GENERAL NOTES - CONCRETE FOUNDATIONS

1. Verify overall pad and concrete riser dimensions with the Engineer before placing concrete. Dimensions X, Y, A, and B vary with cabinet arrangement and should be provided with the Contract Plans.

2. Foundations installed in, or adjacent to, sidewalks shall be constructed with the top of the access surface (not including any concrete cabinet risers) flush with the sidewalk surface and grade.

3. Foundations require a total of 4 feet of level clear space from the door face of any cabinet or associated cabinet riser. Level clear space that is not provided by the concrete pad shall be provided using crushed surfacing meeting the requirements of **Standard Specification Sect. 9-03.9(1)**.

4. Foundations where additional security is required or where the slope beyond the foundation is steeper than 3H : 1V, fencing is required at the edge of the 4 foot level clear space. Fencing shall be 6-foot tall Type 3 Chain Link Fence as shown in **Standard Plan L-20.10** unless otherwise specified in the Contract, with a minimum of one 6-foot access gate.

5. Drive ground rods before placing concrete. Ground rods shall be a minimum of 6 feet apart. See **Standard Plan J-60.05** for additional details.

6. Welded Wire Fabric (WWF) shall be 4-inch by 4-inch (W4.0 x W4.0) meeting the requirements of **Standard Specification Sect. 9-07.7**. As an alternative, a grid of #3 rebar spaced at 1-foot centers (laterally and longitudinally) may be used instead.

7. Concrete riser height is dependent on the following:
   - No riser for Type D and Type E service cabinets, including the full range of all doors.
   - 4-inch riser for locations where aluminum cabinet risers are specified.
   - 12-inch riser for locations without aluminum cabinet risers.

8. Concrete risers shall extend one inch beyond the face of all cabinets (all four sides of riser).

9. Width of concrete clear space varies ~ for clear space associated with the side of a cabinet, these widths only apply to the cabinets at the end of a shared cabinet pad:
   - 3-feet for any space in front of any cabinet door.
   - 2-feet on the side of any service or transformer cabinet (both sides if there are no adjacent cabinets).
   - 2-feet on the side of any cabinet with a generator transfer switch or police panel (on the right side for any cabinet that does not have either panel).
   - 1-foot on the side of any signal or ITS cabinet that does not have a generator transfer switch or police panel (on the left side of any cabinet that does not have either panel).

10. Tie-down Anchor shall consist of a 6-inch diameter PVC drain pipe with a 24-inch long segment of #4 rebar through the center of it as shown. The rebar shall rest on the welded wire fabric outside of the pipe (fabric shall stop at edge of pipe). Fill bottom 3-inches of pipe with drain rock and cap with round plastic grate (do not glue). Provide one anchor for every two cabinets.

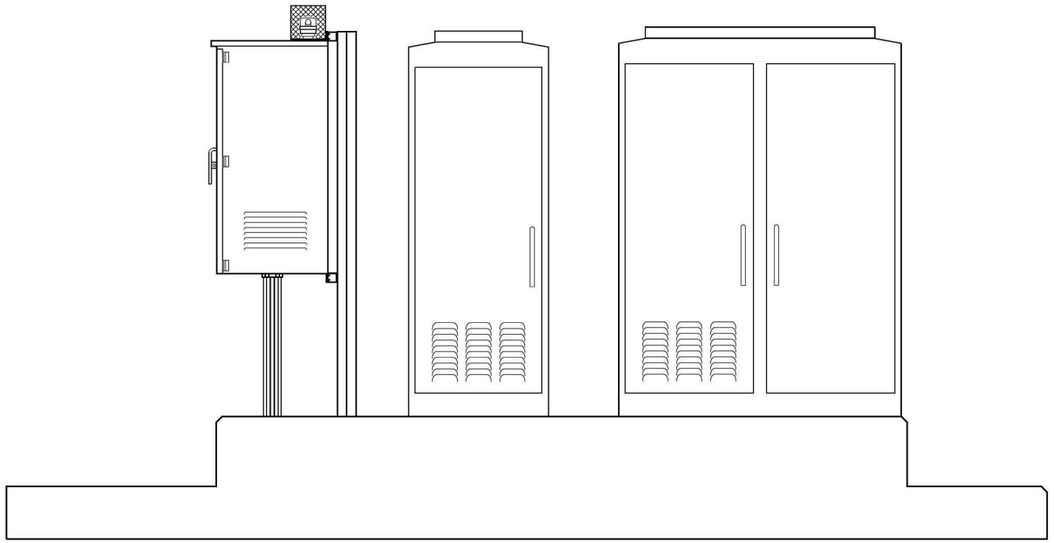
11. Concrete shall be Class 3000, in accordance with **Standard Specification Sect. 8-20.3(4)**. All concrete corners shall have a 3/4-inch chamfer with the exception of edges that abut sidewalk, where corners shall be square and separated from the sidewalk with joint filler.

GENERAL NOTES - CABINET INSTALLATIONS

12. Install conduit couplings on all conduits. Couplers shall be installed with the top of the coupler flush with the top concrete surface. For PVC conduits, the conduit segment above the coupler shall not be glued to the coupler.

