2023

Underground Distribution Construction Standards

PUBLISHED: 2023

THIS MANUAL SUPERSEDES ALL PRIOR ISSUES AND REVISIONS

PUBLISHED BY SALT RIVER PROJECT

POLICY, PROCEDURES & STANDARDS

THESE SRP STANDARDS ARE SUBJECT TO UPDATE AND MODIFICATION AT ANY TIME. PRINTED COPIES MAY NOT INCLUDE THE MOST UP-TO-DATE STANDARDS, REFERENCES, OR REQUIREMENTS. IF YOU HAVE QUESTIONS OR NEED SUPPORT EMAIL:

Engineering_Standards@srpnet.com

THESE STANDARDS ARE PROVIDED FOR GENERAL INFORMATION ONLY AND ARE BASED ON ASSUMPTIONS AND CRITERIA THAT MAY NOT BE APPROPRIATE FOR OR APPLICABLE TO EVERY CIRCUMSTANCE OR ELECTRICAL SYSTEM. SRP ENCOURAGES EACH USER TO CONSULT WITH ITS OWN TECHNICAL ADVISOR CONCERNING THE APPLICABILITY OF THESE STANDARDS TO THE USER'S SPECIFIC SITUATION. THE USER ASSUMES ALL RISK ASSOCIATED WITH THE USE OF THESE STANDARDS.

SRP MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO ANY USE OF OR RELIANCE ON THESE SPECIFICATIONS. ALL REPRESENTATIONS AND WARRANTIES ARE EXPRESSLY DISCLAIMED.

SUBMIT QUESTIONS, COMMENTS OR SUGGESTIONS TO:

Policy, Procedures & Standards

Engineering_Standards@srpnet.com

REVISION LOG

Revisions Previous to 09/15/2023		
Standard Title	**Standard Change**	**Date**
All	Republication	04/25/2023
Transformers 3Ø-2 Transformer Bank Open Wye Primary – Open Delta Secondary	2 Pot Transformer Bank Service Conduits	07/05/2023
Basic Assembly Units – Guard Post	Inconsistent Standards Pages	01/10/2024
Pad Mounted Capacitors – Procedure for Testing Distribution Cap Banks Rated 7.2kV, 60hZ	Varcom Equipment Update	01/30/2024
Pad Mounted Capacitors – Dead Front, 1200 kVar	Add Neutral Current Sensor to OH Cap Bank	03/11/2024
Basic Assembly Units – Ground Rod Assembly Buried Ground Rod Extension	Pulling Enclosure and Switch Pad Cover	05/01/2024
Risers – 100A Cutout Arrester Assemblies	3-Bolt Clamp Removal, T-Bracket Update	09/12/2024
Switching and Fusing – Pad Mounted S&C Intellirupter	Intellirupter Padmount	12/04/2024
Transformers – Three-Phase Pad Installation Details	Conduit Stub-Up Template Update	01/08/2025
Transformers – Tap Setting Chart	Transformer Tap Settings	11/04/2025

TABLE OF CONTENTS

DESCRIPTION **PAGE**

SECTION 0: CUSTOMER ASSISTANCE INFORMATION

PURPOSE AND SCOPE, HOW TO USE THIS BOOK, NOTICE OF CHANGES.....1

CONTACT INFORMATION.....2

AREA BUSINESS OFFICE LOCATIONS AND REFERENCES 3

SECTION 1: BASIC ASSEMBLY UNITS – UB 1-1

SECTION 2: CAPACITORS – UC 2-1

SECTION 3: SWITCHING AND FUSING – UF 3-1

SECTION 4: CONDUIT – UK 4-1

SECTION 5: RISERS 5-1

SECTION 6: TRENCHING – UT..... 6-1

SECTION 7: VAULTS, MANHOLES AND BOXES – UV 7-1

SECTION 8: CABLES AND ACCESSORIES – UW 8-1

SECTION 9: TRANSFORMERS – UX..... 9-1

SECTION 10: LANDSCAPING 10-1

SECTION 11: MISCELLANEOUS 11-1

NOTE: FOR UNDERGROUND CLEARANCES, REFER TO ELECTRICAL CLEARANCE STANDARDS BOOK.

PURPOSE AND SCOPE, HOW TO USE THIS BOOK, CHANGES TO STANDARDS

I. Purpose and Scope

A. The following Underground Distribution Construction Standards attempt to address the majority of construction, however special conditions may occur requiring modification.

B. It is imperative to maintain standardization. Completed Job Orders must reflect any changes on the completed “Installation Records” to assure that all record keeping systems reflect the actual location and facilities as they have been constructed. The accuracy of construction in accordance with standards will allow SRP to expedite future locating, rebuilding or repairing of these facilities to improve customer service.

II. How to Use This Book

A. Revisions are indicated by red font.

B. Title blocks are used to hold information about the book, section, and standard and are located at the bottom of the page.

1. “Approval” refers to the engineer responsible for that standard.
2. “Issue Date” is when the standard was originally created.
3. Revision Date (“Rev Date”) is the date the standard was last updated. Note that standards are reviewed periodically by the responsible engineer, and if no updates are necessary in that review, the Rev Date will remain unchanged.
4. Revision statements are a summary of the changes made on the page and are located at the top of the title block.
5. If a revision results in the complete removal of a diagram or an entire section of a diagram or a complete section of text, a brief explanation of the removal will be entered in the revision statement location of the title block.
6. Revisions to formatting and corrections to typographical errors and/or page numbers will not be noted as a revision date change, however, it will be indicated in red and entered as a change in the Standards Revision Log.

C. Utilizing SRP Standards

1. When utilizing SRP’s standards in design projects, modification of said standards is NOT permitted.
2. Details or images may be extracted and used in design projects when they do not include the title block of the standard and are not presented as a standard.

III. Changes to Standards

These standards are subject to update and modification at any time. Printed copies of this manual are provided as a courtesy, but may not include the most up-to-date standards, references, or requirements.

To access current standards, visit our website:

https://www.srpnet.com/doing-business/builders-developers-contractors/commercial-specifications-guidelines-handbooks

IV. Contact Information

A. Business and Residential

Electrical Emergencies	**NOTE:** Call 9-1-1 first for medical emergencies Fallen Power Lines, Arcing, Electric Shock, Damage to SRP Facilities	**(602) 236-8811**
Residential	General Information, Billing Inquiries, Power Outages, Maintenance of SRP Facilities, Temporary Disconnect from SRP Facilities, Inspections	**(602) 236-8888**
Business Center	General Information, Billing Inquiries, Municipal Customers, Public Agency Customers, Inspections, Temporary Disconnect from SRP Facilities	**(602) 236-8833**
Spanish	La Linea – **servicio en español**	**(602) 236-1111**
SRP Water (Irrigation)	Emergencies, Water (Irrigation), Flooding, General Information, Billing Inquiries, Irrigation Orders, Schedule Time Inquiries	**(602) 236-3333**
Location of Underground Facilities	National "Call Before You Dig" Number ("One Call" Office)	**811**
Blue Stake	Within Maricopa County Outside of Maricopa County	**(602) 263-1100** **(800) 782-5348**
SRP Distributed Energy Programs	Main Line Residential Programs Residential Solar Water Heaters Commercial Programs	**(602) 236-4448** **(602) 236-4661** **(602) 236-4662** **(602) 236-4663**

B. Additional Resources

Graphic Records:	Contract construction companies can request printing services online at srpnet.com/electric/business/graphicrequest.aspx
Shop Drawings:	Customers are required to supply shop drawings for service entrance sections with non-pre-approved meter pedestals (single or double), non-pre-approved 320 amps, and all 400 amps and above. Email shopdraw@srpnet.com (PDF files are preferred).
Standards-related questions:	Email Engineering_Standards@srpnet.com
	SRP's website: srpnet.com Residential / Business Electric / Water assistance information.

V. Area Business Office Locations

East Valley Service Center……...7050 E. University Dr., Mesa 85207
Project Administration Building…….…….....1500 N. Mill Ave., Tempe 85281
Pinal County Customer Center…….....3735 E. Combs Rd., San Tan Valley 85242
West Valley Service Center…….…..221 N. 79th Ave., Tolleson 85353

VI. References

There are numerous documents and standards that were used in developing these guidelines. Many of these documents are modified and updated over time; the equipment of an interconnected generator shall conform to the most recent versions of these documents. A partial list of documents used is included below:

- Electric Utility Service Equipment Requirements Committee (EUSERC) Manual
- Institute of Electrical and Electronics Engineers (IEEE)
- International Building Code (IBC)
- National Electric Code (NEC)
- National Electrical Manufacturers Association (NEMA)
- National Electric Safety Code (NESC)
- Underwriter Laboratories (UL)
- Various state and municipal requirements

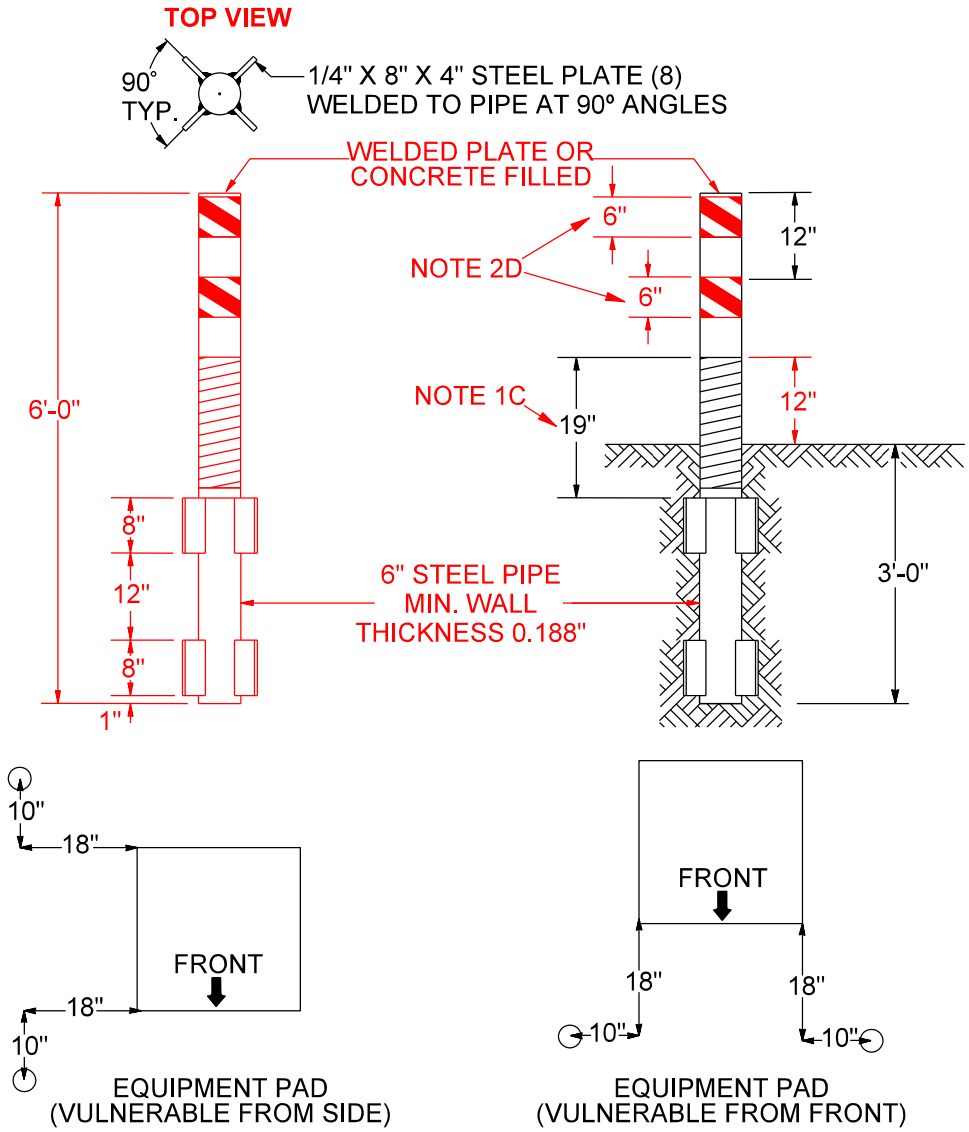
BASIC ASSEMBLY UNITS

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE	1-1-1
GUARD POST	1-2-1
GROUND ROD ASSEMBLY, ALTERNATE GROUNDING ELECTRODE	1-3-1
FASTENING ASSEMBLIES, ENCLOSURE TO PAD	1-4-1
METER PEDESTAL MAKE-UP ON MOBILE HOME PARKS - REFERENCE ONLY	1-5-1
PLACEMENT STANDARD FOR BURIED ELECTRONIC MARKER	1-6-1
GENERAL PAD MOUNT SECURITY	1-7-1

INSTRUCTIONAL GUIDE

PURPOSE: FOR INSTALLATION, REMOVAL OR REPLACEMENT OF BASIC CONSTRUCTION ASSEMBLIES USED IN UNDERGROUND DISTRIBUTION CONSTRUCTION.

UBGP	SRP INSTALLED	UBGPG	CONTRACTOR INSTALLATION SRP SUPPLIED CUSTOMER INSTALLED



STEEL GUARD POST INSTALLATION

NOTES

1. MATERIAL & CONSTRUCTION SPECIFICATION REFER TO SM-637200-5034819.
2. INSTALLATION
   - A. GUARD POST TO BE INSTALLED WHERE NECESSARY TO PROTECT PAD-MOUNTED EQUIPMENT. DO NOT INSTALL GUARD POST IN AN AREA THAT WOULD RESTRICT ACCESS TO THE EQUIPMENT. PROTECT EACH SIDE EXPOSED TO VEHICULAR ACCESS.
   - B. BACKFILL WITH CONCRETE (MATERIAL ITEM #: 5075323) OR BACKFILL WITH NATIVE SOIL AND COMPACT TO 95% DENSITY.
   - C. GUARD POSTS SHALL ALLOW FOR UNRESTRICTED OPERATION OF DOORS.
   - D. APPLY 3" REFLECTIVE TAPE (MATERIAL ITEM #: 5010577) 6" AT HEIGHT LOCATIONS PER DIAGRAM.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	REV: UPDATED ILLUSTRATION AND NOTES FOR CLARITY	
	BASIC ASSEMBLY UNITS GUARD POST	ISSUE DATE: 01/15/87 REV. DATE: 10/02/23 APPROVAL: J. ROBBINS
	1-2-1	8513E111.DGN

UBGRD

8' COPPER CLAD GROUND ROD WITH CONNECTOR AND 6'#4-3 CU WIRE

UBGRDG

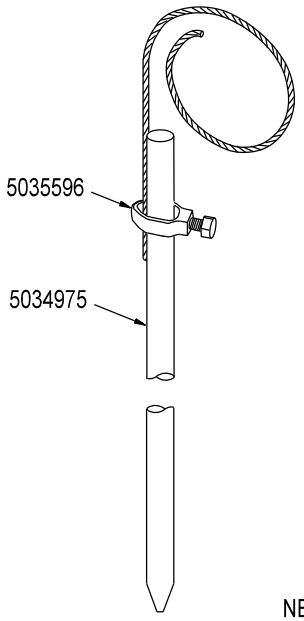
GROUND ROD ONLY FOR CONTRACTOR INSTALLATION

UBGRDL

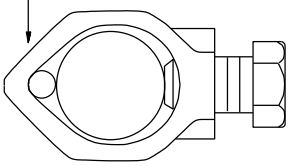
8' COPPER CLAD GROUND ROD WITH CONNECTOR AND 8'#6 CU WIRE FOR STREET LIGHTS

NOTE:

THE TOP OF THE ROD AND CONNECTING WIRE ARE TO BE INSTALLED BELOW FINAL GRADE LEVEL EXCEPT WHEN INSTALLED IN PAD-MOUNTED ENCLOSURES.



INSTALL GROUND WIRE ON OPPOSITE SIDE OF GROUND ROD FROM THE GROUND ROD CLAMP BOLT.

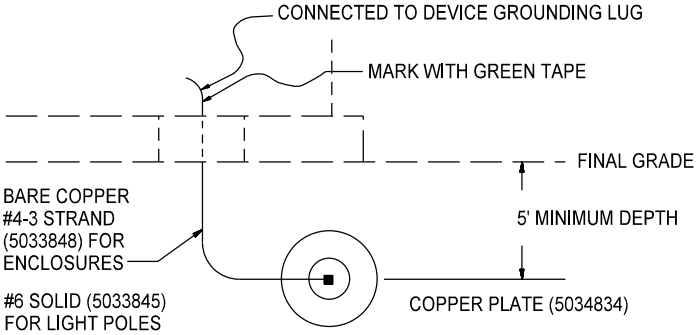


NEW INSTALLATIONS

UBGRDJ PAD MOUNTED ENCLOSURES

UBGRDP LIGHT POLES

ALTERNATE GROUNDING ELECTRODE FOR USE AT EQUIPMENT WHERE EXISTING FACILITIES CONFLICT WITH DRIVING A GROUND ROD.

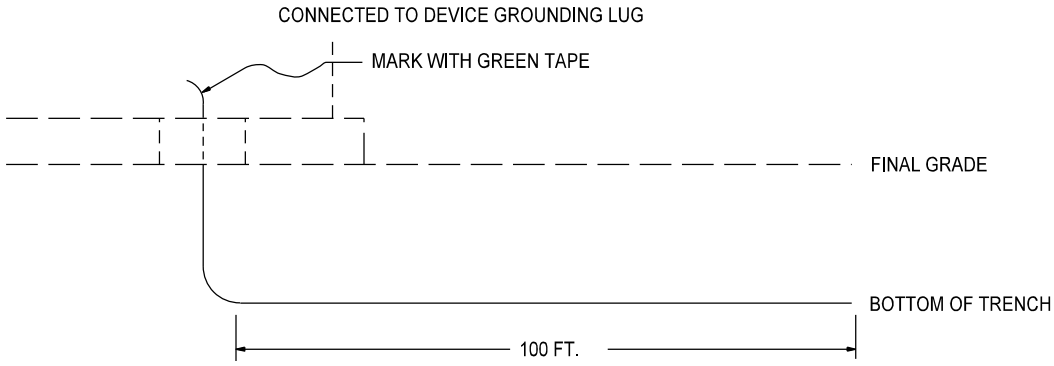


(PREFERRED)
RETROFIT
EXISTING INSTALLATIONS

UBGRDA

ALTERNATE GROUNDING ELECTRODE FOR USE AT PAD MOUNTED EQUIPMENT WHERE EXISTING FACILITIES CONFLICT WITH DRIVING A GROUND ROD.

(SECOND CHOICE)
RETROFIT
EXISTING INSTALLATIONS

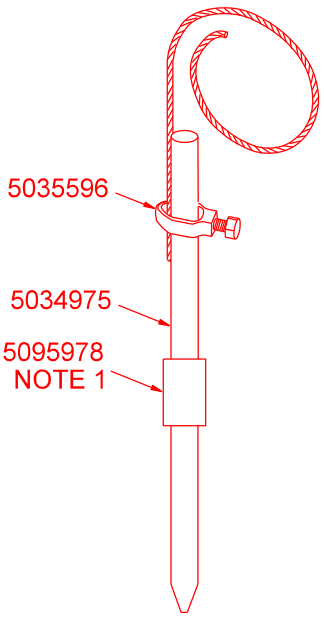


100 FT. OF #4 BARE COPPER (5033848) LAID STRAIGHT ALONG BOTTOM OF TRENCH.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	BASIC ASSEMBLY UNITS GROUND ROD ASSEMBLY ALTERNATE GROUNDING ELECTRODE	ISSUE DATE: 01/15/87 REV. DATE: 07/24/13 APPROVAL: B. PRIEST
	1-3-1	8513E112.DGN

PULLING ENCLOSURE EXTENSION PACKAGE

UBGRDEXT

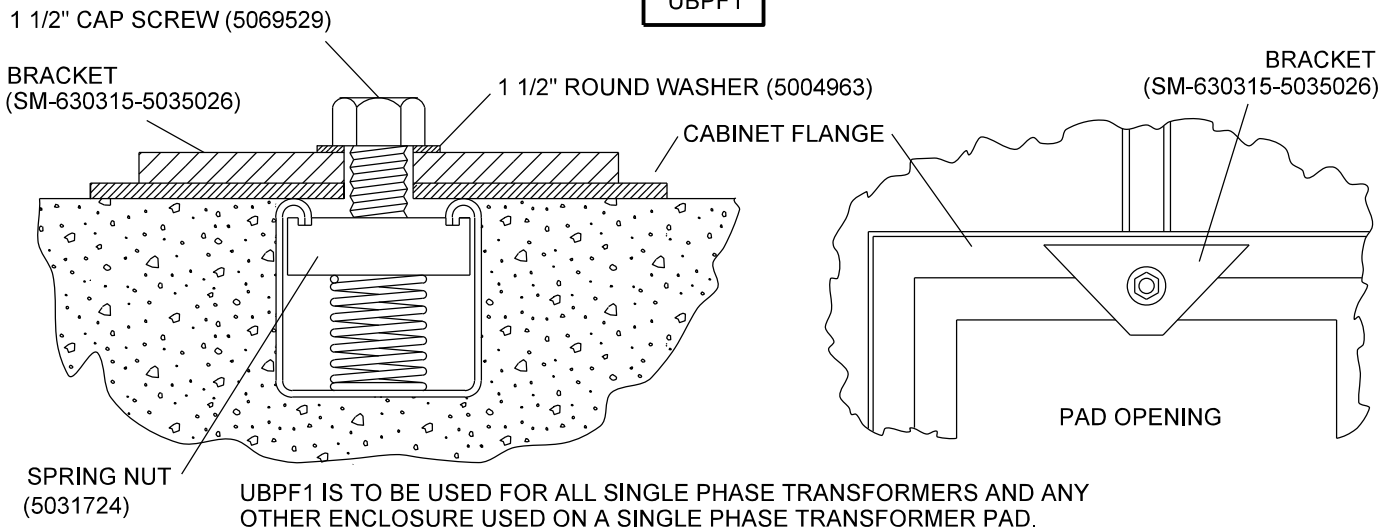


NOTES

1. EXPOSE EXISTING GROUND ROD AND HAMMER ON GROUND COUPLER 1-1/4" ONTO EXISTING GROUND ROD.
2. USE COUPLER TO EXTEND 5/8" X 8' GROUND ROD 4" ABOVE GRADE AT LOCATION SHOWN ON TEMPLATE.
3. HAMMER GROUND ROD EXTENSTION 1-1/4" INTO GROUND COUPLER.
4. CUT GROUND ROD HEIGHT TO 4" ABOVE GRADE.

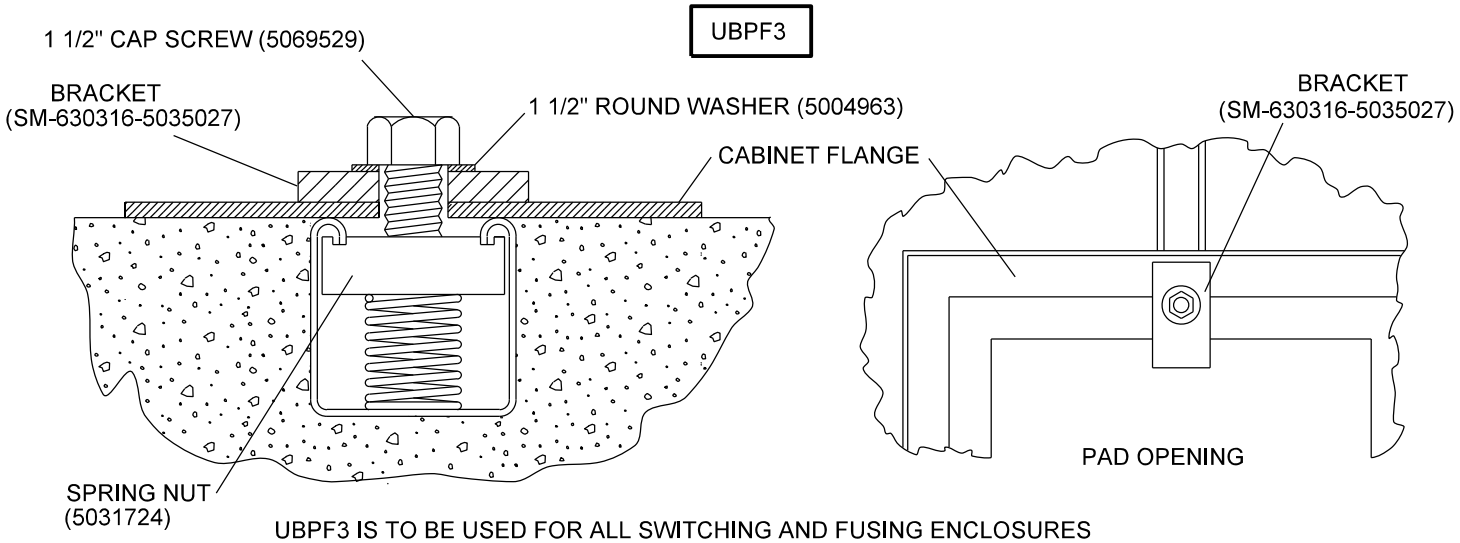
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	BASIC ASSEMBLY UNITS GROUND ROD ASSEMBLY BURIED GROUND ROD EXTENSION	ISSUE DATE: 05/01/24 REV. DATE: APPROVAL: J. LUERA
	1-3-2	8513E645.DGN

UBPF1



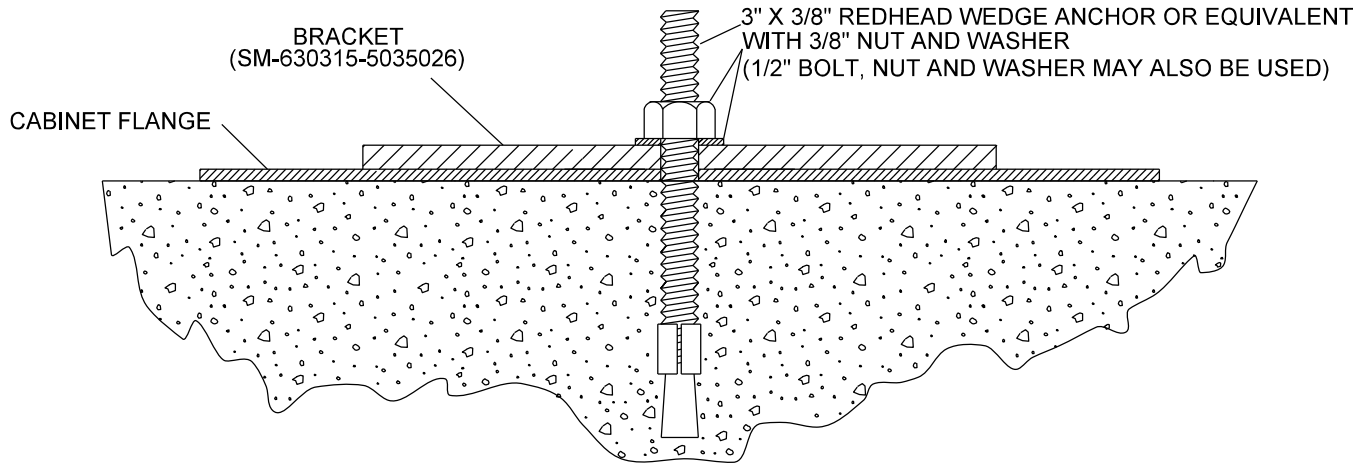
UBPF1 IS TO BE USED FOR ALL SINGLE PHASE TRANSFORMERS AND ANY OTHER ENCLOSURE USED ON A SINGLE PHASE TRANSFORMER PAD.

UBPF3



UBPF3 IS TO BE USED FOR ALL SWITCHING AND FUSING ENCLOSURES

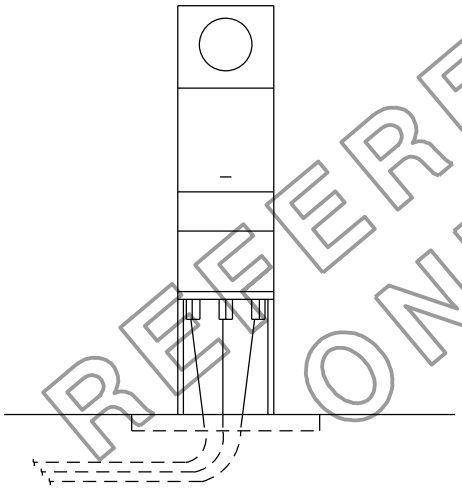
IF NEEDED, CONTACT POWER C&M TOOL ROOM FOR CONCRETE DRILLS AND WEDGE ANCHORS



THIS IS FOR ALL PADS NOT COVERED BY UBPF1 OR UBPF3

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	BASIC ASSEMBLY UNITS FASTENING ASSEMBLY ENCLOSURE TO PAD	ISSUE DATE: 01/15/87 REV. DATE: 02/04/15 APPROVAL: B. PRIEST
	1-4-1	8513E113.DGN

UBMPC1



SECONDARY IN ONLY

NOTES:

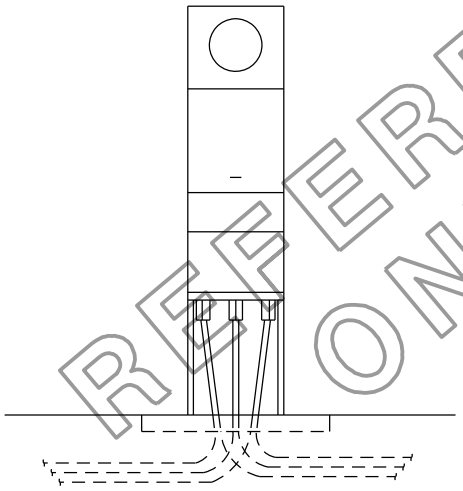
1. END OF RUN METER PEDESTAL.
2. COMPATIBLE UNIT INCLUDES 10' OF SECONDARY CONDUCTOR FOR MAKE-UP INSIDE METER PEDESTAL.

WIRE SIZES:

UTX10
UTX350
UTX40
UTXK10
UTXK40
UTX10K
UTX350K
UTX40K

REFERENCE ONLY

UBMPC2



SECONDARY IN AND SECONDARY OUT

NOTES:

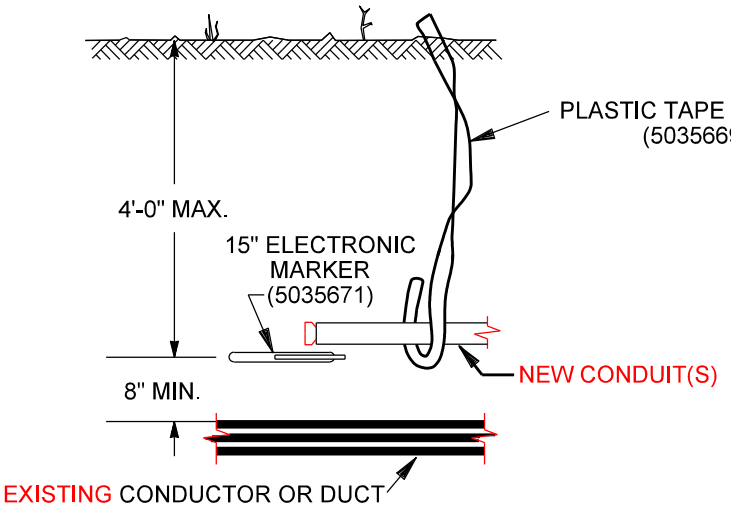
1. MID-RUN METER PEDESTAL.
2. COMPATIBLE UNIT INCLUDES 20' OF SECONDARY CONDUCTOR FOR MAKE-UP INSIDE METER PEDESTAL.

WIRE SIZES:

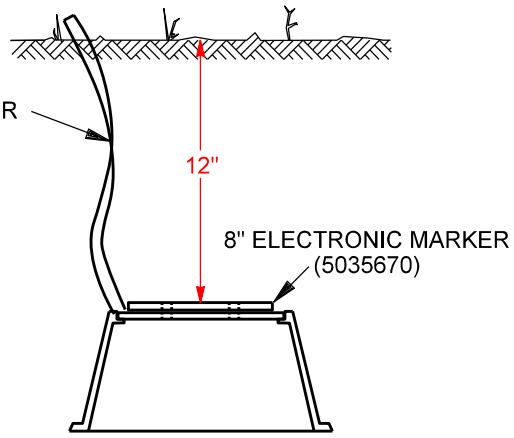
UTX10
UTX350
UTX40
UTXK10
UTXK40
UTX10K
UTX350K
UTX40K

REFERENCE ONLY

INSTALLATION GENERAL
(NOTE 1)



INSTALLATION OF BURIED J-BOX
(NOTE 6)



UBM15	UBM15G	UBM8	UBM8G
15" ELECTRONIC MARKER (5035671)	FOR DEVELOPER INSTALLATION	8" ELECTRONIC MARKER (5035670)	FOR DEVELOPER INSTALLATION

NOTES

1. THE 15" BURIED ELECTRONIC MARKER IS TO BE USED FOR MARKING THE LOCATION OF CONNECTION POINTS, T-TAPS, MOLE ASSEMBLIES, CONDUIT STUB-OUTS OR OTHER LOCATIONS WHICH MAY NEED TO BE LOCATED AT SOMETIME IN THE FUTURE. THE 8" MARKERS ARE INTENDED FOR BURIED J-BOX APPLICATIONS.
2. BURY AT LEAST 8" ABOVE ENERGIZED CONDUCTOR, CLOSER DISTANCE WILL CAUSE THE MARKER TO BE INEFFECTIVE AT 4' OR GREATER DEPTH. FOR SERVICE CONDUIT, IT MAY BE IN BOTTOM OF TRENCH BUT NOT TO EXCEED 4' MAX DEPTH.
3. MARKERS SHALL BE BURIED FLAT AND LEVEL TO ENSURE ACCURACY.
4. SHADE MARKER WITH AT LEAST 4" OF SELECT NATIVE BACKFILL TO PREVENT ACCIDENTAL MOVEMENT OR DAMAGE DURING TRENCH BACKFILL.
5. CARE SHOULD BE TAKEN TO ENSURE THAT CABLE, TIN FOIL, OR OTHER EXTRANEOUS METAL DOES NOT GET DISCARDED INTO THE TRENCH PRIOR TO BACKFILL. METAL IN CLOSE PROXIMITY WILL RENDER THE MARKER INEFFECTIVE.
6. FOR PERMANENT INSTALLATION TO A BURIED J-BOX, SECURE THE 8" MARKER TO LID WITH ONE NYLON CABLE TIES BY DRILLING TWO HOLES IN LID.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	REV: UPDATED ILLUSTRATION AND NOTES FOR CLARITY	
	BASIC ASSEMBLY UNITS PLACEMENT STANDARD FOR BURIED ELECTRONIC MARKER	ISSUE DATE: 01/15/87 REV. DATE: 10/02/23 APPROVAL: J. ROBBINS
	1-6-1	8513E115.DGN

PAD-MOUNTED EQUIPMENT MUST BE SECURED FROM UNAUTHORIZED ACCESS AND OPERATION.

LOCKS

ALL PAD-MOUNTED EQUIPMENT (INCLUDING JUNCTION BOXES) WITH PROVISIONS TO CARRY A LOCK SHALL HAVE AN APPROVED LOCK INSTALLED. EQUIPMENT OPERATING HANDLES SHALL ALSO HAVE APPROVED LOCKS INSTALLED. DISTRICT PADLOCKS AVAILABLE FROM THE WAREHOUSE INCLUDE STOCK CODE 5014605 (SHORT SHANK), AND STOCK CODE 5014606 (LONG SHANK). A SHEAR HEAD LOCK, STOCK CODE 5014360, IS AVAILABLE FOR USE IN AREAS SUBJECT TO PADLOCK THEFT.

PENTA-HEAD BOLTS

ALL PAD-MOUNTED EQUIPMENT (INCLUDING READILY ACCESSIBLE JUNCTION BOXES) WITH PROVISIONS TO CARRY PENTA-HEAD BOLTS SHALL HAVE THEM INSTALLED. SOME OLDER PIECES OF EQUIPMENT MAY NOT HAVE PROVISIONS TO INSTALL PENTA-HEAD BOLTS, THEREFORE ONE CANNOT BE INSTALLED. TO PREVENT CROSSTHREADING, THE BOLT SHALL BE STARTED BY HAND, THEN TIGHTENED USING A PENTA-HEAD WRENCH (STOCK CODE 5039838), OR SOCKET (STOCK CODE 5039839).

REPLACEMENT PENTA-HEAD BOLTS AVAILABLE IN IMPREST

STOCK CODE	SIZE - DIAMETER (IN.) X LENGTH (IN.), THREADS PER INCH
5034051	3/8 X 1.25, 16
5034052	3/8 X 1.5, 16
5034053	3/8 X 2.5, 16
5034054	1/2 X 1.25, 13
5034055	1/2 X 1.5, 13
5034056	1/2 X 2.0, 13
5034285	1/2 X 2.5, 13
5034284	1/2 X 3.0, 13

WHEN REPLACING MISSING 1/2" PENTAHEAD BOLTS IN PAD-MOUNED EQUIPMENT, USE A PUSH NUT RETENTION WASHER (STOCK #5069569) TO HOLD THE BOLT CAPTIVE AND PREVENT FUTURE LOSS.

EQUIPMENT INSTALLATION

1. THE BASE OF ALL EQUIPMENT INSTALLED ON PADS SHALL BE BE FLUSH WITH THE SURFACE OF THE PAD, WITH NO GAPS BETWEEN THE PAD SURFACE AND BASE OF EQUIPMENT. WHEN A TRANSFORMER IS INSTALLED, VERIFY THE SILL IS FLUSH AGAINST THE SURFACE OF THE PAD. THIS MAY REQUIRE ADJUSTMENT TO CLOSE ANY GAPS BETWEEN THE SILL AND THE PAD.
2. PAD-MOUNTED EQUIPMENT SHALL BE SECURED TO THE ANCHOR PROVISIONS AVAILABLE IN THE PAD USING BRACKETS, STOCK CODES 5035026 OR 5035027. NOTE: CAPACITOR AND THREE-PHASE TRANSFORMER PADS DO NOT HAVE ANCHOR PROVISIONS.

VERMIN BARRIER (GOPHER PROOFING)

1. PAD MOUNTED EQUIPMENT WINDOW(S) SHALL BE SEALED TO PREVENT GOPHERS AND OTHER VERMIN FROM INFESTING THE EQUIPMENT.
   A. FOR NEW EQUIPMENT INSTALLATIONS, IF CONTROLLED LOW STRENGTH MATERIAL (CLSM ½ SACK, 5075313) IS NOT USED FOR TRENCH BACKFULL UNDER THE EQUIPMENT PAD, THE WINDOW(S) OF THE PAD SHALL BE SEALED WITH A CEMENT BASED MORTAR (SEE NOTE 2).
   B. FOR EXISTING EQUIPMENT INSTALLATIONS, IF EVIDENCE OF GOPHERS OR OTHER VERMIN EXISTS IN THE AREA NEAR THE EQUIPMENT, THE WINDOW(S) OF THE PAD SHALL BE SEALED WITH A CEMENT BASED MORTAR (SEE NOTE 2).
2. IF MORTAR IS USED, IT SHALL BE ONE-COMPONENT, RAPID-SET, POLYMER MODIFIED CEMENT BASED MORTAR SUCH AS “SPEED CRETE”.
3. WHEN CEMENT BASED MORTAR IS USED TO SEAL THE WINDOW(S) OF EQUIPMENT PADS, IT SHALL BE INSTALLED TO A THICKNESS OF 1 TO 2 INCHES. THE MORTAR SHALL NOT BE INSTALLED TO A THICKNESS THAT OVERFLOWS INTO THE CONDUIT. NOTE: NEITHER CLSM NOR MORTAR SHALL BE USED TO GOPHER PROOF SECONDARY WINDOWS OF THREE-PHASE TRANSFORMERS WITH SECONDARY PULL BOXES.
4. “SPEED CRETE” IS AVAILABLE IN IMPREST, STOCK CODE 5011902.

PAD MOUNTED CAPACITORS

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE	2-1-1
PROCEDURE FOR TESTING DISTRIBUTION CAPACITOR BANKS RATED 7.2KV, 60HZ	2-2-1
CAPACITOR CONTROL WIRING DIAGRAM	2-3-1
CODING FOR MAINTENANCE & AUXILIARY EQUIPMENT	2-4-1
MOUNTING PAD FOR FUTURE CAPACITOR	2-5-1
DEAD FRONT, 1200 KVAR	2-6-1
FIELD TEST REMOTE CONTROL/KYLE SWITCH OPERATION, EATON CBC8000	2-7-1
LIVE AND DEAD FRONT INSTALLATION DETAILS	2-8-1
CODING FOR RETIREMENT OF NON-STANDARD CAPACITOR BANKS	2-9-1
FIELD TEST REMOTE CONTROLLER/KYLE SWITCH OPERATION, JOSLYN (OBSOLETE)	2-10-1

INSTRUCTIONAL GUIDE

PURPOSE: FOR INSTALLATION OF CAPACITOR BANKS ON THE 7.2/12.47KV DISTRIBUTION SYSTEM.

COMPATIBLE UNIT CODING FOR UG SECTION

GENERAL CRITERIA

THE TYPE OF CAPACITOR BANKS REFERENCED IN THIS SECTION ARE PAD MOUNTED, PRE-ASSEMBLED, 1200 KVAR SWITCHED BANK UNITS.

THE PREFIX LETTERS OF THE COMPATIBLE UNIT CODE INDICATE PAD MOUNT CONSTRUCTION. THE NEXT CHARACTERS IN THE CODE DESIGNATE THE TOTAL KVAR OF THE BANK. FOR INSTANCE, 12 INDICATES 1200 KVAR.

EXAMPLE	**COMPATIBLE UNIT**
	UCA12
CAPACITOR BANK, PAD MOUNTED CONSTRUCTION	
1200 KVAR (SINGLE PHASE CAPACITOR UNITS)	

SWITCHED CAPACITOR BANKS

ALL CAPACITOR BANKS ARE PURCHASED WITH A 1/2 KVA, SINGLE PHASE TRANSFORMER TO PROVIDE THE CONTROL VOLTAGE FOR THE BANK SWITCHING.

PROCEDURE FOR TESTING 12.47KV PAD-MOUNT DISTRIBUTION CAPACITOR BANKS RATED 7.2KV, 60HZ

1. DE-ENERGIZE CAPACITOR BANK WITH AUTOMATIC CONTROL.
2. USE HIGH VOLTAGE AMP METER TO VERIFY OIL SWITCHES ARE OPEN.
3. DISCONNECT AND PARK PRIMARY ELBOWS ON INSULATED BUSHINGS, WAIT 5 MINUTES FOR CAPACITOR TO DISCHARGE.
4. USING A HOT STICK AND TEMPORARY JUMPERS, SHUNT ACROSS EACH OF THE THREE GROUPS OF CAPACITOR TANKS.
5. VISUALLY INSPECT ALL OIL SWITCHES, CAPACITOR TANKS, AND POTENTIAL TRANSFORMER; CHECKING FOR BROKEN BUSHINGS, BULGING TANKS AND OBVIOUS OIL LEAKS.
6. USING A MULTI-METER ON THE MICROFARAD SETTING, MEASURE THE MICROFARAD RANGE BETWEEN THE BUSHINGS OF EACH CAPACITOR TANK. IF THE MEASURED VALUE OF THE CAPACITOR TANK IS NOT IN THE ACCEPTABLE RANGE SHOWN IN THE CHART BELOW, THEN THE CAPACITOR NEEDS TO BE REPLACED.

