Estimator:	M. ZEARBAUGH	**Electric Underground Specifications**	Notification#	110457801
ADE:	J. DEGARMO		PM Order#	31180561
Rep:	M. ZEARBAUGH		D&C #	
Supervisor:	L. WRIGHT		Date:	**9/18/2015**

Applicant: JEFF KRAFT

Location: 48 BUENA VISTA AVE. SAN LULIS OBISPO, CA

1 Service Voltage: 120/240 | Main Size: 320 | 1ph.Load: 10 kva. | 3ph.Load: kva.

SC Amps Sym.: 10000

Primary Cable: Number: Size: **EPR - CONC - ENCAP - PE 25KV**

Service Cable:

Number	Hot legs number and size	Number	Neutral number and size
2	4/0 AL. XLP. 600V.	1	1/0 AL. XLP. 600V.

Applicant to Provide and InstallConduit, Trench, and Substructures
(As indicated below and/or on the attached drawing)

	Type / Style:	Size:	Traffic Load:		Code:
Transformer Pad: (Type, Size, and Code)					
Primary J-Box Pad: (Type, Size, and Code)					
Primary Pull Box: (Type, Size, and Code)					
Sec. / Svc. Box / Ped: (Type, Size, Code)	Pull / Splice	17" x 30"	IVT.	W/8" EXT	040937

Barrier Post Req. ☐

All Applicant Installations must pass PG&E inspection, do not backfill* the trench until it has been inspected and approved.

Call the construction Department at **805-546-5247** 48 hours in advance for inspection.

Cost of PG&E supplied materials are subject to change if this design is altered by the applicant.

Please contact **M. ZEARBAUGH** at **805-546-5204** of any changes or need for additional information.

[X] **Please Call USA 811 at least 48 hours prior to excavating this area:**

[X] All existing facility locations are approximate, verify with hand tool excavation.

1 Mains 201 Amp and above, lugs to be supplied by pg&e.

2 Conduit to be direct burial (DB), PVC marked ASTM F512 DB120PVC or schedule 40 marked UL Approved 90°C. Conduit above ground level to meet Engr. Standard Dwgs. *All conduits shall be proven free and clear of dirt, rocks, etc. by means of a mandrel, wire brush, etc. A polyester pulling tape shall be installed in all conduits and attached to an end cap. (No manufactured bends or use of heat shall be used to obtain conduit sweeps.)

3 Conduit depths are shown as minimums and may need to be increased when entering or leaving secondary splice boxes

REFERENCE DRAWINGS are available via the PG&E web site at: http://www.pge.com/greenbook. Refer to the Electric and Gas Service Requirements (Green Book) Section 3, Electric Service - Underground. Or you may contact your PG&E representative for copies of the following.

[ ]	Corrosion Resistant Ground Rods and Ground Rod Clamps	013109
[X]	Secondary Enclosures for Electric Underground (secondary service)	028028
[ ]	Concrete Pad for Three-Phase, Loop Style Pad-Mounted Transformers	045292
[ ]	Loc, Clearance, and Mechanical Details for Pad-Mounted and Subsurface Equipment.	051122
[X]	Terminating UG. Electric Service 0-600 Volt in Customer-Owned Facilities.	058817
[ ]	Landscape Screen for Pad-Mounted Transformers	063422
[X]	Methods and Requirements for Installing Res. UG. Elec. Service 0-600V.	063927
[ ]	Methods and Requirements for Installing Comm. UG. Elec. Service 0-600V.	063928
[ ]	Requirements for Bus Duct Entrance Termination Unit for Use With P/M Transformers.	063929
[ ]	Installation of Pad-Mounted, Load-Break Junction.	066212

Applicant Notes

Refer to Electric & Gas Service Requirements (Green Book) or Separate PG&E Standard Drawings.
Contact Your PG&E Representative for Copies, or Accsess www.pge.com/greenbook.

