

Southern California Edison
Moorpark-Newbury A.13-10-021

DATA REQUEST SET A1310021 Moorpark-Newbury-ED-SCE-03

To: ENERGY DIVISION
Prepared by: Warnetta Logan
Title: Project Manager
Dated: 10/20/2014

Question Q.07:

This request is directed at determining the feasibility of interconnecting the CAMGEN unit to the Moorpark system and identifying any “fatal flaws” of such a connection rather than conducting a detailed engineering study of any particular proposal.

Provide a system single-line diagram indicating how the CAMGEN unit may be interconnected into the Moorpark system. Identify ROW that is available for this connection and where it is not or may not be available. A map or maps of the area clearly identifying the generator site, potential interconnection points, and known ROW restrictions would be helpful. Describe all known issues and currently known potential problems with achieving this interconnection. Provide details as to each of the issues/problems stated. It is understood that the generator is presently connected to the Santa Clara system; describe any impacts (including the severity of each) that would occur to the Santa Clara system if the power generated by the CAMGEN unit were to be transferred to the Moorpark system.

Response to Question Q.07:

To address the specific information requested in the question, SCE has broken down the question into the following components:

- (a) Provide a system single-line diagram indicating how the CAMGEN unit may be interconnected into the Moorpark system.
- (b) Identify ROW that is available for this connection and where it is not or may not be available.
- (c) A map or maps of the area clearly identifying the generator site, potential interconnection points, and known ROW restrictions would be helpful.
- (d) Describe all known issues and currently known potential problems with achieving this interconnection.
- (e) Provide details as to each of the issues/problems stated. It is understood that the generator is presently connected to the Santa Clara system; and
- (f) Describe any impacts (including the severity of each) that would occur to the Santa Clara system if the power generated by the CAMGEN unit were to be transferred to the Moorpark

system.

The response below directly answers the above specific question. However, please note that additional information would also have to be developed in order to capture the entire scope of work associated with a reconnection of Camgen directly to the Moorpark System, including but not limited to work associated with the removal of the infrastructure currently in place as part of the partially constructed Moorpark-Newbury 66 kV Subtransmission Line Project ("Proposed Project"). Some of that information was included in SCE's Proponent's Environmental Assessment for the Proposed Project, but additional details would have to be developed to provide a complete picture of all reasonable activities and impacts associated with the Camgen reconnection to the Moorpark System. The primary known issues and potential problems arise from the fact that Camgen's future designation as a dependable generator is uncertain based on the upcoming 2018 contract expiration. Please see below for the details regarding the feasibility of the conceptual interconnection:

(a) Please refer to the attachment titled "CONFIDENTIAL-ATTACHMENT -Moorpark-Newbury-2031 Forecast Base Case.pdf" for a system single-line diagram indicating the Camgen unit interconnected to the Moorpark System.

(b) There is an existing 16 kV distribution line coming out of Camgen that would need to be overbuilt and SCE would need to acquire a transmission easement from the east side of Camgen that would follow the existing distribution line, extending south for approximately 0.29 miles until the route reaches a SCE fee owned parcel where the line would continue.

(c) Please see attached map identifying the location of the generator and a conceptual Camgen reconnection route. The existing distribution easement is for distribution purposes only; therefore, a new 25-foot transmission easement would need to be acquired from the University. The potential connection point would begin at a pole outside of Camgen Substation. The conceptual route would follow the distribution line south to Potrero Road. The line would continue heading south, crossing Potrero Road, until it reaches the Moorpark-Ormond Beach ROW. From there it would parallel the Moorpark-Ormond Beach 220 kV Transmission Line to the east. The conceptual route would potentially connect into the existing idle section of the Newbury-Thousand Oaks 66 kV Subtransmission Line.

(d) Known Issues and Currently Known Potential Problems:

- **Extension of Power Purchase Agreement:**

- § The assumption that power could be provided from the Camgen generator to the Moorpark System depends on the existence of an ongoing obligation for Camgen to supply that power to the CAISO grid. Camgen is currently obligated to supply power to SCE only through April 2018, and anything further would have to be pursuant to either an extension of the existing power purchase agreement or execution of a new such agreement between the operator of Camgen and an off-taker.

- **Potential Infrastructure Upgrades Related to the Disconnection of Camgen from the Santa Clara System and the Reconnection of Camgen to the**

Moorpark System:

§ Substations

- Electrical system upgrades, including replacement of electronic equipment, reprogramming of equipment, and testing of substation equipment would be required at Camgen, Newbury and Thousand Oaks Substations. In addition, studies such as short-circuit-duty analyses may be required to determine if other equipment such as circuit breakers may require replacement at other substations.

§ Telecommunications

- Any of the aforementioned upgrades could result in the need to upgrade and/or replace telecommunications infrastructure at Camgen, Newbury, Moorpark and Thousand Oaks Substations. In addition, telecommunications upgrades could potentially be required between the aforementioned substations and elsewhere on SCE's telecommunications network. These upgrades could potentially include new telecommunication cable; telecommunications equipment; and ancillary infrastructure such as pole replacements, underground ducts and structures, etc.

§ Subtransmission

- Studies would be required to adequately evaluate all subtransmission infrastructure concepts, such as overbuilding the existing 16 kV distribution line between Camgen and the 220 kV ROW with larger subtransmission poles and replacing poles at the connection points for the new line. SCE would also need to study the adequacy of the existing infrastructure (including poles, conductors, and associated equipment) of the currently idle existing 66 kV segments related to the reconnection of Camgen.
- Pole heights of the new subtransmission poles may trigger an FAA review and the potential to add marking and/or lighting due to the proximity of the potential 66 kV line route near Camgen to Naval Base, Ventura County and the Camarillo Airport.

· **Distribution/Planning- Long Term Reliability:**

SCE system planners annually review a generator's past performance of generation output and reliability as well as the expiration date of the generator's current contract as a part of a determination of whether a generator is considered "dependable" or not. When a generator's contract expiration date approaches and the absence of the generator's output would result in an SCE system criteria violation, SCE must initiate a solution to be completed in sufficient time such that were the contract to expire and is not renewed or another sufficient contract be executed, an SCE solution would be in-service to address the criteria violation.

