



Pedernales Electric Cooperative  
**Underground Installation Specifications**

November 15, 2024

DRAWING NUMBER	DESCRIPTION
COVER	COVER PAGE
500-000	INDEX
500-100	DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL
500-102	EQUIPMENT BOLLARDS
500-103	APPROVED MANUFACTURERS & DISTRIBUTORS (2 PAGES)
510-009	TYPICAL TRENCH, PAD, & METER PEDESTAL NOTES (3 PAGES)
510-010	SINGLE-PHASE PRIMARY CONDUIT ARRANGEMENT
510-012	SINGLE-PHASE PRIMARY & SECONDARY CONDUIT ARRANGEMENT
510-014	SINGLE-PHASE PRIMARY & SECONDARY CONDUIT ARRANGEMENT JOINT WITH OTHER UTILITIES
510-016	SINGLE-PHASE SERVICE CONDUIT ARRANGEMENT
510-020	THREE-PHASE PRIMARY & SECONDARY CONDUIT ARRANGEMENT (2 PAGES)
510-022	THREE-PHASE PRIMARY, SECONDARY & OTHER UTILITIES CONDUIT ARRANGEMENT (2 PAGES)
510-023	THREE-PHASE PRIMARY CONDUIT ARRANGEMENT JOINT WITH NATURAL GAS (HORIZONTAL OPTION)
510-024	CONDUIT CROSSING DETAIL FOR PEC ABOVE OTHER UTILITIES
510-025	THREE-PHASE PRIMARY CONDUIT ARRANGEMENT JOINT WITH NATURAL GAS (STACKED OPTION)
510-026	CONDUIT INSTALLATION ON SLOPE GREATER THAN 25%
510-027	CONDUIT INSTALLATION ON SLOPE GREATER THAN 25% (ALTERNATIVE)
510-029	CONDUIT INSTALLATION IN FLOOD-PRONE AREAS
520-010	PAD FOR SINGLE-PHASE METER PEDESTAL
520-020	52" PAD FOR 1Ø TRANSFORMER WITH VFI, SMALL SECTIONALIZING ENCLOSURE
520-030	72" PAD FOR 1Ø TRANSFORMER WITH VFI, SMALL SECTIONALIZING ENCLOSURE
530-010	SMALL PAD FOR SINGLE-PHASE SECTIONALIZING ENCLOSURE
530-020	SMALL PAD FOR THREE-PHASE SECTIONALIZING ENCLOSURE
530-022	LARGE PAD FOR THREE-PHASE SECTIONALIZING ENCLOSURE
530-023	SINGLE-PHASE COMBINATION SECTIONALIZING ENCLOSURE AND TRANSFORMER PAD
530-024	SMALL COMBINATION SECTIONALIZING ENCLOSURE AND TRANSFORMER PAD
530-026	LARGE COMBINATION SECTIONALIZING ENCLOSURE AND TRANSFORMER PAD
530-030	PAD FOR THREE-PHASE TRANSFORMER 45-300 kVA
530-032	PAD FOR THREE-PHASE TRANSFORMER 500-1,500 kVA
530-034	PAD FOR THREE-PHASE TRANSFORMER 2,000-3,000 kVA
530-040	GENERAL SPECIFICATIONS FOR POURED-IN-PLACE VAULTS
530-050	VAULT FOR SUBMERSIBLE SWITCHGEAR & SPLICE BOX (2 PAGES)
530-051	LID FOR VAULT FOR SUBMERSIBLE SWITCHGEAR & SPLICE BOX (USE ON 530-050) 6'x12' 3.5'x8' OPENING
530-052	VAULT FOR SWITCHGEAR STACKABLE SECTIONS WITH CAST-IN-PLACE H20-RATED LIDS (4 PAGES)
530-090	VAULT FOR SWITCHGEAR (2 PAGES)
530-091	LID FOR SWITCHGEAR (USE ON VAULT 530-090) 8'x8' TWO 18"x64" OPENINGS
530-092	LID FOR SUBMERSIBLE SWITCHGEAR & SPLICE BOX (USE ON VAULT 530-090) 8'x8' 48"x72" DOUBLE-LEAF LID
530-093	LID FOR DEAD-FRONT AND ABOVE-GROUND SWITCHGEAR SINGLE WINDOW (FOR USE ON VAULT 530-090)
550-020	SECONDARY ENCLOSURE
550-021	TAP BOX
550-022	TAP BOX PAD
560-015	SINGLE-PHASE RISER POLE USING STANDOFF BRACKETS
560-025	THREE-PHASE RISER POLE USING STANDOFF BRACKETS
560-050	SECONDARY RISER WITH STANDOFFS
560-051	SECONDARY RISER WITH STANDOFFS TO A METER RACK
560-052	600-VOLT UNDERGROUND SERVICE FROM OVERHEAD TRANSFORMER
570-010	SAFETY CLEARANCES AROUND PADMOUNT UNDERGROUND TRANSFORMERS
570-015	WORKING CLEARANCES AROUND PADMOUNT UNDERGROUND TRANSFORMERS
580-010	ELECTRONIC MARKING BALLS FOR PRIMARY STUB-OUT LOCATIONS

REV | 1 | DATE | 10/15/2024 | REVISION | ADDED 500-102 EQUIPMENT BOLLARDS | BY | AMJ | CHK | SSS | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**INDEX**

drawn:	approved:	date:	500-000
AMJ	MMG	10/15/2024	

**MEMBER/DEVELOPER CONTRIBUTION:**

1. Payment to PEC for materials per the Line Extension Policy.
2. Trench.
3. Conduit (See Specification 510-009, *Typical Trench, Pad, & Meter Pedestal Notes*).
4. Conduit spacers.
5. Transformer pads.
6. Meter pedestal pads.
7. Underground secondary enclosures and extensions.
8. Ground rods and clamps.
9. Polyester pulling tape (2,500-pound tensile strength) in all conduit. Do not tie knots in the mule tape — it must be a continuous run.
10. Sand for initial backfill.
11. Rock-free dirt over initial backfill.
12. 1/2" to 3/4" gravel for the bottom of vaults and secondary enclosures.
13. Concrete or flowable fill where required. Flowable fill is NOT allowed as a substitute for concrete for PEC equipment pads. Flowable fill may be used as backfill in situations where trench settling may be an issue or anywhere that does not require structural strength. The 28-day compressive strength range when tested must be a minimum of 300 psi. Flowable fill is NOT a substitute for concrete except where explicitly listed in the Underground Installation Specifications.
14. Meter sockets (PEC will provide sockets only on PEC-supplied meter pedestals. See Specification 510-009, *Typical Trench, Pad, & Meter Pedestal Notes*).
15. Primary enclosures and extensions (if applicable).
16. Meter sockets (PEC will provide pedestal-mounted sockets only).
17. Switchgear (if applicable).
18. Bollards, if deemed necessary by PEC to protect electrical equipment. Design must be approved by PEC prior to installation. See Specification 500-102, *Equipment Bollards*.

**PEC CONTRIBUTION PAID FOR BY DEVELOPER/MEMBER AS INDICATED IN THE LINE EXTENSION POLICY:**

1. Primary conductors.
2. Secondary conductors.
3. Primary connectors.
4. Secondary connectors.
5. Transformers.
6. Meter pedestals with meter sockets.
7. Switchgear.

**Refer to applicable drawings within these specifications.**

REV	C	DATE	11/13/2024	REVISION	CHANGES FOR CONDUIT NOTES	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	---------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

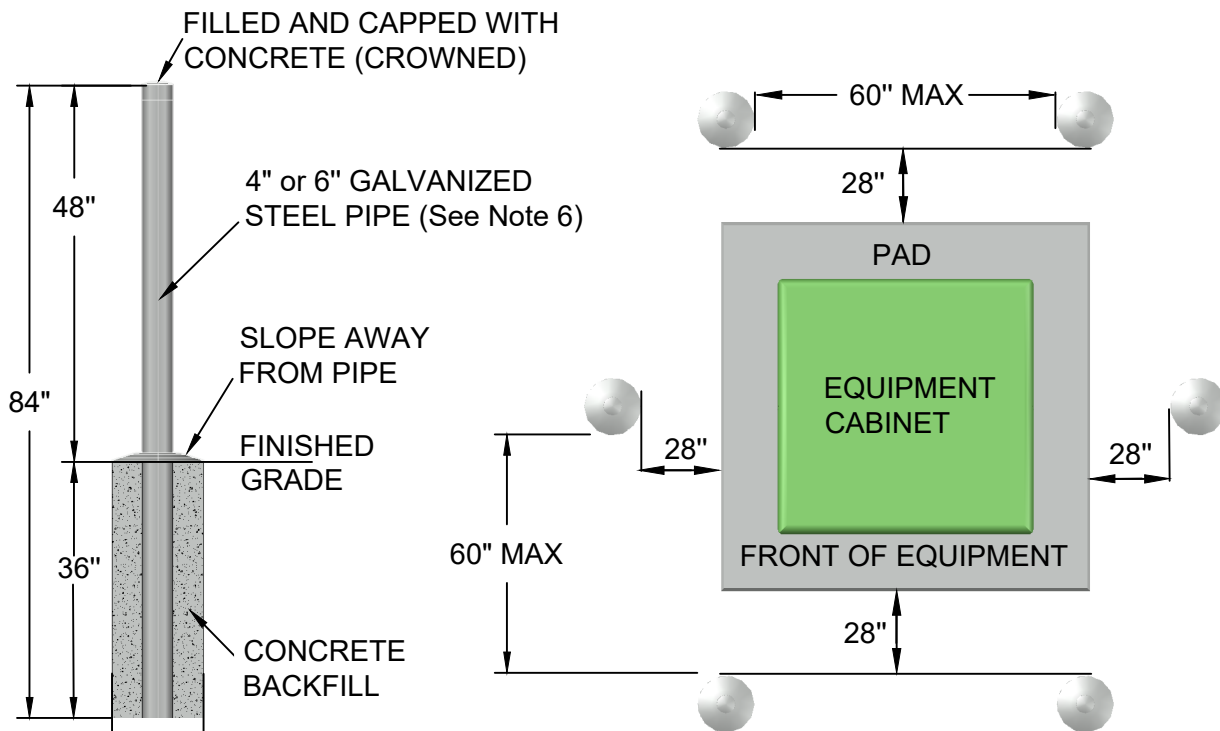
**DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL**

drawn:	approved:	date:	500-100
AMJ	MMG	11/13/2024	

**BOLLARD REQUIREMENTS:**

1. Whenever possible, PEC equipment shall be located where it is not subject to vehicular damage. If PEC determines an equipment location will be subjected to vehicular damage, bollards shall be placed to protect the equipment, and the specifications outlined below shall be used.
2. Members shall provide, install, and maintain bollards.
3. PEC reserves the right to require bollards anywhere deemed appropriate.
4. Bollards shall be made of galvanized steel pipe and filled with concrete. Concrete shall be crowned on bollards.
5. Bollard installment shall avoid interference with grounding grid and conduits.
6. Bollards shall be 4" in diameter; however, in situations where high traffic volume exists, a 6" diameter post may be required.
7. Bollards placed in stable soil shall be surrounded with 6" of concrete. Bollards placed in sand or unstable soil shall be surrounded with 12" of concrete.
8. If several bollards are required, locate them no more than 5' apart.
9. For extra visibility, bollards shall be painted Safety Yellow and have reflective safety tape on them.
10. Area within protection bollards must remain clear for opening equipment doors and maintenance.
11. Exposure to irrigation and fertilizer may impact type of bollards required.

**TYPICAL BOLLARD DETAIL & PLACEMENT**



Bollard diameter and soil conditions will determine hole diameter. See notes 6 and 7.

Bollard placement and dimensions illustrated here depict a typical application. Bollard placement may vary depending on equipment and surrounding conditions.  
**Bollard design and placement must be approved by PEC prior to installation.**

REV	DATE	10/15/2024	REVISION	ISSUE FOR CONSTRUCTION	BY	AMJ	CHK	SSS	APR	MMG
-----	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**EQUIPMENT BOLLARDS**

drawn:	approved:	date:	500-102
AMJ	MMG	10/15/2024	

TYPE OF MATERIAL	MANUFACTURER	PHONE NUMBER	ADDRESS	EMAIL/WEBSITE
CONDUIT SPACERS	CANTEX	(817) 215-7000	301 COMMERCE ST. STE. 2700 FORT WORTH, TX 76102	cantexinc.com
		(817) 215-7001 FAX		
GROUND ROD CLAMPS	PENN UNION	(814) 734-1631	229 WATERFORD ST. EDINBORO, PA 16412	sales@penn-union.com
		(814) 734-4946 FAX		
MANHOLES	RINKER MATERIALS	(210) 661-2351	402 N WW WHITE RD. SAN ANTONIO, TX 78219	rinkerpipe.com/locations
SECONDARY ENCLOSURES	ALUMA-FORM	(901) 362-0100	3625 OLD GETWELL RD. MEMPHIS, TN 38118	alumaform.com
SECONDARY ENCLOSURES	AMERICAN PADMOUNT SYSTEMS	(864) 380-7955	6133 BLUE CIRCLE DR. HOPKINS, MN 78622	Gary.Harter@ampadsys.com
SECONDARY ENCLOSURES	CHANNELL COMMERCIAL CORP.	(214) 304-7800	1700 JUSTIN RD. ROCKWALL, TX 75087	info@channell.com
		(951) 296-2322 FAX		
SECONDARY ENCLOSURES	DURHAM	(417) 532-7121	722 DURHAM RD. LEBANON, MO 65536	durhamusa.com
		(417) 532-2366 FAX		
SECONDARY ENCLOSURES	HUBBELL POWER SYSTEMS	(573) 682-5521	210 N. ALLEN CENTRALIA, MO. 65240	hpscs@hubbell.com
		(573) 682-8475 FAX		
SECONDARY ENCLOSURES	NORDIC FIBERGLASS, INC.	(218) 745-5095	21415 HIGHWAY 75 NW. WARREN, MN 56762	sales@nordicfiberglass.com
		(218) 745-4990 FAX		
SECONDARY ENCLOSURES	PENCELL	(573) 682-5521	546 ENGLISH RD. ROCKY MOUNT, NC 27804	hubbell.com/hubbellpowersystems/en/hp s-brands/pencell
		(573) 682-8475 FAX		
SECTIONALIZING TERMINALS	AZZ, INC.	(800) 843-0051	3100 PROGRESS DR. OSHKOSH, WI 54901	azz.com
		(920) 232-8977 FAX		
SECTIONALIZING TERMINALS	MAYSTEEL	(262) 251-1632	6199 COUNTY RD. W. ALLENTON, WI 53002	maysteel.com/contact
VAULTS AND LIDS	CAPITAL PRECAST, LLC.	(830) 606-6200	6905 S. OLD BASTROP HWY. SAN MARCOS, TX 78666	info@capitalprecastllc.com
VAULTS AND LIDS	HALLIDAY PRODUCTS	(800) 298-1027	6401 EDGEWATER DR. ORLANDO, FL 32810	sales@hallidayproducts.com
VAULTS AND LIDS	HUBBELL POWER SYSTEMS (CDR)	(573) 682-5521	210 N. ALLEN CENTRALIA, MO. 65240	hpscs@hubbell.com
		(573) 682-8475 FAX		
VAULTS AND LIDS	LONE STAR PRECAST	(512) 312-2121	454 KELLY SMITH LN BUDA, TX 78610	ebray@lsprecast.com
VAULTS AND LIDS	OLDCASTLE INFRASTRUCTURE	(210) 923-4523	1900 RILLING RD. SAN ANTONIO, TX 78214	contact@oldcastleprecast.com
VAULTS AND MANHOLES	THE TURNER COMPANY	(210) 560-7577	11049 S. HWY. 287 RHOME, TX 76078	sharon@theturnerco.com
		(817) 638-9053		

REV | E | DATE | 09/01/2023 | REVISION | SEVERAL LINK, PHONE, & ADDRESS NUMBER CHANGES | BY | RWC | CHK | SSS | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**APPROVED MANUFACTURERS  
AND DISTRIBUTORS  
PAGE 1 OF 2**

drawn:	approved:	date:	500-103
RWC	MMG	09/01/2023	

DISTRIBUTOR	PHONE NUMBER	ADDRESS	EMAIL/WEBSITE
TECHLINE	(512) 809-6930	9609 BECK CIR AUSTIN, TX 78758	techline-inc.com
IRBY	(512) 635-8177	509 W. SH 71 BASTROP, TX 78602	tboyd@irby.com
	(512) 787-8288		ryan.johnson@irby.com
TEXAS ELECTRIC COOPERATIVES	(210) 373-7840	3600 BRITTMORE RD STE 120 HOUSTON, TX 77043	sw@tec-sales.com

REV | E | DATE | 09/01/2023 | REVISION | SEVERAL LINK, PHONE, & ADDRESS NUMBER CHANGES | BY | RWC | CHK | SSS | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**APPROVED MANUFACTURERS  
AND DISTRIBUTORS  
PAGE 2 OF 2**

drawn:	approved:	date:	500-103
RWC	MMG	09/01/2023	

## TYPICAL SPECIFICATIONS FOR ALL PADS

1. Require 3" or 4" conduit (unless otherwise specified by PEC) with bell-end fittings to extend 1 1/2" to 2" above pad. Typical conduit specifications are on the next page.
2. Pads must extend a minimum of 4" above final grade and 1 1/2" below final grade. All pads must be placed on a slope less than or equal to 3:1. If greater than 3:1, contractor must bring slope to required grade.
3. All disturbed soil underneath pad must be replaced by concrete.
4. All ground rods shall be 3/4" X 10' copper-clad with clamp and must extend 3" above top of pad.
5. Wood float finish leaving pad square and level with no dips or crown.
6. **Contact PEC before pouring concrete and comply with the following instructions:**
  - a. Pre-pour inspection: Check framing and layout of pad and conduit components.
  - b. Final inspection: Overall review of pad and conduits. Ensure bell ends are on conduit.

## TYPICAL FOR SINGLE-PHASE TRANSFORMER, COMBINATION, SECTIONALIZER, AND SECONDARY PADS

7. Concrete to have minimum strength of 3,000 PSI.
8. Steel reinforcing shall be 6" X 6" No. 10 wire mesh or 3/8" re-bar on 12" center, stopping 1" from the sides.

## TYPICAL FOR THREE-PHASE TRANSFORMER PADS

9. Concrete testing, 4,000 PSI; 4%–6% entrained air, 3/4" maximum-size aggregate.
10. Steel reinforcement shall be 3/8" re-bar on 12" center, stopping 1" from sides.
11. Minimum concrete cover over reinforcing steel 2" unless noted.

## TYPICAL TRENCH SPECIFICATIONS

12. Trenches must be kept free of building materials and other debris in active building sites.
13. Bottom of trench shall be sanded to provide smooth, even support of conduits.
14. Initial backfill shall be manufactured or commercial sand placed directly around conduits. Minimum 3/8" pea gravel may be used for initial backfill in flood-prone areas.
15. Schedule 40 electrical-grade PVC conduit. Schedule 80 electrical-grade conduit may be used with rock-free backfill in place of sand in secondary-only trenches.
16. Failure to receive inspection will require removal of the backfill to allow inspection. Contact PEC to receive all applicable inspections.
17. Minimum cover shall be 30" from the top of primary conduit to sub-grade. With PEC approval, minimum cover requirements may be reduced by 6" with every 2" of 3,000 PSI concrete poured directly onto conduit. **\*Contact PEC before pouring concrete.\***
18. Concrete or flowable fill shall be poured around all conduit crossings and 90-degree bends. On conduit bends of other angles, concrete or flowable fill may be required upon inspection. **\*Contact PEC before pouring concrete.\***
19. Trench may be used jointly with gas and other utilities if adequate separation is provided. There shall be a minimum of 12" separation between electrical conduits and all other utilities' conduits. See drawings 510-014, 510-022, 510-023, 510-024, and 510-025.
20. Warning tape shall be a minimum of 12" above electrical conduits.
21. All other utilities must be routed around PEC equipment vaults, pedestals, transformers, primary enclosures, and/or similar underground electric facilities.
22. For 2" and **smaller** waterlines, special permission must be granted by PEC. Water lines larger than 2" are not allowed in PEC trenches.

REV	E	DATE	11/13/2024	REVISION	CHANGES FOR CONDUIT NOTES	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	---------------------------	----	-----	-----	-----	-----	-----



## UNDERGROUND INSTALLATION SPECIFICATIONS

## TYPICAL TRENCH, PAD, & METER PEDESTAL NOTES PAGE 1 OF 3

drawn:	approved:	date:	510-009
AMJ	MMG	11/13/2024	

**TYPICAL TRENCH SPECIFICATIONS (CONTINUED)**

- 23. Conduit may be under pavement if a depth of 30" cover to sub-grade is maintained.
- 24. Underground conductor from secondary enclosure/transformer to meter shall have 24" of cover. This depth may be reduced to 18" when a 2" supplemental protective covering of concrete is provided. If rigid conduit is used, the depth can be reduced by 6". Red electric warning tape is required in the ditch.

**TYPICAL CONDUIT SPECIFICATIONS**

- 1. Primary Conduit:
  - a. 3" Schedule 40 electrical-grade PVC with 36" minimum Schedule 80 radius bends.
  - b. 4" Schedule 40 electrical-grade PVC with 48" minimum Schedule 80 radius bends.
- 2. Secondary/Service Conduit:
  - a. 3" Schedule 80 electrical-grade PVC with 24" minimum Schedule 80 radius bends. Schedule 40 with 24" minimum Schedule 80 radius bends can be used if embedded in sand. Size service conduit as needed.
- 3. Controls or Temporary Service Conduit:
  - a. 2" Schedule 40 electrical-grade PVC with 24" minimum Schedule 80 radius bends.
- 4. Riser Conduit or Other Above-Ground Conduit:
  - a. 3" or 4" Schedule 80 electrical-grade PVC.

**Note: Contractor may be required to pull a mandrel, of a diameter not less than 80% of the inside diameter of the conduit through all conduits, under the supervision of a PEC representative.**

**Conduit Legend**

Typical in All Drawings

- P Primary Conduit
- S Secondary Conduit
- CW Communications or Water
- G Gas Line
- AS Alternate Secondary Conduit

**Primary Phasing Legend**

Phasing for three-phase primary applications: pad-mounted enclosures, combination pads, three-phase transformers, and three-phase risers.

- R  
P Red = Phase A
- B  
P Blue = Phase B
- Y  
P Yellow = Phase C

REV	E	DATE	11/13/2024	REVISION	CHANGES FOR CONDUIT NOTES	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	---------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**TYPICAL TRENCH, PAD, &  
METER PEDESTAL NOTES  
PAGE 2 OF 3**

drawn:	approved:	date:	
AMJ	MMG	11/13/2024	510-009



## TYPICAL METER PEDESTAL SPECIFICATIONS

Meter pedestals are approved by PEC. In situations where meter pedestals are used, the following conditions will apply:

1. Purchase and install circuit breaker in box. Circuit breakers are the bolt-in type. The box will accommodate 150-amp and 200-amp breakers. The breaker must have an interrupting capacity of 10,000 amps rated at 240 volts. Approved models: GE TQD22[amperage]WL and Eaton/Cutler-Hammer FD2200 or equal (old Westinghouse CA2200W).
2. Install insulated jumpers from bottom of meter socket to top of breakers.
3. Install meter pedestal pad in accordance with Drawing 520-010, *Pad for Service Meter Pedestal*.
4. Member will be responsible for the installation of underground cable from the meter pedestal to the house and the connections to the bottom of the circuit breakers. The underground cable used from the meter pedestal to the house shall be an approved type for underground installation (USE or UF type). Conductor size will be based on member load, location of meter, and National Electrical Code for size of conduit.

### PEC Responsibility:

1. Furnish and install meter pedestal.
2. Furnish and install combination meter socket and breaker box.
3. Install jumper wires from top of meter socket to pedestal connector and set meter on connect order after all work has been completed.

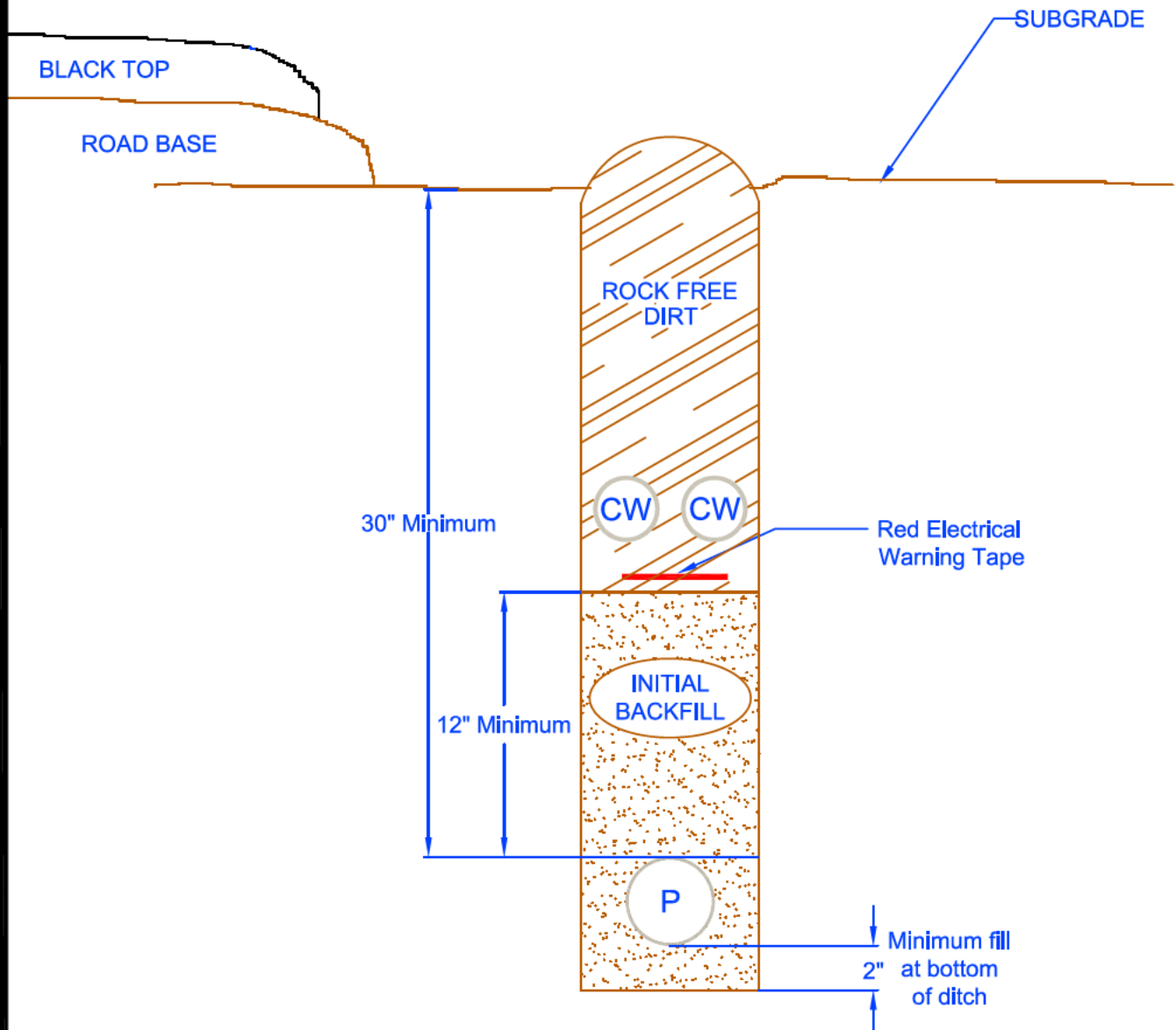
REV	E	DATE	11/13/2024	REVISION	CHANGES FOR CONDUIT NOTES	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	---------------------------	----	-----	-----	-----	-----	-----



## UNDERGROUND INSTALLATION SPECIFICATIONS

## TYPICAL TRENCH, PAD, & METER PEDESTAL NOTES PAGE 3 OF 3

drawn:	approved:	date:	510-009
AMJ	MMG	11/13/2024	



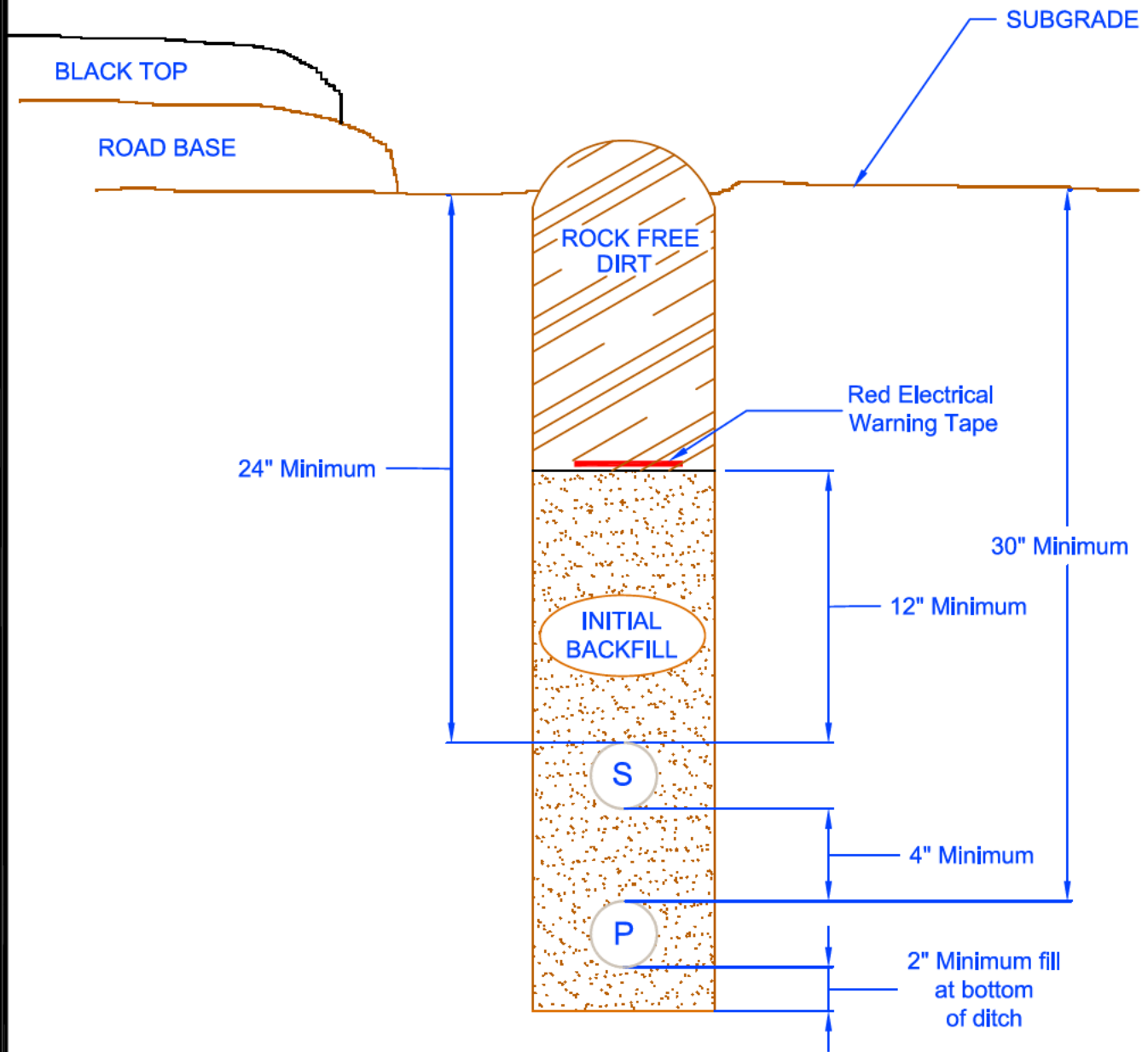
Reference Drawing  
 510-009-0911 for  
 Typical Trench Details



PEDERNALES ELECTRIC  
 COOPERATIVE, INC.  
 URD DEVELOPER'S SPECIFICATIONS

1" Conduit Arrangement  
 for Primary  
 601 to 50,000 Volts

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	510-010-0911



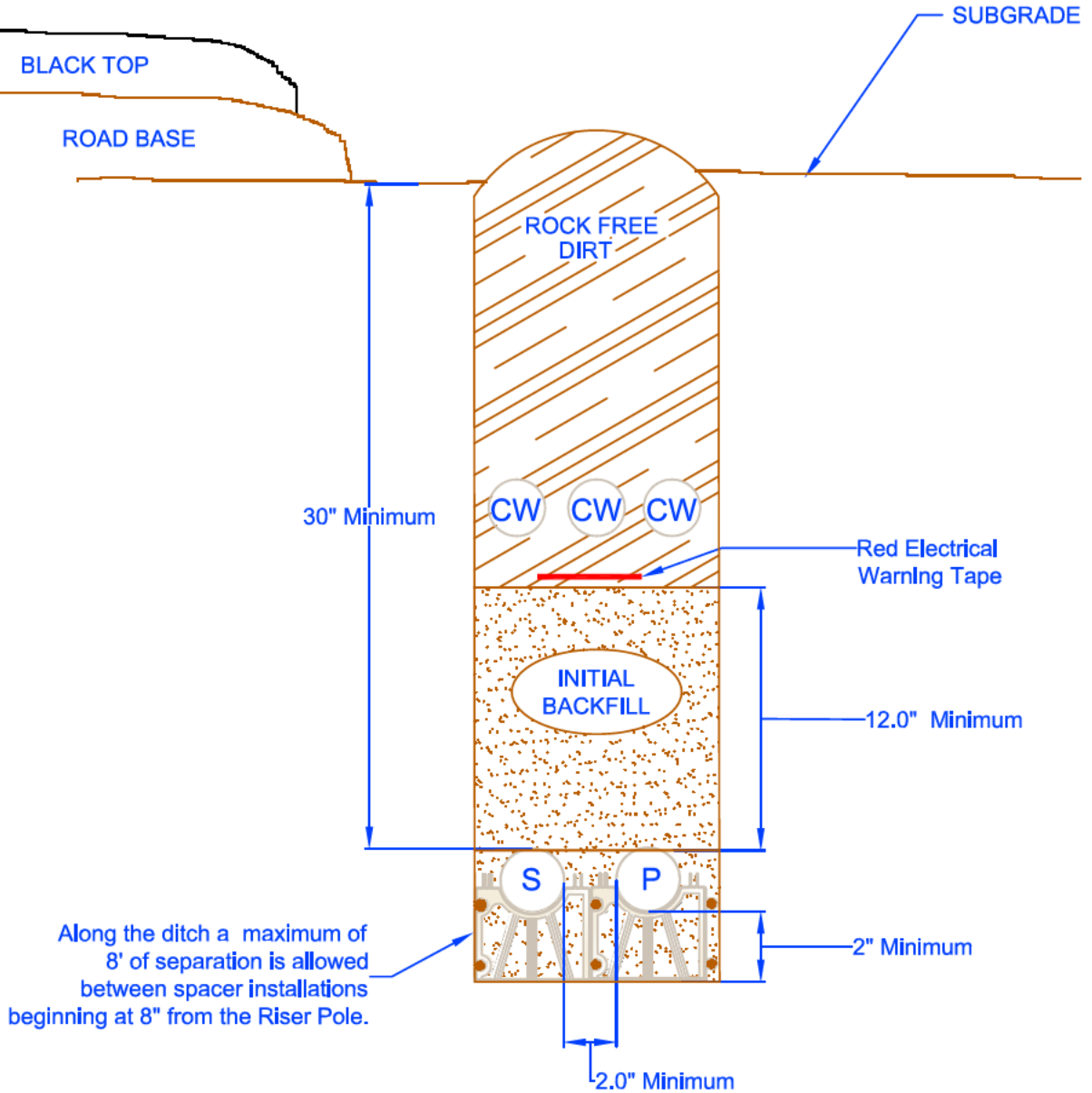
Reference Drawing  
 510-009-0911 for  
 Typical Trench Details



PEDERNALES ELECTRIC  
 COOPERATIVE, INC.  
 URD DEVELOPERS SPECIFICATIONS

1Ø Conduit Arrangement  
 for Primary and Secondary

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	510-012-0911



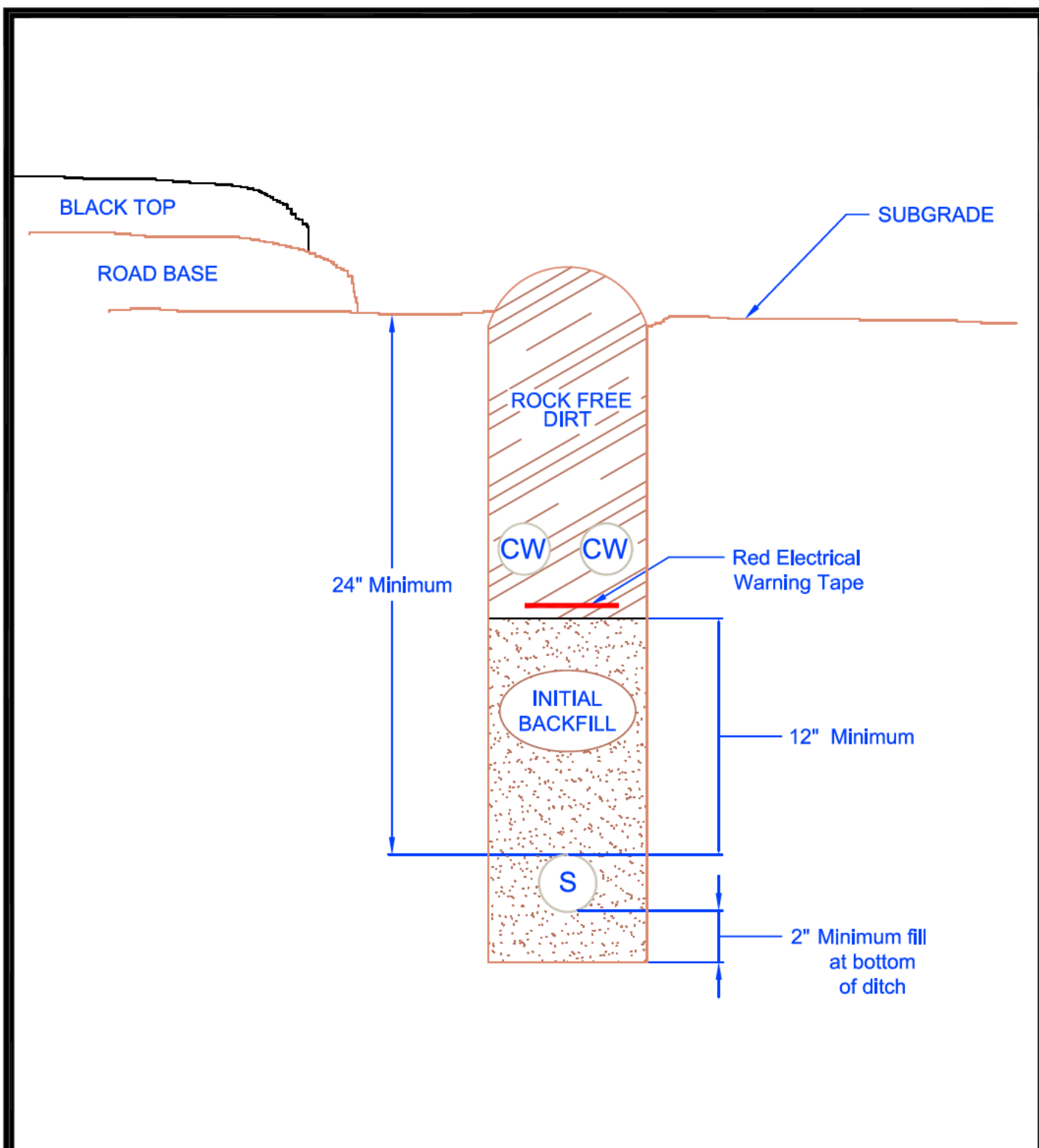
Reference Drawing  
 510-009-0911 for  
 Typical Trench Details



