

Pedernales Electric Cooperative, Inc.

Underground Installation Specifications

As of September 11, 2023

DRAWING NUMBER	DESCRIPTION
COVER	COVER PAGE
500-000	INDEX
500-100	DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL (2 PAGES)
500-103	APPROVED MANUFACTURERS & DISTRIBUTORS (2 PAGES)
510-009	TYPICAL NOTES REFERENCE PAGE
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 (2 PAGES)
530-022	LARGE PAD FOR THREE-PHASE SECTIONALIZING ENCLOSURE (2 PAGES)
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 | H | DATE | 04/05/2022 | REVISION | ADDED 520-020 CHANGED TITLE OF 520-030 TO MATCH | BY | RWC | CHK | SSS | APR | MMG



UNDERGROUND INSTALLATION SPECIFICATIONS

INDEX

drawn:

RWC

approved:

MMG

date:

04/05/2022

500-000

TRENCH SPECIFICATIONS:

Installation of conduit:

1. Minimum cover to be 30" from the top of primary conduit to sub-grade.
2. Bottom of trench shall be sanded to provide smooth, even support for conduits.
3. Sand to be placed directly around conduits for initial backfill.
4. There is to be a minimum of 12" separation between electrical conduits and all other utilities' conduits.
5. Warning tape to be a minimum of 12" above electrical conduits.
6. Concrete or flowable fill to 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.
7. Trench may be used jointly if adequate separation is provided. (See drawings 510-014, 510-022, 510-023, 510-024 and 510-025).
8. Conduit may be under pavement if a depth of 30" cover to sub-grade is maintained.
9. Trench may be on property if adequate depth is maintained. "Adequate depth" is defined as 30" below the lowest point between the edge of pavement and property line.

Inspection schedule:

1. After primary conduit installation.
2. After initial backfill.
3. After secondary conduit installation.
4. After remainder of initial backfill and warning tape.
5. After secondary backfill (rock-free dirt).

Failure to receive inspection will require removal of the backfill to allow inspection.

DEVELOPER/CONTRACTOR CONTRIBUTION:

1. Payment to PEC for materials per the Line Extension Policy.
2. Trench.
3. Conduit:
 - a. 3" conduit Schedule 40, conduit bends Schedule 80 with 3", 36" minimum radius and accessories.
 - b. 4" conduit Schedule 40, conduit bends Schedule 80 with 4", 48" minimum radius and accessories.
 - c. Conduit for service will be sized as needed.
 - d. 2" conduit for controls or temporary service only.
 - e. Conduit bends with a 24" radius may be used only for secondary.

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.

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. No knots to be tied 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. Install meter socket when metering on building.
15. Furnish and install any gang-type meter sockets.
16. Primary enclosures and extensions (if applicable).
17. Meter sockets (PEC will provide pedestal-mounted sockets only).
18. Switchgear (if applicable).
19. Bollards, if deemed necessary by PEC to protect electrical equipment. Design must be approved by PEC prior to installation.

MEMBER'S RESPONSIBILITY:

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 and 200 amp breakers. The breaker must have an interrupting capacity of 10,000 amps rated at 240 volts. GE Cat. No. TQD22 (amp needed) WL and Eaton Cuttler-Hammer FD2200 or equal (old Westinghouse # CA2200W).
2. Install insulated jumpers from bottom of meter socket to top of breakers.
3. Install galvanized rigid conduit, Schedule 40 PVC or an approved equal from pedestal pad to bottom of box.
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.

Refer to applicable drawings within these specifications.

REV	B	DATE	07/09/2020	REVISION	ADD 2" CONDUIT AND FLOWABLE FILL NOTES	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	--	----	-----	-----	-----	-----	-----



UNDERGROUND INSTALLATION SPECIFICATIONS

DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL

PAGE 1 OF 2

drawn:	approved:	date:	500-100
RWC	MMG	07/09/2020	

MEMBER'S RESPONSIBILITY CONTINUED:

5. 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 or flowable fill is provided. If rigid conduit is used, the depth can be reduced by 6". Red electric warning tape is also required in the ditch.
6. Apply and receive all applicable inspections.
7. When all work is completed according to specifications, notify PEC you are ready for electric service. PEC will make the connect and set the meter on a routine connect order.
8. For commercial and residential applications, the member shall supply the CT enclosure (if needed) and all secondary cable in accordance with the National Electrical Code.

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

1. Primary conductors.
2. Secondary conductors.
3. Cable terminations.
4. Transformers.
5. Meter pedestals.
6. Switchgear.
7. Secondary GelPort connectors.
8. Meter socket combo.

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.

Refer to applicable drawings within these specifications.

REV	B	DATE	07/09/2020	REVISION	ADD 2" CONDUIT AND FLOWABLE FILL NOTES	BY	RWC	CHK	SSS	APR	SSS
-----	---	------	------------	----------	--	----	-----	-----	-----	-----	-----



**UNDERGROUND
INSTALLATION
SPECIFICATIONS**

DEVELOPER/MEMBER/PEC SUPPLIED MATERIAL

PAGE 2 OF 2

drawn:	approved:	date:	500-100
RWC	MMG	07/09/2020	

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	tboyd@irby.com
	(512) 787-8288	BASTROP, TX 78602	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 for All Pads

1. Require 3" conduit (unless otherwise specified by PEC) with bell-end fittings to extend 1 1/2" to 2" above pad.
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:**
 - Pre-pour inspection: Check framing and layout of pad and conduit components.
 - 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 to stop 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 to stop 1" from sides.
11. Minimum concrete cover over reinforcing steel 2" unless noted.

Typical Trench Details

12. Schedule 40 electrical-grade PVC conduit. Schedule 80 electrical-grade conduit can be used in place of sand in secondary-only trenches.
13. Initial backfill shall be manufactured or commercial sand. Minimum 3/8" pea gravel may be used for initial backfill in flood-prone areas.
14. With PEC approval, minimum cover requirements may be reduced by six inches with every two inches of 3,000 PSI concrete poured directly onto conduit. ***Contact PEC before pouring concrete.***
15. If any type of vault or pedestal for the underground electric is planned, then all other utilities should be routed around these facilities.
16. For 2" and **smaller** waterlines, special permission must be granted by PEC. Water lines larger than 2" will not be allowed in PEC trench.
17. Refer to drawings 510-023 and 510-025 for PEC specifications and trench details on gas joint trench installations.

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) Red = Phase A (B) Blue = Phase B (Y) Yellow = Phase C

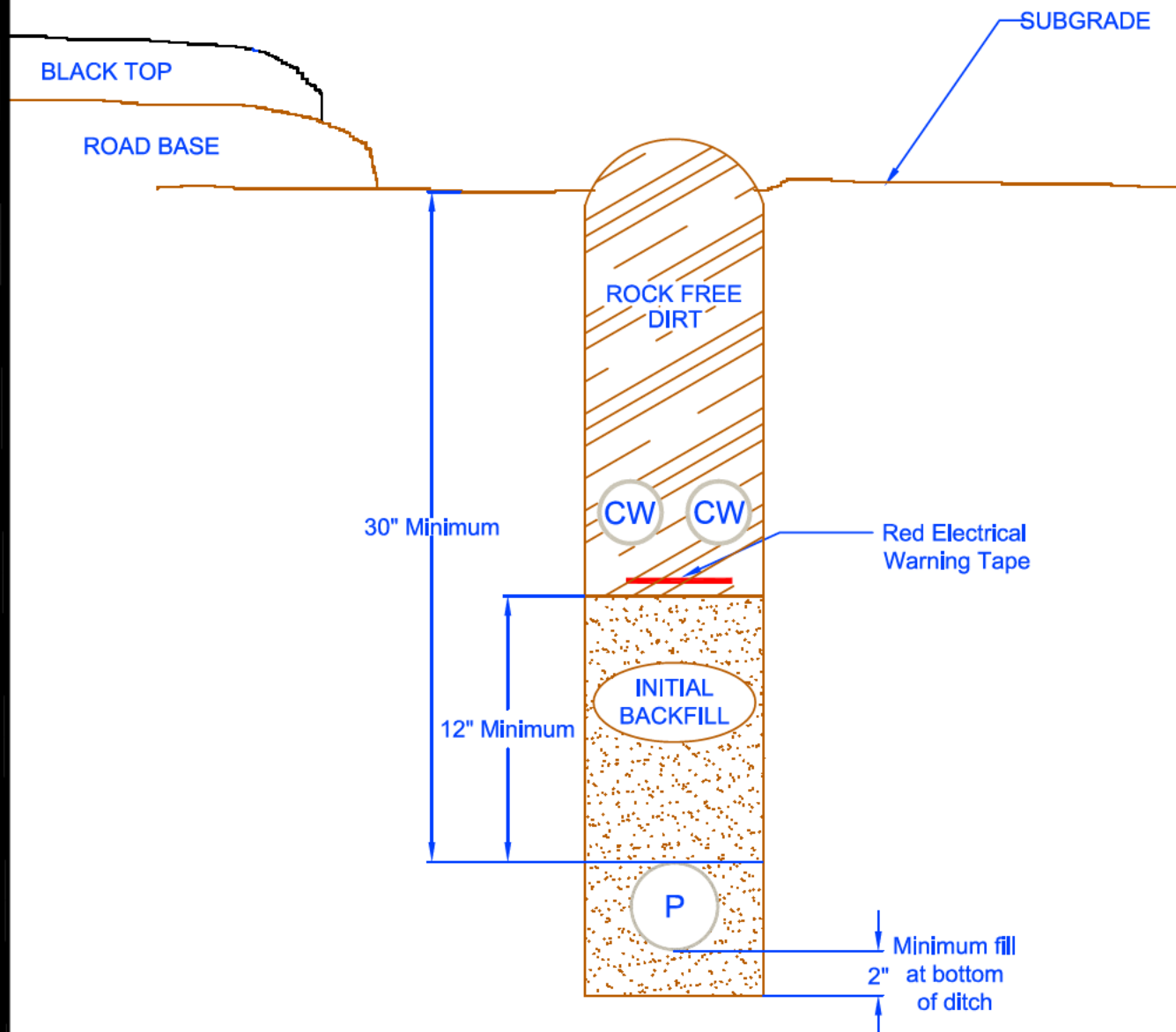
REV | C | DATE | 09/01/2023 | REVISION | ADDED PRIMARY PHASING LEGEND | BY | RWC | CHK | SSS | APR | MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

TYPICAL NOTES REFERENCE PAGE

drawn:	approved:	date:	510-009
RWC	MMG	09/01/2023	



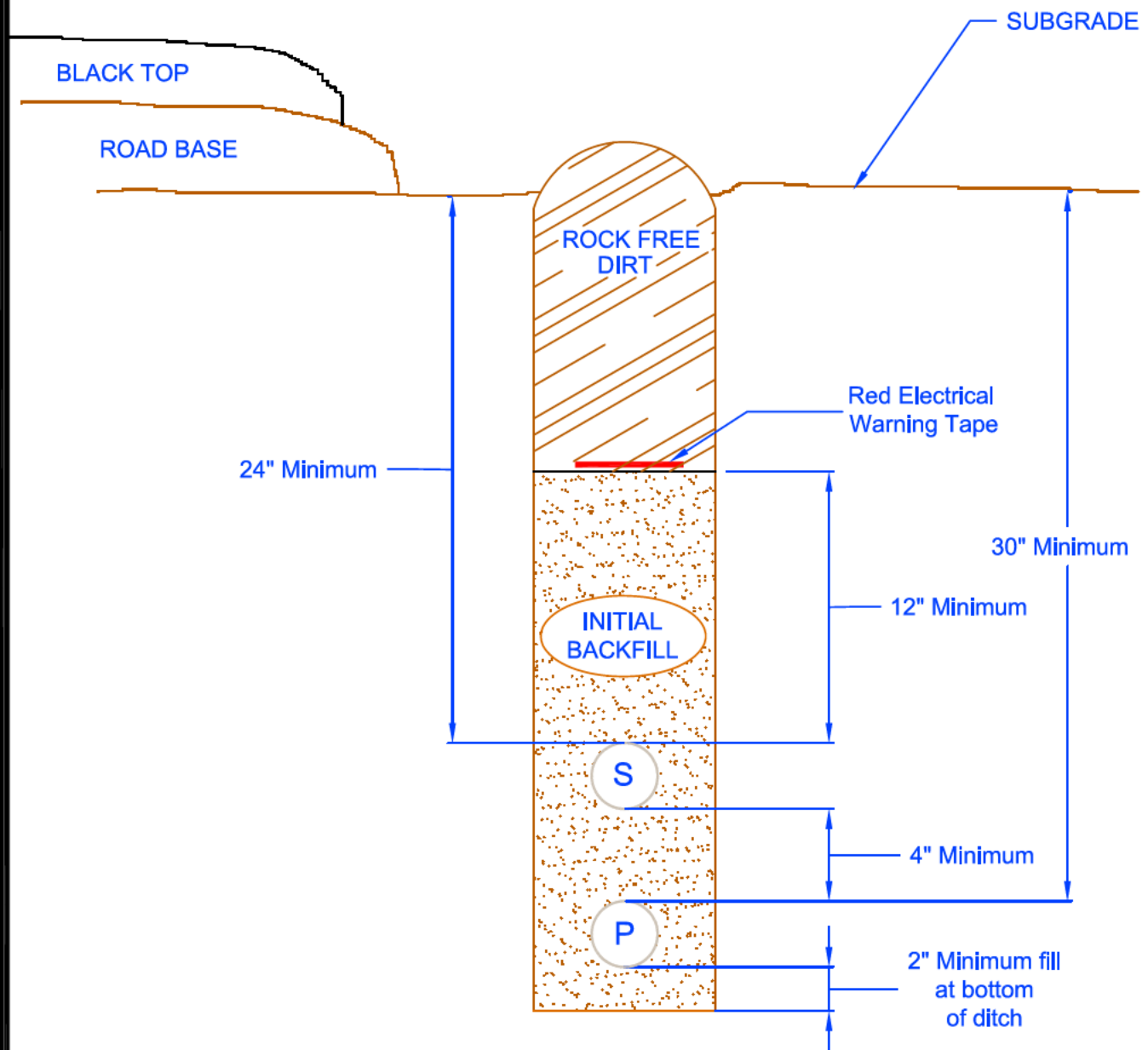
Reference Drawing
510-009-0911 for
Typical Trench Details



PEDERNALES ELECTRIC
COOPERATIVE, INC.
URD DEVELOPER'S SPECIFICATIONS

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

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



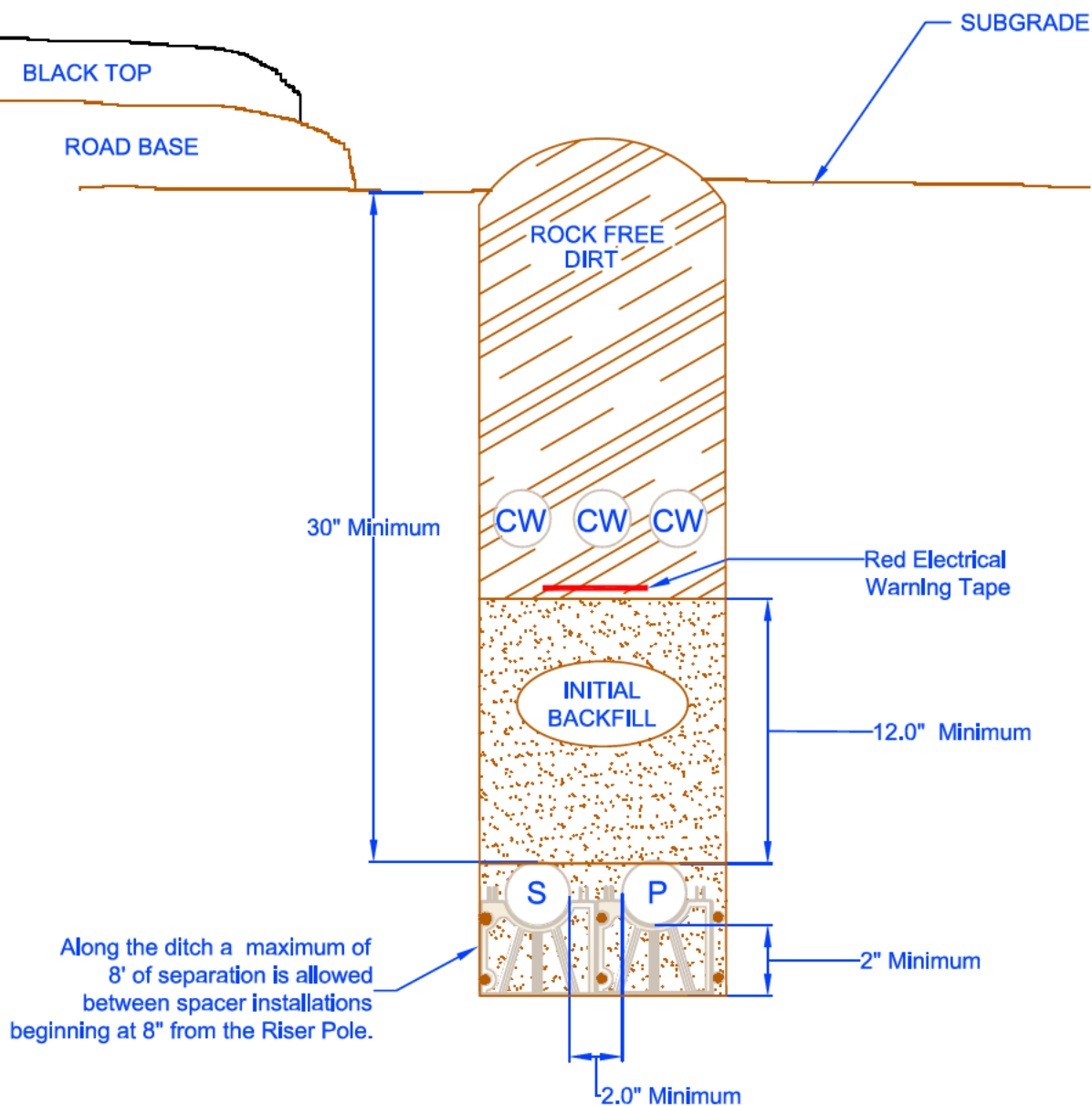
Reference Drawing
510-009-0911 for
Typical Trench Details



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



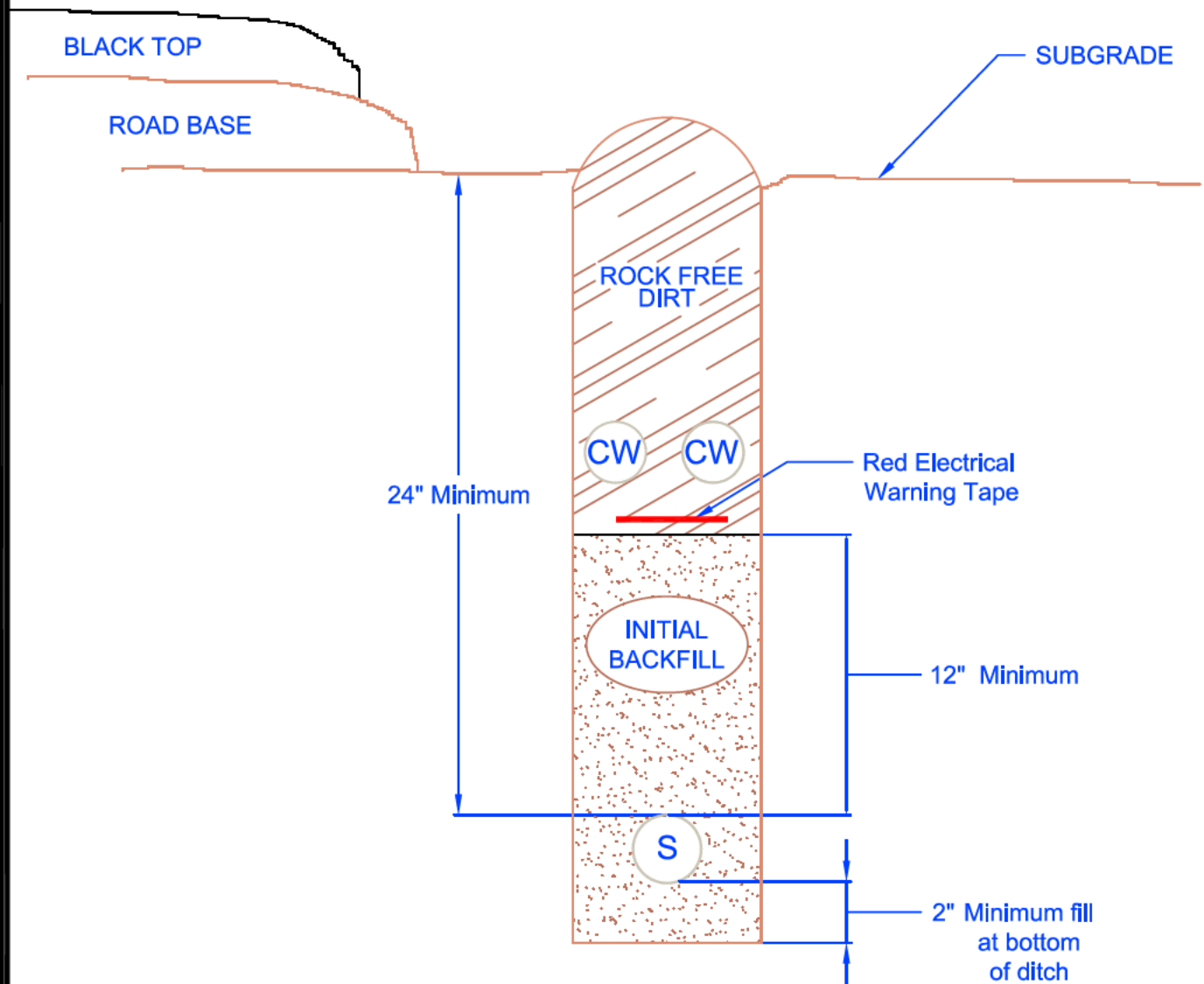
Reference Drawing
510-009-0911 for
Typical Trench Details



PEDERNALES ELECTRIC
COOPERATIVE, INC.
URD DEVELOPER'S SPECIFICATIONS

1Ø Conduit Arrangement Joint with other Utilities

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



Reference Drawing
510-009-0911 for
Typical Trench Details

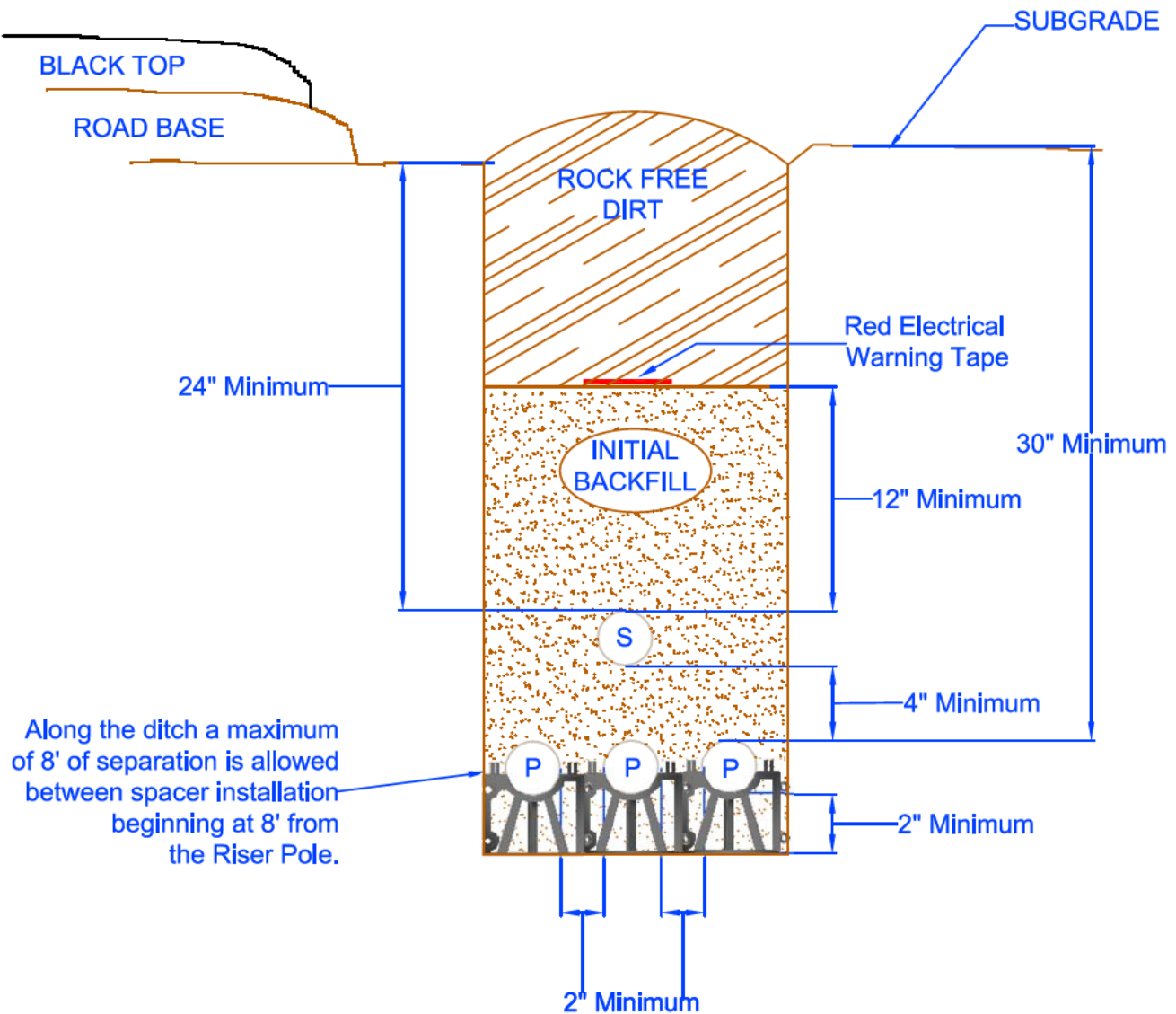


PEDERNALES ELECTRIC
COOPERATIVE, INC.
URD DEVELOPER'S SPECIFICATIONS

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



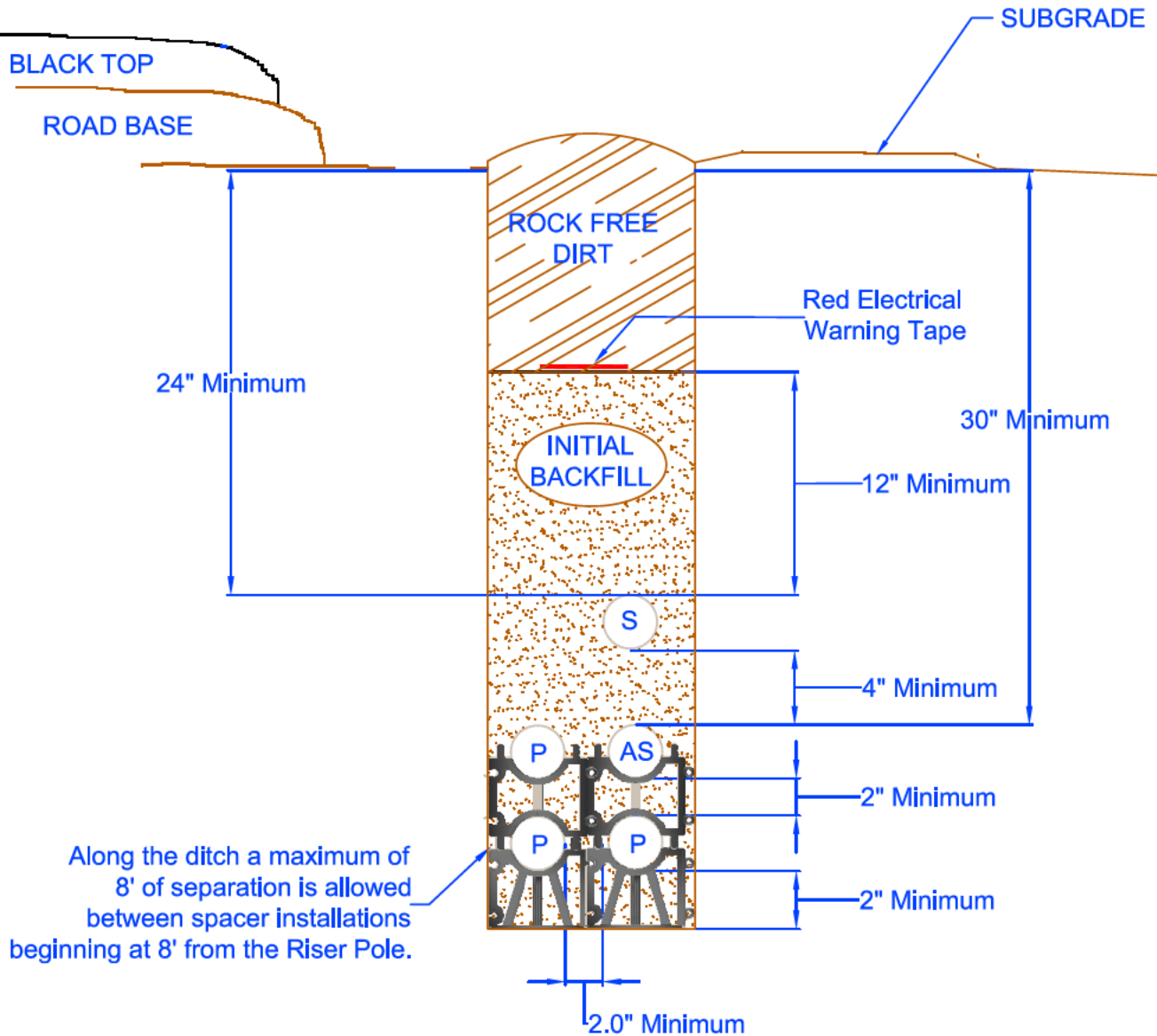
PEDERNALES ELECTRIC
COOPERATIVE, INC.

