



**CONSTRUCTION NOTES:**

Unless otherwise specified on the working drawing which forms a part of the specification, the Contractor/Developer shall furnish the following items at no cost to the Edison Company.  
Southern California Edison Company has attempted to correctly show all existing utilities and substructures in the vicinity of the work, but does not guarantee there are no other substructures in the area.  
Failure of SCE to show all substructures in their correct location will not be a basis for a claim for extra work, and the contractor shall be responsible for all damages to substructures whether shown or not.

- FOR GENERAL SPECIFICATIONS SEE UGS G 001.
- CONDUIT:
  - Minimum cover in street or parkway is 30" below gutter grade, unless noted otherwise.
  - Minimum cover on private property is 30" below finished grade, unless noted otherwise.
  - Contractor is to furnish and install approved conduit to Edison specifications per UGS CD 100.1, 110 AND 120.
  - For the type of conduit for this job, See UGS CD 110.1.
  - Install all risers per UGS CD 160, 161, 162 and 170.
  - Cap of mainline conduits per UGS CD 148 and service conduits per UGS CD 150.
  - Install blank conduit plugs in all conduits terminating into Vaults, Manholes, PMH's, SOE's & all cap locations, per UGS CD 180.1 & UGS CD 180.2.
  - Install pull rope in all conduit runs. Pull rope to be at least 3/8" polypropylene rope, braided or twisted. For specifications, approved makes, and suppliers, see UGS G 040.
  - All conduit must be maintained with the approved material UGS CD 197.
- CONDUIT RADIUS REQUIREMENTS:
  - The minimum radius for bends are:
    - 36" for conduits 3" in diameter or smaller
    - 48" for conduits 4" and 5" in diameter
    - 60" for 6" diameter conduit
  - The minimum radius for all sweeps of all mainline conduits is 12'-6" (unless noted otherwise).
- EXCAVATION AND BACKFILL:
  - Work area shall be cleared and rough graded to within four inches of final grade prior to installation of Edison conduit or structures.
  - All excavations shall be in accordance with the California State Construction Safety Orders (when applicable), Edison specifications, and all governing local ordinances.
  - Each trench to be a uniform depth below final grade prior to installation of Edison conduit or structures.
  - Backfill shall be provided by the Contractor for all excavations and shall include crushed rock, concrete, and/or imported backfill, when required.
  - Backfill with a MINIMUM of one sack per yard sand cement slurry ground and over vaults and manholes per UGS G 030, section 6.4 and around PMH's within one foot of finished grade, per UGS SS 590.1.
  - Backfill, per Edison specifications, shall immediately follow conduit or substructure installation. At no time shall conduit be left exposed over 24 hours.
  - No rocks are allowed within 12 inches of direct-buried cables or any conduit without concrete encasement. Native backfill capable of passing through a one-half inch mesh screen shall be considered to be "rock free". If existing backfill does not pass through a 1/2" screen, place imported sand 3" below and 12" above Edison cables. After this point, no rocks larger than 12" diameter are permitted.
  - All backfill shall be compacted to meet or exceed local ordinances or other requirements. It shall be placed in a manner that will not damage the conduit or substructure or allow future subsidence of the trench or structures.
- PAVING:
  - Repping, where required, shall be placed in such a manner that interference with traffic, including pedestrian traffic, will be kept to a minimum. The Contractor shall establish a program of repping acceptable to the Municipality, County, or other authority having jurisdiction and which is acceptable to Edison.
- STRUCTURES:
  - All substructures shall be constructed or installed to Edison specifications.
  - Install protection barriers per UGS MS 830 when required in areas exposed to traffic, per Edison Inspector.
  - All conduit lines and concrete floored substructures shall be water tight.
  - All grounding materials shall be furnished and installed by the Contractor.
- RETAINING WALLS:
  - When required, retaining walls shall be provided by the Developer. Walls are required wherever grade rises more than 18 inches above the structure or 24" above the pad surface at a distance of 5 feet from the same, or in areas subject to erosion. Design and installation must comply with local building ordinances. Refer to Edison Inspector for typical space requirements.
- PERMITS:
  - All permits necessary for excavation shall be provided by the Contractor/Developer.
- ACCESS:
  - Heavy truck access shall be maintained to equipment locations. Structures must be clear of all appurtenances that would obstruct the loading or unloading of equipment.
- SERVICES:
  - Meters and services shall comply with Edison Electrical Services Requirements.
  - Wiring must be in accordance with applicable local ordinances and approved by local Inspection Authorities.
- LOCATION:
  - The location of excavations and structures for Edison shall be as shown on the working drawing. No deviation from the planned locations will be permitted unless approved by the Edison Inspector. See UGS G 001, section 2.2.
  - Actual location of obstructions, storm drains, and/or other foreign utilities to be the responsibility of the Contractor. See UGS G 001, section 2.3.
- Contractor is to verify location and widths of all sidewalks and driveways prior to street light installation. See UGS CD 175.1, UGS CD 175.2 and UGS CD 175.3.
- SURVEY:
  - Surveying of street improvements, property corners, lot lines, finished grade, etc., necessary for the installation of underground facilities must be completed and markers or stakes placed prior to the start of the installation. In addition, Developer shall maintain the markers during the installation and inspection by Edison. Grade and property line stakes must show any offset measurements.
- COORDINATION AND SUPERVISION:
  - The Developer shall provide supervision over and coordination among the various contractors working within the development in order to prevent damage to Edison facilities. He is responsible for the cost of repairs, replacement, relocation, or other corrections to Edison facilities made necessary by his failure to provide supervision or to otherwise comply with these specifications.
- TELEPHONE AND OTHER UTILITY REQUIREMENTS:
  - The drawing prepared for this job may also cover the facilities to be installed for the telephone company and/or other utility. Any questions concerning details of their installation should be referred to the company concerned.
- OWNERSHIP:
  - Developer is to deed to the Edison Company all structures shown hereon except those shown as customer owned.
- WARRANTY:
  - Applicants expressly represent and warrant that all work performed and all material used in meeting Applicants' obligations herein are free from defects in workmanship and are in conformity with Southern California Edison Company's requirements. This warranty shall commence upon receipt by Applicants of Company's final acceptance and shall expire one year from that date. Applicants agree to promptly correct to the Company's satisfaction and that of any governmental agency having jurisdiction and at Applicant's expense any breach of this warranty which may become apparent through inspection or operation of underground electric system by Company during this warranty period.
- INSPECTION:
  - Inspection is required during the construction period. A 48 hour advance notice of intent to start construction is required from the contractor to the Southern California Edison Company. Standards of Edison construction requirements are available upon request.

