower (50 HP) at all staging yards. Any generators used at the staging yard will be located away from noise sensitive areas, and positioned on the property to comply with local noise ordinances.
APM NOISE-2: Mufflers	Functioning mufflers will be maintained on all equipment.
APM NOISE-3: Resident Notification	Residents within 50 feet of proposed construction activities will be notified of the start of construction at least 1 week prior to construction activity in the area.
APM NOISE-4: Helicopter use	Helicopter usage for the Proposed Project would be limited to those hours deemed acceptable for construction activities by the City of San Diego Noise Code (7 a.m. to 7 p.m.) and the City of Poway Noise Code (7 a.m. to 5 p.m.). Helicopter usage at any one location would be very brief as the lines are being strung or during pole removal and installation activities.
APM NOISE-5: Construction Noise	For the few locations where the Proposed Project would exceed the noise ordinances, as discussed previously, SDG&E would meet and confer with the appropriate City to discuss temporarily deviating from the requirements of the Noise Code, as described in the construction noise variance process (see Section 4.10.3.1). Additionally, In the unlikely event that rock blasting is used during construction, a noise and vibration calculation will be prepared and submitted to SDG&E Environmental Programs and Transmission Engineering and Design for review before blasting at each site. The construction contractor will ensure compliance with all relevant local, state, and federal regulations relating to blasting activities, as well as SDG&E's blasting guidelines.
Public Services	
AMP PS-1: Recreation Access	Where construction within existing public parks, preserves, and open space areas would not completely restrict access through these areas, and where necessary,

Table 2.6-1: Applicant Proposed Measures

APM Number	Requirements
	SDG&E will create temporary foot and bicycle paths along with appropriate advanced notice and signage to direct and allow for the pedestrian and bicycle access through each affected park.
AMP PS-2: Public Notification of Construction	SDG&E will provide the public with advance notification of construction activities. Concerns related to dust, noise, and access restrictions with construction activities will be addressed within this notification.
AMP PS-3: Coordination with Recreation Facilities	All construction activities will be coordinated with the authorized officer for each affected park, trail, or recreational facility prior to construction in these areas.
AMP PS-4: Signage	As needed, signs will be posted directing vehicles to alternative park access and parking, if available, in the event construction temporarily affects parking near trailheads.
AMP PS-5: Recreational Facilities Repair	All parks, trails, and recreational facilities that are physically impacted during construction activities and are not directly associated with the new permanent facilities, will be returned to an approximate pre-construction state, while still allowing for SDG&E to safely operate and maintain the facilities, following the completion of the Proposed Project. SDG&E will replace or repair any damaged or removed public equipment, facilities, and infrastructure in a timely manner.
APM PS-6: Theft Prevention	At the completion of each work day, construction crews will lock up and secure each worksite to prevent theft or vandalism associated with work equipment or supplies. SDG&E will also implement its project-specific fire plan, which will include private fire patrol monitoring as appropriate. Furthermore, SDG&E may have private security personnel monitoring construction sites where materials are stored, which may include the substations, staging yards and ROW.
Recreation	
APM REC-1: Coordination Measures with Parks and Preservers	Appropriate safety measures will be implemented where trails and parks are located in close proximity to construction areas to provide a safety buffer between recreational users and construction areas. Construction schedule and activities will be coordinated with the authorized officer for each affected recreation area.
APM REC-2: Temporary Trail Detours	Where feasible, temporary detours will be provided for trail users. Signs will be posted to direct trail users to temporary trail detours.
Transportation and Traffic	
APM TR -1: Emergency Access	SDG&E will coordinate with local emergency response agencies during all construction within Carmel Valley Road. Coordination with local emergency response agencies (in addition to project design features and ordinary construction/operating restrictions) would ensure that impacts to emergency access are less than significant.
APM TR-2: Helicopter Use	Any helicopter use will comply with all relevant usage restrictions including those imposed by the FAA and Caltrans. SDG&E and/or the construction contractor will coordinate with local air traffic control and comply with applicable FAA regulations regarding helicopter use to prevent conflict with air traffic generated by local airports. Helicopter usage will conform to acceptable hours for construction