The primary issue with the scenario of reconnecting Camgen to the Moorpark

System is that SCE does not consider Camgen to be a long-term reliable substitute for the Proposed Project. There are several reasons for this. First, it is unknown whether or not Camgen will obtain another power delivery contract with SCE or another off-taker, and even if it does, the potential contractual obligations are unknown. Accordingly, SCE has no guarantee that the generation output Camgen would be obligated to produce would be sufficient to meet SCE's needs that otherwise would be remedied by the Proposed Project. If a future situation were to develop where Camgen might find it economically beneficial to cease generating power or significantly reduce its output, SCE would be left without the resources to satisfy the peak electrical demand that is forecasted to develop in 2021 on the Moorpark-Newbury-Pharmacy 66 kV Subtransmission Line. In such a scenario, SCE's only immediate remedy would be legal and financial; its electrical customers in and around the area served by Newbury Substation via the Moorpark-Newbury-Pharmacy 66 kV Subtransmission Line would be faced with electrical service interruptions until SCE could construct a satisfactory infrastructure remedy. That remedy would most likely be the exact same Proposed Project that is the subject of the current proceeding. Yet, as evidenced by this proceeding, that course of action could take several years, all while SCE's affected customers would remain at risk of interruptions.

Moreover, even if Camgen were to enter into a new contract, SCE has no guarantee that Camgen's generation profile will be consistent with its past performance. Camgen's generation facility has been in operation for many years, and SCE is not aware of any Camgen intention to repower or upgrade that facility in any way. Should the Camgen facility fail without warning, SCE would be left in the difficult position where it could be incapable of meeting electrical demand requirements.

In addition, SCE recently performed an electrical demand forecast to identify all "known issues and currently known potential problems" with reconnecting Camgen to the Moorpark System. The study showed that even with Camgen being reconnected to the Moorpark System, SCE anticipates that the existing Moorpark-Newbury-Pharmacy 66 kV Subtransmission Line would still be subject to an overload under N-1 (contingency) conditions in the year 2027. Accordingly, SCE would still need to construct the Moorpark-Newbury 66 kV Project by the year 2027 to address this forecasted N-1 violation on the Moorpark System. Please see the attachments titled:

- "CONFIDENTIAL-ATTACHMENT -Moorpark-Newbury-2027 Forecast N-1 Case.pdf". This document shows that with the loss of the Camgen-Newbury-Thousand Oaks 66 kV Subtransmission Line, a section of the Moorpark-Newbury-Pharmacy 66 kV Subtransmission Line is forecasted to exceed its emergency rating in the year 2027.
- "CONFIDENTIAL-ATTACHMENT -Peak Demand Forecast-2031.pdf". This shows the forecasted demand for Newbury Substation, Thousand

Oaks Substation and Pharmacy Substation for a Camgen unit re-connection simulation.

Furthermore, extending the forecast to the year 2031 using the same load growth assumptions used at the end of the current 10-year forecast, power flow studies demonstrate that a base case overload would occur on the existing Moorpark-Newbury-Pharmacy 66 kV Subtransmission Line in the year 2031, even with Camgen fully operational and connected to the Moorpark System. Please see the attachment titled:

- "CONFIDENTIAL-ATTACHMENT -Moorpark-Newbury-2031 Forecast Base Case.pdf". The document shows that under Base Case conditions, a section of the Moorpark-Newbury-Pharmacy 66 kV Subtransmission Line is forecasted to exceed its normal rating in the year 2031.

In summary, the conceptual reconnection of Camgen to the Moorpark System should not be considered a reliable long-term solution obviating the need for the Proposed Project. Although in theory that reconnection (and a new or renewed contract for power delivery) could delay the need for the Proposed Project, it would result in SCE being put in the position of relying on a third-party generator to solve an SCE 66 kV subtransmission system overload. With the current uncertainty of the future Camgen generation output (current contract expiring in April 2018), completing the construction the Proposed Project is the prudent solution to ensure continued reliability for the electrical system in the Electrical Needs Area.

· **Environmental**

Below is a high level summary of issues that would need to be analyzed with respect to the construction of the assumed 66 kV line route that would potentially be used for reconnecting Camgen to the Moorpark System:

Aesthetics: Potrero Road is a County Eligible Scenic Highway.

Agriculture Resources: New poles may result in new agricultural land impacts.

Air Quality/GHG: Unclear given the CPUC's current methodology for assessing construction equipment emissions in the Ventura County Air Pollution Control District.

Biological Resources: To date, SCE has not conducted biological resource surveys along the Camgen reconnection route. However, a review of aerial imagery of the existing land in the vicinity of the identified route indicates the area includes developed areas (residential, university); agricultural uses (crops, orchard, nursery); and possible native vegetation communities such as sage scrub, chaparral, and grassland. The following special status biological resources are

known to occur within or adjacent to the identified route based on a search of the California Natural Diversity Database (CNDDDB) (see attached map):

- Coastal California gnatcatcher (*Polioptila californica californica*); Federally-listed Threatened
- Least Bell's vireo (*Vireo bellii pusillus*); Federally and State-listed Endangered
- White-tailed kite (*Elanus leucurus*); State Fully Protected
- Verity's dudleya (*Dudleya verityi*); Federally-listed Threatened, California Native Plant Society (CNPS) 1B.1
- Conejo buckwheat (*Eriogonum crocatum*); State Rare, CNPS 1B.2
- Chaparral ragwort (*Senecio aphanactis*); CNPS 2B.2
- Dune larkspur (*Delphinium parryi* ssp. *blochmaniae*); CNPS 1B.2
- Plummer's mariposa-lily (*Calochortus plummerae*); CNPS 4.2
- Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*); CNPS 1B.1
- Woven-spored lichen (*Texosporium sancti-jacobi*); CNPS 3

Review of the CNDDDB map and aerial photographs indicate that the eastern-most portion of the identified route (south of Potrero Road and east of the agricultural land uses) has a high potential to support sensitive biological resources. Field surveys would be required to confirm the presence of native vegetation, regulated tree species, jurisdictional waters, suitable habitat, and sensitive species within the identified route. The identified route does not occur within USFWS designated critical habitat.

Cultural Resources: To date, SCE has not conducted archaeological or paleontological resource surveys along the conceptual Camgen reconnection route. A desktop review of the route indicates the potential route includes developed areas, agricultural fields, and possibly some undisturbed land. The latter has potential for archaeological and paleontological resources. Field surveys would be required to verify actual conditions.

Geology/Soils: A desktop review of the Ventura County General Plan indicates that new poles could be located in the vicinity of a fault, in an area where liquefaction may be a concern and potentially in a flood plain.

Hydrology and Water Quality: No issues currently identified.

Land Use and Planning: No issues currently identified.

Mineral Resources: No issues currently identified.

Noise: No issues currently identified.

Population and Housing: No issues currently identified.

Public Services: No issues currently identified.

Recreation: No issues currently identified.

Transportation and Traffic: Minor impacts during construction due to potential lane closure or road closure along Potrero Road.

Utilities and Services Systems: No issues currently identified.

· **Real Estate**

Would require successful easement negotiations with the California State University, Channel Islands.

(e) Please refer to the answers in Part D of this response for details of known issues and potential problems.

