CUSTOMER INFORMATION BOOK

FOR INSTALLING INDIVIDUAL UNDERGROUND ELECTRIC FACILITIES

TURLOCK IRRIGATION DISTRICT

Revision February 2025

P.O. BOX 949
333 EAST CANAL DRIVE
TURLOCK, CA 95381
(209) 883-8415

Updates for 2025

Construction Standards

30571- Added Warning Tape and Compaction Test

34605 – Added Conductor and Conduit Table

34610 – Initial Issue IU w/ Service Box

34701 – Revised Conductors Based on NEC Table 310.16

35201 – Updated Conduit Sizes

Material Standards

2022 – Added Interior Dimensions and “Trade Size” Column

2170 – Added Swedge Couplers

2202 – Added 4/0 Quad

TABLE OF CONTENTS

Section 1

General Information

1.1 WHAT IS AN I.U.?

An individual underground (I.U.) is a single service fed underground from an overhead transformer mounted on a TID pole. I.U. service panel sizes shall be 100 amp to 600 amp. For panel sizes greater than 600 amp, consult TID Electrical Engineering.

1.2 WHEN CAN I HAVE AN I.U. SERVICE?

You can have an I.U. service if your service panel is close to existing overhead electric facilities (generally less than 300 feet), or if an overhead line extension can be built close to your panel.

1.3 HOW DO I PROCEED TO GET AN I.U.?

1.3.1 Apply with Electrical Engineering at TID. Provide panel location, voltage and load, date needed, and other applicable information.

1.3.2 Pay TID the I.U. connection fee and sign up for the meter.

1.4 WHAT IS THE PROCESS AFTER I APPLY?

1.4.1 TID will field the job, prepare design drawings and material list, and will provide construction information to you.

1.4.2 You will provide an estimate of the date you will install your facilities and need power, and TID will schedule to set a pole if necessary.

1.4.3 You will acquire the appropriate materials, dig the trench, and install the conduit and service wire. E-mail (inspections@tid.org) or Fax (209-656-2140) TID for inspection prior to backfilling the trench. See the TID Inspection Request Form.

1.4.4 You will need your panel inspected and tagged by the local governing inspection authority (city, county, etc.). If you are going to be ready for power earlier or later than what you told TID, please notify us so that we can update our schedule.

1.4.5 When tagged, you will need to notify TID at the numbers above so we can energize your panel.

1.5 WHERE DO I PUT MY PANEL?

TID has the final say on meter location, and some locations are prohibited. There are requirements for meter height and access also. See Section 2 for more information.

1.6 WHERE DO I GET MATERIALS, AND WHAT KIND?

Depending on the size of your panel and other conditions, TID will inform you of wire and conduit size for your panel. You must install the size and type of materials approved by TID (TID does not accept copper service wire or compacted wire). For details on material requirements and where they can be purchased, see Section 4 and Section 5.

1.7 WHAT ELSE DO I NEED TO KNOW?

Your service panel must be acceptable to TID as well as to the inspecting authority. You should tell your supplier to provide a panel that meets TID's EUSERC requirements, and/or consult with TID directly prior to purchase.

You should familiarize yourself with the drawings and notes in the following sections to ensure your installation work is safe and meets requirements.

In addition to installing the conduit and service wire, you are responsible to connect the service wires to your panel. TID will connect them on the other end.

If TID construction has not been completed within 2 years of receipt of a completed application, the customer may be required to re-apply under the then current Electric Service Rules, Electric Service Schedule of Charges, and other construction requirements.

1.8 WHAT IF I NEED A BACKUP GENERATOR?

Backup generators are a significant safety issue. Even a small generator that is improperly connected can result in serious injury or death to TID line workers and customers and can cause significant damage to facilities. For this reason, TID requires that any backup generators our customers may use to supply load that is also supplied by TID must be interconnected via a TID-approved transfer switch, such that the generator in a fail-safe manner is prevented from ever connecting to TID's system. To avoid expensive redesign and panel/equipment replacement, please provide a single line diagram showing the proposed interconnection of any generators, and detailed model and specifications for the proposed transfer switch to TID for approval prior to purchase of equipment. In general, TID will approve transfer switches that are mechanically interlocked throw-over type knife blade switches without bypass provisions, though alternative transfer switch types will be considered if adequate details are provided.

TID Inspection Request Form

(Please Print)
Complete all of the information below and either e-mail (inspections@tid.org) or fax (209-656-2140) to the Turlock Irrigation District Line Department

Address of Inspection:_____
_____

Directions:_____
_____
_____
_____

Type of Inspection Requested:_____
_____

Owner's Name:_____
Phone Number:_____

Contractor's Name:_____
Phone Number:_____

All conduits and substructures installed for TID use must be inspected prior to backfilling. Failure to obtain an inspection will require the installer to expose the buried facilities for inspection.

Refer to the appropriate TID information booklet for material specifications and construction standards. Booklets may be obtained at 333 East Canal Drive in Turlock or online at http://tid.com/power/engineering-construction

WATER & POWER
Serving Central California since 1887

Underground Inspection Check Sheet

INSPECTIONS: www.tid.org/power/electrical-inspection-request/

Inspections: (209)883-8476 OR call (209) 606-0136 for questions

CUSTOMER NAME: _____

CONTACT NUMBER: _____

JOB LOCATION: _____

JOB NUMBER: _____

W.O. NUMBER: _____

INSPECTIONS:	**INSPECTOR:**	**DATE:**
☐ **PRE CONSTRUCTION MEETING**		
☐ **TRENCH:** *Ref: 30571		
☐ **PRIMARY CONDUIT:** *Ref: 30570,35201		
☐ **SECONDARY CONDUIT:** *Ref: 30571,35201		
☐ **WIRE:** *Ref: 30800,34701		
☐ **SECONDARY BOX:** *Ref: 34805,35201		
☐ **TRANSFORMER PAD:** *Ref: 35051,35054		
☐ **GROUND GRID:** *Ref: 35051		
☐ **REBAR:** *Ref: 35101		
☐ **SECONDARY MANDRIL:**		
☐ **PRIMARY MANDRIL:** *Ref: 35201		
☐ **PANEL:** Ref: 34815		
☐ **PLACARDS:**		
☐ **BOLLARDS:** Ref: 35151, 35152, 35154,35155		
☐ **INSPECTION TAG:**		
☐ **KNOX BOX:** Ref: 50510		
☐ **VAULT:** Ref: 35202		

NOTES:

*Reference Constriction Standards

*Photos will NOT be accepted
in lieu of inspections

customer information sticker

Section 2

Meter Requirements

2.1 Meter Height

The requirements for meter height, which is the vertical distance between the centerline of the meter and the ground or standing surface, shall be as follows:

48" minimum - 75" maximum for single meter residential & meter pedestals

36" minimum – 75” maximum allowed for commercial meter clusters in self-supporting, rain-tight cabinets

2.2 Meter Working Space

Working space in front of the meter permits access to the metering installation and provides working safety for personnel. A working space entirely on the property of the customer is required in front of all meters except for buildings constructed on zero lot lines.

The working space is to be kept clear and unobstructed and shall not be used for storage.

When meters or metering equipment are placed in cabinet enclosures, the clear working space shall extend from the outer face of the cabinet.

The height of the clear working space shall be 78 inches minimum from the standing surface.

The width of the clear working space shall be 36 inches minimum for a one meter installation and shall extend the additional width necessary for access to the total number of metering panels. The centerline of any meter shall not be less than 18 inches from any adjacent side wall or other protruding obstruction.

The depth of the clear working space shall be 36 inches minimum for services rated 150 volts or less to ground. When the service is rated in excess of 150 volts to ground, the depth shall be as required by applicable electrical codes or as dictated by the physical design and arrangement of the metering cubicles.

2.3 Meter Locations – General Conditions

In order that the most satisfactory meter location may be determined and adequate space provided, TID should be consulted while the building or residence is in the preliminary planning stage. Installation of additional facilities at the customer's expense or future relocations at his expense may be prevented by early consultation with TID.

The following basic location requirements shall apply in all cases:

2.3.1 All locations for meters and metering equipment are subject to TID approval.

2.3.2 Meters shall be accessible (with dual locking devices if necessary) during and after landscaping or other building construction. No meter shall be enclosed by any fencing without permission from an authorized TID representative.

2.3.3 Meters and metering equipment installed on or recessed in the external surface of any building shall have a clear working and standing space entirely on the property of the customer served. Any exception from this requirement must be approved by TID.

2.4 Unacceptable Locations for Electric Meters

2.4.1 In any location that is hazardous to equipment or persons or unsuitable for entry, such as:

a. any elevator shaft.
b. any doorway or hatchway.
c. directly over any stairway, ramp or steps.
d. any area accessible only through a trap-door, hatchway, or by means of a ladder.
e. any area where personnel may contact exposed high voltage conductors or equipment in motion.

2.4.2 In any place where vibration, moisture, excessive temperature, fumes, or dust may damage the meter or interfere with its operation.

2.4.3 Within or requiring access through any bath, shower, powder or toilet room.

2.4.4 On any portion of a building where later landscaping, fencing or other building construction will make the meter inaccessible.

2.4.5 Within any enclosed area that contains or will contain gas meters.

2.4.6 Meters and metering equipment shall not be installed within any locked facility in which TID would be denied access at any time of the day.

2.4.7 Indoors.

2.4.8 Outdoor meters shall not be installed where they will interfere with traffic, sidewalks, driveways, or where they will obstruct the opening of doors or windows, or in any location which may be considered hazardous or cause damage to the metering equipment.

2.5 Remote Metering

Remote metering is acceptable in instances where an external panel or switchboard is not utilized.

The following special arrangements are required:

2.5.1 Applicant shall provide an approved CT mounting cabinet that complies with the previous paragraph "Meter Locations - General Conditions."
2.5.2 1 1/4" steel conduit between the CT cabinet and meter socket.
2.5.3 Meter will be located within 50 conductor feet of CT cabinet.
2.5.4 Junction boxes are permitted only if they can be sealed.
2.5.5 Couplings must have seal screws.
2.5.6 For special meter distance requirement, refer to construction standard 50510.

2.6 Planning and Grouping of Additional Meters

Occasionally there is need to locate and install additional service and metering equipment after the originally planned electric service for a building is installed and energized. Where possible, additional meters should be grouped with those electric meters already in service.

2.7 Two or More Houses on One Lot

If more than two dwellings or buildings are located on the same lot, consult TID to determine acceptable meter locations before proceeding with the wiring of the buildings.

For a single-family dwelling located behind another dwelling or commercial establishment on an inside (non-corner) lot not subject to further subdivision, the meters shall be located adjacent to each other at the building closest to the distribution line from which service will be supplied. All wiring beyond the meters will be at the customer's expense.

For multi-dwelling buildings constructed on the rear of non-commercial lots, if practical, and at the customer's request, TID will install separate service facilities to the rear building. The meters for the rear building shall be grouped together at a suitable location at the rear building.

2.8 Meter Occupancy Identification

Where meters are grouped at a common location, such as for two or more houses on a lot or for a multiple occupancy building, either residential or non-residential, each meter position and its directly identifiable service disconnect shall be clearly and permanently marked by the building owner or his representative to indicate the occupancy served (Per N.E.C. 230-72a). Examples of permanent marking shall be engraved plate attached by screws, rivets, or two-part epoxy. Clear identification means a legible apartment or street number. The store name may be included but does not constitute a clear designation in

itself. Apartment or suite numbers must be on or adjacent to the door of each unit.

2.9 Sealing of Meters and Metering Equipment

All meters and enclosures for meters, metering equipment and service entrance equipment on the line side of the meter will be sealed by TID. The TID seal shall not be broken except by an authorized representative of TID. No person is permitted to tamper, remove, replace, or in any way interfere with a meter or its connections as placed by TID.

2.10 Meter Socket Bypass Devices

Automatic bypass or circuit closing devices that close when the meter is removed from the socket shall not be used.

Manual circuit closing devices are required on all service entrance equipment exceeding 30 amps nameplate rating except domestic, signboards and temporary service. Service entrance equipment must be continuously rated per U/L 414.

2.11 Self-contained Metering Defined

A self-contained meter is capable of carrying the total current at the voltage of the electric service supplied to the customer. Sockets for self-contained meters are directly connected to the customer's service entrance conductors, and the meter is inserted into the socket. Meter sockets are available with nominal ratings of 100 or 200 amperes. Contact TID for details on single-phase, 400 amp service.

2.12 Transformer-rated Metering Defined

When the electric service needs of the applicant exceed the ampacity or voltage limitations of a self-contained meter, metering transformers, which connect directly to the customer's service entrance conductors, must be used. A transformer-rated meter is then connected to the metering transformers to measure the energy delivered to the customer. The metering transformers and the transformer-rated meter(s) are furnished and installed by T.I.D.

2.13 EUSERC

Electric Utility Service Equipment Requirements Committee (EUSERC) is an organization whose purpose is to promote uniform electric service requirements among the utilities. TID is a member of and supports EUSERC. As such, when an applicant wishes service within the District service area and the equipment chosen meets EUSERC, it is understood, with some specific exceptions, that TID will provide power to the equipment. Check with the District for details.

2.14 Switchboards

Switchboards are considered a specialty item for metering equipment. TID requires two sets of approval drawings of such equipment. If TID takes exception to the equipment, the applicant will be notified of the changes required. Should the applicant request service and the equipment is not acceptable, service will not be connected. Have the equipment checked and approved prior to requesting service. It will save time and headaches for everyone involved.

The switchboard must at a minimum meet EUSERC requirements. A switchboard service section has a hinged meter panel located in front of the instrument transformer compartment. Hinged meter panels must have EUSERC handles and open a minimum of 90° with meters and test switches mounted. Hinged meter panels must be sealable.

For special meter distance requirement, refer to construction standard 50510.

Section 3

Construction Standards Drawings

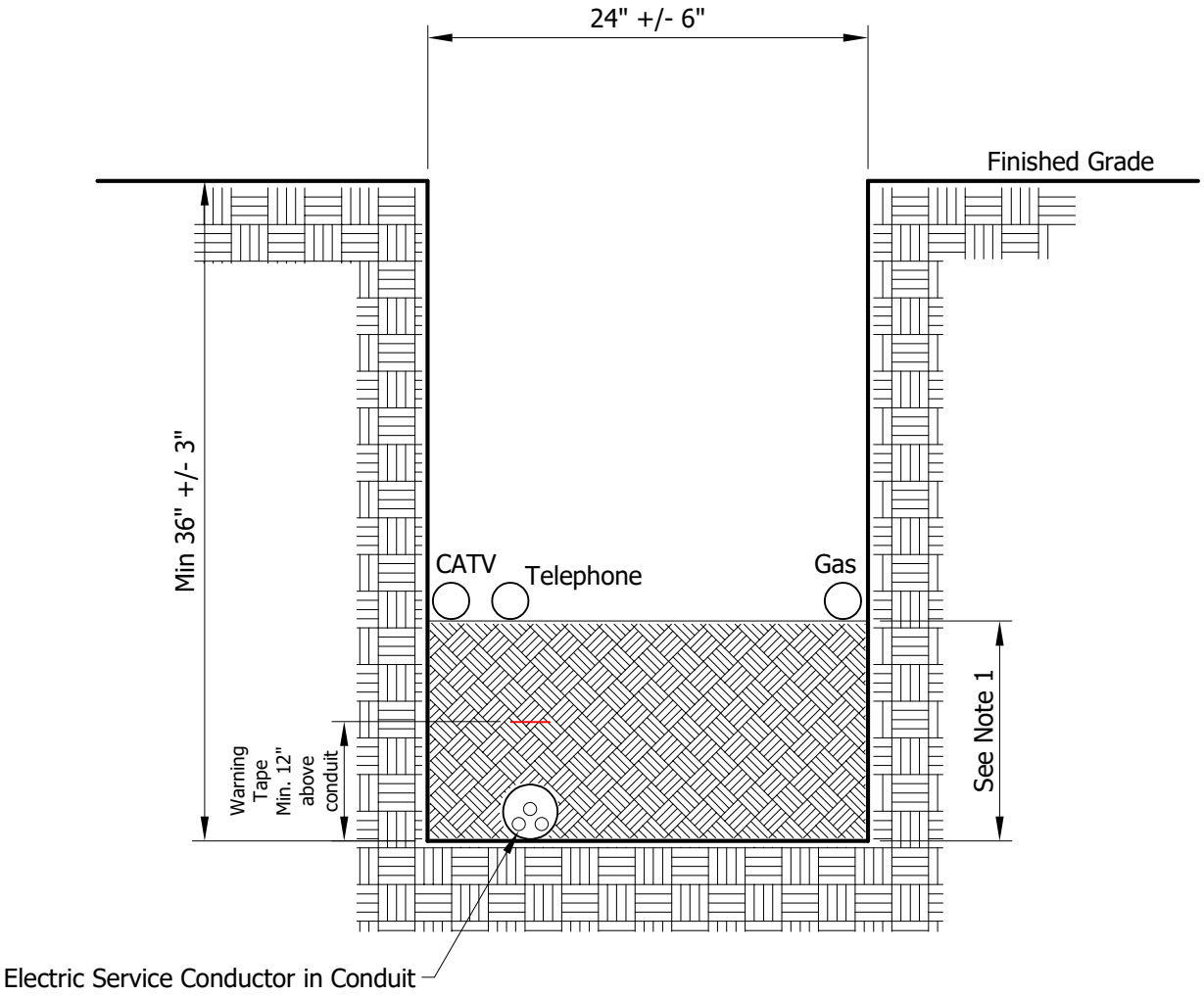


Figure 1
Service Trench Configuration

Notes:

1. 1'-6" minimum non-native compacted backfill, with compaction to be not less than 95% relative compaction. A compaction test with the testing companies information: Name, Address and Contact Information may be required buy TID.
2. Backfill material to be non-rock with no clumps larger than 1" diameter.
3. Conduit size as per Construction Standard 35201.
4. Depth trench subject to be deeper to accommodate larger sweeps.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
G	ADDED WARNING TAPE AND COMPACTION TEST	ADL					SSG	05-2024
F	UPDATED TITLEBLOCK, ADDED HYPERLINK	ELJ	RWB	LJC	RA		MSG	09-2016
E	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
D	CLARIFY GENERAL & TID NOTES	BB	ETE	RWB	LBG		RA	01-1994
C	DIMENSION CHANGE	SCP	RWB	LBG	RA		AKH	09-1989

SERVICE TRENCH CONFIGURATION

SHEET 1 OF 1

30571 DWG. NO. **G**

13 PAGE

DIRECTIVE FOR PULLING CONDUCTOR IN UNDERGROUND CONDUIT

1. On all pulls, the pullout manhole should be rigged so that an adequate amount of conductor for splicing or terminating may be pulled into the manhole without the necessity of taking hitches on the conductor sheath or jacket. The maximum stress occurs at the leading end of the conductor.
2. Conductor pulls shall be made such that bends are nearest to the feed end. This arrangement results in minimum tension on the conductor.
3. Before making a pull, the duct line should be clear and free of dirt, rocks, etc. If necessary, clean duct by use of wire brush, mandrell, etc.
4. The pulling line used to pull conductors through conduit shall be of adequate strength to pull the maximum allowable conductor pulling tensions. The use of "Flat Strap" or "Mule Tape" (TID Stock number U-8200-004) pulling line is recommended to avoid the pulling line burning through the elbows during difficult pulls.
5. Tables 1 through 4 describe the conductors used in underground construction and list the maximum allowable pulling tensions for each conductor. The use of a basket grip over the insulation is allowed only on pulls where the maximum tensions are expected to be less than 1,000 pounds per conductor. Pulling eyes that pull directly on the conductor(s) are acceptable on all pulls.
6. The minimum bending radius for insulated conductor shall be calculated as the overall conductor diameter times the multiplier as shown in Table 5, Sheet 2 of this standard.
7. The use of a conductor protector (TID Stock Number U-6360-001) is required on all conductor pulls into conduit as shown in Figure 1, Sheet 3 of this standard. The cable should be carefully guided into the duct, particularly at the start of a pull. Ample amounts of conductor pulling compound (TID Stock Number U-6290-001) should be used. The use of a feed-in tube extending from the pulling area directly into the conduit may be utilized where hand feeding the conductor into horizontal conduits is difficult.
8. When the conductor pull is complete, the conductor ends shall be wiped clean of the conductor pulling compound. All conductors shall then be capped to prevent water from entering the conductor strands. On primary cables, use heat shrink end caps (TID Stock Number U-6390-XXX). On secondary conductors, seal the conductor ends with a double wrap of plactic tape.