Table 2.6-1: Applicant Proposed Measures	
APM Number	**Requirements**
	activities, as outlined within the applicable local noise codes and ordinances. As required, a Congested Air Plan will be prepared, based upon actual helicopter usage, pursuant to FAA regulations (14 CFR 137.51).
APM TR-3: Standard 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 and Caltrans.
APM TR-4: Encroachment Permits	SDG&E will obtain the required encroachment permits from the City of San Diego for crossings at city streets and Caltrans for work near I-15 and Hwy 56, and will ensure that proper safety measures are in place while construction work is occurring near public roadways. These safety measures include flagging, proper signage, and orange cones to alert the public to construction activities near the roadway.
Cumulative Impacts	
APM CUM-1: SDG&E Project Coordination	If any SDG&E system upgrade projects develop the potential to overlap with the Proposed Project, coordination of construction will be undergone to reduce cumulative impacts and minimize overall disruption to adjoining land uses.
APM CUM-2: CIP Coordination	If any City of San Diego CIP projects have the potential to directly conflict with Proposed Project construction activities, SDG&E shall coordinate with the City of San Diego CIP to ensure construction activities can be coordinated such that construction would not occur concurrently at the same location.

2.7 ELECTRIC AND MAGNETIC FIELDS

2.7.1 Overview

Recognizing that there is a great deal of public interest and concern regarding potential health effects from exposure to electric and magnetic fields (EMFs) from power lines, this section provides information regarding EMF associated with electric utility facilities and the potential EMF resulting from the Proposed Project. The CPUC does not consider EMF to be an environmental issue in the context of CEQA. This is because there is no agreement among scientists that EMF creates a potential health risk and because CEQA does not define or adopt standards for defining any potential risk from EMF. As a result, the following EMF information is presented for the benefit of the public and decision makers, but is not considered within the context of CEQA.

Other concerns related to power line fields include nuisance (corona and audible noise; radio, television, electronic equipment interference) and potential health risk impacts (induced currents and shock hazards and effects on cardiac pacemakers). These field issues are addressed in Section 4.13: Electrical Interference and Safety. The effects of audible corona noise are evaluated in Section 4.8: Noise. Environmental impacts are defined for these issues, and mitigation measures are recommended.

2.7.2 Defining EMF

Electric and magnetic fields are separate phenomena and occur both naturally and as a result of human activity across a broad electrical spectrum. Naturally occurring electric and magnetic fields are caused by the weather and the Earth's geomagnetic field. The fields caused by human activity result from technological application of the electromagnetic spectrum for uses such as communications, appliances, and the generation, transmission, and local distribution of electricity.

The frequency of a power line is determined by the rate at which electric and magnetic fields change their direction each second. For power lines in the United States, the frequency of change is 60 times per second and is defined as 60 Hertz (Hz) power. In Europe and many other countries, the frequency of electric power is 50 Hz. Radio and communication waves operate at much higher frequencies: 500,000 Hz to 1,000,000,000 Hz. The information presented in this document is limited to the EMF from power lines operating at frequencies of 50 or 60 Hz.

Electric power flows across transmission systems from generating sources to serve electrical loads within the community. The apparent power flowing over a transmission line is determined by the transmission line's voltage and the current. The higher the voltage level of the transmission line, the lower the amount of current needed to deliver the same amount of power. For example, a 115-kV transmission line with 200 amps of current will transmit approximately 40,000 kilowatts (kW), and a 230-kV transmission line requires only 100 amps of current to deliver the same 40,000 kW.

Electric Fields

Electric fields from power lines are created whenever the lines are energized, with the strength of the field dependent directly on the voltage of the line creating it. Electric field strength is typically described in terms of kilovolts per meter (kV/m). Electric field strength attenuates (reduces) rapidly as the distance from the source increases. Electric fields are reduced at many receptors because they are effectively shielded by most objects or materials such as trees or houses.