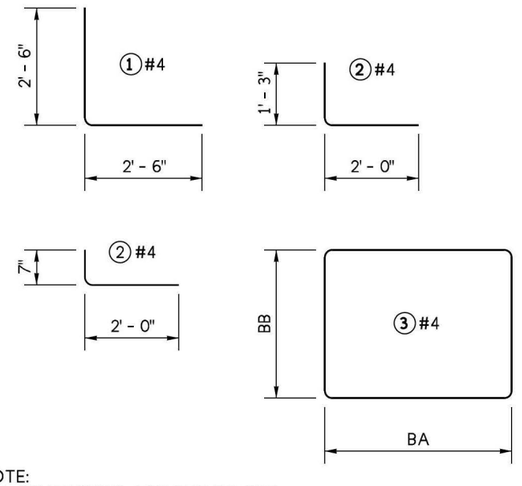
13. Conduits shall extend a minimum of 2-inches and a maximum of 3-inches onto the cabinet, as measured from the concrete surface to the top of the end bell (PVC) or ground bushing (RMC).

14. Serving utility may require the meter socket to be installed pm the outside of the cabinet. Utility feeder conduit shall still terminate in the utility section of the cabinet unless otherwise required by the utility.



REINFORCING STEEL BENDING DIAGRAM

SEE **STD. SPEC. SECT. 9-07.1(2)** FOR BENDING DIAM.



NOTE:
ALL DIMENSIONS ARE OUT TO OUT
BAR 4 DIMENSIONS ARE ALWAYS FOUR INCHES SMALLER
THAN THEIR ASSOCIATED CONCRETE RISER DIMENSIONS.

Aug 24, 2026

CABINET ORIENTATION
CONDUIT LAYOUT AND
FOUNDATION DETAIL
STANDARD PLAN J-10.10-05

SHEET 1 OF 6 SHEETS

APPROVED FOR PUBLICATION

Aug 24, 2026

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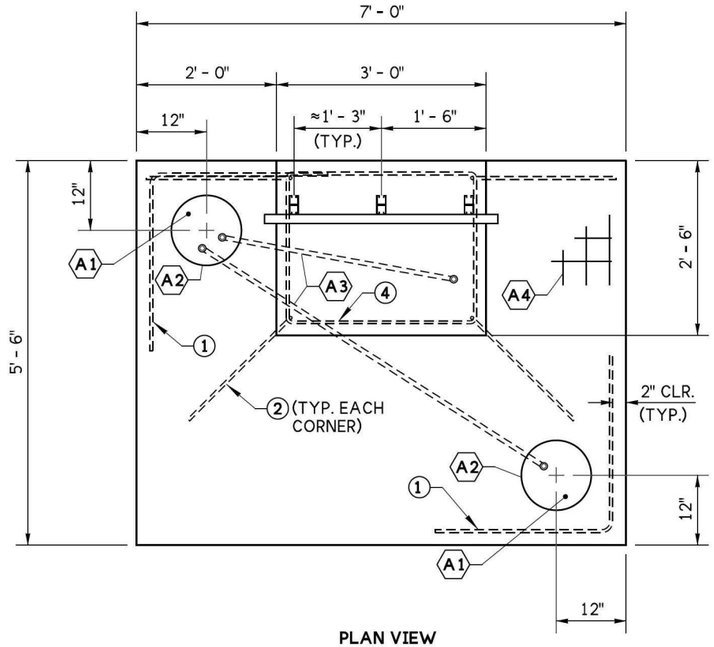


PLAN VIEW

KEY NOTES - SHEET 2 OF 6

(A1) Ground rod ~ See **Note** 5, Sheet 1 of 6.

(A2) Ground rod well (Ground tile) - 12" diameter concrete.

(A3) Service ground electrode conduits.

(A4) Welded wire fabric ~ See **Note 6**, Sheet 1 of 6.

(A5) Utility entrance conduit. Conduit shall terminate in the utility section of the service cabinet.

(A6) Conduits to field equipment. Conduits shall terminate in the customer section of the service cabinet.

(A7) Conduit couplers ~ See **Note 1**2, Sheet 1 of 6.

(A8) Vertical support steel channel ~ See **Note A1**, this sheet.

(A9) Horizontal support steel channel ~ See **Note A2**, this sheet.

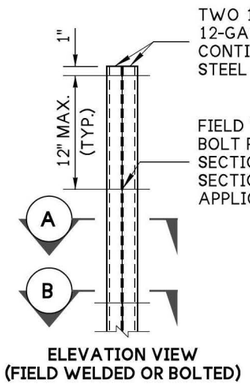
NOTES ~ SINGLE STRUT MOUNT CABINET (SHEET 2 OF 6)

A1. Vertical steel supports shall be two continuous 1 5/8" (in.) x 1 5/8" (in.) 12-gage slotted steel channels installed back-to-back (3 pairs required) ~ see Strut Mount Support Details this sheet for connection details. As an alternative, continuous 1 5/8" (in.) x 3 1/4" (in.) 12-gage slotted steel channel may be used in place of each channel pair. Channels shall be embedded a minimum of 12" (in.) into the concrete foundation. Supports shall be evenly spaced, with the center support centered in the concrete riser, and the outer supports tied to the riser rebar hoop.

