3-PHASE SECONDARY CABINET STANDARDS

SECONDARY THREE PHASE CABINET STANDARDS – Revised 02-15-2018

Benefits with the use of this cabinet are as follows:

1. Provides the customer with the flexibility to install more than eight (8) secondary conductors (per phase) at the site. Due to weight and spacing requirements, the Utility prefers to install a maximum of eight (8) secondary conductors (per phase) inside the padmount transformer.

2. Reduce the amount of time required to change out a padmount transformer by reducing the number of splices required on the secondary conductors.

3. Provide the customer's electrician with a secondary termination point without having to access the Utility transformer that is on site.

Guidelines for installation and maintenance of this cabinet are as follows:

1. The Utility will supply and install the secondary cabinet at the site.

2. The customer will be required to install six (6) 4" Schedule 40 Rigid PVC conduits from the secondary cabinet to the secondary side of the padmount transformer. The Utility requires the customer to use a minimum of 24" radius sweeps (ells) at the end points of the 4" Schedule 40 Rigid PVC conduit. Larger radius sweeps (ells) will be permitted, as long as the trench is deep enough to allow the top of the sweeps (ells) to be flush with final grade. Sweeps (ells) larger than 24" radius shall not be cut-off at the ends (must conform to a 90° angle) to become flush with final grade.

3. The Utility will install the secondary conductor from the transformer to the secondary cabinet.

4. The cabinet will remain the property of the Utility and will be locked by the Utility.

5. If the customer damages the cabinet or its contents during the installation, it will be the customer's responsibility to make all necessary repairs prior to the Utility energizing the transformer. If circumstances warrant the Utility to make the repairs, the customer will be billed for all material and labor.

6. The Utility agrees to unlock the cabinet for any authorized maintenance that is required by the customer's electrician. The cost of this maintenance will be the responsibility of the customer.

7. Only one customer (one C.T. meter) will be allowed to be connected to the secondary cabinet. The C.T.'s utilized for metering will be installed on the transformer bushings inside the padmount transformer under normal circumstances.

Technical guidelines for electric engineering personnel are:

1. The Utility will install a 3-phase padmount transformer with a specified KVA size based upon the commercial load data sheet and riser diagram provided by the customer. The customer will supply the concrete pad per the attached specification drawings (see Exhibit 1 for transformer sizes 45-1000 KVA, or Exhibit 2 for transformer sizes 1500-2500 KVA). The Utility will supply any mounting bolts required for anchoring the transformer to the concrete pad.

2. The Utility will install a 3-phase secondary cabinet with a specified dimension based upon the commercial load data sheet and riser diagram provided by the customer. The customer will supply the concrete pad as per the attached specification drawings (see Exhibit 3 for small secondary cabinet installations, or Exhibit 4 for large secondary cabinet installations). The Utility will supply any mounting bolts required for anchoring the secondary cabinet to the concrete pad.

3. The 3-phase secondary cabinet shall be installed no more than eight (8) feet from the 3-phase padmount transformer location.

4. The customer will be required to install six (6) 4" Schedule 40 Rigid PVC conduits from the padmount transformer to the secondary cabinet for all installations that do not have a concrete cable trough installed.

5. If the customer installs a concrete trough between the padmount transformer and secondary cabinet to serve as a cable raceway, the concrete trough must meet the minimum specifications illustrated in Exhibit 7 (front to back installation) or Exhibit 8 (side by side installation).

6. The Utility will supply all secondary cables from the padmount transformer to the secondary cabinet based upon the specified transformer KVA size and voltage. See **Tables 1 & 2** on the following page for the size and quantity of cables to be installed by the Utility for each transformer KVA size and voltage available.

Table 1: Utility Supplied Secondary Cables for 208Y/120V Transformers

Transformer KVA Size	Transformer Voltage	Transformer Secondary Amp Rating (100% FLA)	Secondary Cable Size installed by Utility	# of Secondary Cables Installed by Utility
45	208Y/120	125	350 MCM CU	4 x 25' each = 100'
75	208Y/120	208	350 MCM CU	4 x 25' each = 100'
150	208Y/120	416	350 MCM CU	8 x 25' each = 200'
225	208Y/120	625	500 MCM CU	8 x 25' each = 200'
300	208Y/120	833	500 MCM CU	12 x 25' each = 300'
500	208Y/120	1,388	750 MCM CU	16 x 25' each = 400'
750	208Y/120	2,082	750 MCM CU	20 x 25' each = 500'
1000	208Y/120	2,776	750 MCM CU	24 x 25' each = 600'

Table 2: Utility Supplied Secondary Cables for 480Y/277V Transformers

Transformer KVA Size	Transformer Voltage	Transformer Secondary Amp Rating (100% FLA)	Secondary Cable Size installed by Utility	# of Secondary Cables Installed by Utility
75	480Y/277	90	350 MCM CU	4 x 25' each = 100'
150	480Y/277	180	350 MCM CU	4 x 25' each = 100'
225	480Y/277	271	350 MCM CU	8 x 25' each = 200'
300	480Y/277	361	350 MCM CU	8 x 25' each = 200'
500	480Y/277	601	500 MCM CU	8 x 25' each = 200'
750	480Y/277	901	500 MCM CU	12 x 25' each = 300'
1000	480Y/277	1,203	500 MCM CU	16 x 25' each = 400'
1500	480Y/277	1,804	750 MCM CU	20 x 25' each = 500'
2000	480Y/277	2,406	750 MCM CU	24 x 25' each = 600'
2500	480Y/277	3,007	750 MCM CU	24 x 25' each = 600'

The following will become the standard specifications when ordering the cabinet:

1. The secondary cabinet will be a three phase fully assembled padmount termination enclosure with a maximum design voltage of 600 volts.