(f) Impacts to the Santa Clara System:

If the generation from Camgen were to be transferred back to the Moorpark System, the generation available to the Santa Clara System would be reduced by approximately 25 MW. Currently the Santa Clara 66 kV System has several generation resources. Relevant here, four of these generators could contribute to a potential overload of the Santa Clara-Colonia 66 kV Subtransmission Line. Each of these four generators (one of which is Camgen), has a contract set to expire before the year 2020. The transfer of Camgen to the Moorpark System would leave the Santa Clara System with three generators that could affect the potential line overload mentioned above. If the power purchase contracts for all three of these generators were not renewed, the Santa Clara-Colonia 66 kV Subtransmission Line is projected to exceed its emergency rated capacity in the year 2021 during an unplanned outage of the Santa Clara-Colonia-Procgen 66 kV Subtransmission Line (N-1 contingency condition). In order to remedy the unacceptable overload condition, SCE would have to take some additional action such as transferring generation from Camgen back to the Santa Clara System or undertaking an infrastructure improvement project such as reconductoring approximately 10 miles of the existing Santa Clara-Colonia 66 kV Subtransmission Line, depending in part on field conditions present at the time. It is important to note again that the projected overload on the Santa Clara-Colonia 66 kV Subtransmission Line only arises as a result of a hypothetical transfer of Camgen generation away from the Santa Clara System and into the Moorpark System, or other discontinued supply of power from Camgen (and the other three generators referenced above) away from the Santa Clara System.

In summary, there are a number of reasons why the Proposed Project is the proper solution to

accommodate the purpose and need identified in SCE's Application and PEA, even if the Camgen generator were to be reconnected to the Moorpark System and a new or renewed power delivery contract be executed. Among those reasons is the fact that reliance on a third-party generator would be unreasonable given that actual delivery of power would be out of SCE's control, and if that delivery should cease or be reduced, SCE customers could be subjected to electrical service interruptions without any rapid solution. The Proposed Project would still be needed within the Moorpark System and there is a potential for other actions that could be needed to maintain the reliability of the Santa Clara System.

CNDDDB – BIOS; 12-17-14

The screenshot displays the BIOS viewer interface for the CNDDDB. The browser address bar shows the URL <https://map.dfg.ca.gov/bios/?al=ds85>. The page header includes the California Department of Fish and Wildlife BIOS logo, navigation buttons for 'Basemaps' and 'Layers', and a search bar with the text 'Add Data: BIOS'. A 'Filter by extent' checkbox is checked. Other navigation buttons include 'Identify Features' and 'Advanced Tools'. The user is logged in as 'Hi, cnddb_com' and the version is 'v5.24.12'. The map shows a topographic view of Round Mountain with several plant species distribution areas highlighted in yellow, orange, and purple. A red box with an arrow points to a path labeled 'Approximate Camgen reconnection route'. The map scale is 1:18,056 (Zoom level 15). The system tray at the bottom shows the date and time as 1:27 PM on 12/17/2014.

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Basemaps Layers

Add Data: BIOS Click here to search and see list of datasets

Filter by extent Identify Features Advanced Tools

Hi, cnddb_com Logout

v5.24.12 Help

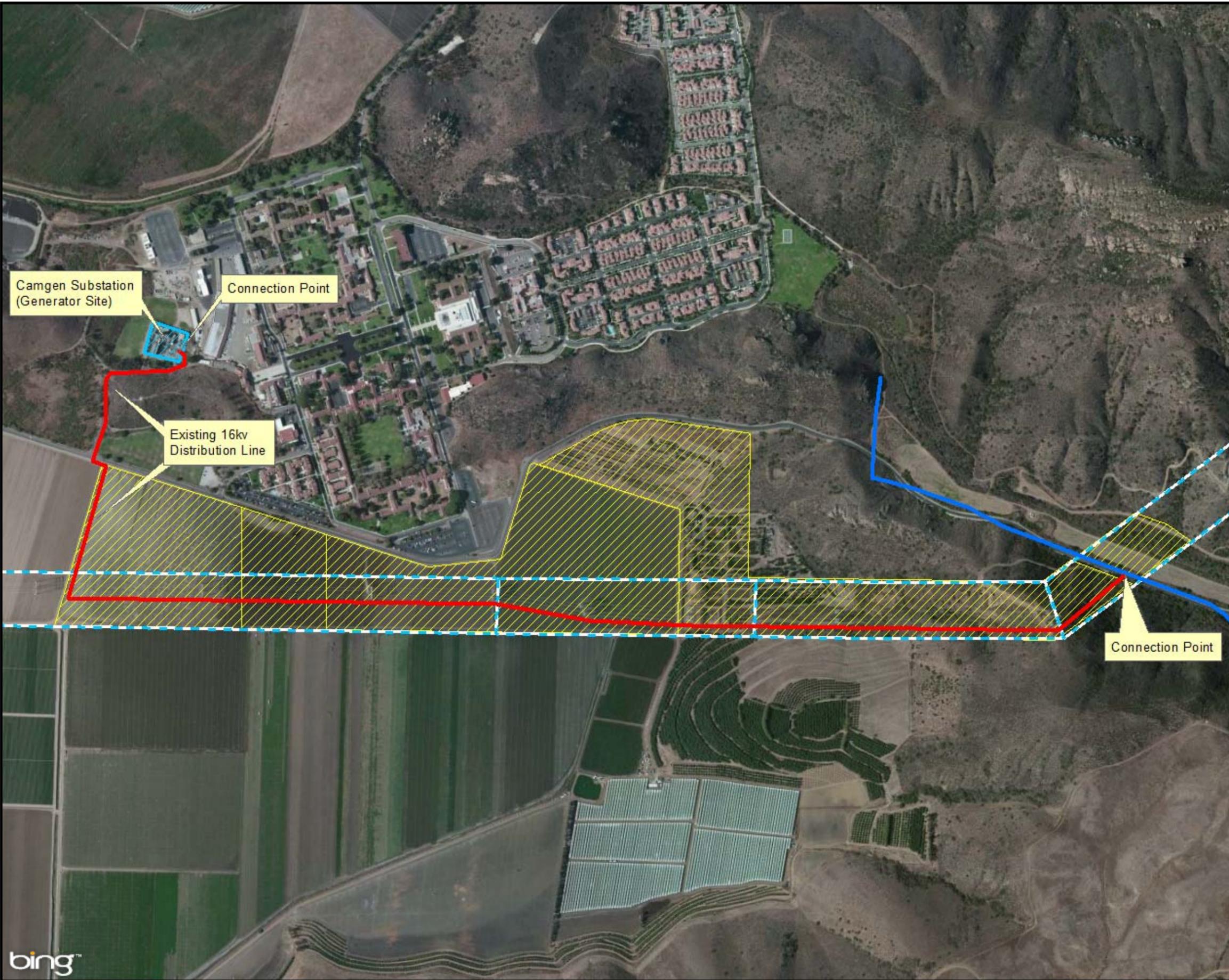
Map Scale=1: 18,056 (Zoom level 15)