Table 1 Primary (25 kV) Cable Physical Data

Cable Size	Insulation	Cable O.D. (in.)	Maximum Allowable Pulling Tension (lbs./cable)
#2	TR-XLPE	1.14	400
1/0	TR-XLPE	1.24	400
1/0	EPR	1.22	400
600 MCM	EPR	1.80	4,800
1000 MCM	EPR	2.26	8,000
1100 MCM	EPR	2.05	8,800

Table 2 Secondary (600 V) Conductor Physical Data (Single Conductor)

Conductor Size	Conductor O.D. (in.)	Maximum Allowable Pulling Tension (lbs./conductor)
#6	0.36	160
4/0	0.70	1,270
350 MCM	0.89	2,100
500 MCM	1.02	3,000
750 MCM	1.20	4,500
1000 MCM	1.35	6,000

Table 3 Secondary (600 V) Conductor Physical Data (Triplex Conductor)

Conductor Size	Conductor O.D. (in.)	Maximum Allowable Pulling Tension (lbs./conductor)
1/0	1.09	1,670
2/0	1.18	2,235
4/0	1.39	3,175
350 MCM	1.78	5,470
500 MCM	2.04	8,100

Table 4 Secondary (600 V) Conductor Physical Data (Quadplex Conductor)

Conductor Size	Conductor O.D. (in.)	Maximum Allowable Pulling Tension (lbs./conductor)
1/0	1.16	2,305
2/0	1.25	3,035
500 MCM	2.16	11,100

Table 5 Minimum Bending Radius Multiplier

Type of Conductor	Multiplier
Primary (25 kV) Cable	12
Secondary (600 V) Conductor	5

See Note 6, Sheet 1 of this standard

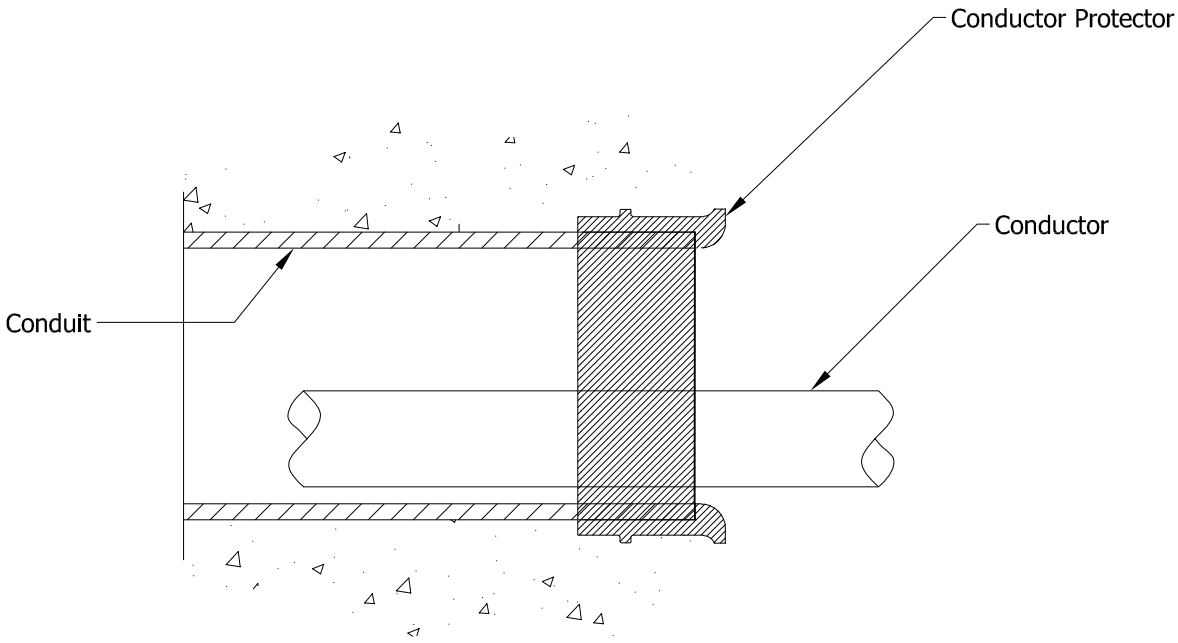


Figure 1
Conductor Protector

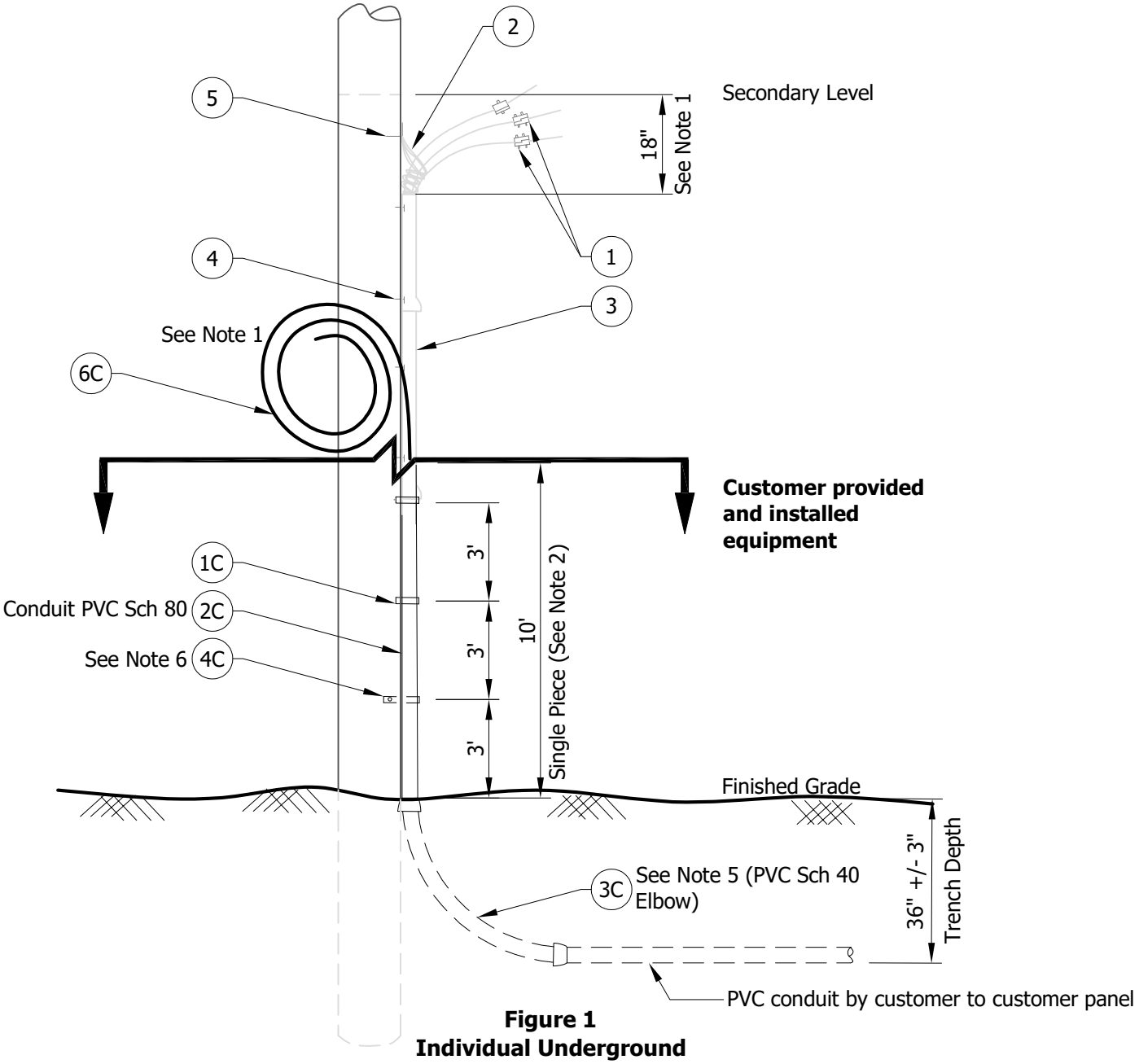


Figure 1
Individual Underground

Notes:

1. Service cable (provided by customer) is to be of sufficient length to exceed secondary level by three feet. Coil cable and tie in manner that will not damage cable.
2. After the elbow, (1) 10' straight length of conduit up the pole (no bell up) to be provided by customer.
3. TID to inform customer which quadrant of the pole the conduit is to rise.
4. TID to inspect conduit prior to backfilling.
5. All elbows to be 36" radius, schedule 40. Attach conduit straps to pole using washerhead lag screws.
6. Refer to Construction Standard 34805 for service box installation.
7. No service greater than 225kVA (480V) will be served from pole mounted transformers.
8. No more a than total of 270° [3 (90°) or combinations of 90° and 45°] bends in the conduits

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
J	ADDED CONDUCTOR AND CONDUIT TABLE	ADL					SSG	01-2023
I	UPDATED TITLEBLOCK AND TABLES	ELJ					MSG	09-2016
H	REPLACE TITLE BLOCK, ADDED MATERIAL STD	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
G	CHANGED ELBOW RADIUS TO 36 INCHES							
F	ADD NOTE: WIRE COILED BY CUSTOMER	BB	SPL				BLL	09-1998

INDIVIDUAL UNDERGROUND

SHEET 1 OF 2

34605 DWG. NO.

J

17 PAGE

Table 1 Bill of Materials Provided and Installed by TID

Item	Stock Number	Qty	Description	Material STD
1	O-7330-XXX	3or4	Parallel Groove Clamp (size determined by wire)	2131
2	U-6370-XXX	1	Cable Grip	2135
3	U-6160-XXX	20'	Powermould (size determined by wire)	2170
4	O-7189-002	16	Washerhead Lag Screws	2322
5	O-7192-004	1	J Hook	
6	U-5595-XXX	As Req'd	Underground Secondary Connector	2178
7	U-5999-000	As Req'd	Rubber Boot for Connector (Included)	

Table 2 Resource (1/0 to 4/0)

Resource	Qty	Hours
Line Supervisor	1	2.0
Lineman	1	
Line Truck	1	
Personnel Lift	1	

Table 3 Resource (500 Triplex or Quad)

Resource	Qty	Hours
Line Supervisor	1	2.5
Lineman	1	
Line Truck	1	
Personnel Lift	1	

Table 4 Bill of Materials Provided and Installed by Customer

Item	Stock Number	Qty	Description	Material STD
1C	U-6048-XXX	3	Conduit Strap	2170
2C	U-6050-XXX	10'	Conduit PVC Sch 80	
3C	U-6085-XXX	1	PVC Sch 40 90 Degree Elbow	
4C	O-7189-002	4	Washerhead Lag Screws	2322

(6C) Table 5 Conduit and Conductor Size

Service Entrance Size	Conduit	Service Conductor (Phase)	Neutral Conductor Size
100A 1Ø & 3Ø	(1)-3"	1/0 AL	1/0 AL
200A 1Ø & 3Ø	(1)-3"	4/0 AL	2/0 AL
400A 1Ø & 3Ø	(1)-4"	500 AL	350 AL
600A 1Ø & 3Ø	(1)-4"	500 AL	350 AL

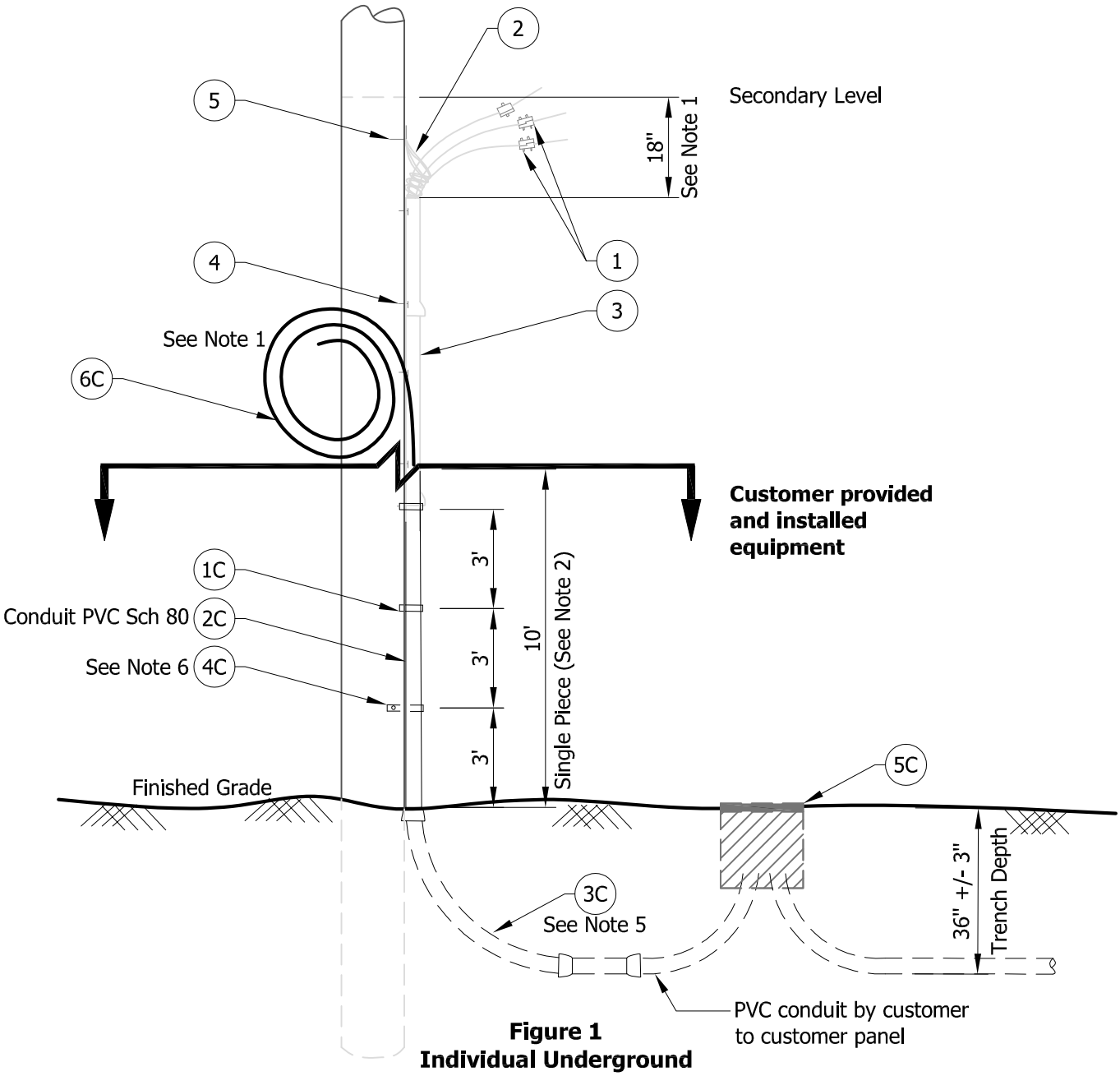


Figure 1
Individual Underground

Notes:

1. Service cable (provided by customer) is to be of sufficient length to exceed secondary level by three feet. Coil cable and tie in manner that will not damage cable.
2. After the elbow, (1) 10' straight length of conduit up the pole (no bell up) to be provided by customer.
3. TID to inform customer which quadrant of the pole the conduit is to rise.
4. TID to inspect conduit prior to backfilling.
5. All elbows to be 36" radius, schedule 40. Attach conduit straps to pole using washerhead lag screws.
6. Refer to Construction Standard 34805 for service box installation.
7. No service greater than 225kVA (480V) will be served from pole mounted transformers.
8. No more a than total of 270° [3 (90°) or combinations of 90° and 45°] bends in the conduits

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
--	Initial Issue	ADL					SSG	10-2023

INDIVIDUAL UNDERGROUND
WITH SERVICE BOX

SHEET 1 OF 2

34610 - DWG. NO.

19 PAGE

Table 1 Bill of Materials Provided and Installed by TID

Item	Stock Number	Qty	Description	Material STD
1	O-7330-XXX	3or4	Parallel Groove Clamp (size determined by wire)	2131
2	U-6370-XXX	1	Cable Grip	2135
3	U-6160-XXX	20'	Powermould (size determined by wire)	2170
4	O-7189-002	16	Washerhead Lag Screws	2322
5	O-7192-004	1	J Hook	
6	U-5595-XXX	As Req'd	Underground Secondary Connector	2178
7	U-5999-000	As Req'd	Rubber Boot for Connector (Included)	

Table 2 Resource (1/0 to 4/0)

Resource	Qty	Hours
Line Supervisor	1	2.0
Lineman	1	
Line Truck	1	
Personnel Lift	1	

Table 3 Resource (500 Triplex or Quad)

Resource	Qty	Hours
Line Supervisor	1	2.5
Lineman	1	
Line Truck	1	
Personnel Lift	1	

Table 4 Bill of Materials Provided and Installed by Customer

Item	Stock Number	Qty	Description	Material STD
1C	U-6048-XXX	3	Conduit Strap	2170
2C	U-6050-XXX	10'	Conduit PVC Sch 80	
3C	U-6085-XXX	1	PVC Sch 40 90 Degree Elbow	
4C	O-7189-002	4	Washerhead Lag Screws	2322
5C	O-13XX-XXX	1	Service Box (size as required)	2022

(6C) Table 5 Conduit and Conductor Size

Service Entrance Size	Conduit	Service Conductor (Phase)	Neutral Conductor Size
100A 1Ø & 3Ø	(1)-3"	1/0 AL	1/0 AL
200A 1Ø & 3Ø	(1)-3"	4/0 AL	2/0 AL
400A 1Ø & 3Ø	(1)-4"	500 AL	350 AL
600A 1Ø & 3Ø	(1)-4"	500 AL	350 AL

Table 1 Service Conductor Size - Underground

Service Entrance Size (Amp)	Conductor Quantity and Size	
	Single Phase	Three Phase
30 (Maintenance Only)	(1) #6 per Phase (Note 1) (1) #6 Neutral	(1) #6 per Phase (1) #6 Neutral
60-70 (Maintenance Only)	(1) 1/0 per Phase (1) #6 Neutral	(1) 1/0 per Phase (1) #6 Neutral
100-125	1/0 Triplex (Note 4)	1/0 Quadplex (Note 4)
200-225	4/0 Triplex (Notes 2, 4)	4/0 Quadplex (Note 4)
400	(2) 4/0 per Phase (1) 4/0 Neutral	(2) 4/0 per Phase (1) 4/0 Neutral
600	(2) 500 per Phase (1) 350 Neutral	(2) 500 per Phase (1) 350 Neutral
800	(3) 500 per Phase (1) 500 Neutral	(3) 500 per Phase (1) 500 Neutral
1,000	--	(3) 500 per Phase (1) 500 Neutral
1,200	--	(3) 750 per Phase (1) 750 Neutral
1,400	--	(4) 750 per Phase (1) 750 Neutral
1,600	--	(4) 750 per Phase (2) 750 Neutral
1,800	--	(4) 1000 per Phase (2) 1000 Neutral
2,000	--	(5) 1000 per Phase (2) 1000 Neutral
2,500	--	(5) 1000 per Phase (2) 1000 Neutral
3,000	--	(6) 1000 per Phase (2) 1000 Neutral

Notes:

1. Use one phase conductor and one neutral conductor for 120-volt circuits.
2. Refer to Construction Standard 30510 for service size to limit residential fault current.
3. Where voltage drop, voltage flicker, or other practical reasons necessitate, Engineering may specify a service size other than as listed above.
4. Individual conductors of appropriate size may be substituted for Triplex or Quadplex in accordance with TID Material Standard 2202.
5. All conductors shall be aluminum and are to be in accordance with TID conductor specifications.
6. Conductor ampacities referenced from latest NEC version Table 310.16

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
M	REVISED CONDUCTORS AMP BASED ON TABLE 310.16	ADL					SSG	01-2024
L	UPDATED 1800A CONDUCTOR	ADL					SSG	03-2023
K	UPDATED TITLEBLOCK AND TABLES	ELJ					MSG	09-2016
J	REPLACE TITLE BLOCK, REMOVE 4,000 A	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
I	REMOVE 1/0 FROM 200 AMP	SDC					BLL	06-2006

SERVICE WIRE SIZE UNDERGROUND

SHEET 1 OF 2

34701 DWG. NO.

M

21 PAGE

Figure 1
Compression Type Connector

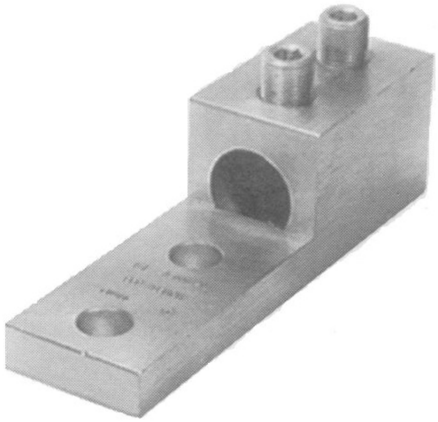


Figure 2
Set Screw Type Connector

NOTES:

1. Aluminum tin plated
2. Terminal lug to carry full continuous current rating of conductor
3. NEMA bolt hole spacing is required on all connectors. Compression connectors must be long barrel type, similar to TID Stock Number U-6220-XXX.
4. On 3 phase, 400 amp and larger panel, terminal lugs shall be suitable compression type or 2 set screw type on conductor end. The lugs must have a minimum 2 bolt connection on the panel spades. See figures 1 and 2.
5. Before installation TID underground inspector must approve lugs and crimping die.