Duct and Structure Inspector: **JESSE CARRASCO** Phone: 310-779-3195  
Cabling Construction Coordinator:

005: Rev. 07/21/16

**CONNECTING TO EXISTING SCE STRUCTURES**

- Per SCE requirements, customers are not allowed to enter, intercept or tie-in to existing SCE facilities, e.g. structures, equipment, multi-conduit runs/banks, or conductors. These facilities may be energized and the work will only be performed by SCE. Contact the appropriate SCE Inspector to schedule an appointment. Customers may connect to an existing conduit stub without a SCE Inspector present.

- Multi-conduit runs/banks are runs of conduit in close proximity to each other and other SCE facilities. A conduit stub is a single empty conduit stub that is not in close proximity to other SCE owned facilities. Refer to the work order map for details.

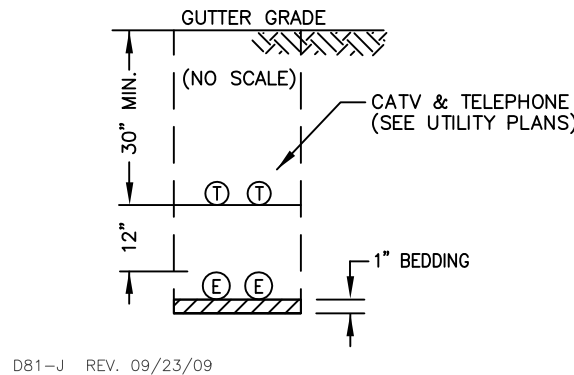
- Per CPUC/SCE's Rule 15 B.1.A and Rule 16 B.1.A., the customer will provide all necessary excavations (with the exception of excavation under pads and primary splice boxes), material (including conduit and structures) and encasement, to be utilized in the intercept/tie-in process.

