



Specifications for Electrical Underground Distribution Systems from Overhead Transformation, Secondary Service Accounts

Specification DDS-4 OH
Revision 11, February 2024

**ONCOR ELECTRIC DELIVERY COMPANY
SPECIFICATIONS FOR ELECTRICAL UNDERGROUND DISTRIBUTION SYSTEMS
FROM OVERHEAD TRANSFORMATION, SECONDARY SERVICE ACCOUNTS
SPECIFICATION NUMBER DDS-4 OH**

TABLE OF CONTENTS

SECTION 1- SCOPE	Page 1
SECTION 2- REFERENCES	Page 1
SECTION 3- DEFINITIONS	Page 1
SECTION 4- GENERAL	Page 1
SECTION 5- COMPANY RESPONSIBILITY	Page 2
SECTION 6- CONTRACTOR RESPONSIBILITY	Page 3
SECTION 7- ACCEPTANCE	Page 5

ATTACHMENTS:

DDS-4 OH Detail Sheets 1- 16

**ONCOR ELECTRIC DELIVERY COMPANY
SPECIFICATIONS FOR ELECTRICAL UNDERGROUND DISTRIBUTION SYSTEMS
FROM OVERHEAD TRANSFORMATION, SECONDARY SERVICE ACCOUNTS
SPECIFICATION NUMBER DDS-4 OH**

1. SCOPE

This document represents the minimum requirements and specifications for the installation of the electrical underground distribution systems fed from overhead transformation, serving Secondary Service Accounts, to be transferred to Oncor Electric Delivery Company ownership.

2. REFERENCES

This specification shall be used in conjunction with the latest revision of the following publications.

2.1 The Electric Service Guidelines, Oncor Electric Delivery Company.

3. DEFINITIONS

3.1 Company: Oncor Electric Delivery Company and its designated representatives.

3.2 Contractor: Individual or firm installing electric underground service for Secondary Service Accounts.

3.3 Authority Having Jurisdiction: Generally an incorporated City or Town, but may be an agency of the County, State or Federal Government.

3.4 Point of Delivery: The point where Company's conductors are connected to premise's conductors, typically at the meter socket or service enclosure.

4. GENERAL

4.1 The latest edition of all applicable building and safety codes shall be followed in the installation of the electrical underground distribution system. Included, but not limited to, are the:

4.1.1 Local City Building and Fire Codes or any other applicable codes for a particular project location

4. GENERAL (continued)

- 4.1.2 National Electrical Safety Code (NESC)
- 4.1.3 U.S. Occupational Safety and Health Act of 1970 (OSHA)
- 4.1.4 The American Concrete Institute (ACI)
- 4.1.5 The American Society for Testing and Materials (ASTM)
- 4.2 Upon receipt of all necessary information from the Contractor, a project sketch showing the route of the conduit line and other pertinent information will be furnished by the Company.
- 4.3 Prior to construction a meeting shall be held to discuss and coordinate construction and inspection.
- 4.4 The Company will require a signed easement at no cost or a filed plat incorporating Company easement requirements prior to the Company installing any electrical facilities.
- 4.5 Joint use ditch will be determined by the Company on an individual basis.
- 4.6 No electrical facilities shall be connected by the Company until after the final inspection is made and approval by the Authority Having Jurisdiction, as required by code, has been received.

5. COMPANY RESPONSIBILITY- The following shall be performed by, and the responsibility of, the Company:

- 5.1 The Company inspector is to inspect all conduit installations prior to the placing of backfill.
- 5.2 The Company inspector is responsible for all field changes and coordinates changes with the local Engineering office.
- 5.3 After approval of the installed conduit system by the Company inspector, and after the Contractor has signed all appropriate contracts, agreements, easements and has paid any required CIAC (contribution in aid of construction), the Company shall install service lateral cables up to the line side of the point of delivery.

5. COMPANY RESPONSIBILITY (continued)

- 5.4 Upon notification of final electrical inspection from the Authority Having Jurisdiction, the Company is to make final electrical connections at the point of delivery.

6. CONTRACTOR RESPONSIBILITY- The following shall be performed by, and the responsibility of, the Contractor:

- 6.1 The Contractor is to provide the Company a Site Plan, a Dimension Control Plan, an Elevation Plan, a Grading Plan and loading information.
- 6.2 The Contractor is to coordinate with the Company inspector for inspection of work prior to backfilling.
- 6.3 The Contractor is to provide personnel and vehicular access to the facility at all times.
- 6.4 The Contractor is to be held responsible for the full direction and supervision of all work being performed by his employees, agents or contractors. The Contractor shall also be responsible for the area at all times prior to acceptance, particularly in the prevention of damage to the electrical distribution system by the activities of other trades and utilities.
- 6.5 All testing of concrete and backfill which is deemed necessary by the Company is to be performed by an independent testing laboratory at the Contractor's expense.
- 6.6 The Contractor is to replace at his expense any damaged equipment or work not in compliance with the requirements in these specifications, the project sketch, the DDS-4 OH Detail Sheets or as specified by the Company.
- 6.7 The Contractor is to furnish equipment and labor to lay out ditch, set grade, dig ditches, place conduit in ditch and place electrical connection boxes. The line shall run in as straight alignment as practicable. All conduit and bends shall be Schedule 40 PVC or Schedule 80 PVC and shall be electrical grade. All PVC conduit and bends shall be gray in color.
- 6.8 The Contractor may be required to furnish a spare conduit in the same ditch with service lateral conduit(s) and cap both ends at bends.
- 6.9 The Contractor is to complete rough site grading, establish final grade and clear all obstructions. Any change in final grade which requires the lowering or raising of electrical conductors or associated equipment is at the expense of the Contractor.

6. CONTRACTOR RESPONSIBILITY (continued)

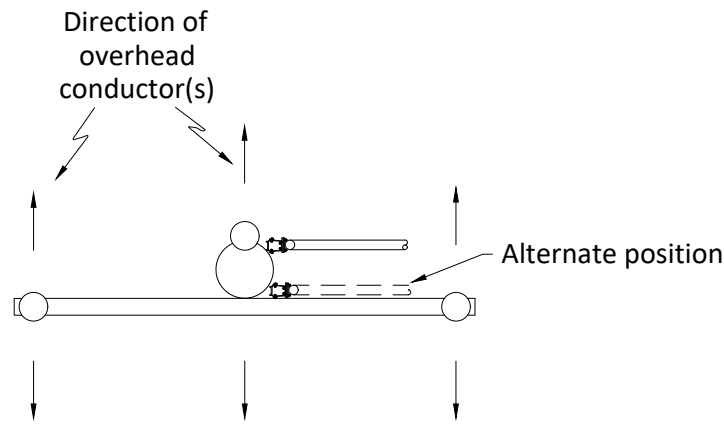
- 6.10 Minimum vertical crossing clearance of electrical conduits from other utilities' conduits is twelve (12) inches.
- 6.11 A lateral separation of five (5) feet from electrical conduits to other utilities' conduits is required on private property.
- 6.12 Backfilling of conduit trenches under paved areas and around conduit bends at riser poles is to be compacted to 95% of the density of surrounding undisturbed soil as per ASTM D 698. Stabilization must be uniform to bottom of ditch. An alternative method for backfilling around conduit bends consists of concrete backfill with bend. The method and location where used will be at the discretion of the Company.
- 6.13 Contractor is to pull a mandrel through each conduit to check and clear blockage and leave an approved pull tape in each conduit. Pull tape shall be furnished by the party providing conduit and shall be installed by Contractor. Mandrel shall be furnished by Contractor. Conduit shall be plugged at both ends. Reference DDS-3 UG Detail Sheet 8 for approved pull tapes.
- 6.14 Approved self-contained meter sockets or approved meter packs are to be provided and installed by the Contractor. Transocket meter bases and service enclosures (when required) are to be provided by the Company and installed by the Contractor. Reference the Electric Service Guidelines for approved self- contained meter sockets. **Contact Company for approval of meter packs prior to letting bids and installing equipment.**
- 6.15 For single occupant, C. T. metered Secondary Service accounts fed from overhead transformation, the Contractor is to provide and install the underground raceway to the riser pole. The Company shall provide, install, connect and maintain the service lateral conductor.
- 6.16 If socket type metering fed from overhead transformation is utilized, the Contractor is to mount the meter socket on the building with the location approved by the Company and provide and install the underground raceway to the riser pole. The Company shall provide, install, connect and maintain the service lateral conductor.
- 6.17 For multiple occupancy Secondary Service accounts fed from overhead transformation, the Contractor is to provide and install (1) the service lateral raceway from the service enclosure to the riser pole and (2) the conductors and associated raceways from the service enclosure to the line side of the meters. The Company shall provide, install, connect and maintain the service lateral conductors to the line side of the service enclosure.

