IMPERIAL IRRIGATION DISTRICT
BUSINESS OFFICE LOCATIONS
Customer Service Operations

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Phone Numbers:
(760) 398-5841
(760) 391-5944 Fax

Imperial Valley
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333 S. Waterman Ave
El Centro, CA. 92243
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### GENERAL INFORMATION

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1.0 GENERAL INFORMATION

1.0.1 As a Developer or Contractor (collectively “Customer”) involved in today’s new residential and/or commercial developments, you are well aware of how timing can make the difference between the success and failure of any project. The importance of establishing and adhering to realistic construction schedules is equally as important to the success of a project as project funding.

1.0.2 With current and projected demands increasing for residential and commercial units within the Imperial Irrigation District’s (IID) service area, it is important for Developers to establish a comprehensive development plan for the successful marketing of their projects.

1.0.3 The IID likewise must also set schedules to keep pace with the demands for electrical service. In that regard, the following information is provided as a guide to assist the Developer in the planning and scheduling of projects.

1.0.4 IID’s commitments and estimated costs are subject to review if payment is not received within six months.

1.1 REQUIREMENTS FOR ELECTRIC SERVICE

1.1.1 Complete and sign all applicable forms in the Customer Information Packet located in the back of this document. Please contact your Customer Project Development Services project manager with questions or assistance in completing the forms.

1.1.2 A non-refundable advance design fee payment (applied as a credit toward the construction costs).

1.1.3 An AutoCAD electronic file along with the requirements listed in 1.11 below are required for your proposed project.

1.2 ADVANCE ENGINEERING FEES

1.2.1 An advance engineering fee must be paid to IID before a commitment will be granted. The advance fee will be determined as follows:

1.2.1.1 Engineering fees will be determined by the Customer Project Development Services project manager in accordance with Section I, Requirements for Electric Service, letter C.

1.2.1.2 Switch and/or feeder work design.

1.2.1.3 The Engineering Fee will be paid to begin engineering a project and will be applied as a credit toward the IID cost of
1.2.1.4 If the project is cancelled, the Engineering Fee is non-refundable.

1.2.1.5 Any design changes that result in the redesign of project and therefore alters prior scheduled IID commitments will require an additional non-refundable Engineering Fee. Please contact a Customer Project Development Services project manager for appropriate design fee costs. District office locations and contact numbers are listed on page 2.

1.3 ELIGIBILITY FOR ENGINEERING DESIGN

1.3.1 The IID’s Customer Project Development Services Section schedules the preparation of the job package schedule based on receipt of all required customer information. Job preparation will not begin until job is placed on the engineering schedule. To be placed on the engineering schedule, the developer must complete and submit the following:

1.3.1.1 Completion of all related IID forms found in the Customer Information Packet located at the end of this document.

1.3.1.2 Payment of engineering fee. (See 1.2)

1.3.1.3 Plans, drawings and load data. (See 1.11)

1.4 JOB PACKAGE PREPARATION

1.4.1 The time required to prepare a job package for construction will vary depending upon the size of job, complexity of work, and right-of-way access, environmental, and/or permit requirements. IID will provide and mail a cost letters to the responsible party as shown in Customer application located at the end of this document.

1.5 JOB PACKAGE RELEASE

1.5.1 The job will be released for Construction Scheduling when the conditions contained within the Customer Information Packet have been met and the IID’s job package has been approved.

1.6 CONSTRUCTION SCHEDULE

1.6.1 Based upon the estimated request date for service, the job package is released and placed on the IID’s construction schedule. Schedule may be obtained from Customer Project Development Services project manager.
1.6.2 IID's goal is to provide timely and economical electric service. In order to achieve this goal the Developer should promptly provide the information requested and keep the Customer Project Development Services project manager informed of project status.

1.7 UNDERGROUND FACILITIES

1.7.1 When underground facilities are to be included, IID will provide a complete set of underground duct, vault, transformer pad and riser pole system installation drawings and associated specifications for each project or phase.

1.7.2 It is the responsibility of the Developer to provide and install, at Developer's expense, the complete underground conduit and vault system, including any street lighting systems required by the city, county or other governing agency having jurisdiction.

1.7.3 Lighting systems must be approved in advance of installation by the governing agency having jurisdiction.

1.7.4 IID will provide a point of service.

1.7.5 IID will provide an Underground Power Inspector during the installation of conduit and vault systems with the exception of street light systems.

1.7.6 Any request for inspections on a project must be scheduled with IID a minimum of 48 business hours in advance. Failure to schedule and/or obtain an inspection and approval for any portion of the lighting or underground power system may result in the total rejection of the system.

1.8 LIABILITY

1.8.1 To eliminate any misunderstandings concerning IID's assumption of liability for personal injury or property damage prior to or following the completion of the underground duct and vault system by the Developer.

1.8.2 The Developer will be required to acknowledge in writing that the IID accepts no responsibility for safety, maintenance, repairs, corrections for any on-site or off-site electrical distribution system equipment or facilities until the system and facilities are occupied by IID.

1.8.3 The acknowledgement will be executed through the completion of the Indemnification Agreement (Form IID-700C 6-07). The Indemnification Agreement is required prior to obtaining electrical power service for the development project.
1.8.4 Those persons executing the statement must be legally authorized by the Developer to execute the statement, which shall be binding on all parties having ownership of, or contractual interest in, the land and/or development project. This will allow the application to be placed on the engineering schedule.

1.9 OCCUPATION OF FACILITIES

1.9.1 It is the responsibility of the Developer to supply and maintain all necessary safeguards and to ensure a safe working environment during and after the construction and/or installation of the underground power system.

1.9.2 It is IID’s policy to occupy only those portions of the system for which a service request has been made and all line extension charges and connect fees have been paid.

1.9.3 Only those portions of the system which are actually occupied by the IID will be released from the Developer’s responsibility. The Developer shall continue to be responsible for the maintenance, repairs, safety, corrections and the liability for the balance of the unoccupied and de-energized portions of the power system, until such time that IID takes possession.

1.9.4 Any portion of an existing underground system installed in advance of service needs of the Developer that is not occupied by the IID shall require a full and complete re-inspection. The IID will not establish construction and/or cable installation schedules in advance of the requirement.

1.9.5 Upon completion of the duct and vault system and acceptance of the installation as meeting IID’s standards for installation conformance only, IID will assume ownership of all such facilities, except conduits, vaults and enclosures that are on, within or a part of a building or structure or that are not occupied by the IID.

1.10 SPECIAL SERVICE CONDITIONS

1.10.1 During the initial review of any project, IID may determine that special service conditions exist due to one or more of the following conditions:

1.10.1.1 Existing distribution and/or transmission facilities do not have the capacity to serve the project.

1.10.1.2 Special or additional rights-of-way or easements may be required to serve the project.

1.10.1.3 Special voltage and/or load demands could be imposed on
existing facilities by the project.

1.10.1.4 All rights-of-way determined necessary to extend electrical service to any project shall be the sole responsibility of the customer to acquire. Contact Real-Estate Section: Imperial Valley (760) 339-9239.

1.10.1.5 New Substation Required

1.10.2 Under these conditions the Developer will be required to:

1.10.2.1 Substation requirements; refer to Substation standard RGSTD-1001 Substation site requirements

1.10.2.2 Provide any additional rights-of-way or easements that the District determines necessary to provide electrical service to said project.

1.11 PLANS, DRAWINGS AND LOAD DATA

1.11.1 IID requires the Developer to provide the following to IID’s Customer Project Development Services the following:

1.11.1.1 Approved street lighting plan.  
**NOTE:** In the District’s Riverside County service area, the Developer shall submit lighting proposals first to the county of Riverside and then to the District’s Customer Project Development Services for service points.

1.11.1.2 Water, sewer and drainage plans.

1.11.1.3 Street improvement plans.

1.11.1.4 Precise grading and landscaping plans.

1.11.1.5 Site plans with building(s) shown.

1.11.1.6 Parcel and overall project map with phasing.

1.11.1.7 Graphic scales on all AutoCAD drawings.

1.11.1.8 All parcel map property corners or tract map boundary corners shall be tied to section or ¼ section corners. Final maps shall identify all property lines.

1.11.1.9 One hard copy of total connected electrical loads for each building style or floor plan.

1.11.1.10 Items to be included into their own separate layers are as follows:
1.11.1.10.1 Land Parcel Layer
1.11.1.10.2 Right of Way Layer
1.11.1.10.3 Centerline layer including Street Centerline Annotation
1.11.1.10.4 Public Utility Easement (P.U.E.) Layer

1.11.2 Refer to 1.11 above for proposed residential subdivisions, commercial projects and apartment projects. All land base or base map data must first be acquired from either the county of Imperial or the county of Riverside (as appropriate). The land base information will include NAD-83, zone 6 state plane coordinates, the appropriate existing parcel map, street, road and any other known right-of-way boundaries. Known surveyed benchmark locations and/or GPS data points should also be included, wherein they are available. Ultimately, the proposed project should be designed inside the county area of the submittal and all the information to be provided in AutoCAD digital form.

1.12 CONFLICT

1.12.1 In the event of a conflict between the Developers Energy Planning Guide and Contractor Notes; Contractor Notes will take precedence.

1.13 CONTRACTOR RESPONSIBILITY

1.13.1 These specifications cover the requirements for furnishing and installing certain portions of electrical underground distribution facilities not detailed in the attached IID issued Contractors Drawings.

1.13.2 Whenever a manufacturer’s material or equipment is referred to by name, type, or catalog number, this material or equipment is satisfactory, and “or approved equal” requires that other manufacturer’s material or equipment will be acceptable only if it is of equal quality and approved by the IID before purchase.

1.13.3 It will be the responsibility of the contractor to conform to local regulations and obtain any necessary permits in the performance of these specifications and comply with all IID drawings and documents in their entirety.

1.13.4 Inspection service will be provided by the IID. Materials and workmanship shall at all times be open to inspection by the IID Inspector. Inspection schedules are subject to a minimum 48 hour advance notice and are by appointment only – Imperial (760) 482-3300 or La Quinta (760) 398-5828
1.13.5 Any work failed/rejected by the IID Inspector shall be corrected in a matter satisfactory to the IID Inspector prior to the continuation of work. The IID Inspector shall have final authority to pass, fail or approve corrected measures. Work will not continue until the IID Inspector has inspected and passed the electrical system.

1.13.6 The required material and work includes furnishing and installing the following:

2.0 METERING
3.0 TRENCHING, ENCASEMENT, BORING
4.0 SECONDARY
5.0 TRANSFORMER PADS, VAULTS, SECTOR SLEEVES
6.0 EQUIPMENT & BUILDING CLEARANCES
7.0 SLOPE & RETAINING WALLS
8.0 TREE CLEARANCES
9.0 RISERS
10.0 APPENDIX
11.0 CUSTOMER INFORMATION PACKET

1.14 All work shall follow the best modern practice both in the manufacturer and the installation of underground facilities. All work shall be done by artisans skilled in their various trades.

1.15 All rights-of-way determined necessary to extend electrical service to any project shall be the sole responsibility of the customer to acquire. For information regarding all real estate and right-of-way matters please contact the IID Real Estate Section: Imperial Valley & La Quinta (760) 339-9239.
# METERING

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2.1 Questions Regarding Metering Equipment

2.1.1 If any question arises, and the answer does not appear to be available in these pages, it is imperative that you call the Customer Project Development Services Office of IID.

Imperial Valley Office: (760) 482-3300
Coachella Valley Office: (760) 398-5841

2.1.2 The most common service alterations are an upgrade to the electric service panel. Upgrades are generally needed when a family exceeds its existing service due to remodeling, room additions, or installation of a new major electric appliance. Another common upgrade of electric service involves moving the overhead service drop underground. This is generally done as a safety precaution when families decide to add a backyard pool, deck or patio, or simply to improve aesthetics.

2.1.3 The customer shall carry the responsibility to ensure the project of upgrading the electrical service panel complies with the most recent issue of the National Electric Code (NEC), EUSERC, and any other federal, state, or local codes that apply.

2.1.4 Once the customer’s service equipment is installed, the county or the city with jurisdiction requires that the installation pass an electrical inspection before the IID can complete the connection to the electrical system.

2.1.5 The customer is responsible for requesting and passing the inspection.

2.1.6 If you are looking to make this type of service change or alteration, you will be required to follow your city or county building department requirements prior to contacting the IID.

2.1.7 It is the customer’s responsibility to be aware of any applicable local codes and ordinances.

2.1.8 Ringless meter panels are not acceptable. This applies to all residential and commercial meter panels.

2.1.9 IID and Authority Having Jurisdiction (AHJ) Responsibility lines. The Imperial Irrigation District responsibility stops at the meter. The AHJ responsibility starts at the bottom of the meter.
2.2 Who Provides Metering Equipment

2.2.1 All meter sockets, meter socket enclosures, metering transformer cabinets, and switchboard service sections will be provided, installed, owned and maintained by the customer. If the customer wants advanced metering (i.e. pulse metering, modem access, load profile, etc.) The customer will pay the extra cost to provide this service.

2.2.2 400 amp rated panels may utilize the class 320 self-contained meters for residential use only

2.2.2.1 Meter will be installed in an accessible location (see 2.4)

2.2.3 600 amp rated residential panels must comply with the following criteria

2.2.3.1 Meter will be installed in an accessible location (see 2.4)

2.2.3.2 Meter panel must be approved by IID Meter Dept. prior to purchase and installation

2.2.3.3 Installation must comply with all applicable Authority having Jurisdiction (AHJ) and Imperial Irrigation District (IID) requirements

2.3 Who installs the Meter?

2.3.1 Meters will be installed and the service connected and energized by the IID only after the following:

2.3.1.1 Metering equipment has been provided and properly installed

2.3.1.2 After an inspection clearance has been given to the IID by the appropriate Authority Having Jurisdiction (AHJ)

2.3.1.3 All outstanding fees have been paid

2.4 Meter accessibility

2.4.1 Meters and metering equipment will be so placed as to be at all times readily accessible for inspection, reading, testing and maintenance. Prior to energizing the service the customer is required to provide IID with a copy of keys. Lock box will be provided by IID.

2.4.2 As defined by the electrical codes, readily accessible means, “Capable of being reached quickly, for operation, renewal or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc.”
2.5 Service and Meter Location

2.5.1 Care must be taken in selecting a proper and convenient location for the meter and service disconnect switch or circuit breaker. The location shall comply with applicable codes, laws and ordinances of the authority having jurisdiction (AHJ) of inspection.

2.5.2 On new installations, it is necessary that the location for the meter be approved by the IID. This can be accomplished by the customer or contractor calling the Customer Project Development Services Office and requesting a service and meter location. Meter and service disconnect location must be approved by the IID.

2.5.3 Whenever any addition, alteration or renewal is contemplated to existing service conduits, service entrance conductors or metering equipment, the customer or contractor shall contact the Customer Project Development Services Office for an approved service and meter location. This is imperative to provide advice regarding correction of any existing unacceptable condition.

2.5.4 Meters and metering equipment may be located at a point other than adjacent to the overhead service drop attachment or to the underground service terminating enclosure upon approval by the Customer Project Development Services Office of the IID.

2.5.5 Customer equipment, load wires, load management equipment, etc. are not allowed in the unmetered sections of the panel including pull and metering section. Taps for fire alarms and fire pumps are not allowed in the pull section and or CT Metering section of panel.

2.6 Meter Locations Requiring Enclosure

2.6.1 Whenever the meter is located in any place where excessive moisture, vibration, noise, fumes, dust or similar deteriorating agents will interfere with its operation, it must be enclosed or housed in a manner which is approved by the IID.

2.6.2 Whenever the meter is mounted in a school, or such a location that is accessible to heavy pedestrian/student traffic, it must be suitably enclosed or housed. Access must be given to IID employees. Please consult the IID Customer Project Development Services Office, Imperial Valley (760) 482-3300, Coachella Valley (760) 398-5841.

2.6.3 Residential services above 400 amps (see 2.2.3)
2.7 Unacceptable Meter Locations

2.7.1 For reasons of public safety, maintenance of service, reliability of service, and reliability of metering, it is not permissible to install meters and metering equipment:

2.7.2 Inside any individual residential occupancy, carports, or garages

2.7.3 In a substation area or in a transformer vault containing transformers or high-voltage equipment.

2.7.4 In a location not readily accessible for reading, hazardous or unsuitable for entry by meter readers or service personnel (including alleyways, storage rooms, and pedestrian traffic areas, etc.)

2.7.5 In a restroom, bath, shower, powder, toilet room, etc.

2.7.6 In an elevated area (such as a balcony or mezzanine) or a depressed area (such as a basement, cellar or underground room) that does not have access by means of a ramp or clear stairway of normal tread and rise conforming to building code requirements

2.7.7 On a surface/place where excessive moisture, vibration, noise, fumes, dust or similar deteriorating agents will interfere with its operation, unless it is enclosed in a manner approved by IID

2.7.8 In an alleyway where meter is subject to potential vehicular damage

2.7.9 In a room containing mechanical equipment

2.7.10 Inside any building, unless located within an acceptable meter room. (Customer must provide key prior to energizing service).

2.8 Meter Locations

2.8.1 Residential Occupancies

2.8.1.1 For single – and multi-family residential buildings, meters and metering equipment will be installed outdoors and may be mounted on surface or semi-flush on exterior building wall.

2.8.1.2 In large multi-family residential high-rise buildings, the IID may at its option, establish more than one meter location for groups of individual meter facilities. Consult the Engineering Section (Customer Project Development Services Office) of the IID for approval of service plans and meter locations in these cases.
2.8.2 Commercial and Industrial

2.8.2.1 For single – occupancy buildings, meters and metering equipment may be installed:

2.8.2.2 Outdoors and mounted on surface or semi-flush on exterior building wall

2.8.2.3 In a room within a building approved by the IID for the location of electric meters, with provision for proper illumination and with access only by a door (with provision for IID lockbox, customer is required to furnish keys to access door prior to energizing of panel) opening to the outside of the building.

2.8.2.4 Outside the security gates.

2.8.2.5 The IID reserves the right to install meter/communication equipment.

2.8.2.6 In multi-occupancy building, extensive shopping centers or buildings exceeding two floors, the IID may, at its option, establish more than one meter location for groups of individual meter facilities. Consult the IID Customer Project Development Services Office for approval of service plans in these cases.

2.9 Meter Markings

2.9.1 Where meters are grouped at a common location for a multiple-occupancy building, either residential or commercial, each meter socket panel or its related service disconnect shall be clearly and permanently marked by the contractor or customer, prior to meters being installed, to indicate the occupancy served. Labeling must be approved by IID.

2.10 Meter Heights

2.10.1 When a single meter is wall or surface mounted, either indoors or outdoors, the minimum height of the meter shall be 5’ (60 inches) and the maximum height shall be 6’ 3” (75 inches). These heights are measured from the standing surface to the center line of the meter. Multi-metered packs as measured from finished grade please consult IID Customer Project Development Services Office. Residential refer to 2.8.1. Commercial refer to 2.8.2.
NOTES:
1. SIZE AND DIMENSIONS OF PANELS WILL VARY. DRAWING IS NOT TO SCALE.
2. THIS DRAWING PERTAINS TO BOTH OVERHEAD AND UNDERGROUND ELECTRIC SERVICE APPLICATIONS.
3. MAINTAIN 3 FEET CLEAR, LEVEL, AND UNOBSURCTED WORK SPACE IN FRONT OF ELECTRIC SERVICE EQUIPMENT.

⚠️ PLUMBING FIXTURES MUST BE LOCATED 18" MINIMUM FROM THE OUTSIDE EDGE OF METER PANEL.
2.11 Planning and Grouping for Additional Meters

2.11.1 When there is a need to locate and install additional service and metering equipment after the originally-planned electric service for a building is installed and energized:

2.11.2 The additional meters shall be grouped with those meters already in service, and should be installed in accordance with the established meter location plan for the building.

2.11.3 The added service equipment must be located and installed in conformance with applicable codes, laws, and ordinances of the inspection authority having jurisdiction.

2.12 Working Space in Front of Meter

2.12.1 To permit access to the metering installation and to provide working safety for personnel, a level working and standing space located entirely on the property of the customer is to be provided for at all meter installations.

2.12.2 The working space, to be kept clear and unobstructed, shall extend a minimum of 3' (three feet) from the face of the meter socket or metering transformer enclosure.

2.12.3 The width of the working space should permit ready access to the complete metering installation and in no case be less than 3' (three feet).

2.12.4 The height clearance for the working space should be no less than 7' (seven feet). See Standard 615.

2.12.5 The working space clearance on panels rated 3R with outside doors must be a minimum of 2' (two feet) clearance beyond the edge of the outside doors when the doors are open and locked at 90° (ninety degrees) from the panel.

2.12.6 When housekeeping pad is more than 2½" (two and one half inches) above final grade, the pad shall extend a minimum of 3’ (three feet) beyond the leading edge of service entrance (pull section) and metering sections.
NOTES:
1. SOCKETS WITH APPROVED SEALING RINGS SHALL BE FURNISHED, INSTALLED, AND WIRED BY THE ELECTRICAL CONTRACTOR.

2. CARE SHOULD BE EXERCISED TO DESIGN CABINET SUCH THAT NEITHER THE ROOF NOR THE DOOR FRAME WILL INTERFERE WITH THE CLEARANCES OR THE INSTALLATION OF THE METER.

3. METER TO BE INSTALLED WITH 10" MINIMUM CLEARANCE TO THE NEAREST SIDE WALL OR OTHER OBSTRUCTION.

4. 3' x 3' LEVEL WORKING/STANDING AREA TO BE FREE OF VEHICULAR TRAFFIC INCLUDING A DRIVE THRU.

5. 11" MIN. AND 15" MAX. CLEARANCE FROM FRONT OF METER TO INSIDE OF CLOSET DOOR

IMPERIAL IRRIGATION DISTRICT

SINGLE SELF CONTAINED METER
RESIDENTIAL SERVICE
0–600 VOLTS
2.13 Meter Socket Requirements

2.13.1 All meter sockets will conform to NEMA-EEI Standard MSJ-7, be Underwriter's Laboratories approved and meet Electric Utility Service Equipment Requirements Committee (EUSERC) requirements.

2.13.2 Meter sockets for single-phase, 3-wire, 120/240 volt, service shall be 200 amperes and have four terminals. For 200 amperes rating 250 KCMIL terminal lugs will be supplied and for 400 ampere rating 300 KCMIL terminal lugs will be supplied.

2.13.3 Meter sockets for Network 3-wire, 120/208 volt, service shall be 200 amperes and have five terminals. For 200 amperes rating 250 KCMIL terminal lugs will be supplied.

2.13.4 Meter sockets for three-phase, 4-wire, 120/208 volt-wye and 120/240 volt-delta shall be 200 amperes and have seven (7) terminals. These self-contained service panels will be limited to 200 ampere rating and be supplied with 250 KCMIL AL-CU terminal lugs.

2.13.5 Meter sockets for transformer-rated metering will be 20 amperes with terminal arrangement, depending on the type of service. See table of socket terminal arrangements, Standard 608 on page 18.
**Meter Socket Clip Arrangement:**

The number of socket clips and their arrangement varies with the type of service supplied to the customer. The following table lists this requirement.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Service Voltage</th>
<th>Service Capacity</th>
<th>Socket Clip Arrangement</th>
<th>Metering Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>120/240 3 Wire</td>
<td>200 Amps</td>
<td>Exhibit 1</td>
<td>Self-contained 184 Meter</td>
</tr>
<tr>
<td>1</td>
<td>120/240 3 Wire</td>
<td>*400 Amps</td>
<td>Exhibit 1</td>
<td>Self-contained Class 320 Residential use only</td>
</tr>
<tr>
<td></td>
<td>120/240 3 Wire</td>
<td></td>
<td></td>
<td><strong>Self-contained 5 Clip 4A5 Meter</strong></td>
</tr>
<tr>
<td></td>
<td>Network</td>
<td>200 Amps</td>
<td>Exhibit 3</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 3 Wire</td>
<td>400-600 Amps</td>
<td>Exhibit 2</td>
<td>CT Metering 6 Clip 286 Meter</td>
</tr>
<tr>
<td>3</td>
<td>120/208 4 Wire Y</td>
<td>200 Amps</td>
<td>Exhibit 4</td>
<td>Self-contained 7 Clip 40737 Meter</td>
</tr>
<tr>
<td>3</td>
<td>120/208 4 Wire Y</td>
<td>400 to 3000 Amps</td>
<td>Exhibit 5</td>
<td>CT Metering 15 Clip 50Y3 Meter</td>
</tr>
<tr>
<td>3</td>
<td>120/208 4 Wire Delta</td>
<td>200 Amps</td>
<td>Exhibit 4</td>
<td>Self-contained 7 Clip 407Z7 Meter</td>
</tr>
<tr>
<td>3</td>
<td>120/240 4 Wire Delta</td>
<td>400 to 600 Amps</td>
<td>Exhibit 5</td>
<td>CT Metering 15 Clip 50Y3 Meter</td>
</tr>
<tr>
<td>3</td>
<td>277/480 4 Wire Y</td>
<td>25 to 4000 Amps</td>
<td>Exhibit 5</td>
<td>CT Metering 15 Clip 50Y3 Meter</td>
</tr>
</tbody>
</table>

If customer requires 5KV or higher, they must consult IID Customer Service Operations Office.

* 400 Amp Class 320 panels are not allowed for use on commercial accounts.

** See Standard 614, Fig 2 for 5th clip location.

---

**Exhibit 1**

**Exhibit 2**

**Exhibit 3**

**Exhibit 4**

**Exhibit 5**

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**Imperial Irrigation District**

*Drawn By* [Signature]

*Reviewed* [Signature]

*Approved* [Signature]

*Revision* Rev 2

*Date* 11-17-2016

**Meter Socket Clip Arrangements**

---

28
NOTES:
1. LINE CONDUCTORS SHALL BE CONNECTED TO THE TOP TERMINALS OF SOCKET AND LOAD CONDUCTORS CONNECTED TO THE BOTTOM TERMINALS OF THE SOCKET.

2. POTENTIAL TAPS INCLUDING THE NEUTRAL TAP, SHALL BE LOCATED BEHIND SEALED PANELS.

3. CLAMPED OR BOLTED CONNECTIONS IN METERING EQUIPMENT ENCLOSURES SHALL BE PERMITTED, INCLUDING THE NEUTRAL CONNECTION.

4. HIGH LEG OR POWER LEG WILL BE CONNECTED ON THE RIGHT HAND SIDE, LOCATED ON TOP OF METER SOCKET. THE CUSTOMER IS RESPONSIBLE FOR LOCATION OF HIGH LEG OR POWER LEG AFTER METER.

IMPERIAL IRRIGATION DISTRICT

CONNECTION DIAGRAM
FOR SELF-CONTAINED
METER SOCKETS

DRAWN BY
REVIEWED
APPROVED
REVISION REV 2
DATE 5-20-2013
2.14 Barricades

2.14.1 Permanent barricades may be required to provide the clearance where the working space is exposed to vehicles or hazardous conditions.

2.15 Sealing of Meters and Metering Equipment

2.15.1 All meters and enclosures for meters, metering equipment, and service entrance equipment on the line side of the meter (except as approved for access to replace fuses used for over-current protection) will be sealed by the IID. The IID seal shall not be broken except by an authorized IID representative.

2.15.2 No person is permitted to tamper or in any way interfere, with a meter or its connections as placed by the IID.

2.16 Service Riser and Meter Switch

2.16.1 All service and metering installations shall comply with applicable codes, laws, and ordinances of the inspection authority having jurisdiction (AHJ).

2.17 Meter Pedestals (manufactured homes)

2.17.1 Residential

2.17.1.1 A meter pedestal is a structure that supports service equipment. If a meter pedestal is required for the project, it is the customer’s responsibility to purchase and install it.

2.17.1.2 The NEC requires that manufactured homes have a disconnect switch installed within 30' from the home on the side of the home facing normal public access. Normally, the meter socket is installed at this same location.

2.17.1.3 There are two options for meter pedestals:

2.17.1.3.1 Custom built – standard 181.4 custom built pedestal is one that the customer or electrical contractor builds. (See 2.18.1.3.1.1)

2.17.1.3.2 Factory built – standard 181.41 a factory built pedestal is one that is UL approved and purchased by the customer or contractor. (See 2.18.1.3.2.1)

2.17.1.3.3 For residential pedestals refer to EUSERC 307.
NOTE:
INSTALLATION TO BE APPROVED
AND TAGGED BY APPLICABLE
INSPECTING AUTHORITY.

METER PEDESTALS

A METER PEDESTAL IS A STRUCTURE THAT SUPPORTS SERVICE EQUIPMENT. IF A METER PEDESTAL IS REQUIRED
FOR THE PROJECT, IT IS THE CUSTOMER’S RESPONSIBILITY TO PURCHASE AND INSTALL IT.

THE NEC REQUIRES THAT MANUFACTURED HOMES HAVE A DISCONNECT SWITCH INSTALLED WITHIN 30 FEET OF THE
HOME ON THE SIDE OF THE HOME FACING NORMAL PUBLIC ACCESS. NORMALLY, THE METER SOCKET IS
INSTALLED AT THIS SAME LOCATION.

THERE ARE TWO OPTIONS FOR METER PEDESTALS:
1) CUSTOM BUILT – STANDARD NUMBER 181.4 STATES, A CUSTOM BUILT PEDESTAL IS ONE THAT THE CUSTOMER
OR ELECTRICAL CONTRACTOR BUILDS.
2) FACTORY BUILT – STANDARD NUMBER 181.41 STATES, A FACTORY BUILT PEDESTAL IS ONE THAT IS PURCHASED.

▲ ITEMS OWNED AND INSTALLED BY CUSTOMER/CONTRACTOR

1. 6" X 6" X 10' MIN FULLY PRESSURE-TREATED POST
2. SERVICE ENTRANCE EQUIPMENT
3. SERVICE CONDUIT
4. GROUND WIRE (IN ACCORDANCE WITH NEC)
5. GROUND RODS (IN ACCORDANCE WITH NEC 250-56)
6. CUSTOMER CONDUCTORS
7. ELBOW, 90° BEND, 24" MIN RADIUS
8. COUPLING

○ ITEMS OWNED AND INSTALLED BY IID

11. SERVICE WIRE
12. METER

IMPERIAL IRRIGATION DISTRICT

CUSTOM BUILT
METER PEDESTAL

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE
6-6-2013

181.4
NOTE:
INSTALLATION TO BE APPROVED AND TAGGED BY APPLICABLE INSPECTING AUTHORITY.

METER PEDESTALS

A METER PEDESTAL IS A STRUCTURE THAT SUPPORTS SERVICE EQUIPMENT. IF A METER PEDESTAL IS REQUIRED FOR THE PROJECT, IT IS THE CUSTOMER’S RESPONSIBILITY TO PURCHASE AND INSTALL IT.

THE NEC REQUIRES THAT MANUFACTURED HOMES HAVE A DISCONNECT SWITCH INSTALLED WITHIN 30 FEET OF THE HOME ON THE SIDE OF THE HOME FACING NORMAL PUBLIC ACCESS. NORMALLY, THE METER SOCKET IS INSTALLED AT THIS SAME LOCATION.

THERE ARE TWO OPTIONS FOR METER PEDESTALS:
1) CUSTOM BUILT — STANDARD NUMBER 181.4 STATES, A CUSTOM BUILT PEDESTAL IS ONE THAT THE CUSTOMER OR ELECTRICAL CONTRACTOR BUILDS.
2) FACTORY BUILT — STANDARD NUMBER 181.41 STATES, A FACTORY BUILT PEDESTAL IS ONE THAT IS PURCHASED.

△ ITEMS OWNED AND INSTALLED BY CUSTOMER/CONTRACTOR
1. N/A
2. SERVICE ENTRANCE EQUIPMENT
3. SERVICE CONDUIT
4. GROUND WIRE (IN ACCORDANCE WITH NEC)
5. GROUND RODS (IN ACCORDANCE WITH NEC 250–56)
6. CUSTOMER CONDUCTORS
7. ELBOW, 90° BEND, 24" MIN RADIUS
8. COUPLING (WHEN APPLICABLE)
9. FACTORY – BUILT METER PEDESTAL
10. CONCRETE STABILIZER PAD 36" X 2" MINIMUM

〇 ITEMS OWNED AND INSTALLED BY IID
11. SERVICE WIRE
12. METER

IMPERIAL IRRIGATION DISTRICT

DRAWN BY
REVIEWS
APPROVED
REVISION
DATE
FACTORY BUILT
METER PEDESTAL

181.41

6–6–2013
2.17.2 Commercial

2.17.2.1 Customer shall provide detailed drawing of meter pedestal to the Imperial Irrigation District including model / catalog number, manufacturer name, etc. Meter Pedestal shall be installed only after approval by appropriate Imperial Irrigation District Customer Project Development Services office, Imperial Valley (760) 482-3300, Coachella valley (760) 398-5841.

2.17.2.2 Customer shall provide an appropriate meter panel wiring diagram that clearly indicates all customer-service wiring connections are connected on the load side of the meter.

2.17.2.3 Service equipment enclosure and metering equipment shall meet the requirements of the Imperial Irrigation District (IID). The meter area shall have a sealable, lockable, weather tight cover.

2.17.2.4 Service equipment enclosures shall be factory wired and conform to NEMA standards.

2.17.2.5 The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of ¼” or 11 mm

2.17.2.6 Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 Amp and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:

- 2.17.2.6.1 Incoming terminals (landing lugs)
- 2.17.2.6.2 Neutral lugs
- 2.17.2.6.3 Solid neutral terminal strip

2.17.2.7 Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.

2.17.2.8 Meter test bypass facilities will only be allowed if approved by the Imperial Irrigation District Meter shop in the service area pedestal is being installed. If approved the pedestal shall have the following additions:

- 2.17.2.8.1 Windows for inspection of by-pass blocks
- 2.17.2.8.2 Test block area will be locked and only assessable to the Imperial Irrigation District

2.17.2.9 Meter sockets shall be 5 socket clip type which will allow 120/208 volt or 120/240 volt service.
2.17.2.10 Maximum height of the pedestal will be 48”

2.17.2.11 Meter Pedestal shall have a Utility Side (Line Side) and a Load Side (Customer Side) that are separated by non-removable panel

2.17.2.12 Construction will be NEMA 3R, rain tight

2.17.2.13 All nuts, bolts and screws will be stainless steel

2.17.2.14 Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, “Spaces about Electrical Equipment (600 Volts, Nominal, or Less)”

2.17.2.15 Grounding electrode (ground rod) will be installed on the Load Side (Customer Side) of the Pedestal, and will be 5/8” x 10’

2.17.2.16 All loads shall be connected after the Utility meter. Meter Pedestals with un-metered loads will not be energized by the Imperial Irrigation District. Services that are currently metered and part of the load is un-metered will be changed to metered load

2.17.2.17 Provide Imperial Irrigation District Customer Operations with an application package including approved street improvement plans, site plan, proposed panel location, panel voltage and panel main size panel specification, pedestal type, manufacturer, catalog number, one line schematics, pedestal drawings, etc.