2. Unit must be complete with a 4235 amp aluminum (5225 amp copper) bus, free from burrs.

3. All bus bars are continuous length, including the ground bus.

4. The bus bars mounted in the smaller secondary cabinet, which is illustrated in Exhibit 5, will accommodate up to eighteen (18) 1000 MCM conductors per phase. However, the utility will require up to six (6) of the eighteen (18) spaces available (per phase) on the bus bars.

5. The bus bars mounted in the larger secondary cabinet, which is illustrated in Exhibit 6, will accommodate up to thirty (30) 1000 MCM conductors per phase. However, the utility will require up to six (6) of the thirty (30) spaces available (per phase) on the bus bars.

6. Bus bars shall be mounted from the sides with insulating material strong enough to withstand the weight of all conductors (and C.T.'s if applicable).

7. Each conductor location must be supplied with two (2) clamping screws and must be the "lay-in lug" type connector.

8. Enclosure must be solid weld construction with all seams to be ground smooth. The top of the cabinet must be removable. Pins and other hardware are to be stainless steel.

9. Must meet A.N.S.I C57.12.28-1988 paint and security requirements.

10. Must be supplied with latching/security system with recessed penta-head bolt and shielded padlock shackle.

**********APPROVAL**********

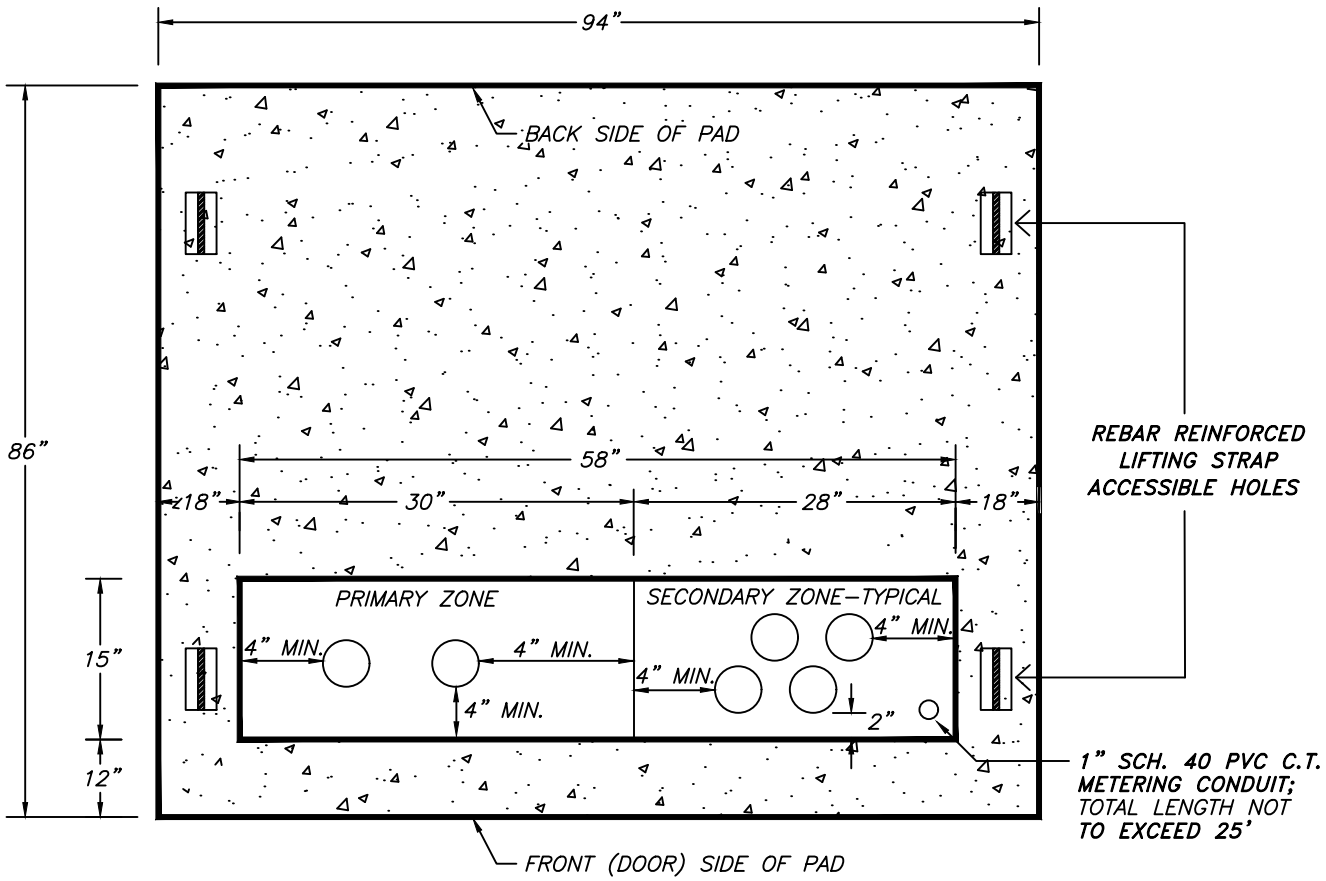
Signature: _____ Date: 3-12-2018
Mike Poucher, Utility Director