URD DEVELOPER'S SPECIFICATIONS

30 Conduit Arrangement
Electric Only
Primary and Secondary

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

OPTION 2



Reference Drawing
510-009-0911 for
Typical Trench Details

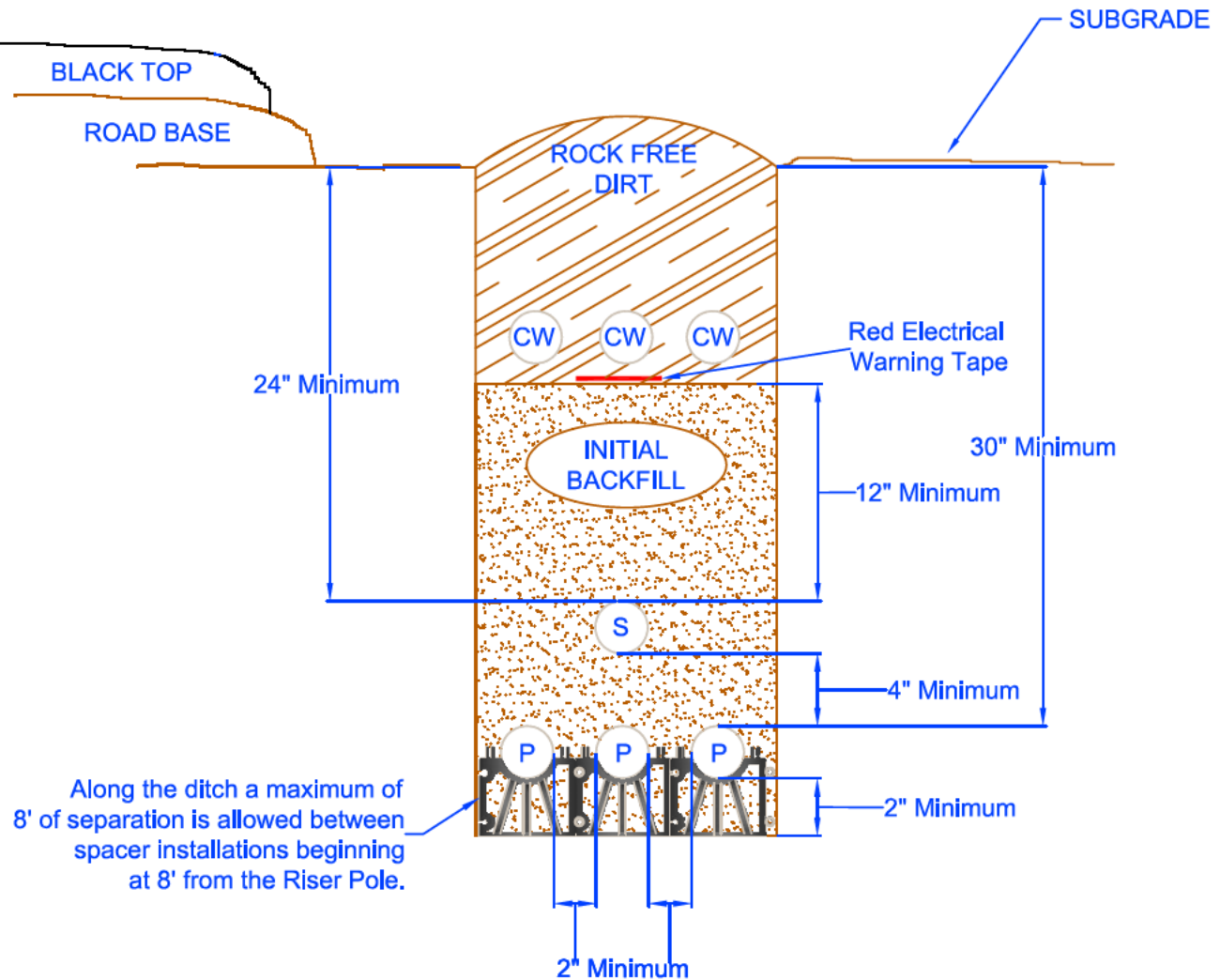


**PEDERNALES ELECTRIC
COOPERATIVE, INC.**
URD DEVELOPER'S SPECIFICATIONS

**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



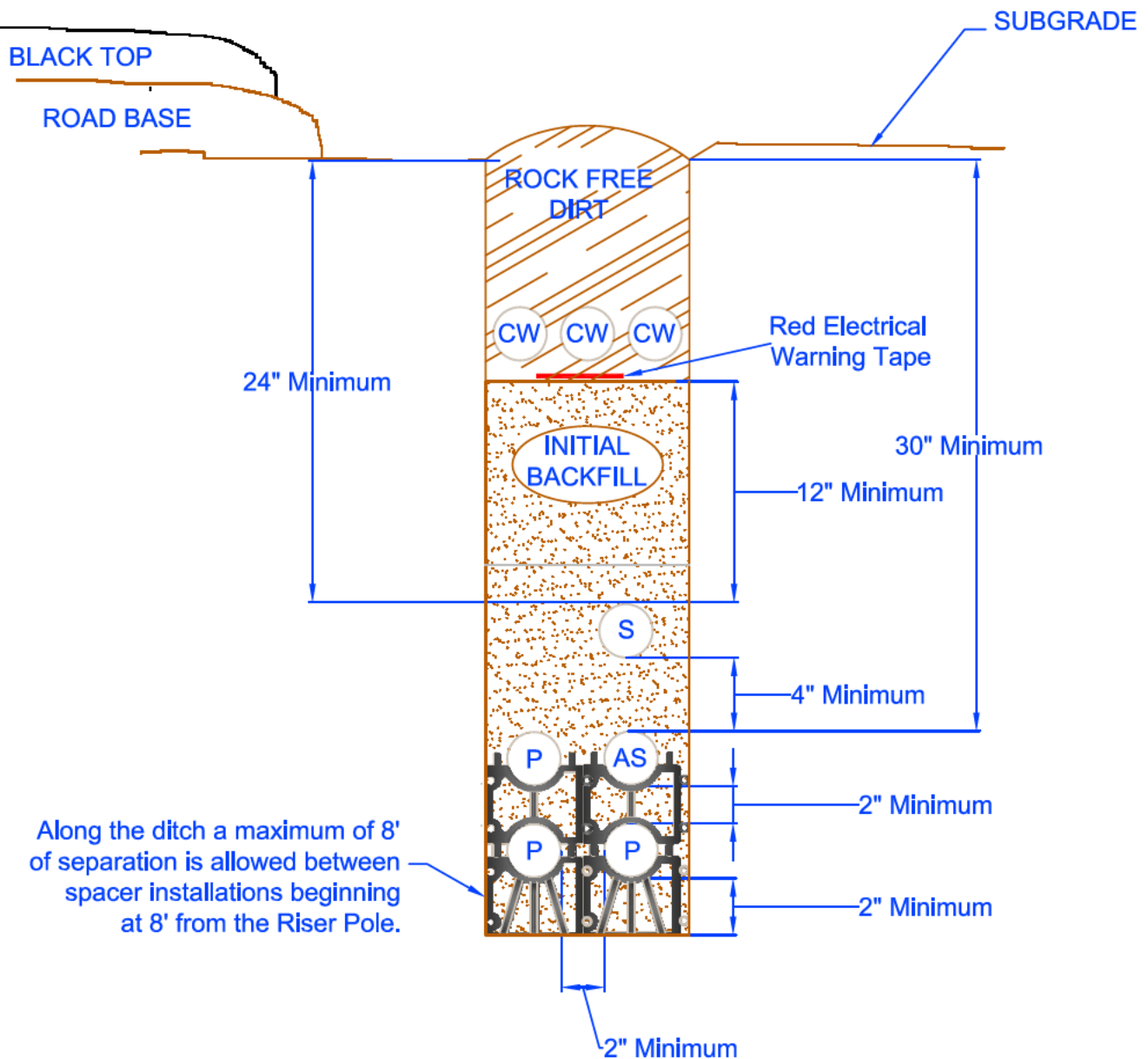
PEDERNALES ELECTRIC
COOPERATIVE, INC.

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:
JBS	MJB	December 12, 2011	510-022-0911

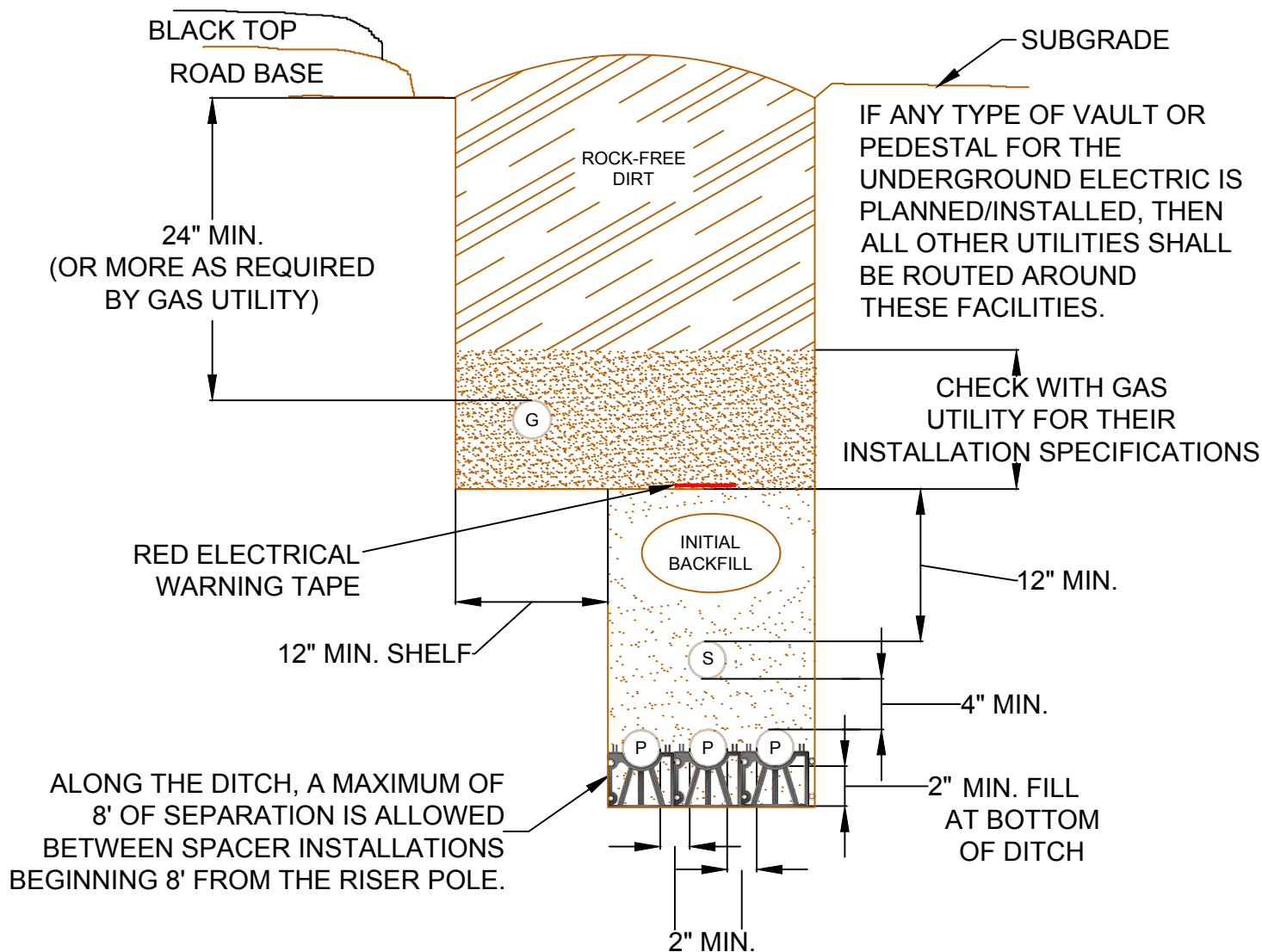
PEC prefers to avoid joint trench installations with gas lines. If a gas joint trench is required, contact PEC for permission and to coordinate inspections. A joint trench as depicted below or on drawing 510-025 is permitted with prior approval providing the following conditions are met:

- 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:

RWC

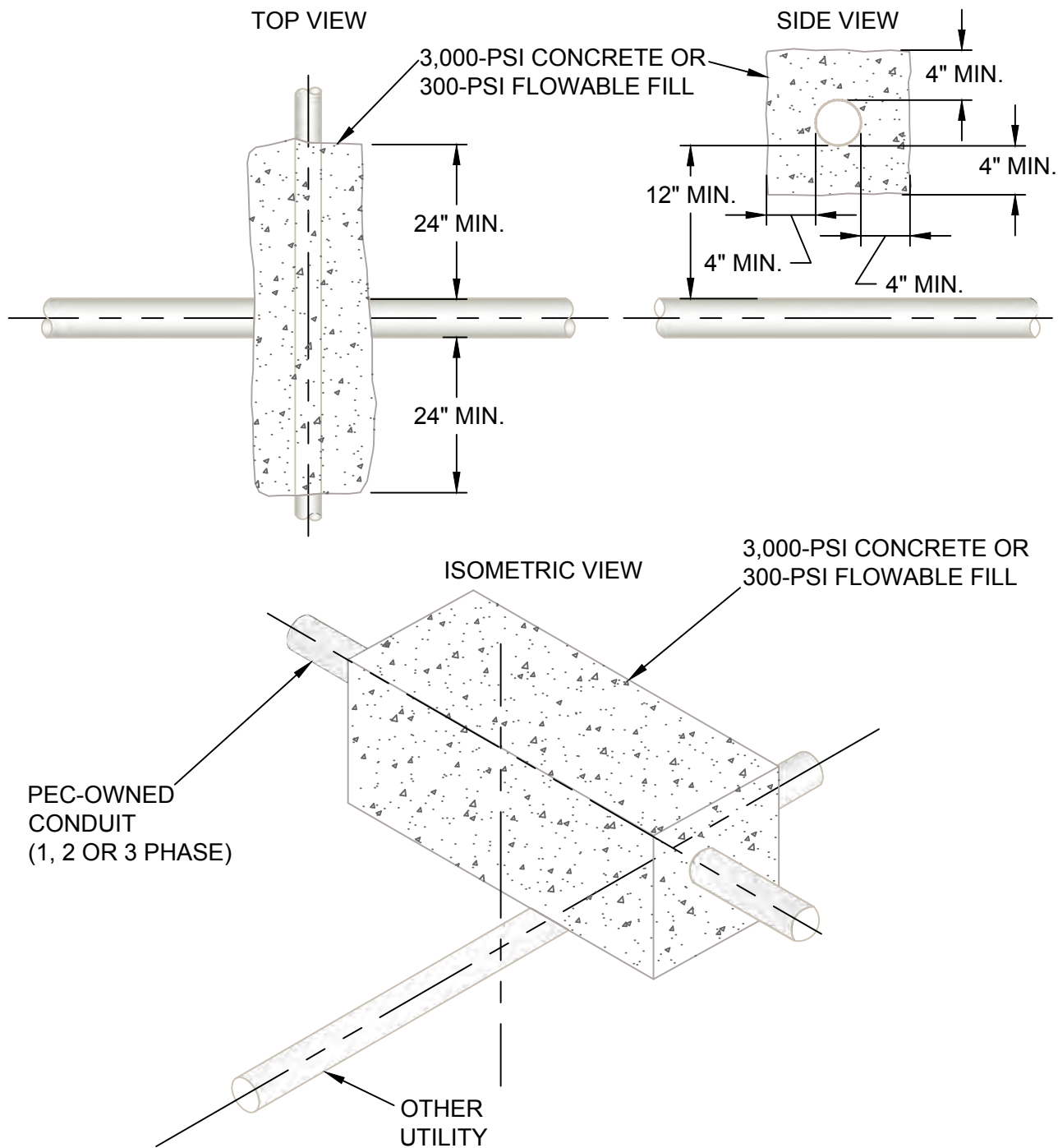
approved:

MMG

date:

03/26/2020

510-023



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	

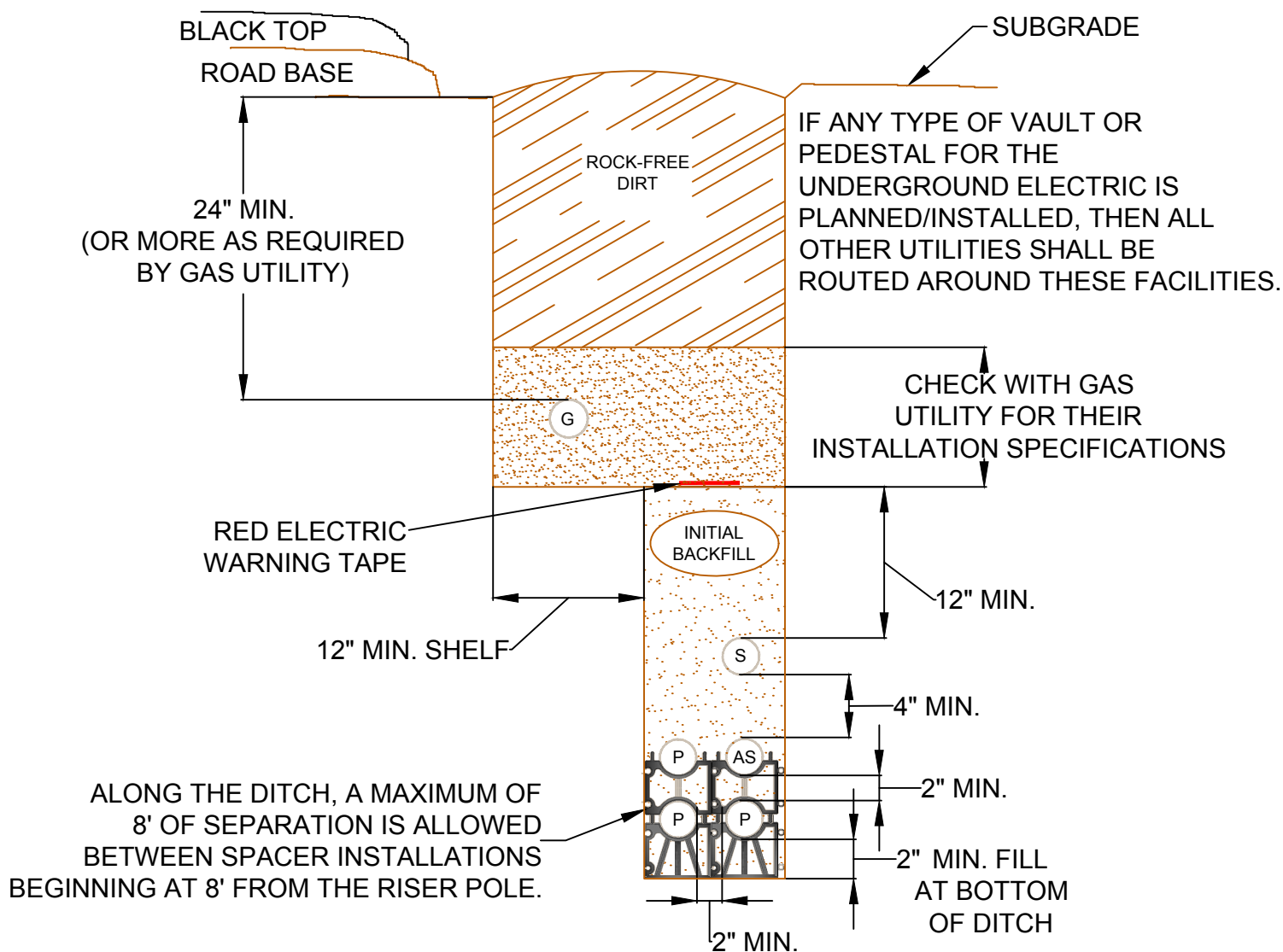
PEC prefers to avoid joint trench installations with gas lines. If a gas joint trench is required, contact PEC for permission and to coordinate inspections. A joint trench as depicted below or on drawing 510-023 is permitted with prior approval providing the following conditions are met:

- 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 510-023 for joint gas trench horizontal installation option.



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

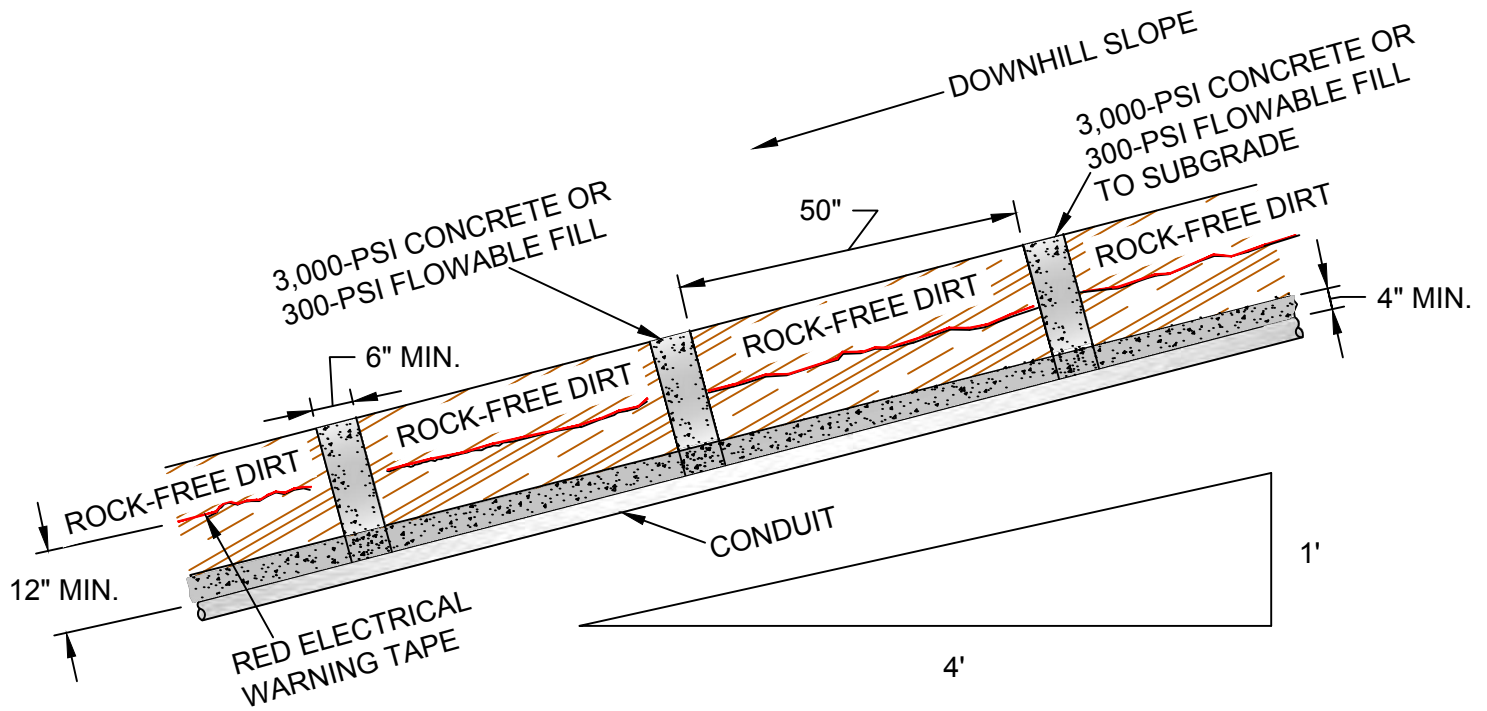


UNDERGROUND
INSTALLATION
SPECIFICATIONS

3Ø PRIMARY CONDUIT ARRANGEMENT
JOINT WITH NATURAL GAS
STACKED OPTION

drawn:	approved:	date:
RWC	MMG	03/26/2020

510-025



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
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----

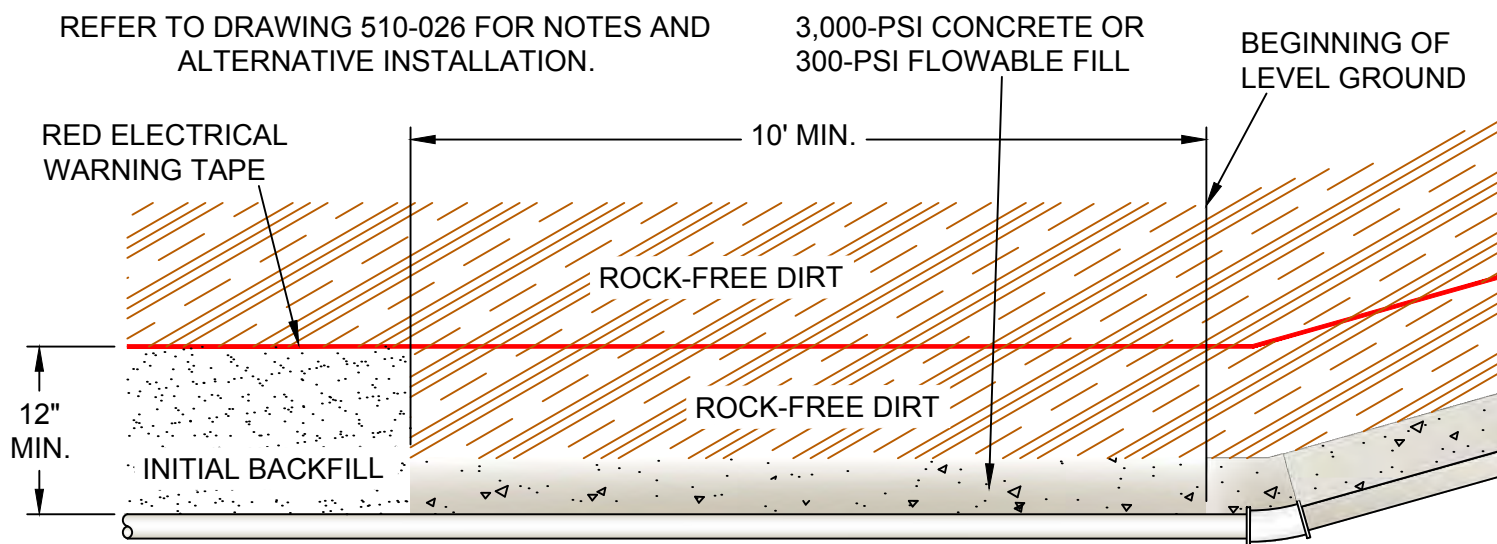
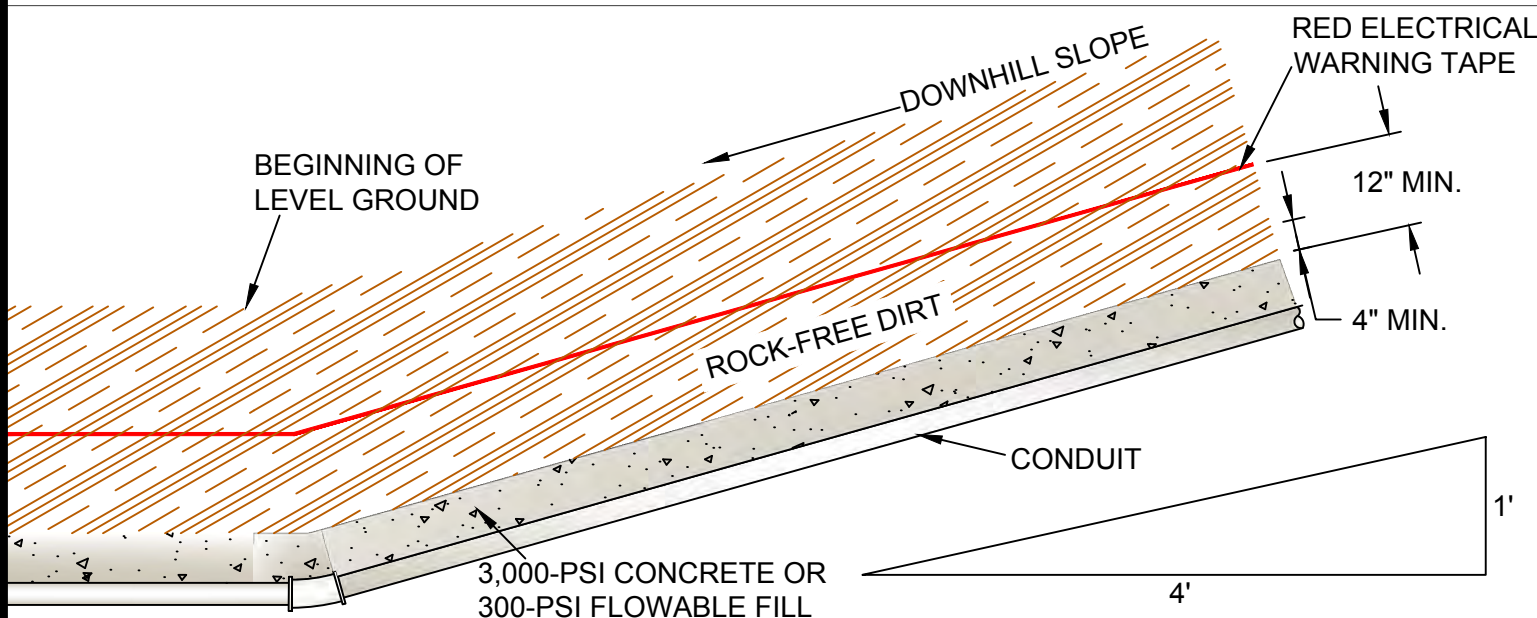
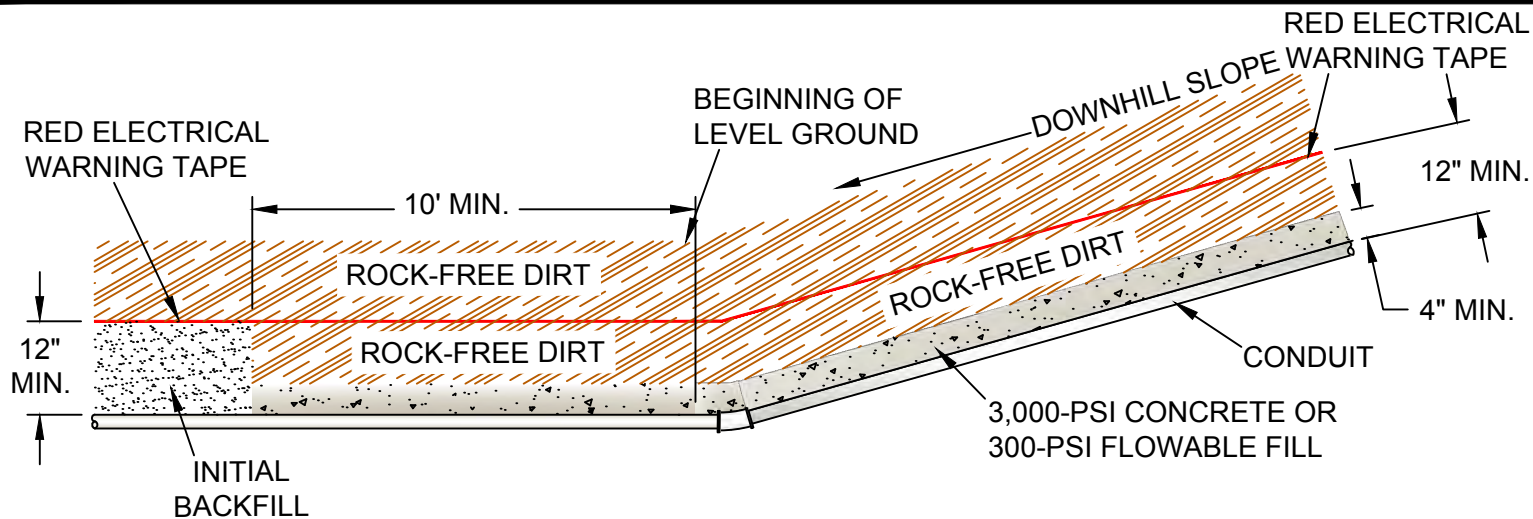


UNDERGROUND
INSTALLATION
SPECIFICATIONS

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:

RWC

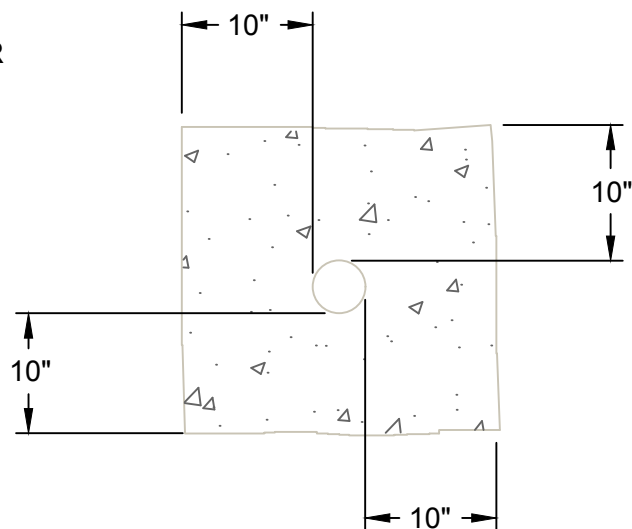
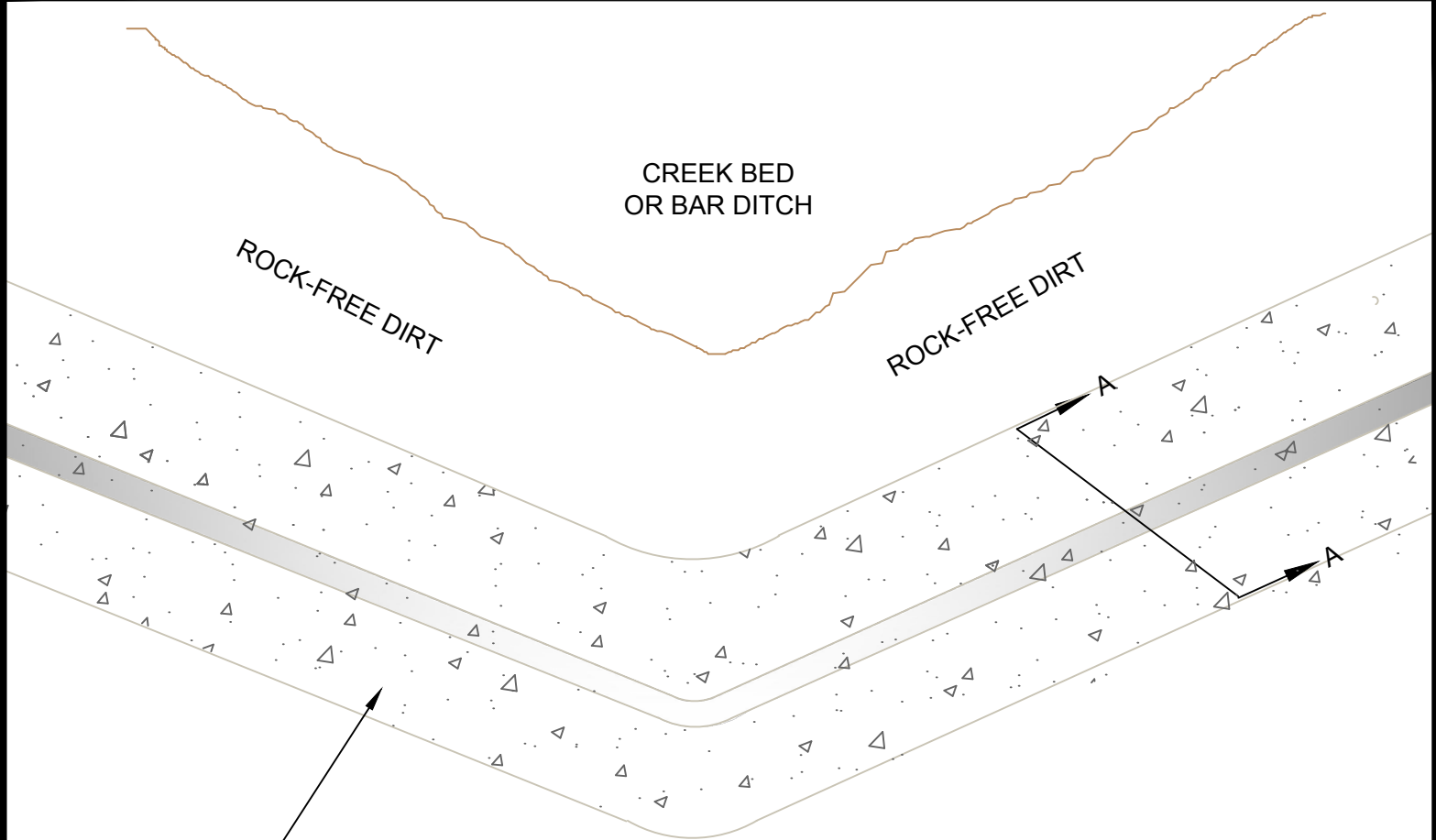
approved:

MMG

date:

07/09/2020

510-027



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:

RWC

approved:

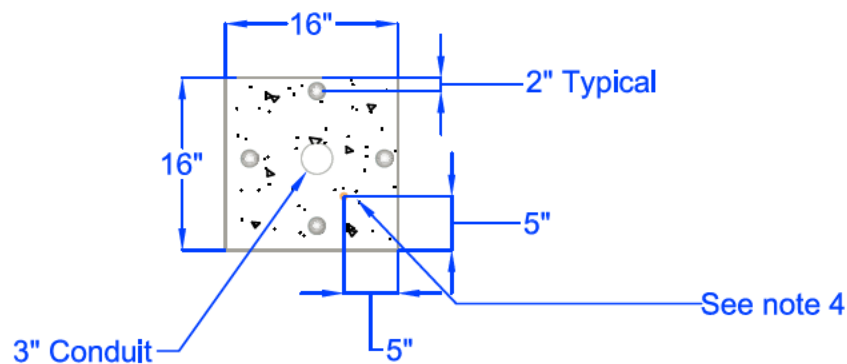
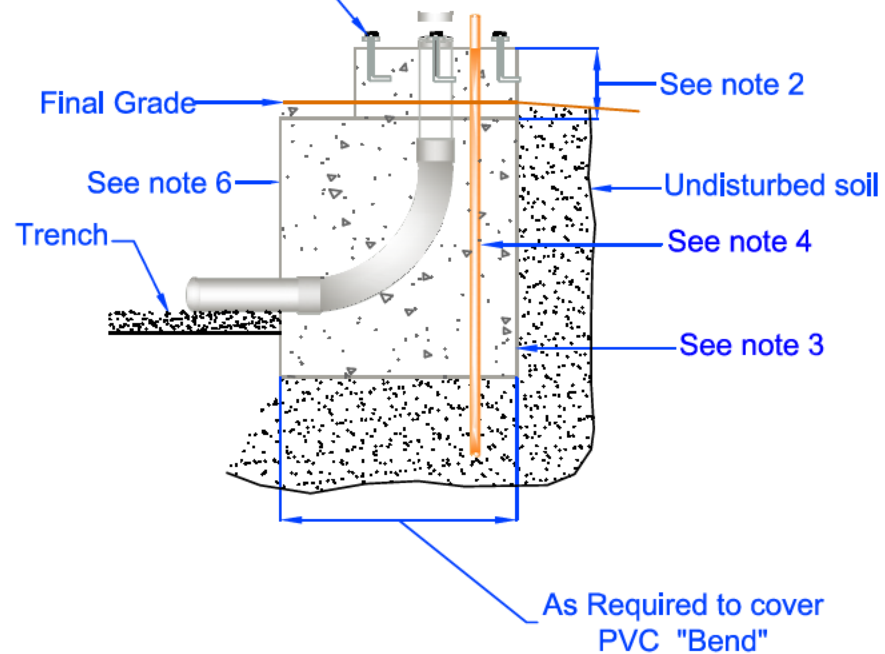
MMG

date:

07/09/2020

510-029

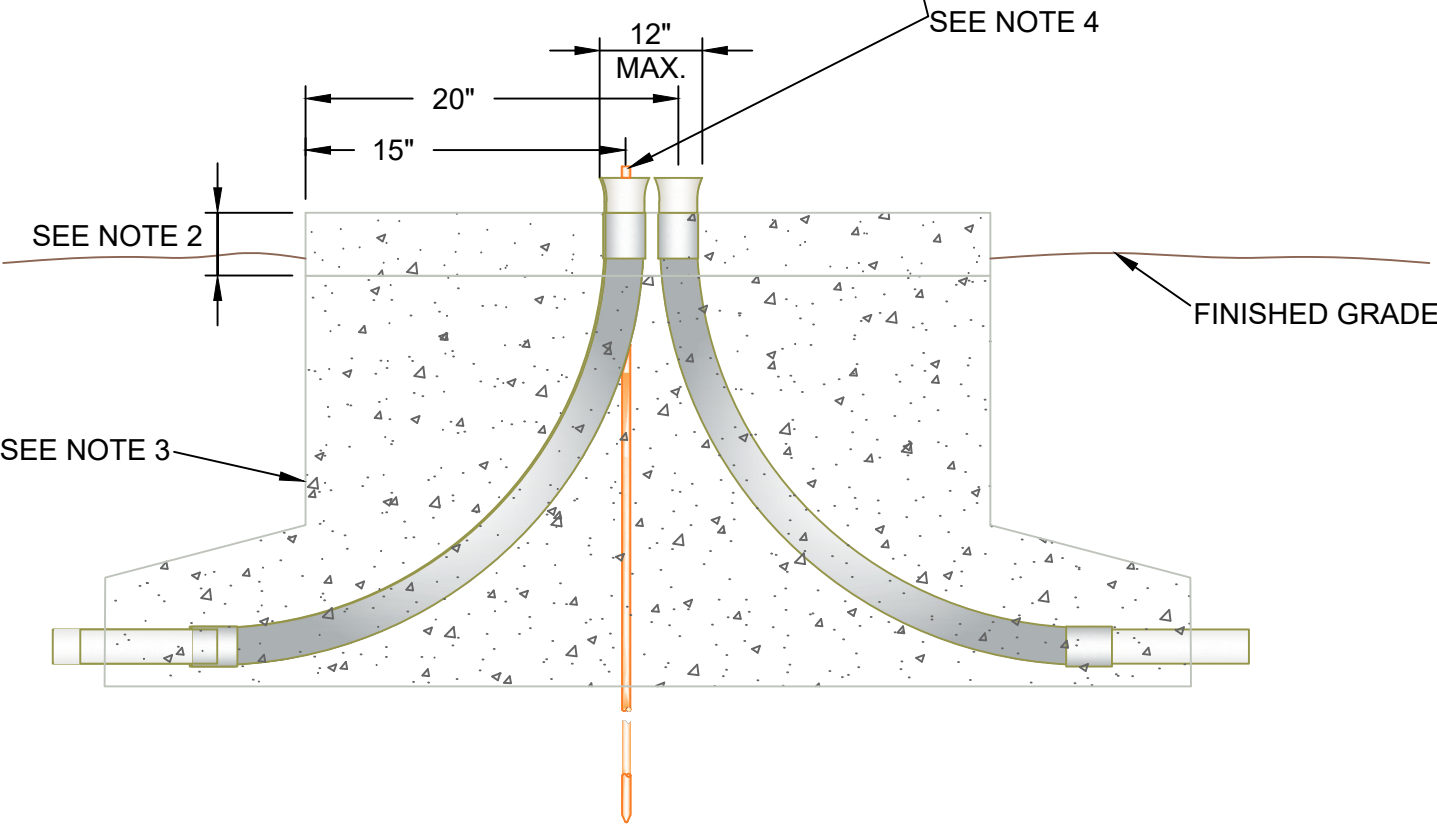
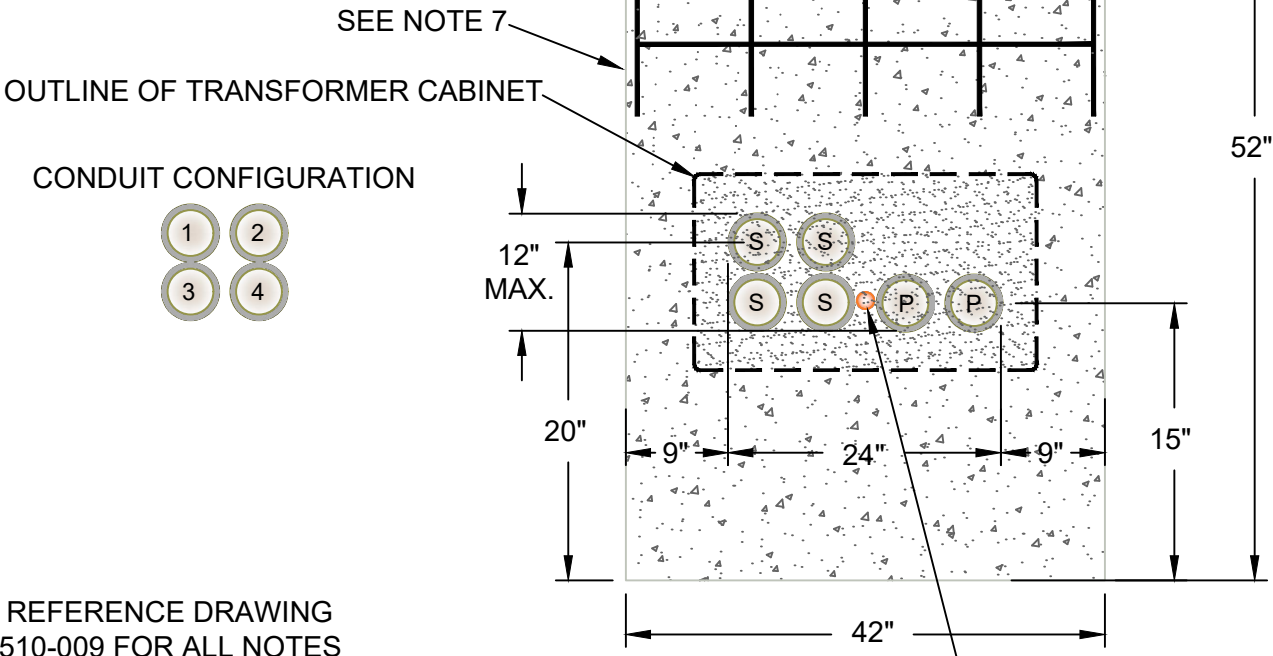
A 3D perspective diagram of a concrete slab. The slab is a rectangular prism with a light blue top surface and a darker blue body. It sits on a thin, light-colored layer representing the subgrade. Below the subgrade is a layer of dark, irregular shapes representing gravel or aggregate. A blue arrow points from the text 'Final Grade' to the top surface of the slab.



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.



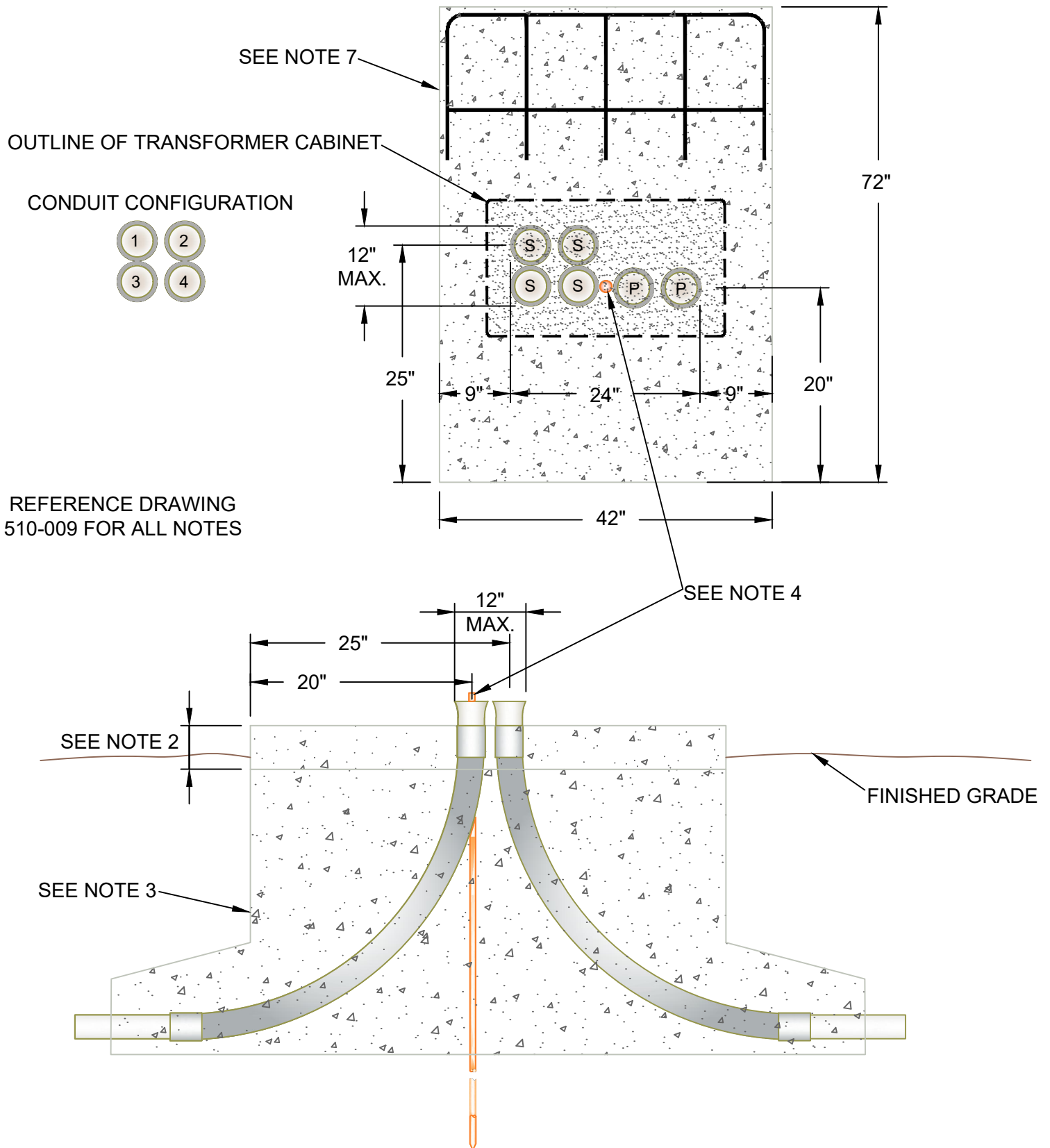
REV	A	DATE	04/28/2022	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



UNDERGROUND
INSTALLATION
SPECIFICATIONS

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

drawn:	approved:	date:	520-020
RWC	MMG	04/28/2022	



REV B DATE 04/28/2022 REVISION REMOVED NOTE

BY RWC CHK SSS APR MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

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

drawn:

approved:

date:

RWC

MMG

04/28/2022

520-030

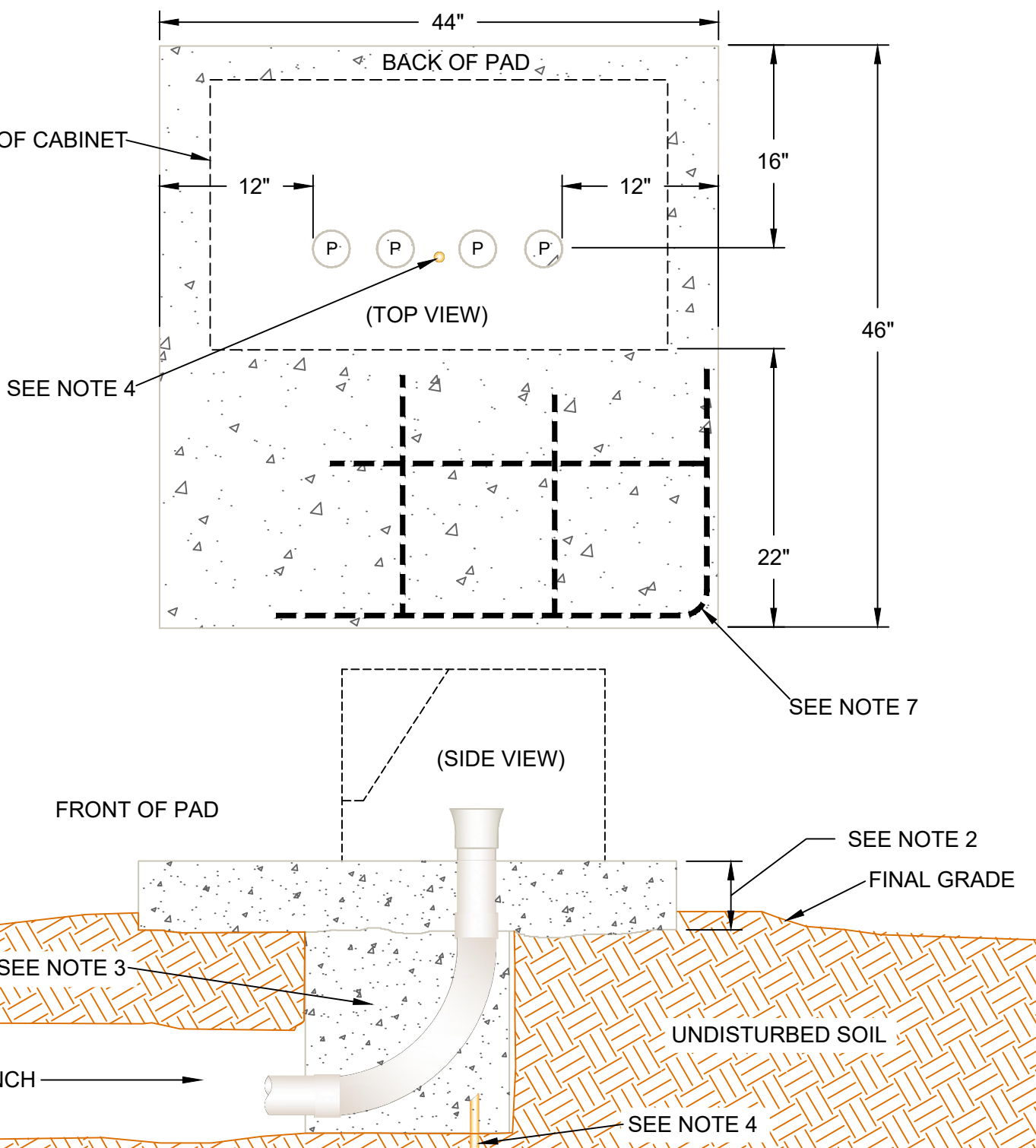
APPROVED SECTIONALIZING ENCLOSURES:

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

APPROVED ALUMINUM SECTIONALIZING ENCLOSURES:

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

**REFERENCE DRAWING
510-009 FOR ALL NOTES**



REV | A | DATE | 02/23/2023 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | SSS | APR | MMG



**UNDERGROUND
INSTALLATION
SPECIFICATIONS**

**SMALL PAD FOR
10" SECTIONALIZING ENCLOSURE**

drawn:

RWC

approved:

MMG

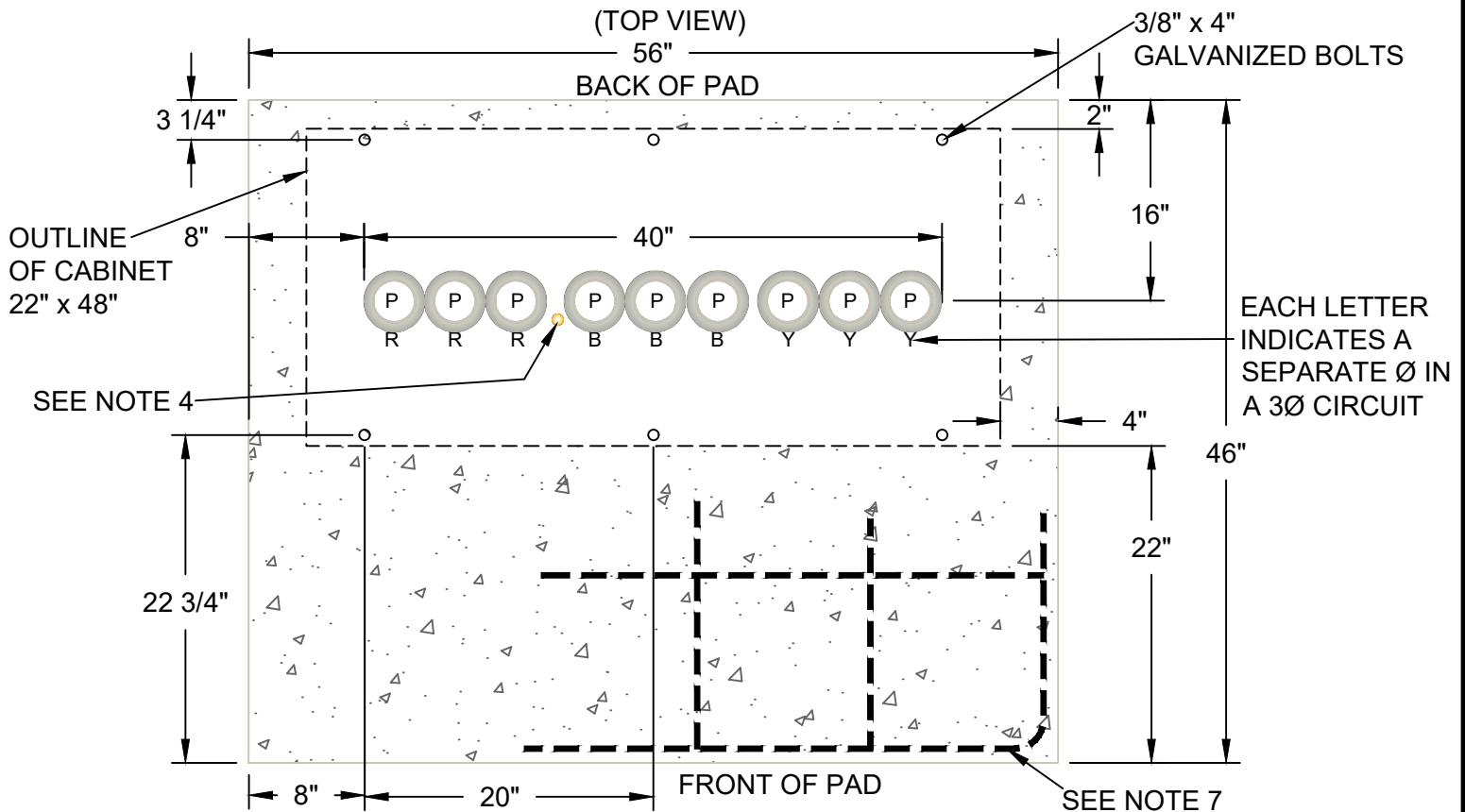
date:

02/23/2023

530-010

- 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

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

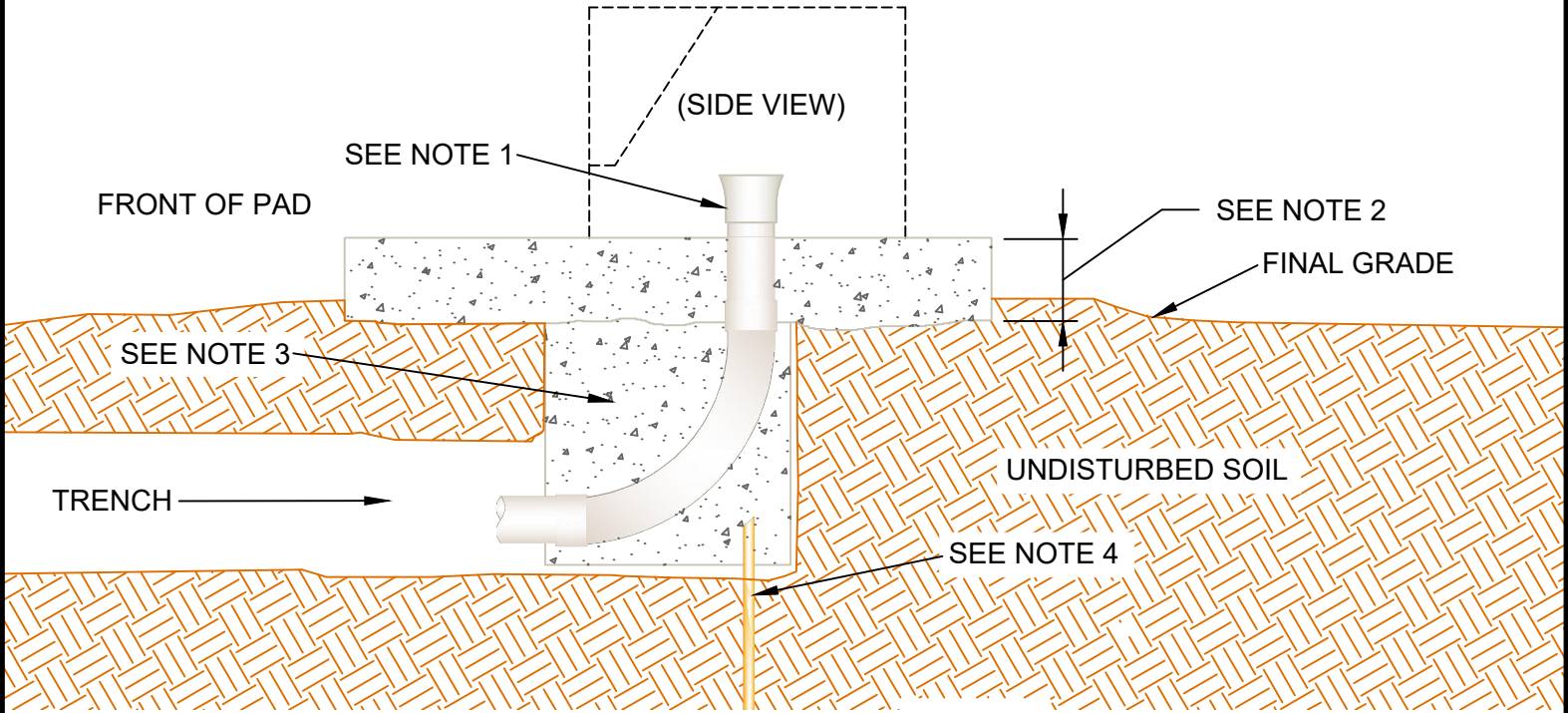


REV	A	DATE	02/24/2023	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



SMALL PAD FOR
3Ø SECTIONALIZING ENCLOSURE
PAGE 1 OF 2

drawn:	approved:	date:	530-020
RWC	MMG	02/24/2023	



REV	A	DATE	02/05/2019	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



UNDERGROUND
INSTALLATION
SPECIFICATIONS

SMALL PAD FOR
30 SECTIONALIZING ENCLOSURE
PAGE 2 OF 2

drawn:	approved:	date:	530-020
RWC	MMG	02/05/2019	

APPROVED SECTIONALIZING ENCLOSURES:

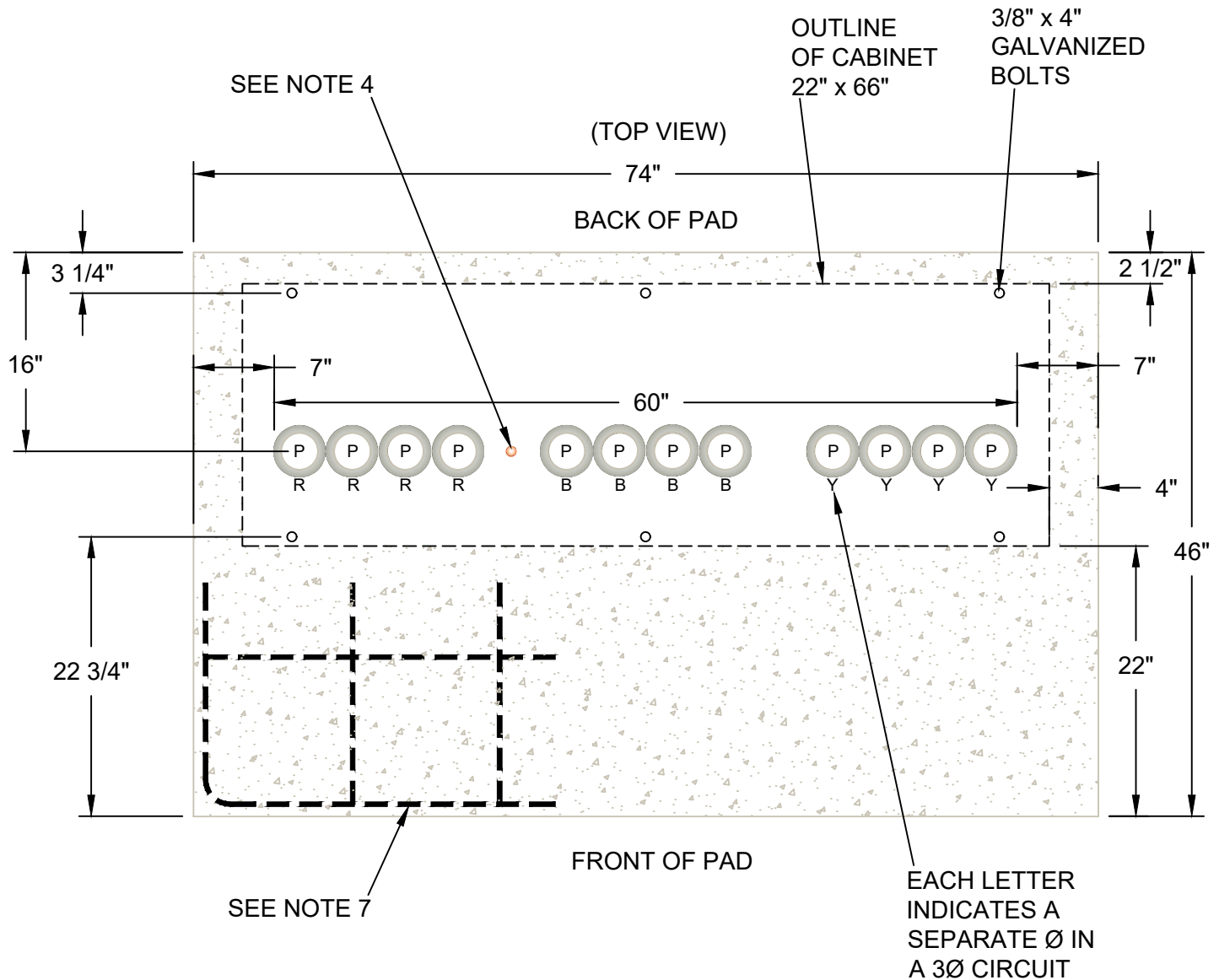
- MAYSTEEL-HUBBELL CC366-22TH
- DURHAM AM30662263
- BARFIELD-HUBBELL BGSSE226630TP-H

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



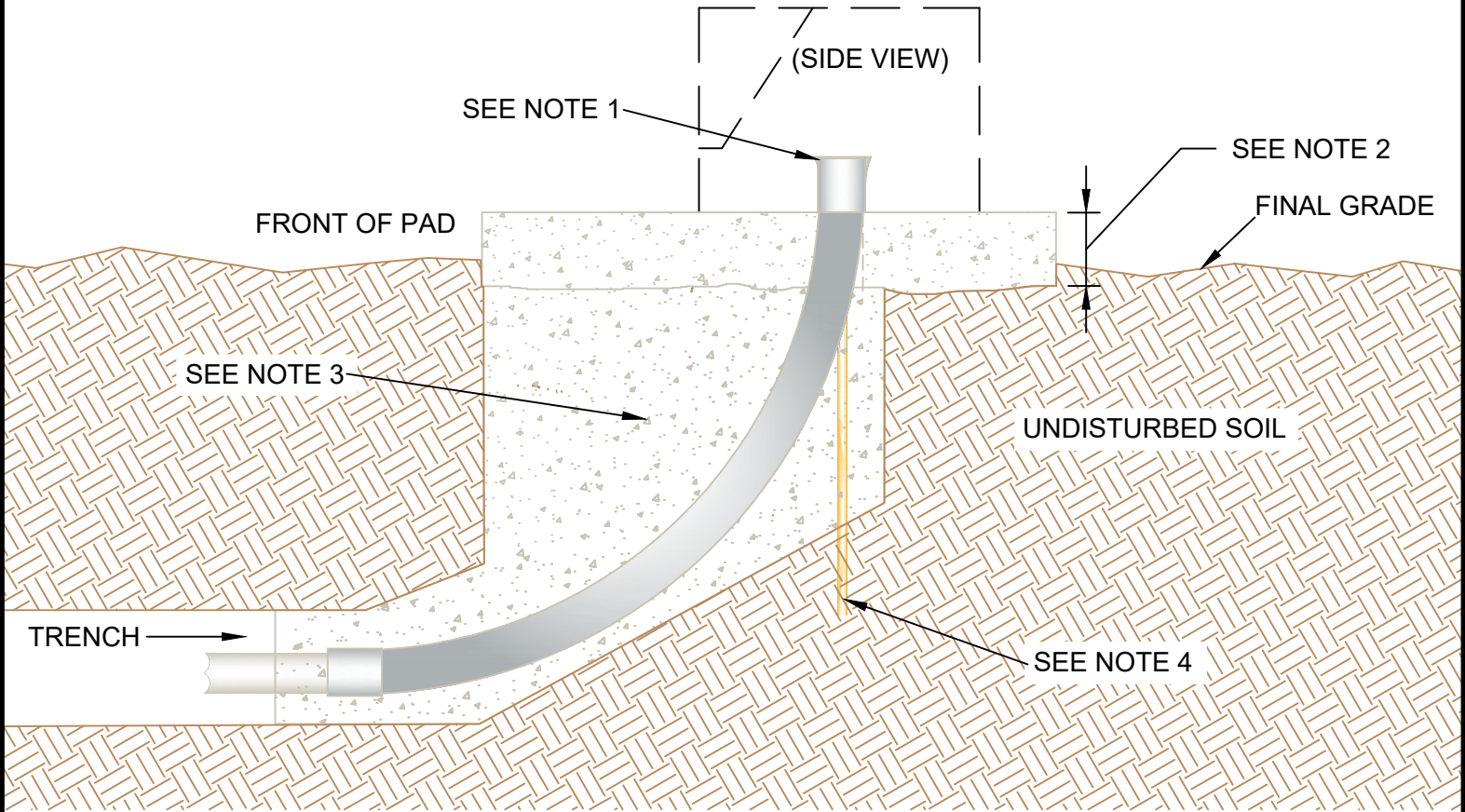
REV	A	DATE	02/24/2023	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



UNDERGROUND INSTALLATION SPECIFICATIONS

LARGE PAD FOR
3Ø SECTIONALIZING ENCLOSURE
PAGE 1 OF 2

drawn:	approved:	date:	530-022
RWC	MMG	02/24/2023	



REV	A	DATE	02/24/2023	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	------------------------	----	-----	-----	-----	-----	-----



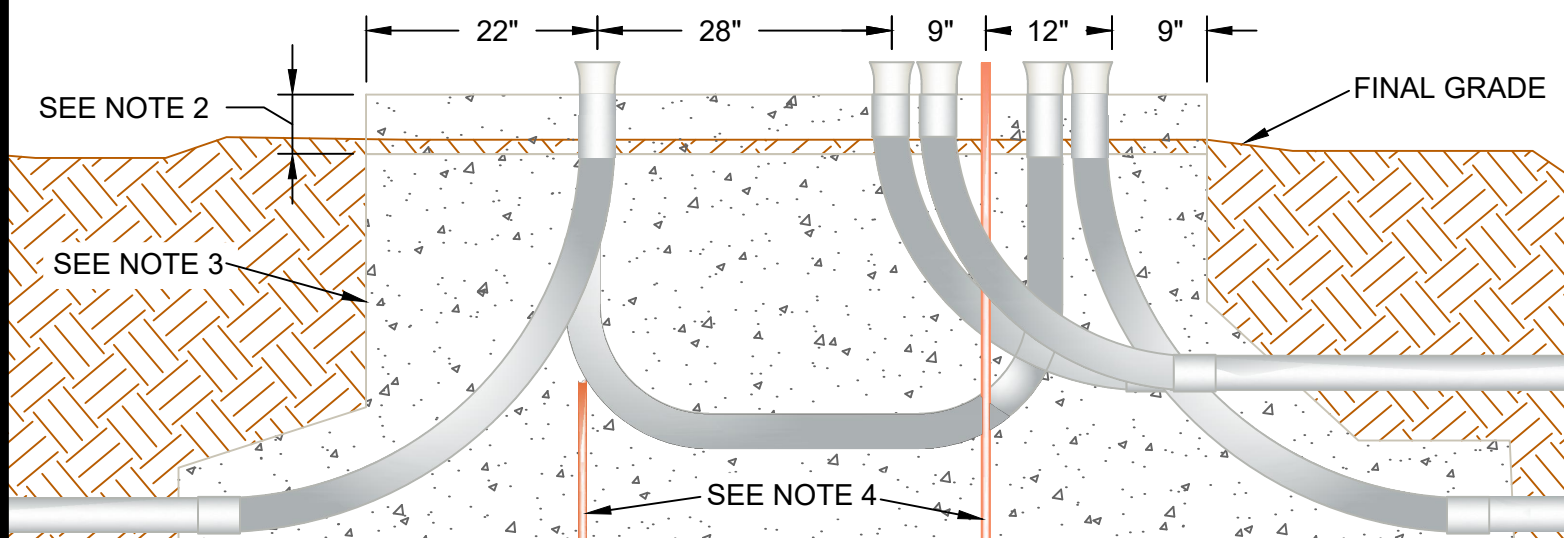
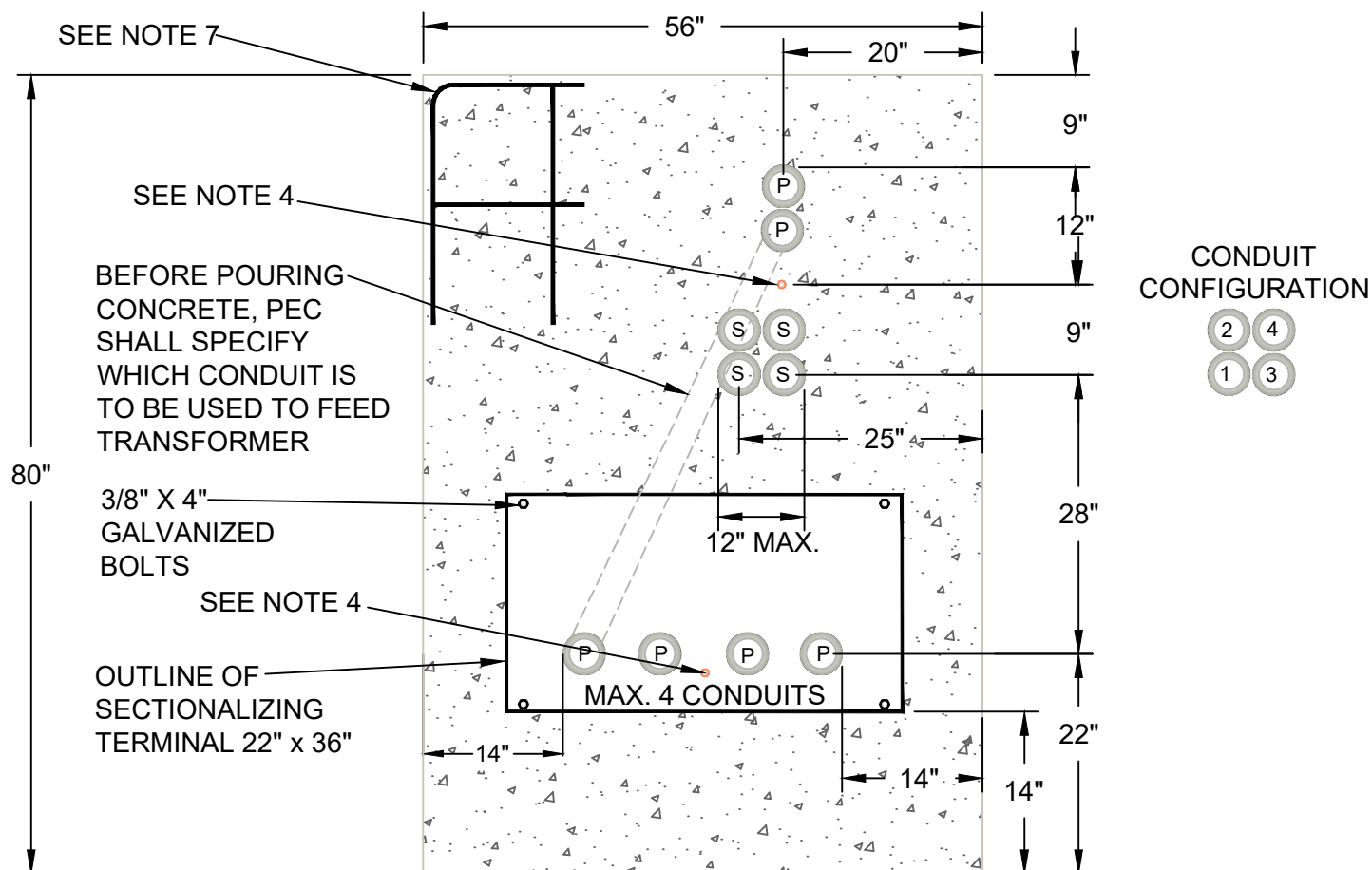
UNDERGROUND
INSTALLATION
SPECIFICATIONS

LARGE PAD FOR
3Ø SECTIONALIZING ENCLOSURE
PAGE 2 OF 2

drawn:	approved:	date:	530-022
RWC	MMG	02/24/2023	

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

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



REV	B	DATE	02/23/2023	REVISION	ADDED ALUMINUM SECTIONALIZERS	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	-------------------------------	----	-----	-----	-----	-----	-----



UNDERGROUND INSTALLATION SPECIFICATIONS

1Ø COMBINATION
SECTIONALIZING ENCLOSURE
AND TRANSFORMER PAD

drawn:	approved:	date:	530-023
RWC	MMG	02/23/2023	

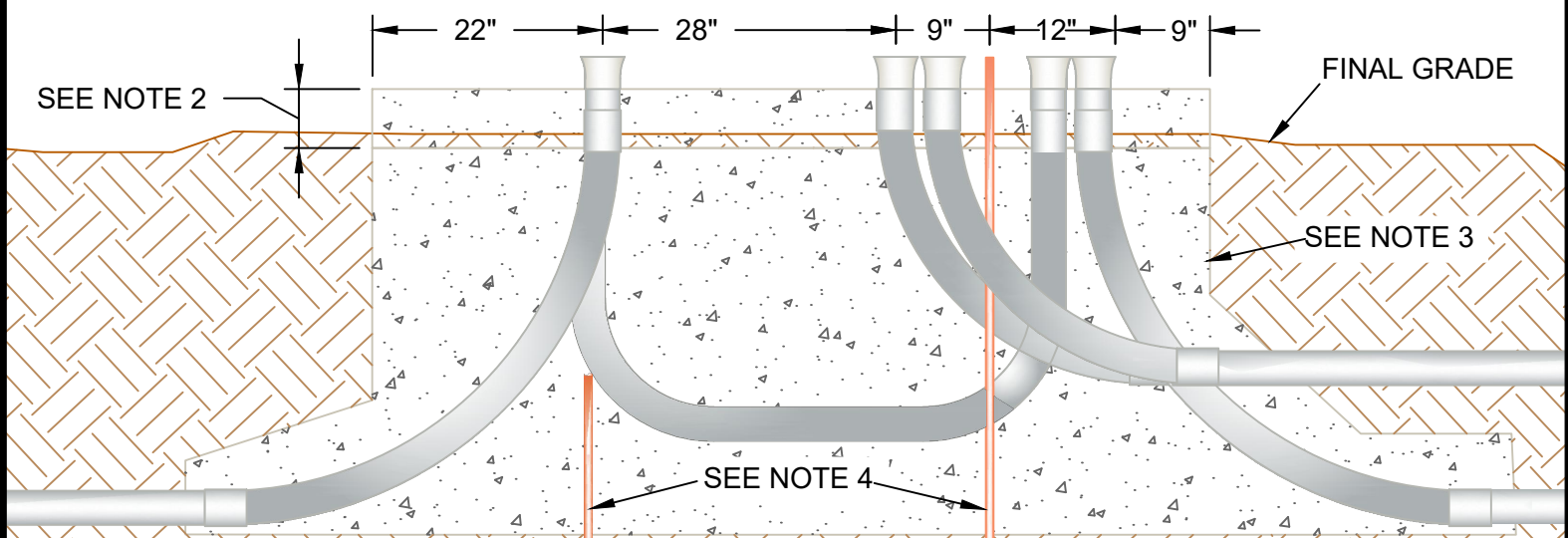
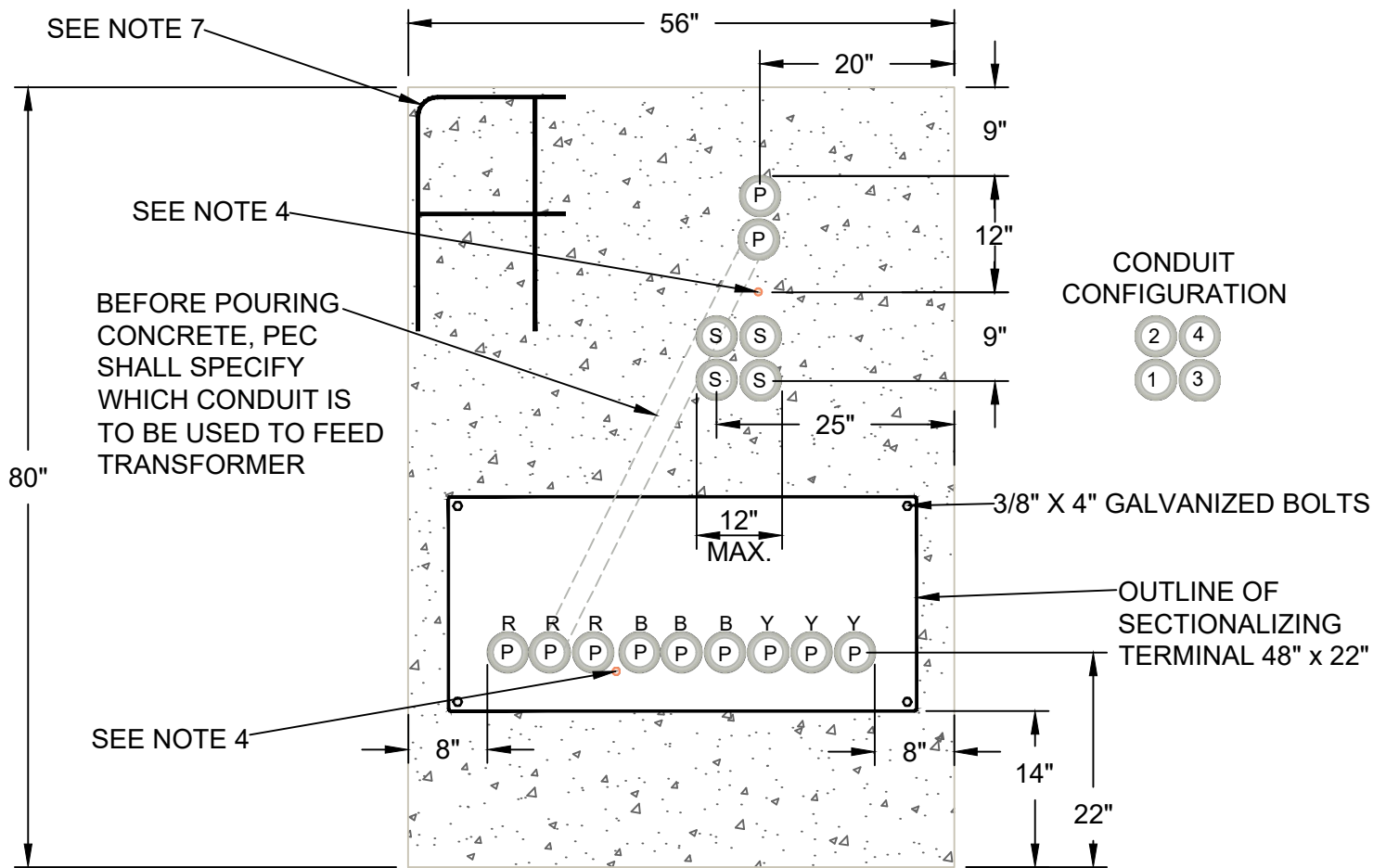
APPROVED SECTIONALIZING ENCLOSURES:

- 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 DRAWING
510-009 FOR ALL NOTES**



REV	B	DATE	02/24/2023	REVISION	ADDED ALUMINUM SECTIONALIZERS	BY	RWC	CHK	SSS	APR	MMG
-----	---	------	------------	----------	-------------------------------	----	-----	-----	-----	-----	-----



**UNDERGROUND
INSTALLATION
SPECIFICATIONS**

**SMALL COMBINATION
SECTIONALIZING ENCLOSURE
AND TRANSFORMER PAD**

drawn:	approved:	date:	530-024
RWC	MMG	02/24/2023	

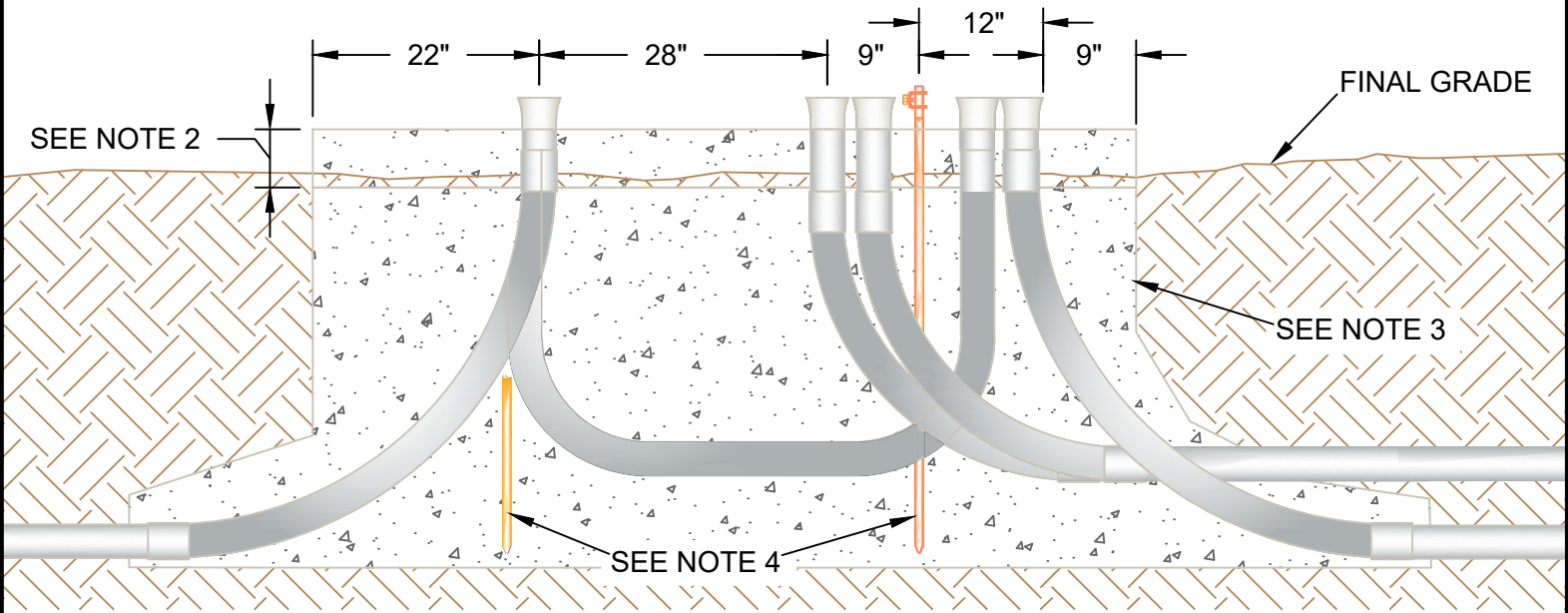
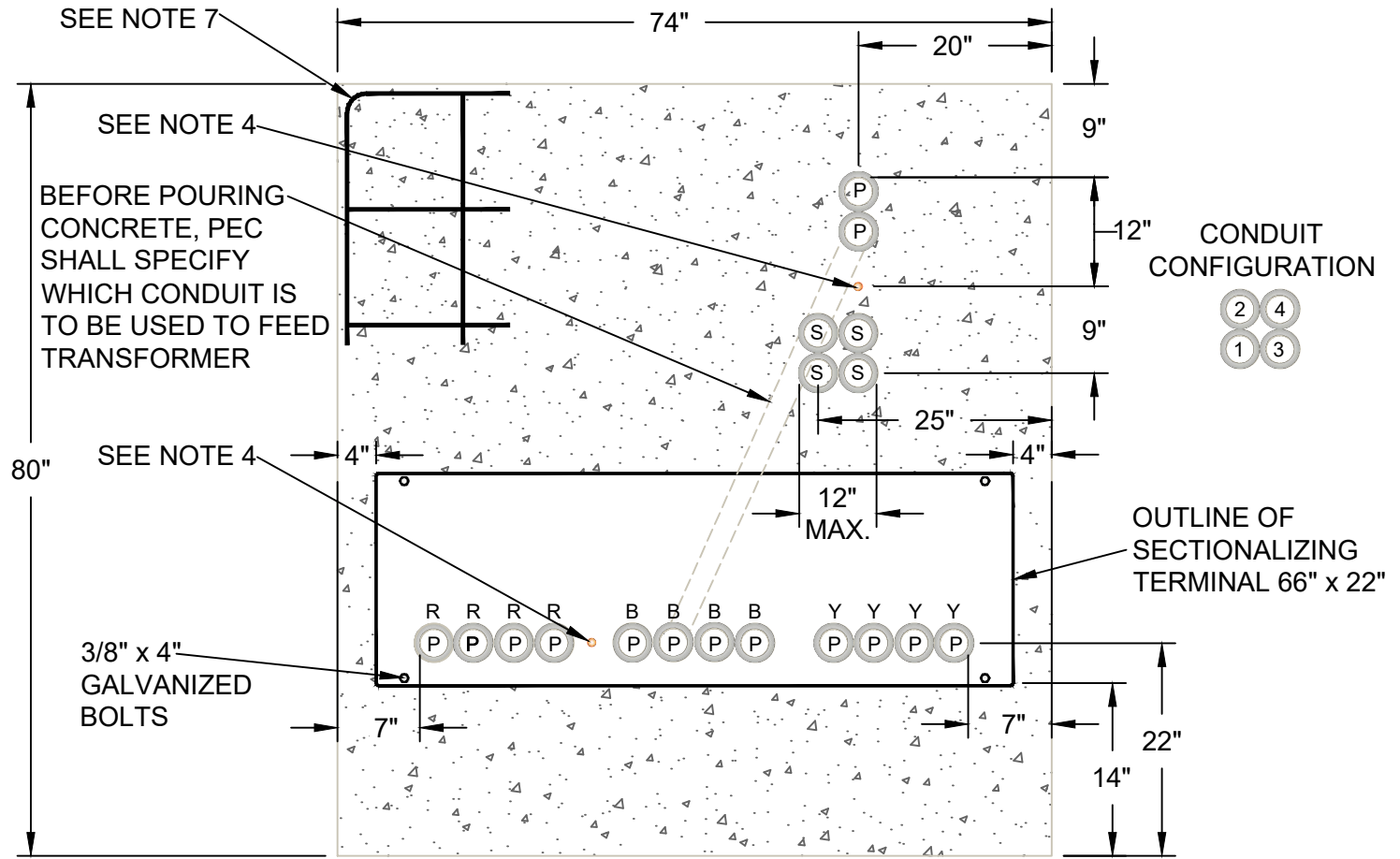
APPROVED SECTIONALIZING ENCLOSURES:

- 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 DRAWING
510-009 FOR ALL NOTES



REV B DATE 04/11/2023 REVISION ADDED ALUMINUM SECTIONALIZERS BY RWC CHK SSS APR MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

LARGE COMBINATION
SECTIONALIZING ENCLOSURE
AND TRANSFORMER PAD

drawn:

RWC

approved:

MMG

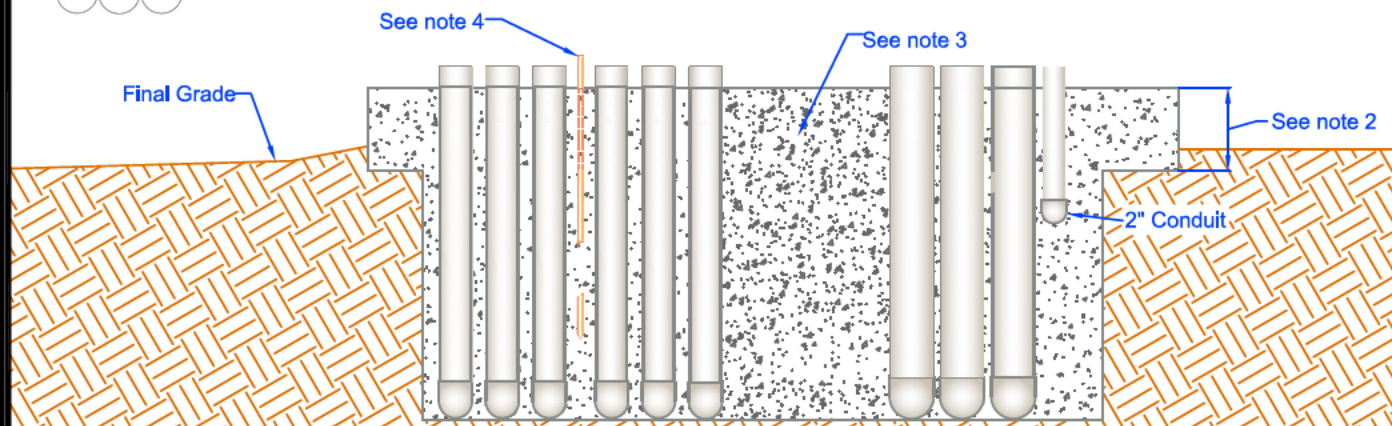
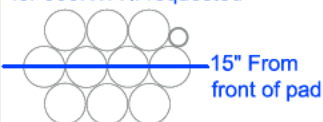
date:

04/11/2023

530-026

for all notes

45KVA to 225 KVA Maximum of 6 Conduits
300 KVA Maximum of 10 Conduits



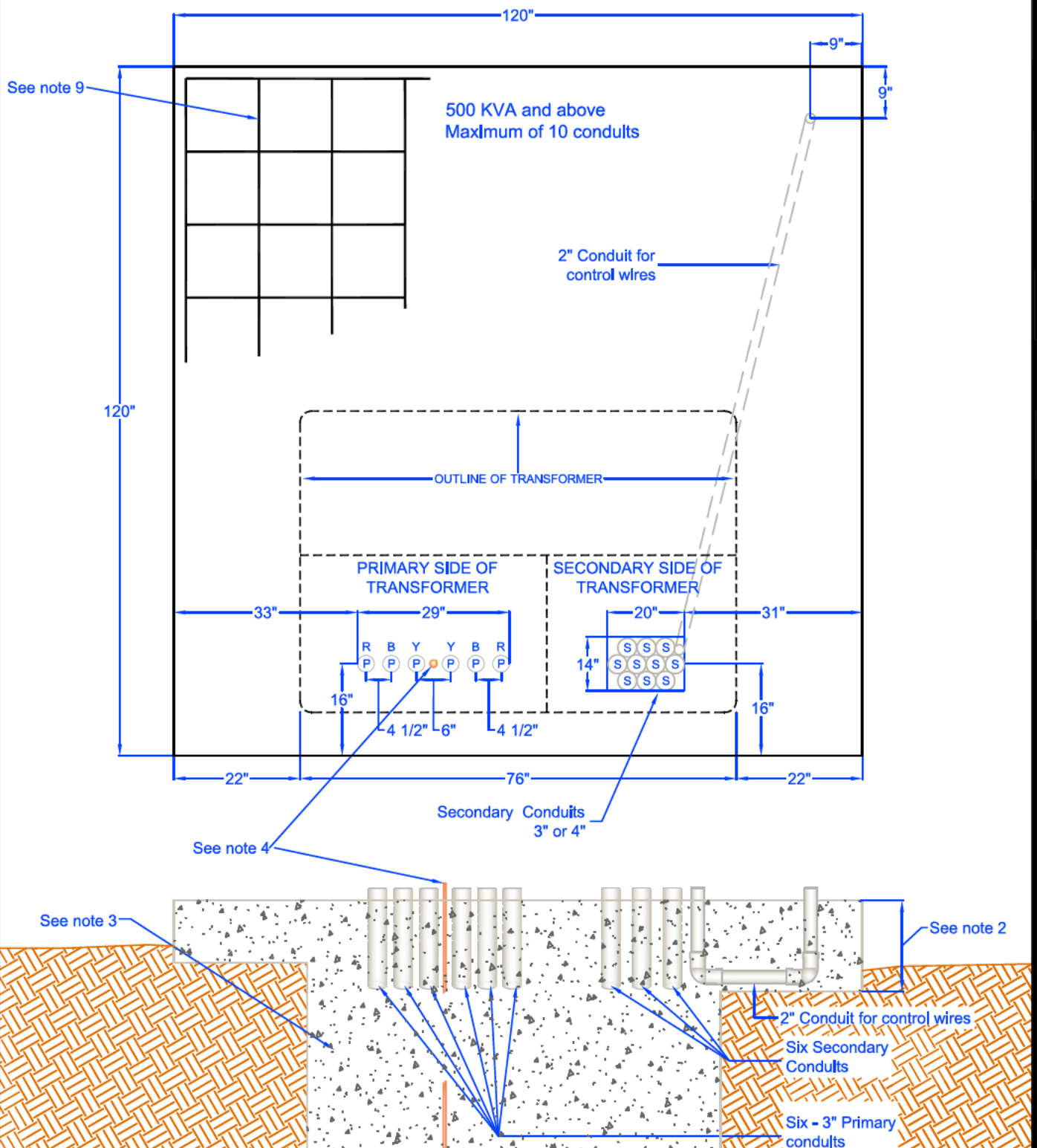
URD DEVELOPER'S SPECIFICATIONS

530-030-0911

3Ø Transformer Pad 45-300 KVA

Reference Drawing
510-009-0911
for all notes

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



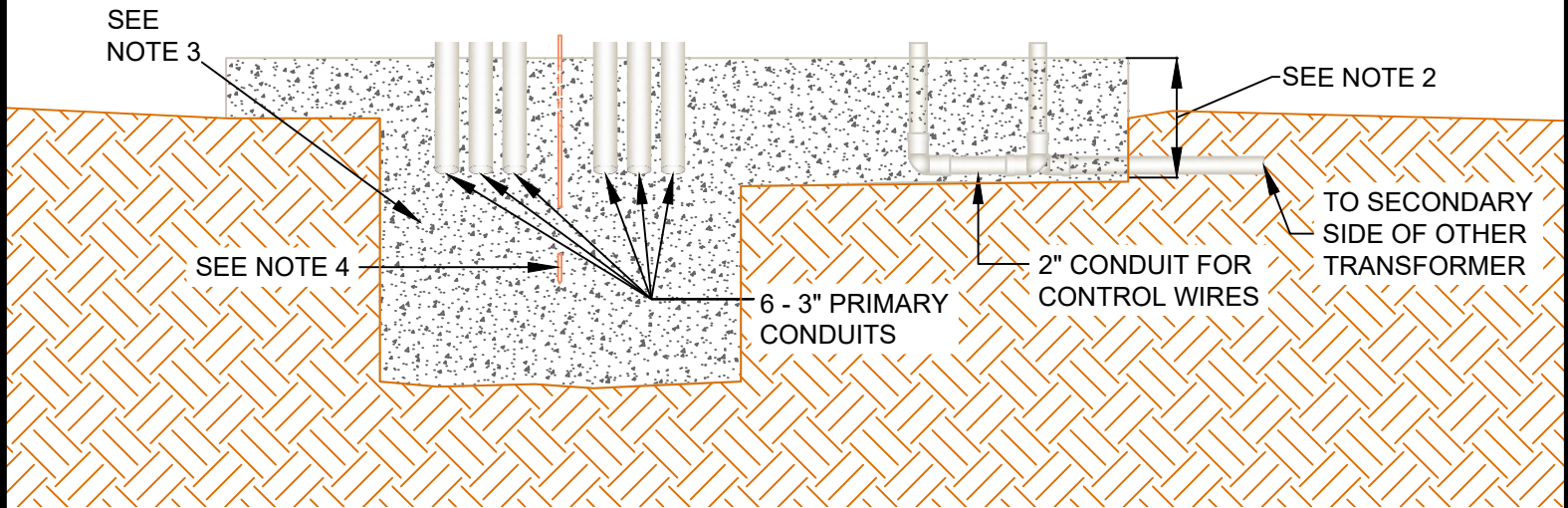
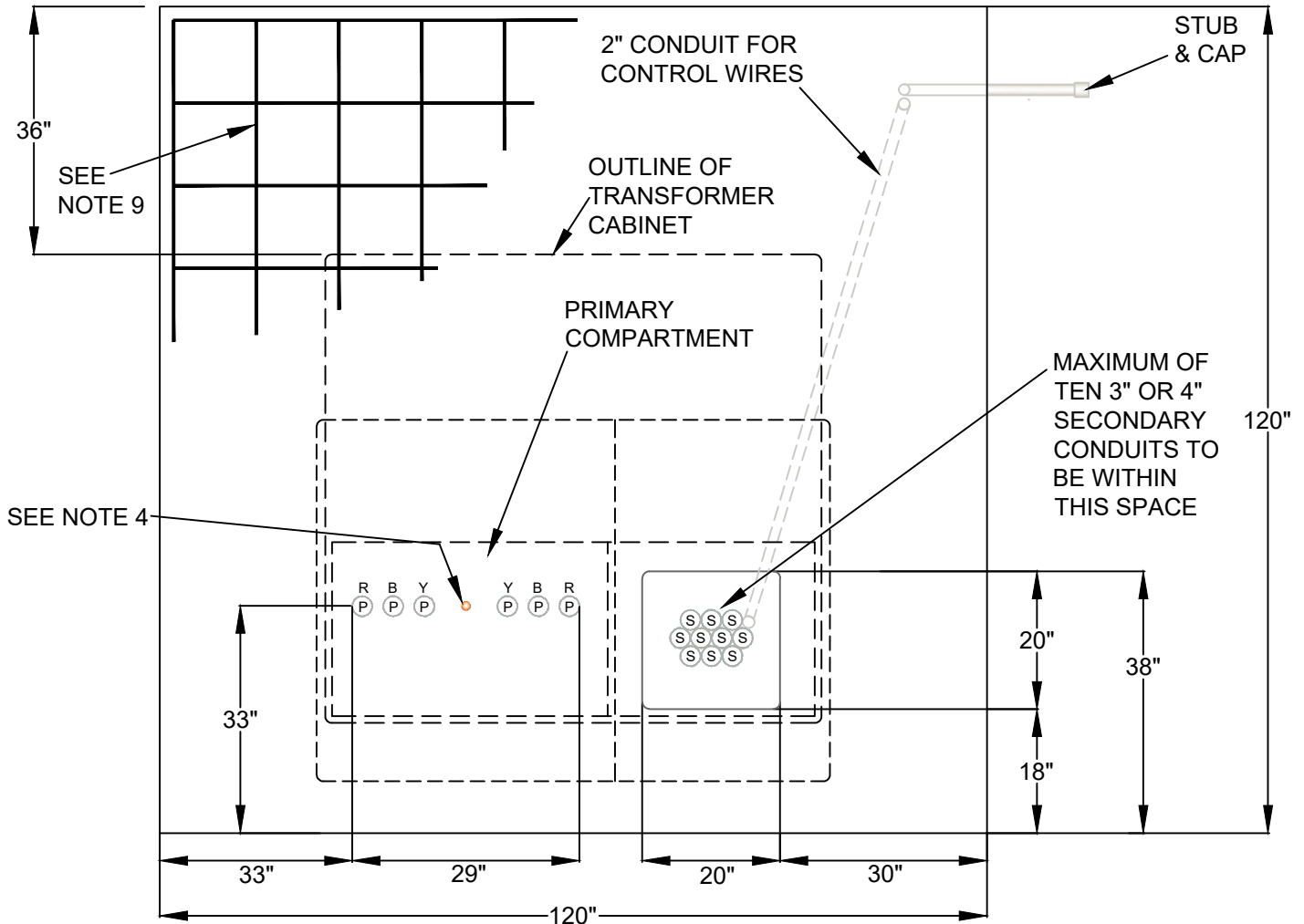
PEDERNALES ELECTRIC
COOPERATIVE, INC.
URD DEVELOPER'S SPECIFICATIONS

3Ø Transformer Pad
500-1500 KVA

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

REFERENCE DRAWING 510-009 FOR ALL NOTES

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 A DATE 12/03/2021 REVISION Y B R WAS R B Y BY RWC CHK SSS APR MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

3Ø TRANSFORMER PAD
2000-3000 kVA

drawn:

RWC

approved:

MMG

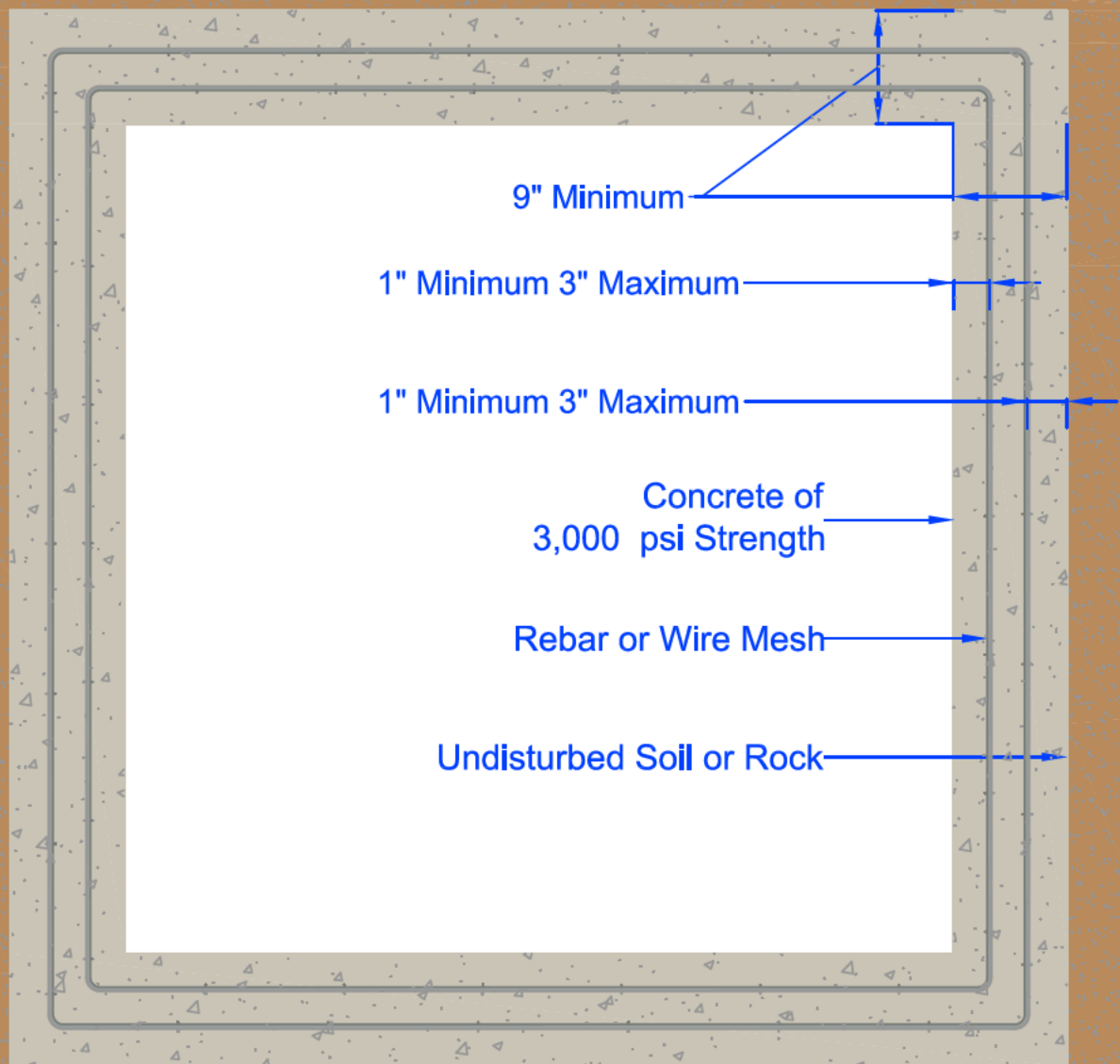
date:

12/03/2021

530-034

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

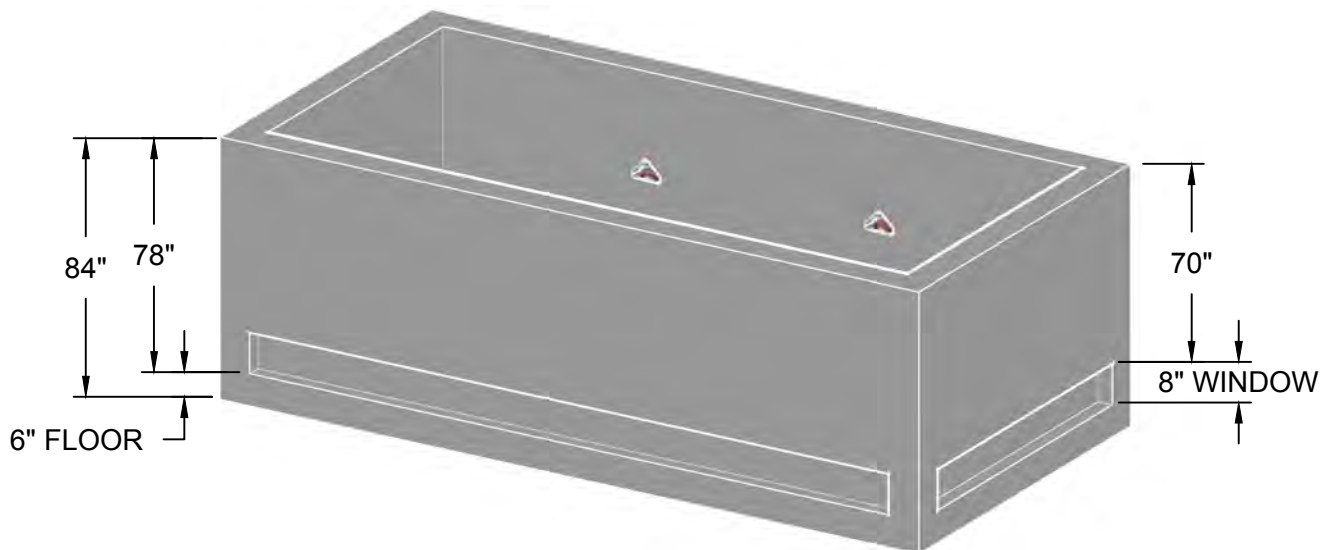
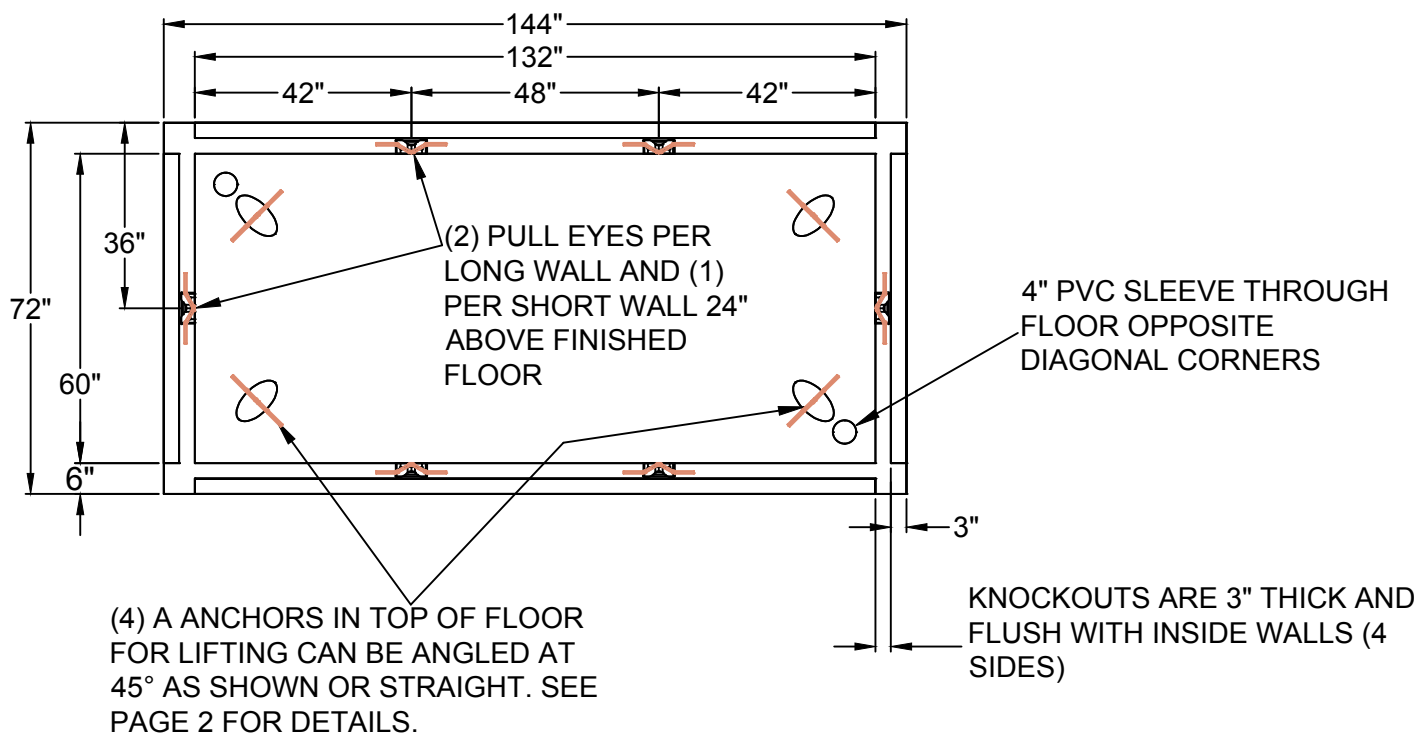
General Specifications for Poured in Place Vaults

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:

RWC

approved:

MMG

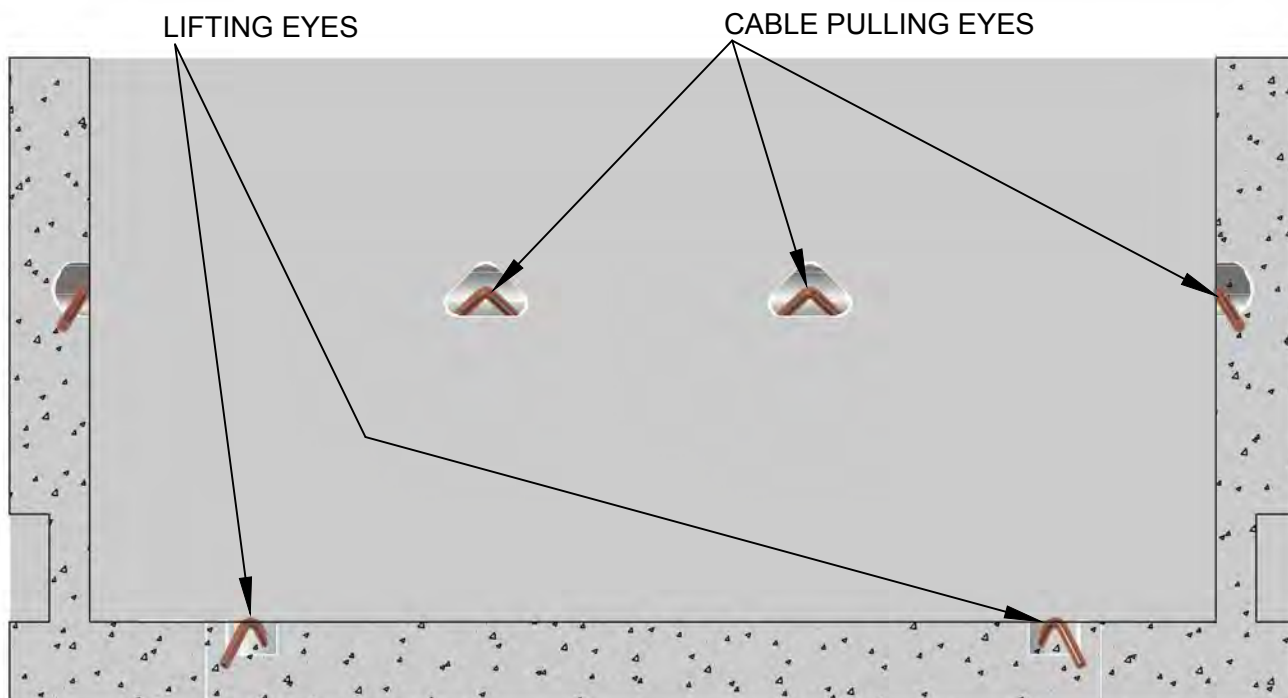
date:

07/23/2020

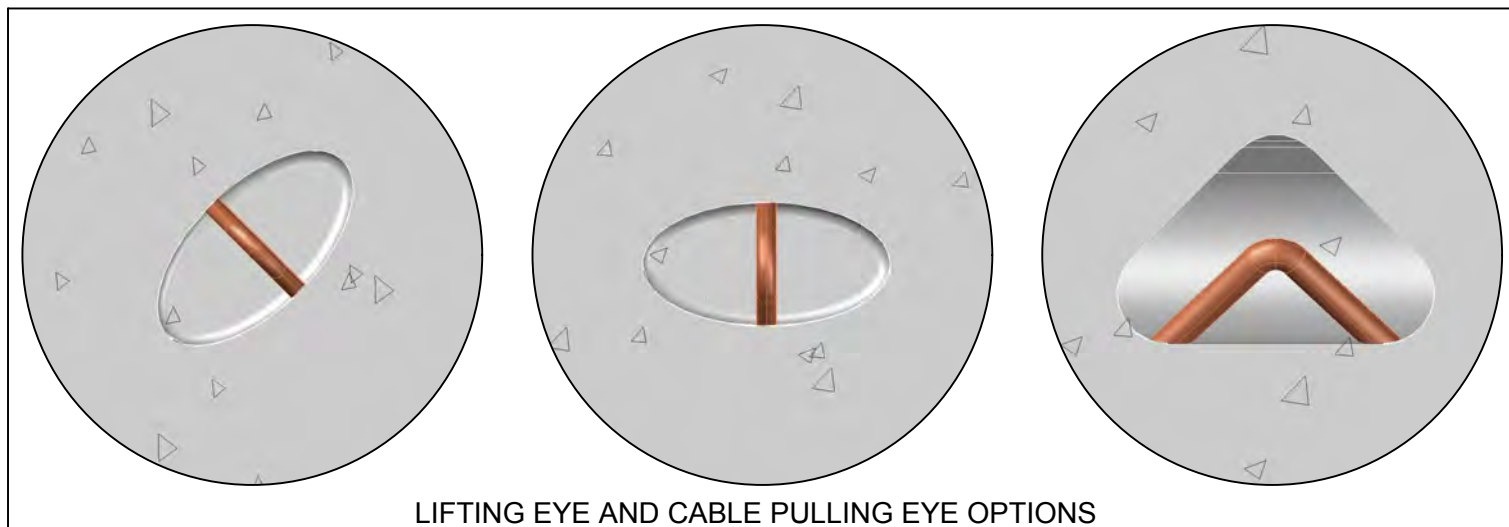
530-050

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



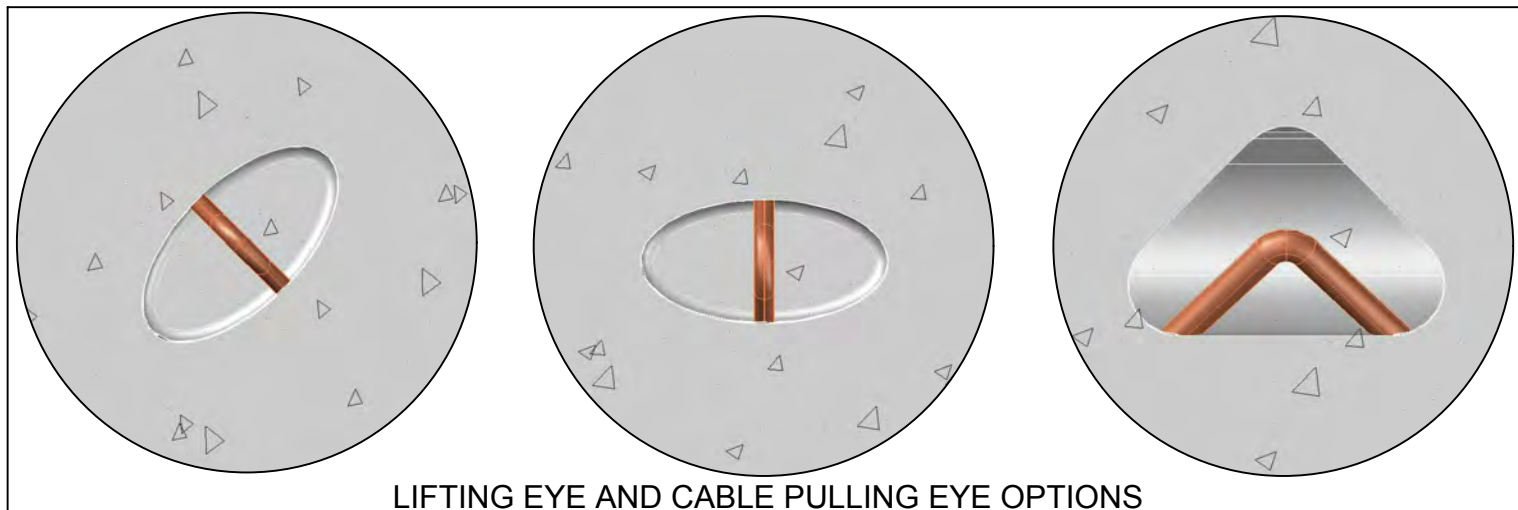
UNDERGROUND
INSTALLATION
SPECIFICATIONS

VAULT FOR SUBMERSIBLE
SWITCHGEAR AND SPLICE BOX
PAGE 2 OF 2

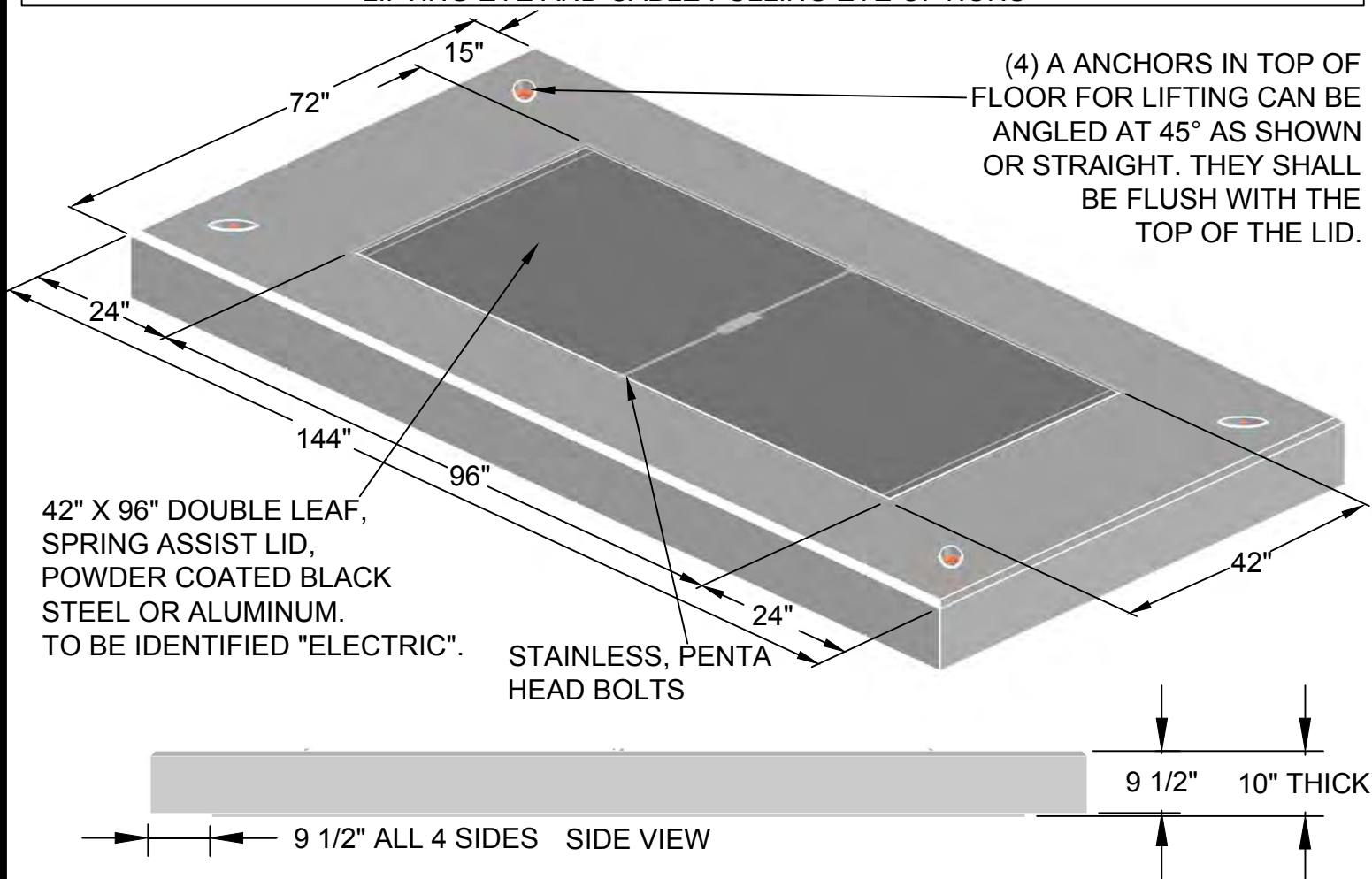
drawn:	approved:	date:	530-050
RWC	MMG	07/23/2020	

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.