Unlike magnetic fields, which penetrate almost everything and are unaffected by buildings, trees, and other obstacles, electric fields are distorted by any object that is within the electric field including the human body. Even trying to measure an electric field with electronic instruments is difficult because the devices themselves will alter the levels recorded. Determining an individual's exposure to electric fields requires the understanding of many variables, one of which is the electric field itself, with others including how effectively the person is grounded and their body surface area within the electric field.

Electric fields in the vicinity of power lines can cause the same phenomena as the static electricity experienced on a dry winter day, or with clothing just removed from a clothes dryer, and may result in small nuisance electric discharges when touching long metal fences, pipelines, or large vehicles. An acknowledged potential impact to public health from electric transmission lines is the hazard of electric shock: electric shocks from transmission lines are generally the result of accidental or unintentional contact by the public with the energized

wires. The issue of induced currents and shock hazards is addressed separately in Sections 4.11 and 4.13.

Magnetic Fields

Magnetic fields from power lines are created whenever current flows through power lines at any voltage. The strength of the field is directly dependent on the current in the line. Magnetic field strength is typically measured in milliGauss (mG). Similar to electric fields, magnetic field strength attenuates rapidly with distance from the source. However, unlike electric fields, magnetic fields are not easily shielded by objects or materials. The nature of a magnetic field can be illustrated by considering a household appliance. When the appliance is energized by being plugged into an outlet but not turned on, no current flows through it. Under such circumstances, an electric field is generated around the cord and appliance, but no magnetic field is present. If the appliance is switched on, the electric field would still be present and a magnetic field would also be created. The electric field strength is directly related to the magnitude of the voltage from the outlet and the magnetic field strength is directly related to the magnitude of the current flowing in the cord and appliance.

2.7.3 EMF in the Proposed Project Area

The Proposed Project consists of the installation of about 16.7 miles of new 230-kV transmission line. Approximately 13.9 miles of the proposed line would be installed overhead and approximately 2.8 miles would be underground. The project alignment includes developed areas and open space lands. Public exposure to EMFs in developed areas is more widespread and encompasses a very broad range of field intensities and durations.

2.7.4 Scientific Background and Regulations Applicable to EMF

EMF Research

For more than 20 years, questions have been asked regarding the potential effects within the environment of EMFs from power lines, and research has been conducted to provide some basis for response. Earlier studies focused primarily on interactions with the electric fields from power lines. In the late 1970s, the subject of magnetic field interactions began to receive additional public attention and research levels have increased. A substantial amount of research investigating both electric and magnetic fields has been conducted over the past several decades; however, much of the body of national and international research regarding EMF and public health risks remains contradictory or inconclusive.

Extremely low frequency (ELF) fields are known to interact with tissues by inducing electric fields and currents in these fields. However, the electric currents induced by ELF fields

commonly found in our environment are normally much lower than the strongest electric currents naturally occurring in the body such as those that control the beating of the heart.[1]

Research related to EMF can be grouped into three general categories: cellular level studies, animal and human experiments, and epidemiological studies. Epidemiological studies have provided mixed results, with some studies showing an apparent relationship between magnetic fields and health effects while other similar studies do not. Laboratory studies and studies investigating a possible mechanism for health effects (mechanistic studies) provide little or no evidence to support this link.

Since 1979, public interest and concern specifically regarding magnetic fields from power lines has increased. This increase has generally been attributed to publication of the results of a single epidemiological study (Wertheimer and Leeper 1979). This study observed an association between the wiring configuration on electric power lines outside of homes in Denver and the incidence of childhood cancer. Following publication of the Wertheimer and Leeper study, many epidemiological, laboratory, and animal studies regarding EMF have been conducted.

Research on ambient magnetic fields in homes and buildings in several western states found average magnetic field levels within most rooms to be approximately 1 mG, while in a room with appliances present, the measured values ranged from 9 to 20 mG (Severson et al. 1988; Silva 1988). Immediately adjacent to appliances (within 12 inches), field values are much higher.