- The customer must adhere to all applicable Cal-OSHA, local, city, state and federal regulations, (including, but not limited to, all necessary shoring and traffic control in place to perform the intercept/tie-in work by SCE's underground civil contractor(s)).

- Intercept/tie-in work must be coordinated with SCE's civil contractors through the Division Inspector/P-Spec to limit exposure of excavation(s). Customer is responsible for securing excavation(s).

DOB: 11/13/18

**TYPICAL CONDUIT SECTION JOINT WITH CATV & TELE SEE UGS CD 120**



DB1-4 REV. 09/23/09

CUSTOMER-OWNED CONDUIT MATERIAL AND CONCRETE ENCASEMENT ARE TO BE INSTALLED IN ACCORDANCE WITH EDISON ELECTRICAL SERVICE REQUIREMENTS.  
\*SUBJECT TO APPROVAL BY LOCAL INSPECTION AUTHORITIES

WHERE CONDUITS ARE PICKED UP OR INTERCEPTED, CONDUIT SHALL BE MANDRELLED AND PULL ROPE INSTALLED FROM TERMINAL TO TERMINAL.

**CONDUIT RADIUS REQUIREMENTS:**  
A: The minimum radius for bends are:  
36" for conduits 3" in diameter or smaller  
48" for conduits 4" and 5" in diameter  
60" for 6" diameter conduit  
B: The minimum radius for sweeps are:  
36" for conduits 3" in diameter or smaller  
12'-6" for conduits 4" in diameter and larger, unless otherwise noted.

**INTERCEPT ENERGIZED CONDUIT**  
(Split "Y" Fitting and/or Intercept Energized Conduit)  
The customer is responsible to trench up to and completely around the existing energized conduit at the location it is to be intercepted. The customer is to provide the Split "Y" fitting and any slip couplings or conduit needed for the intercept.

**CITY OF TORRANCE**  
**PETROL 16KV**  
**LA FRESA SUB**

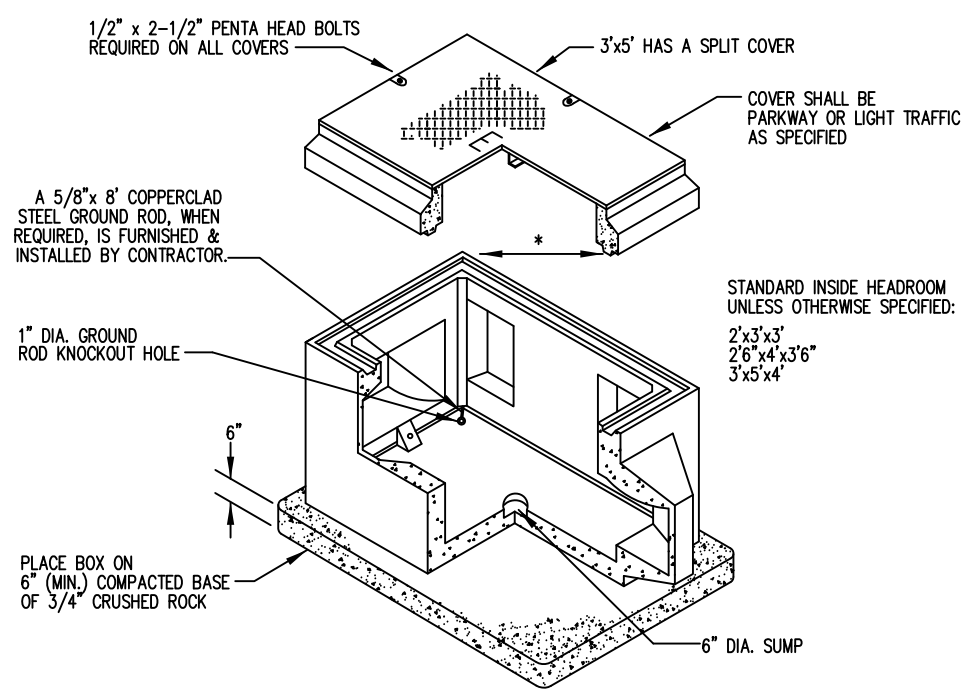
**UNDERGROUND SERVICE ALERT**

Contact USA  
Dial 811 or 800-422-4133  
www.digalert.org/contact  
For Underground Locating  
Two Working Days Before You Dig