PEDERNALES ELECTRIC  
 COOPERATIVE, INC.  
 URD DEVELOPER'S SPECIFICATIONS

1Ø Conduit Arrangement  
 Joint with other Utilites

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	510-014-0911



Reference Drawing  
 510-009-0911 for  
 Typical Trench Details

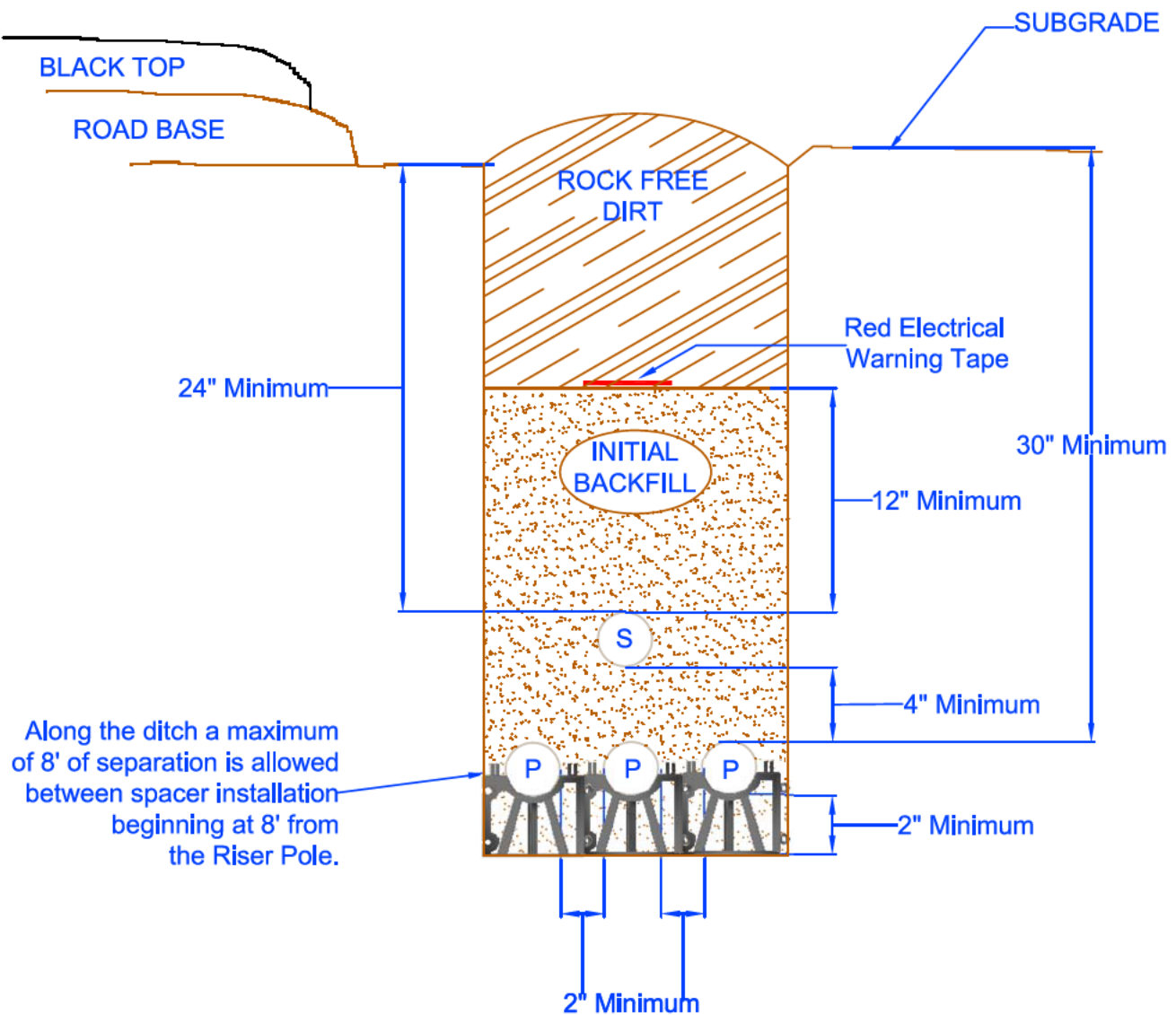


PEDERNALES ELECTRIC  
 COOPERATIVE, INC.  
 URD DEVELOPER'S SPECIFICATIONS

1Ø Conduit Arrangement  
 for Service  
 0 to 600 Volts

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	510-016-0911

# OPTION 1



Reference Drawing  
510-009-0911 for  
Typical Trench Details

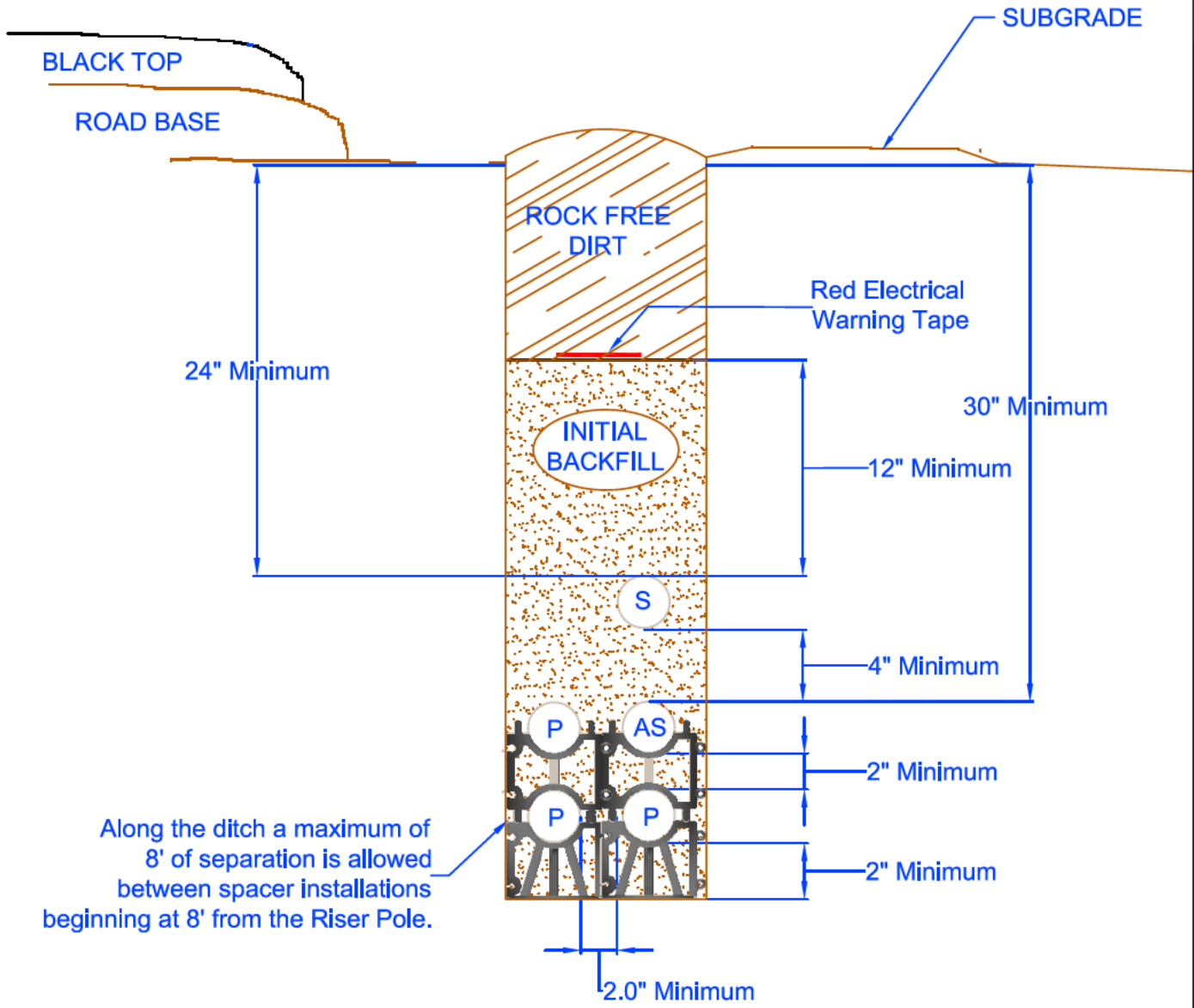


**PEDERNALES ELECTRIC  
COOPERATIVE, INC.**  
URD DEVELOPER'S SPECIFICATIONS

**3Ø Conduit Arrangement  
Electric Only  
Primary and Secondary**

drawn:	approved	date:	drawing number:
<b>JBS</b>	<b>MJB</b>	December 12, 2011	<b>510-020-0911</b>

# OPTION 2



Along the ditch a maximum of 8' of separation is allowed between spacer installations beginning at 8' from the Riser Pole.

Reference Drawing  
510-009-0911 for  
Typical Trench Details

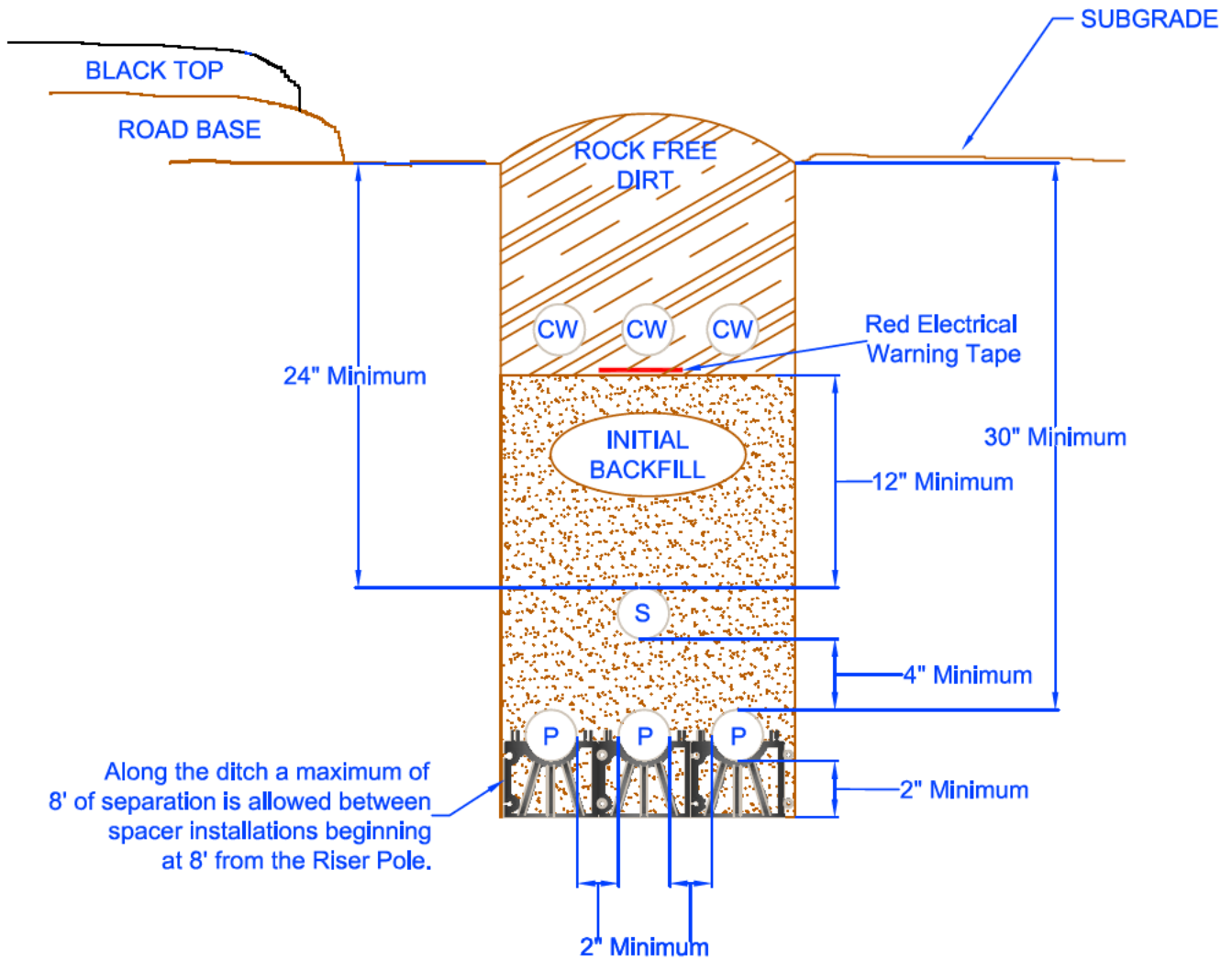


**PEDERNALES ELECTRIC  
COOPERATIVE, INC.**  
URD DEVELOPER'S SPECIFICATIONS

**3Ø Conduit Arrangement  
Electric Only  
Primary and Secondary**

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	510-020-0911

# OPTION 1



Reference Drawing  
510-009-0911 for  
Typical Trench Details



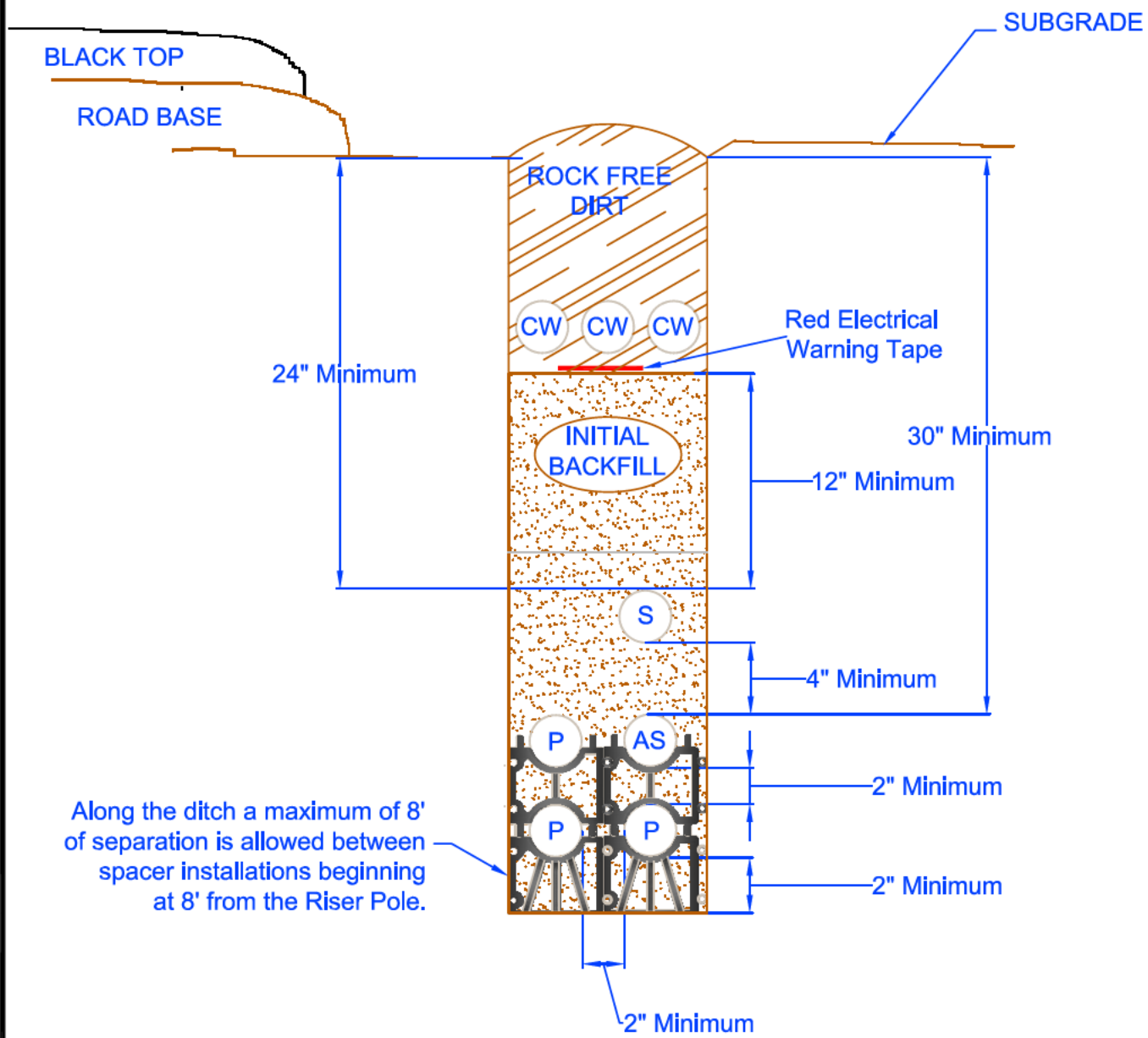
PEDERNALES ELECTRIC  
COOPERATIVE, INC.  
URD DEVELOPER'S SPECIFICATIONS

## 3Ø Conduit Arrangement Joint with Other Utilities

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	510-022-0911



# OPTION 2



Reference Drawing  
510-009-0911 for  
Typical Trench Details



**PEDERNALES ELECTRIC  
COOPERATIVE, INC.**  
URD DEVELOPER'S SPECIFICATIONS

## 3Ø Conduit Arrangement Joint with Other Utilities

drawn:	approved	date:	drawing number:
<b>JBS</b>	<b>MJB</b>	December 12, 2011	<b>510-022-0911</b>

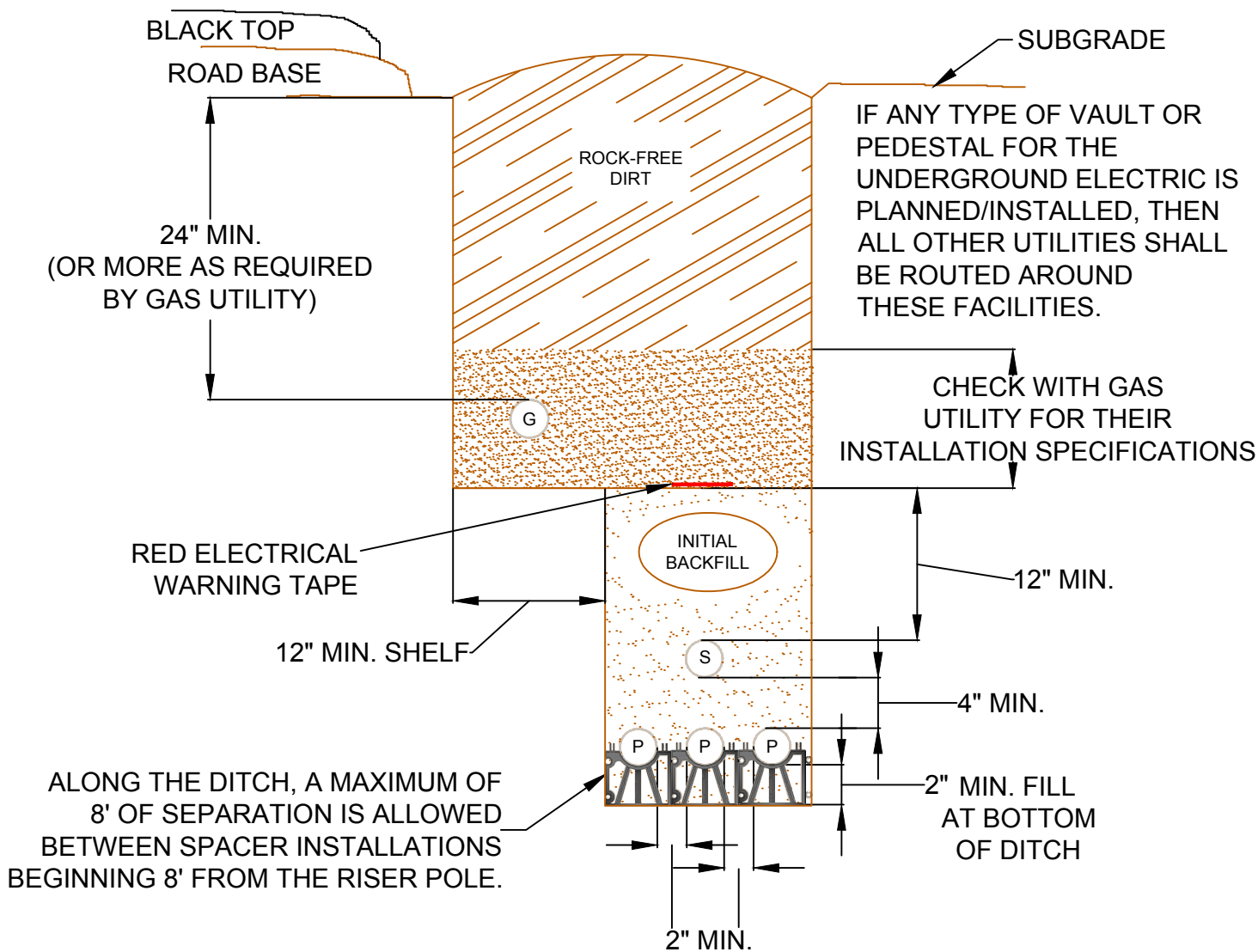
PEC prefers to avoid joint trench installations with gas lines. If a gas joint trench is required, contact PEC for permission and to coordinate inspections. A joint trench as depicted below or on drawing 510-025 is permitted with prior approval providing the following conditions are met:

- The joint trench is not in a public right of way.
- The gas utility is regulated by the Public Utility Commission of Texas.
- The trench installation must meet PEC, gas utility and national standards.
- The maximum pressure of the gas line is 60 PSI or less.

Gas lines not meeting the listed requirements above are not permitted in trenches with PEC facilities. These lines shall be separated horizontally from primary and secondary conduits by at least 24 inches of undisturbed earth. A final inspection by a PEC inspector is required before the gas facilities are installed in the trench and prior to backfill.

Other Notes:

- 1Ø installation is allowable. Gas main shall be a minimum of 12" from all electrical conduit.
- Reference drawing 510-009 for typical trench details.
- See drawing 510-025 for joint gas trench stacked installation option.



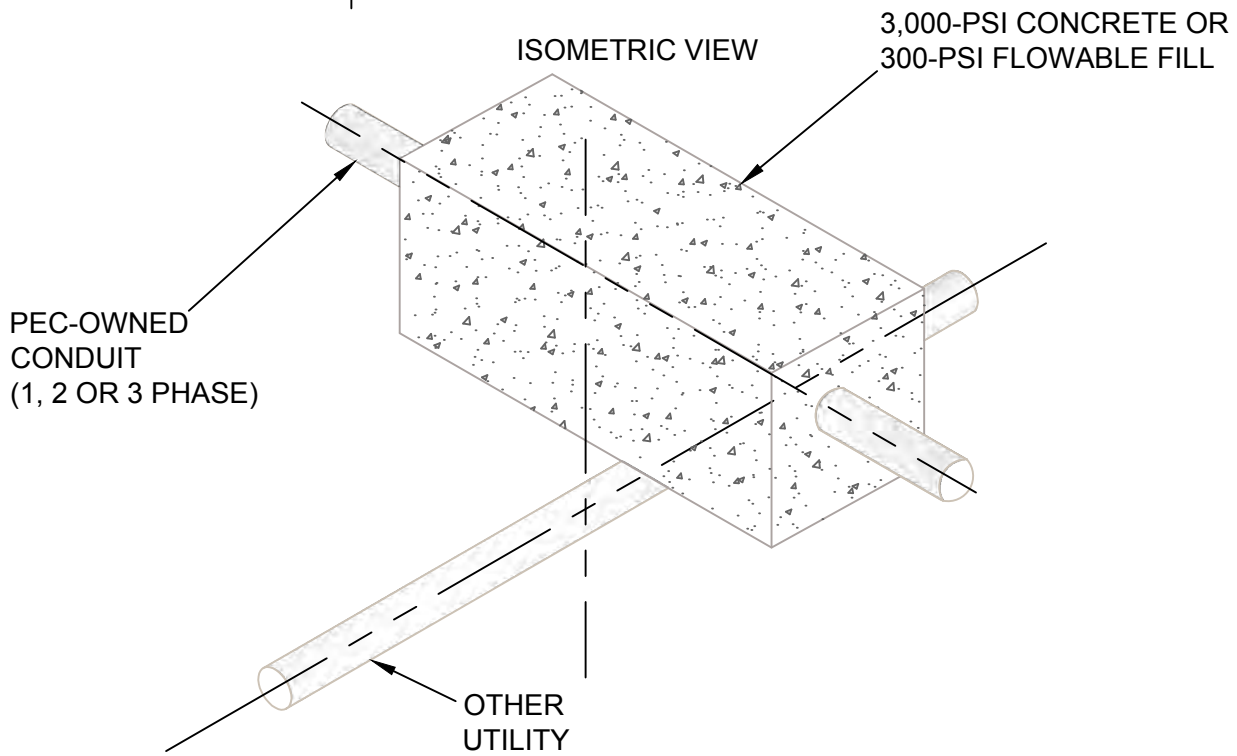
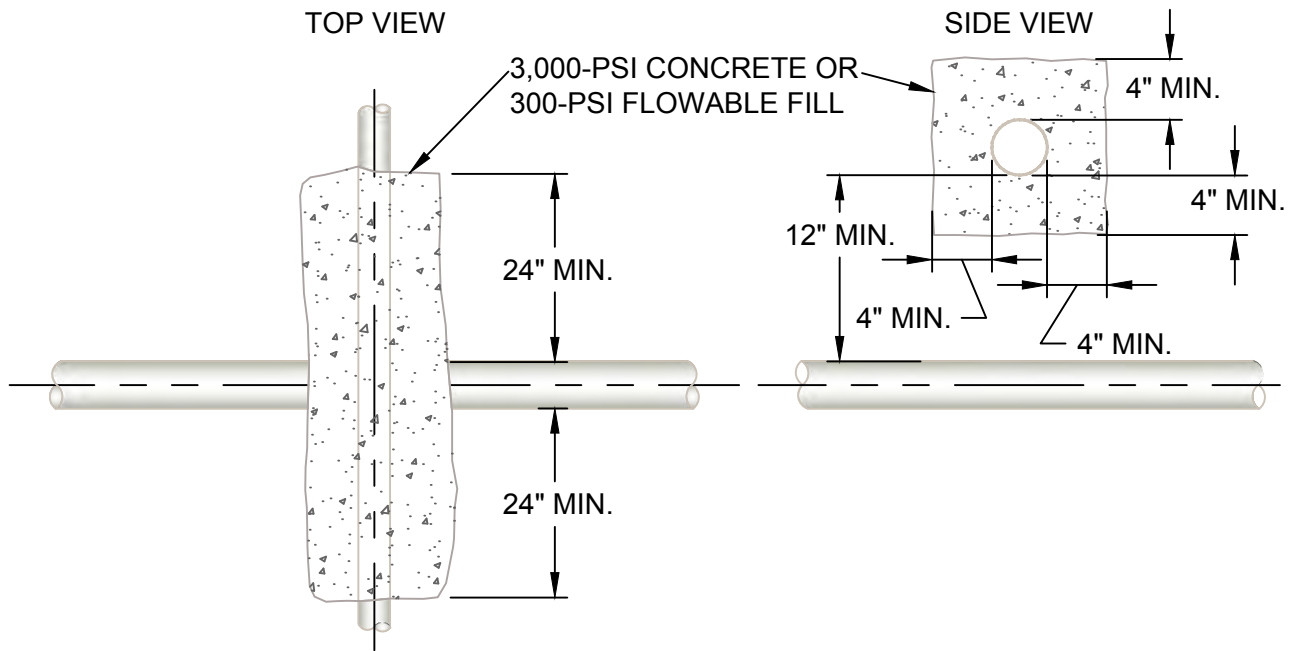
REV A DATE 03/26/2020 REVISION ADDED NOTE FOR JOINT USE WITH NATURAL GAS BY RWC CHK MMG APR MMG



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

3Ø PRIMARY CONDUIT ARRANGEMENT  
JOINT WITH NATURAL GAS  
HORIZONTAL OPTION

drawn:	approved:	date:	510-023
RWC	MMG	03/26/2020	



**NOTES:**

1. REFER TO APPROPRIATE DRAWINGS FOR CORRECT EMBEDMENT DEPTH.
2. 3,000-PSI CONCRETE OR 300-PSI FLOWABLE FILL TO BE A MINIMUM THICKNESS OF 4" AROUND CONDUIT.
3. THIS INSTALLATION APPLIES WHEREVER THE ELECTRICAL CONDUIT CROSSES ABOVE ANY OTHER CONDUIT.
4. IF ANOTHER UTILITY CROSSES OVER A PEC CONDUIT SYSTEM, THE OTHER UTILITY MUST COMPLY WITH NESC RULES 353B1 AND 353B2.

REV | A | DATE | 07/09/2020 | REVISION | ADD FLOWABLE FILL TO CONCRETE NOTES | BY | RWC | CHK | SSS | APR | MMG

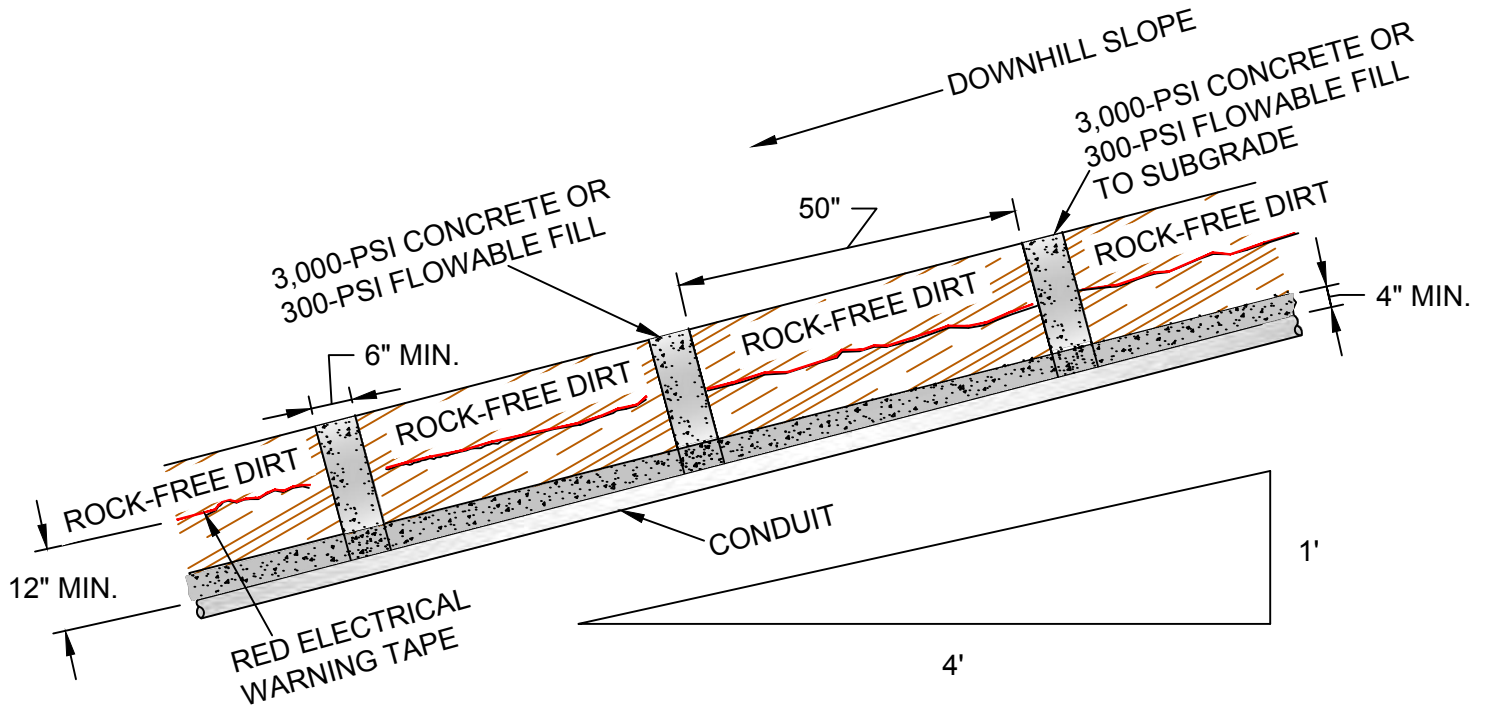


**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**CONDUIT CROSSING DETAIL  
FOR PEC ABOVE OTHER UTILITIES**

drawn:	approved:	date:	510-024
RWC	MMG	07/09/2020	





NOTES:

1. REFER TO APPROPRIATE TRENCH DRAWING FOR CORRECT EMBEDMENT DEPTH.
2. AS AN ALTERNATIVE, SEE DRAWING 510-027.

REV | A | DATE | 07/09/2020 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | SSS | APR | MMG

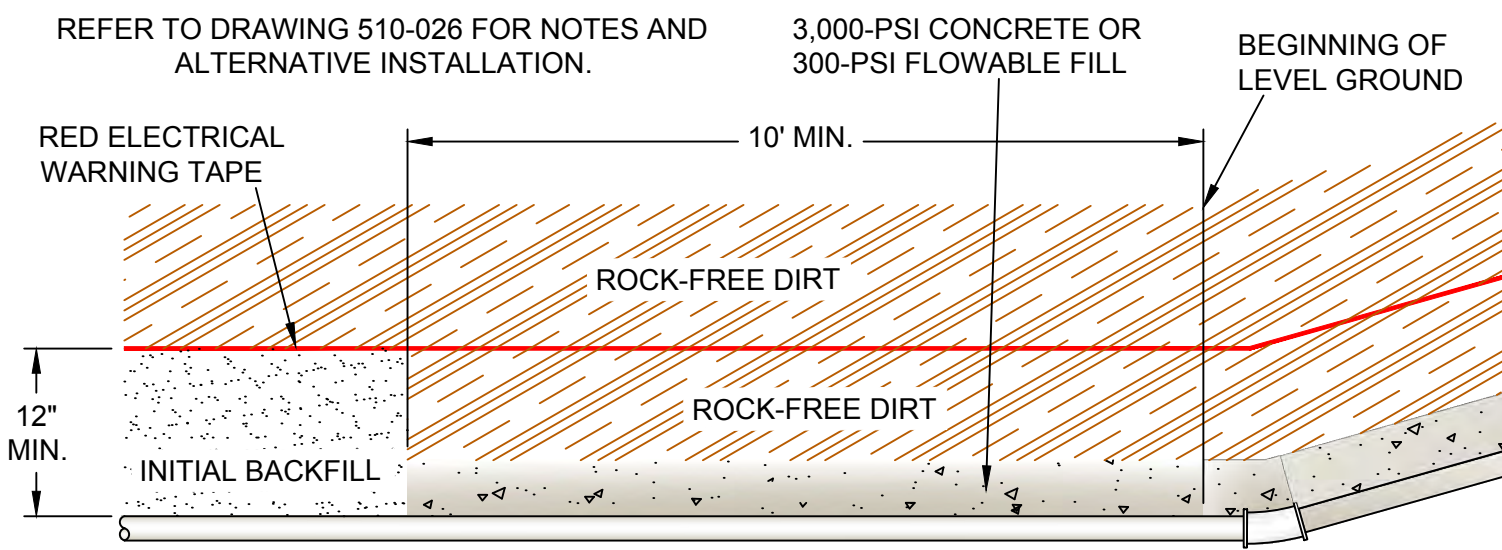
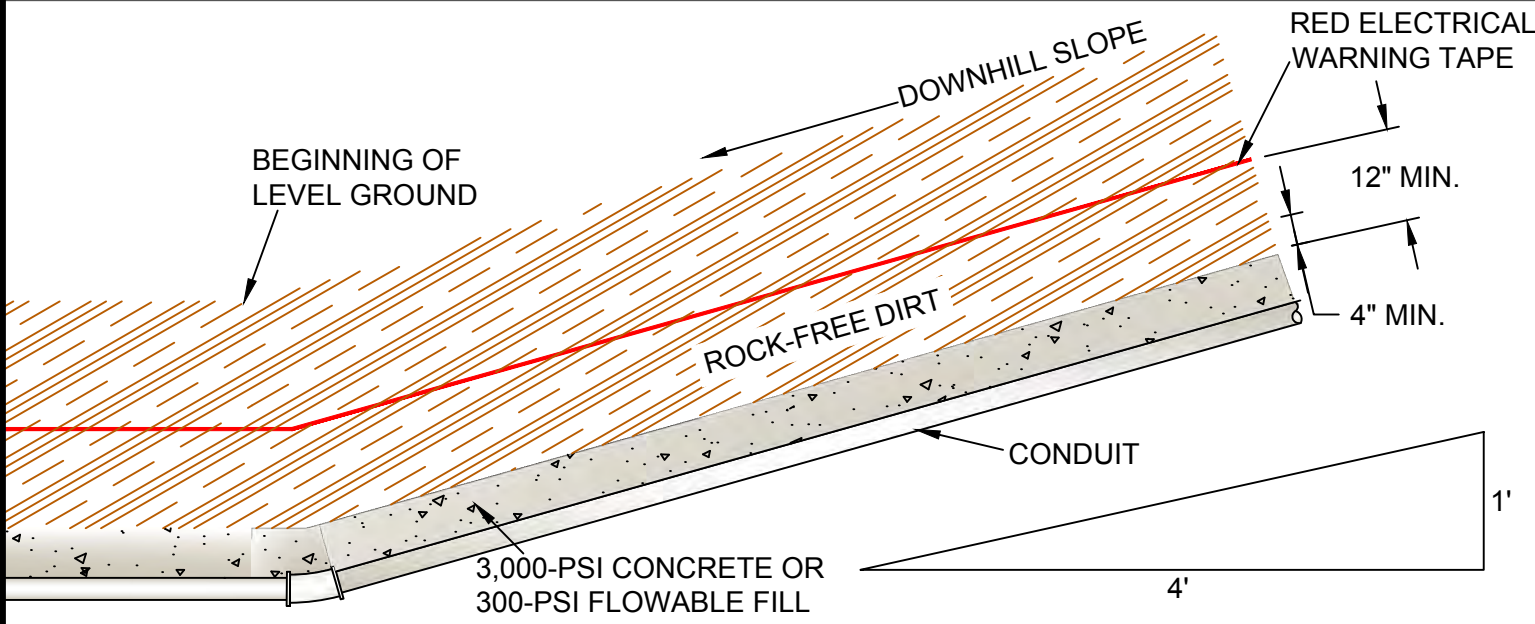
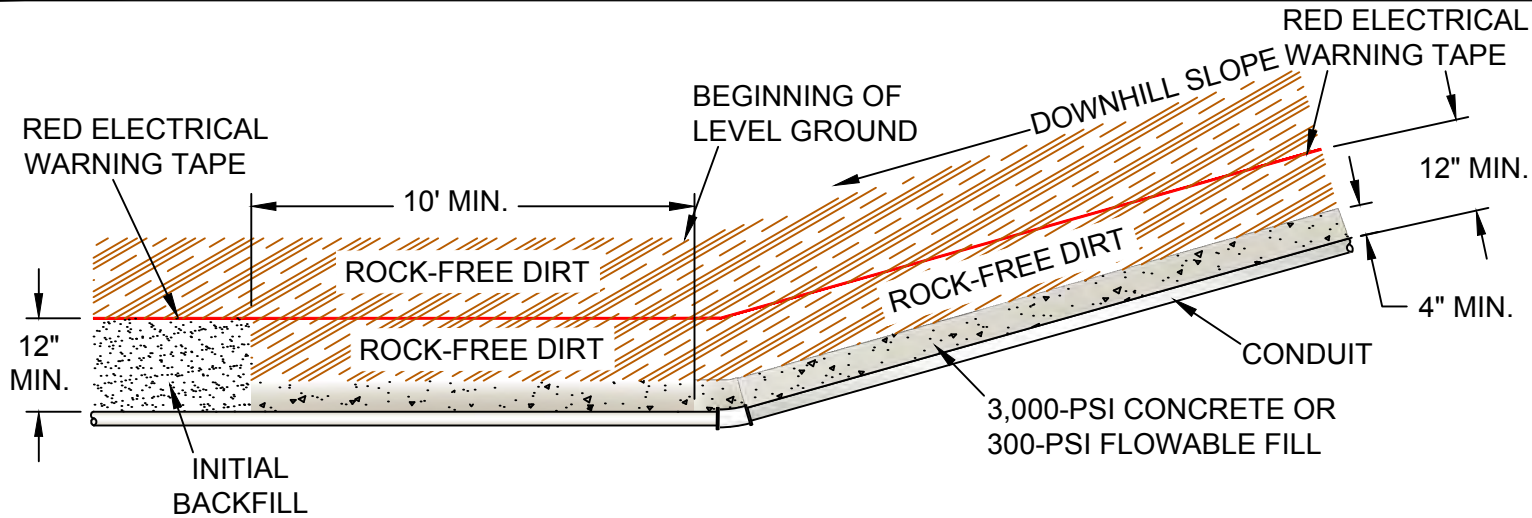


UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

CONDUIT INSTALLATION ON  
SLOPE GREATER THAN 25%

drawn:	approved:	date:
RWC	MMG	07/09/2020

510-026



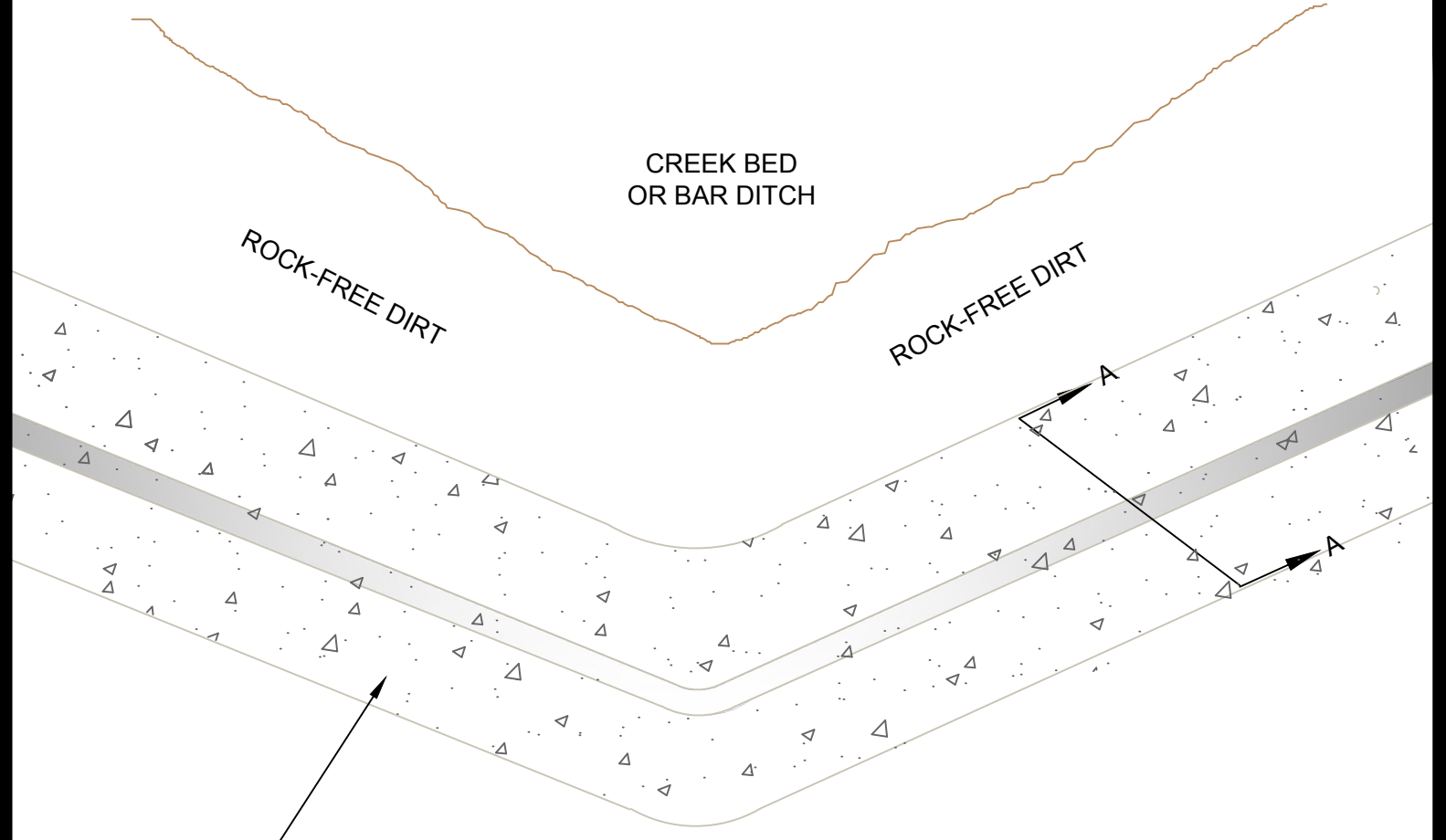
REV A | DATE 07/09/2020 | REVISION | ISSUE FOR CONSTRUCTION | BY RWC | CHK SSS | APR MMG



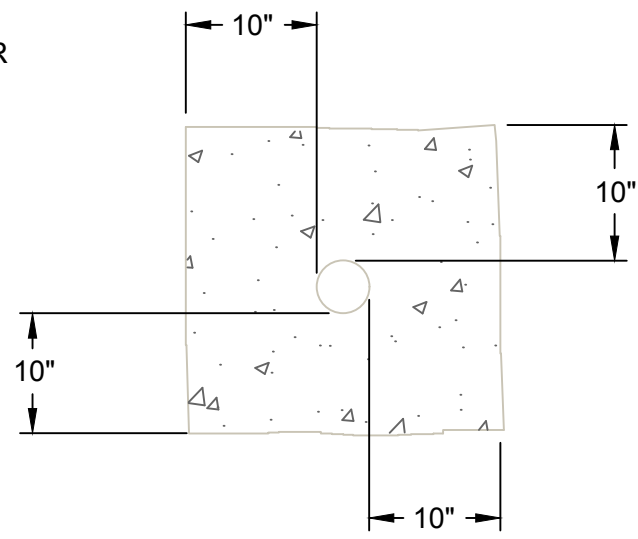
**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**CONDUIT INSTALLATION ON SLOPE  
GREATER THAN 25% (ALTERNATIVE)**

drawn:	approved:	date:	<b>510-027</b>
RWC	MMG	07/09/2020	



3,000-PSI CONCRETE OR  
300-PSI FLOWABLE FILL



SECTION A-A

NOTE: REFER TO APPROPRIATE DRAWINGS FOR CORRECT EMBEDMENT DEPTH.

REV	A	DATE	07/09/2020	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----

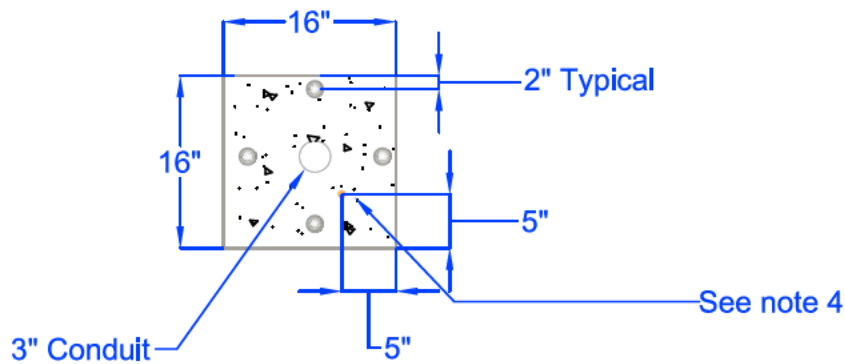
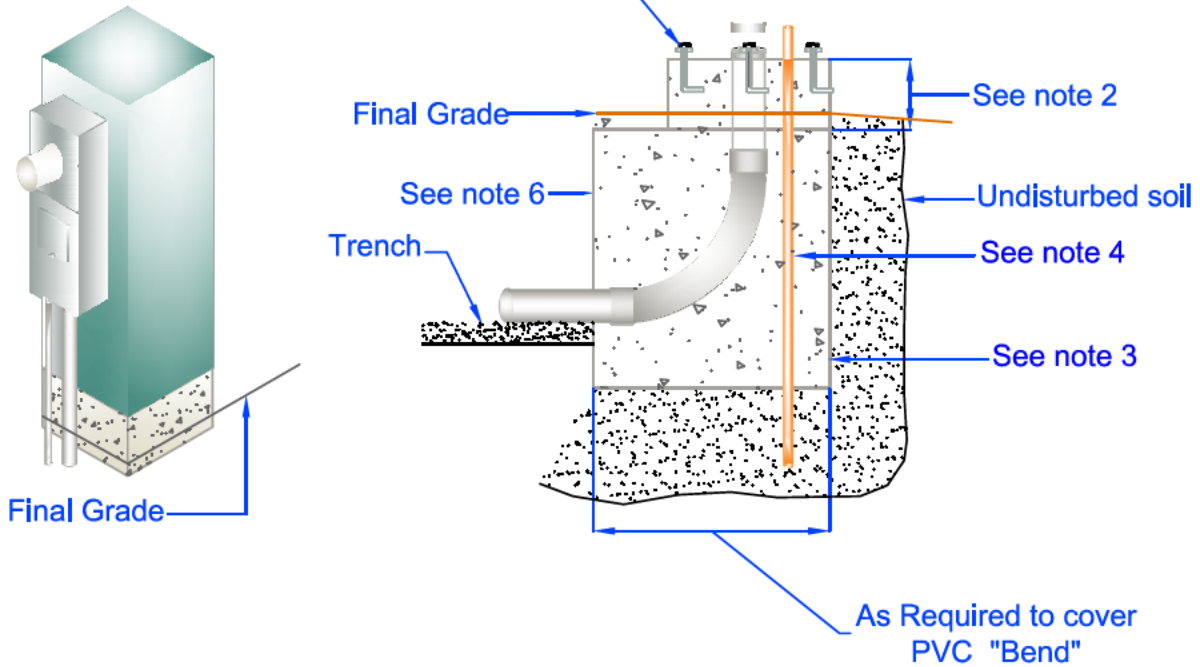


UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

CONDUIT INSTALLATION  
IN FLOOD-PRONE AREAS

drawn:	approved:	date:	510-029
RWC	MMG	07/09/2020	

3/8" X 4" Galvanized "L" bolts with nuts and 1" washers. Bolts to be 1" above concrete with clean threads. Drop in anchors approved- to be drilled and set after pour. See inspector for template for bolt locations.



Reference Drawing  
510-009-0911 for  
Typical Notes



PEDERNALES ELECTRIC  
COOPERATIVE, INC.  
URD DEVELOPER'S SPECIFICATIONS

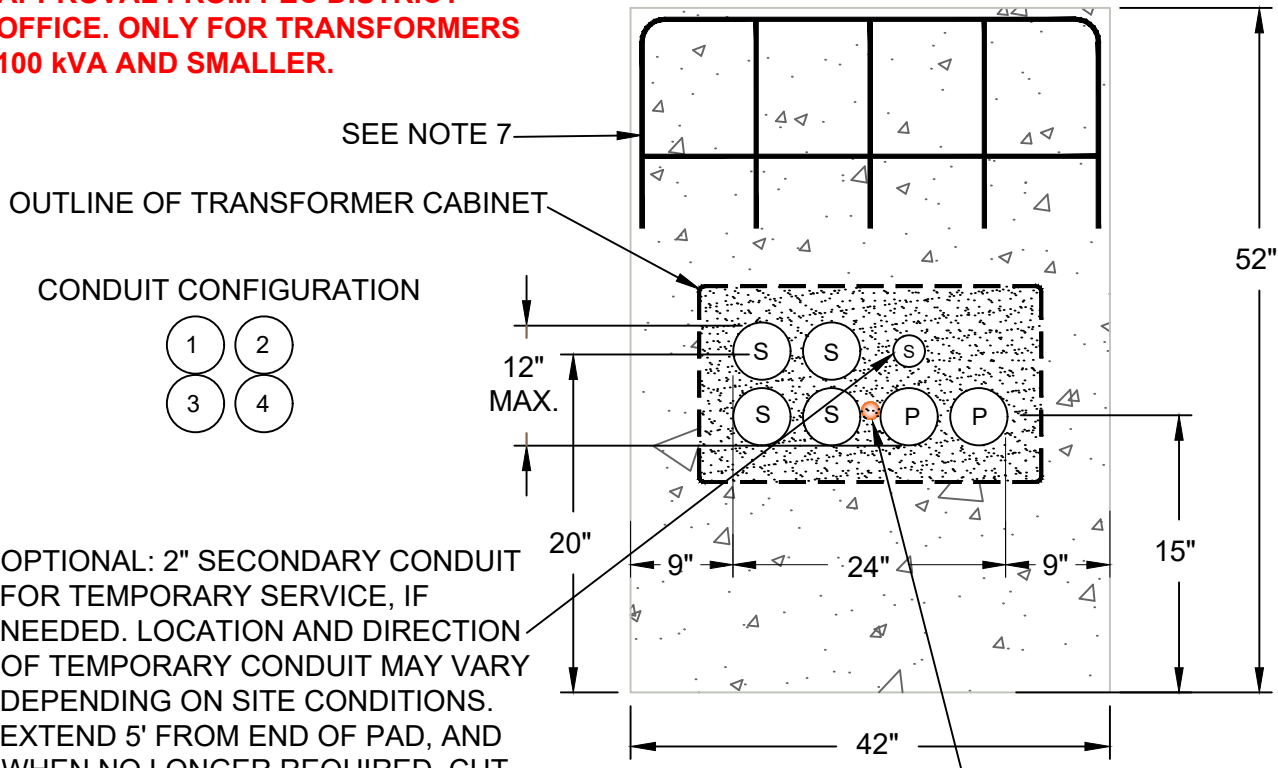
Pad for Service  
Meter Pedestal

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	520-010-0911

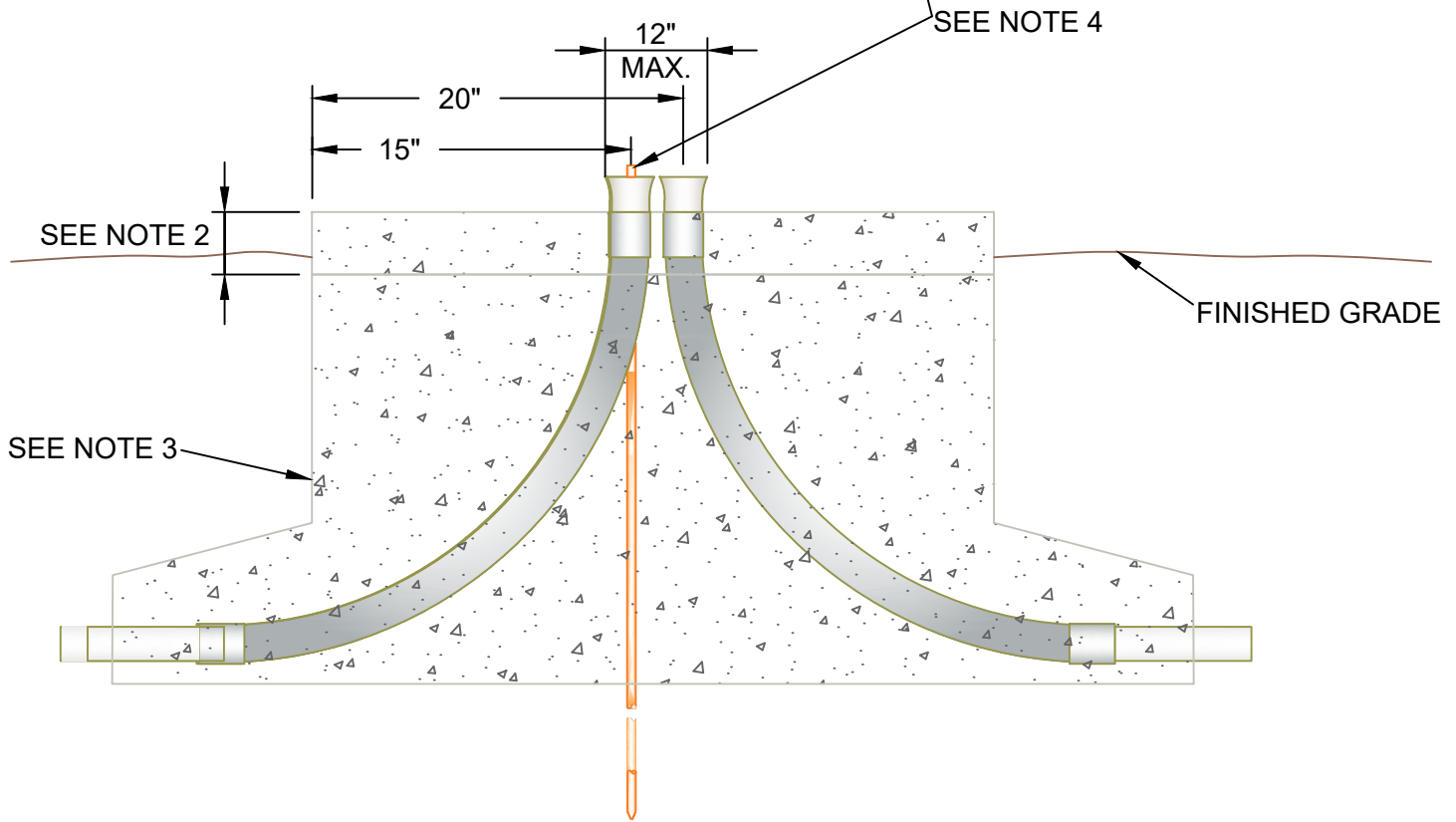


**52" PAD OPTION IS FOR COMPACT INSTALLATIONS AND MUST HAVE APPROVAL FROM PEC DISTRICT OFFICE. ONLY FOR TRANSFORMERS 100 kVA AND SMALLER.**

**REFERENCE PAGE 1 OF 510-009 FOR ALL NOTES**



OPTIONAL: 2" SECONDARY CONDUIT FOR TEMPORARY SERVICE, IF NEEDED. LOCATION AND DIRECTION OF TEMPORARY CONDUIT MAY VARY DEPENDING ON SITE CONDITIONS. EXTEND 5' FROM END OF PAD, AND WHEN NO LONGER REQUIRED, CUT STUB-OUT 6" BELOW GRADE AND CAP.



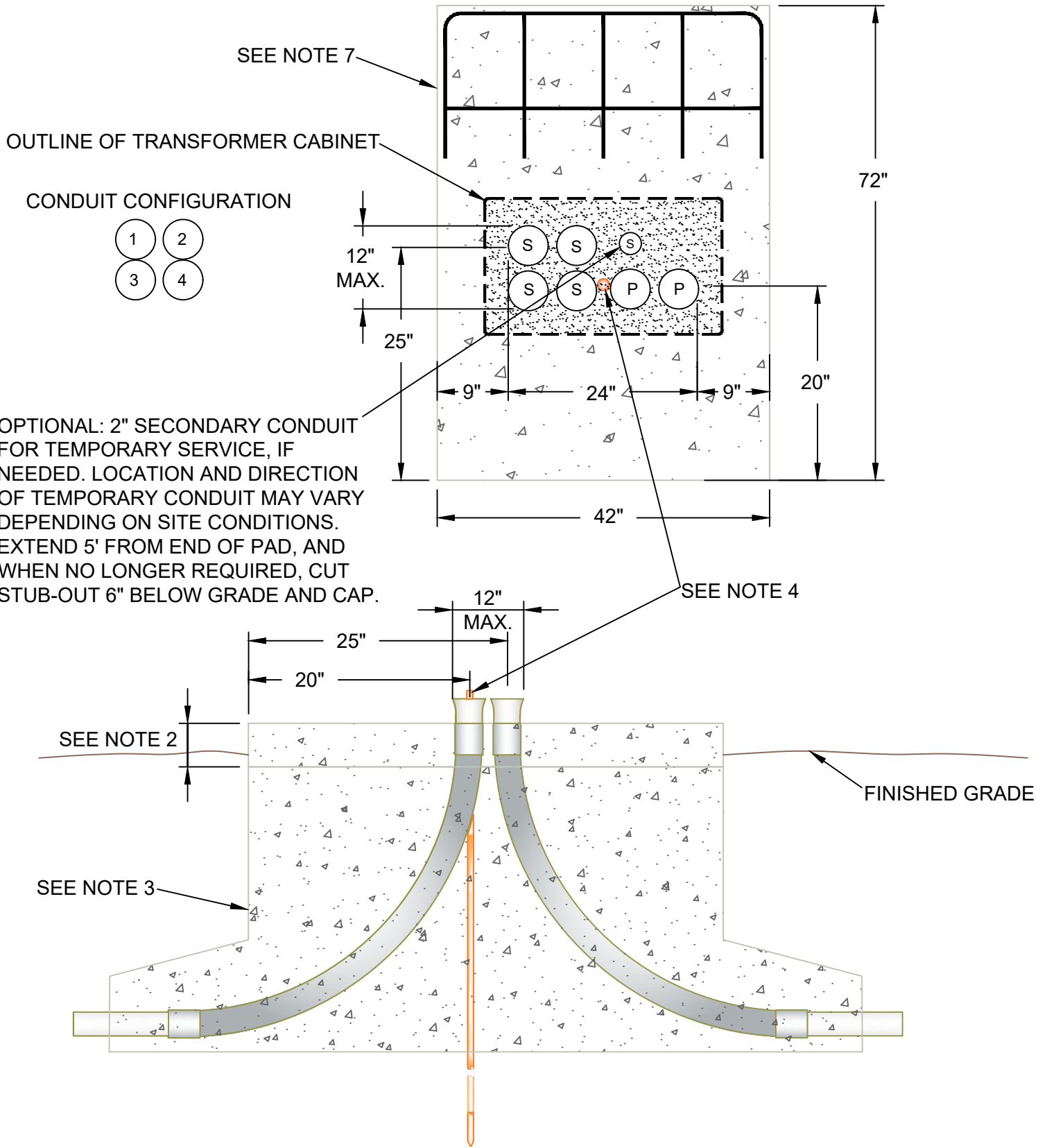
REV B DATE 11/13/2024 REVISION REDRAWN FOR CLARITY, ADDED 2" FOR TEMP. SERVICE BY AMJ CHK SSS APR MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**52" PAD FOR 1Ø TRANSFORMER  
WITH VFI, SMALL SECTIONALIZING ENCLOSURE**

drawn:	approved:	date:	520-020
AMJ	MMG	11/13/2024	



REV | D | DATE | 11/13/2024 | REVISION | REDRAWN FOR CLARITY, ADDED 2" FOR TEMP. SERVICE | BY | AMJ | CHK | SSS | APR | MMG



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

72" PAD FOR 1Ø TRANSFORMER  
WITH VFI, SMALL SECTIONALIZING ENCLOSURE

drawn:	approved:	date:	520-030
AMJ	MMG	11/13/2024	

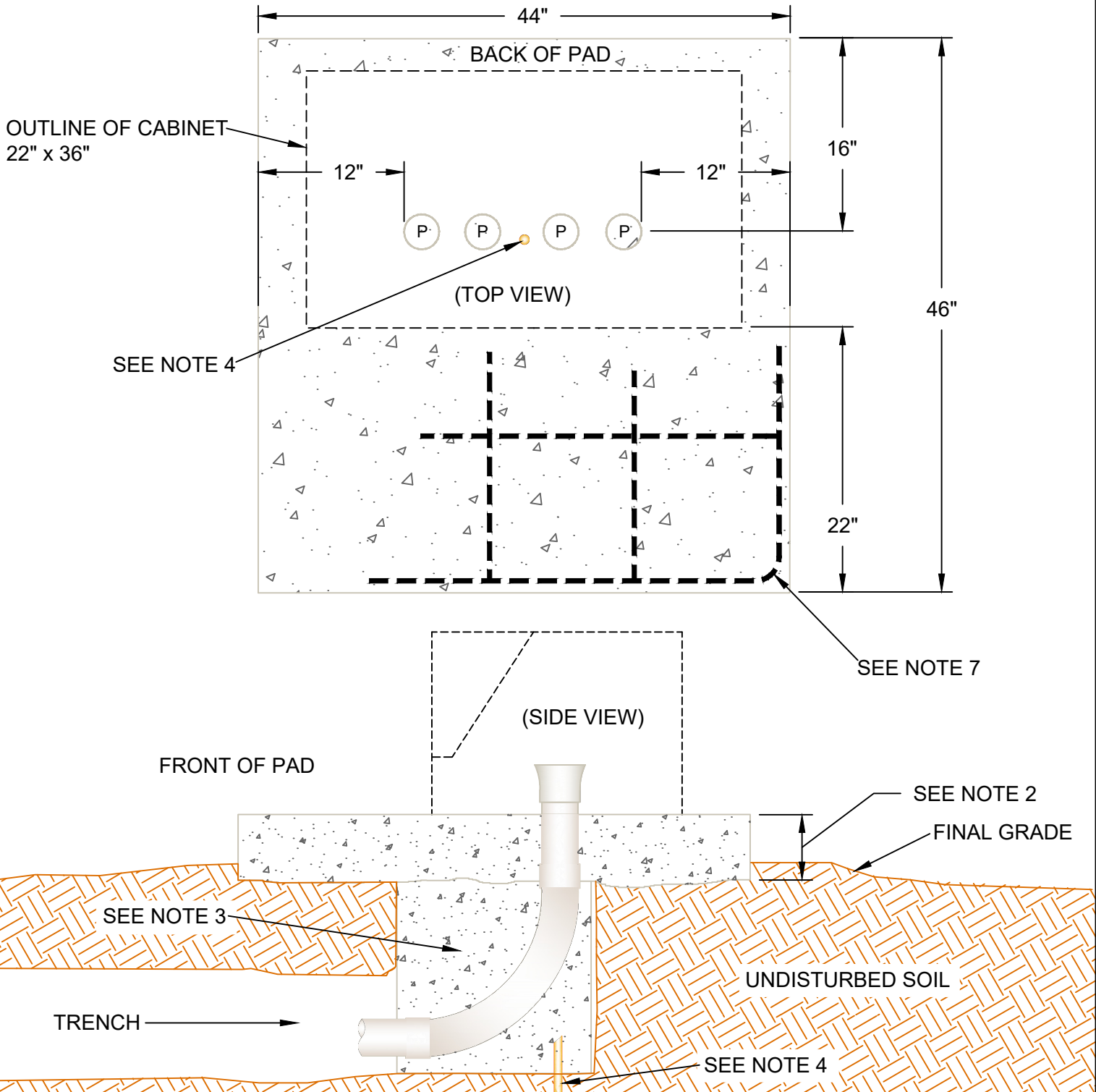
**APPROVED SECTIONALIZING ENCLOSURES:**

- MAYSTEEL-HUBBELL CC336-22TH
- DURHAM 1008823
- ALUMA-FORM ENC-SC1-303622-S2-G-JJA
- AMERICAN PADMOUNT SYSTEMS APS-14S303622-N

**REFERENCE PAGE 1 OF 510-009 FOR ALL NOTES**

**APPROVED ALUMINUM SECTIONALIZING ENCLOSURES:**

- ALUMA-FORM ENC-SC1-303622-A2-G-JJA
- AMERICAN PADMOUNT SYSTEMS ABS303623-N



REV	B	DATE	11/13/2024	REVISION	ISSUE FOR CONSTRUCTION	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



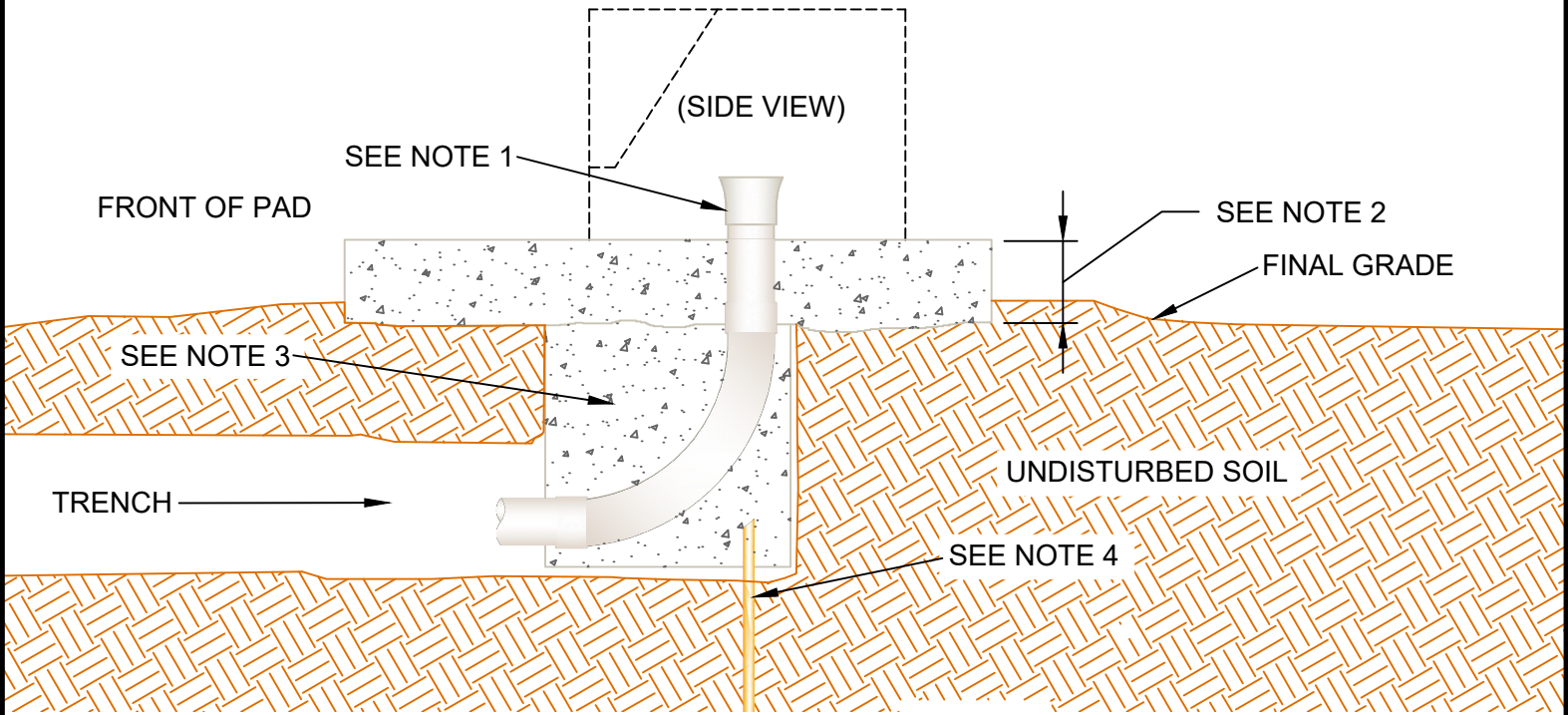
**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**SMALL PAD FOR  
1Ø SECTIONALIZING ENCLOSURE**

