



Specifications for Electrical Service Lateral Raceways- Single Unit & Duplex Residential

Specification DDS-1
Revision 15, May 2024

**ONCOR ELECTRIC DELIVERY COMPANY
SPECIFICATIONS FOR ELECTRICAL SERVICE LATERAL RACEWAYS
SINGLE UNIT & DUPLEX RESIDENTIAL
SPECIFICATION NUMBER DDS-1**

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**ONCOR ELECTRIC DELIVERY COMPANY
SPECIFICATIONS FOR ELECTRICAL SERVICE LATERAL RACEWAYS
SINGLE UNIT & DUPLEX RESIDENTIAL
SPECIFICATION NUMBER DDS-1**

1. SCOPE

This document represents the minimum requirements and specifications for the installation of electrical service lateral raceways, serving single unit and duplex residences, 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 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 underground electrical service lateral raceway.

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

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

4. GENERAL

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

4.1.1 Local City Building Code

4.1.2 National Electrical Safety Code (NESC)

4. GENERAL (continued)

4.1.3 U. S. Occupational Safety and Health Act of 1970 (OSHA)

4.1.4 Local City Location and Coordination Policy (if applicable)

4.2 Prior to construction a meeting shall be held to discuss and coordinate construction and inspection.

4.3 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 check all conduit installations prior to backfilling.

5.2 After approval of the installed conduit system by the Company inspector, and after all appropriate contracts, agreements, and easements have been signed and any CIAC (contribution in aid of construction) has been paid, the Company shall install service lateral cables up to the line side of the point of delivery.

5.3 Upon notification of final electrical inspection from the Authority Having Jurisdiction, the Company is to make final electrical connections at the line side of 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 coordinate with the Company inspector for inspection of work prior to backfilling.

6.2 The Contractor is to replace at his expense any damaged equipment or correct any work not in compliance with the requirements in these specifications, the project sketch, the DDS-1 Detail Sheets or as specified by the Company.

6.3 The Contractor is to furnish all conduit, bends, equipment and labor to install the service lateral raceway as per the DDS-1 Detail Sheets. 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. CONTRACTOR RESPONSIBILITY (continued)

6.4 Contractor is to provide and install an oversized PVC conduit/raceway fitting that slips over the service later conduit. This fitting prevents exposure of conductors due to the conduit/raceway movement due to soil expansion and contraction. Conduit inserted a minimum of 12” into the fitting. Approved PVC conduit/raceway fitting manufacturers and part numbers:

Conduit Size	MFR	MRF#
2”	Carlton	E957JXX
2”	Cantex	5144028
2”	Heritage	610407
3”	Carlton	E954LXX
3”	Cantex	5144043
3”	Heritage	610409
4”	Carlton	E954NXX
4”	Cantex	5144027
4”	Heritage	610410

6.5 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-1 Detail Sheet 10 for approved pull tapes.

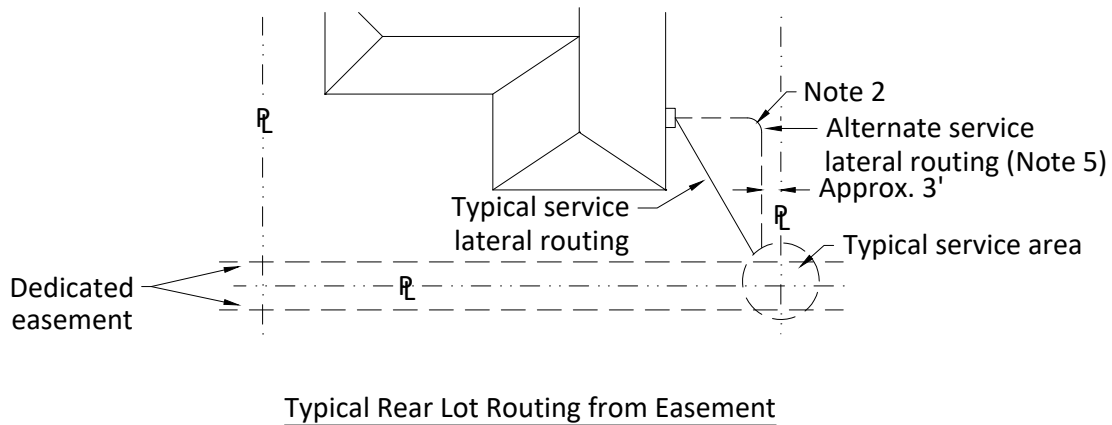
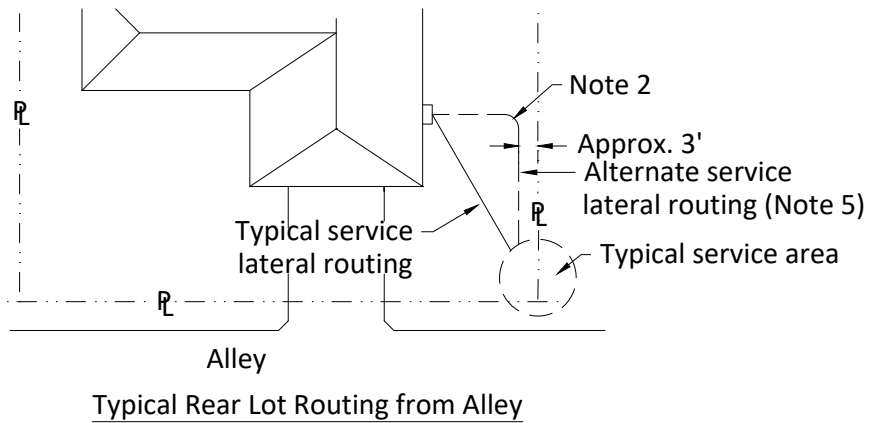
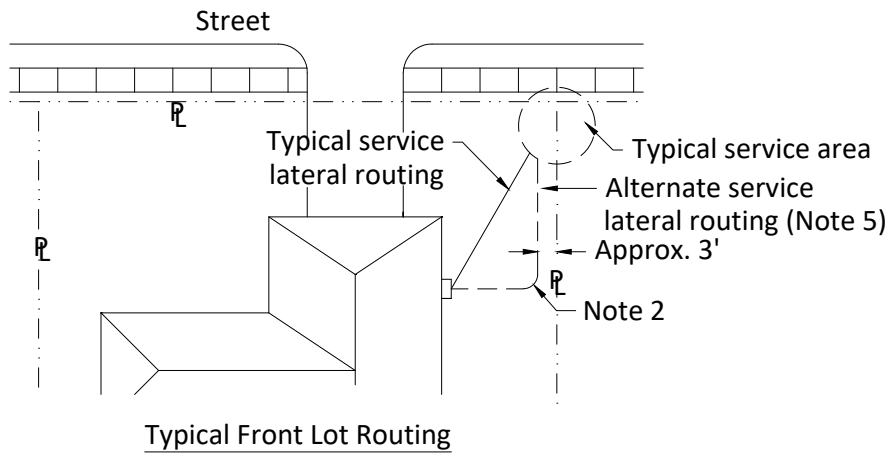
6.6 The Contractor is to secure inspection and approval of the premise’s facilities by the Authority Having Jurisdiction prior to connection of electrical facilities.

6.7 The Contractor shall provide and install self- contained meter sockets. Reference the Electrical Service Guidelines for approved self- contained meter sockets.