☑ Conduit, Trenching and Backfill:

1	All dimensions and locations are estimated, approximate and may be superseded by a JOINT TRENCH or COMPOSITE DRAWING.
2	Applicant to provide and install all underground facilities shown on this drawing in accordance with PG&E engineering standards and the following.
3	Applicant to provide all TRENCHING, SHADING, BACKFILL, AND COMPACTION.
4	4" of sand is required above and below conduit if native soil is not free of rocks, hardpan, etc. Backfill shall meet approval of PG&E Inspector
5	Service Conduit: 063927, Page 2 Tbl.1 & 2 (Residential.)
	Service Conduit: 063928, Page 3 Tbl.1, 2 , & 3 (Commercial / Industrial)
6	Distribution Conduit: PG&E Drawing 062288, Pages 1-14.
7	Provide long conduit sweeps where indicated. Recommended sweep radius (10' OF RADIUS PER INCH OF CONDUIT DIAMETER) Example: 4" CONDUIT = 40' RADIUS.
8	Manufactured bends or application of heat shall not be used to obtain long conduit sweeps. Do not to exceed 330 degrees of bends including feed location.
9	All conduits shall be proven FREE and CLEAR, and a POLYESTER PULLING TAPE installed
	Manufactured bends are not to be CUT, SHORTENED, or ALTERED in any way.
11	Install: a) Temporary caps on conduits stubbed at riser poles, pads, and boxes
	b) Permanent caps on buried conduits ends
	c) End Bell Fittings are required for all conduits entering an enclosure knockout or pad window (they must be grouted)
	d) 36" minimum bend radius for primary conduit.
	e) 24" minimum bend radius for service and secondary conduit.
12	Identify ends of buried conduit with a vertical conduit scrap installed from ridged cap to ground level.
13	Conduits entering primary boxes shall be at a right angle to the window or wall.

☑ Subsurface Transformers and enclosures / sec. Boxes and Pedestals:

15	**Single Phase Horizontal Transformer: PG&E drawing 060578, Pages 12 0f 12**
16	**Primary Underground Enclosures: PG&E drawing 062000, Pages 1-14**
17	**Substructure Clearance: 051122, Pages 1-25**
18	**Secondary Pedestals and Splice boxes: 028028, Pages 1-14**

☐ Padmounted Transformers, Switches, and Junction Boxes:

☐ Grounds, Barrier Protection, and Landscape:

☐ Safety & Workmanship:

☐ Insert Drawing:

EST:	M. ZEARBAUGH	JEFF KRAFT		CO:	
ADE:	J. DEGARMO			SD:	
SUPV:	L. WRIGHT			NOTIF:	110457801
REP:	M. ZEARBAUGH	48 BUENA VISTA AVE. SAN LULIS OBISPO, CA		OTHER:	
PLNR:				SHT:	
Scale:	DATE:	PACIFIC GAS & ELECTRIC COMPANY		31180561	
	9/18/2015				

PM# 31180561

PACIFIC GAS & ELECTRIC COMPANY
GENERAL NOTES FOR TRENCH, CONDUIT and SUBSTRUCTURES

1. **TRENCHING BY APPLICANT** - The applicant is required to provide, or to make arrangements and pay for, trenching, boring, backfill, excavation, paving, permits and any required substructures (i.e., conduit, boxes, transformer pads, ground rods) in accordance with PG&E specifications and CPUC Rule 15 and 16.

2. **INSPECTIONS REQUIRED** - All trenching, conduit and substructures installed by the applicant/contractor for PG&E must be installed in accordance with the attached PG&E drawing and inspected by a PG&E inspector. Trenching must be inspected prior to any backfilling. Transformer pads and associated ground rods must be inspected prior to the pouring of concrete. Please call the local PG&E business office at **(805)-546-5247,** 48 hours in advance for inspection of PG&E facilities. The California Government Code 4216 makes it mandatory for those excavating to call the Underground Service Alert (USA) @ **811** at least 2 full working days prior to excavation. This USA service will locate and mark all the existing underground facilities in the area. This service is provided at no cost. The meter panel will need to be inspected and tagged by the City or County inspector prior to inspection by PG&E. Construction will be scheduled and prioritized once all fees have been paid, permits obtained as required by any State or local governing agency having jurisdiction, contracts are signed and all inspections approved.