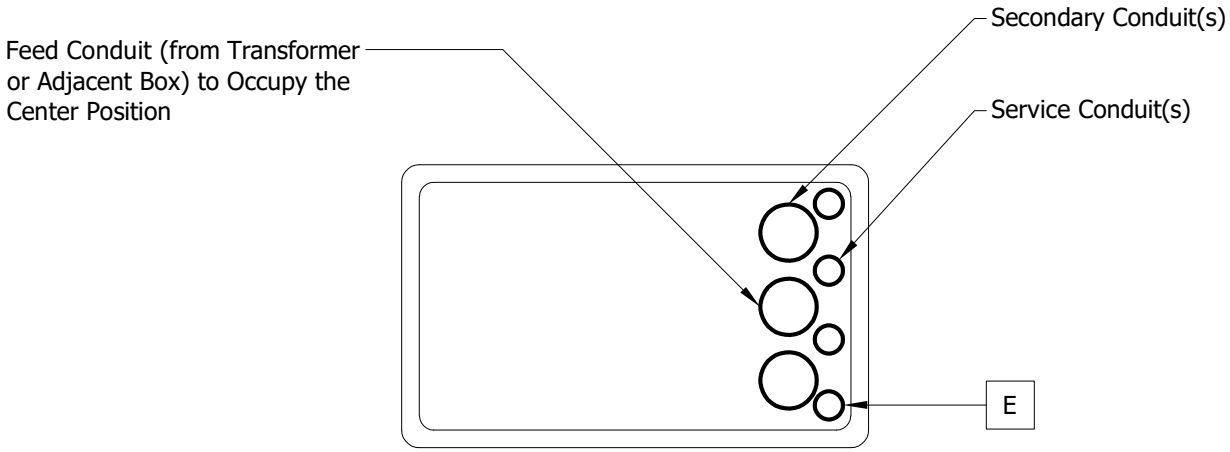


Figure 1
Plan View

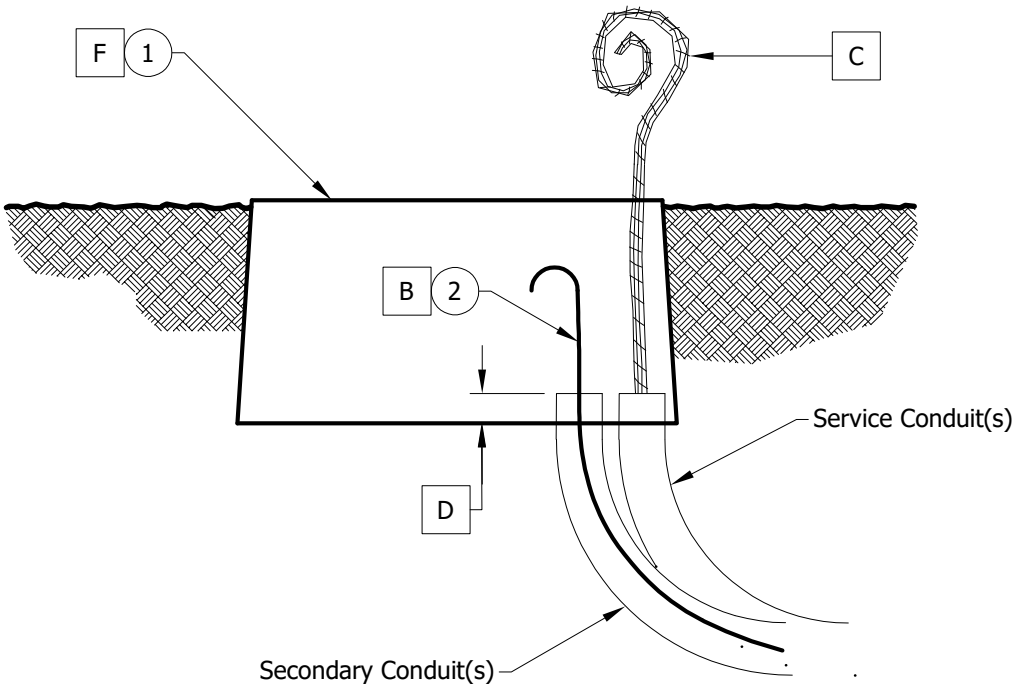


Figure 2
Profile View

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

SERVICE BOX INSTALLATION

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
I	ADDED TABLE 3	SSG		DNH	DP	MN	MSG	06-2021
H	UPDATED TITLEBLOCK, TABLES, NOTES	ELJ					MSG	09-2016
G	REPLACE TITLE BLOCK, ADDED MATERIAL STD	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
F	RELABEL CONDUITS	SDC	BS	KJO	DBM	GKT	BLL	09-2007
E	SPECIFY FEED CONDUIT IN CENTER POSITION	SDC	GKT	MSG	DBM	KJO	BLL	03-2007

SHEET 1 OF 2

34805 DWG. NO. **I**

Table 1 Bill of Materials

Item	Stock Number	Qty	Description	Material STD
1	O-13XX-XXX	1	Service Box (size as required)	2022
2	U-8200-004	As Req'd	¾" Pull Rope	2401

Table 2 Resources

Resource	Qty	Hours
Line Supervisor	1	1.0
Lineman	1	
Line Truck	1	

Table 3 Clearances (Min. in Ft)

TID Equipment	Front	Sides	Back
Service Box	3	3	3

Notes:

A. The soil under the service box shall be compacted to no less than 95% relative compaction.
B. Leave approximately 3 feet of pull rope extended past conduit.
C. Leave approximately 4 feet of service conductor extended past conduit.
D. Insert conduit 2 inches inside service box.
E. All conduits are to be located against the same end of the service box.
F. The box lid must be labeled "ELECTRIC".
G. See Construction Standard 35201 for size and quantity of conduits required.

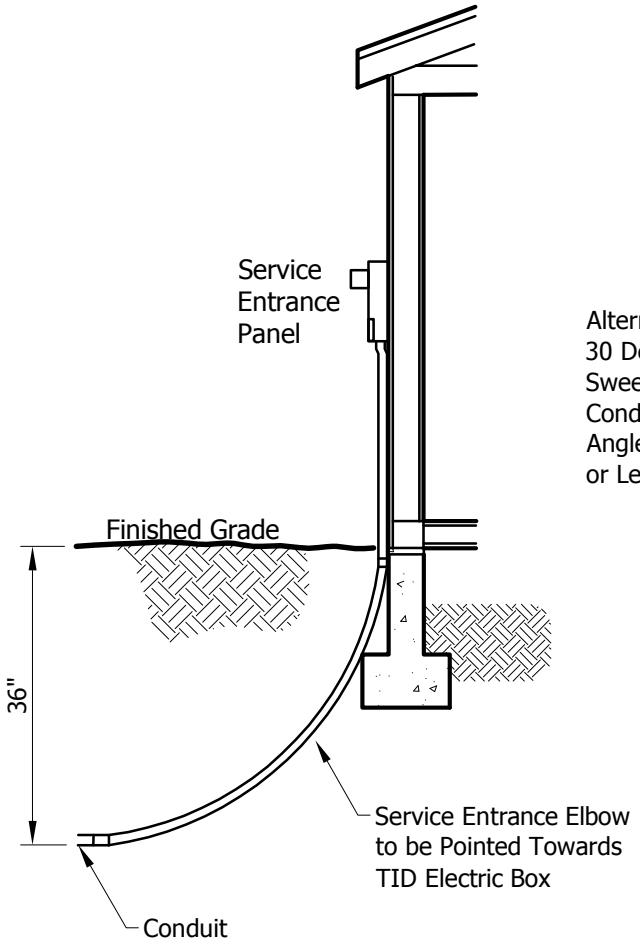


Figure 1
Typical Surface Mount

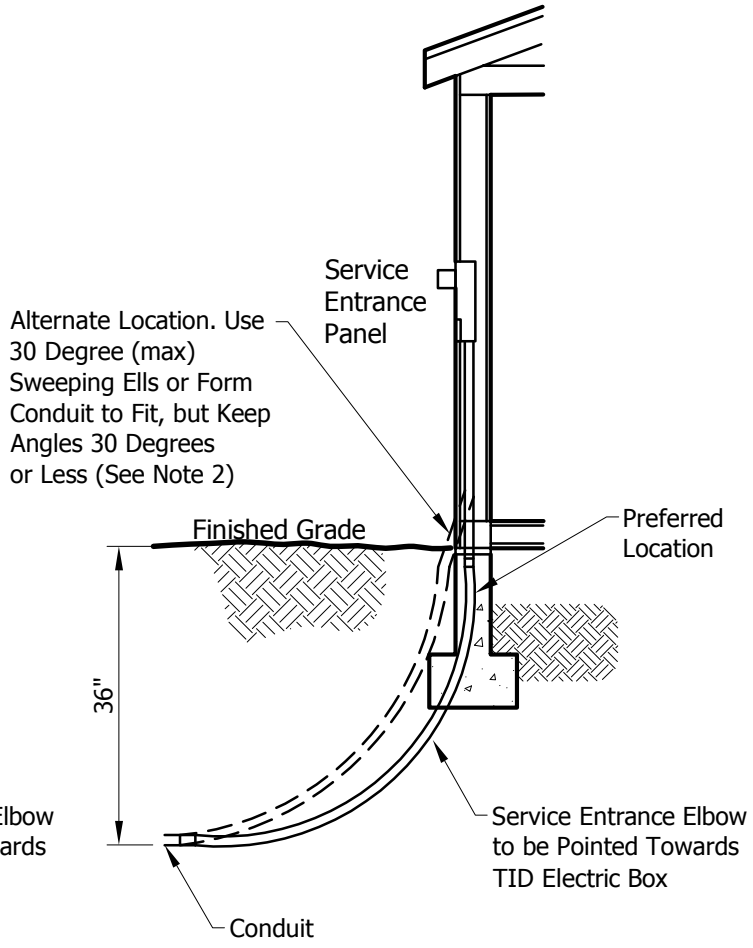


Figure 2
Typical Flush Mount

Notes:

1. Service entrance equipment will conform to applicable sections of the Electric Utility Service Equipment Requirements Committee (EUSERC) Standards.
2. All PVC conduits must be adequately glued and set prior to installation of conductors. Only sweeping types of bends are acceptable. Conduit that is deformed due to heating or over stressing during installation will not be acceptable.
3. Meters will be furnished and set by TID after the installation has been approved by the governing inspection agency.
4. The service entrance panel shall be mounted so that the center of the meter will be at a height between a minimum of 48 inches and a maximum of 75 inches above finished grade.
5. Grounding shall be in accordance with the National Electric Code (NEC) and local codes. TID may require that the grounding conductor be installed in EMT or cable armor to protect the conductor from mechanical damage. Use approved cast ground clamp.
6. Conduit size and schedule per TID Construction Standard 35201.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
F	CORRECTED METER HEIGHT	BB	RWC	RWB	LBG		RA	03-1994
G	REDRAWN IN AUTOCAD	SDC	PJO	KJO	LBG		BLL	04-2003
H	CLARIFY GROUNDING REQUIREMENTS	SDC	KJO	DM	GKT		BLL	02-2006
I	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
J	UPDATED TITLEBLOCK	ELJ					MSG	09-2016

MINIMUM REQUIREMENTS FOR RESIDENTIAL SERVICES USING UNDERGROUND CONSTRUCTION

SHEET	DWG. NO.		PAGE
1 OF 1	**34810**	**J**	25

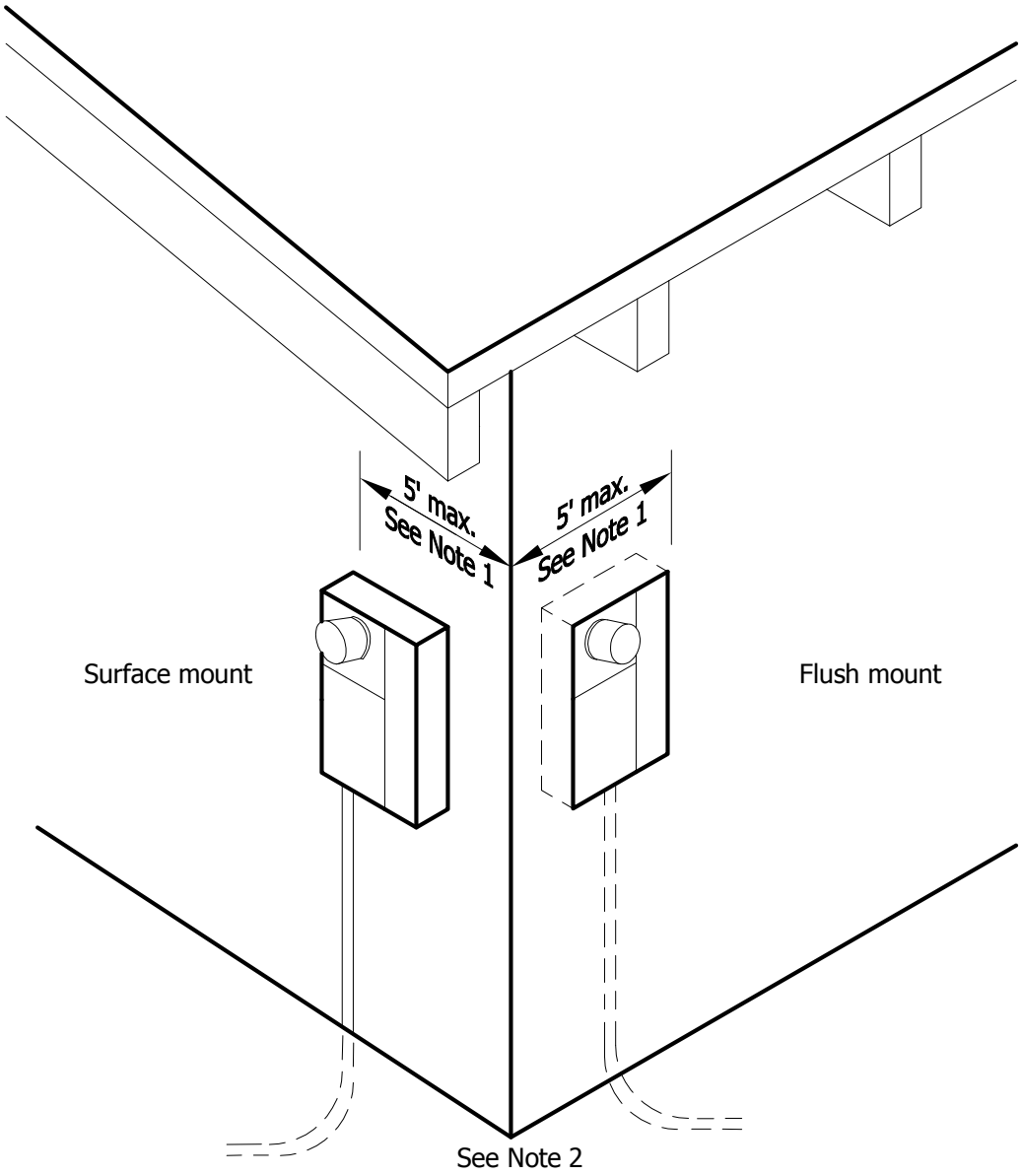


Figure 1
Underground Residential
Service Panel Location

Notes:

1. The electrical panel shall be installed within the first five feet of the corner of the structure.
2. The electrical panel shall be installed near the corner of the structure closest to the utility trench.
3. The electrical panel shall be adjacent to other utilities.
4. The electrical panel shall be on the street side of any fences.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
--	INITIAL ISSUE	SDC		KJO			BLL	04-2003
A	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
B	UPDATE TITLE BLOCK	ELJ					MSG	09-2016

UNDERGROUND RESIDENTIAL
SERVICE PANEL LOCATION

SHEET 1 OF 1

34815 DWG. NO.

B

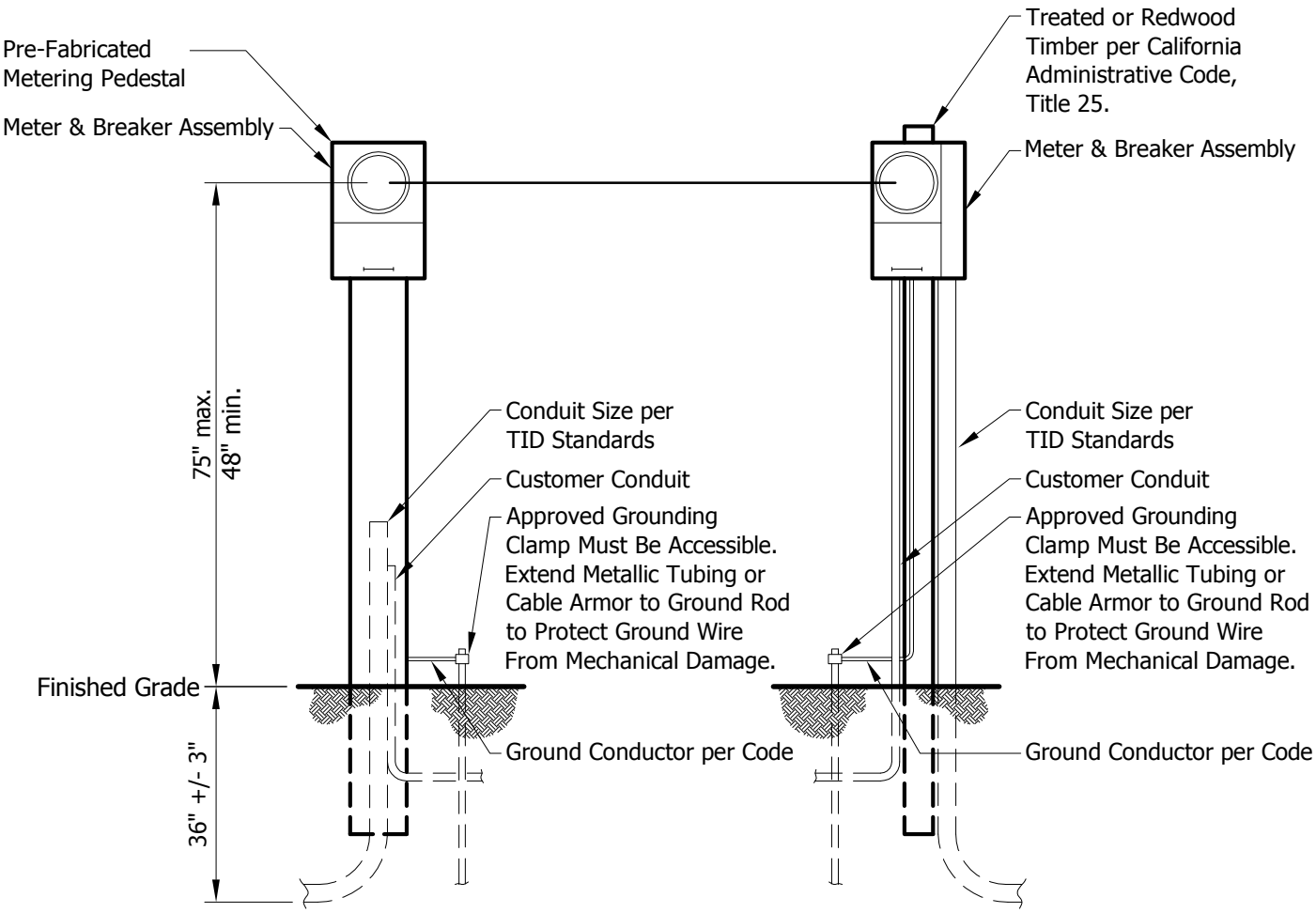


Figure 1
Pre-Fabricated
Metering Pedestal

Figure 2
Treated or Redwood Timber
Metering Pedestal

Notes:

1. Service entrance equipment will conform to applicable sections of the Electric Utility Service Equipment Requirements Committee (EUSERC) Standards.
2. Customer shall supply panel with bus bar lugs where one set of lugs feeds all meters. Lug size and quantity will be specified by the District.
3. Meters will be furnished and set by TID after the installation has been approved by the governing inspection agency.
4. No service will be run under existing or future concrete areas.
5. All PVC conduits must be adequately glued and set prior to installation of conductors. Only sweeping type bends are acceptable.
6. See Construction Standard 30571 for trench configurations.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
B	CHANGED NOTES	SP	RWB	RCM	RA		AKH	10-1989
C	COMBINED WITH CUSTOMER BOOK	BB	ETE	RWB	LBG		RA	06-1993
D	REDRAWN IN AUTOCAD	SDC	PJO	KJO			BLL	04-2003
E	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
F	UPDATE TITLEBLOCK	ELJ					MSG	09-2016

MINIMUM REQUIREMENTS FOR SINGLE MOBILE HOME METERING USING UNDERGROUND CONSTRUCTION

SHEET		DWG. NO.		PAGE
1	OF 1	**34820**	**F**	27

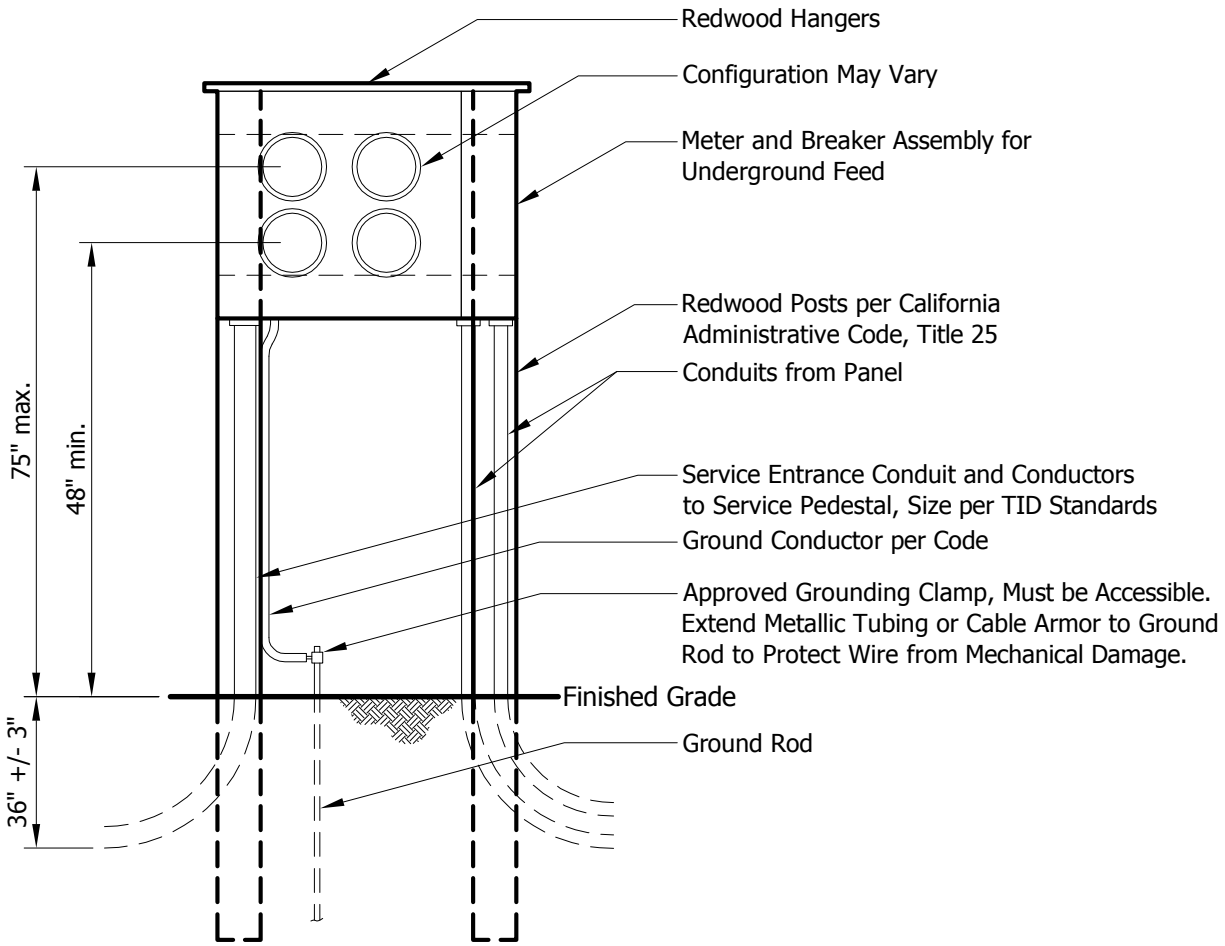


Figure 1
Multiple Mobile Home Metering
Using Underground Construction

Notes:

1. Service entrance equipment will conform to applicable sections of the Electric Utility Service Equipment Requirements Committee (EUSERC) Standards.
2. Customer shall supply panel and bus bar lugs where one set of lugs feeds all meters. Lug size and quantity will be specified by the District.
3. Meters will be furnished and set by TID after the installation has been approved by the governing inspection agency.
4. No service will be run under existing or future concrete areas.
5. All PVC conduits must be adequately glued and set prior to installation of conductors. Only sweeping type bends are acceptable.
6. See Construction Standard 30571 for trench configurations.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
B	CHANGED NOTES	SP	RWB	RCM	RA		AKH	10-1989
C	COMBINED WITH CUSTOMER BOOK	BB	ETE	RWB	LBG		RA	06-1993
D	REDRAWN IN AUTOCAD	SDC	PJO	KJO			BLL	04-2003
E	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
F	UPDATE TITLEBLOCK	ELJ					MSG	09-2016

MINIMUM REQUIREMENTS FOR MULTIPLE MOBILE HOME METERING USING UNDERGROUND CONSTRUCTION

SHEET 1 OF 1

34830 DWG. NO.

F

28 PAGE

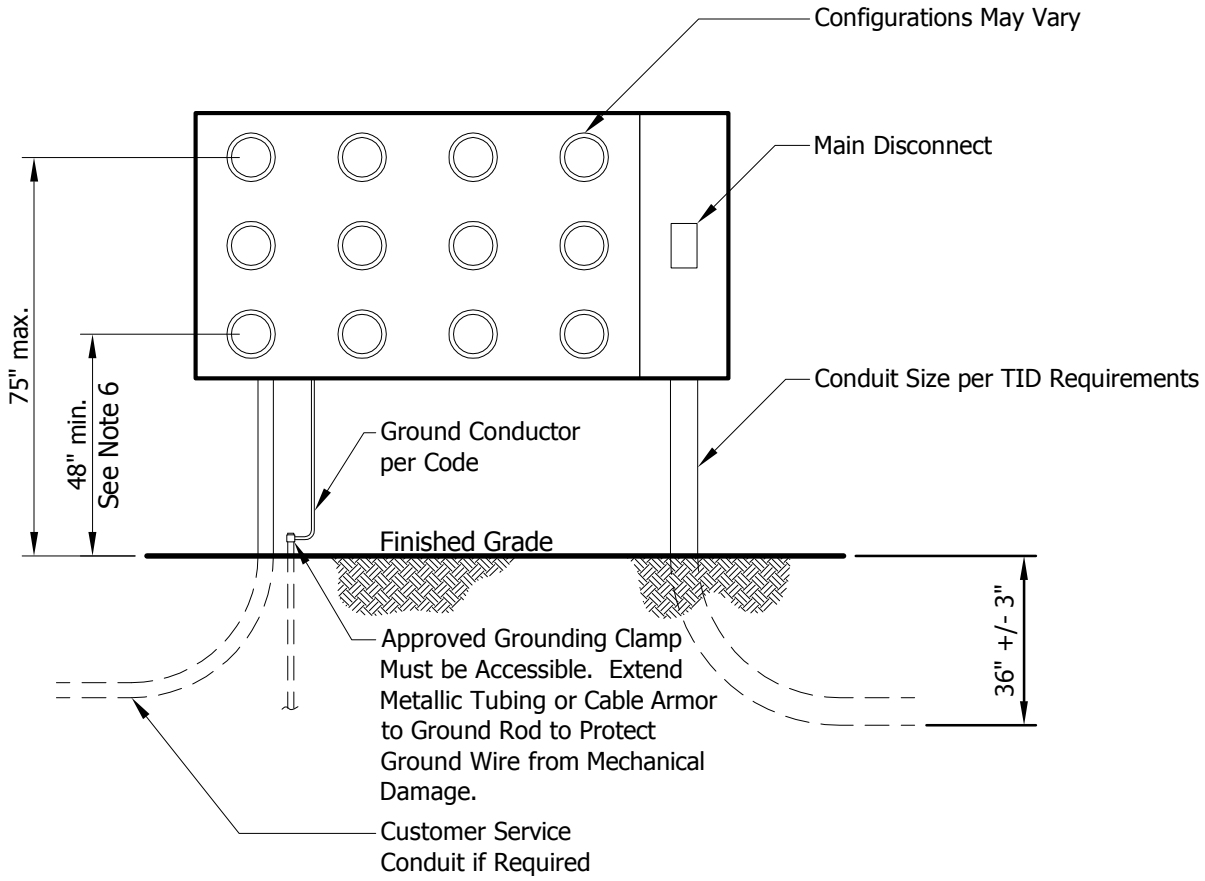


Figure 1
Multiple Metering
Using Underground Construction

Notes:

1. Service entrance equipment will conform to applicable sections of the Electric Utility Service Equipment Requirements Committee (EUSERC) Standards.
2. Customer shall supply panel with bus bar lugs where one set of lugs feeds all meters. Lug size and quantity will be specified by the District.
3. Meters will be furnished and set by TID after the installation has been approved by the governing inspection agency.
4. No service will be run under existing or future concrete areas.
5. All PVC conduits must be adequately glued and set prior to installation of conductors. Only sweeping type bends are acceptable.
6. Minimum meter height may be reduced to 36" when utilizing enclosed switchboards.
7. See Construction Standard 30571 for trench configurations.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
B	DIMENSION CHANGE	SP	RWB	RCM	RA		AKH	10-1989
C	COMBINED WITH CUSTOMER BOOK	BB	ETE	RWB	LBG		RA	06-1993
D	REDRAWN IN AUTOCAD							
E	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013
F	UPDATE TITLEBLOCK	ELJ					MSG	09/28/2016

MINIMUM REQUIREMENTS FOR MULTIPLE METERING USING UNDERGROUND CONSTRUCTION

SHEET 1 OF 1

34840 DWG. NO.

F

29 PAGE

General Information:

Electrical plastic conduit constructed of polyvinyl chloride (PVC) will be used in all underground developments. PVC schedule 40 conduit will be used for all subsurface straight runs and all subsurface elbows. PVC schedule 80 conduit will be used for all above ground runs. The following tables describe general sizes and uses for PVC conduits. These sizes shall be used unless otherwise specified by the District.

General Practice:

After conduits are installed, an appropriately sized mandrel will be pulled through them, and the pull rope installed. Immediately after pulling the mandrel and pull rope, the conduits will be plugged. The mandrel and plugging procedure must be done in the presence of the TID Inspector.

Table 1 Primary Circuit Conduits

Size of Primary Cable	Conduit Quantity and Size	
	Single Phase	Three Phase
#2 AL or 1/0 AL	(1) 4"	(1) 4"
4/0 AL	(1) 5"	(1) 5"
600 Compact AL (See Note 1)	--	(1) 6", (1) 2"
1100 Compact AL (See Note 1)	--	(1) 6", (1) 2"

Table 2 Secondary Circuit Conduits (Residential type construction)

Size of Secondary Conductor	Conduit Quantity and Size
4/0 Triplex (Maintenance Only)	(1) 3"
500 Triplex	(1) 4"

Table 3 Service Conduits (Residential type construction)

Service Entrance Size (Amp)	Conduit Quantity and Size
100 or 200	3"
400	4"
600	(1) 5" (See Note 2)
800	(1) 5" (See Note 2)

Table 4 Secondary/Service Conduits (Commercial type construction)

Service Entrance Size (Amp)	Conduit Quantity and Size	
	Single Phase	Three Phase
100	(1) 3"	(1) 3"
200	(1) 3"	(1) 3"
320	(1) 4"	(1) 4"
400	(2) 4"	(3) 4"
600	(2) 4"	(3) 4"
800	(2) 5"	(3) 5"
1000	--	(3) 5"
1200	--	(3) 5"
1400	--	(3) 5"
1600	--	(4) 5"
1800	--	(4) 5"
2000	--	(6) 5"
2500	--	(6) 5"
3000	--	(6) 5"

Table 5 Conduit Sweep Radius

Conduit Size	Orientation	Angle	*Sweep Radius
2"	Vertical	90°	36"
3"		90°	36"
4"		90°	48"
5"		90°	60"
6"		90°	60"
2"	Horizontal	Any	48"
3"		Any	48"
4"		Any	60"
5"		Any	60"
6"		Any	60"

Notes:

1. There should not be more a than total of 270° [3 (90°) or combinations of 90° and 45°] bends in the conduits.
2. 2023 NEC Table C.11 referenced for conduit fill.
3. *Sweep radius subject to change depending on trench depth and equipment

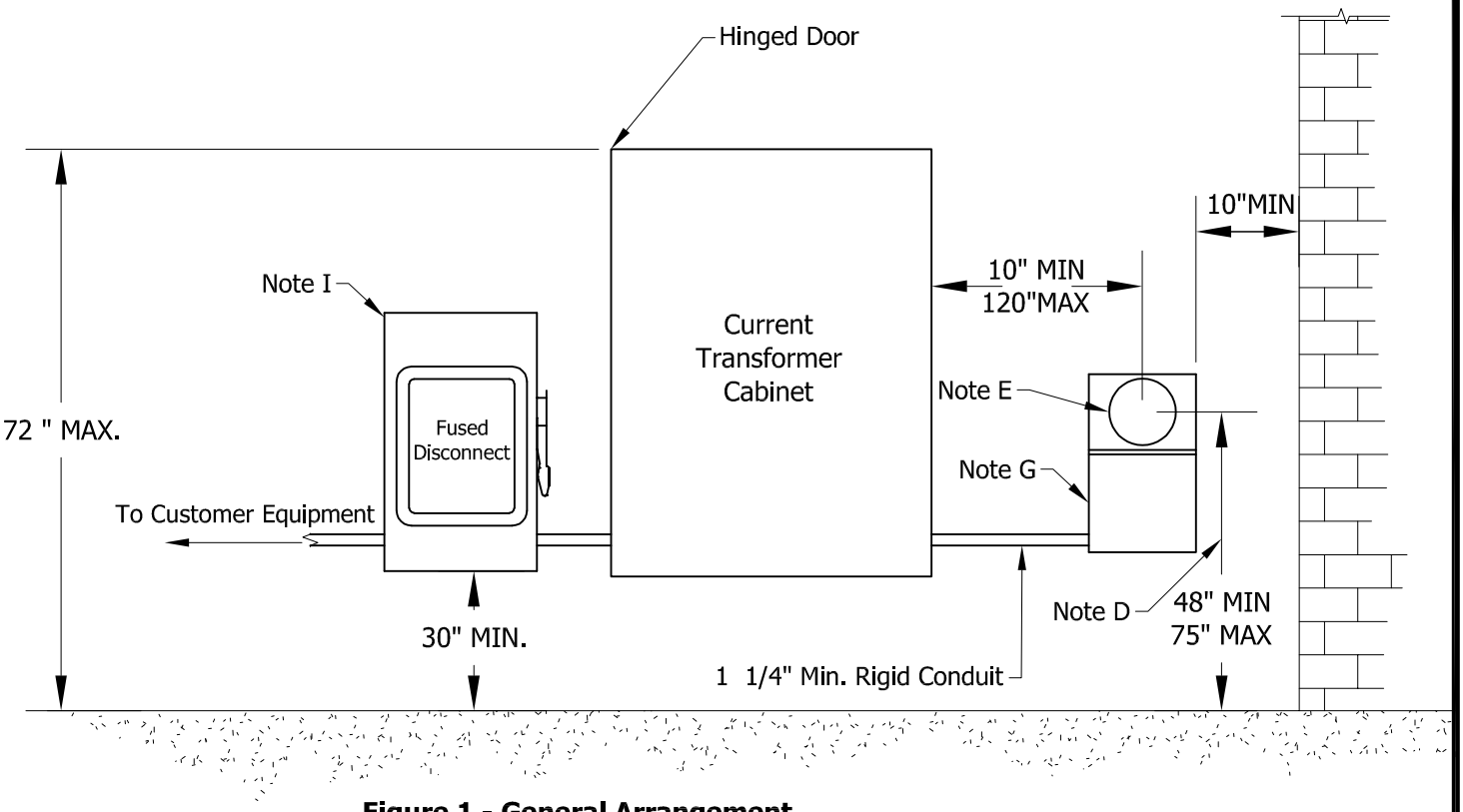


Figure 1 - General Arrangement
Current Transformer Cabinet

Notes

A. Cabinet shall have a hinged door with the hinges opposite of meter. The minimum cabinet size shall be 36" X 36".
B. The direction of feed through the current transformer cabinet shall be vertical.
C. For outdoor installations, CT cabinet and meter cabinet shall be NEMA 3R rated.
D. There must be minimum of 78" in height from the standing surface and 36" minimum in width around the cabinet of clear working space.
E. The customer shall furnish and install a meter socket(s) and a metal cabinet for housing the metering current transformers in accordance with specification shown.
F. Distance from the utility service meter and CT cabinet shall be less than 10 feet and within sight of each other. For remote meter situation, refer to TID standard 50510.
G. Meter panel shall have provision for test switch under cover.
H. EUSERC standards 313 and 314 will not be acceptable.
I. For non fusible disconnect consult TID engineering.
J. Overhead Limited to 600A service entrance or 250HP load

Table 1 Bill of Materials

Item	Phase	Type of Service	No of Jaws
1	1 Phase	3W, 120/240V Delta	6
2	3 Phase	4W, 120/240, 120/208, 277/480 V	13

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
-	INTIAL ISSUE	ADL	DNP				SSG	03-2023

CURRENT TRANSFORMER CABINETS
400 - 800 AMPS

SHEET 1 OF 1

50500 - DWG. NO.