		ACCEPTABLE MICROFARAD VALUES			**ACCEPTABLE PHASE CURRENT**		
PHASE VOLTAGE	**TANK SIZE**	**MINIMUM VALUE**	**NOMINAL VALUE**	**MAXIMUM VALUE**	**MINIMUM PHASE CURRENT**	**NOMINAL PHASE CURRENT**	**MAXIMUM PHASE CURRENT**
(V)	(KVAR)	(μF)	(μF)	(μF)	(A)	(A)	(A)
7,200	200	9.21	10.23	12.28	25.00	27.77	33.33
	400	18.42	20.46	24.56	50.00	55.54	66.66

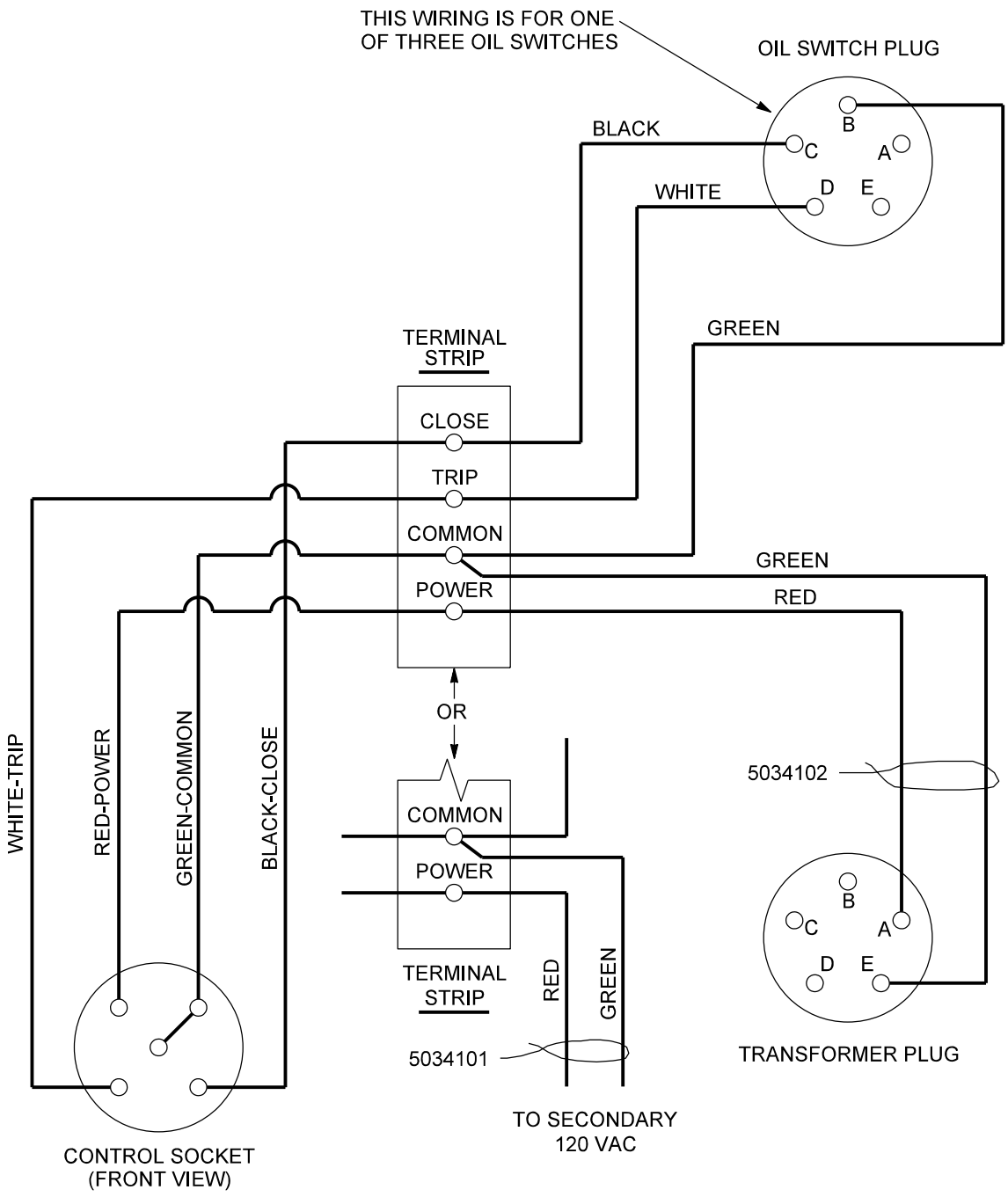
7. WHEN REMOVING CAPACITORS BANKS OR CAPACITOR TANKS FROM SERVICE, A PIECE OF CONDUCTOR SHALL BE INSTALLED BETWEEN THE BUSHINGS OF EACH TANK.
8. LOW VOLTAGE FUSES IN THE CONTROLLERS ARE:

   HD ELECTRIC (VARCOM) 15 AMP SLOW-BLOW (5034355) – REFERENCE ONLY

   EATON COOPER 10-AMP SLOW-BLOW (5089126)

NOTES

1. PRIOR TO PLACING IN SERVICE, ON-LINE TEST EACH PHASE OF THE CAPACITOR BANK USING THE ABOVE CHART FOR ACCEPTABLE PHASE CURRENT BASED ON CAPACITOR SIZE.
2. THE FIRST FOUR STEPS OF THE ABOVE PROCEDURE MAY BE OMITTED FOR NEW INSTALLATIONS THAT HAVE NEVER BEEN ENERGIZED.
3. MULTI-METER WITH MICROFARAD SETTING REPLACES THE CAPACITANCE AND SIMPSON METER FOR CHECKING CAPACITORS
4. USE #12 CU GROUND WIRE FROM THE METER SOCKET TO THE BOTTOM OF THE OUTSIDE OF THE CONTROLLER CABINET.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	PAD MOUNTED CAPACITORS CAPACITOR CONTROL WIRING DIAGRAM	ISSUE DATE: 01/15/87 REV. DATE: 07/24/13 APPROVAL: B. PRIEST
	2-3-1	8513E106.DGN

COMPATIBLE UNIT CODING FOR MAINTENANCE OF CAPACITOR BANKS

COMPATIBLE UNIT NUMBER	DESCRIPTION	MATERIAL ITEM
UCBD	12kV 200A OIL SWITCH	5034754
UCBM15	150kVAR 1Φ CAPACITOR	5034234
UCBM2	200kVAR 1Φ CAPACITOR	5034238
UCBM4	400kVAR 1Φ CAPACITOR	5034239
UCBX	0.5kVA TRANSFORMER	5034764
	FUSE, 15.5KV, 100A NX FAID2, 2 BARREL	5034574
	FUSE, CONTROL TRANSFORMER, 8.3kV 1.5A NX	5034765
	KIT,FUSE MOUNTING, TO ADD FUSE FOR CPT "A" PHASE, IN SCOTT PADMOUNTED CAPACITOR BANKS	5088042
	BRACKET,MOUNTING, RETROFIT HUBBELL OIL SWITCH, IN SCOTT PADMOUNTED CAPACITOR BANKS	5080414
	KIT, CPT RELOCATION, IN SCOTT PADMOUNTED CAPACITOR BANKS	5089858
	NEUTRAL CURRENT SENSOR TO CB CONTROLLER	5090920
	REPLACEMENT NX HINGE CONTACT & TERMINAL	5094795
	CONTROLLER CBC8000 W/O RADIO	5087345
	CONTROLLER CBC8000 WITH RADIO	5086438
	ALL DISC-S CELLULAR ANTENNA W/ CABLE	5094870

COMPATIBLE UNIT CODING FOR AUXILIARY EQUIPMENT USED WITH CAPACITOR BANKS

COMPATIBLE UNIT NUMBER	DESCRIPTION	MATERIAL ITEM
UCBP	PARKING STAND EXTENSION	5035030

COMPATIBLE UNIT CODING FOR (CORROSION RESISTANT) STAINLESS STEEL CAPACITOR BANKS FOR MAINTENANCE ONLY

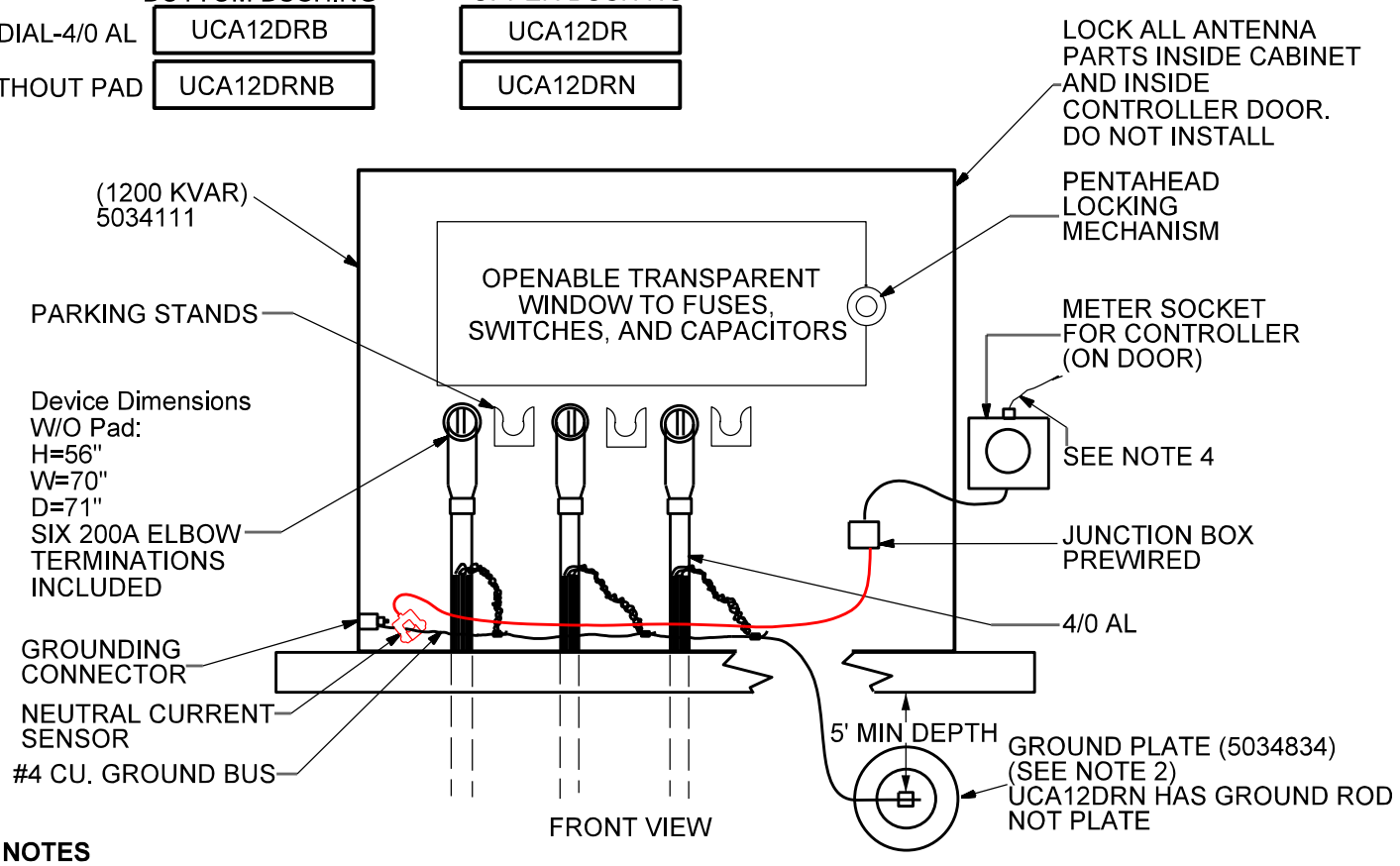
COMPATIBLE UNIT NUMBER	DESCRIPTION	MATERIAL ITEM
UCA12DRS	DEADFRONT 1200 KVAR CAPACITOR - STAINLESS STEEL	5098158

NOTES

1. A 400KVAR 1Φ CAPACITOR MAY BE REPLACED WITH TWO 200KVAR 1Φ CAPACITORS (5034238). #2 COPPER 600V, 7-STRAND (5033865) IS USED FOR CONNECTIONS.

UCAP	FOR 1200KVA CAPACITOR, SM-637175-5069784 (APPROXIMATE WEIGHT: 1500 LBS.). INCLUDES PAD, CONDUIT AND END CAPS.

NOTE 1	DEAD FRONT SWITCH BOTTOM BUSHING	DEAD FRONT SWITCH UPPER BUSHING
RADIAL-4/0 AL	UCA12DRB	UCA12DR
WITHOUT PAD	UCA12DRNB	UCA12DRN



NOTES

1. CHOOSE THE TYPE OF SWITCH AND BUSHING POSITION ON WHICH THE CAPACITOR WILL BE INSTALLED. PARKING STAND EXTENSIONS ARE INCLUDED AND INSTALLED WHEN SERVED FROM THE LOWER BUSHINGS OF A DEAD FRONT SWITCH.

2. TERMINATE A #4 CU GROUND BUS INTO THE ENCLOSURE GROUND CONNECTOR. TRAIN THE #4 CU GROUND BUS IN FRONT AND ALONG THE BASE OF THE ENCLOSURE TO THE GROUND PLATE. TRAIN THE CONCENTRIC NEUTRALS DOWN ALONG THE PRIMARY CABLES AND CONNECT TO THE #4 CU GROUND BUS USING COMPRESSION CONNECTORS. NEUTRAL CURRENT SENSOR TO BE MOUNTED WITH LABEL FACING CABINET ON #4 CU GROUND BUS.

3. INSTALL CONTROLLER 5087354 IN THE DISTRIBUTION LINE PAD-MOUNTED CAPACITOR. FOR TIER 2 BASE STATIONS (T2B) INSTALL TC-CAPCTRL. FOR ENDPOINTS INSTALL TC-CAPCTRLEP.

4. CONNECT #12 CU GROUND WIRE FROM THE METER SOCKET TO THE BOTTOM OF THE OUTSIDE OF THE EATON COOPER CONTROLLER CABINET. (GREEN WIRE MAY EXIT SOCKET FROM THE TOP, BOTTOM, OR MAY NEED TO BE INSTALLED.)

5. SEE MISCELLANEOUS SECTION FOR ENCLOSURE AND CABLE IDENTIFICATION MARKING METHODS.

6. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL.

7. NEW CAPACITOR BANK SHALL BE ENERGIZED, TESTED, FUSES LEFT CLOSED WITH BANK OIL SWITCHES OPEN, PRIOR TO CREW LEAVING JOB (REFER TO 2-7-1). FOR EATON COOPER CONTROLLER, PERFORM 6 STEPS LISTED ON THE EATON COOPER DIAGRAM (REFER TO 2-7-2).

CAUTION

CAPACITORS SHALL BE SWITCHED VIA THE INTERNAL SWITCHE(S) ONLY. LOAD BREAK ELBOWS SHALL NOT BE USED TO SWITCH CAPACITOR BANKS AND ARE TO BE USED ONLY UNDER NO LOAD CONDITIONS.



NOTES

1. REMOVE THE FUSE FROM CONTROLLER BEFORE INSTALLATION.
2. VERIFY CONTROLLER IS PROPERLY MOUNTED.
3. ATTACH ANTENNA TO CONTROLLER.
4. VERIFY POWER CABLE & ETHERNET CABLE ARE BOTH CONNECTED TO CONTROLLER AND RADIO.
5. VERIFY THE CONTROLLER & THE NEUTRAL OF THE CAPACITOR BANK ARE PROPERLY GROUNDED.
   a. VERIFY THE GROUND LUG IS TIED DIRECTLY TO EARTH GROUND TO ENSURE THAT THE CASE & INTERNAL COMPONENTS ARE SAFELY GROUNDED.
6. REINSTALL CONTROLLER FUSE.



1. Before installing this control, rotate the upper switch to **LOCAL/TIME DELAY SET**. *Note: Leave in this mode for capbank failure, operating toggle switch to open or close bank.*
2. Attach ground wire to lug on bottom of control.
3. After installing this control, verify line volts by rotating switch to **VOLT MONITOR**.
4. Rotate the upper switch to **LOCAL/TIME DELAY SET** and use the **MANUAL** toggle switch to close the capacitor bank.

Note: *5 minute delay after any OPEN before a CLOSE is allowed. Press and hold CLOSE toggle switch to see remaining time in the display.*

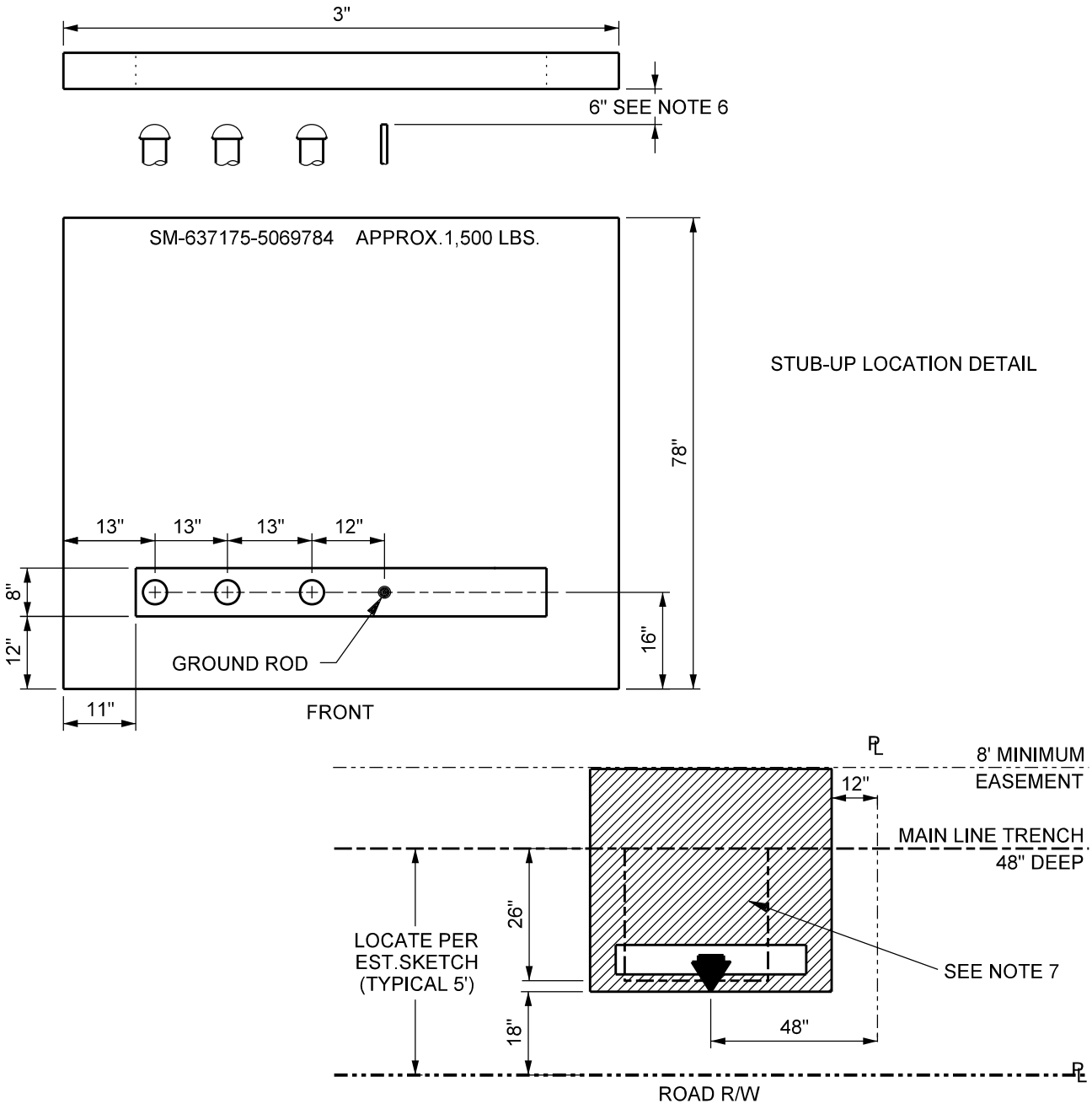
5. Toggle to open to leave capacitor bank switches open after performing a close operation.
6. Rotate the upper switch to **REMOTE** and verify blinking light before locking control.

NOTICE: Notify Distribution Operations (DOC) prior to operating this capacitor bank. 950P-6

REFERENCE ONLY

NOTES

1. LEAVE ANTENNA AND ITS ELBOW IN DOOR OF CONTROLLER.



NOTES

1. FRONT OF PAD SHALL FACE STREET.
2. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
3. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
4. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATION NOTES (TRENCHING SECTION).
5. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE CAPACITOR BANK (DESIGNATED PARKING), FRONT OF CAPACITOR SHALL BE ROTATED 90°. INTO EASEMENT. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD R/W.
6. CONDUIT INSTALLED AND CAPPED 6 INCHES BELOW PAD WHEN PROVIDED FOR FUTURE CAPACITOR BANK.
7. WIDEN LATERAL TRENCH PER STUB-UP DETAIL.

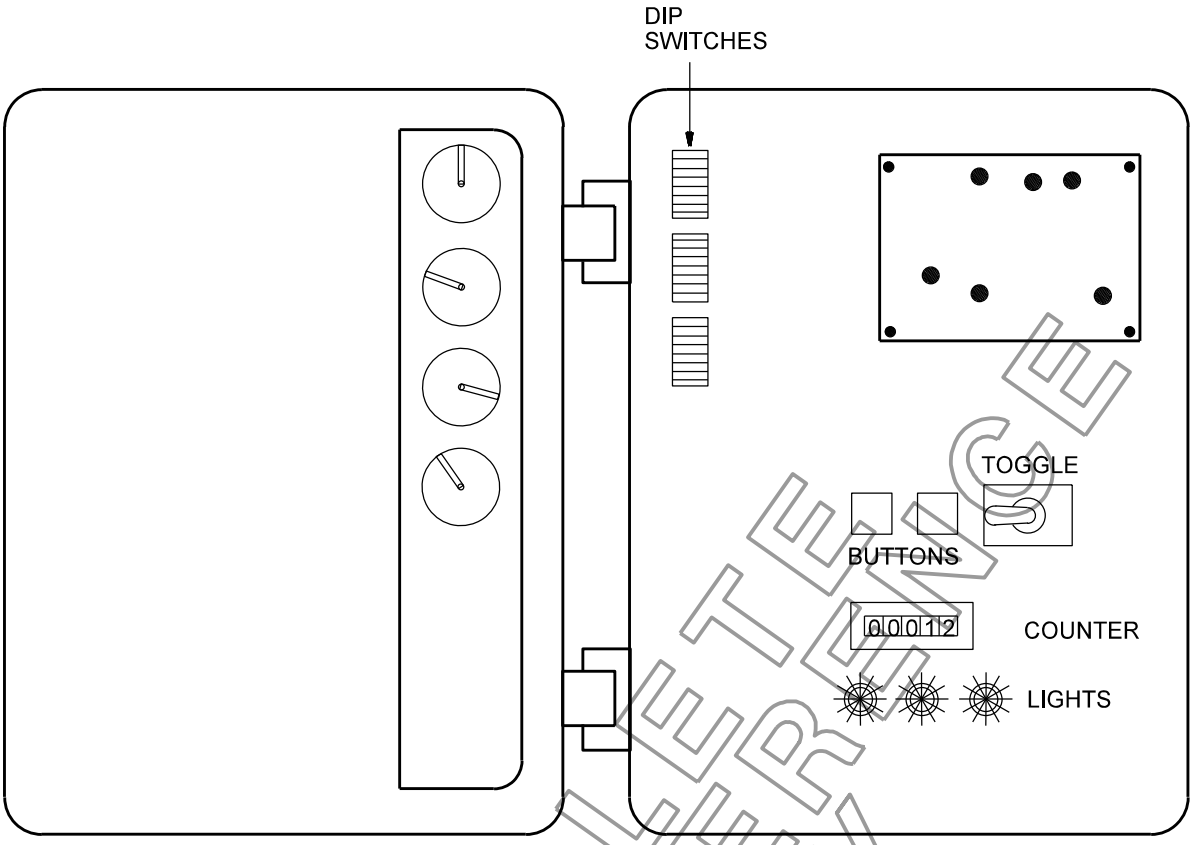
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	PAD MOUNTED CAPACITORS LIVE AND DEAD FRONT INSTALLATION DETAILS	ISSUE DATE: 01/15/87 REV. DATE: 01/21/15 APPROVAL: B. PRIEST
	2-8-1	8513E110.DGN

COMPATIBLE UNIT CODING FOR RETIREMENT OF
NON-STANDARD CAPACITOR BANKS

CONTROLLED CAPACITOR BANKS

BANK SIZE KVAR	UNIT SIZE KVAR	UNITS 1 ∅	COMPATIBLE UNIT CODE *
900	150	X	RUCC1509N
1200	200/400	X	RUCC20012N

* FOR LIVE FRONT OR DEAD FRONT



FOR REFERENCE ONLY

TESTING RC CONTROLLER/KYLE SWITCH OPERATION

OPEN THE RC CONTROLLER AFTER IT IS INSTALLED AND ENERGIZED.

NORMALLY,THE KYLES WILL BE IN THE OPEN POSITION AND THE GREEN LIGHT SHOULD BE ON. WITH THE TOGGLE SWITCH IN THE LOCAL POSITION PRESS THE RED BUTTON. THE RED LIGHT SHOULD FLASH FOR ABOUT ONE MINUTE AND THEN THE RED LIGHT WILL TURN ON CONTINUOUS WITH AN AUDIBLE CLICK AND THE KYLES SHOULD CLOSE. AFTER 30 SECONDS A RELAY PICKS UP AND THE COUNTER ADVANCES. PRESS THE GREEN BUTTON AND THE KYLE SWITCH WILL OPEN. LEAVE TOGGLE IN THE LOCAL POSITION AND FUSES IN. YOU ARE DONE.

POSSIBLE PROBLEMS:
IF THE YELLOW OR RED LIGHT IS FLASHING OR THERE ARE NO LIGHTS ON PULL THE CONTROLLER FROM THE SOCKET AND REINSTALL IT.
IF THE GREEN LIGHT IS NOT ON, LEAVE THE FUSES IN, LOCK THE CABINET AND CONTACT DOC OR THE CAPACITOR TECHNICIAN.

RARELY, THE RED LIGHT MAY BE ON AT FIRST AND THE KYLES ARE OPEN. IF THIS HAPPENS, PRESS THE GREEN BUTTON AND THE GREEN LIGHT SHOULD COME ON AND THE KYLES SHOULD REMAIN OPEN. ON THE BOTTOM DIP SWITCH MOVE THE CIT SLIDER TO THE RIGHT (THIS WILL REMOVE A SEVEN MINUTE TIMER FROM THE OPERATION). PRESS THE RED BUTTON, THE RED LIGHT WILL FLASH FOR ABOUT ONE MINUTE THEN THE RED LIGHT WILL TURN ON CONTINUOUS AND THE KYLES SHOULD CLOSE. AFTER 30 SECONDS THE COUNTER WILL ADVANCE, PRESS THE GREEN BUTTON AGAIN. THE KYLE SWITCH WILL OPEN. LEAVE THE TOGGLE IN THE LOCAL POSITION, RETURN THE DIP SWITCH CIT SLIDER TO THE LEFT. YOU ARE DONE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	PAD MOUNTED CAPACITORS FIELD TEST REMOTE CONTROLLER/KYLE SWITCH OPERATION JOSLYN	ISSUE DATE: 04/07/03 REV. DATE: 09/25/12 APPROVAL: B. PRIEST
	2-10-1	8513E16.DGN

SWITCHING AND FUSING

TITLE/DESCRIPTION	PAGE NO.
EQUIPMENT GROUNDS	3-1-1
FUSE MOUNTINGS & SWITCHES	3-2-1
FUSE AND ELBOW WITH VOLTAGE INDICATOR	3-3-1
FUSED ELBOW	3-4-1
4/0 PRIMARY LOOP TRANSFORMER TAP	3-5-1
DEAD FRONT SWITCH TERMINATING COMPONENTS	3-6-1
FAULT INDICATOR, LIQUID TYPE, AUTOMATIC RESET	3-7-1
FAULT INDICATOR ON LOWER FEEDER, ON ALL SWITCHES	3-8-1
FAULT INDICATOR ON UPPER FEEDER TIE, ON ALL SWITCHES	3-9-1
FAULT INDICATOR AND WINDOW ADDITION	3-10-1
INSTALLATION DETAILS FOR DEAD-FRONT FUSING ENCLOSURE	3-11-1
AIR INSULATED DEAD FRONT FUSING ENCLOSURE	3-12-1
DEAD FRONT SWITCHING ENCLOSURE	3-13-1
DEAD FRONT SWITCHING ENCLOSURE IN AREA WITH FUTURE DB CONVERSION TO ALL CONDUIT	3-13-3
DEAD FRONT SWITCHING ENCLOSURE IN AREA WITH FUTURE OH CONVERSION	3-13-4
FUSED BUSHING ASSEMBLY FOR SWITCH	3-13-5
DEAD FRONT SWITCH CONNECTIONS AND TERMINATIONS	3-13-6
SINGLE 3-PHASE VACUUM FAULT INTERRUPTER	3-14-1
DOUBLE 3-PHASE VACUUM FAULT INTERRUPTER	3-15-1
REMOTE CONTROL S&C DEAD FRONT SWITCH, ONE SIDE ACCESS	3-16-1
PAD MOUNTED S&C INTELLIRUPTER	3-16-2
REMOTE SUPERVISORY CONTROL, COMMUNICATIONS CONDUIT	3-17-1
REMOTE SUPERVISORY CONTROL, ANTENNA, POLE, 27'-5" & 21'-0"	3-17-2

SWITCHING AND FUSING

TITLE/DESCRIPTION	PAGE NO.
AUTOMATED SWITCH, ANTENNA RISER FOR WOOD POLE	3-18-1
EQUIPMENT INSTALLATION DETAILS, S&C PME-10, 4-WAY DEAD FRONT SWITCH	3-19-1
EQUIPMENT INSTALLATION DETAILS, S&C PME-9, DEAD FRONT AUTOMATIC TRANSFER SWITCH WITH REMOTE SUPERVISORY CONTROL	3-20-1
#2 SINGLE PHASE PRIMARY LOOP	3-21-1
#2 SINGLE PHASE PRIMARY LOOP, CONDUIT STUB-UP	3-22-1
PRIMARY TAP ENCLOSURE, 4/0 RUN - #2/7 TAP	3-23-1
750 MCM FEEDER PULLING ENCLOSURE	3-24-1
4/0 PRIMARY LOOP TAP ENCLOSURE STUB-UP	3-25-1
4/0 PRIMARY LOOP TAP ENCLOSURE	3-26-1
THREE PHASE PRIMARY PULLING ENCLOSURE FOR #2 AND 4/0 CONDUCTOR	3-27-1
SINGLE PHASE PRIMARY PULLING ENCLOSURE	3-28-1

OBSOLETE - FOR REPLACEMENT/REFERENCE ONLY

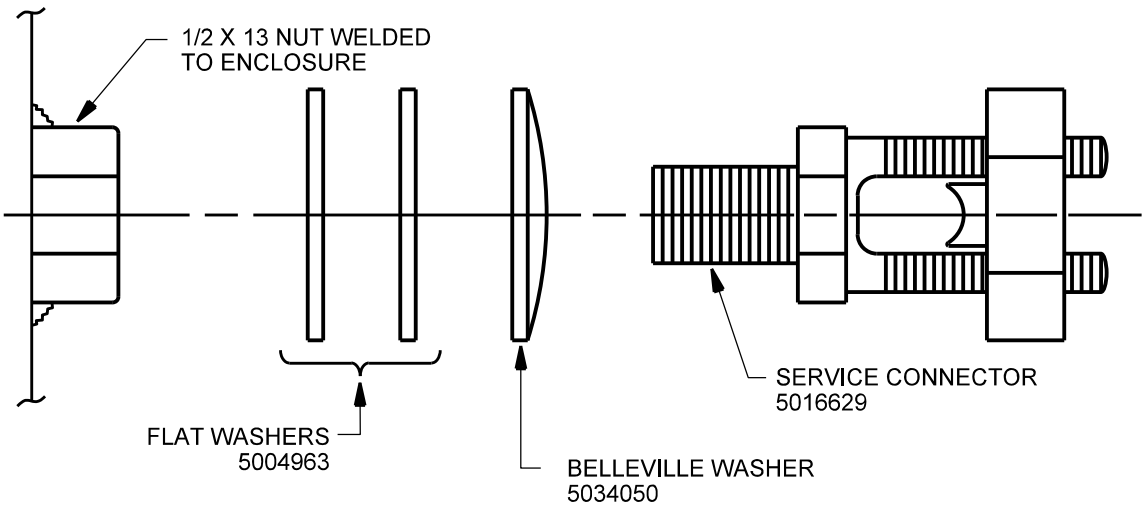
TITLE/DESCRIPTION	PAGE NO.
ISO QUENSUR SWITCH REPLACEMENT	3-29-1
DEAD FRONT FUSING ENCLOSURE	3-30-1
22" X 60", LIVE FRONT FUSING ENCLOSURE	3-31-1
INSTALLATION DETAILS, 22" X 60" FUSING ENCLOSURE	3-31-2
CONDUIT STUB-UP DETAIL FOR CABLE REPLACEMENT IN EXISTING ENCLOSURE	3-31-3
BLADE SWITCHING ENCLOSURE	3-32-1
ALL GANG SWITCHING ENCLOSURES	3-33-1
INSTALLATION DETAILS, ALL GANG SWITCHING ENCLOSURES EXCEPT S&C	3-33-2

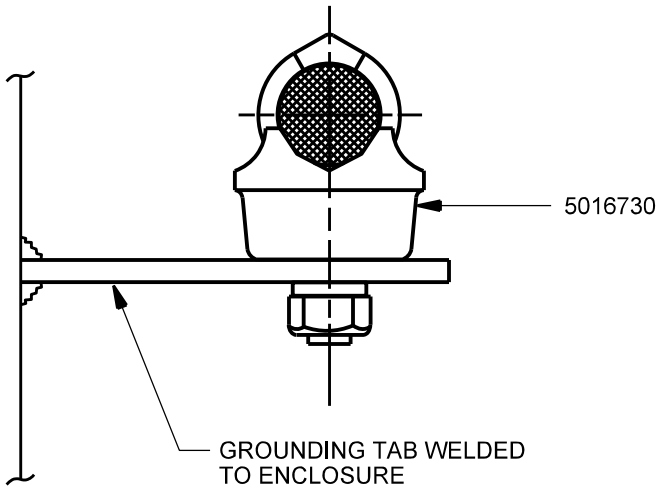
SWITCHING AND FUSING

TITLE/DESCRIPTION	PAGE NO.
S&C PMH-9, 4-WAY AUTOMATIC TRANSFER SWITCH	3-34-1
EQUIPMENT INSTALLATION DETAILS, S&C PMH-9, 4-WAY, AUTOMATIC TRANSFER SWITCH	3-35-1
VACUUM FAULT INTERRUPTER	3-36-1
REMOTE CONTROL DEAD FRONT SWITCH	3-37-1
AUTOMATED REMOTE CONTROL S&C VACUUM FAULT INTERRUPTER	3-38-1
EQUIPMENT INSTALLATION DETAILS, S&C AUTOMATED REMOTE SUPERVISORY CONTROL, COMMUNICATIONS CONDUIT & GROUNDING	3-38-2
COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD ENCLOSURES, SWITCHES, AND FUSES	3-39-1

22KV SECTION

TITLE/DESCRIPTION	PAGE NO.
22KV PRIMARY TAP ENCLOSURE, 1/0 TAP & RUN	3-40-1
22KV SINGLE PHASE PRIMARY PULLING ENCLOSURE	3-41-1

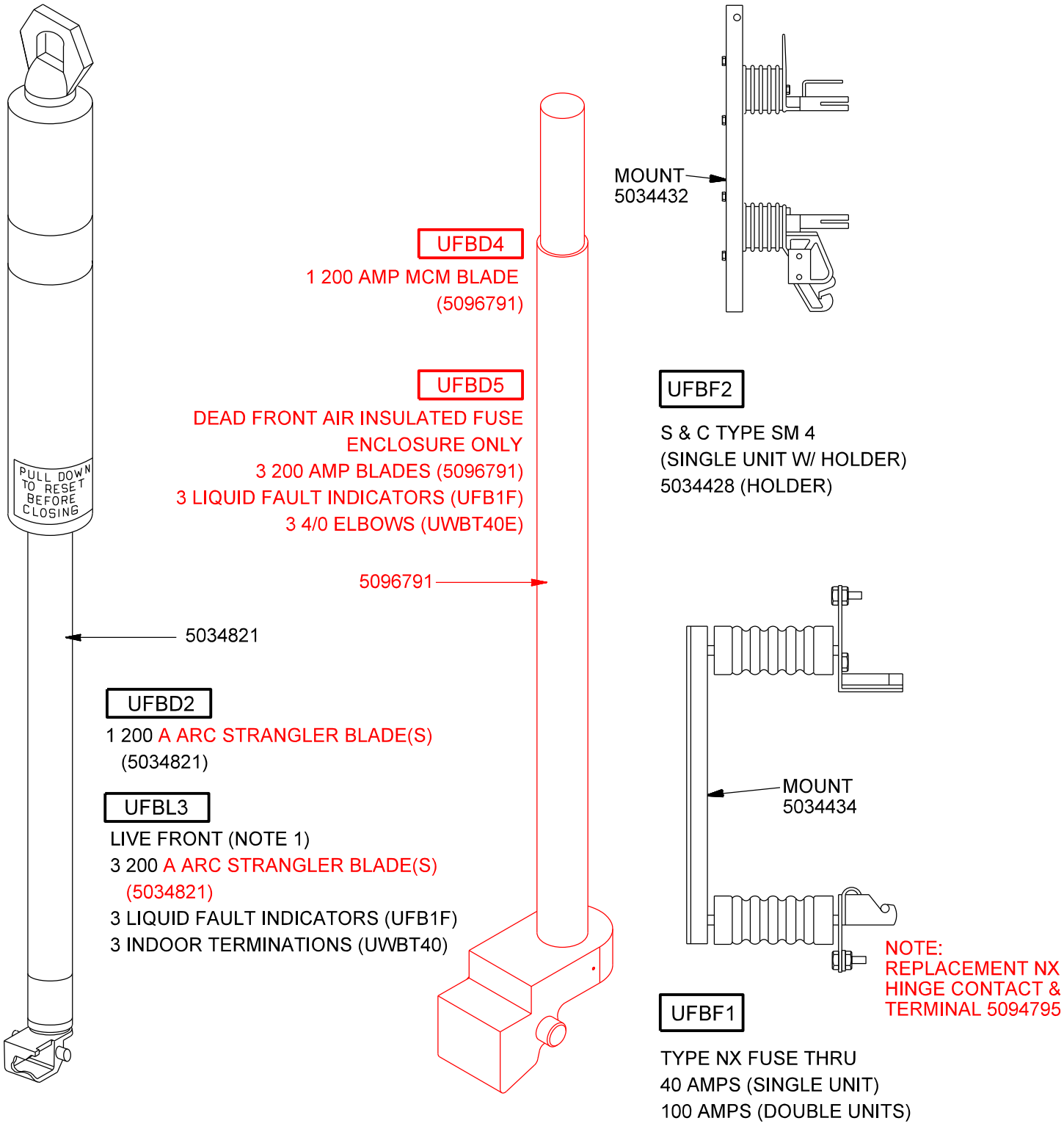




NOTES

ENCLOSURE GROUND CONNECTORS SHALL BE INSTALLED AS SHOWN FOR 2/0 OR #4 BARE COPPER BUS AS NOTED ON EQUIPMENT INSTALLATION STANDARD.

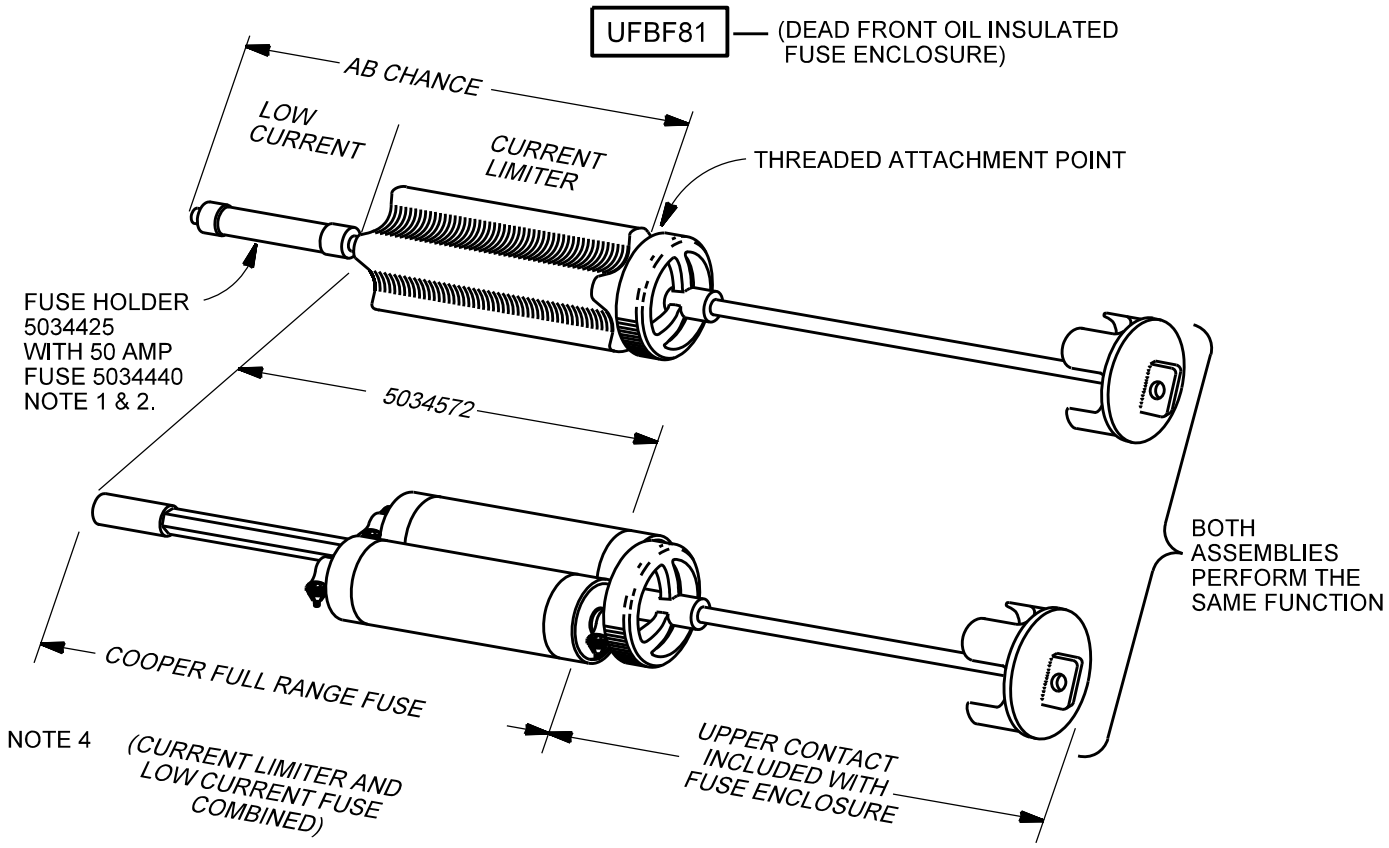
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING EQUIPMENT GROUNDS	ISSUE DATE: 10/11/94 REV. DATE: 07/25/13 APPROVAL: B.PRIEST
	3-1-1	8513E27.DGN

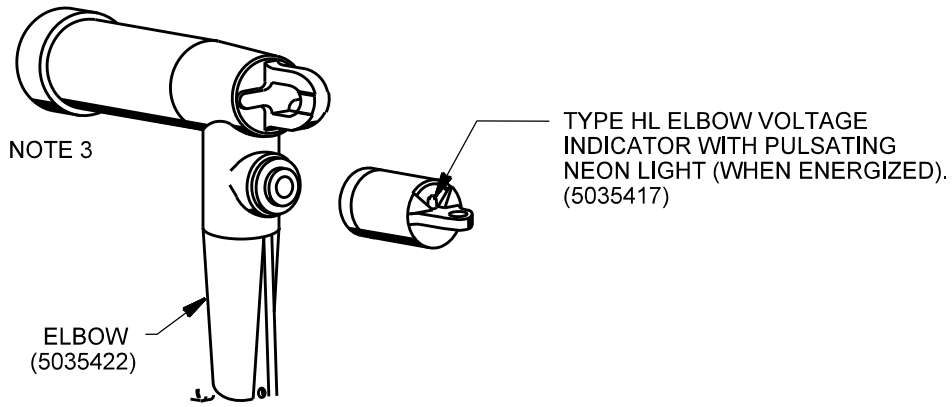


NOTES

1. IN LIVE FRONT FUSE ENCLOSURES (UFE) OLDER THAN ABOUT 1968 USING THE KNUCKLE MOUNTING, THIS BLADE WILL NOT FIT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	REV: UPDATED ILLUSTRATION, CUS & MATERAL NUMBERS	
	SWITCHING AND FUSING FUSE MOUNTINGS AND SWITCHES	ISSUE DATE: 01/15/87 REV. DATE: 07/03/25 APPROVAL: R. HINOJOS
	3-2-1	8513E253.DGN





ASSEMBLY INSTRUCTIONS

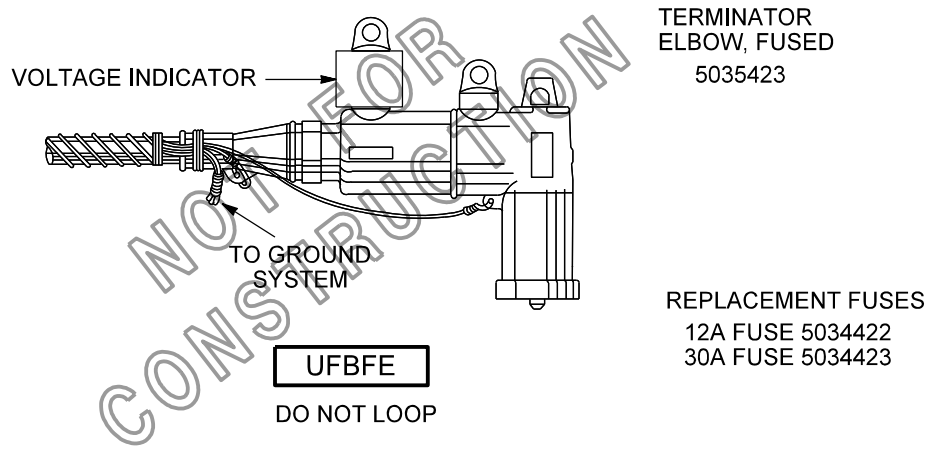
1. INSTALL EXPULSION FUSE INTO FUSE HOLDER AND THREAD TIGHTLY ONTO CURRENT LIMITING FUSE. THIS COMPATIBLE UNIT INCLUDES EXPULSION FUSE 5034440 WHICH IS MARKED 50 AMPS BUT IN THE AMBIENT OIL ENVIRONMENT IS RATED TO CARRY 80 AMPS. FOR OTHER FUSE SIZES, SEE THE TRANSFORMER FUSING CHART FOR DEAD FRONT FUSING.

2. INSTALL FUSE HOLDER CLAMP AND THREAD CURRENT LIMITING FUSE ONTO UPPER CONTACT. TIGHTEN ENTIRE FUSE ASSEMBLY TO 120-180 IN.-LBS.