3. **TRENCHING** – A joint trench **may** include telephone and cable television facilities. Customer-owned gas piping, to include propane lines, are **not permitted** in a joint trench. Water, sewer, sanitary, or storm drain and other wet utility piping, are not permitted in a joint trench. Maintain a minimum of 3 feet of separation between any wet utilities when installing electric facilities. The trench depth must be sufficient to accommodate the required cover, conduit size being installed (e.g. 2 inch, 3 inch, 4 inch, 5 inch or other sizes), any necessary bedding materials, and the conduit bends (e.g. 24 inch, 36 inch or 60 inch bends). A minimum of 24 inches of cover for secondary (0-750v) electric service, or 30 inches minimum cover for primary (over 750v) is required. A minimum 30 inches of cover for all electric service is required in the any portion not on private property. Additional trench depth or boring of roadways may be required by the local City/County governing agency. Cal Trans has a minimum of 42 inches of cover for all electric service.

4. **CONDUITS** - A conduit system is required for underground service laterals. It is the applicant's responsibility to provide service conduit in accordance with the PG&E design standards 063927 and 063928. These standards are available at **www.pge.com/greenbook**. The conduit type for PG&E service conductors on, under or within the applicant's building, shall be Schedule 40 galvanized steel, U.L. approved Schedule 40 or 80 PVC. PVC Schedule 40 or 80 UL approved 90° C conduit shall be so marked. Schedule 40 PVC shall not be used if the conduit is so located that it is subject to physical damage. Conduits shall not pass under or through one building to supply adjacent buildings. The applicant shall prove all conduits with a mandrel or other means in a manner acceptable to PG&E, that the service conduit system is free of dirt, rocks, or other obstructions that could prevent hinder, or harm the installation of the service lateral conductors. Sharp turns, bends modified by the application of heat, or other irregularities in the conduit must be avoided. The applicant shall furnish and install conduit unglued caps or plugs on the ends of all conduits. Every effort should be made to obtain a straight, watertight conduit line. Conduit runs require a flat polyester pull tape (PG&E code 56-0154, Mule Tape, Dottie, Neptco Inc. or equivalent), white sequential footage markings every foot, with a minimum tensile strength of 2500 lbs. The pull tape shall be securely attached to the conduit plugs or caps. The tape shall be proven free and not glued or caught on joints. A pull rope is not acceptable due to abrasion of the conduit inside surface. The end of conduits stubbed out for future use shall be visibly marked by sweeping up and capping the end of the duct above the finished grade for easy locating.

All electric service conduit must enter PG&E splice boxes or enclosures from the bottom or through the boxes' knockouts and at right angles to the box. Therefore, the installed depth of the conduit may need to be increased at those locations. Where more than two 90-degree bends are required, consult PG&E to determine whether pull boxes may be required to avoid excessive pulling tension on the service cables.

5. **BACKFILL** – Applicants shall use backfill (sand or native soil, where suitable) to provide a smooth bedding. Fill all voids around facilities and provide at least 4 inches of cover for the conduit. Native backfill is preferred for use throughout the entire trench. Using import soil shall be limited to shading of trench occupants and /or backfilling when native soils will not allow for the required compaction. Soils containing occasional rounded rocks less than ½" diameter or less is acceptable backfill. Crushed rock or sharp edged materials of any kind are unacceptable. Backfill containing large rock, paving material, cinders, large amounts of sharply angular substance or corrosive material shall not be placed in excavation where such material may damage conduits or prevent adequate compaction of the fill or contribute to corrosion of the conduits. Where native soil exceeds ½-inch minus and where electric facilities are to placed at the bottom of trench, a minimum 2-inch sand bed is required. In lieu of rockfree backfill the customer may install rigid PVC schedule 40 or better conduit. Backfill and compaction must meet any applicable PG&E, Federal, State or local General Terms and Specific Conditions. A six inch cover over all facilities (electric, cable, phone, etc.) is required prior to tamping. PG&E may require 100% backfill compaction, e.g. under sidewalks, other**.**

6. **TRANSFORMER PADS AND BOXES**- Provide + or - 6" level gravel in the bottom of excavated holes for all concrete boxes and 10" of level rock gravel below all fiberglass transformer pads. Clean, non-expansive soil compacted to 90% shall be used. Spare gravel shall be available for final adjustment. The applicant/contractor is responsible to install and level any boxes and pads conforming to final grade with +/- 1 inch. Two 5/8" x 8' copperclad ground rods with clamps and copper ground wire will be provided by the applicant and installed for all transformer pads. To avoid cable insulation damage concrete pad and conduits flush with the concrete pad, the ends of conduits shall be provided with a suitable fitting, such as a bushing, or end bell. A single 3/4" x 12' copperclad ground rod with clamp shall be provided for all primary boxes. Non-conformance will be corrected by the applicant/contractor at his expense.