Methods to Reduce EMF

EMF levels from transmission lines can be reduced in three primary ways: shielding, field cancellation, or increasing the distance from the source. Shielding, which reduces exposure to electric fields, can be actively accomplished by placing trees or other physical barriers along the transmission line ROW. Shielding also results from existing structures the public may use or occupy along the line. Since electric fields can be blocked by most materials, shielding is effective for the electric fields but is not effective for magnetic fields.

Magnetic fields can be reduced either by cancellation or by increasing distance from the source. Cancellation is achieved in two ways. A transmission line circuit consists of three "phases": three separate wires (conductors) on a transmission tower. The configuration of these three conductors can reduce magnetic fields. First, when the configuration places the three conductors closer together, the interference, or cancellation, of the fields from each wire is enhanced. This technique has practical limitations because of the potential for short circuits if the wires are placed too close together. There are also worker safety issues to consider if spacing is reduced. Second, in instances where there are two circuits (more than three-phase wires), such as in portions of the Proposed Project cancellation can be accomplished by arranging phase

[1] The power frequencies (50/60 Hz) are part of the ELF (3 Hz to 300 Hz) bandwidth.

wires from the different circuits near each other. In underground lines, the three phases are typically much closer together than in overhead lines because the cables are insulated (coated).

The distance between the source of fields and the public can be increased by either placing the wires higher aboveground, burying underground cables deeper, or by increasing the width of the ROW. For transmission lines, these methods can prove effective in reducing fields because the reduction of the field strength drops rapidly with distance.

Scientific Panel Reviews

Numerous panels of expert scientists have convened to review the data relevant to the question of whether exposure to power-frequency EMF is associated with adverse health effects. These evaluations have been conducted in order to advise governmental agencies or professional standard-setting groups. These panels of scientists first evaluate the available studies individually, not only to determine what specific information they can offer, but also in terms of the validity of their experimental design, methods of data collection, analysis, and suitability of the authors' conclusions to the nature and quality of the data presented. Subsequently, the individual studies, with their previously identified strengths and weaknesses, are evaluated collectively in an effort to identify whether there is a consistent pattern or trend in the data that would lead to a determination of possible or probable hazards to human health resulting from exposure to these fields.

These reviews include those prepared by international agencies such as the World Health Organization (WHO 1984, 1987, 2001, and 2007) and the international Non-Ionizing Radiation Committee of the International Radiation Protection Association (IRPA/INIRC 1990) as well as governmental agencies of a number of countries, such as the U.S. EPA, the National Radiological Protection Board of the United Kingdom, the Health Council of the Netherlands, and the French and Danish Ministries of Health.

As noted below these scientific panels have varied conclusions on the strength of the scientific evidence suggesting that power frequency EMF exposures pose any health risk.

In May 1999 the National Institute of Environmental Health Sciences (NIEHS) submitted to Congress its report titled, Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, containing the following conclusion regarding EMF and health effects:

> Using criteria developed by the International Agency for Research on Cancer (IARC), none of the Working Group considered the evidence strong enough to label ELF-EMF exposure as a known human carcinogen or probable human carcinogen. However, a majority of the members of this Working Group concluded that exposure to power-line frequency ELF-EMF is a possible carcinogen.

In June 2001, a scientific working group of IARC (an agency of WHO) reviewed studies related to the carcinogenicity of EMF. Using standard IARC classification, magnetic fields were classified as "possibly carcinogenic to humans" based on epidemiological studies. "Possibly carcinogenic to humans" is a classification used to denote an agent for which there is limited

evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals. Other agents identified as "possibly carcinogenic to humans" include gasoline exhaust, styrene, welding fumes, and coffee (WHO 2001).