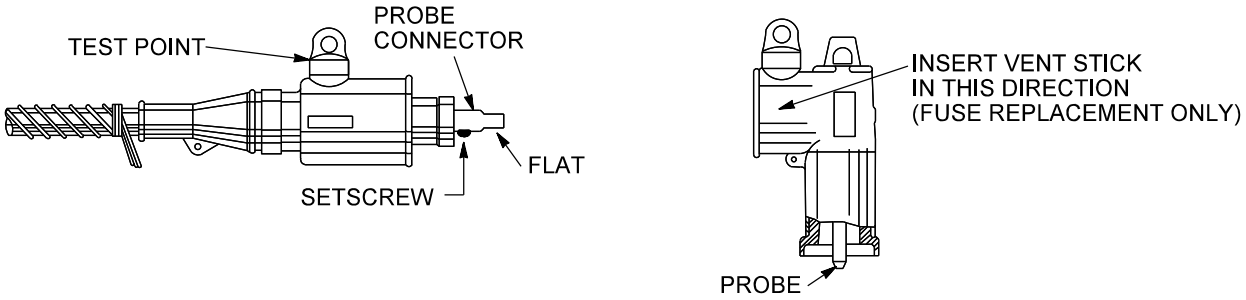
3. SEE LUBRICATING PROCEDURE (PG 8-27-1) FOR TRANSFORMER BUSHINGS AND ELBOWS.

4. WHILE THE A.B. CHANCE FUSE HAS A REPLACEABLE LOW CURRENT (LOAD SENSING) ELEMENT, (5034440) THE COOPER FULL RANGE FUSE DOES NOT.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	SWITCHING AND FUSING FUSE AND ELBOW WITH VOLTAGE INDICATOR	ISSUE DATE: 01/15/87 REV. DATE: 11/05/14 APPROVAL: B.PRIEST
	3-3-1	8513E255.DGN



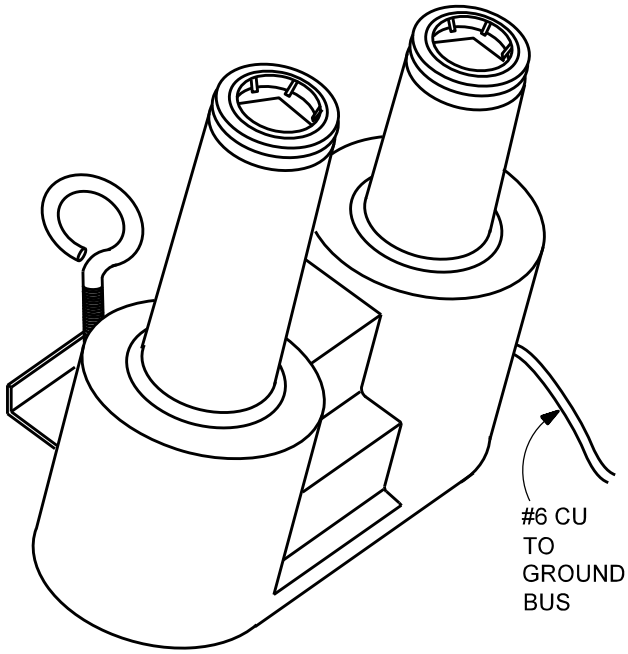
NOT FOR CONSTRUCTION



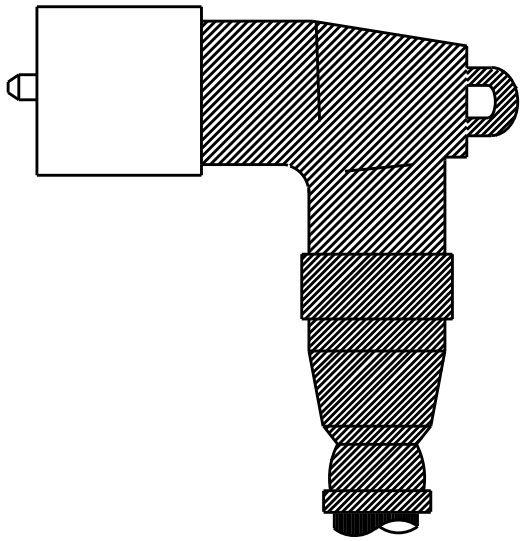
RE-FUSING INSTRUCTIONS FOR FUSED ELBOW

1. AN OPERATED FUSE WILL BE INDICATED BY A NON-FLASHING VOLTAGE INDICATOR, LOCATED ON THE BOTTOM TEST POINT OF THE FUSED ELBOW.
2. REMOVE AND PARK THE ELBOWS AT BOTH THE SOURCE AND LOAD ENDS OF THE CABLE RUN.
3. VERIFY THE CABLE IS DE-ENERGIZED AND GROUND AT THE LOAD END.
4. REMOVE THE PROBE FROM THE FUSED ELBOW BY UNSCREWING.
5. SEPARATE THE PROBE HALF HOUSING FROM THE FUSE HALF HOUSING, EXPOSING THE PROBE CONNECTOR.
6. REMOVE THE PROBE CONNECTOR BY LOOSENING THE ALLEN SCREW.
7. UNSCREW THE OPERATED FUSE FROM THE HOUSING.
8. INSTALL NEW FUSE (5034422) BY APPLYING A SMALL AMOUNT OF SILICONE GREASE TO THE BODY. INSERT THE THREADED END OF THE FUSE INTO THE FUSE HOUSING AND SCREW IT INTO THE CONNECTOR, HAND TIGHT.
9. RE-ASSEMBLE THE PROBE CONNECTOR ONTO THE EXPOSED FUSE TERMINAL, MAKING SURE THE FLATS ARE PERPENDICULAR WITH WITH THE BUSHING IT WILL MATE WITH.
10. APPLY SILICONE GREASE TO THE PROBE HALF OF THE FUSED ELBOW AND ASSEMBLE TOGETHER, MAKING SURE THE RUBBER SURFACES BUTT AND THE TEST POINTS ARE PARALLEL TO EACH OTHER.
11. RE-INSTALL PROBE INTO PROBE HOUSING AND TIGHTEN.
12. RE-LUBRICATE THE BUSHING/ELBOW INTERFACES WITH SILICONE GREASE AND RETURN CIRCUIT TO OPERATION.

UFB40T



FEED THRU PARKING
BUSHING
5034287



ELBOW TERMINATION
5035425

NOTES

1. (3) FEED THRU PARKING BUSHINGS & (6) #4/0 ELBOW TERMINATORS ARE PROVIDED IN THIS UNIT TO PROVIDE FOR (1) 3 Ø TRANSFORMER LOOP TAP.
2. PARKING BUSHING BASE SHALL BE CONNECTED TO ENCLOSURE GROUNDING BUS USING #6 CU AND SPLIT BOLT.
3. WHEN ORDERING FOR ANY DEVICE OTHER THAN A PDT, DELETE THE ELBOWS.

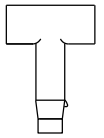
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 4/0 PRIMARY LOOP TRANSFORMER TAP	ISSUE DATE: 10/11/93 REV. DATE: 07/25/13 APPROVAL: B.PRIEST
	3-5-1	8513E204.DGN

UFBT500T (500 MCM) UFBT750T (750 MCM)

600 A T-BODY TERMINATION
W/ 600 A CONNECTING PLUG
(SWITCH W/ FEEDER TIE)

UFBT500TCSH
UFBT750TCSH

HOUSING (5033799)
CONNECTING PLUG (5033802)

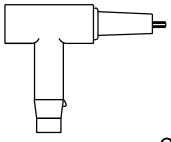


CONNECTOR
500 MCM (5033801)
750 MCM AL/CU (5033795)
#4/0 (5033798)

CABLE ADAPTER
500 MCM (5033800)
750 MCM AL/CU (5033796)
#4/0 (5033797)

OR

INTEGRAL T-BODY (5033805)



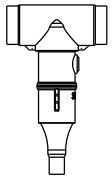
CONNECTOR
500 MCM (5033801)
750 MCM AL/CU (5033795)
#4/0 (5033798)

CABLE ADAPTER
500 MCM (5033800)
750 MCM AL/CU (5033796)
#4/0 (5033797)

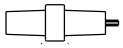


OR

(5094983)



CONNECTING PLUG (5033802)





500 & 750 AL/CU
(5088459)

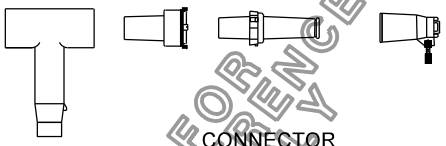
FOR REFERENCE ONLY

UFBT500D (500 MCM) UFBT750D (750 MCM)

600 A T-BODY TERMINATION
W/ 200 A BUSHING & CAP
SEE NOTE 3

UFBT500DCSH
UFBT750TCSH

HOUSING (5033799)
REDUCING WELL (5033901)
BUSHING INSERT (5025839)
INSULATED CAP W/ GROUND (5034295)



CONNECTOR
500 MCM (5033801)
750 MCM AL/CU (5033795)
#4/0 (5033798)

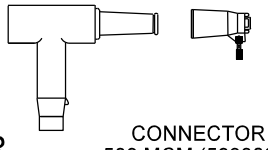


CABLE ADAPTER
500 MCM (5033800)
750 MCM AL/CU (5033796)
#4/0 (5033797)



OR

INTEGRAL T-BODY (5033803)
INSULATED CAP W/ GROUND (5034295)



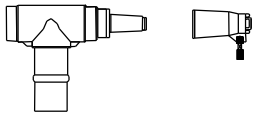
CONNECTOR
500 MCM (5033801)
750 MCM AL/CU (5033795)
#4/0 (5033798)

CABLE ADAPTER
500 MCM (5033800)
750 MCM AL/CU (5033796)
#4/0 (5033797)



OR

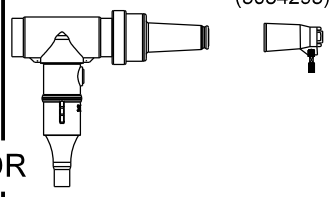
COLD SHRINK T-BODY (5088461)
INSULATED CAP W/ GROUND (5034295)



COLD SHRINK CONNECTOR
500 MCM AND
750 MCM AL/CU
(5088459)

OR

(5094983) (5094959)
INSULATED CAP W/ GROUND (5034295)



500 & 750 AL/CU
(5088459)



FOR REFERENCE ONLY

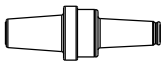
UFBEC

BUSHING EXTENDER
W/ 200 A BUSHING AND CAP
SEE NOTE 4

BUSHING EXTENDER (5033903)



(5094959)



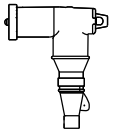
INSULATED CAP W/ GROUND (5034295)



UWBT40E

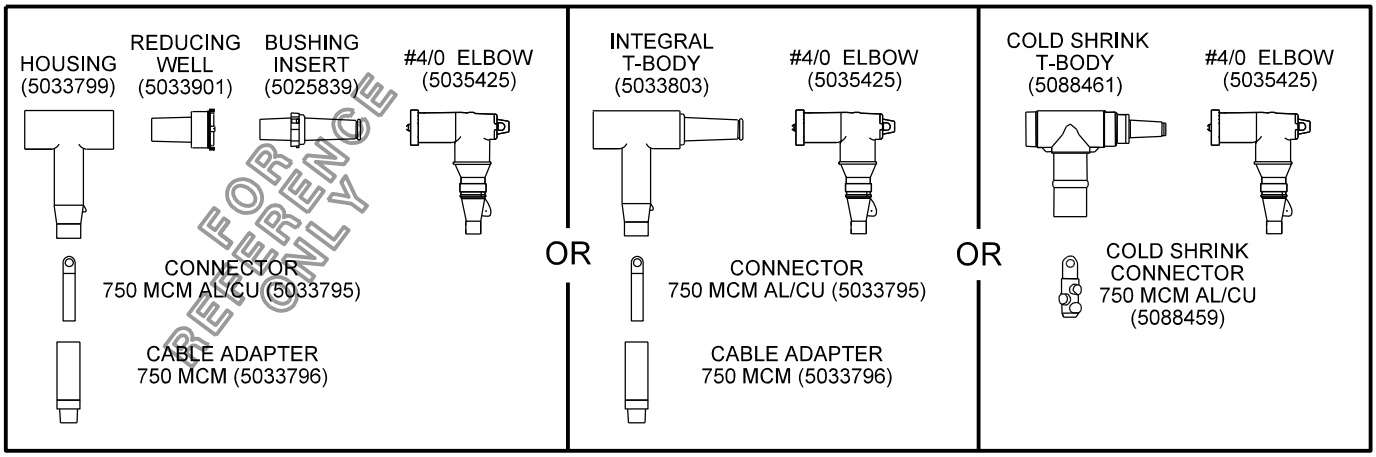
200 A LOADBREAK
ELBOW FOR #4/0
SEE NOTES 3 & 4

#4/0 ELBOW
(5035425)

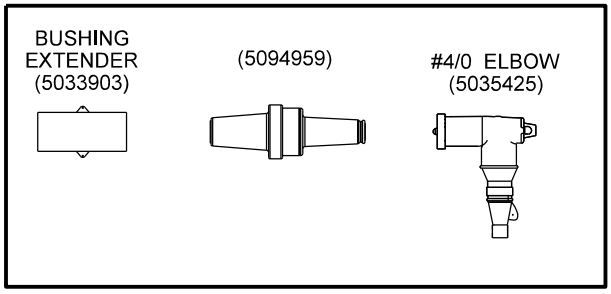


Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING DEAD FRONT SWITCH TERMINATING COMPONENTS	ISSUE DATE: 01/15/87 REV. DATE: 03/23/22 APPROVAL: J. LUERA
	3-6-1	8513E595.DGN

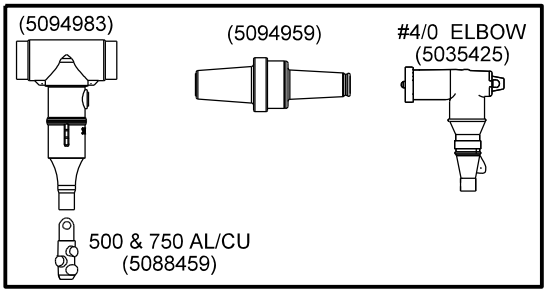
UFBT74 (750 MCM) 600 A T-BODY TERMINATION
W/ 200 A BUSHING & #4/0 ELBOW



UWBR40BE BUSHING EXTENDER
W/ 200 A BUSHING AND #4/0 ELBOW



UFBT74CSH



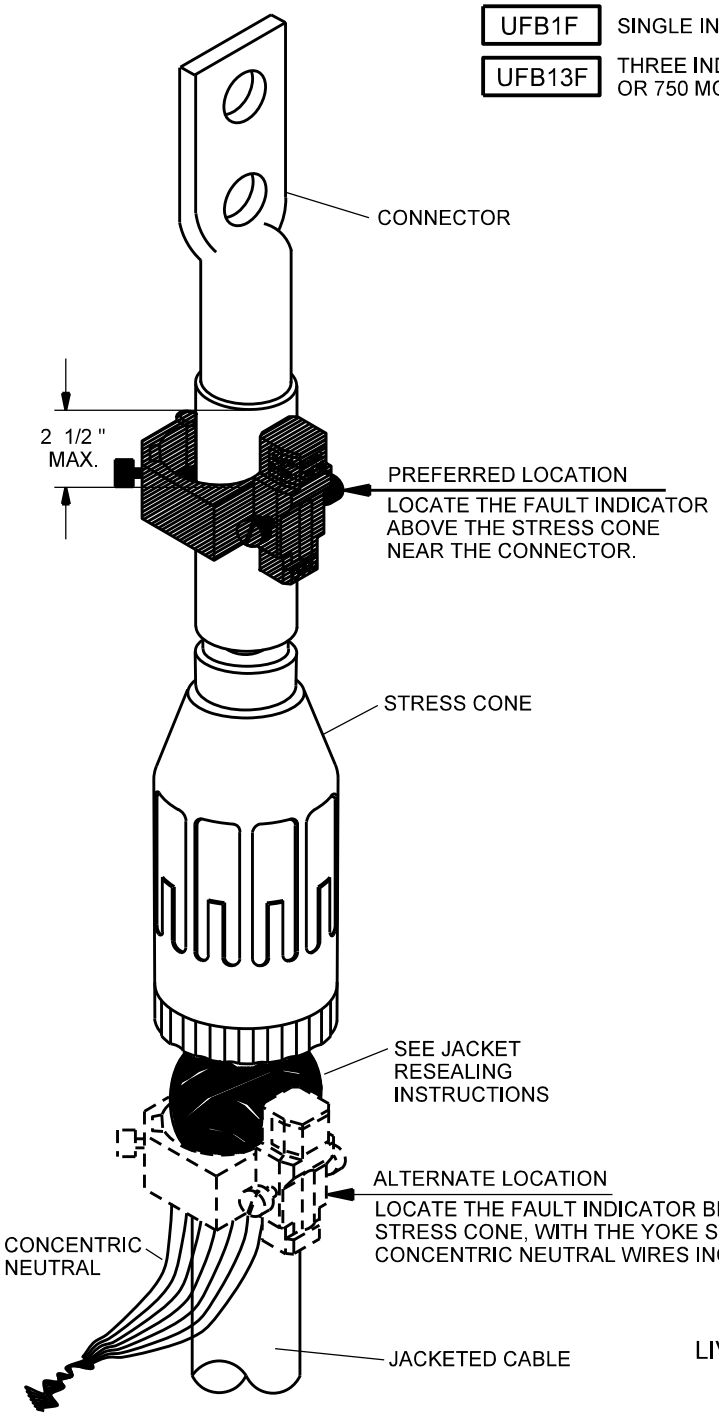
NOTES

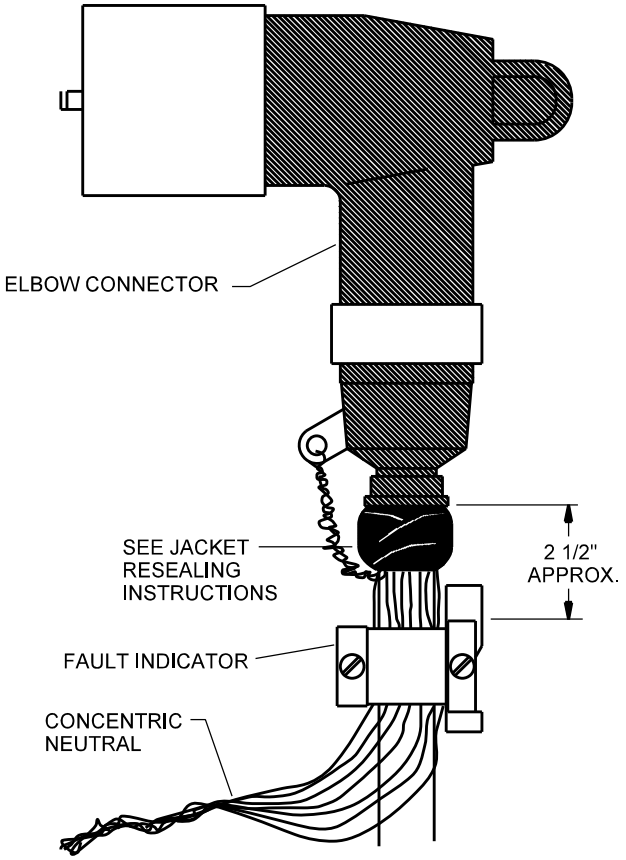
1. CU includes components for a single termination.
2. See individual switch detail for CU components and installation order.
3. Use UFBT74CSH when a T-body with #4/0 elbow required.
4. Use UWBR40BE when bushing extender with #4/0 elbow required.

Underground Distribution Construction Standards PROPRIETARY MATERIAL	SWITCHING AND FUSING DEAD FRONT SWITCH TERMINATING COMPONENTS	ISSUE DATE: 01/15/87 REV. DATE: 03/23/22 APPROVAL: J. LUERA
	3-6-2	8513E595.DGN

UFB1F SINGLE INDICATOR FOR ALL PRIMARY CABLE UP TO 4/0

UFB13F THREE INDICATORS FOR 500 MCM OR 750 MCM FEEDER





ELBOW INSTALLATION

LOCATE THE FAULT INDICATOR BELOW THE ELBOW WITH THE YOKE SURROUNDING ALL CONCENTRIC NEUTRAL WIRES INCLUDING THE PIGTAIL.

LIVE FRONT INSTALLATION



THE FAULT INDICATOR MUST BE MOUNTED VERTICALLY (COMPANY NAME LOCATED AT THE TOP), MAX. DEVIATION FROM VERTICAL LINE 15 DEG.

CAUTION :

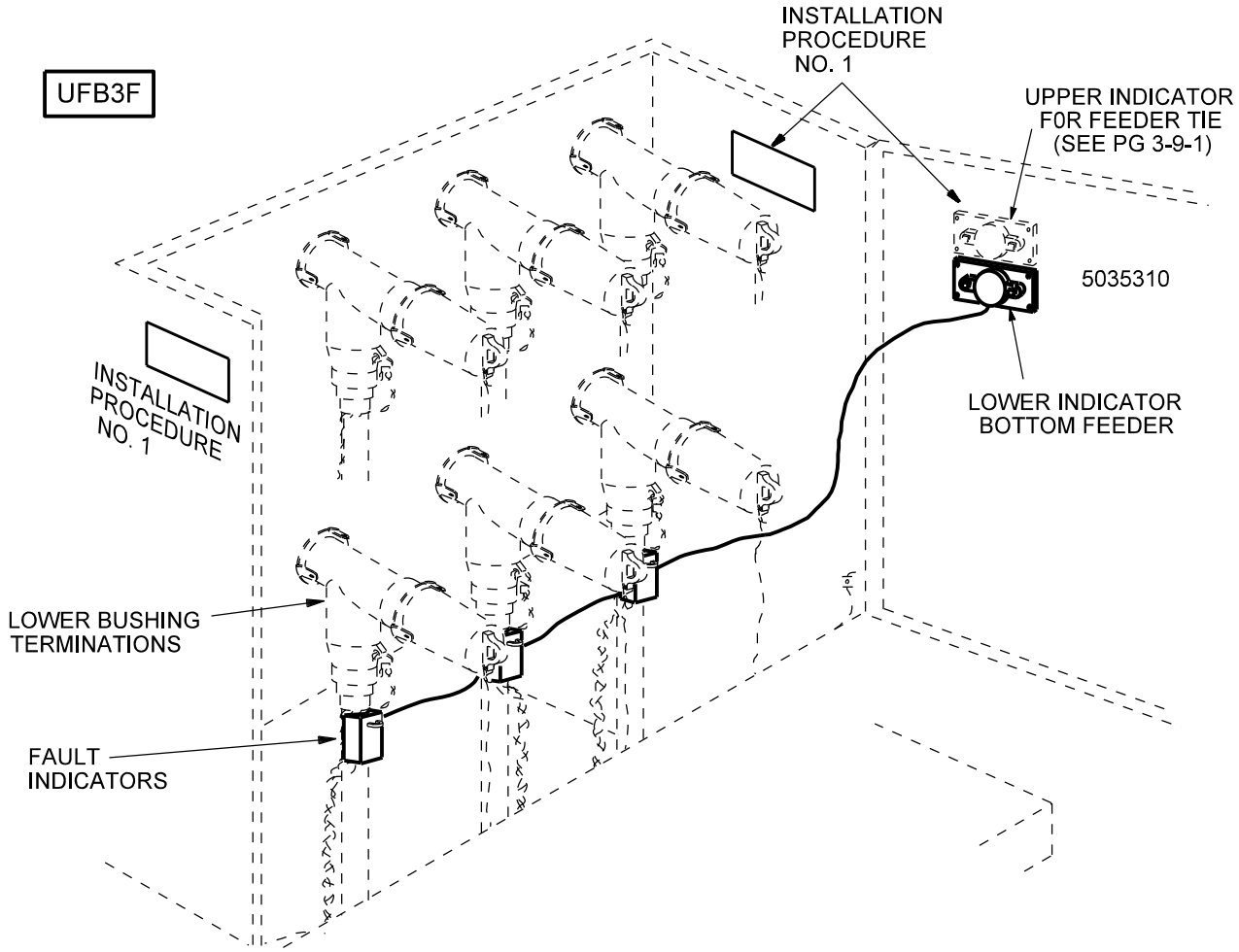
FAULT INDICATOR MUST BE CONSIDERED ENERGIZED. DE-ENERGIZE CONDUCTOR BEFORE INSTALLING OR REMOVING.

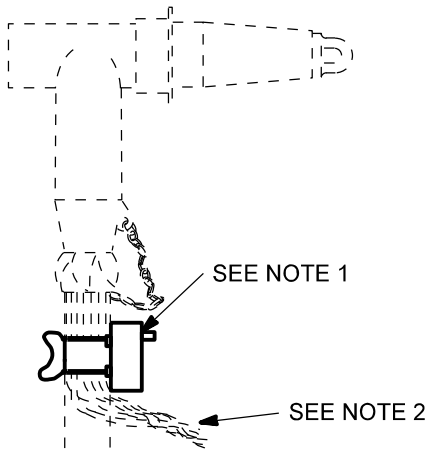
NOTES

1. BE SURE TO INSTALL FAULT INDICATOR RIGHT SIDE UP.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING FAULT INDICATOR LIQUID TYPE, AUTOMATIC RESET	ISSUE DATE: 01/15/87 REV. DATE: 09/27/12 APPROVAL: B.PRIEST
	3-7-1	8513E258.DGN

ALL BOTTOM FEEDER TERMINATIONS SHALL HAVE FAULT INDICATORS





SENSOR INSTALLATION DETAIL

INSTALLATION PROCEDURE (ALL SWITCHES)

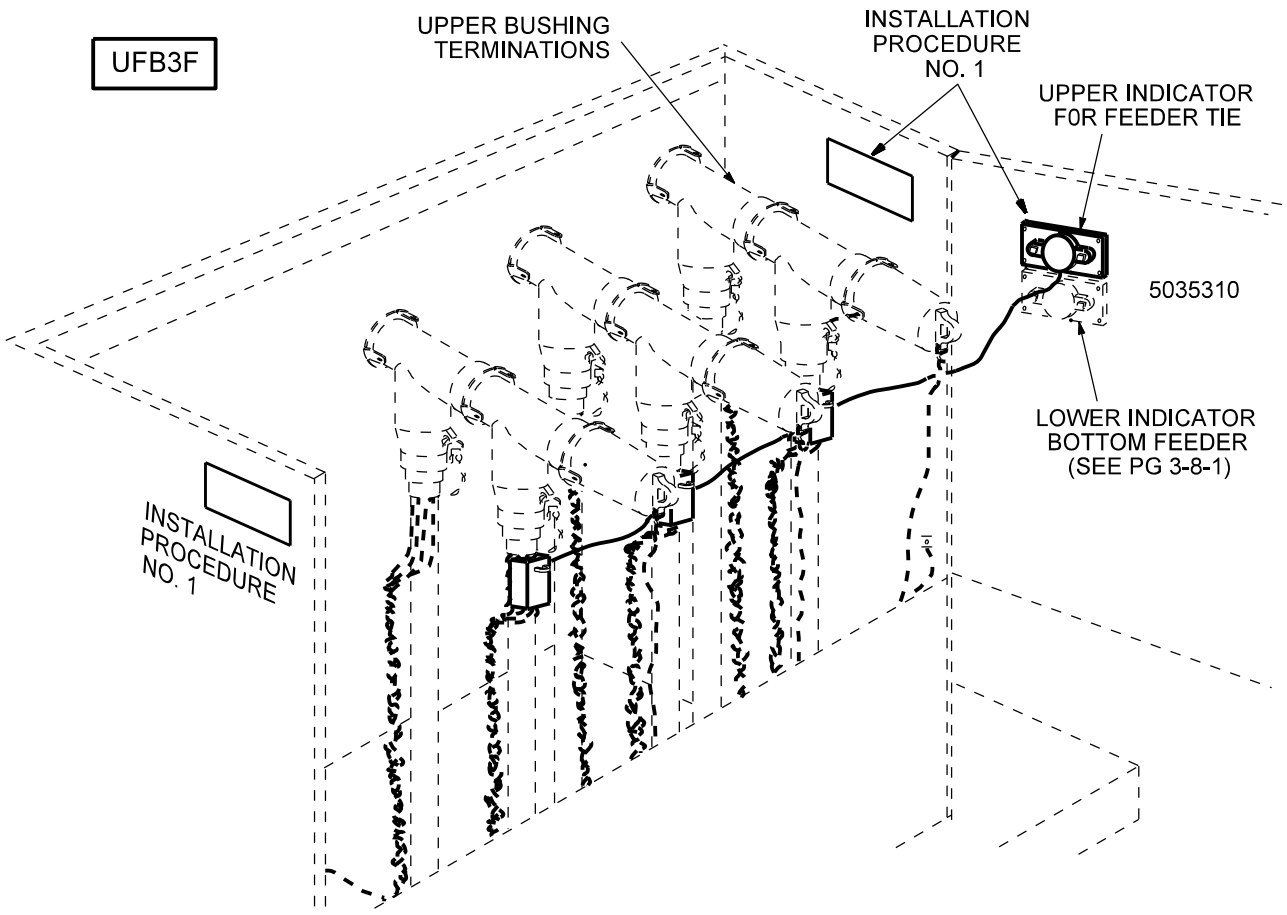
1. THREE LOCATIONS ARE AVAILABLE FOR FAULT DETECTOR INDICATORS. INSTALL THE INDICATORS TO FACE THE STREET.
2. INSTALL INDICATOR ON LOWER WINDOW IN DOOR USING 2-1/4" X 1/2" BOLTS AND FLAT WASHERS.
3. TRAIN CABLE DOWN ALONG DOOR AND BEHIND CABLES ON LOWER BUSHINGS. ATTACH SENSORS ON 500MCM OR 750 MCM CABLES. (SEE DETAIL)

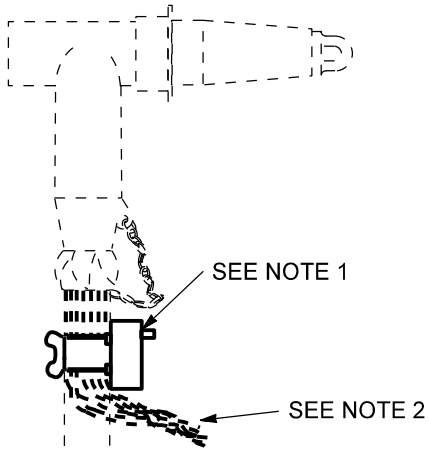
NOTES

1. SENSOR MUST BE INSTALLED OVER TWISTED DRAIN WIRES OR CONCENTRIC NEUTRALS ON EACH OF THE LOWER BUSHING TERMINATIONS.
2. DRAIN WIRES TWISTED TOGETHER AND BONDED TO GROUND USING COMPRESSION CONNECTOR.
3. THREE SWITCHES AT UDA HAVE A FAULT DETECTOR WITH CONTACTS (STOCK 5035310).

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING FAULT INDICATOR ON LOWER FEEDER ON ALL SWITCHES	ISSUE DATE: 01/15/87 REV. DATE: 01/22/15 APPROVAL: B.PRIEST
	3-8-1	8513E7.DGN

ALL UPPER FEEDER TIE TERMINATIONS SHALL HAVE FAULT INDICATORS





SENSOR INSTALLATION DETAIL

INSTALLATION PROCEDURE (SWITCHES WITH FEEDER TIES)

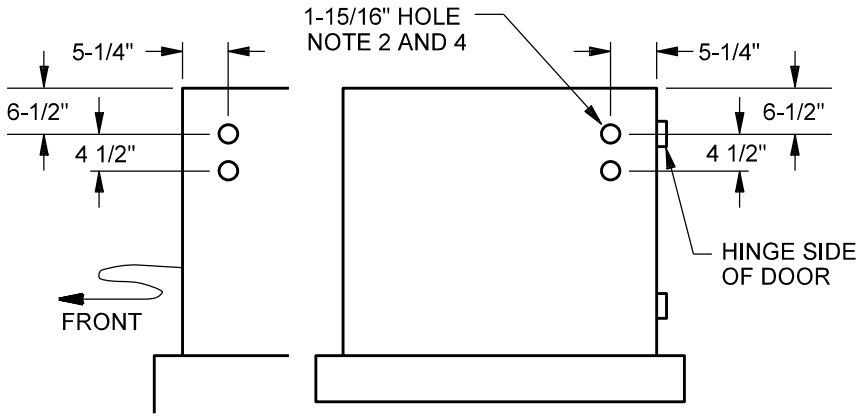
1. THREE LOCATIONS ARE AVAILABLE FOR FAULT DETECTOR INDICATORS. INSTALL THE INDICATORS TO FACE THE STREET.
2. INSTALL INDICATOR ON UPPER WINDOW IN DOOR USING 2-1/4" X 1/2" BOLTS AND FLAT WASHERS.
3. TRAIN CABLE DOWN ALONG DOOR AND BEHIND CABLES ON UPPER BUSHINGS. ATTACH SENSORS ON 500MCM OR 750MCM CABLES. (SEE DETAIL)

NOTES

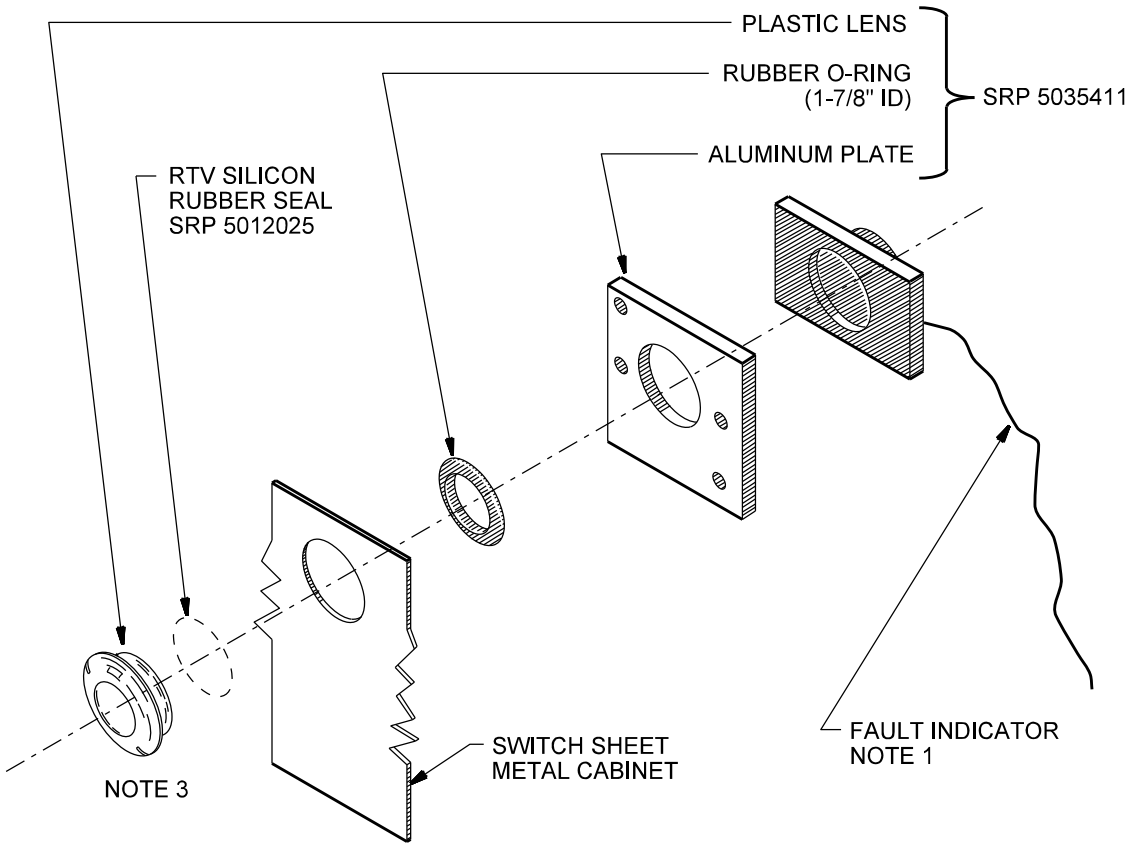
1. SENSOR MUST BE INSTALLED OVER TWISTED DRAIN WIRES OR CONCENTRIC NEUTRALS ON EACH OF THE SPECIFIED BUSHING TERMINATIONS.
2. DRAIN WIRES TWISTED TOGETHER AND BONDED TO GROUND USING COMPRESSION CONNECTOR.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING FAULT INDICATOR ON UPPER FEEDER TIE ON ALL SWITCHES	ISSUE DATE: 11/21/88 REV. DATE: 01/22/15 APPROVAL: B.PRIEST
	3-9-1	8513E8.DGN

UFB3FW

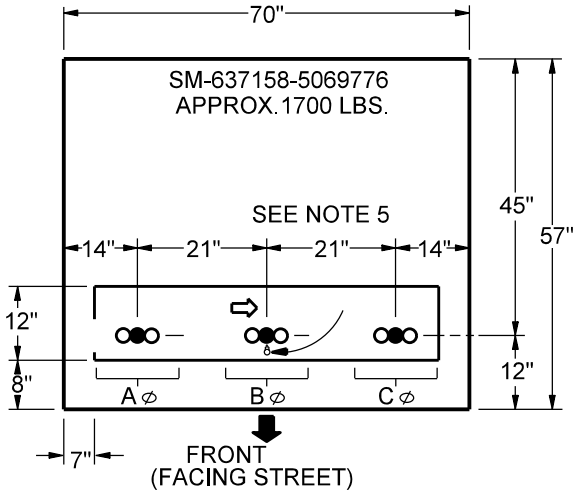


FRONT VIEW OF SWITCH



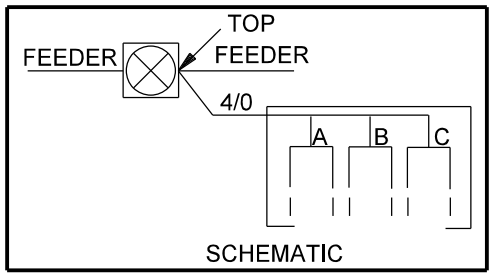
NOTES

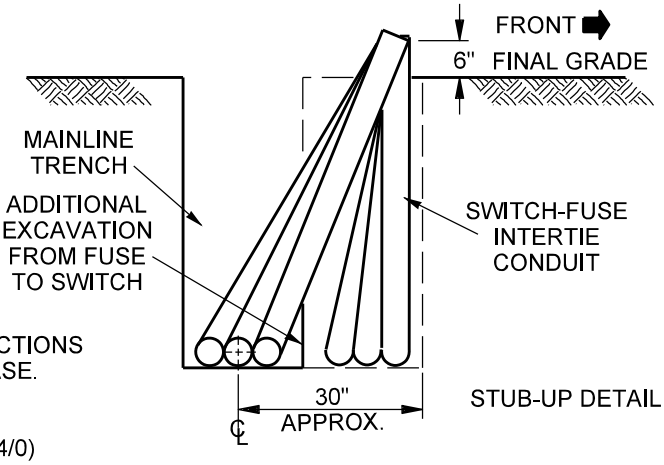
1. FAULT INDICATOR INCLUDED, SEE UFB3F IN SECTION 3.
2. OBTAIN KNOCKOUT TOOL FROM TOOL ROOM.
   A. START WITH 3/8" PILOT HOLE
   B. THEN CUT A 1/2" KNOCKOUT.
   C. THEN CUT A 1-1/2" KNOCKOUT (THIS DYE CUTS A 1-15/16" HOLE).
3. A TOOL IS AVAILABLE TO TIGHTEN LENS. STOCK CODE 5035412.
4. ONLY ONE FAULT INDICATOR IS INSTALLED WITH UFB3FW. SPACING FOR A SECOND WINDOW IS SHOWN IF NEEDED.



STUB-UP LOCATION

PLAN VIEW





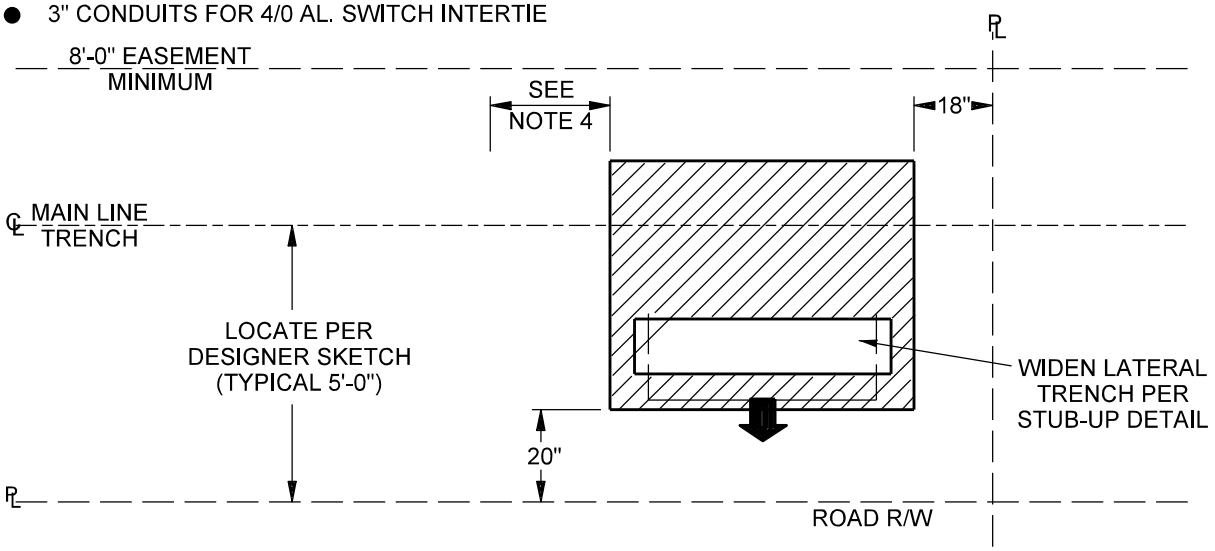
STUB-UP DETAIL

NOTES

1. FOR THREE PHASE LOAD TAPS, MAKE ALL CONNECTIONS TO LEFT OR RIGHT HAND BUSHINGS OF EACH PHASE.

SYMBOLS

- ○ 2 1/2" CONDUITS FOR #2 AL.(OR 3" CONDUIT FOR 4/0)
- ● 3" CONDUITS FOR 4/0 AL. SWITCH INTERTIE



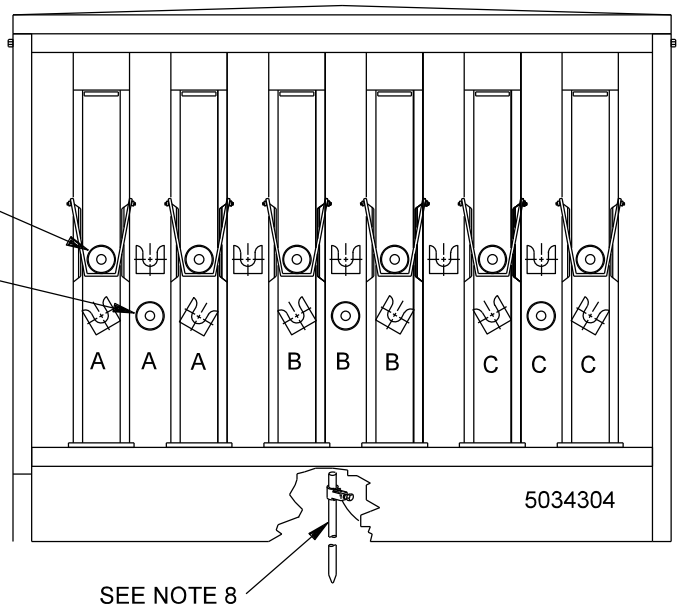
NOTES

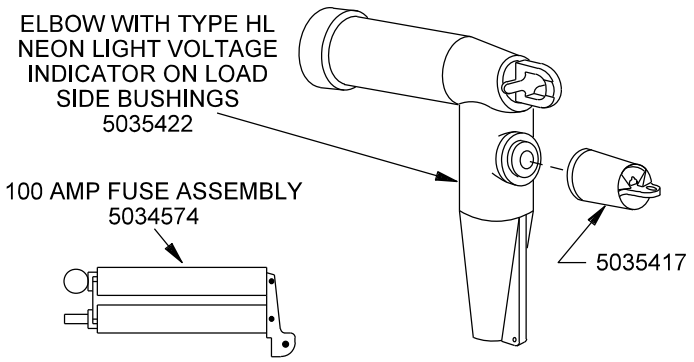
1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY, (BLUE TOP) AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM 18" SEPARATION BETWEEN THE SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE. ALLOW ENOUGH SPACE FOR CONDUIT ELBOWS.
5. STUB 2/0 BARE COPPER NEUTRAL FROM SWITCH TO ENCLOSURE GROUNDING PADS OR INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLE, CONNECT GROUND ROD TO CABINET GROUND WITH #4 COPPER WIRE.
6. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE FUSE ENCLOSURE (DESIGNATED PARKING) FRONT OF FUSING ENCLOSURE SHALL BE ROTATED 90 DEG. IN TO EASEMENT, ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD R/W.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING INSTALLATION DETAILS FOR DEAD-FRONT FUSING ENCLOSURE	ISSUE DATE: 01/15/87 REV. DATE: 08/08/13 APPROVAL: B. PRIEST
	3-11-1	8513E119.DGN

NUMBER OF FUSES PER ENCLOSURE	COMPATIBLE UNIT
NONE	UFAD *
1	UFA1D *
2	UFA2D *
3	UFA3D *
4	UFA4D *
5	UFA5D *
6	UFA6D *

DEVICE DIMENSIONS
W/O PAD:
H=48"
W=66"
D=44"





TIGHTEN FUSES IN HOLDERS BEFORE INSTALLATION.