Approximate Camgen reconnection route

Table

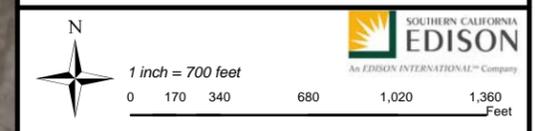
1:27 PM 12/17/2014

Notification #: 202317577 Filename: MNP_Conceptual_Camgen_Reconnection_Map.mxd Created by: J. Le Date: 12/29/2014



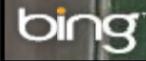
- Legend**
-  Newbury-Thousand Oaks (Idle)
 -  Proposed Camgen Reconnection Route
 -  Camgen Substation (Generator Site)
 -  Ormond-Moorpark ROW
 -  SCE Fee-Owned Property

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale.
© Real Properties Department, Survey & GIS Mapping.



**MOORPARK-NEWBURY 66 KV
SUBTRANSMISSION LINE PROJECT
CONCEPTUAL CAMGEN RECONNECTION ROUTE**

Ver. 01 12/29/2014



Southern California Edison
Moorpark-Newbury A.13-10-021

DATA REQUEST SET A1310021 Moorpark-Newbury-ED-SCE-03

To: ENERGY DIVISION
Prepared by: Kendra Heinicke
Title: Estimator
Dated: 10/20/2014

Question Q.08:

Discussion of PEA Subtransmission Line Route Alternatives 2 and 3 indicates that each of these alternatives would present technical and reliability impacts and challenges (both present and future). Please provide a full description and discussion of each adverse impact and challenge, as well as potential means to offset the impacts or meet the challenges. Specifically, please provide, but not necessarily limit the discussion to, the following information:

- a. For Subtransmission Line Route Alternative 2, provide more detail about the option identified in protest letters and EIR scoping letters regarding undergrounding the portion of the new 66 kV subtransmission line in the Santa Rosa Valley portion of the Moorpark-Ormond Beach 220 kV ROW; provide detailed explanation of why and where the steep terrain would present engineering challenges for this underground option and what the specific engineering challenges would be and how they could be addressed. The explanation should consider underground perpendicular crossings of the 220 kV line, as well as a placing the line underground longitudinally within the 220 kV ROW in the residential areas of Santa Rosa Valley.
- b. For Subtransmission Line Route Alternative 2, provide additional explanation why the location of the line within the west side of the existing Moorpark-Ormond Beach 220 kV corridor would not be consistent with the Garamendi Principles, i.e., explain why preserving space on the west side of the 220 kV ROW corridor for future use under the Proposed Project would be preferable to preserving space on the east side of the 220 kV ROW corridor under Subtransmission Line Route Alternative 2, assuming the existing poles already constructed on the east side would be removed under this alternative.
- c. For Subtransmission Line Route Alternative 3, provide detail on why the existing double circuit subtransmission lines cannot be collocated on new lightweight steel or tubular steel poles with the proposed new subtransmission line on the north side of State Route 118 within SCE's existing ROW. Please provide a drawing with dimensions of the associated triple-circuit poles that would be required. Please also address the potential of including an additional new subtransmission pole line immediately north of the existing double circuit pole line on the north side of State Route 118, including the possibility of locating the new poles within the existing subtransmission line ROW.

Response to Question Q.08:

a. SCE does not support constructing the Moorpark Newbury 66 kV Subtransmission Line in Santa Rosa Valley area underground because of the significant engineering challenges due to the topography between Sites 18 and 20, and fault zone concerns along the route in Santa Rosa Valley.

First, the ROW crosses the Simi-Santa Rosa Fault, an active Alquist-Priolo Earthquake Fault Zone that perpendicularly traverses the ROW. Constructing an underground subtransmission line in such an area could pose risks from a reliability perspective. SCE engineers advise against such construction because of the risk that seismic activity could pose to the underground structures and cable. Overhead construction, however, can be accommodated in such a fault zone because of the increased flexibility that overhead construction provides in the event of displacement across the fault. In addition, overhead structures have less rigidity and have more flexibility by incorporating slack that enables the conductors to swing and not break when fault activity occurs. Overhead structures also can be located to avoid the surface trace of the fault.

In addition, the ROW contains excessively steep areas would not be suitable for underground subtransmission construction. The weight of the underground cable would require that the cable be held-back with special cable grips in standard transmission vaults and restraint vaults. However, in the area near Sites 18 and 19, this is not feasible because the rise and fall of the grade is excessive.

In addition, the aforementioned challenges regarding fault zones and the excessively steep terrain between Sites 18 and 20 would similarly render infeasible any “underground perpendicular crossings of the 220 kV line, as well as a placing the line underground longitudinally within the 220 kV ROW.”