32 PAGE

CRITERIA FOR ELECTRICAL ROOMS

1. Electrical rooms shall only be allowed for commercial/ industrial meters.

2. The distance of the main meter from the transformer or CT compartment shall be as the following:

   (a) If service with a transformer ≥ 500 KVA - Maximum 75 unobstructed linear feet from the transformer.

   (b) If service with a transformer < 500 KVA - Maximum 75 unobstructed linear feet from the CT compartment . Doors or other means of entrance are acceptable.

3. The electrical room must be keyed such that the key made available to TID opens only the electrical room itself.

4. The key must be made available to TID via a lock-box, and must be keyed to TID specifications so that only TID may open the lock box. Sharing of the lock-box is NOT allowed.

5. The lock-box shall be located as close to the electrical room as possible in an unrestricted access area, but in no case farther than 10 feet from the meter room door. The lock-box must be between 36 inches and 72 inches above the adjacent walking surface.

6. The lock-box must be surface or recessed mount. Door bracket hanging is not permitted.

7. To ensure compatibility within the District, the lock-box used must be from the KNOX Company. The KNOX-BOX 1662 series or the 3200 series are the only approved lock-boxes.

8. The electrical room must meet all building, fire, safety codes and all applicable code requirements. The electrical room must be safe for TID personnel and free from any harmful or unsafe substances or vapors. The electrical room must be properly ventilated.

9. The electrical room must not be used in any way for storage. TID will not be responsible for missing or damaged goods stored in the electrical room. A well-readable sign stating "No Storage Allowed in this electrical Room" must be posted prominently inside the room or on the outside of the electrical room door.

10. The electrical room must provide a minimum clear, safe, level working space extending 3 feet horizontally in front of the meter panel, and to a ceiling height of a least seven feet one inch.

11. The electrical meter room must be immediately adjacent to and accessible from the outside of the building. Access to the meter room via successive doors and/or rooms is not allowable.

12. The electrical room must have a single entry from the outside. Entry to any other areas of the building via the meter room is not allowed.

13. The electrical room design and location is to be approved by TID staff.

14. The electrical room must provide an overhead light for adequate illumination of meters and safe entry and work within the room. A 120-volt convenience outlet shall be provided in accordance with the NEC and all applicable codes for use by persons who may need supplemental lighting or other meter work related power.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
C	REVISED NOTE 1 AND ADDED NOTE 2, 3	SSG		MC	AJB		MSG	04-2021
B	UPDATE TITLEBLOCK	ELJ					MSG	01-2017
A	ADD LOCK-BOX HEIGHT REQUIREMENT	GKT	KJO	KG	JC		BLL	06-2000
--	INITIAL ISSUE	GKT	KJO	KG	JC		BLL	05-2000

CRITERIA FOR ELECTRICAL ROOMS

SHEET 1 OF 1

50510 DWG. NO. **C**

Table 1 Single Phase Service From Single Phase or Delta Secondary Transformers

Type of Service	Main Size Amps	Meter Socket	Drawing Number
2 Wire 1 Phase 120 Volt	30 A	100A 4 Jaw MCC CDR	51010
3 Wire 1 Phase $^{120}/_{240}$ Volt	100 A	100A 4 Jaw MCC CDR	51015
3 Wire 1 Phase $^{120}/_{240}$ Volt	200 A	200A 4 Jaw MCC CDR	51015
3 Wire 1 Phase $^{120}/_{240}$ Volt	400 A	320A 4 Jaw MCC CDR	51025
3 Wire 1 Phase $^{120}/_{240}$ Volt	400 A	Self Contained Meter Receptacle	51030 Maintenance Only
3 Wire 1 Phase $^{120}/_{240}$ Volt	400 A 600 A 800 A	CMCTC 6 Jaw TP	51040

Table 2 Three Phase Service From Delta Secondary Transformers

Type of Service	Main Size Amps	Meter Socket	Drawing Number
4 Wire 3 Phase $^{120}/_{240}$ Volt	100 A Limit to 30 HP for Pumping Loads	100 A 7 Jaw MCC CDR	51050
4 Wire 3 Phase $^{120}/_{240}$ Volt	200 A Limit to 60 HP for Pumping Loads	200 A 7 Jaw MCC CDR	51050
4 Wire 3 Phase $^{120}/_{240}$ Volt	400 A 600 A 800 A	CMCTC 13 Jaw TP	51070
3 Wire 3 Phase 480 Volt	100 A Limit to 60 HP for Pumping Loads	100 A 5 Jaw MCC CDR	51020 Maintenance Only
3 Wire 3 Phase 480 Volt	200 A Limit to 125 HP for Pumping Loads	200 A 5 Jaw MCC CDR	51020 Maintenance Only
3 Wire 3 Phase 480 Volt	400 A 600 A 800 A	CMCTC 8 Jaw TP	51060 Maintenance Only

Table 3 Single Phase Service From Wye Secondary Transformers

Type of Service	Main Size Amps	Meter Socket	Drawing Number
2 Wire 1 Phase 120 Volt	30 A	100 A 4 Jaw MCC CDR	51020
3 Wire 1 Phase $^{120}/_{208}$ Volt	200 A	200 A 5 Jaw MCC CDR	51020

Table 4 Three Phase Service From Wye Secondary Transformers

Type of Service	Main Size Amps	Meter Socket	Drawing Number
4 Wire 3 Phase $^{120}/_{208}$ Volt	100 A Limit to 30 HP for Pumping Loads	100 A 7 Jaw MCC CDR	51055
4 Wire 3 Phase $^{120}/_{208}$ Volt	200 A Limit to 60 HP for Pumping Loads	200 A 7 Jaw MCC CDR	51055
4 Wire 3 Phase $^{120}/_{208}$ Volt	400 A to 2000 A	CMCTC 13 Jaw TP	51074
4 Wire 3 Phase $^{277}/_{480}$ Volt	100 A Limit to 60 HP for Pumping Loads	100 A 7 Jaw MCC CDR	51055
4 Wire 3 Phase $^{277}/_{480}$ Volt	200 A Limit to 125 HP for Pumping Loads	200 A 7 Jaw MCC CDR	51055
4 Wire 3 Phase $^{277}/_{480}$ Volt	400 A to 3000 A	CMCTC 13 Jaw TP	51074
3 Wire 3 Phase 12 kV	Varies	CMVTCTC 8 Jaw TP	51081 Maintenance Only
4 Wire 3 Phase 12 kV	Varies	CMCTC 13 Jaw TP	51081

Abbreviations:

CMVTCTC - Combination Meter and Voltage Transformer and Current Transformer Cabinet.

TP - Test Perch (Provisions for mounting meter test blocks in cabinet).

CDR - Continuous Duty Rated per UL 414 (CDR not required for domestic service).

MCC - Manual Circuit Closing Device.

CMCTC - Combination Meter and Current Transformer Cabinet.

Notes:

1. Manual Circuit closing devices will be required on all service entrance equipment exceeding 30 amps nameplate rating except:

   Domestic
   Signboards
   Temporary services

2. Meter socket and CT cabinets and mounting shall conform to applicable sections of the Electric Utility Service Equipment Requirements Committee (EUSERC) Standards. Consult TID Meter Shop if you have any questions.

3. Meter Sockets shall be located on the outside of buildings, where meters will be readily accessible for reading, unless prior arrangements are made with Standards and Line Engineering Dept.

4. For remote meter installations, the customer shall provide an approved CT mounting cabinet, a 1 ¼ inch rigid steel conduit without junction boxes between the CT cabinet and meter socket and shall locate the meter socket not more than 50 circuit feet from the CT cabinet. T.I.D. will install the Current Transformers and wiring.

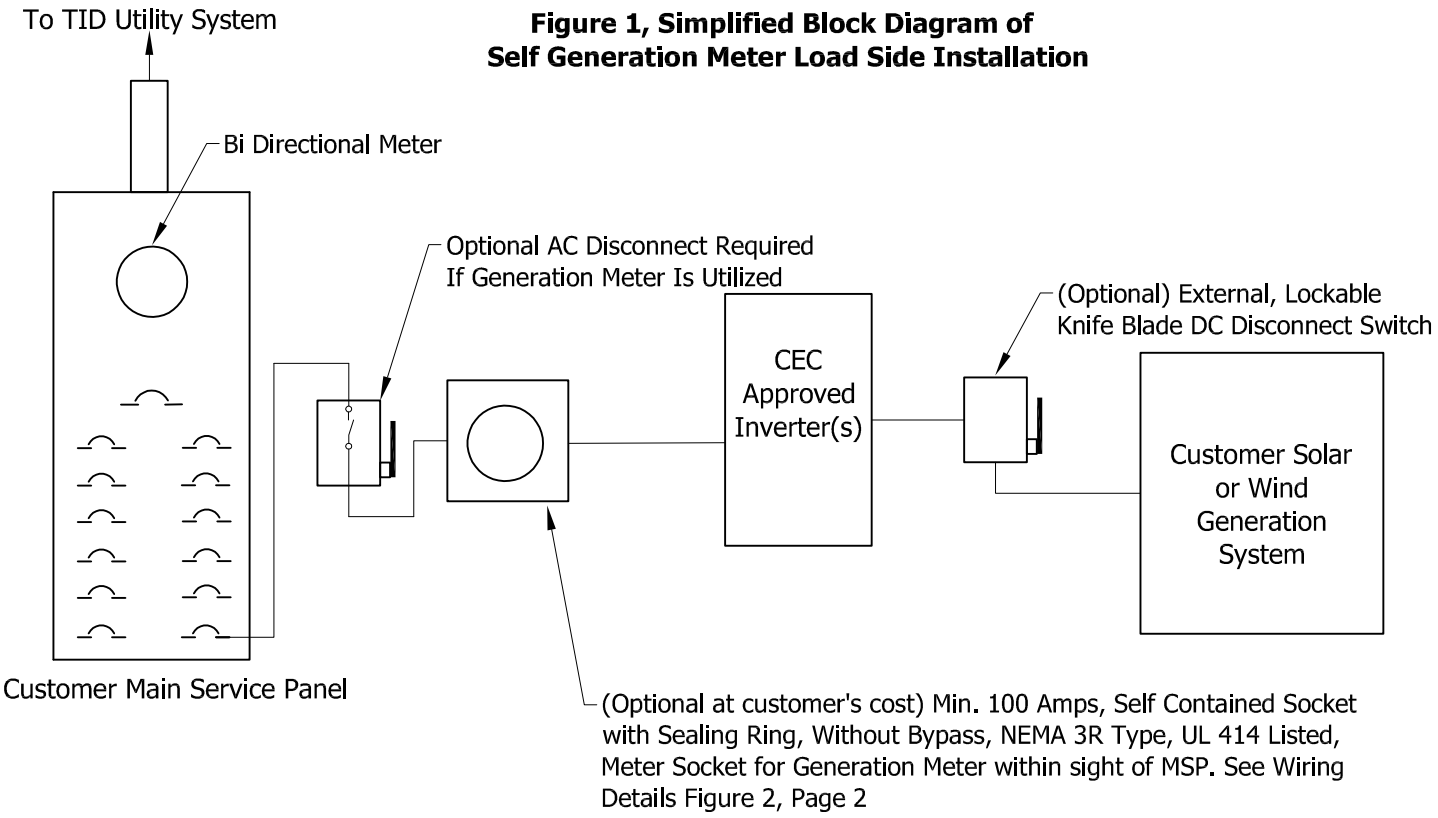
5. Service entrance equipment for commercial operation must be continuously rated for the load specified.

6. All electrical work on a customer's premise must be passed by the proper inspecting authorities before any hookup can be made by T.I.D.

7. Building plans and definite load information for commercial and industrial installations must be furnished to T.I.D.'s Standards and Line Engineering Department, P.O. Box 949, Turlock, CA 95381, as soon as possible.

8. "K-Base" meter panels and ringless meter sockets are not allowed or accepted.

Figure 1, Simplified Block Diagram of Self Generation Meter Load Side Installation



Notes:

1. Installation shall meet all applicable safety and performance standards established by the current National Electric Code (NEC), the Institute of Electrical and Electronic Engineers (IEEE), and accredited testing laboratories such as Underwriters Laboratories (UL), and where applicable, rules of the Public Utilities Commission (PUC) regarding safety and reliability, as well as meeting all TID requirements.
2. TID will ensure that the metering at the point of interconnection will accurately measure electricity flow in both directions. If service panel replacement is necessary, the applicant shall be responsible for such cost.
3. Arrangements utilizing transfer switches, or alternatives to the arrangement shown above, will be considered upon submission of a diagram and explanation of the proposed deviation(s).
4. Main service panels rated 400 Amps and above will require CT cabinet, an AC disconnect switch, and need to contact TID Engineering for other requirements.
5. The battery storage should be UL 1741 and IEEE 1547 certified.
6. TID allows parallel battery operation however TID does not allow exporting power back on the grid from battery storage during a power outage.
7. Battery storage can only be connected through smart inverters.

Refer to TID solar installation guidelines for additional requirements.

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
H	ADDED BREAKER TO AC DISCONNECT	ADL	ADD	MAC			GSS	11-2022
G	REMOVED AC DIS. SW. & PV GEN. METER AN OPTION	SSG		BAP	MAC	MH	EDJ	05-2020
F	ADD NOTE 6 & 7 FOR BATTERY BACKUP	SSG		BAP	MAC	EKR	EDJ	12-2017
D	REPLACE TITLE BLOCK	ELJ					MSG	09-2016
E	REPLACE TITLE BLOCK	JRS	MSG	JSA	MLH	SDP	EDJ	06-2013

SELF GENERATION
LOAD SIDE CONNECTION
WIRING & METER INSTALLATION

SHEET 1 OF 2 | 51092 DWG. NO. | H | PAGE 37

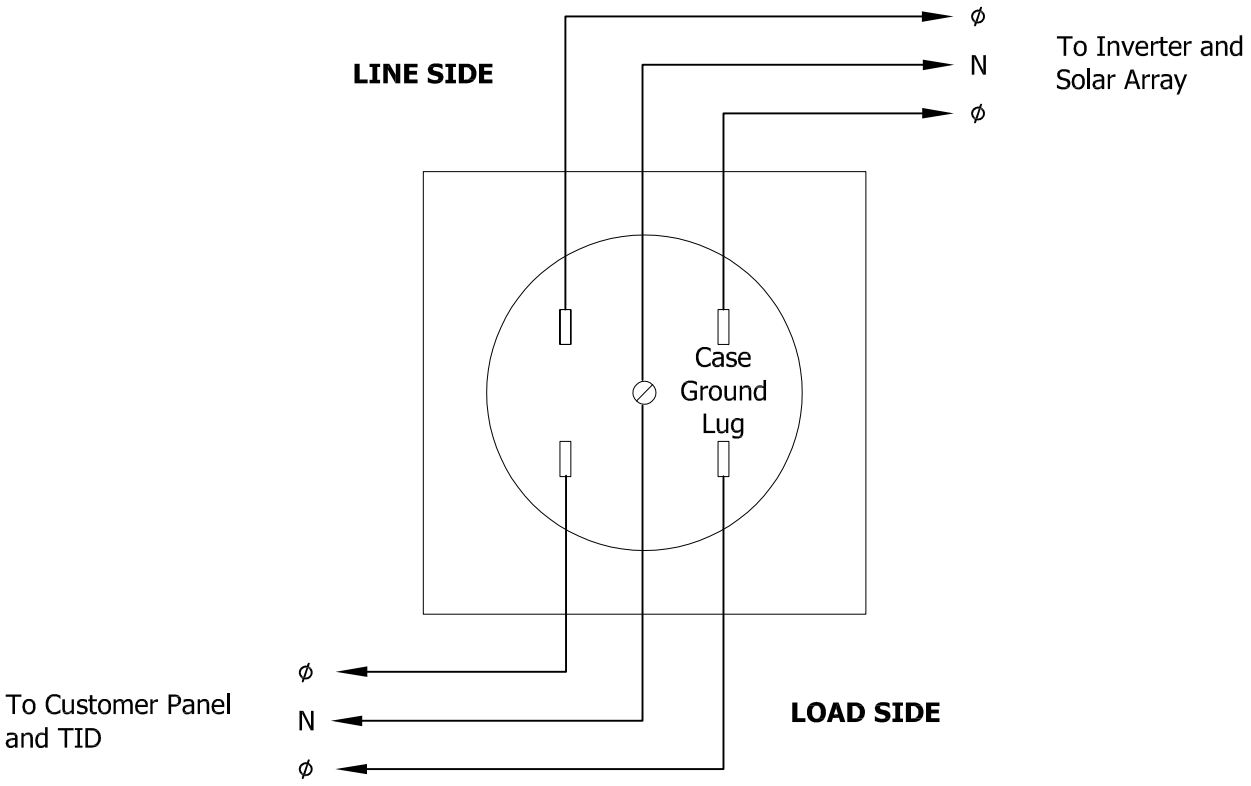


Figure 2
Simplified Detail of
Generation Meter Wiring

SELF GENERATION
LOAD SIDE CONNECTION
WIRING AND METER INSTALLATION

CONSTRUCTION STANDARDS

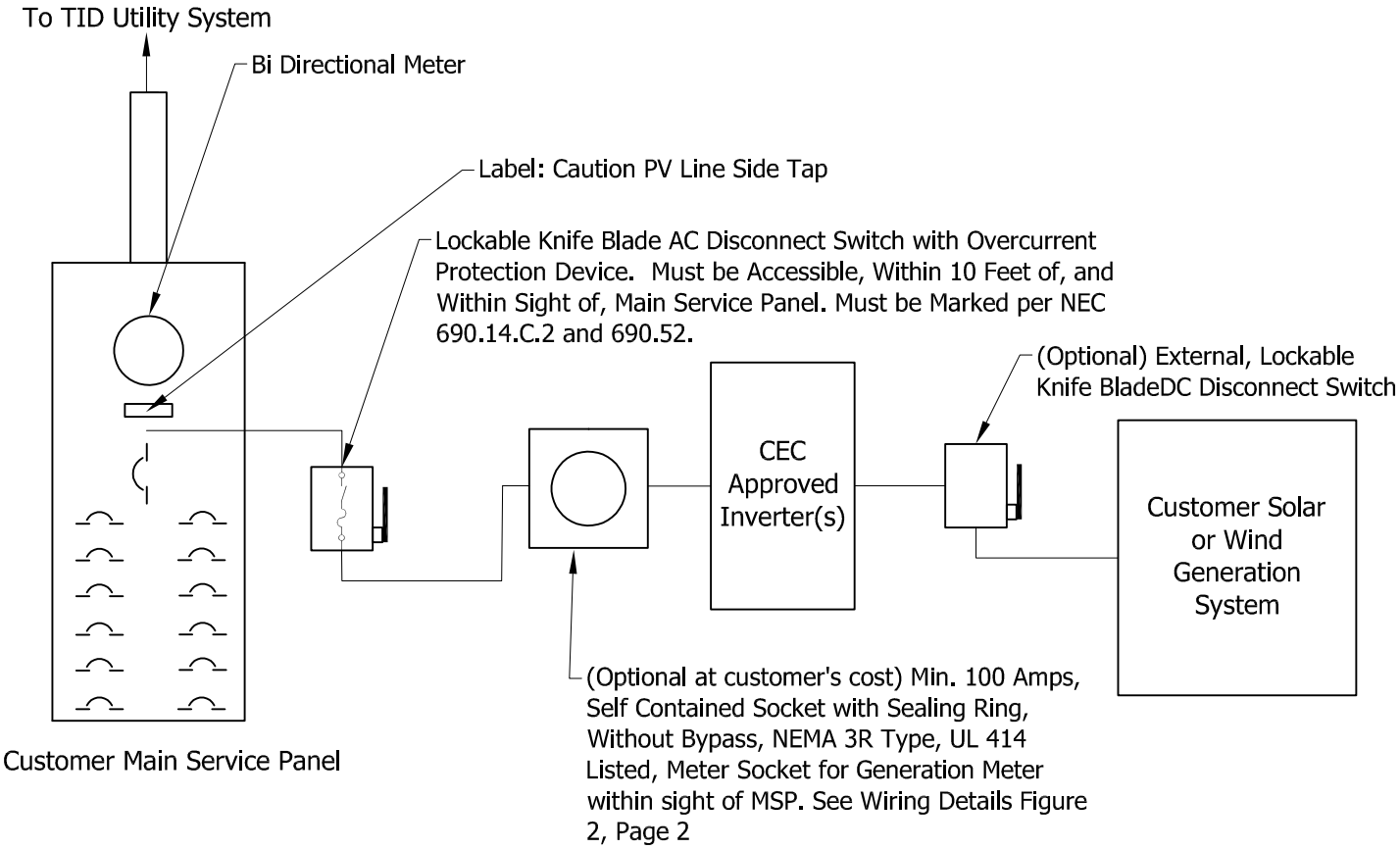


Figure 1, Simplified Block Diagram of Line Side Connection Installation

Notes:

1. Installation shall meet all applicable safety and performance standards established by the National Electric Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories, and where applicable, rules of the Public Utilities Commission regarding safety and reliability, as well as meet all TID requirements.
2. TID will ensure that the metering at the point of interconnection will accurately measure electricity flow in both directions. If service panel replacement is necessary, the applicant shall be responsible for such cost.
3. Arrangements utilizing transfer switches or alternatives to the arrangement shown above will be considered upon submission of a diagram and explanation of the proposed deviation(s).
4. Main service panels rated 400 Amps and above will require CT cabinet, an AC disconnect switch, and need to contact TID Engineering for other requirements.
5. Line side connection must be downstream of TID metering and not located within sealed TID compartment.
6. Line side connection shall not void UL listing on customer main service panel.
7. Customer must receive local jurisdiction approval for a line side connection.
8. The battery backup panel should be UL 1741 and IEEE 1547 certified.
9. TID allows parallel battery operation however TID does not allow exporting power back on the grid from battery storage during a power outage.
10. The battery storage can only be connected through smart inverters.