6.8 The Contractor is to make all connections on the load side of the point of delivery.

7. ACCEPTANCE

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



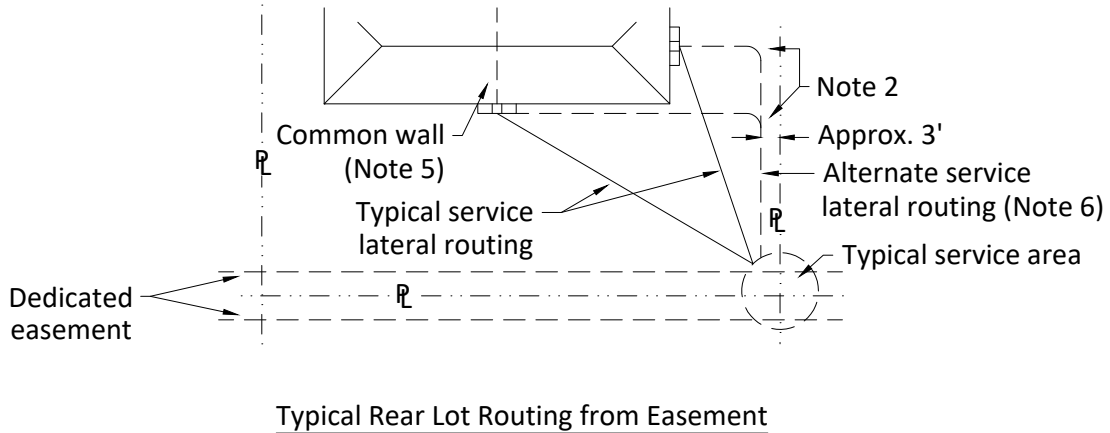
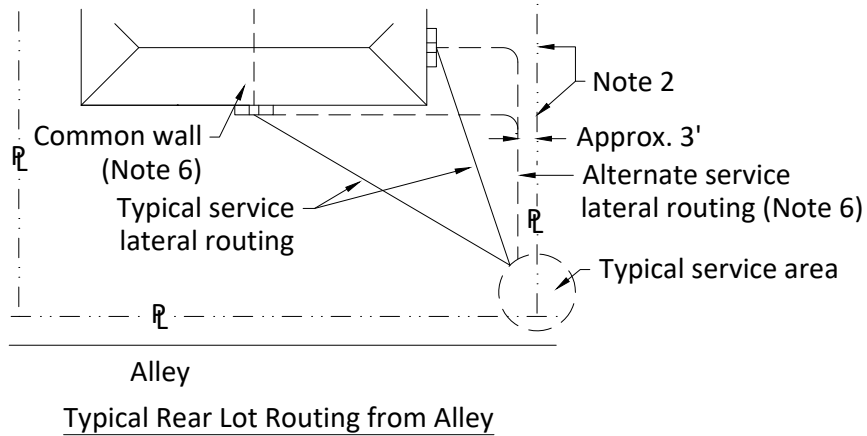
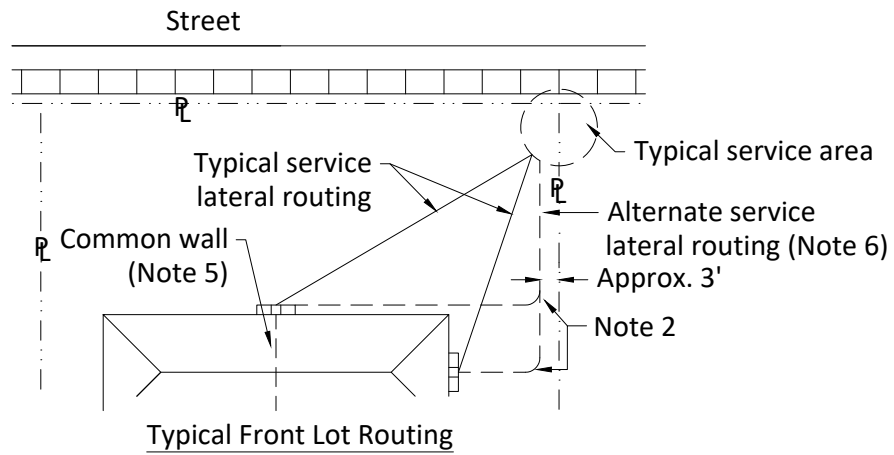
Notes:

1. Consult company representative for size of conduit to be installed.
2. Reference detail sheet 12 for bend radius for all horizontal and vertical conduit bends.
3. Limit raceway to three 90° bends. If more than three 90° bends are required, contact company representative.
4. Distance between 90° bends shall be 5' minimum.
5. Alternate routing to allow for swimming pools and other obstructions. Reference DDS-1 detail sheet 19.



**SERVICE LATERAL ROUTING -
SINGLE FAMILY RESIDENTIAL**

DDS-1 DETAIL SHEET 1 OF 20



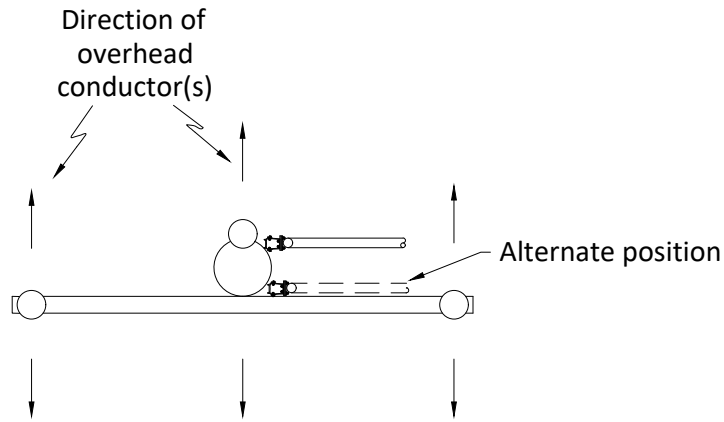
Notes:

1. Consult company representative for size of conduit to be installed.
2. Reference detail sheet 12 for bend radius for all horizontal and vertical conduit bends.
3. Limit raceway to three 90° bends. If more than three 90° bends are required, contact company representative.
4. Distance between 90° bends shall be 5' minimum.
5. For a one owner two unit living structure, company provides one point of delivery to common wall.
6. Alternate routing to allow for swimming pools and other obstructions. Reference DDS-1 detail sheet 19.

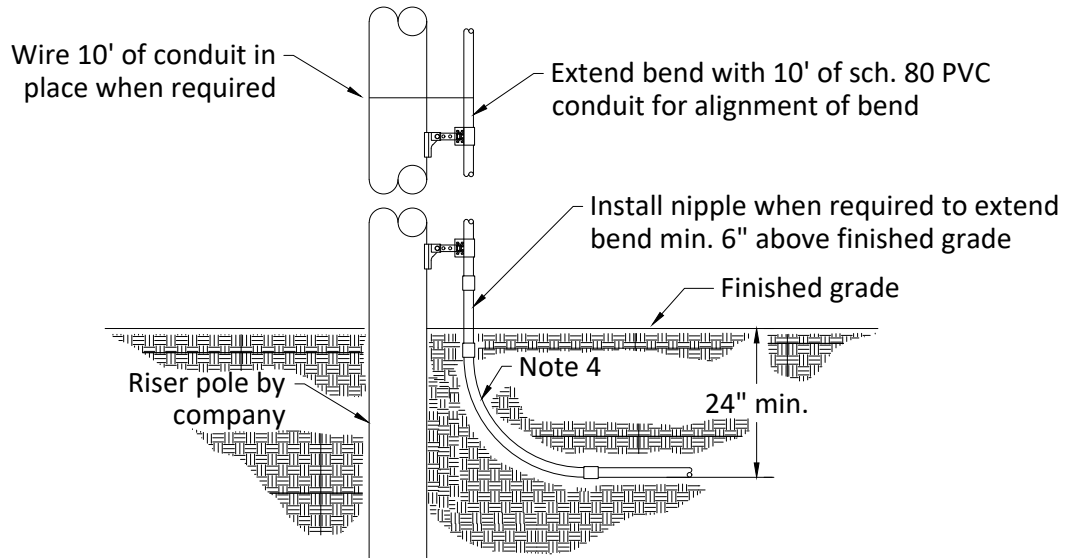


TYPICAL SERVICE LATERAL ROUTING - RESIDENTIAL DUPLEX

DDS-1 DETAIL SHEET 2 OF 20



Top View



Plan View

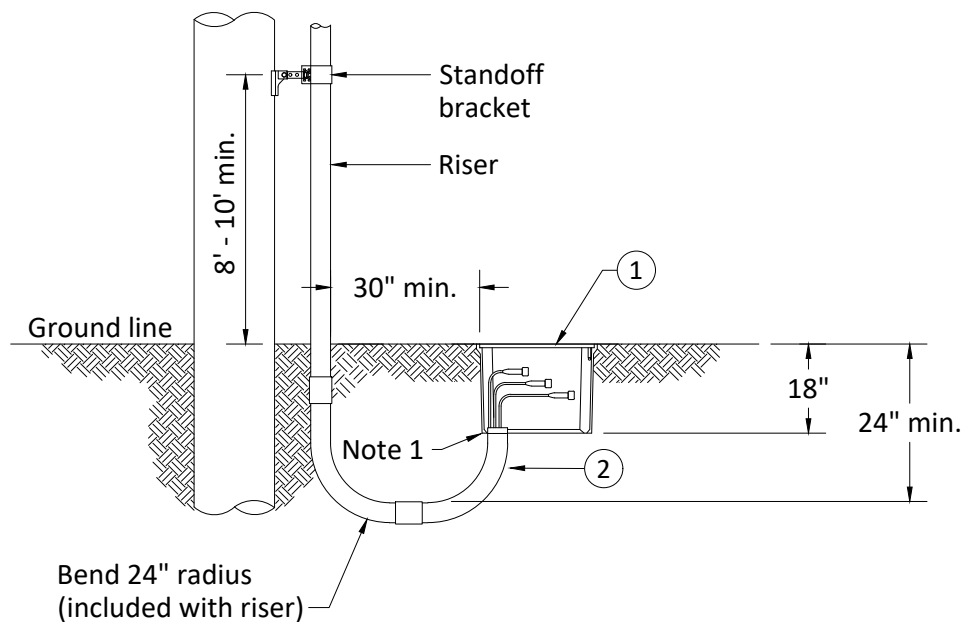
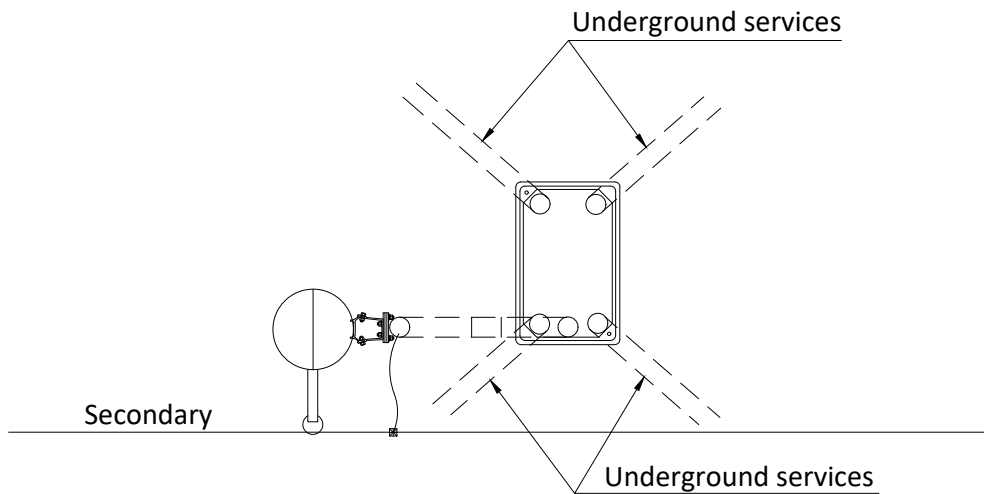
Notes:

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 12 for bend radius for all horizontal and vertical conduit bends.