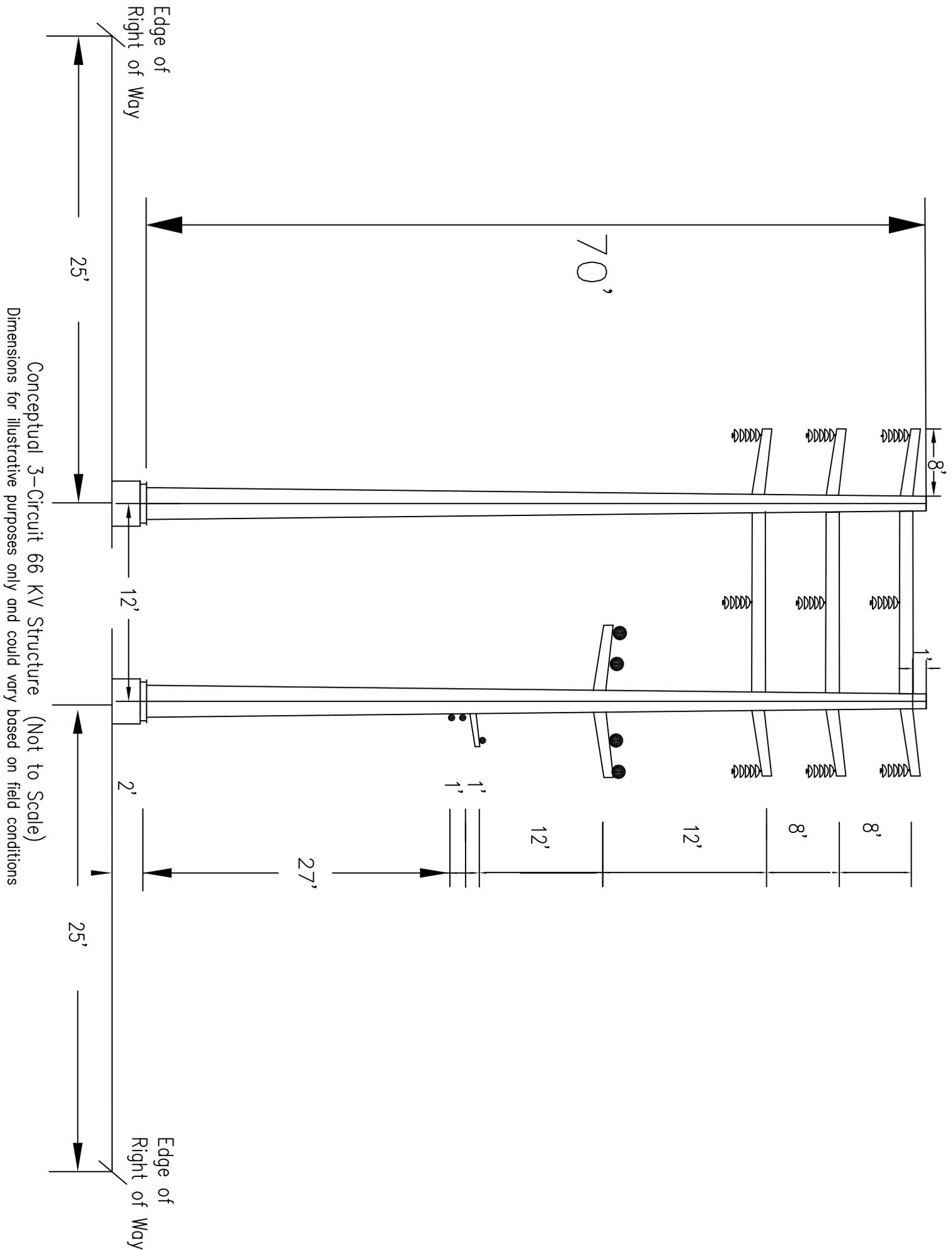
Further, even if it were feasible to install underground construction in this area, it should be noted that such construction would likely trigger an increased level of environmental impacts. For example, as noted in the PEA and subsequent information provided by SCE in response to data requests, there are paleontological or archeological resources that could be more susceptible to damage with underground construction.

b. SCE installed the past work portion of the Moorpark-Newbury 66 kV Subtransmission Line on the east/south side of the existing 220 kV transmission line in the ROW primarily to avoid multiple crossings of the new 66 kV line under the existing 220 kV lines to enter and exit substations. Such crossings would introduce potential engineering, construction and maintenance obstacles. As noted previously, G.O. 95, Section III, Rule 31.3 states that care shall be taken to avoid unnecessary crossings. Moreover, utilizing both sides of the ROW to accommodate the crossings of the 66 kV line would unnecessarily reduce the available remaining width of the ROW for future consideration (inconsistent with the Garamendi Principles). If a subtransmission line were to cross from the east side of a ROW to the west side (especially when the center of the ROW is already occupied by an existing transmission line), the presence of infrastructure on both the west and east side of that existing transmission line could effectively block, and preclude the ability to construct future lines down, the west or east side. As a result, the area beyond the location where the crossing is installed could be rendered

useless and unavailable for future infrastructure.

SCE assumes that future infrastructure will eventually be needed in this ROW, and accordingly SCE believes it is prudent to manage the ROW in consideration of this expectation. However, if the ROW were constrained by crossings of the new 66 kV line, this may require the acquisition of additional property to replace the ROW that has been rendered useless by the unnecessary crossings. Accordingly, SCE's strategy in constructing the Project in its designed location is consistent with the Garamendi Principles in the sense that, as opposed to rendering a substantial portion of the Moorpark-Ormond Beach 220 kV ROW unavailable for future infrastructure, the same existing ROW would provide room for both: a) the Project's subtransmission line and structures; and b) potential future transmission lines and structures. In fact, for many years, SCE had contemplated constructing a new Sandstone Substation in the Camarillo area; that substation was contemplated to be directly connected to Moorpark Substation, likely via future 220 kV transmission lines that could be constructed within this same ROW.

c. If SCE had to install three subtransmission circuits on new lightweight steel or tubular steel poles, SCE would build a unique structure that accommodates three circuits in vertical configuration, as shown in the attached figure. However, the footprint of such a structure would be significantly larger than the footprint of the existing double-circuit poles. It should be noted that SCE does not have an exclusive ROW on the north side of Highway 118; the existing poles are located within the existing Caltrans ROW. For such a structure, SCE would require an approximate 65-foot wide ROW for the new structures compared to the current poles, which are generally within an approximately 20-foot footprint. A simple review of a Google Earth map shows that there is insufficient room between the nearby Union Pacific Railway ROW and Highway 118 to accommodate such structures.



Southern California Edison
Moorpark-Newbury A.13-10-021

DATA REQUEST SET A1310021 Moorpark-Newbury-ED-SCE-03

To: ENERGY DIVISION
Prepared by: Kendra Heinicke
Title: Estimator
Dated: 10/20/2014

Question Q.09:

Regarding Subtransmission line Alternative 2, in SCE response to Proceeding Ludington Data Request 1, Question 8, SCE's cost estimates for the alternative assume replacement of four double-circuit 220 kV towers with taller towers in order to maintain required G.O. 95 clearances as necessitated by the installation of the 66 kV crossings of the 220 kV lines. Please provide drawings (indicating height and width) for each of the poles/towers (220 kV and 66 kV) that would be utilized in each of the crossings in order to maintain the required G.O. clearances. Also note any topographic or other physical features that influence the design. Please also provide an explanation why the proposed subtransmission line poles could not be sized in order to cross under the existing 220 kV poles.

Response to Question Q.09:

In response to this Data Request question, SCE recently performed a detailed engineering review to analyze whether the 220 kV portal towers would require replacement as previously anticipated. The detailed engineering review determined that it would be feasible to cross under the existing 220 kV portal towers without having to replace the existing portal towers to meet GO 95 requirements (even though GO 95 Section III Rule 31.3, Conflicts and Crossings expressly states that crossings should be avoided unless absolutely necessary). In order to do so, SCE would need to add six new TSPs to the proposed Moorpark-Newbury 66 kV Subtransmission Line and move two previously installed TSPs, (Sites 8 and 24), north and south, respectively. The TSPs at Sites 8 and 24, as well as proposed new TSPs C and D would need to be interset in the existing alignment to prevent the new 66 kV line from swinging into the existing 220 kV lines. New TSPs A, B, E and F would facilitate the crossing.