Refer to TID solar installation guidelines for additional requirements

TURLOCK IRRIGATION DISTRICT

CONSTRUCTION STANDARDS

REV	DESCRIPTION	INIT	CHK	RV'D	RV'D	RV'D	APP	DATE
D	ADDED FUSE AND BREAKER IN AC DISCONNECT	ADL	ADD	MAC			GSS	11-2022
C	MADE PV GEN. METER REQ. AS AN OPTION	SSG		BAP	MAC	EKR	EDJ	05-2020
B	REPLACE TITLE BLOCK	ELJ					MSG	09-2016
A	REPLACE TITLE BLOCK	JRS	MSG	JSA	SDP	MLH	EDJ	06-2013
--	INITIAL ISSUE	MSG	JRS	MLH	SDP	JSA	EDJ	01-2013

SELF GENERATION
LINE SIDE CONNECTION
WIRING & METER INSTALLATION

SHEET 1 OF 2

51093 DWG. NO.

D

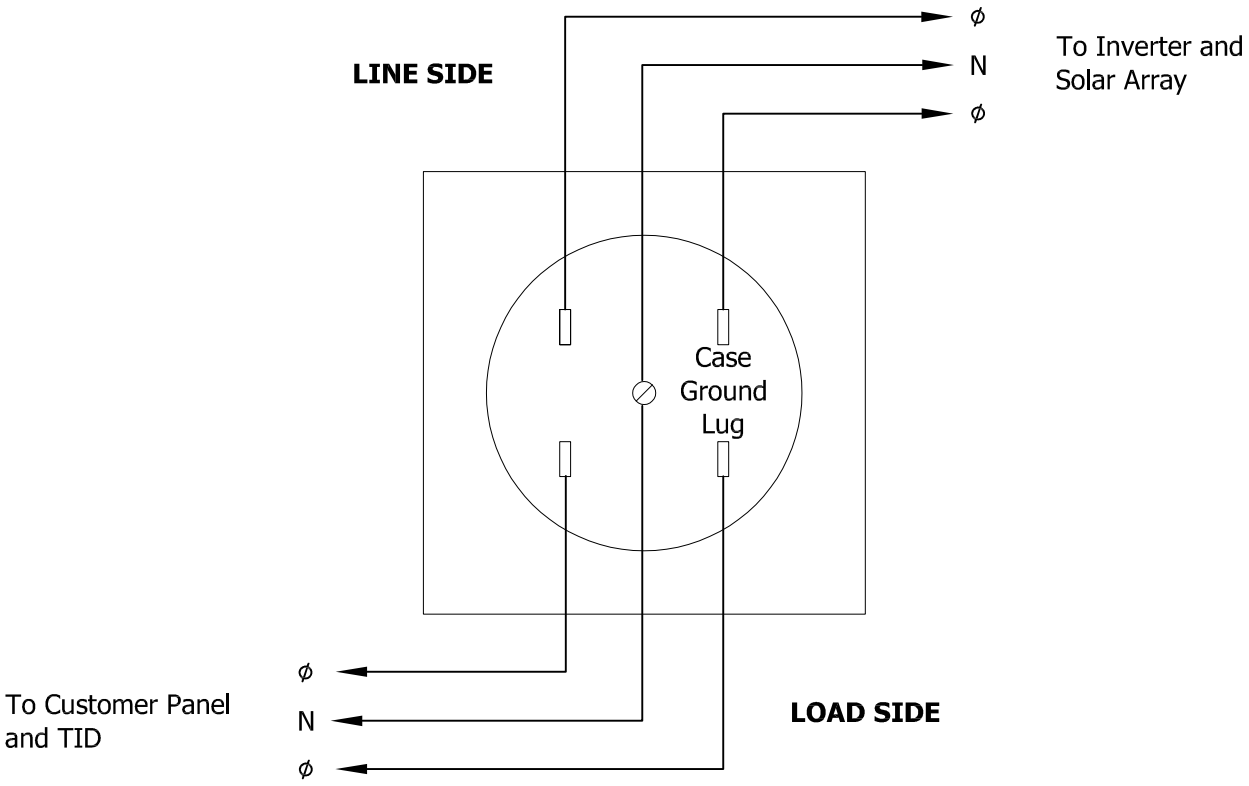


Figure 2
Simplified Detail of
Generation Meter Wiring

SELF GENERATION
LINE SIDE CONNECTION
WIRING & METER INSTALLATION

CONSTRUCTION STANDARDS

SHEET		DWG. NO.		PAGE
2 OF 2		**51093**	**D**	40

Section 4

Material Standards Drawings

TW=TOP WIDTH
TL=TOP LENGTH
BW=BOTTOM WIDTH
BL=BOTTOM LENGTH

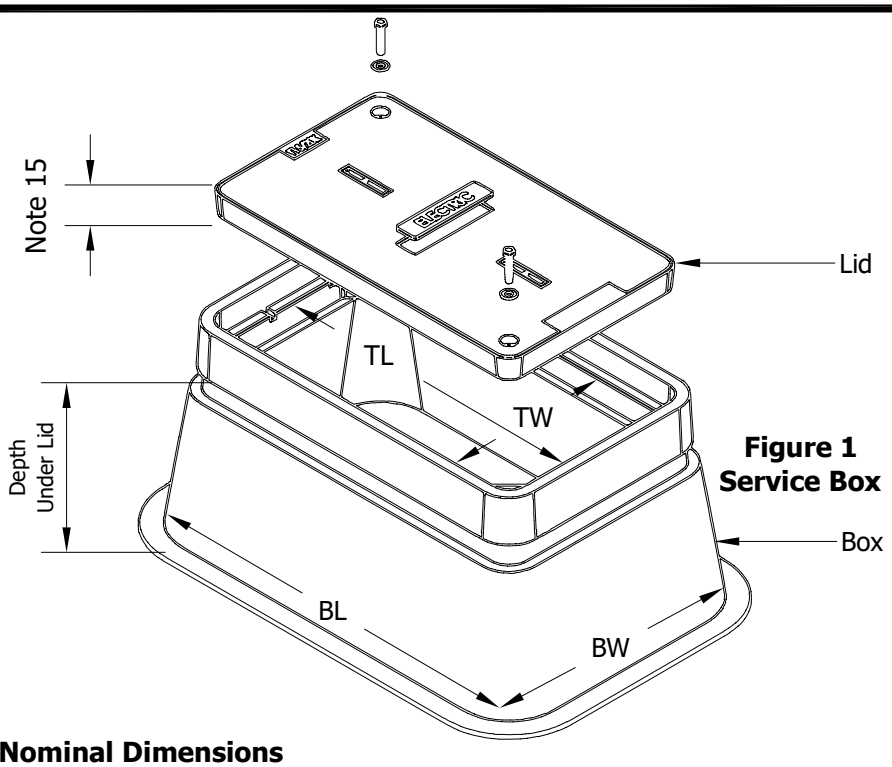


Figure 1
Service Box

Table 1 Nominal Dimensions

Stock Number	Size	Trade Size	Minimum Interior Dimensions (Inches)			
			Length		Width	Depth
U-1346-008	Small	13"x24"	Top	21	12	16
			Bottom	29	20	
U-1366-002	Large	17"x30"	Top	28	15	16
			Bottom	37	24	
U-1376-001	X-Large	24"x36"	Top	33	21	16
			Bottom	41	30	

Notes:

1. Assembly to consist of box with cover.
2. Meets WUC Guide 3.6 (latest revision) unless otherwise specified.
3. Boxes and lids to meet loading requirements of Designation A-16 of ASTM C 857 (latest revision), including the "live load increase".
4. Cover shall be marked "ELECTRIC".
5. Cover provided with lifting provisions.
6. Cover shall be gray in color.
7. Cover shall be lockable using (2) penta head bolts.
8. Penta head bolts shall be 1/2-6 coil x 2.50".
9. Non-corrosive materials to be used on locking device.
10. Materials shall be ultra-violet radiation resistant.
11. Box shall be constructed of polymer based material or have a polymer ring to assist in controlling sidewall and backfill deflections.
12. Box shall have adequate soil bearing surfaces to prevent settling in firm soils at the specified loading.
13. Box to be without bottom.
14. Use X-Large box for 8 position secondary connectors
15. X-Large box 3" lid. Small and large box 2"

Table 2 Replacement WUC Cover

Stock Number	Box Size (in.)
U-1347-001	13 x 24
U-1367-001	17 x 30
U-1377-001	24 x 36

Replacement Cover per WUC Guide 3.6 (latest revision)

Table 3 Extension

Stock Number	Size (in.)
U-1368-008	17 x 30 x 8
U-1378-008	24 x 36 x 8

8" Extension Ring to Raise Box
For Placement Below Box

Table 4 Grade Ring

Stock Number	Size (in.)
U-1348-002	13 x 24 x 2
U-1368-002	17 x 30 x 2
U-1378-002	24 x 36 x 2

2" - 3" Grade Ring
WUC Guide 3.6 (latest revision) Cover Compatible

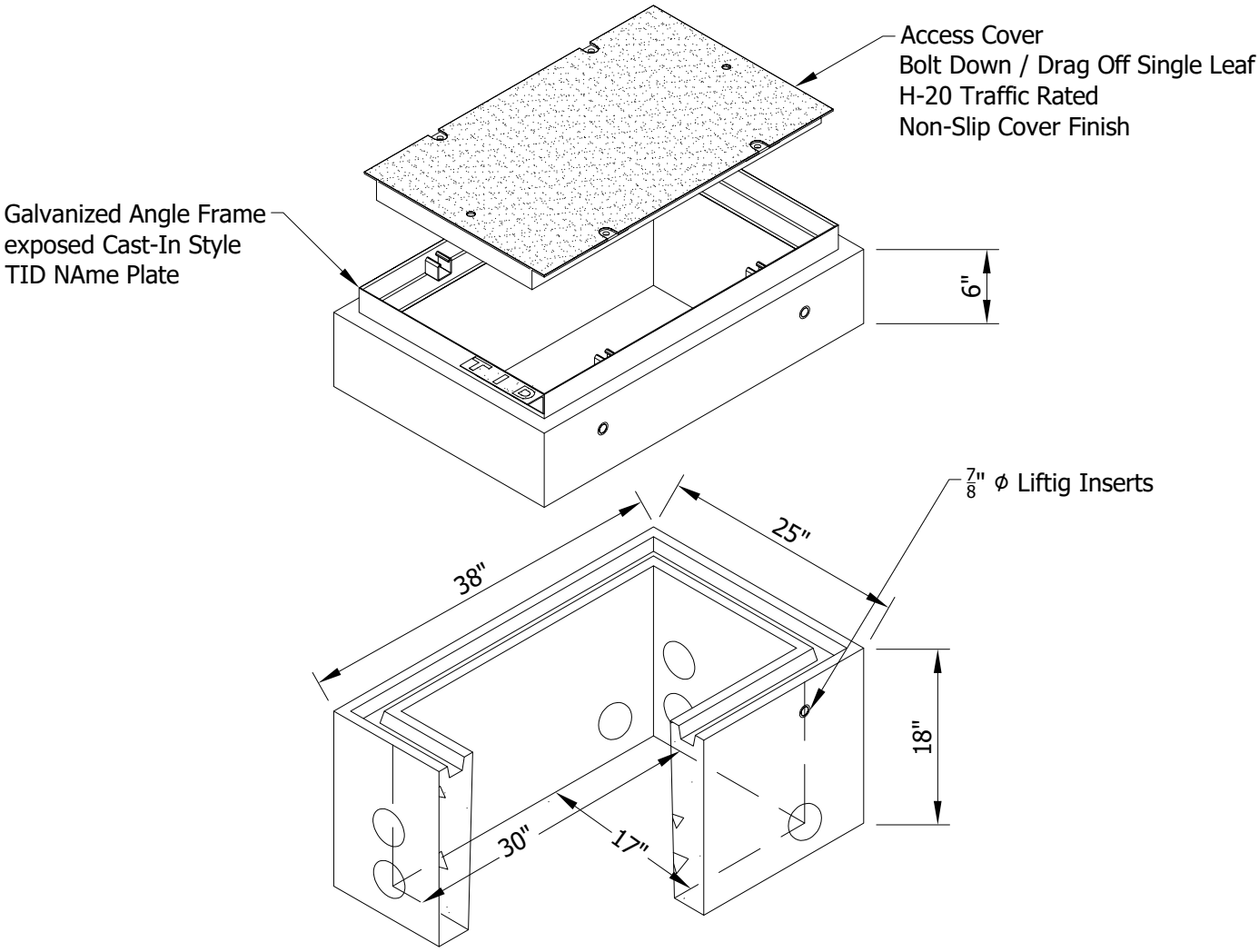


Figure 2
Concrete Box for Full Traffic

Table 5 Traffic Rated Box Dimensions

Stock Number	Size (in.)
U-1366-003	17 x 30 x 20

Notes - Concrete Boxes for Full Traffic:

1. Reinforced Concrete boxes for full traffic (H/20) must meet the requirements of the latest ASTM C-857.
2. Cover shall be lockable using non-corrosive penta head bolts (1/2-6 coil x2.50").
3. Concrete parts shall be interchangeable.
4. Covers shall have a high coefficient of friction (0.65 or better), slip resistant surface.
5. Box covers must have TID identification. The box body, cover, and extension must be labeled with the manufacturer's name and have the TID Stock Number on the inside surface.
6. All concrete parts shall be permanently identified as to the manufacturer on the inside surface.
7. All concrete parts shall be provided with four $\frac{7}{8}$ inch diameter, 1-$\frac{3}{4}$ inch minimum deep inserts with UNC Class 2A threads.

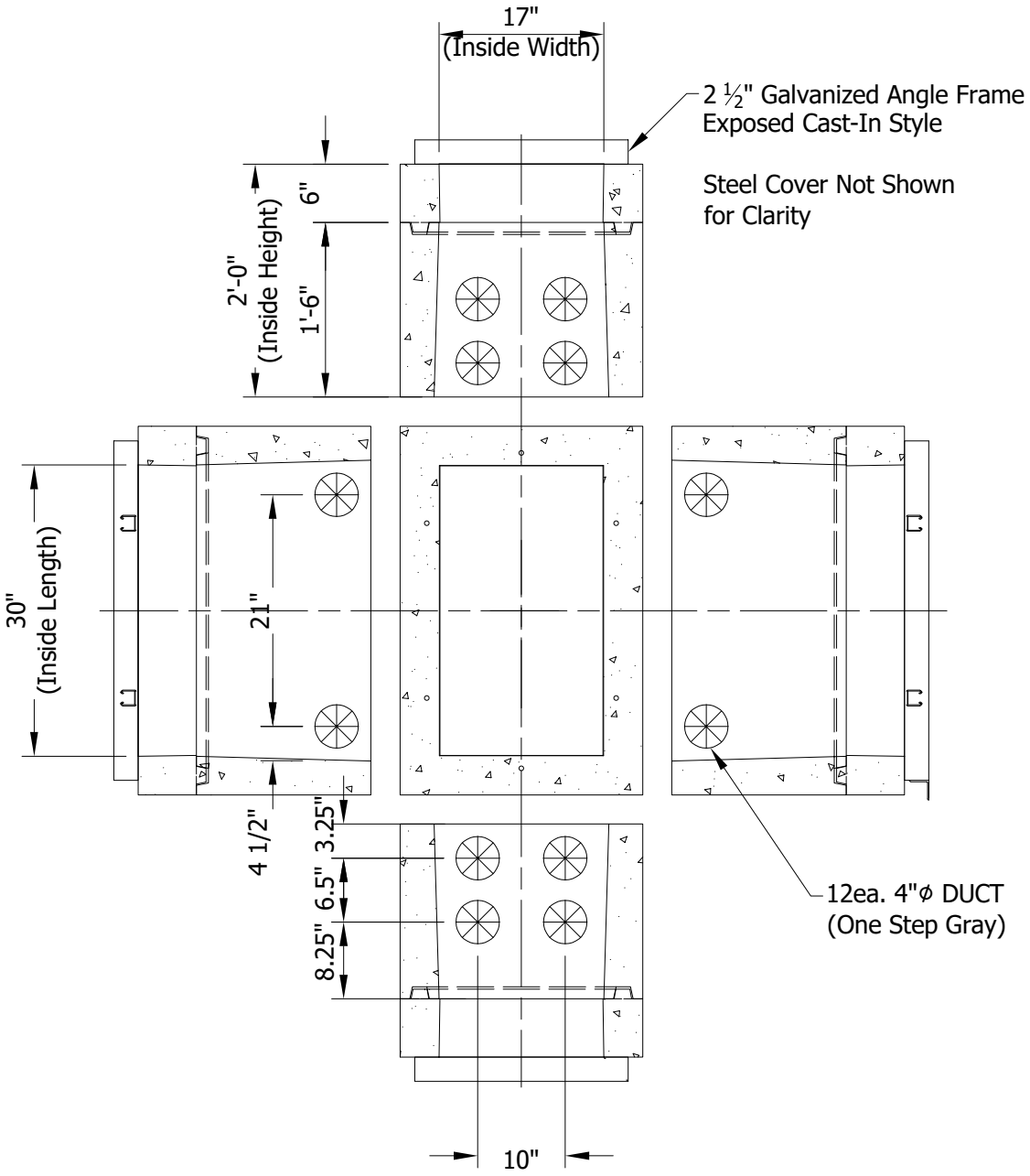


Figure 3
Concrete Box for Full Traffic

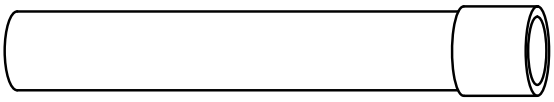


Figure 1
PVC Conduit

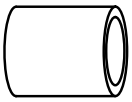


Figure 2
PVC Coupling

Figure 3
Swedge Coupling

Table 1 PVC Conduit, Schedules 40&80

Stock Number	Description
U-6050-001	1" Schedule 80
U-6050-002	2" Schedule 80
U-6050-003	3" Schedule 80
U-6050-004	4" Schedule 80
U-6050-005	5" Schedule 80
U-6050-006	6" Schedule 80
U-6060-000	½" Schedule 40
U-6060-001	1" Schedule 40
U-6060-002	2" Schedule 40
U-6060-003	3" Schedule 40
U-6060-004	4" Schedule 40
U-6060-005	5" Schedule 40