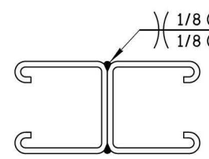
A2. Horizontal steel supports shall be continuous 1 5/8" (in.) x 1 5/8" (in.) 12-gage slotted steel channels (two required).

A3. Cabinet height shall be determined by the required height of the utility meter - verify height with serving utilty (typically 5 to 6 feet).

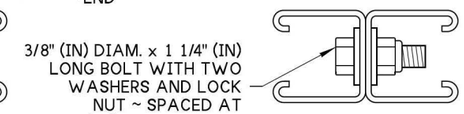
A4. See Sheet 1 for reinforcing steel bending diagrams.



ELEVATION VIEW
(FIELD WELDED OR BOLTED)

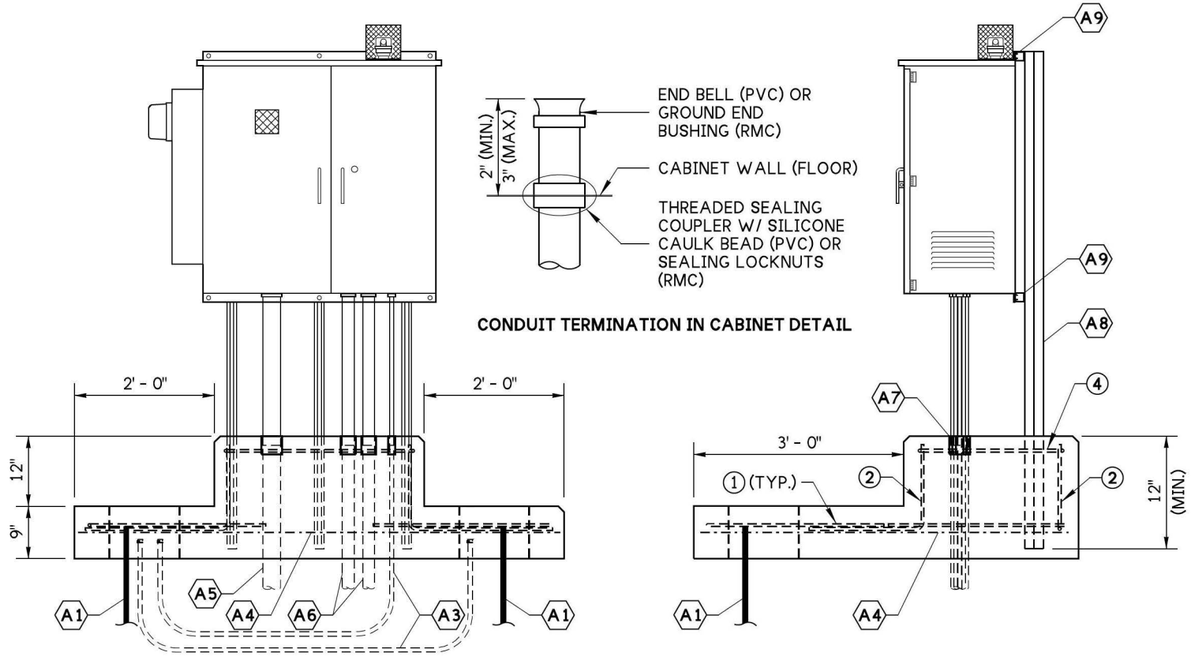


SECTION (A)
(WELDED CONNECTION)



SECTION (B)
(BOLTED CONNECTION)

STRUT MOUNT SUPPORT DETAILS
(SEE NOTE A1)



CONDUIT TERMINATION IN CABINET DETAIL

FRONT ELEVATION VIEW

RIGHT SIDE ELEVATION VIEW

STRUT MOUNT SERVICE CABINET
(TYPE B MODIFIED SERVICE CABINET SHOWN)