Signature: _____ Date: 3-19-2018
Eric Weaver, Deputy Utility Director

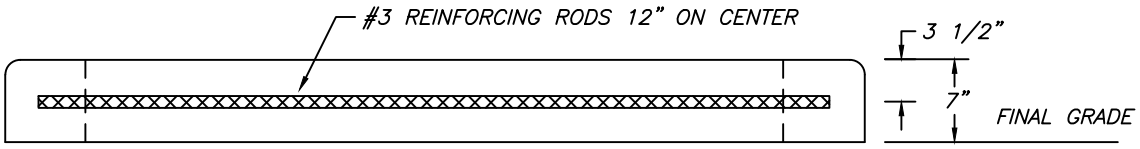
Signature: _____ Date: 3-13-2018
Tim Bloom, Line Foreman

Signature: _____ Date: 3-13-2018
Chris Henry, Line Foreman

45KVA – 1000KVA
120/208V, 120/240V, 277/480V
PLAN VIEW



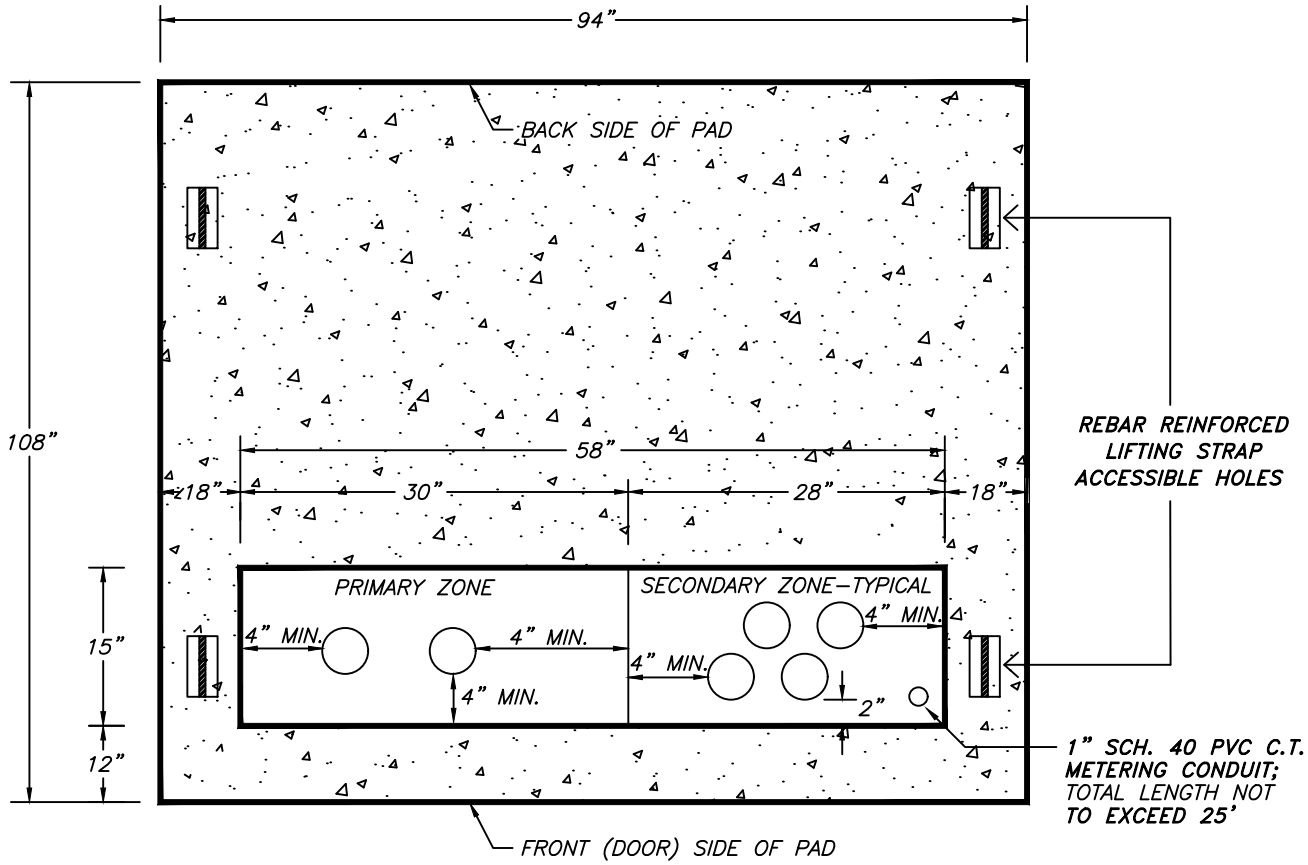
ELEVATION VIEW



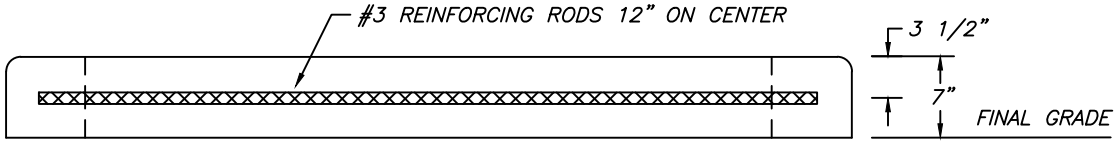
NOTE: CONCRETE TO BE 3000 PSI AT 28 DAYS

NOTES:
1. THE TRANSFORMER PAD MUST FACE IN THE DIRECTION SPECIFIED BY THE ELECTRIC ENGINEERING DIVISION. SHRUBS AND STRUCTURES MUST BE KEPT NINE (9) FEET AWAY FROM THE FRONT SIDE AND THREE (3) FEET AWAY FROM THE OTHER SIDES OF THE TRANSFORMER.