On behalf of the CPUC, the California Department of Health Services (DHS) completed a comprehensive review of existing studies related to EMF from power lines and potential health risks. This risk evaluation was undertaken by three staff scientists with the DHS. Each of these scientists is identified in the review results as an epidemiologist, and their work took place from 2000 to 2002. The results of this review titled, An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations, and Appliances, were published in June 2002. The conclusions contained in the executive summary are provided below:

- To one degree or another, all three of the DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.
- They strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.
- They strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.
- To one degree or another they are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, depression, or symptoms attributed by some to sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide.
- For adult leukemia, two of the scientists are "close to the dividing line between believing or not believing" and one was "prone to believe" that EMFs cause some degree of increased risk.

The report indicates that the DHS scientists are more inclined to believe that EMF exposure increased the risk of the above health problems than the majority of the members of scientific committees that have previously convened to evaluate the scientific literature. With regard to why the DHS review's conclusions differ from those of other recent reviews, the report states:

> The three DHS scientists thought there were reasons why animal and test tube experiments might have failed to pick up a mechanism or a health problem; hence, the absence of much support from such animal and test tube studies did not reduce their confidence much or lead them to strongly distrust epidemiological evidence from statistical studies in human populations. They therefore had more faith in the quality of the epidemiological studies in human populations and hence gave more credence to them.

While the results of the DHS report indicate these scientists believe that EMF can cause some degree of increased risk for certain health problems, the report did not quantify the degree of risk or make any specific recommendations to the CPUC.

In addition to the uncertainty regarding the level of health risk posed by EMF, individual studies and scientific panels have not been able to determine or reach consensus regarding what level of magnetic field exposure might constitute a health risk. In some early epidemiological studies, increased health risks were discussed for daily time-weighted average field levels greater than 2 mG. However, the IARC scientific working group indicated that studies with average magnetic field levels of 3 to 4 mG played a pivotal role in their classification of EMF as a possible carcinogen.

The 2007 WHO [Environmental Health Criteria (EHC) 238] report concluded that:

- Evidence for a link between Extremely Low Frequency (50 to 60 Hz) magnetic fields and health risks is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. However, "…virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status…the evidence is not strong enough to be considered causal but sufficiently strong to remain a concern."
- "For other diseases, there is inadequate or no evidence of health effects at low exposure levels."

2.7.5 Policies, Standards, and Regulations

A number of counties, states, and local governments have adopted or considered regulations or policies related to EMF exposure. The reasons for these actions have been varied; in general, however, the actions can be attributed to addressing public reaction to and perception of EMF as opposed to responding to the findings of any specific scientific research. Following is a brief summary of the guidelines and regulatory activity regarding EMF.

International Guidelines

The International Radiation Protection Association, in cooperation with the World Health Organization, has published recommended guidelines (ICNIRP 2010) for electric and magnetic field exposures. For the general public, the limits are 5 kV/m for electric fields and 2,000 mG for magnetic fields. Neither of these organizations has any governmental authority nor recognized jurisdiction to enforce these guidelines. However, because they were developed by a broad base of scientists, these guidelines have been given merit and are considered by utilities and regulators when reviewing EMF levels from electric power lines.

National Guidelines

Although the U.S. EPA has conducted investigations into EMF related to power lines and health risks, no national standards have been established. There have been a number of studies sponsored by the U.S. EPA, the Electric Power Research Institute (EPRI), and other institutions. Several bills addressing EMF have been introduced at the congressional level and have provided funding for research; however, no bill has been enacted that would regulate EMF levels.

The 1999 NIEHS report to Congress suggested that the evidence supporting EMF exposure as a health hazard was insufficient to warrant aggressive regulatory actions. The report did suggest passive measures to educate the public and regulators on means aimed at reducing exposures. NIEHS also suggested the power industry continue its practice of siting lines to reduce public exposure to EMF and to explore ways to reduce the creation of magnetic fields around lines.

State Guidelines

Several states have adopted limits for electric field strength within transmission line ROWs. Florida and New York are the only states that currently limit the intensity of magnetic fields from transmission lines. These regulations include limits within the ROW as well as at the edge of the ROW and cover a broad range of values. The magnetic field limits were based on an objective of preventing field levels from increasing beyond levels currently experienced by the public and are not based upon any link between scientific data and health risks (Morgan 1991).