**TYPICAL SERVICE AREA-
SECONDARY RISER POLE**

DDS-1 DETAIL SHEET 3 OF 20



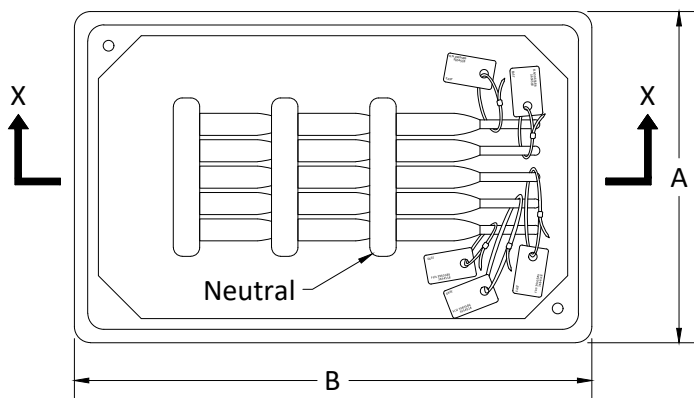
Notes:

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 12 for bend radius for all horizontal and vertical conduit bends.
4. Cut off bend flush with bottom of secondary/service box.

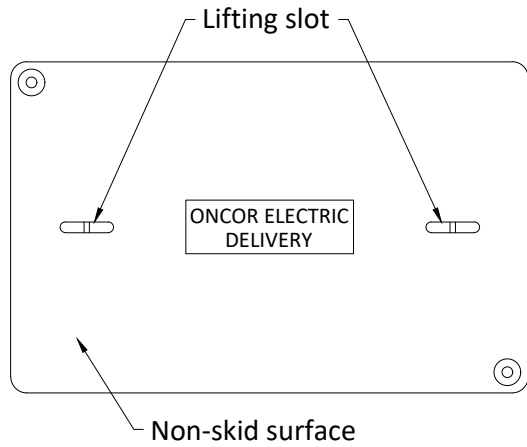


SECONDARY RISER WITH SECONDARY SERVICE BOX, CONDUIT SYSTEM

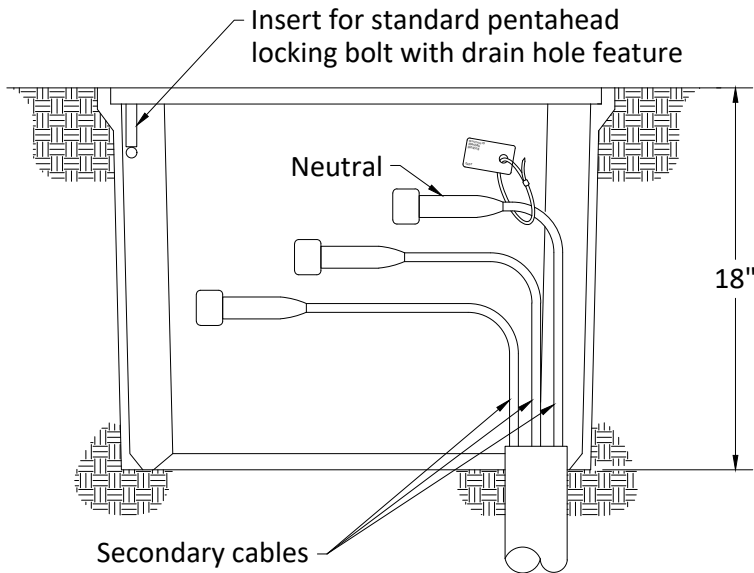
DDS-1 DETAIL SHEET 4 OF 20



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

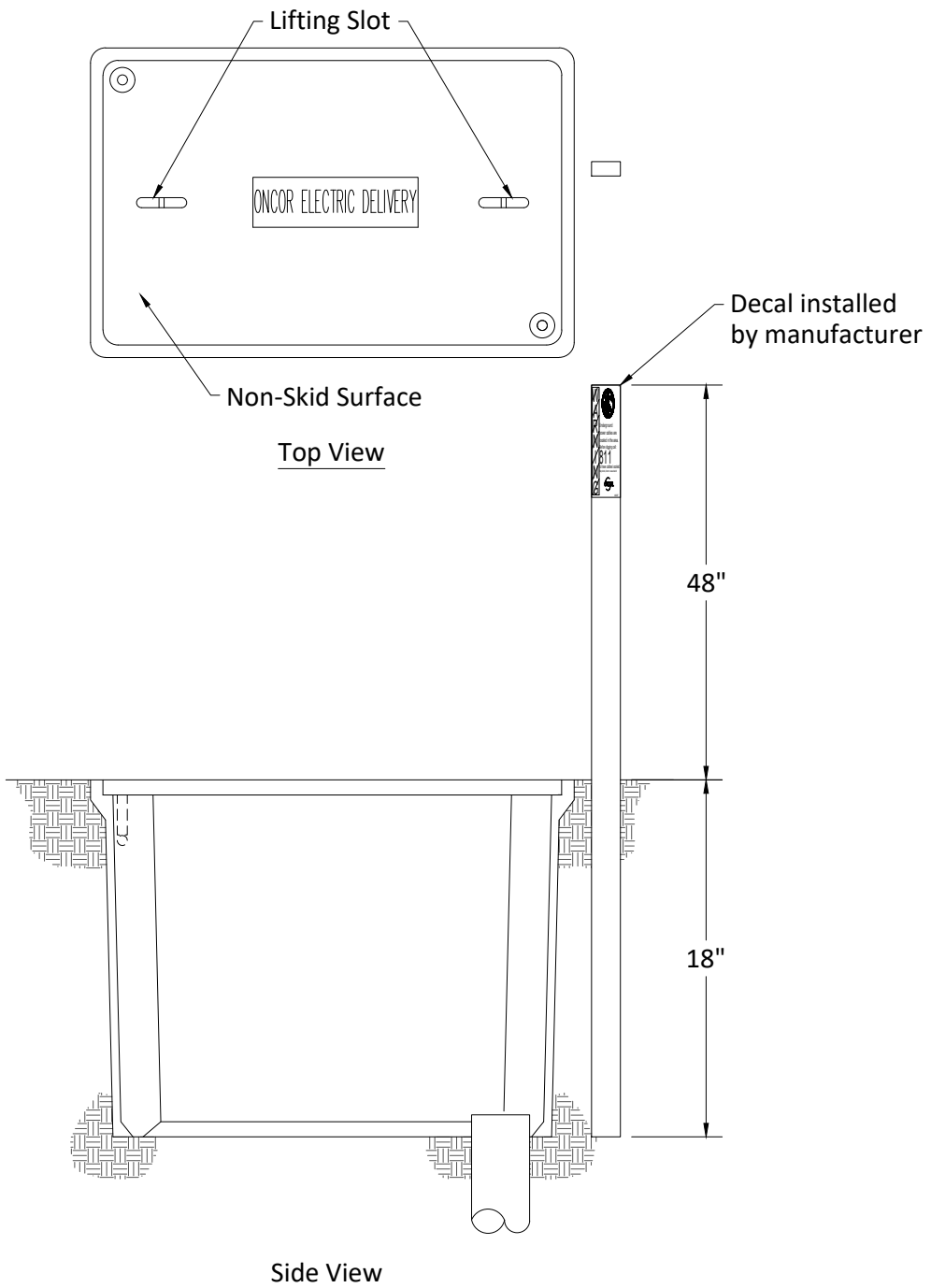
Notes:

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 12 for bend radius for all horizontal and vertical conduit bends.