2. THE TRANSFORMER FORM MUST BE INSPECTED BY THE ELECTRIC ENGINEERING DIVISION, OEU OFFICE PHONE (352) 351–6620, PRIOR TO POURING CONCRETE. THE CONTRACTOR SHALL SCHEDULE THIS INSPECTION AT LEAST TWENTY FOUR (24) HOURS IN ADVANCE.
3. PRE–FABRICATED CONCRETE PADS MAY BE PURCHASED FROM OUTSIDE VENDORS AS LONG AS THE PRE–FABRICATED PADS MEET UTILITY SPECIFICATIONS.

1500KVA – 2500KVA
277/480V
PLAN VIEW



ELEVATION VIEW



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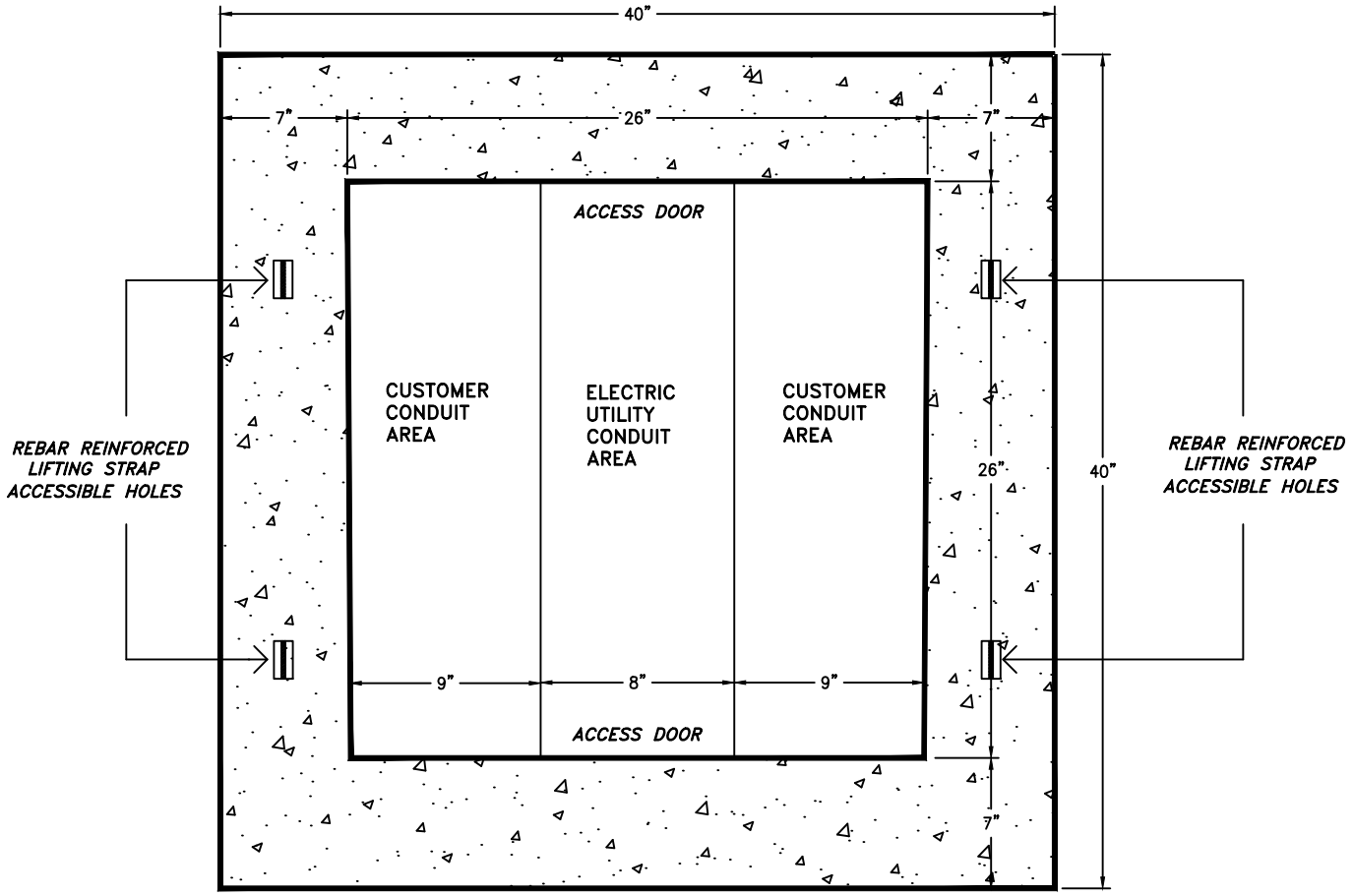
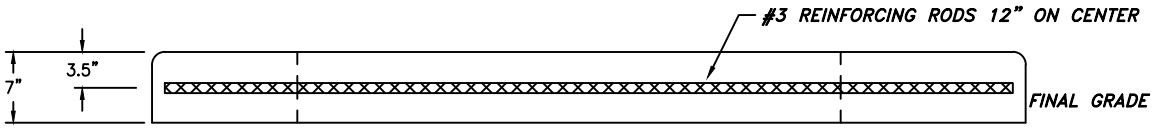
PLAN VIEW