The engineering review did not identify any unusual topographic or physical features that would impact the design.

Attached you will find:

- Data sheets indicating the heights and widths required for the six new TSPs (MOORPARK-NEWBURY XING DATA SHEETS REV B.PDF)
- Data sheets for the two existing TSPs that would be moved (M56773_SH8-Model.pdf and M57663_SH24-Model.pdf)
- Exhibit showing proposed crossing locations (MNP_AlternativeOverview_20150113.pdf)

- Summary of the new footings required (FOOTING SUMMARY XING REV B.doc)

Please note that all of the proposed structure widths and footings are estimated values and are contingent upon the final design of the TSPs by the manufacturer. Also note that the structure locations between the two crossings are not final and would have to be evaluated in greater detail.

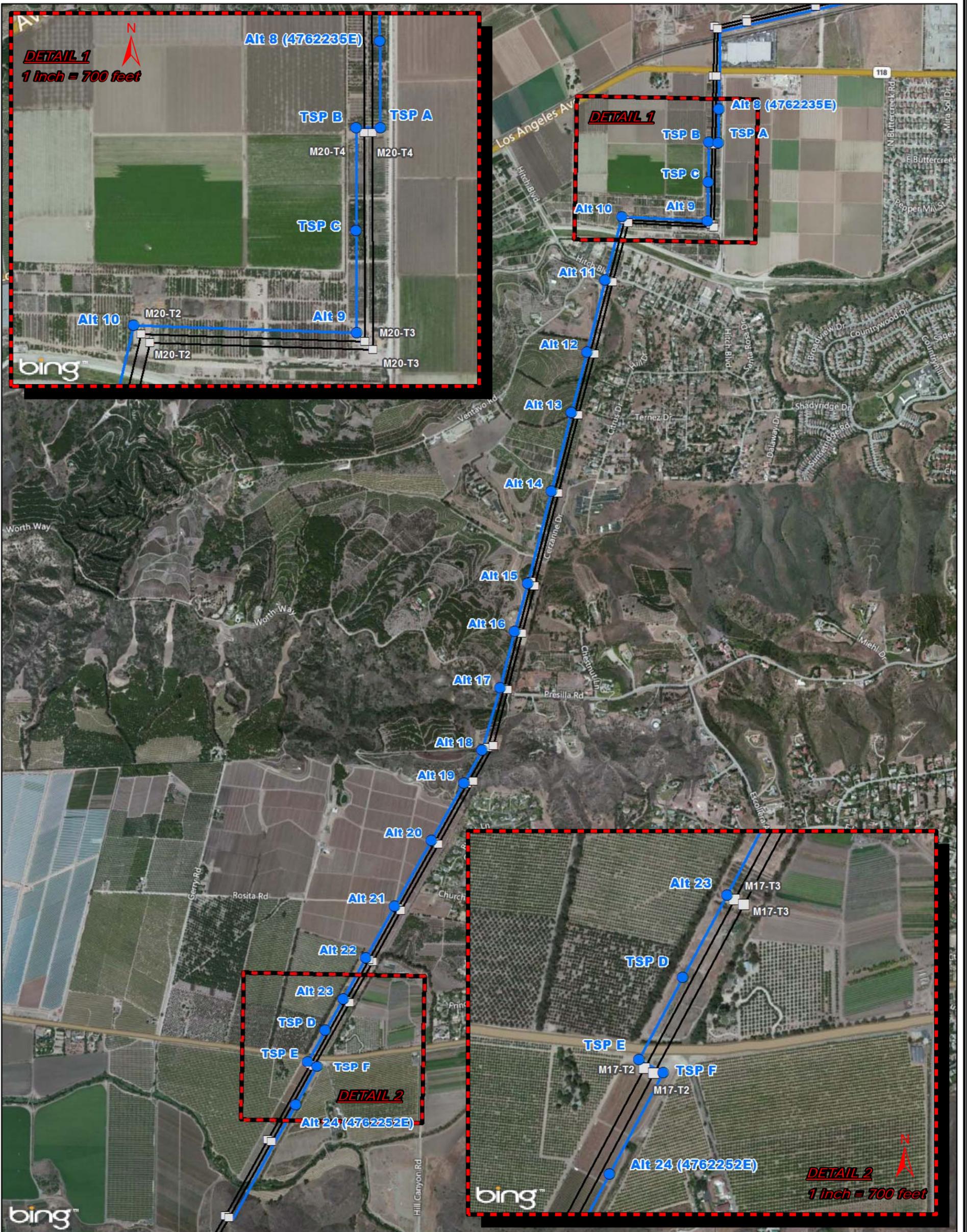
SOUTHERN CALIFORNIA EDISON COMPANY
Pomona, California
1/14/15

Moorpark-Newbury 66kV T/L Segment 2, 6 TSP's

Footing Summary

(All footings are approximate and are contingent upon vendors final pole design)

<u>Item</u>	<u>Pole Number</u>	<u>Pole Type</u>	<u>Depth</u>	<u>Diameter</u>	<u>Data Sheet</u>
1.	TSP A	75-3160-24	28.5	7.0	M# Sh. 1
2.	TSP B	75-3175-24	28.5	7.0	M# Sh. 2
3.	TSP C	100-1205-12	22.5	6.0	M# Sh. 3
4.	TSP D	100-1185-12	22.5	6.0	M# Sh. 4
5.	TSP E	75-3170-24	26.5	7.0	M# Sh. 5
6.	TSP F	75-3195-24	26.5	7.0	M# Sh. 6
7.	4762235E	130-1905-16	34.0	7.0	M57663 Sh. 8
8.	4762252E	130-1905-16	21.5	7.0	M57663 Sh. 24



Moorpark-Newbury 66kV Subtransmission Project:
 Map Developed in Response to CPUC Data Request Set ED-03, Question 9

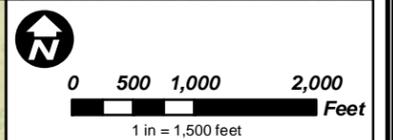
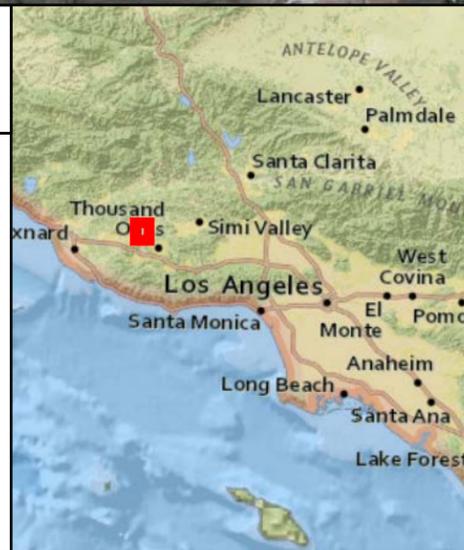
Legend