DETAILS
UFBF100
SEE NOTE 9

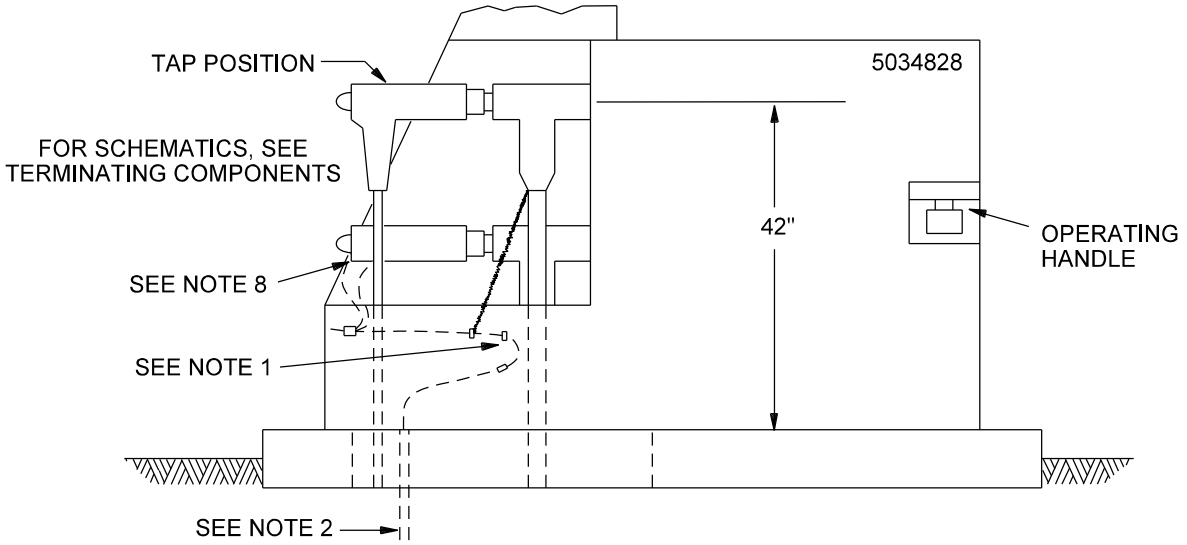
NOTES

1. THE AIR-INSULATED DEAD-FRONT FUSING ENCLOSURE IS A DIRECT REPLACEMENT FOR THE OIL-FILLED FUSING ENCLOSURE.
2. TO PROVIDE FOR TELCO BONDING, RUN #6 COPPER WIRE FROM A GROUNDING LUG TO A POINT 12" OUTSIDE THE PAD. LOCATE AS NEAR THE CENTER OF THE PAD OPENING AS POSSIBLE IN THE PRIMARY TRENCH AT A DEPTH OF 12".
3. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS (SEE ELECTRIC SERVICE SPECIFICATIONS).
4. SEE "MISCELLANEOUS" SECTION OF BOOK FOR ENCLOSURE AND CABLE IDENTIFICATION MARKING METHODS.
5. RUN 2/0 COPPER WIRE ACROSS INSIDE ENCLOSURE FRONT TO GROUNDING LUG. CONNECT FEEDER NEUTRAL AND CONCENTRIC NEUTRALS TO THIS WIRE.
6. RADIAL FEED WILL BE 4/0 ALUMINUM FROM A NEARBY SWITCHING ENCLOSURE OR 600A GANG-OP RISER.
7. SINGLE PHASE CIRCUITS REQUIRE A 100 AMP FUSE. COMPATIBLE UNIT INCLUDES CURRENT LIMITING FUSES.
8. INSTALL GROUND ROD (IF 2/0 BARE NEUTRAL FROM SWITCH NOT INSTALLED) SO IT DOES NOT INTERFERE WITH CABLES. CONNECT TO CABINET GROUND WITH #4 CU WIRE.
9. WHEN ADDING A FUSED TAP AFTER INITIAL INSTALLATION, CALL FOR COMPATIBLE UNIT UFBF100. THIS INCLUDES ELBOW WITH VOLTAGE INDICATOR AND 100 AMP FUSE ASSEMBLY.
10. FOR REPLACEMENT OF RUSTED OUT ENCLOSURE ONLY, ORDER UFADC OR UFADCN (NO PAD).

REFUSING INSTRUCTIONS

1. LOAD SIDE ELBOWS CONTAIN VOLTAGE LAMPS THAT FLASH WHEN FUSE IS INTACT (CAUTION: LAMP IS NOT FOOLPROOF).
2. LOAD SIDE ELBOW MUST BE REMOVED AND PARKED BEFORE UNLATCHING AND OPENING A FUSE DOOR.
3. REPLACE BLOWN FUSE WITH NEW UNIT 5034574.

UFD1D	500MCM FEEDER ONLY (NO TAP)
UFD1D7	750MCM AL FEEDER ONLY (NO TAP)
UFD1D7C	750MCM CU FEEDER ONLY (NO TAP)
UFD1DF	500MCM WITH 500MCM FEEDER TIE
UFD1DF7	750MCM AL WITH 750MCM AL FEEDER TIE
UFD1DF7R	750MCM AL WITH 750MCM AL FEEDER TIE RADIAL
UFD1DF7RC	750MCM CU WITH 750MCM AL OR CU FEEDER TIE RADIAL
UFD1DF7C	750MCM CU WITH 750MCM CU FEEDER TIE
UFD1DR	500MCM RADIAL FEEDER WITH 4/0 TAP
UFD1DR7	750MCM RADIAL FEEDER WITH 4/0 TAP
UFD1DT	500MCM WITH 4/0 TAP
UFD1DT7	750MCM AL WITH 4/0 TAP
UFD1DT7C	750MCM CU WITH 4/0 TAP
UFD1DREP	REPLACEMENT FOR CABLE REPLACEMENT JOBS 5034825 W/O TAP PROVISION
UFD1DC	CORROSION RESISTANT SWITCH FOR MAINTENANCE REPLACEMENT OF RUSTED EQUIPMENT ONLY
UFD1DCN	CORROSION RESISTANT SWITCH FOR MAINTENANCE REPLACEMENT OF RUSTED EQUIPMENT ONLY, NO PAD

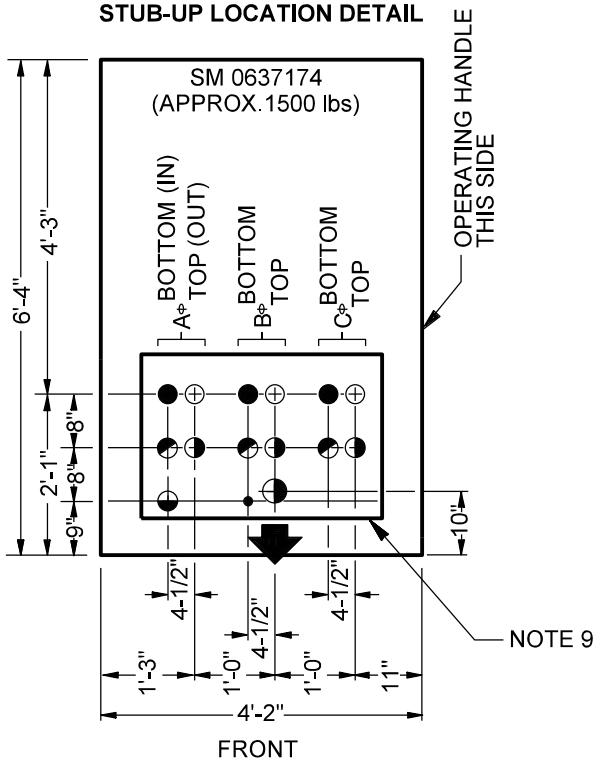


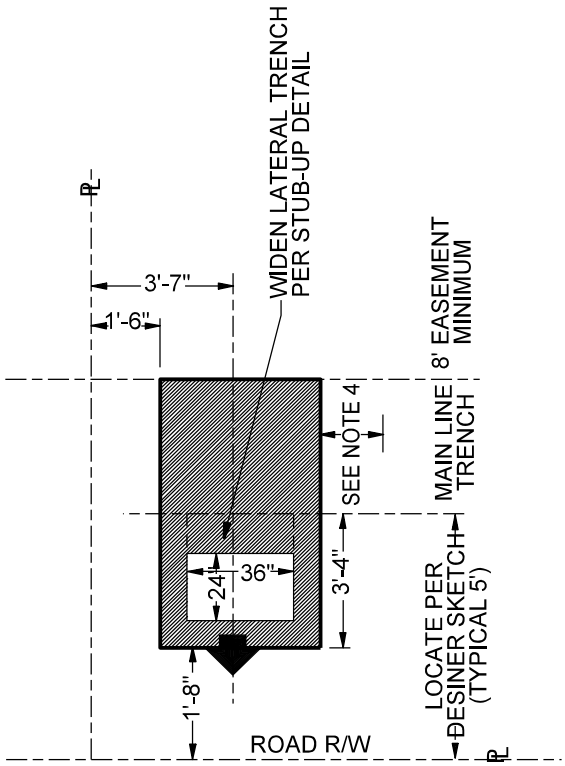
DEVICE DIMENSIONS W/O PAD:
H=54"
W=48"
D=56"

NOTES

1. IF 2/0 CU NEUTRAL IS PRESENT, CONNECT TO BOTH ENCLOSURE GROUND LUGS. OTHERWISE, RUN 2/0 CU ACROSS FRONT OF ENCLOSURE GROUND LUGS. CONNECT DRAIN WIRES OR CONCENTRIC NEUTRALS TO THIS GROUND BUS.
2. TO PROVIDE FOR TELCO BONDING, RUN #6 CU WIRE FROM ENCLOSURE GROUNDING TO A POINT 12" OUTSIDE THE PAD. LOCATE IN THE TRENCH AT A DEPTH OF 12".
3. FENCES ARE NOT ALLOWED ACROSS THE FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL.
4. SEE THE MISCELLANEOUS SECTION FOR ENCLOSURE AND CABLE INDENTIFICATION MARKING METHODS.
5. CONDUIT SHALL BE STUBBED TO 1" BELOW THE LEVEL OF THE PAD (4" ABOVE GRADE).
6. LOAD TAP OR FEEDER TIE SHALL SLWAYS BE ON TOP SWITCH BUSHINGS. (ONLY PAD MOUNTED CAPACITORS MAY ALSO BE TAPPED TO LOWER BUSHINGS.)
7. ALL CABLE TERMINATIONS PROVIDED FOR CU CHOSEN.
8. INSULATING CAP ON LOAD BUSHING (LOAD BREAK BUSHING PROVIDED FOR GROUNDING ELBOW WHEN NEEDED).
9. THE 4/0 CABLES SHALL BE TRAINED SO THEY WILL REACH A PARKING BUSHING IN ONE OF THE PARKING STANDS PROVIDED ALONG SIDE EACH BUSHING.
10. IF 2/0 CU NEUTRAL IS NOT PRESENT, INSTALL GROUND ROD (NOT TO INTERFERE WITH CABLES) AND CONNECT #4 CU CABINET GROUND BUS TO ROD. (A GROUND ROD IS ISSUED WITH ALL SWITCHES FOR 750MCM FEEDER.)
11. MOUNT FAULT DETECTOR INDICATORS TO FACE STREET. SEE FAULT INDICATOR INSTALLATION PROCEDURE IN THIS SECTION.

STUB-UP LOCATION DETAIL





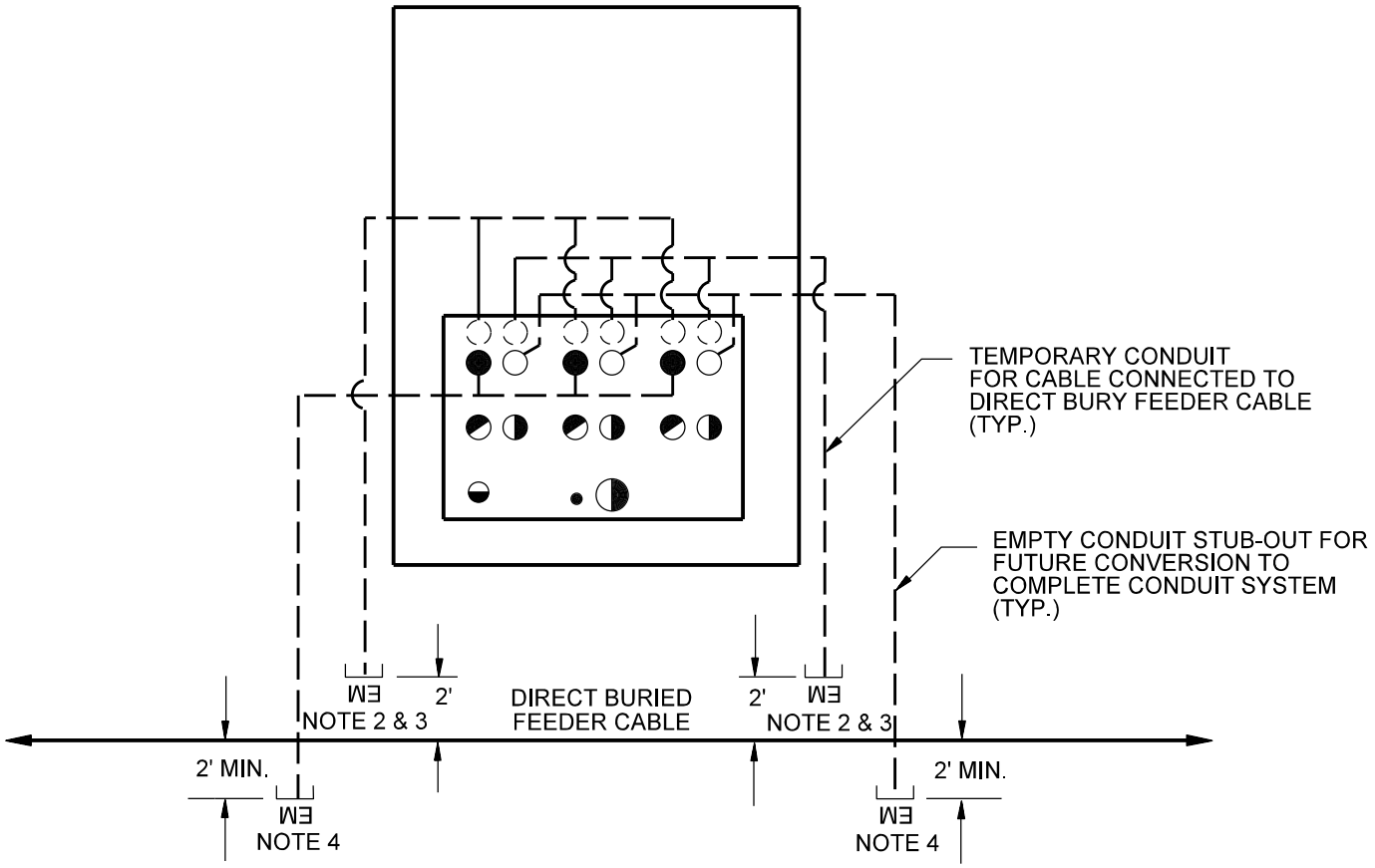
IDENTIFICATION OF SYMBOLS

SYMBOL	POSITION	CABLE TERMINATION
1 ○	TOP	3" CONDUIT FOR EITHER: 500MCM FEEDER OR 750MCM FEEDER
2 ◑	TOP-TAP	3" CONDUIT FOR EITHER: 500MCM FEEDER, 750MCM FEEDER OR 4/0 AL
3 ◑	TOP-TAP	4" CONDUIT FOR 3-4/0 AL (NOTE 8)
4 ◒	TOP-TAP	2-1/2" CONDUIT FOR FUSED SINGLE PHASE TRANSFORMER (NOTE 10)TAP INTERNALLY FUSED. (A Ø TOP ONLY)
5 ◐	BOTTOM-TAP	3" CONDUIT FOR 4/0 AL CAPACITOR TAP (W/ SYMBOL #6 BELOW REQUIRES PARKING STAND EXTENSION 5035030)
6 ●	BOTTOM	3" CONDUIT FOR EITHER: 500MCM FEEDER OR 750MCM FEEDER
7 •	GROUND ROD	

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM OF 3 FT SEPARATION BETWEEN SWITCH PAD AND THE PAD OF ADJACENT EQUIPMENT.
5. IF 3 FT OF CLEAR SPACE ON THE RIGHT SIDE (NOTE 4) IS OBSTRUCTED, A SWITCH WITH THE OPERATING HANDLE ON THE LEFT IS AVAILABLE (STOCK CODE 5034823), BEWARE THIS SWITCH DOES NOT HAVE THE SINGLE-PHASE FUSED TOP CAPACITY.
6. MAINTAIN A MINIMUM OF 12 FT CLEARANCE IN FRONT OF SWITCH DOORS.
7. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE SWITCH (E.G. DESIGNATED PARKING), THE SWITCH SHALL BE ROTATED 90° SO THE OPERATING HANDLE FACES ROAD RIGHT-OF-WAY. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD RIGHT OF WAY.
8. STUB UP ONE 4" CONDUIT AS SHOWN ABOVE WHEN TAPPING INTO AN EXISTING 3 - 4/0 AL IN ONE 4" CONDUIT. THIS AVOIDS THE NEED FOR A PULL BOX AT THE SWITCH TO SEPERATE THE 4/0 AL OUT INTO 3 - 3' CONDUIT.
9. SEE PAGES 3-13-3 AND 3-13-4 WHEN THIS SWITCH WILL BE TIED INTO DIRECT BURIED CABLE OR OVERHEAD SYSTEM THAT WILL BE CONVERTED TO ALL CONDUIT SYSTEM IN THE FUTURE.
10. 50KVA MAXIMUM. ONE 50KVA OR TWO 25KVA TRANSFORMERS. IF TWO 25KVA TRANSFORMERS ARE CONNECTED, TRAFFIC SIGNALS (AUTO OR RAIL) MAY ONLY BE SERVED FROM FIRST TRANSFORMER OUT.

STUB-UP LOCATION DETAIL



IDENTIFICATION OF SYMBOLS

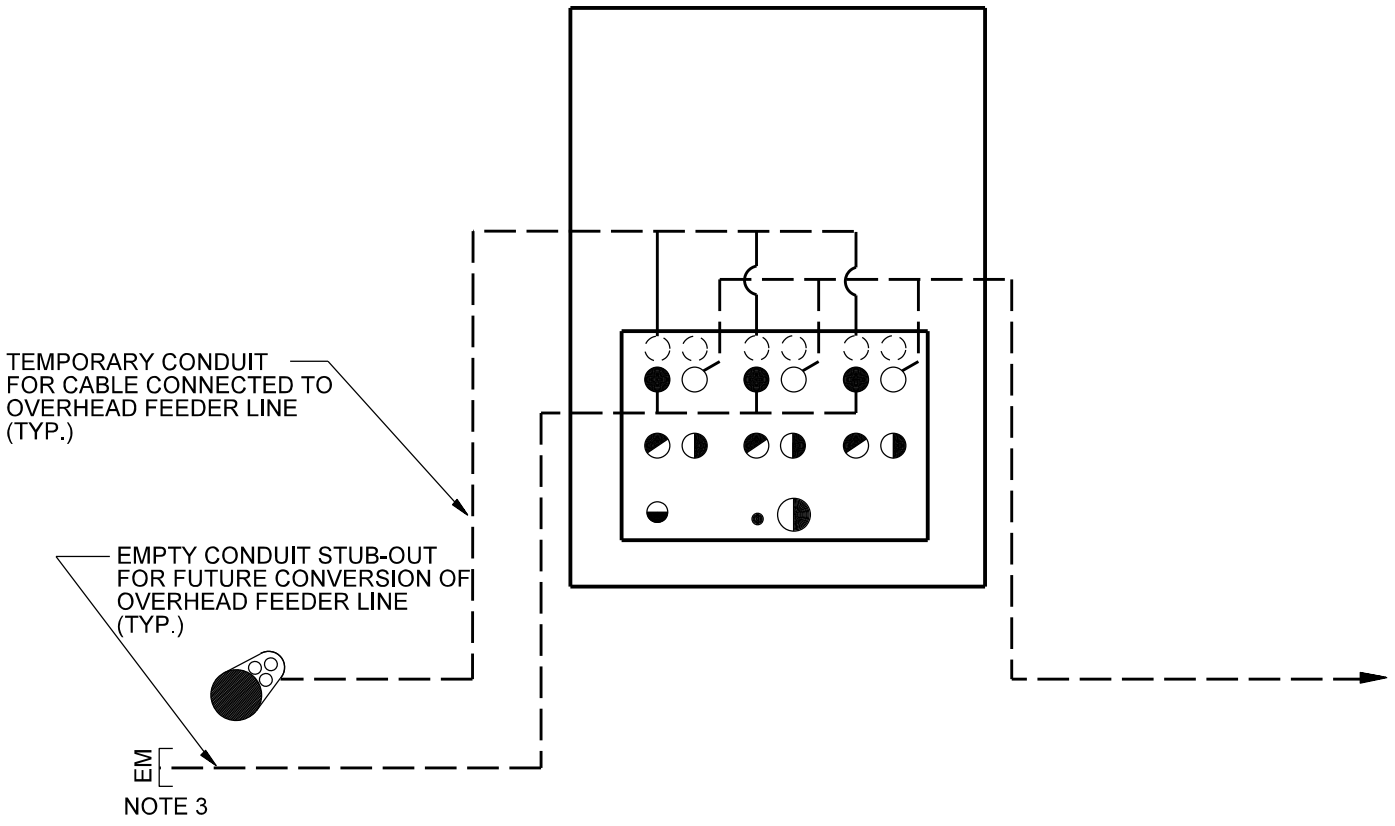
	SYMBOL	POSITION	CABLE TERMINATION
1	◌	TEMP	3" CONDUIT FOR TEMPORARY CABLE: 500MCM FEEDER OR 750MCM FEEDER
2	○	TOP	3" CONDUIT FOR EITHER: 500MCM FEEDER OR 750MCM FEEDER
3	◑	TOP-TAP	3" CONDUIT FOR EITHER: 500MCM FEEDER, 750MCM FEEDER, OR 4/0 AL
4	◑	TOP-TAP	4" CONDUIT FOR 3-4/0 AL (NOTE 8 - PG. 3-13-1)
5	◒	TOP-TAP	2-1/2" CONDUIT FOR FUSED SINGLE PHASE TRANSFORMER (NOTE 6) TAP INTERNALLY FUSED. (AØ TOP ONLY)
6	◒	BOTTOM-TAP	3" CONDUIT FOR 4/0 AL CAPACITOR TAP (W/ SYMBOL #7 BELOW REQUIRES PARKING STAND EXTENSION 5035030)
7	●	BOTTOM	3" CONDUIT FOR EITHER: 500MCM FEEDER OR 750MCM FEEDER
8	•	GROUND ROD	

NOTES

1. INSTALL CONDUIT AS SHOWN ABOVE WHEN INSTALLING A NEW SWITCH INTO EXISTING DIRECT BURIED FEEDER CABLE.
2. TEMPORARY CONDUIT SHALL BE STUBBED OUT 2 FT FROM DIRECT BURIED CABLE. INSTALL END CAPS ON THE CONDUIT AND SET FLAG AND ELECTRONIC MARKER (5035671) OVER STUB-OUT.
3. INSTALL FEEDER CABLE INTO TEMPORARY CONDUIT AND SPLICE INTO DIRECT BURIED CABLE. WHEN INSTALLING 500 MCM, A 2/0 BARE COPPER NEUTRAL IS ALSO REQUIRED TO BE INSTALLED.
4. EXTEND PERMANENT CONDUIT A MINIMUM 2 FEET PAST THE DIRECT BURIED SPLICES. INSTALL END CAPS ON CONDUIT AND SET FLAGS AND ELECTRONIC MARKER (5035671) OVER STUB-OUT.
5. DELETE STANDARD TEMPLATE 5031741 AND ADD NEW TEMPLATE 5031856 TO ALLOW FOR TEMPORARY CONDUIT STUB-UPS.
6. 50KVA MAXIMUM. ONE 50KVA OR TWO 25KVA TRANSFORMERS. IF TWO 25KVA TRANSFORMERS ARE CONNECTED, TRAFFIC SIGNALS (AUTO OR RAIL) MAY ONLY BE SERVED FROM FIRST TRANSFORMER OUT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING DEAD FRONT SWITCHING ENCLOSURE (IN AREA WITH FUTURE DB CONVERSION TO ALL CONDUIT)	ISSUE DATE: 01/15/87 REV. DATE: 11/05/14 APPROVAL: B. PRIEST
	3-13-3	8513E525.DGN

STUB-UP LOCATION DETAIL



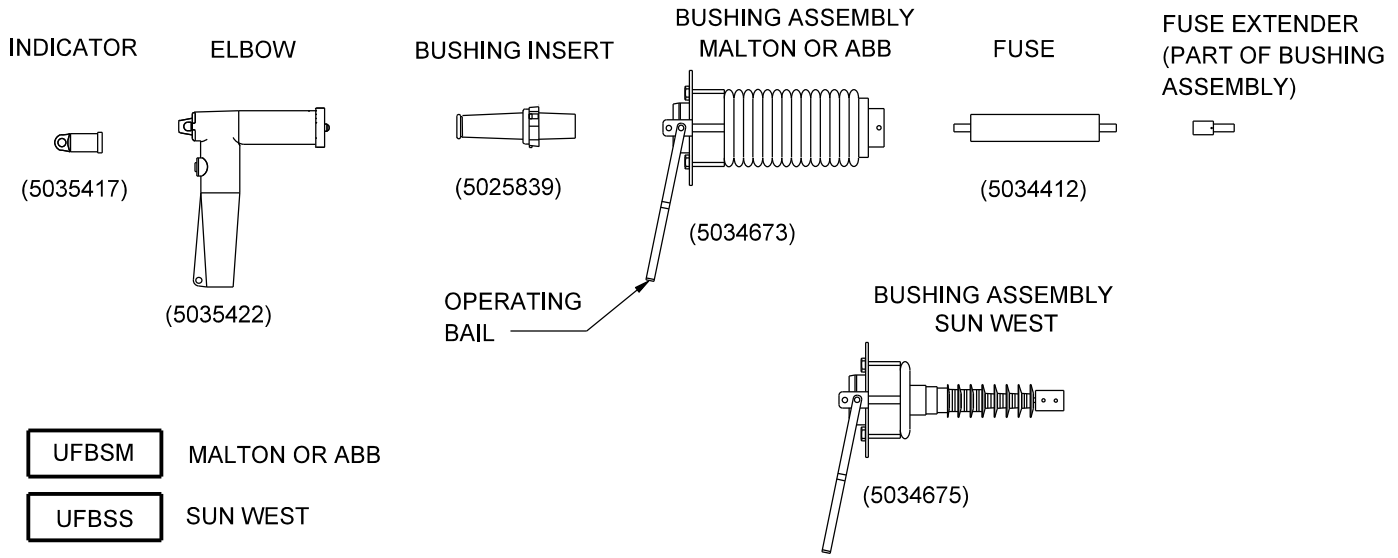
IDENTIFICATION OF SYMBOLS

	SYMBOL	POSITION	CABLE TERMINATION
1	◌	TEMP	3" CONDUIT FOR TEMPORARY CABLE: 500MCM FEEDER OR 750MCM FEEDER
2	○	TOP	3" CONDUIT FOR EITHER: 500MCM FEEDER OR 750MCM FEEDER
3	◑	TOP-TAP	3" CONDUIT FOR EITHER: 500MCM FEEDER, 750MCM FEEDER, OR 4/0 AL
4	◑	TOP-TAP	4" CONDUIT FOR 3-4/0 AL (NOTE 8 - PG. 3-13-2)
5	◒	TOP-TAP	2-1/2" CONDUIT FOR FUSED SINGLE PHASE TRANSFORMER TAP INTERNALLY FUSED. (AØ TOP ONLY)
6	◒	BOTTOM-TAP	3" CONDUIT FOR 4/0 AL CAPACITOR TAP (W/ SYMBOL #7 BELOW REQUIRES PARKING STAND EXTENSION 5035030)
7	●	BOTTOM	3" CONDUIT FOR EITHER: 500MCM FEEDER OR 750MCM FEEDER
8	•	GROUND ROD	

NOTES

1. INSTALL CONDUIT AS SHOWN ABOVE TO SET UP FOR A FUTURE CONVERSION OF ADJACENT OVERHEAD FEEDER LINE.
2. TEMPORARY CONDUIT SHALL BE STUBBED UP AT FEEDER RISER POLE. INSTALL FEEDER CABLE INTO TEMPORARY CONDUIT AND RISER AND CONNECT TO OVERHEAD LINE.
3. EXTEND PERMAMENT CONDUIT PAST POLE RISER AS SPECIFIED BY DESIGNER. INSTALLED END CAPS ON CONDUIT AND SET FLAGS AND ELECTRONIC MARKER (5035671) OVER STUB-OUT.
4. DELETE STANDARD TEMPLATE 5031741 AND ADD NEW TEMPLATE 5031856 TO ALLOW FOR TEMPORARY CONDUIT STUB-UPS.
5. 50KVA MAXIMUM. ONE 50KVA OR TWO 25KVA TRANSFORMERS. IF TWO 25KVA TRANSFORMERS ARE CONNECTED, TRAFFIC SIGNALS (AUTO OR RAIL) MAY ONLY BE SERVED FROM FIRST TRANSFORMER OUT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING DEAD FRONT SWITCHING ENCLOSURE (IN AREA WITH FUTURE OH CONVERSION)	ISSUE DATE: 01/15/87 REV. DATE: 11/05/14 APPROVAL: B. PRIEST
	3-13-4	8513E526.DGN



UFBSM	MALTON OR ABB
UFBSS	SUN WEST

1. ONE 50KVA OR TWO 25KVA UNITS MAY BE FED. A TRAFFIC SIGNAL, AUTO OR RAIL, MAY BE FED FROM THE FIRST TRANSFORMER OUT ONLY.

2. FUSED BUSHING ASSEMBLY FOR ABB/MALTON SWITCHES, STOCK CODE 5034828. AVAILABLE FOR USE ON ABB/MALTON SWITCHES WITH MANUFACTURE DATE 02/98 AND LATER.

INSTALLATION INSTRUCTIONS

1. LUBRICATE BUSHING INSERT AND INSTALL INTO BUSHING ASSEMBLY WELL.

2. INSTALL FUSE ONTO END OF BUSHING ASSEMBLY WELL.

3. LUBRICATE PROTECTIVE CAP AND INSTALL ON BUSHING INSERT.

4. REMOVE PARKING STAND FROM TOP "A" PHASE LEFT SIDE BUSHING, EXPOSING ACCESS PORT.

5. INSTALL COMPLETE BUSHING ASSEMBLY INTO ACCESS PORT ON SWITCH USING HOT LINE TOOLS ON THE OPERATING BAIL. ROTATE TO LATCH.

6. INSTALL ELBOW TERMINATION ONTO TAP CABLE.

7. INSTALL VOLTAGE INDICATOR ONTO ELBOW.

8. USING HOT LINE TOOLS, REMOVE INSULATING CAP AND INSTALL ELBOW ONTO BUSHING INSERT TO ENERGIZE TAP CABLE.

RE-FUSING INSTRUCTIONS

1. VERIFY FUSE HAS OPERATED BY VISUAL EXAMINATION OF VOLTAGE INDICATOR AND BY HIGH VOLTAGE METER THRU BUSHING AFTER ELBOW HAS BEEN REMOVED AND PARKED ON AN ADJACENT PARKING STAND.

2. USING HOT LINE TOOLS, INSTALL PROTECTIVE CAP ONTO EXPOSED BUSHING INSERT.

3. USING HOT LINE TOOLS ON OPERATING BAIL, ROTATE BUSHING ASSEMBLY TO UNLATCH AND REMOVE BY PULLING OUT.

4. REMOVE OPERATED FUSE FROM BUSHING ASSEMBLY AND REPLACE WITH NEW FUSE. REMOVE FUSE EXTENDER FROM OPERATED FUSE AND INSTALL ONTO END OF NEW FUSE.

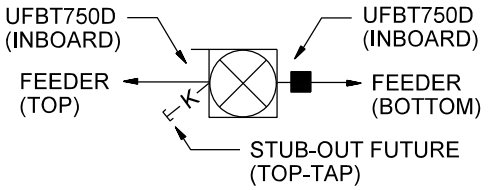
5. USING HOT LINE TOOLS ON OPERATING BAIL, INSTALL BUSHING ASSEMBLY. ROTATE TO LATCH.

6. REMOVE PROTECTIVE CAP.

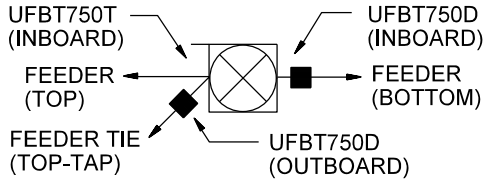
7. RE-INSTALL ELBOW TO ENERGIZE THE CABLE.

SWITCH CU: UFD1D, UFD1D7, & UFD1D7C
FEEDER IN & OUT (NO TAP)

NOTE: WHEN A FUTURE FEEDER TIE WILL BE INSTALLED AT THE SWITCH ADD NOTE AT SWITCH ON CONSTRUCTIONS PRINTS TO READ: "FUTURE FEEDER TIE PLANNED; INSTALL UFBT750T AND UFBEC ON TOP BUSHINGS"; DESIGNER SHALL DELETE 3-UFBT750D AND ORDER 3-UFBT750T AND 3-UFBEC; THE SUBSTITUTION ALLOWS THE T-BODIES ON THE FIRST FEEDER TO BE RE-USED WHEN THE FEEDER TIE IS INSTALLED

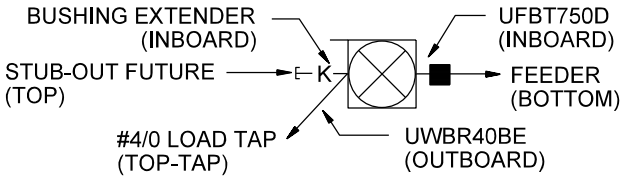


SWITCH CU: UFD1DF, UFD1DF7, & UFD1DF7C
FEEDER IN & OUT WITH FEEDER TIE

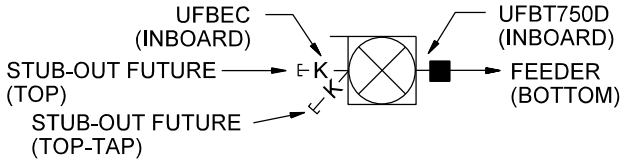


SWITCH CU: UFD1DR
RADIAL FEEDER WITH #4/0 TAP
(FEEDER TERMINATED IN BOTTOM POSITION)

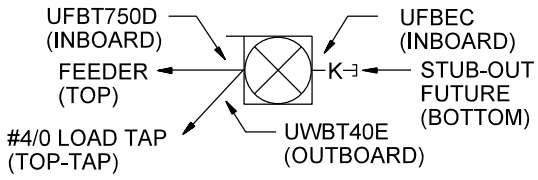
NOTE:
BUSHING EXTENDER COMPONENTS
INCLUDED WITH UWBRE40BE



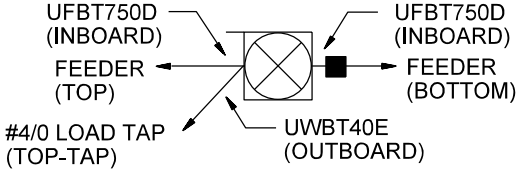
SWITCH CU: UFD1D7R
RADIAL FEEDER (NO TAP)
(FEEDER TERMINATED IN BOTTOM POSITION)



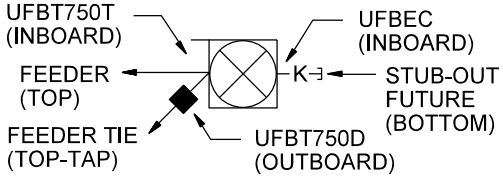
SWITCH CU: UFD1DR7
RADIAL FEEDER WITH 4/0 TAP
(FEEDER TERMINATED ON UPPER BUSHINGS)



SWITCH CU: UFD1DT, UFD1DT7, & UFD1DT7C
FEEDER IN & OUT WITH #4/0 TAP

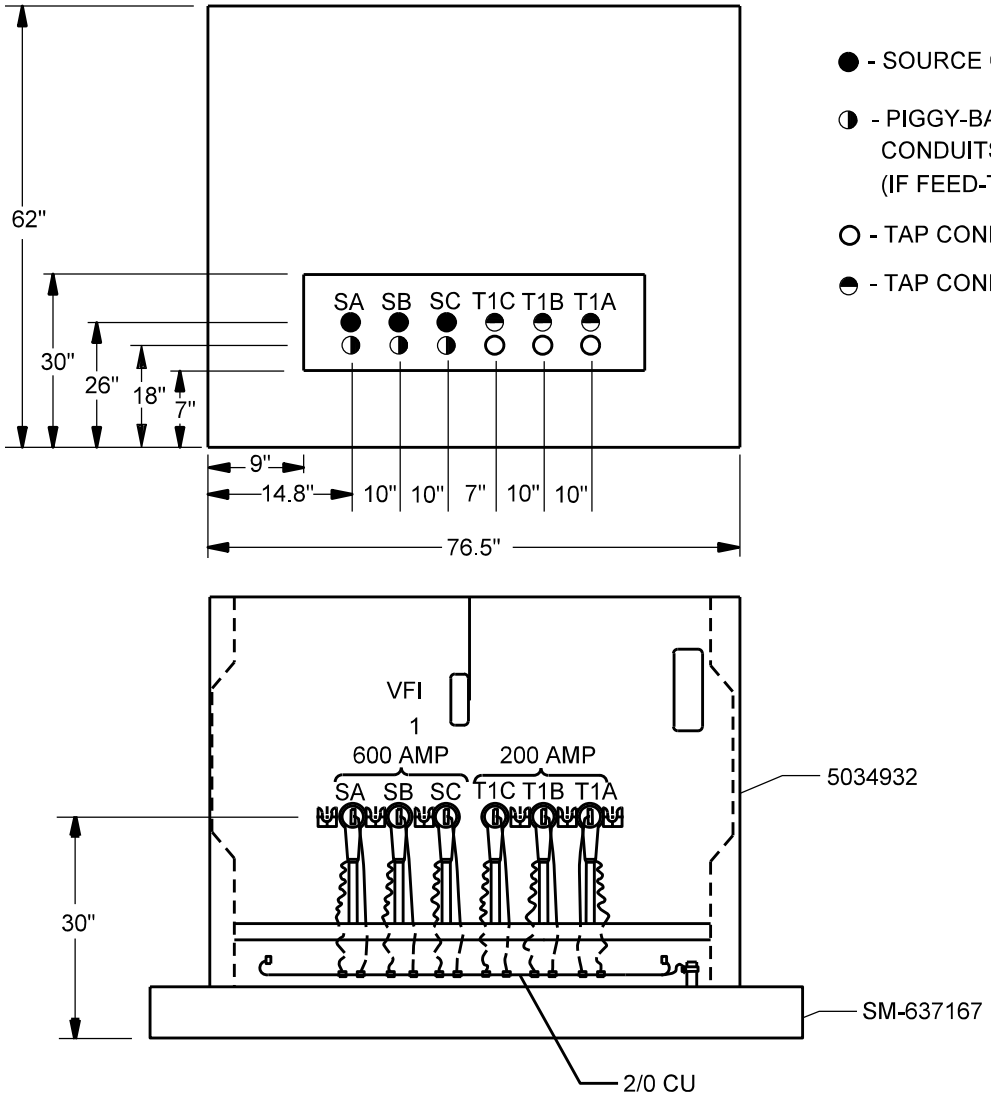


SWITCH CU: UFD1DF7R & UFD1DF7RC
RADIAL FEEDER WITH FEEDER TIE
(ALL FEEDER TERMINATED ON UPPER BUSHINGS)



NOTES

1. SWITCH CU INCLUDES TERMINATING CU COMPONENTS AND FAULT INDICATOR(S).
2. INBOARD = CONNECTED TO SWITCH BUSHING; OUTBOARD = TAPPED OFF OF INBOARD TERMINATION.
3. TERMINATION CU FOR FEEDER SHOWN ON SCHEMATIC ASSUMES 750 MCM.
4. SEE PAGES 3-6-1 AND 3-6-2 FOR ARRANGEMENT OF COMPONENTS FOR EACH TERMINATION CU TYPE.