drawn:	approved:	date:	530-010
AMJ	MMG	11/13/2024	



REFERENCE PAGE 1 OF  
510-009 FOR ALL NOTES



REV	B	DATE	11/13/2024	REVISION	ISSUE FOR CONSTRUCTION	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

SMALL PAD FOR  
30 SECTIONALIZING ENCLOSURE  
PAGE 2 OF 2

drawn:	approved:	date:	530-020
AMJ	MMG	11/13/2024	

**APPROVED SECTIONALIZING ENCLOSURES:**

- MAYSTEEL-HUBBELL CC366-22TH
- DURHAM AM30662263
- BARFIELD-HUBBELL BGSSE226630TP-H

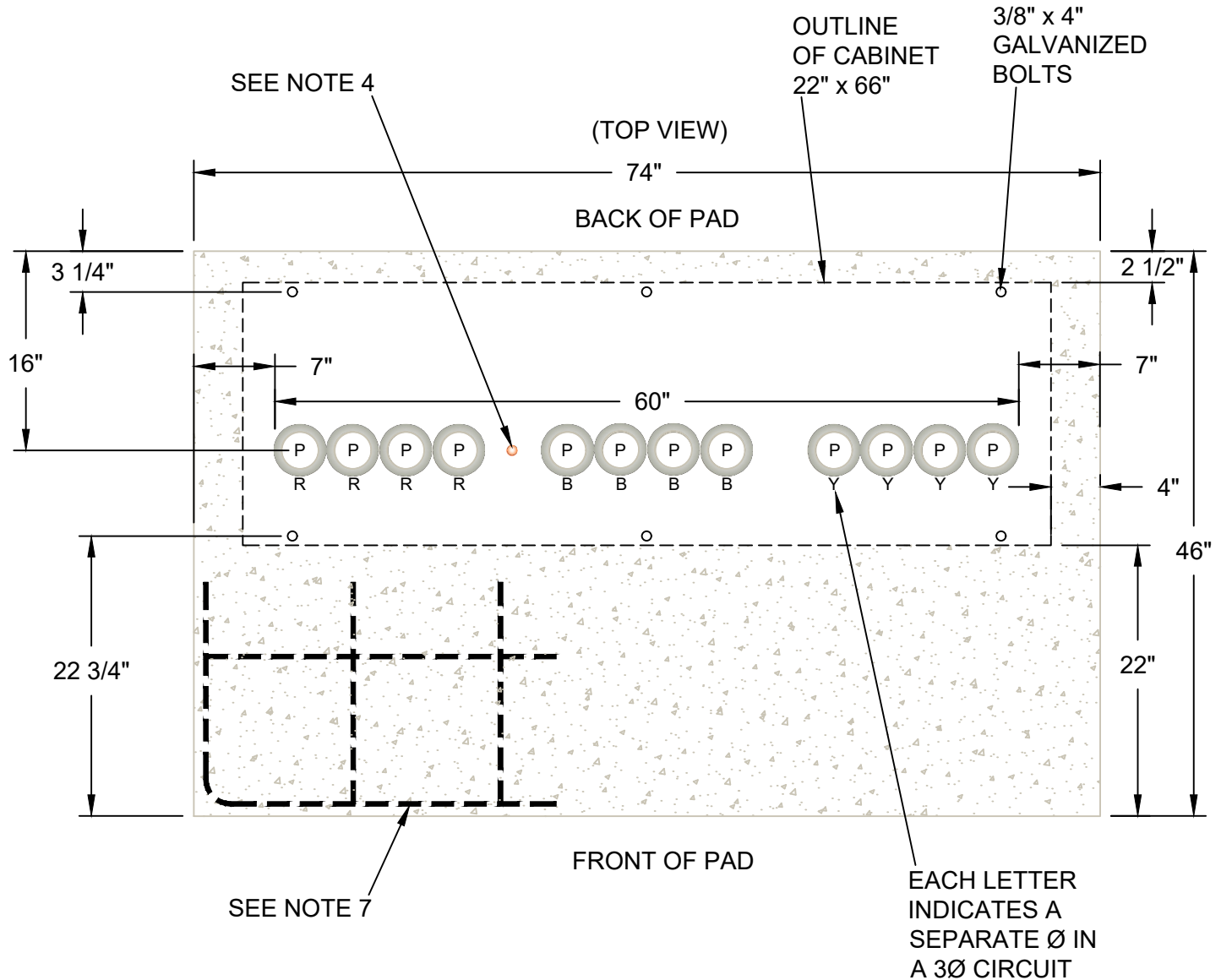
**APPROVED ALUMINUM SECTIONALIZING ENCLOSURES:**

- ALUMA-FORM ENC-SC3-306622-A2-G-JJA
- AMERICAN PADMOUNT SYSTEMS APS306723-ACACACA

**APPROVED SECTIONALIZING ENCLOSURES WITH 18" SPACER:**

- DURHAM 1010868
- BARFIELD-HUBBELL BGSSE226630TP-H-W/18" RISER

**REFERENCE PAGE 1 OF 510-009 FOR ALL NOTES**



REV | B | DATE | 11/13/2024 | REVISION | ISSUE FOR CONSTRUCTION | BY | AMJ | CHK | SSS | APR | MMG

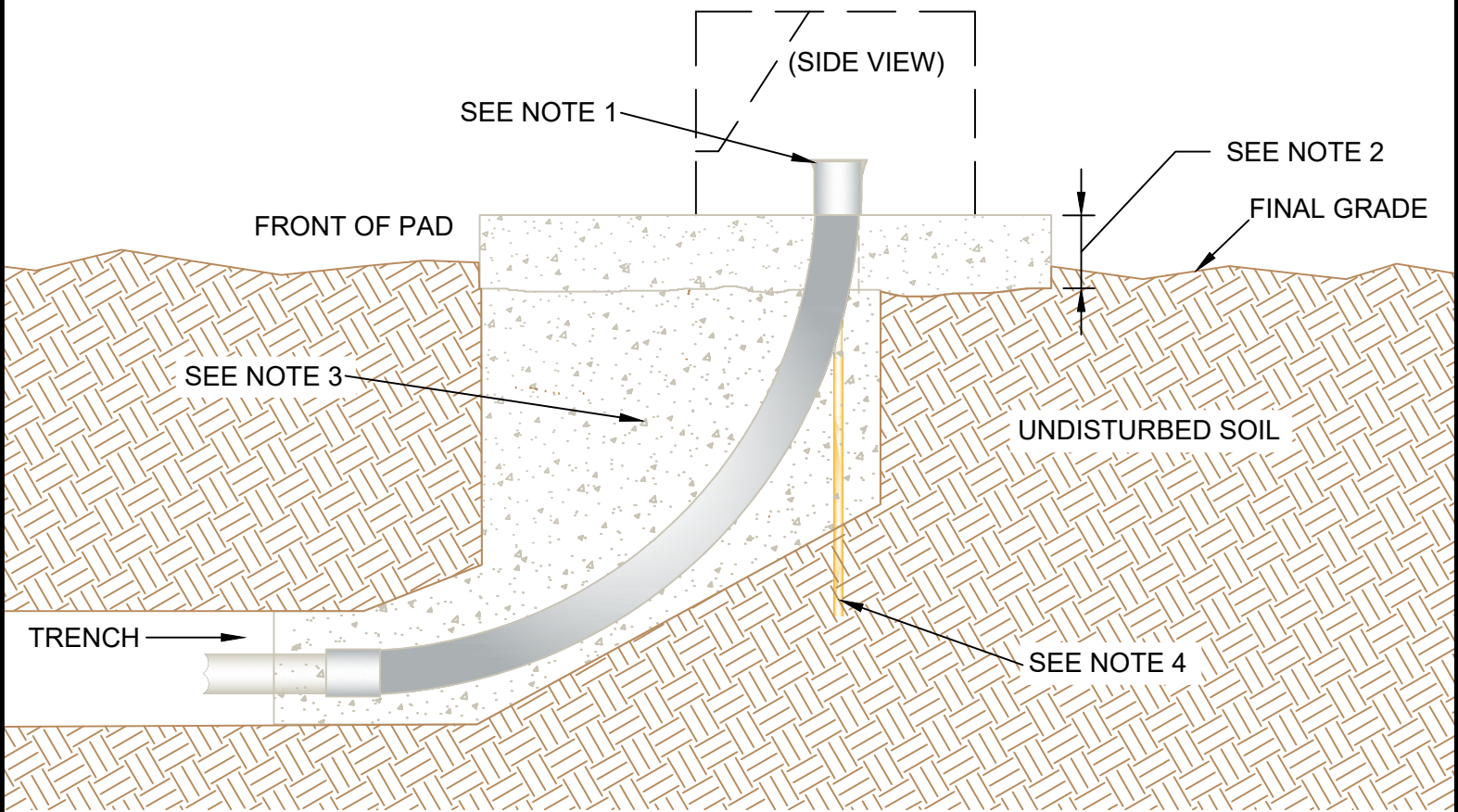


**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**LARGE PAD FOR  
3Ø SECTIONALIZING ENCLOSURE  
PAGE 1 OF 2**

drawn:	approved:	date:	530-022
AMJ	MMG	11/13/2024	

REFERENCE PAGE 1 OF  
510-009 FOR ALL NOTES



REV | B | DATE | 11/13/2024 | REVISION | ISSUE FOR CONSTRUCTION | BY | AMJ | CHK | SSS | APR | MMG



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

LARGE PAD FOR  
3Ø SECTIONALIZING ENCLOSURE  
PAGE 2 OF 2

drawn: AMJ	approved: MMG	date: 11/13/2024	530-022

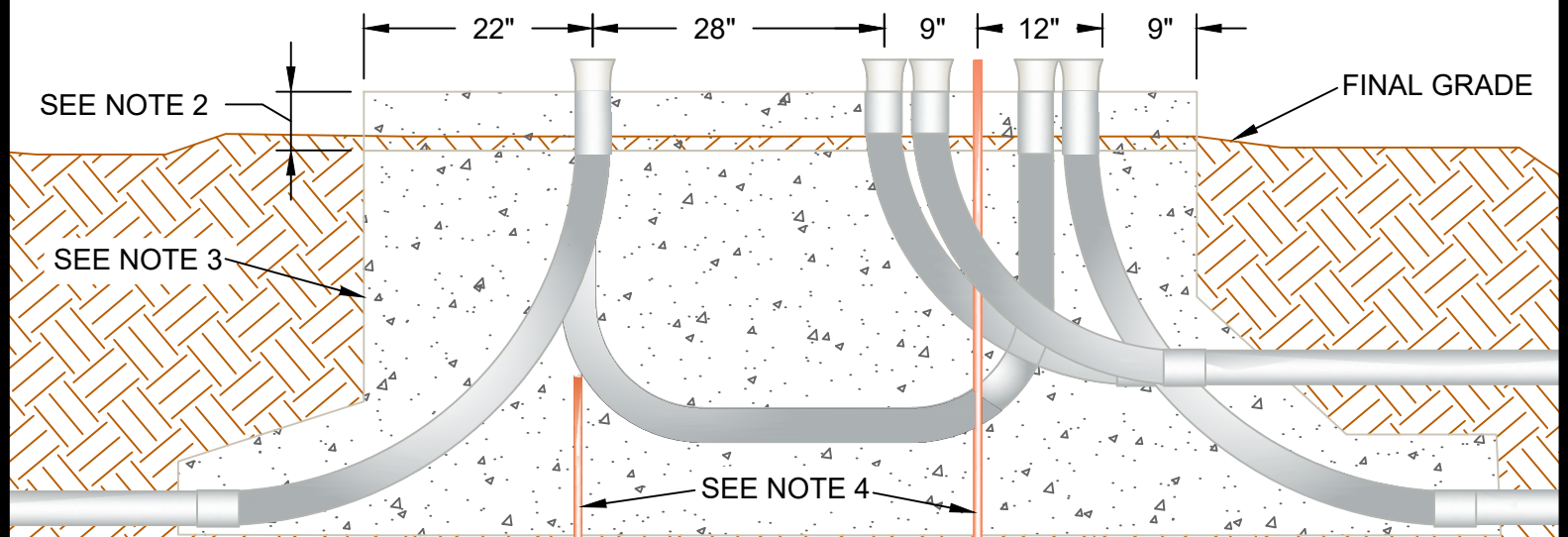
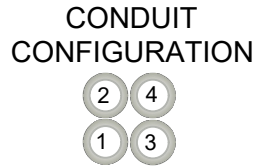
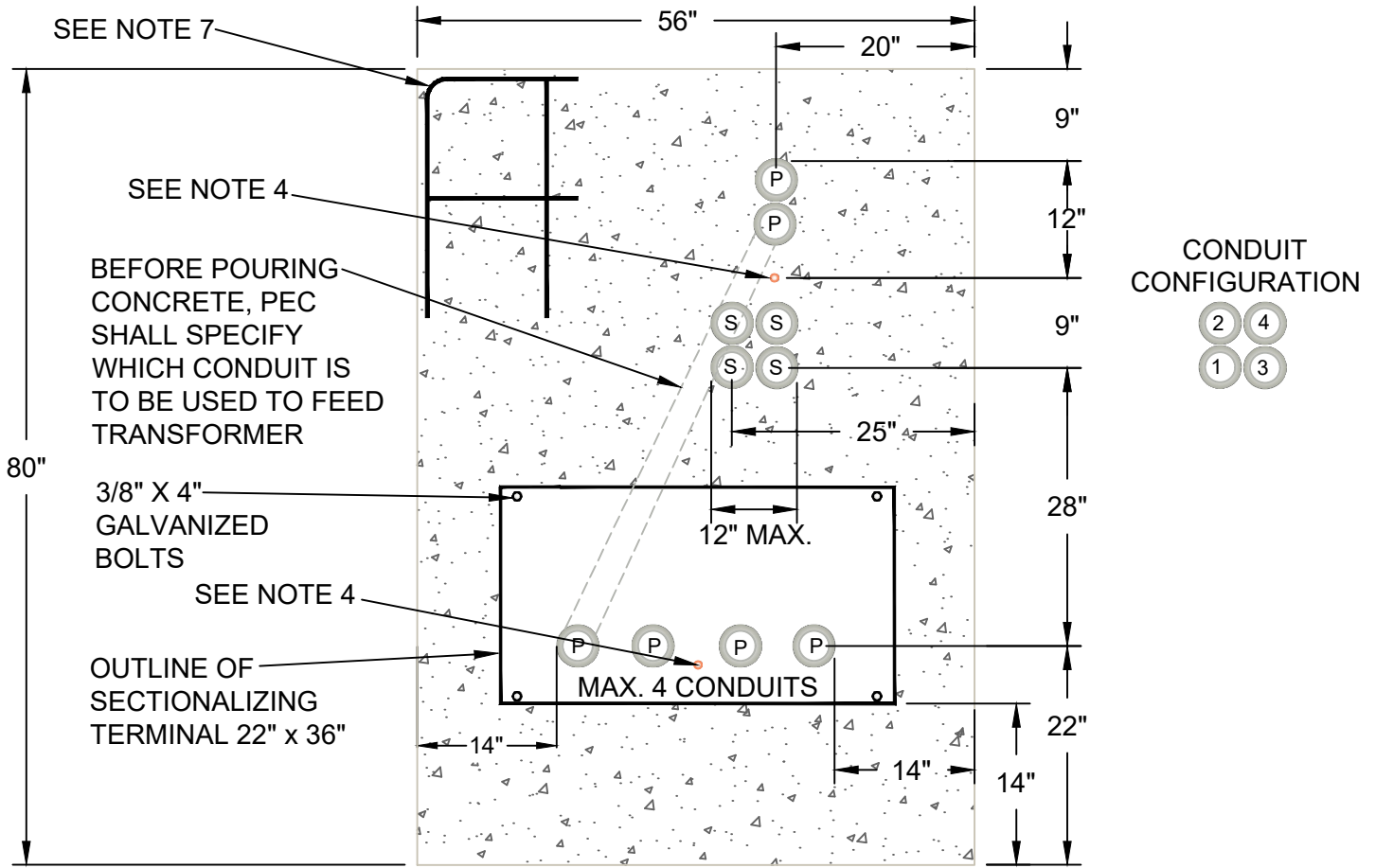
**APPROVED SECTIONALIZING ENCLOSURES:**

- MAYSTEEL-HUBBELL CC336-22TH
- DURHAM 1008823
- ALUMA-FORM ENC-SC1-303622-S2-G-JJA
- AMERICAN PADMOUNT SYSTEMS APS-14S303622-N

**REFERENCE PAGE 1 OF 510-009 FOR ALL NOTES**

**APPROVED ALUMINUM SECTIONALIZING ENCLOSURES:**

- ALUMA-FORM ENC-SC1-303622-A2-G-JJA
- AMERICAN PADMOUNT SYSTEMS ABS303623-N



REV	C	DATE	11/13/2024	REVISION	ADDED ALUMINUM SECTIONALIZERS	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	-------------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**1Ø COMBINATION  
SECTIONALIZING ENCLOSURE  
AND TRANSFORMER PAD**

drawn:	approved:	date:	530-023
AMJ	MMG	11/13/2024	



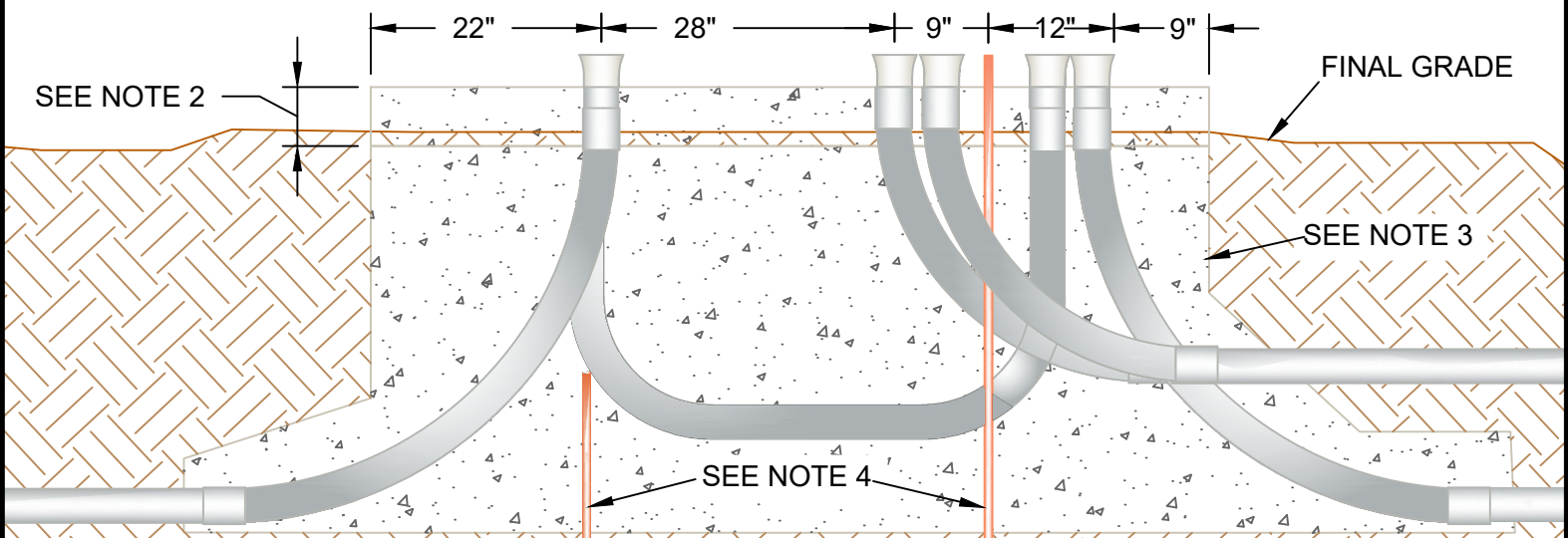
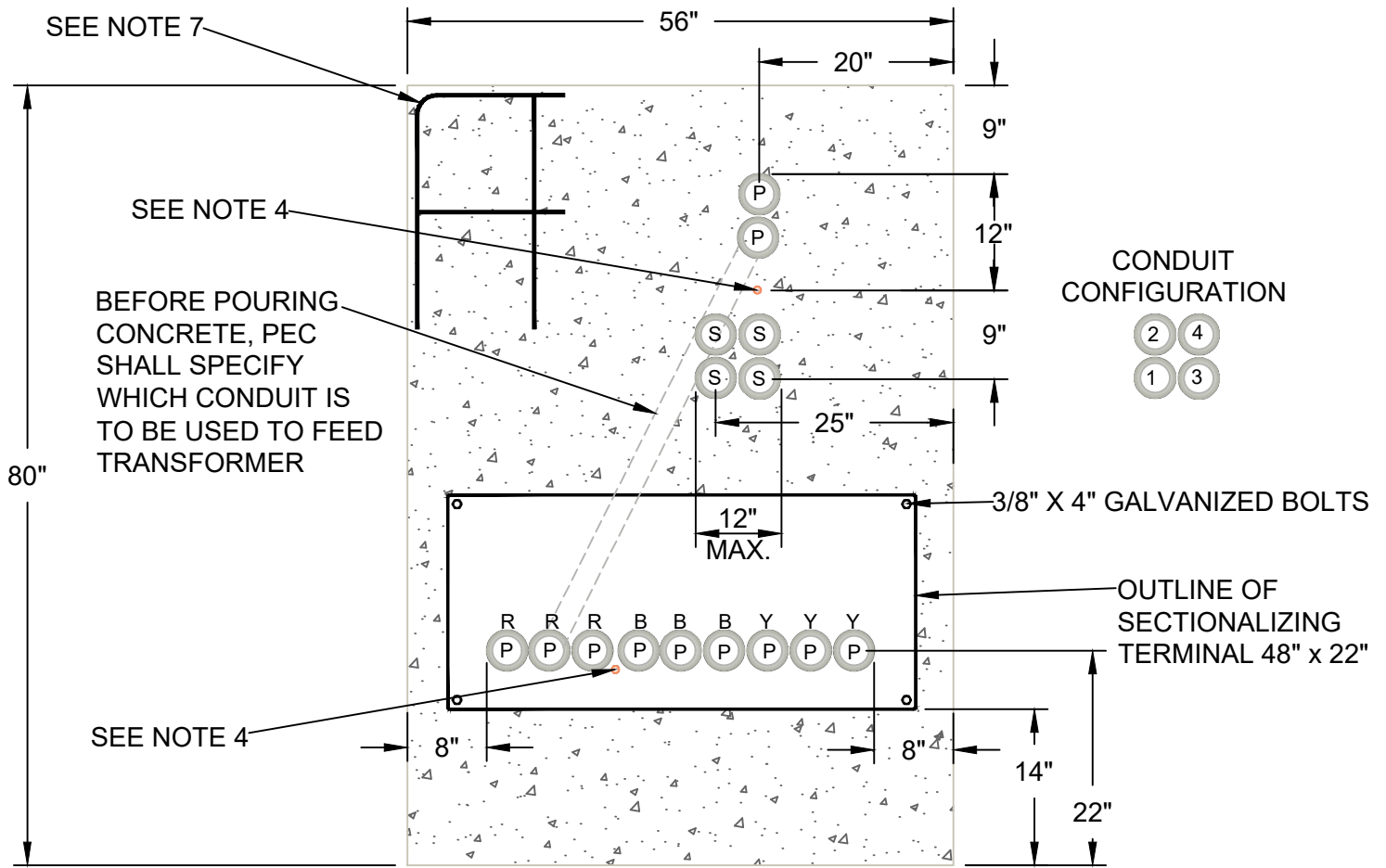
**APPROVED SECTIONALIZING ENCLOSURES:**

- DURHAM 1010188A
- MAYSTEEL-HUBBELL CC348-22TH
- BARFIELD-HUBBELL BGSSE 224830TP
- MALTON-ABB MEH304823
- ALUMA-FORM ENC-SC3-304822-S2-G-JJA
- AMERICAN PADMOUNT SYSTEMS APS-14S304822-UUU

**APPROVED ALUMINUM SECTIONALIZING ENCLOSURES:**

- ALUMA-FORM ENC-SC3-304822-A2-G-JJA
- AMERICAN PADMOUNT SYSTEMS APS304822-UUU

**REFERENCE PAGE 1 OF 510-009 FOR ALL NOTES**



REV	C	DATE	11/13/2024	REVISION	ADDED ALUMINUM SECTIONALIZERS	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	-------------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**SMALL COMBINATION  
SECTIONALIZING ENCLOSURE  
AND TRANSFORMER PAD**

drawn:	approved:	date:	530-024
AMJ	MMG	11/13/2024	

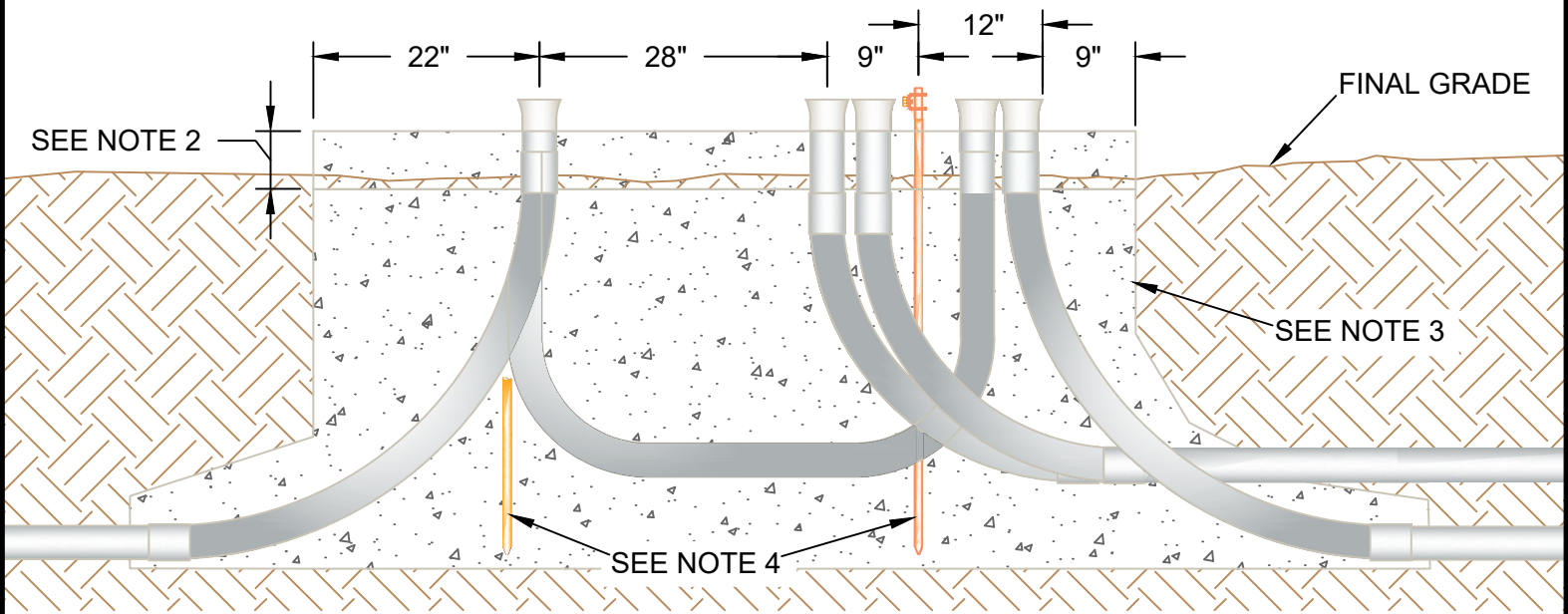
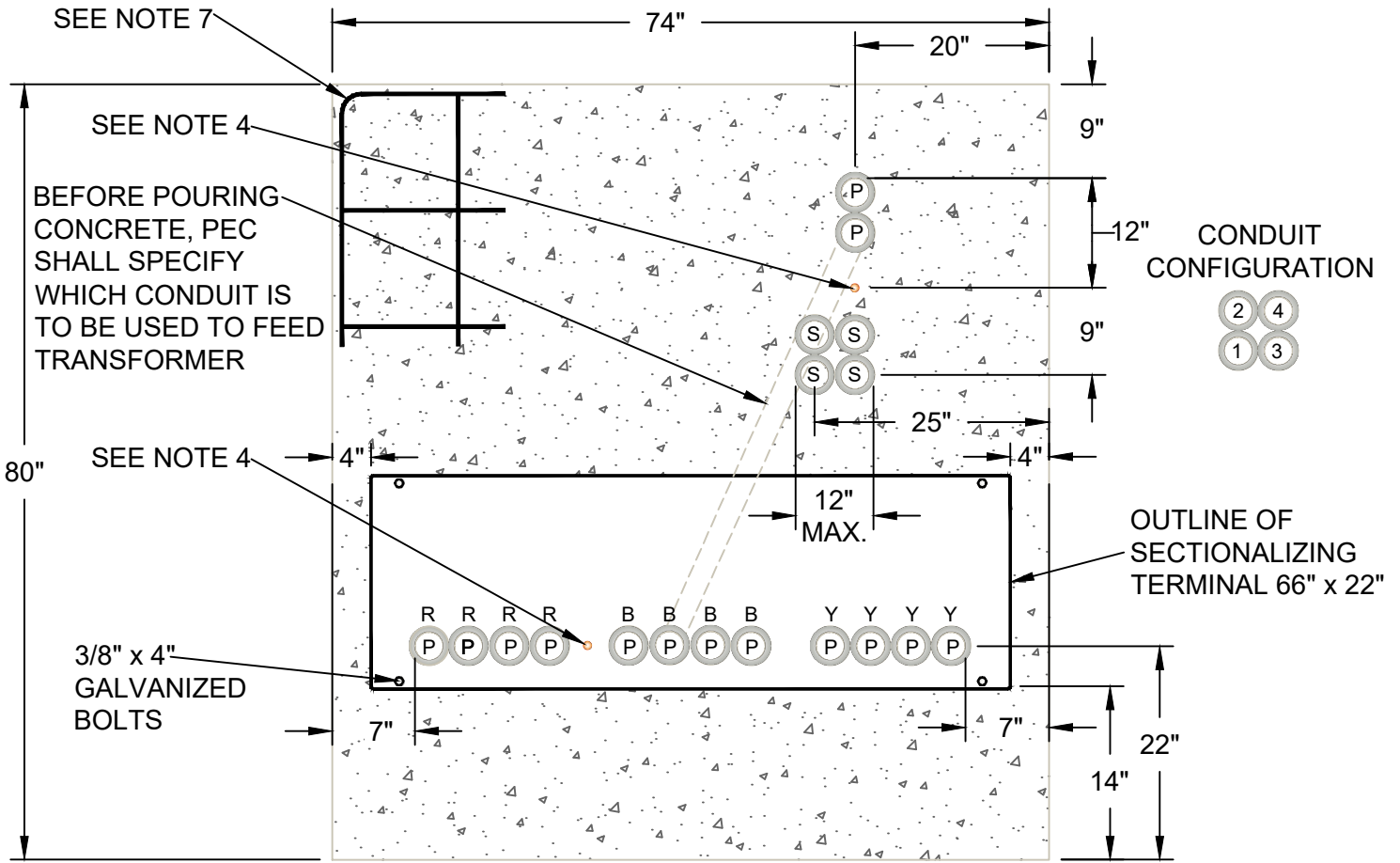
**APPROVED SECTIONALIZING ENCLOSURES:**

- MAYSTEEL-HUBBELL CC366-22TH
- DURHAM AM30662263
- BARFIELD-HUBBELL BGSSE226630TP-H
- ALUMA-FORM ENC-SC3-306622-S2-G-JJA

**APPROVED ALUMINUM SECTIONALIZING ENCLOSURES:**

- ALUMA-FORM ENC-SC3-306622-A2-G-JJA
- AMERICAN PADMOUNT SYSTEMS APS306723-ACACACA

**REFERENCE PAGE 1 OF 510-009 FOR ALL NOTES**



REV	C	DATE	11/13/2024	REVISION	ADDED ALUMINUM SECTIONALIZERS	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	-------------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**LARGE COMBINATION  
SECTIONALIZING ENCLOSURE  
AND TRANSFORMER PAD**

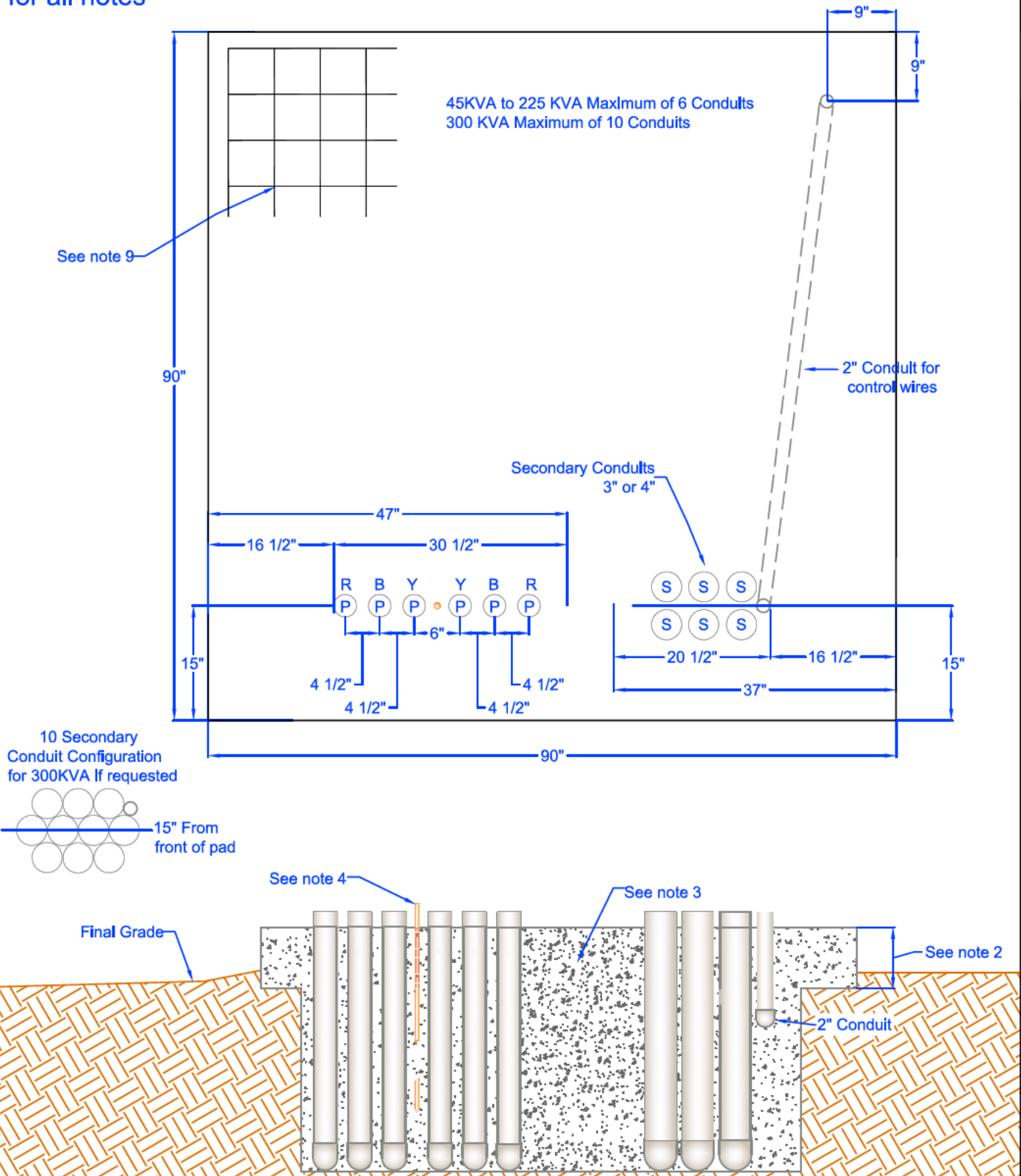
drawn:	approved:	date:	530-026
AMJ	MMG	11/13/2024	

Reference Drawing

510-009-0911

for all notes

12' GATE REQUIRED IF PAD ENCLOSED IN FENCE OF ANY KIND.



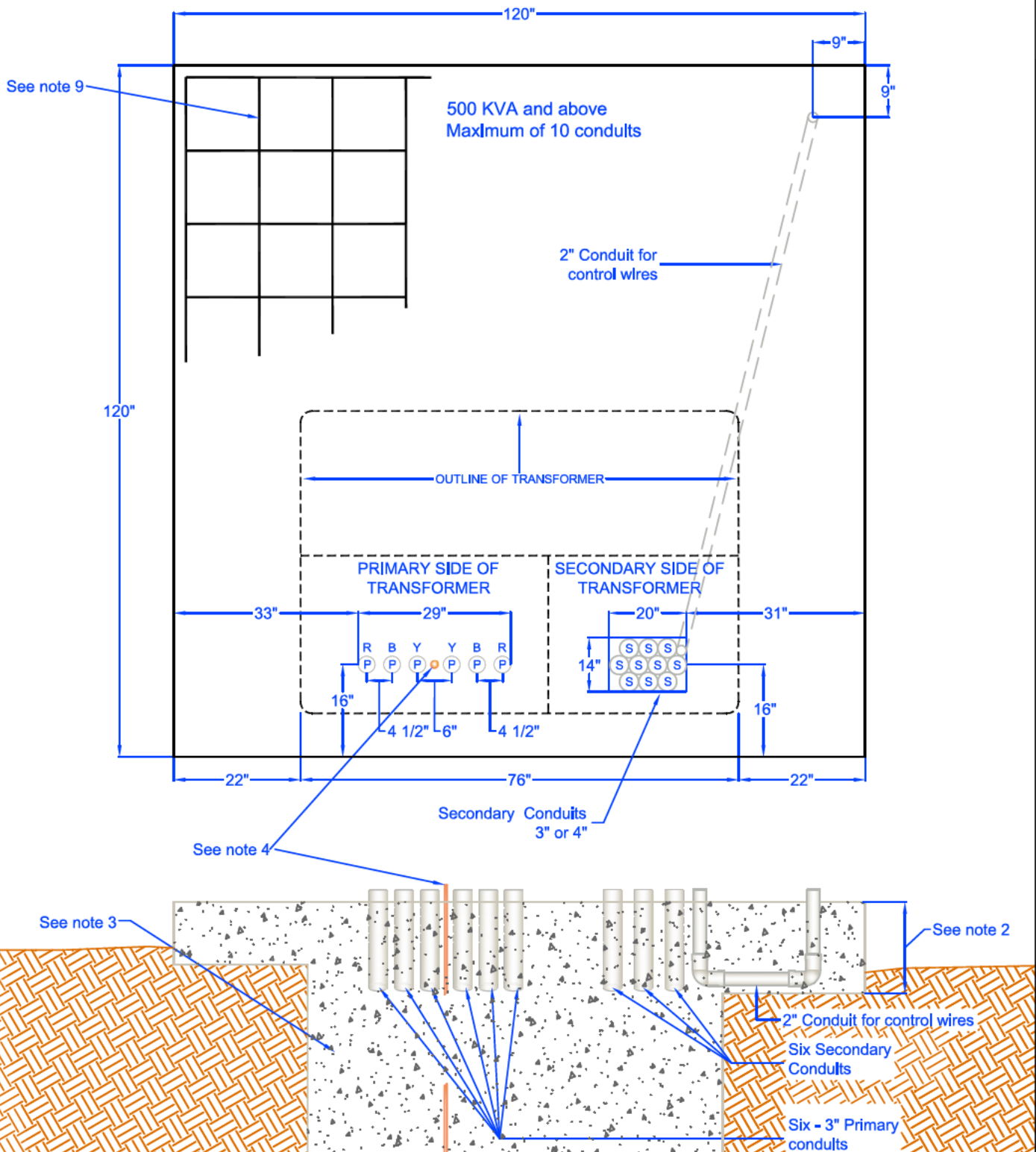
PEDERNALES ELECTRIC  
COOPERATIVE, INC.  
URD DEVELOPER'S SPECIFICATIONS

3Ø Transformer Pad  
45-300 KVA

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	530-030-0911

Reference Drawing  
 510-009-0911  
 for all notes

12' GATE REQUIRED IF PAD ENCLOSED IN FENCE OF ANY KIND.

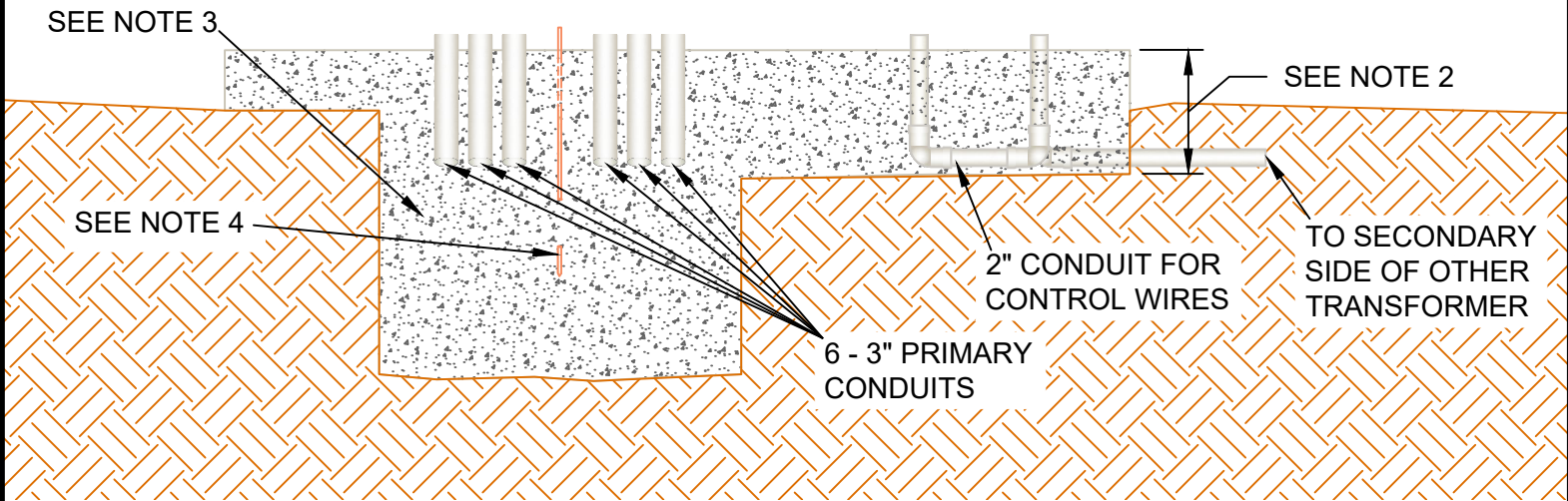
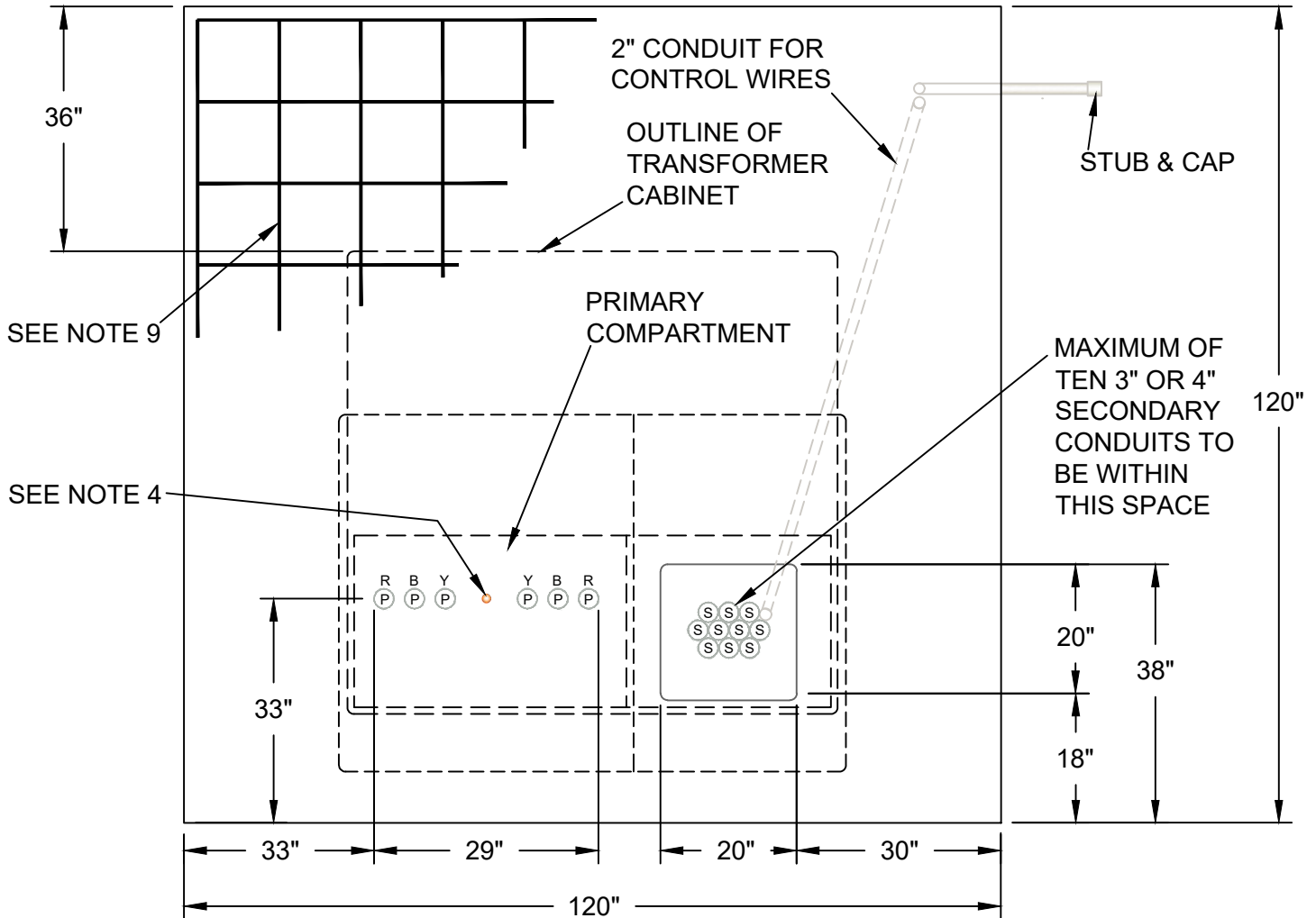


PEDERNALES ELECTRIC  
 COOPERATIVE, INC.  
 URD DEVELOPER'S SPECIFICATIONS

3Ø Transformer Pad  
 500-1500 KVA

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	530-032-0911

12' GATE REQUIRED IF PAD ENCLOSED IN FENCE OF ANY KIND.  
GROUND IN FRONT OF PAD-MOUNTED EQUIPMENT SHALL NOT  
HAVE A SLOPE OF MORE THAN 6" IN 10'.