016: Rev. 05/28/20

**WARNING**  
THE EXCAVATOR MUST TAKE ALL STEPS NECESSARY TO AVOID CONTACT WITH UNDERGROUND FACILITIES WHICH MAY RESULT IN INJURY TO PERSONS OR DAMAGE TO FACILITIES IN THE AREA. THE INDICATED LOCATIONS OF EDISON UNDERGROUND FACILITIES, AS PROVIDED, ARE BELIEVED TO BE ACCURATE. HOWEVER, THE FINAL DETERMINATION OF EXACT LOCATIONS AND THE COST OF REPAIR TO DAMAGED FACILITIES IS THE RESPONSIBILITY OF THE EXCAVATOR.

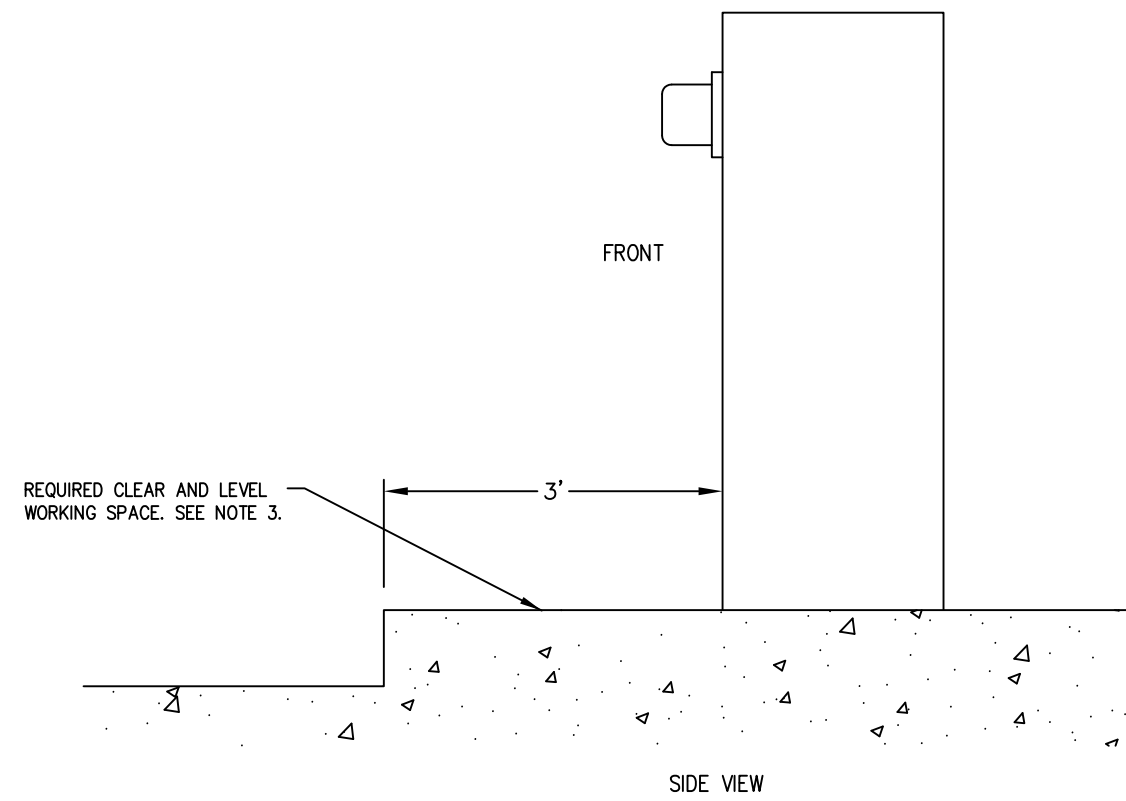
**PRECAST CONCRETE PULL BOX WITH DEEP RECESSES (2'X 3' OR 2'6"X 4' OR 3'X 5')**  
**SEE UGS HP 215, 220 & 225**



\* TYPE OF JOINT MAY VARY WITH MANUFACTURER  
REF. UGS HP 215  
UGS HP 220  
UGS HP 225  
053: Rev. 03/05/07

**TIE-IN MADE THROUGH SIDE WALL OF STRUCTURE**  
(Vault, Manhole, PME, SOE/CST, BURD, Slab Box, Pull Box, PMH)  
The customer is responsible to trench to the structure entrance point and bring the conduit to within 5' of the structure being entered. The customer is to provide slip coupling and conduit.