Alternative

- Conceptual Structure Locations
- Conceptual 66kV Alignment

Existing

- Existing Moorpark-Ormond Beach No.1-4 220kV Structures
- Existing Moorpark-Ormond Beach No.1-4 220kV Lines



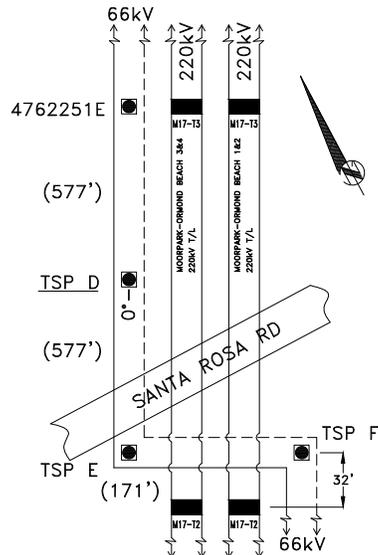
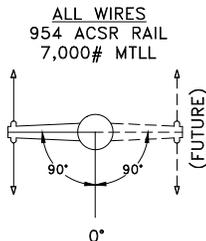
Notification #: 202317577
 Date: 1/13/2015
 File Name: MNP_AlternativeOverview_20150113.mxd
 Version #: 1

Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale.
 © Real Properties Department, Survey & GIS Mapping.
 Service Layer Credits: Image courtesy of USGS Image courtesy of LAR-IAC Earthstar Geographics SIO © 2014 Microsoft Corporation © 2014 Nokia © AND National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

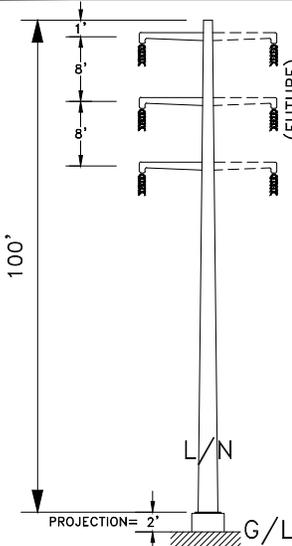


PLOT PLAN

STATIONS 1-3



Max.Grnd.Line Dia. 38" County -- Map -- G.W.O.No. TD#



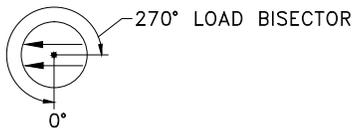
STN. NO.	CKT.	CONDUCTOR		ATTACH.	
		NO. & SIZE	TENS.	QUAN.	DWG. NO.
1	66	2-954 ACSR RAIL	7,000# MTL	1/1 FUT.	3A-B-13K8
2	66	2-954 ACSR RAIL	7,000# MTL	1/1 FUT.	3A-B-13K8
3	66	2-954 ACSR RAIL	7,000# MTL	1/1 FUT.	3A-B-13K8

Pole No. TSP 4 E Pole Dwg.No. A89-2013 Pole Wt. 12,860 LBS. Type 100-1185-12

SAG DATA - TRANSM.

FOOTING DATA B.C. = 46.5"

SPAN	50'	70'	90'	DWG.NO.	N1106	SHT.	6	DET.	-
TSP D TO 251E (577')	8.2	9.2	10.2	LAT.BEAR.OF SOIL	8.0	KSF			
TSP D TO TSPF (577')	8.2	9.2	10.2	"h"	19.5	FT., "D"	6.0	FT.	
				AREA OF REINF.STEEL	18.9	SQ.IN.			
				RAKE	-	IN., BOLT SETTING	-	IN.	
				STEEL NOTE	60 KSI STEEL USED				
				FTG.PROTECTION DWG.	-	DETAIL -			
				GROUND WATER	>20 FT.				



4 LOCATION MOORPARK-NEWBURY 66kV T/L

DATA SHEET - TUBULAR STEEL POLE TSP D

Approved O.K. O.K. MB Eng. Apprvl. KH Supv. Apprvl. Estimator 12/16/14 Date



MXXXXX-0 SH 4

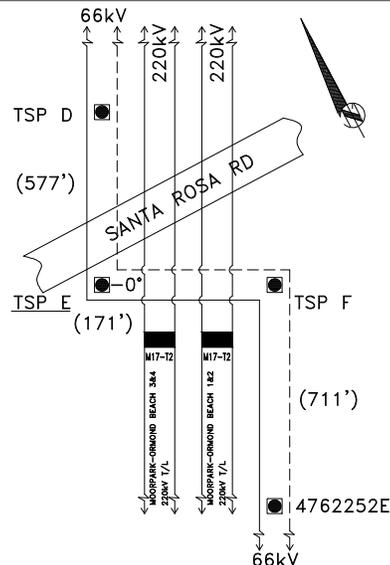
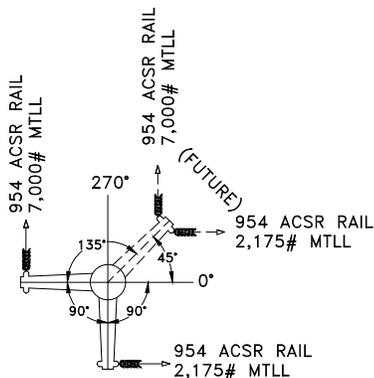
1	SAP WO.	Approved	MADE	CHK'D	2	SAP WO.	Approved	MADE	CHK'D	3	SAP WO.	Approved	MADE	CHK'D
---	---------	----------	------	-------	---	---------	----------	------	-------	---	---------	----------	------	-------

ATTACHMENTS	DWG APPROVAL SIGNATURE	
	YES	NO
CUSTOMER SERVICE DEPARTMENT		

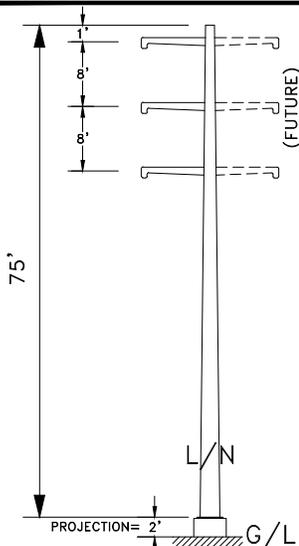
ATTACHMENTS	DWG APPROVAL SIGNATURE	
	YES	NO
TELECOMMUNICATIONS DIVISION		
FOREIGN UTILITY		X

PLOT PLAN

STATIONS 1-3



Max.Grnd.Line Dia. 48" County -- Map -- G.W.O.No. TD#



STN. NO.	CKT.	CONDUCTOR		ATTACH.	
		NO. & SIZE	TENS.	QUAN.	DWG. NO.
1	66	2-954 ACSR RAIL	2,175/7,000# MTL	2/1 FUT.	3A-B-13K8
2	66	2-954 ACSR RAIL	2,175/7,000# MTL	2/1 FUT.	3A-B-13K8
3	66	2-954 ACSR RAIL	2,175/7,000# MTL	2/1 FUT.	3A-B-13K8

Pole No. TSP 5 E Pole Dwg.No. A89-2013 Pole Wt. 19,531 LBS. Type 75-3170-24

SAG DATA - TRANSM.