REV | B | DATE | 11/13/2024 | REVISION | Y B R WAS R B Y | BY | AMJ | CHK | SSS | APR | MMG



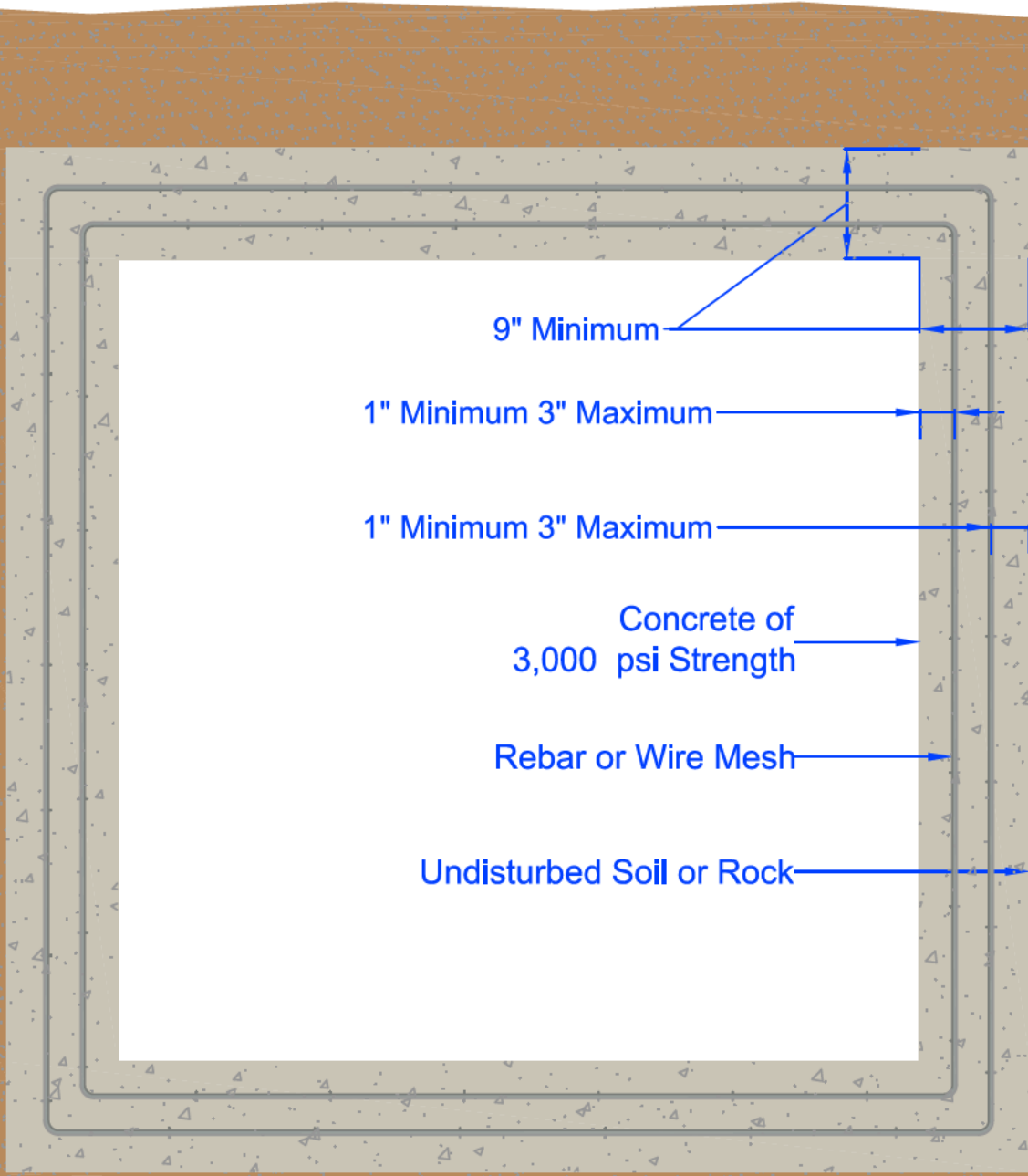
UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

3Ø TRANSFORMER PAD  
2000-3000 kVA

drawn:	approved:	date:	530-034
AMJ	MMG	11/13/2024	

**Notes:**

- 1.) Concrete to be a minimum of 3,000 psi design strength.
- 2.) All walls to be a minimum of 9" thick.
- 3.)  $\frac{3}{8}$ " steel rebar minimum spaced a maximum 12" apart.
- 4.) Footing to extend to undisturbed soil or rock.
- 5.) See individual vault drawings for actual dimensions.



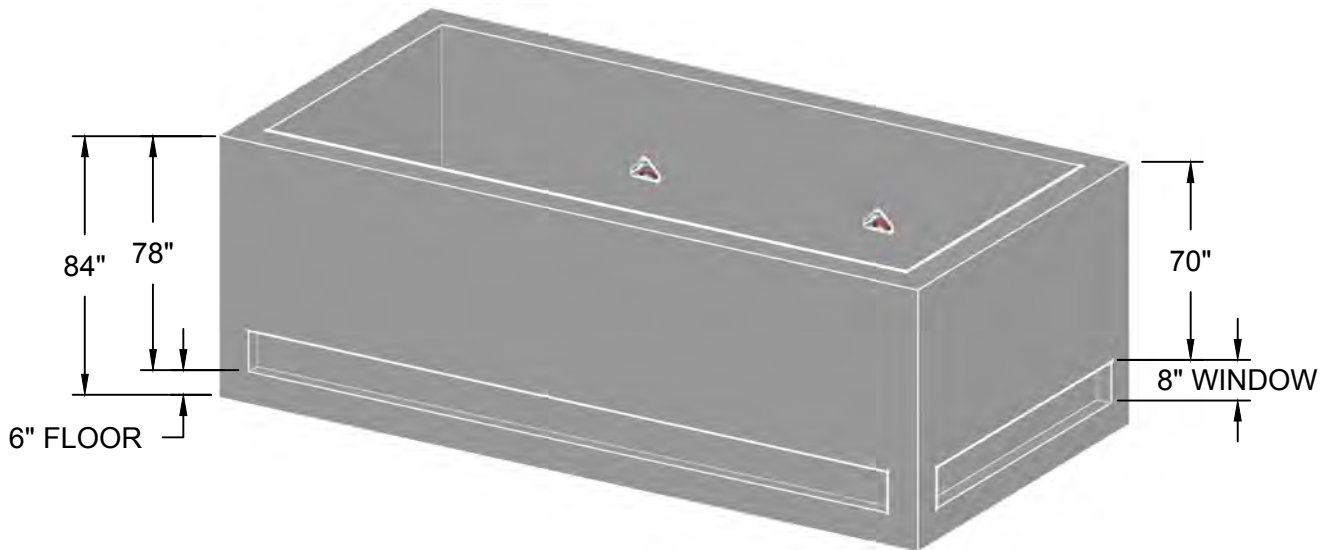
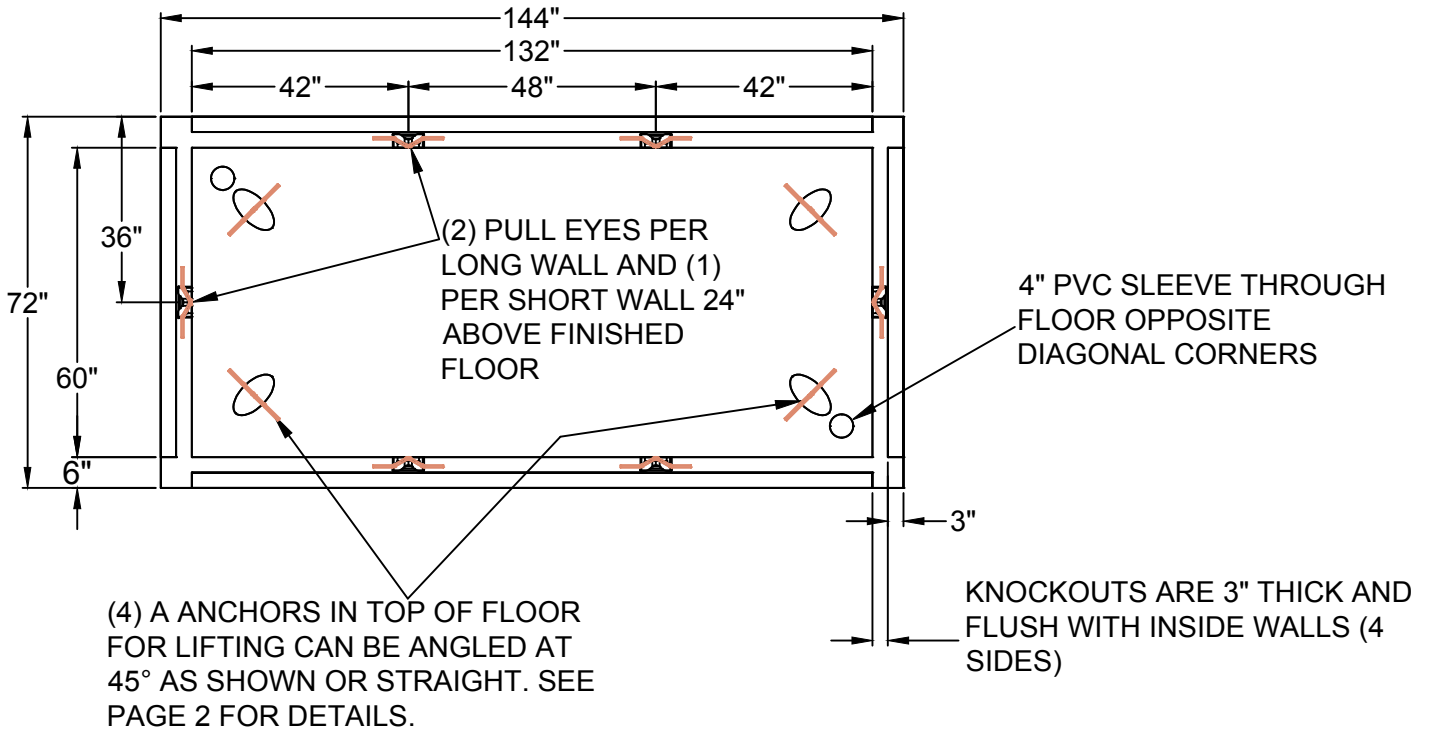
PEDERNALES ELECTRIC  
COOPERATIVE, INC.  
URD DEVELOPER'S SPECIFICATIONS

**General Specifications for  
Poured in Place Vaults**

drawn:	approved	date:	drawing number:
JBS	MJB	December 12, 2011	530-040-0911

**NOTES:**

- 1) SHORT WALLS SHALL HAVE ONE PULLING EYE CENTERED AND AT 24" FROM THE BOTTOM OF THE VAULT. LONG WALLS SHALL HAVE TWO PULLING EYES LOCATED 48" APART, EVENLY SPACED BETWEEN INSIDE WALLS, AND 24" FROM THE BOTTOM OF THE VAULT.
  - 2) ALL PULLING EYES SHALL BE RATED FOR A MINIMUM OF 5,000 POUNDS EACH.
  - 3) 6" ABOVE THE BOTTOM OF THE VAULT, AN 8" KNOCKOUT SHALL EXTEND AROUND THE ENTIRE PERIMETER OF THE VAULT (EXCEPT FOR 6" FROM EACH CORNER) FOR CONDUIT TO BE BROUGHT IN. KNOCKOUTS SHOULD BE 3" THICK AND FLUSH WITH THE INSIDE OF THE VAULT. THE VAULT SHALL BE 7' DEEP.
  - 4) THE VAULT SHALL BE INSTALLED ON A MINIMUM 6" DEEP BED OF 1/2" TO 3/4" DIAMETER GRAVEL.
- (NOTES CONTINUED ON NEXT PAGE.)



REV C DATE 07/23/2020 REVISION NOTE 5: 3/4" X 10' GROUND ROD WAS 8' GROUND ROD BY RWC CHK SSS APR MMG



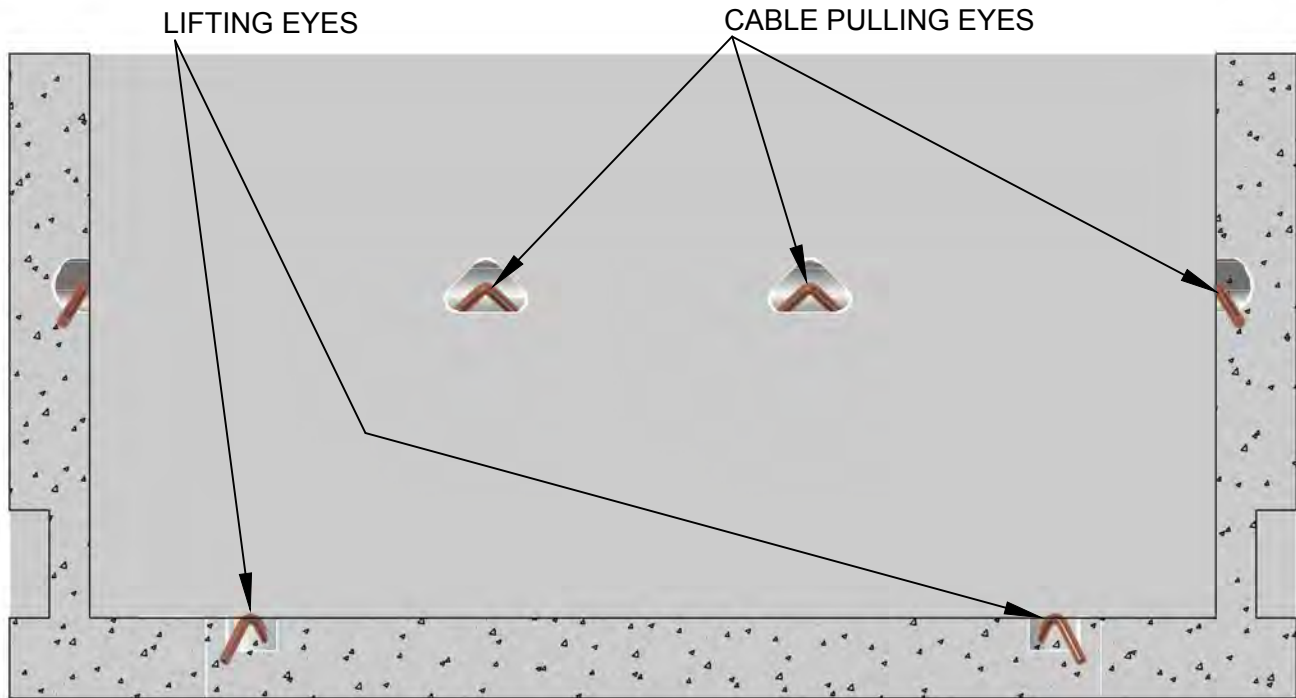
**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**VAULT FOR SUBMERSIBLE  
SWITCHGEAR AND SPLICE BOX  
PAGE 1 OF 2**

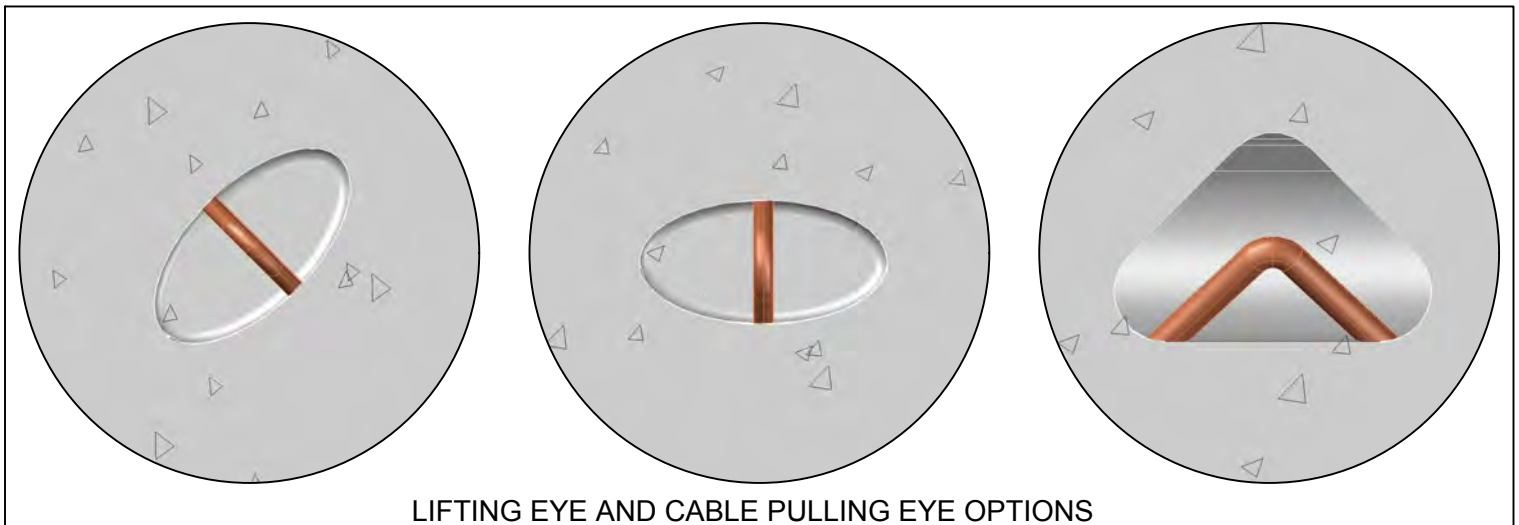
drawn:	approved:	date:	530-050
RWC	MMG	07/23/2020	

NOTES CONTINUED:

- 5) EACH VAULT SHALL BE SUPPLIED WITH EITHER A 3/4" X 10' GROUND ROD DRIVEN IN THE VAULT FLOOR OR A MINIMUM 100 FEET OF #6 BARE COPPER WIRE BURIED NO LESS THAN 18" DEEP IN THE EARTH AND MEETING THE NATIONAL ELECTRICAL SAFETY CODE RULE #094B3.
- 6) ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- 7) LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.
- 8) VAULT CAN BE MADE WITH NO BOTTOM. IT WILL BE 84" TALL, WITH 4 WALLS ON A BED OF 1/2" TO 3/4" DIAMETER GRAVEL.



SECTION THROUGH LIFTING EYES AND CABLE PULLING EYES



LIFTING EYE AND CABLE PULLING EYE OPTIONS

REV | C | DATE | 07/23/2020 | REVISION | NOTE 5: 3/4" X 10' GROUND ROD WAS 8' GROUND ROD | BY | RWC | CHK | SSS | APR | MMG



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

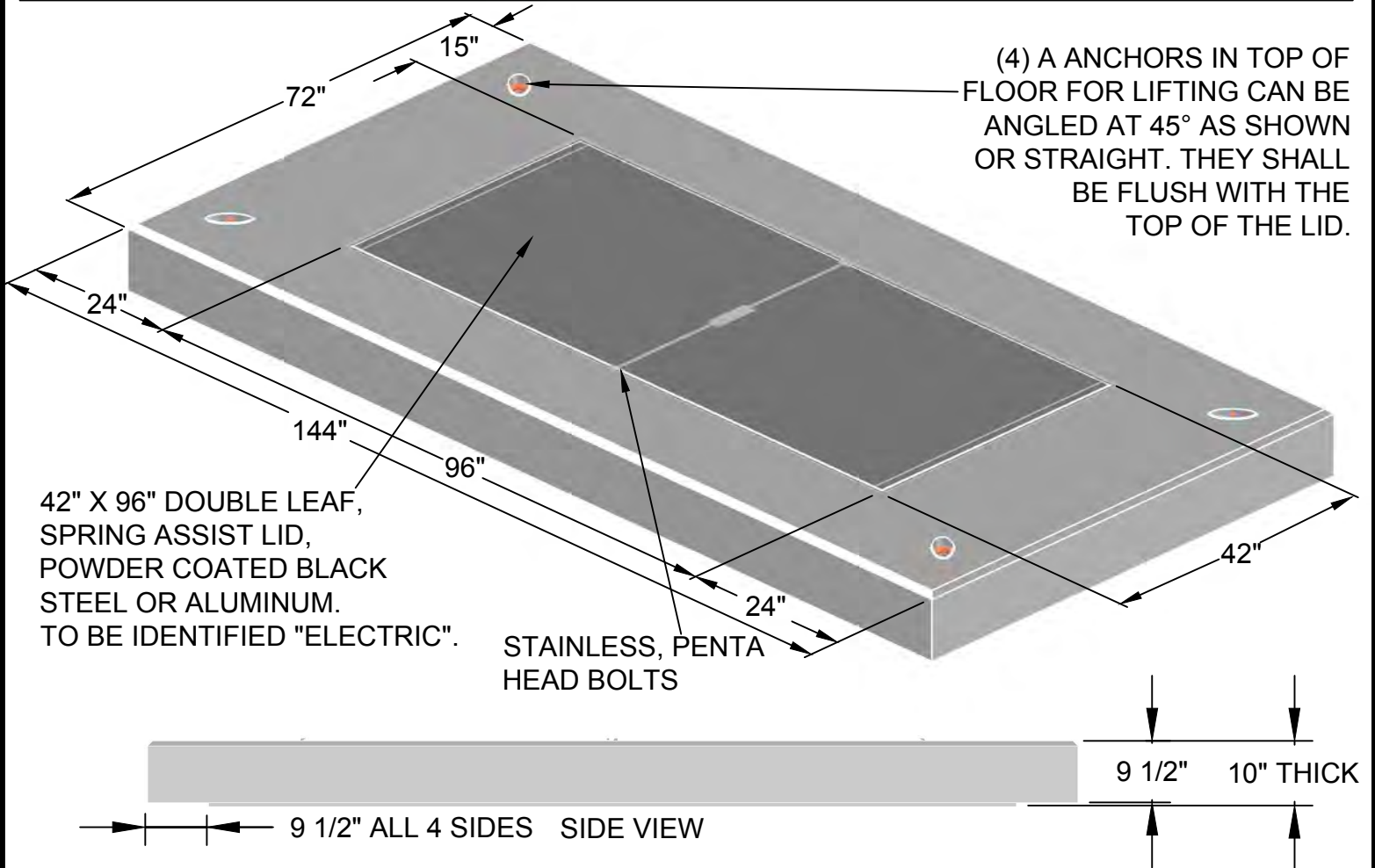
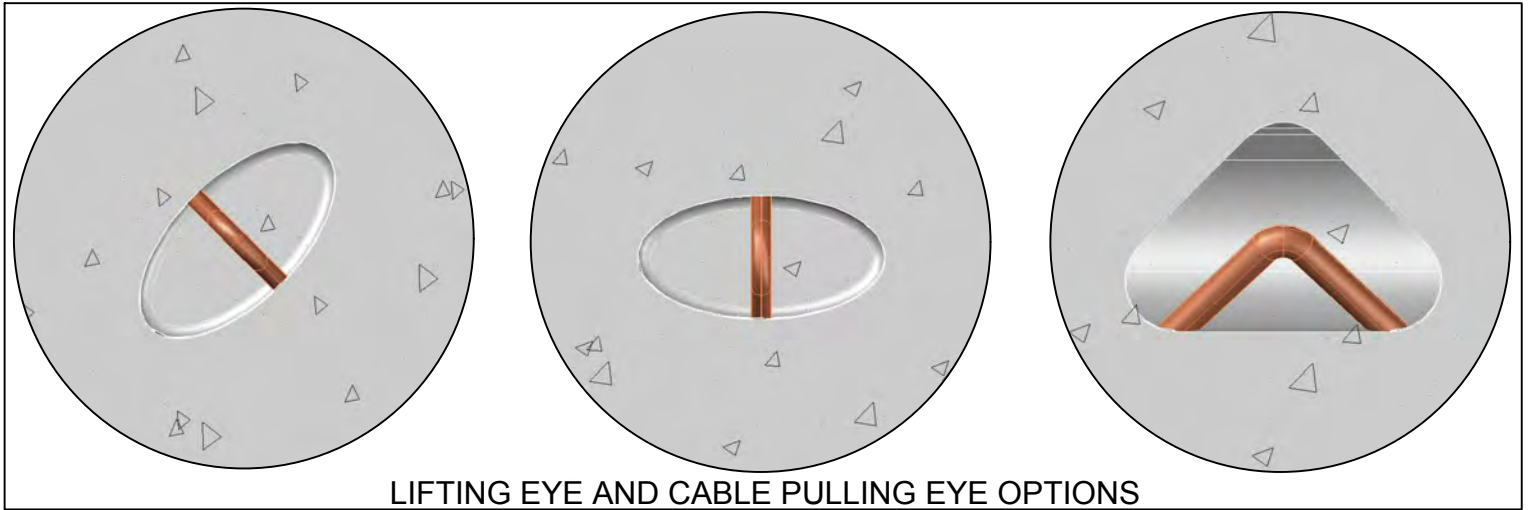
VAULT FOR SUBMERSIBLE  
SWITCHGEAR AND SPLICE BOX  
PAGE 2 OF 2

drawn:	approved:	date:	530-050
RWC	MMG	07/23/2020	



**GENERAL NOTES:**

- ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- ALL LIFTING AND PULLING EYES SHALL BE RATED FOR A MINIMUM 5,000 POUNDS EACH.
- LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.



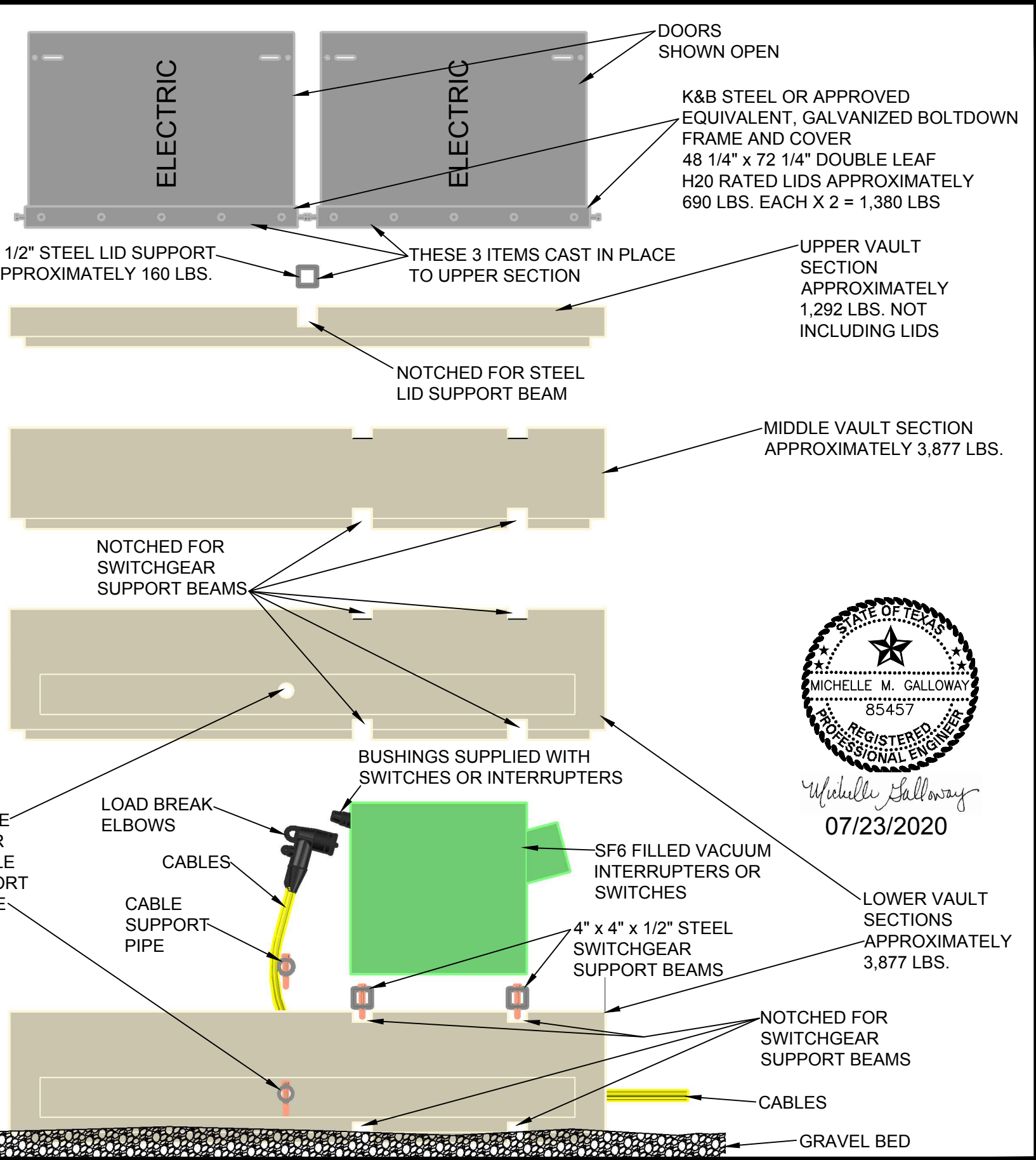
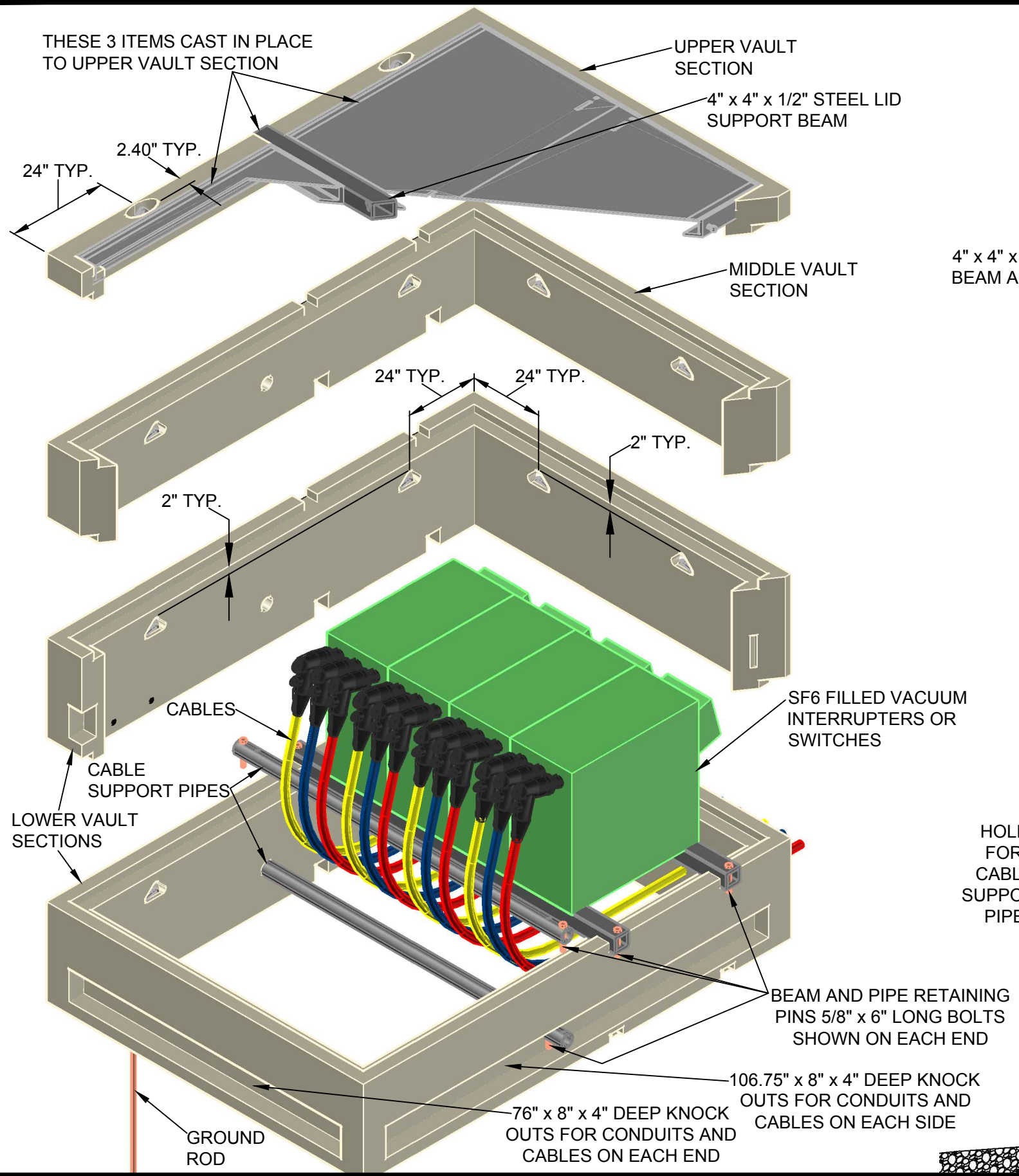
REV | A | DATE | 02/15/2019 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**LID FOR SUBMERSIBLE  
SWITCHGEAR AND SPLICE BOX  
(FOR USE WITH VAULT 530-050)**

drawn:	approved:	date:	<b>530-051</b>
RWC	MMG	02/15/2019	



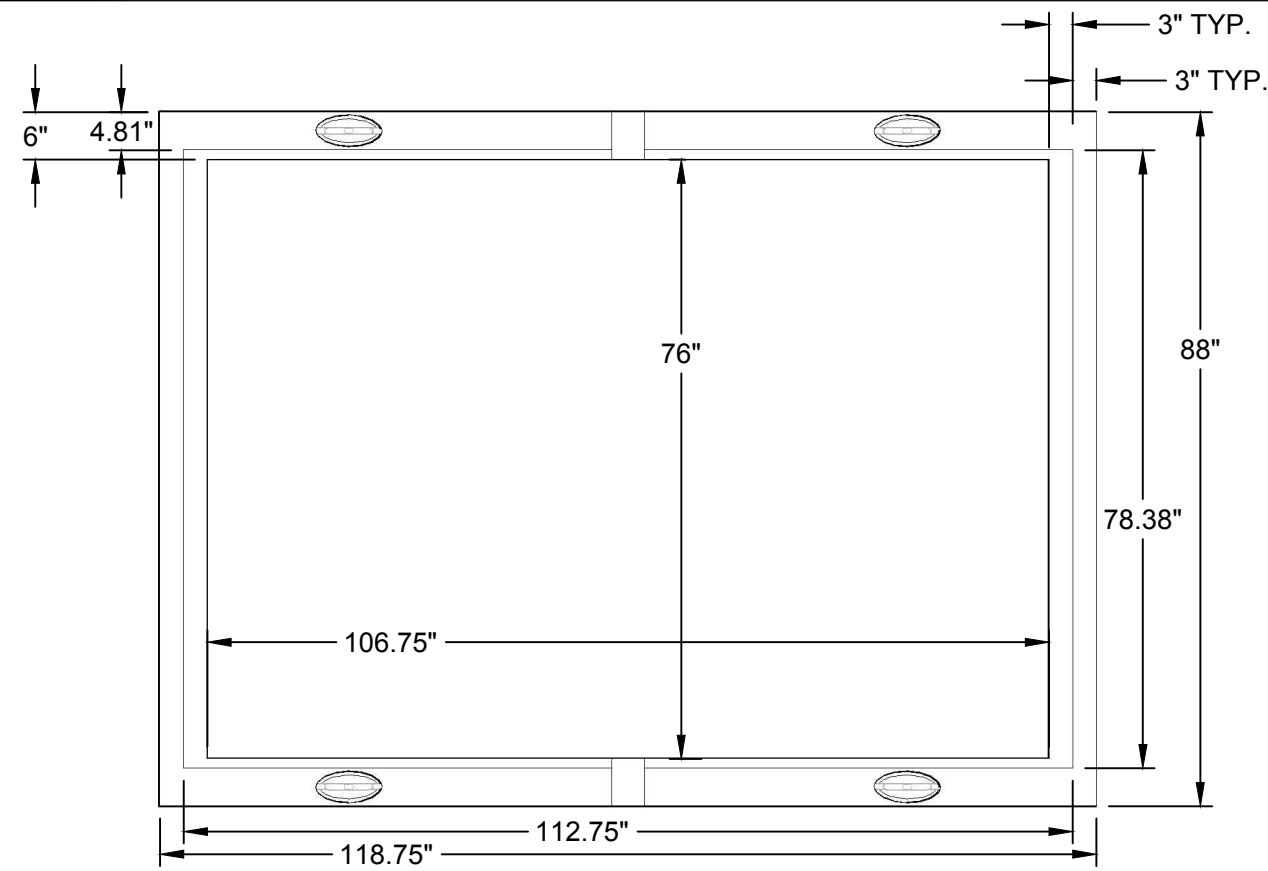
**UNDERGROUND INSTALLATION SPECIFICATIONS**

REV	DATE	REVISION	BY	CHK	APR	REV	DATE	REVISION	BY	CHK	APR
						B	07/23/2020	GROUND ROD TO 3/4" X 10'	RWC	SSS	MMG

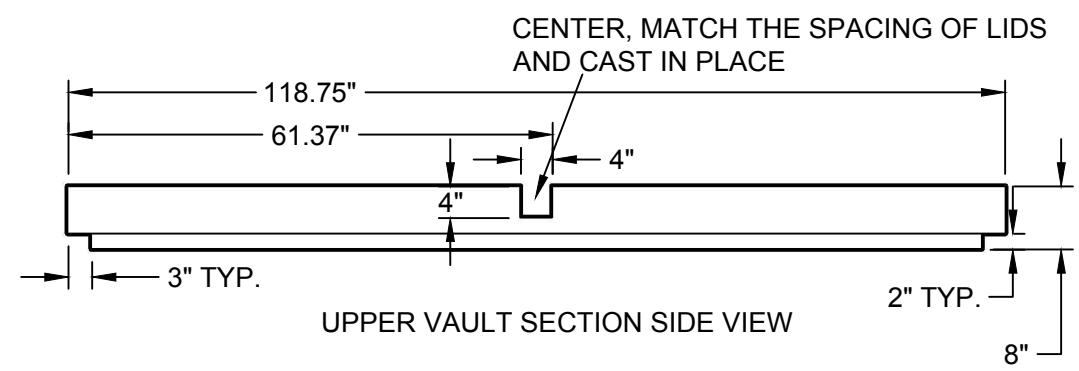
VAULT FOR SWITCHGEAR STACKABLE SECTIONS WITH SQUARE STEEL TUBING FOR SWITCHGEAR SUPPORT AND TWO SETS DOUBLE DOOR CAST-IN-PLACE LIDS