**PANEL CLEARANCE UNDERGROUND SERVICE CONNECTIONS 0-600 VOLTS**  
**SEE ESR 3-16**

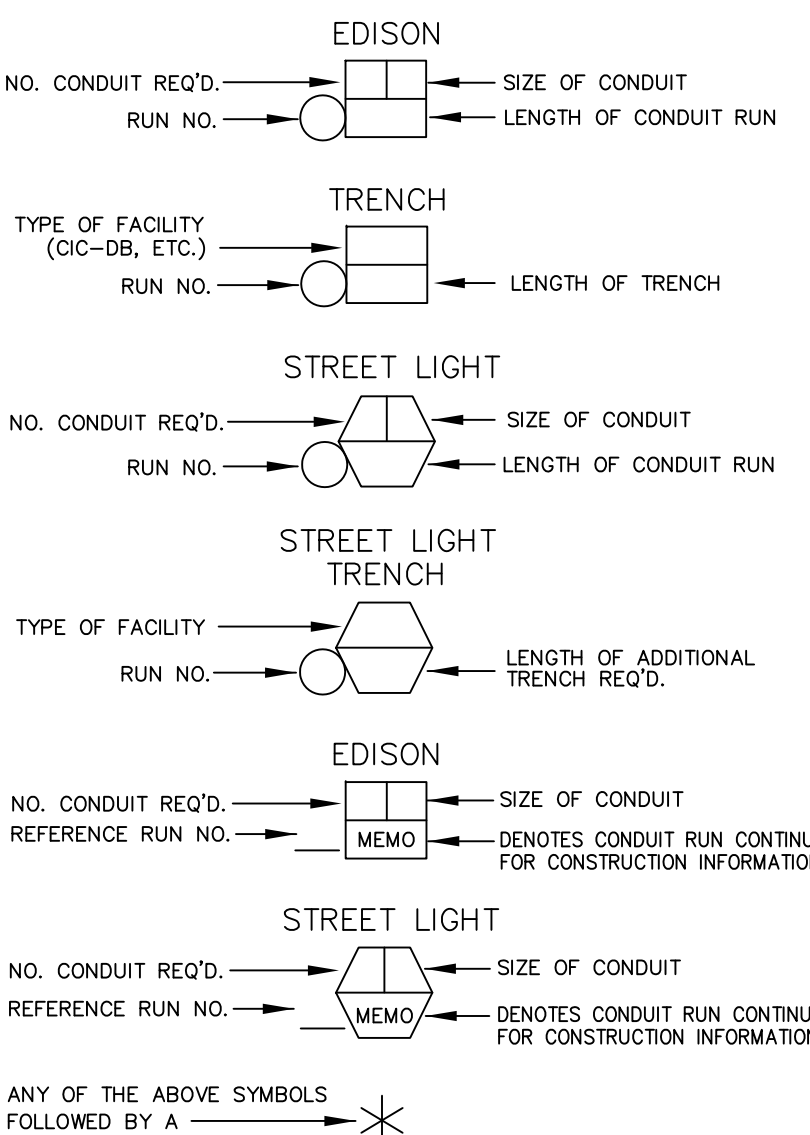


NOTES:

- A MINIMUM OF THREE (3) FEET OF CLEAR, LEVEL WORK SPACE IS REQUIRED IN FRONT OF ALL TERMINATION, METERING, AND SERVICE EQUIPMENT.
- SEE ESR-5 FOR METER-MOUNTING HEIGHT REQUIREMENTS. METER MOUNTING HEIGHT WILL BE MEASURED FROM THE STANDING AND WORKING SPACE TO THE CENTERLINE OF THE METERS(S).
- WHEN SERVICE EQUIPMENT IS INSTALLED ON AN ELEVATED PORTION OF THE FLOOR/GROUND, OR HOUSEKEEPING PAD, THE PAD SHALL BE FLUSH WITH AND EXTEND A MINIMUM OF THREE (3) FEET. THIS IS MEASURED FROM THE FRONT OF THE SERVICE EQUIPMENT OR THE OUTER DOOR(S) OF THE SWITCHBOARD NEHA, OR ENCLOSURE WHEN INSTALLED. IN NO CASE SHALL THE MAXIMUM METER HEIGHT OF SIX (6) FEET THREE (3) INCHES BE EXCEEDED.
- TO MAINTAIN A SAFE, CLEAR, AND LEVEL WORKING AREA IN FRONT OF NEW OR EXISTING METER AND SERVICE EQUIPMENT, A CONCRETE SLAB OR OTHER SUITABLE PERMANENT HARD SURFACE, ACCEPTABLE TO THE COMPANY, MUST BE USED.
- FOR SWITCHBOARDS ABOVE 600V, FIVE-FOOT MINIMUM OF CLEAR AND LEVEL STANDING AND WORKING SPACE IS REQUIRED IN THE FRONT, REAR, AND SIDE OF ANY SECTION WHERE SUCH PART SUPPORTS OR PROVIDES ACCESS TO METERING, TESTING EQUIPMENT, OR SERVICE CABLE TERMINATION SECTIONS.