ELEVATION VIEW



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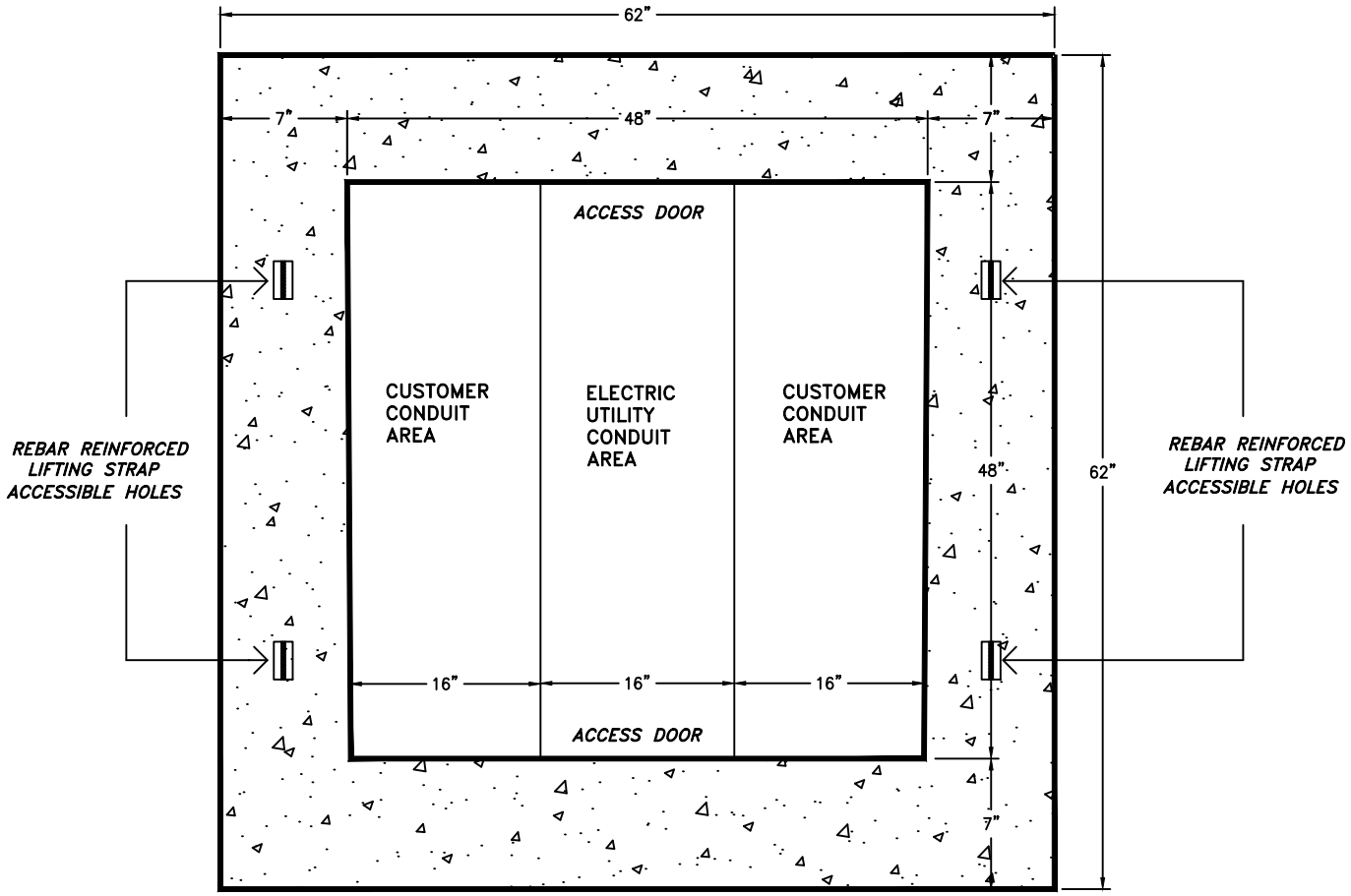
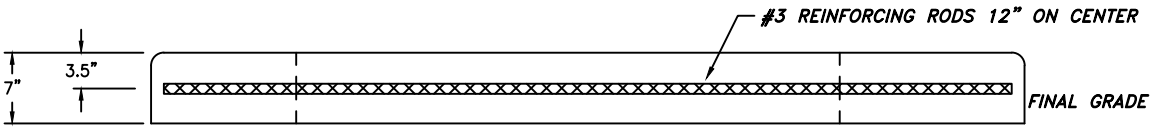
PLAN VIEW