6. CONTRACTOR RESPONSIBILITY (continued)

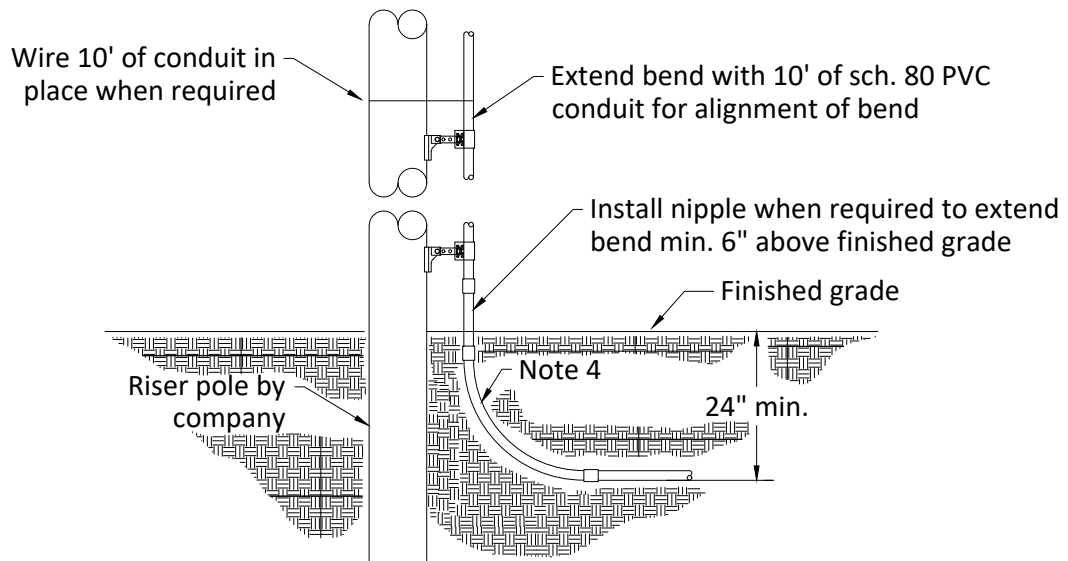
- 6.18 For multiple occupancy Secondary Service accounts utilizing meter packs fed from overhead transformation, the Contractor is to provide and install the service lateral raceway from the meter pack enclosure to the riser pole. The Company shall provide, install, connect and maintain the service lateral conductors to the line side of the meter pack.
- 6.19 For Secondary Service Accounts fed from subsurface secondary/ service boxes or meter pedestals, the Contractor is to (1) provide and install the underground raceway and conductor to the load side of the secondary/ subsurface box or meter pedestal, and (2) provide and install the underground raceway between the secondary/ service box or meter pedestal and the riser pole. The service lateral conductors between the overhead transformer and the source side of the secondary/ service box or meter pedestal shall be supplied, installed, connected and maintained by the Company. The Contractor shall provide the connectors when required and the Company shall install these connectors on the Contractor's conductors and connect to the load side of the secondary/ service box. Reference the Electric Service Guidelines for approved compression type connectors.
- 6.20 The Contractor is to secure inspection and approval of premise's facilities by the Authority Having Jurisdiction prior to the connection of electrical facilities.
- 6.21 Meter sockets to multi-metered locations shall be clearly and permanently marked by the Contractor on the exterior and interior of the meter socket to indicate each location served. Engraved or stamped metal, weather resistant placards shall be used on the exterior of the meter socket and be permanently affixed. Permanent marker or other acceptable method shall be used to mark the location on the inside of the meter socket (at a location other than the cover) where it can be easily read.

7. ACCEPTANCE

- 7.1 The Company inspector shall meet with the Contractor and review the project prior to acceptance. Electrical facilities will be installed as approved by the Company inspector only after acceptance of the project.



Top View



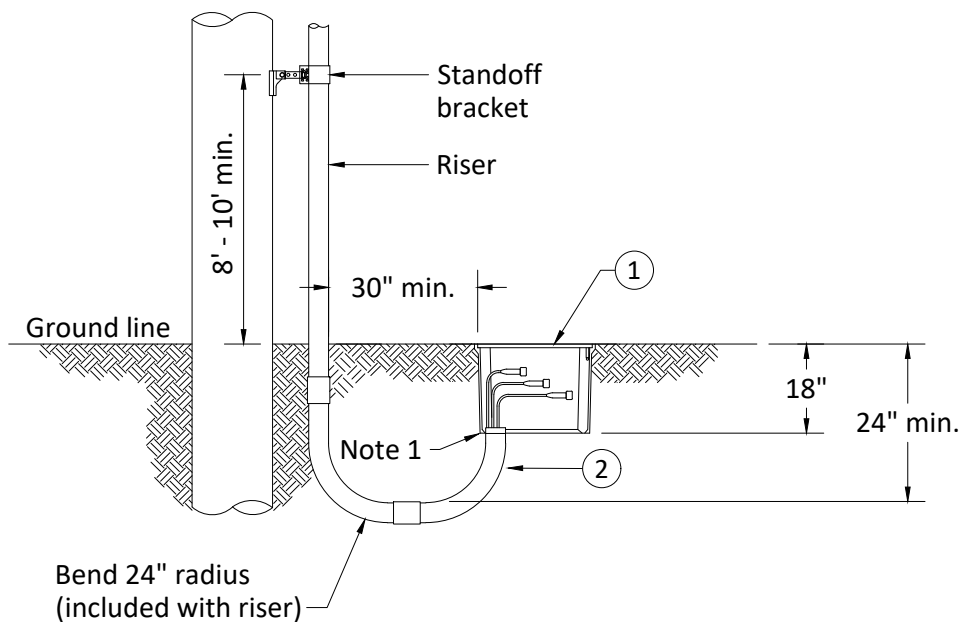
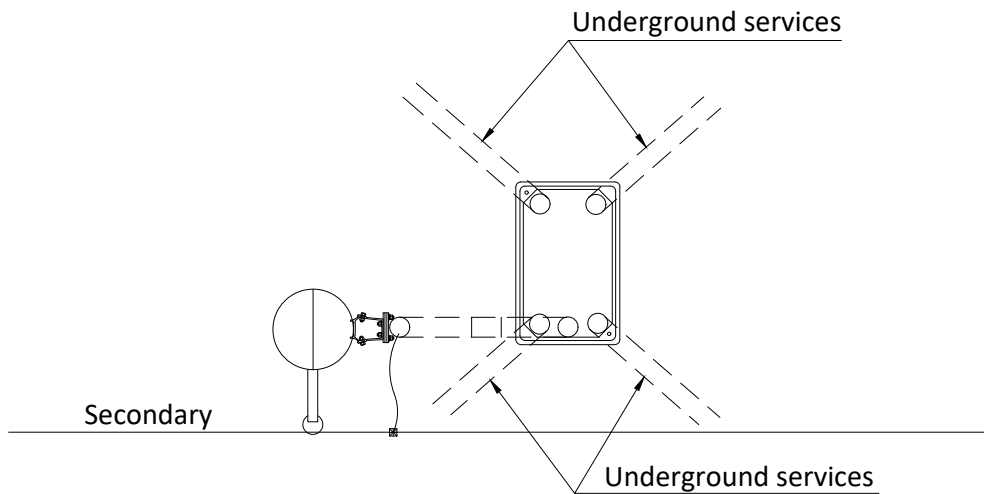
Plan View

Notes:

1. Contact company representative for (1) routing of conduit line, (2) size of conduit, and (3) installations requiring more than one riser on pole.
2. Limit raceway to three 90° bends. If more than three 90° bends are required, contact company representative.
3. Distance between 90° bends shall be 5' minimum.
4. Reference detail sheet 10 for bend radius for all horizontal and vertical conduit bends.



**TERMINATION OF
SECONDARY CONDUIT
AT RISER POLE**



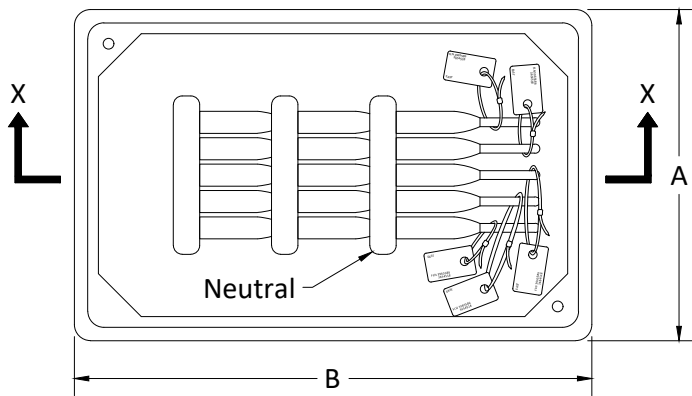
Notes:

1. Contact company representative for (1) routing of conduit line, (2) size of conduit, and (3) installations requiring more than one riser on pole.
2. Limit raceway to three 90° bends. If more than three 90° bends are required, contact company representative.
3. Reference detail sheet 10 for bend radius for all horizontal and vertical conduit bends.
4. Cut off bend flush with bottom of secondary/service box.