FOOTING DATA B.C. = 56.5"

SPAN	50'	70'	90'
TSP E TO TSP F (171')	SEE	TOH	500
TSP E TO TSP D (577')	8.2	9.2	10.2

DWG.NO.	N1106	SHT.	6	DET.	-
LAT.BEAR.OF SOIL	8.0				KSF
"h"	26.5	FT., "D"	7.0		FT.
AREA OF REINF.STEEL	43.8				SQ.IN.
RAKE	27.0	IN., BOLT SETTING	1-11/16		IN.
STEEL NOTE	60 KSI STEEL USED				
FTG.PROTECTION DWG.	-	DETAIL	-		
GROUND WATER	>20 FT.				



4 LOCATION MOORPARK-NEWBURY 66kV T/L

DATA SHEET - TUBULAR STEEL POLE TSP E

No.	Revisions				MB	KH	12/16/14
	Approved	O.K.	O.K.	Eng. Apprvl.	Supv. Apprvl.	Estimator	Date



MXXXXX-0 SH 5

ATTACHMENTS	DWG APPROVAL SIGNATURE	
	YES	NO
		X

CUSTOMER SERVICE DEPARTMENT

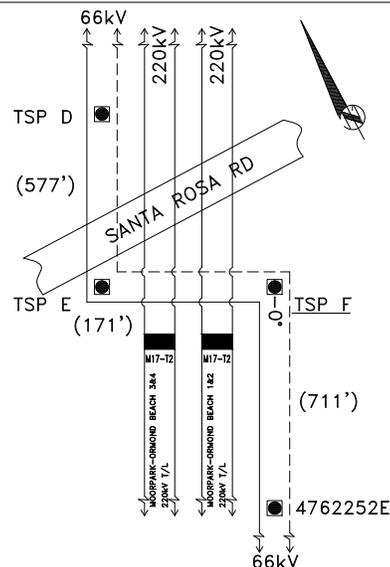
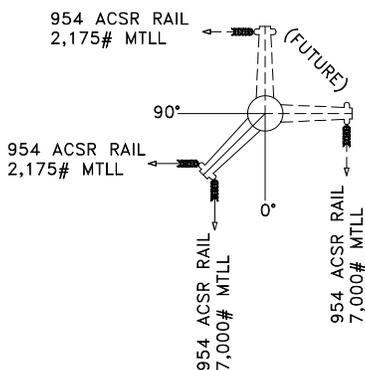
ATTACHMENTS	DWG APPROVAL SIGNATURE	
	YES	NO
	X	X

TELECOMMUNICATIONS DIVISION FOREIGN UTILITY

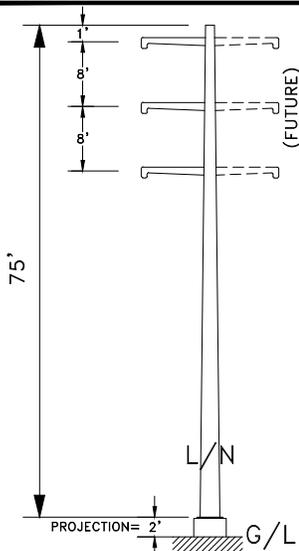
1	SAP WO.	Approved	MADE	CHK'D	2	SAP WO.	Approved	MADE	CHK'D	3	SAP WO.	Approved	MADE	CHK'D
---	---------	----------	------	-------	---	---------	----------	------	-------	---	---------	----------	------	-------

PLOT PLAN

STATIONS 1-3



Max.Grnd.Line Dia. 48" County -- Map -- G.W.O.No. TD#



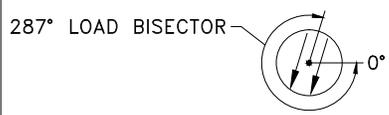
STN. NO.	CKT.	CONDUCTOR		ATTACH.	
		NO. & SIZE	TENS.	QUAN.	DWG. NO.
1	66	2-954 ACSR RAIL	2,175/7,000# MTL	1/2 FUT.	3A-B-13K8
2	66	2-954 ACSR RAIL	2,175/7,000# MTL	1/2 FUT.	3A-B-13K8
3	66	2-954 ACSR RAIL	2,175/7,000# MTL	1/2 FUT.	3A-B-13K8

Pole No. TSP 6 E Pole Dwg.No. A89-2013 Pole Wt. 19,558 LBS. Type 75-3195-24

SAG DATA - TRANSM.

FOOTING DATA B.C. = 56.5"

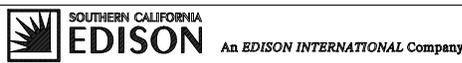
SPAN	50'	70'	90'	DWG.NO.	N1106	SHT.	6	DET.	-
TSP F TO TSP E (171')	SEE	TOH	500	LAT.BEAR.OF SOIL	8.0	KSF			
TSP F TO 252E (711')	12.3	13.5	14.6	"h"	26.5	FT., "D"	7.0	FT.	
				AREA OF REINF.STEEL	44.2	SQ.IN.			
				RAKE	27.3	IN., BOLT SETTING	1-11/16	IN.	
				STEEL NOTE	60 KSI STEEL USED				
				FTG.PROTECTION DWG.	-	DETAIL -			
				GROUND WATER	>20 FT.				



4 LOCATION MOORPARK-NEWBURY 66kV T/L

DATA SHEET - TUBULAR STEEL POLE TSP E

Approved O.K. O.K. MB Eng. Apprvl. KH Supv. Apprvl. Estimator 12/16/14 Date



MXXXXX-0 SH 6

ATTACHMENTS	DWG APPROVAL SIGNATURE	
	YES NO	X
CUSTOMER SERVICE DEPARTMENT		

ATTACHMENTS	DWG APPROVAL SIGNATURE		
	YES NO	X	X
TELECOMMUNICATIONS DIVISION FOREIGN UTILITY			

1	SAP WO.	Approved	MADE	CHK'D	2	SAP WO.	Approved	MADE	CHK'D	3	SAP WO.	Approved	MADE	CHK'D
---	---------	----------	------	-------	---	---------	----------	------	-------	---	---------	----------	------	-------