ELEVATION VIEW



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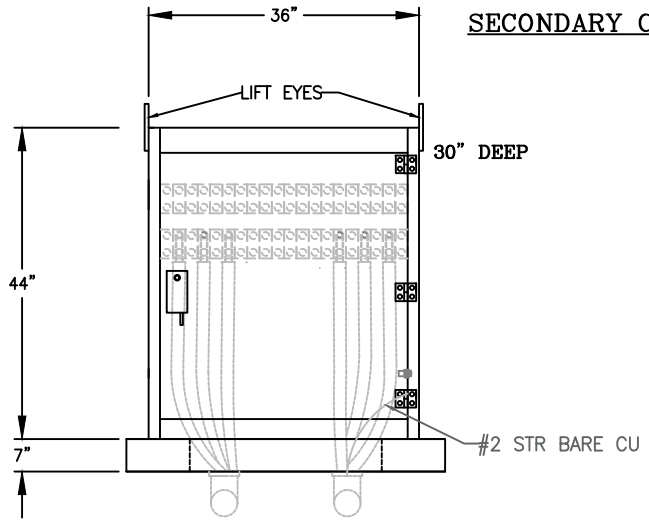
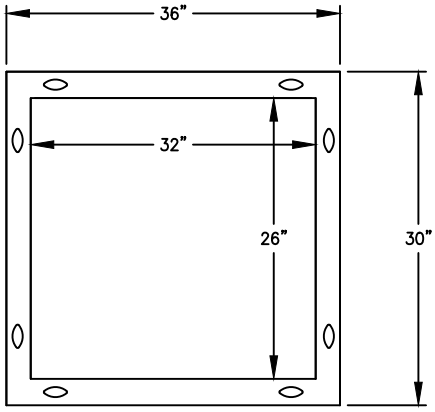
SECONDARY CABINET



FRONT VIEW



BOTTOM VIEW

SV2110 ENCLOSURE, TERMINATION, SECONDARY 3ø

NO.	OUS STOCK NO.	DESCRIPTION	QTY	FERC
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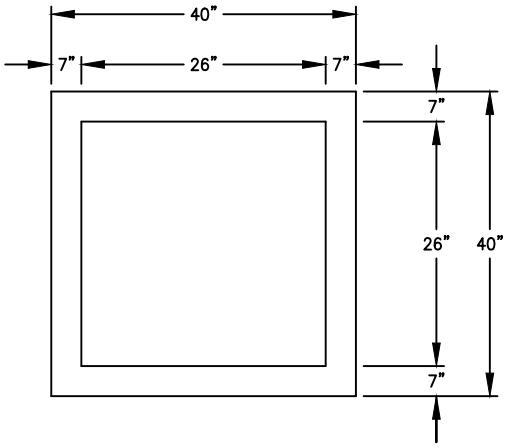
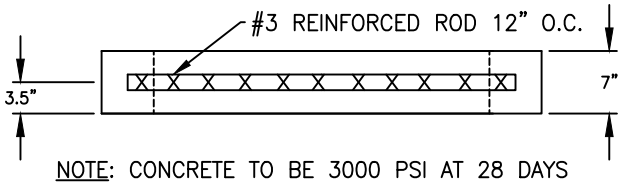
SECONDARY CABINET CONCRETE PAD DIMENSIONS