Aug 24, 2026

CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL STANDARD PLAN J-10.10-05

SHEET 2 OF 6 SHEETS

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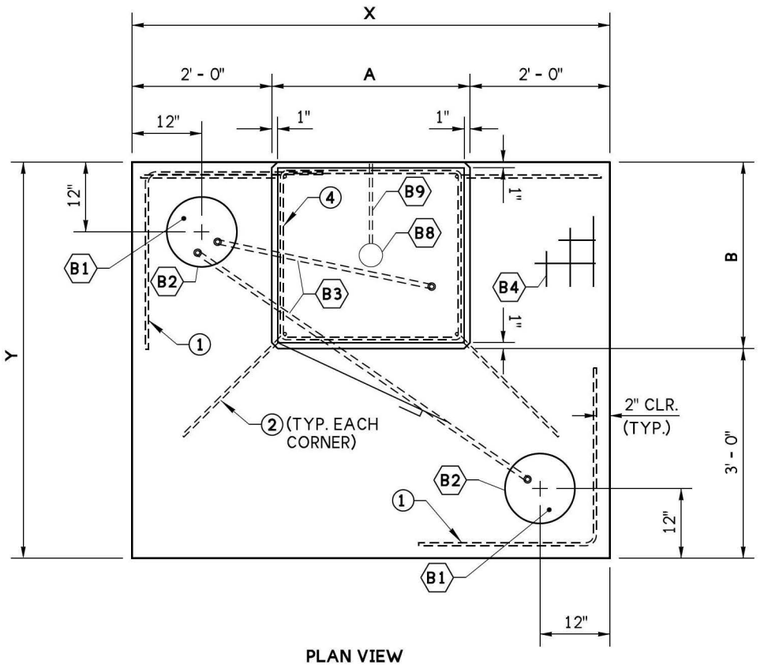
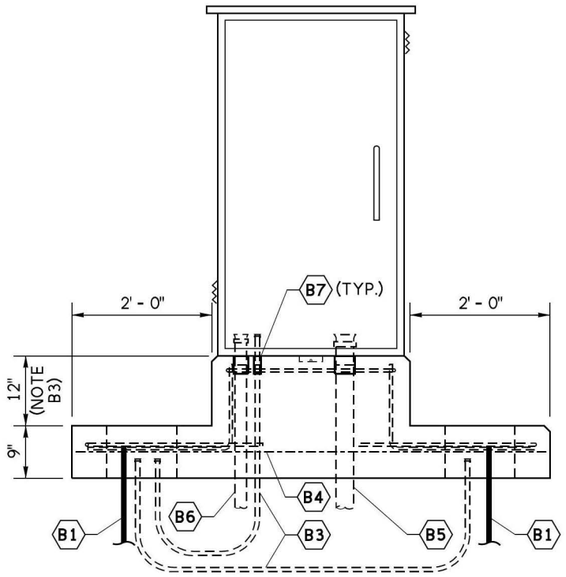
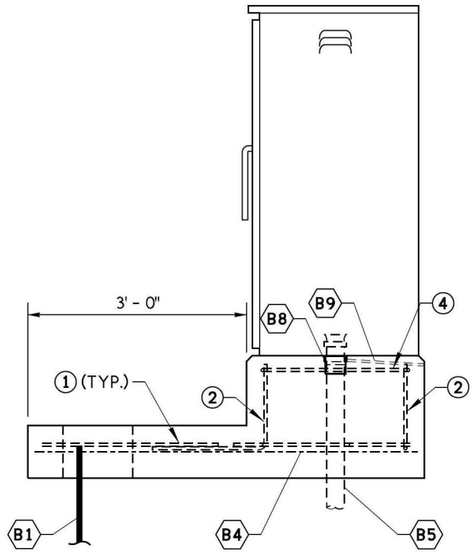


PLAN VIEW



FRONT ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW

SINGLE PAD MOUNT
SERVICE OR TRANSFORMER CABINET
(XFMR-L CABINET SHOWN)

KEY NOTES - SHEET 3 OF 6

- (B1) Ground rod ~ See **Note 5**, Sheet 1 of 6.
- (B2) Ground rod well (Ground tile) - 12" diameter concrete.
- (B3) Service ground electrode conduits.
- (B4) Welded wire fabric ~ See **Note 6**, Sheet 1 of 6.
- (B5) Utility entrance (service cabinet) or input power (transformer cabinet) conduit. Conduit shall terminate in the utility or high-voltage section of the cabinet (as applicable).
- (B6) Conduits to field equipment. Conduits shall terminate in the customer section (service cabinet) or low-voltage (transformer cabinet) of the cabinet.
- (B7) Conduit couplers ~ See **Note 12**, Sheet 1 of 6.
- (B8) 4" (in.) diam. x 1/2" (in.) deep sump. Slope foundation within cabinet footprint toward sump.
- (B9) 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.).

NOTES - SINGLE PAD MOUNT SERVICE OR TRANSFORMER CABINET (SHEET 3 OF 6)

B1. Omit concrete riser and bar #3 for Type **D** and Type **E** service cabinets.

B2. Install conduit couplings on all conduits. Couplers shall be installed with the top of the coupler flush with the top of concrete. For PVC conduits, the conduit segment above the coupler shall not be glued to the coupler.

B3. Conduits shall extend a minimum of 2" (in.) and a maximum of 3" (in.) into the cabinet, as measured from the concrete surface to the top of the end bell (PVC) or ground bushing (RMC).

B4. Serving utility may require meter socket to be installed on the outside of the cabinet. Utility feeder conduit shall still terminate in the utility section of the cabinet unless otherwise required by the utility.

B5. Additional clear space not shown (See Note 3, Sheet 1 of 6).

B6. See Sheet 1 for reinforcing steel bending diagrams.

FOUNDATION SIZE REFERENCE TABLE						
SERVICE CABINETS	PAD LENGTH (X)	PAD WIDTH (Y)	RISER LENGTH (A)	RISER WIDTH (B)	HOOP (3) LENGTH (BA)	HOOP (3) WIDTH (BB)
TYPE D	6' - 4"	3' - 8"	N/A	N/A	N/A	N/A
TYPE E	8' - 4"	3' - 8"	N/A	N/A	N/A	N/A
TRANSFORMER CABINETS	PAD LENGTH (X)	PAD WIDTH (Y)	RISER LENGTH (A)	RISER WIDTH (B)	HOOP (3) LENGTH (BA)	HOOP (3) WIDTH (BB)
XFMR-S (UP TO 12.5 KVA)	6' - 2"	4' - 11"	2' - 2"	1' - 11"	1' - 10"	1' - 7"
XFMR-L (12.6 TO 37.5 KVA)	6' - 10"	5' - 8"	2' - 10"	2' - 8"	2' - 6"	2' - 4"