LIFTING EYE AND CABLE PULLING EYE OPTIONS



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:

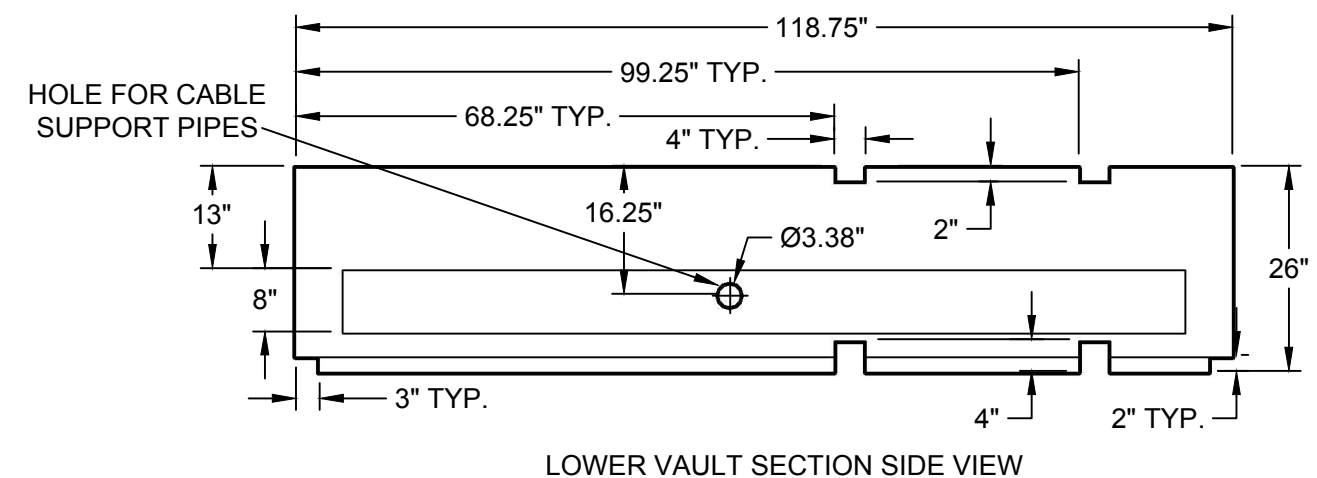
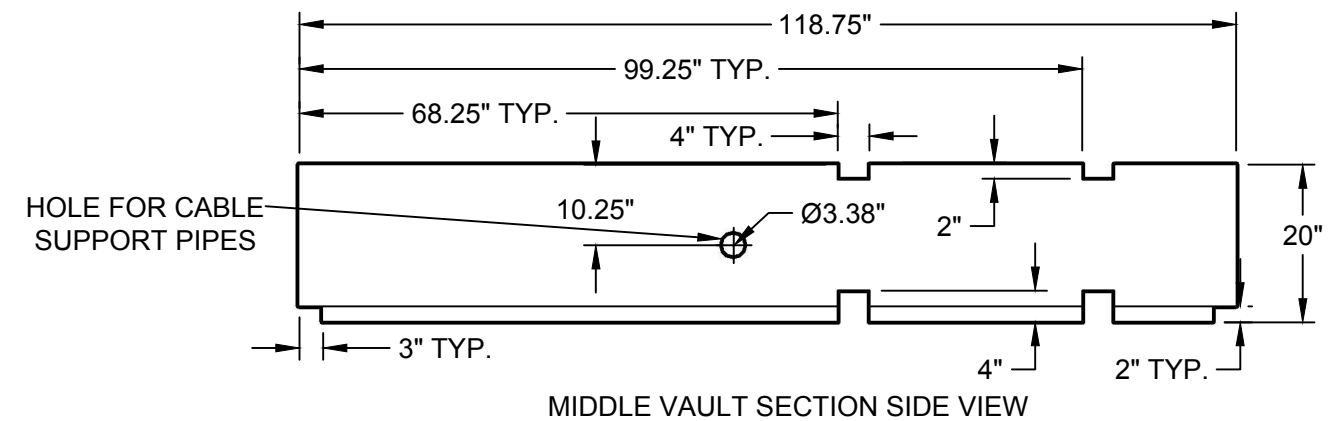
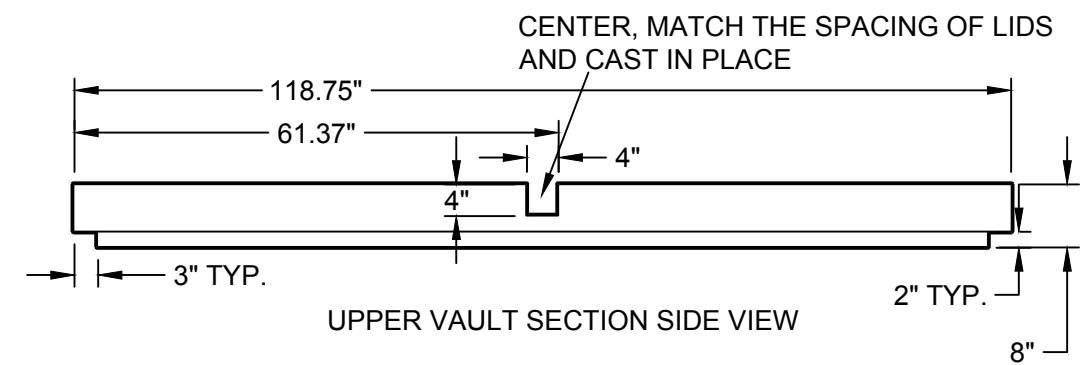
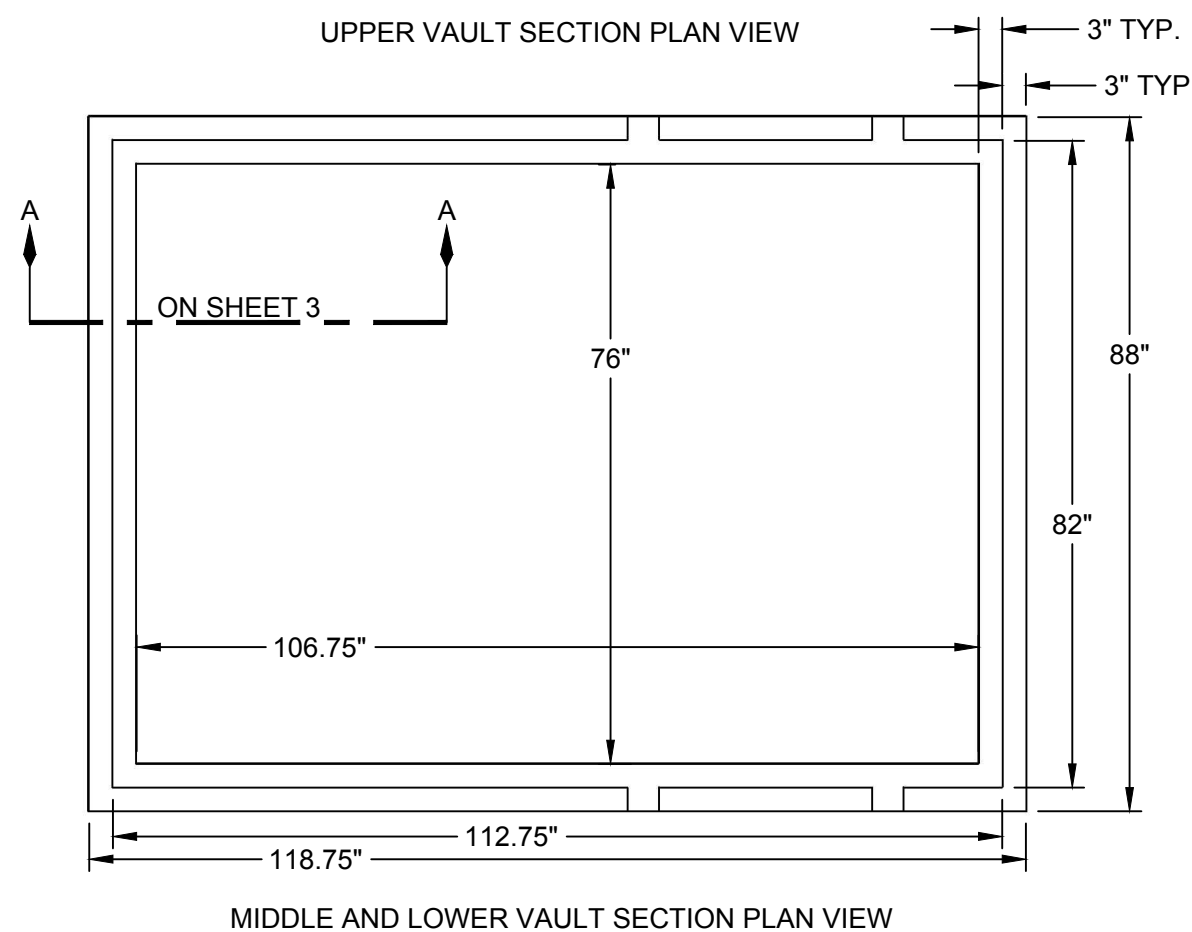
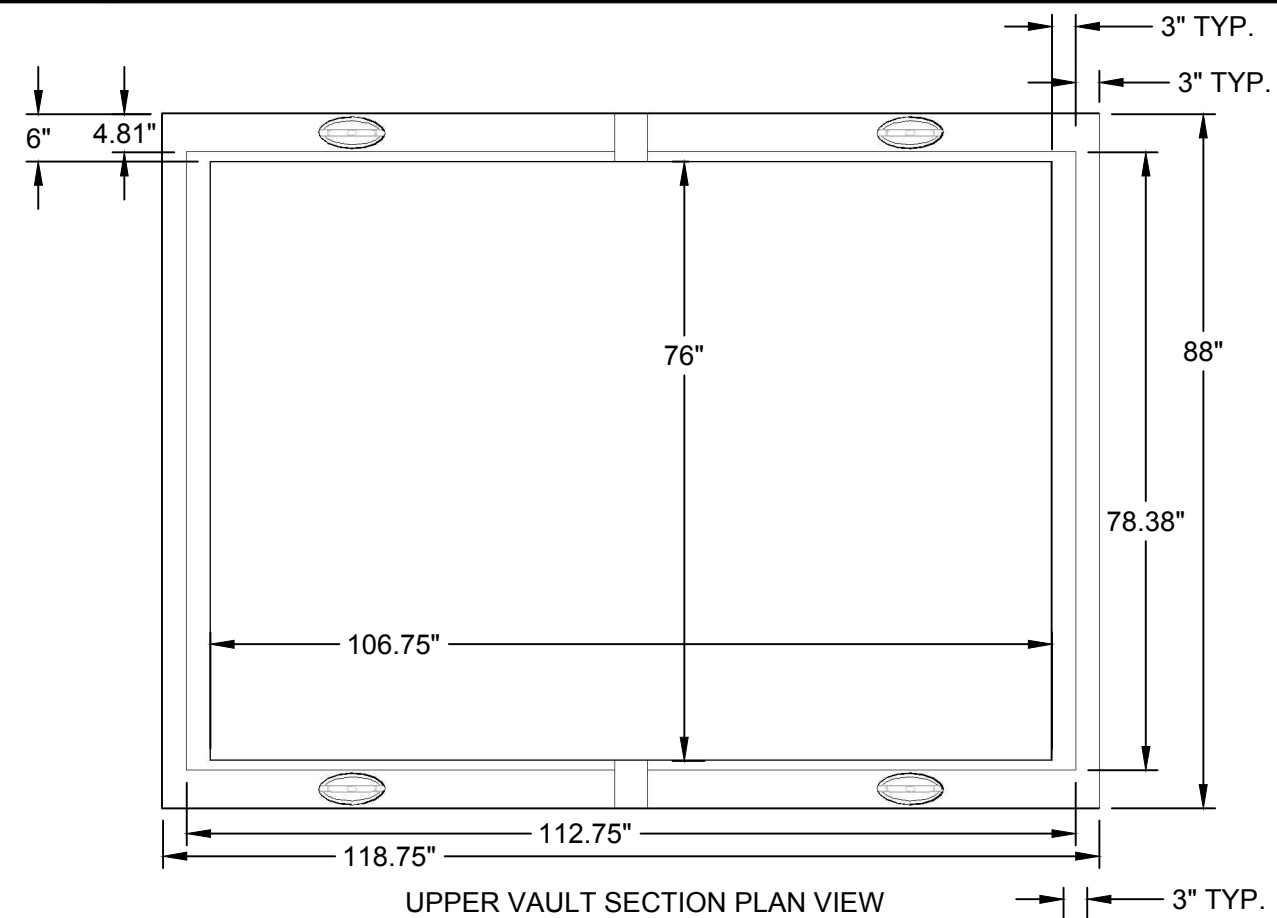
date:

RWC

MMG

02/15/2019

530-051



Michelle Galloway
07/23/2020



UNDERGROUND INSTALLATION SPECIFICATIONS

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

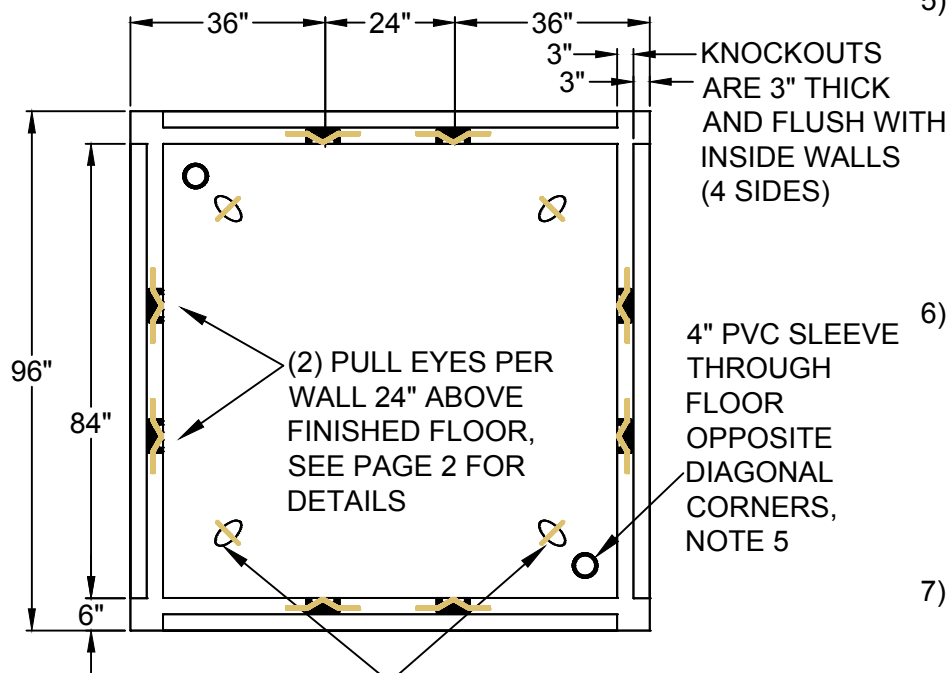
VAULT FOR SWITCHGEAR
STACKABLE SECTIONS WITH SQUARE STEEL
TUBING FOR SWITCHGEAR SUPPORT AND
TWO SETS DOUBLE DOOR CAST-IN-PLACE LIDS

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

530-052
PAGE 2 OF 4

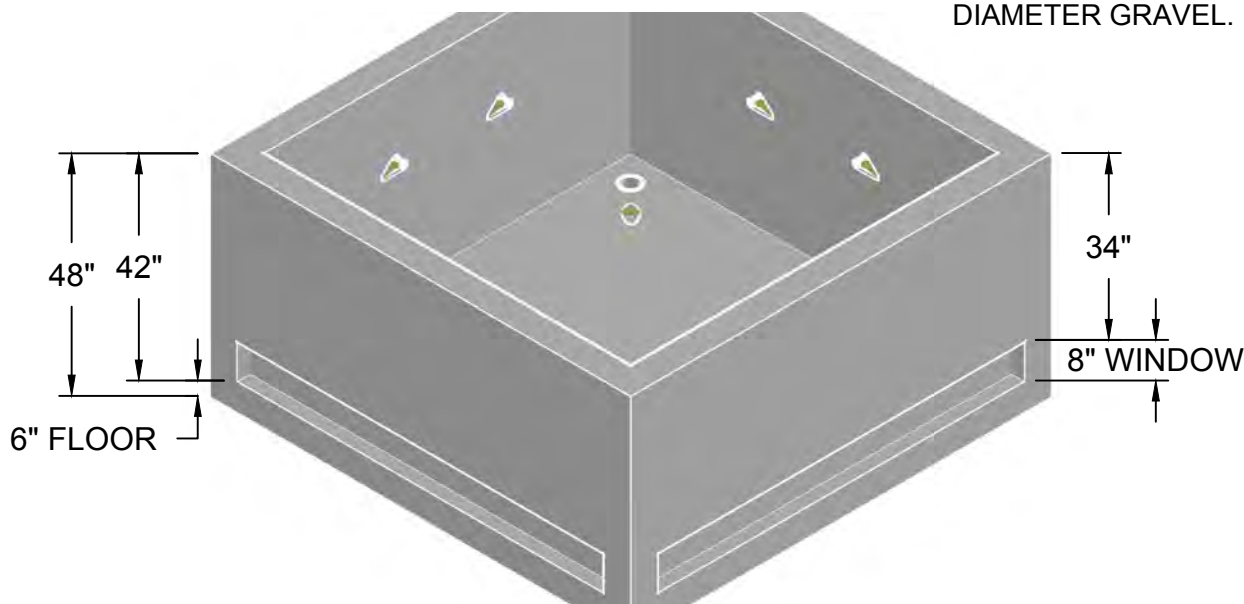
NOTES:

- 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) A 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:

RWC

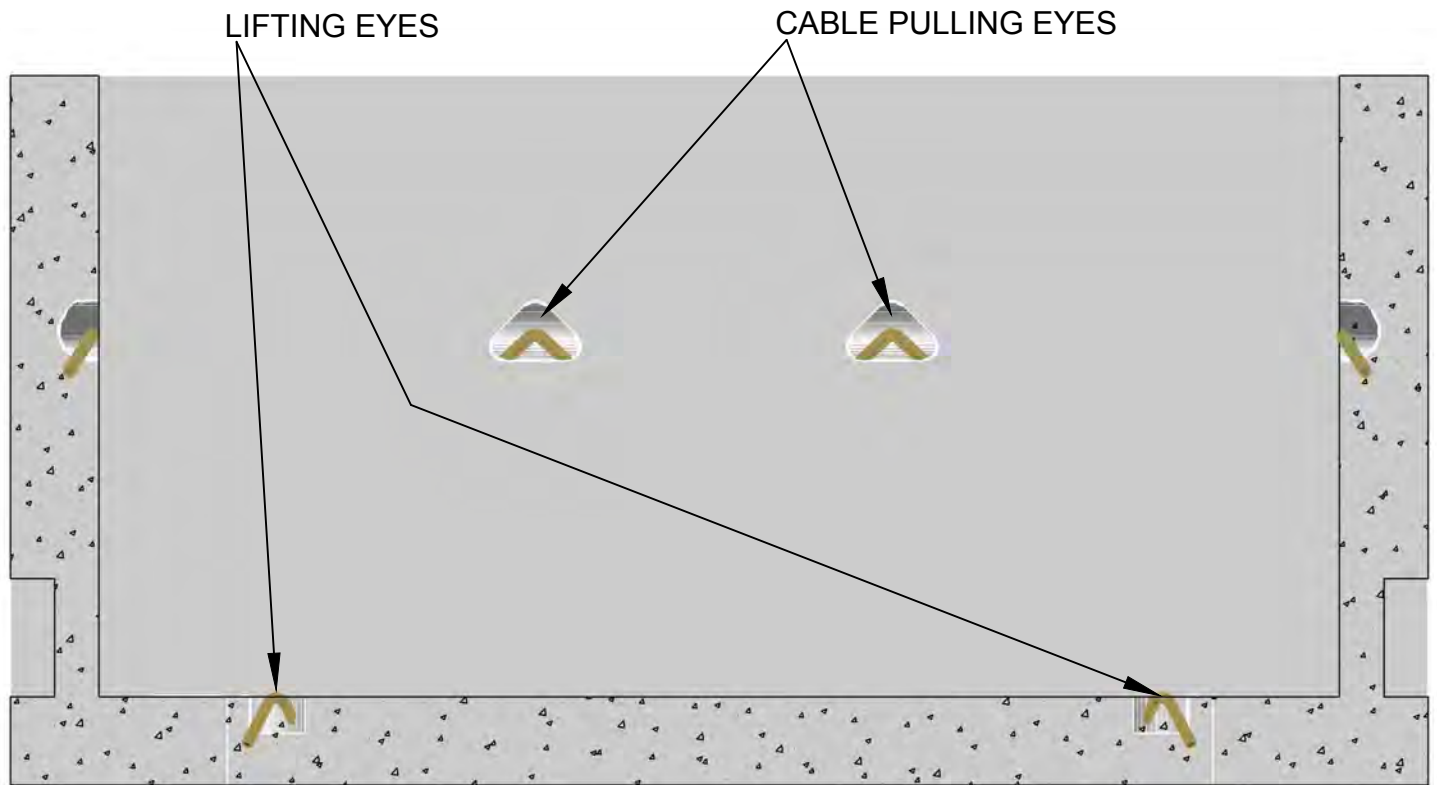
approved:

MMG

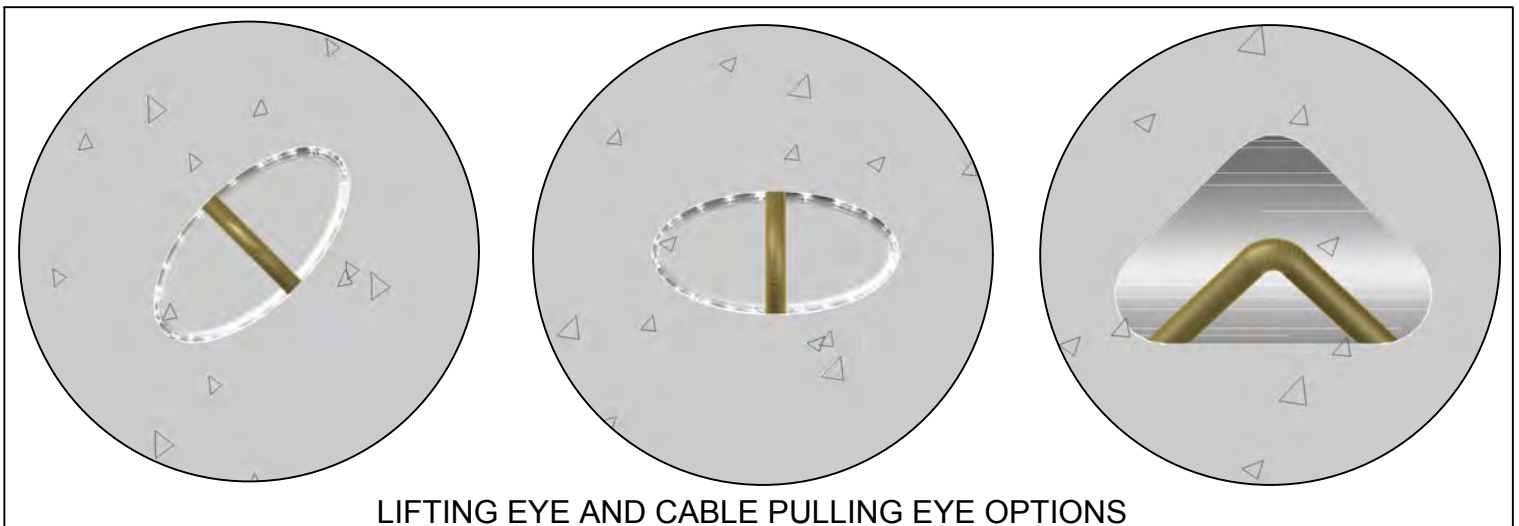
date:

07/23/2020

530-090



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



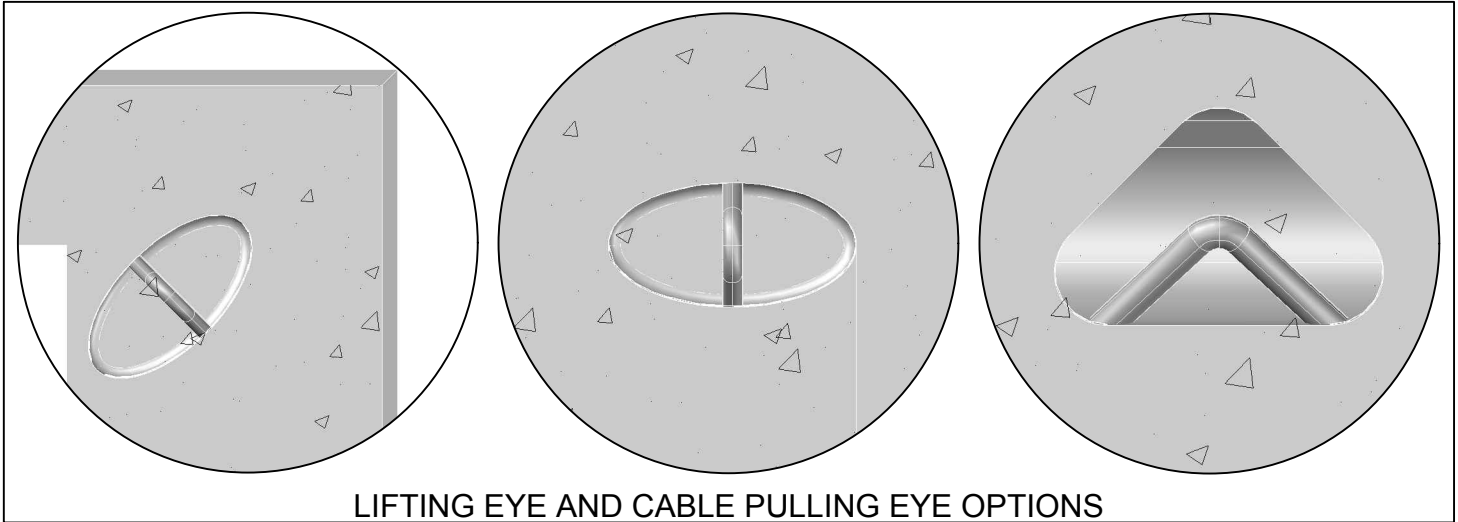
UNDERGROUND
INSTALLATION
SPECIFICATIONS

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

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

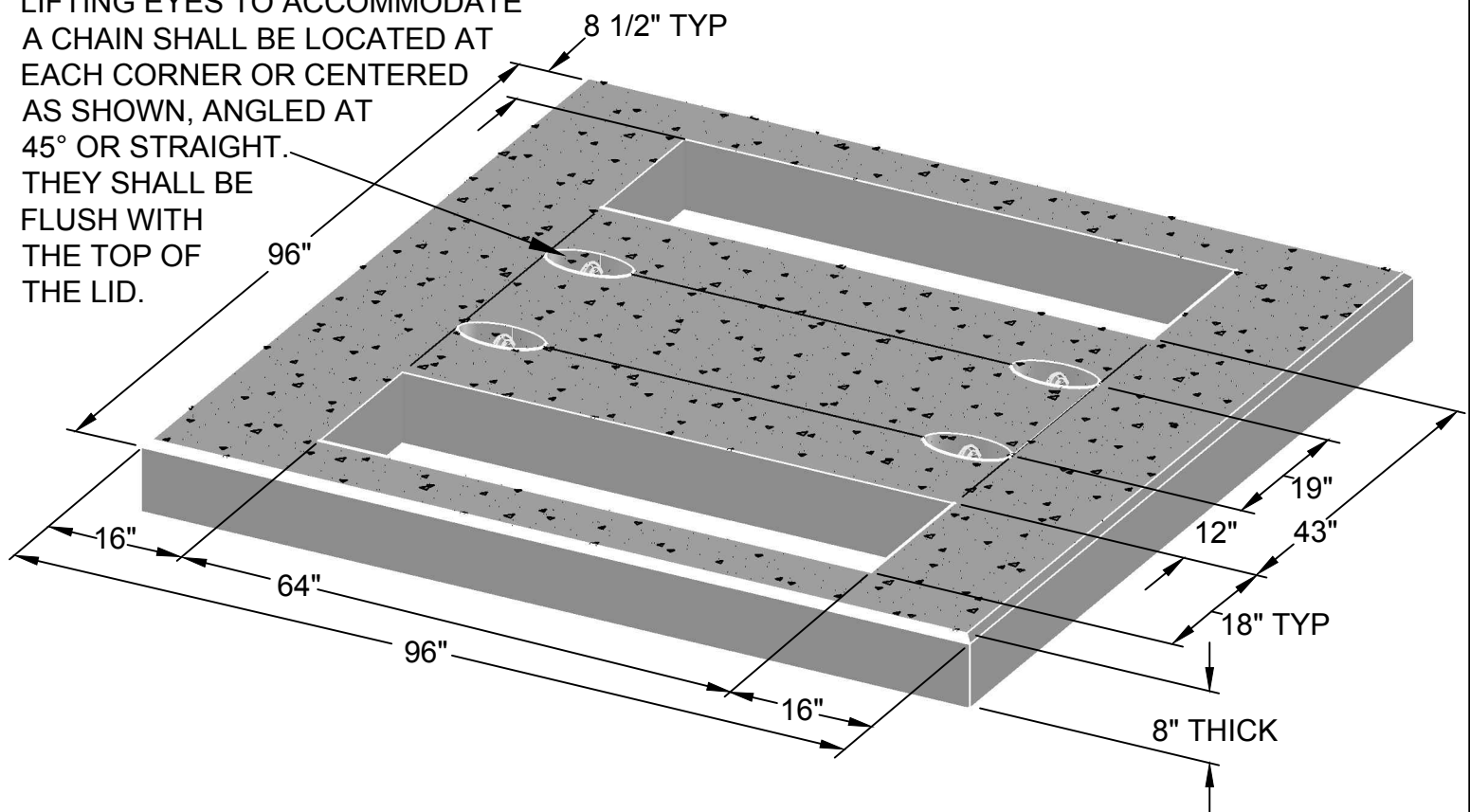
GENERAL NOTES:

- 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.