Elsewhere in the United States, several agencies and municipalities have taken action regarding EMF policies. These actions have been varied and include requirements that the fields be considered in the siting of new facilities. The manner in which EMF is considered has taken several forms. In a few instances, a concept referred to as "prudent avoidance" has been formally adopted. Prudent avoidance, a concept proposed by Dr. Granger Morgan of Carnegie-Mellon University, is defined as ". . . limiting exposures which can be avoided with small investments of money and effort" (Morgan 1991). Some municipalities or regulating agencies have proposed limitations on field strength, requirements for siting of lines away from residences and schools, and, in some instances, moratoria on the construction of new transmission lines. The origin of these individual actions has been varied, with some initiated by regulators at the time of new transmission line proposals within their community, and some by public grassroots efforts.

California Department of Education's (CDE) Standards for Siting New Schools Adjacent to Electric Power Lines Rated 50 kV and Above

The California Department of Education (CDE) evaluates potential school sites under a range of criteria, including environmental and safety issues. There are no EMF guidelines that apply to existing school sites; this information is presented to demonstrate the range of existing guidelines that address EMF. Exposures to power-frequency EMF are one of the criteria. CDE has established "setback" limits for locating any part of a school site property line near the edge of easements for any electrical power lines rated 50 kV and above.

The setbacks from overhead transmission line easements are:

- 100 feet for lines from 50 to 133 kV
- 150 feet for lines from 220 to 230 kV
- 350 feet for lines from 500 to 550 kV

The setbacks from underground transmission line easements are:

- 25.0 feet for lines from 50 to 133 kV (interpreted by CDE up to 200 kV)
- 37.5 feet for lines from 220 to 230 kV

- 87.5 feet for lines from 500 to 550 kV

School districts that have sites that do not meet the California Department of Education setbacks may still obtain construction approval from the State by submitting an EMF mitigation plan. The mitigation plan should consider possible reductions of EMF from all potential sources, including power lines, internal wiring, office equipment, and mechanical equipment.

CPUC Guidelines

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures or regulations.

Following input from interested parties the CPUC implemented a decision (D.93-11-013) that requires that utilities use "low-cost or no-cost" mitigation measures for facilities requiring certification under General Order 131-D.4 The decision directed the utilities to use a 4 percent benchmark on the low-cost mitigation. This decision also implemented a number of EMF measurement, research, and education programs, and provided the direction that led to the preparation of the DHS study described above. The CPUC did not adopt any specific numerical limits or regulation on EMF levels related to electric power facilities.

In Decision D.93-11-013, the CPUC addressed mitigation of EMF of utility facilities and implemented the following recommendations:

- No-cost and low-cost steps to reduce EMF levels
- Workshops to develop EMF design guidelines
- Uniform residential and workplace programs
- Stakeholder and public involvement
- A four-year education program
- A four-year non-experimental and administrative research program
- An authorization of federal experimental research conducted under the National Energy Policy Act of 1992.

Most recently the CPUC issued Decision D.06-01-042, on January 26, 2006, affirming the low-cost/no cost policy to mitigate EMF exposure from new utility transmission and substation projects. This decision also adopted rules and policies to improve utility design guidelines for reducing EMF. The CPUC stated, "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences." At this time, the CPUC has not implemented a general requirement that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure and has not adopted any specific limits or regulation on EMF levels related to electric power facilities. Mitigation measures may be determined on a project-by-project basis by the CPUC.

2.7.6 EMF Data Applicable to the Proposed Project

The Proposed Project includes addition of a 230-kV transmission line between Sycamore Canyon Substation and Peñasquitos Substation. The magnetic field levels along the ROW from existing transmission lines and the Proposed Project can be modeled. The values calculated in an EMF model represent the magnetic field at just one snapshot in time. The current flowing over transmission lines continuously vary, both over the course of a day, as well as over the decades the transmission line will be in service. Since the amount of electricity usage in the community varies over the course of the day, depending upon the use of appliances, lighting, and other sources, the current flowing on the transmission line and the associated magnetic field varies. The periods during the day when the highest power use occurs are referred to as "daily peaks. " In addition, the daily peaks will vary seasonally and in southern California the highest daily peaks occur during the summer when air conditioning usage is at its highest. Further, over the years as communities and electric consumption grow the magnitude of daily and seasonal peaks will also increase over time.