2.17.2.18 Dual and single meter pedestals shall be allowed within the Imperial Irrigation District

2.17.2.19 Residential pedestals cannot be used on commercial accounts commercial customers must use commercial type pedestals
READING COVER, .20" THICK POLYCARBONATE ULTRAVIOLET-RESISTANT SURFACE PLASTIC WINDOW

PADLOCK HASP
CONTINUOUS PIANO HINGE DOOR
PADLOCK HASPS
LATCH
SERVICE SECTION WITH DEAD FRONT PANEL WITH CONTINUOUS PIANO HINGE
LOAD SIDE PULL AREA (CUSTOMER)

TYPICAL SINGLE METER PEDESTAL

LANDING LUGS
REMOVABLE DEAD FRONT PANEL
LINE SIDE PULL AREA (IID)

LANDING LUG

REFER TO METER PEDESTAL FOUNDATION DETAIL

BASE

SINGLE-PHASE
120/240V, OR NETWORK
120/208V, 3 WIRE SERVICE

LANDING LUG

NEUTRAL LUG

N

4-CLIP METER SOCKET AND SUPPORT

100A MAIN BREAKER

NOTE:
5-CLIP METER SOCKET AND SUPPORT IS FOR 120/208V, 3 WIRE, NETWORK

TO LOAD SIDE

TO LOAD SIDE

120/240V SERVICE WIRING DIAGRAM (TYPICAL)
TYPICAL DOUBLE METER PEDESTAL

REFER TO METER PEDESTAL FOUNDATION DETAIL

SINGLE-PHASE 120/240V, OR 120/208V 3 WIRE SERVICE BY IID

100A MAIN BREAKER

120/240V SERVICE WIRING DIAGRAM (TYPICAL)

NOTE:
- 5-CLIP METER SOCKET AND SUPPORT IS FOR 120/240V, 3 WIRE, NETWORK
- 4-CLIP METER SOCKET AND SUPPORT IS FOR 120/240V, 3 WIRE, SERVICE

IMPERIAL IRRIGATION DISTRICT

DRAWN BY

REVIEWED

APPROVED

REVISION REV 04

DATE 11-17-2016

COMMERCIAL METER PEDESTAL
DUAL SOCKET, 10
2.17.3 Commercial Meter Pedestal Foundation and Conduit Requirements

2.17.3.1 Foundation shall extend 2" minimum beyond edge of service equipment, 6" minimum above elevation and 16" in depth. (See attached drawing)

2.17.3.2 Pedestals shall be mounted to the foundation utilizing appropriate mounting materials utilizing manufacturer approved method. Plan showing mounting method shall be provided to the Imperial Irrigation District for final approval.

Imperial Irrigation District contact information:

Imperial Valley (760)-482-3300
Coachella Valley (760)-398-5841

2.17.3.3 Precast pads are not to be used.

2.17.3.4 Conduit shall be: PVC heavy wall schedule 40 for below ground installation and schedule 80 for above ground installation.

2.17.3.5 Conduit will be a minimum of 2" PVC schedule 40 for below ground installation. The PVC will extend above the foundation 2"

2.17.3.6 Conduit depth shall comply with the Imperial Irrigation District standard which states that secondary conduit will be 30" below grade, measured from the top of the conduit. Sweep and riser pipe will be glued.

2.17.3.7 2" conduit shall be provided by contractor for line side used by the Imperial Irrigation District, the conduit will be placed in the foundation to ensure that when the pedestal is installed the line side conduit will be in the line side of the pedestal.

2.17.3.8 Load side conduit(s) shall be set at a distance that allows the load side conduit(s) to be located inside the load side of the cabinet. Line and load side conduits will be placed and separated by their respective pedestal areas.
NOTES:

1. LOCATION AND DIRECTION OF METER PAD TO BE DETERMINED BY I.I.D. CUSTOMER SERVICE OPERATIONS DEPARTMENT:
   IMPERIAL AT (760) 482-3300;
   COACHELLA AT (760) 398-5841

2. ALL SWEEPS TO BE P.V.C. SCHEDULE 40, CONCRETE ENCASEMENT NOT REQUIRED.

3. ALL CONDUIT(S) ON LINE SIDE (IID) TO BE 2" PVC SCHEDULE 40.
2.18 Gang-Connection of Self-Contained Meter Sockets

2.18.1 Multiple meter sockets for residential customers may be connected to a single set of service entrance conductors when the multiple metering equipment is factory bussed and wired.

2.19 Self-contained Panels 480 volt

2.19.1 IID does not allow 277/480-volt self-contained metering. All 277/480-volt services will require instrument transformer metering installed (CT and PT metering). All new 277/480 – volt services will require instrument transformer metering installed (CT and PT metering). Existing 480 volt 3 – wire services that are upgraded or for some other reason must be replaced or rebuilt, shall be upgraded to 277/480 volts, 4 – wire wye service. Existing idle 480 volt 3 – wire services that have not been active for 12 months or longer will be removed from service. The customer will be responsible for upgrading to 277/480 volts, 4 – wire wye service when the reconnection is requested.

2.19.2 If the panel is a self-contained 480 volt meter panel and has a failure or is damaged by vandalism, it must be upgraded:

2.19.2.1 Upgrade to 277/480 Current Transformer (CT) panel

2.19.2.2 IID does not install self-contained 480 volt meters.

2.19.2.3 The customer will be responsible for installing the 4 wire CT panel and paying for all costs related to the new CT panel.

2.19.3 IID will upgrade service to 277/480 volt 4 wire as follows:

2.19.3.1 IID will upgrade the transformer bank and will install the 4 wire, if feasible.

2.20 Instrument Transformer Meter Panels

2.20.1 When an existing CT meter panel 480 volt has a failure or is damaged by vandalism, if the customer can make repairs (breaker, cabling and / or panel accessories replacement only), and CT meter panel can accept a grounded conductor, IID will provide a temporary grounded conductor from the existing transformer bank. This will be provided at NO cost to the customer. This is not a permanent solution and must be addressed by the customer in a timely manner.

2.20.2 The customer will be responsible installing the 4 wire CT panel and paying for all costs related to the new CT panel. The customer must submit an application to upgrade service within 5 working days. It is IID’s intent to expedite the application and design process to limit the inconvenience caused to the customer.

2.20.3.1 IID will upgrade service to 277/480 volt 4 wire as follows:
2.20.3.2 IID will upgrade the transformer bank and will extend the 4 wire, if feasible.

2.21 If an existing CT meter panel 480 volts has a failure or is damaged by vandalism, and the panel, bus bar and mounting brackets are damaged, it will be considered non-repairable and the customer will be required to upgrade to a CT panel that meets IID standards. The upgrade will consist of a new CT panel 4 wire upgrade.

2.22 IID will upgrade service to 277/480 volt 4 wire, as follows:

2.23 Instrument Transformer-Rated Meters

2.23.1 When the electrical supply needs of the customer exceed the capacity of the self-contained meter, current transformers which connect to the service entrance conductors will be used. For voltages of 277 and above, potential transformers will be used to reduce the voltage to the transformer-rated meter.

2.23.2 The transformer-rated meter, when inserted in its socket, is connected directly to the instrument transformers, and an instrument transformer rated multiplier is applied to the billing register of the meter.

2.23.3 The customer furnishes and installs an approved current transformer panel. This can be either an EUSERC approved stand-up panel or a wall mounted EUSERC approved instrument transformer combination metering can. Refer to pages 21 & 22.

2.24 Instrument Transformer Combination Metering Can

2.24.1 When the electric service does not exceed 400 amperes, a combination CT/Meter can is one type of enclosure which the customer may furnish to house metering equipment. The IID will furnish and install the necessary metering equipment (i.e. CT’s, PT’s, test switch, meter, etc.) The customer must use the 50,000 AIC rated current transformer mounting base within the enclosure.

2.24.2 Panel drawings with appropriate EUSERC numbers must be submitted for approval for all CT rated panels. IID Distribution Engineering staff must approve fault current ratings of panels. Contact IID Customer Project Development Services Office

2.24.3 Consult EUSERC acceptability sheets for IID metering requirements per the EUSERC numbers.

2.24.4 Bussing from the pull section through the metering section must be density rated per UL-891 and such material used shall be specified on submitted panel drawings, supplied by customer.
2.24.5 CT metering at the customer’s EUSERC approved panel is normal practice. Metering at pad mounted transformer is an exception which is subject to approval by IID

2.24.6 Bottom fed panels are acceptable up to 1,000 amperes. For panels above 1,000 amperes there must be a full height pull section

2.24.7 All stand-up panels must be bolted down securely to the foundation beneath the panel

2.24.8 On 277/480 volt CT panels rated 1,000 amperes or above, the service disconnect must have a ground fault device per NEC 230-95. Prior to panel being energized, there must be a certified test on site of ground fault device in service disconnect per NEC 230-95. A copy of the field test should be sent to applicable distribution supervisor and Imperial Irrigation District meter shop.

2.24.9 Each CT rated panel will require its own individual single main disconnect, in series with panel busing, which is pad lockable

2.24.10 IID will not accept fusible pullout cartridges in the main disconnect device

2.25 IID Requirements for Manufacturers Drawings

1. All multiple self-contained metering equipment, 0 – 600 volts.
2. All instrument transformer rate metering equipment, 0 – 600 volts.
3. All standard switchboard service sections, 0 – 600 volts.
4. Standard switchboard service sections rated 400 amps and above.
5. Standard switchboard service sections rated 1000 amps and above.
7. High voltage switchboards.
8. None of the above.
2.26 IID Requirements for Manufacturers Drawings Submittals

Items to be included in submittals:

1. Serving Utility Name
2. Contractor name and address (if available)
3. Equipment Distributor
4. Job Site Address (if available)
5. Service type and Voltage – 3 phase 4 wire 208V, etc.
6. Amperage rating of pull and CT sections
7. Available Fault Current Rating- ____ AIC (if available)
8. Short Circuit Current Rating- ____ RMS Symmetrical
9. Frame and amperage of all pull outs or breakers
10. NEMA rating and UL Listing
11. Copper or Aluminum Bus
12. Elevation drawings - front view – line up
13. One line drawings of pull sections, metering section and main breaker
14. EUSERC drawing reference pages
15. Conduit area, overhead view
16. Dimension of sections – height, width and depth
17. Barriers between sections – utility and non – utility
18. Number of clips in meter socket
19. _____ lug positions per phase
20. Locking provisions for main devices
21. Housekeeping pad requirements if needed – 21/2” max. height (if applicable)
22. Section Numbering
2.27 Automatic Transfer Switches (ATS)

2.27.1 Automatic Transfer Switches (ATS) or Manuel Transfer Switches (MTS) must include a one-line diagram, an operation scheme, and equipment specifications including ATS and MTS equipment specifications. All documents are to be provided to the IID Customer Project Development Services Office.

2.28 Primary Metering

2.28.1 Medium voltage panels (over 1,000 volts), in addition to submitting all applicable EUSERC drawings, located in section 2.

2.28.2 An insulated safety barrier must be installed in front of the section with current transformers. The main disconnect device on Medium Voltage Panels are to be located after the Meter Section.
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NOTES:
1. NO LOAD WIRES MAY EXIT ABOVE LOWER LANDING LUG PAD.
2. NO GUTTER BOXES ALLOWED BEFORE FUSES OR MAIN BREAKER.
3. DISCONNECT OR MAIN BREAKER SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC)
   10 FT. TAP RULE 240.21 (B) (1).
4. REFER TO EUERC DRAWING 314.

IMPERIAL IRRIGATION DISTRICT

STANDARD OVERHEAD SERVICE CONFIGURATION
CT COMBINATION ENCLOSURE

DRAWN BY
REVIEWED
APPROVED
REVISION REV 3
DATE 11-10-2016
CT COMBINATION ENCLOSURE

LOAD SIDE
(CUSTOMER)

PREFERRED LOCATION

LINE WIRES

SEE NOTE No. 2

FUSE OR
MAIN BREAKER

MAIN BREAKER BOX

GROUND PER NEC

ENCLOSURE ONLY

SEE NOTE No. 1

SEE NOTE No. 3

NOTES:
1. NO LOAD WIRES MAY EXIT ABOVE LOWER LANDING LUG PAD.
2. NO GUTTER BOXES ALLOWED BEFORE FUSES OR MAIN BREAKER.
3. DISCONNECT OR MAIN BREAKER SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 10 FT. TAP RULE 240.21 (B) (1).

IMPERIAL IRRIGATION DISTRICT

STANDARD UNDERGROUND SERVICE CONFIGURATION
CT COMBINATION ENCLOSURE

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE

611
4-14-2016
**FIGURE A**

**FIGURE B**

**FIGURE C**

<table>
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<td>2</td>
</tr>
<tr>
<td>C</td>
<td>600 – 800</td>
<td>120/208 - 3Ø</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>600 – 800</td>
<td>277/480 - 3Ø</td>
<td>3</td>
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</table>

**NOTE:**
1. FOR CONDUIT SPECIFICATIONS, PLEASE SEE CUSTOMER SERVICE PROPOSAL CONTRACTOR'S NOTES.

**IMPERIAL IRRIGATION DISTRICT**

**ELECTRIC METERING SERVICE**
**AND EQUIPMENT STANDARD**
**CONDUIT CONFIGURATION**

**DRAWN BY**

**REVIEWED**

**APPROVED**

**REVISION** REV 01

**DATE** 9–16–2013 620
NOTE:
1. FOR CONDUIT SPECIFICATIONS, PLEASE SEE CUSTOMER SERVICE PROPOSAL CONTRACTOR'S NOTES.
NOTES ON 305.1

IMPERIAL IRRIGATION DISTRICT

SAFETY SOCKET BOX WITH FACTORY INSTALLED
TEST-BYPASS FACILITIES
200 AMPERE, 0 – 600 VOLTS

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE

M M5
REV 1
10-12-2016
NOTES:

1. This device may be used for commercial, multi-family residential (not separated metered) and other types of occupancies.

2. Cable terminating facilitates shall be aluminum bodied mechanical lugs with a range of no. 1/0 awg through no. 250 kcmil.

3. Hubs capped off is used for underground feed and permanently labeled: "DO NOT BREAK SEALS, NO FUSES INSIDE".

4. Rigid insulating barriers.

5. Insulated bondable vertical lay-in, double neutral lug with no. 250 kcmil wire capacity, mounted on either sidewall.

6. Test-bypass blocks shall be bussed or wired to socket jaws or terminals.

7. Upper test connector studs.

8. All panels shall be independently removable. Meter panel shall be provided with a sealing ring and the meter socket shall be rigidity mounted on support and attached to the meter panel. Test-bypass cover panel shall be sealable and permanently labeled: "DO NOT BREAK SEALS, NO FUSES INSIDE".


10. For 3-phase, 4 wire, connect 7th jaw to body of neutral lug with no. 12 min. copper wire, white in color.

11. For 3-phase, wire delta, identify right hand test-bypass block (2 poles) as power let. Identification to be orange in color.

12. For 3-phase, 3 wire, install bus to connect line and load poles together at top of center test-bypass block and connect 5th jaw to this bus, using no. 12 min. copper wire. Color shall be other than white, gray, green or orange.

13. For 1-phase, 3 wire, provide two test-bypass blocks mounted in the outer positions and a four jaw socket.

14. For 1-phase, 3 wire, provide two test-bypass blocks mounted in the outer positions and a four jaw socket.

15. Test-bypass block connection sequences shall be line-load from left to right and shall be clearly identified in 3/4" minimum block letters.

16. Minimum width of access opening shall be 11-1/2".
## TABLE - MINIMUM DIMENSIONS

<table>
<thead>
<tr>
<th>PANEL TYPE</th>
<th>PANEL RATING* (AMPERS)</th>
<th>&quot;D&quot;</th>
<th>&quot;W&quot; SEE NOTE 4</th>
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<td>STANDARD</td>
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<td>4-1/2</td>
<td>11-1/2</td>
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<td>5</td>
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<tr>
<td>HEAVY-DUTY</td>
<td>200</td>
<td>6</td>
<td>13-1/2</td>
<td>11</td>
<td>8</td>
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</table>

* CONTINUOUS-DUTY

### NOTES:
1. THE PANEL SHOWN ABOVE IS TYPICAL WITH THE CUSTOMER’S DISTRIBUTION SECTION LOCATED TO THE SIDE OF THE METERING COMPARTMENT. THE DISTRIBUTION SECTION MAY ALSO BE LOCATED BELOW THE TEST-BYPASS COMPARTMENT (OVERHEAD SUPPLY ONLY) OR ABOVE THE METER PANEL.
2. METER SOCKET SHALL BE MOUNTED ON A RIGID SUPPORT AND ATTACHED TO THE METER SOCKET PANEL.
3. All panels shall be independently removable. Meter panel shall be provided with a sealing ring and the meter socket shall be rigidly mounted on a support and attached to the meter panel. Test–by-pass compartment cover shall be sealable.

4. Minimum test compartment access opening dimension.

5. Test–by-pass blocks with rigid insulating barriers shall be furnished installed, and bussed or wired to the meter socket by the manufacturer as follows:

   A. For single phase, 3–wire, provide two test–by-pass blocks mounted in the outer positions and 4–jaw socket. For 120/208 volts, single phase 3–wire, provide two test–by-pass blocks mounted in the outer positions and a 5–jaw socket connect the 5th jaw of the meter socket to the neutral lug with a white no. 12 AWG (minimum) copper wire.

   B. For three phase, 3–wire, provide three test–by-pass blocks and a 5–jaw meter socket–connect the line and load poles together at the top of the center position test–by-pass block with a bus section and connect the bus to the 5th jaw of the meter socket with a no. 12 AWG (minimum) copper wire. Color used to identify the wire shall not be either white, gray, green or orange.

   C. For three phase, 4–wire, provide three test–by-pass and a 7–jaw meter socket–connect the 7th jaw of the meter socket to the neutral lug with a white no. 12 AWG (minimum) copper wire. For 120/240 volts, 4–wire delta, the right hand test–by-pass block shall be the power leg (measures 208 volts–to–ground) and shall be identified with an orange color.

   D. Test–by-pass block connection sequence shall be line–load from left to right and shall be clearly identified in 3/4" minimum block letters.

   E. Cable terminals shall be aluminum–bodied mechanical lugs with a range of no. 6 AWG through 1/0 AWG for the 100 ampere test–by-pass block and no. 1/0 AWG through 250 kcmil for the 200 ampere test–by-pass block.

6. 1–1/2" (minimum) dimension measured from compartment side to the test–by-pass block rigid insulating barrier.

7. 3" (minimum) dimension measured from the upper test connector stud (stud "A") to the socket meter cover.

8. The neutral terminal may be provided as follows:

   A. A single mechanical lug or lay–in lug, located on either side or side wall. The lug shall be mounted on a neutral bus bar extending into, and terminating in, the customer section.

   B. Two mechanical lugs or lay–in lugs, located on either side or side wall. The neutral conductor provided from one of the lugs to the neutral bus in the customer section may be factory or field installed.

   C. Overhead supply only – a single insulated, bondable, vertical, lay–in lug located on either side or side wall with the neutral conductor installed unbroken through the lug and terminating on the neutral bus in the customer section.

1" MIN.  

11" MIN. OPENING

14" MIN.

BARRIER
NOTE 6

3" MIN.

FIELD INSTALLED CONDUCTORS MAY REQUIRE A GREATER DIMENSION BETWEEN BLOCK AND BARRIER

BARRIER
NOTE 6

6" MIN.

12" MIN.

6" MIN.

8-1/2" MIN.

10" MIN. OPENING

1-1/2" MIN.

21-1/2" MIN OPENING

24"

TEST-BYPASS BLOCK WITH 4 RIGID INSULATING BARRIERS (SEE NOTE 1)

IMPERIAL IRRIGATION DISTRICT

SELF-CONTAINED METERS
INSTALLED IN SWITCHBOARDS
0 – 200 AMPS, 0 – 600 VOLTS

DRAWN BY
REVIEWED
APPROVED
REVISION REV 1
DATE 10-18-2016

306
1. TEST—BYPASS BLOCKS WITH RIGID INSULATING BARRIERS SHALL BE FURNISHED, INSTALLED, AND WIRED OR BUSSED TO THE METER SOCKET BY THE MANUFACTURER. CONNECTION SEQUENCE SHALL BE LINE—LOAD FROM LEFT TO RIGHT AND SHALL BE IDENTIFIED IN 3/4 " BLOCK LETTERS.

2. METERED CONDUCTORS SHALL NOT PASS THROUGH ADJACENT METERING COMPARTMENTS EXCEPT IN ENCLOSED WIRE WAYS. TO INSURE PROPER IDENTIFICATION OF CABLES IN FACTORY Cabled EQUIPMENT, METERED CABLES (EXCEPT IN THE TEST—BYPASS AREA), SHALL BE EITHER PHYSICALLY BARRIRED OR BUNDLED SO AS TO SEPARATE THEM FROM UNMETERED CABLE OR PERMANENTLY MARKED AND ISOLATED FROM UNMETERED CABLES. PHYSICAL BARRIERS WILL NOT BE REQUIRED IF THE UNMETERED CONDUCTORS ARE BUS.

3. METER PANELS SHALL BE REMOVABLE WITH A MAXIMUM OF TWO METERS PER PANEL. METER PANELS SHALL BE PROVIDED WITH A SEALING RING FOR EACH METER SOCKET AND EACH METER SOCKET SHALL BE RIGIDLY MOUNTED ON A SUPPORT AND ATTACHED TO THE METER PANEL.

4. TEST—BYPASS BLOCK COVER PANEL SHALL BE SEALABLE AND FITTED WITH A LIFTING HANDLE. ALL PANELS EXCEEDING 16" IN WIDTH SHALL REQUIRE TWO LIFTING HANDLES.

5. WHEN A NEUTRAL IS REQUIRED FOR METERING OR TESTING, AN INSULATED NEUTRAL TERMINAL SHALL BE PROVIDED BEHIND EACH TEST—BYPASS COVER PANEL. THE TERMINAL SHALL BE READILY ACCESSIBLE WHEN THE COVER PANEL IS REMOVED AND SHALL BE INDIVIDUALLY CONNECTED TO THE NEUTRAL BUS WITH A MINIMUM SIZE NO. 12 AWG COPPER WIRE.


7. FOR 3 PHASE, 4 WIRE, CONNECT 7TH JAW OF METER SOCKET TO BODY OF NEUTRAL LUG WITH A WHITE NO. 12 AWG COPPER WIRE.

8. FOR 3 PHASE, 4 WIRE DELTA, IDENTIFY RIGHT HAND TEST—BYPASS BLOCK (2 POLES) AS POWER LEG. IDENTIFICATION TO BE ORANGE IN COLOR.

9. FOR 3 PHASE 3 WIRE, INSTALL BUS TO CONNECT LINE AND LOAD POLES TOGETHER AT TOP OF CENTER TEST—BYPASS BLOCK AND CONNECT 5TH JAW OF METER SOCKET TO THIS BUS USING MINIMUM NO. 12 AWG COPPER WIRE. COLOR USED TO IDENTIFY THE WIRE SHALL NOT BE WHITE, GRAY, GREEN, OR ORANGE.

10. FOR 1 PHASE, 3 WIRE, OMIT CENTER TEST—BYPASS BLOCK.

11. FOR 1 PHASE, 3 WIRE, 208Y/120 VOLTS, OMIT CENTER TEST—BYPASS BLOCK AND CONNECT 5TH JAW OF METER SOCKET TO BODY OF NEUTRAL LUG WITH WHITE NO. 12 AWG COPPER WIRE.

12. SEPARATE LINE AND LOAD CONDUCTORS SHALL BE INSTALLED BY THE CONTRACTOR OR MANUFACTURER FOR EACH METER SOCKET.

13. ALL ACCESS PANELS SHALL BE SEALABLE. SEE DRAWING 300, II (I).

14. ALL PANELS SHALL BE INDEPENDENTLY REMOVABLE. METER PANEL SHALL BE PROVIDED WITH A SEALING RING AND THE METER SOCKET SHALL BE RIGIDLY MOUNTED ON SUPPORT AND ATTACHED TO THE METER PANEL. TEST—BYPASS COMPARTMENT COVER PANEL SHALL BE SEALABLE AND PERMANENTLY LABELED: "DO NOT BREAK SEALS. NO FUSES INSIDE"
MINIMUM BOX DIMENSIONS

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<th>W (MIN.)</th>
<th>3 PHASE, 4 WIRE WYE OR DELTA</th>
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<tr>
<td></td>
<td>36&quot;</td>
<td>24&quot;</td>
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NOTES:

1. THE CURRENT-TRANSFORMER COMPARTMENT COVER PANEL(S) SHALL BE LIMITED TO A MAXIMUM OF 9 SQUARE FEET IN AREA, SHALL HAVE TWO LIFTING HANDLES AND A CAUTION LABEL READING "DO NOT BREAK SEALS, NO FUSES INSIDE".

2. A PANEL SUPPORT BRACKET SHALL BE PROVIDED AS SHOWN FOR THE METER AND CURRENT TRANSFORMER PANELS. THE METER PANEL SHALL BE ATTACHED TO THE BRACKET WITH SECURING SCREWS TO PREVENT THE PANEL FROM PULLING OUT WHEN THE METER IS REMOVED FROM THE SOCKET.

3. THE METER PANEL AND CURRENT TRANSFORMER COMPARTMENT COVER SHALL BE SEALABLE. SEE DRAWING 300, NOTE II().

4. SEE DRAWINGS 328A, 328B, AND 329B FOR CT, MOUNTING BASE DETAILS.

5. CONSULT THE UTILITY FOR 800 AMPERE APPLICATIONS.

IMPERIAL IRRIGATION DISTRICT

COMBINATION CURRENT - TRANSFORMER CABINET AND METER SOCKET PANEL FOR OVERHEAD SERVICE
0 - 400 AMPERES, MAXIMUM 0 - 600 VOLTS
MINIMUM BOX DIMENSIONS

<table>
<thead>
<tr>
<th>W (MIN.)</th>
<th>3 PHASE, 4 WIRE WYE OR DELTA</th>
<th>SINGLE PHASE 3 WIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>36&quot;</td>
<td></td>
<td>24&quot;</td>
</tr>
</tbody>
</table>
NOTES:

1. THE CURRENT–TRANSFORMER COMPARTMENT COVER PANEL(S) SHALL BE LIMITED TO A MAXIMUM OF 9 SQUARE FEET IN AREA, SHALL HAVE TWO LIFTING HANDLES AND A CAUTION LABEL READING “DO NOT BREAK SEALS, NO FUSES INSIDE”.

2. A PANEL SUPPORT BRACKET SHALL BE PROVIDED AS SHOWN FOR THE METER AND CURRENT TRANSFORMER PANELS. THE METER PANEL SHALL BE ATTACHED TO THE BRACKET WITH SECURING SCREWS TO PREVENT THE PANEL FROM PULLING OUT WHEN THE METER IS REMOVED FROM THE SOCKET.

3. THE METER PANEL AND CURRENT TRANSFORMER COMPARTMENT COVER SHALL BE SEALABLE. ALL COVER PANELS, REMOVABLE ACCESS PANELS AND HINGED PANELS FOR COMPARTMENTS CONTAINING UNMETERED CONDUCTORS SHALL BE SEALABLE. WHEN A RACEWAY OR CONDUIT FOR METER SECONDARY WIRING IS NECESSARY, SUCH A RACEWAY OR CONDUIT SHALL BE SEALABLE. NO REMOVABLE PANEL OR COVER REQUIRING SEALING SHALL BE LOCATED BEHIND OTHER PANELS, COVERS OR DOORS (EXCEPT RAINTIGHT ENCLOSURE DOORS). NOTE: CARRIAGE BOLTS MAY BE USED TO SECURE COVER PANELS IN PLACE OF SEALING PROVISIONS WHEN THE BOLTS ARE INSTALLED AT THE FACTORY AND DO NOT REQUIRE FIELD REMOVAL AND INSTALLATION TO COMPLETE ASSEMBLY OF THE SWITCHBOARD SECTIONS.

4. THE TERMINATION HEIGHT DIMENSION IS MEASURED FROM THE CENTER LINE OF LOWEST TERMINATING BOLTS OR THE BOTTOM OF THE MECHANICAL LUGS, THE HEIGHT OF THE LOWEST NEUTRAL CABLE TERMINATION BOLT MAY BE REDUCED TO 20” MIN.

5. SEE DRAWINGS 328A, 328B, 329A AND 329B FOR CT, MOUNTING BASE DETAILS.

6. CONSULT THE UTILITY FOR 800 AMPERE APPLICATIONS.

7. LUGS FOR TERMINATION THE CUSTOMER’S GROUND WIRE (OR OTHER GROUNDING CONDUCTORS) SHALL BE LOCATED OUTSIDE OF THE SEALABLE SECTION AND SHALL BE DESIGNED TO READILY PERMIT THE CUSTOMER’S NEUTRAL SYSTEM TO BE ISOLATED, WHEN NECESSARY, FROM THE SERVING AGENCY.
NOTES:

1. BUS ARRANGEMENT AND SUPPORTS SHALL BE PROVIDED AS SHOWN, EXCEPT THE NEUTRAL BUS MAY BE LOCATED AT EITHER SIDE OR ON EITHER SIDE WALL. BUS SUPPORTS SHALL BE CONSTRUCTED OF A CONTINUOUS BAR OF INSULATING MATERIAL AND SHALL BE RIGID TO PREVENT MISALIGNMENT OF THE BUS UNITS WITH THE CABLES IN PLACE.

2. THE BUS UNITS MAY BE SUPPLIED FROM THE TOP OR BOTTOM, AND SHALL BE ANCHORED TO PREVENT TURNING. BUS UNITS SHALL BE CONSTRUCTED OF RECTANGULAR BUS AND WHEN LAMINATED SHALL HAVE NO SPACE BETWEEN LAMINATIONS. BUS DIMENSIONS SHALL BE PROVIDED AS FOLLOWS:
   
   MINIMUM: 1/4” X 2”
   MAXIMUM: 3/4” X 2”

3. BUS UNIT SHALL BE PROVIDED WITH A FIXED STUD AS SHOWN FOR MOUNTING THE CURRENT TRANSFORMERS. EACH SHALL:

   A. CONSIST OF A 1/2” STEEL BOLT AND SHALL BE PROVIDED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) WASHER OR A SPLIT-RING WASHER AND FLAT WASHER.

   B. BE SECURED IN PLACE. “SECURED IN PLACE” MEANS THAT THE STUD WILL NOT TURN, BACK-OUT, OR LOOSEN IN ANY MANNER WHEN TIGHTENING OR LOOSENING THE ASSOCIATED NUTS (INCLUDING CROSS-THREADED SITUATIONS).

4. WHEN THE COMPARTMENT IS SUPPLIED FROM HORIZONTAL CROSS-BUSSING, THE BUSSING SHALL PASS THROUGH THE COMPARTMENT OR IN THE SEALED AREA ABOVE THE COMPARTMENT.

5. EXCEPT FOR CONDUCTORS SUPPLYING THE INSTRUMENT-TRANSFORMER COMPARTMENT, AND THE GROUND BUS, NO OTHER CONDUCTORS OR DEVICES SHALL BE INSTALLED IN, OR ROUTED THROUGH, THE COMPARTMENT OR THE SEALED AREA ABOVE THE COMPARTMENT. THE GROUND BUS SHALL NOT INFRINGE ON UTILITY COMPARTMENT SPACE, OR REDUCE ANY CLEARANCES. CUSTOMER CONNECTIONS TO THE GROUND BUS SHALL NOT BE ALLOWED IN THE INSTRUMENT TRANSFORMER COMPARTMENT.

6. A CLEAR UNOBSERVED WORK SPACE SHALL BE PROVIDED AROUND THE CURRENT-TRANSFORMER BUS UNITS FROM THE BARRIER TO THE UPPER SUPPORT BAR.

7. TAPS FOR ATTACHMENT OF METER SHALL BE PROVIDED ON THE NEUTRAL BUS UNIT SHOWN, OR WHEN THE COMPARTMENT IS SUPPLIED FROM CROSS-BUSSING, A TAP MAY BE PROVIDED ON THE NEUTRAL CROSS-BUSS, OR ON A BUS BAR EXTENSION PROVIDED FROM THE NEUTRAL CROSS-BUSS. A 10-32 SCREW AND WASHER SHALL BE PROVIDED FOR THE NEUTRAL BUS. TAP LOCATIONS SHALL BE CENTERED BETWEEN PHASE BUS UNITS, OR AT EITHER SIDE, AND SHALL BE CENTERED BETWEEN PHASE BUS UNITS, OR AT EITHER SIDE, AND SHALL BE READILY ACCESSIBLE UNDER ENERGIZED CONDITIONS AND WITH THE CURRENT-TRANSFORMER IN PLACE.

8. THE BARRIER SHALL BE CONSTRUCTED OF A RIGID INSULATING MATERIAL RESISTANT TO ARC TRACKING, AND SHALL BE SECURED IN PLACE WITH A MAXIMUM DEFLECTION OF 1/2” FROM AN APPLIED FORCE OF 25 POUNDS DOWNWARD. OPENINGS IN THE BARRIER (I.E. PERIPHERAL GAPS AROUND BARRIER, CUTOUTS AROUND BUS BARS, AND HOLE DIAMETERS PROVIDED FOR VENTILATION) SHALL NOT EXCEED 3/8”. THE BARRIER SHALL BE ATTACHED WITH NONCONDUCTIVE FASTENERS.

9. DIMENSION MEASURED TO INSIDE EDGE OF THE COMPARTMENT ACCESS OPENING.

10. TORQUE LABELS SHALL BE PROVIDED IN EACH UTILITY COMPARTMENT WHERE NUT AND BOLT ASSEMBLIES USING CONE-TYPE (BELLEVILLE) WASHERS ARE USED FOR UTILITY TERMINATIONS, TEST-BYPASS BLOCK CIRCUIT CLOSING NUTS OR FOR SECURING CURRENT-TRANSFORMERS OR CURRENT TRANSFORMER BUS REMOVABLE LINKS. LABELS SHALL BE READILY VISIBLE AND SHALL NOT BE INSTALLED ON ANY REMOVABLE OR HINGES COVER PANEL.
TOP VIEW

ALTERNATE NEUTRAL LOCATIONS, SEE NOTE 1

*SEE NOTE 6

NOTE 11

MIN.

4" 9" 9" 4"

MIN.

5" MIN.*

5" MIN.*

9/16"

1-3/4"

1-3/8"

5/8"

3/4"

1" MIN.

1-1/2" MAX.

BUS DRILLING DETAIL

TYPICAL 6 LOCATIONS

NOTE 3

FRONT VIEW

TEST TRANSFORMER SUPPORT BAR SEE NOTE 1

MIN.

16-1/2"

30"

3"

18-3/8"

6-3/4"

6-7/8"

3" MIN.

4-3/4"

INSTRUMENT TRANSFORMER COMPARTMENT

SIDE VIEW

MIN.

6-1/2"

5" MIN.

8" MAX.