Notes:
1. Meets NEMA TC-2
2. Meets UL-651
3. 10' length with belled end or coupling attached

Table 2 PVC Coupling

Stock Number	Description
U-6090-000	½" Coupling
U-6090-001	1" Coupling
U-6090-002	2" Coupling
U-6090-003	3" Coupling
U-6090-004	4" Coupling
U-6090-005	5" Coupling
U-6090-006	6" Coupling
U-6092-002	2" Coupling - Long Line
U-6092-003	3" Coupling - Long Line
U-6092-004	4" Coupling - Long Line
U-6093-002	2" Coupling - Swedge
U-6093-003	3" Coupling - Swedge
U-6093-004	4" Coupling - Swedge
U-6093-004	5" Coupling - Swedge
U-6093-006	6" Coupling - Swedge

Notes:
1. For use with schedules 40 or 80
2. Meets all specifications for schedules 40 and 80 conduit

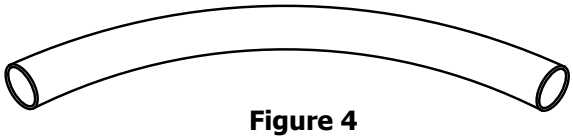


Figure 4
PVC Elbow

Table 3 PVC Elbow, Schedule 40

Stock Number	Description
U-6065-003	3" 30° elbow, 36" radius, schedule 40
U-6065-004	4" 30° elbow, 36" radius, schedule 40
U-6065-005	5" 30° elbow, 36" radius, schedule 40
U-6075-002	2" 45° elbow, 18" radius, schedule 40
U-6075-003	3" 45° elbow, 36" radius, schedule 40
U-6075-004	4" 45° elbow, 36" radius, schedule 40
U-6075-005	5" 45° elbow, 36" radius, schedule 40
U-6085-001	1" 90° elbow, 5¾" radius, schedule 40
U-6085-002	2" 90° elbow, 36" radius, schedule 40
U-6085-003	3" 90° elbow, 36" radius, schedule 40
U-6085-004	4" 90° elbow, 36" radius, schedule 40
U-6085-005	5" 90° elbow, 36" radius, schedule 40
U-6085-007	2" 90° elbow, 24" radius, schedule 40
U-6085-008	4" 90° elbow, 60" radius, schedule 40
U-6085-009	5" 90° elbow, 60" radius, schedule 40
U-6085-010	6" 90° elbow, 60" radius, schedule 40

Table 4 PVC Elbow, Schedule 80

Stock Number	Description
U-6063-003	3" 30° elbow, 36" radius, schedule 80
U-6063-004	4" 30° elbow, 36" radius, schedule 80
U-6063-005	5" 30° elbow, 36" radius, schedule 80
U-6070-002	2" 45° elbow, 18" radius, schedule 80
U-6070-003	3" 45° elbow, 36" radius, schedule 80
U-6070-004	4" 45° elbow, 36" radius, schedule 80
U-6070-005	5" 45° elbow, 36" radius, schedule 80
U-6080-001	1" 90° elbow, 5¾" radius, schedule 80
U-6080-002	2" 90° elbow, 36" radius, schedule 80
U-6080-003	3" 90° elbow, 36" radius, schedule 80
U-6080-004	4" 90° elbow, 36" radius, schedule 80
U-6080-005	5" 90° elbow, 36" radius, schedule 80
U-6080-007	2" 90° elbow, 24" radius, schedule 80

Notes:
1. For use with schedules 40 or 80 conduit.
2. Meets all specifications for schedules 40 and 80 conduit.

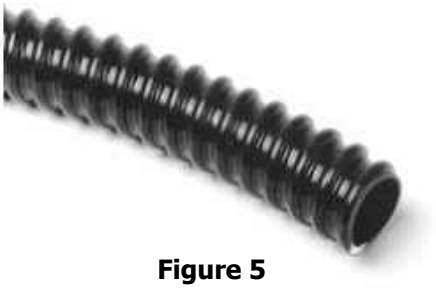


Figure 5
PVC Conduit, Flexible

Table 6 PVC Conduit, Flexible

Stock Number	Diameter (in.)
U-6150-000	½ *
U-6150-001	1 *
U-6150-002	2
U-6150-003	3
U-6150-004	4

* Maintains shape after bending.

Notes:
1. PVC Conduit, flexible, corrugated.

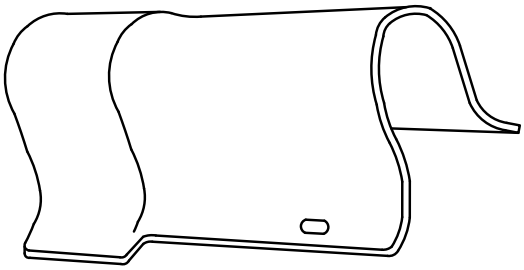


Figure 6
PVC Powermould, Schedule 40

Table 9 PVC Powermould

Stock Number	Diameter (in.)
U-6160-002	2
U-6160-003	3
U-6160-004	4
U-6160-005	5

Notes:
1. Schedule 40.
2. 10' length with belled end.
3. Per NEMA PH41, TC-19.

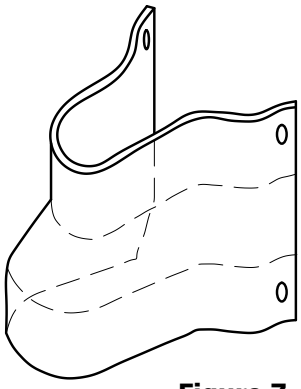


Figure 7
PVC Conduit to Powermould Adapter

Table 10 PVC Conduit to Powermould Adapter

Stock Number	Adapter Size (in.)
U-6170-002	4" conduit to 2" Powermould
U-6170-004	6" conduit to 4" Powermould

Notes:
1. Per NEMA PH41, TC-19.

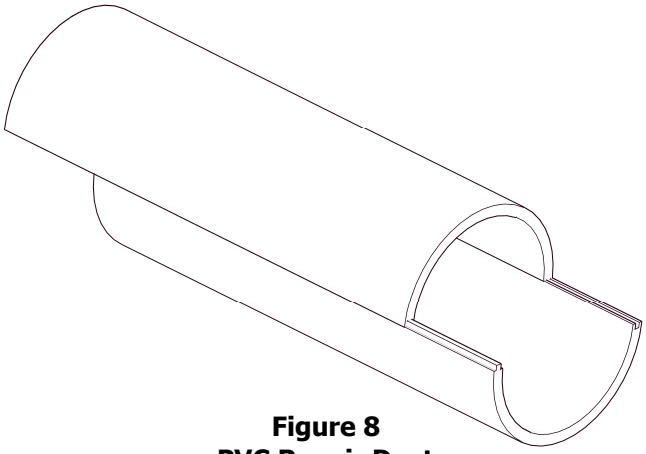


Figure 8
PVC Repair Duct

Table 7 PVC Repair Duct

Stock Number	Diameter (in.)
U-6061-002	2
U-6061-003	3
U-6061-004	4
U-6061-005	5

Notes:

1. Schedule 40.
2. 10' section.
3. Interlock design.
4. Ultraviolet resistant.
5. For repair of schedule 40, schedule 80, and DB 120 conduit.

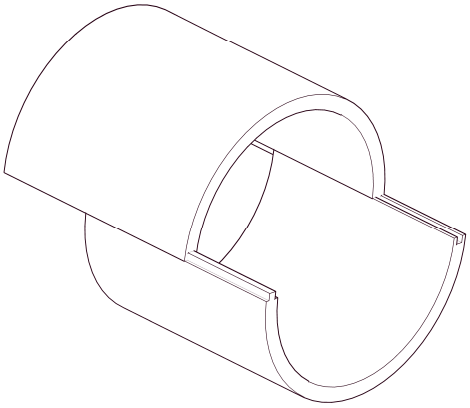


Figure 9
PVC Repair Coupling

Table 8 PVC Repair Coupling

Stock Number	Diameter (in.)
U-6095-002	2
U-6095-003	3
U-6095-004	4
U-6095-005	5
U-6095-006	6

Notes:

1. For use with repair duct.
2. Interlock design.

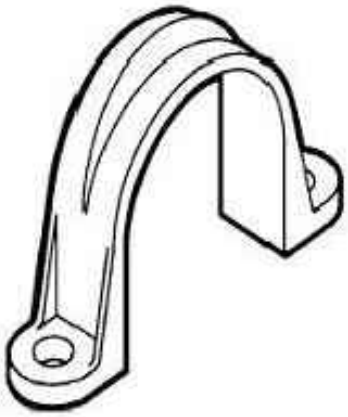


Figure 10
Conduit Strap

Table 11 Conduit Strap

Stock Number	Diameter (in.)
U-6048-001	1
U-6048-002	2
U-6048-003	3
U-6048-004	4
U-6048-005	5
U-6048-006	6

Notes:

1. Hot dip galvanized.
2. 2 hole mounting.
3. Mounting tabs bend 90° on 1", 2", and 3" straps.
4. Mounting tabs bend 30° on 4" and 5" straps.

Figure 11
Terminal Adapter

Table 13 Terminal Adapter

Stock Number	Diameter (in.)
U-6180-001	1
U-6180-002	2
U-6180-003	3
U-6180-004	4

Notes:

1. For use with schedules 40 or 80 conduit.
2. Meets all specifications of schedules 40 and 80 conduit.

Figure 12
Female Adapter

Table 14 Female Adapter

Stock Number	Diameter (in.)
U-6185-001	1
U-6185-002	2
U-6185-003	3
U-6185-004	4

Notes:
1. For use with schedules 40 or 80 conduit.
2. Meets all specifications of schedules 40 and 80 conduit.

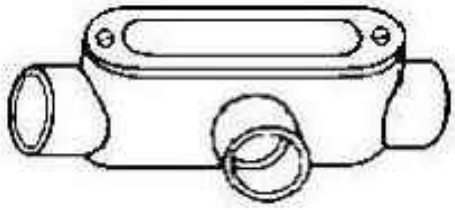


Figure 13
Access Fitting, Type T

Table 15 Access Fitting, Type T

Stock Number	Diameter (in.)
U-6190-001	1

Notes:
1. For use with schedules 40 or 80 conduit.
2. Meets all specifications of schedules 40 and 80 conduit.

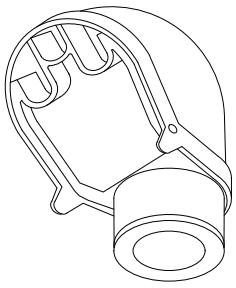


Figure 14
Service Entrance Cap

Table 16 Service Entrance Cap

Stock Number	Diameter (in.)
U-6200-001	1

Notes:
1. For use with schedules 40 or 80 conduit.
2. Meets all specifications of schedules 40 and 80 conduit.

Figure 15
PVC Solvent Cement

Table 17 PVC Solvent Cement

Stock Number	Size (Qt.)
U-6140-002	1

Notes:
1. For use with schedules 40 or 80 PVC conduit.

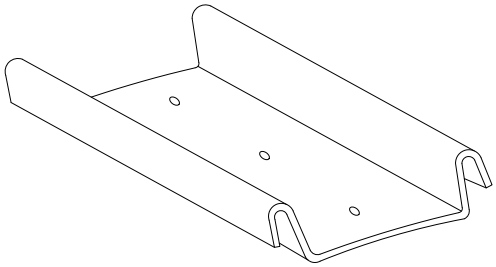


Figure 16
Backing Plate

Table 18 Backing Plate

Stock Number	Size (in.)
U-6165-003	3
U-6165-005	5

Notes:
1. 10' length.

Table 19 Conduit Carrier

Figure 17
Conduit Carrier

Stock Number	Size (in.)
U-7325-001	3 /4 " - 1 - 1 / 4"
U-7325-003	3" - 4"
U-7325-004	4" - 6"
U-7325-008	1-1/2" - 2 - 1/2"

Notes:
1. Heavy-gauge Waterproof woven nylon.
2. Each inflatable line carrier adjusts to fit conduit.

Conductor installed in the District must meet certain requirements. Included in the requirements are the conductor size, type, stranding and insulation. Material not in compliance will be rejected by the District inspectors. Initially, a few select conductors were accepted by the District. In an effort to have underground cable more readily available for contractor through local suppliers, changes have been made to enlarge the list of acceptable cable. Turlock Irrigation District still requires XLP insulation, 1350 aluminum alloy with standard stranding and insulation thickness. The best way to insure compliance is to specify the code name.

An additional change is the acceptance of paralleling the conductor by the contractor. Paralleling is installing three single conductors simultaneously without benefit of the conductors being intertwined; however, the neutral wire must be permanently marked. Color tape (preferably white) or wire ties with labeling is acceptable provided it is determined to be permanent for the neutral.

The following list of conductors with size, stranding, insulation and code names are acceptable for installation at the District

Figure 1
Single Conductor

Table 1 Single Conductor XLP EC Grade per NEMA WC-7 1350 Aluminum

Size	Stranding	SIW Min Standing	Insulation	Code Name
1/0	19	7	80 mils	Harvard
2/0	19	11	80 mils	Yale
4/0	19	17	80 mils	Beloit
350	37	24	95 mils	Rutgers
500	37	30	95 mils	Emory
750	61	53	110 mils	Sewanee
1000	61	53	110 mils	Fordham

Notes:

1. Compacted cable and building wire known as S8000 is NOT acceptable.

Table 2 Triplex/Tri Parallel Conductor XLP EC Grade 1350 Aluminum

Cable Size		Stranding	SIW Min. Stranding	Insulation (mils)	Acceptable Code Names			
Phase	Neutral							
1/0	#2	19, 19, 7	7, 7, 7	80, 80, 60	Queens	Rosary	Marion	Brenau
	1/0	19, 19, 19	7, 7, 7	80, 80, 80	Paterson	Luther	Montchlair	Bergen
2/0	1/0	19, 19, 19	11, 11, 7	80, 80, 80				Shaw
	2/0	19, 19, 19	11, 11, 11	80, 80, 80	Caldwell	Lehman	Bloomfield	Hunter
4/0	1/0	19, 19, 19	18, 18, 7	80, 80, 80			Molloy	Manhattanville
	2/0	19, 19, 19	18, 18, 11	80, 80, 80	Trinity	Belmont	Regis	Sweetbriar
	4/0	19, 19, 19	18, 18, 18	80, 80, 80	Bronx	Glassboro	Manhattan	Monmouth
350	4/0	37, 37, 19	36, 36, 18	95, 95, 80				Wesleyan
500	350	37, 37, 37	36, 36, 33	95, 95, 95	Kings	Trenton	Brooklyn	Rider
	500	37, 37, 37	36, 36, 36	95, 95, 95	Stevens	Jersey City	St. Johns	Westchester

Table 3 Quadplex/Quad Parallel Conductor XLP EC Grade 1350 Aluminum

Cable Size		Stranding	SIW Min. Stranding	Insulation (mils)	Acceptable Code Names			
Phase	Neutral							
1/0	#2	19, 19, 19, 7	7, 7, 7, 7	80, 80, 80, 60	Kent	Cerritos	Piedmont	Notre Dame
	1/0	19, 19, 19, 19	7, 7, 7, 7	80, 80, 80, 80	Carthage	Kellogg	Southern	Purdue
2/0	1/0	19, 19, 19, 19	11, 11, 11 ,7	80, 80, 80, 80				
	2/0	19, 19, 19, 19	11, 11, 11, 11	80, 80, 80, 80	Lycoming	Itasca	Brandeis	Lafayette
4/0	2/0	19	18	80	Wake Forest			
	4/0	19	18	80	Earlham			
500	350	37, 37, 37, 37	36, 36, 36, 33	95, 95, 95, 95	Salesian	Berry	Valparaiso	Wofford
	500	37, 37, 37, 37	36, 36, 36, 36	95, 95, 95, 95	Covenant	Citadel	Marshall	Lackawanna

Developer Provided Materials Used In Underground Construction

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
O-3325-008	**Ground Rod, 8’ x 5/8"**	
	KORTICK	K5428
	JOSLYN	J8338
	COOPER	DN3C8
	AB CHANCE	C615880
	ERITECH	615880
	NEHRING	NCC 588
O-5505-001	**Wire, Bare Copper 1/0 AWG**	
	SERVICE	
	SOUTHWIRE	
	GENERAL CABLE	
	NEHRING	
O-5505-002	**Wire, Bare Copper, 2/0 AWG**	
	SERVICE	
	SOUTHWIRE	
	GENERAL CABLE	
	NEHRING	
O-5965-001	**Wire, Covered AAC, 1000 MCM XLP** Code Name: FORDHAM	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
	GENERAL CABLE	
	KINGWIRE	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
O-5985-005	**Wire, Covered AAC, 750 MCM XLP**	
	Code Name: SEWANEE	
	ALCAN	
	PRYSMIAN	
	GENERAL CABLE	
	SOUTHWIRE	
	NEXANS	
	KINGWIRE	
O-7189-002	**Screws, Lag, Washer Head 1/4" x 2" or 2 1/2"**	
	JOSLYN	J26486.2
	EMC	105
O-7370-001	**Ground Rod Clamp for 5/8" Rod**	
	PENN UNION	CAB-2
	BLACKBURN	JAB58H
	JOSLYN	J8492H
	KORTICK	K4672
	CMC	WB58
	ERITECH	HDC58R
	BURNDY	GRC58
U-1346-008	**Service Box (Small) 13" x 24"**	
	NEW BASIS	FCA132418C4036
	QUAZITE/STRONGWELL	PD1324Z501-17
	CDR	PA12-1324-18
U-1366-002	**Service Box (Large) 17" x 30"**	
	QUAZITE/STRONGWELL	PD1730Z501-17
	NEW BASIS	FMA173018C4036
	CDR	PA12-1730-18

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
U-1366-002	**Service Box (Extra Large) 24" x 36"**	
	QUAZITE/STRONGWELL	PD2436Z501-17
	NEW BASIS	FDC243618C4938
	CDR	PA12-2436-18
U-2054-001	**Transformer Pad - Single Phase**	
	QUAZITE/STRONGWELL	PH5448BA
	NEW BASIS	UGS-504
	ARMORCAST	6001986
	JENSEN PRECAST	
U-2056-001	**Transformer Pad – Three Phase (75 – 500 kVA)**	
	UTILITY VAULT	By Description & Spec
	NEW BASIS	
	TEICHERT BROOKS	
	QUAZITE/STRONGWELL	
	ARMORCAST	
	JENSEN PRECAST	
U-2056-005	**Transformer Pad – Three Phase (750 kVA & larger)**	
	UTILITY VAULT	By Description & Spec
	NEW BASIS	
	TEICHERT BROOKS	
	QUAZITE/STRONGWELL	
	ARMORCAST	
	JENSEN PRECAST	
U-2095-001	**Padmounted Switch Substructure**	
	TEICHERT BROOKS	0510ASYB60PSSTID
	UTILITY VAULT	0260014-3300080
	JENSEN PRECAST	4686 SWITCH VAULT

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
U-2146-003	**Pull Box - Large (12,000 lb loading) (48" x 78" x 60")**	
	TEICHERT BROOKS	0500ASYB60TID
	UTILITY VAULT	0290405-2024120
	JENSEN PRECAST	PB466_4878_TID
U-2146-005	**Pull Box – X-Large (12,000 lb loading) (54" x 102" x 72")**	
	UTILITY VAULT	0260012-2024120
	TEICHERT BROOKS	0510ASYB60TID
	JENSEN PRECAST	PB4686_54102_TID
U-2178-001	**Concrete Transformer Vault (48" x 48" x 78")**	
	UTILITY VAULT	By Description & Spec.
U-2178-002	**Concrete Transformer Vault Complete Lid Assembly**	
	UTILITY VAULT	By Description & Spec.
U-2178-003	**Concrete Transformer Vault 6" Extension Ring**	
	UTILITY VAULT	By Description & Spec.
U-2179-001	**Horizontal Transformer Vault (36" x 60" x 54")**	
	TEICHERT BROOKS	0400ASYTE54LTPG
	JENSEN PRECAST	35 TRANSFORMER VAULT
	UTILITY VAULT	3546 – TID
U-6045-001	**Conduit Brace**	
	SHERMAN RILEY	KC-1
	CONTINENTAL	CRB396