As noted, the magnetic field information for the project is not based on field measurement; rather it is based on modeling and does not predict actual field levels. Magnetic field modeling allows for comparison of magnetic fields in the existing environment and from the Proposed Project as well as evaluating the effectiveness of various magnetic field reduction measures. For the Sycamore to Peñasquitos 230-kV transmission line project SDG&E modeled magnetic fields based upon projected high usage currents for a 2017 heavy summer case. The calculated existing EMF and proposed EMF levels along segments A, B, C, and D of the Proposed Project are presented in Table 2.7-1. The EMF values are presented in mG as measured at the edge of the ROW. These calculations also reflect implementation of the proposed low- and no-cost mitigation measures to reduce magnetic fields (see Section 2.7.7).

Table 2.7-1: Existing and Proposed EMF by Transmission Line Segment

Line Segment	Existing (mG)	Proposed (mG)	Change (mG)
Segment A West		48.9	
Segment A East		46.5	
Segment B North		0.1	
Segment B South		0.3	
Segment C West		122.3	
Segment C East		91	
Segment D North		9.5	
Segment D South		135.9	

SDG&E EMF Plan

Comment [KB44]: Data Need: Need existing EMF data from SDG&E to be able to quantify the change.

2.7.7 SDG&E's Proposed EMF Mitigation

SDG&E reviewed all portions of the power lines and transmission lines in the scope of the Proposed Project for implementation of magnetic field reduction measures. SDG&E would implement low- and no-cost measures to reduce magnetic field levels for the Proposed Project using the 4 percent CPUC benchmark and SDG&E's *EMF Design Guidelines for Electrical Facilities* filed with the CPUC in compliance with CPUC Decisions 93-11-013 and 06-01-042. SDG&E has described these measures in the Field Management Plan it submitted as part of its application for a Certificate of Public Convenience and Necessity (CPCN) enclosed in Appendix X. The measures are summarized in Table 2.7-2. SDG&E also considered several other measures but rejected them for various reasons. Table 2.7-3 describes the rejected measures and the rational for their rejection.

If the Proposed Project or an alternative is approved, the CPUC would monitor implementation of the measures included in SDG&E's Final Field Management Plan. These measures would be included in the Mitigation Monitoring and Compliance Reporting Program (MMCRP).

Table 2.7-2: Low- and No-Cost Measures Identified for the Proposed Project

Project Component(s)	Proposed Low- and No-Cost Measures
Segments A and D where new overhead poles would be installed	Use taller soldiered pole locations relative to existing structures to increase the height of the conductor from the ground and therefore reduce EMF at ground level.
Segments B and C	Reverse phase on one set of wires in Segment B to reduce EMF in the ROW. Reverse phase TL 23004 when bundling TL 23004 and TL 23001 in Segment C to reduce EMF in the ROW.

Comment [KB45]: Data Need: Page 7 and Page 8 each contain a measure for "increasing structure height" The measure on Page 7 is indicated as adopted, while the measure on Page 8 is indicated as not adopted. The measures seem to be the same (e.g., 41 feet sag on Segment D on Page 7 and a 40-feet sage on Page 8), while the analysis of EMF reductions are different. Please explain why this is the case or, if the analysis is incorrect, please provide a corrected analysis of the reduction measures.