INSTRUMENT—TRANSFORMER COMPARTMENT FOR SWITCHBOARDS 0 – 1000 AMPERES, 0 – 600 VOLTS THREE PHASE 4-WIRE

IMPERIAL IRRIGATION DISTRICT

DRAWN BY

REVIEWED

APPROVED

REVISION

DATE 10-20-2016

320
NOTES:
1. BUS ARRANGEMENT AND SUPPORTS SHALL BE PROVIDED AS SHOWN, EXCEPT THE NEUTRAL BUS MAY BE LOCATED AT EITHER SIDE OR ON EITHER SIDE WALL. (NOTE: NEUTRAL BUS NOT REQUIRED FOR 3-PHASE 3-WIRE SERVICE.) BUS SUPPORTS SHALL BE CONSTRUCTED OF A CONTINUOUS BAR OF INSULATING MATERIAL AND SHALL BE RIGID TO PREVENT MISALIGNMENT OF THE BUS UNITS WITH THE CABLES IN PLACE.
2. THE BUS UNITS MAY BE SUPPLIED FROM THE TOP OR BOTTOM, AND SHALL BE ANCHORED TO PREVENT TURNING. BUS UNITS SHALL BE CONSTRUCTED OF RECTANGULAR BUS AND WHEN LAMINATED SHALL HAVE NO SPACE BETWEEN LAMINATIONS. BUS DIMENSIONS SHALL BE PROVIDED AS FOLLOWS:
   Minimum: 1/4" X 2"
   Maximum: 3/4" X 2"
3. BUS UNIT SHALL BE PROVIDED WITH A FIXED STUD AS SHOWN FOR MOUNTING THE CURRENT TRANSFORMERS. EACH SHALL:
   A. CONSIST OF A 1/2" STEEL BOLT AND SHALL BE PROVIDED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) WASHER OR A SPLICE-RING WASHER AND FLAT WASHER. ALL PARTS SHALL BE PLATED TO PREVENT CORROSION.
   B. BE SECURED IN PLACE. "SECURED IN PLACE" SHALL MEAN THAT THE STUD WILL NOT TURN, BACK-OUT, OR LOOSEN IN ANY MANNER WHEN TIGHTENING OR LOOSENING THE ASSOCIATED NUTS (INCLUDING CROSS-THREADED SITUATIONS).
4. WHEN THE COMPARTMENT IS SUPPLIED FROM HORIZONTAL CROSS-BUSSING, THE BUSSING SHALL PASS THROUGH THE COMPARTMENT OR IN THE SEALED AREA ABOVE THE COMPARTMENT.
5. EXCEPT FOR CONDUCTORS SUPPLYING THE INSTRUMENT-TRANSFORMER COMPARTMENT, AND THE GROUND BUS, NO OTHER CONDUCTORS OR DEVICES SHALL BE INSTALLED IN, OR ROUTED THROUGH, THE COMPARTMENT OR THE SEALED AREA ABOVE THE COMPARTMENT. THE GROUND BUS SHALL NOT INFRINGE ON UTILITY COMPARTMENT SPACE, OR REDUCE ANY CLEARANCES. CUSTOMER CONNECTIONS TO THE GROUND BUS SHALL NOT BE ALLOWED IN THE INSTRUMENT TRANSFORMER COMPARTMENT.
6. A CLEAR UNOBLITERATED WORK SPACE SHALL BE PROVIDED AROUND THE CURRENT-TRANSFORMER BUS UNITS FROM THE BARRIER TO THE UPPER SUPPORT BAR.
7. TAPS FOR ATTACHMENT OF METER SHALL BE PROVIDED ON THE NEUTRAL BUS UNIT SHOWN, OR WHEN THE COMPARTMENT IS SUPPLIED FROM CROSS-BUSSING, A TAP MAY BE PROVIDED ON THE NEUTRAL CROSS-BUSS, OR ON A BUS BAR EXTENSION PROVIDED FROM THE NEUTRAL CROSS-BUS. A 10-32 SCREW AND WASHER SHALL BE PROVIDED FOR THE NEUTRAL BUS. TAP LOCATIONS SHALL BE CENTERED BETWEEN PHASE BUS UNITS, OR AT EITHER SIDE, AND SHALL BE CENTERED BETWEEN PHASE BUS UNITS, OR AT EITHER SIDE, AND SHALL BE READILY ACCESSIBLE UNDER ENERGIZED CONDITIONS AND WITH THE CURRENT-TRANSFORMER IN PLACE.
8. THE BARRIER SHALL BE CONSTRUCTED OF A RIGID INSULATING MATERIAL RESISTANT TO ARC TRACKING, AND SHALL BE SECURED IN PLACE WITH A MAXIMUM DEFLECTION OF 1/2" FROM AN APPLIED FORCE OF 25 POUNDS DOWNWARD. OPENINGS IN THE BARRIER (I.E. PERIPHERAL GAPS AROUND BARRIER, CUTOUTS AROUND BUS BARS, AND HOLE DIAMETERS PROVIDED FOR VENTILATION) SHALL NOT EXCEED 3/8". THE BARRIER SHALL BE ATTACHED WITH NONCONDUCTIVE FASTENERS.
9. A REMOVABLE LINK SHALL BE INSTALLED IN THE RIGHT SIDE PHASE BUS FOR 3-PHASE, 3-WIRE SERVICE.
10. THE POWER LEG BUS FOR A 4-WIRE DELTA SERVICE SHALL BE IDENTIFIED BY AN ORANGE OUTER FINISH OR BY TAGGING OR OTHER EFFECTIVE MEANS.
11. DIMENSION MEASURED TO INSIDE EDGE OF THE COMPARTMENT ACCESS OPENING.
12. TORQUE LABELS SHALL BE PROVIDED IN EACH UTILITY COMPARTMENT WHERE NUT AND BOLT ASSEMBLIES USING CONE-TYPE (BELLEVILLE) WASHERS ARE USED FOR UTILITY TERMINATIONS, TEST-BYPASS BLOCK CIRCUIT CLOSING NUTS OR FOR SECURING CURRENT-TRANSFORMERS OR CURRENT-TRANSFORMER BUS REMOVABLE LINKS. LABELS SHALL BE READILY VISIBLE AND SHALL NOT BE INSTALLED ON ANY REMOVABLE OR HINGES COVER PANEL.
NOTES:

1. BUS ARRANGEMENT AND SUPPORTS SHALL BE PROVIDED AS SHOWN, EXCEPT THE NEUTRAL BUS MAY BE LOCATED AT EITHER SIDE OR ON EITHER SIDE WALL. (NOTE: NEUTRAL BUS NOT REQUIRED FOR 3-PHASE 3-WIRE SERVICE.) BUS UNITS SHALL BE ANCHORED SO THAT BUSSES WILL REMAIN IN POSITION WHEN SECTION "B" IS REMOVED. FOR DETAILS OF SECTION "B" AND THE INSULATED CURRENT-TRANSFORMER SUPPORT, SEE DRAWING 330 AND 331. BUS UNITS SHALL BE CONSTRUCTED OF RECTANGULAR BUS AND WHEN LAMINATED SHALL HAVE NO SPACE BETWEEN

2. THE BUS UNITS MAY BE SUPPLIED FROM THE TOP OR BOTTOM, AND SHALL BE CONSTRUCTED OF RECTANGULAR BUS. MAXIMUM ALLOWABLE BUS SIZE SHALL BE FOUR 1/4” X 4” BARS SPACED 1/4”.

3. THE BUS UNITS SHALL BE INSULATED AS SHOWN AND THE INSULATING MATERIAL SHALL BE RATED FOR THE SERVING VOLTAGE. ROUND BUS CORNERS AS NECESSARY TO PREVENT DAMAGE TO INSULATION.

4. WHEN THE COMPARTMENT IS SUPPLIED FROM HORIZONTAL CROSS-BUSING, THE BUSSING SHALL PASS THROUGH THE COMPARTMENT OR IN THE SEALED AREA ABOVE THE COMPARTMENT.

5. EXCEPT FOR CONDUCTORS SUPPLYING THE INSTRUMENT-TRANSFORMER COMPARTMENT, AND THE GROUND BUS, NO OTHER CONDUCTORS OR DEVICES SHALL BE INSTALLED IN, OR ROUTED THROUGH, THE COMPARTMENT OR THE SEALED AREA ABOVE THE COMPARTMENT. THE GROUND BUS SHALL NOT INFRINGE ON UTILITY COMPARTMENT SPACE, OR REDUCE ANY CLEARANCES. CUSTOMER CONNECTIONS TO THE GROUND BUS SHALL NOT BE ALLOWED IN THE INSTRUMENT TRANSFORMER COMPARTMENT.

6. A CLEAR UNOBSSTRUCTED WORK SPACE SHALL BE PROVIDED AROUND THE CURRENT-TRANSFORMER BUS UNITS FROM THE BARRIER TO 2” ABOVE THE REMOVABLE CURRENT-TRANSFORMER BUS SECTIONS ("B").

7. A 10-32 TAP FOR ATTACHMENT OF METER WIRING SHALL BE PROVIDED AS FOLLOWS:
   A. ONE TAP FOR EACH UPPER AND LOWER PHASE BUS UNIT WITH A 10-32 SCREW AND WASHER PROVIDED FOR EACH PHASE BUS IN EITHER THE UPPER OR LOWER POSITION.
   B. ONE TAP ON THE NEUTRAL BUS AS SHOWN, OR WHEN THE COMPARTMENT IS SUPPLIED FROM CROSS-BUSING, OR ON A BUS BAR EXTENSION PROVIDED FROM THE NEUTRAL CROSS-BUS. A 10-32 SCREW AND WASHER SHALL BE PROVIDED FOR THE NEUTRAL BUS. TAP LOCATIONS SHALL BE ACCESSIBLE UNDER ENERGIZED CONDITIONS AND WITH THE CURRENT-TRANSFORMERS IN PLACE.

8. THE BARRIER SHALL BE CONSTRUCTED OF A RIGID INSULATING MATERIAL RESISTANT TO ARC TRACKING, AND SHALL BE SECURED IN PLACE WITH A MAXIMUM DEFLECTION OF 1/2” FROM AN APPLIED FORCE OF 25 POUNDS DOWNWARD. OPENINGS IN THE BARRIER (I.E. PERIPHERAL GAPS AROUND BARRIER, CUTOUTS AROUND BUS BARS, AND HOLE DIAMETERS PROVIDED FOR VENTILATION) SHALL NOT EXCEED 3/8”. THE BARRIER SHALL BE ATTACHED WITH NONCONDUCTIVE FASTENERS.

9. DIMENSION MEASURED TO INSIDE EDGE OF THE COMPARTMENT ACCESS OPENING.
**TABLE 1**

**MAXIMUM ALLOWABLE BUS**

FOUR 1/4" X 4" BARS SPACED 1/4"

SIX 1/4" X 5" BARS SPACED 1/4"

FIVE 3/8" X 5" BARS SPACED 3/8"
NOTES:

1. BUS ARRANGEMENT AND SUPPORTS SHALL BE PROVIDED AS SHOWN, EXCEPT THE NEUTRAL BUS MAY BE LOCATED AT EITHER SIDE OR ON EITHER SIDE WALL. (NOTE: NEUTRAL BUS NOT REQUIRED FOR 3-PHASE 3-WIRE SERVICE.) BUS UNITS SHALL BE ANCHORED SO THAT Busses WILL REMAIN IN POSITION WHEN SECTION "B" IS REMOVED. FOR DETAILS OF SECTION "B" AND THE INSULATED CURRENT-TRANSFORMER SUPPORT, SEE DRAWING 330 FOR 4" AND DRAWING 331 FOR 5" BUS. CONSULT SERVING AGENCY FOR THE USE OF BUS LARGER THAN 5". BUS SUPPORTS SHALL BE CONSTRUCTED OF A CONTINUOUS BAR OF INSULATING MATERIAL.

2. THE BUS UNITS MAY BE SUPPLIED FROM THE TOP OR BOTTOM, AND SHALL BE CONSTRUCTED OF RECTANGULAR BUS. FOR MAXIMUM ALLOWABLE BUS SIZES, SEE TABLE 1.

3. BUS UNITS SHALL BE INSULATED AS SHOWN AND THE INSULATING MATERIAL SHALL BE RATED FOR THE SERVING VOLTAGE. ROUND BUS CORNERS AS NECESSARY TO PREVENT DAMAGE TO INSULATION.

4. WHEN THE COMPARTMENT IS SUPPLIED FROM HORIZONTAL CROSS-BUSSING, THE BUSSING SHALL PASS THROUGH THE COMPARTMENT OR IN THE SEALED AREA ABOVE THE COMPARTMENT.

5. EXCEPT FOR CONDUCTORS SUPPLYING THE INSTRUMENT-TRANSFORMER COMPARTMENT, AND THE GROUND BUS, NO OTHER CONDUCTORS OR DEVICES SHALL BE INSTALLED IN, OR ROUTED THROUGH, THE COMPARTMENT OR THE SEALED AREA ABOVE THE COMPARTMENT. THE GROUND BUS SHALL NOT INFRINGE ON UTILITY COMPARTMENT SPACE, OR REDUCE ANY CLEARANCES. CUSTOMER CONNECTIONS TO THE GROUND BUS SHALL NOT BE ALLOWED IN THE INSTRUMENT TRANSFORMER COMPARTMENT.

6. A CLEAR UNOBSTRUCTED WORK SPACE SHALL BE PROVIDED AROUND THE CURRENT-TRANSFORMER BUS UNITS FROM THE BARRIER TO 2" ABOVE THE REMOVABLE CURRENT-TRANSFORMER BUS SECTIONS ("B").

7. A 10-32 TAP FOR ATTACHMENT OF METER WIRING SHALL BE PROVIDED AS FOLLOWS:
   A. ONE TAP FOR EACH UPPER AND LOWER PHASE BUS UNIT WITH A 10-32 SCREW AND WASHER PROVIDED FOR EACH PHASE BUS IN EITHER THE UPPER OR LOWER POSITION.
   B. ONE TAP ON THE NEUTRAL BUS AS SHOWN, OR WHEN THE COMPARTMENT IS SUPPLIED FROM CROSS-BUSSING, A TAP MAY BE PROVIDED ON THE NEUTRAL CROSS-BUS, OR ON A BUS BAR EXTENSION PROVIDED FROM THE NEUTRAL BUS. TAP LOCATIONS SHALL BE CENTERED BETWEEN PHASE BUS UNITS, OR AT EITHER SIDE, AND SHALL BE READILY ACCESSIBLE UNDER ENERGIZED CONDITIONS AND WITH THE CURRENT-TRANSFORMERS IN PLACE.

8. THE BARRIER SHALL BE CONSTRUCTED OF A RIGID INSULATING MATERIAL RESISTANT TO ARC TRACKING, AND SHALL BE SECURED IN PLACE WITH A MAXIMUM DEFLECTION OF 1/2" FROM AN APPLIED FORCE OF 25 POUNDS DOWNWARD. OPENINGS IN THE BARRIER (I.E. PERIPHERAL GAPS AROUND BARRIER, CUTOUTS AROUND BUS BARS, AND HOLE DIAMETERS PROVIDED FOR VENTILATION) SHALL NOT EXCEED 3/8". THE BARRIER SHALL BE ATTACHED WITH NONCONDUCTIVE FASTENERS.

9. DIMENSION MEASURED TO INSIDE EDGE OF THE COMPARTMENT ACCESS OPENING.
NOTES:
1. SOCKET METER PANEL WITH BLANK METER PANEL SHOWN. CONSULT SERVING UTILITY REGARDING ALTERNATE METER PANEL ARRANGEMENTS.
   BLANK METER PANEL SHALL BE CONSTRUCTED OF 12 GAUGE (MINIMUM) STEEL. SEE DRAWING 332 FOR SOCKET METER PANEL DETAILS.
2. METER PANELS SHALL BE EQUIPPED WITH STOPS TO PREVENT INWARD SWINGING BEYOND THE FRONT SURFACE OF THE SERVICE SECTION.
3. HINGES SHALL BE READILY INTERCHANGEABLE, LEFT OR RIGHT, ON THE JOB SITE.
4. REMOVABLE OR HINGED PANELS ENCLOSING UNMETERED BUS OR CABLE SHALL BE SEALABLE. SEE DRAWING 300, NOTE II().
5. FOR REQUIREMENTS REGARDING INSTRUMENT – TRANSFORMER COMPARTMENTS, SEE;
   0 TO 1000 AMPERES SEE DRAWINGS 319, 320
   1001 TO 3000 AMPERES SEE DRAWINGS 321, 322
   3001 AMPERES AND ABOVE SEE DRAWINGS 323, 324
6. DIMENSION MAY BE REDUCED IF THE SERVICE SECTION IS SUPPLIED FROM HORIZONTAL CROSS – BUSING OR BUS DUCT.
7. WHEN USED AS A UTILITY TERMINATING SECTION IN A BOTTOM – FED SERVICE SECTION, SEE DRAWING 327.
8. FOR OUTDOOR APPLICATIONS, SEE DRAWING 354 FOR WEATHERPROOF ENCLOSURE REQUIREMENTS.
NOTES:

1. SOCKET METER PANEL WITH BLANK METER PANEL SHOWN. CONSULT SERVING UTILITY REGARDING ALTERNATE METER PANEL ARRANGEMENTS. BLANK METER PANEL SHALL BE CONSTRUCTED OF 12 GAUGE (MINIMUM) STEEL. SEE DRAWING 332 FOR SOCKET METER PANEL DETAILS.

2. FILLER PANELS SHALL BE USED WHERE THE SERVICE SECTION WIDTH EXCEEDS THE METER PANEL WIDTH. METER PANELS, EITHER SOCKET OR BLANK, SHALL NOT BE HINGED TO HINGED FILLER PANELS. NON-HINGED FILLER PANELS SHALL NOT EXTEND INTO THE REQUIRED INSTRUMENT-TRANSFORMER COMPARTMENT ACCESS OPENING.

3. METER PANELS AND FILLER PANELS SHALL BE EQUIPPED WITH STOPS TO PREVENT INWARD SWINGING BEYOND THE FRONT SURFACE OF THE SERVICE SECTION.

4. HINGES SHALL BE RATIONAL INTERCHANGEABLE, LEFT OR RIGHT, ON THE JOB SITE.

5. REMOVABLE OR HINGED PANELS ENCLOSING UNMETERED BUS OR CABLE SHALL BE SEALABLE. SEE DRAWING 300, NOTE II(I). 

6. FOR REQUIREMENTS REGARDING INSTRUMENT-TRANSFORMER COMPARTMENTS, SEE:
0 TO 1000 AMPERES SEE DRAWINGS 319, 320
1001 TO 3000 AMPERES SEE DRAWINGS 321, 322
3001 AMPERES AND ABOVE SEE DRAWINGS 323, 324

7. DIMENSION MAY BE REDUCED IF THE SERVICE SECTION IS SUPPLIED FROM HORIZONTAL CROSS-BUSING OR BUS DUCT.

8. WHEN USED AS A UTILITY TERMINATING SECTION IN A BOTTOM-FED SERVICE SECTION, SEE DRAWING 327.

9. FOR OUTDOOR APPLICATIONS, SEE DRAWING 354 FOR WEATHERPROOF ENCLOSURE REQUIREMENTS.

IMPERIAL IRRIGATION DISTRICT

STANDARD SWITCHBOARD SERVICE SECTION
INSTRUMENT–TRANSFORMER COMPARTMENT
FILLER PANEL, 0–600 VOLTS

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE 10–25–2016

68
NOTES:

1. THE PULL SECTION MAY SUPPLY EITHER A CURRENT-TRANSFORMER COMPARTMENT OR A MAIN SERVICE DISCONNECT DEVICE.

2. VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF STRUCTURE.
   A. INDEPENDENT OF OTHER EQUIPMENT AND WITHOUT DISTURBING ADJACENT PANELS.
   B. SEALABLE, PROVIDED WITH TWO LIFTING HANDLES, AND LIMITED TO A MAXIMUM OF 9 SQUARE FEET IN AREA.

3. THE PANEL SHALL BE EQUIPPED WITH TERMINATING FACILITIES COMPLYING WITH DRAWING 347. TERMINATING FACILITIES SHALL BE SECURED TO PREVENT MISALIGNMENT AND SHALL BE RIGID WITHOUT THE INSTALLATION OF CURRENT-TRANSFORMERS.

4. THE CLEARANCE FROM THE ENERGIZED BUS TO THE PULL SECTION REMOVABLE ACCESS COVERS MAY BE REDUCED IF A SAFETY BARRIER IS PROVIDED BY THE MANUFACTURER. FOR ADDITIONAL CLEARANCE AND BARRIER REQUIREMENTS, SEE DRAWING 347, NOTE 12.

5. A VERTICAL CLEARANCE OF 3" MINIMUM SHALL BE MAINTAINED BETWEEN THE CENTERLINE OF THE TOP BOLTS OF THE TERMINATING FACILITIES TO ANY OBSTRUCTION.

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SWITCHBOARD RATING (AMPERES) | MINIMUM ACCESS OPENING DIMENSION (W) - SEE NOTE 8
---|---
4-WIRE | 
BELOW 400 | CONSULT SERVING AGENCY
400 - 800 | 24"
801 - 1000 | 30"

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IMPERIAL IRRIGATION DISTRICT

COMBINATION SWITCHBOARD SERVICE
SECTION AND PULL SECTION
0 - 600 VOLTS, 1000 AMPERES MAXIMUM

DRAWN BY
REVIEWED
APPROVED
REVISION REV 1
DATE 10-10-2016
NOTES:

6. WHEN THE UPPER SECTION IS:

   A. AN INSTRUMENT–TRANSFORMER COMPARTMENT, SEE DRAWINGS 325 AND 326 FOR ADDITIONAL SERVICE SECTION REQUIREMENTS.
   B. A MAIN SERVICE DISCONNECT DEVICE.

   (1.) A FULL WIDTH AND DEPTH, INSULATED, RIGID BARRIER SHALL BE PROVIDED TO SEPARATE THE PULL SECTION AND MAIN
       SERVICE DISCONNECT COMPARTMENT.

   (2.) THE MAIN SERVICE DISCONNECT COVER SHALL BE SEALABLE.

7. SEALING PROVISIONS FOR REMOVABLE COVERS SHALL CONSIST OF TWO DRILLED STUD AND WING–NUT ASSEMBLIES LOCATED ON OPPOSITE
   SIDES OF THE COVER. HINGED COVERS SHALL BE SEALED ON THE UNSUPPORTED SIDE. SEE DRAWING 300, NOTE II(i).

8. THE MINIMUM PULL SECTION ACCESS OPENING (W) IS MEASURED BETWEEN THE LEFT SIDE AND RIGHT SIDE RETURN FLANGES.
1. INSULATED SUPPORTS SHALL BE RATED FOR THE SERVING VOLTAGE AND HAVE SUFFICIENT MECHANICAL STRENGTH FOR THE APPLICATION.

2. MOUNTING BASE ACCEPTS BAR TYPE CURRENT TRANSFORMERS ONLY.

3. TWO 1/2" STEEL BOLTS SHALL BE PROVIDED FOR EACH CABLE TERMINATING AND CURRENT-TRANSFORMER MOUNTING POSITION. EACH BOLT SHALL BE FURNISHED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) OR A SPLIT-RING WASHER AND A FLAT WASHER. BOLTS SHALL BE SECURED IN PLACE AND SPACED AS SHOWN. ALL PARTS SHALL BE PLATED TO PREVENT CORROSION.

   "NOTE: WHEN BELLEVILLE WASHERS ARE USED, THE MANUFACTURER SHALL PROVIDE A LABEL WITH THE REQUIRED TORQUE SETTINGS. THIS LABEL SHALL BE IN A READILY VISIBLE LOCATION WITHIN THE COMPARTMENT THAT THE WASHERS ARE BEING UTILIZED AND SHALL NOT BE INSTALLED ON THE METER OR FILLER PANELS".

4. FOR APPLICATIONS, SEE DRAWINGS 313 & 314.
NOTES:

1. MOUNTING BASE ACCEPTS BAR TYPE CURRENT TRANSFORMERS ONLY.

2. TWO 1/2" STEEL BOLTS SHALL BE PROVIDED FOR EACH CABLE TERMINATING AND CURRENT-TRANSFORMER MOUNTING POSITION. EACH BOLT SHALL BE FURNISHED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) OR A SPLIT-RING WASHER AND A FLAT WASHER. BOLTS SHALL BE SECURED IN PLACE AND SPACED AS SHOWN. ALL PARTS SHALL BE PLATED TO PREVENT CORROSION.

"NOTE: WHEN BELLEVILLE WASHERS ARE USED, THE MANUFACTURER SHALL PROVIDE A LABEL WITH THE REQUIRED TORQUE SETTINGS. THIS LABEL SHALL BE IN A READILY VISIBLE LOCATION WITHIN THE COMPARTMENT THAT THE WASHERS ARE BEING UTILIZED AND SHALL NOT BE INSTALLED ON THE METER OR FILLER PANELS".

3. TERMINATION’S FOR SERVICE CONDUCTORS SHALL BE ONE POSITION MIN., ALUMINUM-BODIED MECHANICAL LUGS WITH A WITH A RANGE ACCEPTING ON NO. 4 AWG THROUGH 600 KCMIL CONDUCTOR OR TWO NO. 1 AWG THROUGH 250 KCMIL CONDUCTORS.

4. FOR APPLICATIONS, SEE DRAWINGS 313 & 314.
NOTES:
1. INSULATED SUPPORTS SHALL BE RATED FOR THE SERVING VOLTAGE AND HAVE SUFFICIENT MECHANICAL STRENGTH FOR THE APPLICATION.
2. MOUNTING BASE ACCEPTS BAR TYPE CURRENT TRANSFORMERS ONLY.
3. TWO 1/2" STEEL BOLTS SHALL BE PROVIDED FOR EACH CABLE TERMINATING AND CURRENT-TRANSFORMER MOUNTING POSITION. EACH BOLT SHALL BE FURNISHED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) OR A SPLIT-RING WASHER AND A FLAT WASHER. BOLTS SHALL BE SECURED IN PLACE AND SPACED AS SHOWN. ALL PARTS SHALL BE PLATED TO PREVENT CORROSION.
   NOTE: WHEN BELLEVILLE WASHERS ARE USED, THE MANUFACTURER SHALL PROVIDE A LABEL WITH THE REQUIRED TORQUE SETTINGS. THIS LABEL SHALL BE IN A READILY VISIBLE LOCATION WITHIN THE COMPARTMENT THAT THE WASHERS ARE BEING UTILIZED AND SHALL NOT BE INSTALLED ON THE METER OR FILLER PANELS”.
4. FOR APPLICATIONS, SEE DRAWINGS 313 & 314.
5. CONSULT THE SERVING UTILITY FOR 800 AMPERE APPLICATIONS.

IMPERIAL IRRIGATION DISTRICT

CURRENT-TRANSFORMER MOUNTING BASE
THREE-PHASE FOUR WIRE
201 - 400 AMPERES MAXIMUM, 0 - 600 VOLTS

DRAWN BY
REVISED
APPROVED
REVISION
DATE
10-19-2016
329A
NOTES:
1. INSULATED SUPPORTS SHALL BE RATED FOR THE SERVING VOLTAGE AND HAVE SUFFICIENT MECHANICAL STRENGTH FOR THE APPLICATION.
2. MOUNTING BASE ACCEPTS BAR TYPE CURRENT TRANSFORMERS ONLY.
3. TWO 1/2" STEEL BOLTS SHALL BE PROVIDED FOR EACH CABLE TERMINATING AND CURRENT-TRANSFORMER MOUNTING POSITION. EACH BOLT SHALL BE FURNISHED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) OR A SPLIT-RING WASHER AND A FLAT WASHER. BOLTS SHALL BE SECURED IN PLACE AND SPACED AS SHOWN. ALL PARTS SHALL BE PLATED TO PREVENT CORROSION.
   "NOTE: WHEN BELLEVILLE WASHERS ARE USED, THE MANUFACTURER SHALL PROVIDE A LABEL WITH THE REQUIRED TORQUE SETTINGS. THIS LABEL SHALL BE IN A READILY VISIBLE LOCATION WITHIN THE COMPARTMENT THAT THE WASHERS ARE BEING UTILIZED AND SHALL NOT BE INSTALLED ON THE METER OR FILLER PANELS".
4. FOR APPLICATIONS, SEE DRAWINGS 313 & 314.
5. CONSULT THE SERVING UTILITY FOR 800 AMPERE APPLICATIONS.
DETAIL "A"
DRILLING AND SPACING OF BUS

(2) 9/16" SLOTS

9/32" "R"
3/4"
9/16"
8-7/8"
11-5/8"
1-3/8"

DETAIL "B"
1/4" X 4" LINK
(SAME MATERIAL AS BUS)

(2) 9/16" HOLES
1-7/8"
1-1/8"
14-1/2"
11-5/8"
5"
4"

NO. OF LINKS
AS REQUIRED

(SEE NOTE 1)

LINK
(SEE DETAIL "B")

WINDOW TYPE
CURRENT TRANSFORMER
(SEE DETAIL "C")

1/4" X 20 CAPSCREW

NO. OF LINKS
AS REQUIRED

(SEE NOTE 1)

LINK
(SEE DETAIL "B")

WINDOW TYPE
CURRENT TRANSFORMER
(SEE DETAIL "C")

1/4" X 20 CAPSCREW

REMOVABLE LINK
(FURNISHED BY MANUFACTURER)

DETAIL "C"
INSULATED SUPPORT FOR
CURRENT TRANSFORMER
(MATERIAL: INSULATING, NON–TRACKING)

(2) 3/8" HOLES
3-3/4"
3"
3-3/8"
8-1/4"

1-5/8"
5/8"

(2) 5/16" HOLES
1-1/8"
1-1/8"

REMOVABLE LINK & CURRENT–TRANSFORMER SUPPORT
INSTRUMENT–TRANSFORMER COMPARTMENTS
4" BUS, 0–600 VOLTS

IMPERIAL IRRIGATION DISTRICT

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE
10–25–2016
NOTES:

1. MANUFACTURER SHALL SECURE THE REMOVABLE BUS LINK TO THE UPPER AND LOWER CURRENT TRANSFORMER BUS UNITS USING 1/2" HEX-HEAD (GRADE 5) STEEL BOLTS WITH ASSOCIATED WASHERS AND NUT. EACH BOLT SHALL BE PROVIDED WITH A FLAT WASHER, A SPRING WASHER AND A NUT. SPRING WASHER MAY BE EITHER A CONE-TYPE (BELLEVILLE) WASHER OR A SPLIT-RING WASHER WITH A FLAT WASHER. ALL WASHERS (BELLEVILLE OR FLAT) SHALL BE 2-1/4" MINIMUM. "NOTE: WHEN BELLEVILLE WASHERS ARE USED, THE MANUFACTURER SHALL PROVIDE A LABEL WITH THE REQUIRED TORQUE SETTING. THIS LABEL SHALL BE IN A READILY VISIBLE LOCATION WITHIN THE COMPARTMENT THAT THE WASHERS ARE BEING UTILIZED AND SHALL NOT BE INSTALLED ON THE METER OR FILLER PANELS."

2. DRILL AND TAP TWO HOLES AS SHOWN ON THE OUTER BUS UNITS FOR 1/4" X 20 CAPSCREWS.
FOUR 5/16" HOLES
2 EACH, UPPER & LOWER FLANGES

SEE NOTE 1

TEST SWITCH MOUNTING

IMPERIAL IRRIGATION DISTRICT

DRAWN BY
REVIEWED
APPROVED
REVISION REV 1
DATE 10-26-2016

15" HINGED METER PANEL
0 – 600 VOLTS
NOTES:

1. THE PANEL SHALL BE CONSTRUCTED OF 12 GAUGE (MINIMUM) STEEL AND SHALL BE HINGED AT THE TEST SWITCH SIDE BY THE MANUFACTURER. THE PANEL SHALL BE FURNISHED WITH A METER SOCKET, SEALING RING, AND A SLOTTED OPENING AND REMOVABLE PLATE EDGES SHALL BE SMOOTH TO PREVENT DAMAGE TO METER RING.

   NOTE: WHEN A CAST METER MOUNTING RING IS PROVIDED, THE SCREWS USED TO ATTACH TO THE METER PANEL SHALL PROVIDE A MINIMUM 1/8" CLEARANCE BETWEEN THE SCREW HEADS AND THE BACK OF THE RING.

2. THE REMOVABLE PLATE SHALL BE ATTACHED TO THE REAR OF THE PANEL WITH SCREWS THAT DO NOT PROTRUDE THROUGH THE FACE OF THE PANEL.

3. THE METER SOCKET SHALL BE DESIGNED FOR BACK CONNECTION.

4. THE PANEL SHALL BE EQUIPPED WITH HINGES. THE HINGES SHALL PERMIT THE PANEL TO OPEN TO 90-DEGREES, AND SHALL BE EASILY INTERCHANGEABLE, RIGHT OR LEFT, ON THE METER SOCKET PANEL. REMOVABLE PIN TYPE HINGES ARE REQUIRED, THE PIN SHALL BE REMOVABLE FROM THE TOP.

5. THE PANEL SHALL BE EQUIPPED WITH A HANDLE ON THE UNSUPPORTED END. THE HANDLE SHALL BE INTERCHANGEABLE, RIGHT OR LEFT, ON THE METER SOCKET PANEL. REMOVABLE PIN TYPE HINGES ARE REQUIRED, THE PIN SHALL BE REMOVED FROM THE TOP.

6. THE PANEL SHALL SUPPORT A 25-POUND LOAD APPLIED AT THE UNSUPPORTED END WHEN FULLY OPENED WITH A MAXIMUM SAG OF 1/8".

7. STUD AND WING NUT ASSEMBLIES SHALL BE SEALABLE WHEN USED.

8. SEE SECTION 200 FOR CORRECT METER SOCKET CONFIGURATION.

9. TEST SWITCH MOUNTING HOLES SHALL BE LOCATED ON THE TOP LEFT AND BOTTOM RIGHT FOR SAFETY.
FIGURE 1

TYPICAL SERVICE TERMINATING ARRANGEMENT. TWO (2) METERS (0 – 200 AMPS)

FIGURE 3

TYPICAL SERVICE TERMINATING ARRANGEMENT. 3 – 6 METERS (201 – 600 AMPS)

<table>
<thead>
<tr>
<th>EQUIPMENT RATING</th>
<th>&quot;W&quot;</th>
<th>&quot;Y&quot;</th>
<th>&quot;X&quot;</th>
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<tr>
<td>AMPERES (CONTINUOUS)</td>
<td>NOTE 6</td>
<td>NOTES 3 &amp; 4</td>
<td></td>
</tr>
<tr>
<td>0-200 AMPS</td>
<td>6-1/2&quot; MIN.</td>
<td>5-1/2&quot; MIN.</td>
<td>11&quot; MIN.</td>
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<tr>
<td>201-600 AMPS</td>
<td>10-1/2&quot; MIN.</td>
<td>6&quot; MIN.</td>
<td>22&quot; MIN.</td>
</tr>
</tbody>
</table>
NOTES:
1. PULL SECTION COVERS SHALL BE:
   A. INDEPENDENT OF OTHER SERVICE EQUIPMENT AND REMOVABLE WITHOUT DISTURRING ADJACENT PANELS.
   B. REMOVABLE, SEALABLE, PROVIDED WITH TWO LIFTING HANDLES AND LIMITED TO A MAXIMUM SIZE OF 9 SQUARE FEET IN AREA. SEE DRAWING 300, GENERAL NOTES FOR HANDLE AND SEALING REQUIREMENTS.

2. METER PANELS, EITHER SOCKET OR BLANK, SHALL NOT BE HINGED TO A HINGED FILLER PANEL. NON-HINGED FILLER PANELS SHALL
   A. FOR EQUIPMENT RATED 200 AMPERES (FIGURES 1 AND 2), TERMINATIONS MAY BE ALUMINUM-BODIED, MECHANICAL LUGS WITH A RANGE OF NO. 4 AWG THROUGH 250 KCML. SEE DRAWING 301 FOR TERMINATION CLEARANCE AND SPACING REQUIREMENTS.
   B. FOR EQUIPMENT RATED 201–600 AMPERES (FIGURES 3 AND 4), TERMINATIONS SHALL BE TWO 1/2" STEEL BOLTS AS SHOWN. SEE DRAWING 347 FOR ADDITIONAL BOLT DETAILS AND TERMINATION CLEARANCE AND SPACING REQUIREMENTS.

3. THE NEUTRAL TERMINATION POSITION SHALL BE IDENTIFIED. A BONDING SCREW OR JUMPER SHALL BE PROVIDED IF THE NEUTRAL TERMINAL IS INSULATED FROM THE ENCLOSURE.