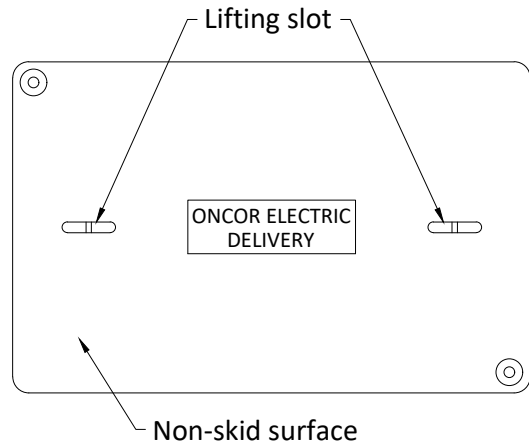


**SECONDARY RISER WITH
SECONDARY/SERVICE BOX,
CONDUIT SYSTEM**

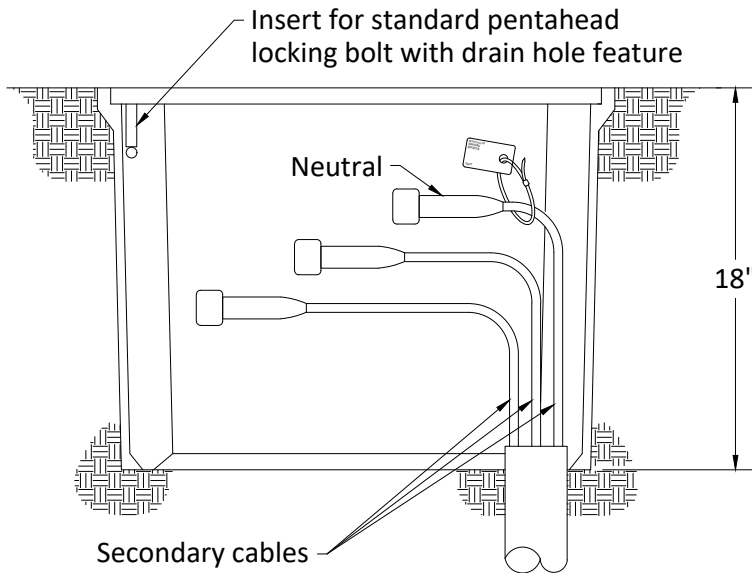
DDS-4 OH DETAIL SHEET 2 OF 16



Plan View - with Cover
Removed



Top View - Cover



Section "X - X"

Box Size (in.)	Overall Dim. (in.)		Max. No. Circuits
	A	B	
17 x 30	20	33	8

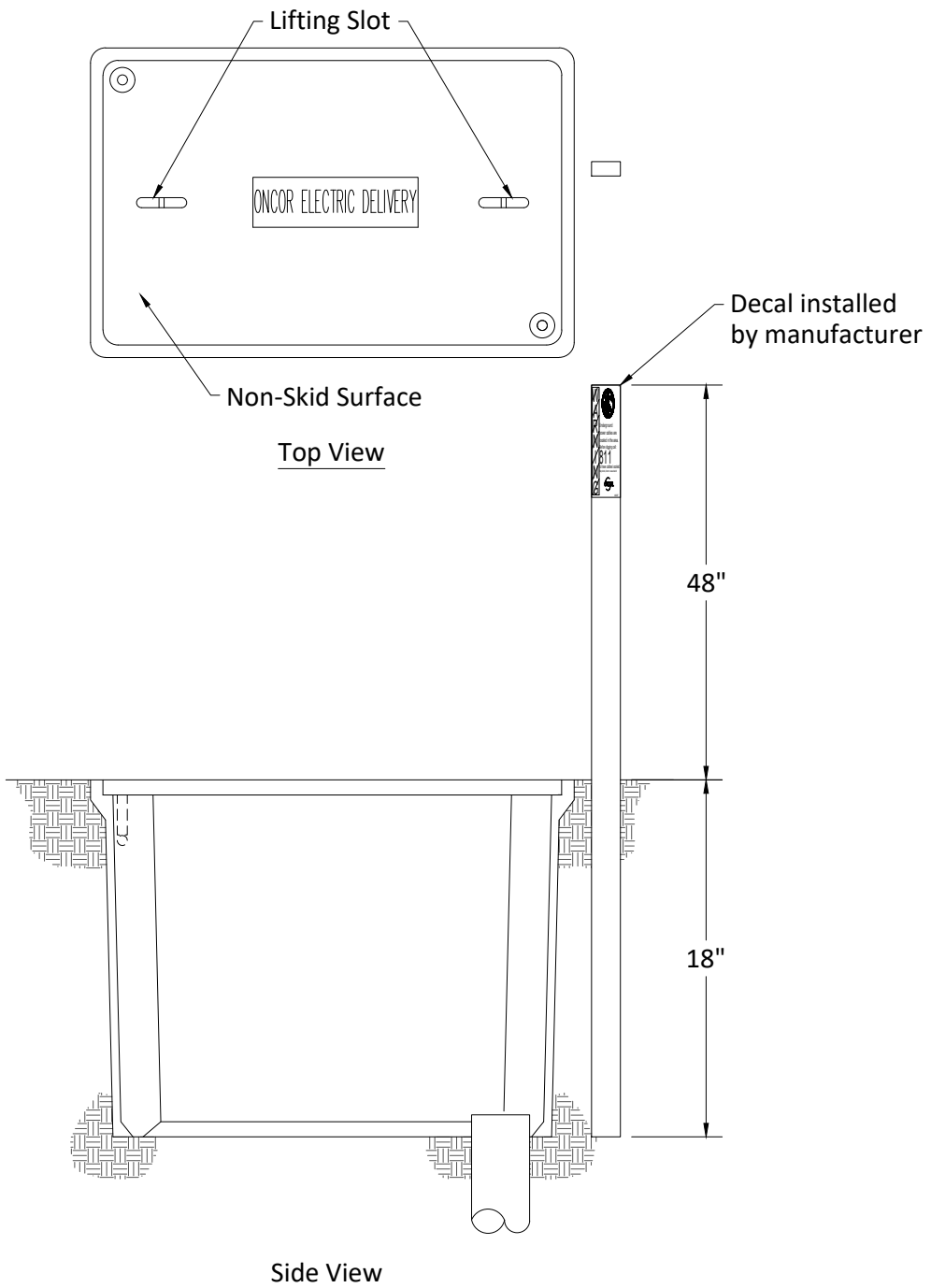
Box Size (in.)	Replacement Lid TSN
13 x 24	326506
17 x 30	326509

Notes:

1. Consult company representative for (1) approved precast secondary subsurface boxes, (2) size of conduit, and (3) routing path of conduit into secondary subsurface box.
2. For installation of conduit to in-service secondary subsurface boxes, consult company representative for details.
3. Reference detail sheet 10 for bend radius for all horizontal and vertical conduit bends.



**TYPICAL SERVICE AREA-
SUBSURFACE
SECONDARY/SERVICE BOX**



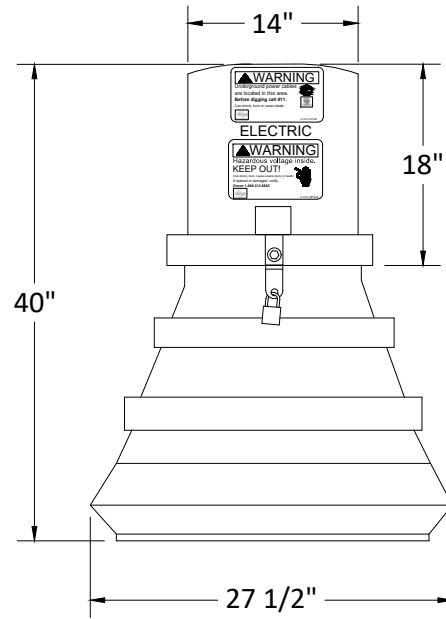
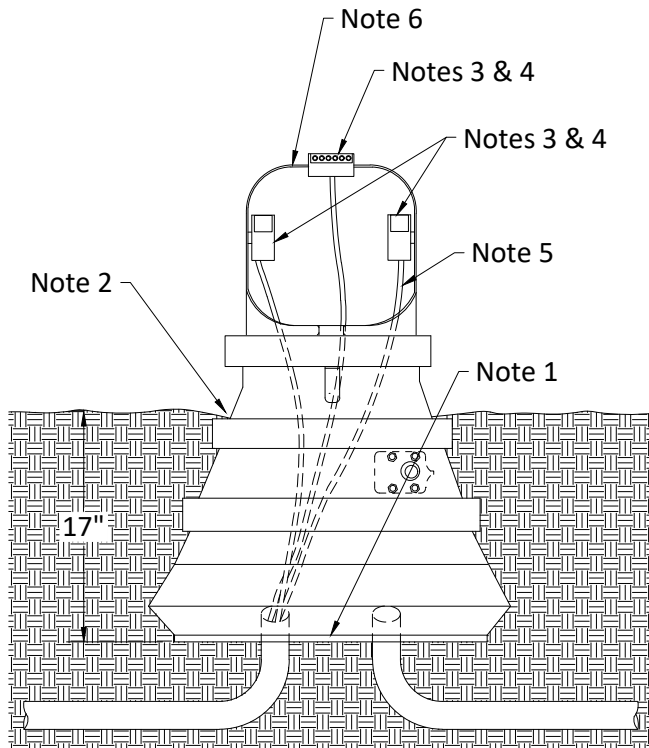
Notes:

1. Consult company representative on where to acquire marker stake.
2. Install marker stake within 3" of one end of subsurface box when box is being installed.
3. Remove marker stake when the last permanent meter is set.