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

DDS-1 DETAIL SHEET 5 OF 20



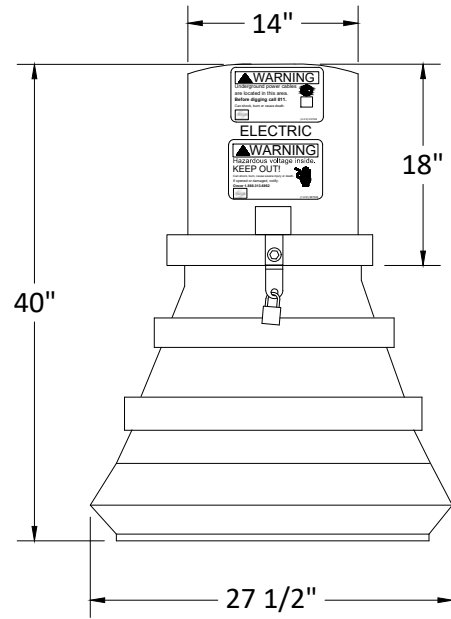
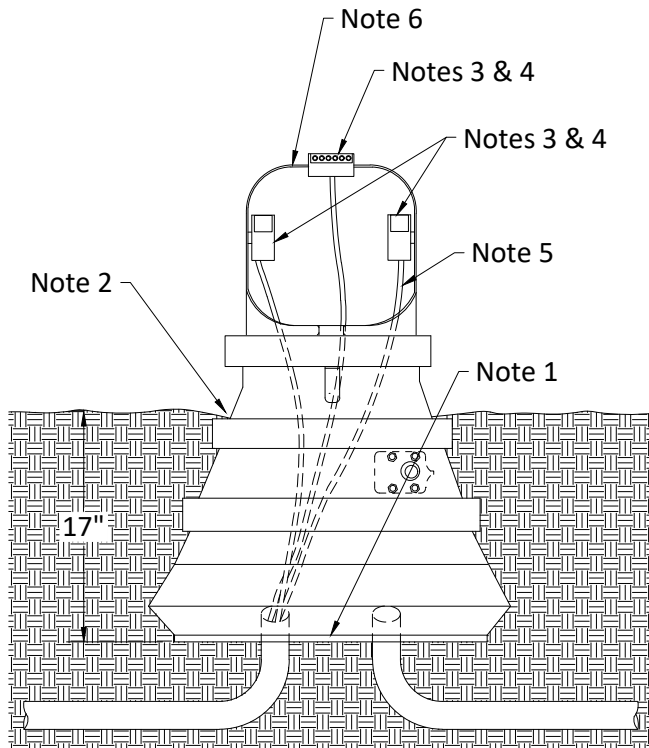
Notes:

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-1 DETAIL SHEET 6 OF 20



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

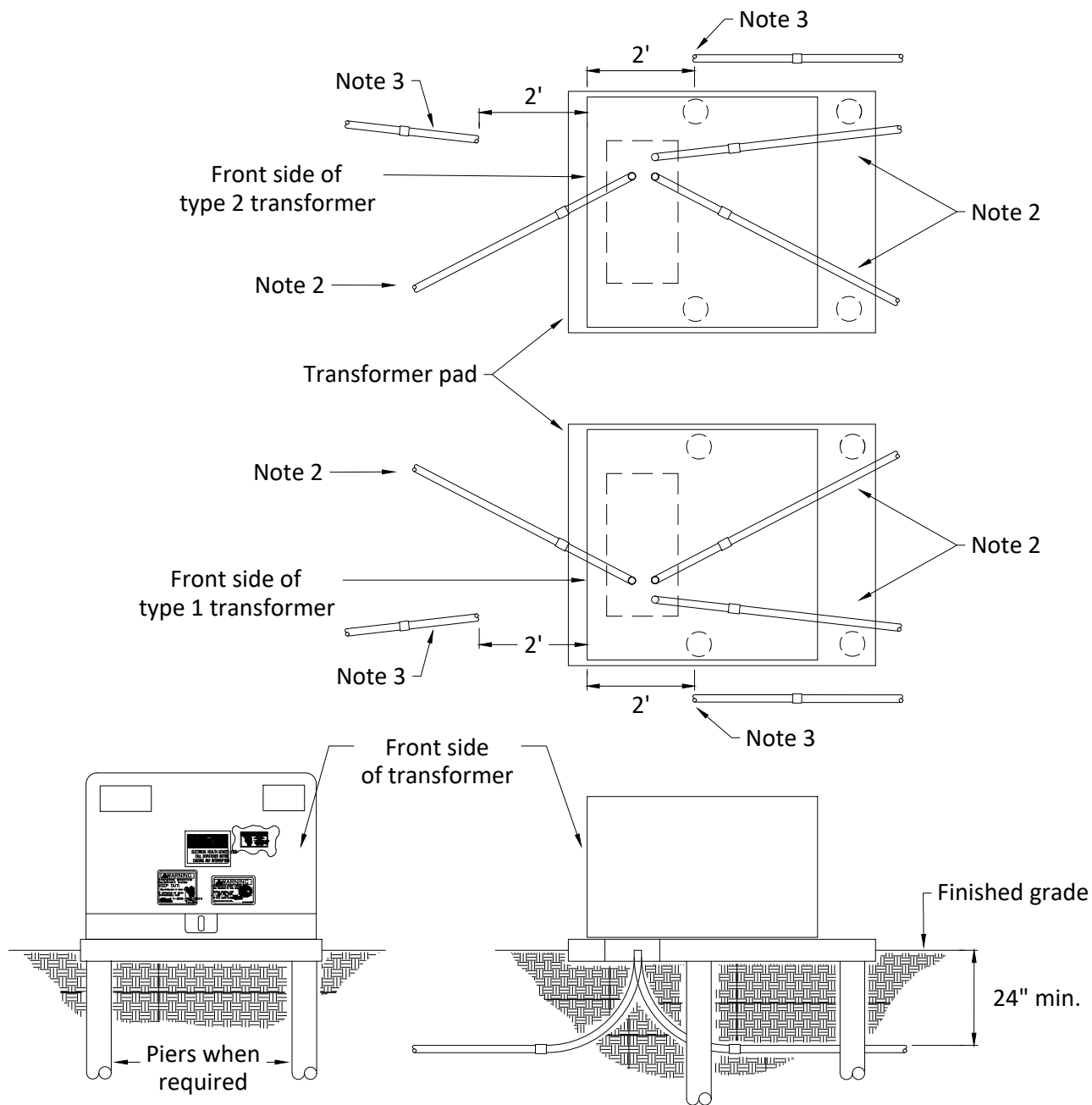
Installation notes:

- 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 12 for bend radius for all horizontal and vertical conduit bends.



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

DDS-1 DETAIL SHEET 7 OF 20



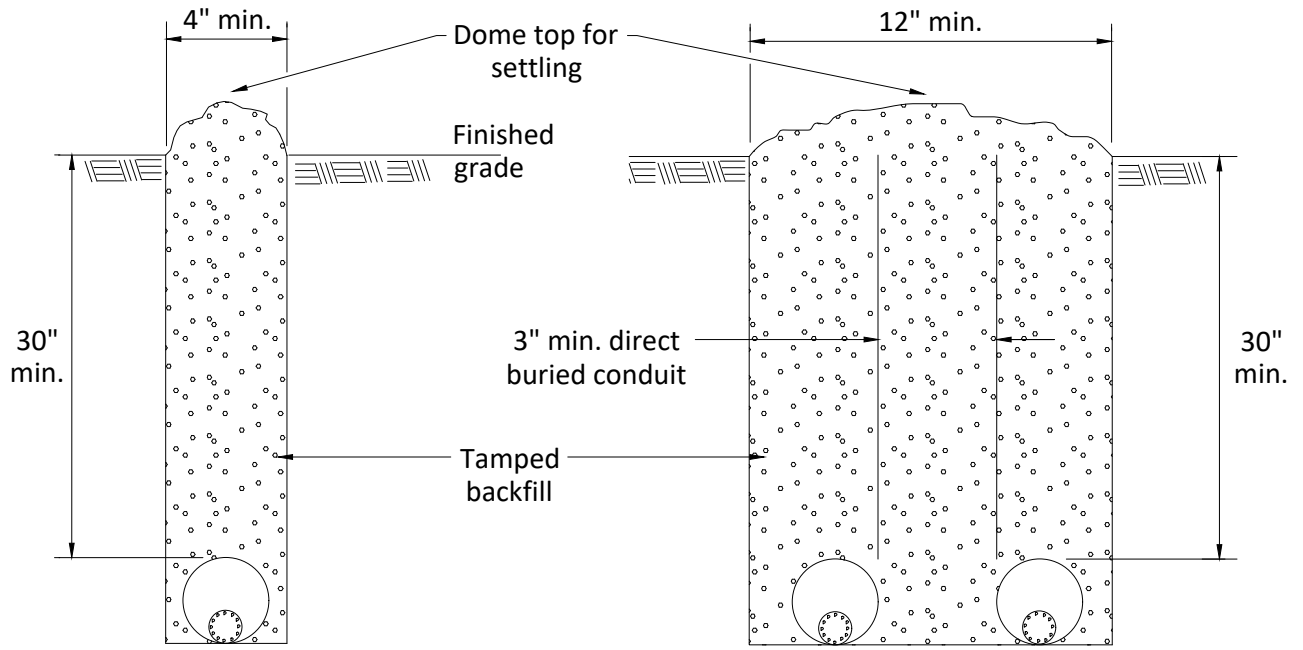
Notes:

1. Consult company representative for size of conduit to be installed.
2. Typical location of service conduits for initial installations.
3. For installation of conduit to in-service transformer pads: bring conduit to within 2' of (1) right front side of transformer for type 1 transformers or (2) left front side of transformer for type 2 transformers. Consult company representative for routing path of conduit to transformer pad window.
4. Reference detail sheet 12 for bend radius for all horizontal and vertical conduit bends.