4. FOR EQUIPMENT RATED UP TO 200 AMPERES, THE NEUTRAL TERMINATION HEIGHT MAY BE REDUCED TO 8–12".

5. CROSS-BUSING OF A DIFFERENT PHASE OR POTENTIAL INSTALLED BEHIND OR BELOW ANY TERMINATING POSITION SHALL BE FULLY INSULATED OR BARRIERED. INSULATING BARRIERS SHALL BE RIGID, NON–FLAMMABLE, RATED FOR THE SERVING VOLTAGE, RESISTANT TO ARC TRACKING, RESISTANT TO PUNCTURE OR DAMAGE BY IMPACT AND ATTACHED WITH NON–CONDUCTIVE FASTENERS.

6. THE MINIMUM PULL SECTION ACCESS OPENING (W) IS MEASURED BETWEEN THE LEFT SIDE AND RIGHT SIDE RETURN FLANGES.

7. SEE DRAWING 353 FOR METER SOCKET AND PANEL REQUIREMENTS.
SWITCHBOARD PULLING SECTION

SERVICE TO LOAD

STANDING SURFACE

BUS/CABLE TERMINATION AS PER DWG. 347

SEE NOTE 2

STANDARD SERVICE SECTION

SEE W

SEALABLE TERMINATION ENCLOSURE SEE DWG. 343

SERVICE TO LOAD

STANDARD SERVICE SECTION

BREAKER

SEE X

BARREI

STANDING SURFACE

SERVICE TO LOAD

STANDARD SERVICE SECTION

SEE W

BARREI

STANDING SURFACE

SERVICE TO LOAD

FIGURE 2
1200 AMP MAXIMUM

SEPARATE TERMINATION ENCLOSURE

FIGURE 3
2000 AMP MAXIMUM

SEE DRAWING 327 FOR PULL SECTION REQUIREMENTS

BOTTOM FEED PULL SECTION

TABLE 1 MINIMUM PULLBOX DIMENSIONS — SEE NOTE 5

<table>
<thead>
<tr>
<th>SWITCHBOARD RATING (AMPERES)</th>
<th>MINIMUM ACCESS OPENING DIMENSION (W) - NOTE 4</th>
<th>TERMINATION HEIGHT (X)</th>
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<tr>
<td>3-WIRE</td>
<td>24&quot;</td>
<td>42&quot; MIN. - 72&quot; MAX.</td>
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<tr>
<td>4-WIRE</td>
<td>24&quot;</td>
<td>60&quot; MIN. - 72&quot; MAX.</td>
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<tr>
<td>BELOW 400</td>
<td>CONSULT SERVING AGENCY</td>
<td></td>
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<tr>
<td>400 - 800</td>
<td>24&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>801 - 1200</td>
<td>24&quot;</td>
<td>30&quot;</td>
</tr>
<tr>
<td>1201 - 2000</td>
<td>30&quot;</td>
<td>35&quot;</td>
</tr>
<tr>
<td>2001 - 3000</td>
<td>42&quot;</td>
<td>60&quot; MIN. - 72&quot; MAX.</td>
</tr>
<tr>
<td>3001 - 4000</td>
<td>44&quot;</td>
<td>60&quot; MIN. - 72&quot; MAX.</td>
</tr>
</tbody>
</table>

IMPERIAL IRRIGATION DISTRICT

UNDERGROUND SERVICE TERMINATIONS
STANDARD SWITCHBOARD SERVICED CONNECTION
400 TO 4000 AMP, 0 - 600 VOLTS

DATE 10-26-2016

345
NOTES:

1. A Switchboard Pull Section as shown in Figure 1, a separate (nonattached) termination enclosure as shown in Figure 2, or a combination switchboard service section and pull section (bottom feed) as shown in Figure 3 shall be provided for underground services.

2. Bus bars or cables may extend from the pull section into switchboard service sections rated up to 800 amperes. Bus bars are required when the service section rating exceeds 800 amperes or multipole metering is supplied.

3. When the service section is supplied from a switchboard pull section as shown in Figure 1, the bus bars or cables shall enter through the side of the sealable section above the current–transformer compartment, or by means of horizontal cross–busing in back of the metering compartment.

4. When horizontal cross busing exists the switchboard pull section below the terminating facilities, the lowest cross bus unit and the transition bussing supplying the cross bus units shall not be less than two feet above the bottom of the enclosure or more than 8” from the back of the enclosure.

5. The minimum pull section access opening (W) is measured between the left side and right side return flanges.

6. Side or rear entry of service entrance cables into the pull section may require greater dimensions than shown in Table 1. Consult the serving agency for requirements.

7. All terminating enclosures (i.e. pull boxes and pull sections) shall have full front access. Cover panels be removable, sealable, provided with two lifting handles, and limited to a maximum of 9 square feet of area.

8. Sealing provisions shall consist of two drilled stud and wing–nut assemblies on opposite sides of the panels.

9. See drawing 347 for construction details and clearance requirements for terminating facilities in pull boxes and pull section.

10. Ground bus, when provided, shall be located at the rear of the terminating enclosure.
FIGURE 1
TERMINATING BOLT AND DRILLING DETAIL
OF TERMINATING FACILITIES

FIGURE 2
SPACING REQUIREMENTS FOR TERMINATING
FACILITIES (SIDE BY OR STAGGERED)

(B)  (C)  (A)  (B)

FIGURE 3
SPACING REQUIREMENTS FOR TERMINATING FACILITIES
ACCESSIBLE FROM (A) FRONT ONLY, (B) ONE SIDE ONLY,
OR (C) FROM EITHER SIDE. SEE NOTE 3 AND 4

FIGURE 4
REQUIRED UNOBRSTUCTED WORKING SPACE FOR ALL TERMINATIONS.

FIGURE 5
SPACING REQUIREMENTS FOR TOP TO BOTTOM STAGGER
OF TERMINATING FACILITIES

NOTE:
4" MIN. REQUIRED (ASSURE 1" MINIMUM CLEARANCE
FROM BODY OF TERMINATING LUG WHEN IN PLACE
TO FRONT PANEL).

EXCEPTION: SEE NOTE 4 & 5

IMPERIAL IRRIGATION DISTRICT
UNDERGROUND SERVICE TERMINATING
FACILITIES IN PULL BOXES OR PULL SECTIONS
0 - 600 VOLS

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE 11-2-2016

347
NOTES:

1. ONE LANDING POSITION IS REQUIRED FOR EACH 400 AMPERES OF SERVICE AMPACITY OR FRACTION THEREOF (i.e., one position for up to 400 amperes, two positions for 401 through 800 amperes, three positions for 801 through 1,200 amperes, etc.). EACH LANDING POSITION SHALL CONSIST OF TWO 1/2” STEEL BOLTS. THE BOLTS SHALL EXTEND FROM 2” TO 2-1/2” FROM THE MOUNTING SURFACE AND BE SPACED ON 1-3/4” VERTICAL CENTERS. WHEN MULTIPLE LANDING POSITIONS PER PHASE ARE REQUIRED, THE HORIZONTAL SPACING BETWEEN THE BOLT POSITIONS SHALL BE 2” (MINIMUM).

   EXCEPTION: EDGewise TERMINATING FACILITIES MAY CONSIST OF 9/16” HOLES HAVING THE SAME SPACING AS SPECIFIED FOR THE 1/2” BOLTS AS SPECIFIED ABOVE AND IN FIGURE 1. THE UNOBSBCRTED WORKING SPACE SHALL BE PROVIDED ON BOTH SIDES OF THE TERMINATION BUS (SEE FIGURE 3).

2. EACH TERMINATING BOLT SHALL BE PROVIDED WITH A SPRING WASHER AND A NUT. THE SPRING WASHER MAY EITHER A CONE-TYPE (BELLEVILLE) WASHER OR A SPLIT-RING AND A FLAT WASHER. ALL PARTS SHALL BE PLATED TO PREVENT CORROSION.

   NOTE: WHEN BELLEVILLE WASHERS ARE USED, THE MANUFACTURER SHALL PROVIDE A LABEL WITH THE REQUIRED TORQUE SETTINGS. THIS LABEL SHALL BE IN A READILY VISIBLE LOCATION WITHIN THE COMPARTMENT THAT THE WASHERS ARE BEING UTILIZED.

3. TERMINATING BOLTS MUST BE SECURED IN PLACE. “SECURED IN PLACE” SHALL MEAN THAT THE STUDS WILL NOT TURN, BACK OUT, OR LOOSEN IN ANY MANNER WHEN TIGHTENING OR LOOSENING TERMINAL NUTS (INCLUDING CROSS-THREADED SITUATIONS). TERMINATING BOLTS SHALL NOT BE USED TO SECURE THE TERMINATION BUS IN PLACE.

4. IN THE TERMINAL MOUNTING AREA, WHICH IS DEFINED AS THE AREA OF THE TERMINATING FACILITIES SHOWN IN FIGURE 1, A CLEAR SPACE (BARREL OF PROXIMITY) OF 1-1/2” MINIMUM IS REQUIRED AROUND ANY TERMINATING FACILITY INCLUDING ITS BOLTS AND BOLT HEADS, ANY OTHER BUS, ANY OTHER TERMINATING FACILITY, OR ANY GROUNDED SURFACE, EXCEPT:
   A. THE MINIMUM CLEARANCE TO THE BACK OF THE PULL SECTION MAY BE REDUCED TO 1”.
   B. THE MINIMUM CLEARANCE TO ANY FULLY INSULATED HORIZONTAL BUS BEHIND THE TERMINATING FACILITY MAY BE REDUCED TO 1”.
   C. THE NEUTRAL TERMINATING FACILITY MAY HAVE A MINIMUM CLEARANCE OF 1” FROM ANY GROUNDED SURFACE.


   EXCEPTION: FOR TERMINATING FACILITIES WITH BOLTS FACING THE ACCESS OPENING AS SHOWN IN FIGURE 2, THE REQUIRED 1-1/2” SIDE CLEARANCE (BUS TO ACCESS OPENING RETURN FLANGE) MAY BE REDUCED TO 3/4”.

6. THE CLEARANCE DIRECTLY ABOVE THE MEASURED FROM THE CENTER OF THE TOP TERMINATION BOLT MAY BE REDUCED TO 1” TO EITHER AN INSULATED SURFACE OR BUS OF THE SAME POTENTIAL.

7. NO MORE THAN ONE TERMINATION FACILITY MAY BE MOUNTED ALONG ANY SIDEWALL.

8. SEE DRAWINGS 302, 303, 342, 343, AND 345 FOR THE MINIMUM DISTANCE FROM THE LOWEST BOLT ON THE TERMINATION FACILITY TO THE BOTTOM OF THE TERMINATION ENCLOSURE.

9. TERMINATING FACILITIES SHALL BE SECURED TO PREVENT TURNING OR BUS MISALIGNMENT WHEN THE CABLES ARE INSTALLED.

10. THE NEUTRAL TERMINATING FACILITY SHALL BE PERMANENTLY IDENTIFIED IN CLEARLY VISIBLE BLOCK LETTERING READING EITHER “NEUTRAL” OR “N”.

11. FOR 120/240 VOLT THREE PHASE 4-WIRE DELTA SERVICES, THE POWER LEG (MEASURING 208–VOLT–TO–GROUND) SHALL BE IDENTIFIED WITH AN ORANGE COLOR.

12. CROSS–BUSSING OF A DIFFERENT PHASE OR POTENTIAL INSTALLED BEHIND OR BELOW ANY TERMINATING POSITION SHALL BE FULLY INSULATED OR BARRIÉRED. INSULATING BARRIERS SHALL BE RIGID, NON–FLAMMABLE, RATED FOR THE SERVING VOLTAGE, RESISTANT TO ARC TRACKING, RESISTANT TO PUNCTURE OR DAMAGE BY IMPACT AND ATTACHED WITH NON–CONDUCTIVE FASTENERS.
13. FOR SWITCHBOARD PULL SECTIONS, THE MINIMUM CLEARANCE FROM ANY ENERGIZED PART TO A REMOVABLE ACCESS COVER PANEL SHALL BE 4". THIS CLEARANCE MAY BE REDUCED TO 1-1/2" WHEN A SAFETY BARRIER IS PROVIDED BY THE MANUFACTURER. THE SAFETY BARRIER SHALL:

A. BE CONSTRUCTED OF A RIGID INSULATING MATERIAL, RESISTANT TO DAMAGE BY IMPACT OR PUNCTURE, WITH A MINIMUM THICKNESS OF 1/8"

B. EXTEND A MINIMUM OF 10" BELOW TERMINATING BUS AND EXTEND UPWARD TO COVER ALL ENERGIZED PARTS THAT INFRINGE INTO THE 4" MINIMUM CLEARANCE DIMENSION, AND BE REMOVABLE.

   NOTE: BRACKETS AND ASSOCIATED HARDWARE USED TO MOUNT THE SAFETY BARRIER SHALL NOT EXTEND INTO THE PROVIDED ACCESS OPENING.

C. HAVE A CAUTION SIGN AFFIXED TO THE BARRIER READING "WARNING: THE BARRIER MUST BE INSTALLED BEFORE REPLACING PULL SECTION COVERS". ADDITIONAL CAUTION SIGNS SHALL BE AFFIXED TO EXTERIOR OF EACH SECTION ACCESS COVER READING "DO NOT REPLACE PULL SECTION COVERS UNTIL SAFETY BARRIER IS IN PLACE".

D. SCREWS OR BOLTS REQUIRING SPECIAL TOOLS FOR INSTALLATION OR REMOVAL ARE NOT ACCEPTABLE.
NOTES:

1. THE SERVICE ENTRANCE CONDUCTORS, FIGURE 1, EITHER CABLE OR BUS BAR, ARE FURNISHED AND INSTALLED BY THE CUSTOMER IN THE FOLLOWING MANNER:
   
   A. WHEN SWITCHBOARDS ARE SERVED THROUGH BUS BAR CONDUCTORS, THE CONDUCTORS SHALL ENTER THROUGH THE TOP, OR AT THE SIDE OR BACK IN THE UPPER 10" SECTION.
   

2. WHEN THE SERVING AGENCY OR CUSTOMER REQUIRES INCOMING CONDUITS FROM THE SIDE OR REAR FOR THE SERVICE CONDUCTORS, AN EXTENSION AS SHOWN IN FIGURE 2, OR OTHER SPECIAL DESIGNED TERMINATION MAY BE REQUIRED. CONSULT THE SERVING AGENCY FOR THE EXTENSION DIMENSIONS.

3. THE DIRECTION OF FEED IS FROM TOP TO BOTTOM IN THE STANDARD SWITCHBOARD SERVICE SECTION. LOAD CONDUCTORS SHALL LEAVE BELOW THE METERING COMPARTMENT AND MAY NOT BE ROUTED BACK THROUGH THE CURRENT TRANSFORMER COMPARTMENT IN ORDER TO EXIT THE SERVICE SECTION.

4. SERVICE ENTRANCE CONDUCTORS SHALL BE CONNECTED TO THE BUSSING IN THE SERVICE SECTION WITH LUGS APPROVED BY THE SERVING AGENCY FOR THE TYPE CONDUCTORS USED.
TERMINATING FACILITIES SAME LENGTH (4–WIRE SHOWN)

FIGURE 1

TERMINATING FACILITIES STAGGERED (4–WIRE SHOWN)

FIGURE 2

CLEARANCES INDICATED ARE FOR SINGLE LUG MOUNTING ONLY, NOT MULTIPLE STACKING LUGS

DRILLING DETAIL FOR TERMINALS (800 AMPERE TERMINAL SHOWN) SEE NOTE 1, 2 AND 3

FIGURE 3
NOTES:

1. ONE TERMINAL LANDING POSITION IS REQUIRED FOR EACH 400 AMPERES OF SERVICE AMPACITY (OR PORTION THEREOF). EACH LANDING POSITION SHALL CONSIST OF TWO 9/16" HOLES SPACED ON 1-3/4" VERTICAL CENTERS. WHEN MULTIPLE LANDING POSITIONS ARE REQUIRED, THE HORIZONTAL SPACING BETWEEN LANDING POSITIONS SHALL BE 2" (MINIMUM).

2. NEUTRAL TERMINAL SHALL BE PERMANENTLY MARKED BY THE MANUFACTURER.

3. FOR 240/120 VOLTS THREE PHASE 4-WIRE SERVICES, THE POWER LEG ("C" PHASE) TERMINAL SHALL BE PERMANENTLY MARKED IN ORANGE COLOR BY THE MANUFACTURER.

4. THE MAXIMUM DIMENSION FROM THE BUILDING OR NEAREST OBSTRUCTION TO THE OUTERMOST LANDING POSITION SHALL NOT EXCEED 25" UNLESS APPROVED BY THE SERVING UTILITY.

5. SERVICE HEADS WITH ENCLOSED TERMINATING POSITIONS ARE NOT PERMITTED.
**METER CUTOUT DETAIL**

**FIGURE 1**

- 0.3125 MIN. RAD.
- 3.66 MIN. RAD.
- 90°

**SIDE VIEW DETAIL**

**FIGURE 2**

- 8-1/2" MIN.
- 7-1/2" MIN.
- D
- C

*BREAKER*

**NOTE 1**

*ALTERNATE BREAKER POSITION BELOW METER SOCKET
SEE SIDE VIEW DETAIL FOR CLEARANCE DIMENSION.*

**DIMENSIONS - INCHES**

<table>
<thead>
<tr>
<th>&quot;A&quot; (PROTRUSIONS)</th>
<th>&quot;B&quot; MIN.</th>
<th>&quot;C&quot; MIN.</th>
<th>&quot;D&quot; MIN.</th>
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</thead>
<tbody>
<tr>
<td>0 (NO PROTRUSION)</td>
<td>3-3/4&quot;</td>
<td>4&quot;</td>
<td>4-3/4&quot;</td>
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<tr>
<td>GREATER THAN 0&quot; TO 1-1/8&quot;</td>
<td>4-1/4&quot;</td>
<td>4&quot;</td>
<td>4-3/4&quot;</td>
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<tr>
<td>GREATER THAN 1-1/8&quot; TO 2&quot;</td>
<td>4-1/4&quot;</td>
<td>4-1/4&quot;</td>
<td>6-1/4&quot;</td>
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<tr>
<td>GREATER THAN 2&quot; T 4&quot;</td>
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<td>4-1/4&quot;</td>
<td>8&quot;</td>
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<tr>
<td>GREATER THAN 4&quot; T 11&quot; MAX.</td>
<td>6-1/4&quot;</td>
<td>10&quot;</td>
<td>8&quot;</td>
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</table>

**IMPERIAL IRRIGATION DISTRICT**

CLEARANCES FOR RESIDENTIAL
MULTIPLE METERING INSTALLATIONS

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<th>DRAWN BY</th>
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<td></td>
<td></td>
<td></td>
<td>REV 1</td>
<td>11-7-2016</td>
</tr>
</tbody>
</table>
NOTES:

1. WHERE AN ADJACENT WALL OR OTHER OBSTRUCTION EXTENDS MORE THAN 11" PERPENDICULAR FROM THE FACE OF THE METER PANEL, A 10" MINIMUM DIMENSION TO THE METER SOCKET AXIS IS REQUIRED. FOR OBSTRUCTIONS EXTENDING 11" OR LESS FROM THE METER PANEL, THE SIDE CLEARANCE SHALL CONFORM TO THAT OF DIMENSION "B".

2. PANELS SHALL BE REMOVABLE TO PROVIDE ACCESS TO THE CUSTOMERS EQUIPMENT WITH THE UTILITY METERS AND TAMPERPROOF SEALING RINGS IN PLACE. WHEN THERE IS MORE THAN ONE METER SOCKET PER PANEL, THE MINIMUM METER CUTOUT OPENING, AS DETAILED IN FIGURE 1 ABOVE SHALL APPLY.

3. UNDERGROUND LANDING LUGS SHALL NOT BE PLACED UNDER ANY SOCKET COVER. TERMINAL IS INSULATED FROM THE ENCLOSURE.

4. DIMENSION "B" SHALL BE INCREASED BY THE AMOUNT THAT THE MAIN SWITCH DOOR, INCLUDING OPERATING HANDLES, REDUCES THE CLEARANCE WHEN OPENED 90 DEGREES.

5. SEE DRAWING 300 II D METER HEIGHTS FOR METER MAXIMUM AND MINIMUM HEIGHTS. TERMINAL IS INSULATED FROM THE ENCLOSURE.

6. REMOVABLE METER PANEL COVERS SHALL NOT EXCEED 6 SQUARE FEET IN AREA.

7. DISTRIBUTION CONDUCTORS SHALL BE BARRIRED FROM METERING COMPARTMENT.
NOTES:
1. HINGED METER PANEL SHALL BE CAPABLE OF BEING OPENED 90-DEGREES WITH METER AND TEST FACILITIES IN PLACE, AND PROVIDE THE FOLLOWING CLEARANCES TO ANY OBSTRUCTION – 11" AT THE METER SOCKET AND 4" AT THE TEST–SWITCH SLOTTED OPENING. SEE DRAWING 332 FOR HINGED METER PANELS CONSTRUCTION DETAILS.
2. METER PANELS, EITHER SOCKET OR BLANK, SHALL NOT BE HINGED TO A HINGED FILLER PANEL. NON–HINGED FILLER PANELS SHALL VAULT LID WILL HAVE AN OFFSET OF 12" (1') BEHIND SIDEWALK.

IMPERIAL IRRIGATION DISTRICT
OUTDOOR OR RAINTIGHT ENCLOSURES
FOR SWITCHBOARDS
0 – 600 VOLTS

DRAWN BY
REVIEWED
APPROVED
REVISION REV 1
DATE 10–11–2016
NOTES:

3. ENCLOSURE DOORS PROVIDING ACCESS TO UTILITY COMPARTMENTS (I.E., METERING SECTIONS AND PULL SECTIONS) SHALL BE:
   A. EQUIPPED WITH A DEVICE TO SECURE THE DOORS IN THE OPEN POSITION AT 90-DEGREES OR MORE.
   B. SECURED IN THE CLOSED POSITION WITH A SINGLE, HANDLE-OPERATED, LATCHING SYSTEM. WHEN PROVIDED WITH A
      LOCKING MEANS, EACH DOOR, OR SET OF DOORS, SHALL BE EQUIPPED WITH AN APPROVED DOUBLE-LOCKING DEVICE,
      ACCEPTING PADLOCKS WITH A 5/16" LOCK SHAFT, TO ALLOW ACCESS BY BOTH THE SERVING UTILITY AND THE CUSTOMER.

4. DIMENSION MAY BE REDUCED IF THE SERVICE SECTION IS SUPPLIED FROM HORIZONTAL CROSS-BUSSING OR BUS DUCT.
<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>VOLTAGE RATING</th>
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<tbody>
<tr>
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<td>4800 MAX.</td>
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<tr>
<td>MINIMUM BARE BUS CLEARANCE PHASE TO GROUND</td>
<td>3-1/2&quot;</td>
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<tr>
<td>MINIMUM BARE BUS CLEARANCE PHASE TO PHASE</td>
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<td>DIMENSION &quot;A&quot;</td>
<td>5&quot; MIN. 10&quot; MAX</td>
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<td>24&quot; MIN.</td>
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<td>DIMENSION &quot;E&quot;</td>
<td>18&quot; MIN.</td>
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<tr>
<td>DIMENSION &quot;G&quot; (*SEE NOTE BELOW)</td>
<td>48&quot; MIN.</td>
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<tr>
<td>DIMENSION &quot;H&quot; FUSE MOUNTING (** ) CLIP CENTER</td>
<td>36-3/4&quot; MIN.</td>
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<td>8-1/2&quot;</td>
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<td>DIMENSION &quot;J&quot;</td>
<td>1-5/8&quot;</td>
</tr>
<tr>
<td></td>
<td>18&quot;</td>
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</table>

* DIMENSION "G" APPLIES WHEN USED AS A CABLE TERMINATION SECTION. CONSULT UTILITY.

** Fuse centerline shall be adjusted to allow fuse voltage selection at not less than 70% of the actual system voltage application.

NOTES:

1. FOR REAR ACCESS DOOR REFER TO DWG 400, NOTE 7.

2. CONSULT SERVING UTILITY FOR NEUTRAL REQUIREMENTS IN 4 WIRE APPLICATIONS.

3. PROVIDE FULL VOLTAGE AND BIL INSULATED NEUTRAL BUSHING FOR CONNECTION TO V.T. COMPARTMENT.

4. PRIMARY TAPS FOR V.T.'S SHALL BE CONNECTED TO LINE SIDE OF METERING C.T.'S.

5. ONE INCH NON METALLIC V.T. AND C.T. CONDUITS SHALL BE LOCATED ON HINGED SIDE OF THE METER PANEL AT MAXIMUM HEIGHT OF 75" ABOVE THE STANDING SURFACE.

6. THE GROUNDING BUS SHALL EXTEND ON EITHER LEFT OR RIGHT SIDE OF THE ACCESS AREA OF THE C.T. COMPARTMENT. THE GROUNDING TERMINALS FOR USE WITH THE BALL STUDS SHALL BE TWO ALUMINUM-BODIED MECHANICAL LUGS ACCEPTING A RANGE OF 6 AWG THROUGH 250 KCMI1. CONDUCTORS, AND SHALL BE IDENTIFIED WITH A LABEL READING "SAFETY GROUNDING POINT FOR UTILITY USE ONLY"

7. FOR SINGLE SOCKET METER PANEL REQUIREMENTS SEE DRAWING 408. FOR DUAL SOCKET PANEL REQUIREMENTS SEE DRAWING 409.

CURRENT TRANSFORMER MOUNTING BASE

NOTE: CENTER THE MOUNTING BASE BETWEEN THE UPPER AND LOWER CURRENT - TRANSFORMER BUS UNITS.

TOP VIEW OF COMPARTMENT VOLTAGE TRANSFORMER MOUNTING RAIL DETAIL

SIDE VIEW OF V.T. MOUNTING

P1000 UNISTRUT EQUIVALENT CHANNEL (TYPICAL)

P1008 3/8–16 SPRING NUT TYPICAL 6 EACH V.T. MOUNTING CROSS CHANNEL

ADJUSTABLE 13" MAX. 5" MIN.
PRIMARY RATING
800 AMPS OR LESS

PRIMARY RATING OVER
800 AMPS, 4 BOLT
MOUNTING AT EACH
C/T END

1/4” APPLIES TO MULTIPLE
BAR THICKNESS. SINGLE
BAR THICKNESS MAY BE
FROM 3/16” TO 3/8”.

NOTES:
INSULATION CLASSES ARE 5,
8.7 AND 15KV.

BASIC IMPULSE INSTALLATION
LEVELS (BIL) FOR THESE
CLASSES ARE 60, 75 AND
110 KV. RESPECTIVELY.

### DIMENSIONS IN INCHES*

<table>
<thead>
<tr>
<th>INSULATION CLASS KV</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
<th>&quot;C&quot; (MAXIMUM)</th>
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<td>26&quot;  11-1/4&quot;  13&quot;</td>
<td></td>
</tr>
</tbody>
</table>

*UNLESS OTHERWISE INDICATED TOLERANCE, PLUS OR MINUS 1/16".
NOTE: TAP ALL HOLES 10-32 EXCEPT AS NOTED

1/4" DRILL 2 HOLES

10-32 TAP 4 HOLES

TEST SWITCH MOUNTING
NOTES:

1. THE PANEL SHALL BE CONSTRUCTED OF 12 GAUGE (MIN) STEEL AND FURNISHED WITH METER SOCKETS, SEALING RINGS, SLOTTED OPENINGS, A REMOVABLE PLATE FOR INSTALLATION OF A SECONDARY TEST SWITCH. SLOTTED OPENINGS AND REMOVABLE PLATE EDGES SHALL BE SMOOTH TO PREVENT DAMAGE METER WIRING.

NOTE: WHEN A CAST METER MOUNTING RING IS PROVIDED, THE SCREWS USED TO ATTACH TO THE METER PANEL SHALL PROVIDE A MINIMUM 1/8" CLEARANCE BETWEEN THE SCREW HEADS AND THE BACK OF THE RING.

2. THE REMOVABLE PLATES SHALL BE ATTACHED TO THE REAR OF THE PANEL WITH SCREWS THAT DO NOT PROTRUDE THROUGH THE FACE OF THE PANEL.

3. METER SOCKETS SHALL BE DESIGNED FOR BACK CONNECTION.

4. THE PANEL SHALL BE EQUIPPED WITH HINGES. THE HINGES SHALL PERMIT THE PANEL TO OPEN TO 90 DEGREES, AND SHALL BE EASILY INTERCHANGEABLE, RIGHT OR LEFT, ON THE METER SOCKET PANEL. REMOVABLE PIN TYPE HINGES SHALL BE REMOVED AT THE TOP.

5. THE PANEL SHALL SUPPORT A 25-POUND LOAD APPLIED AT THE UNSUPPORTED END WHEN FULLY OPENED WITH A MAXIMUM SAG OF 1/8".

6. THE PANEL SHALL HAVE A HANDLE ATTACHED TO BOTH SIDES.

7. STUD AND WING NUTS SHALL BE SEALABLE WHEN USED.

8. CONSULT SERVING UTILITY FOR PANEL WIDTH MORE THAN 38".

9. CONSULT SERVING UTILITY METER SOCKET REQUIREMENTS.
NOTE: A SYSTEM IS “GROUNDING” IF IT IS GROUNDED AT ANY POINT AHEAD OF THE SWITCHBOARD, WHETHER THE GROUNDED CONDUCTOR (NEUTRAL) IS CARRIED THROUGH TO THE LOADS, OR NOT.

FOR SOLIDLY GROUNDED SYSTEMS USED AS SERVICE EQUIPMENT:

1. RUN A GROUNDING ELECTRODE CONDUCTOR (GEC) FROM THE GROUNDING ELECTRODE AT THE INSTALLATION SITE TO THE GEC CONNECTOR (GROUND LUG) LOCATED ON THE SWITCHBOARD GROUND BUS (OR ON THE NEUTRAL BUS, IF SO INDICATED ON THE DRAWING). (SEE FIGURE 1.) SELECT THE PROPER MATERIAL AND SIZE OF THE GEC TO COMPLY WITH THE NEC. INSTALL THE GEC AS SPECIFIED IN THE NEC.

2. WHEN THE UNIT IS USED AS SERVICE EQUIPMENT, THE NEUTRAL MUST BE BONDED TO THE ENCLOSURE. TO DO SO, CONNECT THE MAIN BONDING JUMPER FROM THE GROUND BUS ASSEMBLY TO THE NEUTRAL BUS ASSEMBLY (SHIPPED FROM THE FACTORY DISCONNECTED). FIGURE 2 SHOWS THE UNBONDED POSITION, AND FIGURE 1 SHOWS THE BONDED POSITION.

---

**IMPERIAL IRRIGATION DISTRICT**

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</table>

GROUNDING OF ADD-ON DISTRIBUTION SECTION

---

99
FIGURE 3

GROUNDING OF ADD-ON DISTRIBUTION SECTION

NOTE: WHEN A DISTRIBUTION SECTION IS USED AS A STAND-ALONE SECTION, USE EQUIPMENT GROUNDING CONDUCTORS SIZED ACCORDING TO THE NEC TO CONNECT THE SWITCHBOARD FRAME AND GROUND BUS TO THE SERVICE GROUND.

WHEN A DISTRIBUTION SECTION IS USED AS AN ADD-ON SECTION TO A SERVICE SECTION, THE SINGLE LUG LOCATED ON THE DISTRIBUTION SECTION GROUND BUS MUST BE REMOVED AND REINSTALLED ON THE SERVICE SECTION GROUND BUS. (SEE FIGURE 3.) CONNECT THE SWITCHBOARD FRAME AND THE GROUND BUS IN THE DISTRIBUTION SECTION TO THE SERVICE SECTION USING EQUIPMENT GROUNDING CONDUCTORS SIZED ACCORDING TO THE NEC.
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3.1 Establish all grades (rough and final), bench marks, property corners, ties, fence lines, walls, property lines or other field references as required to install and verify the installation and location of power facilities.

3.2 Establish the location and depth of all existing power system facilities and foreign substructures within the work area. The installation contractor shall call the Underground Service Alert of Southern California (DigAlert) at least two (2) working days prior to beginning any digging or excavation work. DigAlert is the One Call Notification Center that supports all of Southern California, and can be reached by utilizing their online services, DigAlert Express (www.digalert.org/digexpress.html) or by phone (dial 8-1-1).

3.3 Review plans as soon as received from IID for possible conflicts or problems on locations of IID structures. Any revisions to original IID design will require additional engineering time and might cause additional delays to the project. It is the responsibility of the Developer/Contractor to contact the appropriate IID Customer Project Development Services.

3.4 Return all excavated areas to at least 90% compaction using native soil or Caltrans Class 2 aggregate base or crusher fines with 3/8 inch rock. All testing to ensure 90% compaction and restoration of the work area to its former condition is the sole responsibility of the installation contractor. (Refer to 3.17), (Refer to 5.11).

3.5 Street light circuits, CATV, and telephone may be installed in the same trench; however, their relative position must be verified with each serving agency and installed to their specifications. (Refer to Joint Utility 3.12 Standard 100.41).

3.6 The contractor shall take caution to keep from damaging other utility systems that have been installed and shall collaborate with other utilities that may be doing work in the same area. (Refer to 3.2).

3.7 All other utilities shall maintain no less than a 12 inch (1 ft.) clearance from IID substructures and underground equipment. (Refer to Joint Utility 3.12 Standard 100.41, Section B-B) (Refer to 3.23).

3.8 Raceway joint utility trenches will have a minimum width of 24 inch (2 ft.) to ensure adequate separation between Power and Gas facilities. Trenches entering all transformers, sectors, and vaults will maintain a 36 inch (3 ft.) separation. (Refer to Joint Utility 3.12 Standard 100.41, Section A-A).

3.9 When feasible, Gas facilities shall occupy the opposite side of the trench and be 12 inches (1 ft.) above the Power facilities. (Refer to Joint Utility 3.12 Standard 100.41, Section B-B) (Refer to 3.7).

3.10 Developer/contractor will be responsible for coordination of inspections while trench has IID utilities exposed. (Refer to Joint Trench Indemnity Agreement IID-700E (6-07)). Inspection schedules are subject to a minimum of 48 hour advance notice and by appointment only. Imperial (760) 482-3300; La Quinta (760) 398-5828
3.11 The Developer shall be responsible for filling out and signing IID form 700E 6-07 Joint Trench Indemnity Agreement, contact the appropriate IID Customer Project Development Services. (Refer to Joint Trench Indemnity Agreement IID-700E 6-07).
3.13 All Encasement of power ducts will require an on-site inspector at the time of encasement. **Inspection schedules are subject to a minimum of 48 hour advance notice and by appointment only.** Imperial (760) 482-3300
La Quinta (760) 398-5828

3.14 The term encasement as used herein shall mean a 3 inch envelope around all sides of one or more ducts.

3.15 Utilize plastic spacers that provide 3 inch separation. Spacers shall be used on conduit runs to be concrete encased both as single or banked installations (Refer to 3.42 for spacer specifications).

3.16 Concrete encasement of conduits at **street crossings** shall be a 3 sack sand slurry or 1800 – 2000 psi mix.

3.17 Backfills at street crossings maybe a 3 sack sand slurry from top of encasement to street sub-grade. If the contractor utilizes any quick cure chemical product additives to the concrete the contractor shall take full responsibility for concrete quality. (Refer to 3.16), (Refer to 3.22), (Refer to 3.24 Table 1).

3.18 Backfills at street crossings that are other than a 3 sack sand slurry backfill shall observe the following:

3.18.1 Contractor shall wait a minimum of 24 hours before backfilling road base and compacting over concrete encased conduit.

3.18.2 The contractor is responsible to ensure a compaction of 90%. (Refer to 3.4), (Refer to 3.6), (Refer to 5.11).

3.18.3 The contractor accepts the responsibility of providing the IID with the compaction test verification. (Refer to 3.4), (Refer to 3.7).