**MARKER STAKE
FOR
SECONDARY/SERVICE BOX**

DDS-4 OH DETAIL SHEET 4 OF 16



Replacement Parts	
Part	TSN
6 position connector #6 - 350 conductor	397461
6 position connector #4 - 500 conductor	397463
Clear lexan connector cover	397462
Cover tie	479418

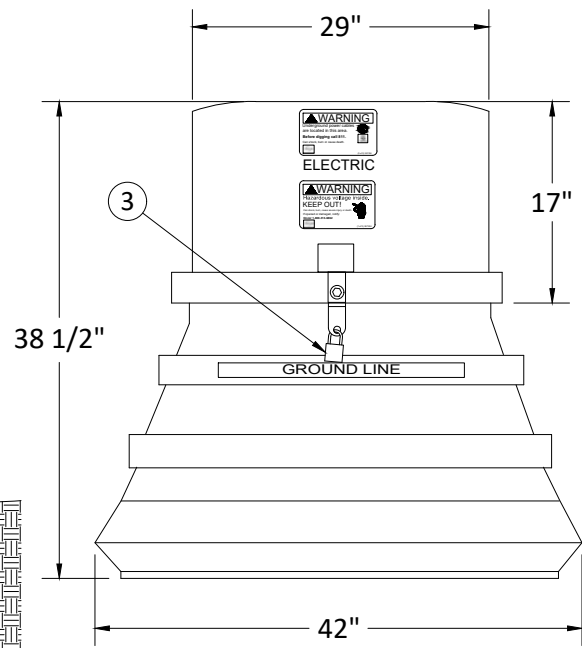
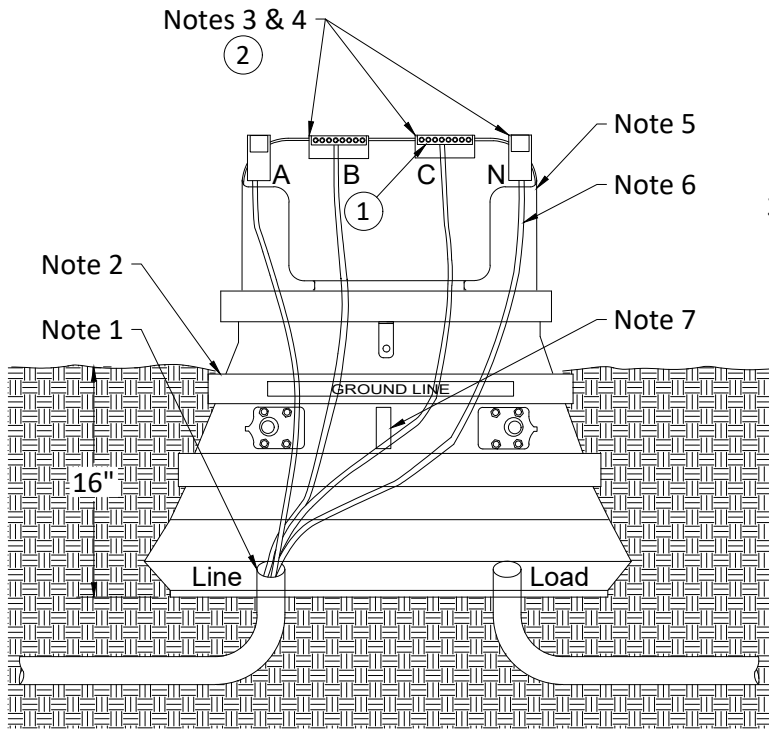
Installation notes:

- Center the cables/conduits in the bottom opening of the pedestal.
- Bury the pedestal to the ground line marker and tamp the soil around the unit to secure it in the upright position.
- The connector cover is a reusable item. If missing or damaged replace with parts as shown. All connector covers shall be secured with ties. If the ties are cut or damaged in any way, replace with stock replacement parts as shown.
- Use the center top mounted connector for the neutral conductor. Use the side mounted connectors for the "hot" conductors.
- Position, cut and remove cable insulation. For good set screw compression on the conductors, extend bare conductor 1/4" above the connector. Brush conductors to remove oxide before installing in connector and apply inhibitor to cable and setscrew threads.
- Locate pedestal to minimize chance of pedestal being struck by vehicular traffic.
- Consult company representative for (1) approved secondary pedestals, (2) size of conduit, and (3) routing path of conduit into secondary pedestal.
- For installation of conduit to in-service secondary pedestals, consult company representative for details.
- Reference detail sheet 10 for bend radius for all horizontal and vertical conduit bends.



**TYPICAL SERVICE AREA-
SINGLE PHASE
SECONDARY PEDESTAL**

DDS-4 OH DETAIL SHEET 5 OF 16



Replacement Parts	
Part	TSN
8 position connector #6 - 500 conductor with clear flexible connector cover	476321

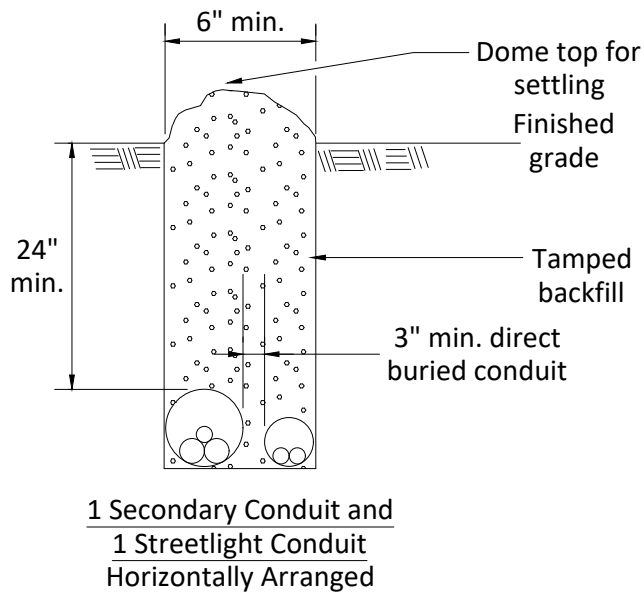
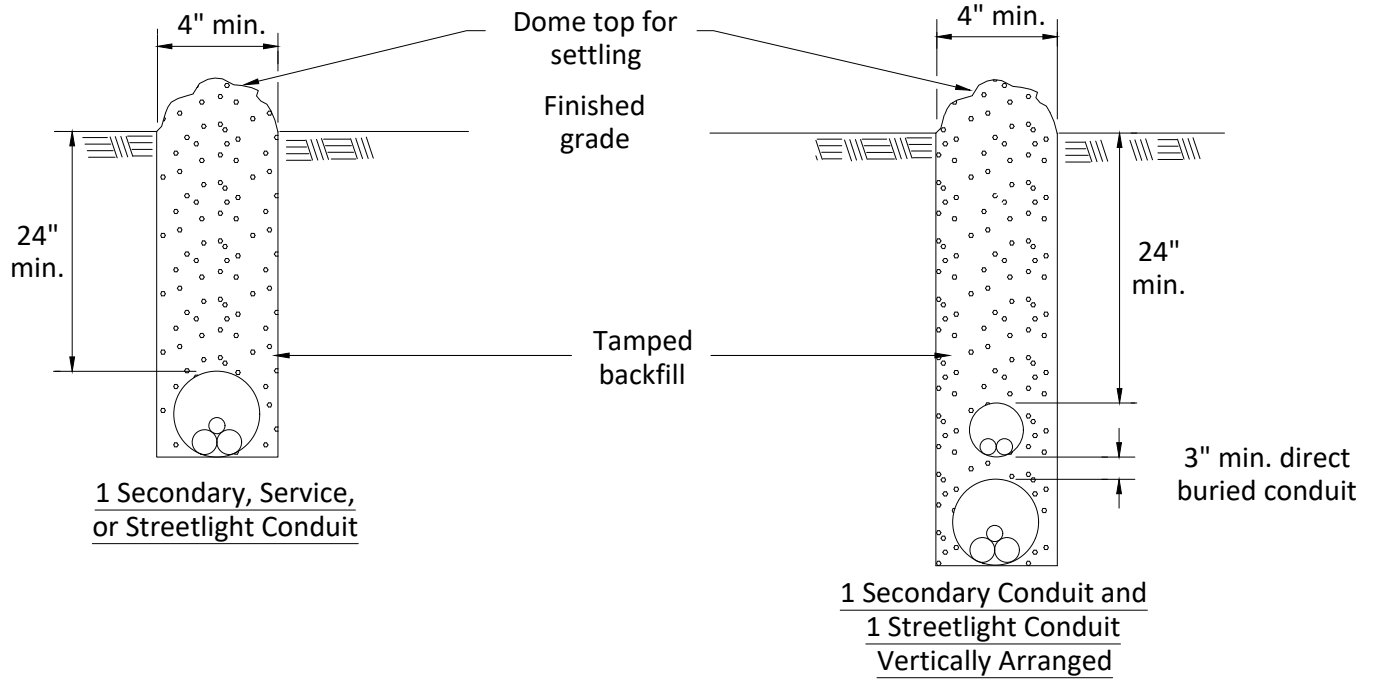
Installation notes:

- Center the cables/conduits in the bottom opening of the pedestal as shown.
- Bury the pedestal to the ground line marker and tamp the soil around the unit to secure it in the upright position.
- The connector cover is a reusable item. If missing or damaged replace with stock replacement part.
- Use a clockwise phase rotation with the mounted cable connectors. Position the "A" phase connections at the 9:00, "B" phase at 11:00, "C" phase at 1:00 and the neutral at 3:00 as shown.
- Locate pedestal to minimize chance of pedestal being struck by vehicular traffic.
- Position, cut and remove cable insulation. For good set screw compression on the conductors, extend bare conductor 1/4 inches above the connector. Brush conductors to remove oxide before installing in connector and apply inhibitor to cable and setscrew threads.
- 2" x 4" wood brace has been installed to prevent the pedestal from collapse during installation compaction. After the installation is complete, cut to remove if necessary. If brace is not a space conflict, leave it in place.
- Consult company representative for (1) approved secondary pedestals, (2) size of conduit, and (3) routing path of conduit into secondary pedestal.
- For installation of conduit to in-service secondary pedestals, consult company representative for details.
- Reference detail sheet 10 for bend radius for all horizontal and vertical conduit bends.






**TYPICAL SERVICE AREA-
THREE PHASE
SECONDARY PEDESTAL**

DDS-4 OH DETAIL SHEET 6 OF 16



Legend:

-  Primary Cable
-  Secondary/Service Cable
-  Streetlight Cable

Notes:

1. Consult company representative for conduit size.
2. Reference sheets 8 and 9 for notes and instructions.
3. Separation dimensions apply to company conduits or cables only. Maintain 12" separation between company conduits or cable and foreign conduits or cable.



TRENCH REQUIREMENTS

1. Trench alignment shall be as straight as conditions permit. Any deviations from planned alignment shall have prior approval by the project engineer/inspector. All trench cuts shall be in accordance with existing safety regulations in effect.
2. Trench bottom should be undisturbed, tamped, or relatively smooth earth. Where excavation is in rock, the conduit should be laid on a layer of clean backfill.
3. All backfill should be free of debris or other material that may damage the conduit system or cause settling. The material should fill the voids around the conduit to prevent hot spots and settling.
4. Backfill should be adequately compacted. Backfill not under pavement should be compacted to the density of the surrounding undisturbed soil. Backfill under pavement should be compacted to not less than 95% of the density of undisturbed soil as determined by ASTM D698.
5. See sheet 9 for instructions for joining PVC conduit.
6. Each conduit run shall be checked by pulling a mandrel through the entire length at the completion of the civil installation.
7. A pull tape shall be left in each conduit. Conduit shall be plugged at both ends.

Approved Pull Tapes			
Conduit Size	Manufacturer	Catalog No.	TSN
1", 2" & 3"	Arnco Neptco, Inc.	BL-WP25 WP2500P	321068
4" & 6"	Arnco Neptco, Inc.	BL-WP60 RP6000N	397616

8. Contact company representative for trench dimensions for more than 2 conduits in same ditch.



**INSTALLATION OF CONDUITS
NOTES AND INSTRUCTIONS**

DDS-4 OH DETAIL SHEET 8 OF 16

The chemicals used in solvent welding of conduit are intended to penetrate the surface of both pipe and fitting, which after curing result in a complete fusion at the joint. The over-use or under-use of chemicals results in leaky joints or weakened pipe.

1. Clean conduit by wiping off all dust, dirt and moisture from surfaces to be cemented either by mechanical or chemical cleaning.
 - 1.1. Mechanical cleaning - Fine abrasive paper or cloth (180 grit or finer) or clean oil-free steel wool.
 - 1.2. Chemical cleaning- Cleaner recommended by manufacturer or equivalent (methyl ethyl ketone - Mek).
2. With a non-synthetic bristle brush apply an even coating of cement to the outside of the pipe and inside the socket. Make sure that the amount of cement applied to the conduit is equal to the depth of the socket. Before assembly, if some evaporation of solvent from the surfaces to be joined is noted, reapply cement, then assemble.

If cement being used has an appreciable change in viscosity or shows signs of jelling, it shall be discarded. In no case shall thinner be used in an attempt to restore jelled PVC cement. Thinner may only be used to change the viscosity of a medium bodied cement to that of a regular bodied cement for application on PVC pipe smaller than 2 1/2" diameter. A medium bodied cement shall be used on 2 1/2" to 6" PVC pipe.

Use a primer to soften the joining surfaces before applying cement. Allow longer cure time. (See item 5).

3. Join pipe within 20 seconds of applying cement. Turn the pipe 1/4 turn to ensure even distribution of cement on surfaces to be bonded. Make sure that pipe is inserted to the full depth of the socket.
4. Clean off any bead or excess cement that appears at the outer shoulder of the fitting. Excess cement allowed to remain in contact with the material is apt to cause weakening of the material, and subsequent failure.
5. Newly assembled joints should be handled carefully until the cement has cured to the recommended set period. Set periods are related to the ambient temperature as follows:

30 min. minimum at 60° to 100° F
1 hr. minimum at 40° to 60° F
2 hr. minimum at 20° to 40° F
4 hr. minimum at 0° to 20° F



INSTRUCTIONS FOR JOINING PVC CONDUIT

DDS-4 OH DETAIL SHEET 9 OF 16

Conduit Nominal Size (in.)	Minimum Bend Radius (in.)	Type of Bend Material for Pulls:
1	18	PVC
2	24	PVC
3	24	PVC
4	36 (See notes 3 & 4)	PVC
6	36	PVC

Notes:

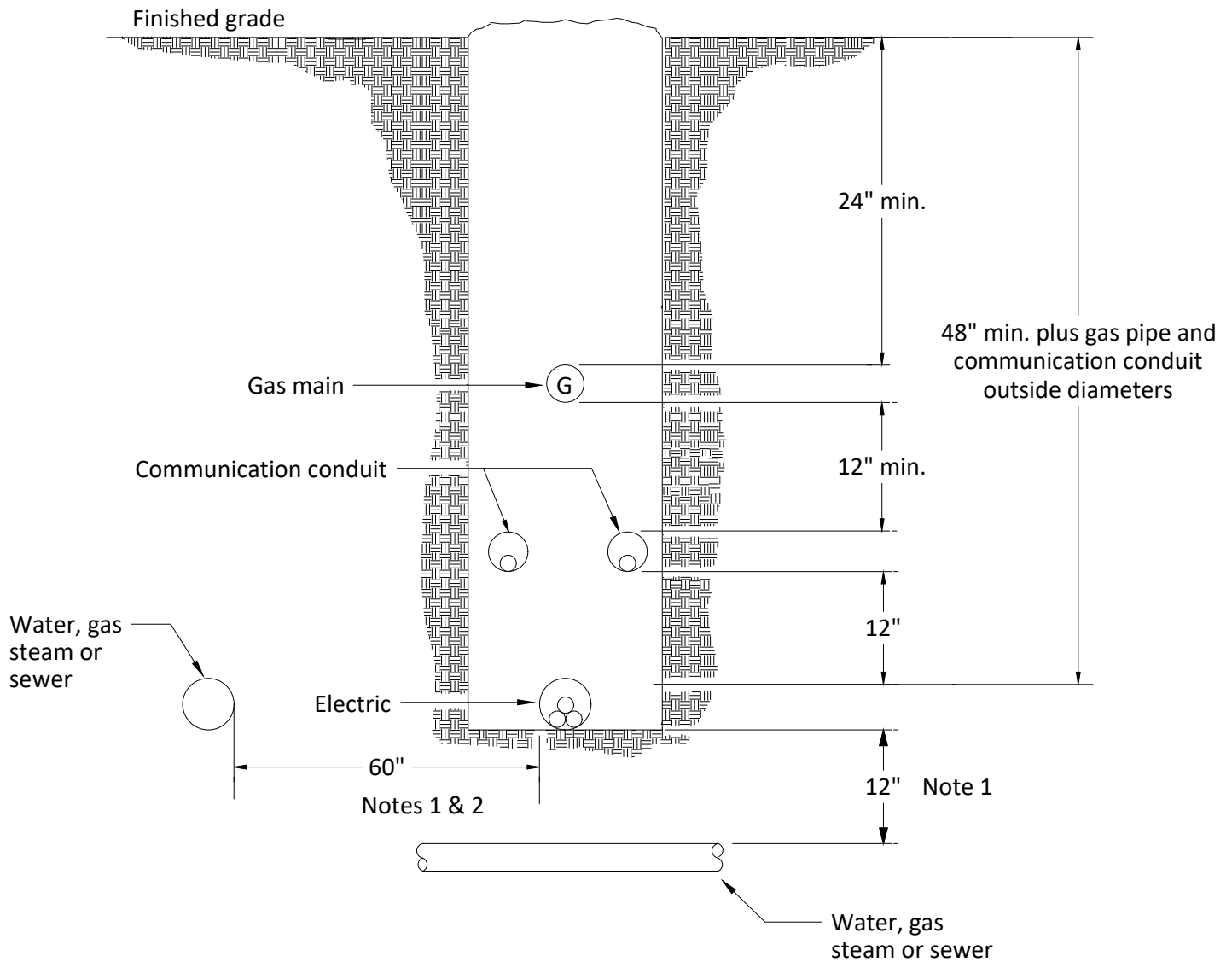
1. Sch. 80 PVC conduit shall be used for all above ground installations (pole and meter risers). Sch. 40 may be used for all below ground installations.
2. No field bends.
3. 24" sweep 90s on 4" PVC may be used when the required conduit depth is less than 30" from final grade.
4. 24" sweep 90s on 4" PVC may be used on primary applications when a proper depth of the conduit can not be attained under a deep well pad or deep window application.

(The complete 90 must be below final grade or the pad window)



**CONDUIT BEND RADIUS
AND MATERIAL**

DDS-4 OH DETAIL SHEET 10 OF 16



Notes:

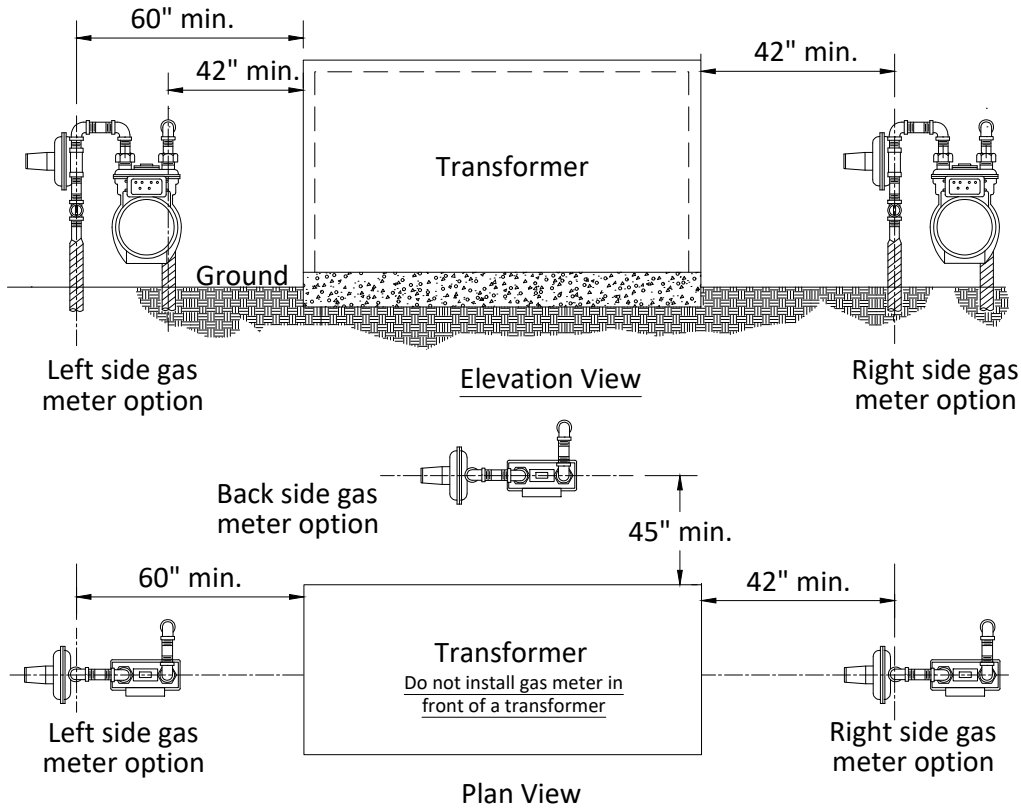
1. Vertical crossing clearance from other utilities shall be 12". A 60" lateral separation of paralleling foreign utilities (excluding gas and communications) shall be required. An exception would be to allow gas, telephone and/or CATV in the same ditch as company conduit system providing the NESC requirements for conduit separation are met or exceeded and the communications circuits are installed in conduit.
2. It is understood that only 12" separation is required on public rights-of-way. Personnel involved in excavation on public rights-of-way are fully aware of the hazards involved. However, excavation on private property can be done by individuals who are not likely to be fully aware of the hazards. Therefore, the 60" lateral separation is required to help prevent injury to personnel doing excavation on private property.



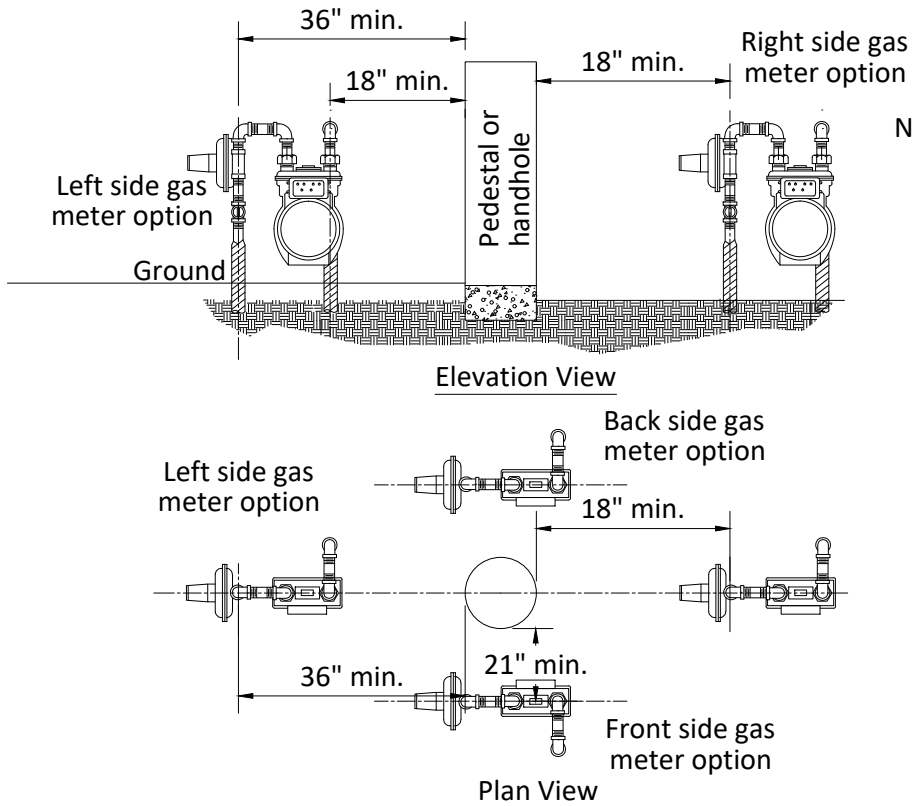
**CLEARANCE REQUIREMENTS
FROM FOREIGN UTILITIES
ON PRIVATE PROPERTY**

DDS-4 OH DETAIL SHEET 11 OF 16

Transformer Clearance Details



Pedestal Clearance Details



Notes:

1. Measurements are referenced from the inlet gas riser.
2. The measurements will ensure:
 - 2.1. That a minimum clearance of 36" is attained between the entire gas meter installation and the pad mounted equipment and
 - 2.2. That a minimum clearance of 12" is attained between the entire gas meter installation and all other aboveground facilities including electric and other utility pedestals and handholes.
3. This standard applies to 630 gas meter installations and smaller. For larger meter installations, contact company representative for assistance.
4. This drawing is typically used when the gas main is located in an alley or dedicated utility easement.