drawn: RWC    approved: MMG    date: 07/23/2020

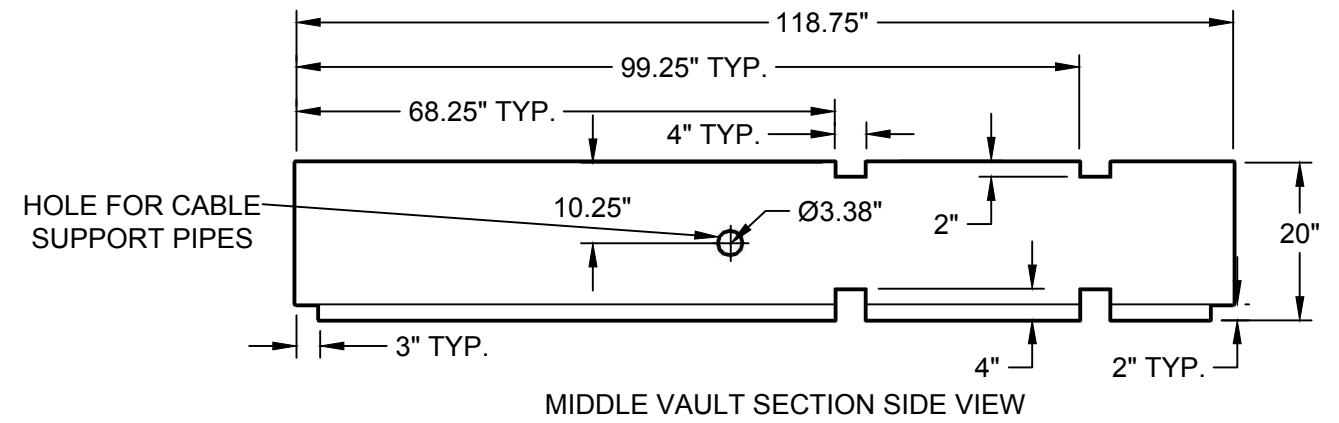
**530-052**  
PAGE 1 OF 4



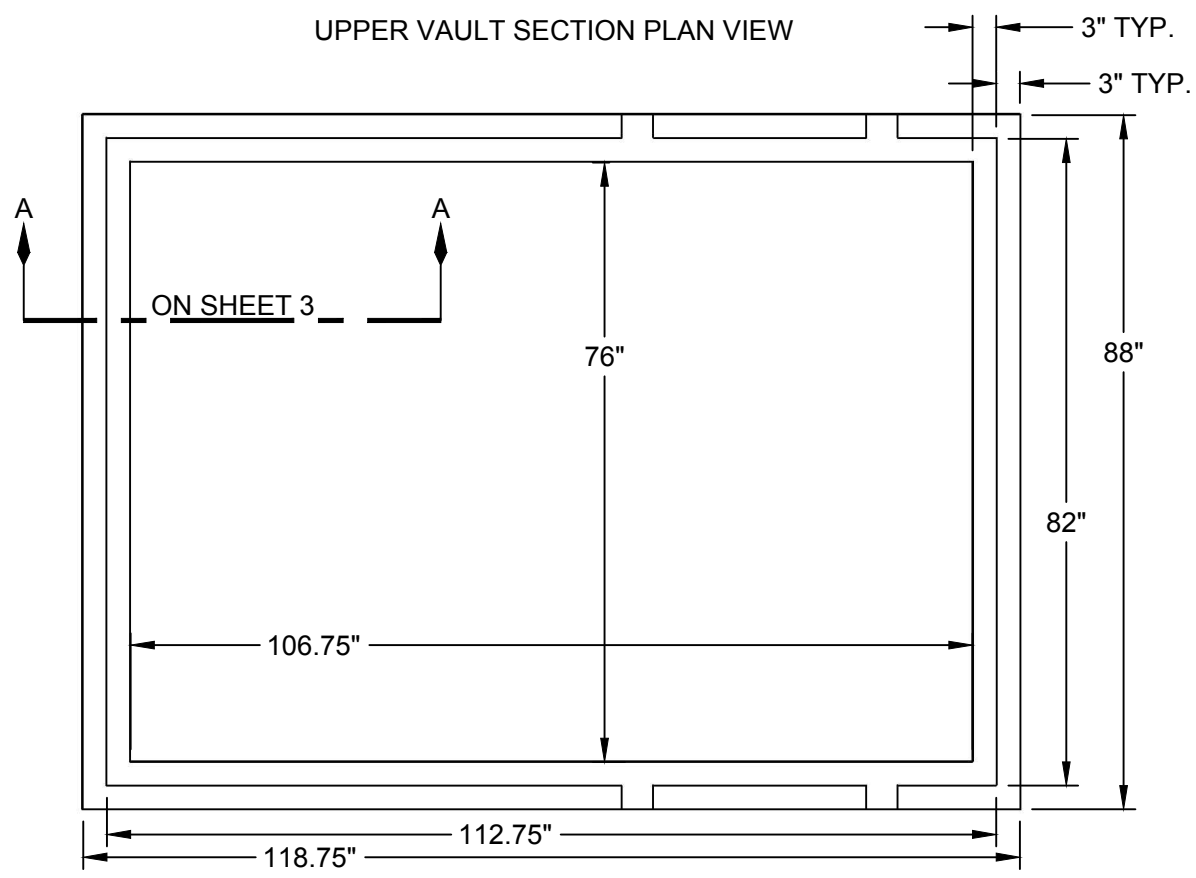
UPPER VAULT SECTION PLAN VIEW



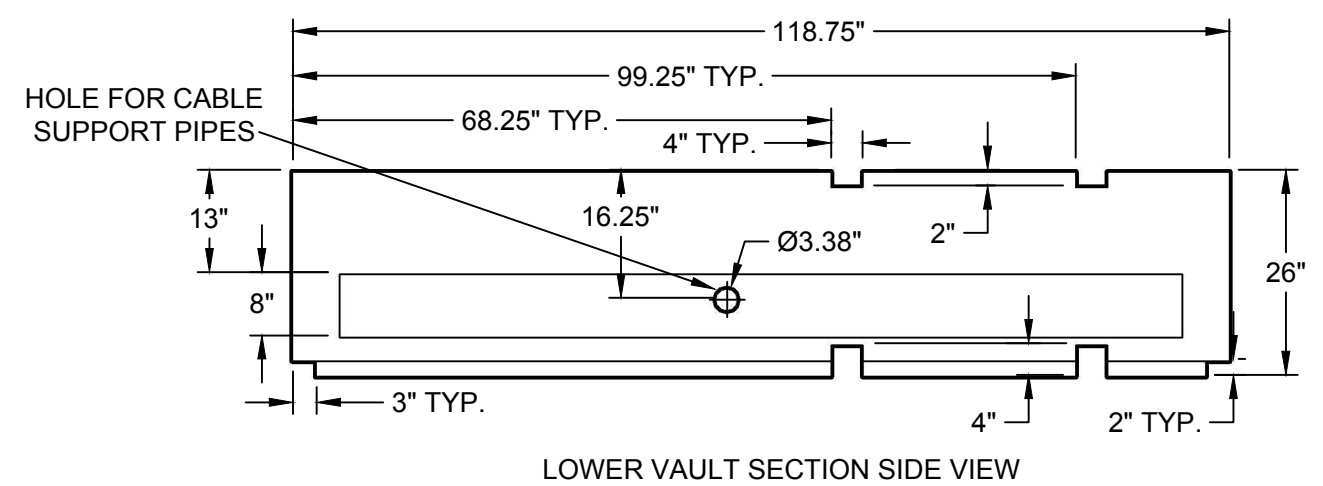
UPPER VAULT SECTION SIDE VIEW



MIDDLE VAULT SECTION SIDE VIEW



MIDDLE AND LOWER VAULT SECTION PLAN VIEW



LOWER VAULT SECTION SIDE VIEW



*Michelle Galloway*  
07/23/2020

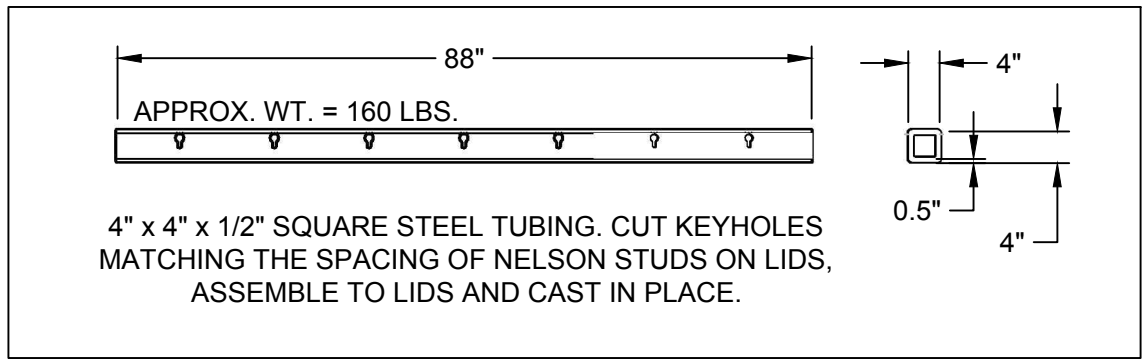


UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

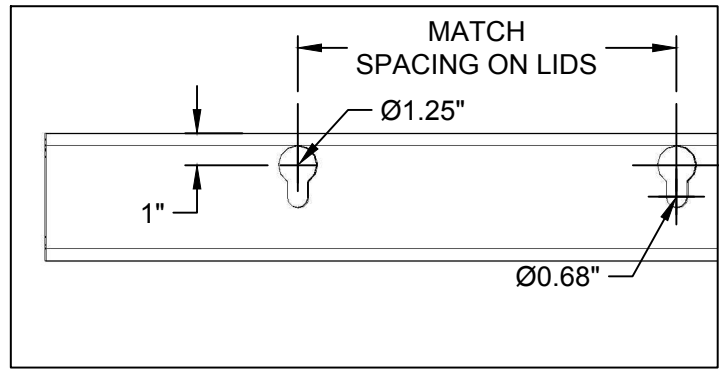
REV	DATE	REVISION	BY	CHK	APR	REV	DATE	REVISION	BY	CHK	APR
						B	07/23/2020	GROUND ROD TO 3/4" X 10'	RWC	SSS	MMG

VAULT FOR SWITCHGEAR  
STACKABLE SECTIONS WITH SQUARE STEEL  
TUBING FOR SWITCHGEAR SUPPORT AND  
TWO SETS DOUBLE DOOR CAST-IN-PLACE LIDS

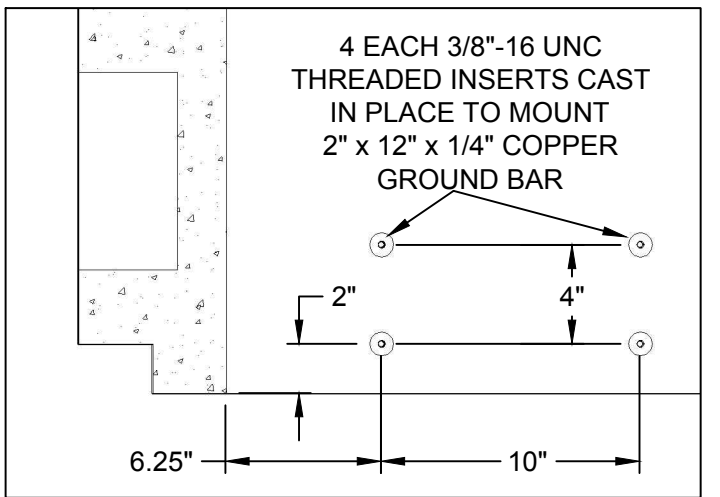
drawn:	approved:	date:
RWC	MMG	07/23/2020



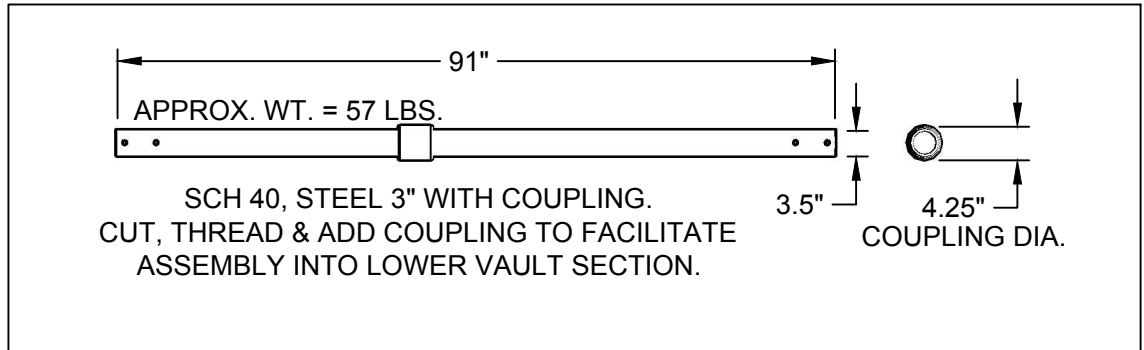
LID SPACING BEAM



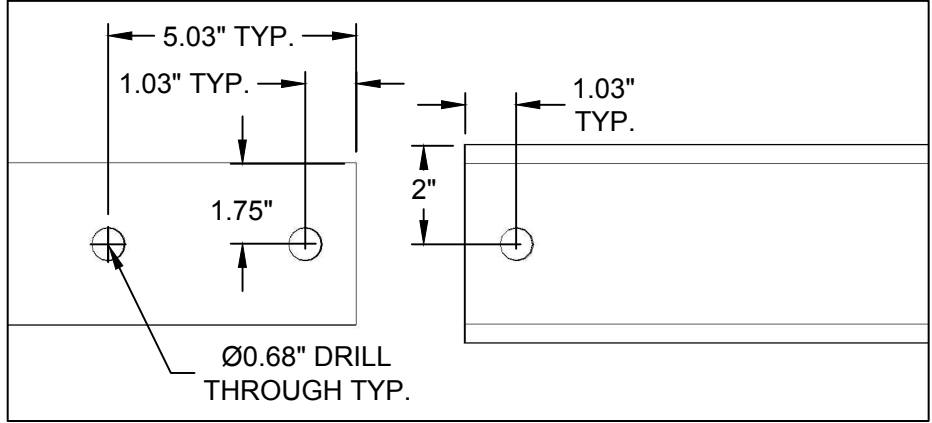
LID SPACING BEAM DRILLING DETAIL (BOTH SIDES)



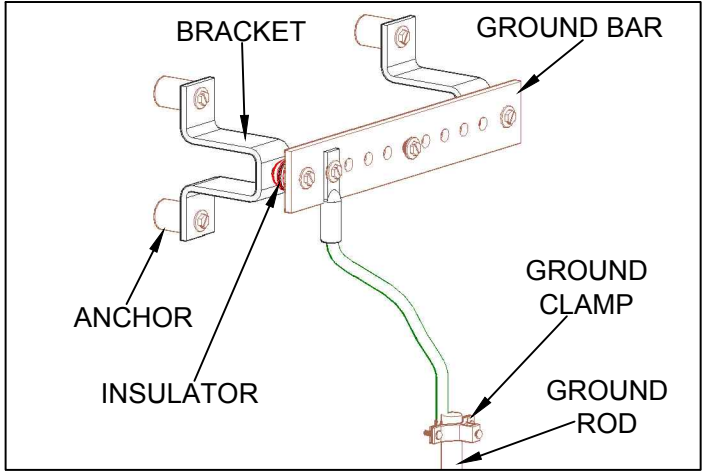
LOWER VAULT SECTION A-A



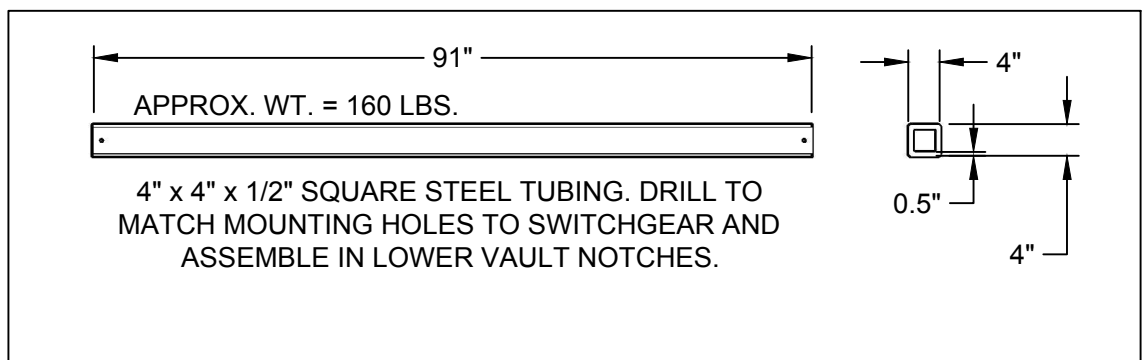
CABLE SUPPORT PIPES



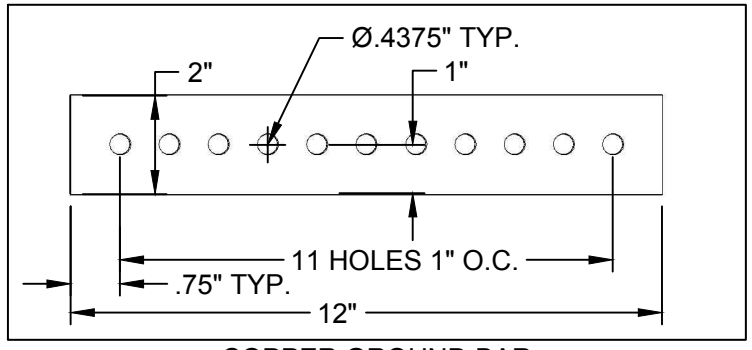
CABLE SUPPORT PIPES AND SWITCHGEAR SUPPORT BEAMS DRILLING DETAIL (BOTH ENDS)



GROUND BAR ASSEMBLY DETAIL



SWITCHGEAR SUPPORT BEAMS



COPPER GROUND BAR



*Michelle Galloway*  
07/23/2020



UNDERGROUND INSTALLATION SPECIFICATIONS

REV	DATE	REVISION	BY	CHK	APR	REV	DATE	REVISION	BY	CHK	APR
						B	07/23/2020	GROUND ROD TO 3/4" X 10'	RWC	SSS	MMG

VAULT FOR SWITCHGEAR STACKABLE SECTIONS WITH SQUARE STEEL TUBING FOR SWITCHGEAR SUPPORT AND TWO SETS DOUBLE DOOR CAST IN PLACE LIDS

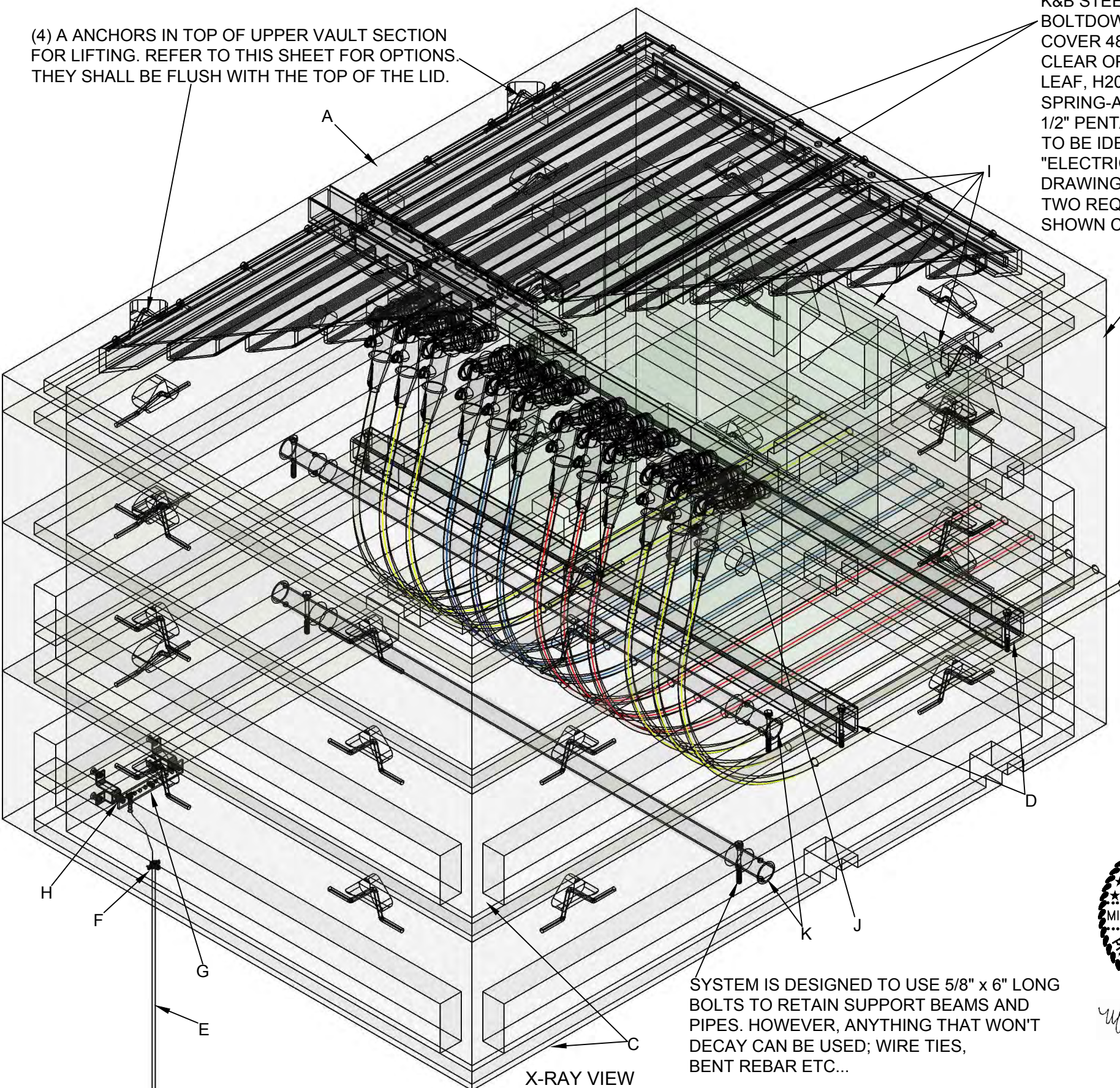
drawn:	approved:	date:
RWC	MMG	07/23/2020

(4) A ANCHORS IN TOP OF UPPER VAULT SECTION FOR LIFTING. REFER TO THIS SHEET FOR OPTIONS. THEY SHALL BE FLUSH WITH THE TOP OF THE LID.

K&B STEEL, GALVANIZED BOLTDOWN FRAME AND COVER 48 1/4" x 72 1/4" CLEAR OPENING, DOUBLE LEAF, H20 RATED, SPRING-ASSIST LIDS AND 1/2" PENTA HEAD BOLTS. TO BE IDENTIFIED "ELECTRIC". REFER TO K&B DRAWING DATED 02-02-17. TWO REQ'D. DOORS SHOWN CUT AWAY.

GENERAL NOTES:

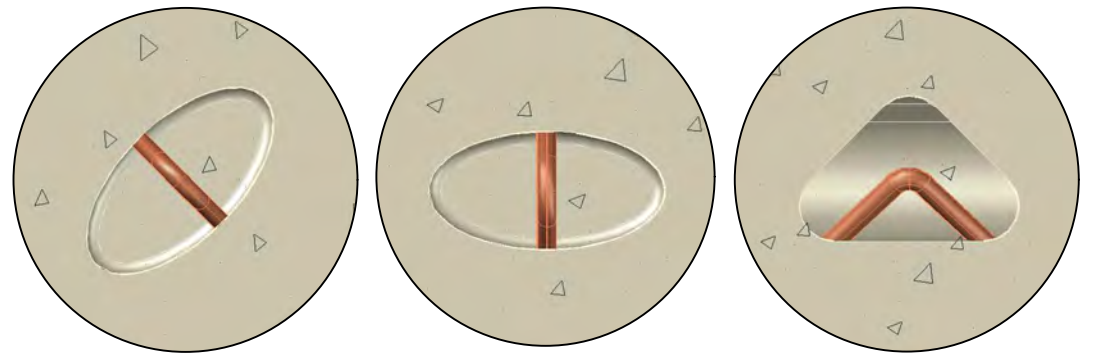
- ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- ALL LIFTING AND PULLING EYES SHALL BE RATED FOR A MINIMUM 5,000 POUNDS EACH.
- LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.
- ANCHORS IN SIDE WALLS OF VAULT SECTIONS FOR LIFTING CAN BE ANGLED AT 45° AS SHOWN OR STRAIGHT. THEY SHALL BE FLUSH WITH THE SIDE WALLS.



ITEM	DESCRIPTION	QTY
A	UPPER VAULT SECTION WITH CAST-IN-PLACE LIDS AND 4" x 4" x 1/2" SQUARE TUBE CENTER SUPPORT BEAM	1
B	MIDDLE VAULT SECTION WITH (INSTALL IF REQUIRED) CABLE SUPPORT PIPE AND GROUND BAR MOUNTING INSERTS	1
C	LOWER VAULT SECTION WITH (INSTALL IF REQUIRED) CABLE SUPPORT PIPE AND GROUND BAR MOUNTING INSERTS	2
D	4" x 4" x 1/2" STEEL SQUARE TUBE SWITCHGEAR SUPPORT BEAMS DRILLED TO MATCH SWITCHGEAR MOUNTING HOLES AS SHOWN ON PAGE 3	2
E	GROUND ROD 3/4" x 10' COPPER	1
F	GROUND ROD CLAMPING NUT 7/8" & GROUND WIRE	1
G	2" x 12" x 1/4" COPPER GROUND BAR DRILLED AS SHOWN ON PAGE 3	1
H	GROUND BAR MOUNTING INSULATORS	2
I	SWITCHGEAR UNDERGROUND SF6 GAS FILLED	1
J	CONNECTOR URD LOAD BREAK ELBOW 25KV	12
K	3" SCH 40 STEEL PIPE WITH COUPLING CUT AND DRILLED FOR RETAINING BOLTS AS SHOWN ON PAGE 3	AS REQ'D

\* DENOTES "GRAB BAG" ITEM

SYSTEM IS DESIGNED TO USE 5/8" x 6" LONG BOLTS TO RETAIN SUPPORT BEAMS AND PIPES. HOWEVER, ANYTHING THAT WON'T DECAY CAN BE USED; WIRE TIES, BENT REBAR ETC...



LIFTING EYE AND CABLE PULLING EYE OPTIONS



UNDERGROUND INSTALLATION SPECIFICATIONS

REV	DATE	REVISION	BY	CHK	APR	REV	DATE	REVISION	BY	CHK	APR
						B	07/23/2020	GROUND ROD TO 3/4" X 10'	RWC	SSS	MMG

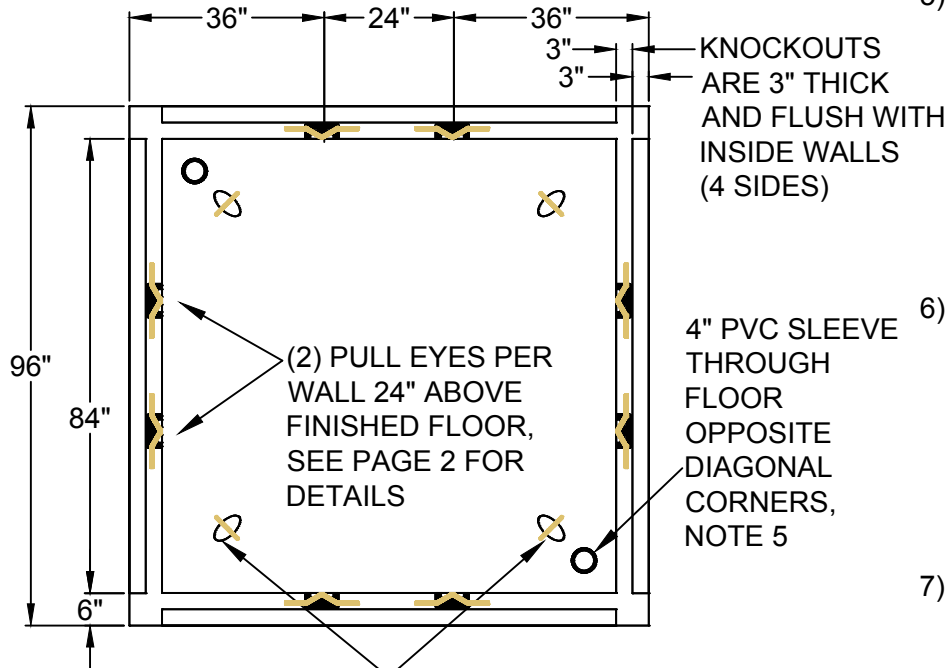
VAULT FOR SWITCHGEAR  
STACKABLE SECTIONS WITH SQUARE STEEL TUBING FOR SWITCHGEAR SUPPORT AND TWO SETS DOUBLE DOOR CAST-IN-PLACE LIDS

drawn:	approved:	date:
RWC	MMG	07/23/2020

**530-052**  
PAGE 4 OF 4

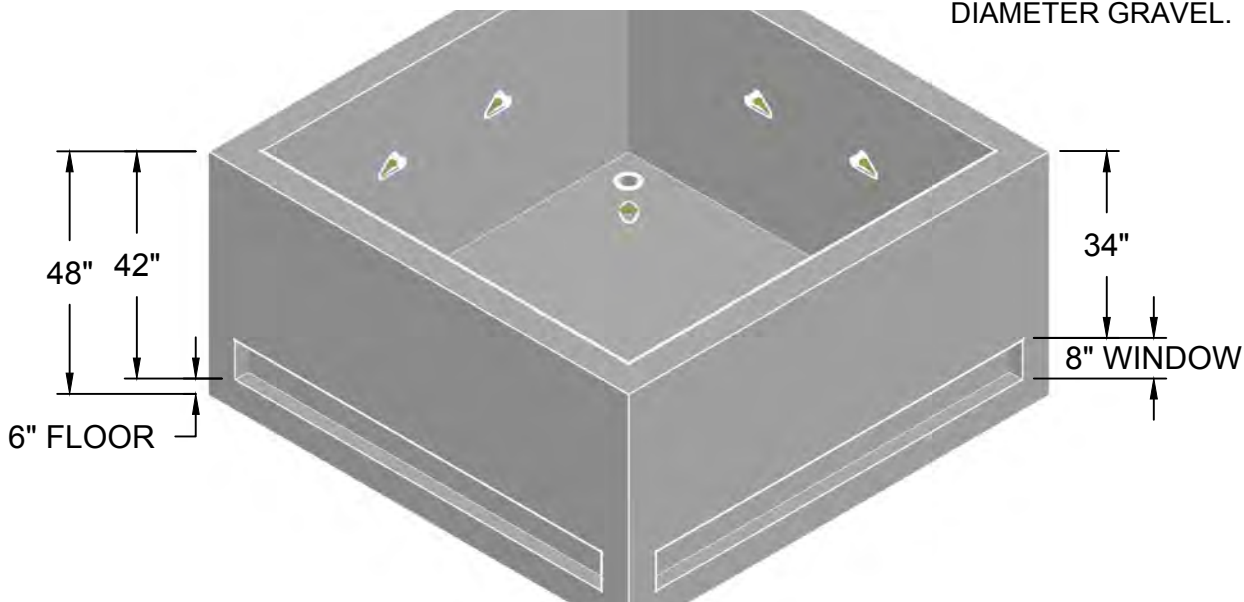
NOTES:

- 1) EACH SIDE WALL SHALL HAVE TWO PULLING EYES LOCATED 24" APART, EVENLY SPACED BETWEEN INSIDE WALLS, AND 24" FROM THE BOTTOM OF THE VAULT.
- 2) ALL PULLING IRONS SHALL BE RATED FOR A MINIMUM OF 5,000 POUNDS EACH.
- 3) 6" ABOVE THE BOTTOM OF THE VAULT, AN 8" KNOCKOUT SHALL EXTEND AROUND THE ENTIRE PERIMETER OF THE VAULT (EXCEPT FOR 6" FROM EACH CORNER) FOR CONDUIT TO BE BROUGHT IN. KNOCKOUTS SHOULD BE 3" THICK AND FLUSH WITH THE INSIDE OF THE VAULT. THE VAULT SHALL BE 48" DEEP.
- 4) THE VAULT SHALL BE INSTALLED ON A MINIMUM 6" DEEP BED OF 1/2" TO 3/4" DIAMETER GRAVEL.



(4) ANCHORS IN TOP OF FLOOR FOR LIFTING CAN BE ANGLED AT 45° AS SHOWN OR STRAIGHT, SEE PAGE 2 FOR DETAILS

- 5) EACH VAULT SHALL BE SUPPLIED WITH EITHER A 3/4" X 10' GROUND ROD DRIVEN IN THE VAULT FLOOR OR A MINIMUM 100 FEET OF #6 BARE COPPER WIRE BURIED NO LESS THAN 18" DEEP IN THE EARTH AND MEETING THE NATIONAL ELECTRICAL SAFETY CODE RULE #094B3.
- 6) ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- 7) LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.
- 8) VAULT CAN BE MADE WITH NO BOTTOM. IT WILL BE 48" TALL, WITH 4 WALLS ON A BED OF 1/2" TO 3/4" DIAMETER GRAVEL.



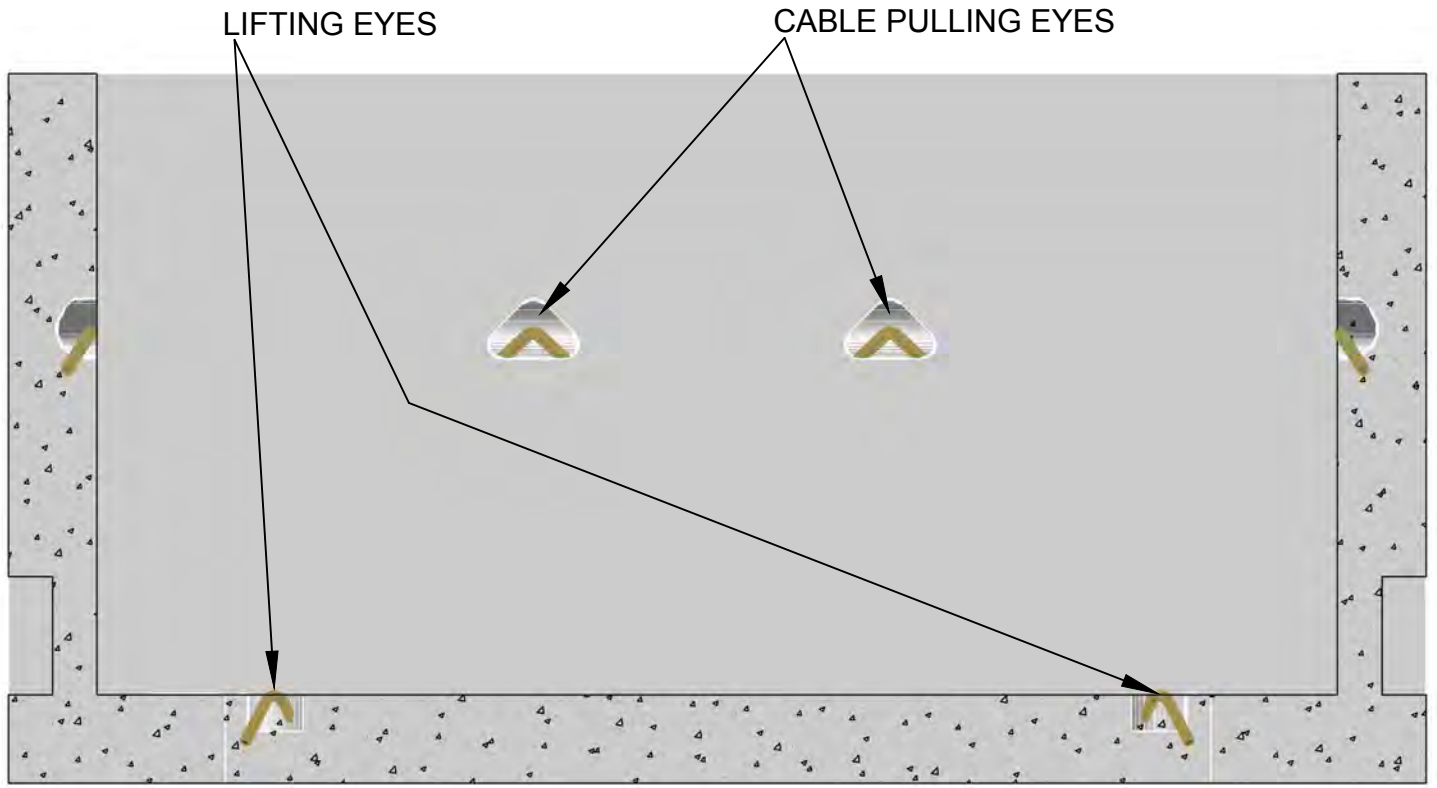
REV C DATE 07/23/2020 REVISION NOTE 5: 3/4" X 10' GROUND ROD WAS 8' GROUND ROD BY RWC CHK SSS APR MMG



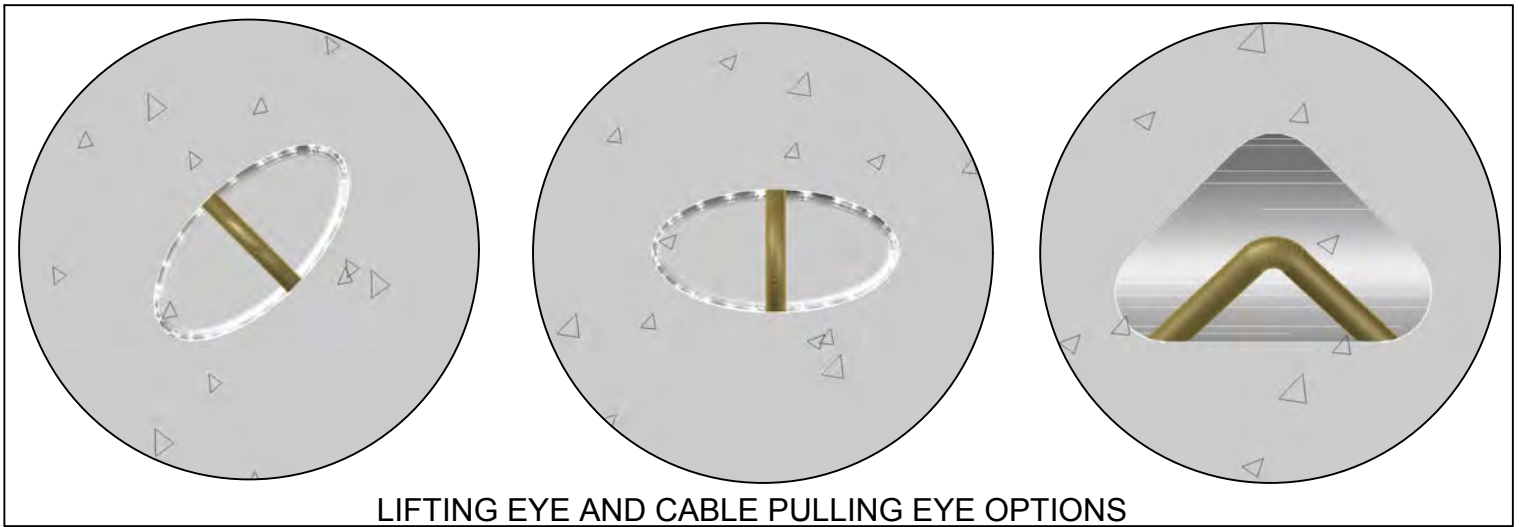
UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