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



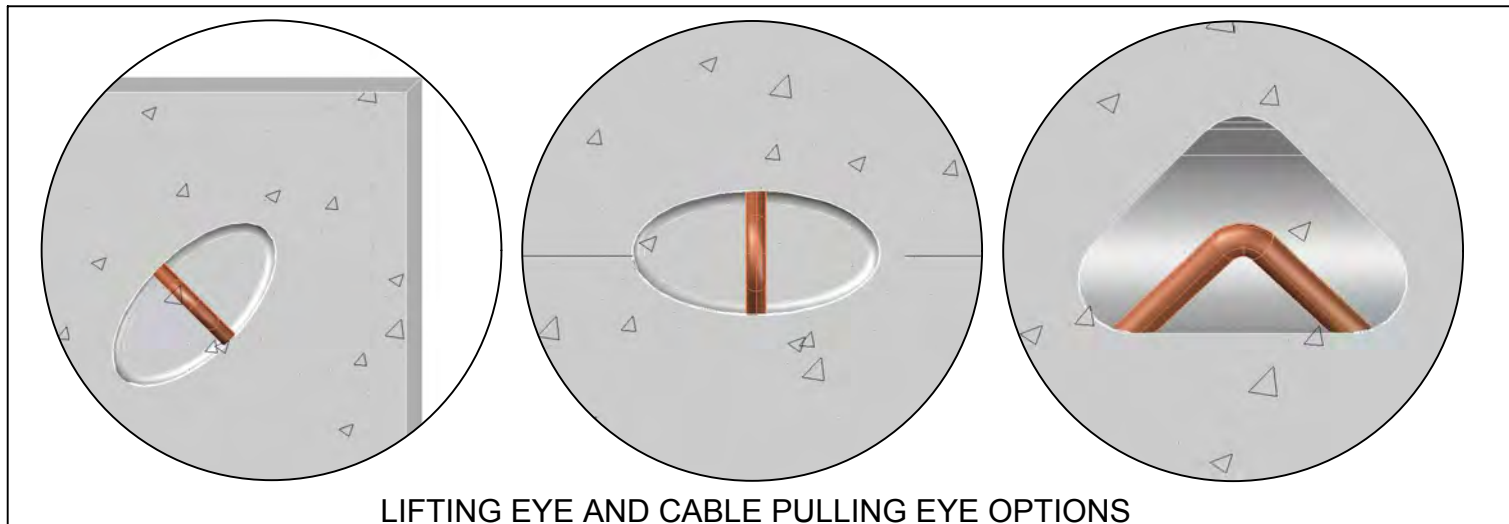
UNDERGROUND
INSTALLATION
SPECIFICATIONS

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:

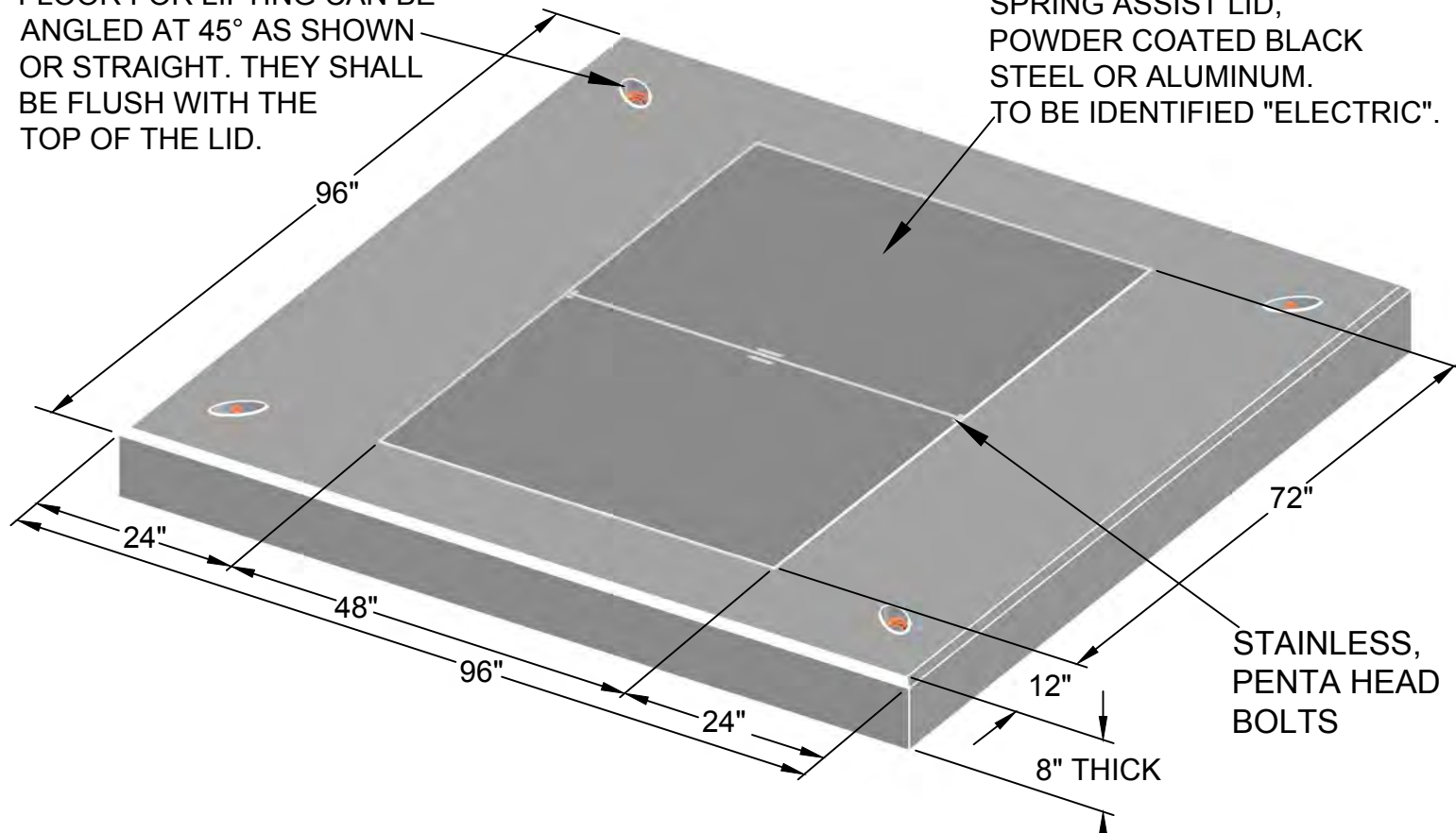
- ALL CONCRETE TO HAVE 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60. BAR BENDING AND PLACEMENT SHALL COMPLY WITH LATEST ACI STANDARDS. DESIGN BASED ON AASHTO HS 20-44 LOADING.
- ALL LIFTING AND PULLING EYES SHALL BE RATED FOR A MINIMUM 5,000 POUNDS 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".



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:

approved:

date:

RWC

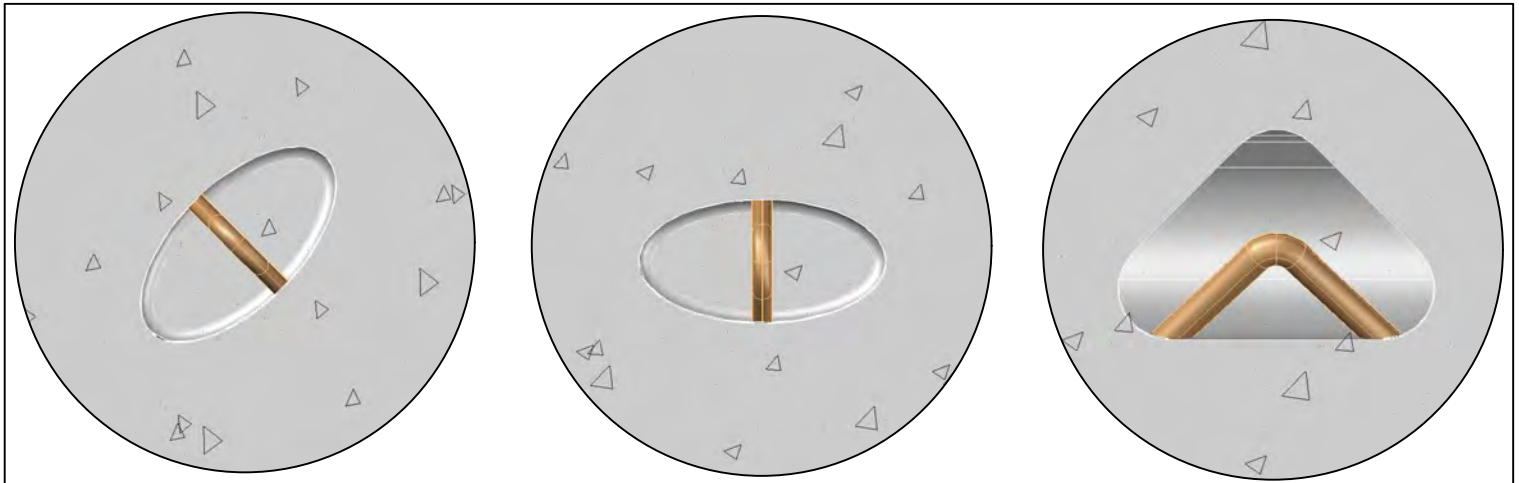
MMG

02/12/2019

530-092

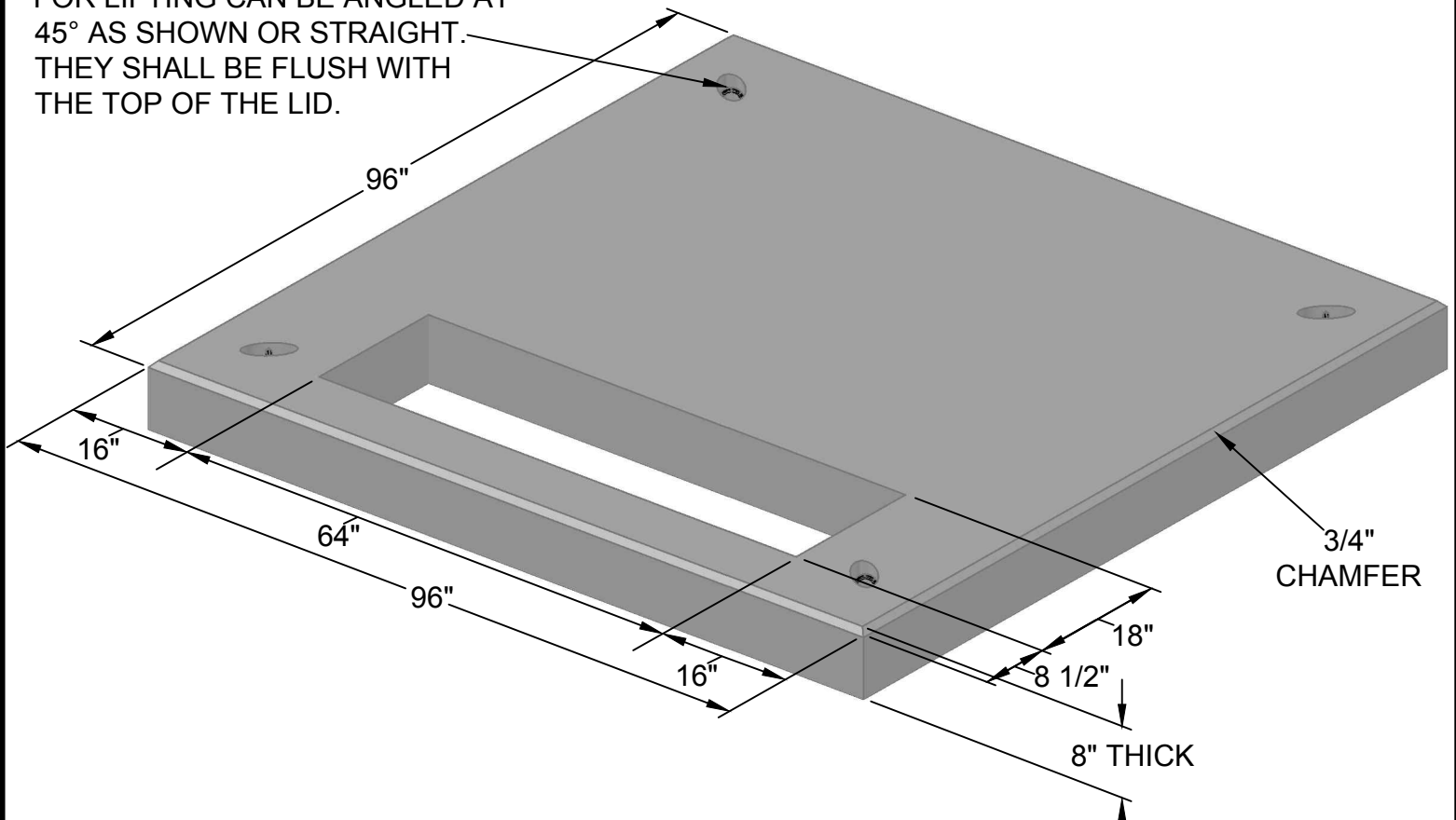
GENERAL NOTES:

- 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.



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.



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



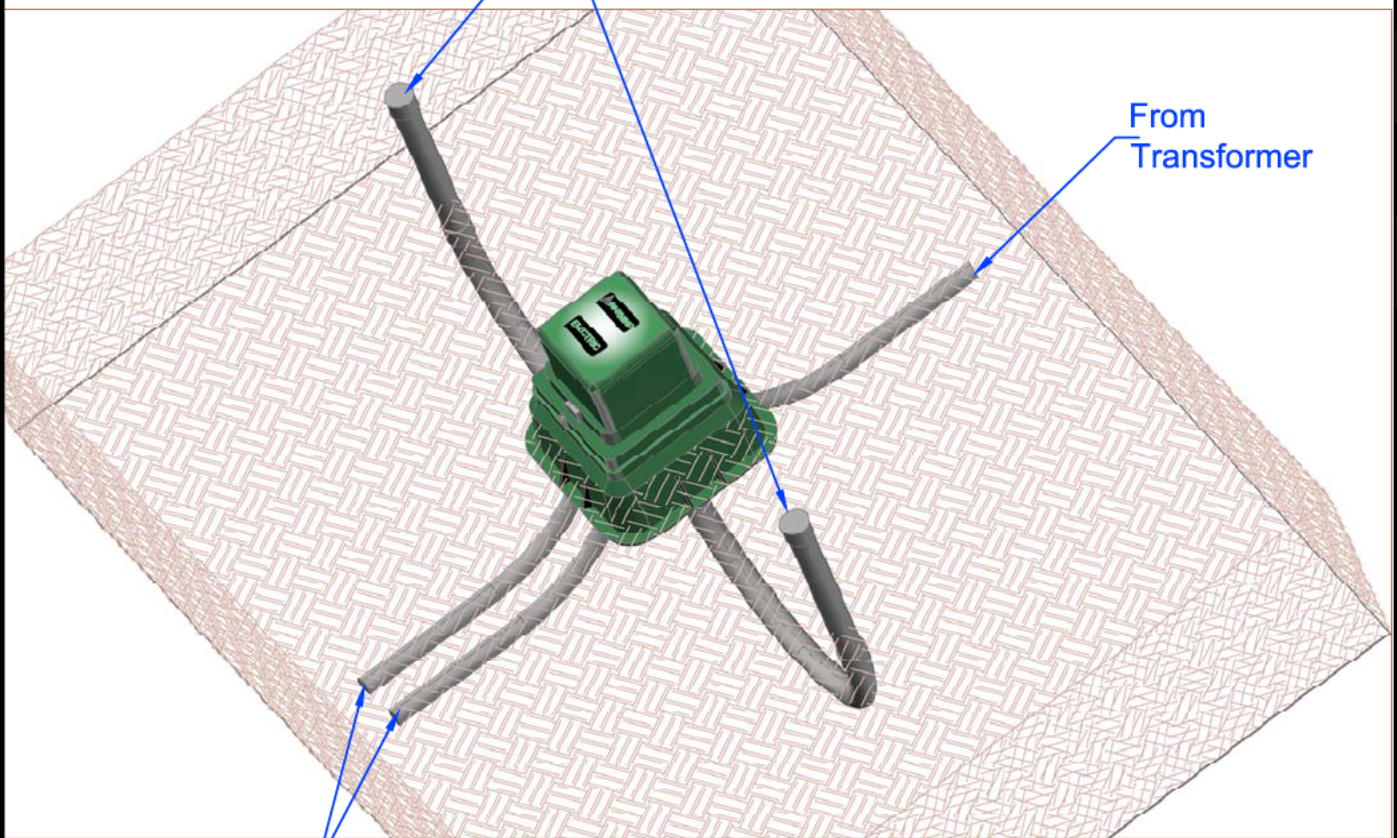
UNDERGROUND
INSTALLATION
SPECIFICATIONS

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

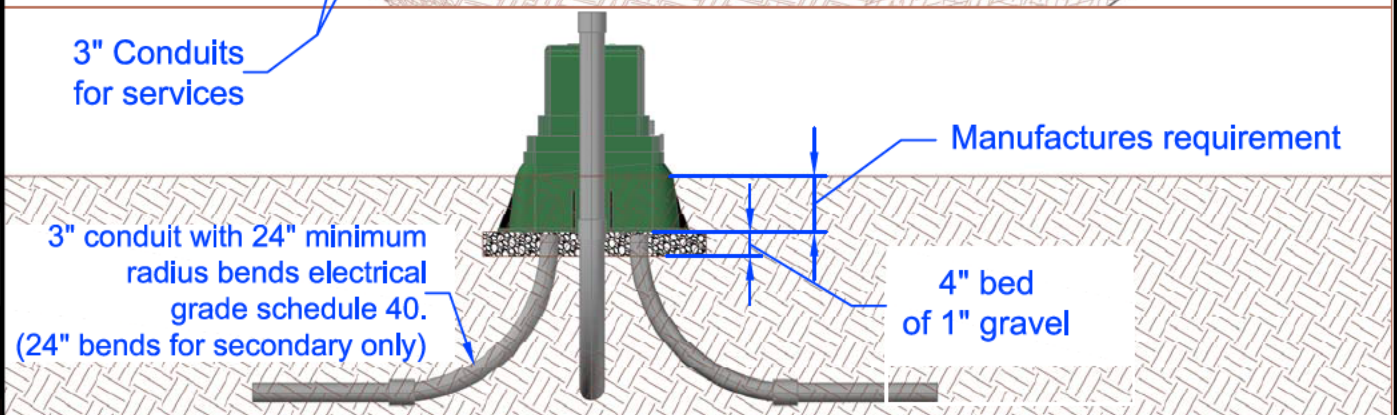
drawn:	approved:	date:	530-093
RWC	MMG	02/15/2019	

Approved Enclosures:
Nordic PSP-151530-MG
Pencell 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



Secondary Enclosure Installation Instructions

- 1) Excavate the hole approximately four inches deeper than the suggested pedestal Burial Depth.
- 2) Compact the soil.
- 3) Add approximately four inches of 1" gravel to the bottom of the hole.
- 4) Compact and level the ground.
- 5) Place the pedestal into the hole.
- 6) Level the pedestal.
- 7) Back-fill with loose earth material.
- 8) Do not back-fill with chunks of frozen material or large rocks next to the pedestal.
- 9) Pack the back-fill material by foot tamping.



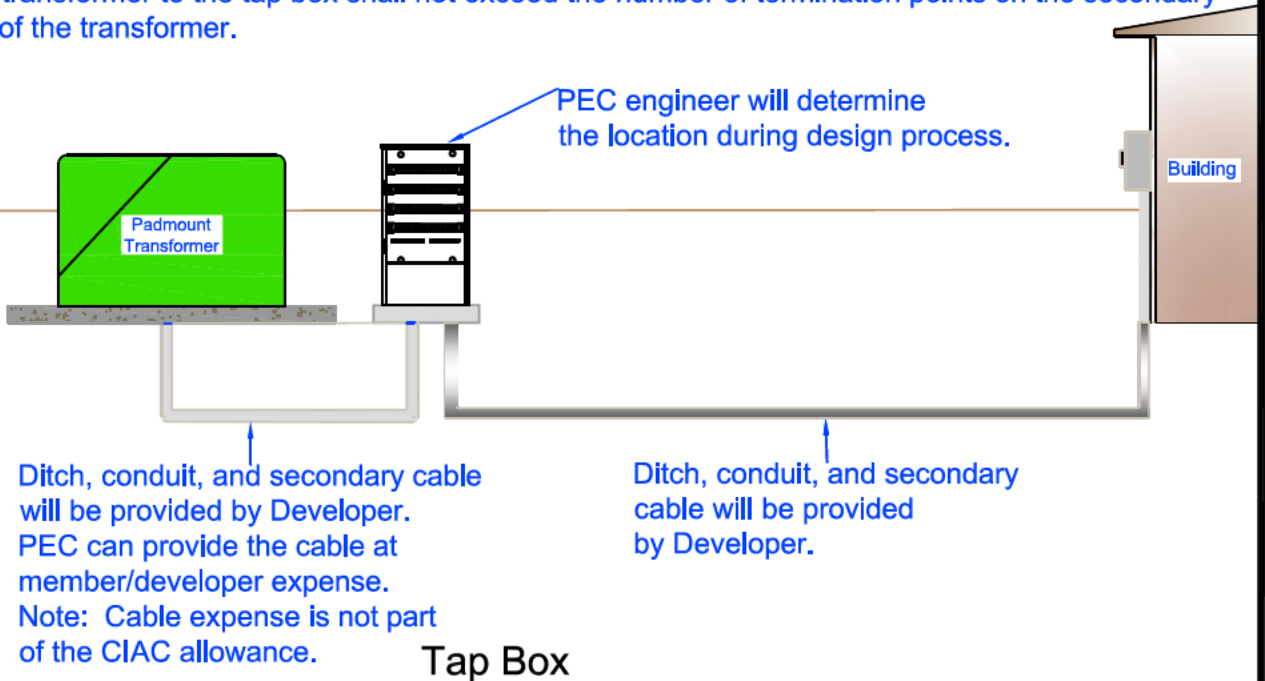
PEDERNALES ELECTRIC
COOPERATIVE, INC.
URD DEVELOPER'S SPECIFICATIONS

Secondary Enclosure

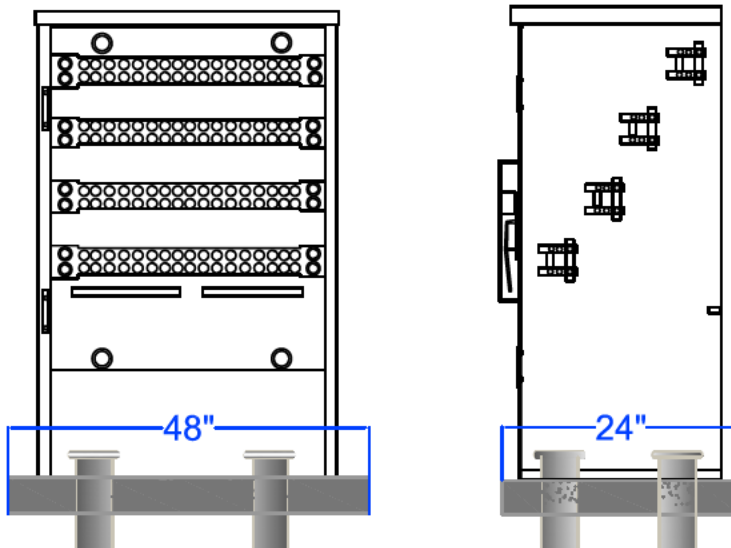
drawn:	approved	date:	drawing number:
JBS	MJB	March 8, 2013	550-020-0911

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 (per PEC Specifications) is to be provided by the Member/developer. The Member/developer will provide the service, from the transformer to the tap box to the load. With mutual 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.



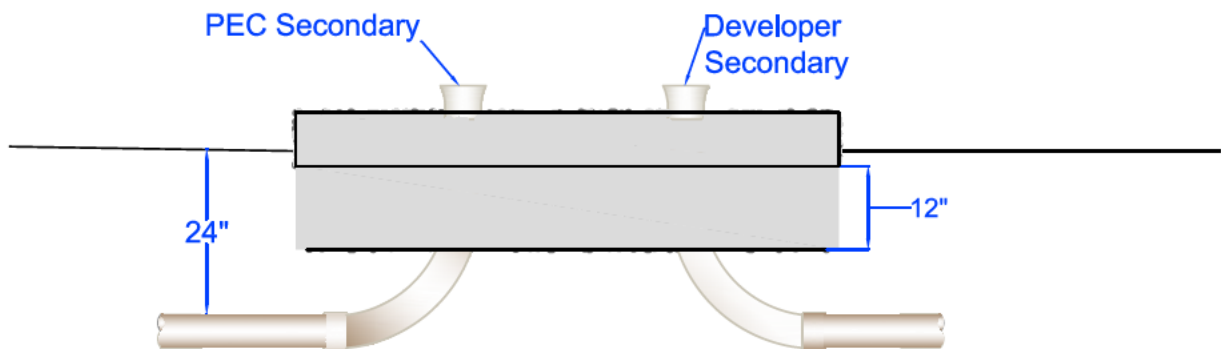
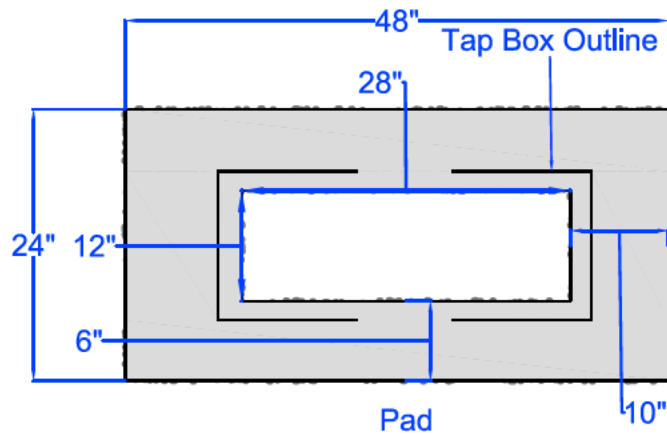
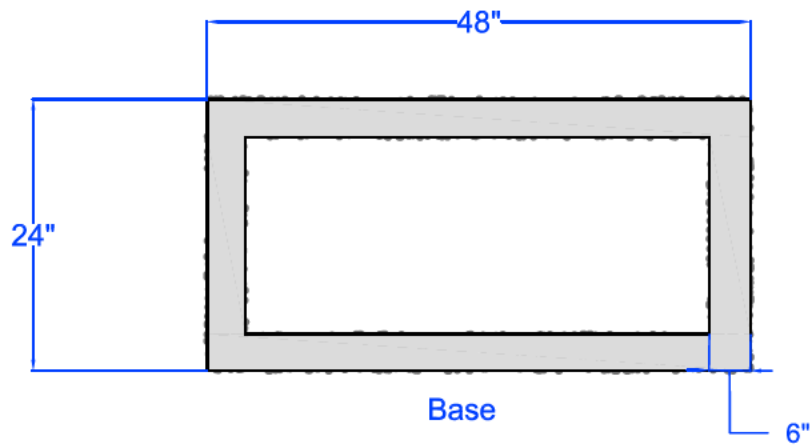
Manufacturer	Part Number
Millbank 500kcmil 22 position	UAP6095-O-NES
Barfield/Hubbell Up to 500kcmil 19 position	LWTE19-500LI



**PEDERNALES ELECTRIC.
COOPERATIVE, INC.**

Tap Box

drawn:	approved	date:	
REB	MJB	November 20, 2015	550-021-0702



Side View

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:

REB

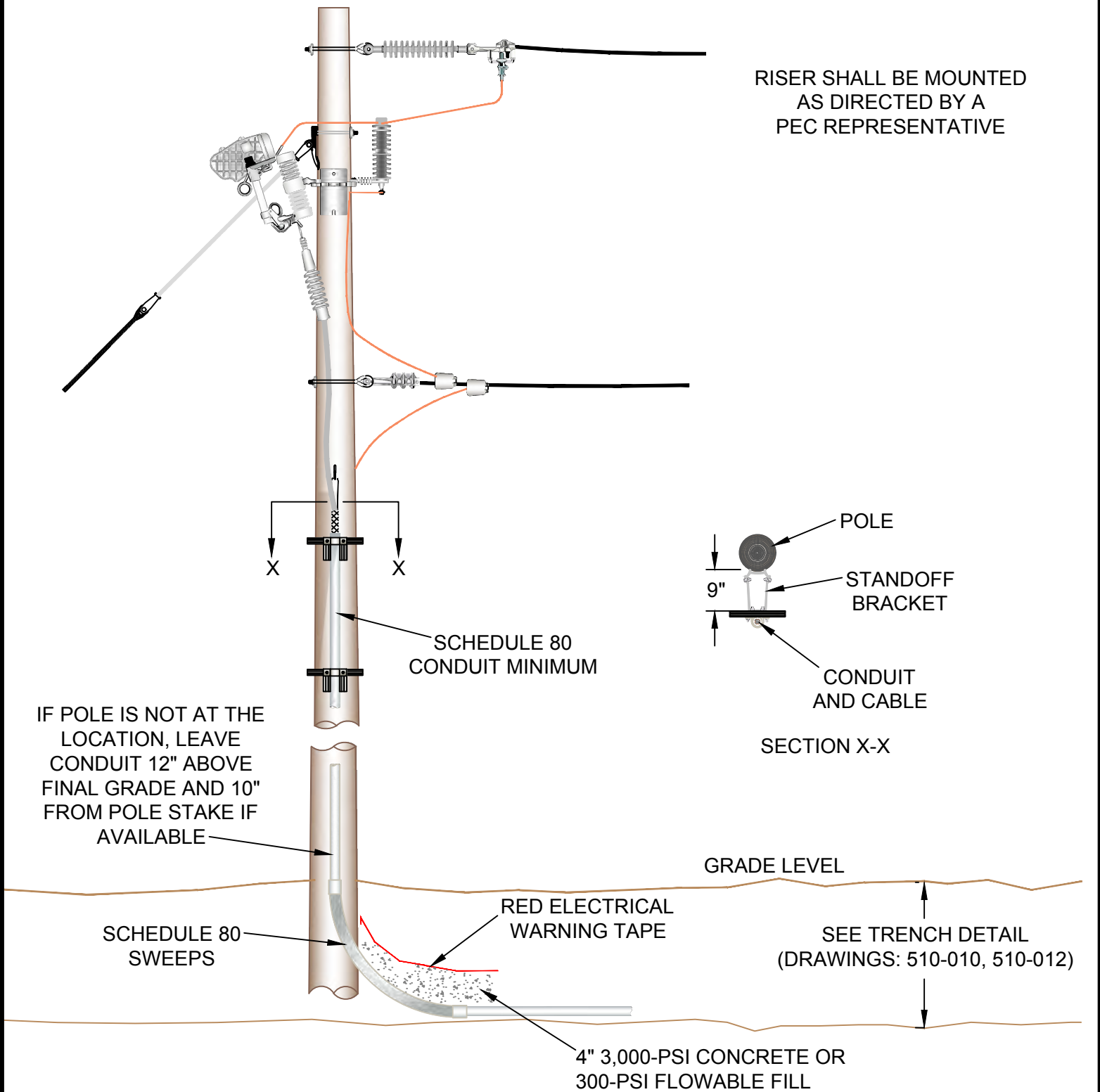
approved

MJB

date:

July 2, 2015

550-022-0702



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



UNDERGROUND INSTALLATION SPECIFICATIONS

1Ø RISER POLE USING STANDOFF BRACKETS

drawn:

RWC

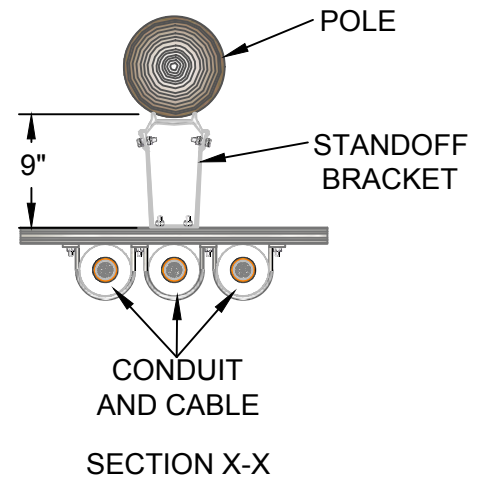
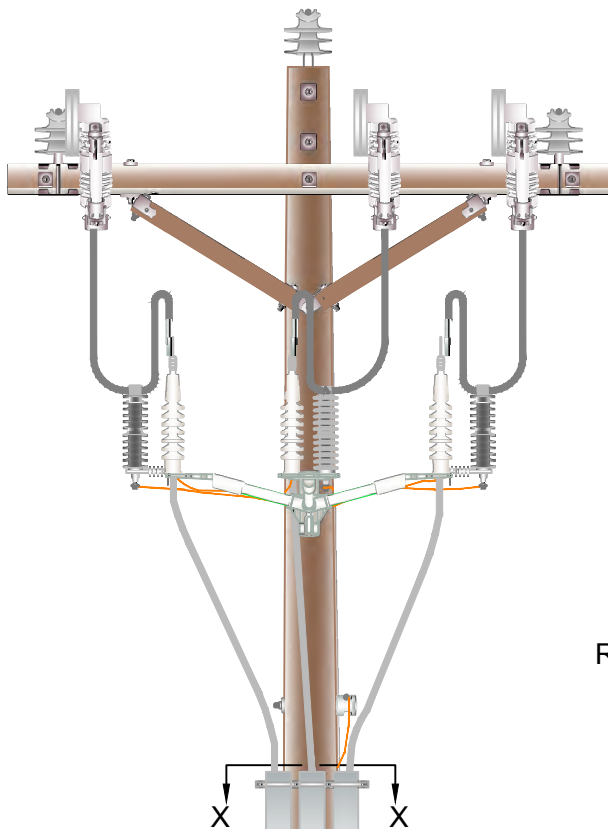
approved:

MMG

date:

07/09/2020

560-015



RISER SHALL BE MOUNTED
AS DIRECTED BY A
PEC REPRESENTATIVE

SCHEDULE 80
ELECTRICAL GRADE
CONDUIT MINIMUM

IF POLE IS NOT AT THE
LOCATION, LEAVE
CONDUIT 12" ABOVE
FINAL GRADE AND 10"
FROM POLE STAKE IF
AVAILABLE

GRADE LEVEL

RED ELECTRICAL
WARNING TAPE

4" 3,000-PSI CONCRETE OR
300-PSI FLOWABLE FILL

SCHEDULE 80
SWEEPS

SEE TRENCH DETAIL
(DRAWINGS: 510-020, 510-022)

REV | A | DATE | 07/09/2020 | REVISION | ISSUE FOR CONSTRUCTION

BY | RWC | CHK | SSS | APR | MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

3Ø RISER POLE
USING STANDOFF BRACKETS

drawn:

RWC

approved:

MMG

date:

07/09/2020

560-025

NESC Rule 217A2C: Standoff brackets on supporting structures shall be arranged so that there is not less than 2.45 M (8 FT) between either: (1) The lowest bracket and ground or other accessible surface, or (2) The two lowest brackets.
Exception: This rule does not apply where supporting structures are isolated.