3.19 Backfill Material when used above concrete encasement shall be native soil or Caltrans Class 2 aggregate base or crusher fines with 3/8 inch rock properly compacted, unless otherwise specified on the drawings or by the IID Customer Project Development Services. (Refer to 3.4), (Refer to 5.16).

3.20 IID concrete encasement, backfill, etc. requirements will be followed unless the City, County, State Agency, Property Owners, or Authority having jurisdiction has requirements that are more strict, the highest requirements will be followed.

3.21 Encasement shall be sand slurry below streets, parking lots, and commercial driveways. (Refer to Trench Detail 3.25 Standard 100.3), (Refer to 3.24 Table 1).

3.22 Concrete encasement for all other locations shall be no less than a 2 sack or 1500 psi sand slurry mix.
3.23 The spacing between the adjoining utilities will be in compliance with G.O. 128 and have a minimum of 12 inch (1 ft.) separation. When existing utilities are present and are perpendicular to each other, the 12 inch separation may be reduced to no less than 6 inches and a 3 inch concrete encased envelope is required. (Refer to 3.7), (Refer to Trench Detail 3.25 Standard 100.3).

3.24 Conduit encasement criteria is as follows in Table 1

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<th>Feeder Type</th>
<th>Number of Runs</th>
<th>Size</th>
<th>Amperage</th>
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<tr>
<td>Back bone</td>
<td>2 or more</td>
<td>6&quot;</td>
<td>600 Amp</td>
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<tr>
<td>Lateral</td>
<td>All Runs</td>
<td>3&quot;, 4&quot;, 5&quot;</td>
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GENERAL INSTALLATION NOTES

1. USE PLASTIC SPACERS THAT PROVIDE 3" SEPARATION.

2. PLASTIC SPACERS SHALL BE USED ON CONDUIT RUNS TO BE CONCRETE ENCASED BOTH AS SINGLE OR BANKED INSTALLATIONS AND ON DUCT BANKS NOT ENCASED. (REFER TO NOTE 3.48).

3. CONDUIT RUNS SHALL NOT CROSS EACH OTHER WHEN ON THE SAME LEVEL AND/OR PLANE. (REFER NOTE 3.23)

4. THE MAXIMUM OBTAINABLE SEPARATION BETWEEN POWER FACILITIES AND ALL OTHER SUBSTRUCTURES SHALL BE MAINTAINED AT ALL TIMES, 12" MIN. WHEN PARALLELING AND 12" MIN. WHEN CROSSING ENCASED IN CONCRETE.


6. ENCASE IN CONCRETE 3" ENVELOPE WHERE REQUIRED. SEE CONDUIT LAYOUT SHEETS (JOB COPY) FOR LOCATION OF CONCRETE TRENCHES.

7. LINE GUARD TAPE REQUIRED IN ALL TRENCHES. (REFER TO NOTE 3.46 STANDARD 100.5).

LEGEND

IDENTIFY # OF CONDUITS

CONDUIT

3 SACK MIX SAND SLURRY

2 SACK SAND SLURRY

80% COMPACTED BACKFILL (BACKFILL TO BE NATIVE SOIL OR CALTRANS CLASS 2 AGGREGATE BASE OR CRUSHER FINE WITH 3/8 INCH ROCK).
3.26 Conduit runs shall not cross each other when on the same level and/or plane.

3.27 Primary conduits shall be buried a minimum depth of 4 feet. Secondary and service conduits shall be buried a minimum depth of 2 ½ feet (2.5').

3.28 Sizes and arrangements of conduits shall be as shown on the drawings.

3.29 Where the external diameter of the conduit is smaller than the diameter of the opening in the vault wall, the reduction in the conduit diameter shall take place 2 feet (24") from the external wall of the vault. (Refer to 3.30, Vault Side View, and Standard 100.142).

3.30 The maximum obtainable separation between power facilities and all other substructures shall be maintained at all times, 12 inch (1') minimum when paralleling and 6 inch minimum when perpendicular and encased in concrete. (Refer to 3.27). (12 inch minimum refers to compacted backfill).
VAULT SIDE VIEW, CONDUIT REDUCTION - REFER TO 3.29
3.32 All conduits shall meet and/or exceed UL-651 and/or NEMA TC-2. All conduits shall be:

3.32.1 Schedule 40 for below ground installation:

- PVC Heavy Wall
- PVC Cellular Core

3.32.2 Schedule 80 above ground installation:

- PVC Heavy Wall

3.33 All conduit sweeps shall meet and/or exceed UL-651 and/or NEMA TC-3.

3.34 Conduit sweeps in duct runs shall not have less than a 12 feet 6 inches (12.5’) horizontal radius unless shown otherwise on the Contractor Notes. (See Radius Index 3.33.1 (Horizontal) Table 4).

3.34.1 Table 4 Conduit Radius Index – Horizontal

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<tr>
<td>5”</td>
<td>12.5’ Radius</td>
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<td>25’ Radius Typical</td>
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*Contact your IID Customer Service Project Manager for instructions

3.35 Conduit sweeps in vertical runs (pole risers and equipment risers) shall be installed in accordance with Table 5, (3.37.1 Riser Sweep Radius – Vertical).

3.36 All 2 inch and 3 inch service and/or secondary conduit (vertical) risers which enter buildings, service panels, secondary boxes, transformer pads, meter panels, etc., shall have a minimum 2 foot radius (24”), see Table 5, (3.37.1 Riser Sweep Radius – Vertical).

3.37 All 4 inch primary conduit (vertical) risers which enter transformer pads, primary metering panels, underground switch gear panels and pole risers, shall have a 4 foot (48”) Radius for 4 inch duct, see Table 5, (3.37.1 Riser Sweep Radius – Vertical).

3.38 All 5 inch and 6 inch primary conduit risers which enter transformer pads, primary metering panels, underground switch gear panels and pole risers, shall have a minimum of 4 foot (48”) radius for 5 inch ducts, and 5 foot radius (60”) for 6 inch ducts, see Table 5, (3.37.1 Riser Sweep Radius – Vertical). Contact your IID Customer Project Development Services for further instructions or questions.
3.38.1 Table 5 Riser Sweep Radius – Vertical

<table>
<thead>
<tr>
<th>RISER SWEEP RADIUS INDEX (VERTICAL) TABLE 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SECONDARY Dia.</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>2”</td>
</tr>
<tr>
<td>3”</td>
</tr>
<tr>
<td>4”</td>
</tr>
<tr>
<td><strong>PRIMARY Dia.</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>4”</td>
</tr>
<tr>
<td>5”</td>
</tr>
<tr>
<td>6”</td>
</tr>
</tbody>
</table>

*Contact your IID Customer Service Project Manager for instructions.
N/A = Not Applicable

3.39 The installation of the conduit system will be conducted by a single contractor or other entity to give the project continuity, reducing the possibility of deviations from the G.O. 128 regulations, Authority having jurisdiction, and IID standards. Developer/Contractor will accept the most strict or highest requirements from the entities mentioned above.

3.40 Marking Tape over Conduits:

3.40.1 Contractor shall install 2 inch line guard III tape, red in color with black lettering “CAUTION BURIED ELECTRIC LINE BELOW” (See 3.46, Standard 100.5)

3.40.2 Contractor will install tape 12 inches (1’) above the power conduits. When conduit(s) is/are encased in concrete, Developer/Contractor shall back fill with compacted (90%) native soil to meet the 12 inch (1’) requirement. (See 3.46, Standard 100.5)

3.41 Mandrel

3.41.1 The installation contractor shall mandrel all primary ducts and secondary service ducts. IID shall provide the mandrel and the IID inspector for the mandrel process. Refer to 3.41.1 Pulling Rope, Table 8 Conduit rope/Measured Rope Requirements for Primary Pulls. Inspection field check schedules are subject to a minimum 48 hour advance notice and are by appointment only; Imperial (760) 482-3300; La Quinta (760) 398-5828

3.41.2 IID Inspector will conduct a field check prior to mandrel test to ensure IID structures are:

3.41.2.1 Not damaged

3.41.2.2 Clear of debris

3.41.2.3 No obstructions to IID structures (accessibility)

3.41.3 If mandrel is requested from IID structure to meter panel, IID Inspector will field check the following:
3.41.3.1 Scratch coat or brown coat must be installed on residence/building

3.41.3.2 Wallboard must be installed on the wall the meter panel is located.

3.42 After field checks are approved by IID Inspector:

3.42.1 Cold Mandrel: Can continue per IID Inspectors instructions

3.42.2 Hot Mandrel: Will be scheduled at a later date to an IID Troubleshooter

3.43 IID Inspector is required to be in attendance on all mandrel tests

3.44 Pulling rope: In all duct runs, the installation contractor is to furnish and install the following:

3.44.1 Polypropylene rope usually yellow in color is acceptable

3.44.2 All conduits may be filled with polypropylene rope, **knots & splices are not allowed at any time.**

3.44.2.1 **Note:** If pulling wire at a later date (any time after construction), Developer/Contractor is responsible and required to pull in new rope that have no splices.

3.44.2.2 **Note:** When multiple conduits are installed, Mule tape, ½” wide with foot markers, is required in **one** conduit. Mule tape will meet or exceed 1,250 lbs. tensile strength.

3.44.2.3 **Note:** Detectable mule tape, rope, or wire is prohibited

3.45 Table 8 Conduit Rope/Measured Rope Requirements

<table>
<thead>
<tr>
<th>Rope Type</th>
<th>Conduit Length</th>
<th>Conduit which will contain Wire</th>
<th>Rope Tensile Strength (Average Breaking Strength)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Polypropylene ⅜”</td>
<td>0’ – 1000’</td>
<td>No Knots</td>
<td>1,250 lbs. Min.</td>
</tr>
<tr>
<td>2) Polypropylene ½”</td>
<td>1000’ – Greater</td>
<td>No Knots</td>
<td>2,500 lbs. Min.</td>
</tr>
</tbody>
</table>
NOTES:

1. INSTALL LINE GUARD III TAPE (RED, MINIMUM 2" WIDE). TAPE TO BE FURNISHED & INSTALLED BY CONTRACTOR AND SHALL READ: "CAUTION: BURIED ELECTRIC LINE BELOW".

2. TAPE WILL BE INSTALLED 12" ABOVE HIGHEST PRIMARY OR SECONDARY IMPERIAL IRRIGATION DISTRICT CONDUIT TRENCH.

TYPICAL TRENCH DETAIL W/LINEGUARD III TAPE OR EQUIVALENT
3.47 All conduit spacers shall be made of polystyrene or high impact polymer material; see representation (A) below, (Refer to 3.49 Table 6 for spacer clearances). Spacers shall provide the conduit separation shown in 3.49 Table 6 below.

3.48 Conduit spacers will be installed every 6 feet (72”).

Spacer representation (A) (See 3.47)

3.49 Table 6 Spacers Clearances

<table>
<thead>
<tr>
<th>CONDUIT SIZE</th>
<th>DUCT TO DUCT SEPARATION</th>
<th>CLEARANCE TRENCH TO CONDUIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HORIZONTAL</td>
<td>VERTICAL</td>
</tr>
<tr>
<td>3”</td>
<td>3”</td>
<td>3”</td>
</tr>
<tr>
<td>4”</td>
<td>3”</td>
<td>3”</td>
</tr>
<tr>
<td>5”</td>
<td>3”</td>
<td>3”</td>
</tr>
<tr>
<td>6”</td>
<td>3”</td>
<td>3”</td>
</tr>
</tbody>
</table>
3.50 Contractor shall obtain and install stub out markers comparable to the stub out marker indicated in Table 9, (see 3.51).

3.51 Stub out conduit shall be a minimum of 10’. Refer to Contractor Notes drawing for specific Stub out lengths. (Refer 3.53 Standard 100.14, Stub out Detail).
NOTES:
1. ENCASEMNT SHALL BEGIN 10' MINIMUM FROM VAULT.
2. NO CONCRETE TO BE POURED WITHIN 10' OF ANY CONDUIT ENTRANCE OR EXIT WALL OF VAULT.
3.53 Boring information: The conduit in steel casing construction procedure is a solution to the problem of laying power cables under a surface obstruction (highway, runway, rail bed) without disruption. The basic procedure is to:

3.53.1 Excavate and shore pits on both sides of the surface obstruction.

3.53.2 Bore under the surface obstruction connecting the excavated pits and install a steel casing, steel casing sections shall be welded together.

3.53.3 Place conduits in the steel casing.

3.53.4 Inject grout into the area between the conduits and steel casing.

3.53.5 Pull power cables through the conduits.

3.54 Conduit in steel casing construction keeps the conduits organized within the steel casing. The advantage of this method is the precise placement of the casing within the earth. Such precision helps avoid existing underground pipes, cables and obstructions. The organization also keeps to a minimum underground clutter that may hinder future construction projects. The casing is easily located and avoided by those doing future underground work.

3.54.1 For both primary and secondary conduits, conduit in steel casing construction is required for all street crossings implemented through boring.

3.54.2 For secondary conduits, there can be no more than four and no less than two 3-inch conduits.

3.55 Table 2 (Common Steel Casing and Conduit Sizes)

<table>
<thead>
<tr>
<th>Conduit Number &amp; Size</th>
<th>Casting OD (Inches)</th>
<th>Casting Wall Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-3” **</td>
<td>14” OD**</td>
<td>.375” *</td>
</tr>
<tr>
<td>2-4” **</td>
<td>14” OD**</td>
<td>.375” *</td>
</tr>
<tr>
<td>2-5” **</td>
<td>16” OD**</td>
<td>.375” *</td>
</tr>
<tr>
<td>4-5” **</td>
<td>20”OD**</td>
<td>.250” *</td>
</tr>
<tr>
<td>6-5” **</td>
<td>22” OD **</td>
<td>.375” *</td>
</tr>
<tr>
<td>9-5” **</td>
<td>30” OD **</td>
<td>.500” *</td>
</tr>
<tr>
<td>18-5” **</td>
<td>36” OD **</td>
<td>.500” *</td>
</tr>
<tr>
<td>2-6” **</td>
<td>18” OD **</td>
<td>.375” *</td>
</tr>
<tr>
<td>4-6” **</td>
<td>24” OD **</td>
<td>.375” *</td>
</tr>
<tr>
<td>5-6” **</td>
<td>24” OD **</td>
<td>.375” *</td>
</tr>
<tr>
<td>7-6***</td>
<td>30” OD **</td>
<td>.469” *</td>
</tr>
<tr>
<td>14* - 6” **</td>
<td>48” OD **</td>
<td>.688” *</td>
</tr>
</tbody>
</table>

*Use as example only, contractor is responsible to contact Bore Spacer Manufacturer to ensure correct Casing OD and Wall Thickness.

**Contact Bore Spacer Manufacturer for correct information concerning multiple conduit runs including spacers and casing sizes.

In all cases contact you’re IID Customer Project Development Services.
3.56 Conduit used within the steel casing will be EPC40 (schedule 40) PVC. Manufacturer spacers are available that are shaped to fit in a round steel casing (see 3.64). (Refer to Drawing 3.65 through 3.68 Typical Boring Details). Contractor shall ensure that the spacers utilized conform to the following features:

3.56.1 Provisions for mounting rollers to aid installation.

3.56.2 Holes for wire ropes, which when held taut prevent the corkscrew of the duct bank when pulled through the casing.

3.56.3 Float-stops to prevent the conduit from being deformed by the upward load created by the duct bank floating when the grout is injected.

3.56.4 Flow holes and a contoured perimeter to allow the grout to pass through easily.

3.56.5 Bore spacers will be nonmetallic material.

3.56.6 Bore spacers shall be placed 5 feet apart.

3.56.7 Secure the bore spacers and conduits with carbon steel, stainless steel bands, or ¾ inch (.75") wide polypropylene strapping with a 1400 lbs. breaking strength.

3.56.8 Bore spacers will maintain the minimum conduit separation through the steel casing of 1 ½ inches (1.5") minimum.

3.57 The space between the outside diameter (OD) of the conduits and the casing inside diameter (ID) shall be grouted for the following reasons.

3.57.1 To eliminate the possibility of a duct bank collapse due to the force put on the duct bank when cable is being pulled into place.

3.57.2 To eliminate the possibility of duct bank collapse due to the weight of the cables.

3.57.3 To eliminate the possibility of duct bank rotation due to cable weight causing an out of balance rotation torque.

3.57.4 To reduce the possibility of a duct bank meltdown when there is a cable fault. The grout will tend to contain the fault to a single duct.

3.57.5 To transfer the heat generated by the power cables to the surrounding ground.
3.58 It is important to select a proper grout recipe for the injection process. Not all installations are identical. Therefore, the Developer/Contractor must consult a cement grout vendor or specialist for the proper grout mix and injection method for an installation. An ideal grout fills the casing void completely, while maintaining a pumping pressure low enough not to crush the conduits and a curing temperature low enough not to deform or collapse the conduits. (See picture below).

3.59 Under normal conditions the contractor shall install grout inside of the steel casing that is highly cementitious (high in cement and fly ash) and have a slump of approximately 8 inches.

3.60 Grout with special additives (such as “Elastizell” or “Mearlcrete”) which reduce the grout density to about 75 lbs./cu. ft. and increase fluidity so it is similar to that of an 11 inches slump are not to be used for the reason that they have lower thermal conductivity and are normally restricted to communication applications.

3.61 IID will not accept “blown sand” for power applications; sand will not dissipate the heat generated by power cables as quickly as cement grout, it may be necessary to de-rate the power cables.

3.62 Single Phase (one conduit) 4 inch conduit in P.U.E. or right of way (under driveways) may be direct bored. This does not include street crossings.

3.63 Single Phase (two conduit w/spare conduit) 4 inch conduit bore under road to feed a single phase transformer may be installed utilizing the IID boring standard. Conduit will be installed inside of steel casing, see Table 2.
3.64  Boring Spacer Manufacturer

<table>
<thead>
<tr>
<th>Bore Spacer Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
</tr>
<tr>
<td>*Underground Devices, Inc.</td>
</tr>
</tbody>
</table>

*Manufacturer used as example; manufacturer is approved for use. Contractor shall utilize spacers that conform to 3.47. (Refer to drawings 3.64 – 3.68 Typical Boring Details)
THE HYBRID TYPE BORE SPACER YIELDS ALMOST THE MAXIMUM AREA BETWEEN THE CASING ID AND THE OUTSIDE OF THE BORE SPACER FOR GROUT MIGRATION.

SECURE CONDUITS TO BORE SPACERS BY INSTALLING ONE OF THE FOLLOWING ON EACH SIDE OF EACH BORE SPACER AS SHOWN BY THE PHANTOM LINES:
A. 5/8" Wide x .030" Thick 201 Stainless Steel Bands & Buckles Having a Min. Breaking Strength of 1875 lbs.
B. 3/4" Wide Polypropylene Strapping Having a 1400 LB Breaking Strength, 7% Max Stretch, & Steel Seals.

MATERIAL:
.750" x .037" Thick High Density Polyethylene (HDPE) Sheets Are Stress Relieved
COLOR: NATURAL WHITE
TENSILE STRENGTH: 3700 PSI, ELONGATION: 550%

<table>
<thead>
<tr>
<th>BORE SPACERS MANUFACTURER</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERGROUND DEVICES, INC.</td>
</tr>
<tr>
<td>(847)205-9000</td>
</tr>
<tr>
<td><a href="http://www.udevices.com">http://www.udevices.com</a></td>
</tr>
</tbody>
</table>

*MANUFACTURER USED AS AN EXAMPLE. CONTRACTOR SHALL UTILIZE SPACERS THAT CONFORM TO NOTE 3 C.

IMPERIAL IRRIGATION DISTRICT

TYPICAL BORING DETAIL

4-3" CONDUITS

DATE: 12-18-2018

3.63
The Hybrid Type Bore Spacer yields almost the maximum possible area between the casing ID and the outside of the bore spacer for grout vibration.

Secure conduits to bore spacers by installing one of the following on each side of each bore spacer as shown by the phantom lines:

A. 5/8" x .030 GALVANIZED CARBON STEEL BANDS & BUCKLES HAVING A MIN. BREAKING STRENGTH OF 1405 LBS.

B. 3/4" WIDE POLYPROPYLENE STRAPPING HAVING A 1100 LB BREAKING STRENGTH, 7% MAX. STRETCH, & STEEL SEALS.

**Manufacturer Used as an Example. Contractor shall utilize spacers that conform to Note 3 C.**

**Imperial Irrigation District**

Typical Boring Detail

2-5" Conduits
SECURE CONDUITS TO BORE SPACERS BY INSTALLING ONE OF THE FOLLOWING ON EACH SIDE OF EACH BORE SPACER AS SHOWN BY THE PHANTOM LINES:
A. 5/8" X 0.032" THICK 201 STAINLESS STEEL BANDS & BUCKLES WITH A MINIMUM BREAKING STRENGTH OF 1875 LBS.
B. 3/4" X 0.032" POLYOLEFIN STRAPPING HAVING A 1800 LB BREAKING STRENGTH, 7% MAX STRETCH, & STEEL SEALS.

Bore Spacers Manufacturer

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Contact Phone Number</th>
<th>Web Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>*UNDERGROUND DEVICES, INC.</td>
<td>(847)205-9000</td>
<td><a href="http://www.udc.com">http://www.udc.com</a></td>
</tr>
</tbody>
</table>

*Manufacturer used as an example. Contractor shall utilize spacers that conform to note 3 c.

Imperial Irrigation District

Typical Boring Detail

2-6" Conduits
1.106" MAXIMUM FLOAT

FLOAT STOP (2 REQ'D)

.875" CLEARANCE BETWEEN BORE SPACER OD AND CASING ID

.24" CASING O.D

.375" CASING WALL THICKNESS

4.653" DIA HOLE THAT CAN BE USED FOR A GROUT INJECTION PIPE OR AS A FLOW HOLE.

OPENING FOR OPTIONAL 1/2" CABLE TO STABILIZE DUCT BANK DURING INSTALLATION (2 REQ'D AS SHOWN)

CORNER IS BROKEN .312" X 22.5° ON ONE SIDE OF BORE SPACER TO AID IN THE WITHDRAWAL OF GROUT INJECTION PIPE.

SECURE CONDUITS TO BORE SPACERS BY INSTALLING ONE OF THE FOLLOWING ON EACH SIDE OF EACH BORE SPACER AS SHOWN BY THE PHANTOM LINES:

A. 5/8" WIDE X .030" THICK 201 STAINLESS STEEL BANDS & BUCKLES HAVING A MIN. BREAKING STRENGTH OF 1875 LBS.
B. 3/4" Wide POLYPROPYLENE STRAPPING HAVING A 1400 LB BREAKING STRENGTH, 7% MAX. STRETCH & STEEL SEALS.

BELLED END OF CONDUIT WILL NOT HIT INSIDE OF CASING EVEN IF DUCT BANK FLOATS TO THE TOP.

GROUT OVERFLOW AREA AT THE TOP OF BORE SPACER

THE HYBRID TYPE BORE SPACERS YIELDS ALMOST THE MAXIMUM AREA BETWEEN THE CASING ID AND THE OUTSIDE OF THE BORE SPACER FOR GROUT MIGRATION.

HIDDEN LINES REPRESENT O.D OF CONDUIT BELLED ENDS.

THE PERIMETER OF BORE SPACER IS SCALLOPED FOR MAXIMUM GROUT FLOW AREA.

FACTORY INSTALLED 2" DIA. POLYOLEFIN COMPACT WHEEL ASSEMBLY. WHEELS ARE RATED AT 200 LBS PER WHEEL (2 REQUIRED)

MATERIAL:

.035" X .035" THICK HIGH DENSITY POLYETHYLENE (HIGH SHEET ARE STRESS RELIEVED)
COLOR: NATURAL WHITE
TENSILE STRENGTH: 3700 PSI, ELONGATION: 550%

EXTRACT GROUT INJECTION PIPE IN THIS DIRECTION

SECTION A-A

BORE SPACERS MANUFACTURER

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>CONTACT PHONE NUMBER</th>
<th>WEB SITE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>(847)205-9000</td>
<td><a href="http://www.uddevices.com">http://www.uddevices.com</a></td>
</tr>
</tbody>
</table>

*MANUFACTURER USED AS AN EXAMPLE. CONTRACTOR SHALL UTILIZE SPACERS THAT CONFORM TO NOTE 3 C.

IMPERIAL IRRIGATION DISTRICT

TYPICAL BORING DETAIL

4-6" CONDUITS

DRAWN BY
REVIEWED
APPROVED
REVISION REV 2
DATE 4-28-2016

3.66
1.251" MAXIMUM FLOAT
FLOAT STOP (2 REQUIRED)

1" CLEARANCE BETWEEN BORE SPACER OUTSIDE DIAMETER AND CASING INTERNAL DIAMETER

600" Casing (OUTSIDE DIAMETER)

500" Casing WALL THICKNESS

CONTOURED FLOW HOLE
(5 REQUIRED)

5.716" (HOLE THAT CAN BE USED)
FOR A CEMENT INJECTION PIPE AS A FLOW HOLE OR FOR AN ADDITIONAL 6" EPDM (SCH. 40) CONDUIT

CORNERS ARE BURNT .312" X .312" ON ONE SIDE OF BORE SPACES TO AID IN THE WITHDRAWAL OF CEMENT INJECTION PIPE

SECURE CONDUITS TO BORE SPACER BY INSTALLING ONE OF THE FOLLOWING ON EACH SIDE OF EACH BORE SPACER AS SHOWN BY THE PHANTOM LINES:
A) 5/8" WIDE X .030" THICK 201 STAINLESS STEEL BANDS & BUCKLES HAVING A MIN. BREAKING STRENGTH OF 1800 LBS.
B) 3/4" WIDE POLYPROPYLENE STRAPPING HAVING A 1400 LBS BREAKING STRENGTH, 7% MAX. STRETCH, & STEEL SEALS.

BORE SPACERS MANUFACTURER

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>CONTACT PHONE NUMBER</th>
<th>WEB SITE</th>
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<tbody>
<tr>
<td>*UNDERGROUND DEVICES, INC.</td>
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<td><a href="http://www.udevices.com">http://www.udevices.com</a></td>
</tr>
</tbody>
</table>

*MANUFACTURER USED AS AN EXAMPLE. CONTRACTOR SHALL UTILIZE SPACERS THAT CONFORM TO NOTE 3 C.

IMPERIAL IRRIGATION DISTRICT

TYPICAL BORING DETAIL
6-6" CONDUITS
# SECONDARY & TEMPORARY SERVICE

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<td>4.16 TEMPORARY DETAIL FROM TRANSFORMER STANDARD 193.21</td>
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<tr>
<td>4.17 TEMPORARY DETAIL FROM THREE PHASE TRANS. STANDARD 193.211</td>
<td>142</td>
</tr>
</tbody>
</table>
4.1 Above surface secondary pullbox to be utilized in Imperial County for secondary construction. See 4.4 Standard 181.1.

4.2 Above surface secondary pullbox to be utilized in Riverside County for secondary construction. See 4.5 Standard 181.2.

4.3 Secondary voltage for all secondary pullboxes to be 120/240V, single phase; under no circumstances will 277/480V be used in secondary pullboxes.
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

NORDIC FIBERGLASS, INC.
PEDESTAL DRAWING #PR-170
USING M-2 LOCKING ASSEMBLY AND
H-101-P4 HASP WITH BENT SECURITY TAB
DEAD GRASS IN COLOR
HAND LAID 12” TOP
COMPRESSION MOLDED 18” BOTTOM

INSTALLATION DETAILS

NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

SCHEDULE 40 SWEEPS
(SEE CONTRACTORS NOTE: DRAWING FOR SIZE OF RADIUS)

SCHEDULE 80 CONDUIT

FINISHED GRADE

8” PEA GRAVEL

4” MIN - 6” MAX

IMPERIAL VALLEY SECONDARY PULLBOX
DETAIL DRAWING
ABOVE GROUND LEVEL

IMPERIAL IRRIGATION DISTRICT

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE
12-31-2013

181.1
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

INSTALLATION DETAILS

SCHEDULE 40 SWEEPS (SEE CONTRACTORS NOTE DRAWING FOR SIZE OF RADIUS)

NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

IMPERIAL IRRIGATION DISTRICT

LA QUINTA SECONDARY PULLBOX
DETAIL DRAWING
ABOVE GROUND LEVEL

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE

12–31–2013
181.2
4.6 Single secondary riser with above ground pullbox. See 4.7 Standard 181.11

4.6.1 Contractor shall perform all trenching refer to section 3

4.6.2 Contractor shall install conduit runs, pullbox and riser material (up to first 10’ stick of schedule 80 PVC on pole (utilize IID provided stand-off bracket to maintain correct clearance from pole) Contact Customer Project Development Services office for location of pole.

4.6.2 Contractor shall install pull rope in conduit run between pullbox and meter. Refer to 3.44 Table 8 Conduit Rope/Measured Rope Requirements.

4.6.3 Contractor shall call Customer Project Development Services for trench inspection. Inspections are subject to a minimum 48 hour advance notice and are by appointment only.

4.6.3.1 Imperial Valley (760) 482-3300
4.6.3.2 Coachella Valley (760) 398-5828

4.6.4 Contractor shall backfill after IID inspector’s approval. Trench shall be free of rocks adjacent to conduit & pullbox.

4.6.5 Contact Customer Project Development Services for specifications on commercial services

4.6.6 All PVC joints shall be cemented with approved PVC cement
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

3" PVC SCHEDULE 80 COUPLING (BY CUSTOMER)

8' (MIN) (BY CUSTOMER)

STAND-OFF BRACKET
ALUMA FORM
CAT. 9-CSO-12
W/ 3" STRAP KIT

FINISH GRADE
WITH 90% COMPACTION
(BY CUSTOMER)

FINISH GRADE

SCHEDULE 40 SWEEPS

PVC SCH 80 SWEEP 36" RADIUS
(BY CUSTOMER)

SCHEDULE 40 SWEEPS

ALL RISER SWEEPS TO BE INSTALLED BELOW FINISH GRADE.

CONTRACTOR NOTES:
1. ALL JOINTS TO BE CEMENTED WITH APPROVED PVC CEMENT.
2. CALL I.I.D. IN COACHELLA VALLEY (760) 398-5828 48HRS IN ADVANCE FOR INSPECTION.
3. CALL I.I.D. IN IMPERIAL VALLEY (760) 482-3300 48HRS IN ADVANCE FOR INSPECTION.

NOTES:
△REFER TO INSTALLATION DETAILS FOR LA QUINTA AND IMPERIAL VALLEY FOR PROPER INSTALLATION OF SECONDARY PULLBOX. (IMPERIAL VALLEY PULLBOX PICTORIALLY REPRESENTED IN DRAWING).

2. CONTRACTOR SHALL DO ALL TRENCHING. (REFER TO 3.1, THROUGH 3.6 AND 5.23)

3. CONTRACTOR SHALL INSTALL CONDUIT RUNS, PULLBOX AND RISER MATERIAL ON I.I.D. POLE. CONTACT CUSTOMER OPERATIONS FOR LOCATION OF POLE.

4. CONTRACTOR SHALL INSTALL PULL ROPE IN CONDUIT RUN BETWEEN PULLBOX AND METER. REFER TO CONTRACTORS NOTES, TABLE 8 CONDUIT ROPE/MEASURED ROPE REQUIREMENTS, SEE 3.45.

5. CONTRACTOR SHALL CALL CUSTOMER OPERATIONS FOR TRENCH INSPECTION PRIOR TO BACKFILLING.

6. CONTRACTOR SHALL BACKFILL AFTER I.I.D. INSPECTOR’S APPROVAL. TRENCH SHALL BE FREE OF ROCKS ADJACENT TO CONDUIT & PULLBOX. (REFER TO NOTES IN SECTION 3)

7. INQUIRE WITH CUSTOMER OPERATIONS FOR SPECIFICATIONS ON COMMERCIAL SERVICES.

8. ALL MATERIAL SHOWN ON SKETCH EXCEPT POLE SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AT THEIR EXPENSE.

△REFER TO CONTRACTORS NOTES DRAWING AND TABLE 5, 3.38.1
4.8 Secondary double riser with 3” or 4” conduit

4.8.1 Conduit installation to be completed by the customer or contractor up to 10’ above finished grade as shown in standard 181.31. See 4.9 Standard 181.31

4.8.2 Conduit stand-off bracket provided by IID shall be used to ensure correct distance from pole to conduit, bracket when installed by contractor is required to be a minimum of 8’ above finished grade

4.8.3 All conduit installed above ground shall be schedule 80 PVC

4.8.4 Conduit sweeps terminating at riser pose shall be schedule 80 PVC with a minimum 3’ (36”) radius. See 3.38.1 Table 5 Riser Sweep Radius – Vertical

4.8.5 Sweep connection to be installed 6” below finished grade. See 4.9 Standard 181.31
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

CONSTRUCTION NOTES:

⚠️ CONDUIT INSTALLATION TO BE COMPLETED BY THE CUSTOMER OR CONTRACTOR UP TO 10' ABOVE FINISHED GRADE AS SHOWN.

⚠️ REFER TO CONTRACTORS NOTES DISTRIBUTION PLAN FOR DIRECTION OF THE SWEEP AND RISER POSITION.

⚠️ FIRST CONDUIT BRACKET TO BE INSTALLED APPROXIMATELY 8 FEET ABOVE FINISHED GRADE.

⚠️ REFER TO CONTRACTORS NOTES DISTRIBUTION PLAN FOR SIZE OF SCHEDULE 80 PVC ABOVE GROUND.

⚠️ BRACKETS TO BE SUPPLIED BY IID UNLESS OTHERWISE NOTED.

⚠️ SEPARATE CONDUITS LEAVING CENTER OF POLE OPEN FOR USE.

⚠️ CONDUIT SWEEPS TERMINATING AT RISER POLE SHALL BE SCHEDULE 80 WITH A MINIMUM 3' (36") RADIUS, REFER TO TABLE 5 RISER SWEEP RADIUS 3.38.1

⚠️ ALL RISER SWEEPS TO BE INSTALLED 6" BELOW FINISHED GRADE.
4.10  Secondary underground pullbox to self-contained meter panel single phase 120/240 volt service. See 4.11 Standard 181.411

4.10.1 Schedule 40 PVC can be used when conduit will be installed in trench or not exposed to sunlight

4.10.2 Schedule 80 PVC will be used for all conduits exposed to sunlight or above ground

4.10.3 2” conduit radius will be 24”

4.10.4 3” conduit radius will be 36”

4.10.5 4” conduit radius will be 36”

4.10.6 Customer shall perform all trenching per IID standards see section 3.

4.10.7 Customer shall install all conduit runs, secondary pullbox, and riser material on IID pole (if applicable).

4.10.8 Contact Customer Project Development Services for pole location

4.10.9 Customer shall install pull rope in conduit runs between proposed riser to pull box or transformer. See 3.44 table 8 Conduit Rope/Measured Rope Requirements
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

NOTES:

CUSTOMER RESPONSIBILITY:

1. 3" SECONDARY CONDUIT BEND RADIUS TO UNDERGROUND TRANSFORMER SHALL BE 36", 90° BEND, SCHEDULE 40 PVC.
2. 3" SECONDARY CONDUIT BEND RADIUS TO RISER POLE SHALL BE 36", 90° BEND, SCHEDULE 40 PVC.

2. CUSTOMER SHALL DO ALL THE TRENCHING PER IID SPECIFICATIONS. CUSTOMER SHALL INSTALL ALL CONDUIT RUNS, SECONDARY PULLBOX, AND RISER MATERIAL ON I.I.D POLE (IF APPLICABLE). CONTACT CUSTOMER OPERATIONS DEPARTMENT FOR LOCATION OF POLE.