VAULT FOR DEAD FRONT,  
ABOVE-GROUND SWITCHGEAR  
PAGE 1 OF 2

drawn:	approved:	date:	530-090
RWC	MMG	07/23/2020	



SECTION THROUGH LIFTING EYES AND CABLE PULLING EYES



LIFTING EYE AND CABLE PULLING EYE OPTIONS

REV C DATE 07/23/2020 REVISION NOTE 5: 3/4" X 10' GROUND ROD WAS 8' GROUND ROD BY RWC CHK SSS APR MMG



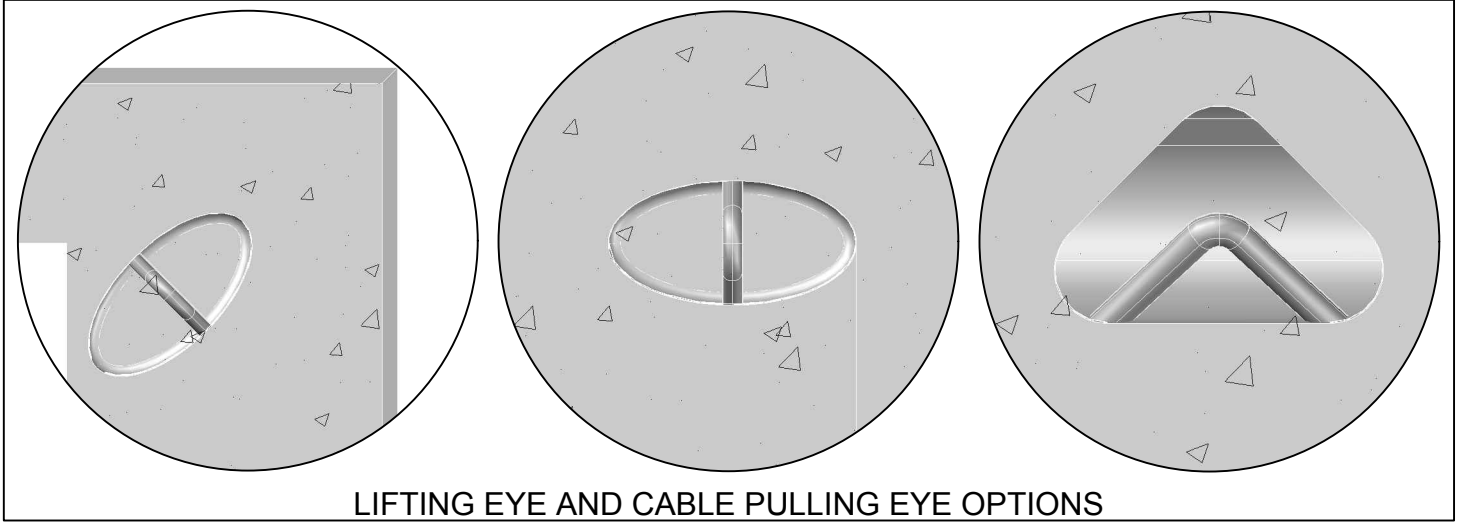
UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

VAULT FOR DEAD FRONT,  
ABOVE-GROUND SWITCHGEAR  
PAGE 2 OF 2

drawn: RWC	approved: MMG	date: 07/23/2020	530-090

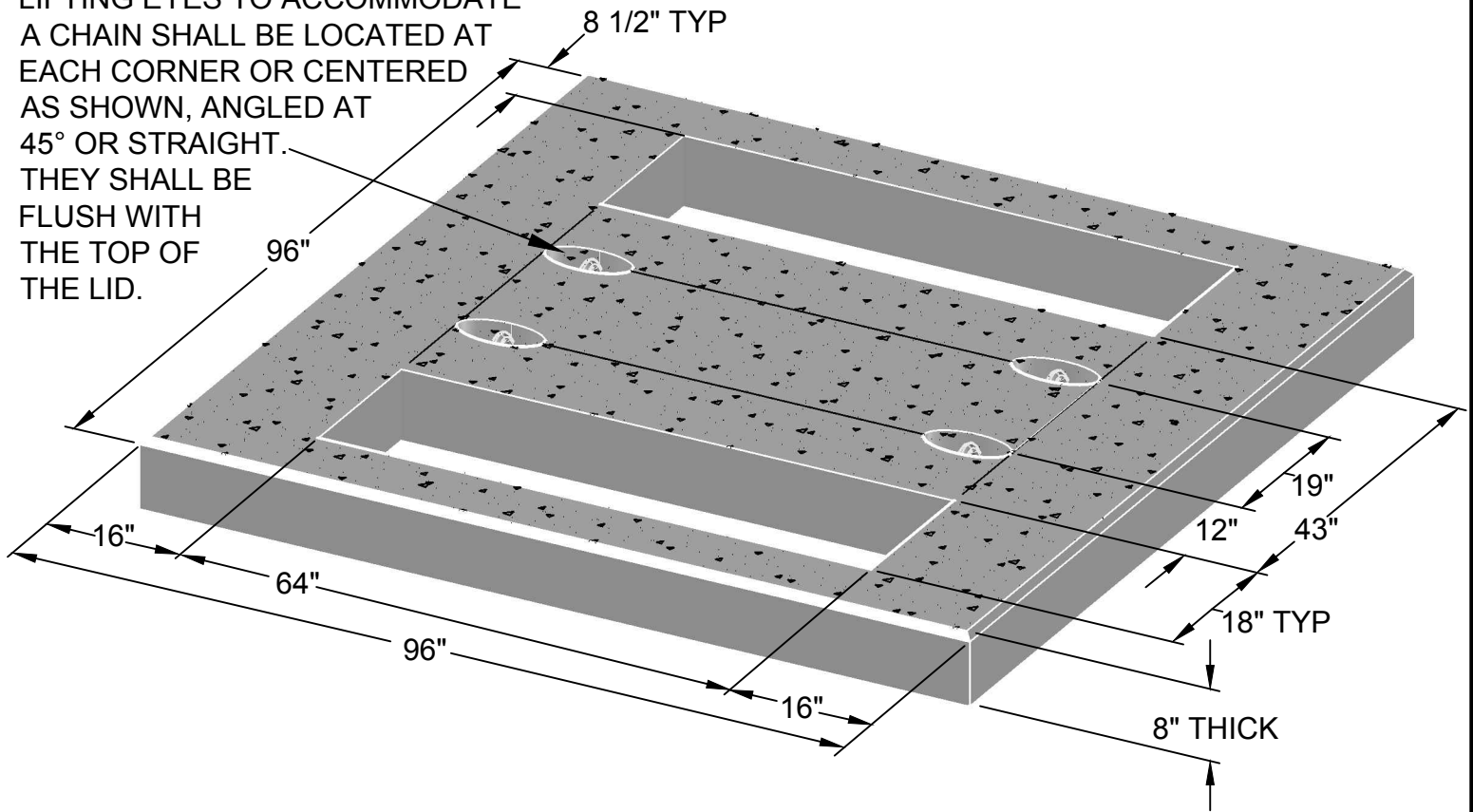
**GENERAL NOTES:**

- ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- ALL LIFTING AND PULLING EYES SHALL BE RATED FOR A MINIMUM 5,000 POUNDS EACH.
- LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.



LIFTING EYE AND CABLE PULLING EYE OPTIONS

LIFTING EYES TO ACCOMMODATE A CHAIN SHALL BE LOCATED AT EACH CORNER OR CENTERED AS SHOWN, ANGLED AT 45° OR STRAIGHT. THEY SHALL BE FLUSH WITH THE TOP OF THE LID.



REV B DATE 02/05/2019 REVISION CHANGED POSITION OF ANCHORS BY RWC CHK EJD APR MMG



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

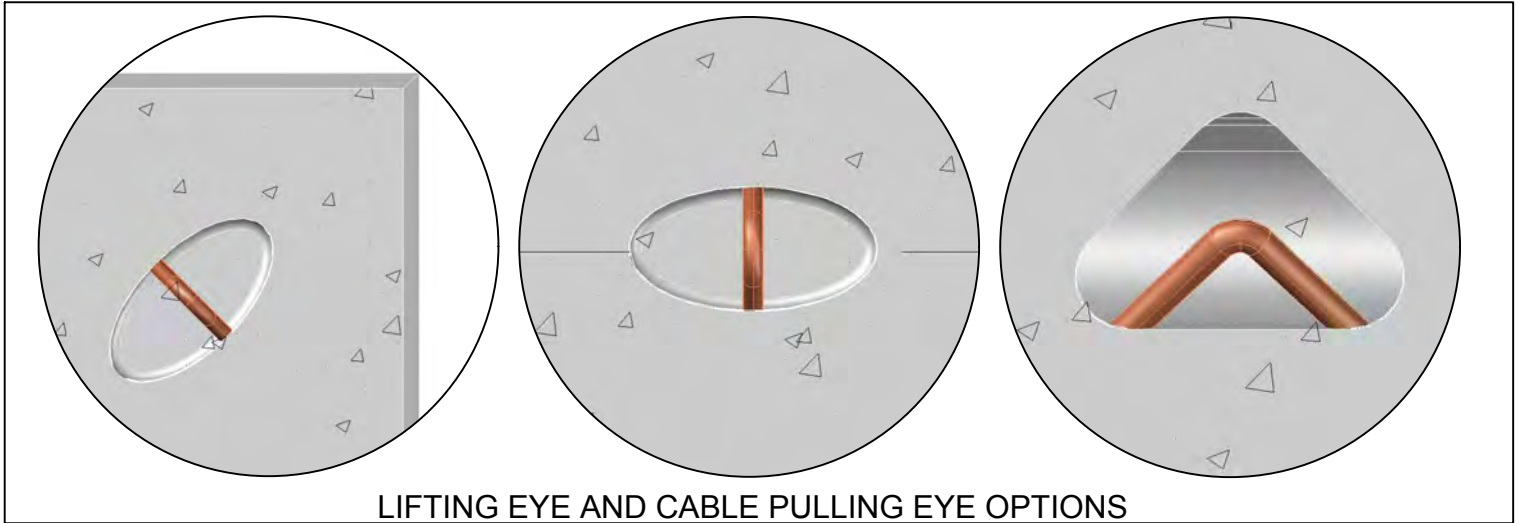
LID FOR DEAD FRONT AND  
ABOVE GROUND SWITCHGEAR  
(FOR USE ON VAULT 530-090)

drawn:	approved:	date:	530-091
RWC	MMG	02/05/2019	



**GENERAL NOTES:**

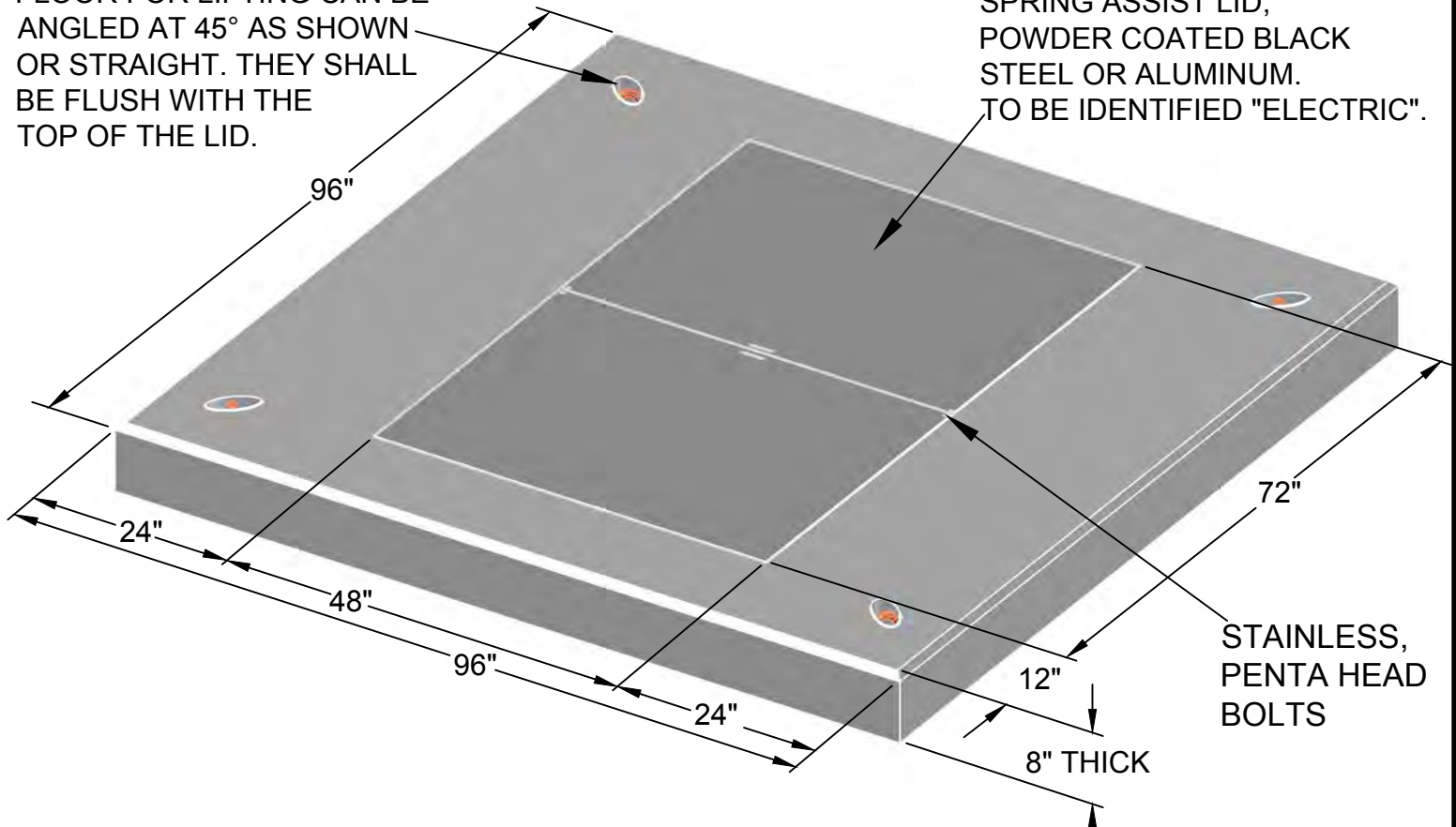
- ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- ALL LIFTING AND PULLING EYES SHALL BE RATED FOR A MINIMUM 5,000 POUNDS EACH.
- LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.



LIFTING EYE AND CABLE PULLING EYE OPTIONS

(4) A ANCHORS IN TOP OF FLOOR FOR LIFTING CAN BE ANGLED AT 45° AS SHOWN OR STRAIGHT. THEY SHALL BE FLUSH WITH THE TOP OF THE LID.

48" X 72" DOUBLE LEAF, SPRING ASSIST LID, POWDER COATED BLACK STEEL OR ALUMINUM. TO BE IDENTIFIED "ELECTRIC".



STAINLESS, PENTA HEAD BOLTS

8" THICK

REV B DATE 02/12/2019 REVISION ISSUE FOR CONSTRUCTION BY RWC CHK EJD APR MMG



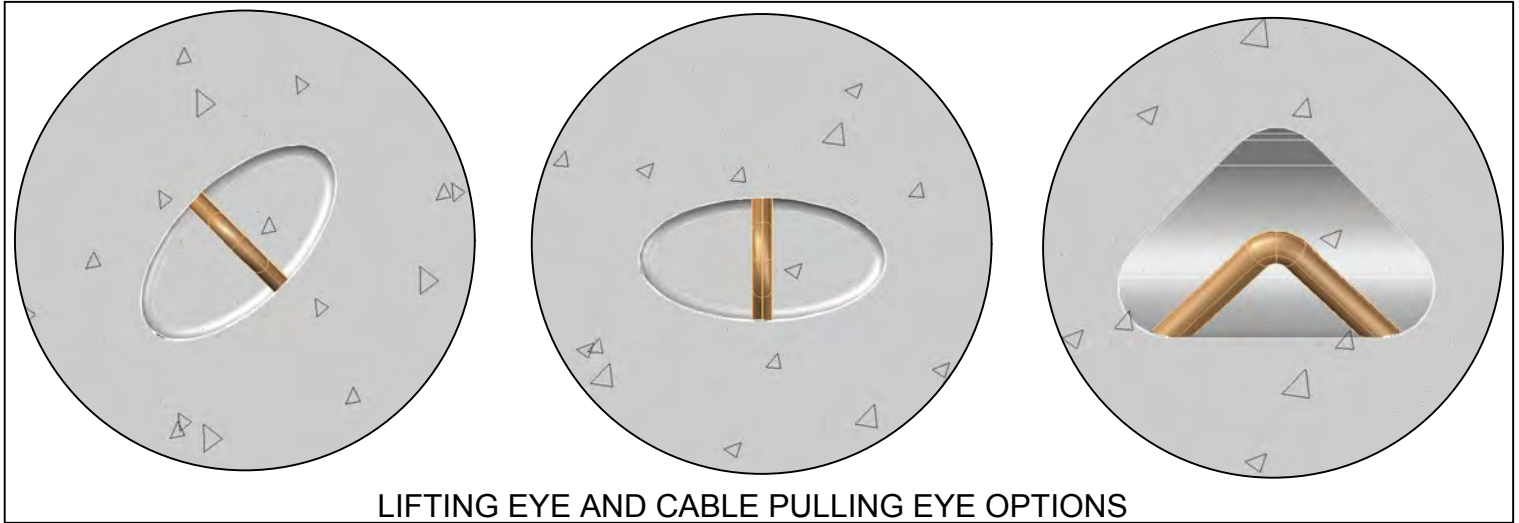
UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

LID FOR SUBMERSIBLE  
SWITCHGEAR AND SPLICE BOX  
(FOR USE WITH VAULT 530-090)

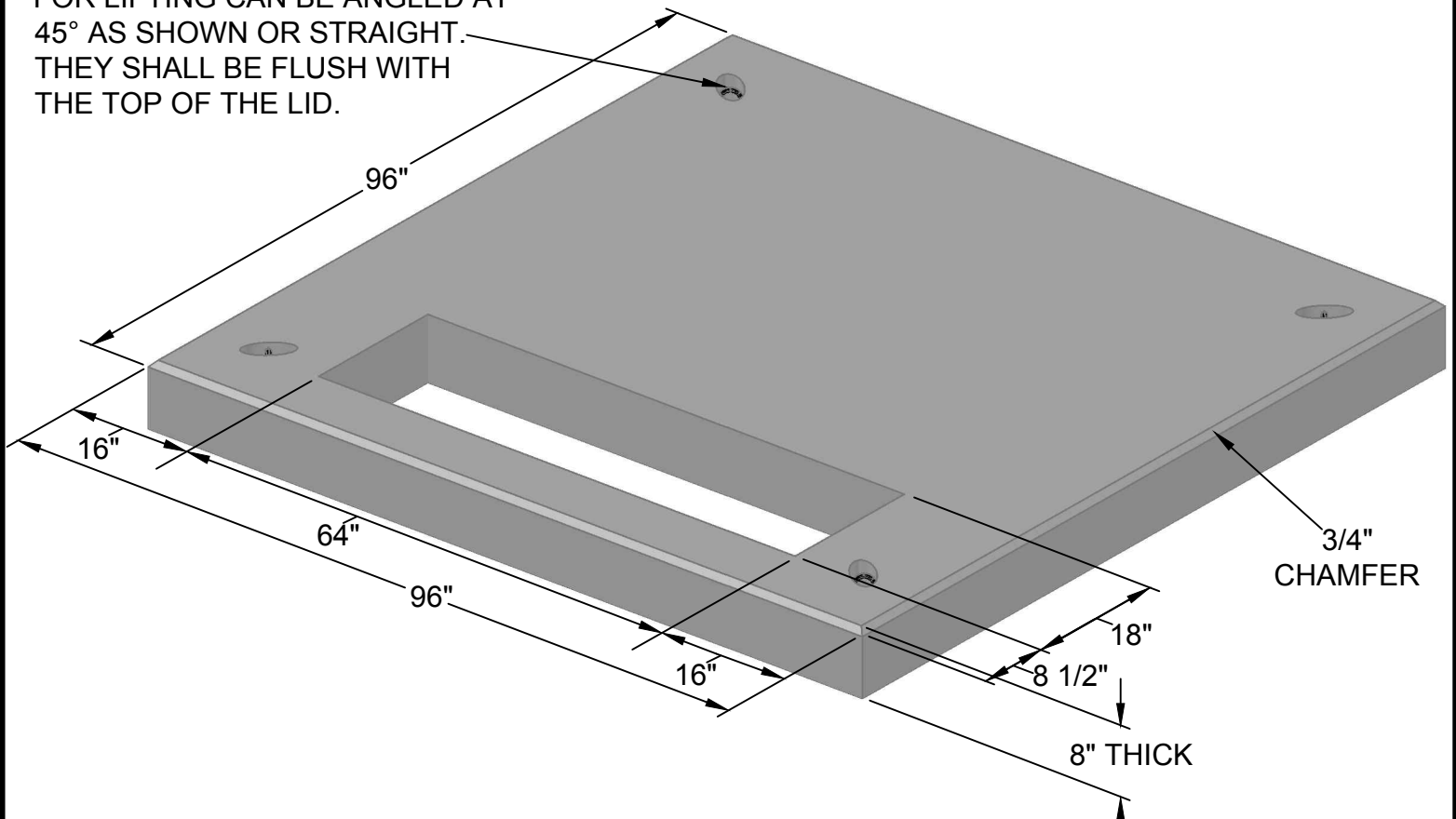
drawn: RWC	approved: MMG	date: 02/12/2019	530-092

**GENERAL NOTES:**

- ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- ALL LIFTING AND PULLING EYES SHALL BE RATED FOR A MINIMUM 5,000 POUNDS EACH.
- LIFTING AND PULLING EYE SHAPES AND DIMENSIONS CAN VARY, SO LONG AS FORM, FIT AND FUNCTION ARE SATISFIED.



(4) A ANCHORS IN TOP OF FLOOR FOR LIFTING CAN BE ANGLED AT 45° AS SHOWN OR STRAIGHT. THEY SHALL BE FLUSH WITH THE TOP OF THE LID.



REV | A | DATE | 02/15/2019 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG



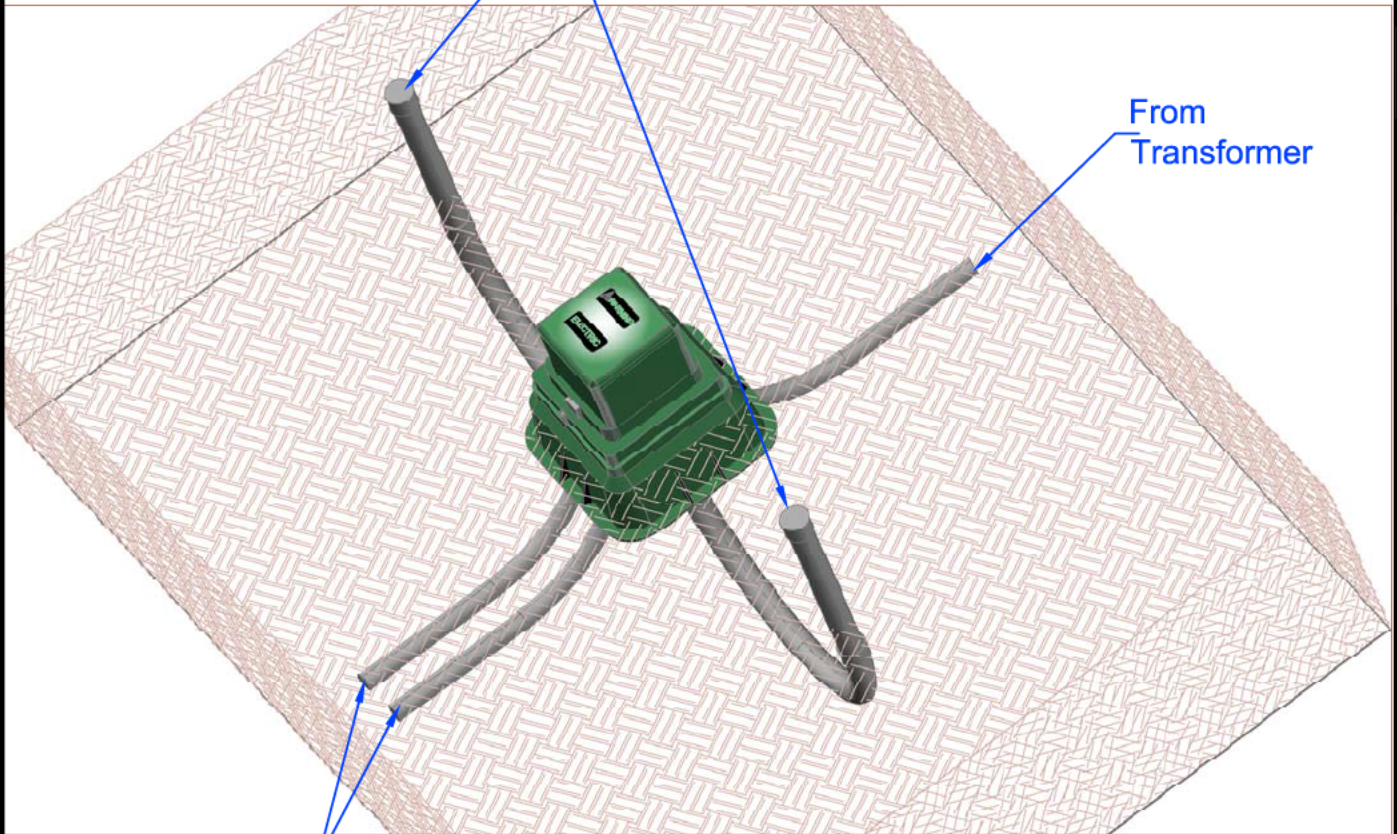
**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**LID FOR DEAD-FRONT AND  
ABOVE-GROUND SWITCHGEAR SINGLE  
WINDOW (FOR USE ON VAULT 530-090)**

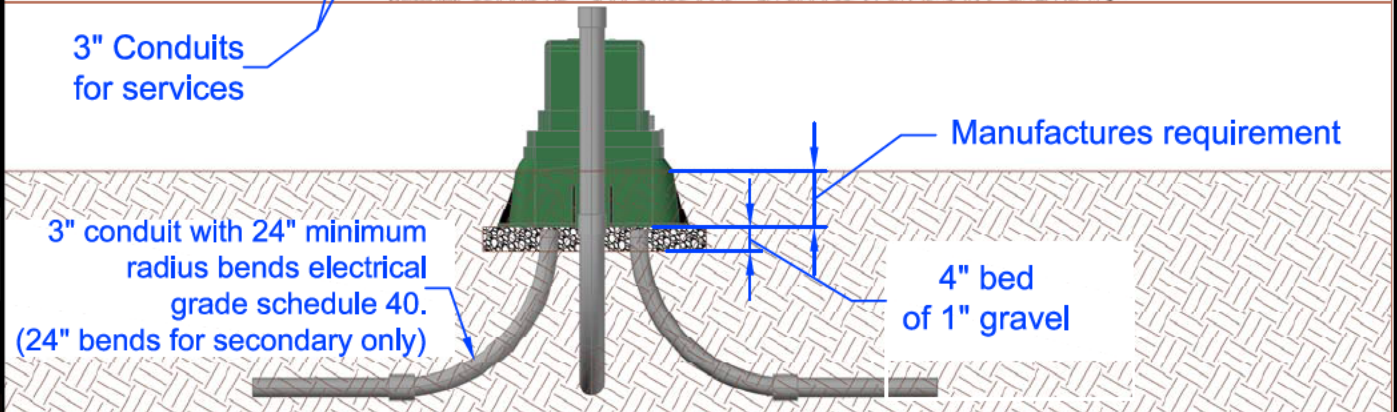
drawn:	approved:	date:	<b>530-093</b>
RWC	MMG	02/15/2019	

Approved Enclosures:  
 Nordic PSP-151530-MG  
 Pencil AG18HDX-PECEWB

2-2" x 24" Radius Bends with Cap end. For each temporary hookup (two places). As required by Member. All conduits to enter vertically thru gravel bed in bottom of enclosure.



3" Conduits for services



3" conduit with 24" minimum radius bends electrical grade schedule 40. (24" bends for secondary only)

Manufactures requirement

4" bed of 1" gravel

**Secondary Enclosure Installation Instructions**

- |   |  |   |
|---|--|---|
| <ol style="list-style-type: none"> <li>1) Excavate the hole approximately four inches deeper than the suggested pedestal Burial Depth.</li> <li>2) Compact the soil.</li> </ol> | <ol style="list-style-type: none"> <li>3) Add approximately four inches of 1" gravel to the bottom of the hole.</li> <li>4) Compact and level the ground.</li> <li>5) Place the pedestal into the hole.</li> <li>6) Level the pedestal.</li> </ol> | <ol style="list-style-type: none"> <li>7) Back-fill with loose earth material.</li> <li>8) Do not back-fill with chunks of frozen material or large rocks next to the pedestal.</li> <li>9) Pack the back-fill material by foot tamping.</li> </ol> |
|---|--|---|



PEDERNALES ELECTRIC  
 COOPERATIVE, INC.  
 URD DEVELOPER'S SPECIFICATIONS

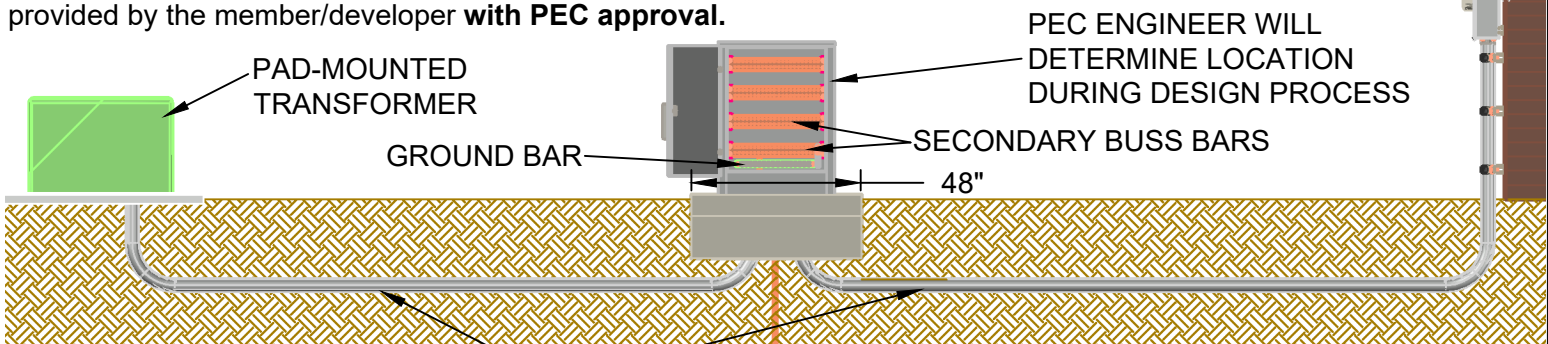
**Secondary Enclosure**

drawn:	approved	date:	drawing number:
JBS	MJB	March 8, 2013	550-020-0911

APPROVED TAP BOXES*	PART NUMBER
MILBANK 500 kcmil 22-POSITION	UAP6095-O-NES
HUBBELL/CMC UP TO 500 kcmil 19-POSITION	LWTE19-500LI
HUBBELL/CMC UP TO 750 kcmil 22-POSITION	LWTE22-750LI
GIVCO	364816ctb

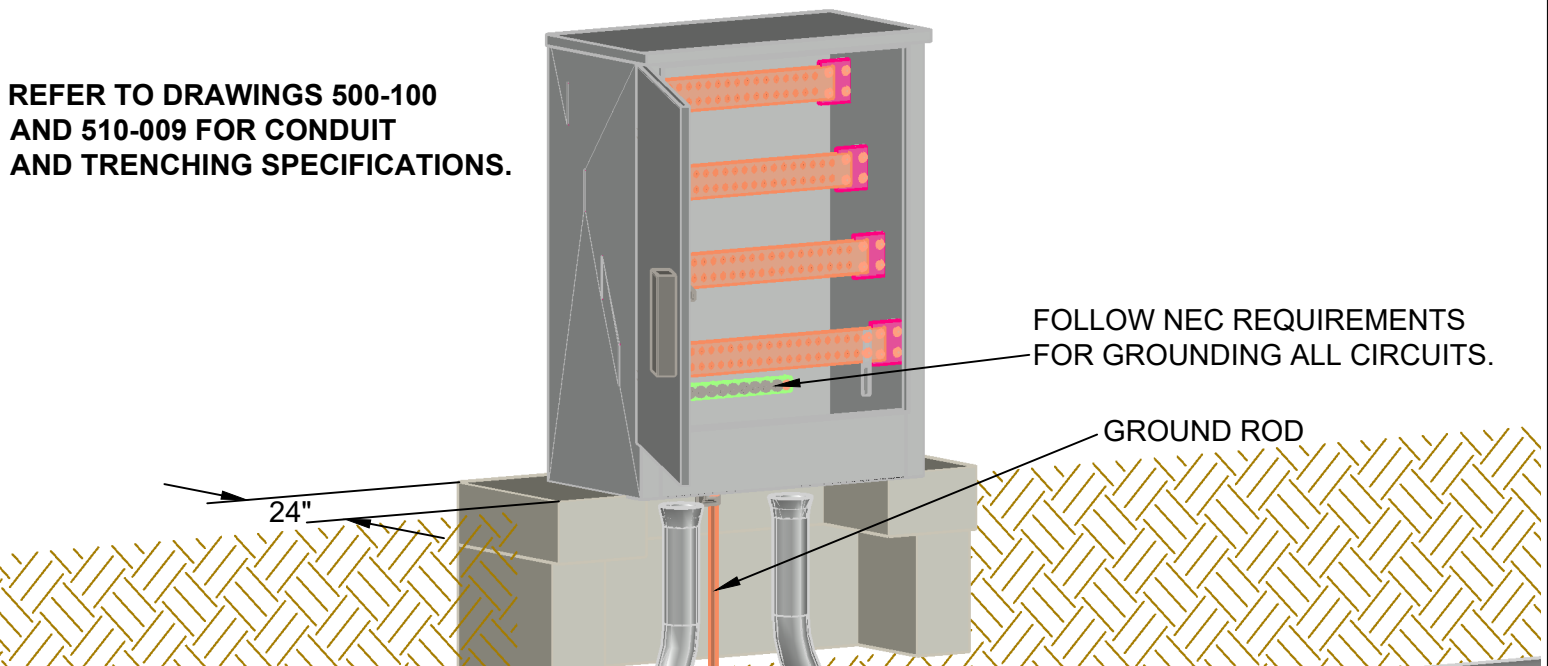
For commercial/industrial/multi-family residential underground services where the meter or a bank of meters is to be located on the building or adjacent to the load, the service (cable, conduit, and trench) from the transformer to the load will be provided by the member/developer. In those cases where the number of service cables will exceed the number of the termination points on the secondary terminal of the transformer, a tap box meeting PEC specifications and the latest version of ANSI C119.4 is to be provided by the member/developer. The tap box shall be lockable. Doors on both sides are preferred. The member/developer will provide the service from the transformer, to the tap box, to the load.

With agreement between PEC and the member/developer, PEC can provide the cable from the transformer to the tap box at the member/developer's expense. The number of cables from the transformer to the tap box shall not exceed the number of termination points on the secondary terminal of the transformer. The tap box enclosure shall be grounded by the member/developer in accordance with applicable codes. \*Tap boxes meeting all required specifications that are produced by manufacturers and/or consist of part numbers not listed above may be provided by the member/developer **with PEC approval**.



DEVELOPER SHALL PROVIDE DITCH, CONDUIT, GROUNDING CONDUCTOR, GROUND ROD, AND SECONDARY CABLE. PEC CAN PROVIDE CABLE AT MEMBER/DEVELOPER EXPENSE. CABLE EXPENSE IS NOT PART OF CIAC ALLOWANCE.

REFER TO DRAWINGS 500-100 AND 510-009 FOR CONDUIT AND TRENCHING SPECIFICATIONS.



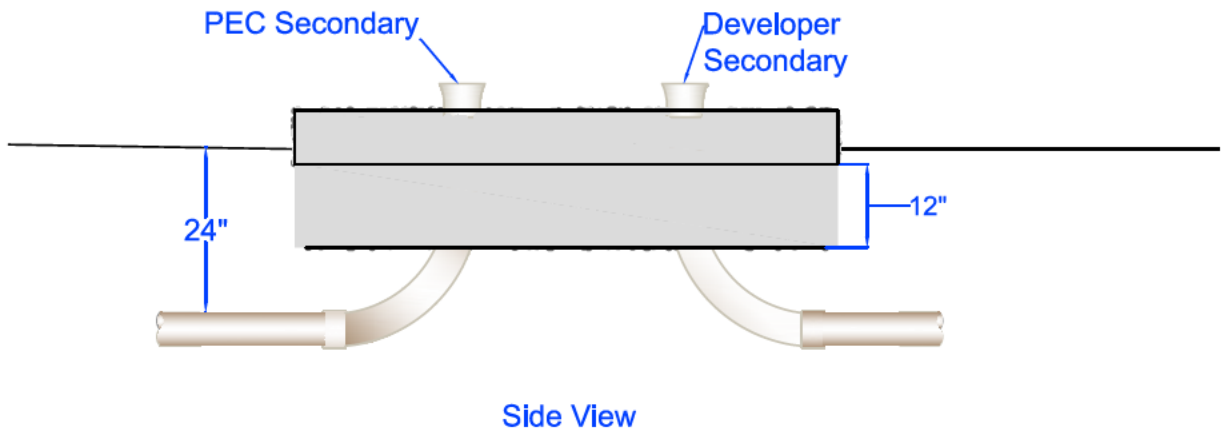
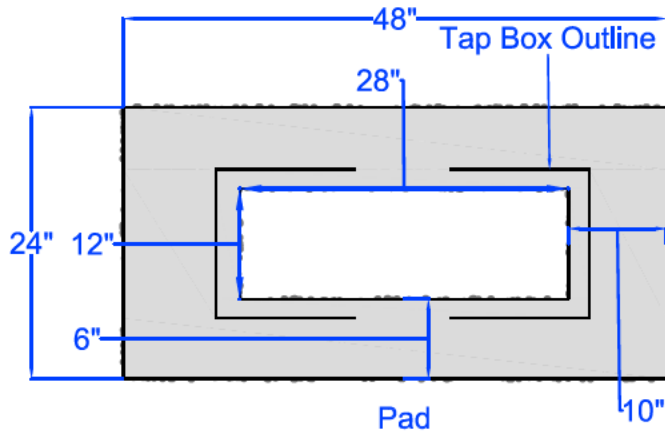
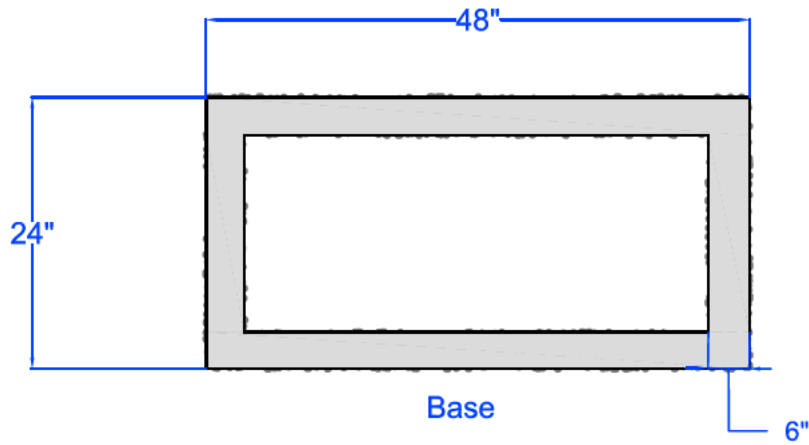
REV	B	DATE	08/12/2024	REVISION	ADD NEW MODEL; ANSI C119; OPTIONAL TAP BOXES.	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	---	----	-----	-----	-----	-----	-----



UNDERGROUND  
INSTALLATION  
SPECIFICATIONS

TAP BOX

drawn:	approved:	date:	550-021
RWC	MMG	08/12/2024	



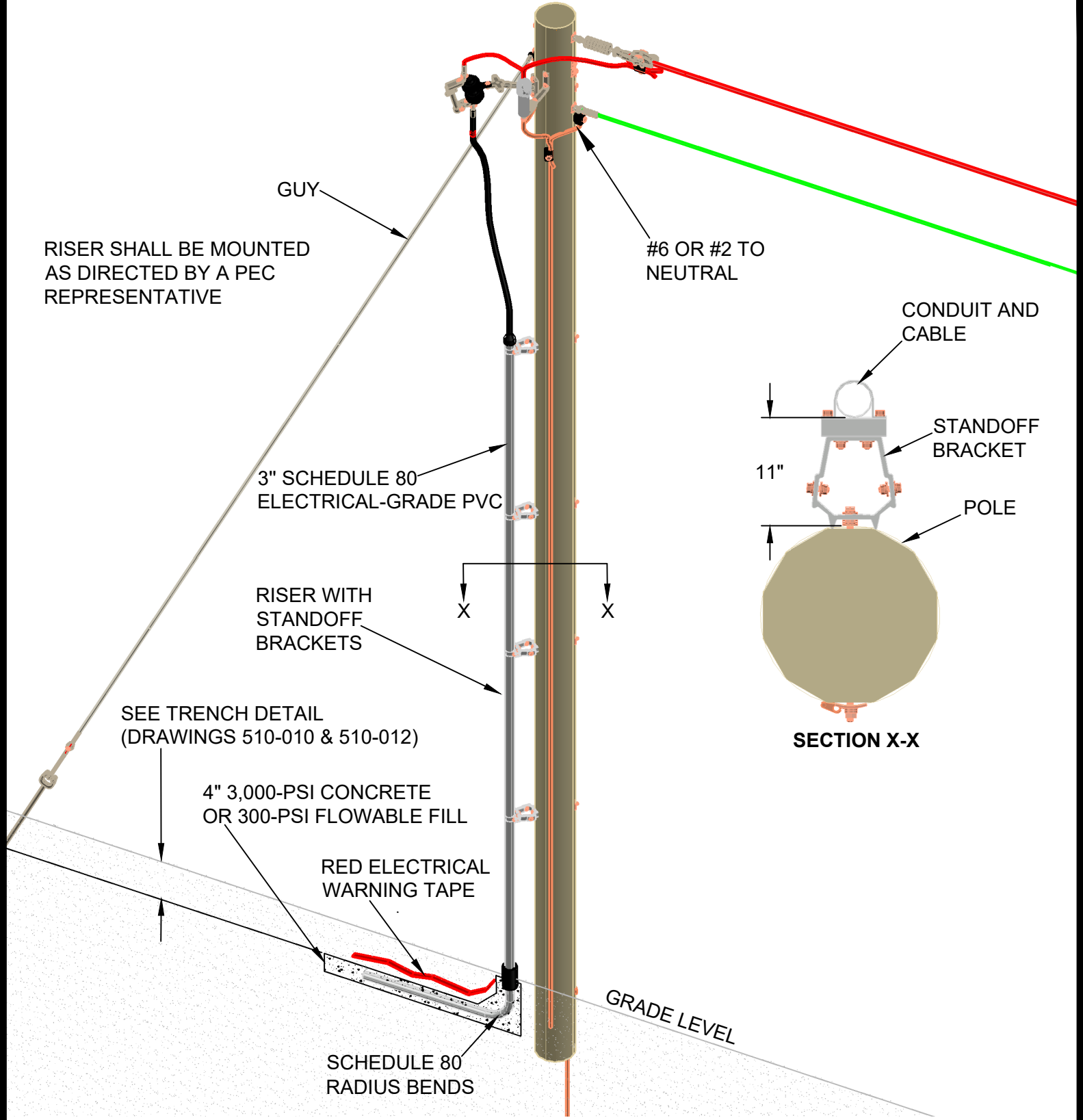
Pad to extend 4" above grade and 1½" below grade.  
 Number of Developer Secondaries to be determined  
 by electrician.