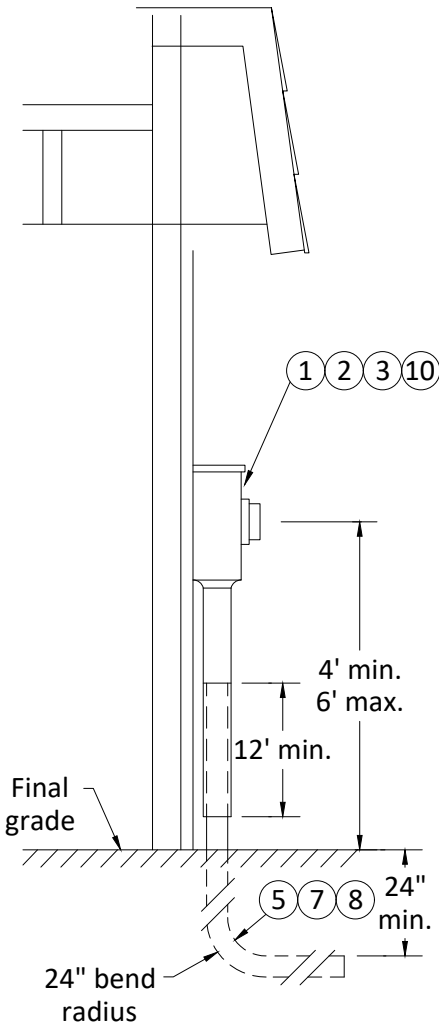


**ABOVEGROUND CLEARANCES
FROM GAS METER INSTALLATIONS**

DDS-4 OH DETAIL SHEET 12 OF 16

UNDERGROUND THREE-PHASE AND SINGLE-PHASE SERVICE METER FOR ONE RESIDENTIAL OR ONE NON-RESIDENTIAL (ONE SECONDARY) SERVICE

FIGURE 4-B



Notes:

1. Reference the ESG, pages 48-55 for company-customer responsibility of source and load conductors and connection of these conductors.
2. Meter socket shall be provided, installed, and maintained by customer. Reference the ESG, see Table 5-C, pages 56-61 for list of approved meter sockets. Transockets, when required, shall be provided by company and installed and maintained by customer. All meter sockets (excluding transockets) require the line-side conductors to be connected to the top meter socket terminals. **Customer load conductors may not exit top half of meter socket.**
3. An insulated conduit bushing is required for raceways terminating in the meter socket. The service raceway shall not contain any conduit or other open connections.
4. Customer's ground rod conductor, #6 copper minimum shall originate in the service entrance equipment and extend to a ground rod. The ground rod conductor is permitted to be routed through the meter socket enclosure, but shall not terminate within. Company reserves the right to refuse installation of service contingent upon inspection of customer's grounding connections.
5. Reference the ESG and see 400.02, page 34 and 400.03, page 34 for company or customer responsibility for service lateral raceway installation. Schedule 40 PVC is required for company owned underground service lateral raceways. **Rigid steel, IMC, or EMT is not allowed.** Contact company representative prior to installation to determine service lateral raceway size, 2" is minimum.
6. If there is a possibility of additional customers being served from the same transformer at another location, a service disconnect is required. This only applies for instrument rated metering installations, unless prohibited by governing authority.
7. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited.
8. Service lateral conductor must enter from the BOTTOM of the meter socket, not from the side and not from the top. Service lateral conduit must be straight and inline with the meter socket with at least 3' of service lateral raceway above grade.
9. An oversized PVC conduit/raceway fitting that slips over the service lateral conduit riser is required. This fitting prevents exposure of conductors due to conduit/raceway movement due to soil expansion and contraction. Conduit inserted a minimum of 12" into the fitting.
10. Company owned service lateral conductors are installed by company and line-side (top) connections made up by company. Customer's service conductors are installed and connected in socket by customer.
11. Company recommends that customer limit to one circuit per conduit to avoid potential loading problems.

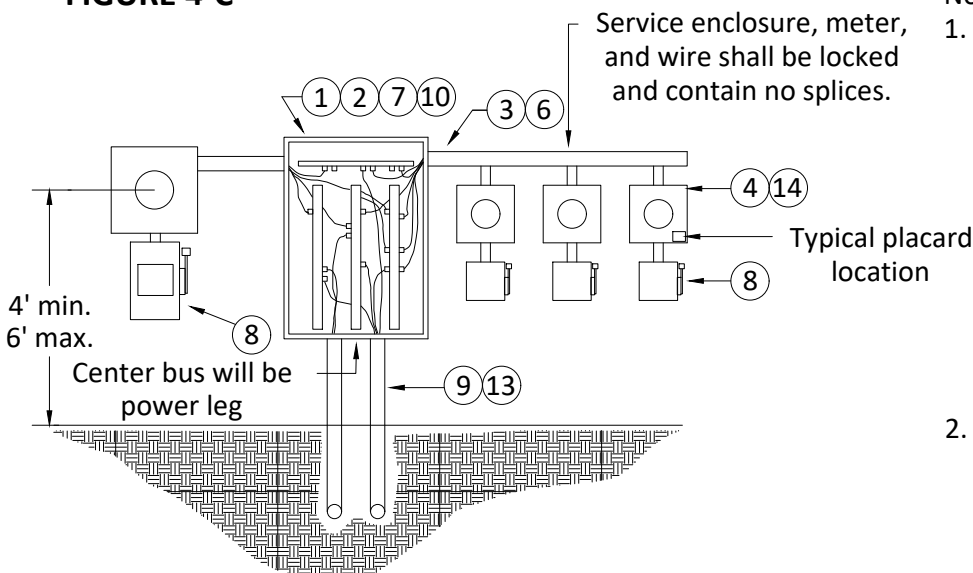


TYPICAL METER INSTALLATIONS

DDS-4 OH DETAIL SHEET 13 OF 16

UNDERGROUND SERVICE METERS, TWO OR MORE NON-RESIDENTIAL WITH SERVICE ENCLOSURE

FIGURE 4-C



Notes:

1. A service enclosure (reference the ESG and see 500.08, page 47) for Secondary Service installations through 2500 amperes and two or more meter sockets are required. Service enclosure shall be installed by customer on outside wall of building. Contact company for determination of service enclosure requirements. For duplex and multifamily installations, reference the ESG and see Figure 5-F, page 67.
2. Load conductors to meter sockets to be connected equally on both ends of bus bars to obtain full current rating of bus bars. Line conductors shall be connected to center of bus bars.

3. Conductors, gutters and raceways provided, installed and maintained by customer. Company locks or seals may be required.
4. Meter sockets shall be provided, installed and maintained by customer. Transockets, when required, shall be provided by company and installed by customer. Company locks or seals will be installed at each meter socket. Reference the ESG, see Table 5-C, pages 56-61 for list of approved meter sockets.
5. For use on service voltages through 480V.
6. Service entrance conductors to be continuous from meter sockets to service enclosure.
7. Refer to ESG, pages 48-55 for connector/conductor responsibility in service enclosures. Approved connectors, plated .375" minimum diameter bolts, Belleville washers, and oxide inhibitor are required for connections to plated aluminum bus.
8. Instrument rated service to a non-residential structure must be equipped with a disconnecting means installed on the load-side of the instrument rated metering equipment where the metering equipment is installed on a customer structure, unless prohibited by local governing authority. Service disconnect switches and breakers are both acceptable for use as the disconnecting means. The disconnecting means must have provision for a company lock. The disconnecting means must be readily accessible by company and within 3' of the meter. A 4" minimum clearance from the service disconnect switch operating lever is required. Customer must receive company approval of electrical design and/or nonstandard equipment or locations prior to installation of equipment.
9. For service lateral installation refer to the ESG and see 400.02, page 34. The service raceway shall not contain any conduit or other open connections.
10. For underground services, the bottom section of the enclosure shall be reserved for the line-side conductors. Load side conductors are not permitted to exit bottom.
11. If there is a possibility of additional instrument rated installations being served from the same transformer at another location, a service disconnect is required.
12. Insulated conduit bushings are required for raceways terminating in the meter socket.
13. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited.
14. Schedule 40 PVC is required for company owned underground service lateral raceways. **Rigid steel, IMC, or EMT is not allowed.**
15. Each socket must be clearly and permanently marked as indicated in 500.11, refer to the ESG, page 47.