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
U-6048-001	**Conduit Strap – 1”**	
	INWESCO	50A10
	L.H. DOTTIE	403
U-6048-002	**Conduit Strap – 2”**	
	INWESCO	50A14
	L.H. DOTTIE	406
U-6048-003	**Conduit Strap – 3”**	
	INWESCO	50A18
	L.H. DOTTIE	408
U-6048-004	**Conduit Strap – 4”**	
	INWESCO	50A22
	L.H. DOTTIE	410
U-6048-005	**Conduit Strap – 5”**	
	INWESCO	50A26
U-6048-006	**Conduit Strap – 6”**	
	INWESCO	50A30
U-6050-001	**Conduit – 1” Schedule 80**	
	CARLON	49408
	JM EAGLE	4701000102
	CANTEX	A53BA12
U-6050-002	**Conduit – 2” Schedule 80**	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	CARLON	49411
	JM EAGLE	4702000102
	CANTEX	A53CA12
U-6050-003	**Conduit – 3” Schedule 80**	
	CARLON	49413
	JM EAGLE	4703000102
	CANTEX	A53DA12
U-6050-004	**Conduit – 4” Schedule 80**	
	CARLON	49415
	JM EAGLE	4704000102
	CANTEX	A53EA12
U-6050-005	**Conduit – 5” Schedule 80**	
	CARLON	49416
	JM EAGLE	4705000102
	CANTEX	A53FA12
U-6050-006	**Conduit – 6” Schedule 80**	
	CARLON	49417-010
	JM EAGLE	4706000103
	CANTEX	A53GA12
U-6060-002	**Conduit – 2” Schedule 40**	
	CARLON	49011
	JM EAGLE	4602000103
	CANTEX	A52CA12
U-6060-003	**Conduit – 3” Schedule 40**	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	CARLON	49013
	JM EAGLE	4603000103
	CANTEX	A52DA12
U-6060-004	**Conduit – 4" Schedule 40**	
	CARLON	49015
	JM EAGLE	4604000103
	CANTEX	A52EA12
U-6060-005	**Conduit – 5" Schedule 40**	
	CARLON	49016
	JM EAGLE	4605000103
	CANTEX	A52FA12
U-6063-003	**Conduit - Elbow 3" 30° 36" Radius Schedule 80**	
	CARLON	UB6FL
	CANTEX	5123759
	JM EAGLE	3303680
U-6063-004	**Conduit - Elbow 4" 30° 36" Radius Schedule 80**	
	CARLON	UB6FN
	CANTEX	5123760
	JM EAGLE	4303680
U-6063-005	**Conduit - Elbow 5" 30° 36" Radius Schedule 80**	
	CARLON	UB6FP
	CANTEX	5123761
	JM EAGLE	5303680
U-6070-002	**Conduit - Elbow 2" 45° 18" Radius Schedule 80**	
	CARLON	UB7CJ

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	JM EAGLE	2451880
U-6070-003	**Conduit - Elbow 3” 45° 36” Radius Schedule 80**	
	CARLON	UB7FL
	CANTEX	5121077
	JM EAGLE	3453680
U-6070-004	**Conduit - Elbow 4” 45° 36” Radius Schedule 80**	
	CARLON	UB7FN
	CANTEX	5119821
	JM EAGLE	4453680
U-6070-005	**Conduit - Elbow 5” 45° 36” Radius Schedule 80**	
	CARLON	UB7FP
	CANTEX	5119820
	JM EAGLE	5453680
U-6075-002	**Conduit - Elbow 2” 45° 18” Radius Schedule 40**	
	CARLON	UA7CJ
	CANTEX	5133797
	JM EAGLE	2451840
U-6075-003	**Conduit - Elbow 3” 45° 36” Radius Schedule 40**	
	CARLON	UA7FL
	CANTEX	5133779
	JM EAGLE	3453640
U-6075-004	**Conduit - Elbow 4” 45° 36” Radius Schedule 40**	
	CARLON	UA7FN
	CANTEX	5133777
	JM EAGLE	4453640

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
U-6075-005	**Conduit - Elbow 5” 45° 36” Radius Schedule 40**	
	CARLON	UA7FP
	CANTEX	5133780
	JM EAGLE	5453640
U-6080-002	**Conduit - Elbow 2” 90° 24” Radius Schedule 80**	
	CARLON	UB9CJ
	CANTEX	5121099
	JM EAGLE	2901880
U-6080-003	**Conduit - Elbow 3” 90° 36” Radius Schedule 80**	
	CARLON	UB9FL
	CANTEX	5121081
	JM EAGLE	3903680
U-6080-004	**Conduit - Elbow 4” 90° 36” Radius Schedule 80**	
	CARLON	UB9FN
	CANTEX	5121023
	JM EAGLE	4903680
U-6080-005	**Conduit - Elbow 5” 90° 36” Radius Schedule 80**	
	CARLON	UB9FP
	CANTEX	5121083
	JM EAGLE	5903680
U-6085-002	**Conduit - Elbow 2” 90° 24” Radius Schedule 40**	
	CARLON	UA9CJ
	CANTEX	5133844
	JM EAGLE	2901840

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
U-6085-003	**Conduit - Elbow 3” 90° 36” Radius Schedule 40**	
	CARLON	UA9FL
	PW PIPE	By Description
	CANTEX	5133820
	JM EAGLE	3903640
U-6085-004	**Conduit - Elbow 4” 90° 36” Radius Schedule 40**	
	CARLON	UA9FN
	CANTEX	5133821
	JM EAGLE	4903640
U-6085-005	**Conduit - Elbow 5” 90° 36” Radius Schedule 40**	
	CARLON	UA9FP
	CANTEX	5133841
	JM EAGLE	5903640
U-6085-006	**Conduit - Elbow 6” 90° 60” Radius Schedule 40**	
	CARLON	UA9IR
	CANTEX	5133886
	JM EAGLE	By Description
U-6090-002	**Conduit – 2” Schedule 40/80 Coupling**	
	CARLON	E940J
	JM EAGLE	60010200
	KRALOY	E13120
	CANTEX	6141628
U-6090-003	**Conduit – 3” Schedule 40/80 Coupling**	
	CARLON	E940L
	JM EAGLE	60010300
	KRALOY	E13130

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	CANTEX	6141630
U-6090-004	**Conduit – 4” Schedule 40/80 Coupling**	
	CARLON	E940N
	JM EAGLE	60010400
	KRALOY	E13140
	CANTEX	6141632
U-6090-005	**Conduit – 5” Schedule 40/80 Coupling**	
	CARLON	E940P
	JM EAGLE	60010500
	KRALOY	E13150
	CANTEX	6141633
U-6090-006	**Conduit – 6” Schedule 40/80 Coupling**	
	CARLON	E940R
	JM EAGLE	60010600
	CANTEX	6141634
U-6092- 002	**Conduit – 2” Schedule 40 Long Line Coupling**	
	CARLON	E941J
	CANTEX	6121623
	JM EAGLE	240FABCPL
U-6092- 003	**Conduit – 3” Schedule 40 Long Line Coupling**	
	CARLON	E941L
	CANTEX	6202005
	JM EAGLE	340FABCPL
U-6092- 004	**Conduit – 4” Schedule 40 Long Line Coupling**	
	CARLON	E941N

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	CANTEX	6202010
	JM EAGLE	440FABCPL
U-6135-002	**Conduit – 2” Plug (Cap)**	
	CARLON	P258J
	PW PIPE	61800200
	KRALOY	E35020A
	CANTEX	5315248
U-6135-003	**Conduit – 3” Plug (Cap)**	
	CARLON	P258LT
	PW PIPE	61800300
	KRALOY	E35030A
	CANTEX	5315260
U-6135-004	**Conduit – 4” Plug (Cap)**	
	CARLON	P258N
	PW PIPE	61800400
	KRALOY	E35040A
	CANTEX	5315252
U-6135-005	**Conduit – 5” Plug (Cap)**	
	CARLON	P258P
	PW PIPE	61800500
	KRALOY	E35050A
	CANTEX	5315253
U-6140-002	**Solvent Cement for Conduit - 1 qt PVC AllWeather**	
	CARLON	VC9982
	WELD ON	DUIT 427
U-6220-000	**Compression Terminal Lug for #2 Wire**	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	ANDERSON	AHL-2-BN-TP
	BLACKBURN	AL4P
	HOMAC	SA2 NTN
	DOSSERT	DPL 6-2N-D2-EC-SN
U-6220-001	**Compression Terminal Lug for 1/0 Wire**	
	PENN UNION	BLUA-1/0D3
	ANDERSON	AHL-1/0-BN-TP
	BLACKBURN	AL6P
	HOMAC	AL1/0-NTN
U-6220-002	**Compression Terminal Lug for 2/0 Wire**	
	PENN UNION	BLUA-2/0D
	ANDERSON	AHL-2/0-BN-TP
	BLACKBURN	AL8P
	HOMAC	AL2/0-NTN
U-6220-003	**Compression Terminal Lug for 4/0 Wire**	
	PENN UNION	BLUA-4/0D
	ANDERSON	AHL-4/0-BN-TP
	BLACKBURN	AL12P
	HOMAC	AL4/0-NTN
U-6220-004	**Compression Terminal Lug for 350 MCM Wire**	
	PENN UNION	BLUA-035D
	ANDERSON	AHL-350-BN-TP
	BLACKBURN	AL18P
	HOMAC	AL350-NTN
U-6220-005	**Compression Terminal Lug for 500 MCM Wire**	
	PENN UNION	BLUA-050D2
	ANDERSON	VACL-500-12BN
	BLACKBURN	ALS4P

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	HOMAC	2081-500
	MAC	MUH 500

U-6220-006 **Compression Terminal Lug for 750 MCM Wire**

ANDERSON	AHL-750-BN-TP
BLACKBURN	AL44P
HOMAC	AL750-NTN
PENN UNION	KWL-079D1-P1C

U-6220-007 **Compression Terminal Lug for 1000 MCM Wire**

BURNDY	YCAK44A-2G2
PENN UNION	KWL-100D1-TN
BLACKBURN	AL60P

U-6225-004 **Wire, Covered AAC, 4/0 AWG XLP**
Code Name: BELOIT

ALCAN
PRYSMIAN
NEXANS
SOUTHWIRE
CENTELSA

U-6225-007 **Wire, Covered AAC, 500 MCM XLPE**
Code Name: EMORY

ALCAN
PRYSMIAN
NEXANS
SOUTHWIRE
CENTELSA

U-6229-001 **Cable, Covered AAC, Triplex 1/0 XLPE**
Code Name: BRENAU, MARIAN, QUEENS, ROSARY, PATERSON, LUTHER, MONTCHLAIR, BERGEN

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
	CENTELSA	
U-6229-002	**Cable, Covered AAC, Triplex 2/0 XLPE** Code Name: SHAW, CALDWELL, LEHMAN, BLOOMFIELD, HUNTER	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
	CENTELSA	
U-6229-004	**Cable, Covered AAC, Triplex 4/0 XLPE** Code Name: MOLLOY, MANHATTANVILLE, TRINITY, BELMONT, REGIS, SWEETBRIAR	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
	CENTELSA	
U-6229-006	**Cable, Covered AAC, Triplex 350 XLPE** Code Name: WESLEYAN	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
	CENTELSA	
U-6229-007	**Cable, Covered AAC, Triplex 500 XLPE** Code Name: RIDER, BROOKLYN, KINGS, TRENTON, STEVENS, JERSEY CITY, ST. JOHNS, WESTCHESTER	
	ALCAN	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
	CENTELSA	
U-6232-001	**Cable, Covered AAC, Quadplex 1/0 XLPE** Code Name: NOTRE DAME, PIEDMONT, CERRITOS, KENT, CARTHAGE, KELLOGG, SOUTHERN PURDUE	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
U-6232-002	**Cable, Covered AAC, Quadplex 2/0 XLPE** Code Name: LYCOMING, ITASCA, BRANDEIS, LAFAYETTE	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
U-6232-007	**Cable, Covered AAC, Quadplex 500 XLPE** Code Name: WOFFORD, VALPARAISO, BERRY, SALESIAN, MARSHALL, CITADEL, LACKAWANNA, COVENANT	
	ALCAN	
	PRYSMIAN	
	NEXANS	
	SOUTHWIRE	
U-6290-000	**Cable Pulling Compound 1 Gallon**	
	ARNCO	HL B1005P
	POLYWATER	A-640
	DCD	35000-410
U-6300-001	**Sealing Compound**	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	A.C. HORN. INC DEHYDRATING 6 MASTIC	
U-6360-001	**Cable Protector**	
	VIRGINIA PLASTICS	LG-345
	ELECRICAL MATERIALS CO.	27-1
	CONDUX	0804 2300
	EMCO	27-1G
U-6390-001	**Heat Shrink Cap (0.75” - 1.50”)**	
	T&B	HSC300-600
	SIGMAFORM	SSC-150
	MAC	ISC 150
	UTILCO	HSC-2
	3M	ICEC 031A
	RAYCHEM	ESC-3/A
U-6390-002	**Heat Shrink Cap (1.25” - 2.50”)**	
	T&B	HSC250
	SIGMAFORM	SSC-250
	MAC	ISC 250
	UTILCO	HSC-3
	3M	ICEC 061A
	RAYCHEM	ESC-5/A
U-6390-003	**Heat Shrink Cap (1.75” - 3.60”)**	
	T&B	HSC360
	SIGMAFORM	SSC-360
	MAC	ISC 360
	3M	ICEC 161A
	RAYCHEM	ESC-6/A
U-6440-001	**Power Marker - Flat**	

TID Stock Number	***Description***	
	Manufacturer	*Part Number*
	3M	#1251
U-6470-001	**Street Light Fuse Holder**	
	BUSS	TRON HEB-JJ
U-6471-001	**Street Light Fuse Holder Boots**	
	BUSS	1A0512
U-7145-010	**Street Light Fuse 10 Amp**	
	BUSS	BAF10
U-7145-015	**Street Light Fuse 15 Amp**	
	BUSS	BAF15
U-7145-025	**Street Light Fuse 25 Amp**	
	BUSS	BAF25
U-7145-030	**Street Light Fuse 30 Amp**	
	BUSS	BAF30
U-8200-004	**Pull Rope – 3/4"**	
	NEPTCO	WP2500P
	ARNCO	BLWP25
	HERCULINE	P2500W
	WELLINGTON	N303M

Section 5

Locating Materials

The following is a list of suppliers who have indicated that they stock materials required by TID. Please note that **not all materials are available from all suppliers**. If you have any questions or problems sourcing materials required by TID, please contact the TID Purchasing Division at (209) 883-8401.

Acme Electric
1025 S. Kilroy Rd.
Turlock, CA 95380
(209) 667-2851
Contact: Buster Lucas

All-Phase Electric
2250 Cooper Ave
Merced, CA 95340
(209) 384-0777

Champion Wire and Cable
822 W. 22nd St
Tempe, AZ 85282
(800) 329-1900
(602) 736-1525
Contact: Jeremy Scott

Consolidated Electric Distributors (CED)
1343 N. Emerald Avenue
Modesto, CA 95351
(209) 524-5591
Contact: Steve Miller

Central Wholesale Electric
1466 N. Carpenter Rd
Modesto, CA 95351
(209) 550-2500
Contact: Randy DeCicco

Graybar Electric
1211 Fee Dr
Sacramento, CA 95815
(800) 388-8061 ext. 1947
Contact: Rod Ruggles

Herning Underground Supply
567 Exchange Ct
Livermore, CA 94550
(925) 373-8660
Contact: Pat Ruth :(559) 994-8312

Independent Electric Supply, Inc.
1565 Venture Lane
Turlock, CA 95380
(209) 668-4702
Contact: David Crew

Kingwire
3030 N. Lamb Blvd Ste 113
Las Vegas, NV 89115
(702) 368-7597
(702) 368-7598 (fax)
Contact: Bob

Platt Electric
1431 Freitas Pkwy
Turlock, CA 95380
(209) 656-1063
Contact: Deeann Harmon

Rexel Norcal Valley
919 Emerald Avenue
Modesto, CA 95351
(209) 577-6611
Contact: Alex Ceja

Willie Electric Supply
101 S. 7th Street
Modesto, CA 95333
(209) 527-6800
Contact: Gary Bird/Todd Wilson

The following list of companies have material on hand, have access to material, or will provide you with additional sources to locate materials required by the District. Order materials in advance as some may have a lead time.

COMPANY	***BRAND NAME***
New Basis 11501 Dublin Blvd Ste. 200 Dublin, CA 94568 (925) 551-5019	New Basis
Teichert Brooks 2441 Charter Way Stockton, CA 95206 (209) 464-7696	Teichert Brooks
ElectriGroup 4600 Pell Dr. Sacramento, CA 95838 (916) 922-5550	Carlon
GEXPRO General Electric Supply Company 4608 Roseville Rd North Highlands, CA 95660 (916) 339-4521	Carlon Cantex
Intraline 379 Beach Rd. Burlingame, CA 94010 (650) 340-9133	Polywater Cantex J-M Eagle
Kortick Manufacturing Co. 2230 Davis St. Hayward, CA 94545 (510) 856-3600	Kortick

COMPANY	***BRAND NAME***
Neptco P.O. Box 2323 Pawtucket, RI 02861-0323 (800) 354-5445	Neptco
Maydwell & Hartzell 2236 Davis Ct. Hayward, CA 94545 (510) 780-1700	Strongwell/Quazite
Pacific Utilities 2475 Estand Way Pleasant Hill, CA 94523 (925) 674-1600	Virginia Plastics Utilco
HD Supply - Benicia 6350 Goodyear Rd Benicia, CA 94510 (800) 670-7746	Fargo Homac Inwesco Burndy
HD Supply - Portland 9151 S.E. McBrod Portland, OR 97222 (800) 547-9490	Alcan Cantex Carlon Polywater
Westchem Equipment Co. 28301 Industrial Blvd. Hayward, CA 94545 (510) 782-3675	Inwesco

Section 6

Inspections

Facilities constructed by either the owner or his or her builder must be constructed according to TID standards and applicable local building codes.

If the TID inspector determines that any of the customer/builder-installed facilities do not meet TID standards, the owner/builder will be responsible for making the necessary changes at his or her cost.

TID cannot complete the service work until **ALL** customer work has passed TID and applicable governing agencies' inspections.

The following is a list of governing agencies within the TID service territory:

Stanislaus County Building Inspection Office
ATTN: Deputy Building Inspector
1010 10th St., Suite 3500, Modesto 95354

(Serving: Ceres, Denair, Hickman, Keyes, La Grange & Stanislaus Co.)
Phone: (209) 525-6557

Merced County Inspection Office
ATTN: Chief Building Official
2222 M St., Merced 95340

(Serving: Ballico, Delhi, Hilmar & Merced Co.)
Phone: 209) 385-7477

City of Hughson Building Department
ATTN: Chief Building Official
7001 Whitmore Ave. #8
Hughson, CA. 95326

(Serving: City of Hughson)
Phone: (209) 883-0811

City of Modesto Building Inspection Department
1010 10th St., Suite 3100, Modesto 95354

(Serving: City of Modesto)
Phone: (209) 577-5232

City of Patterson Community Development Department
Building Division
1 Plaza, Patterson 95363

(Serving: City of Patterson)
(209) 895-8030

City of Turlock Building Inspection Department
156 S. Broadway, Ste 130, Turlock 95380

(Serving: City of Turlock)
Phone: (209) 668-5560

NOTE: Under some conditions, state or other authorities will be responsible for inspecting the electric facilities. The agencies listed above will assist you in determining the proper authority.

TID Contact List

TID Service Division

(209)-883-8301

TIDservicedivision@tid.org

TID Line Engineering Department

(209)-883-8415

LineEngineering@tid.org

TID Customer Service

(209)-883-8222

CSworkorders@tid.org

TID Underground Inspector

(209)-606-0136

TIDuderground@tid.org

TID Line Scheduler

(209)-883-8660

jobscheduling@tid.org