Table 2.7-3: Low- and No-Cost Measures Rejected for the Proposed Project

Project Component(s)	Low- or No-Cost Measure Considered	Reason for Rejection
All segments	Locate power lines closer to center of the utility corridor to the extent possible.	**Segments A and D:** New steel poles in Segment A and Segment D cannot be moved closer to the center of the easement because of separation requirements with other tie lines. **Segment B:** Segment B is underground and by design is located away from the nearby daycare center. **Segment C:** Segment C is built on existing structures that are already as close to the center of the easement as possible.
All segments	Reduce conductor (phase) spacing.	**Segment A, B, and D:** Conductor on Segment A would be spaced per *SDG&E Electric Transmission Standards*, which provides optimum magnetic field reduction at the edge of the ROW. **Segment C:** The existing transmission lines would remain on existing structures with existing configurations; modification to the existing phase spacing is out of scope of the Proposed Project.
Segments A and D	Phase circuits to reduce magnetic fields	**Segments A and D:** Modeling demonstrated that the proposed phasing of the Proposed Project resulted in the lowest milligauss values throughout the corridor. Changing the phasing of the existing circuits could inadvertently increase EMF in areas that are out of scope of the Proposed Project.
Segments A, C, and D	Place overhead line underground	**Segments A, C, and D:** A low-cost measure totaling 4 percent of the project cost would allow for undergrounding approximately 0.37 miles of the Proposed Project. The *EMF Design Guidelines for Electrical Facilities* contains prioritized land uses to determine how mitigation costs should be applied. Schools are the highest priority; therefore, the highest priority segment for undergrounding was identified as Segment A, where there are five schools within or adjacent to a 1,000-foot buffer from the project alignment. These schools are located along a 4-mile length of Segment A. This portion of Segment A is transected by Ted Williams Parkway and Interstate 15. Further, the terrain is varying, which makes undergrounding more expensive if not infeasible. It would not be feasible to underground the whole of this 4-mile section given the low-cost measure standard of 4 percent of project cost. Alternately, undergrounding only 0.37 miles of the 4-mile segment would not provide equitable mitigation for all schools.
Segment B	Increase trench depth.	**Segment B:** Increasing the depth of Segment B would degrade line rating of the Proposed Project and would result in the Proposed Project not meeting its required ampacity rating.

2.8 REQUIRED PERMITS AND APPROVALS

Required permits and approvals for the Proposed Project are presented in Table 2.8-1.

Table 2.8-1: Summary of Permits Requirements

Permits and Other Requirements	Agency	Jurisdiction/Purpose
Federal		
NEPA Compliance, Tier 1 Approval	MCAS Miramar/Committee for Land and Airspace Management Policy	Construction on MCAS Miramar
Endangered Species Act Consultation	U.S. Fish and Wildlife Service	Impacts to federally listed species during installation of new facilities
Clean Water Act Section 404	U.S. Army Corps of Engineers	Impacts to Waters of the United States
Lighting and Aerial Marking	FAA and MCAS Miramar	Construction of overhead materials potentially requiring aerial marking
Congested Area Plan	FAA	Use of helicopters over congested areas
State		
CPCN	CPUC	Overall project approval and CEQA review
National Pollution Discharge Elimination System (NPDES)—Construction General Permit and Implementation of a Project-specific SWPPP	State Water Resources Control Board	Stormwater discharges associated with construction activities disturbing more than 1 acre of land
Section 401 Water Quality Certification	Regional Water Quality Control Board	Certification that the project is consistent with state water quality standards
California Endangered Species Act Consultation	CDFW	Impacts to listed species during installation of new facilities
Section 1602 of the California Fish and Game Code	CDFW	Impacts to Waters of the State of California
Encroachment Permit	Caltrans	Construction, operation, and maintenance within, under, or over state highway ROW
Local		
Encroachment Permit and Traffic Control Plan(s)	City of San Diego	Construction within, under, or over city roadways (Carmel Valley Road)
Coastal Development Permit	City of San Diego	Construction of facilities within California Coastal Zone

Table 2.8-1: Summary of Permits Requirements		
Permits and Other Requirements	**Agency**	**Jurisdiction/Purpose**
Temporary Use Permit	City of Poway	Use of Stowe Staging Yard

2.9 REFERENCES – PROJECT DESCRIPTION

ICNIRP (International Commission on Non-Ionizing Radiation Protection). 2010. ICNIRP Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz--100 kHz)

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