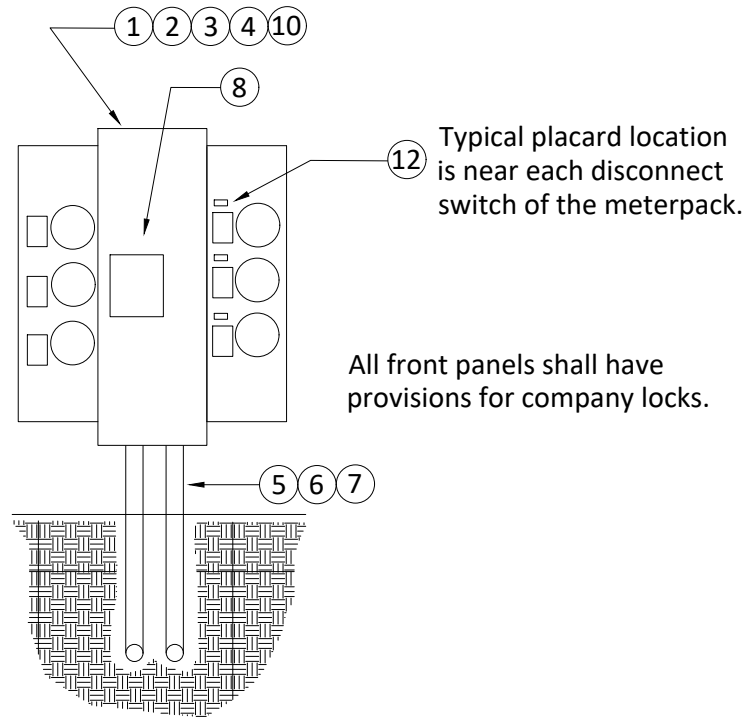


**TYPICAL METER INSTALLATIONS
(CONT.)**

DDS-4 OH DETAIL SHEET 14 OF 16

UNDERGROUND SERVICE METER PACK, MULTI-METER INSTALLATION

FIGURE 4-D



Notes:

1. A meter pack, installed by customer on outside wall of building for Secondary Service installations for two or more meter sockets, may be installed in lieu of a service enclosure. **Contact company for approval of meter packs prior to letting bids and installing equipment.** For multifamily installations, reference the ESG, see Figure 5-F, page 67.
2. Meter packs provided, installed, and maintained by customer.
3. Refer to the ESG, pages 48-55 for connector/conductor responsibility in meter pack.
4. When utilizing meter packs to serve Secondary Service customers, lever-operated bypass mechanisms are required for each individual meter socket.
5. If 7 or more meters are able to be installed, a service disconnect must be used on the line side of the meter pack. Check with city for additional requirements.
6. All meter packs must be ringless.
7. For service lateral installation refer to the ESG and see 400.02, page 34. The service raceway shall not contain any conduit or other open connections.
8. The use of flexible metallic conduit, liquid tight flexible metallic conduit, and liquid tight flexible non-metallic conduit for service entrance raceway is prohibited. The service raceway may not contain any conduit or other open connections.
9. Schedule 40 PVC is required for company owned underground service lateral raceways. **Rigid steel, IMC, or EMT is not allowed.**
10. Meter packs with meter stacks up to 5 meters tall will be permitted under certain conditions. Maximum mounting height is 72" to the center of the top meter socket. For meter stacks that have 5 vertical positions, a permanent hard surface extending a minimum of 24" in front of the meter pack and the width of the meter pack is required. Contact company for details.
11. **It is the customer's responsibility to determine local code requirements concerning meter packs with main switches or main circuit breakers prior to installing equipment.**
12. Each socket must be clearly and permanently marked as indicated in 500.11, refer to the ESG, page 47. Apartment or Location placards shall be mounted on meter pack adjacent to the tenant breaker, as an alternate mounting position. Screws and rivets are not allowed to attach placards.

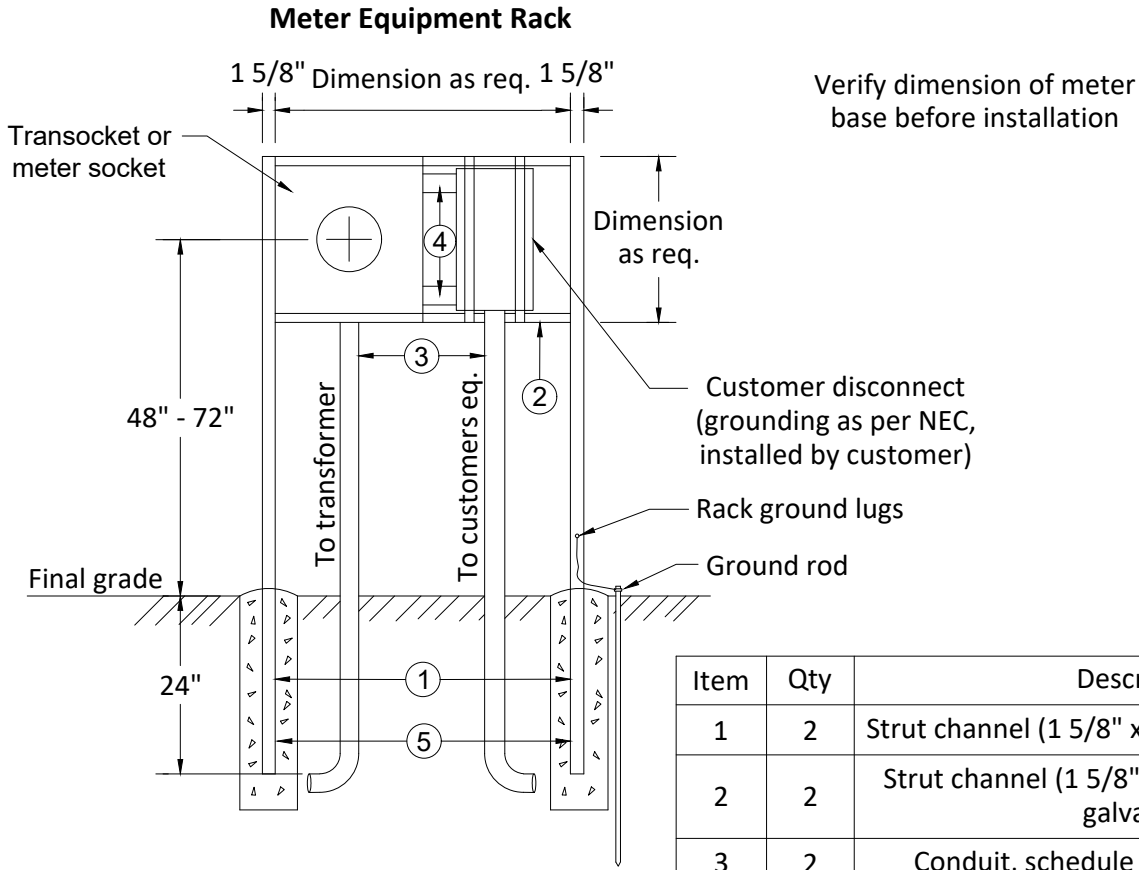


**TYPICAL METER INSTALLATIONS
(CONT.)**

DDS-4 OH DETAIL SHEET 15 OF 16

UNDERGROUND SERVICE, METER RACK

FIGURE 4-E



Item	Qty	Description
1	2	Strut channel (1 5/8" x 1 5/8" x 8'), galvanized
2	2	Strut channel (1 5/8" x 1 5/8" x 1/8" x 36"), galvanized
3	2	Conduit, schedule 80 PVC, as required
4	1	Conduit, nipple, as required (lowered for meter socket - upper for transocket)
5		Concrete, as required

Notes:

1. Company owned service lateral conductors are installed by company and line-side (top) connections made up by company. Customer service conductors are installed and connected in socket by customer.
2. Meter socket, rack and conduit/risers provided, installed and maintained by customer. A 4" minimum clearance from the disconnect switch operating-lever is required. Reference the ESG, see Table 5-C, pages 58-61 for list of approved meter sockets.
3. Service lateral or source conductors provided and installed as per 400.02, refer to the ESG, page 34. The service raceway to transformer (source) may not contain any conduit or other open connections.
4. A 4' clearance is required from meter side of meter rack assembly to any obstruction or structure.
5. Customer service equipment may be installed on the meter rack assembly in accordance with all applicable codes. In unincorporated areas, contact company representative for details.
6. Customer provides, installs and maintains the ground rod conductor, #6 copper minimum and connection to a ground rod. Company reserves the right to refuse installation of service contingent upon observing an unsafe customer connection.
7. Alternate design- customer shall obtain company approval of any alternate design prior to installation. A meter pedestal is an acceptable alternate design. Contact company representative for details.



**TYPICAL METER INSTALLATIONS
(CONT.)**

DDS-4 OH DETAIL SHEET 16 OF 16