3. CUSTOMER SHALL INSTALL 1/4" NYLON PULLCORD IN CONDUIT RUNS BETWEEN PROPOSED RISER/UNDERGROUND TRANSFORMER TO SECONDARY PULLBOX AND FROM SECONDARY PULLBOX TO METER PANEL.

4. CUSTOMER SHALL CONTACT CUSTOMER OPERATIONS DEPARTMENT FOR TRENCH INSPECTION PRIOR TO BACKFILLING. CUSTOMER SHALL BACKFILL AFTER I.I.D. INSPECTOR’S APPROVAL. TRENCH SHALL BE FREE OF ROCKS ADJACENT TO CONDUIT & SECONDARY PULLBOX.

I.I.D RESPONSIBILITY:

1. I.I.D TO PROVIDE ALL SECONDARY CABLE FROM TRANSFORMER TO SECONDARY PULLBOX AND FROM SECONDARY PULLBOX TO METER PANEL.
2. I.I.D TO PROVIDE AND INSTALL METER.
4.12 Temporary Power

4.12.1 Customer is required to contact Customer Project Development Services to discuss your project with a project manager or service planner.

4.12.2 Complete the required application.

4.12.3 Prior to any excavation near or around IID facilities including transformers, secondary pullboxes, etc. Customer is required to obtain a dig alert (call 811).

4.12.4 IID qualified electrical worker must be present when opening a transformer, pullbox or other device. Contact Customer Project Development Services for scheduling.

4.12.5 Customer is required to schedule inspection of installed conduit by IID prior to any backfill of trench.

4.12.6 Temporary feed from secondary pullbox. See 4.12 Standard 193.2

4.12.7 Temporary feed from single phase transformer. See 4.13 Standard 193.21

4.12.8 Temporary feed from three phase transformer. See 4.14 Standard 193.211
AREA TO BE CLEAR OF VEGETATION AND TREE GROWTH FOR SERVICE CABLE INSTALLATION.

NOTE: INSTALLATION TO BE APPROVED AND TAGGED BY APPLICABLE INSPECTING AUTHORITY

CUSTOMER IS REQUIRED TO CONTACT CUSTOMER PROJECT DEVELOPMENT SERVICES TO DISCUSS METER POLE LOCATION. METER POLE SHALL BE INSTALLED AS NEAR AS POSSIBLE TO OVERHEAD TRANSFORMER / SERVICE POLE IN ACCORDANCE TO THE IID 15kV DISTRIBUTION BUILDING CLEARANCES STANDARDS pg228.

ITEMS OWNED AND INSTALLED BY THE CUSTOMER

MINIMUM POLE REQUIREMENTS: PERMANENT 25' TREATED PINE OR FIR WITH 5" MIN. TOP DIAM.
TEMPORARY 6" x 6" x 25' SAWED PINE OR FIR TIMBER, TREATED, OR 30'.
SET POLE TYPICAL 10% + 2' DEEP.
EXAMPLE 30'-10% = 3'+2' = 5'

METER PANEL SHALL BE IN ACCORDANCE TO NEC AND CONTAIN THE FOLLOWING:
A. METER WELL (SOCKET)
B. MAIN DISCONNECT BREAKER
C. DISTRIBUTION CIRCUIT BREAKERS

METER PANEL SHALL BE MOUNTED ON A BOARD WITH A MINIMUM THICKNESS OF 3/4". ALL RELEVANT LOCAL CODES SHALL BE FOLLOWED TO ENSURE INSTALLATION FOLLOWS NEC.

GROUND WIRE IN ACCORDANCE WITH NEC.
GROUND RODS (TWO REQUIRED PER NEC).
SERVICE ENTRANCE CONDUCTORS TO BE ACCORDANCE TO NEC, 3' OUT OF WEATHERHEAD.
INSULATED CLEVIS (CUSTOMER RESPONSIBILITY 600 VOLT CLEVIS & INSULATOR.)
CONDUIT TYPE AND SIZE TO BE APPROVED BY THE CITY, COUNTY, OR AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.
PVC SCHEDULE 80 SLEEVE SIZE IS TO BE DETERMINED BY APPROVED CONDUIT SIZE. SCHEDULE 80 SLEEVE SHALL COVER TOP 10' OF RISER AND UTILIZE STRAPS TO HOLD SLEEVE IN PLACE.
PIPE STRAPS PER CONDUIT SIZE.
APPROVED GROUND CLAMP AND FITTINGS.

ITEMS OWNED AND INSTALLED BY I.I.D.

IMPERIAL IRRIGATION DISTRICT

CUSTOMER METER POLE
SECONDARY RISER AND PANEL DETAIL
FOR PERMANENT AND TEMPORARY POWER

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE

180.4
**SCOPE:** THIS STANDARD SHOWS 2 INCH CONDUIT TERMINATION AT THE CUSTOMERS CONDUIT RISER.

**NOTES:**
1. A STRAIGHT PIECE OF 2 INCH CONDUIT AND A 90°, 24" MINIMUM RADIUS IS REQUIRED.

**INSTALLATION:**
2. VERIFY METER AND SERVICE LOCATION WITH IID BEFORE INSTALLATION.
   - 90° RADIUS 24" CONNECTION MUST BE 6" BELOW FINAL GRADE.
   - 90° RADIUS 36" CONNECTION SHALL BE AT FINAL GRADE.

**IMPERIAL IRRIGATION DISTRICT**

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<td></td>
<td>REV 2</td>
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**RESIDENTIAL RISER AND CONDUIT**
NOTE:
1. INSPECTOR AND TROUBLESHOOTER MUST BE PRESENT BEFORE EXCAVATING UNDER EXISTING IID PULLBOX.
2. A VERTICAL PORTION OF CONDUIT IS REQUIRED TO ENTER INTO IID PULLBOX. 24" RADIUS MUST BE BELOW FINISH GRADE.
3. CONDUIT ENTERING IID PULLBOX MUST BE VERTICAL AND NOT AGAINST THE SIDE WALLS OF PULLBOX, SEE TOP VIEW.

FOR CUSTOM BUILT METER POST INSTALLATIONS SEE STANDARD 181.4, SECTION 2, 2.18
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.
NOTES:
1. INSPECTOR AND TROUBLESHOOTER MUST BE PRESENT BEFORE EXCAVATING UNDER EXISTING IID TRANSFORMER. WHEN SECONDARY STUB OUT IS AVAILABLE AN IID INSPECTOR MUST BE PRESENT.
2. A VERTICAL PORTION OF CONDUIT IS REQUIRED TO ENTER INTO IID 3Ø TRANSFORMER. SCHEDULE 40 36" RADIUS MUST BE BELOW FINISH GRADE.

FOR CUSTOM BUILT METER POST INSTALLATIONS SEE STANDARD 181.4, SECTION 2.2.18, AUTHORITY HAVING JURISDICTION WILL INSPECT POST, PLYWOOD, AND METER.
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5.1 All conduits entering transformer pads shall be cut off 0 inch to 1 inch from above the top of the pad. All conduits will be required to be capped using low density polyethylene (LDPE) plugs with pull tabs. See 5.28, Table 7, Poly Plug (dimensions shown shall be approximate).

5.2 Single phase transformer pads installed adjacent to roads shall have the primary conduits installed closest to the road, and secondary conduits installed away from the road. (Contact the appropriate IID Customer Service Project Manager).

5.3 Precast Pad inspection; when the contractor receives or installs a precast pad that has a continuous crack across three sides (side, top, and inside window) this pad will be rejected by the IID inspector. When a crack is non-continuous and the crack exceeds 1/32 inch (.032") wide, the contractor may make appropriate repairs to the crack with a manufacture approved epoxy equal to CIA-GEL 7000. The contractor must inform the IID inspector of any crack repair(s) to be made before repair is made.

5.4 No other utility will be allowed to occupy the area under a transformer pad. See 3.12 standard 100.41 Section A - A.

5.5 All Transformer, single phase Sector precast pads, and Sector Sleeves will not be installed until the following compaction process has been completed:

5.5.1 Location of all transformer precast pad, single phase sector precast pads, and sector sleeves to be a compaction of 90% minimum by Developer/Contractor.

5.5.2 Compaction material will conform to Caltrans Class 2 aggregate base or crusher fines with 3/8 inch rock.

5.5.3 Compaction will be performed at a minimum of 2 feet (24") beyond proposed transformer and single phase sector precast pads on all four sides.

5.5.4 Compaction depth will be a minimum of 1 foot (12") depth.

5.5.5 Developer/Contractor will contact IID Inspector after compaction has been completed. IID Inspector must pass visual compaction prior to compaction test.

5.5.6 After IID Inspector visually passes compaction, at the expense of the Developer/Contractor, will obtain a compaction test.

5.5.6.1 NOTE: A maximum of ½ inch (.50") of sand fill will be approved for leveling of compaction area. If the sand fill exceeds the maximum requirement, the IID Inspector will fail the compaction.
5.5.7 Compaction testing should conform to ASTM D6938 (Nuclear Gauge).

5.5.8 IID Inspector will identify a minimum of 3 testing points to a maximum of 4 testing points at the discretion of the IID Inspector.

5.5.9 Testing probe (source rod) will extend to a minimum depth of 8 inches on all identified testing points.

5.5.10 After compaction test report is reviewed by the IID Inspector, the Inspector must be present when Developer/Contractor installs all precast pads.

5.5.10.1 *NOTE:* After compaction test has been reviewed by IID Inspector, all precast pad(s) must be installed within 24 hours. If precast pad(s) is not installed within allotted time, IID will require a re-test at the Developer’s expense.

5.6 Single Phase Transformer Pad 25 Kv to 167 Kv. Used in Imperial Valley. See 5.7 and 5.8 standard 135 and 135.1

5.6.1 Approved single phase transformer pad manufacturers see 5.8 standard 135.1
NOTE:

◊ WINDOW OPENING ON TOP OF PAD IS SLIGHTLY SMALLER THAN BOTTOM OPENING A RESULT OF FORM CONSTRUCTION
CONSTRUCTION NOTES:

1. A PRECAST CONCRETE PAD SHALL BE USED.

2. APPROVED MANUFACTURERS AND STRUCTURES.

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<td>SUPERIOR READY MIX</td>
<td>(760)352-4341</td>
<td>3421 HLR</td>
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3. CONTRACTOR TO PROVIDE TWO 5/8"x10' COPPERWELD GROUND RODS PER PAD (INSTALLATION BY CONTRACTOR).

4. SIZE AND NUMBER OF CONDUITS IN EACH PAD TO BE AS SHOWN ON CONDUIT LAYOUT.

5. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSFORMER IS INSTALLED.

6. CONTRACTOR SHALL PROVIDE & INSTALL 12" OF CLASS 2 AGGREGATE ROAD BASE MATERIAL OR CRUSHER FINES WITH 3/8" ROCKS UNDERNEATH TRANSFORMER PAD, AND COMPACT ALL ROAD BASE UNDERNEATH TRANSFORMER PAD TO A MINIMUM COMPACTION OF 90%. SEE STANDARD 135 SECTION 3, 3.4.

7. CONDUITS TO TERMINATE 1" ABOVE TOP OF TRANSFORMER PAD.
5.9 Single Phase Transformer Pad 25 Kv to 167 Kv. Used in Coachella Valley. See 5.10 and 5.11 standard 135.2 and 135.3

5.9.1 Approved single phase transformer pad manufacturers see 5.11 standard 135.3
PAD UTILIZED IN COACHELLA VALLEY

NOTE:

WINDOW OPENING ON TOP OF PAD IS SLIGHTLY SMALLER THAN BOTTOM OPENING A RESULT OF FORM CONSTRUCTION

IMPERIAL IRRIGATION DISTRICT

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE

COACHELLA VALLEY

PRECAST CONCRETE PAD DETAIL FOR
SINGLE-PHASE TRANSFORMER
25KVA TO 167KVA

135.2

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CONSTRUCTION NOTES:

1. A PRECAST CONCRETE PAD SHALL BE USED.

2. APPROVED MANUFACTURERS AND STRUCTURES.

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(F) = FRONT   (S) = SIDE   (T) = THICKNESS

3. CONTRACTOR TO PROVIDE TWO 5/8"x10' COPPERWELD GROUND RODS PER PAD (INSTALLATION BY CONTRACTOR).

4. SIZE AND NUMBER OF CONDUITS IN EACH PAD TO BE AS SHOWN ON CONDUIT LAYOUT.

5. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSFORMER IS INSTALLED.

6. CONTRACTOR SHALL PROVIDE & INSTALL 12" OF CLASS 2 AGGREGATE ROAD BASE MATERIAL OR CRUSHER FINES WITH 3/4" ROCKS UNDERNEATH transformer pad, and compact all road base underneath transformer pad to a minimum compaction of 90%. See Standard 135, Section 3, 3.4.

7. CONDUITS TO TERMINATE 1" ABOVE TOP OF TRANSFORMER PAD.

8. PRECAST PAD UTILIZED IN LA QUINTA
5.12 Three Phase Transformer Pad 45 Kv to 500 Kv. See 5.13 and 5.14 standard 136 and 136.1

5.12.1 Approved three phase transformer pad manufacturers see 5.14 standard 136.1
NOTE: EXACT MEASUREMENT IS DEPENDENT UPON MANUFACTURER SPECIFICATIONS. SEE STANDARD 136.1, CONSTRUCTION NOTE 2. APPROVED MANUFACTURERS AND STRUCTURERS.

TRANSFORMER PAD

SIDEWALK

STREET SIDE

12"

COMPACtion (SEE NOTE #6 STANDARD 136.1)

NOTE: WINDOW OPENING ON TOP OF PAD IS SLIGHTLY SMALLER THAN BOTTOM OPENING A RESULT OF FORM CONSTRUCTION

IMPERIAL IRRIGATION DISTRICT

PRECAST CONCRETE PAD DETAIL FOR THREE-PHASE TRANSFORMERS 45KVA TO 500KVA

DRAWN BY
REVIEWED
APPROVED
REVISION REV 7
DATE 9-27-2016
**CONSTRUCTION NOTES:**

1. A PRECAST CONCRETE PAD SHALL BE USED.

2. APPROVED MANUFACTURERS AND STRUCTURES.

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3. CONTRACTOR TO PROVIDE TWO 5/8"x10’ COPPERWELD GROUND RODS PER PAD (INSTALLATION BY CONTRACTOR).

4. SIZE AND NUMBER OF CONDUITS IN EACH PAD TO BE AS SHOWN ON CONDUIT LAYOUT.

5. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSFORMER IS INSTALLED.

6. CONTRACTOR SHALL PROVIDE & INSTALL 12” OF CLASS 2 AGGREGATE ROAD BASE MATERIAL OR CRUSHER FINES WITH 3/8” ROCKS UNDERNEATH TRANSFORMER PAD, AND COMPACT ALL ROAD BASE UNDERNEATH TRANSFORMER PAD TO A MINIMUM COMPACTION OF 90%. SEE STANDARD 136. SECTION 3, 3.4.

7. CONDUITS TO TERMINATE 1” ABOVE TOP OF TRANSFORMER PAD.
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5.15 Three Phase Transformer Pad 750 Kv to 2500 Kv. See 5.16 and 5.17 standard 137 and 137.1

5.15.1 Approved three phase transformer pad manufacturers see 5.17 standard 137.1
*NOTE: EXACT MEASUREMENT IS DEPENDENT UPON MANUFACTURER SPECIFICATIONS. SEE STANDARD 137.1, CONSTRUCTION NOTE 2. APPROVED MANUFACTURERS AND STRUCTURERS.

TRANSFORMER PAD

SIDEWALK

STREET SIDE

COMPACATION SEE NOTE #6 STANDARD 137.1

PRIMARY

5 OR 6-4" SECONDARY CONDUITS

PRIMARY

8-4" SECONDARY CONDUITS

NOTE:

◊ WINDOW OPENING ON TOP OF PAD IS SLIGHTLY SMALLER THAN BOTTOM OPENING A RESULT OF FORM CONSTRUCTION

IMPERIAL IRRIGATION DISTRICT

PRECAST CONCRETE PAD DETAIL FOR THREE-PHASE TRANSFORMERS 750KVA TO 2500KVA

DRAWN BY

REVIEWED

APPROVED

REVISION

DATE 9-27-2016

137
CONSTRUCTION NOTES:

1. A PRECAST CONCRETE PAD SHALL BE USED.

2. APPROVED MANUFACTURERS AND STRUCTURES:

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<th>STRUCTURE No.</th>
<th>DIMENSIONS FRONT/SIDE/THICKNESS</th>
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<tr>
<td>SUPERIOR READY MIX</td>
<td>(760)352-4341</td>
<td>3427HLR</td>
<td>96&quot;(F) X 96&quot;(S) X 8&quot;(T)</td>
</tr>
<tr>
<td>JENSON PRECAST</td>
<td>1-800-257-6100</td>
<td>9696-T8-25</td>
<td>96&quot;(F) X 96&quot;(S) X 8&quot;(T)</td>
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<tr>
<td>OLD CASTLE</td>
<td>1-800-626-3860</td>
<td>11D-9696-08P</td>
<td>96&quot;(F) X 96&quot;(S) X 8&quot;(T)</td>
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</table>

(F) = FRONT        (S) = SIDE        (T) = THICKNESS

3. CONTRACTOR TO PROVIDE TWO 5/8"x 10’ COPPERWELD GROUND RODS PER PAD (INSTALLATION BY CONTRACTOR.)

4. SIZE AND NUMBER OF CONDUITS IN EACH PAD TO BE AS SHOWN ON CONDUIT LAYOUT.

5. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSFORMER IS INSTALLED.

6. CONTRACTOR SHALL PROVIDE & INSTALL 12" OF CLASS 2 AGGREGATE ROAD BASE MATERIAL OR CRUSHER FINES WITH 3/8" ROCKS UNDERNEATH TRANSFORMER PAD, AND COMPACT ALL ROAD BASE UNDERNEATH TRANSFORMER PAD TO A MINIMUM COMPACTION OF 90%. SEE STANDARD 135. SECTION 3, 3.4.

7. CONDUITS TO TERMINATE 1" ABOVE TOP OF TRANSFORMER PAD.

---

IMPERIAL IRRIGATION DISTRICT

PRECAST CONCRETE PAD DETAIL FOR THREE-PHASE TRANSFORMERS 750KVA TO 2500KVA

DRAWN BY
REVIEWED
APPROVED
REVISION REV 8
DATE 9-27-2016 137.1
5.18 No landscaping will be allowed including sprinkler systems within the compacted area.

5.19 A concrete curb will be required when compaction grade level does not meet finished grade level. See 5.20 Standard 100.9
NOTES:

⚠️ COMPACTED AREA SHALL BE CALTRANS CLASS 2 AGGREGATE BASE OR CRUSHER FINES WITH 3/8" ROCKS.
SECTION 5.5 COMPACTION PROCESS.

⚠️ A MAXIMUM OF 3/4" OF SAND FILL WILL BE APPROVED FOR LEVELING OF COMPACTION AREA.
SECTION 5.5 COMPACTION PROCESS.
5.21 All transformer precast pads, sector sleeves, pull boxes, manholes, vaults, and switch pad installations shall be installed 3 inches above final grade (where not installed along sidewalks) and flush with final sidewalk for those types of installations. In areas with sloping contours greater than ¼” (.25”) to the foot, the top edge shall be set as shown below highest point of slope. (In no case shall there be more than 3 inches of slope in 1 foot (12”) of horizontal measurement).

5.22 Contractor/Developer shall keep all debris away from IID’s transformer pads, primary vaults, secondary pull boxes, and other IID equipment to give IID personnel access during the duration of the project.

5.23 Excavation for vaults, junction pads, secondary pullboxes and conduits shall be made to the proper depth (Refer to 3.26). After proper installation and inspection have been completed, compacted backfill (native soil or Caltrans Class 2 aggregate base or crusher fines with 3/8 inch rock) shall be made to the finished level. All surplus excavation shall be disposed of in a satisfactory manner.

5.24 Contractor is responsible for permanent and waterproof markings on all interior vault knockouts, any and all conduits, conduit runs, and stub outs, with the conduit number corresponding to the number shown on the plans.

5.25 Contractor shall seal or grout around seams, lid sections, and ducts entering vaults and pullboxes to prevent soil and water entering at joints or openings.

5.26 Where the external diameter of the conduit is smaller than the diameter of the opening in the vault wall, the reduction in conduit diameter shall take place 2 feet (24”) from the external wall of the vault. (Refer to 3.28 and 3.30 Standard 100.142).

5.27 All conduits entering secondary pull boxes or splice boxes shall be cut off 7 inches to 9 inches above the pea gravel. All conduits will be required to be capped using polyethylene plugs with pull tabs. See 5.28 Table 7, Poly Plugs.
5.28 Table 7 Poly Plugs

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<th>Trade Size</th>
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<th>Ø &quot;D – 1&quot;</th>
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<td>6.875&quot;</td>
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5.29 Barrier posts shall be 4" diameter pipe schedule 40 black cold rolled steel, painted high visibility yellow.

5.30 Barrier posts require a concrete fill/foundation. See 5.32 Standard 181.6.

5.31 IID will not accept removable barrier posts.
CONCRETE CAP (TAPERED)

4" STEEL PIPE
(SCHED. 40 BLACK COLD ROLLED)
PAINTED HIGH VISIBILITY YELLOW,
WITH CONCRETE FILLED.

TAPER CONCRETE UP
1/4" AROUND PIPE

FINISH GRADE

18" Ø CONCRETE FOOTING
5 SACK MIX WITH 3/8" AGGREGATE

NOTE:
1. REMOVABLE BARRIER POSTS ARE NOT ALLOWED.
2. IMPERIAL VALLEY TRANSFORMER PAD SHOWN.

IMPERIAL IRRIGATION DISTRICT

TYPICAL BARRIER POST
DETAIL

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE
181.5
9-27-2016
5.33 To comply with California General Order 128, rule 21.5A, the contractor is required to provide and install, a minimum of 2 - 5/8" x 10' ground rods. Copperweld ground rods shall be installed at each transformer pad and junction pad, and primary vault. (See 5.22.1 – 5.22.4).

5.34 The Developer/Contractor is responsible for driving any and all ground rods in the system that is a joint trench. This will be predetermined and completed before IID construction crews arrive on the job.

5.35 Trench and pad grounding:

5.35.1 Single phase transformer see 5.36 and 5.36.1 Standard 190.2-190.21

5.35.2 Three phase transformer see 5.37 and 5.37.1 Standard 190.3-190.31

5.35.3 Single phase sector see 5.38 and 5.38.1 Standard 190.4-190.41

5.35.4 Three phase sector see 5.39 and 5.39.1 Standard 190.5-190.51
- 6" x 6" ALLOWED SPACE FOR GROUND ROD.

- 00-2/0 CU. STR. WIRE

- PRIMARY TRENCH WALL

- 00-2/0 CU. STR. WIRE

- 5' MIN.

- PLAN VIEW

- GROUND WIRE

- COMPLETED WELD CONNECTION

- CADWELD ONE-SHOT/

- GROUND ROD 5/8" x 10'

- BY CUSTOMER

- TRANSFORMER PAD

- GROUND ROD 5/8" x 10'

- WRAP 00-2/0 CU. STR. WIRE

- 1" WIRE

- 3"

- SECTION A-A

- GROUND WIRE

- AMPACT (IID)

- GROUND WIRE

- TRANSFORMER PAD

- PRIMARY TRENCH BOTTOM

- 00-xref2/0 CU. STR. WIRE

- 5" MIN.

- 48" MIN.

- 12"

- GROUND ROD 5/8" x 10'

- GROUND ROD 5/8" x 10'

- Amp #83750-1 CONNECTOR GROUND WIRE

- TRANSFORMER PAD

- BY I.I.D.

IMPERIAL IRRIGATION DISTRICT

TRENCH GROUND WIRE FOR SINGLE PHASE TRANSFORMER PADS TO BE INSTALLED BY CONTRACTOR

DRAWN BY
REVIEWED
APPROVED
REVISION REV 8
DATE 11-21-2016

167
CONSTRUCTION NOTES:

(A) GROUND RODS TO HAVE A 6’-0” MINIMUM SEPARATION.
(B) WRAP 6’ OF WIRE (NOT EXPOSED) 1” UNDERGROUND NEXT TO GROUND ROD.
(C) LOCATE GROUND RODS SO THEY DO NOT TOUCH CONDUITS. GENERAL ORDER 128 REQUIRES GROUND RODS TO BE DRIVEN.

BILL OF MATERIAL

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NOTES:
THE SERVICE TRENCH IS ON PRIVATE PROPERTY AND BELONGS TO THE CUSTOMER, THEREFORE, THE TRENCH GROUND WIRE SHOULD ALWAYS BE INSTALLED IN THE PRIMARY TRENCH.
- 6" x 6" ALLOWED SPACE FOR GROUND ROD.

TRANSMFORMER PAD

6' 00 2/0 CU. STRAND WIRE

PRIMARY TRENCH WALL

00 2/0 CU. STRAND WIRE

5' MIN.

A

GROUND WIRE

COMPLETED WELD CONNECTION

CADWELD ONE-SHOT/ 

GROUND ROD 5/8" x 10'

BY CUSTOMER

3"

3"

3"

3"

5' MIN.

48" MIN.

12"

GROUND WIRE

GROUND ROD 5/8" x 10'

GROUND ROD 5/8" x 10'

GROUND ROD 5/8" x 10'

GROUND ROD 5/8" x 10'

GROUND WIRE

AMPACT (IID)

GROUND WIRE

TRANSFORMER PAD

BY I.I.D.

PRIMARY TRENCH BOTTOM

C GROUND ROD 5/8" x 10'

SECTION A-A

IMPERIAL IRRIGATION DISTRICT

TRENCH GROUND WIRE FOR 
THREE PHASE TRANSFORMER PADS 
TO BE INSTALLED BY CONTRACTOR

DRAWN BY

REVIEWED

APPROVED

REVISION REV 8

DATE 11-21-2016

190.3

169
CONSTRUCTION NOTES:

A. GROUND RODS TO HAVE A 6’-0” MINIMUM SEPARATION.

B. WRAP 6’ OF WIRE (NOT EXPOSED) 1” UNDERGROUND NEXT TO GROUND ROD.

C. LOCATE GROUND RODS SO THEY DO NOT TOUCH CONDUITS. GENERAL ORDER 128 REQUIRES GROUND RODS TO BE DRIVEN.

BILL OF MATERIAL

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NOTES:

THE SERVICE TRENCH IS ON PRIVATE PROPERTY AND BELONGS TO THE CUSTOMER, THEREFORE, THE TRENCH GROUND WIRE SHOULD ALWAYS BE INSTALLED IN THE PRIMARY TRENCH.

IMPERIAL IRRIGATION DISTRICT

TRENCH GROUND WIRE FOR THREE PHASE TRANSFORMERS PAD TO BE INSTALLED BY CUSTOMER

DRAWN BY
REVIEWED
APPROVED
REVISION REV 7
DATE 11-21-2016
CONSTRUCTION NOTES:

1. APPROVED MANUFACTURERS AND STRUCTURES:

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<th>MANUFACTURER</th>
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<th>STRUCTURE No.</th>
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<tr>
<td>JENSEN PRECAST</td>
<td>1-800-257-6100</td>
<td>K466-FH72-25P</td>
</tr>
<tr>
<td>OLD CASTLE</td>
<td>1-800-626-3860</td>
<td>IID 466-84</td>
</tr>
</tbody>
</table>

2. FINISHED GRADES MUST BE ESTABLISHED PRIOR TO VAULT INSTALLATION. BOTTOM SECTION OF VAULT MUST BE LEVEL PRIOR TO ADDITION OF GRADE RINGS. SET THE BOTTOM SECTION AS LEVEL AS POSSIBLE TO ENSURE ANY WATER IN THE VAULT WILL DRAIN TOWARD THE SUMP.

3. CONDUIT SHALL BE TERMINATED IN END WALL KNOCKOUTS BY USE OF CAST IN PLACE TERMINATORS.

4. CLEAN JOINT SURFACES WITH A BRUSH AND ENSURE JOINTS ARE DRY. FIRMLY PRESS JOINT SEALING COMPOUND ONTO SURFACE END-TO-END AROUND THE ENTIRE JOINT. ALLOW 1” OVERLAP WHEN ABUTTING. SEALING COMPOUND OR GROUT SHALL BE REQUIRED BETWEEN LAST GRADE RING AND TOP COVER SECTION PER I.I.D. INSPECTOR.

5. PROVIDE THREE PIECE POLYMER COVER AS REQUIRED PER I.I.D. DRAWINGS.

6. COMPACT ALL BACKFILLS TO 90%.

7. PROVIDE TWO 5/8”x10’ COPPERWELD GROUND RODS PER VAULT. (LOCATED AT OPPOSING VAULT CORNERS, TWO 3/4” HOLES.)

8. ALL TOP COVERS SHALL BE MARKED WITH IMPERIAL IRRIGATION DISTRICT’S LOGO: "I.I.D."

9. SEE CONTRACTOR NOTES’ CONDUIT LAYOUT FOR SIZE AND NUMBER OF CONDUITS REQUIRED IN EACH VAULT. CONDUITS TERMINATION INSIDE WALL KNOCKOUTS SHALL REQUIRE THE USE OF END-BELLS.

10. LIFTING ANCHORS ARE NOT TO BE USED FOR CABLE PULLING.

11. 6” MINIMUM PEA GRAVEL BASE REQUIRED UNDER BASE ENCLOSURE.

ENGINEERING NOTES:

A. THE EXACT VAULT DESIGN AND DIMENSION VARY BY MANUFACTURER. THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY.

B. THE EXACT LOCATION AND ORIENTATION OF THE VAULT SHALL BE SPECIFIED ON THE CONTRACTOR NOTES CONDUIT DRAWINGS.

BILL OF MATERIAL

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<td>WASHER, 1/2” FLAT ROUND, STAINLESS STEEL</td>
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<td>9</td>
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<td>10</td>
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<td>SUMP PUMP HOLE COVER, POLYMER</td>
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IMPERIAL IRRIGATION DISTRICT

DRAWN BY: [Signature] [Date: 9-27-2016] 110.21
REVIEWED: [Signature] [Date: ]
APPROVED: [Signature] [Date: ]
REVISION: REV 6

SUBSTRUCTURES
MEDIUM VAULT EQUIPMENT ENCLOSURE
(INSIDE DIMENSIONS 4’ X 6”–6” X 5’)
16" x 63" CLEAR OPENING AT BOTTOM

60-5/8" x 22-7/16" OPENING AT BOTTOM

TOP SECTION

5'-3" (63")

9"

5'-2" BOTTOM (62")

7"-8" BOTTOM (92")

7'-6" TOP (90°)

2'-2 9/16" TOP (26-9/16")

2'-11 5/8" TOP (35 5/8")

2' TOP (16")

3/8" DRAFT

64-5/8"

26-3/16"

12" INTERMEDIATE SECTION

7"-6" (90°)

5'-0" (60")

4'-0" (48")

7"-8" (90°)

6"-6" (78")

2 OR 4-TON LIFTING ANCHORS, INSIDE-2 EA. SIDE

90° BASE ENCLOSURE

5'-6" (66")

5" DIA. CONDUIT KNOCKOUTS 8 EA. END-16 TOTAL

19.5"

15.5" MIN 17" MAX

6" PEA GRAVEL

3/4" HOLE (2 TOTAL-AT OPPOSITE CORNERS)

12" DIA. SUMP HOLE

PULLING IRONS 2 EACH END AND 2 IN MIDDLE

IMPERIAL IRRIGATION DISTRICT

DRAWN BY

REVISED BY

APPROVED BY

REVISION REV 5

DATE 12-09-2013

171.3

SUBSTRUCTURES – SECTOR PAD VAULT EQUIPMENT ENCLOSURE (INSIDE DIMENSIONS 4' x 6'6" X 5")
CONSTRUCTION NOTES:

1. APPROVED MANUFACTURERS AND STRUCTURES:

<table>
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<th>MANUFACTURER</th>
<th>PHONE No.</th>
<th>STRUCTURE No.</th>
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<tbody>
<tr>
<td>U.S. CONCRETE</td>
<td>(619) 449–6810</td>
<td>3440TP–III</td>
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</table>

2. FINISHED GRADES MUST BE ESTABLISHED PRIOR TO VAULT INSTALLATION. BOTTOM SECTION OF VAULT MUST BE LEVEL PRIOR TO ADDITION OF GRADE RINGS. SET THE BOTTOM SECTION AS LEVEL AS POSSIBLE TO ENSURE ANY WATER IN THE VAULT WILL DRAIN TOWARD THE SUMP.

3. CONDUIT SHALL BE TERMINATED IN END WALL KNOCKOUTS BY USE OF CAST IN PLACE TERMINATORS.

4. CLEAN JOINT SURFACES WITH A BRUSH AND ENSURE JOINTS ARE DRY. FIRMLY PRESS JOINT SEALING COMPOUND ONTO SURFACE END–TO–END AROUND THE ENTIRE JOINT. ALLOW 1” OVERLAP WHEN ABUTTING. SEALING COMPOUND OR GROUT SHALL BE REQUIRED BETWEEN LAST GRADE RING AND TOP COVER SECTION PER I.I.D. INSPECTOR.

5. PROVIDE THREE PIECE POLYMER COVER AS REQUIRED PER I.I.D. DRAWINGS.

6. COMPACT ALL BACKFILLS TO 90%.

7. PROVIDE TWO 5/8”x10’ COPERWELD GROUND RODS PER VAULT. (LOCATED AT OPPOSING VAULT CORNERS, TWO 3/4” HOLES.)

8. ALL TOP COVERS SHALL BE MARKED WITH IMPERIAL IRRIGATION DISTRICT’S LOGO: ”I.I.D.”

9. SEE CONTRACTOR NOTES’ CONDUIT LAYOUT FOR SIZE AND NUMBER OF CONDUITS REQUIRED IN EACH VAULT. CONDUITS TERMINATION INSIDE WALL KNOCKOUTS SHALL REQUIRE THE USE OF END–BELLS.

10. LIFTING ANCHORS ARE NOT TO BE USED FOR CABLE PULLING.

11. 6” MINIMUM PEA GRAVEL BASE REQUIRED UNDER BASE ENCLOSURE.

ENGINEERING NOTES:

A. THE EXACT VAULT DESIGN AND DIMENSION VARY BY MANUFACTURER. THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY.

B. THE EXACT LOCATION AND ORIENTATION OF THE VAULT SHALL BE SPECIFIED ON THE CONTRACTOR NOTES CONDUIT DRAWINGS.

BILL OF MATERIAL

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<td>SEALANT, PLASTIC–MASTIC</td>
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<td>6</td>
<td>6</td>
<td>LUBRICANT EZ–1</td>
<td></td>
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<td>7</td>
<td>1</td>
<td>EXTENSION SECTION 12”</td>
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<td>GRAVEL, 3/8”</td>
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<td>9</td>
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<td>SUMP PUMP HOLE COVER, POLYMER</td>
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IMPERIAL IRRIGATION DISTRICT

SUBSTRUCTURES – SECTOR PAD
VAULT EQUIPMENT ENCLOSURE
(INSIDE DIMENSIONS 4’ x 6’–6” x 5’)

DRAWN BY
REVIEWED
APPROVED
REVISION REV 6
DATE 12–09–2013
171.31
CONSTRUCTION NOTES:

1. APPROVED MANUFACTURERS AND STRUCTURES:

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<th>STRUCTURE No.</th>
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<td>JENSEN PRECAST</td>
<td>1-800-257-6100</td>
<td>K586-FH78-25</td>
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<tr>
<td>U.S. CONCRETE</td>
<td>(619)449-6810</td>
<td>3316 PARKWAY MANHOLE</td>
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<tr>
<td>OLD CASTLE</td>
<td>1-800-626-3860</td>
<td>IID 586-84 VAULT</td>
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2. FINISHED GRADES MUST BE ESTABLISHED PRIOR TO VAULT INSTALLATION. BOTTOM SECTION OF VAULT MUST BE LEVEL PRIOR TO ADDITION OF GRADE RINGS. SET THE BOTTOM SECTION AS LEVEL AS POSSIBLE TO ENSURE ANY WATER IN THE VAULT WILL DRAIN TOWARDS THE SUMP.