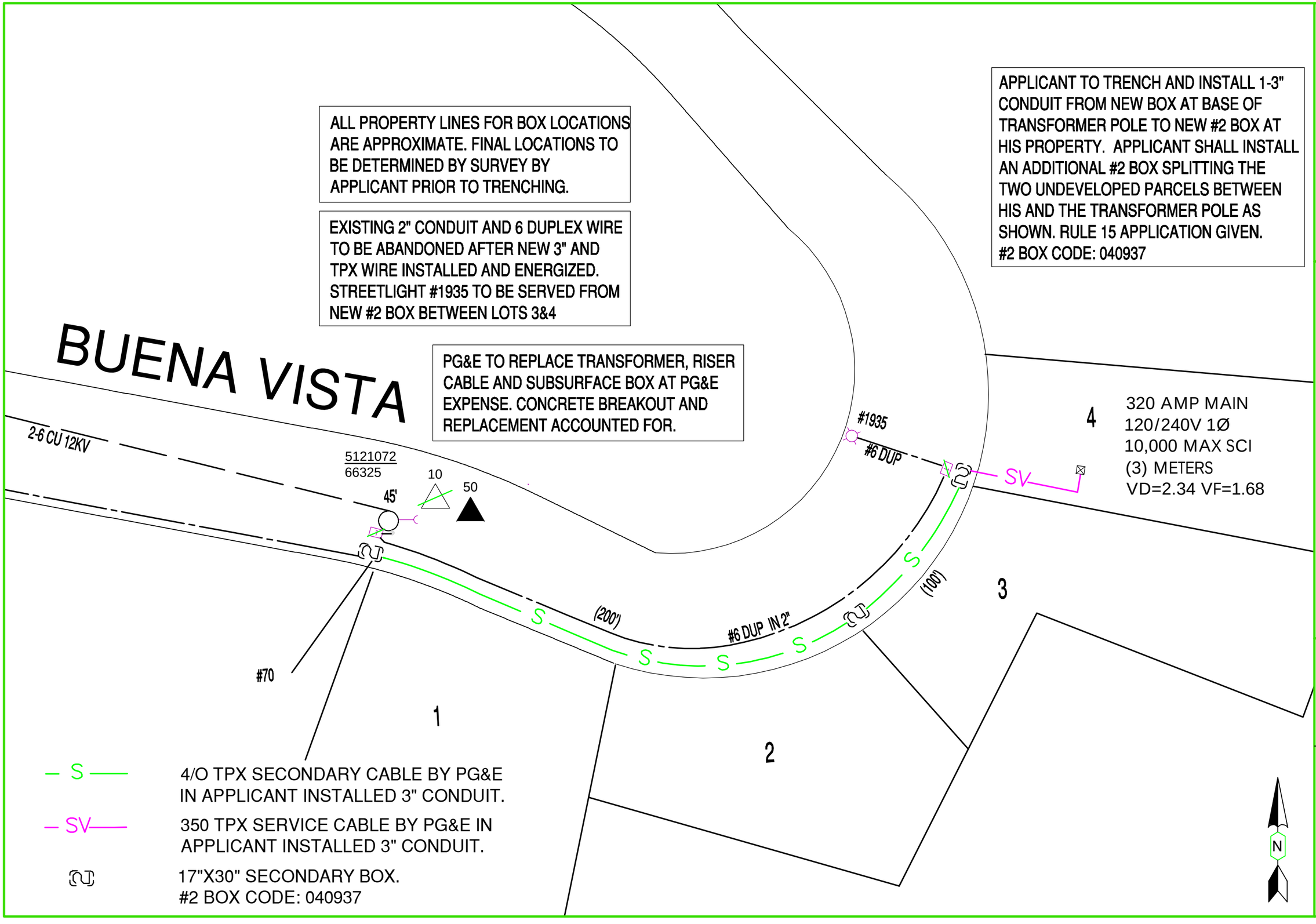
7. **MISCELLANEOUS**- Installations of spare or future conduits that do not terminate in a service panel or box shall be swept up above ground and capped to facilitate the locating of the conduits in the future. The policy of using permanent service panels to supply temporary power is acceptable in some cities and counties. Schedule 40 or 80 PVC riser conduit may be damaged due to staples and nails, and this has resulted in damage to service cables. Therefore, for those locations that will be energized prior to completion of the wall, the conduit shall be Schedule 40, rigid steel conduit to protect the service cables from damage from siding nails, etc.
   Water intrusion into service conduits and meter termination facilities may occur if the source side of the service facility (e.g. secondary splice box) is at an elevation greater that the meter termination facilities. When the intrusion of water can reasonably be expected, as identified above, the following actions are required. The applicant is responsible for providing a means to prevent the accumulation of excess water or water pressure in the service conduit system. This can be accomplished by providing a water diversion device, such as; (1) a PG&E box (size to be determined by PG&E) installed at the base of the meter panel riser, or (2) a series of fittings in the meter panel riser which channels the water out of and away from the service conduit system. The device must be secured and installed in such a manner as to prevent the possibility of physical damage and access to, or extension of any object or wire into the meter panel. Any deviation from the layout drawing must be approved by the PG&E inspector. When meters are grouped at a common location, or when an individual meter serves a remote location (residential or nonresidential), it is essential to properly identify and mark meters. Clearly and permanently mark each individual meter position and its service disconnect means, with the occupancy unit, street address, use, or location served. Examples of permanent markings are identification plates attached with screws or weatherproof adhesive; paint permanently applied using a stencil or careful lettering; or, commercially available decals. All materials and workmanship shall be first quality in every respect, plumb and true according to the specific requirements of the drawings and the above applicable notes and specifications. (rev 4-24-03)