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CABINET ORIENTATION
CONDUIT LAYOUT AND
FOUNDATION DETAIL
STANDARD PLAN J-10.10-05

SHEET 3 OF 6 SHEETS

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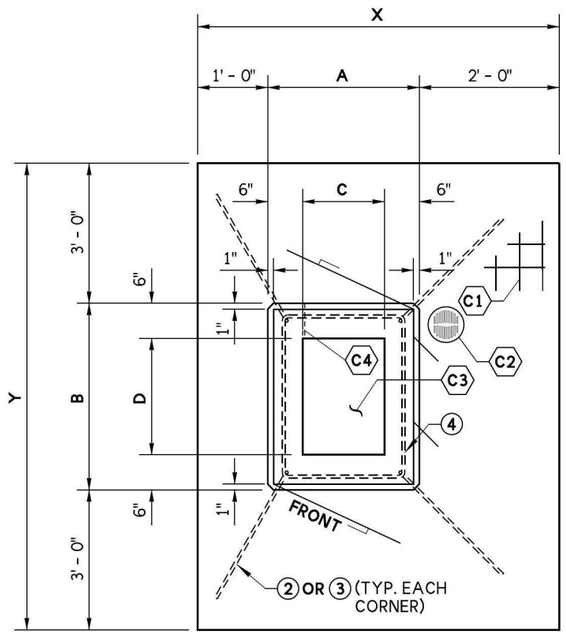


PLAN VIEW

KEY NOTES - SHEET 4 OF 6

C1 Welded wire fabric ~ See Note **6**, Sheet 1 of 6.

C2 Generator Tie-Down Anchor ~ See Note **10**, Sheet 1 of 6.

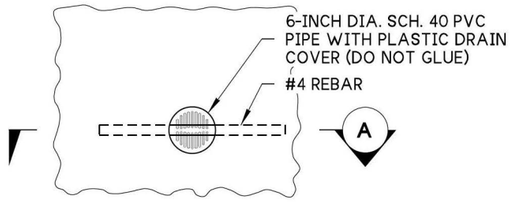
C3 Cabinet Well ~ See Note **C3**, this sheet.

C4 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.)

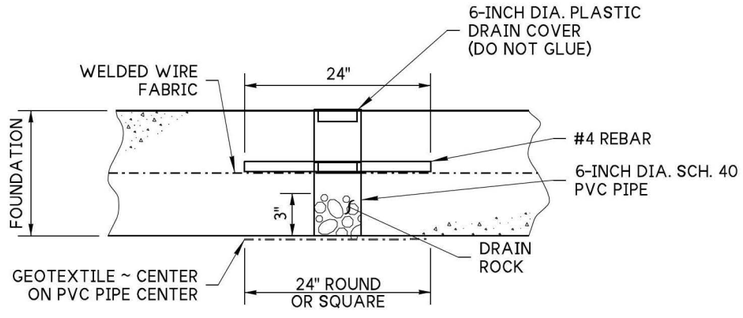
C5 Conduits ~ See Contract Plans for number, type, and function.

C6 Conduit couplers ~ See Note **12**, Sheet 1 of 6.

CABINET WELL REFERENCE TABLE		
SIGNAL AND ITS CABINETS	WELL LENGTH (C)	WELL WIDTH (D)
TYPE 33x	1' - 2"	1' - 8"
TYPE 33xD	3' - 3"	1' - 8"
TYPE 342LX / NEMA P44	2' - 10"	1' - 4"



PLAN VIEW



ELEVATION VIEW

SECTION (A)

GENERATOR TIE-DOWN ANCHOR

NOTES - SINGLE PAD MOUNT TRAFFIC SIGNAL OR ITS CABINET (SHEET 4 OF 6)

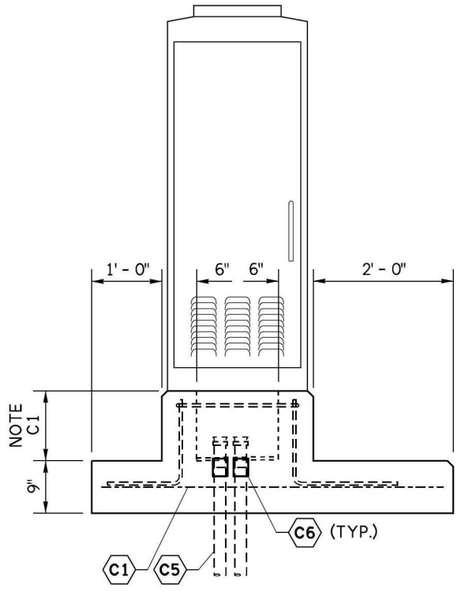
C1. Concrete riser height shall be 4-inches where aluminum cabinet risers are specified, and 12-inches where concrete risers are specified.

C2. Generator Tie-Down Anchors are only required for cabinets with Generator Transfer Switches (GTS). Anchor shall along the side of the cabinet near the back corner of the cabinet riser as shown. See General Note 10, Sheet 1 of 6.