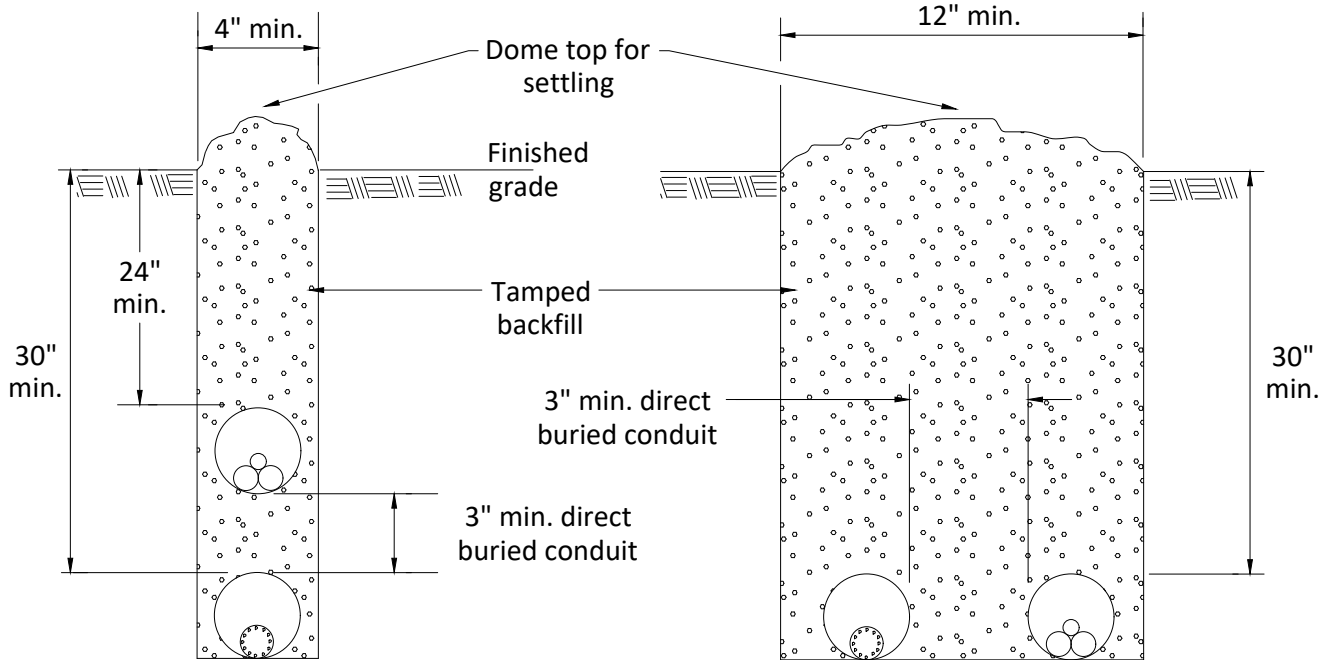
**TYPICAL SERVICE AREA-
TRANSFORMER PAD**

DDS-1 DETAIL SHEET 8 OF 20



1 Primary Conduit

2 Primary Conduits



1 Primary Conduit and
1 Secondary Conduit
Vertically Arranged

1 Primary Conduit and
1 Secondary Conduit
Horizontally Arranged

Notes:

1. Consult company representative for conduit size.
2. See detail sheets 10 and 11 for notes and instructions.
3. Separation dimensions apply to company conduits or cables only. Maintain 12" separation between company conduits or cables and foreign conduits or cables.



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 shall 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 11 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-1 DETAIL SHEET 10 OF 20

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 note 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-1 DETAIL SHEET 11 OF 20

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:

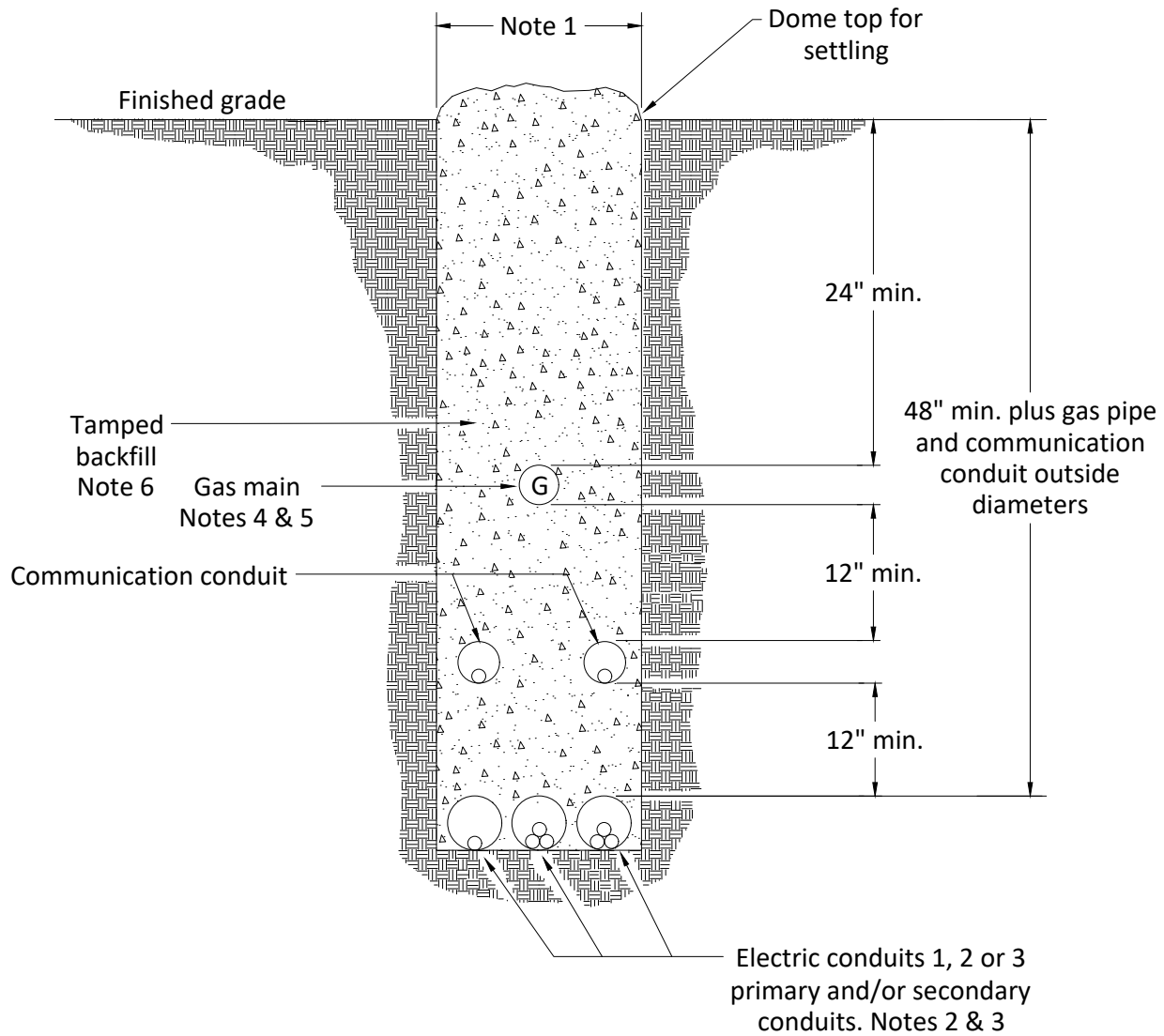
1. Sch. 80 PVC conduit shall be used for all above ground installations (pole and meter risers). Sch. 40 may be used for all below ground installations.
2. No field bends.
3. 24" sweep 90s on 4" PVC may be used when the required conduit depth is less than 30" from final grade.
4. 24" sweep 90s on 4" 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-1 DETAIL SHEET 12 OF 20



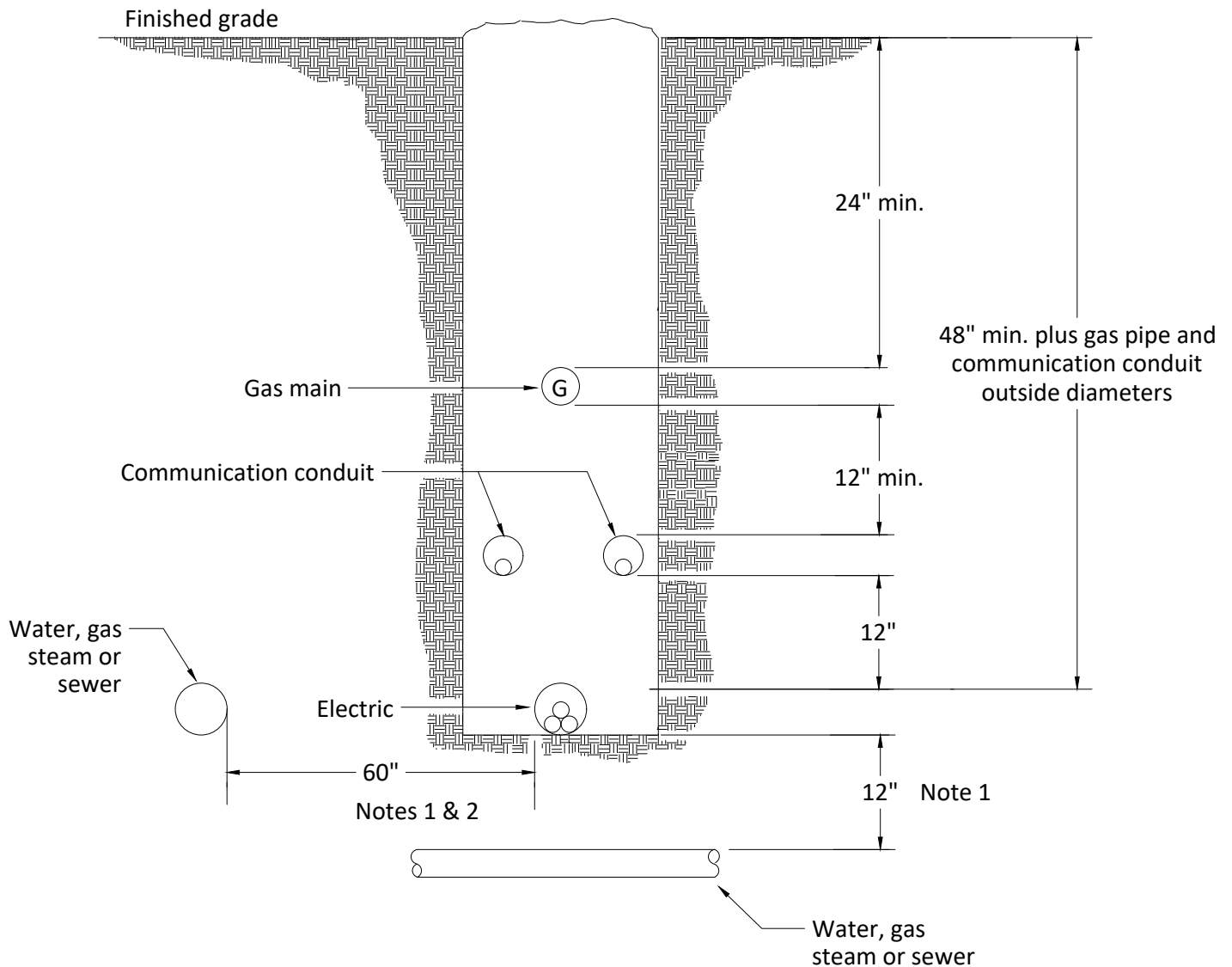
Notes:

1. 12" min. with more than one electrical supply conduit.
4" min. with one electrical supply conduit (in solid rock pipe diameter determines min. width).
2. Ampacities are reduced for multiple circuits in a trench.
3. See detail sheets 10 and 11 for notes and instructions.
4. The gas line in a joint trench shall be polyethylene.
5. When a gas line crosses under an enclosure such as a pedestal, pad mount transformer or splice/pull box, it will be sleeved in a section of polyethylene or schedule 40 PVC. The sleeve will extend a minimum of 3' beyond the edge of the enclosure on each side. Maintain a 12" separation between gas line and electrical supply conduit(s).
6. Backfill material and compaction shall meet or exceed each utility's specifications.



**TRENCH REQUIREMENTS
JOINT USE ELECTRIC, GAS
AND COMMUNICATION**

DDS-1 DETAIL SHEET 13 OF 20



Notes:

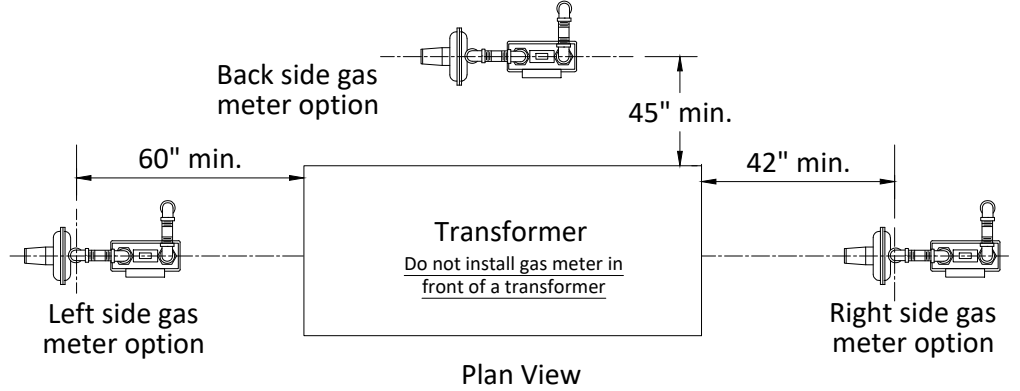
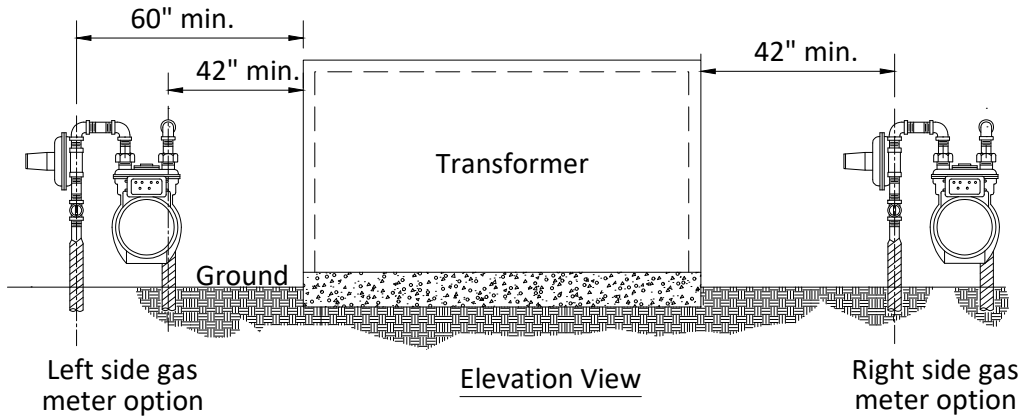
1. Vertical crossing clearance from other utilities shall be 12". A 60" lateral separation of paralleling foreign utilities (excluding gas and communications) shall be required. An exception would be to allow gas, telephone and/or CATV in the same ditch as company conduit system providing the NESC requirements 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.



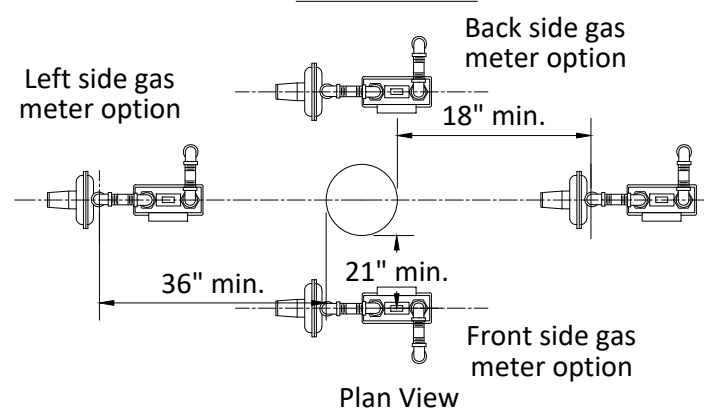
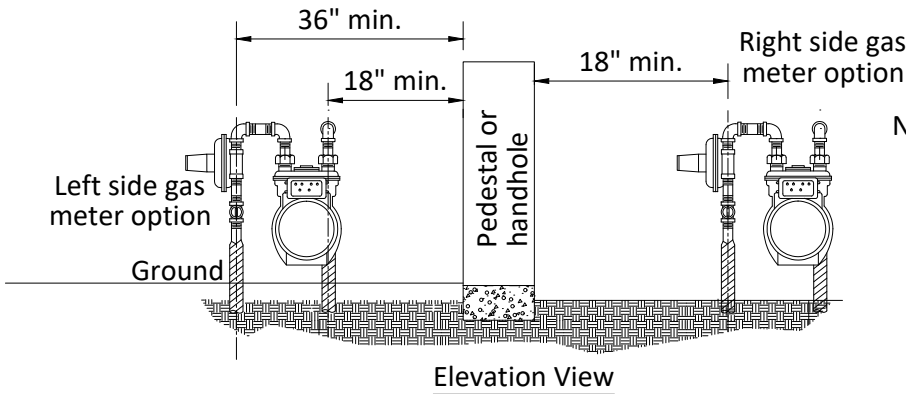
**CLEARANCE REQUIREMENTS
FROM FOREIGN UTILITIES
ON PRIVATE PROPERTY**

DDS-1 DETAIL SHEET 14 OF 20

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 transformer 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.