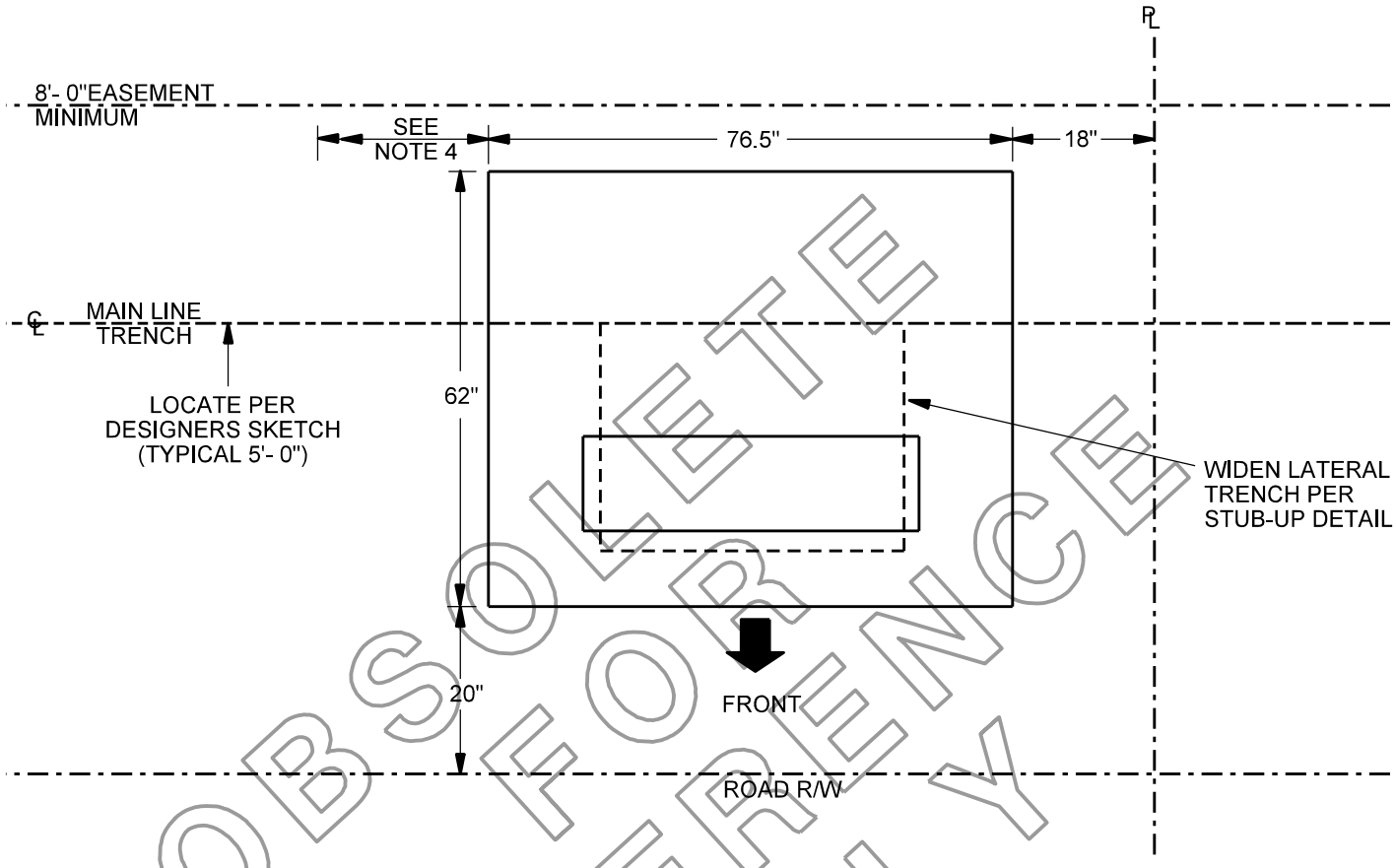


UFDFD1 - 4/0 IN/OUT
UFDFD2- 750 IN/OUT
UFDFD3- 750 IN, 4/0 OUT

NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 CU ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND RODS TO NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS.
4. CONDUIT SHALL BE STUBBED TO 1" BELOW THE LEVEL OF THE PAD (5" ABOVE GRADE).
5. LOAD BREAK BUSHINGS PROVIDE POINT FOR TESTING AND GROUNDING.
6. IF SOURCE FEED-THRU REQUIRED, USE THREE OF UFBT750T. IF 4/0 SOURCE, SUBSTITUTE STOCK NO. 5033797 & 5033798 FOR 750 CABLE ADAPTER 5033796 AND 750 CONNECTOR 5033795.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING SINGLE 3-PHASE VACUUM FAULT INTERRUPTER	ISSUE DATE: 08/24/97 REV. DATE: 11/06/14 APPROVAL: B. PRIEST
	3-14-1	8513E294.DGN

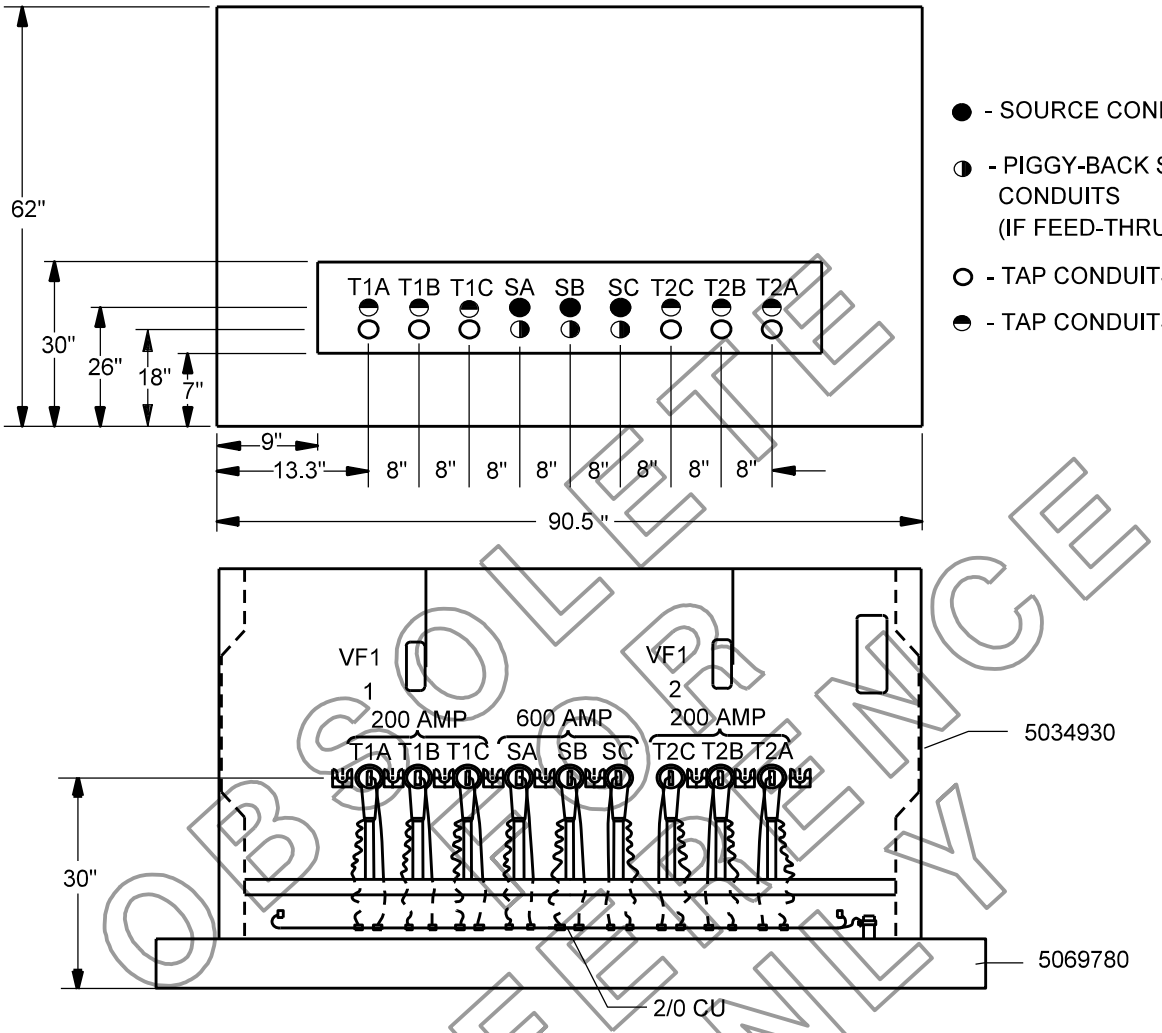


OBSOLETE
FOR
REFERENCE
ONLY

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM 18" SEPARATION BETWEEN THE SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE. ALLOW SPACE FOR CONDUIT ELBOWS BETWEEN PADS.
5. STUB 2/0 BARE COPPER NEUTRAL FROM SWITCH TO ENCLOSURE GROUNDING PADS OR INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLE, CONNECT GROUND ROD TO CABINET GROUND WITH #4 COPPER WIRE.
6. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE FUSE ENCLOSURE (DESIGNATED PARKING) FRONT OF FUSING ENCLOSURE SHALL BE ROTATED 90 DEG. IN TO EASEMENT, ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD R/W.
7. CONDUITS SHALL BE STUBBED-UP 5 INCHES ABOVE FINAL GRADE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING SINGLE 3-PHASE VACUUM FAULT INTERRUPTER	ISSUE DATE: 08/18/97 REV. DATE: 11/06/14 APPROVAL: B. PRIEST
	3-14-2	8513E297.DGN



UFDFD12 - 4/0 IN/OUT
UFDFD22 - 750 IN/OUT
UFDFD32 - 750 IN 4/0 OUT

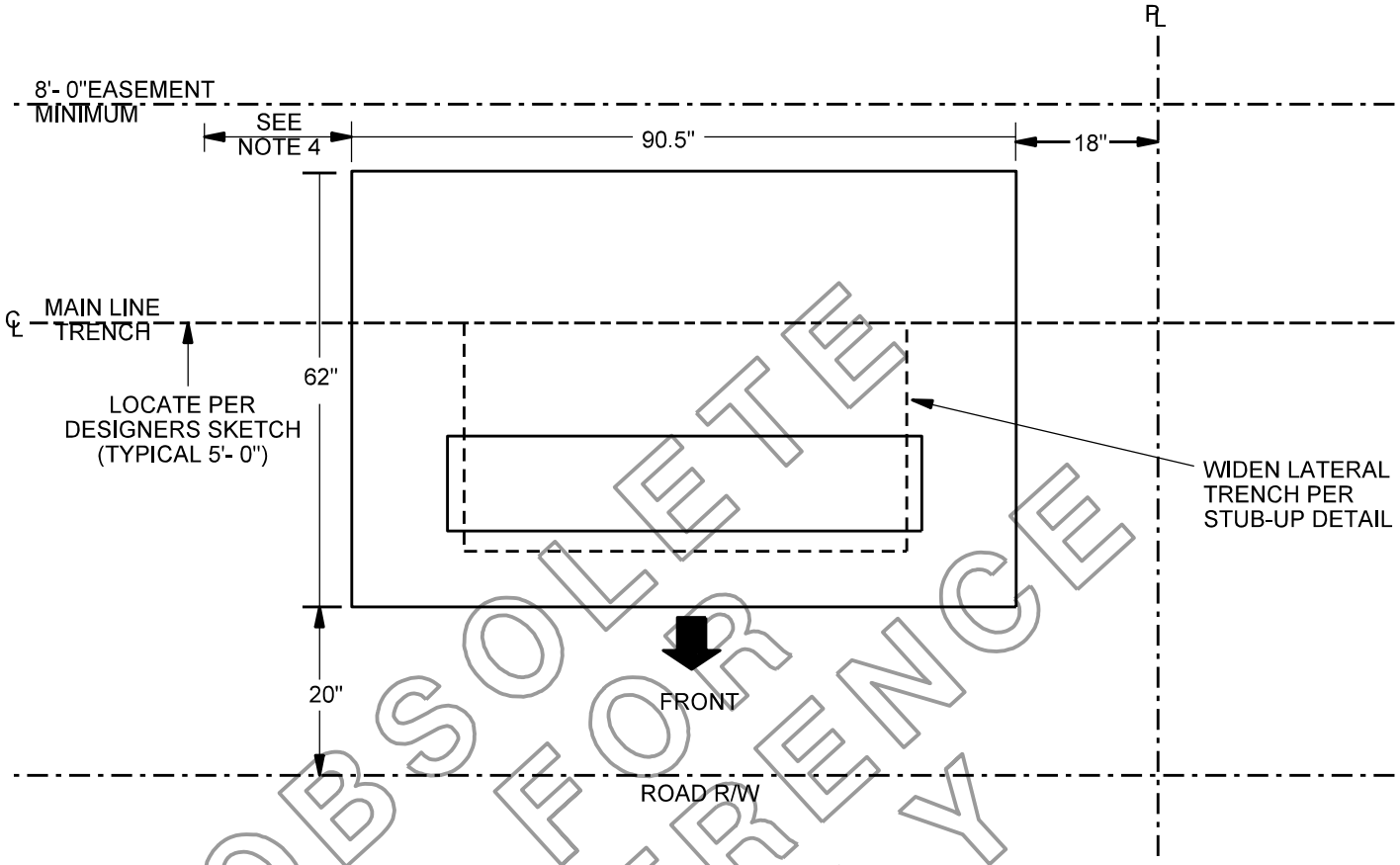
DEVICE DIMENSIONS W/O PAD:
H=48"
W=84"
D=56"

OBSOLETE REFERENCE ONLY

NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 CU ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND RODS TO NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS.
4. CONDUIT SHALL BE STUBBED TO 1" BELOW THE LEVEL OF THE PAD (5" ABOVE GRADE).
5. LOAD BREAK BUSHINGS PROVIDE POINT FOR TESTING AND GROUNDING.
6. IF SOURCE FEED-THRU REQUIRED USE THREE OF UFBT750T. IF 4/0 SOURCE SUBSTITUTE 5033797 AND 5033798 FOR 750 CABLE ADAPTER 5033796 AND 750 CONNECTOR 5033795.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING DOUBLE 3-PHASE VACUUM FAULT INTERRUPTER	ISSUE DATE: 09/24/97 REV. DATE: 11/06/14 APPROVAL: B. PRIEST
	3-15-1	8513E295.DGN



OBSOLETE
FOR
REFERENCE
ONLY

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM 18" SEPARATION BETWEEN THE SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE.
5. STUB 2/0 BARE COPPER NEUTRAL FROM SWITCH TO ENCLOSURE GROUNDING PADS OR INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLE, CONNECT GROUND ROD TO CABINET GROUND WITH #4 COPPER WIRE.
6. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE FUSE ENCLOSURE (DESIGNATED PARKING) FRONT OF FUSING ENCLOSURE SHALL BE ROTATED 90 DEG. IN TO EASEMENT, ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD R/W.
7. CONDUITS SHALL BE STUBBED-UP 5 INCHES ABOVE FINAL GRADE.

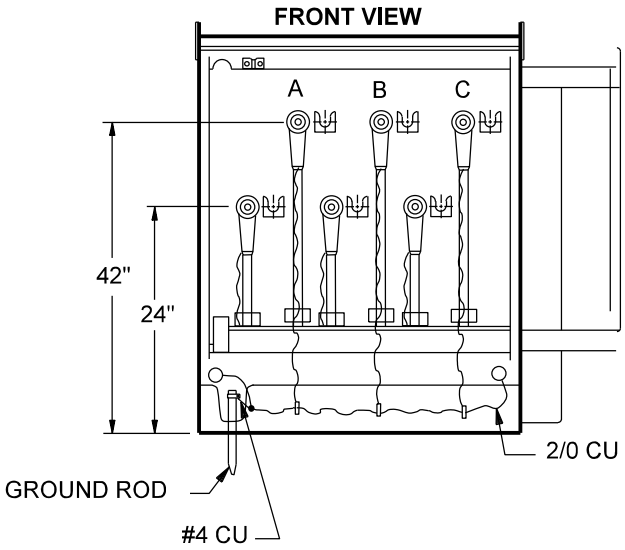
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING DOUBLE 3-PHASE VACUUM FAULT INTERRUPTER	ISSUE DATE: 08/19/97 REV. DATE: 11/05/14 APPROVAL: B. PRIEST
	3-15-2	8513E298.DGN

UFDCF7	750 MCM IN/OUT (NO TIE)
UFDCF8	750 MCM IN/OUT 750 MCM TIE
UFDCF9	750 MCM IN/OUT 4/0 TAP
UFDCF10	500 MCM IN/OUT (NO TIE)
UFDCF11	500 MCM IN/OUT 500 MCM TIE
UFDCF12	500 MCM IN/OUT 4/0 TAP

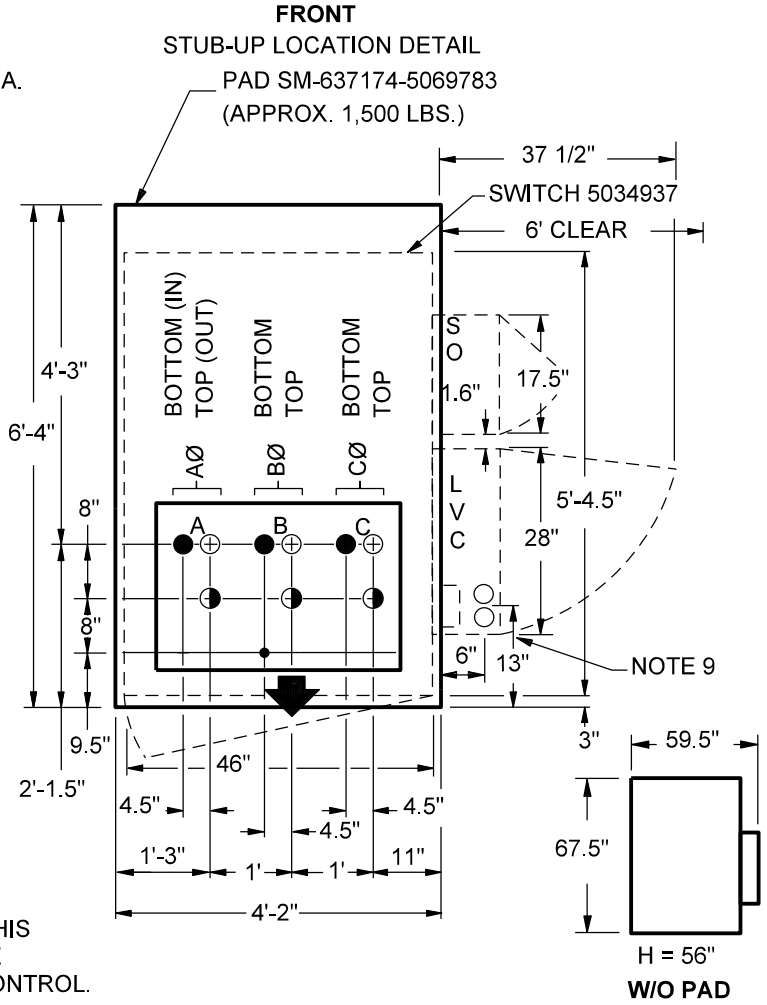
SYMBOL	POSITION	CABLE TERMINATION
○	TOP	3" CONDUIT FOR EITHER 500 OR 750 MCM FEEDER
◑	TOP-TAP	3" CONDUIT FOR EITHER 500 OR 750 MCM FEEDER, OR 4/0 AL
●	BOTTOM	3" CONDUIT FOR EITHER 500 OR 750 MCM FEEDER
◉	GROUND ROD	

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
3. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE SWITCH (E.G., DESIGNATED PARKING), THE SWITCH SHALL BE ROTATED 90 SO THE "SO" AND "IVC" COMPARTMENTS FACE ROAD RIGHT OF WAY. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD RIGHT OF WAY.
4. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 CU ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
5. INSTALL GROUND RODS TO NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTORS.
6. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS.
7. CONDUIT SHALL BE STUBBED TO 1" BELOW THE LEVEL OF THE PAD (5" ABOVE GRADE).
8. LOAD BREAK BUSHINGS PROVIDE POINT FOR TESTING AND GROUNDING.
9. TWO COMMUNICATIONS CONDUIT ENTRANCES AT THIS APPROXIMATE LOCATION ON CABINET BOTTOM. SEE SWITCHING AND FUSING, REMOTE SUPERVISORY CONTROL.

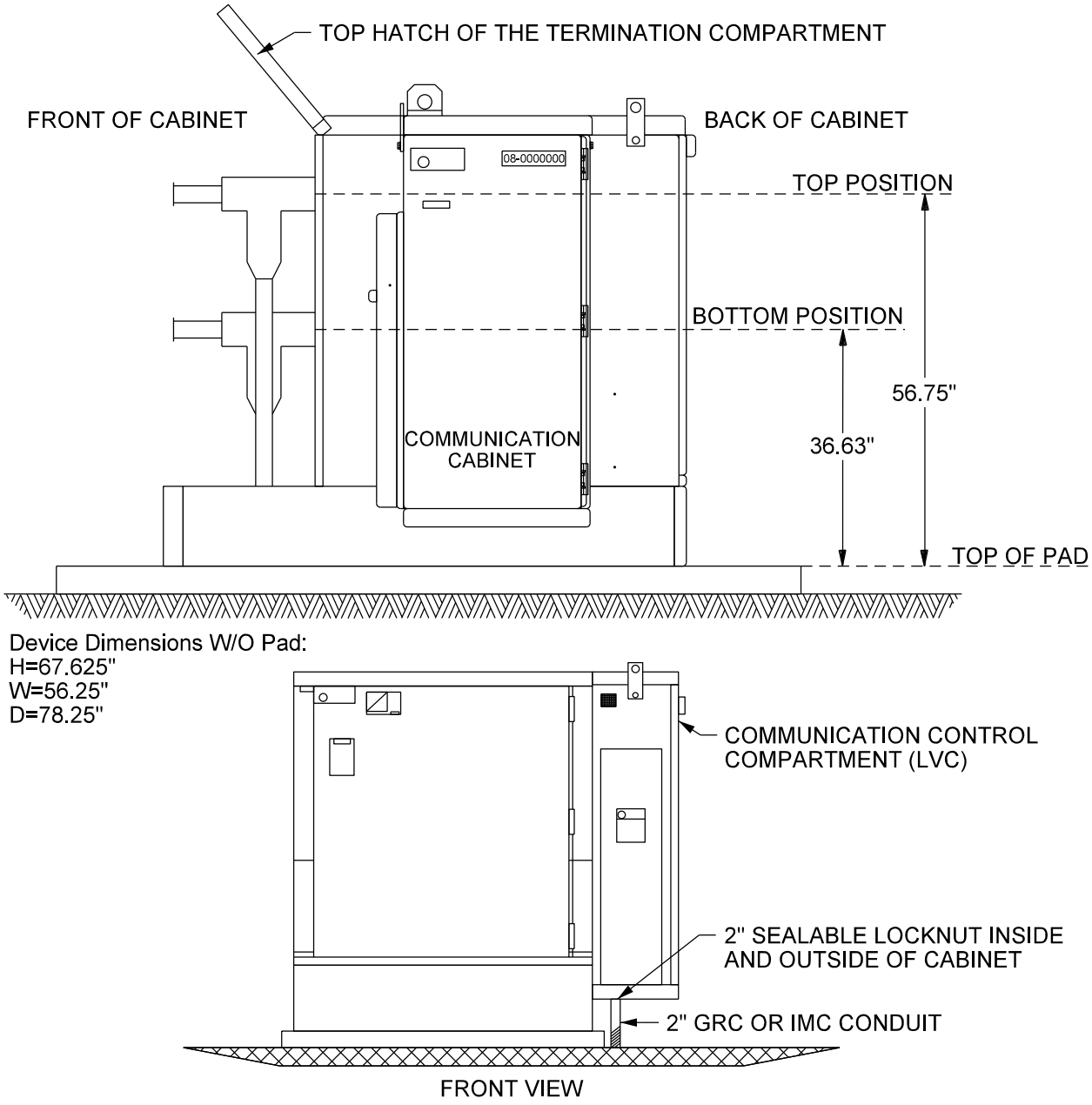


CURRENT SENSORS: WHEN UNITS ARE INSTALLED IN THIS COMPARTMENT THE INFORMATION ON THE TAGS MUST BE RECORDED AS TO PHASE (USE YELLOW SHEET LOCATED IN COMMUNICATION CONTROL COMPARTMENT).



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING REMOTE CONTROL S&C DEAD-FRONT SWITCH ONE SIDE ACCESS	ISSUE DATE: 07/07/09 REV. DATE: 07/25/13 APPROVAL: B. PRIEST
	3-16-1	8513E508.DGN

UFDCF13 750 MCM AL FEEDER IN/OUT

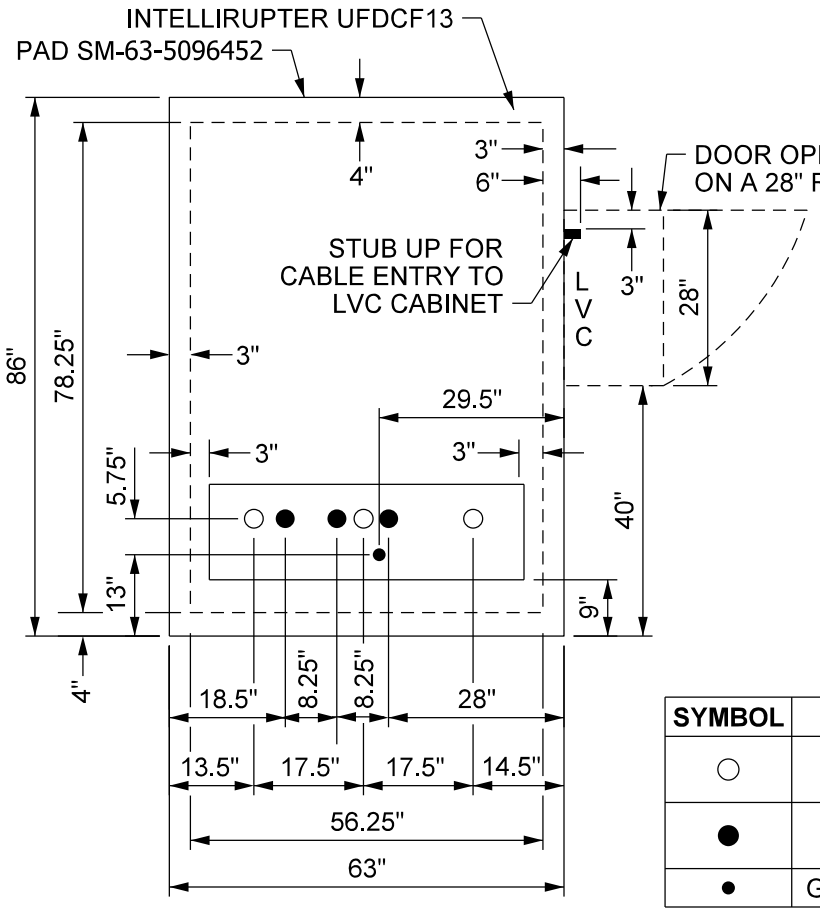


NOTES

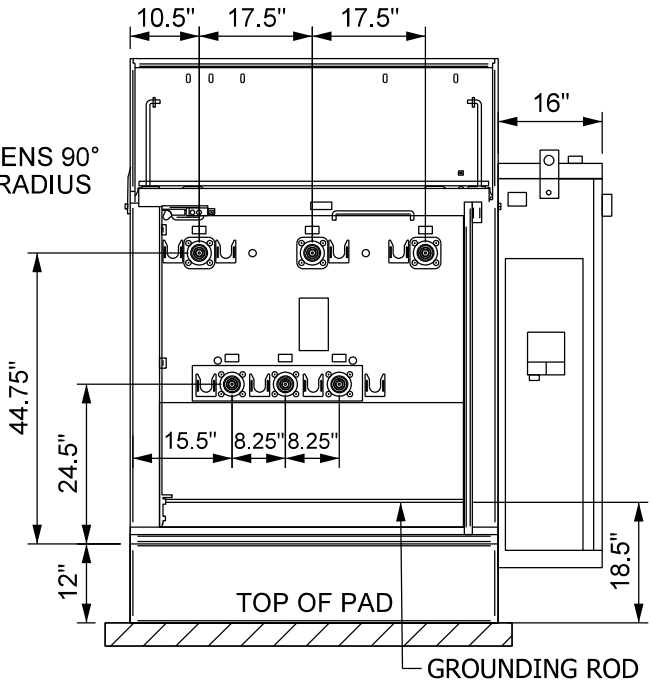
1. To provide for telco bonding, run #6 CU wire from enclosure grounding to a point 12" outside the pad. Locate in the trench at a depth of 12".
2. Fences are not allowed across the front of enclosure. A gate is permissible if it is free of locks notes column that would prohibit access by SRP Personnel.
3. See the miscellaneous section for enclosure and cable indentification marking methods.
4. Conduit shall be stubbed to 1" below the level of the top of pad (5" above grade).
5. All cable terminations provided for CU chosen.
6. Insulating cap on load bushing (load break bushing provided for grounding elbow when needed).
7. Project design to determine the appropriate telecommunication method for operation and controls. Examples: Fiber optic or SRP's Field Area Network. See SRP's Communication Design & Construction Standards book for applicable requirements associated with the chosen telecommunication method.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	SWITCHING AND FUSING PAD MOUNTED S&C INTELLIRUPTER	ISSUE DATE: 12/04/24 REV. DATE: APPROVAL: C. OBRIEN
	3-16-2	8513E642.DGN

STUB-UP LOCATION DETAL



FRONT VIEW

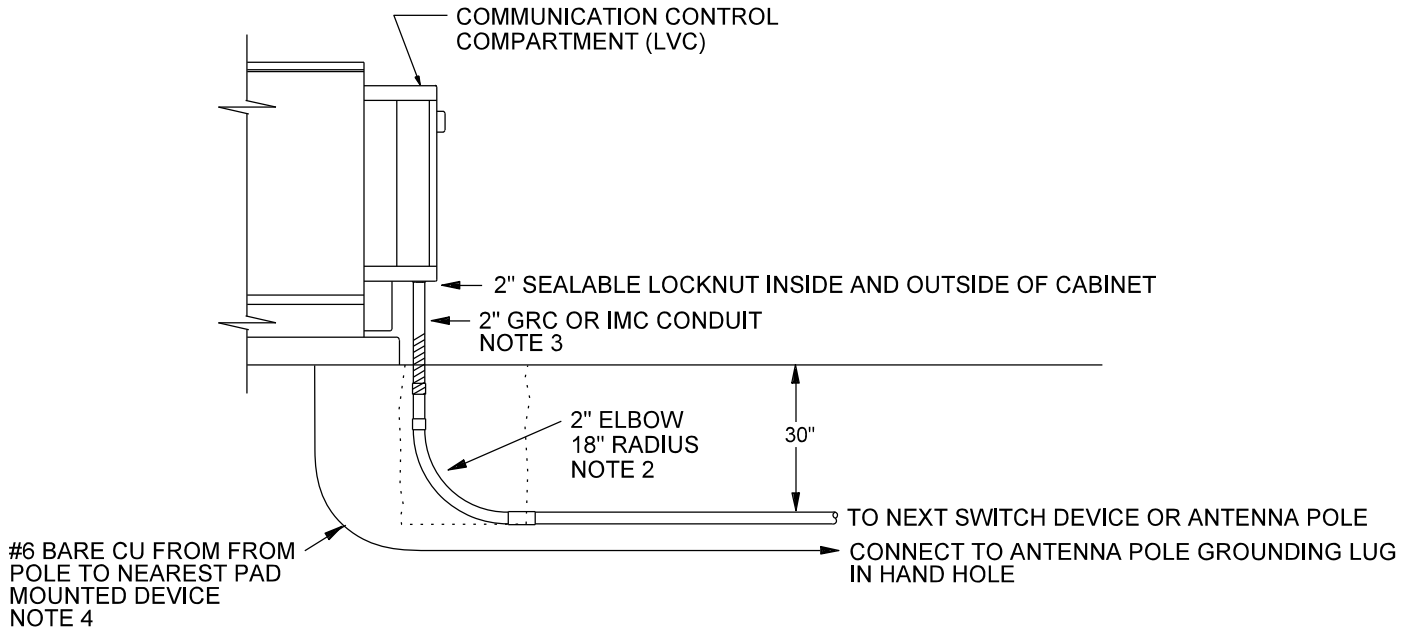


SYMBOL	POSITION	CABLE TERMINATION
○	TOP	3" CONDUIT FOR EITHER 750 MCM FEEDER OR #4/0 A CONNECTION
●	BOTTOM	3" CONDUIT FOR EITHER 750 MCM FEEDER OR #4/0 A CONNECTION
•	GROUND ROD	

NOTES

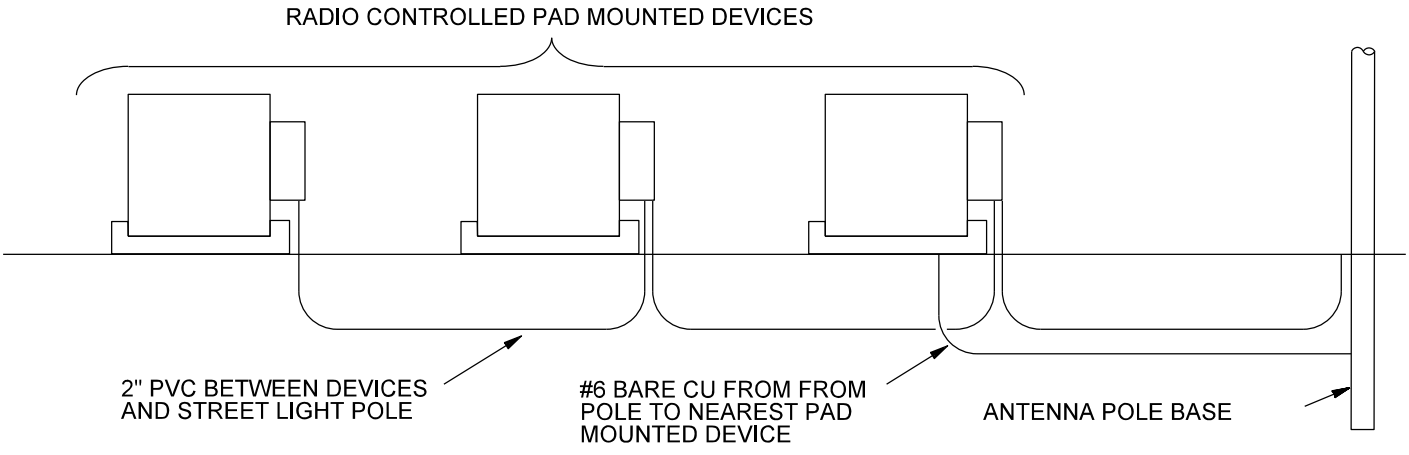
1. All pad elevations shall be established by survey (blue top), and top of pad shall be 6" above final grade in immediate area.
2. Pad must be level before setting enclosure. Area under pad must be compacted per trench specifications.
3. If obstacles are anticipated in front of the intellirupter (e.g., designated parking), the intellirupter shall be rotated 90° so the "LVC" compartments face road right-of-way. Additional labeling shall be placed on the side of the enclosure facing road right-of-way.
4. Install ground connectors into enclosure grounding nuts. Train 2/0 Cu along front base of enclosure and connect to ground connectors.
5. Install ground rods to not interfere with conduits. Connect #4 Cu lead from ground rod to ground connectors.
6. Train concentric neutral wires down along cables and connect to 2/0 Cu bus using compression connectors. Connect ground leads from insulated bushing caps to 2/0 Cu using split bolts.
7. Conduit shall be stubbed to 1" below the level of the pad (5" above grade).
8. Load break bushings provide point for testing and grounding.
9. See Section: Switching and Fusing, Dead Front Switch Terminating Components, 750 MCM Terminating Components, within this book.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING PAD MOUNTED S&C INTELLIRUPTER	ISSUE DATE: 12/04/24 REV. DATE: APPROVAL: C. OBRIEN
	3-16-3	8513E643.DGN



NOTES

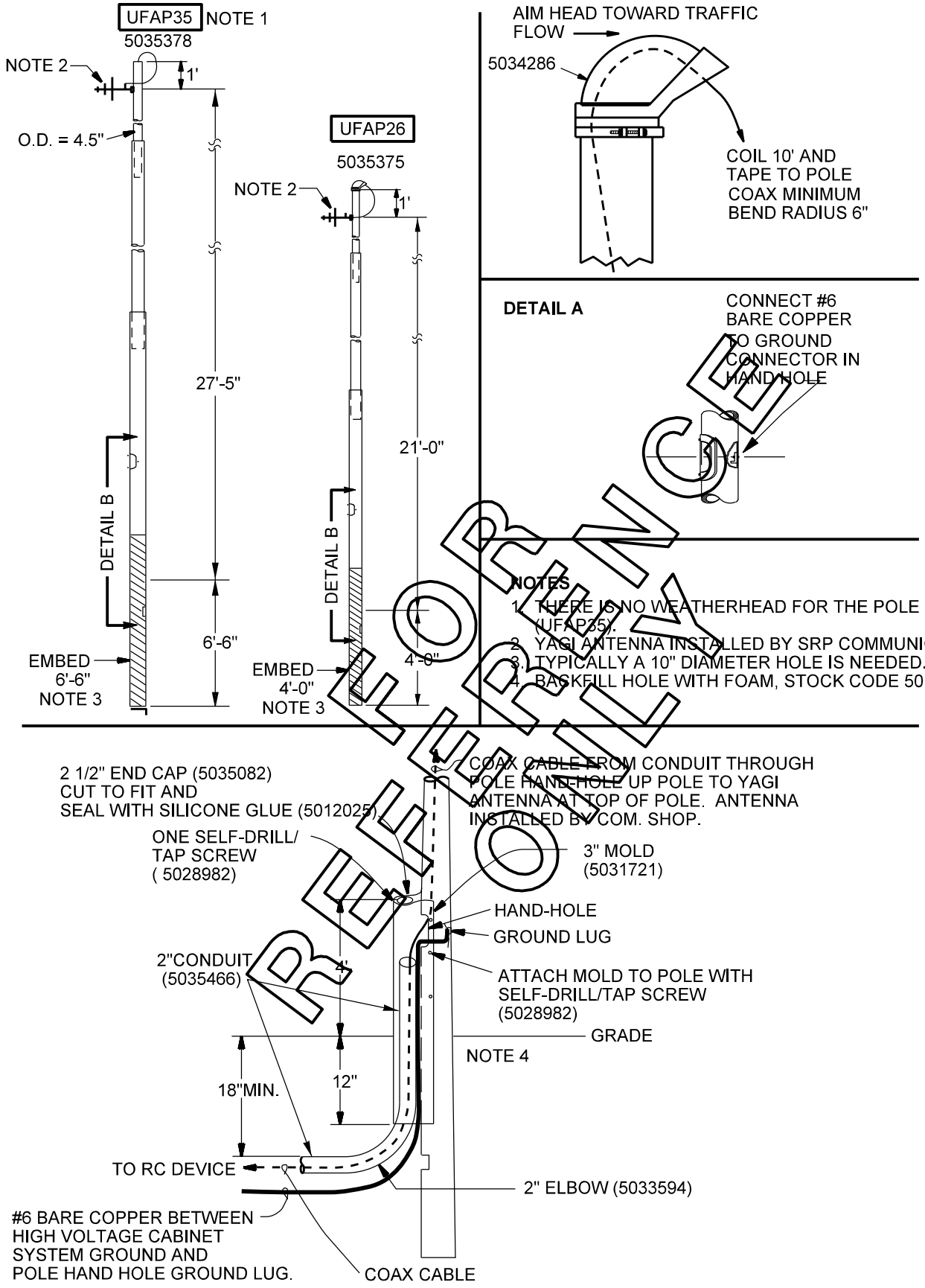
1. STUB UP CONDUIT(S) AT LOCATION DIMENSIONED ON THE DEVICE PAD DETAIL.
2. EXTEND 2 INCH PVC CONDUIT 1' ABOVE GRADE AND PLUG. MAINTAIN A 2' X 2' PIT KEEPING ELBOW EXPOSED UNTIL CONNECTION TO SWITCH IS COMPLETE. PIT SHALL BE CENTERED AROUND ELBOW.
3. INSTALL THREADED PVC ADAPTER 6" BELOW GRADE AND INSTALL 2" GALAVNIZED RIGID STEEL OR INTERMEDIATE METAL CONDUIT INTO LVC COMPARTMENT. INSTALL PLAST THROAT LINER ON END OF CONDUIT. WRAP CONDUIT FROM BOTTOM OF ADAPTER WITH UL APPROVED PVC TAPE OVERLAPPED WITH A MINIMUM HALF THE TAPE STARTING FROM BOTTEM OF ADAPTER TO 6" ABOVE GRADE. BACK FILL PIT.
4. RUN #6 BARE CU FROM ANTENNA POLE INTO WINDOW OF NEAREST PAD MOUNTED DEVICE. LEAVE 4' COIL AT DEVICE WINDOW AND 10 FOOT COIL AT POLE LOCATION. BOND #6 BARE CU TO HIGH VOLTAGE CABINET SYSTEM GROUND AND POLE GROUNDING LUG IN HAND HOLE.



NOTES

1. THE TOTAL CONDUIT LENGTH FROM THE DEVICES TO POLE LOCATION SHALL NOT EXCEED 200'.
2. SEE COMMUNICATIONS DESIGN AND CONSTRUCTION STANDARD FOR FAN RADIO CABINET INSTALLATION AT POLE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING REMOTE SUPERVISORY CONTROL COMMUNICATIONS CONDUIT	ISSUE DATE: 07/29/02 REV. DATE: 05/15/20 APPROVAL: J. Luera
	3-17-1	8513E314.DGN

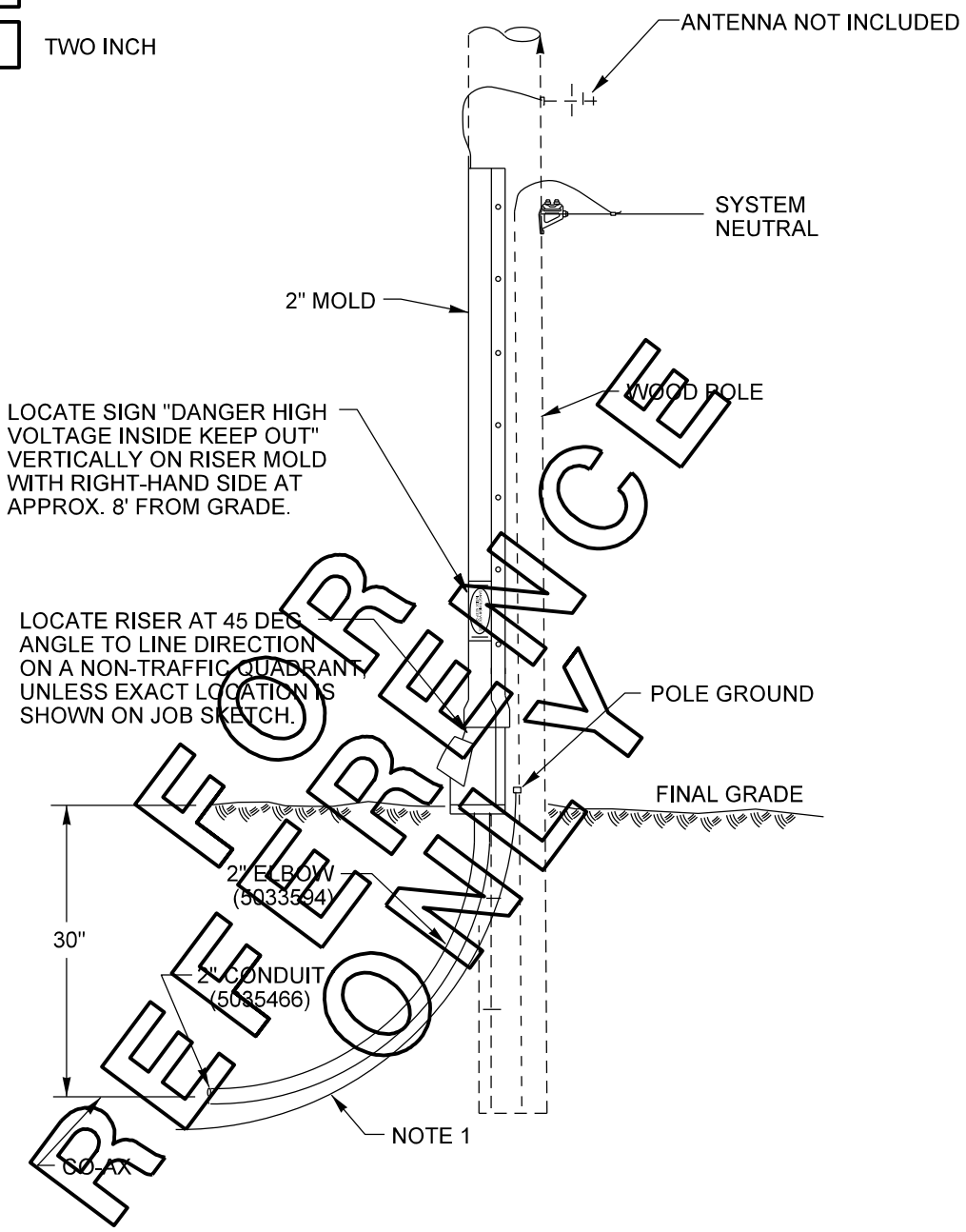


REFERENCE ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING REMOTE SUPERVISORY CONTROL ANTENNA, POLE, 27'-5" & 21'-0"	ISSUE DATE: 07/24/02 REV. DATE: 11/06/14 APPROVAL: B.PRIEST
	3-17-2	8513E521.DGN

URAP1	ONE INCH
URAP2	TWO INCH

POLE RISER WITH
CONDUIT STUB-UP



REFERENCE ONLY

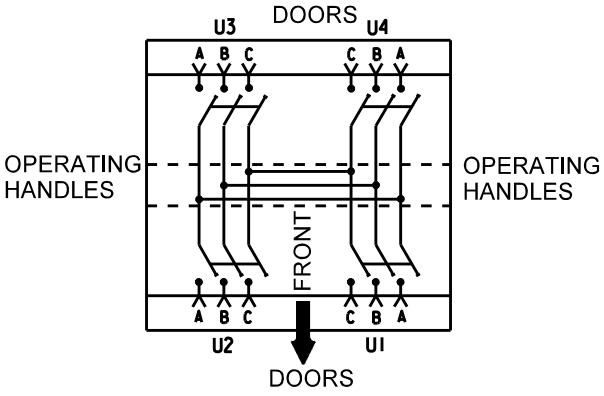
NOTES

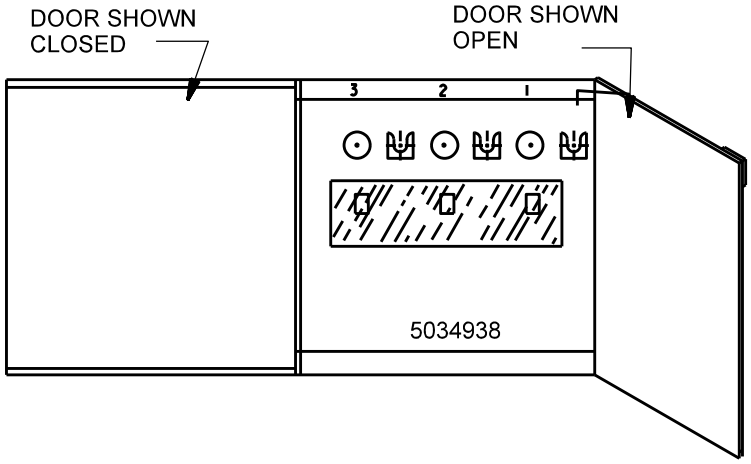
1. CONNECT POLE GROUND TO SYSTEM NEUTRAL GROUND IN SWITCH ELBOW TERMINATION COMPARTMENT WITH #6 BARE COPPER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING AUTOMATED SWITCH ANTENNA RISER FOR WOOD POLE	ISSUE DATE: 10/29/01 REV. DATE: 01/22/15 APPROVAL: B. PRIEST
	3-18-1	8513E317.DGN

TO ORDER A FOUR-WAY SWITCH:

1. ORDER ONE COMPATIBLE UNIT "UFD", WHICH IS THE SWITCH AND PAD.
2. ORDER FROM THE FOLLOWING COMPATIBLE UNIT OPTIONS FOR EACH OF THE FOUR COMPARTMENTS:

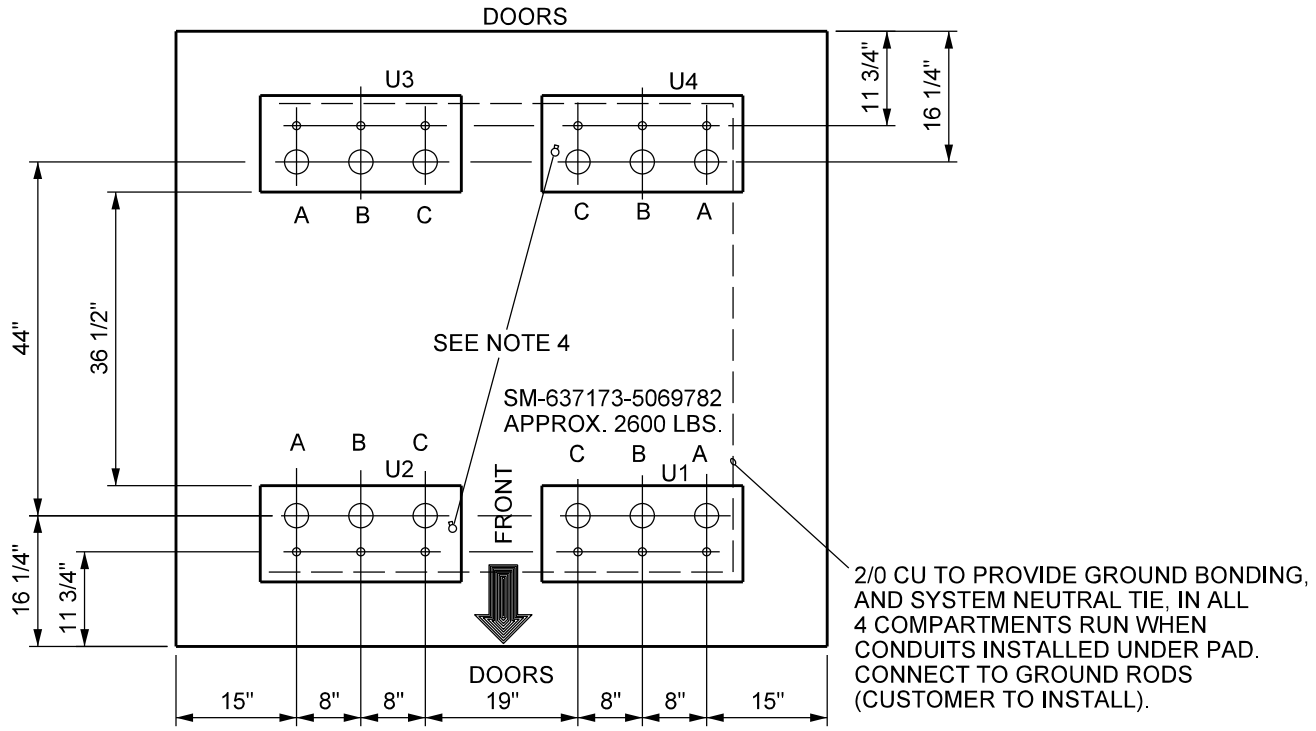




COMPATIBLE UNITS OPTIONS	MATERIAL QUANTITY TO ORDER	TERMINATION
UFBT750D	3	FEEDER 750 AL OR COPPER
UFBT74	3	FEEDER 750 AL WITH 4/0 TAP
UWBR40BE	3	4/0 RUN
UFBEC	3	EMPTY COMPARTMENT

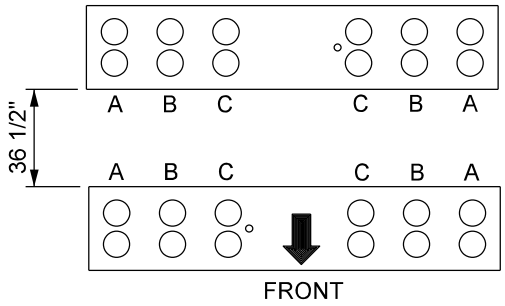
NOTES

1. BOND 2/0 CU FEEDER NEUTRAL AND CONCENTRIC NEUTRALS TO ENCLOSURE GROUND BUS.
2. TO PROVIDE FOR TELCO BONDING, RUN #6 CU FROM GROUND BUS TO A POINT 12" OUTSIDE PAD IN PRIMARY TRENCH AT A DEPTH OF 12".
3. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS THE FRONT AND BACK OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL.
4. SEE MISCELLANEOUS SECTION FOR ENCLOSURE AND CABLE IDENTIFICATION MARKING METHODS.
5. ENCLOSURE WILL BE BOLTED TO PAD PER UBPF3, AND LOCKED AT ALL TIMES.
6. IF A 2/0 BARE CU NEUTRAL IS NOT PRESENT IN SWITCH, INSTALL TWO 8' GROUND RODS (UBGRD) SO AS NOT TO INTERFERE WITH CABLES AND CONNECT TO CABINET GROUND WITH #4 CU. INSULATED CAP DRAIN WIRES SHALL BE CONNECTED TO GROUND BUS USING SPLIT BOLT CONNECTORS. ALL CONCENTRIC NEUTRALS SHALL BE CONNECTED TO THE GROUND WITH COMPRESSION CONNECTORS.
7. WHEN A 3Ø-4/0 AL TAP IS REQUIRED, THE DESIGNER SHALL INDICATE THE LOCATION FOR THE TAP.
8. WHEN A 3Ø- 4/0 AL RUN IS REQUIRED, THE DESIGNER SHALL INDICATE THE LOCATION FOR THE RUN.
9. FOR REPLACEMENT OF RUSTED SWITCH ONLY, ORDER UFDC OR UFDCN (NO PAD).