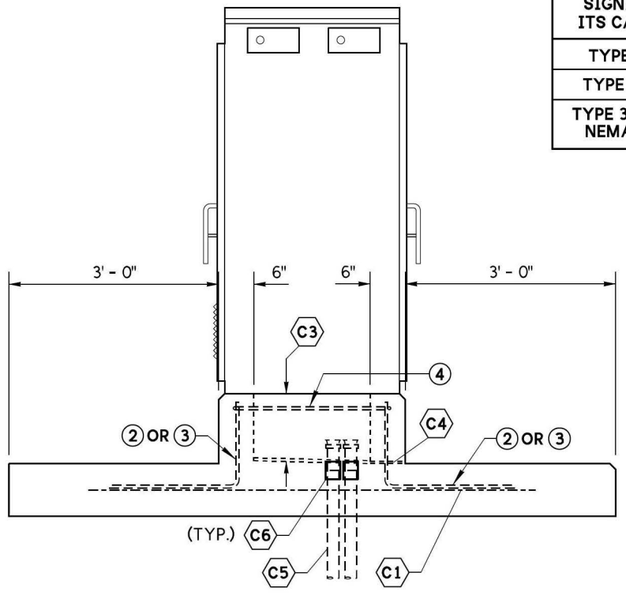
C3. Cabinet wells are required where concrete cabinet risers are specified. Cabinet well shall be a nominal 10" (in.) deep, sloping towards the corner where the drain tube is installed. Well dimensions are 12" (in.) smaller than the riser length and width dimensions (A and B). See Cabinet Well Reference Table, this sheet.

C4. Additional clear space not shown (See Note 3, Sheet 1 of 6)

C5. See Sheet 1 for reinforcing steel bending diagrams.



FRONT ELEVATION VIEW



RIGHT SIDE ELEVATION VIEW

FOUNDATION SIZE REFERENCE TABLE						
SIGNAL AND ITS CABINETS	PAD LENGTH (X)	PAD WIDTH (Y)	RISER LENGTH (A)	RISER WIDTH (B)	HOOP (2) LENGTH (BA)	HOOP (2) WIDTH (BB)
TYPE 33x	5' - 2"	6' - 8"	2' - 2"	2' - 8"	1' - 10"	2' - 4"
TYPE 33xD	6' - 3"	6' - 8"	4' - 3"	2' - 8"	3' - 11"	2' - 4"
TYPE 342LX / NEMA P44	5' - 10"	6' - 4"	3' - 10"	2' - 4"	3' - 6"	2' - 0"

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CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL STANDARD PLAN J-10.10-05

SHEET 4 OF 6 SHEETS

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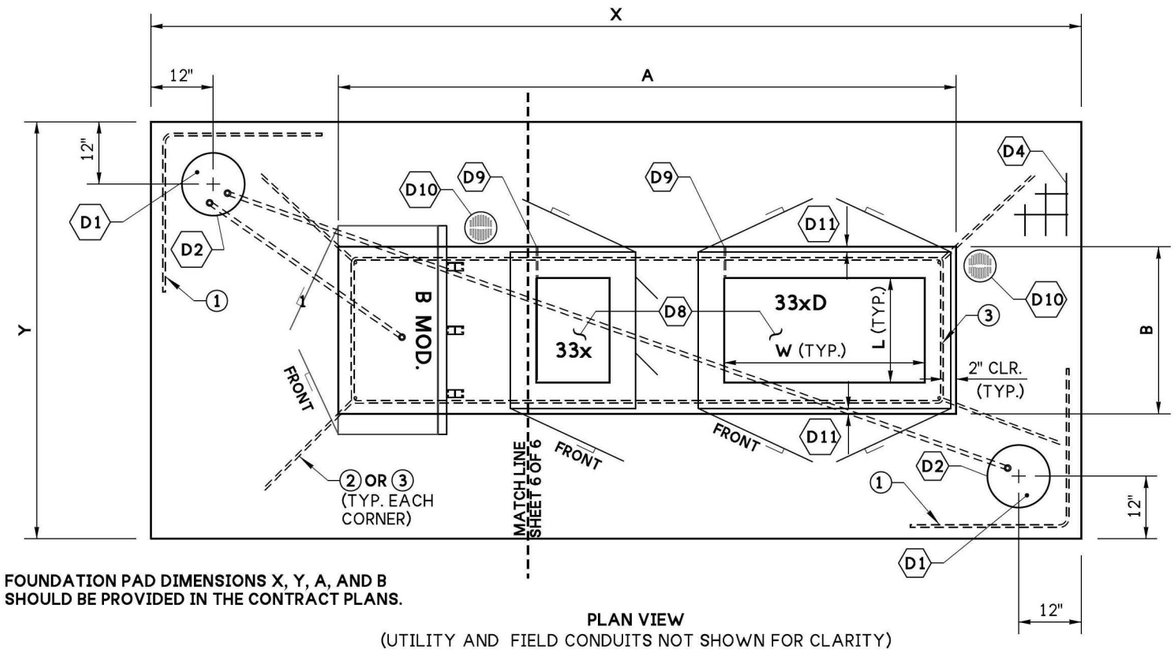
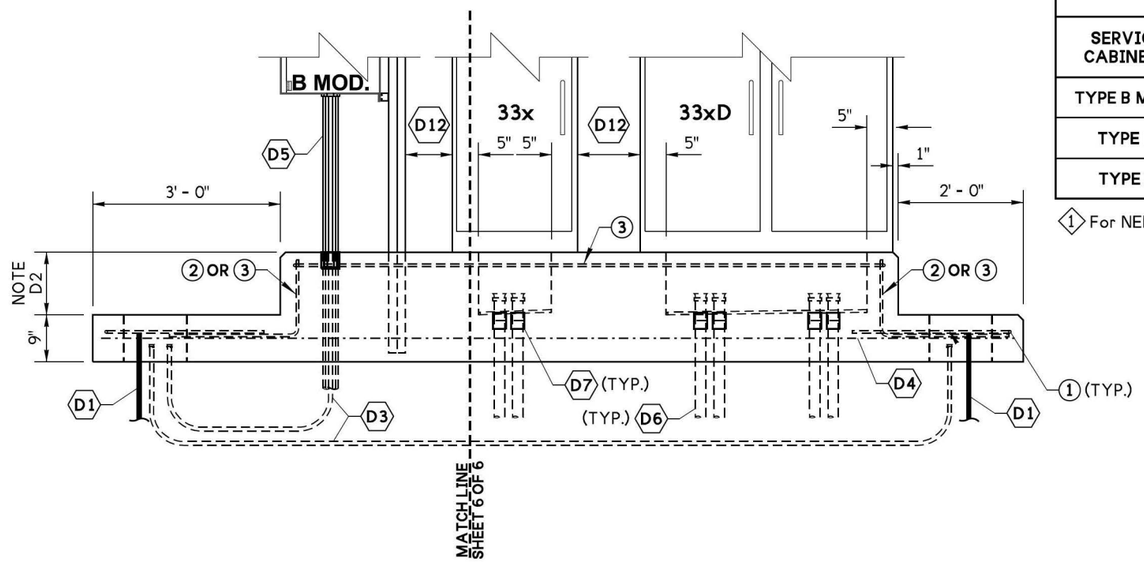