PLAN VIEW



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ELEVATION VIEW

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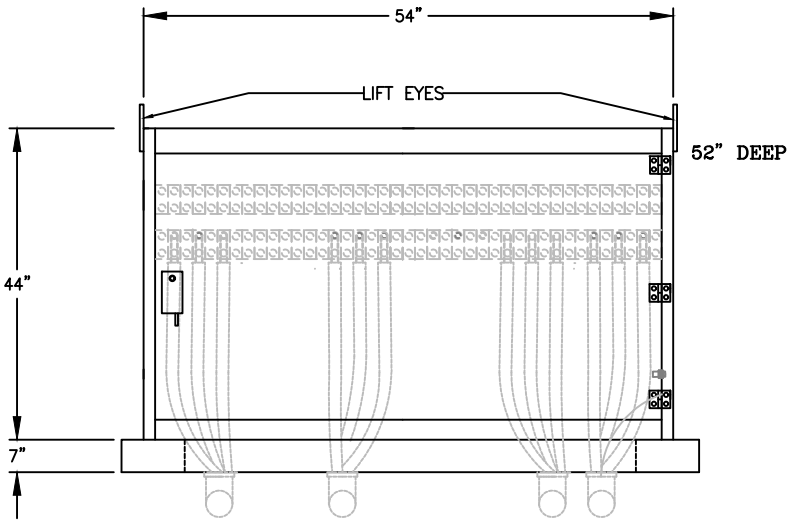
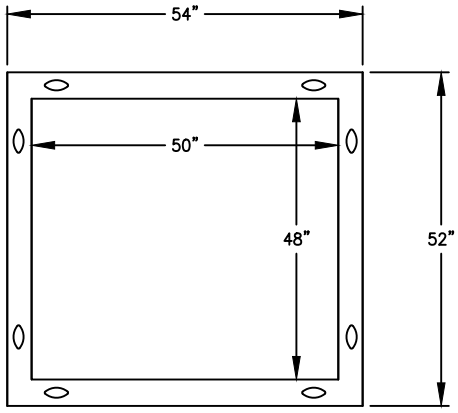
SECONDARY CABINET



FRONT VIEW



BOTTOM VIEW

SV2111 ENCLOSURE, TERMINATION, SECONDARY 3ø

NO.	OUS STOCK NO.	DESCRIPTION	QTY	FERC
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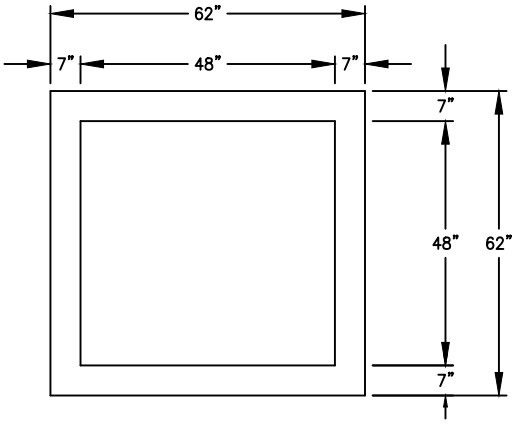
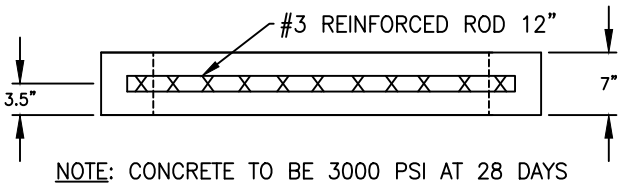
SECONDARY CABINET CONCRETE PAD DIMENSIONS



PLAN VIEW



ELEVATION VIEW

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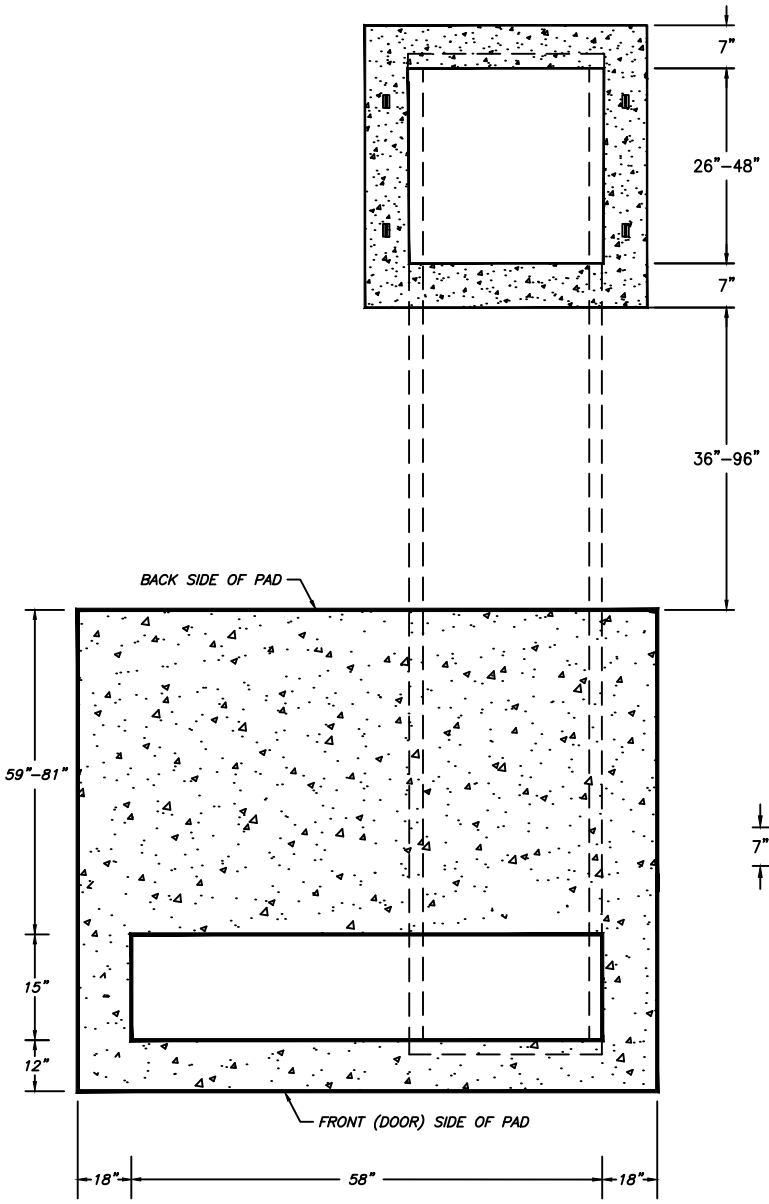
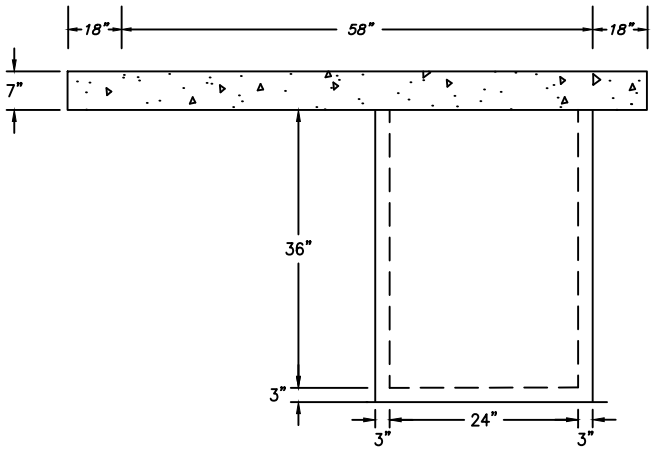