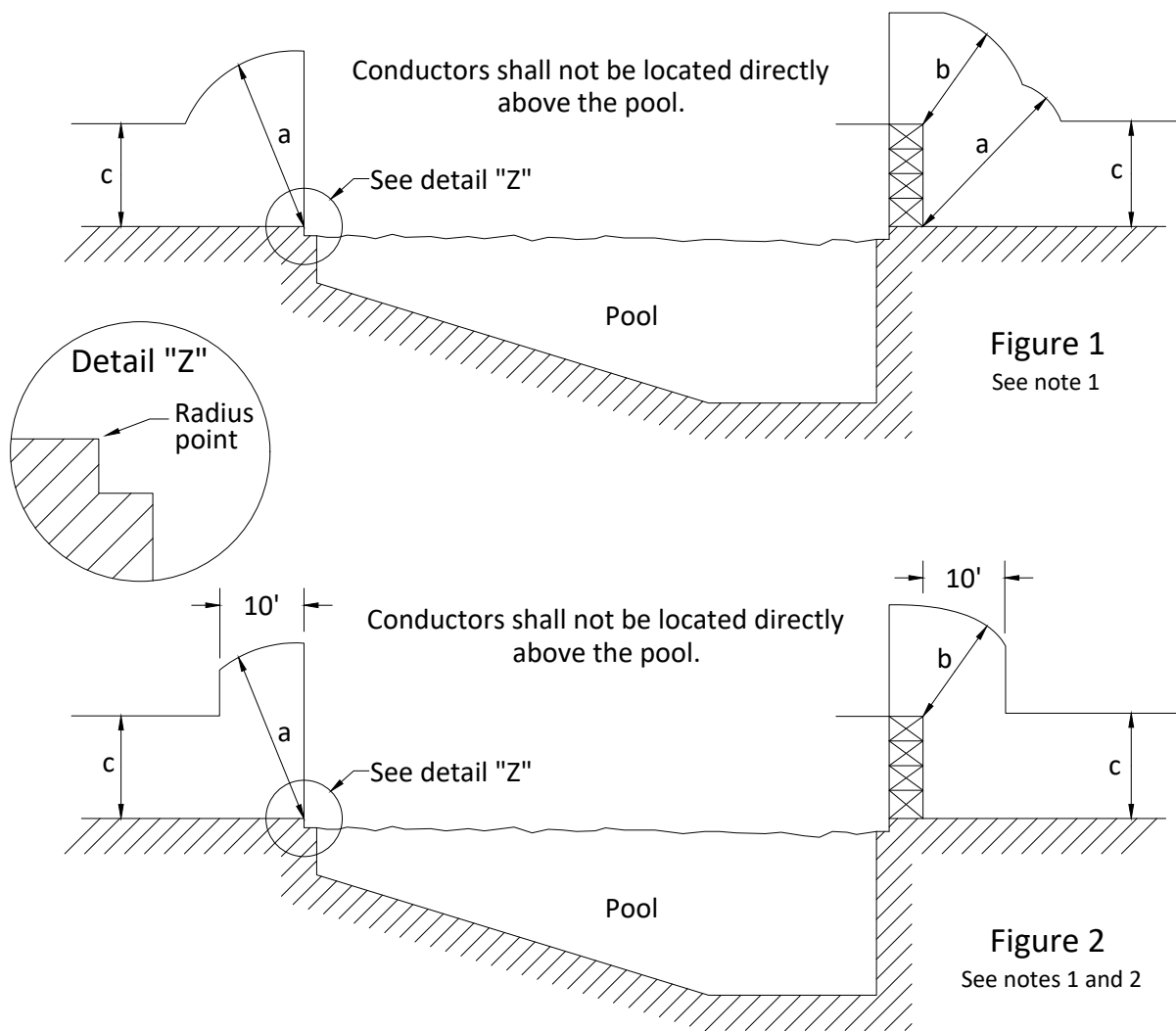


**ABOVEGROUND CLEARANCES
FROM GAS METER INSTALLATIONS**

DDS-1 DETAIL SHEET 15 OF 20

CLEARANCES OF SWIMMING POOLS FROM OVERHEAD FACILITIES

FIGURE 2-B



Notes:

1. Dimensions for "a", "b", and "c" shown above are defined by table on Page 18.
2. Figure 2 shall be applied ONLY to:
 - Overhead Guys;
 - Neutral Conductor;
 - Cabled Conductor ≤ 750 V Phase to Ground

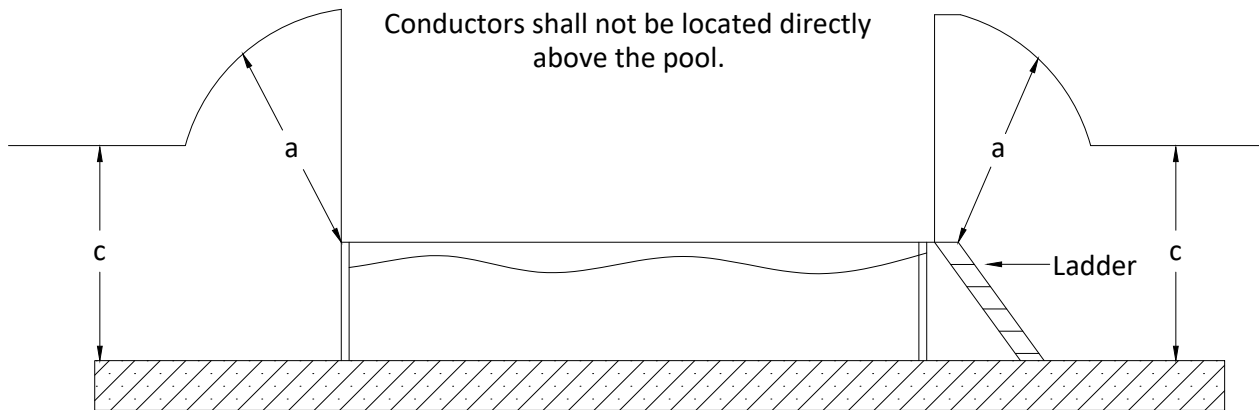


**LOCATION OF SERVICE LATERAL
NEAR A SWIMMING POOL**

DDS-1 DETAIL SHEET 16 OF 20

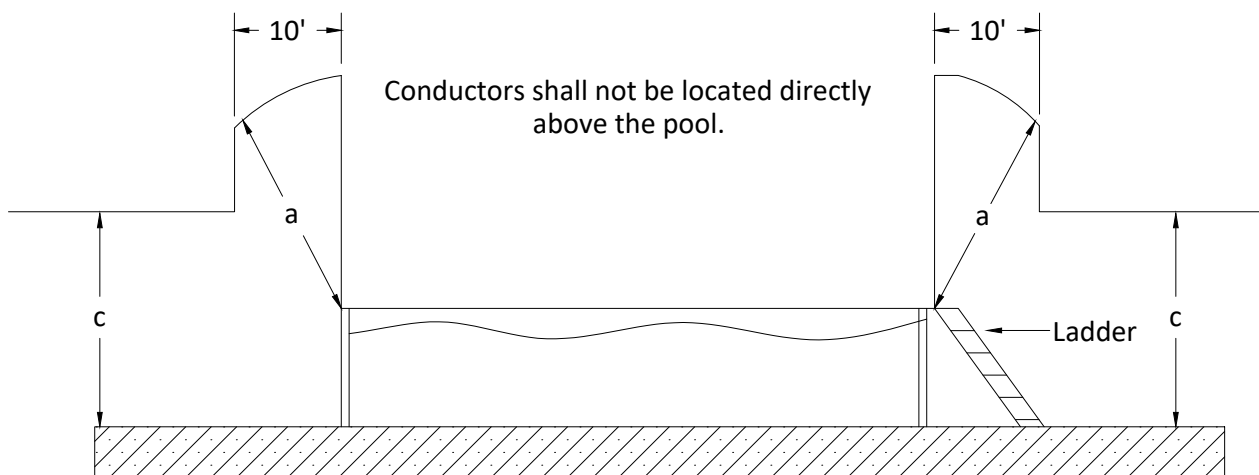
CLEARANCES OF SWIMMING POOLS FROM OVERHEAD FACILITIES (cont'd)

FIGURE 2-B



Above ground swimming pool without a deck. Clearances maintained from the highest point of the installation.

Figure 3
See notes 1 and 3



Above ground swimming pool without a deck. Clearances maintained from the highest point of the installation.

Figure 4
See notes 1, 2, and 3

Notes:

1. Dimensions for "a" and "c" shown above are defined by table on Page 18.
2. Figure 4 shall be applied ONLY to:
 - Overhead Guys;
 - Neutral Conductor;
 - Cabled Conductor \leq 750 V Phase to Ground
3. Proper respective clearances must be maintained if a diving platform, tower, water slide, or other fixed, pool-related structure exists.



**LOCATION OF SERVICE LATERAL
NEAR A SWIMMING POOL
(CONT.)**

DDS-1 DETAIL SHEET 17 OF 20

CLEARANCES OF SWIMMING POOLS FROM OVERHEAD FACILITIES (cont'd)

TABLE 2-B

The table below contains clearance values based upon the requirements of the National Electrical Safety Code with allowances for worst case conditions. Actual clearance requirements vary with conductor size and type, ambient air temperature, and other factors. The values shown in the table are meant to be a guideline. **When clearances are less than indicated in the table, the Customer should contact Company for exact requirements based on field conditions.**

Please Note: **Wires, conductors, cables, or unguarded rigid live parts shall not pass over a swimming pool.**

	Requirements	Overhead Guy or Neutral (ft)	Bundled or Cabled Secondary or Service (ft)	Open Wire Secondary or Service (ft)	Pole Line or Primary Conductor (ft)
a.	Clearance in any direction from water level, edge of pool, base of diving platform, or anchored raft.	27	27.5	28	30
b.	Clearance in any direction to diving platform, tower, water slide or other fixed, pool related structure.	19	19.5	20	22
c.	Vertical clearance over adjacent land which is driveways, parking lots, and alleys subject to truck traffic (any vehicle exceeding 8' in height).	20.5	21	21.5	23.5
d.	Vertical clearance over adjacent land which is spaces and ways subject to pedestrians or restricted traffic only. *	14.5	17	17.5	19.5
e.	These clearances do not apply to overhead guys, neutral conductors and cabled conductor \leq 750 volts when these facilities are 10' or more horizontally from the edge of the pool, diving platform, diving tower, water slide, or other fixed, pool related structure.	10	-	-	-