THIS DETAIL SHOWS CONDUIT DIMENSIONS RELATIVE TO THE PAD.
SEE PG. 3-19-3, 3-19-4 OR 3-19-5 FOR THE PAD DIMENSIONS RELATIVE TO THE TRENCH.

TEMPLATE SPACING DETAIL



SYMBOLS

◯ — 3" CONDUITS FOR 500MCM OR 750MCM AL.
PLUS THE FOLLOWING WHERE A TAP IS REQUIRED:

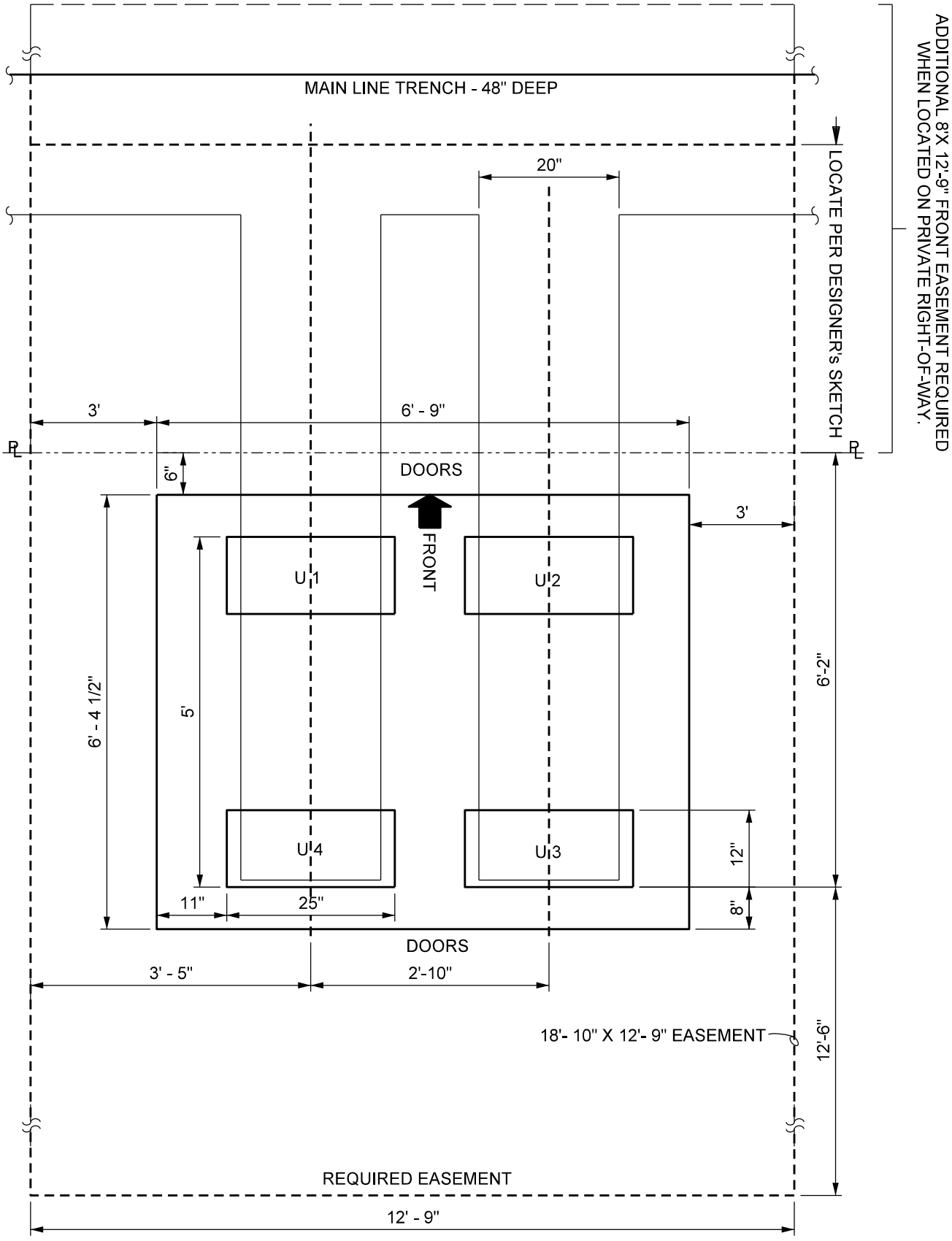
○ — 3" CONDUITS FOR 4/0 AL. PIGGY BACKED TO FEEDER TERMINATION.

STUB-UP LOCATION DETAIL

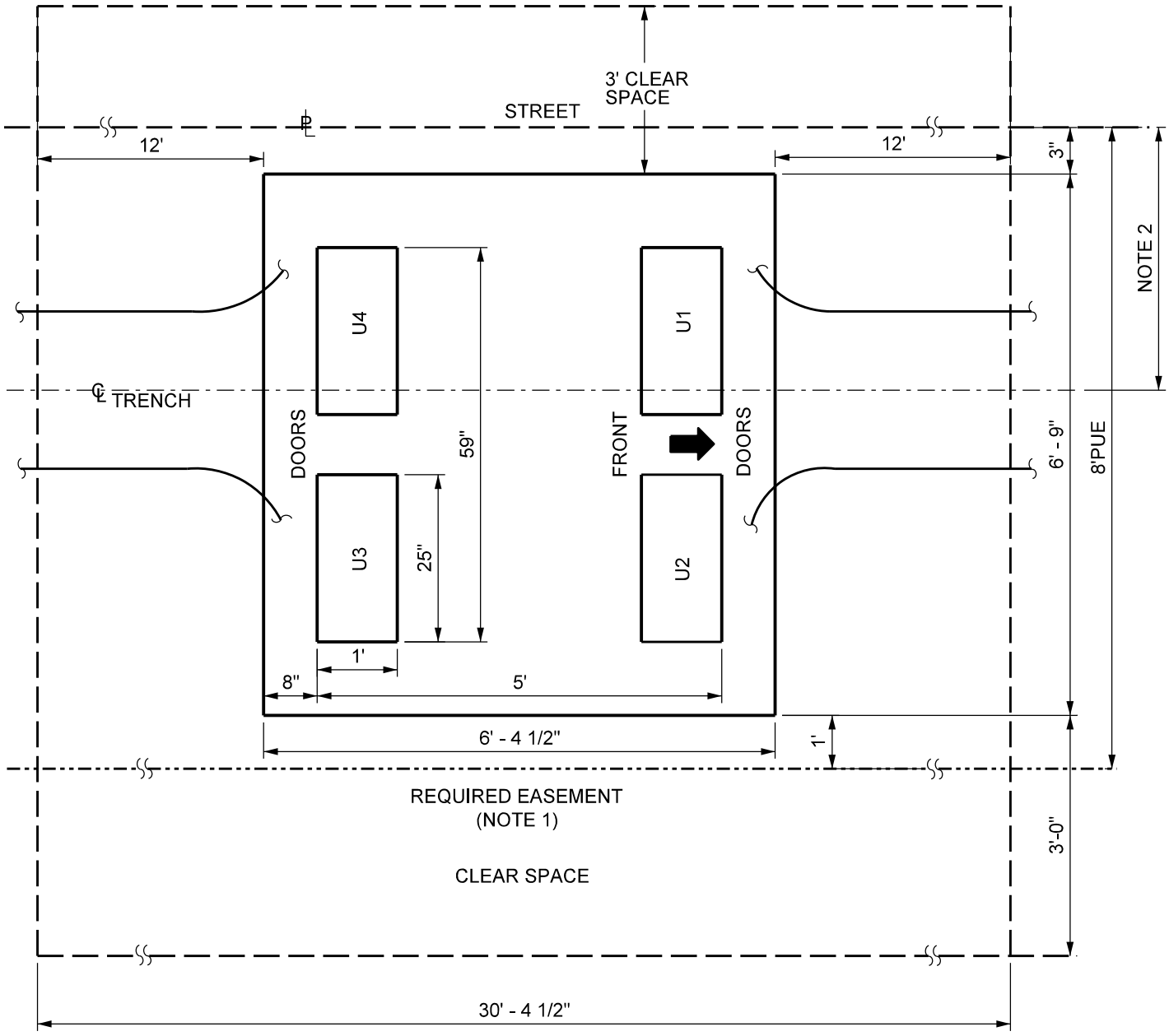
NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. IF A 2/0 BARE COPPER NEUTRAL IS NOT AVAILABLE IN SWITCH, INSTALL TWO 8 FT. GROUND RODS (UBGRD) SO AS NOT TO INTERFER WITH CABLES AND CONNECT TO CABINET GROUND WITH #4 CU.

Underground Distribution Construction Standards SRP PROPRIETARY MATERIAL	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-10, 4-WAY DEAD-FRONT SWITCH	ISSUE DATE: 01/15/87 REV. DATE: 08/08/13 APPROVAL: B. PRIEST
	3-19-2	8513E539.DGN



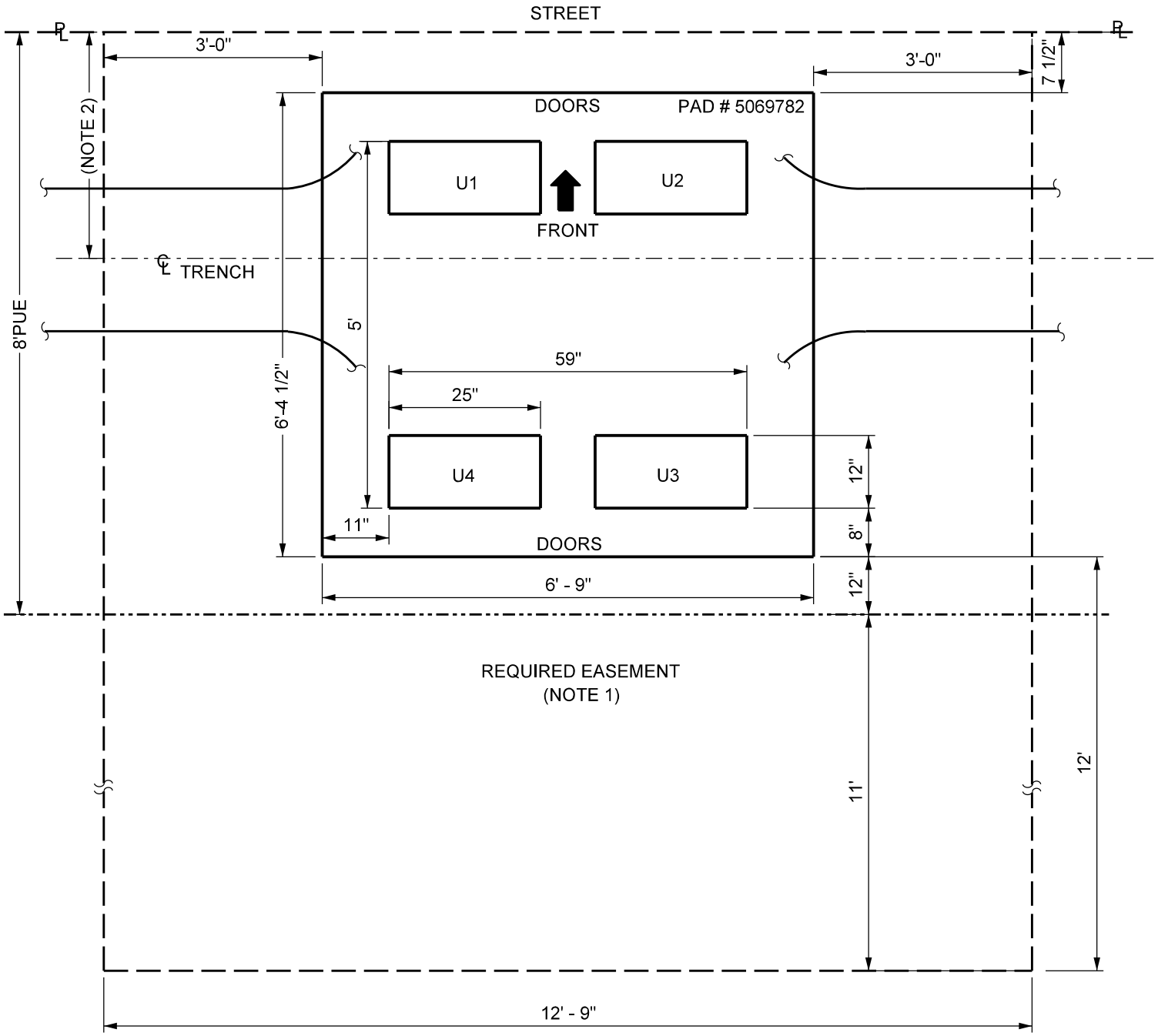
Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-10, 4-WAY DEAD-FRONT SWITCH	ISSUE DATE: 01/15/87 REV. DATE: 09/25/12 APPROVAL: B. PRIEST
	3-19-3	8513E540.DGN



NOTES

1. 2'- 4" X 30' - 4 1/2" EASEMENT REQUIRED. ADJUST THESE DIMENSIONS IF THE PAD POSITION IS NOT AS SHOWN.
2. LOCATE PER DESIGNER'S SKETCH.

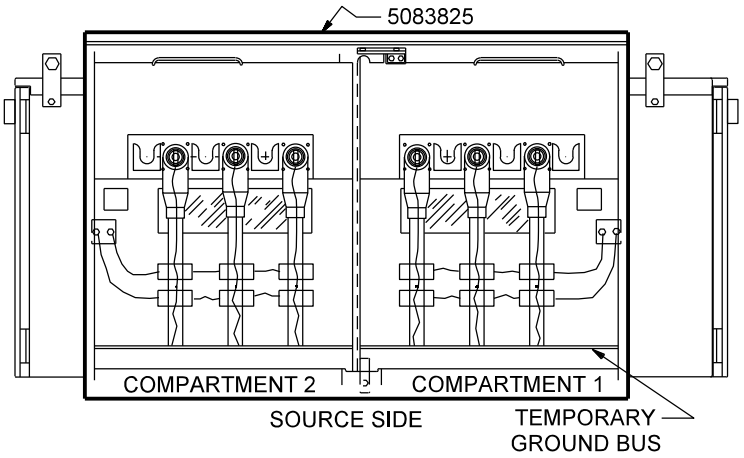
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-10, 4-WAY DEAD-FRONT SWITCH	ISSUE DATE: REV. DATE: 04/05/10 APPROVAL: B. PRIEST
	3-19-4	8513E541.DGN



NOTES

1. 11' - 2 1/2" X 12' - 9" EASEMENT REQUIRED. ADJUST THESE DIMENSIONS IF THE PAD POSITION IS NOT AS SHOWN
2. LOCATED PER DESIGNER'S SKETCH.

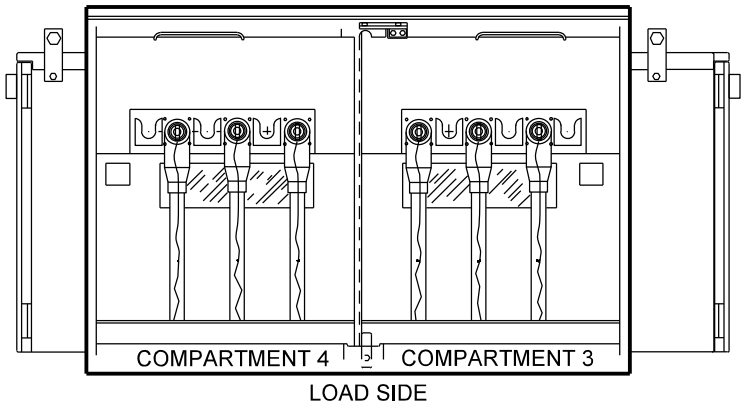
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-10, 4-WAY DEAD-FRONT SWITCH	ISSUE DATE: 01/15/87 REV. DATE: 07/26/13 APPROVAL: B. PRIEST
	3-19-5	8513E542.DGN



UFDDTC1*	SWITCH WITH ONE FEED OUT
UFDDTC2*	SWITCH WITH TWO FEEDS OUT

*7 IS FOR 750 MCM AL. FEEDER IN, 4/0 AL. OUT TO CUSTOMER.

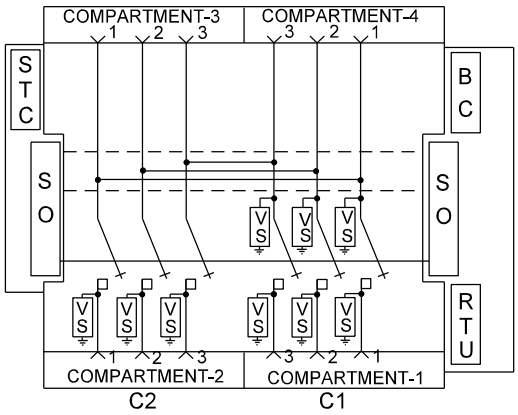
*8 IS FOR 750 MCM AL. FEEDER IN, 750 MCM AL. OUT TO CUSTOMER.



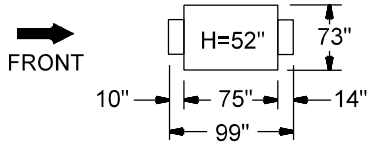
FRONT

FRONT

SCHEMATIC



DEVICE DIMENSIONS W/O PAD:



SCHEMATIC LEGEND

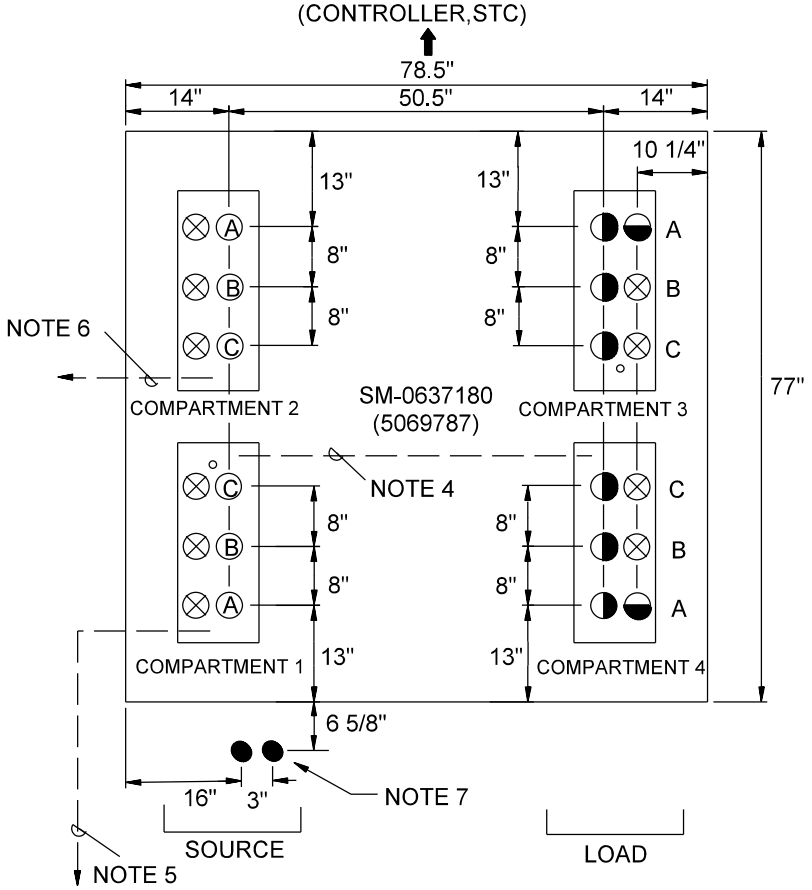
VS	VOLTAGE SENSING DEVICE ON SOURCE
SO	SWITCH OPERATOR
STC	SOURCE TRANSFER CONTROL
BC	BATTERY CHARGER
RTU	REMOTE TERMINAL UNIT

NOTES

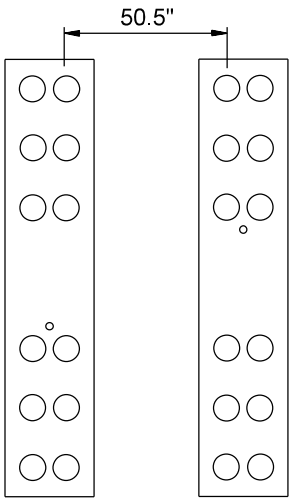
1. SEE PAGE 3-20-2 FOR CONDUIT STUB UP AND GROUNDING DETAIL AND NOTES.
2. SEE PAGE 3-20-3 FOR CURRENT SENSOR DETAILS AND NOTES.
3. INSTALL GROUND CONNECTORS TO ENCLOSURE GROUNDING PADS. TRAIN 2/0 BUS BETWEEN COMPARTMENTS 1 & 2 AND 3 & 4 AND CONNECT TO GROUND CONNECTORS.
4. CONNECT #4 CU FROM GROUND RODS, #6 CU TELCO AND FAN ANTENNA POLE GROUNDS, AND 2/0 NEUTRAL BETWEEN PAD WINDOWS TO 2/0 BUS USING COMPRESSION CONNECTORS. SEE PAGE 8-11-1 FOR COMPRESSION CONNECTORS. TEMPORARY GROUNDING BUS SHALL NOT BE USED FOR A PERMANENT CONNECTION.
5. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS TO FROM INSULATED BUSHING CAPS TO 2/0 USING SPLIT BOLT CONNECTORS.
6. WHEN SERVING A SINGLE-PHASE TRANSFORMER WITH 4/0, ORDER (1) UWBT40E.
7. SEE MISCELLANEOUS SECTION FOR ENCLOSURE AND CABLE MARKING REQUIREMENTS AND METHODS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-9 DEAD FRONT AUTOMATIC TRANSFER SWITCH WITH REMOTE SUPERVISORY CONTROL	ISSUE DATE: 01/17/88 REV. DATE: 02/03/22 APPROVAL: S. Luera
	3-20-1	8513E144.DGN

STUB-UP LOCATION DETAIL



CONDUIT STUB UP TEMPLATE SPACING
MATERIAL ITEM 5069787



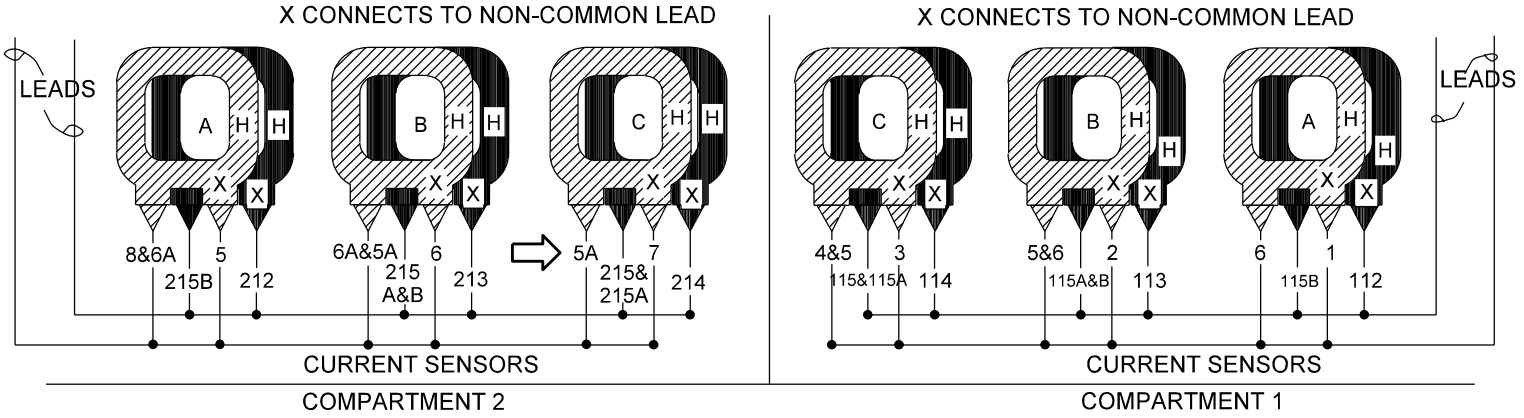
SYMBOLS

- ◯ 3" CONDUITS FOR 750MCM AL. OR 750 MCM CU.SOURCES.
- ◑ 3" CONDUITS FOR 4/0,750MCM AL. OR 750MCM CU.LOADS.
- ◒ 3" SINGLE PHASE TAP
- ⊗ NOT USED
- ● 2" CONDUIT FOR COMMUNICATION CONTROL CABLE
- ○ GROUND ROD

NOTES

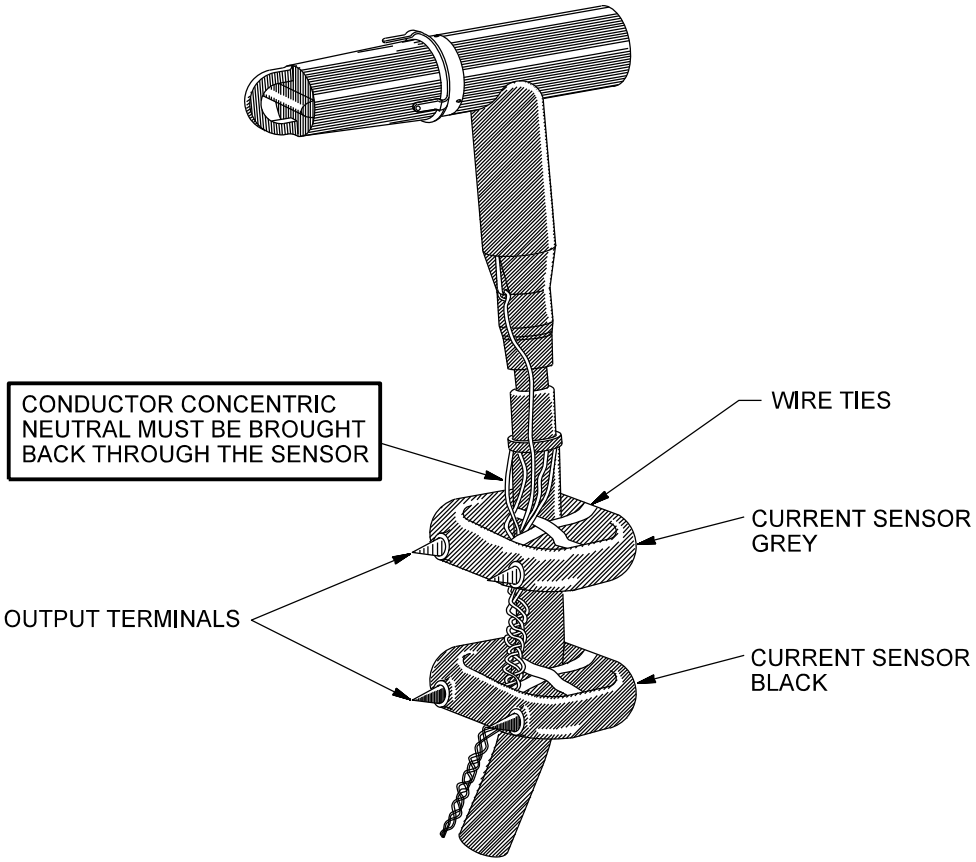
1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD SHALL BE LEVEL BEFORE SETTING ENCLOSURE.
3. INSTALL TWO 5/8" X 8' GROUND RODS 5" ABOVE GRADE AT LOCATIONS SHOWN ON TEMPLATE.
4. INSTALL 2/0 BARE CU WITH CONDUITS UNDER PAD BETWEEN WINDOWS OF COMPARTMENTS 1 AND 4. LEAVE 1' LEAD ABOVE GRADE IN BOTH WINDOWS TO CONNECT TO 2/0 GROUND BUS BETWEEN COMPARTMENTS 1 & 4 AND COMPARTMENTS 3 AND 4 FOR BONDING, AND SYSTEM NEUTRAL TIE, IN ALL 4 COMPARTMENTS.
5. INSTALL #6 BARE CU FROM COMPARTMENT 1 AND RUN WITH 2" COMUNICATIONS CABINET TO FAN ANTENNA POLE OR COMMUNICATIONS CABIN. LEAVE 1' LEAD ABOVE GRADE TO CONNECT TO 2/0 GROUND BUS.
6. FOR TELCO BONDING (WHEN REQUIRED), INSTALL #6 BARE CU TO A POINT 12" OUTSIDE OF PAD IN PRMARY TRENCH AT A DEPTH OF 12". LEAVE 1' LEAD ABOVE GRADE TO CONNECT TO 2/0 GROUND BUS.
7. MAINTAIN A 2' WIDE PIT KEEPING ELBOW(S) EXPOSED UNTIL CONNECTION TO SWITCH IS COMPLETE. ELBOW(S) SHALL BE CENTERED INSIDE PIT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING & FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-9 DEAD FRONT AUTOMATIC TRANSFER SWITCH WITH REMOTE SUPERVISORY CONTROL	ISSUE DATE: 01/17/88 REV. DATE: 05/15/20 APPROVAL: J. Luera
	3-20-2	8513E536.DGN

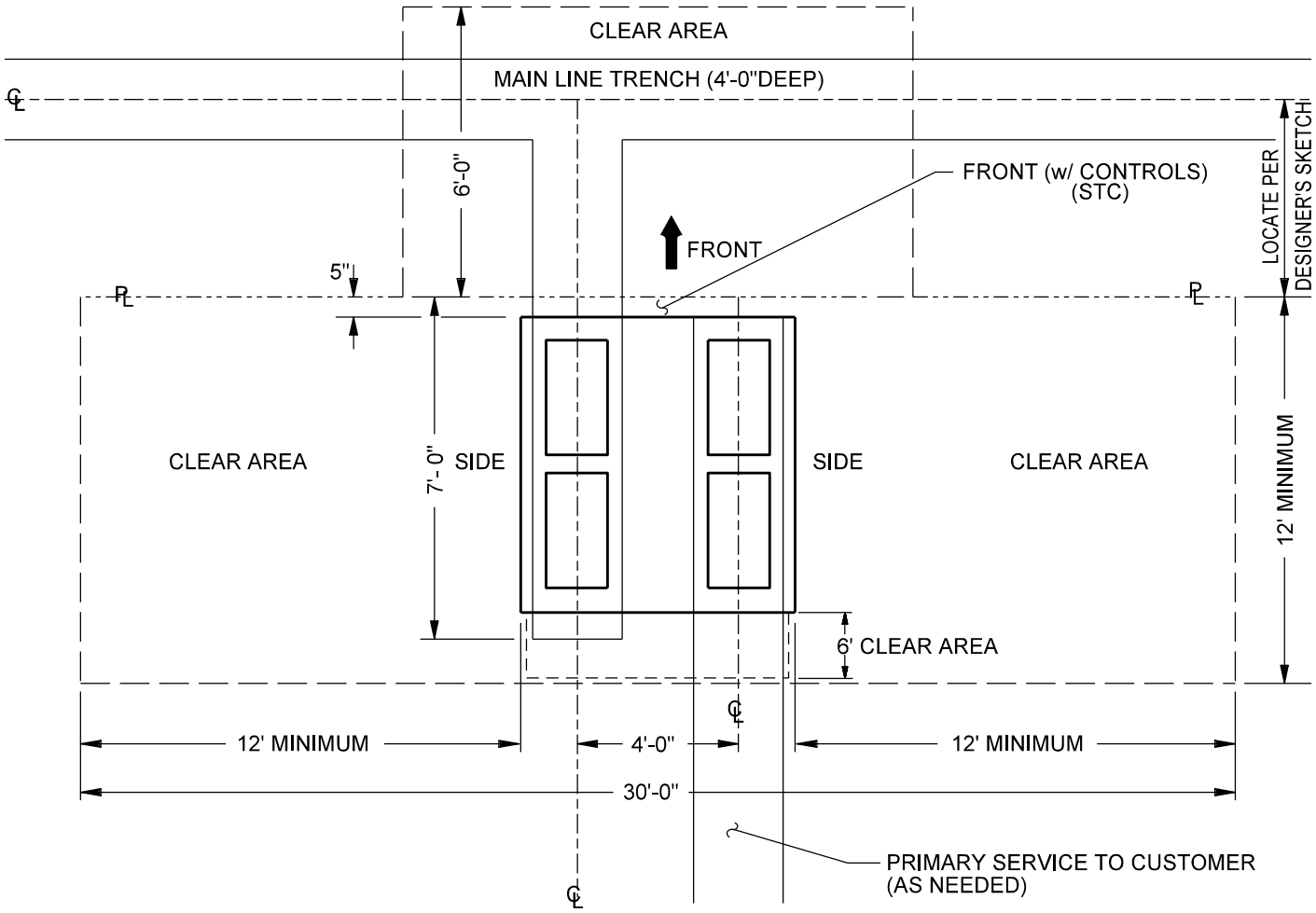


NOTES

1. 2 SETS OF CURRENT SENSORS ARE INSTALLED ON THE SOURCE CABLES. THE GRAY FINISH UNITS ARE CONNECTED TO THE WIRE LEADS NUMBERED 1, 2, 3 AND 4, 5, 6 COMMON IN COMPARTMENT 1; 5, 6, 7 AND 5A, 6A, 8 COMMON IN COMPARTMENT 2. THE BLACK CURRENT SENSORS ARE CONNECTED TO THE LEADS NUMBERED 112, 113, 114 AND 115, 115A, 115B COMMON IN COMPARTMENT 1; 212, 213, 214 AND 215, 215A, 215B COMMON IN COMPARTMENT 2.
2. INSTALL THE CURRENT SENSORS AS SHOWN BELOW. SENSORS ARE TO BE PLACED AROUND CABLE'S GROUNDED CONCENTRIC NEUTRAL.
3. THE "H" LOCATED ON EACH GRAY AND EACH BLACK CURRENT SENSOR SHALL BE INSTALLED FACING UP.
4. A VOLTAGE OF APPROXIMATELY 60V CAN BE ON THE CURRENT SENSOR TERMINALS.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING & FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-9 DEAD FRONT AUTOMATIC TRANSFER SWITCH WITH REMOTE SUPERVISORY CONTROL	ISSUE DATE: 01/17/88 REV. DATE: 10/06/15 APPROVAL: S. DURAN
	3-20-3	8513E537.DGN



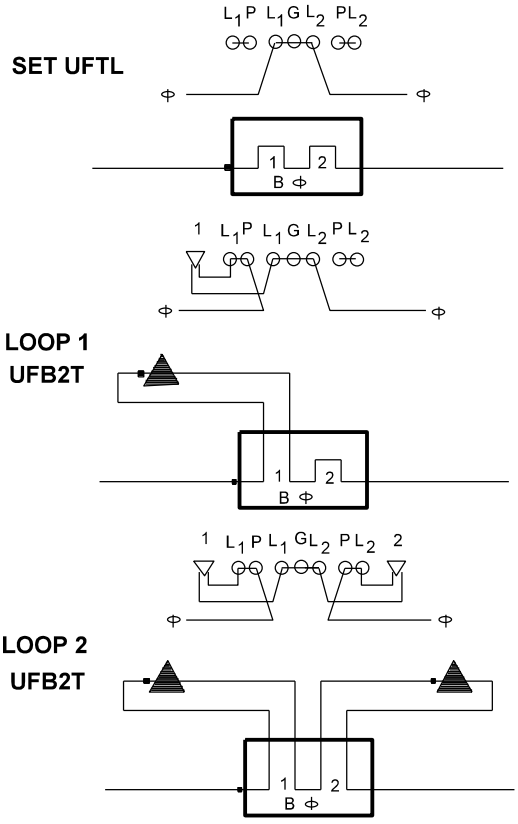
MINIMUM AREA REQUIRED FOR SWITCH OPERATION

NOTES

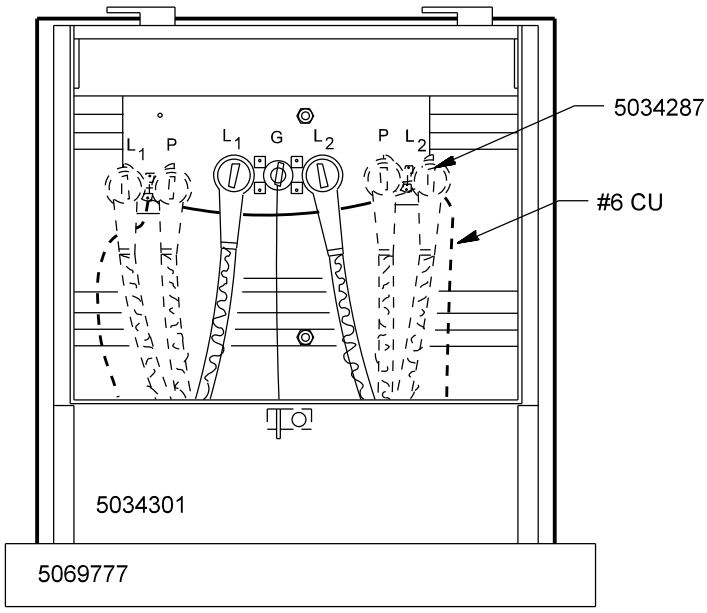
1. NO BUILDINGS, FENCES OR OTHER OBSTRUCTIONS ARE TO BE PERMITTED IN THE INDICATED CLEAR AREA. THIS INCLUDES LANDSCAPING WHICH WOULD RESTRICT ACCESS OR CREATE OTHER SAFETY HAZARDS (i.e. TRIPPING). GATES WITH A MINIMUM 10 FOOT OPENING MAY BE INSTALLED ACROSS THE FRONT OR SIDES OF THE SWITCH,PROVIDED THEY ARE A MINIMUM OF 18 INCHES FROM THE SWITCH PAD AND HAVE NO LOCKS THAT WOULD PREVENT ACCESS BY SRP PERSONNEL.

2. SWITCH MUST HAVE A 16 FOOT WIDE TRUCK ACCESS FOR MAINTENANCE OR REMOVAL.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING & FUSING EQUIPMENT INSTALLATION DETAILS S&C PME-9 DEAD FRONT AUTOMATIC TRANSFER SWITCH WITH REMOTE SUPERVISORY CONTROL	ISSUE DATE: 01/17/88 REV. DATE: 04/25/10 APPROVAL: B. PRIEST
	3-20-4	8513E538.DGN



SCHEMATIC DIAGRAM



ENCLOSURE WITH NO LOOPS UFTL

DEVICE DIMENSIONS W/O PAD:

H=30"
W=30"
D=22"

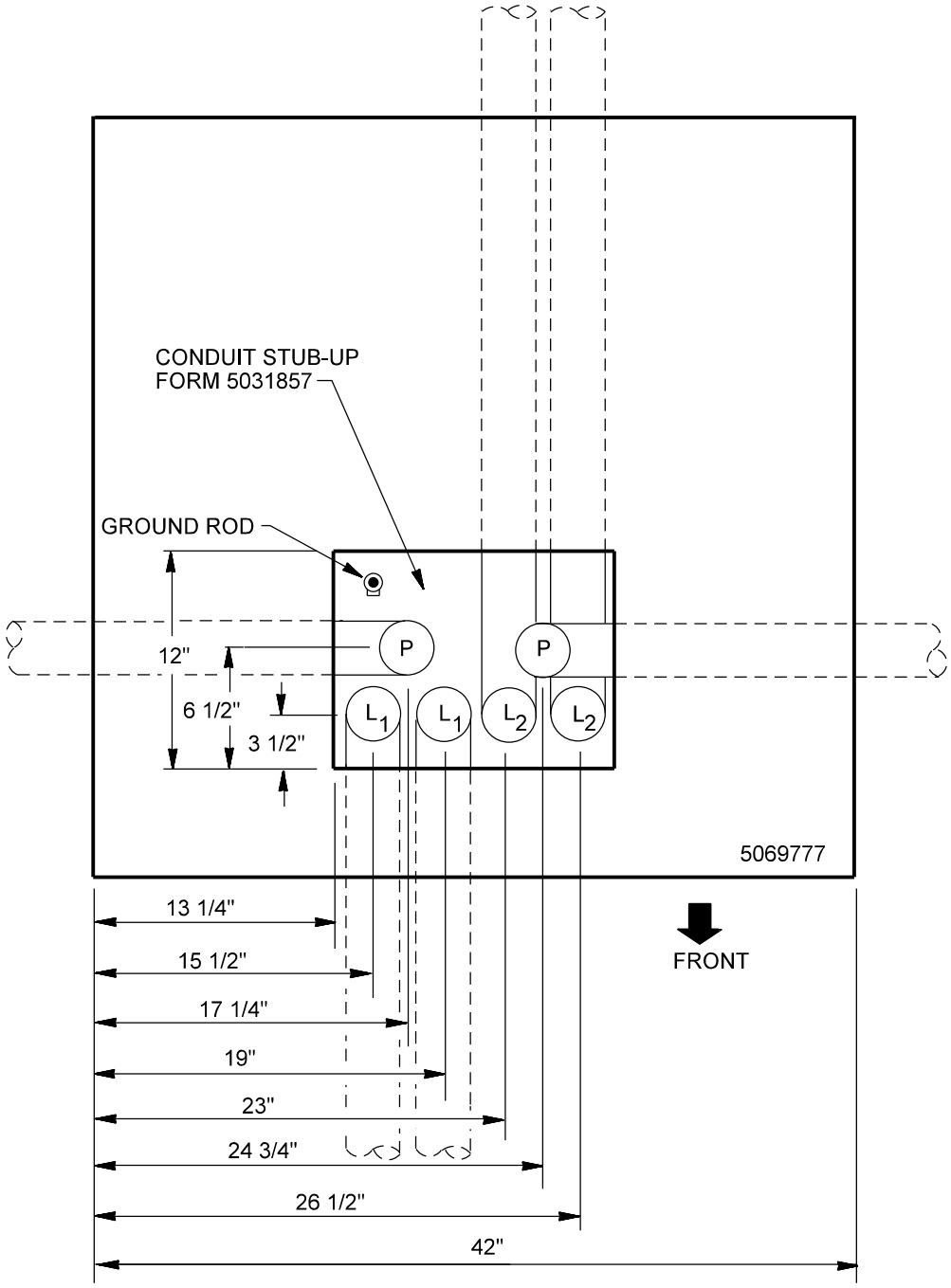
SCHEMATIC SYMBOL PLACEMENT GUIDELINES

1. ORIENT TAP POSITIONS OF THE ENCLOSURE BY DIRECTING "FLAT TOPS" IN THE DIRECTION OF THE CONDUIT STUB OUTS OR FUTURE TRANSFORMERS WHEN FEASIBLE
2. ON SCHEMATIC SYMBOL, "1" REPRESENTS THE LEFT TAP POSITION AND "2" REPRESENTS THE RIGHT TAP POSITION WHEN FACING THE FRONT OF THE ENCLOSURE.