TOP VIEW



FRONT VIEW

NOTES:

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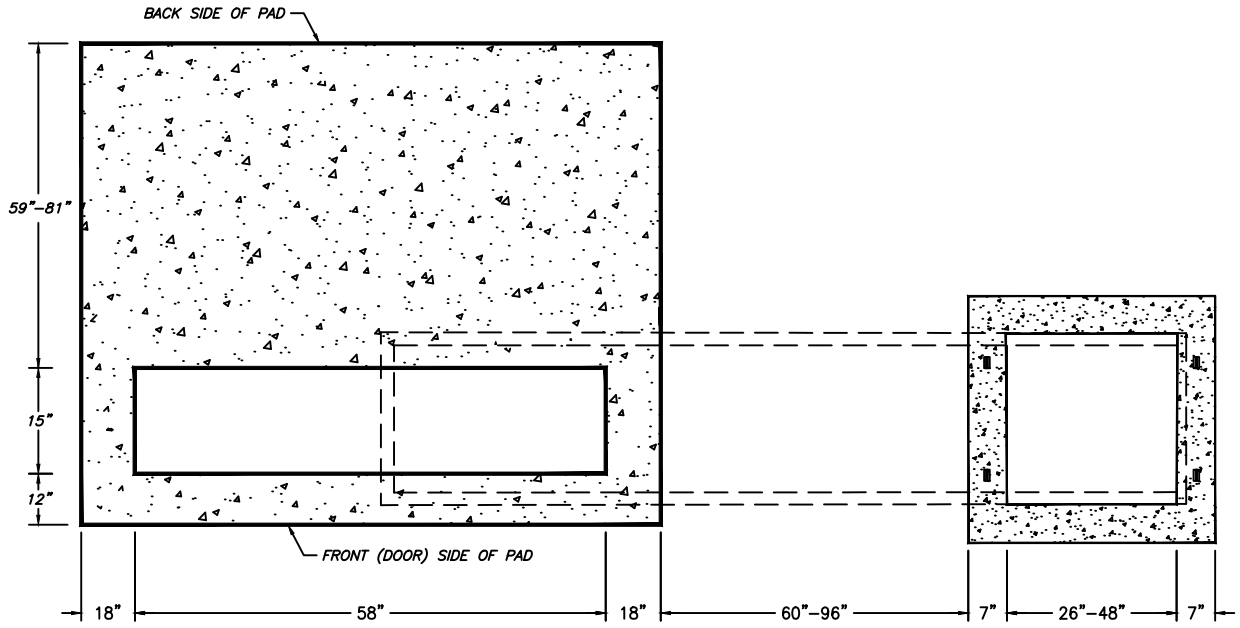
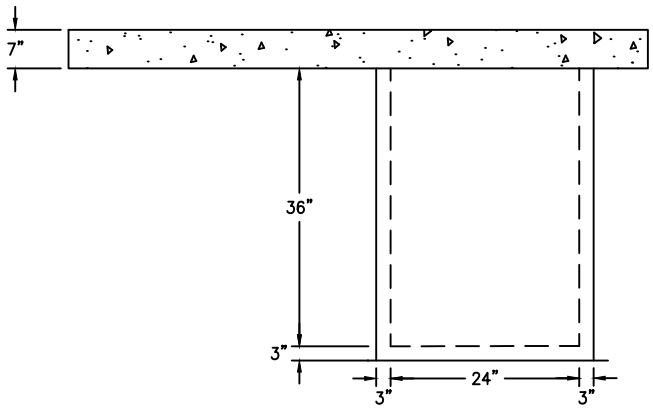


TOP VIEW



SIDE VIEW

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