099: 07/08/07

**LEGEND OF CONDUIT SYMBOLS (CONVENTIONAL U. G.)**



ANY OF THE ABOVE SYMBOLS FOLLOWED BY A DENOTES THE FOLLOWING:

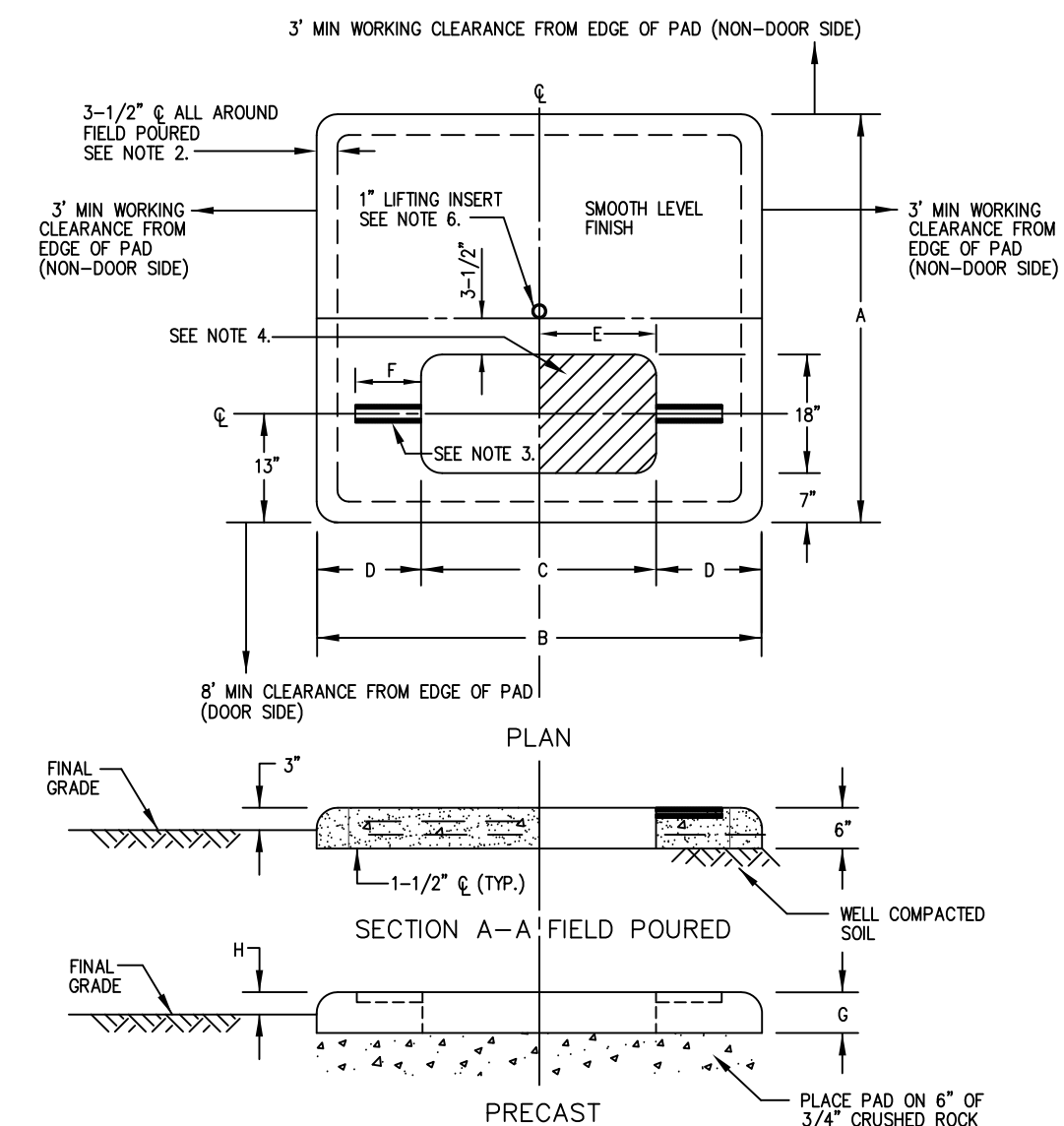
DB CONDUIT WITHOUT ENCASEMENT IS ACCEPTABLE FOR PORTIONS OF TRENCH WITH ONLY ONE OR TWO CONDUITS