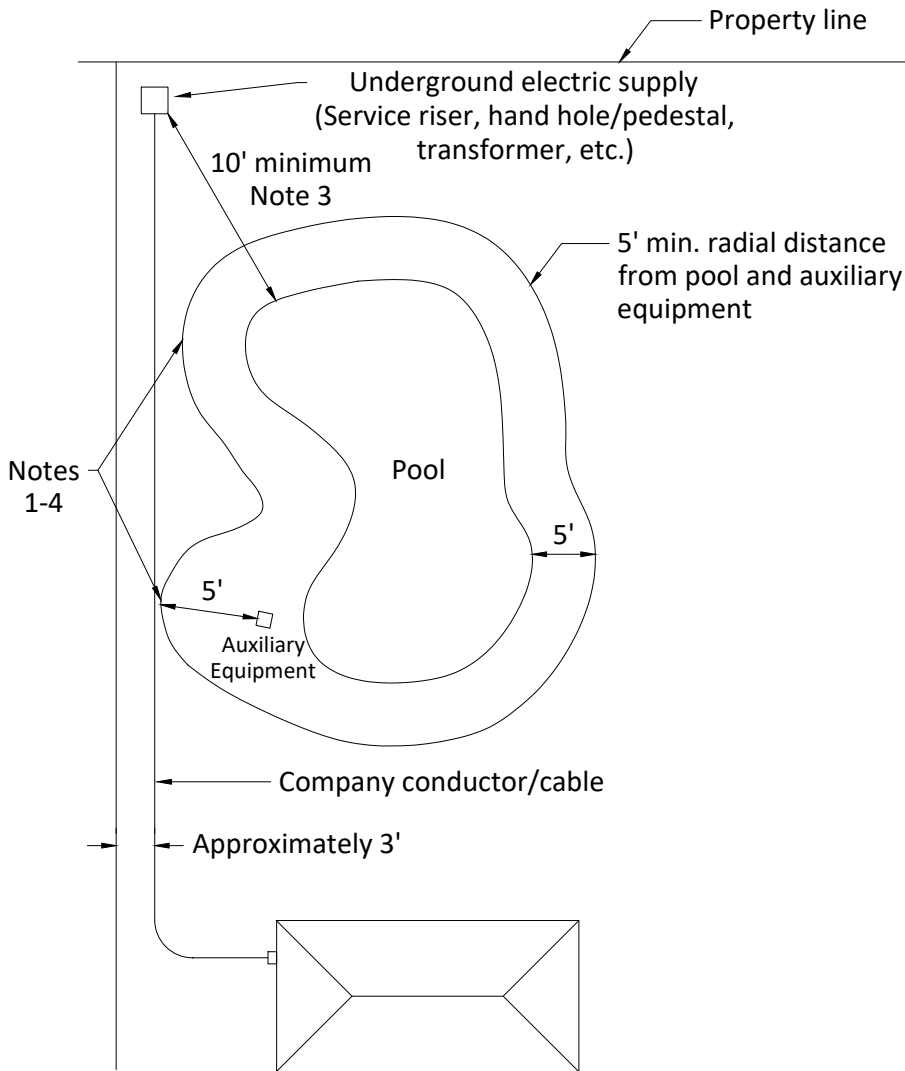


**LOCATION OF SERVICE LATERAL
NEAR A SWIMMING POOL
(CONT.)**

DDS-1 DETAIL SHEET 18 OF 20

CLEARANCE OF SWIMMING POOLS FROM UNDERGROUND FACILITIES

FIGURE 2-C



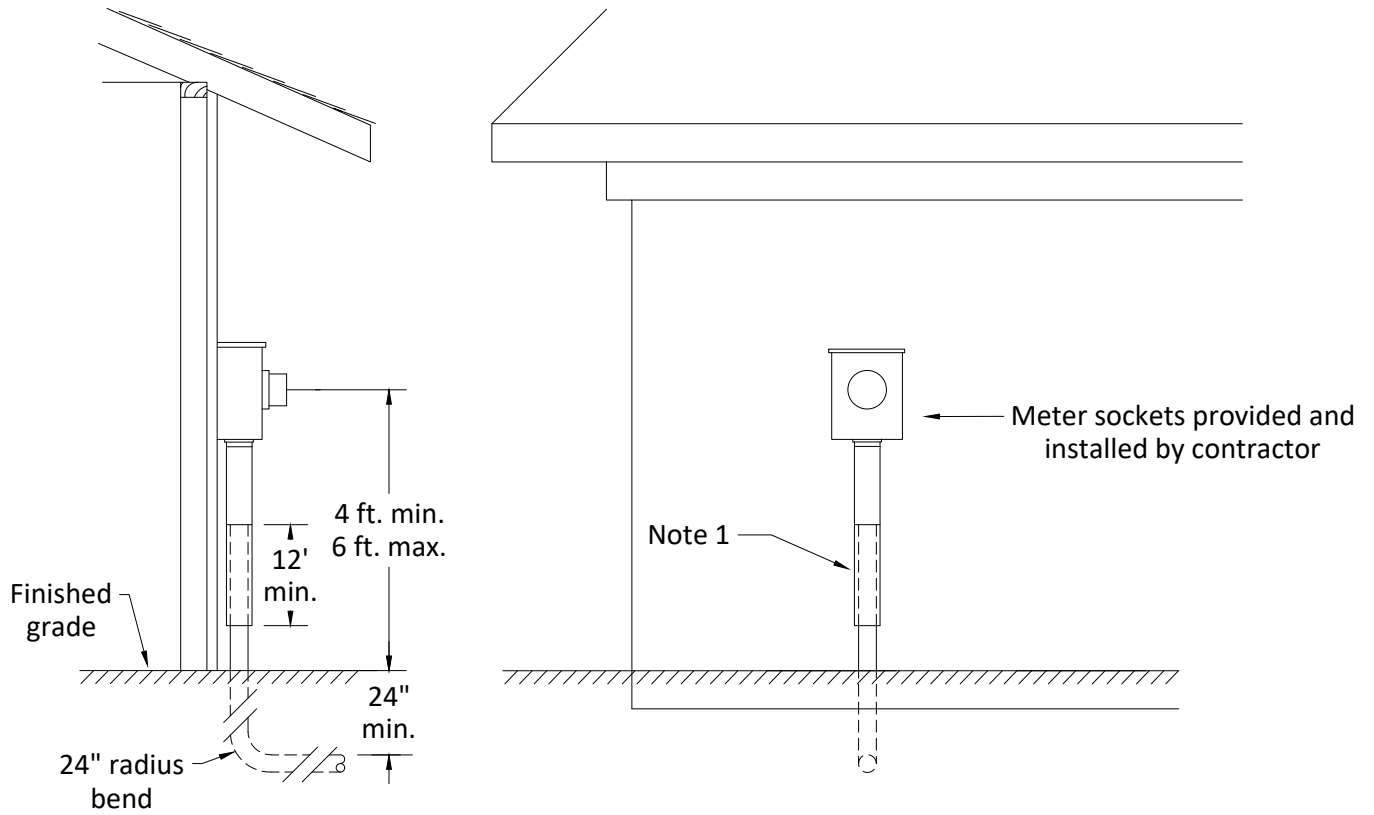
Notes:

1. Company Conductor/Cable - Oncor Electric Delivery Company LLC and its officers, agents, employees, successors, and assigned owned cable and/or conductor. (i.e. primary, secondary, service lateral)
2. A swimming pool or its auxiliary equipment or water pipes shall not be installed within 5' of direct-buried company conductor/cable.
3. Where a swimming pool must be installed within 5' of an existing direct-buried primary, secondary, and/or service, the primary, secondary, and/or service shall be installed in a continuous conduit to the point of delivery (POD).
4. Conduits installed for company conductor/cable shall be a minimum of 2' from the water's edge of the swimming pool. This distance applies to new pool site conduits and to the re-routing of existing company primary, secondary, and/or service.
5. The swimming pool auxiliary equipment conduits, conductors, water pipes, or customer owned facilities may not be installed in the same trench as the company conductor/cable.
6. Pad mounted equipment shall be located 10' or more from the water's edge.
7. Local requirements may require greater clearances.
8. For additional information related to company conductor/cable and swimming pools see document DDS1PR at Oncor.com.
9. Allowing pools and pool equipment as close as 2' from Oncor owned medium voltage cables (5 through 25 kV) may require the Oncor R.O.W. Department involvement.

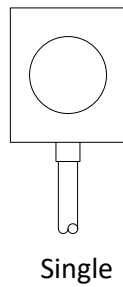


**LOCATION OF SERVICE LATERAL
NEAR A SWIMMING POOL
(CONT.)**

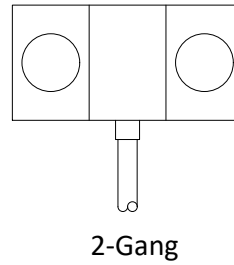
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Typical Meter Installation



Single



2-Gang

Meter Sockets-Single and Duplex

Note 3

Notes:

1. Meter riser shall be schedule 80 PVC. exemption: schedule 40 PVC is acceptable if permitted by local code and riser is not placed in the vicinity of a driveway or subject to physical damage. Rigid steel, IMC, or EMC is not allowed.
2. 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.
3. Reference Oncor's "Electric Service Guidelines" for meter information.



METERING INFORMATION

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