FOUNDATION PAD DIMENSIONS X, Y, A, AND B SHOULD BE PROVIDED IN THE CONTRACT PLANS.

PLAN VIEW
(UTILITY AND FIELD CONDUITS NOT SHOWN FOR CLARITY)



FRONT ELEVATION VIEW

MULTI-CABINET FOUNDATION PAD

KEY NOTES - SHEETS 5 AND 6 OF 6

(D1) Ground rod ~ See Note **5**, sheet 1 of 6.

(D2) Ground rod well (Ground tile) - 12" diameter concrete.

(D3) Service ground electrode conduits.

(D4) Welded wire fabric ~ See Note **6**, sheet 1 of 6.

(D5) Utility entrance (service cabinet) or input power (transformer cabinet) conduit. Conduit shall terminate in the utility or high voltage section of the cabinet (as applicable).

(D6) Conduits to field equipment. Conduits shall terminate in the customer section (service cabinet) or low-voltage (transformer cabinet) of the cabinet.

(D7) Conduit couplers ~ See Note **12**, Sheet 1 of 6.

(D8) Cabinet Well ~ See Note **D2**, this sheet.

(D9) 3/8" (in.) diam. polyethylene or copper tubing for drain. Tubing shall be straight, but slope downward a minimum of 1" (in.).

(D10) Tie-Down Anchor ~ See Note **10**, Sheet 1 of 6.

(D11) Riser lip shall be 1" (in.) from the base edge of the largest cabinet to the face of the concrete riser. Smaller cabinets shall be positioned so that the front riser lip is 1" (in.) wide.

(D12) Spacing between cabinets varies ~ see Note **D1** this sheet.

NOTES - MULTI-CABINET FOUNDATION
(SHEETS 5 AND 6 OF 6)

D1. Multi-Cabinet pads shall use Standard Spacing, unless Wide Spacing is specified in the Contract:

a. Standard Spacing: spacing between adjacent cabinets shall be:
- 12-inches where a police panel or generator transfer switch (GTS) is accessed from the space.
- 6-inches between all other cabinets

b. Wide Spacing: spacing between adjacent cabinets shall be determined by the widest door width of the two cabinets (where the door swings into the space). Left and right side cabinet clearances are shown in the Cabinet Clearance Reference Table.

D2. Cabinet wells are required where concrete cabinet risers are specified. Cabinet well shall be a nominal 10" (in.) deep, sloping towards the corner where the drain tube is installed. Well dimensions are 12" (in.) smaller than the riser length and width dimensions (A and B). See Cabinet Well Reference Table, this sheet.

D3. See Sheet 1 for reinforcing steel bending diagrams.

CABINET CLEARANCE REFERENCE TABLE

SERVICE CABINETS	LEFT SIDE	RIGHT SIDE	TRANSFORMER CABINETS	LEFT SIDE	RIGHT SIDE	SIGNAL AND ITS CABINETS	LEFT SIDE	RIGHT SIDE
TYPE B MOD.	1' - 10"	1' - 6"	XFMR-S (UP TO 12.5 KVA)	2' - 0"	6"	TYPE 33x	2' - 0"	2' - 0"
TYPE D	2' - 4"	6"				TYPE 33xD	2' - 0"	2' - 0"
TYPE E	2' - 0"	2' - 4"	XFMR-L (12.6 TO 37.5 KVA)	3' - 8"	6"	TYPE 342LX	1' - 10"	1' - 10"
						NEMA P44	3' - 8" (1)	3' - 8"

(1) For NEMA P44 cabinets that do not have a rear door, left side dimension is 6 inches.