SEM-ENCASUREMENT IS REQUIRED FOR PORTIONS OF TRENCH WITH ONLY THREE OR FOUR CONDUITS

FULL ENCASEMENT IS REQUIRED FOR MORE THAN FOUR CONDUITS

D18: Rev. 5/08/2006

**PAD FOR SURFACE-MOUNTED TRANSFORMER**



TALE SS 504-1: Surface-Mounted Transformer Pads-Dimensions

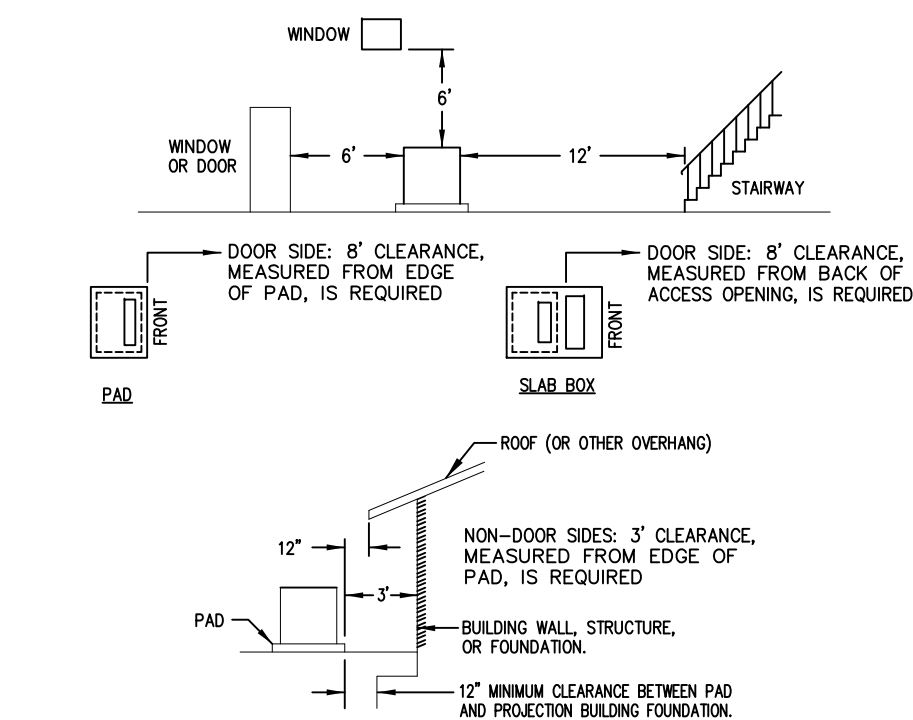
Transformer	Pad Dimensions (in)								Weight (lb)	SAP
	A	B	C	D	E	F	G	H		
1φ 25 KVA-167 KVA 3φ	54	48	26	11	12	6	4	2	750	10118012
3φ 75 KVA-150 KVA SW and Fuse	72	94	50	22	22	14	6	3	3,200	10118013

Notes(s):