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

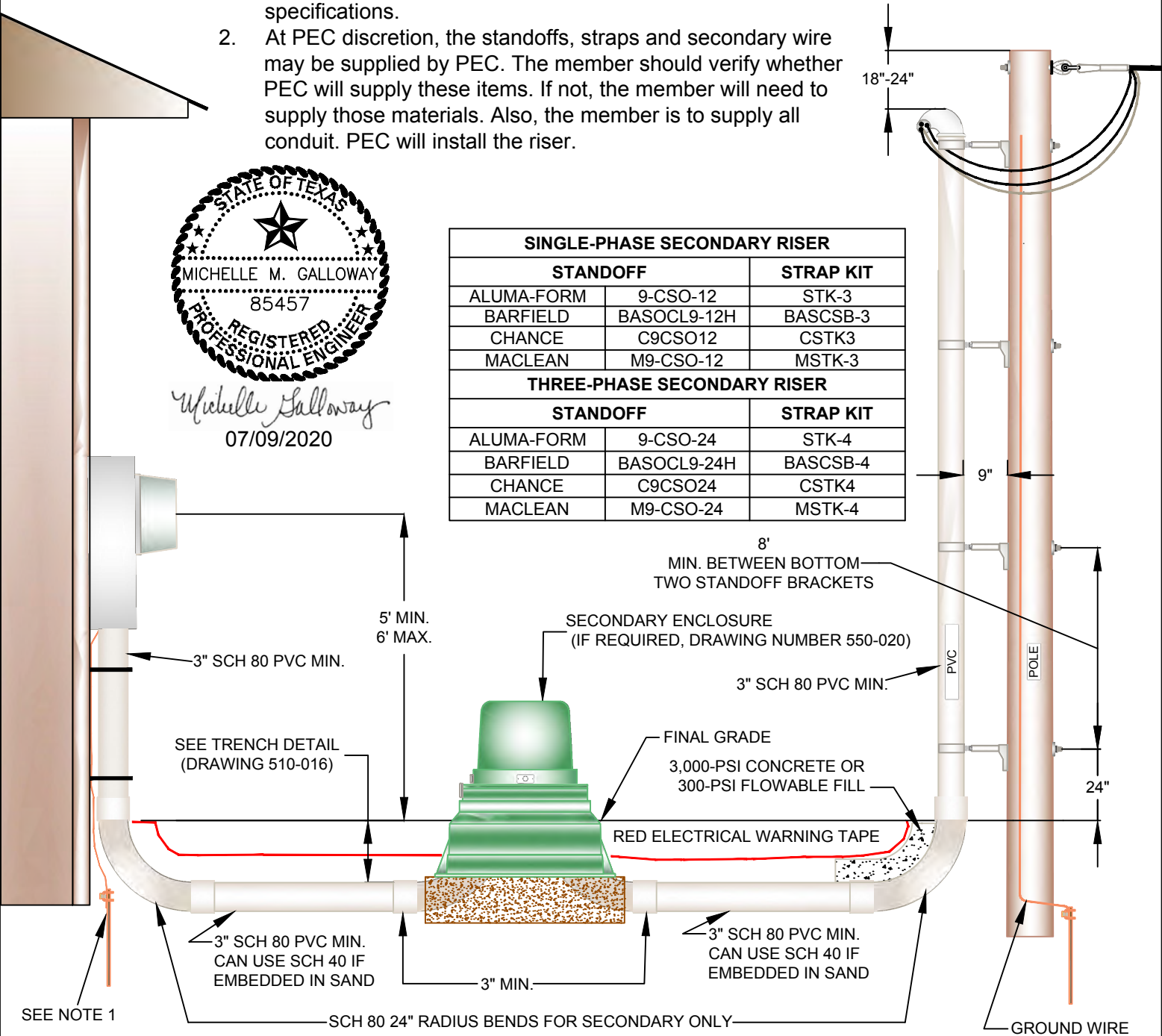
NOTES TO MEMBERS:

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



Michelle Galloway
07/09/2020

SINGLE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-12	STK-3
BARFIELD	BASOCL9-12H	BASCSB-3
CHANCE	C9CSO12	CSTK3
MACLEAN	M9-CSO-12	MSTK-3
THREE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-24	STK-4
BARFIELD	BASOCL9-24H	BASCSB-4
CHANCE	C9CSO24	CSTK4
MACLEAN	M9-CSO-24	MSTK-4



REV C DATE 07/09/2020 REVISION ADD FLOWABLE FILL TO CONCRETE NOTE BY RWC CHK SSS APR MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

SECONDARY RISER WITH STANDOFFS

drawn:	approved:	date:	560-050
RWC	MMG	07/09/2020	

NESC Rule 217A2C: Standoff brackets on supporting structures shall be arranged so that there is not less than 2.45 M (8 FT) between either: (1) The lowest bracket and ground or other accessible surface, or (2) The two lowest brackets. Exception: This rule does not apply where supporting structures are isolated.

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



Michelle Galloway
07/09/2020

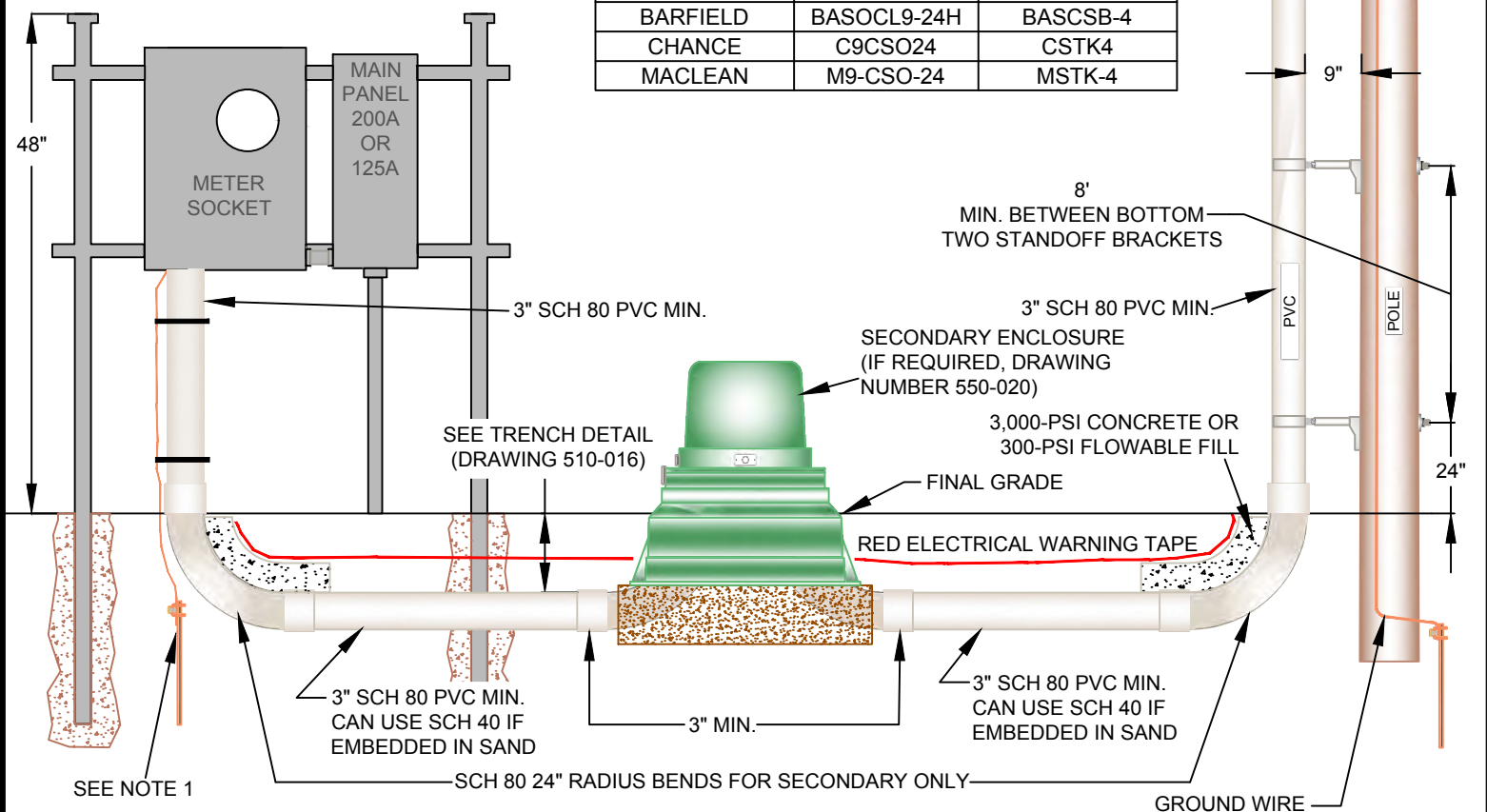
NOTES TO MEMBERS:

1. Select and install ground rod according to meter loop specifications.
2. At PEC discretion, the standoffs, straps and secondary wire may be supplied by PEC. The member should verify whether PEC will supply these items. If not, the member will need to supply those materials. Also, the member is to 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	BASCSB-3
CHANCE	C9CSO12	CSTK3
MACLEAN	M9-CSO-12	MSTK-3
THREE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-24	STK-4
BARFIELD	BASOCL9-24H	BASCSB-4
CHANCE	C9CSO24	CSTK4
MACLEAN	M9-CSO-24	MSTK-4



REV C DATE 07/09/2020 REVISION ADD FLOWABLE FILL TO CONCRETE NOTE BY RWC CHK SSS APR MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

SECONDARY RISER WITH STANDOFFS TO A METER RACK

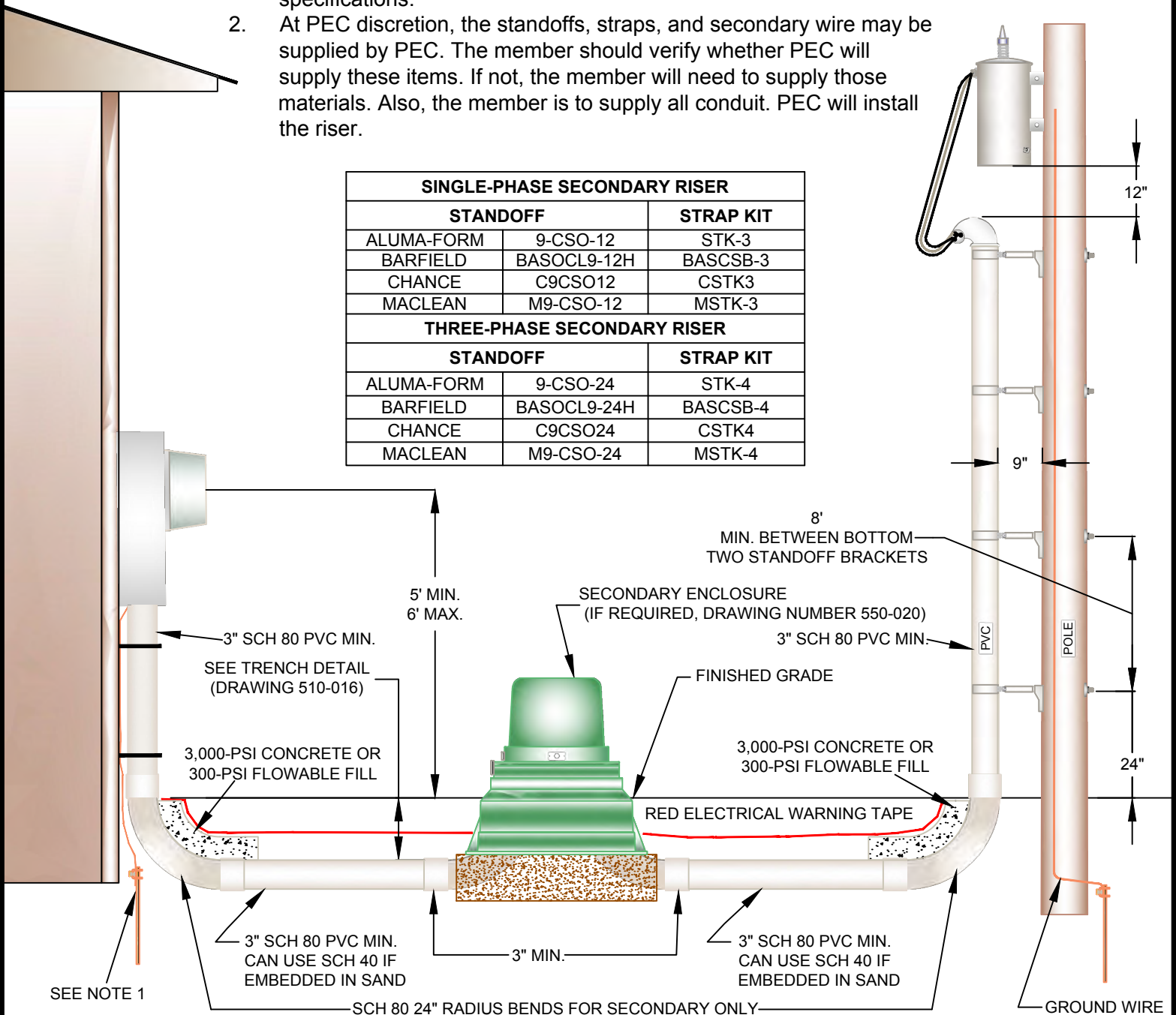
drawn:	approved:	date:
RWC	MMG	07/09/2020

560-051

NESC Rule 217A2C: Standoff brackets on supporting structures shall be arranged so that there is not less than 2.45 M (8 FT) between either: (1) The lowest bracket and ground or other accessible surface, or (2) The two lowest brackets.
Exception: This rule does not apply where supporting structures are isolated.

For 30' or 35' meter poles, install four standoffs: The first at 2' above ground, the second at 10' above ground, and the remaining two evenly spaced above the second standoff.

- NOTES TO MEMBERS:
- 1. Select and install a ground rod according to meter loop specifications.
 - 2. At PEC discretion, the standoffs, straps, and secondary wire may be supplied by PEC. The member should verify whether PEC will supply these items. If not, the member will need to supply those materials. Also, the member is to 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	BASCSB-3
CHANCE	C9CSO12	CSTK3
MACLEAN	M9-CSO-12	MSTK-3
THREE-PHASE SECONDARY RISER		
STANDOFF		STRAP KIT
ALUMA-FORM	9-CSO-24	STK-4
BARFIELD	BASOCL9-24H	BASCSB-4
CHANCE	C9CSO24	CSTK4
MACLEAN	M9-CSO-24	MSTK-4

REV D DATE 08/13/2021 REVISION ADD CONCRETE TO BOTH SWEEPS BY RWC CHK SSS APR MMG



UNDERGROUND
INSTALLATION
SPECIFICATIONS

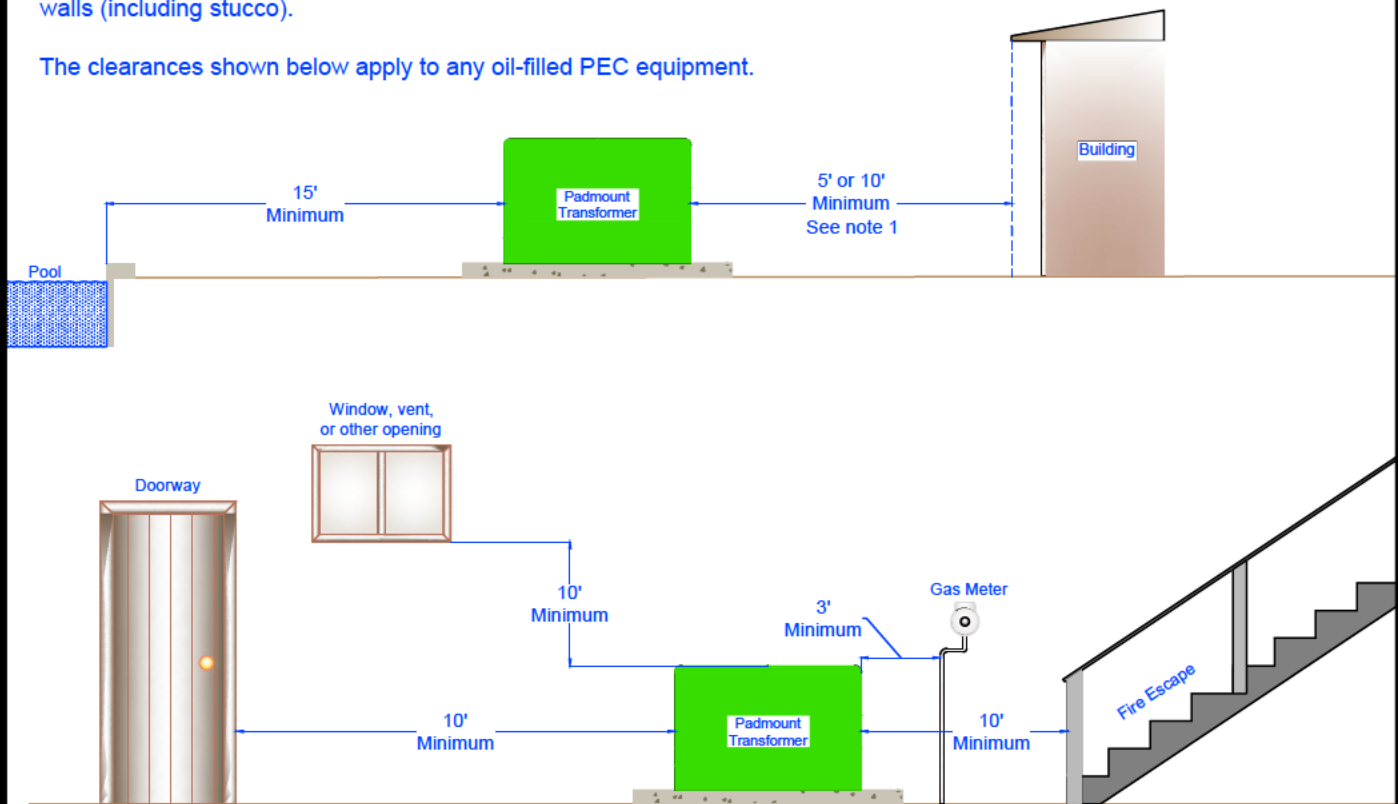
600-VOLT UNDERGROUND SERVICE
FROM OVERHEAD TRANSFORMER

drawn:	approved:	date:	560-052
RWC	MMG	08/13/2021	

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

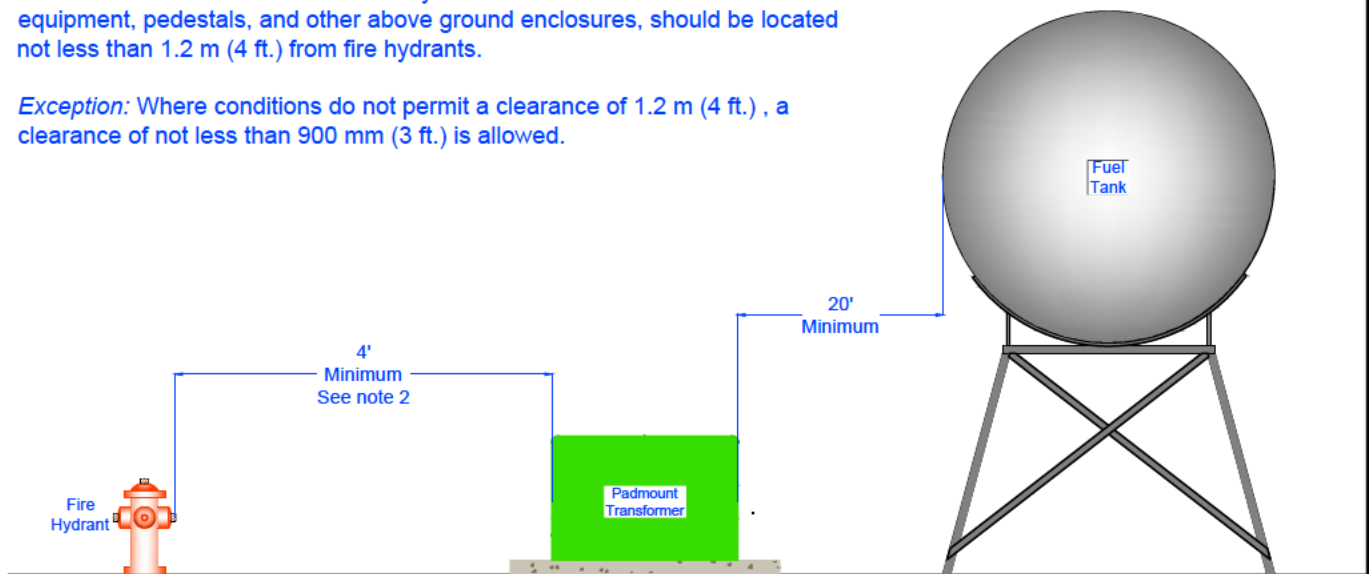
The clearance from a building is five feet if the building has non-combustible walls (brick, concrete, steel, or stone), ten feet if the building has combustible walls (including stucco).

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.

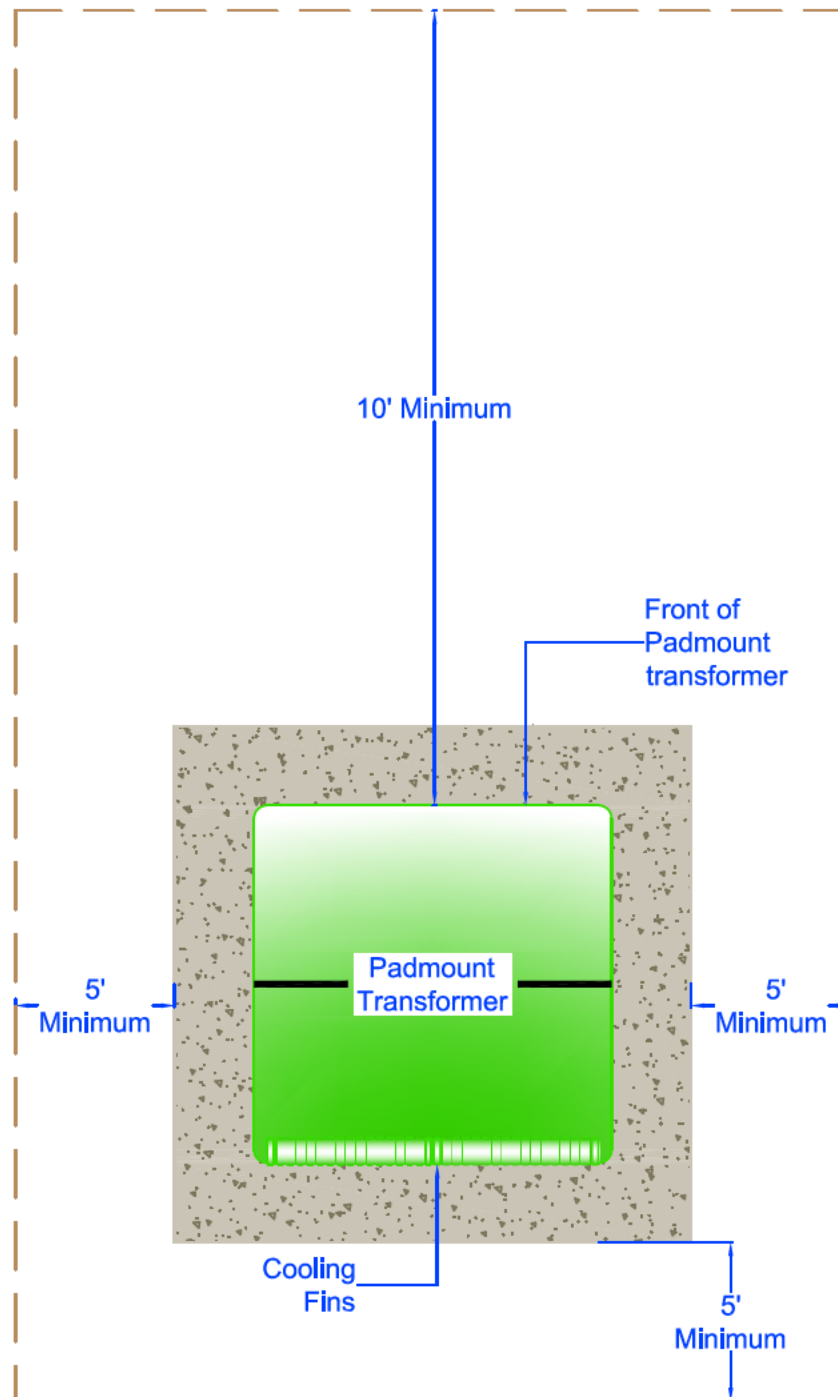


PEDERNALES ELECTRIC
COOPERATIVE, INC.
URD DEVELOPER'S SPECIFICATIONS

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)



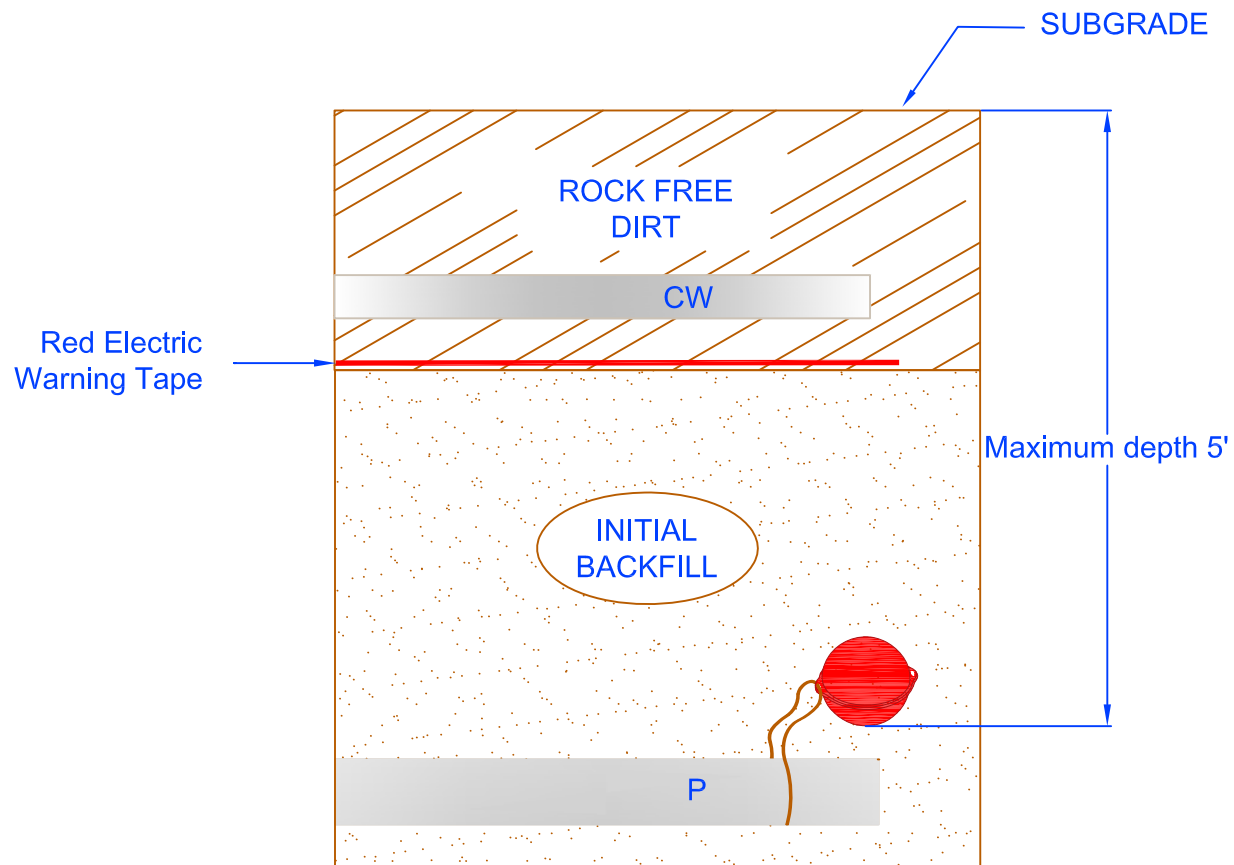
The clearances shown above applies to all PEC padmounted electrical equipment over 600 volts PEC equipment.



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