3. CONDUIT SHALL BE TERMINATED IN END WALL KNOCKOUTS BY USE OF CAST IN PLACE TERMINATORS.

4. CLEAN JOINT SURFACES WITH A BRUSH AND ENSURE JOINTS ARE DRY. FIRMLY PRESS JOINT SEALING COMPOUND ONTO SURFACE END-TO-END AROUND THE ENTIRE JOINT. ALLOW 1" OVERLAP WHEN ABUTTING. SEALING COMPOUND OR GROUT SHALL BE REQUIRED BETWEEN LAST GRADE RING AND TOP COVER SECTION PER I.I.D. INSPECTOR.

5. PROVIDE THREE PIECE POLYMER COVER AS REQUIRED PER I.I.D. DRAWINGS.

6. COMPACT ALL BACKFILLS TO 90%.

7. PROVIDE TWO 5/8"x10' COPPERWELD GROUND RODS PER VAULT. (LOCATED AT OPPOSING VAULT CORNERS, TWO 3/4" HOLES.)

8. ALL TOP COVERS SHALL BE MARKED WITH IMPERIAL IRRIGATION DISTRICT'S LOGO: "I.I.D."

9. SEE CONTRACTOR NOTES' CONDUIT LAYOUT FOR SIZE AND NUMBER OF CONDUITS REQUIRED IN EACH VAULT. CONDUITS TERMINATION INSIDE WALL KNOCKOUTS SHALL REQUIRE THE USE OF END-BELLS.

10. LIFTING ANCHORS ARE NOT TO BE USED FOR CABLE PULLING.

11. 6" MINIMUM PEA GRAVEL BASE REQUIRED UNDER BASE ENCLOSURE.

ENGINEERING NOTES:

A. THE EXACT VAULT DESIGN AND DIMENSION VARY BY MANUFACTURER. THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY.

B. THE EXACT LOCATION AND ORIENTATION OF THE VAULT SHALL BE SPECIFIED ON THE CONTRACTOR NOTES CONDUIT DRAWINGS.

BILL OF MATERIAL

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<td>SEALANT, PLASTIC–MASTIC</td>
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<td>16</td>
<td>BOLT, S.S. PENTAHEAD, 1/2&quot; x 2–1/2&quot;</td>
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<td>WASHER, 1/2&quot; FLAT ROUND STAINLESS STEEL</td>
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<td>10</td>
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IMPERIAL IRRIGATION DISTRICT

SUBSTRUCTURES
LARGE VAULT EQUIPMENT ENCLOSURE
(INSIDE DIMENSIONS 5’ X 8’ – 6” X 6”)

DRAWN BY
REVIEWED
APPROVED
REVISION REV 6
DATE 12–09–2013

176
TOP SECTION

60-5/8" x 22-7/16"
OPENING AT BOTTOM

16" x 63" CLEAR
OPENING AT BOTTOM

POLYMER COVER

12" EXTENSION SECTION

2 OR 4 TON LIFTING
ANCHOR INSIDE 2 EA. SIDE

5" DIA. CONDUIT KNOCKOUTS
8 EA. END - 16 TOTAL

24" EXTENSION SECTION

5-1/2" MIN. 6" MAX

48" BASE ENCLOSURE

6" DIA. CONDUIT KNOCKOUTS
12 EACH END - 24 TOTAL

3/4" HOLE (2 TOTAL - AT OPPOSITE CORNERS)
12" DIA. SUMP HOLE

6" PEA GRAVEL
PULLING IRONS

IMPERIAL IRRIGATION DISTRICT

SUBSTRUCTURES - SECTOR PAD
VAULT EQUIPMENT ENCLOSURE
(INSIDE DIMENSIONS 5' X 8' X 6')

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE
177.4
CONSTRUCTION NOTES:

1. APPROVED MANUFACTURERS AND STRUCTURES:

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PHONE No.</th>
<th>STRUCTURE No.</th>
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</thead>
<tbody>
<tr>
<td>U.S. CONCRETE</td>
<td>(619) 449–6810</td>
<td>3441TP-III</td>
</tr>
</tbody>
</table>

2. FINISHED GRADES MUST BE ESTABLISHED PRIOR TO VAULT INSTALLATION. BOTTOM SECTION OF VAULT MUST BE LEVEL PRIOR TO ADDITION OF GRADE RINGS. SET THE BOTTOM SECTION AS LEVEL AS POSSIBLE TO ENSURE ANY WATER IN THE VAULT WILL DRAIN TOWARD THE SUMP.

3. CONDUIT SHALL BE TERMINATED IN END WALL KNOCKOUTS BY USE OF CAST IN PLACE TERMINATORS.

4. CLEAN JOINT SURFACES WITH A BRUSH AND ENSURE JOINTS ARE DRY. FIRMLY PRESS JOINT SEALING COMPOUND ONTO SURFACE END-TO-END AROUND THE ENTIRE JOINT. ALLOW 1” OVERLAP WHEN ABUTTING. SEALING COMPOUND OR GROUT SHALL BE REQUIRED BETWEEN LAST GRADE RING AND TOP COVER SECTION PER I.I.D. INSPECTOR.

5. PROVIDE THREE PIECE POLYMER COVER AS REQUIRED PER I.I.D. DRAWINGS.

6. COMPACT ALL BACKFILLS TO 90%.

7. PROVIDE TWO 5/8”x10' COPPERWELD GROUND RODS PER VAULT. (LOCATED AT OPPOSING VAULT CORNERS, TWO 3/4” HOLES.)

8. ALL TOP COVERS SHALL BE MARKED WITH IMPERIAL IRRIGATION DISTRICT’S LOGO: “I.I.D.”

9. SEE CONTRACTOR NOTES’ CONDUIT LAYOUT FOR SIZE AND NUMBER OF CONDUITS REQUIRED IN EACH VAULT. CONDUITS TERMINATION INSIDE WALL KNOCKOUTS SHALL REQUIRE THE USE OF END-BELLS.

10. LIFTING ANCHORS ARE NOT TO BE USED FOR CABLE PULLING.

11. 6” MINIMUM PEA GRAVEL BASE REQUIRED UNDER BASE ENCLOSURE.

ENGINEERING NOTES:

A. THE EXACT VAULT DESIGN AND DIMENSION VARY BY MANUFACTURER. THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY.

B. THE EXACT LOCATION AND ORIENTATION OF THE VAULT SHALL BE SPECIFIED ON THE CONTRACTOR NOTES CONDUIT DRAWINGS.

BILL OF MATERIAL

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<td>④</td>
<td>4</td>
<td>BOLT, PENTAHEAD, 1/2” x 2–1/2”</td>
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<tr>
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<td>⑥</td>
<td>AS</td>
<td>LUBRICANT EZ–1</td>
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<td>⑦</td>
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<td>EXTENSION SECTION 12”</td>
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<tr>
<td>⑧</td>
<td>AS</td>
<td>GRAVEL, 3/8”</td>
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<td>⑨</td>
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IMPERIAL IRRIGATION DISTRICT

SUBSTRUCTURES – SECTOR PAD VAULT EQUIPMENT ENCLOSURE (INSIDE DIMENSIONS 5’ x 8’ x 6’)

DRAWN BY [Signature]
REVISED REV 6
DATE 12–09–2013

171.41
CONSTRUCTION NOTES:

1. APPROVED MANUFACTURERS AND STRUCTURES:

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PHONE No.</th>
<th>STRUCTURE No.</th>
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<tr>
<td>JENSEN PRECAST</td>
<td>1-800-257-6100</td>
<td>K586-SB78-25</td>
</tr>
<tr>
<td>U.S. CONCRETE</td>
<td>(619) 449-6810</td>
<td>3316SP-IID/K</td>
</tr>
<tr>
<td>OLD CASTLE</td>
<td>1-800-626-3860</td>
<td>IID 586-84 PMH</td>
</tr>
</tbody>
</table>

2. FINISHED GRADES MUST BE ESTABLISHED PRIOR TO VAULT INSTALLATION. BOTTOM SECTION OF VAULT MUST BE LEVEL PRIOR TO ADDITION OF GRADE RINGS. SET THE BOTTOM SECTION AS LEVEL AS POSSIBLE TO ENSURE ANY WATER IN THE VAULT WILL DRAIN TOWARD THE SUMP.

3. CONDUIT SHALL BE TERMINATED IN END WALL KNOCKOUTS BY USE OF CAST IN PLACE TERMINATORS.

4. CLEAN JOINT SURFACES WITH A BRUSH AND ENSURE JOINTS ARE DRY. FIRMLY PRESS JOINT SEALING COMPOUND ONTO SURFACE END-TO-END AROUND THE ENTIRE JOINT. ALLOW 1” OVERLAP WHEN ABUTTING. SEALING COMPOUND OR GROUT SHALL BE REQUIRED BETWEEN LAST GRADE RING AND TOP COVER SECTION PER I.I.D. INSPECTOR.

5. PROVIDE THREE PIECE POLYMER COVER AS REQUIRED PER I.I.D. DRAWINGS.

6. COMPACT ALL BACKFILLS TO 90%.

7. PROVIDE TWO 5/8”x10’ COPPERWELD GROUND RODS PER VAULT. (LOCATED AT OPPOSING VAULT CORNERS, TWO 3/4” HOLES.)

8. ALL TOP COVERS SHALL BE MARKED WITH IMPERIAL IRRIGATION DISTRICT’S LOGO: “I.I.D.”

9. SEE CONTRACTOR NOTES’ CONDUIT LAYOUT FOR SIZE AND NUMBER OF CONDUITS REQUIRED IN EACH VAULT. CONDUITS TERMINATION INSIDE WALL KNOCKOUTS SHALL REQUIRE THE USE OF END-BELLS.

10. LIFTING ANCHORS ARE NOT TO BE USED FOR CABLE PULLING.

11. 6” MINIMUM PEA GRAVEL BASE REQUIRED UNDER BASE ENCLOSURE.

ENGINEERING NOTES:

A. THE EXACT VAULT DESIGN AND DIMENSION VARY BY MANUFACTURER. THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY.

B. THE EXACT LOCATION AND ORIENTATION OF THE VAULT SHALL BE SPECIFIED ON THE CONTRACTOR NOTES CONDUIT DRAWINGS.

BILL OF MATERIAL

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<td>EXTENSION SECTION, 12”</td>
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<td>4</td>
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<td>EXTENSION SECTION, 24”</td>
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<td>1</td>
<td>ENCLOSURE, 114” BASE</td>
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<tr>
<td>6</td>
<td>12</td>
<td>BOLT, S.S. PENTAHEAD, 1/2” x 2-1/2”</td>
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<tr>
<td>7</td>
<td>12</td>
<td>WASHER, 1/2”, FLAT ROUND STAINLESS STEEL</td>
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<td>9</td>
<td>AS</td>
<td>LUBRICANT EZ–1</td>
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<tr>
<td>10</td>
<td>AS</td>
<td>PEA GRAVEL, 3/8”</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>SUMP PUMP HOLE COVER, POLYMER</td>
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</table>

IMPERIAL IRRIGATION DISTRICT

LARGE SWITCH PAD
(INSIDE DIMENSIONS 5’ x 8”–6” x 6”)

171.45
CONSTRUCTION NOTES:

1. A PRECAST CONCRETE PAD SHALL BE USED.

2. APPROVED MANUFACTURERS AND STRUCTURES.

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PHONE No.</th>
<th>STRUCTURE No.</th>
<th>DIMENSIONS</th>
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<tr>
<td>SUPERIOR CONCRETE</td>
<td>(760)352-4341</td>
<td>3421 HLR</td>
<td>44&quot;(F) x 46&quot;(S) x 6&quot;(T)</td>
</tr>
<tr>
<td>JENSON PRECAST</td>
<td>1-800-257-6100</td>
<td>PD4446-T6-25</td>
<td>44&quot;(F) x 46&quot;(S) x 6&quot;(T)</td>
</tr>
<tr>
<td>OLD CASTLE</td>
<td>1-800-626-3860</td>
<td>HJ-4446-06TP</td>
<td>44&quot;(F) x 46&quot;(S) x 6&quot;(T)</td>
</tr>
</tbody>
</table>

(F) = FRONT  (S) = SIDE  (T) = THICKNESS

3. CONTRACTOR TO PROVIDE TWO 5/8"x10' COPPERWELD GROUND RODS PER PAD (INSTALLATION BY CONTRACTOR).

4. SIZE AND NUMBER OF CONDUITS IN EACH PAD TO BE AS SHOWN ON CONDUIT LAYOUT.

5. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSFORMER IS INSTALLED.

6. CONTRACTOR SHALL PROVIDE & INSTALL 12" OF CLASS 2 AGGREGATE ROAD BASE MATERIAL OR CRUSHER FINES WITH 3/4" ROCKS UNDERNEATH TRANSFORMER PAD, AND COMPACT ALL ROAD BASE UNDERNEATH TRANSFORMER PAD TO A MINIMUM COMPACTION OF 90%. SEE STANDARD 135. (REFER TO SECTION 6, TRANSFORMER PRECAST PADS, PRECAST VAULTS, SECTOR SLEEVES, LETTER L).

7. CONDUITS TO TERMINATE 1" ABOVE TOP OF TRANSFORMER PAD.

IMPERIAL IRRIGATION DISTRICT

DRAWN BY
REVIEWED
APPROVED
REVISION
DATE 12-09-2013

PRECAST CONCRETE PAD DETAIL FOR SINGLE-PHASE SECTOR 171.11
- 6" x 6" ALLOWED SPACE FOR GROUND ROD.

SECTOR PAD

00 2/0 CU. STR. WIRE

PRIMARY TRENCH WALL

00 2/0 CU. STR. WIRE

5' MIN.

GROUND WIRE

- COMPLETED WELD CONNECTION

CADWELD ONE-SHOT /

GROUND ROD 5/8" x 10'

PLAN VIEW

BY CUSTOMER

GROUND ROD

WRAP 00 2/0 CU. STR. WIRE

GROUND ROD 5/8" x 10'

SECTION A-A

SECTOR PAD

GROUND ROD 5/8" x 10'

GROUND WIRE

SECTOR PAD

GROUND ROD 5/8" x 10'

AMPACT (IID)

GROUND WIRE

BY I.I.D.

PRIMARY TRENCH BOTTOM

GROUND ROD 5/8" x 10'

GROUND WIRE

CONNECTOR

SECTOR PAD

IMPERIAL IRRIGATION DISTRICT

TRENCH GROUND WIRE FOR SINGLE PHASE SECTOR PADS TO BE INSTALLED BY CONTRACTOR

DRAWN BY

REVIEWED

APPROVED

REV 8

DATE 11–21–2016

190.4
CONSTRUCTION NOTES:

A GROUND RODS TO HAVE A 6'-0" MINIMUM SEPARATION.

B WRAP 6' OF WIRE (NOT EXPOSED) 1" UNDERGROUND NEXT TO GROUND ROD.

C LOCATE GROUND RODS SO THEY DO NOT TOUCH CONDUITS. GENERAL ORDER 128 REQUIRES GROUND RODS TO BE DRIVEN.

BILL OF MATERIAL

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<td>CADWELD, ONE-SHOT OR Amp 83750-1 CONNECTORS</td>
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<td>WIRE - COPPER 00 2/0 STRAND, SOFT DRAWN, BARE.</td>
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<td>GROUND ROD, 5/8&quot; x 10', COPPERWELD</td>
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NOTES:

THE SERVICE TRENCH IS ON PRIVATE PROPERTY AND BELONGS TO THE CUSTOMER, THEREFORE, THE TRENCH GROUND WIRE SHOULD ALWAYS BE INSTALLED IN THE PRIMARY TRENCH.
11"-12" CENTER DUCTS IN FIBERCRETE BOX

TOP OF BOX SHALL BE LEVEL

5" PVC SCH. 40 SWEEP REFER TO RADIUS CHART, TABLE 5

3/8" PEA GRAVEL

FINISH GRADE

12" MIN

12" MIN

10"

6"

2"

18"

18"
CONSTRUCTION NOTES:

1. COMPACT ALL BACKFILL FOR EXCAVATION UNDER SECTOR SLEEVE TO 90% BEFORE FIBERCRETE BOX PAD INSTALLATION.

2. CONTRACTOR SHALL PROVIDE & INSTALL 3/8" PEA GRAVEL MATERIAL UNDERNEATH SECTOR SLEEVE, AND 18" INSIDE OF BOX FOR SUPPORT AND DRAINAGE.

3. CONTRACTOR TO PROVIDE TWO 5/8" x 10' COPPERWELD GROUND RODS PER SECTOR SLEEVE (INSTALLATION BY CONTRACTOR).

4. SIZE AND NUMBER OF CONDUITS IN EACH SECTOR SLEEVE TO BE AS SHOWN ON CONDUIT LAYOUT.

5. CONDUITS NEED TO BE CENTERED IN FIBERCRETE BOX.

6. ALL PRIMARY SWEEPS TO BE PVC SCHEDULE 40, REFER TO TABLE 5 RISER SWEEP RADIUS.

7. GUARD POSTS MAY BE REQUIRED AT DISCRETION OF I.I.D. INSPECTOR.

8. ANCHORAGE TO BE SET BY I.I.D. WHEN TRANSCLOSURE IS INSTALLED.

9. APPROVED MANUFACTURERS AND STRUCTURES:

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PHONE No.</th>
<th>STRUCTURE No.</th>
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<tbody>
<tr>
<td>CONCAST, INC</td>
<td>REXEL (760) 352–4941</td>
<td>FC–23–69–36–1157</td>
</tr>
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</table>
SCOPE: THIS STANDARD SHOWS THE PAD-MOUNTED, THREE-PHASE, LOW PROFILE CABLE TERMINATING CABINET, PREFERRED INSTALLATION WHEN TERMINATING 4/0 AND SMALLER CABLE.

FRONT VIEW

ISOMETRIC VIEW

SIDE VIEW
6" x 6" ALLOWED SPACE FOR GROUND ROD.

#2/0 CU. STRAND WIRE (6’ EXPOSED TAILOUT)

PRIMARY TRENCH WALL

#2/0 CU. STRAND WIRE

3’ MIN.

PLAN VIEW

BY CUSTOMER

ROADBASE MATERIAL

FINISH GRADE

GROUND WIRE

COMPLETED WELD CONNECTION

CADWELD ONE-SHOT/

GROUND ROD
5/8"x10'

SECTION A–A

BY I.I.D.

GROUND ROD
5/8" x 10'

AMPACT (IID)

GROUND WIRE

ROADBASE MATERIAL

IMPERIAL IRRIGATION DISTRICT

THREE PHASE SECTOR SLEEVE
GROUNDS DETAIL
TO BE INSTALLED BY CONTRACTOR

DRAWN BY

REVIEWED

APPROVED

REVISION REV 7

DATE 11–21–2016

190.5
**CONSTRUCTION NOTES:**

A. GROUND RODS TO HAVE A 6’-0” MINIMUM SEPARATION.

B. WRAP 6’ OF WIRE (EXPOSED TAILOUT)

C. LOCATE GROUND RODS SO THEY DO NOT TOUCH CONDUITS. GENERAL ORDER 128 REQUIRES GROUND RODS TO BE DRIVEN.

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**BILL OF MATERIAL**

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<tr>
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<td>1</td>
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<tr>
<td>3</td>
<td>20’</td>
<td>WIRE – COPPER 00 2/0 STRAND, SOFT DRAWN BARE</td>
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<tr>
<td>4</td>
<td>2</td>
<td>GROUND ROD, 5/8” x 10’, COPPERWELD</td>
<td>40003814</td>
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**NOTES:**

THE SERVICE TRENCH IS ON PRIVATE PROPERTY AND BELONGS TO THE CUSTOMER, THEREFORE, THE TRENCH GROUND WIRE SHOULD NOT BE INSTALLED IN THE CUSTOMER TRENCH.
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6.1 Equipment clearances shall be measured from all above ground objects. See 6.3.1 Standard 100.16.

6.2 Clearances are required at the side(s) or end(s) of substructures, pad-mounted equipment, etc. IID secondary pullboxes, vaults, and transformers pre-cast pads may occupy or be installed within clearances. Developer/Contractor is responsible to provide 3 feet (36") of clearance for planting greenery around pads and larger substructures. Developer/Contractor is responsible to provide 10 feet (120") of clearance on the "Working Side" of IID equipment. Working Side = Door access side(s) of equipment. See 6.3.1 Standard 100.16.

6.3 IID equipment containing oil and capacitors adjacent to combustible buildings, distance shall not be less than 10 feet (120") from building windows and/or doors. See 6.3.1 Standard 100.16.
NOTES:
1. NO WINDOW OR DOOR SHALL BE WITHIN A 10' (120") RADIUS OF OIL FILLED EQUIPMENT.
6.3.2 Noncombustible – Building surfaces or materials approved by the uniform building code as having a minimum fire rating of one hour include but not limited to:

6.3.2.1.1 Steel studded drywall

6.3.2.1.2 Steel studded stucco or other materials on steel studs having minimum fire rating of one hour.

6.3.2.1.3 Brick or stone

6.3.2.1.4 Tile

6.3.2.1.5 Concrete

6.3.2.1.6 Iron or steel

6.3.3 Combustible – Building surfaces or materials include but not limited to:

6.3.3.1.1 Wood studded stucco

6.3.3.1.2 Wood studded drywall

6.4 Pre-cast concrete pads, vaults, and sector sleeves are to be installed 1 foot (12") from back of existing or proposed sidewalk. When barrier post(s) are required to protect IID structures, barrier post(s) will be installed 1 foot (12") from back of sidewalk. All Pre-cast concrete pads, vaults, and sector sleeves to be installed 25 feet from handicap ramps.
6.5 Required clearances from any IID transformer to other utilities is 18" on sides or back of transformer the 18" is measured from the transformer pad. See 6.6 Standard 202.4

6.5.1 Barrier posts required refer to 5.31 Standard 181.6.

6.5.2 Barrier posts not required transformer precast pad shall have a 12" offset behind sidewalk. See 6.4. Refer to 6.6 Standard 202.4

6.5.3 Transformer pad working clearance refer to 6.7 Standard 202.5

6.5.3.1 Working clearance in front or opening of transformer ten feet (10') measurement is from edge of pad. See 6.7 Standard 202.5

6.5.3.2 Working clearance on each side of transformer three feet (3') measurement is from edge of pad. See 6.7 Standard 202.5

6.5.3.3 Working clearance behind transformer is three feet (3') measurement is from edge of pad. See 6.7 Standard 202.5
NOTES:
1. THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE REQUIRED CLEARANCES FROM AN I.I.D TRANSFORMER TO OTHER UTILITIES (18") AND MINIMUM HOT STICK CLEARANCE.

⚠️ WHEN BARRIER POSTS ARE REQUIRED, REFER TO BARRIER POST DETAIL 181.6, SECTION 5.32. IF BARRIER POSTS ARE NOT REQUIRED, TRANSFORMER PRECAST PAD SHALL HAVE A 12" (1") OFFSET BEHIND SIDEWALK.
NOTES:

⚠️ THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE REQUIRED CLEARANCES FROM AN I.I.D TRANSFORMER TO OTHER UTILITIES (18") AND MINIMUM HOT STICK CLEARANCE.

⚠️ WHEN BARRIER POSTS ARE REQUIRED, ALL OTHER UTILITIES TO STAY CLEAR OF AREA. (REFER TO BARRIER POST DETAIL, 181.6, SECTION 5.32.)
6.8 Required working clearances in front of a sector is ten feet (10’).

6.8.1 Barrier posts required refer to 5.31 Standard 181.6.

6.8.2 Barrier posts not required sector sleeve shall have a 12” offset behind sidewalk. See 6.4. Refer to 6.6 Standard 202.4

6.8.3 Sector sleeve or pad working clearance refer to 6.10 Standard 202.7

6.8.3.1 Working clearance in front of sector is ten feet (10’) measurement is from edge of sleeve or pad. See 6.10 Standard 202.7

6.8.3.2 Working clearance on each side of sector is three feet (3’) measurement from edge of sleeve or pad. See 6.10 Standard 202.7

6.8.3.3 Working clearance behind sector is three feet (3’) measurement is from edge of sleeve or pad. See 6.10 Standard 202.5

6.9 Required clearances from any IID sector to other utilities is 18” on sides or back of sector the 18” is measured from the sector sleeve or pad. See 6.11 Standard 202.8
NOTES:
1. THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE REQUIRED CLEARANCES
   FROM AN I.I.D SECTOR AND MINIMUM HOT STICK CLEARANCE.

⚠ WHEN BARRIER POSTS ARE REQUIRED, REFER TO BARRIER POST DETAIL 181.6, SECTION 5.32. IF BARRIER POSTS ARE NOT REQUIRED,
   SECTOR SLEEVE SHALL HAVE A 12" (1') OFFSET BEHIND SIDEWALK.
NOTES:

⚠️ THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE REQUIRED CLEARANCES
FROM AN I.I.O SECTOR TO OTHER UTILITIES (18") AND MINIMUM HOT STICK CLEARANCE.

⚠️ WHEN BARRIER POSTS ARE REQUIRED, ALL OTHER UTILITIES TO STAY CLEAR OF AREA.
(REFER TO BARRIER POST DETAIL, 181.6, SECTION 5.32.)
6.12 Required working clearances in front and back of a switch is ten feet (10’).

6.12.1 Barrier posts required. refer to 5.31 Standard 181.6

6.12.2 Barrier posts not required. Switch shall have a 12” offset behind sidewalk. See 6.4, and 6.14 Standard 202.9

6.12.3 Switch sleeve or vault pad working clearance refer to 6.14 Standard 202.9

6.12.3.1 Working clearance in front and back of a switch is ten feet (10’) measurement is from edge of sleeve or vault lid. See 6.14 Standard 202.9

6.12.3.2 Working clearance on each side of a switch is three feet (3’) measurement from edge of sleeve or vault lid. See 6.14 Standard 202.9

6.13 Required clearances from any IID switch to other utilities is 18” on sides, back and front require the ten foot (10’) clearance, measurement is from edge of the switch sleeve or vault lid. See 6.15 Standard 202.10
1. THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE REQUIRED CLEARANCES FROM AN I.I.D SWITCH VAULT AND MINIMUM HOT STICK CLEARANCE.

⚠️ FENCE, RETAINING WALL, OR ANY OBSTRUCTION MUST REMAIN A MINIMUM OF 10’ FROM THE EDGE OF THE VAULT (WHERE ACCESS DOORS ARE PRESENT) TO MAINTAIN HOT STICK CLEARANCE.

⚠️ WHEN BARRIER POST ARE REQUIRED, REFER TO BARRIER POST DETAIL 181.6, SECTION 5.32. IF BARRIER POSTS ARE NOT REQUIRED VAULT LID WILL HAVE AN OFFSET OF 12” (1’) BEHIND SIDEWALK.
NOTES:

⚠️ THE PURPOSE OF THIS DRAWING IS TO ILLUSTRATE THE REQUIRED CLEARANCES FROM AN I.I.D SWITCH VAULT TO OTHER UTILITIES AND MINIMUM HOT STICK CLEARANCE. COMMUNICATIONS WILL HAVE A MINIMUM 18" OFFSET FROM EDGE OF VAULT LID.

⚠️ WHEN BARRIER POSTS ARE REQUIRED, ALL OTHER UTILITIES TO STAY CLEAR OF AREA (BARRIER POST DETAIL, 181.6, SECTION 5.32.)
6.16 Required clearances from any IID secondary pullbox to other utilities is 18” on sides.

6.16.1 Imperial Valley secondary pullbox example. See 6.17 Standard 202.11

6.16.2 Coachella Valley secondary pullbox example. See 6.18 Standard 202.12
NOTES:
1. IID Requires secondary pullboxes to have a minimum clearance of 18" from all other utilities.
   △ Secondary pullbox to be installed a minimum of 12" (1') behind sidewalk.
NOTES:
1. IID REQUIRES SECONDARY PULLBOXES TO HAVE A MINIMUM CLEARANCE OF 18" FROM ALL OTHER UTILITIES.
2. SECONDARY PULLBOX TO BE INSTALLED A MINIMUM OF 12" (1') BEHIND SIDEWALK.

6.19.1 Table A Basic Minimum Allowable Vertical Clearance of Wires Above and in Proximity to Buildings and Structures

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>VOLTAGE</th>
<th>DISTANCE OR CLEARANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERTICAL CLEARANCE ABOVE WALKABLE SURFACE ON BUILDINGS</td>
<td>750 – 22,000 VOLTS</td>
<td>12’</td>
</tr>
<tr>
<td>VERTICAL CLEARANCE ABOVE NON WALKABLE SURFACE ON BUILDINGS</td>
<td>750 – 22,000 VOLTS</td>
<td>8’</td>
</tr>
<tr>
<td>CENTERLINE OF POLE TO FENCE</td>
<td>7200 – 15,000 VOLTS</td>
<td>5’</td>
</tr>
</tbody>
</table>

6.19.2 Table B Minimum Approach distance Between Power Lines, Cranes and Derricks

<table>
<thead>
<tr>
<th>POWER LINE VOLTAGE</th>
<th>MINIMUM APPROACH DISTANCE FOR CRANE OR DERRICK, LOAD AND LOAD LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP TO 50,000 VOLTS</td>
<td>10 FEET</td>
</tr>
<tr>
<td>OVER 50,000 VOLTS UP TO 250,000 VOLTS</td>
<td>17 FEET</td>
</tr>
<tr>
<td>OVER 250,000 VOLTS UP TO 370,000 VOLTS</td>
<td>21 FEET</td>
</tr>
<tr>
<td>OVER 370,000 VOLTS UP TO 550,000 VOLTS</td>
<td>27 FEET</td>
</tr>
</tbody>
</table>

6.19.3 Table C Minimum Approach Distance between Energized Line/Equipment and People, Materials, and non-crane equipment

<table>
<thead>
<tr>
<th>ENERGIZED LINE VOLTAGE</th>
<th>MINIMUM APPROACH DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPT TO 50,000 VOLTS</td>
<td>10 FEET</td>
</tr>
<tr>
<td>OVER 50,000 VOLTS UP TO 75,000 VOLTS</td>
<td>11 FEET</td>
</tr>
<tr>
<td>OVER 75,000 VOLTS UP TO 125,000 VOLTS</td>
<td>13 FEET</td>
</tr>
<tr>
<td>OVER 125,000 VOLTS UP TO 175,000 VOLTS</td>
<td>15 FEET</td>
</tr>
<tr>
<td>OVER 175,000 VOLTS UP TO 250,000 VOLTS</td>
<td>17 FEET</td>
</tr>
<tr>
<td>OVER 250,000 VOLTS UP TO 370,000 VOLTS</td>
<td>21 FEET</td>
</tr>
<tr>
<td>OVER 370,000 VOLTS UP TO 550,000 VOLTS</td>
<td>27 FEET</td>
</tr>
</tbody>
</table>
NOTES:

◊ BUILDING STRUCTURES TO CONDUCTOR, CLEARANCE TO BE 12 FT. MIN RADIAL FOR 15KV CIRCUITS.

◊ CLEARANCE TO BE 5 FT. RADIAL FROM CENTERLINE OF POWER POLE, I1D RIGHT OF WAY.

NO STRUCTURES ALLOWED IN I1D RIGHT OF WAY.

◊ BUILDING STRUCTURE TO BE A MAXIMUM HEIGHT OF 13 FT. IF DIRECTLY OUTSIDE OF I1D RIGHT OF WAY.

4. CLEARANCES SHOWN ARE FOR DOUBLE CIRCUITS ONLY, FOR SINGLE CIRCUIT CLEARANCES NOTE ◊ APPLIES.
NOTES:

1. SECONDARY SERVICE WIRES PASSING OVER THE ROOF (FLAT OR PEAK) OF ANOTHER STRUCTURE, BUT NOT ATTACHED TO THAT STRUCTURE, MUST MAINTAIN THE MINIMUM CLEARANCES SHOWN. SECONDARY WIRES INCLUDE TRIPLEX, QUADRUPLEX, AND ALL OPEN WIRES. WHEN OPEN WIRE IS INSTALLED, THE LOWEST CONDUCTOR (TYPICALLY PHASE "C") MUST MAINTAIN THE MINIMUM CLEARANCES SHOWN.

2. ACCORDING TO NESC TABLE 234-1, A ROOF, BALCONY, OR AREA IS CONSIDERED ACCESSIBLE TO PEDESTRIANS IF THE MEANS OF ACCESS IS THROUGH A DOORWAY, RAMP, WINDOW, STAIRWAY, OR A PERMANENTLY MOUNTED LADDER. A PERMANENTLY MOUNTED LADDER IS NOT CONSIDERED A MEANS OF ACCESS IF ITS BOTTOM RUNG IS 8 FEET OR MORE FROM THE GROUND OR OTHER PERMANENTLY INSTALLED ACCESSIBLE SURFACE.

3. THE SERVICE WIRES MUST NOT CROSS A METAL ROOF.
NOTES:
1. SERVICE DROP LENGTH SHOULD BE LIMITED TO 100FT. MAX.
2. SERVICE CONDUIT, INCLUDING SERVICE CAP, INSULATED WIRES, GUY WIRES, SERVICE MAST HOLDER, SELF CONTAINED METER, GROUND CONNECTION WITH ROD AND BREAKER BOX ARE TO BE PROVIDED BY THE CONTRACTOR.
3. THE SERVICE WIRING MUST NOT CROSS A METAL ROOF.

IMPERIAL IRRIGATION DISTRICT

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DATE

30000024

OVERHEAD SECONDARY (MULTIPLEX SERVICES)
SINGLE/THREE PHASE

206.12

214
Any IID underground high voltage structure i.e., transformer, switch, sector, capacitor bank, and secondary voltage metering equipment shall maintain a 10 foot (120") radial clearance from any commercial propane tank, vent, or fill-tube that contains flammable liquids, gases, vapors, or mixtures. Refer to NFPA 58 Sections 6.3, Containers Separation Distances.
6.24 Any Imperial Irrigation District overhead primary pole or conductor transformer, switch, capacitor bank, voltage regulator, and secondary service, meter, etc. shall maintain 18 feet and 6 inches radial clearance from any commercial propane tank, vent, or fill-tube that contains flammable liquids, gases, vapors, or mixtures. Overhead primary or secondary conductors are not to cross over the propane tank regardless if the height is more than 18 feet and 6 inch radius. Refer to NFPA 58 Sections 6.3, Containers Separation Distances.
## RETAINING WALLS

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7.1 Developer/Contractor shall be responsible to provide a retaining wall around IID facility where applicable. See 7.08 – 7.11 Standards 100.15 – 100.153 per IID requirements. If the slope is greater than what is described in 7.2 or 7.3, a retaining wall is required. The drawing set-back is required for IID personnel to maintain and operate equipment safely. The IID has the final decision where retaining wall is to be installed.

7.2 Sloping backfill at grade finish shall be 6 to 18 inches below the top of the retaining wall; IID has the final decision on distance of retaining wall above ground level. Retaining wall shall require full back and two side walls to prevent fill from entering IID structure. See 7.1 and Standards 100.15 – 100.153).

7.3 Retaining wall built near a falling away slope shall be allowed to have side walls that are stepped due to the type of falling away slope. See 7.2 and 7.09 Standard 100.151 Section B “Reverse Sub grade Retaining Wall” drawing.