ALL PROPERTY LINES FOR BOX LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED BY SURVEY BY APPLICANT PRIOR TO TRENCHING.

EXISTING 2" CONDUIT AND 6 DUPLEX WIRE TO BE ABANDONED AFTER NEW 3" AND TPX WIRE INSTALLED AND ENERGIZED. STREETLIGHT #1935 TO BE SERVED FROM NEW #2 BOX BETWEEN LOTS 3&4

PG&E TO REPLACE TRANSFORMER, RISER CABLE AND SUBSURFACE BOX AT PG&E EXPENSE. CONCRETE BREAKOUT AND REPLACEMENT ACCOUNTED FOR.

APPLICANT TO TRENCH AND INSTALL 1-3" CONDUIT FROM NEW BOX AT BASE OF TRANSFORMER POLE TO NEW #2 BOX AT HIS PROPERTY. APPLICANT SHALL INSTALL AN ADDITIONAL #2 BOX SPLITTING THE TWO UNDEVELOPED PARCELS BETWEEN HIS AND THE TRANSFORMER POLE AS SHOWN. RULE 15 APPLICATION GIVEN.
#2 BOX CODE: 040937



— S — 4/O TPX SECONDARY CABLE BY PG&E IN APPLICANT INSTALLED 3" CONDUIT.

— SV — 350 TPX SERVICE CABLE BY PG&E IN APPLICANT INSTALLED 3" CONDUIT.

17"X30" SECONDARY BOX.
#2 BOX CODE: 040937

SUBSTRUCTURE SKETCH

48 BUENA VISTA AVE.
SAN LUIS OBISPO, CA

EST: MARK ZEARBAUGH 805-546-5204
ADE: JERRY DEGARMO 546-5229
SUPV: JOSH JONES
REP: MARK ZEARBAUGH 805-546-5204
PLNR:

NOTIF: 110457801 | JPA#:
SCALE: NTS | DATE: 9-5-15
PM: 2110524 | SHEET: 1 OF 1 | REV. 0

NO ENVIRONMENTAL ISSUES

Know what's below. Call before you dig. 811

NEAR LOC: N/A
GAS CONFLICT:
GAS MAP:

PRIMARY VOLTAGE: 120/240
CKT. MAP:
SOURCE SIDE DEVICE: OCB
SUB & CIRCUIT: SLO 1101
DSGN SAG:
LOADING AREA:
CORROSION AREA: MODERATE
EXEMPT EQUIP. INST:

VOLTAGE AREA: 12KV
ELEC.MAP: MM-34-11
RAPTOR ZONE:
ARRESTER DIST:
INSULATION DIST: 2
FIRE AREA: YES