- Concrete to be 3,000 psi (minimum) at 28 days.
- Reinforcing steel to be No. 4 bars installed in a double net. Perimeter bars to be continuous (8" minimum lap or weld).
- Hold-down brackets to be P-3200 series unistrut (or equal).
- Primary cables must be installed in shaded area of drawing above as far to the right as possible on single phase transformers only. On three-phase transformers primary cables must be installed in the unshaded area of drawing above as far left as possible.
- See AC 701 for pad-mounted transformer/capacitor grounding requirements and AC 703 for approved grounding materials.
- 1-inch listing insert to be located at center of gravity on precast pads.
- See SS 500 for approved manufacturers.
- The three-phase transformer shall only be used on a pad when four or fewer services are to be installed. A slab box should be used when more than four services will be installed.
- Use a thin layer of redi-crete (or equivalent) for rodent and weed control or where transformer does not fully cover opening in pad.
- A 17" x 30" x 15" plastic handhole (SAP 10117726) shall be inverted and installed under the cable opening of the pad.
- This will provide adequate cable slack for operation of the load-break elbows on single phase transformers only.

D43: Rev. 05/28/20

**MINIMUM CLEARANCES FOR PADMOUNTED TRANSFORMERS**  
**SEE DDS-3, 3-40**



NOTES:

- A 6' MINIMUM CLEARANCE IS REQUIRED ON DOOR SIDE OF TRANSFORMER FOR OPERATION. THIS AREA MUST REMAIN CLEAR OF ALL OBSTRUCTIONS INCLUDING, BUT NOT LIMITED TO, STAIRS, TREES, GATES, FENCES, WALLS, SIGNS AND POLES.
- PAD-MOUNTED TRANSFORMERS SHALL NOT BE LOCATED IN FRONT OF DOORS, STAIRWAYS, BENEATH WINDOWS THAT CAN BE OPENED, OR WHERE THEY WILL OBSTRUCT THE VISION OF VEHICULAR TRAFFIC.
- PAD-MOUNTED TRANSFORMERS SHALL BE LOCATED AT LEAST THE MINIMUM DISTANCE AWAY FROM BUILDINGS OR OTHER STRUCTURES TO ENSURE ADEQUATE SPACE FOR OPERATING, TO MINIMIZE VIBRATION HAZARD, AND TO MEET FIRE SAFETY REQUIREMENTS.
- A CLEAR PASSAGEWAY OF 12 FEET MINIMUM SHALL BE AVAILABLE AT ALL TIMES, IMMEDIATELY ADJACENT TO ONE SIDE OF THE TRANSFORMER TO PROVIDE AN ACCESSIBLE ROADWAY FOR TRANSFORMER MAINTENANCE. THIS PASSAGEWAY SHALL BE DESIGNED TO MEET H-20 (OR H-10) CONSTRUCTION.
- TRANSFORMER STRUCTURES WILL NORMALLY BE INSTALLED ONLY IN NONTRAFFIC AREAS. TRANSFORMER PROTECTION IS REQUIRED WHEN COMPANY EQUIPMENT IS EXPOSED TO TRAFFIC. THIS PROTECTION MAY BE IN THE FORM OF BARRIERS, BARRICADES, CURB. A CURB MUST HAVE A MINIMUM HEIGHT OF 6 INCHES AND BE AT LEAST 6 INCHES THICK AND ITS FRONT FACE LOCATED 60 INCHES MINIMUM FROM THE EQUIPMENT FOUNDATION.

DS4: Rev. 05/14/12

DISTRICT 44 - SOUTH BAY	PROJ. MGR. HU, BAIXUE PHONE	PLANNER HU, BAIXUE PHONE 310-386-0654	DESIGNER ELLIS, CASSANDRA D
PROJECT NO. 1722613-3 1722613-3-SERVICE REQUEST 1722613-3-NEW METER & SERVICE	MSR NO. 1221396G	PRODUCT-1 CIRCUT / VOLTAGE THOMAS GUIDE	ASSOC DESIGN
PETROL 16KV SUB 7 PIP NO. LA FRESA	CIRCUIT CODE	PRODUCT-2 PRODUCT-3	ASSOC DESIGN
INVENTORY MAP 39-66C-7	J.P.A. NO.	PROPOSED CONSTRUCTION (LOCATION)	
		20500 MADRONA AVE TORRANCE, CA 90503	
3/24/2021	ANDREW CORTIZ	BAIXUE HU	C ELLIS
TYPE	DATE	APPROVED BY	CHECKED BY
Southern California Edison Company			
SHEET			1295040_0.01