NOTES

1. INSTALL A FAULT INDICATOR ON THE INCOMING PRIMARY ON ALL TAP ENCLOSURES AND ANY SINGLE PHASE TRANSFORMER THAT IS INSTALLED DIRECTLY IN THE LATERAL.
2. INITIAL INSTALLATION MAY BE WITH NO TRANSFORMER SERVED. WHEN TRANSFORMER LOOP #1 OR TRANSFORMER LOOP #2 IS INSTALLED, CABLES ARE TERMINATED AND ELBOWS POSITIONED AS SHOWN IN THE SCHEMATIC DIAGRAM.
3. FOR EACH SINGLE PHASE TRANSFORMER LOOP IN AND OUT OF THIS ENCLOSURE, CALL FOR ONE UFB2T TO GET TERMINATING ELBOWS AND FEED THRU BUSHINGS, AND ONE UFB1F FOR THE SINGLE PHASE FAULT INDICATOR
4. SINGLE PHASE LOOP SWITCHING AND SECTIONALIZING IS TO BE PERFORMED IN TRANSFORMERS OR PAD MOUNTED FUSES, BUT NOT IN THIS TAP ENCLOSURE.
5. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN # 2/0 CU ALONG THE BACK BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
6. CONNECT #4 CU LEAD FROM GROUND ROD TO ENCLOSURE GROUND CONNECTOR.
7. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO #2/0 CU BUS USING COMPRESSION CONNECTORS. PROVIDE SUFFICIENT SLACK TO ALLOW FOR RELOCATING THE ELBOWS TO ADJACENT BUSHINGS.
8. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO #2/0 CU USING SPLIT BOLTS. CONNECT #6 CU WIRE TO THE BASE OF THE FEED THROUGH PARKING BUSHINGS, TRAIN DOWN TO THE #2/0 GROUND BUS AND CONNECT WITH COMPRESSION CONNECTORS.
9. CONDUIT STUB-UP SPACER INCLUDED IN UFTL ONLY.
10. FOR REPLACEMENT OF RUSTED OUT ENCLOSURE ONLY, ORDER UFTC OR UFTCN (NO PAD).

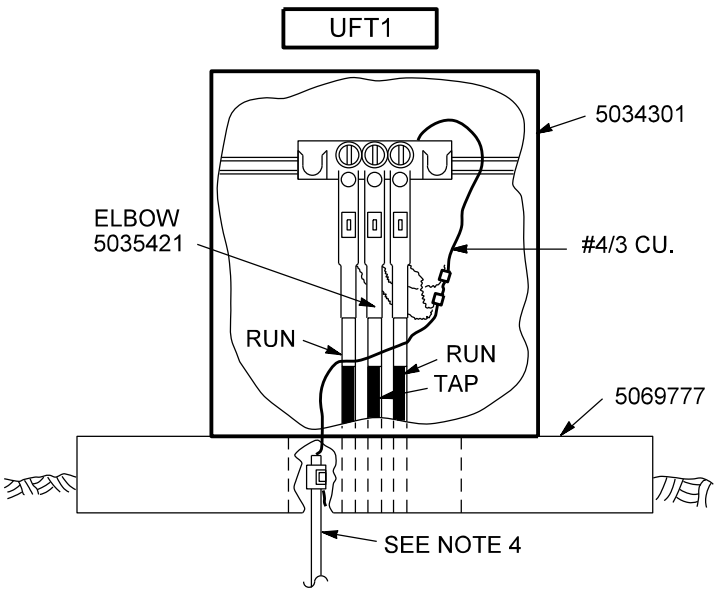
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING #2 SINGLE PHASE PRIMARY LOOP	ISSUE DATE: 01/29/03 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	3-21-1	8513E345.DGN

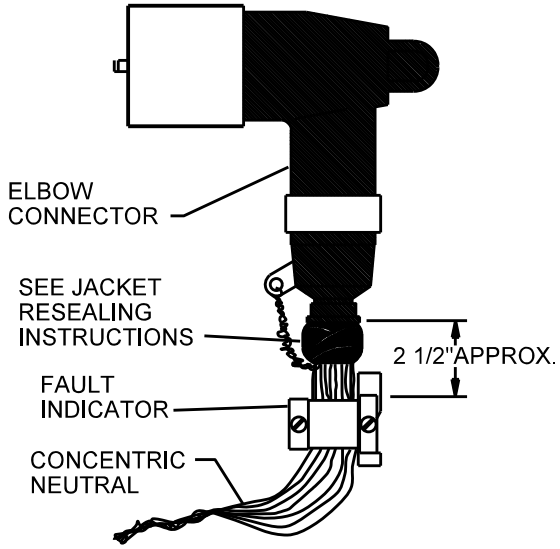


NOTES

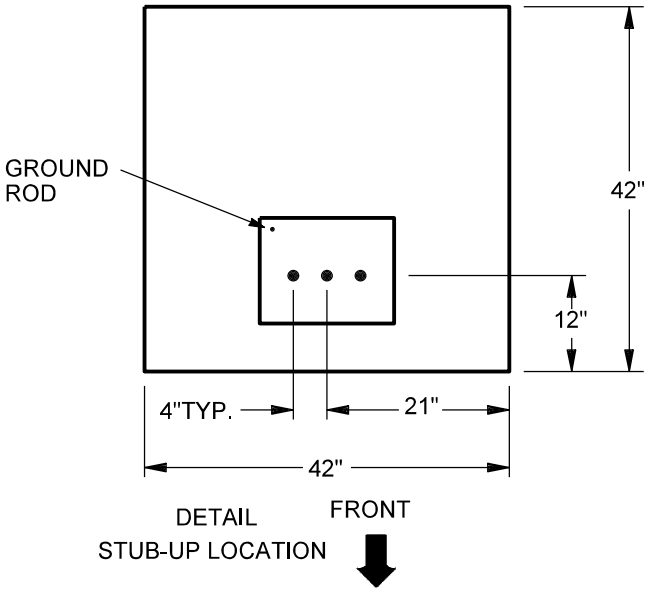
1. CONDUIT IS 2.5 INCHES IN DIAMETER.
2. CONDUIT STUB-OUTS FOR FUTURE ARE TO BE CAPPED.
3. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH ANY CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
4. STUB-OUTS FOR FUTURE MAY BE LOCATED AT DISTANCE AS REQUIRED AND MAY BE 45°, 90° OR OTHER.
5. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING #2 SINGLE PHASE PRIMARY LOOP CONDUIT STUB-UP	ISSUE DATE: 01/29/03 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	3-22-1	8513E346.DGN





DETAIL
200A LOAD BREAK ELBOW

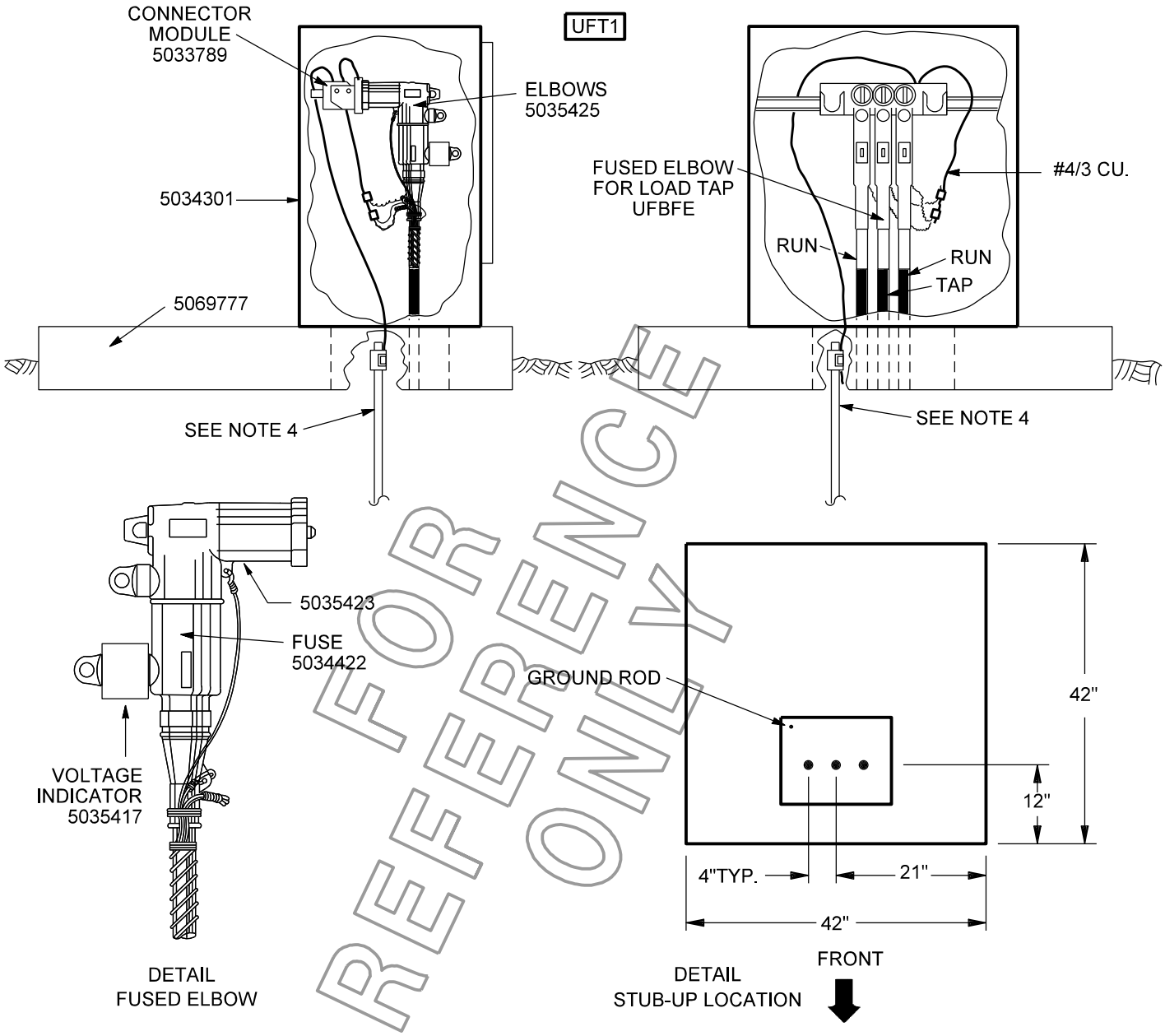


DETAIL
STUB-UP LOCATION

NOTES

1. LOCATE THE FAULT INDICATOR BELOW THE #2 ELBOW WITH THE YOKE SURROUNDING ALL CONCENTRIC NEUTRAL WIRES, INCLUDING THE PIGTAIL.
2. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL. MAINTAIN A MINIMUM 18" DEEP SEPARATION BETWEEN SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE.
3. ENCLOSURE WILL BE BOLTED TO PAD AND LOCKED AT ALL TIMES.
4. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLES. CONNECT TO CABINET SWITCHING DEVICE GROUND WITH #4 COPPER WIRE.
5. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
6. UFT1 HAS NO CONDUIT STUB-UP SPACER.
7. FOR REPLACEMENT OF RUSTED OUT ENCLOSURE ONLY, ORDER UFTC OR UFTCN (NO PAD).

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING PRIMARY TAP ENCLOSURE 4/0 RUN - #2/7 TAP	ISSUE DATE: 01/07/89 REV. DATE: 11/09/14 APPROVAL: B. PRIEST
	3-23-1	8513E145.DGN



FOR REFERENCE ONLY

NOTES

1. AN ENERGIZED CIRCUIT INDICATOR SHALL BE INSTALLED ON THE BOTTOM TEST POINT OF THE FUSED ELBOW.
2. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL. MAINTAIN A MINIMUM 18" DEEP SEPARATION BETWEEN SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE.
3. ENCLOSURE WILL BE BOLTED TO PAD AND LOCKED AT ALL TIMES.
4. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLES. CONNECT TO CABINET SWITCHING DEVICE GROUND WITH #4 COPPER WIRE.
5. FOR RE-FUSING INSTRUCTIONS, SEE UFBFE.
6. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
7. UFT1 HAS NO CONDUIT STUB-UP SPACER.
8. FOR REPLACEMENT OF RUSTED OUT ENCLOSURE ONLY, ORDER UFTC OR UFTCN (NO PAD).

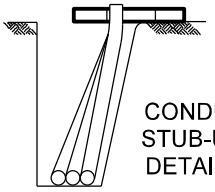
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING PRIMARY TAP ENCLOSURE 4/0 RUN - #2/7 TAP	ISSUE DATE: 01/07/89 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	3-23-2	8513E145.DGN

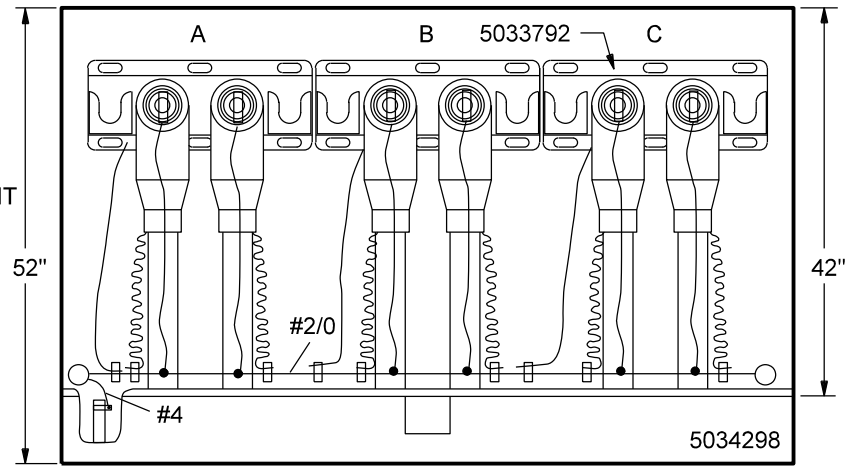
750 MCM FEEDER PULLING ENCLOSURE

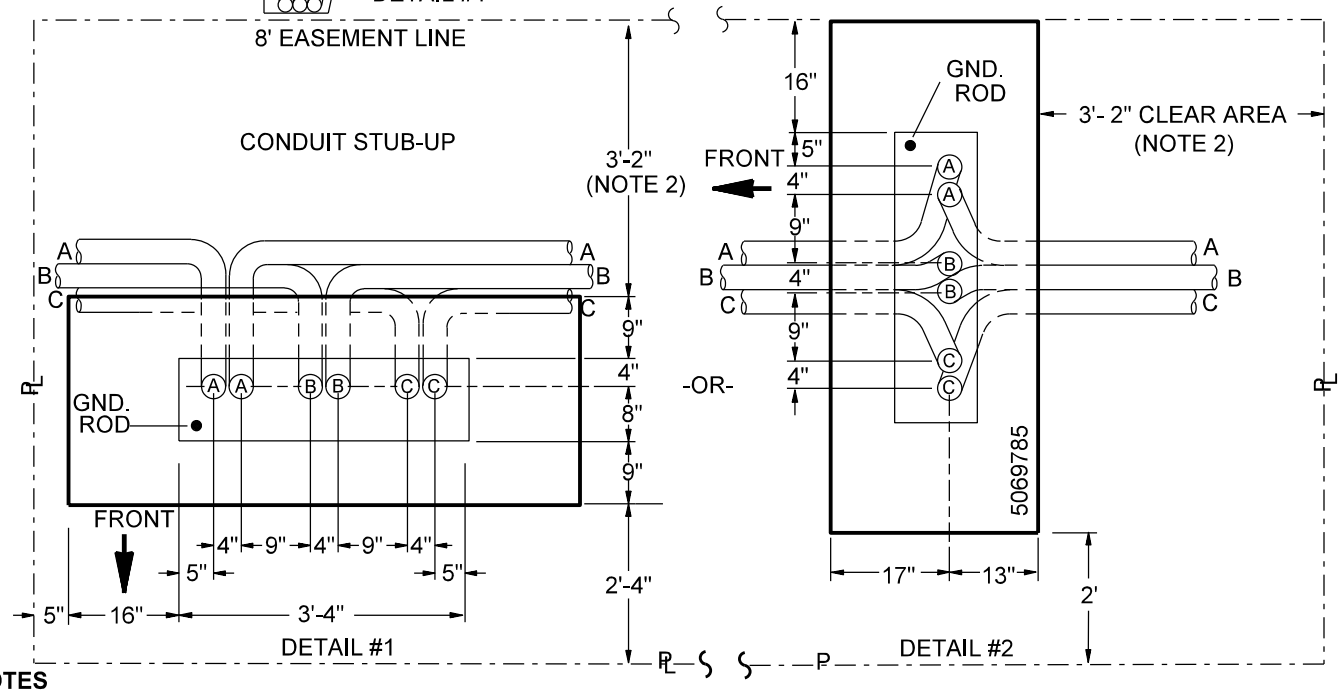
FEEDER CONDUCTOR

UFFP	750 MCM AL
UFFPC	750 MCM CU
UFFPR	750 MCM AL (RADIAL)
UFF	PAD CABINET NO TERMINATIONS NOTE 10
UFB3T750	TERMINATIONS FOR UFF, 750 MCM
UFB3T750C	TERMINATIONS FOR UFF, 750 MCM CU

DEVICE DIMENSIONS
W/O PAD:
H=52"
W=48"
D=22"



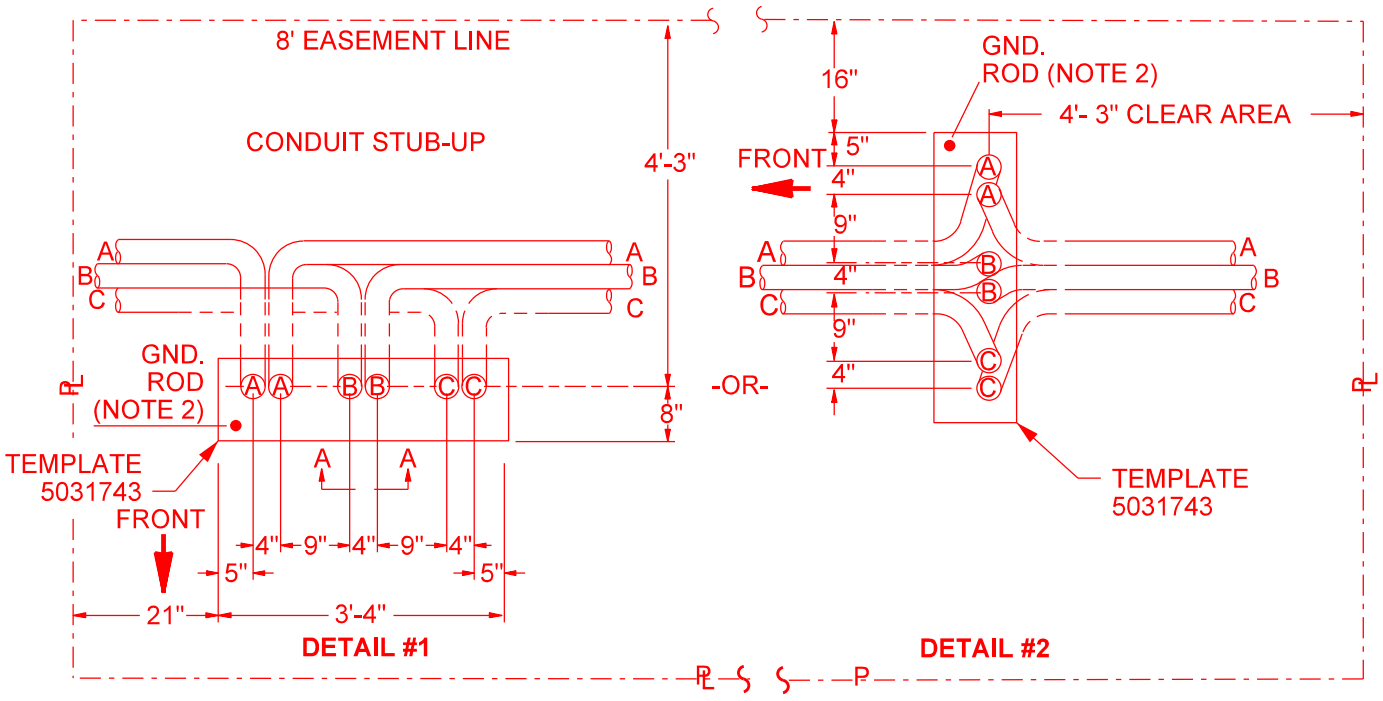


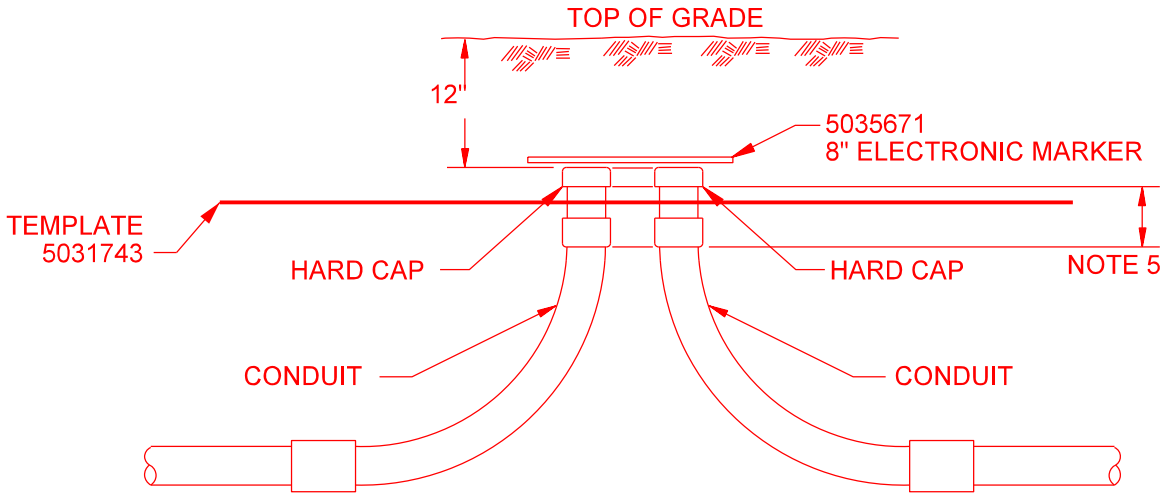


NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN #2/0 CU ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS. GROUND JUNCTION BASE TO #2/0 USING #6 CU.
2. CLEAR SPACE PROVIDED FOR POSSIBLE FUTURE SWITCH REPLACEMENT.
3. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
4. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO #2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO #2/0 CU USING SPLIT BOLTS.
5. WHEN ADDING FEEDER TERMINATIONS TO RADIAL INSTALLATION, USE THREE UFBT750D.
6. FOR USE ON 500 MCM FEEDER, CHANGE T-BODY CONNECTOR AND CABLE ADAPTER.
7. CONDUIT STUB-UP TEMPLATE IS SRP # 5031743.
8. IF PULLING ENCLOSURE IS CHANGED OUT WITH A SWITCH, THE LEFT-MOST TERMINATION OF EACH PHASE WILL BE RE-TERMINATED ON THE BOTTOM BUSHINGS OF THE SWITCH.
9. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
10. #2/0 COPPER GROUNDS BROUGHT UP INTO CABINET MUST BE LOOPED TO MAINTAIN SYSTEM GROUND CONTINUITY.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 750 MCM FEEDER PULLING ENCLOSURE	ISSUE DATE: 04/30/93 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	3-24-1	8513E168.DGN



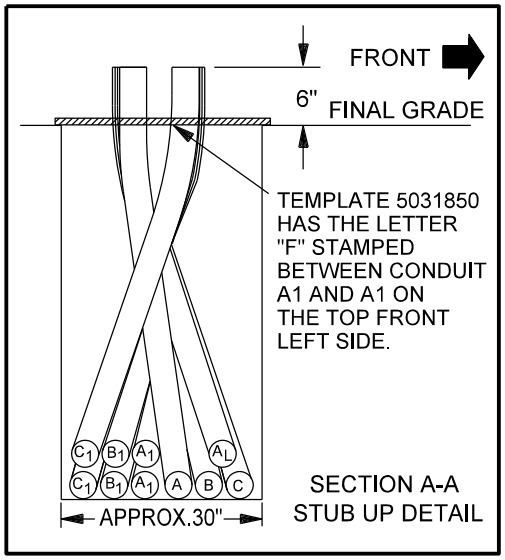


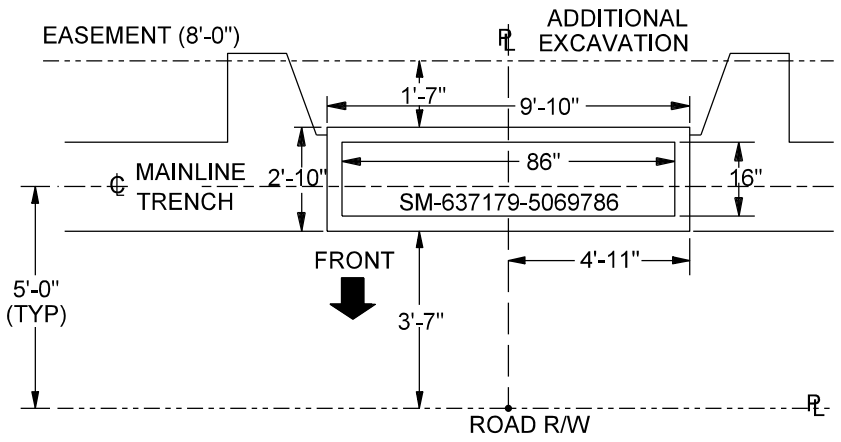
VIEW A-A

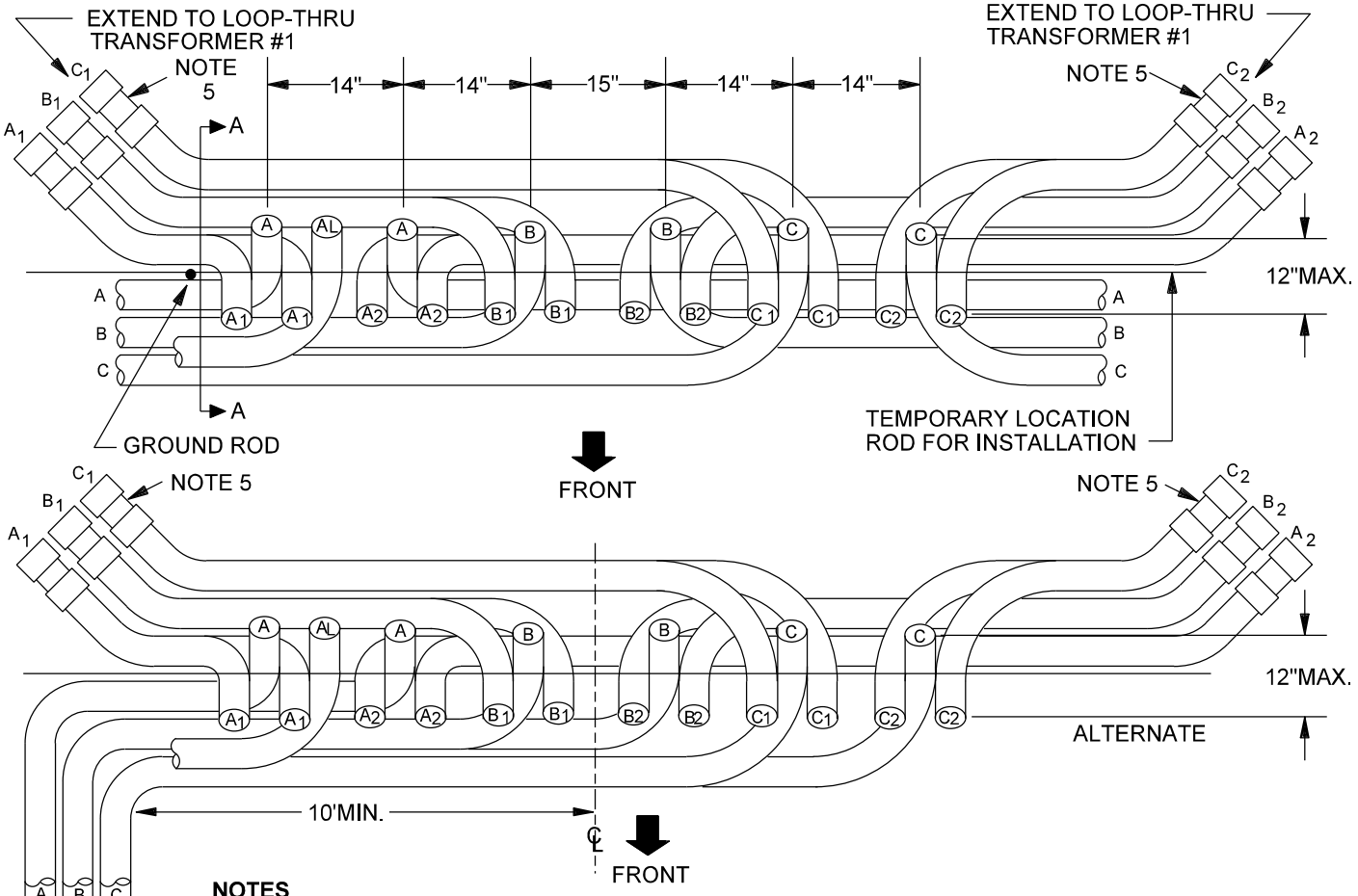
NOTES

1. TOP OF GRADE TO BE FLAT AND LEVEL. DO NOT GLUE CAPS. WHEN EXTENDED IN FUTURE, STUB UPS SHALL BE PERPENDICULAR TO GRADE.
2. INSTALL 5/8" X 8' GROUND ROD 12" BELOW GRADE AT LOCATION SHOWN ON TEMPLATE.
3. IF 2/0 BARE CU NEUTRAL IS INSTALLED, LEAVE 48" LONG CONTINUOUS LOOP AROUND STUB UPS BELOW ELECTRONIC MARKER.
4. PLACE ELECTRONIC MARKER DIRECTLY ON TOP OF CENTER CONDUIT STUB UPS. MARKER TO BE BURRIED FLAT AND LEVEL.
5. BACKFILL WITH NATIVE BACKFILL 6" BELOW FROM BOTTOM OF CONDUIT CAPS TO TOP OF GRADE. LEAVE MINIMUM OF 4" OF NATIVE BACKFILL AROUND STUB UPS.
6. SEE 750 MCM FEEDER PULLING ENCLOSURE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 750 MCM FEEDER PULLING ENCLOSURE (FUTURE)	ISSUE DATE: 05/01/24 REV. DATE: APPROVAL: J. LUERA
	3-24-2	8513E628.DGN





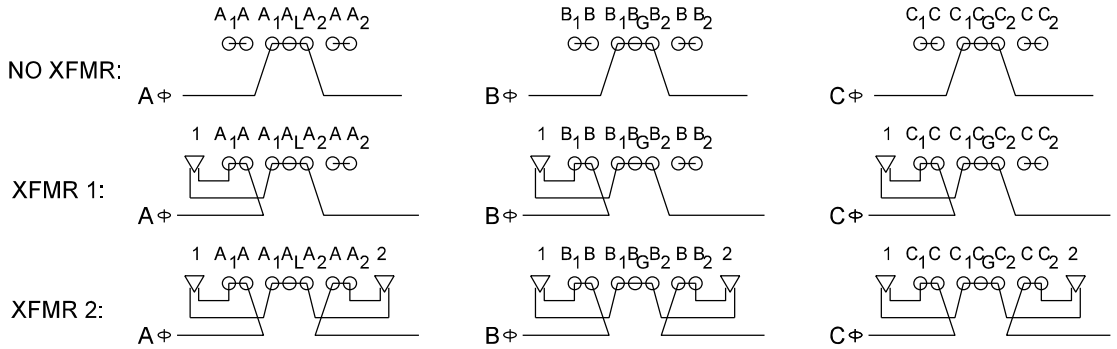


NOTES

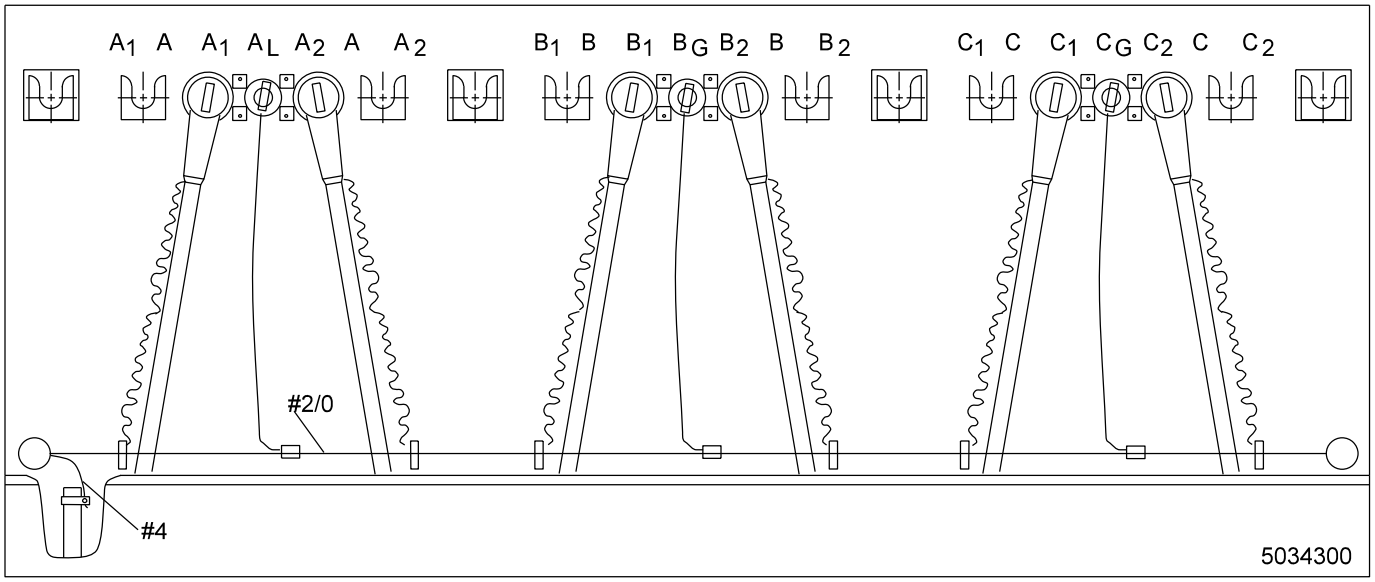
1. CONDUIT IS 3 INCHES IN DIAMETER.
2. CONDUIT A_L IS PROVISION FOR SINGLE PHASE TAP TO STREET LIGHTING TRANSFORMER.
3. CONDUIT STUBOUTS FOR FUTURE ARE TO BE CAPPED.
4. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH ANY CONDUITS.
5. STUB-OUT FOR FUTURE MAY BE LOCATED AT DISTANCE AS REQUIRED AND MAY BE 45 DEG, 90 DEG OR OTHER THESE STUB-OUTS SHALL BE PHASE CODED WITH COLORED MARKING TAPES.
6. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING #4/0 PRIMARY LOOP TAP ENCLOSURE STUB-UP	ISSUE DATE: 03/31/92 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	3-25-1	8513E166.DGN

UFT40



SCHEMATIC DIAGRAM



DEVICE DIMENSIONS W/O PAD: H=36" W=94" D=22"

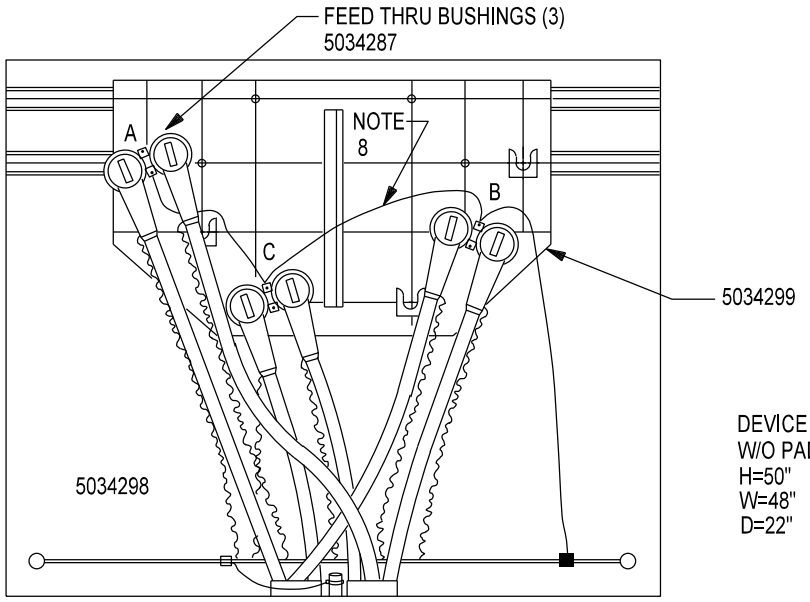
NOTES

1. INITIAL INSTALLATION MAY BE WITH NO TRANSFORMER SERVED AS SHOWN WHEN TRANSFORMER #1 OR TRANSFORMER #2 IS INSTALLED, CABLES ARE TERMINATED AND ELBOWS POSITIONED AS SHOWN IN THE SCHEMATIC DIAGRAM.
2. FOR EACH THREE PHASE TRANSFORMER TO BE LOOPED IN AND OUT OF THIS ENCLOSURE, CALL FOR ONE UFB40T TO GET TERMINATING ELBOWS AND FEED-THRU PARKING BUSHINGS.
3. THREE PHASE LOOP SWITCHING AND SECTIONALIZING IS TO BE PERFORMED IN TRANSFORMERS OR PAD MOUNTED SWITCH, BUT NOT IN THE TAP ENCLOSURE.
4. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 CU ALONG THE FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
5. CONNECT #4 CU LEAD FROM GROUND ROD TO ENCLOSURE GROUND CONNECTOR. WHEN A TELCO AND/OR CABLE TV ENCLOSURE IS WITHIN 6 FT., TELCO AND/OR CABLE TV WILL STUB A BONDING WIRE TO THE GROUND ROD. SRP WILL CONNECT THIS BOND WIRE TO THE GROUND ROD.
6. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. PROVIDE SUFFICIENT SLACK TO ALLOW FOR RELOCATING THE ELBOWS TO ADJACENT BUSHINGS.
7. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS. CONNECT #6 CU WIRE TO THE BASE OF THE FEED-THRU PARKING BUSHINGS, TRAIN DOWN TO THE 2/0 GROUND BUS AND CONNECT WITH SPLIT BOLTS.
8. A SINGLE 25 KVA TRANSFORMER WHICH SUPPLIES STREET LIGHTS, A SPRINKLER CONTROL OR SIMILAR LOAD, BUT NOT TRAFFIC SIGNALS MAY BE SERVED FROM THE A_L POSITION, USING A UWBT2EF.

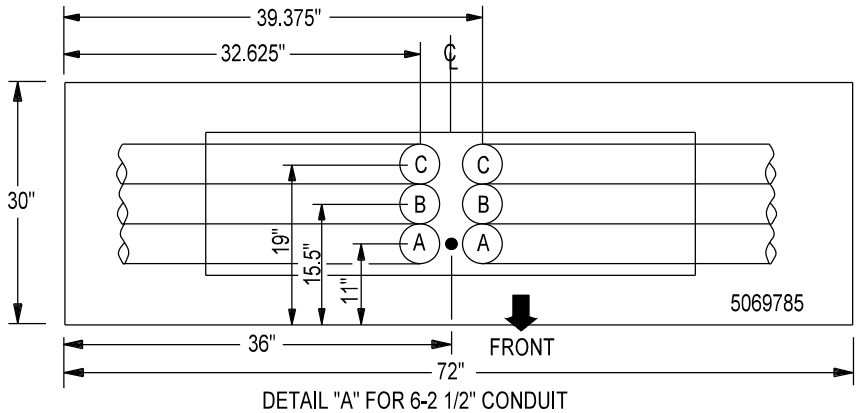
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING #4/0 PRIMARY LOOP TAP ENCLOSURE	ISSUE DATE: 03/31/92 REV. DATE: 11/18/14 APPROVAL: B. PRIEST
	3-26-1	8513E167.DGN

UFP2
#2-3Ø

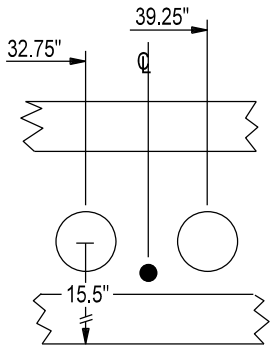
UFP3
4/0-3Ø



DEVICE DIMENSIONS
W/O PAD
H=50"
W=48"
D=22"



DETAIL "A" FOR 6-2 1/2" CONDUIT



DETAIL "B" FOR
2-4" CONDUITS
USED IN EXISTING
4" CONDUIT SYSTEMS

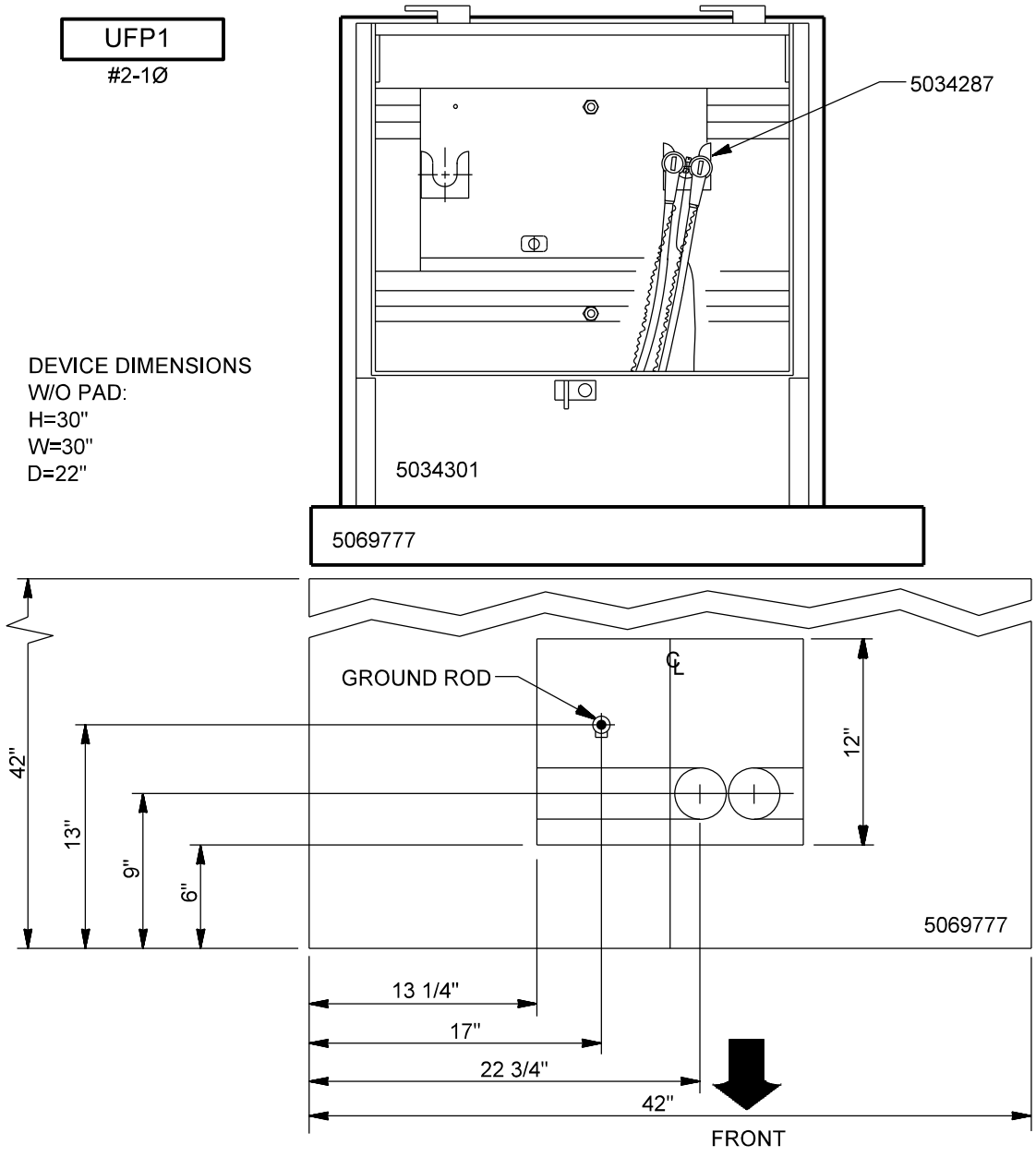
NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS.
4. DETAIL "B" SHOWS DIMENSIONS FOR INSTALLATION WITH 2 - 4" CONDUITS USED IN EXISTING 4" CONDUIT SYSTEMS.
5. CONDUIT STUB-UP TEMPLATE IS SRP STOCK #5031847.
6. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA
7. GROUND FEED THRU BUSHING TO 2/0 CU GROUND BUS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 3Ø PRIMARY PULLING ENCLOSURE FOR #2 AND 4/0 CONDUCTOR	ISSUE DATE: 10/17/94 REV. DATE: 04/22/20 APPROVAL: J. LUERA
	3-27-1	8513E211.DGN

UFP1

#2-1Ø



DEVICE DIMENSIONS
W/O PAD:
H=30"
W=30"
D=22"

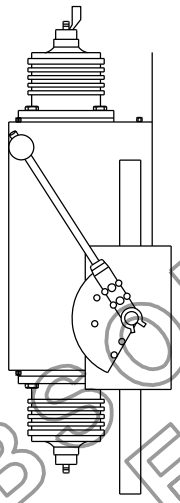
NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS.
4. GROUND FEED THRU BUSHING TO 2/0 CU GROUND BUS.
5. UFP1 HAS NO CONDUIT STUB-UP SPACER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 1Ø PRIMARY PULLING ENCLOSURE	ISSUE DATE: 10/17/94 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	3-28-1	8513E212.DGN