7.4 The IID reserves the right to determine when and where retaining walls are needed; the Developer/Contractor shall contact the IID inspector and/or Customer Service Project Manager.

7.5 Concrete block (concrete masonry unit) retaining walls are to be grouted.

7.6 Poured in place reinforced retaining walls are permitted.

7.7 Retaining wall “blocks” are not allowed in construction of retaining walls in IID areas. See 7.10 standard 100.152 for retaining wall material specifications.
<table>
<thead>
<tr>
<th>Type of Structure</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
<th>&quot;C&quot;</th>
<th>&quot;D&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>3' X 6' Primary Small Pullbox</td>
<td>3'</td>
<td>3'</td>
<td>2'</td>
<td>1 1/2'</td>
</tr>
<tr>
<td>4' X 6' Primary Medium Pullbox</td>
<td>3'</td>
<td>3'</td>
<td>2'</td>
<td>2'</td>
</tr>
<tr>
<td>6' X 8'-6&quot; Primary Vault Without Cabinet</td>
<td>3'</td>
<td>8'</td>
<td>3'</td>
<td>3'</td>
</tr>
<tr>
<td>6' X 8'-6&quot; Primary Vault With Cabinet</td>
<td>3'</td>
<td>10'</td>
<td>3'</td>
<td>3'</td>
</tr>
<tr>
<td>All Transformer Pad (Single &amp; Three Phase)</td>
<td>3'</td>
<td>3'</td>
<td>VARIES</td>
<td>VARIES</td>
</tr>
</tbody>
</table>

**Notes:**
1. The chart above indicates the space available to operate and/or maneuver equipment safely with retaining wall.
2. Retaining wall sides will end at the center of all IID facilities (see plan view).
3. Refer to Standard 100.151 - 100.153 for retaining wall construction.
7.10

SCOPE:

This standard shows retaining walls for level and sloping backfill to protect pad mounted and subsurface equipment.

---

**TABLE 10 - RETAINING WALL SLOPE ELEVATION**

<table>
<thead>
<tr>
<th>WALL HEIGHT</th>
<th>WALL TYPE (T)</th>
<th>WALL STEEL (R)*</th>
<th>WALL KEY W x H (K)</th>
<th>WALL FOUNDATION W x H</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) 32&quot;</td>
<td>8&quot;X8&quot;X16&quot; BLOCK</td>
<td>#4 REBAR ON 24&quot; CENTER</td>
<td>#4 REBAR ON 24&quot; CENTER</td>
<td>NONE</td>
</tr>
<tr>
<td>(B) 56&quot;</td>
<td>8&quot;X8&quot;X16&quot; BLOCK</td>
<td>#4 REBAR ON 24&quot; CENTER</td>
<td>#4 REBAR ON 24&quot; CENTER</td>
<td>4&quot; x 2&quot;</td>
</tr>
<tr>
<td>(C) 72&quot;</td>
<td>8&quot;X6&quot;X16&quot; BLOCK</td>
<td>#5 REBAR ON 24&quot; CENTER</td>
<td>#5 REBAR ON 24&quot; CENTER</td>
<td>4&quot; x 2&quot;</td>
</tr>
<tr>
<td>(D) 96&quot;</td>
<td>10&quot;X6&quot;X16&quot; BLOCK</td>
<td>#5 REBAR ON 18&quot; CENTER</td>
<td>#5 REBAR ON 18&quot; CENTER</td>
<td>4&quot; x 2&quot;</td>
</tr>
</tbody>
</table>

**NOTES:**
1. HORIZONTAL STEEL 4-#4 BARS SHALL BE PlACED VERTICALLY IN THE FOOTING AS SHOWN.
2. SLOPE OF RETAINED EARTH HORIZONTAL RUN TO VERTICAL RISE 2 TO 1.
3. CONSULT LOCAL BUILDING DEPARTMENT FOR PERMITS.

---

**MATERIAL LIST:**

**TYPE II**

- BLOCK WALL TYPE (T)
  - 8"X8"X16" BLOCK
  - 8"X6"X16" BOND BEAM
  - 10"X8"X16" BLOCK
  - 10"X8"X16" BOND BEAM

CMU = ASTM C 90

**REINFORCED STEEL (R)**

- HORIZONTAL AND VERTICAL
  - #4 REBAR (fy = 60ksi)
  - #5 REBAR (fy = 60ksi)

**FOUNDATION**

- 4000 psi CONCRETE

---

**IMPERIAL IRRIGATION DISTRICT**

**DRAWN BY**

**REVIEWED**

**APPROVED**

**REVISION** REV 1

**DATE** 12-09-2013 100.152
FOUNDATION PLAN
N.T.S.

IMPERIAL IRRIGATION DISTRICT

REVIEWED
APPROVED
REVISION
DATE 12-09-2013

RETAINING WALL SECTIONS
FOUNDATION PLAN

100.153
7.12 Slope elevations greater than those described in detail may require retaining walls on 3 sides per IID safety and electrical clearance requirements (3 inch per 1 linear foot requires retaining walls). See 7.1, 7.2 and 7.8 – 7.11 Standard 100.15 – 100.153.

7.13 A falling away slope from a finished grade that has no ratio equal or less than a 2 to 1 within 6 feet (72”) of the IID equipment will require a retaining wall. See 7.3 and 7.8 – 7.11 Standard 100.15 – 100.153.

7.14 “IID EQUIPMENT” is identified as vaults, sectors, all transformers, and secondary pullboxes.

NOTE: WHEN OPENING OF IID EQUIPMENT IS LOCATED FACING THE DROP OFF SIDE, A 10 FOOT HORIZONTAL LEVEL IS REQUIRED.
NOTES:
1. WHEN SLOPE IS GREATER THAN 5' (12:1'), AN EROSION CONTROL CONCRETE CURB WILL BE REQUIRED.
2. CURB DIMENSIONS: 4" WIDE X 8" HIGH FROM FINISHED GRADE.
*CURB HEIGHT SUBJECT TO CHANGE PER INSPECTOR'S DISCRETION TO A MAXIMUM HEIGHT OF 12".*
*WHEN BARRIER POSTS ARE REQUIRED, REFER TO BARRIER POST DETAIL 181.6, SECTION 5.32. IF BARRIER POSTS ARE NOT REQUIRED, TRANSFORMER PRECAST PAD SHALL HAVE A 12" (1') OFFSET BEHIND SIDEWALK.*
# TREE CLEARANCES

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<tr>
<td>PAGE INTENTIONALLY LEFT BLANK</td>
<td>240</td>
</tr>
</tbody>
</table>
NOTES:

Vegetation to Conductor Clearance to be 10 ft. radial for 15KV circuits.

Vegetation Clearance to be 5 ft. radial from surface of structure.

New vegetation growth to be 20 ft. from centerline of the structure and 15 ft. high from ground surface. This vegetation to be slow growth type and have a maximum growth height not to exceed 15 ft.

4. Refer to standard number 202.24 for fan and date palm tree clearances.
NOTES:

1. VEGETATION TO CONDUCTOR CLEARANCE TO BE 10 FT. RADIAL FOR 15KV CIRCUITS AND 15 FT. RADIAL FOR 92KV CIRCUITS.

2. VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF STRUCTURE.

3. NEW VEGETATION GROWTH TO BE 20 FT. FROM CENTERLINE OF THE STRUCTURE AND 15 FT. HIGH FROM GROUND SURFACE. THIS VEGETATION TO BE SLOW GROWTH TYPE AND HAVE A MAXIMUM GROWTH HEIGHT NOT TO EXCEED 15 FT.

4. REFER TO STANDARD NUMBER 202.24 FOR FAN AND DATE PALM TREE CLEARANCES.
NOTES:

 VEGETATION TO CONDUCTOR CLEARANCE TO BE 10 FT. RADIAL FOR 15KV CIRCUITS.

 VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF STRUCTURE.

 NEW VEGETATION GROWTH TO BE 20 FT. FROM CENTERLINE OF THE STRUCTURE AND 15 FT. HIGH FROM GROUND SURFACE. THIS VEGETATION TO BE SLOW GROWTH TYPE AND HAVE A MAXIMUM GROWTH HEIGHT NOT TO EXCEED 15 FT.

4. REFER TO STANDARD NUMBER 202.24 FOR FAN AND DATE PALM TREE CLEARANCES.
NOTES:

_VEGETATION TO CONDUCTOR CLEARANCE TO BE 10 FT. RADIAL FOR 15KV CIRCUITS AND 15 FT. RADIAL FOR 92KV CIRCUITS._

_VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF STRUCTURE._

_NEW VEGETATION GROWTH TO BE 20 FT. FROM CENTERLINE OF THE STRUCTURE AND 15 FT. HIGH FROM GROUND SURFACE. THIS VEGETATION TO BE SLOW GROWTH TYPE AND HAVE A MAXIMUM GROWTH HEIGHT NOT TO EXCEED 15 FT._

4. REFER TO STANDARD NUMBER 202.24 FOR FAN AND DATE PALM TREE CLEARANCES.
NOTES:

1. VEGETATION TO CONDUCTOR CLEARANCE TO BE 20 FT. RADIAL FOR 161KV CIRCUITS AND 230KV CIRCUITS.

2. VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF STRUCTURE.

3. NO VEGETATION ALLOWED IN THIS AREA, FROM 30 FT. OF CENTERLINE OF THE CIRCUIT AND 15 FT. HIGH FROM GROUND SURFACE.

4. REFER TO STANDARD NUMBER 202.24 FOR FAN AND DATE PALM TREE CLEARANCES.
HAZARDOUS TREE(S)
Palm Trees (All Species)

NOTES:
1. A HAZARDOUS TREE, AS DEFINED BY THE CALIFORNIA FOREST PRACTICE RULES, SHALL BE IDENTIFIED AND EVALUATED BY THE FOLLOWING FACTORS:
   A) ITS PROXIMITY TO A UTILITY RIGHT-OF-WAY OR FACILITY THAT COULD DAMAGE UTILITY FACILITIES.
   B) THE DEFECTIVENESS OF THE TREE DUE TO ANY CAUSE.
   C) OTHER POTENTIAL HAZARDS SUCH AS EXTREME CONDITIONS.

2. PALM TREES POSSESS ONLY ONE GROWTH TIP OR STALK AND SOMETIMES GROW RAPIDLY, ESPECIALLY WITH THE CONSTANT WATERING IN SOME OF OUR DESERT COMMUNITIES. CONSEQUENTLY, ANY SPECIES OF PALM TREES THAT GROW 20' OR HIGHER AND DIRECTLY UNDER OR INTO A POWER LINE WILL NEED TO BE REMOVED.
NOTE:

1. PALM TREES CAN AND WILL TOWER TO HEIGHTS UP TO 65' AND 70'. THEY ARE CONSTANTLY TRIMMED AND HARVESTED BY DATE TREE WORKERS AND ARE POPULAR IN COUNTRY CLUBS. IN THE INTEREST FOR WORKER SAFETY AND POWER SUPPLY DEMAND, THE ABOVE MENTIONED CLEARANCES ARE BETWEEN OUTSIDE CONDUCTORS AND THE TIPS OF PALM FRONDS.
NOTES:

1. PALM TREES CAN AND WILL TOWER TO HEIGHTS UP TO 65’ AND 70’. THEY ARE CONSTANTLY TRIMMED AND HARVESTED BY DATE TREE WORKERS AND ARE POPULAR IN COUNTRY CLUBS. IN THE INTEREST FOR WORKER SAFETY AND POWER SUPPLY DEMAND, THE ABOVE MENTIONED CLEARANCES ARE BETWEEN INSIDE CONDUCTORS AND THE TIPS OF PALM FRONDS, SEE DATE PALM CONFIGURATION.

2. A HAZARDOUS TREE, AS DEFINED BY THE CALIFORNIA FOREST PRACTICE RULES, SHALL BE IDENTIFIED AND EVALUATED BY THE FOLLOWING FACTORS:  
   A) ITS PROXIMITY TO A UTILITY RIGHT-OF-WAY OR FACILITY THAT COULD DAMAGE UTILITY FACILITIES.
   B) THE DEFECTIVENESS OF THE TREE DUE TO ANY CAUSE.
   C) OTHER POTENTIAL HAZARDS SUCH AS EXTREME CONDITIONS.

3. PALM TREES POSSESS ONLY ONE GROWTH TIP OR STALK AND SOMETIMES GROW RAPIDLY, ESPECIALLY WITH THE CONSTANT WATERING IN SOME OF OUR DESERT COMMUNITIES. CONSEQUENTLY, ANY SPECIES OF PALM TREES THAT GROW 20’ OR HIGHER AND DIRECTLY UNDER OR INTO A POWER LINE WILL NEED TO BE REMOVED.
NOTES:

Vegetation to conductor clearance to be 10 ft. radial for 15kV circuits and 25 ft. radial for 230kV circuits.

Vegetation clearance to be 5 ft. radial from surface of structure.

New vegetation growth to be 30 ft. from centerline of the structure and 15 ft. high from ground surface. This vegetation to be slow growth type and have a maximum growth height not to exceed 15 ft.

4. Refer to standard number 202.24 for fan and date palm tree clearances.

Imperial Irrigation District

Existing line conditions
230kV transmission and 15kV distribution underbuild
TABLE 1

<table>
<thead>
<tr>
<th>VEGETATION</th>
<th>GROWTH RATE PER YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALT CEDAR</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>TAMARISK</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>ATHEL</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>EUCALYPTUS</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>COTTONWOOD</td>
<td>8' to 10'</td>
</tr>
</tbody>
</table>

NOTES:

◇ VEGETATION TO CONDUCTOR BLOWOUT CLEARANCE TO BE 25 FT. RADIAL FOR 230KV CIRCUITS.
◇ VEGETATION TO CONDUCTOR DURING NORMAL CONDITIONS, CLEARANCE TO BE 30 FT. RADIAL FOR 230KV CIRCUITS.
◇ VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM OF STRUCTURE.
◇ UNDER NO CIRCUMSTANCES VEGETATION IDENTIFIED ON TABLE 1 WILL BE ALLOWED IN THIS AREA. IN ADDITION, ANY PALM TREE SPECIES WILL NOT BE ALLOWED. SEE 230KV STANDARD 202.33 FOR DETAILS.
NOTES:

◇ CONDUCTOR SAG WILL VARY DURING WINTER SEASON AND SUMMER SEASON. DURING SUMMER SEASON, AN ADDITIONAL 12 FT. OF SAG WILL OCCUR BECAUSE OF MAXIMUM LOADING OF THE CONDUCTOR COMPARED TO THE WINTER SEASON SAG.

◇ VEGETATION TO CONDUCTOR CLEARANCE TO BE 25 FT. RADIAL FOR 230KV CIRCUITS.

◇ VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF POLE STRUCTURE.

◇ UNDER NO CIRCUMSTANCES VEGETATION IDENTIFIED ON TABLE 1 WILL BE ALLOWED IN THIS AREA. IN ADDITION, ANY PALM TREE SPECIES WILL NOT BE ALLOWED. SEE 230KV STANDARD 202.33 FOR DETAILS.

TABLE 1

<table>
<thead>
<tr>
<th>VEGETATION</th>
<th>GROWTH RATE PER YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALTCEDAR</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>TAMARISK</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>A. TEL</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>EUCALYPTUS</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>COTTONWOOD</td>
<td>8' to 10'</td>
</tr>
</tbody>
</table>
NOTES:

☐ CONDUCTOR SAG WILL VARY DURING WINTER SEASON AND SUMMER SEASON. DURING SUMMER SEASON, AN ADDITIONAL 43 FT. OF SAG WILL OCCUR BECAUSE OF MAXIMUM LOADING OF THE CONDUCTOR COMPARED TO THE WINTER SEASON SAG.

☐ VEGETATION TO CONDUCTOR CLEARANCE TO BE 65 FT. RADIAL FOR 230KV CIRCUITS.

☐ VEGETATION CLEARANCE TO BE 5 FT. RADIAL FROM SURFACE OF POLE STRUCTURE.

☐ UNDER NO CIRCUMSTANCES VEGETATION IDENTIFIED ON TABLE 1 WILL BE ALLOWED IN THIS AREA. IN ADDITION, ANY PALM TREE SPECIES WILL NOT BE ALLOWED. SEE 230KV STANDARD 202.33 FOR DETAILS.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>VEGETATION</td>
</tr>
<tr>
<td>SALT CEDAR</td>
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<tr>
<td>ATHEL</td>
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<tr>
<td>EUCALYPTUS</td>
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<tr>
<td>COTTONWOOD</td>
</tr>
</tbody>
</table>

IMPERIAL IRRIGATION DISTRICT

LINE CLEARANCES FOR 230KV STEEL POLE STRUCTURES

202.30

DRAWN BY: REVIEWED: APPROVED: REVISION: DATE: 6-30-14
8.12

![Diagram of vegetation and tree growth clearance areas]

**TABLE 1**

<table>
<thead>
<tr>
<th>VEGETATION</th>
<th>GROWTH RATE PER YEAR</th>
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</thead>
<tbody>
<tr>
<td>SALT CEDAR</td>
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<tr>
<td>TAMARISK</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>ATHEL</td>
<td>10' to 15'</td>
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<tr>
<td>EUCALYPTUS</td>
<td>10' to 15'</td>
</tr>
<tr>
<td>COTTONWOOD</td>
<td>8' to 10'</td>
</tr>
</tbody>
</table>

**NOTES:**

- Vegetation to conductor blowout clearance to be 17 ft. radial for 230KV circuits.
- Vegetation to conductor during normal conditions, clearance to be 50 ft. radial for 230KV circuits.
- Vegetation clearance to be 5 ft. radial from of structure.
- Under no circumstances vegetation identified on Table 1 will be allowed in this area. In addition, any palm tree species will not be allowed. See 230KV Standard #202.33 for details.

**IMPERIAL IRRIGATION DISTRICT**

<table>
<thead>
<tr>
<th>DRAWN BY</th>
<th>REVIEWED</th>
<th>APPROVED</th>
</tr>
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**LINE CLEARANCES FOR 230KV TRANSMISSION STEEL POLE STRUCTURES**

DATE 6–30–2014 202.29
# PRIMARY RISER

Table of contents – Section 9

<table>
<thead>
<tr>
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<tr>
<td>9.0 PRIMARY SINGLE RISER STANDARD 108.1</td>
<td>242</td>
</tr>
<tr>
<td>9.1 PRIMARY DUAL RISER STANDARD 108.12</td>
<td>243</td>
</tr>
<tr>
<td>PAGE INTENTIONALLY LEFT BLANK</td>
<td>244</td>
</tr>
</tbody>
</table>
CONSTRUCTION NOTES:

CONDUIT INSTALLATION TO BE COMPLETED BY THE CUSTOMER OR CONTRACTOR UP TO 10’ ABOVE FINISHED GRADE AS SHOWN.

REFER TO CONTRACTORS NOTES DISTRIBUTION PLAN FOR DIRECTION OF THE SWEEP AND RISER POSITION.

FIRST CONDUIT BRACKET TO BE INSTALLED APPROXIMATELY 8 FEET ABOVE FINISHED GRADE.

REFER TO CONTRACTORS NOTES DISTRIBUTION PLAN FOR SIZE OF SCHEDULE 80 PVC ABOVE GROUND.

GROUND RODS TO BE INSTALLED BY IID.

BRACKETS TO BE SUPPLIED BY IID UNLESS OTHERWISE NOTED.

CONDUIT SWEEP TERMINATING AT RISER POLE SHALL BE SCHEDULE 80 WITH A MINIMUM 4’ (48”) RADIUS, SEE STANDARD 100.12. REFER TO CONTRACTORS NOTE 4H AND REFER TO TABLE 5 RISER SWEEP RADIUS.

ALL RISER SWEEPS TO BE INSTALLED 6” BELOW FINISHED GRADE.

NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.
NOTE: SWEEPS AND CONDUITS PVC MATERIAL ONLY.

CONSTRUCTION NOTES:

- Conduit installation to be completed by the customer or contractor up to 10' above finished grade as shown.
- Refer to contractors' notes distribution plan for direction of the sweep and riser position.
- First conduit bracket to be installed approximately 8 feet above finished grade.
- Refer to contractors' notes distribution plan for size of Schedule 80 PVC above ground.
- Ground rods to be installed by IID.
- Brackets to be supplied by IID unless otherwise noted.
- Separate conduits leaving center of pole open for use.
- Conduit sweeps terminating at riser pole shall be Schedule 80 with a minimum 4' (48") radius. See Standard 100.12. Refer to contractors' note 4H and refer to Table 5 riser sweep radius.

All riser sweeps to be installed 6" below finished grade.

Imperial Irrigation District

Primary Dual Riser Pole

Drawn By
Reviewed
Approved
Revision REV 05
Date 12-09-2013
APPENDIX

Table of contents – Section 10

<table>
<thead>
<tr>
<th>PARAGRAPHS</th>
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<td>Table 1</td>
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<td>Table 4</td>
<td>Conduit Radius Index, Section 3</td>
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<td>Table 5</td>
<td>Riser Sweep Radius, Section 3</td>
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<td>Table 6</td>
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<td>Table 7</td>
<td>Poly Plugs, Section 5</td>
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<td>Table 8</td>
<td>Conduit Rope/Measured Rope Requirements, Section 3</td>
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<td>Table 10</td>
<td>Retaining Wall Slope Elevation, Section 7</td>
</tr>
<tr>
<td>Table A</td>
<td>Basic Minimum Allowable Vertical Clearances, Section 6</td>
</tr>
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<td>Table B</td>
<td>Minimum Approach Distance for Equipment, Section 6</td>
</tr>
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<td>Table C</td>
<td>Minimum Approach Distance for People, Section 6</td>
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<tbody>
<tr>
<td>11.1</td>
<td>CUSTOMER PROJECT APPLICATION</td>
<td>248 – 257</td>
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<td>11.2</td>
<td>PROCESS OVERVIEW</td>
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<td>11.3</td>
<td>APPLICATION CHECKLIST</td>
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<td>11.4</td>
<td>CREDIT ESTABLISHMENT REQUIREMENTS</td>
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<tr>
<td>11.5</td>
<td>RESIDENTIAL &amp; COMMERCIAL APPLICATIONS FOR SERVICE</td>
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<td>11.6</td>
<td>APPLICATION FOR SERVICE – CONTINUED</td>
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<td>11.7</td>
<td>CONTRACTOR INFORMATION SHEET</td>
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<td>11.8</td>
<td>TERMS &amp; CONDITIONS</td>
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<tr>
<td>11.9</td>
<td>MOTOR, STARTER, &amp; GENERATOR INFORMATION</td>
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</tr>
<tr>
<td>11.10</td>
<td>JOINT TRENCHING INDEMNITY AGREEMENT</td>
<td>257</td>
</tr>
</tbody>
</table>
Customer Project Development Services

Customer Project Application

Last Updated (11-16)

Imperial Valley
333 S. Waterman Ave., El Centro, CA
Mail: Customer Project Dev., PO Box 937, Imperial, CA 92251
Office Hours: 7:30 a.m. - 5:30 p.m. (closed every other Friday)
760-482-3300

Coachella Valley
Mail/Physical Address: 81-600 Avenue 58, La Quinta, CA 92253
Office Hours: 7:00 a.m. - 5:00 p.m. (closed every other Friday)
760-398-5841
**Process Overview**

**Customer Controlled • IID Controlled**

**INITIATION**
Customer provides service location, size of panel and voltage of the main panel. Depending upon the project size, IID will provide a ballpark construction cost estimate and timeline.

**ENGINEERING**
Customer submits a completed application packet. Customer pays the engineering fee if requested. An IID staff member is assigned and the electrical design is drawn.

**CONDUIT INSTALLATION**
Customer initiates a pre-construction meeting with IID to review the work to be accomplished. Customer will complete construction (e.g. conduit, main panel, etc.) and request IID to inspect the work. IID inspectors validate the work is up to standards and ensure site access for construction crews. CT meter installation, if applicable (timeline varies).

**CONSTRUCTION**
Customer pays the estimated construction fees and requests construction. IID works with the customer to schedule construction. IID crew completes construction.

**INSPECTION/METER INSTALLATION**
Agency having jurisdiction (AHJ) inspects and passes the service panel. IID installs and energizes CT metering, if applicable (timeline varies). IID energizes non-CT metered service.
APPLICATION CHECKLIST

The following forms and information are required to process your application in a timely manner.

Application Forms

- Application for New Service.
- Contractor Information Sheet, if requested.
- Joint Trench Indemnity Agreement, if requested.
- Terms and Conditions.
- Motor Nameplate Data Sheet, if requested.

Engineering Documents

Approved electrical engineered drawings in AutoCAD format reflecting the following:
- City-approved street improvement drawings.
- Project site plan and legal description of the property.
- One-line diagram.
- Approved streetlight plan.
- Main panel size and voltage.
- Main panel location.
- Panel schedules.
- Motor starter data sheet.
- List of motor size(s) in HP.

Rights of Way and Easements

- All rights of way and easements shall be in the form acceptable to and at no cost to IID for the installation, operation and maintenance of all electric facilities.

For PV Projects

- Application projects check-sheet.
- Electrical one-line diagram check-sheet.
- Site plan check-sheet.

All files should be in .pdf, e-file, and/or printed, as requested.
CREDIT ESTABLISHMENT REQUIREMENTS

Residential Application:
1) Complete the Project Information and Single Family Residential Application sections.
2) Sign the application.
3) Attach a photocopy of your driver’s license.
4) Provide your social security number (at least the last four digits).

Commercial Application: (Sole Proprietor)
1) Complete the Project Information and Commercial sections.
2) Sign the application.
3) Attach a photocopy of your driver’s license.
4) Provide your social security number (at least the last four digits) and/or your Federal Tax ID number.

Corporation, LLC or LLP:
1) Attach a copy of your articles of incorporation, your annual statements of Domestic Corporation, or a copy of your annual stockholders’ report.
2) Provide your Federal Tax ID number.
3) The officer/member must provide a letter of authorization for the person signing if he or she cannot sign.
4) Entity paperwork must be provided with this application, if applicable.

Partnership:
1) Both partners must sign the application or one partner may sign and attach partnership papers.

Limited Partnership:
1) Attach limited partnership documents.
2) General partnerships that are a corporation will need to include the information requested for a corporation (see Corporation, LLC or LLP above).
3) A partner must sign or provide a letter of authorization for the signing agent.

Additional:
1) A service establishment fee of $25.00 will be billed on your first energy statement.
2) Guarantee deposits are held until credit is established in accordance with IID Regulation 7. A copy of this and other regulations is available on our website www.iid.com.

Guarantee Deposits May Be Made Using One of the Following Methods:
1) Cash, check, credit card or electronic funds transfer.
2) Indemnity Bond from your insurance company (forms available upon request).
3) Irrevocable Letter of Credit from your bank.
## Application for Service

### Project Information

<table>
<thead>
<tr>
<th>Project Address</th>
<th>City</th>
<th>State</th>
<th>Zip Code</th>
<th>In-Service Date</th>
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</thead>
</table>

### Electrical Installation

- [ ] Overhead
- [ ] Underground
- [ ] Area/Streetlight
- [ ] Net Meter
- [ ] Distributed Generation
- [ ] Temporary Service
- [ ] Service Relocate
- [ ] Service Removal

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<th>Main Panel Size (Amps)</th>
<th>Voltage Required</th>
<th>1 Phase</th>
<th>3 Phase</th>
<th>Number of Meters</th>
<th>Total Connected Load (HP)</th>
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### Type of Project:

- [ ] Single Family Residential
- [ ] Subdivision Residential
- [ ] Commercial
- [ ] Industrial
- [ ] Agricultural

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<th>Business Hours</th>
<th># Workdays in Week</th>
<th># Workdays in Month</th>
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### Construction Contact

<table>
<thead>
<tr>
<th>Name</th>
<th>Cell Number</th>
<th>Other Phone</th>
<th>Email</th>
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### Contract Account Number

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<th>Account Number</th>
<th>Meter Number(s)</th>
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</table>

### Project Description

(Attach additional pages as necessary)

Electrical one-line / panel schedules / panel specifications may be required

---

### Single Family Residential Application Information (If Other, Skip to Next Section)

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<thead>
<tr>
<th>Property Owner (if different than above)</th>
<th>Cell Number</th>
<th>Other Phone</th>
<th>Email</th>
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<table>
<thead>
<tr>
<th>Billing Address (if different than above)</th>
<th>City</th>
<th>State</th>
<th>Zip Code</th>
<th>Driver License Number</th>
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<table>
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<tr>
<th>Other Contact (If any)</th>
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### Commercial, Industrial, Residential Subdivision, Temporary Service or Agricultural

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<th>L L P</th>
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<th>Business Name</th>
<th>Doing Business As (if applicable)</th>
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<th>Billing Address (if different than above)</th>
<th>City</th>
<th>State</th>
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<table>
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<th>2.</th>
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<table>
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<th>If Corporation, List the Following:</th>
<th>President/Member</th>
<th>Secretary/Member</th>
<th>Vice President/Member</th>
<th>Treasurer/Member</th>
<th>Federal Tax ID #</th>
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APPLICATION FOR SERVICE - CONTINUED

REGULATIONS GOVERNING SALE AND USE OF ELECTRIC ENERGY

Excerpts from Regulation No. 6
The customer shall, at his own risk and expense, furnish, install and keep in good and safe condition all electric wires, lines, machinery and apparatus of any sort which may be required for receiving electric energy from the District, and for applying and utilizing such energy, including all necessary protective appliances and suitable housing therefor. The District shall not be responsible for any loss or damage occasioned or caused by the negligence or want of proper care or wrongful act of the customer or any of his agents, employees or licensees on the part of the customer in installing, maintaining, using, operating or interfering with any such wires, lines, machinery or apparatus.

Excerpts from Regulation No. 11
The district shall, at its option, have the right to disconnect its services until the customer has complied with all the terms of the agreement and of the District’s regulation.

Excerpts from Regulation No. 15
The District will construct, own, operate and maintain lines only along public streets, roads and highways which the District has the legal right to occupy and on public lands and private property across which rights-of-way satisfactory to the District may be obtained without cost or condemnation by the District.

All Imperial Irrigation District Regulations Governing the Sale and Use of Electric Energy are available for viewing at all IID Division Offices, Imperial Operating Headquarters and online at www.iid.com.

☐ I have read and agree to the Regulations listed above.

Signature: _______________________    Title: ___________________________
Print Name: ______________________   Date: ___________________________

INTERNAL USE ONLY

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<th>Multi.</th>
<th>Demand</th>
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# Contractor Information Sheet

If applicable, please select the level of authorization for communication with your contractor.

<table>
<thead>
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<th>Contractor</th>
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<tbody>
<tr>
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<td>Contact</td>
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<tr>
<td>Contact Phone</td>
<td></td>
</tr>
<tr>
<td>Email Address</td>
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</tr>
</tbody>
</table>

- [ ] Attend meetings and/or respond to correspondence regarding this project.
- [ ] Pick-up the contractor notes packet for this project.
- [ ] Receive electronic files for this project, including energy account information.
- [ ] Obtain approvals, to complete this project.

Signature: ___________________________ Title: ___________________________

Print Name: __________________________ Date: ___________________________
Terms & Conditions

Indemnification Agreement
In consideration for the provision of electrical utility service by IID for the development project identified in the Standards Specifications and Contractor Information Sheet, Applicant and IID agree as follows: The provision of electric utility service to Applicant is conditioned on compliance by Applicant with all applicable laws including the Imperial Irrigation District Regulations Governing the Sale and Use of Electric Energy and Rate Schedules.

Applicant shall defend and indemnify IID, from any: liability, claims, suite or actions; losses, expenses, fees, or costs of any kind, so long as such things are in relation to, as a consequence of, arising out of, or in any way attributable actually, allegedly or impliedly, in whole or in part, to the provision of electrical service by IID to Applicant for the development project identified in the Standards Specifications and Contractor Information Sheet; however, Applicant shall not be required to indemnify and hold harmless IID as set forth above for liability attributable to the sole fault of IID.

Customer Initials ______

Environmental Impact Information
The work IID has to undertake to provide the electric service requested may cause impacts to the environment. Since the work is customer-driven and not a system upgrade, it is IID’s policy that any environmental impacts created by new, relocated, modified or reconstructed IID facilities (which can include, but are not limited to, substations, transmission and distribution lines, IID-owned canals and drains, etc.) required to provide electric service to the customer need to be assessed in accordance with the California Environmental Quality Act and National Environmental Policy Act, if applicable, and, if required, mitigated. Failure to comply with such requirements will result in the postponement of the service requested until the appropriate environmental documentation is obtained by the customer from the lead agency having jurisdiction to permit the customer’s project and the environmental impacts are fully assessed and mitigated. Any and all mitigation necessary as a result of the impacts on the environment caused by the construction, relocation and/or update of the IID facilities is the responsibility of the customer.

At its discretion IID will verify, via its field crews and project inspectors, if impacts are being mitigated per customer’s environmental document and if customer is providing on-site mitigation monitoring. If not, customer will be advised of this and IID work will be halted until the appropriate mitigation measures and monitoring are in place.

Customer Initials ______

Engineering Fee
I acknowledge that failure to complete and return all pertinent forms to IID could cause a delay in electric service. I agree and understand that the Engineering Fee will be paid to begin engineering a project and will be applied as a credit toward the construction cost of the project. The Engineering Fee is non-refundable. Any design changes that result in the redesign of the project, and therefore alters prior schedule IID commitments will require an additional non-refundable Engineering Fee and may cause delays in construction schedules(s).

Customer Initials ______

Signature: _______________________ Title: ___________________________
Print Name: _____________________ Date: _________________________
**Motor Nameplate Data, Motor Starter Information & Generator Information**

Engineering will analyze the effect of large motors connected to the IID system based on the motor nameplate data and motor starter information.

**Motor Nameplate Data:**
- All motors - 50 HP and above.
- Simultaneously starting motors - 15 HP and above.
- All motors starting more than one time per hour - 15 HP and above.
- See typical nameplate:

<table>
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<th>HP</th>
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<th>Insul. Class</th>
<th>HZ</th>
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<tr>
<td>ID No.</td>
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<td>Max AB Temp.</td>
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**Motor Starter Information:**
- Please provide motor starter data.
- This data can be obtained from the manufacturer or the manufacturer’s catalog.

**Generator Information (PV):**
- Rated Capacity (CEC-AC, kWh)
- Generator Type (Solar, Wind, Battery, Etc.)
- Generator Equipment Manufacturer
- Generator Module Number
- Inverter/Controller Manufacturer
- Inverter Model Number
- Type of Visible Open Disconnect
- Estimated Monthly Production, (kWh)
- Estimated Date of Parallel Operation
JOINT TRENCHING INDEMNITY AGREEMENT

The joint trenching of utilities, as opposed to the trenching of utilities in separate trenches, is a development and construction method which provides cost savings to Contractors. However, joint trenching also presents additional risks of danger due to the proximity of utilities in a common trench. In consideration for permission given by IID to Contractor to install all utilities in a joint trench, Contractor agrees to indemnify IID as set forth herein.

In consideration for permission given by IID to Contractor to install all utilities in a joint trench, Contractor and IID agree that Contractor shall defend and indemnify IID, from any: liability, claims, suit or actions; losses, expenses, fees, or costs of any kind, so long as such things are in relation to, as a consequence of, arising out of, or in any way attributable actually, allegedly or impliedly, in whole or in part, to the joint trenching of utilities by Constricter and/or its subcontractors. However, Contractor shall not be required to indemnify and hold harmless IID as set forth above for liability attributable to the sole fault of IID.

Signature: _______________________ Title: ___________________________
Print Name: ______________________ Date: _________________________