PEDERNALES ELECTRIC.  
 COOPERATIVE, INC.

Tap Box Pad

drawn:	approved	date:	550-022-0702
REB	MJB	July 2, 2015	



NESC Rule 217A2c: Standoff brackets on supporting structures shall be arranged so that there is not less than 8 ft. (2.45 m) between either: (1) The lowest bracket and ground or other permanently installed accessible surface, or (2) the two lowest brackets. Exception: This rule does not apply where supporting structures are isolated.

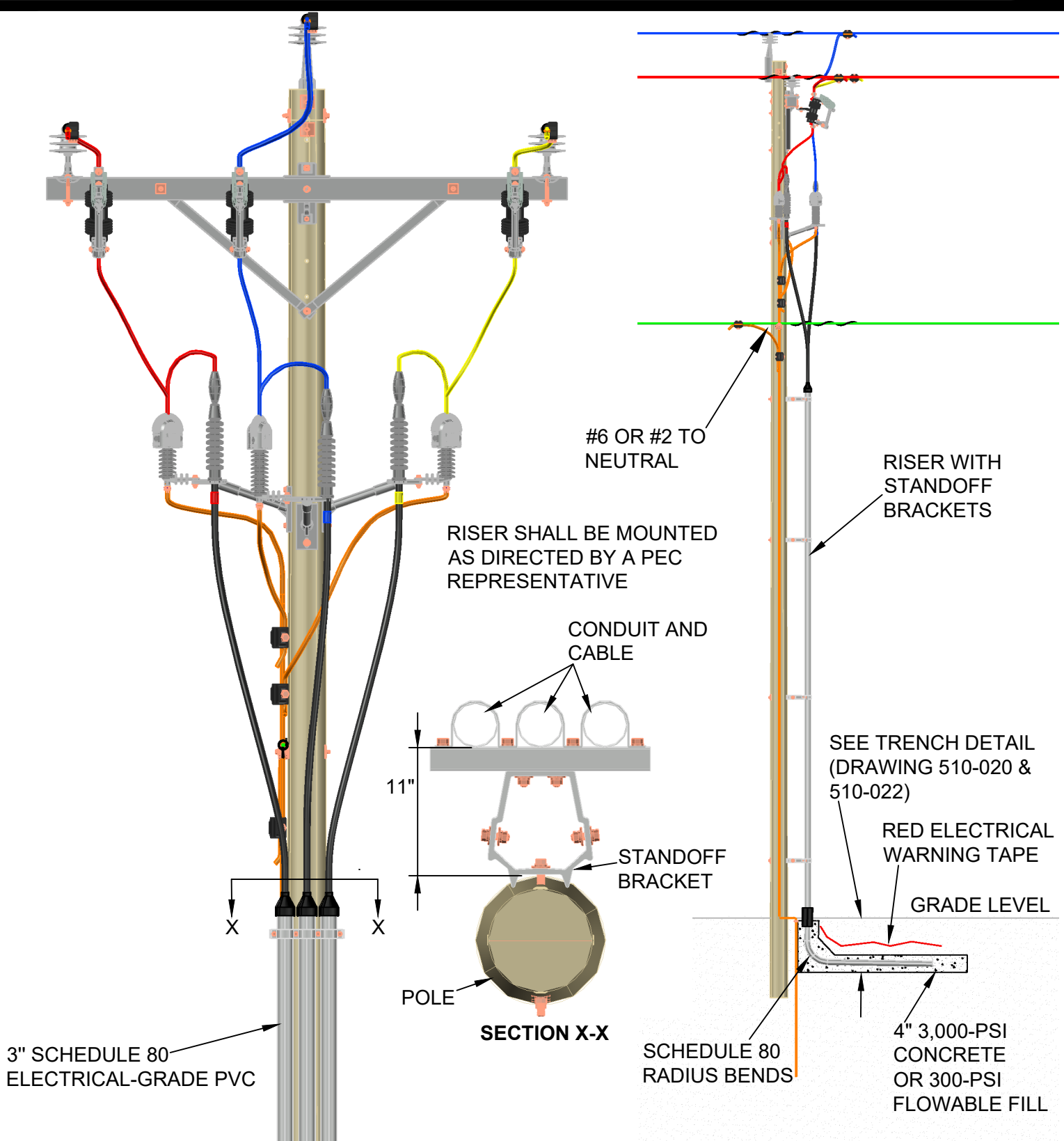
REV	B	DATE	11/13/2024	REVISION	SECTION X-X ENLARGED FOR CLARITY, 11" DIM.	BY	AMJ	CHK	SSS	APR	MMG
-----	---	------	------------	----------	--	----	-----	-----	-----	-----	-----



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**1Ø RISER POLE USING STANDOFF BRACKETS**

drawn:	approved:	date:	560-015
AMJ	MMG	11/13/2024	



NESC Rule 217A2c: Standoff brackets on supporting structures shall be arranged so that there is not less than 8 ft. (2.45 m) between either: (1) The lowest bracket and ground or other permanently installed accessible surface, or (2) the two lowest brackets. Exception: This rule does not apply where supporting structures are isolated.

REV | B | DATE | 11/13/2024 | REVISION | SECTION X-X ENLARGED FOR CLARITY, 11" DIM. | BY | AMJ | CHK | SSS | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**3Ø RISER POLE  
USING STANDOFF BRACKETS**

drawn:	approved:	date:	560-025
AMJ	MMG	11/13/2024	

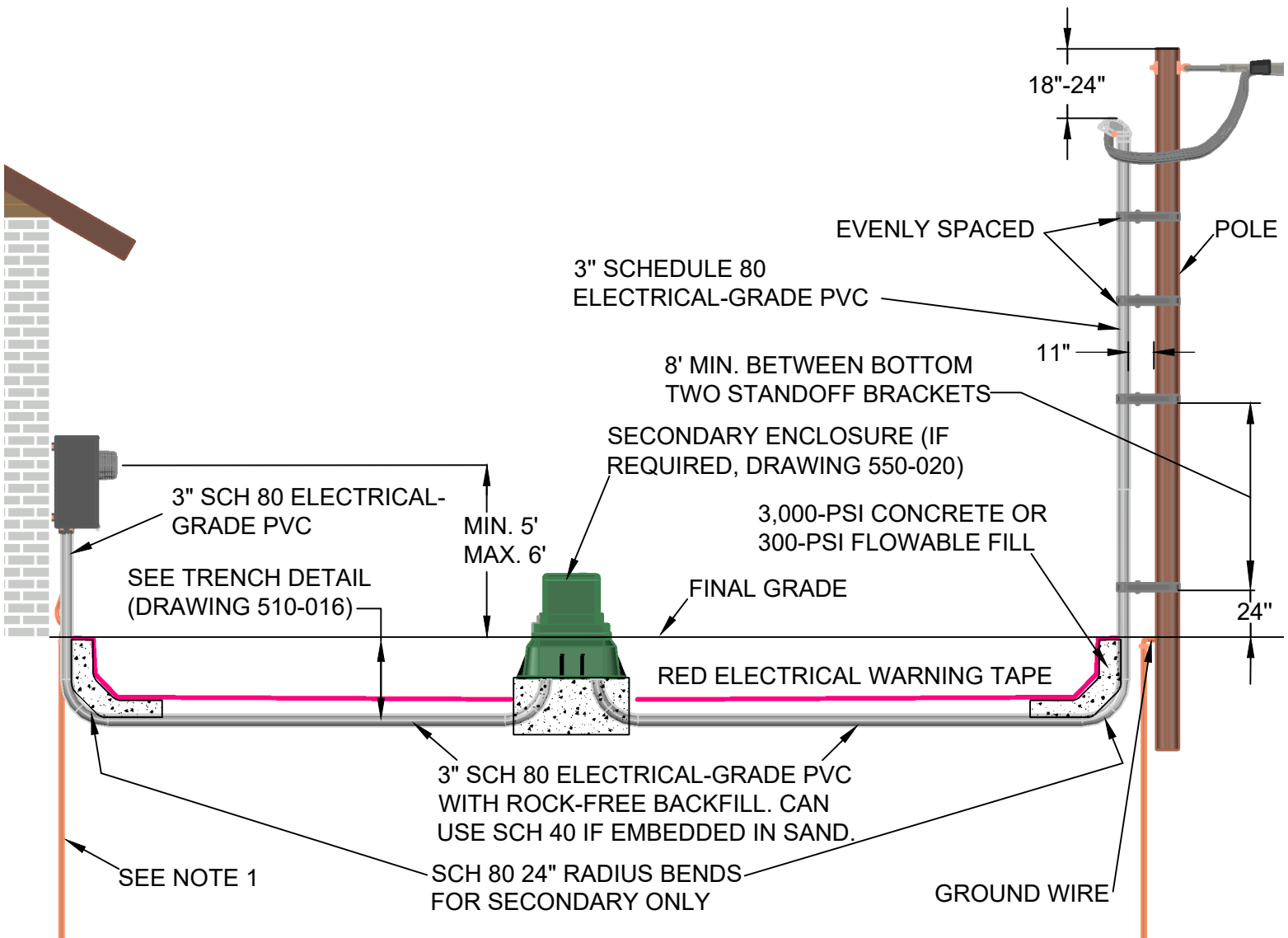
NESC Rule 217A2c: Standoff brackets on supporting structures shall be arranged so that there is not less than 8 ft. (2.45 m) between either: (1) The lowest bracket and ground or other permanently installed accessible surface, or (2) the two lowest brackets. Exception: This rule does not apply where supporting structures are isolated. For 30' or 35' pole, install 4 standoff brackets: First at 2' above ground, second at 10' above ground, and remaining 2 evenly spaced above second standoff.

**NOTES TO MEMBERS:**

1. Select and install ground rod according to meter loop specifications.
2. At PEC discretion, standoff brackets, straps, and secondary wire may be supplied by PEC. The member should verify whether PEC will supply these items. If not, the member shall supply those materials. Also, the member shall supply all conduit. PEC will install the riser.

SINGLE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-12	STK-3
BARFIELD	BASOCL9-12H	BA5CSB-3
CHANCE	C9CSO12	CSTK3
MACLEAN	SI-6CSO-12-4WT	MSTK-3

THREE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-24	STK-4
BARFIELD	BASOCL9-24H	BA5CSB-4
CHANCE	C9CSO24	CSTK4
MACLEAN	SI-6CSO-24-4WT	MSTK-4



REV | D | DATE | 11/13/2024 | REVISION | REDRAWN FOR CLARITY, 11" DIM. | BY | AMJ | CHK | SSS | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**SECONDARY RISER WITH STANDOFFS**

drawn:	approved:	date:	560-050
AMJ	MMG	11/13/2024	



NESC Rule 217A2c: Standoff brackets on supporting structures shall be arranged so that there is not less than 8 ft. (2.45 m) between either: (1) The lowest bracket and ground or other permanently installed accessible surface, or (2) the two lowest brackets. Exception: This rule does not apply where supporting structures are isolated.

For 30' or 35' pole, install 4 standoffs: First at 2' above ground, second at 10' above ground, and remaining 2 standoffs evenly spaced above second standoff.

**NOTES TO MEMBERS:**

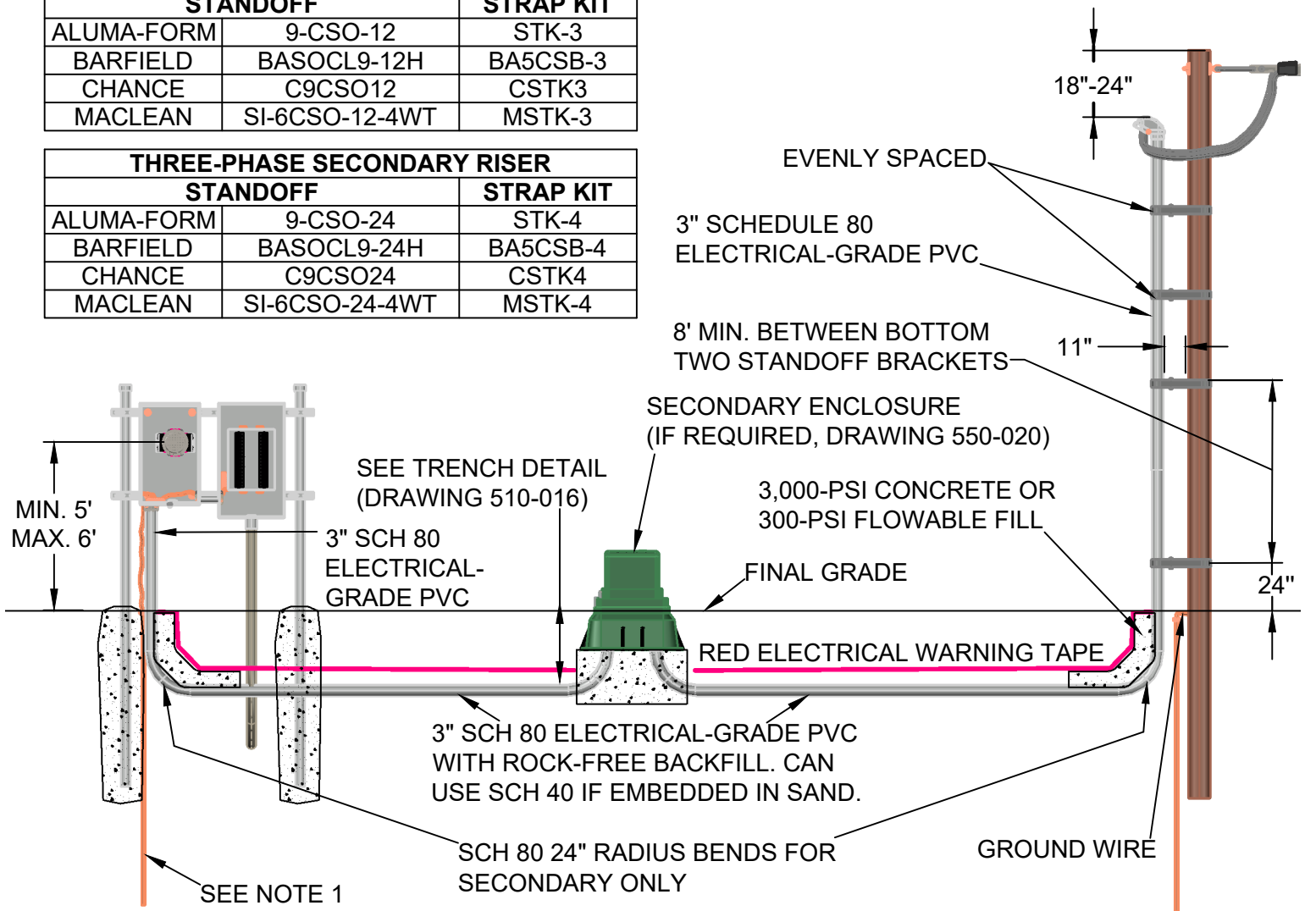
1. Select and install ground rod according to meter loop specifications.
2. At PEC discretion, the standoff brackets, straps and secondary wire may be supplied by PEC. The member should verify whether PEC will supply these items. If not, the member shall supply those materials. Also, the member shall supply all conduit. PEC will install the riser.

**URD FREESTANDING RACK:**

- Incoming conduit must attach to the side of the meter socket opposite from the disconnect.
- See 500-100 for member's responsibilities.

SINGLE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-12	STK-3
BARFIELD	BASOCL9-12H	BA5CSB-3
CHANCE	C9CSO12	CSTK3
MACLEAN	SI-6CSO-12-4WT	MSTK-3

THREE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-24	STK-4
BARFIELD	BASOCL9-24H	BA5CSB-4
CHANCE	C9CSO24	CSTK4
MACLEAN	SI-6CSO-24-4WT	MSTK-4



REV D DATE 11/13/2024 REVISION REDRAWN FOR CLARITY, 11" DIM. BY AMJ CHK SSS APR MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

**SECONDARY RISER WITH STANDOFFS  
TO A METER RACK**

drawn:	approved:	date:	560-051
AMJ	MMG	11/13/2024	

NESC Rule 217A2c: Standoff brackets on supporting structures shall be arranged so that there is not less than 8 ft. (2.45 m) between either: (1) The lowest bracket and ground or other permanently installed accessible surface, or (2) the two lowest brackets. Exception: This rule does not apply where supporting structures are isolated.

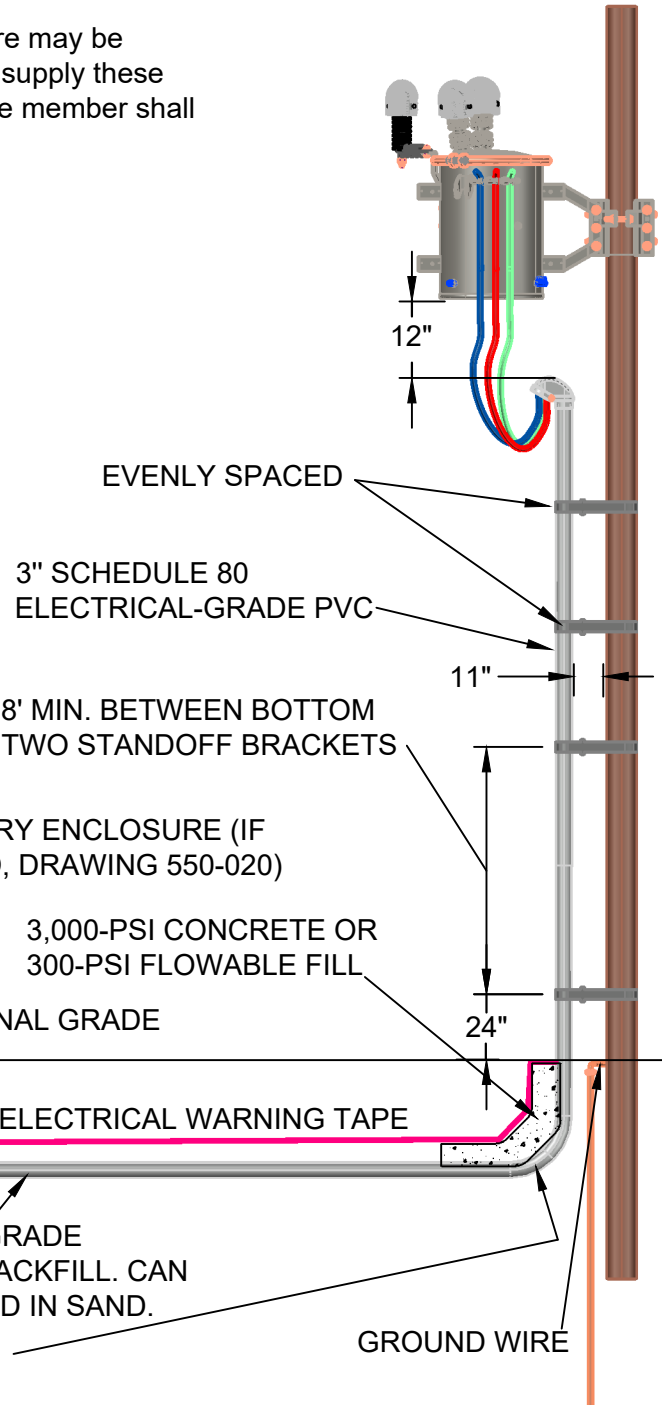
For 30' or 35' pole, install 4 standoffs: First at 2' above ground, second at 10' above ground, and remaining 2 standoffs evenly spaced above second standoff.

**NOTES TO MEMBERS:**

1. Select and install ground rod according to meter loop specifications.
2. At PEC discretion, standoff brackets, straps and secondary wire may be supplied by PEC. The member should verify whether PEC will supply these items. If not, the member shall supply those materials. Also, the member shall supply all conduit. PEC will install the riser.

SINGLE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-12	STK-3
BARFIELD	BASOCL9-12H	BA5CSB-3
CHANCE	C9CSO12	CSTK3
MACLEAN	SI-6CSO-12-4WT	MSTK-3

THREE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-24	STK-4
BARFIELD	BASOCL9-24H	BA5CSB-4
CHANCE	C9CSO24	CSTK4
MACLEAN	SI-6CSO-24-4WT	MSTK-4



REV | E | DATE | 11/13/2024 | REVISION | REDRAWN FOR CLARITY, 11" DIM. | BY | AMJ | CHK | SSS | APR | MMG



**UNDERGROUND  
INSTALLATION  
SPECIFICATIONS**

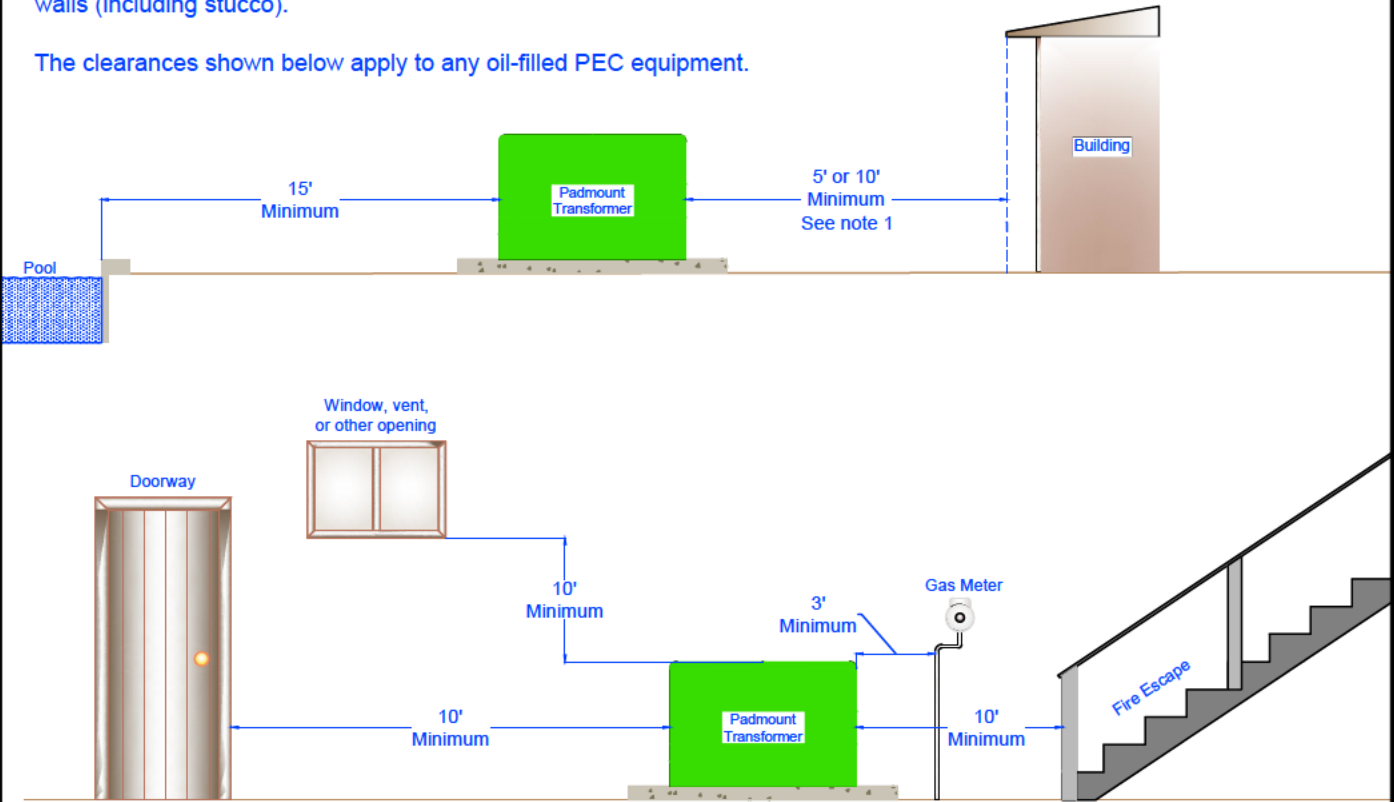
**600-VOLT UNDERGROUND SERVICE  
FROM OVERHEAD TRANSFORMER**

drawn:	approved:	date:	560-052
AMJ	MMG	11/13/2024	

Note 1: Clearance from padmount transformers to structures measured from the nearest metal portion of the transformer, to the structure or any overhang.

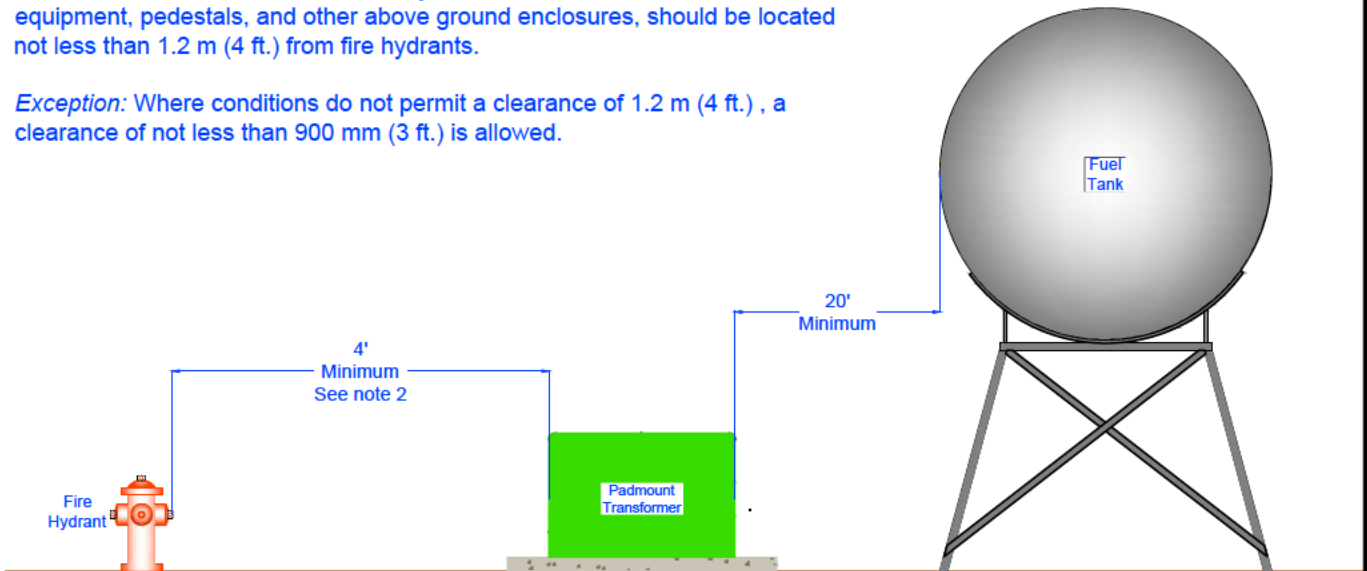

The clearance from a building is five feet if the building has non-combustible walls (brick, concrete, steel, or stone), ten feet if the building has combustible walls (including stucco).

The clearances shown below apply to any oil-filled PEC equipment.



Note 2: Per the National Electric Safety Code rule 380D Pad mounted equipment, pedestals, and other above ground enclosures, should be located not less than 1.2 m (4 ft.) from fire hydrants.

Exception: Where conditions do not permit a clearance of 1.2 m (4 ft.) , a clearance of not less than 900 mm (3 ft.) is allowed.

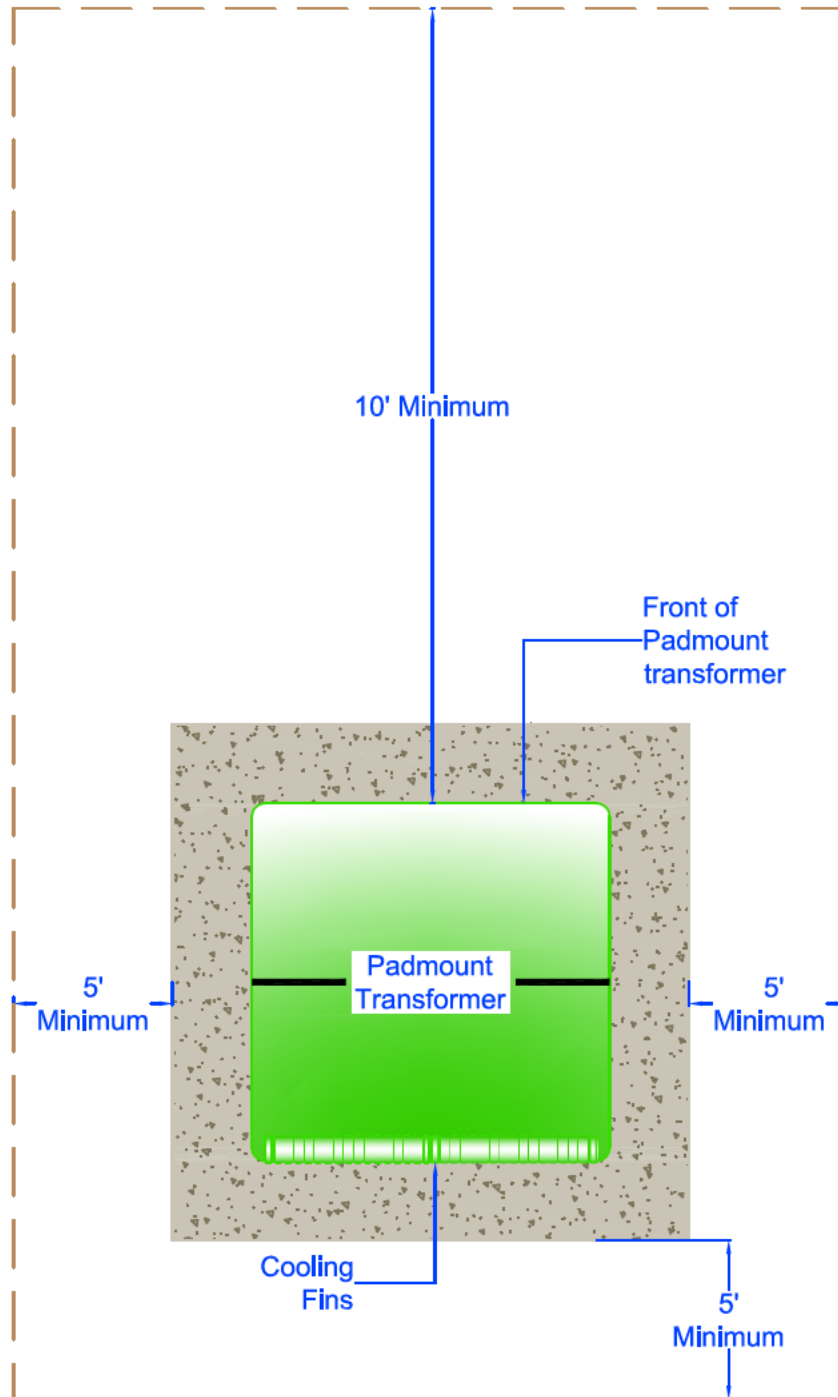



**PEDERNALES ELECTRIC COOPERATIVE, INC.**  
URD DEVELOPER'S SPECIFICATIONS

**Safety Clearances around Padmount Transformers**

drawn:	approved	date:	drawing number:
JBS	MJB	March 11, 2015	570-010-0911

A minimum clearance of ten feet of clear, level, unobstructed working space is required in front of a padmount transformer, to allow use of hot sticks.  
OSHA Rule 1910.303(h)(5)(V1)



The clearances shown above applies to all PEC padmounted electrical equipment over 600 volts PEC equipment.

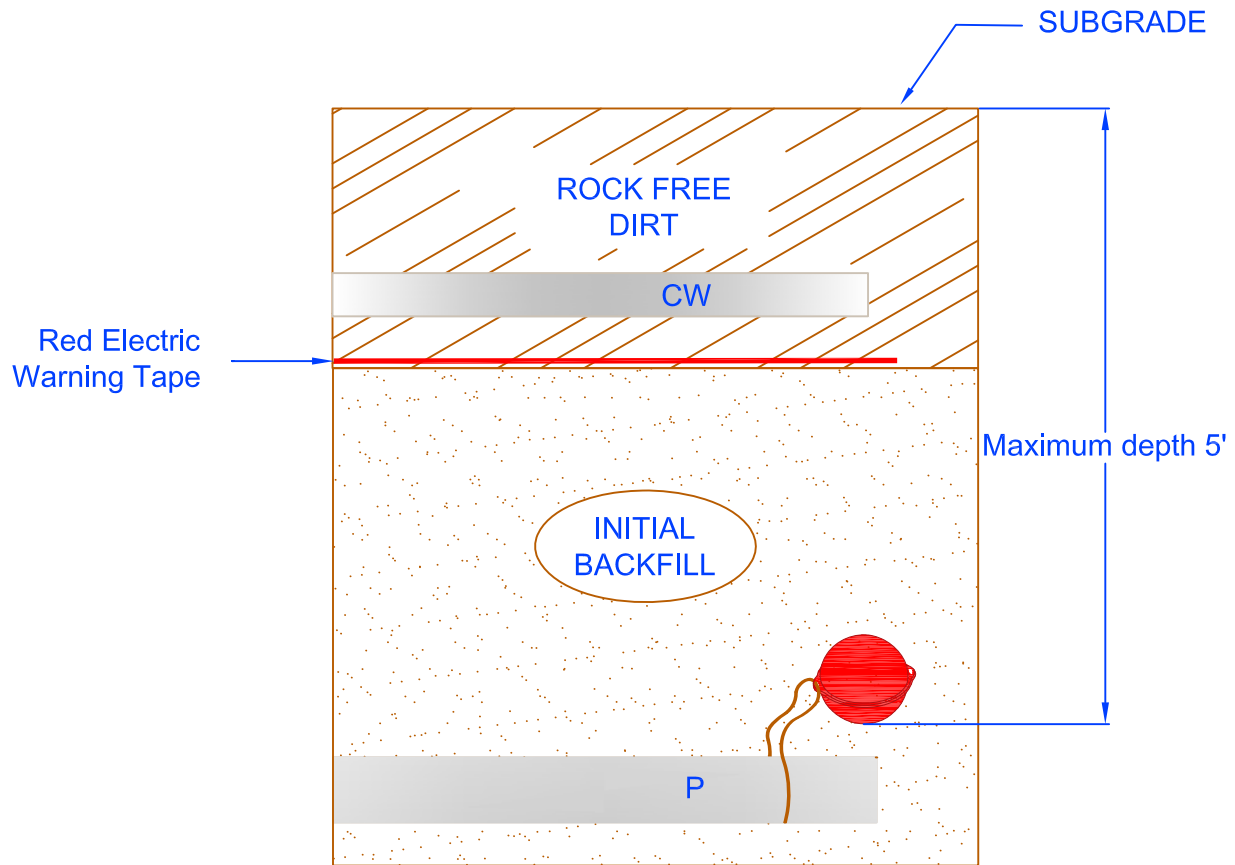


PEDERNALES ELECTRIC  
COOPERATIVE, INC.

URD DEVELOPER'S SPECIFICATIONS

### Working Clearances around Padmount Transformers

drawn:	approved	date:	drawing number:
JBS	MJB	February 28, 2013	570-015-0911



Model Number # 1402-XR

Stock # 80611161144

**NOTES:**

- 1) 3M Electronic Marking System Extended Range Ball Marker's are required at locations deemed necessary by PEC.
- 2) PEC inspector will deliver marker balls to developer's contractor for installation.
- 3) Ball markers must be tied to the conduit ends using the tie down tabs provided.
- 4) The XR Ball Marker cannot reliably re-radiate the locator's signal at a depth greater than 5 feet, this is the maximum allowable distance between ball marker and subgrade.
- 5) Hand fill at least 6 inches of soil over the marker to prevent movement or damage during backfill.



PEDERNALES ELECTRIC  
COOPERATIVE, INC.

URD DEVELOPER'S SPECIFICATIONS

3M Electronic Marking System  
Extended Range Ball Marker

drawn:	approved	date:	drawing number:
DBS	MJB	July 18, 2016	580-010-0911