CABINET WELL REFERENCE TABLE

SIGNAL AND ITS CABINETS	WELL LENGTH (C)	WELL WIDTH (D)
TYPE 33x	1' - 2"	1' - 8"
TYPE 33xD	3' - 3"	1' - 8"
TYPE 342LX / NEMA P44	2' - 10"	1' - 4"

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Aug 24, 2026

CABINET ORIENTATION CONDUIT LAYOUT AND FOUNDATION DETAIL STANDARD PLAN J-10.10-05

SHEET 5 OF 6 SHEETS

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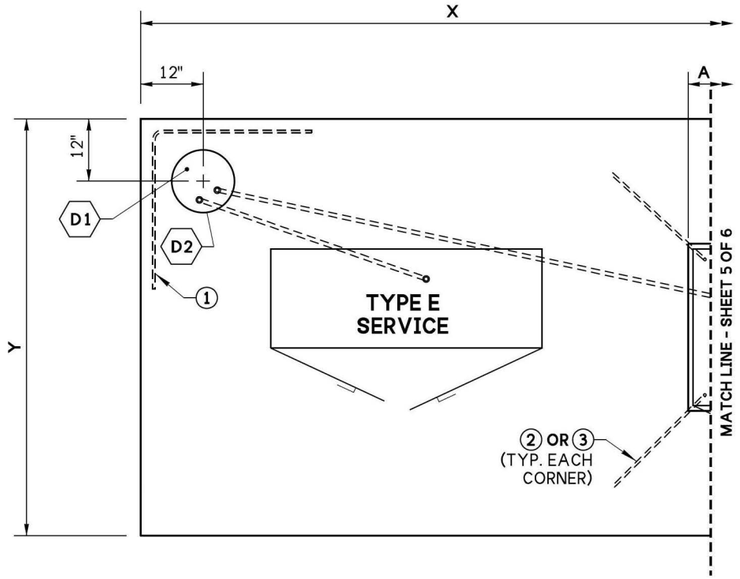
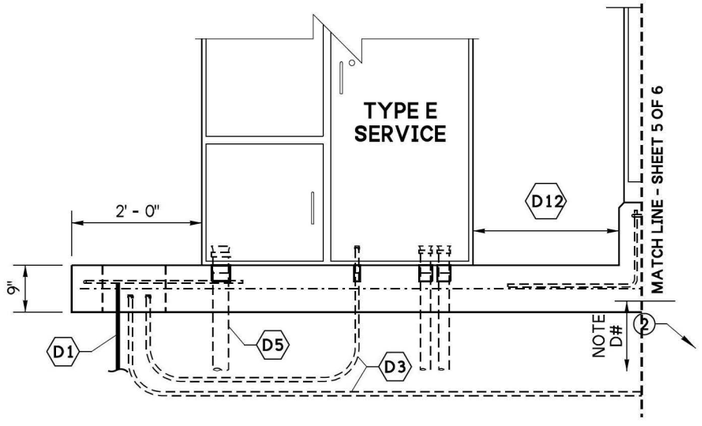


PLAN VIEW
(UTILITY AND FIELD CONDUITS NOT SHOWN FOR CLARITY)



FRONT ELEVATION VIEW

MULTI-CABINET FOUNDATION PAD ~ ALTERNATE END
(TYPE E SERVICE ON END SHOWN)

	CLEAR SPACE	SERVICE CABINET	CLEAR SPACE	CHAMFER	TYPE 33X CABINET	CLEAR SPACE	TYPE 33XD CABINET	CHAMFER	CLEAR SPACE	"X" DIMENSION	◇2 "A" DIMENSION	CLEAR SPACE	CHAMFER	TYPE 33X CABINET	CHAMFER	CLEAR SPACE	"Y" DIMENSION	◇2 "B" DIMENSION
TYPE B (MOD.) SERVICE AND NARROW SPACING	*3' - 0"*	2' - 0"	6"	◇1	2' - 0"	1' - 0"	4' - 1/2"	1"	*2' - 0"*	14' - 7 1/2"	9' - 7 1/2"	*3' - 0"*	1"	2' - 6"	1"	*3' - 0"*	8' - 8"	2' - 8"
TYPE E SERVICE AND WIDE SPACING	*2' - 0"*	*4' - 4"*	*2' - 0"*	1"	2' - 0"	2' - 0"	4' - 1/2"	1"	*2' - 0"*	18' - 6 1/2"	8' - 2 1/2"	*3' - 0"*	1"	2' - 6"	1"	*3' - 0"*	8' - 8"	2' - 8"

◇1 CHAMFER UNDER FRONT EDGE OF SERVICE CABINET

◇2 "A" AND "B" DIMENSIONS DO NOT INCLUDE ITEMS IN *ITALICS*

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CABINET ORIENTATION
CONDUIT LAYOUT AND
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STANDARD PLAN J-10.10-05

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