RUFBD6

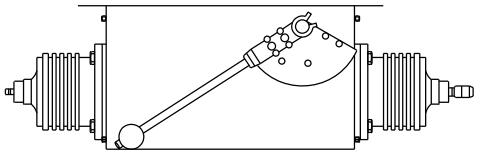
VERTICALLY MOUNTED ISO QUENSUR



OBSOLETE
FOR
REMOVAL
ONLY

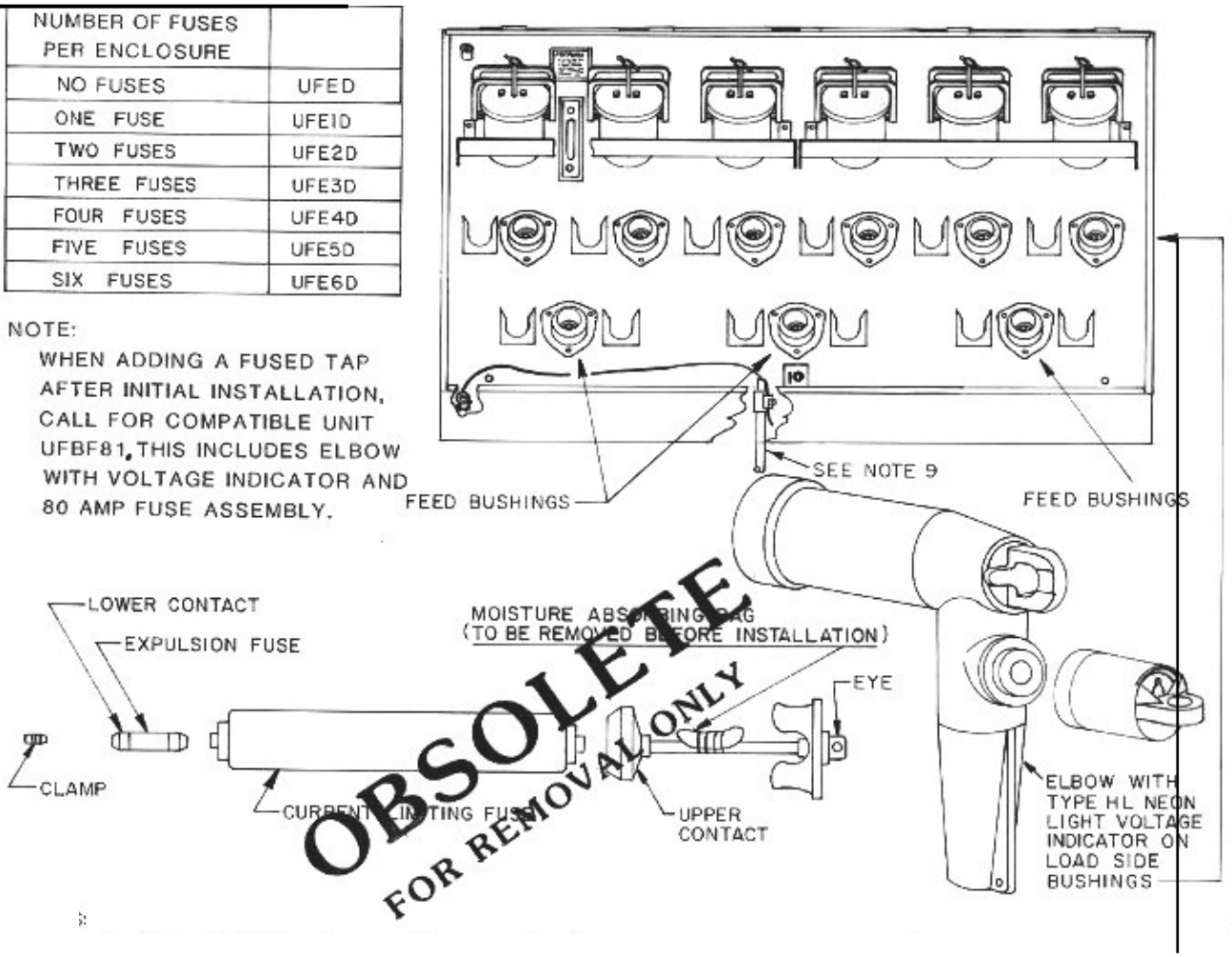
RUFBD7

HORIZONTALLY MOUNTED ISO QUENSUR



NUMBER OF FUSES PER ENCLOSURE	
NO FUSES	UFED
ONE FUSE	UFE1D
TWO FUSES	UFE2D
THREE FUSES	UFE3D
FOUR FUSES	UFE4D
FIVE FUSES	UFE5D
SIX FUSES	UFE6D

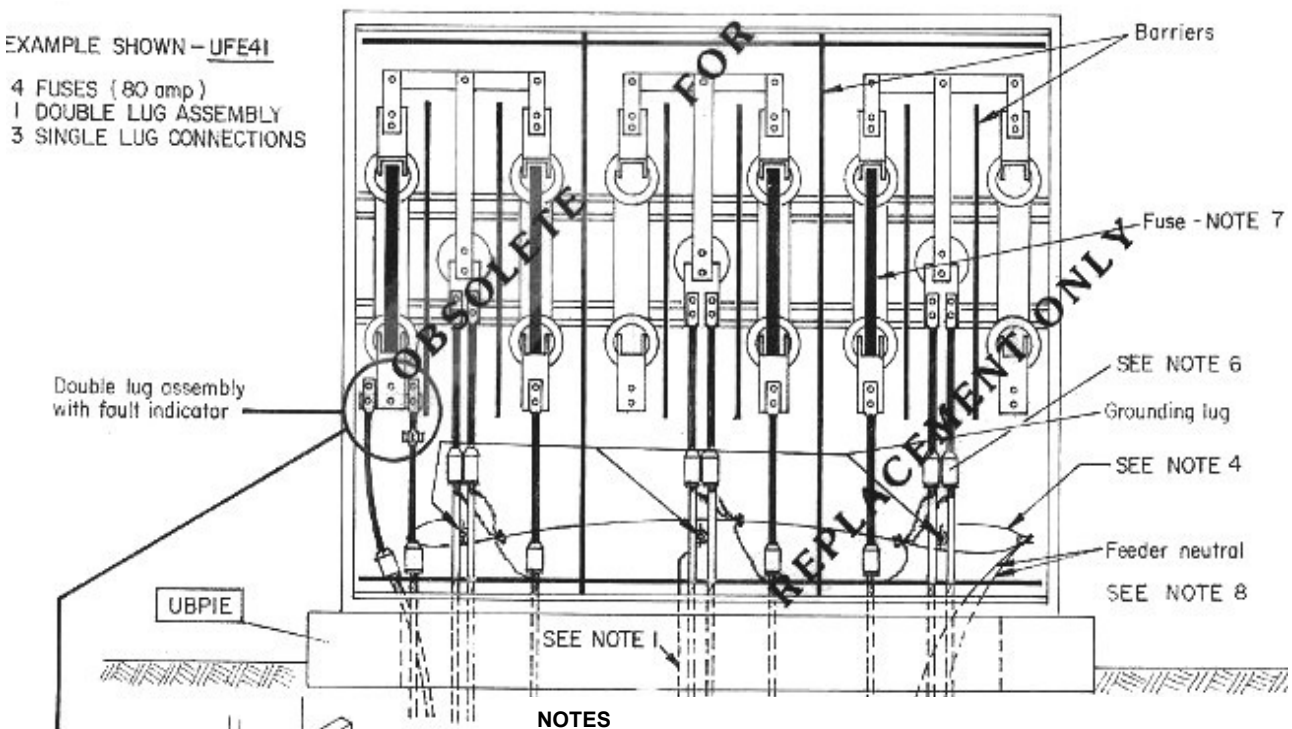
NOTE:
WHEN ADDING A FUSED TAP AFTER INITIAL INSTALLATION, CALL FOR COMPATIBLE UNIT UFBF81, THIS INCLUDES ELBOW WITH VOLTAGE INDICATOR AND 80 AMP FUSE ASSEMBLY.



NOTES
1. To provide for TELCO bonding, run #6 copper wire from a grounding lug to a point 12” outside the pad. Locate as near the center of the pad opening as possible in the primary trench at a depth of 12”.
2. Fences shall not be built across the front of enclosure. A gate is permissible if it is free of locks. (See *Electric Service Specifications*.)
3. See Miscellaneous section for enclosure and cable identification marking methods.
4. Run 2/0 copper wire across inside enclosure front to grounding lug. Connect feeder neutral and concentric neutrals to this wire.
5. Radial feed will be 4/0 aluminum from a nearby switching enclosure.
6. Check for proper oil level.
7. Single phase circuits require 80-amp fuse. Compatible Unit includes current limiting fuse (and expulsion fuse marked 50 amps). This combination is rated at 80 amps.
8. Enclosure will be locked and penta bolts securely fastened.
9. Install ground rod (if 2/0 bare neutral from switch not installed) so it does not interfere with cables; connect to cabinet ground with #4 CU wire.

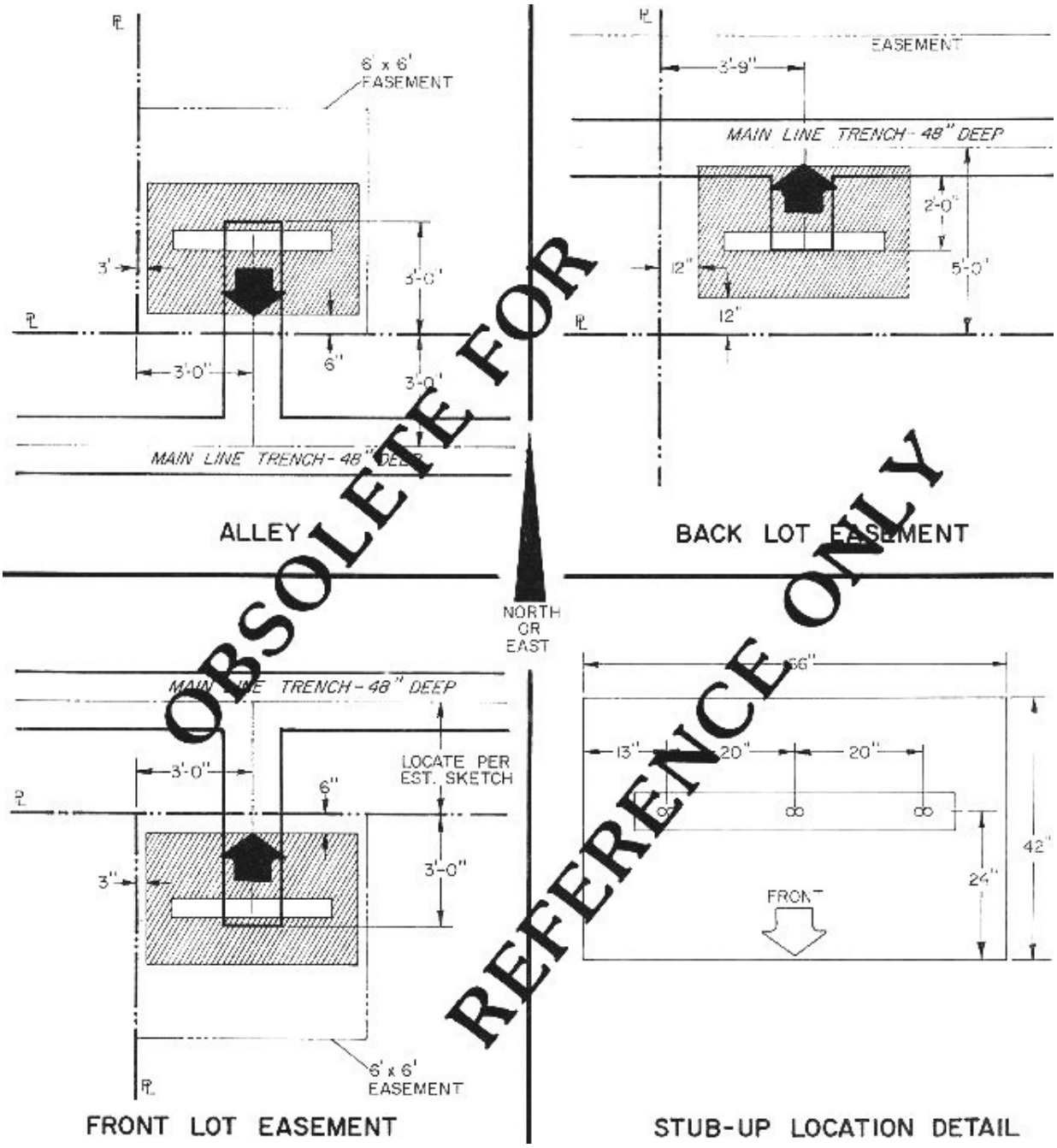
RE-FUSING INSTRUCTIONS
1. Load-side elbows contain voltage lamps that flash when fuse is intact. (CAUTION – lamp is not foolproof.)
2. Load-side elbow **must** be removed and parked before a fuse is removed. The fuse is **not** a loadbreak device.
3. Relieve pressure in enclosure via pressure relief valve.
4. Unscrew eyebolt until fuse bail can be swung downward.
5. Install hot stick intro bayonet eye, pull sharply approximately 1” to disconnect contacts.
6. Withdraw bayonet slowly to minimize oil dripping.
7. Fuse is a two-part assembly. Each part must be checked for continuity (**never** use a megger), indicating which one or both fuses are blown.
8. After replacing blown fuse(s), tighten fuse assembly to within 120 inch/pounds to 180 inch/pounds.
9. Reinstall fuse assembly and clean pan of any dripped oil.

Number of Fuses per Enclosure	Number of Double Lug Assemblies						
	0	1	2	3	4	5	6
No Fuses	UFE	--	--	--	--	--	--
1 Fuse	UFE1	UFE11	--	--	--	--	--
2 Fuses	UFE2	UFE21	UFE22	--	--	--	--
3 Fuses	UFE3	UFE31	UFE32	UFE33	--	--	--
4 Fuses	UFE4	UFE41	UFE42	UFE43	UFE44	--	--
5 Fuses	UFE5	UFE51	UFE52	UFE53	UFE54	UFE55	--
6 Fuses	UFE6	UFE61	UFE62	UFE63	UFE64	UFE65	UFE66
	Add "R" to the Units for Radial Feeder						



NOTES

1. To provide for TELCO bonding, run #6 copper wire from center grounding lug to a point 12" outside the pad. Locate as near the center of the pad opening as possible in the primary trench at a depth of 12".
2. A fence is not allowed to be built across front of enclosure. A gate is permissible if it is free of locks. See Electric Service Specification #UG-12.
3. See Underground Miscellaneous Procedure #1 for enclosure and cable identification marking methods.
4. Run 2/0 copper wire from right side grounding lug around rear of enclosure to left side grounding lug. Connect feeder neutral and concentric neutrals to this wire.
5. Bolt enclosure to pad making use of all four (4) Unistrut tie down brackets. Enclosure will be locked and penta bolt latches shall be latched.
6. Radial feeder requires one termination per phase only.
7. Single phase circuits require 80 amp fuses. Compatible unit includes 80 amp fuses.
8. If 500 MCM feeders are not present, install 8 ft. ground rod (UBGRD) and connect to cabinet ground.
9. For replacement of rusted out enclosure only, order UFEL or UFELN (no pad).

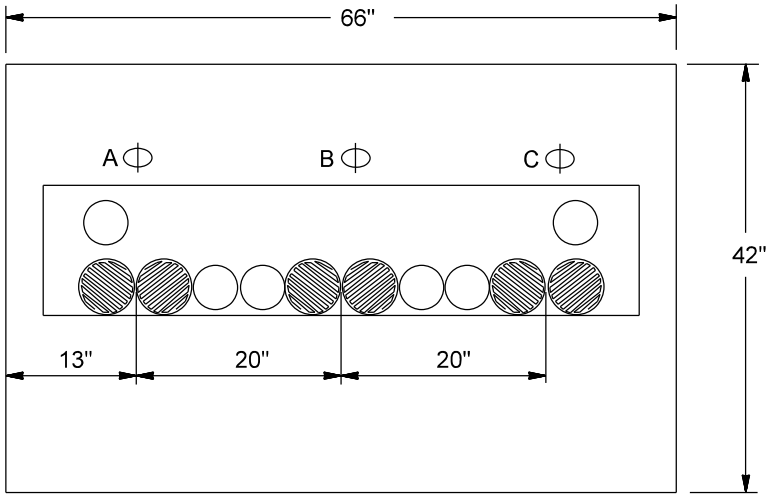


OBSOLETE FOR REFERENCE ONLY

NOTES

1. All pad elevations shall be established by survey (blue top) and top of pad shall be 4" above final grade in immediate area.
2. Pad must be level before setting enclosure.
3. Area under pad must be compacted to 95% density (AASHO, T-99).

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 22" X 60" LIVE FRONT FUSING ENCLOSURE INSTALLATION DETAILS	ISSUE DATE: 01/15/87 REV. DATE: 05/24/10 APPROVAL: B. Priest
	3-31-2	UG3-31-2.doc



FRONT

SYMBOLS

○ 2 1/2" CONDUITS FOR #2 AL.

▨ 3" CONDUITS FOR FEEDER

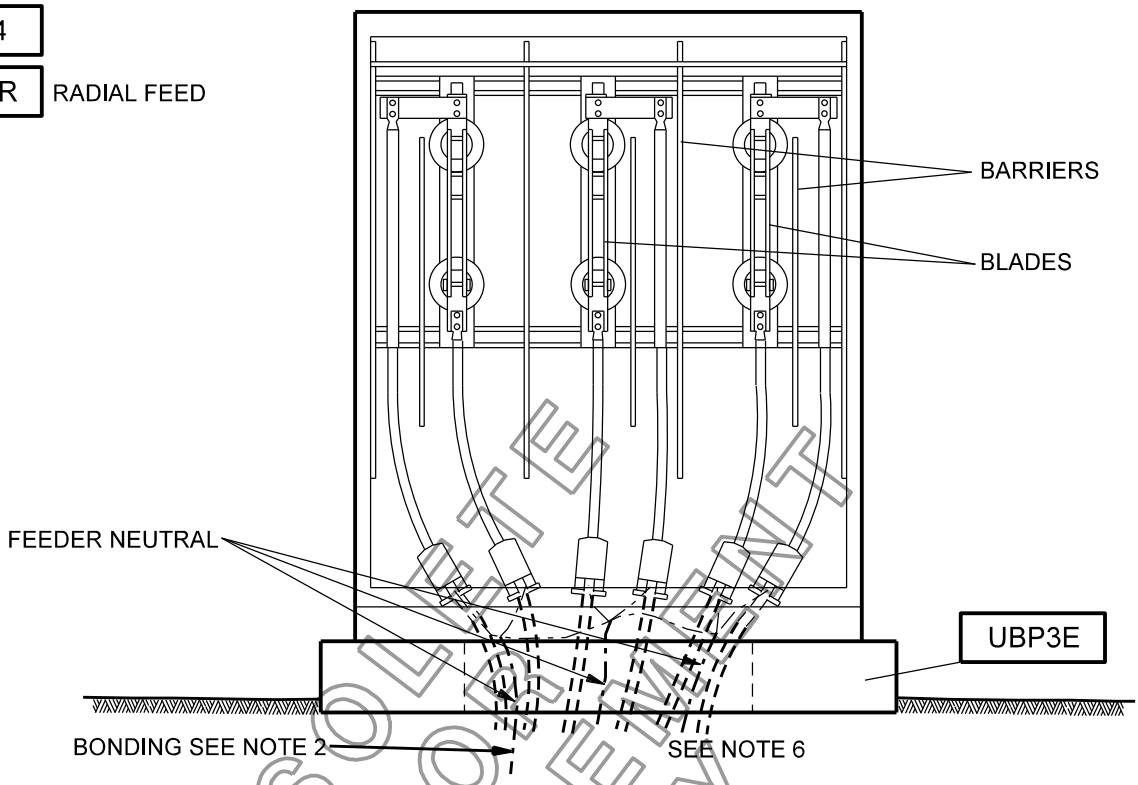
NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY, (BLUE TOP) AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM 36" SEPARATION BETWEEN THE SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE.
5. STUB 2/0 BARE COPPER NEUTRAL FROM SWITCH TO ENCLOSURE GROUNDING PADS OR INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLE. CONNECT GROUND ROD TO CABINET GROUND WITH #4 COPPER WIRE.
6. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE FUSE ENCLOSURE, (DESIGNATED PARKING) FRONT OF FUSING ENCLOSURE SHALL BE ROTATED 90 DEG. IN TO EASEMENT. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD R/W.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 22" X 60" LIVE FRONT FUSING ENCLOSURE CONDUIT STUB-UP DETAIL FOR CABLE REPLACEMENT IN EXISTING ENCLOSURE	ISSUE DATE: 11/19/01 REV. DATE: 09/27/12 APPROVAL: B. PRIEST
	3-31-3	8513E332.DGN

UFD4

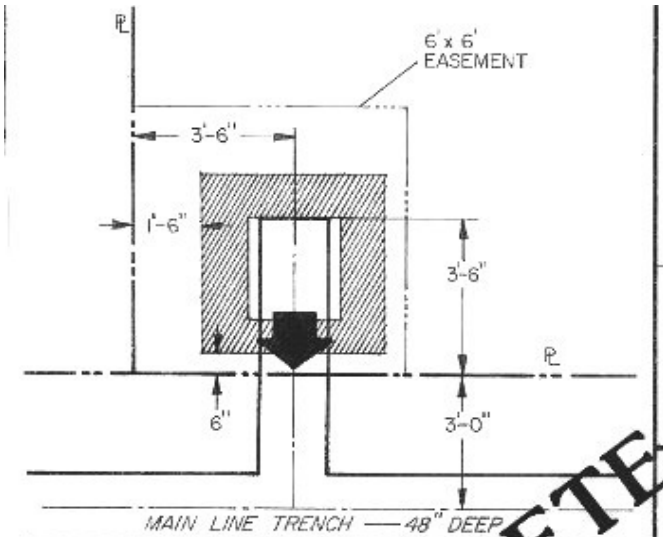
UFD4R RADIAL FEED



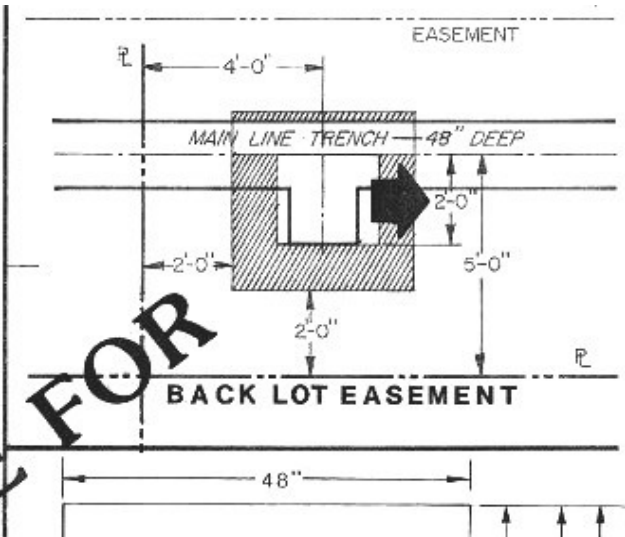
OBSOLETE
FOR REPLACEMENT
ONLY

NOTES

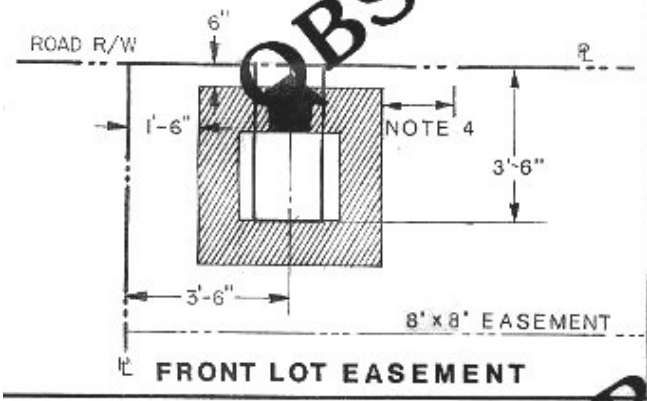
1. RUN #2/0 COPPER WIRE FROM RIGHT SIDE GROUNDING LUG TO LEFT SIDE GROUNDING LUG. CONNECT GROUND WIRES FROM TERMINATORS TO THIS WIRE.
2. TO PROVIDE FOR TELCO BONDING, RUN #6 COPPER WIRE FROM ENCLOSURE GROUNDING TO A POINT 12" OUTSIDE THE PAD. LOCATE IN THE PRIMARY TRENCH AT A DEPTH OF 12".
3. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IFIT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL.
4. SEE MISCELLANEOUS PROCEDURE FOR ENCLOSURE AND CABLE IDENTIFICATION MARKING METHODS.
5. ENCLOSURE WILL BE BOLTED TO PAD AS PER UBPF3 AND LOCKED AT ALL TIMES.
6. IF 500MCM CABLE WITH A #2/0 BARE COPPER IS NOT PRESENT IN SWITCH, INSTALL 8 FT GROUND ROD (UBGRD) SO AS NOT TO INTERFERE WITH CABLES AND CONNECT TO CABINET GROUND WITH #4 COPPER WIRE.
7. IF CONDUIT IS USED, IT SHALL BE STUBBED TO 1/2" BELOW THE LEVEL OF THE PAD.
8. IF BARE CONCENTRIC NEUTRAL CABLE IS PRESENT IN THE CABINET, IT WILL BE NECESSARY TO INSTALL A WRAP AROUND HEAT SHRINK SLEEVE (5035824) OVER THE CONCENTRIC NEUTRAL ON THE AREA OF THECABLE WHERE THE GROUT WOULD CONTACT THE CABLE.



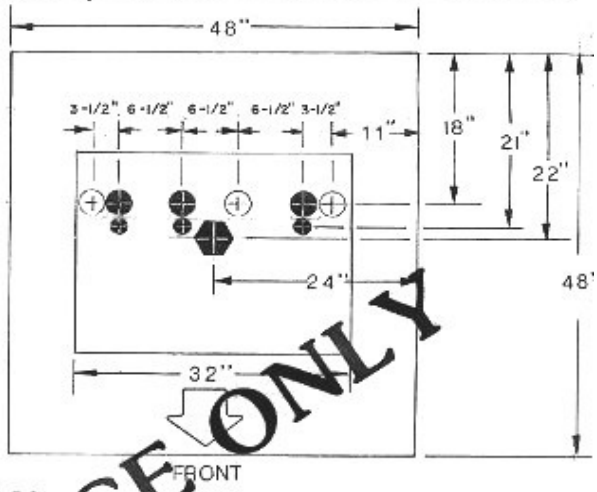
ALLEY



BACK LOT EASEMENT



FRONT LOT EASEMENT



SYMBOLS:

○ 3" CONDUITS OR DIRECT BURIED 500 MCM AL. PLUS ONE OF THE FOLLOWING — — —

3" CONDUITS OR DIRECT BURIED 4/0 AL. DOUBLE LUGGED TO FRONT OF SWITCH. USE WHEN TAP REQUIRED

*** IF A FEEDER TIE IS REQUIRED (DOUBLE 500 ON ONE SIDE OF SWITCH) SUBSTITUTE WITH 3" CONDUITS OR DIRECT BURIED 500 MCM AL.***

⬢ 4" CONDUIT FOR 3~ 4/0 AL. DOUBLE LUGGED TO FRONT OF SWITCH. USE WHEN SINGLE CONDUIT IS REQUIRED.

NOTE:
THOSE SHOWN IN BLACK ARE CONNECTED TO BOTTOM OF SWITCH.

STUB-UP LOCATION DETAIL

NOTES:

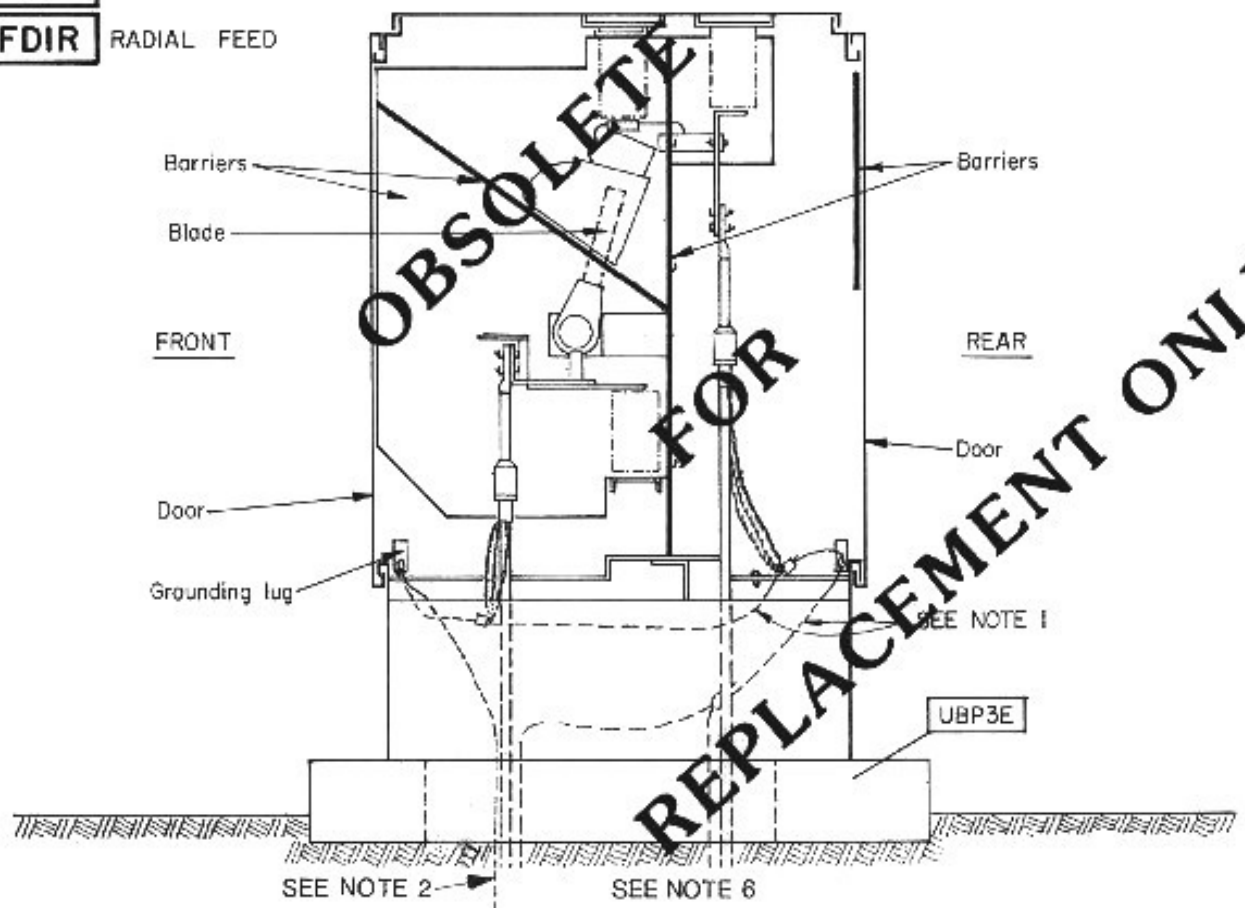
1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY, (BLUE TOP) AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED TO 80% DENSITY (AASHO. T-99).
4. MAINTAIN A MINIMUM 18" SEPARATION BETWEEN THE SIDES OF THE ENCLOSURE PAD AND THE PAD OF ANY ADJACENT EQUIPMENT OR FENCE. MAINTAIN A MINIMUM 3-1/2' SEPARATION BETWEEN THE BACK OF THE ENCLOSURE PAD AND ANY OBSTRUCTION OR FENCE.
5. IF 500 CABLE WITH A 2/0 BARE COPPER NEUTRAL IS NOT PRESENT IN SWITCH INSTALL 8' GROUND ROD (UBGRD) SO AS NOT TO INTERFERE WITH CABLES, AND CONNECT TO CABINET GROUND WITH #4 COPPER WIRE.

OBSOLETE FOR REFERENCE ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING BLADE DISCONNET SWITCH ENCLOSURE INSTALLATION DETAILS	ISSUE DATE: 01/15/87 REV. DATE: 05/24/10 APPROVAL: B. Priest
	3-32-2	UG3-32-2.doc

UFDI

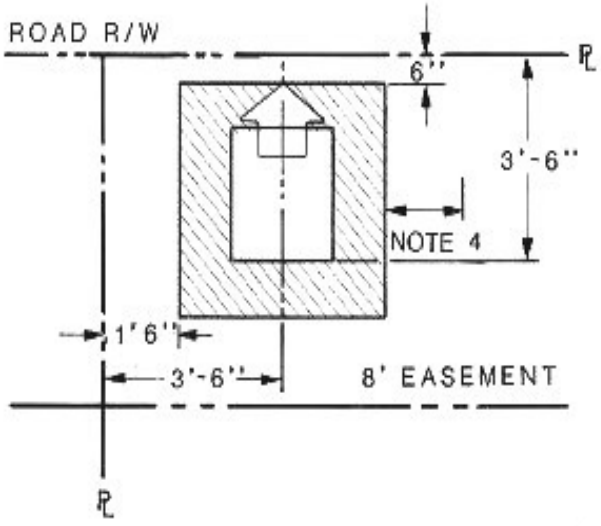
UFDIR RADIAL FEED



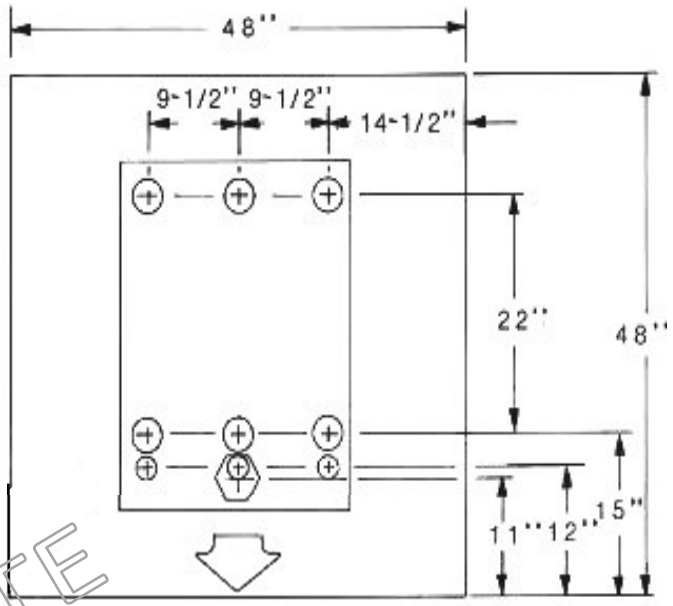
OBSOLETE FOR REPLACEMENT ONLY

NOTES

1. Bond 2/0 CU feeder neutral to enclosure grounding lug. Connect concentric neutrals to 2/0 CU wire, then connect to feeder neutral.
2. To provide for TELCO bonding, run #6 CU wire from enclosure.
3. Fences shall not be built across the front of enclosure. A gate is permissible if it is free of locks that would prohibit access by SRP personnel.
4. See Miscellaneous section for enclosure and cable identification marking methods.
5. If 500 MCM cable with 2/0 bare CU is not present in switch, install 8 ft. ground rod (UBGRD), so as not to interfere with cables, and connect to cabinet ground with #4 CU wire.
6. If conduit is used, it shall be stubbed to 1/2” below the level of the pad.
7. If bare concentric neutral cable is present in the cabinet, it will be necessary to install a wrap-around (heat shrink sleeve, 5035824) over the concentric neutral on the area of the cable where the grout would contact the cable.
8. See page 3 for all installation details, except S&C, which are on page 4.
9. For replacement of rusted out switch only, order UFDIC or UFDICN (no pad).



FRONT LOT EASEMENT



OBSOLETE FOR REFERENCE ONLY

SYMBOLS

◯ 3” conduit or direct buried 500 MCM AL

…Plus one of the following…

○ 2” conduits or direct buried 4/0 AL, double lugged to front of switch

*** If a feeder tie is required (double 500 on one side of switch) substitute with 3” conduits or direct buried 500 MCM AL. ***

⬡ 4” conduit for 3 – 4/0 AL double lugged to front of switch. Use when single conduit is required.

STUB-UP LOCATION DETAIL

NOTES

1. All pad elevations shall be established by survey (blue top) and top of pad shall be 4” above final grade in immediate area.
2. Pad must be level before setting enclosure.
3. Area under pad must be compacted to 80% density (AASHO, T-99).
4. Maintain a minimum 18” separation between the sides of the enclosure pad and the pad of any adjacent equipment or fence. Maintain a minimum 3-1/2’ separation between the back of the enclosure pad and any obstruction or fence.
5. If 500 MCM cable with a 2/0 bare copper neutral is not present in switch, install 8’ ground rod (UBGRD), so as not to interfere with cables, and connect to cabinet ground with #4 CU wire.

UFDT1*	SWITCH WITH ONE FEED OUT
UFDT2*	SWITCH WITH TWO FEEDS OUT

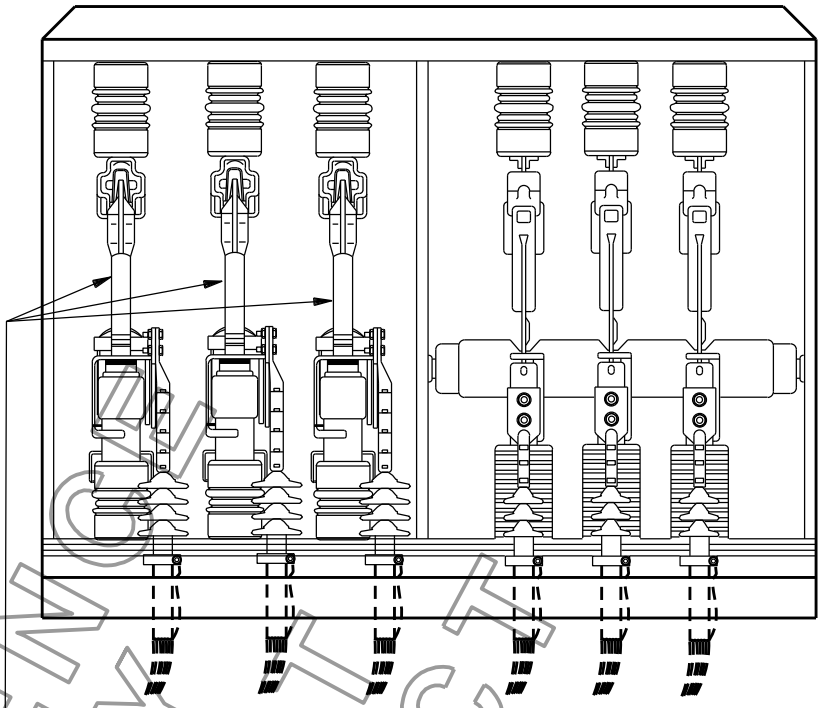
* 4 IS FOR #4/0 AL FEEDERS IN, #4/0 AL OUT TO CUSTOMER.

* 5 IS FOR 500 MCM AL FEEDERS IN, #4/0 AL OUT TO CUSTOMER.

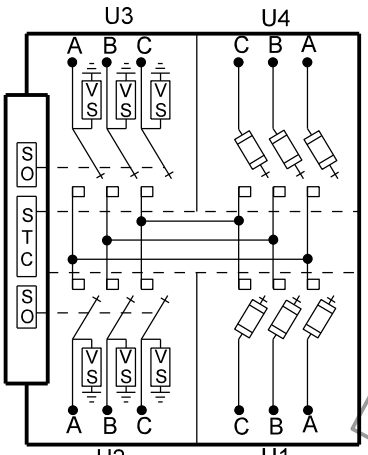
* 6 IS FOR 500 MCM FEEDERS IN, 500 MCM AL OUT TO CUSTOMER.

* 7 IS FOR 750 MCM AL FEEDER IN, #4/0 AL OUT TO CUSTOMER.

* 8 IS FOR 750 MCM AL FEEDER IN, 750 MCM AL OUT TO CUSTOMER.



SIDE VIEW



SCHEMATIC

VS-VOLTAGE SENSING DEVICE ON SOURCE
STC-SOURCE TRANSFER CONTROL
SO-SWITCH OPERATOR

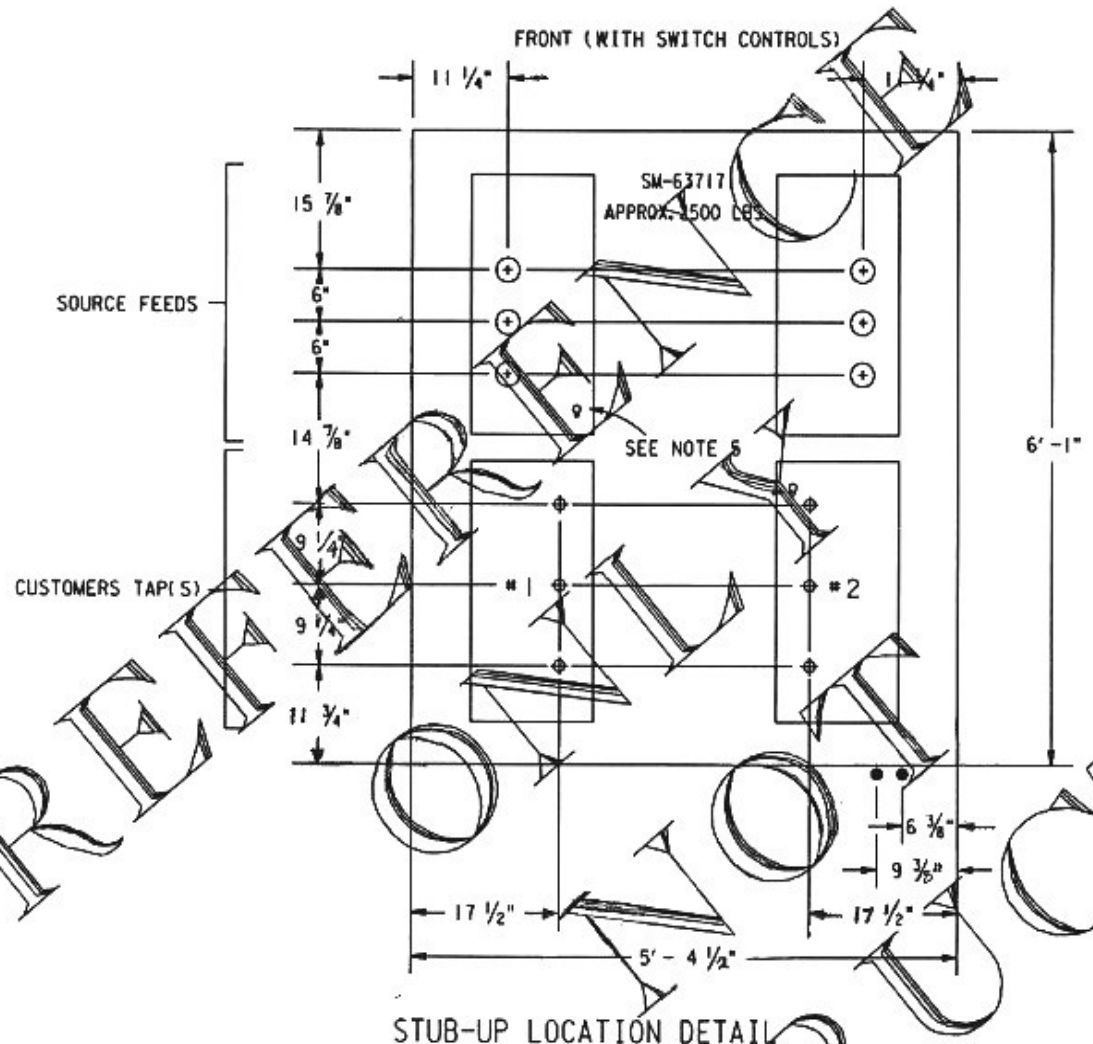
-SPECIAL USE-

APPROVAL OF
ELECTRIC SYSTEM ENGINEERING
REQUIRED PRIOR TO USE

REFERENCE ONLY
DO NOT
CONSTRUCT

NOTES

1. BOND #2/0 C.U. FEEDER NEUTRAL AND CONCENTRIC NEUTRALS TO ENCLOSURE GROUND BUS.
2. TO PROVIDE FOR TELCO BONDING, RUN #6 C.U. FROM GROUND BUS TO A POINT 12" OUTSIDE PAD IN PRIMARY TRENCH AT A DEPTH OF 12".
3. FOR FENCING AND BUILDING RESTRICTIONS, SEE PAGE 3-462.
4. SEE MISCELLANEOUS SECTION FOR ENCLOSURE AND CABLE IDENTIFICATION MARKING METHODS.
5. ENCLOSURE WILL BE BOLTED TO PAD PER UBPF3 AND LOCKED AT ALL TIMES.
6. IF A #2/0 BARE COPPER NEUTRAL IS NOT PRESENT IN SWITCH, INSTALL TWO 8 FT. GROUND RODS (UBGRD) SO AS NOT TO INTERFERE WITH CABLES, AND CONNECT TO CABINET GROUND WITH #4 C.U. ALL CONCENTRIC NEUTRALS AND DRAIN WIRES SHALL BE CONNECTED TO GROUND BUS USING SPLIT BOLT CONNECTORS.
7. BLADE DISCONNECTS WILL NORMALLY BE USED IN THE FUSING COMPARTMENTS U3 AND U4. IF FUSES ARE REQUIRED, CONTACT ELECTRIC SYSTEM ENGINEERING.



STUB-UP LOCATION DETAIL

SYMBOLS:

O — 3" CONDUITS FOR 500MCM OR 750MCM AL. FEEDER OR 4/0 AL.

o — 3" CONDUITS FOR 4/0, 500MCM OR 750MCM AL.

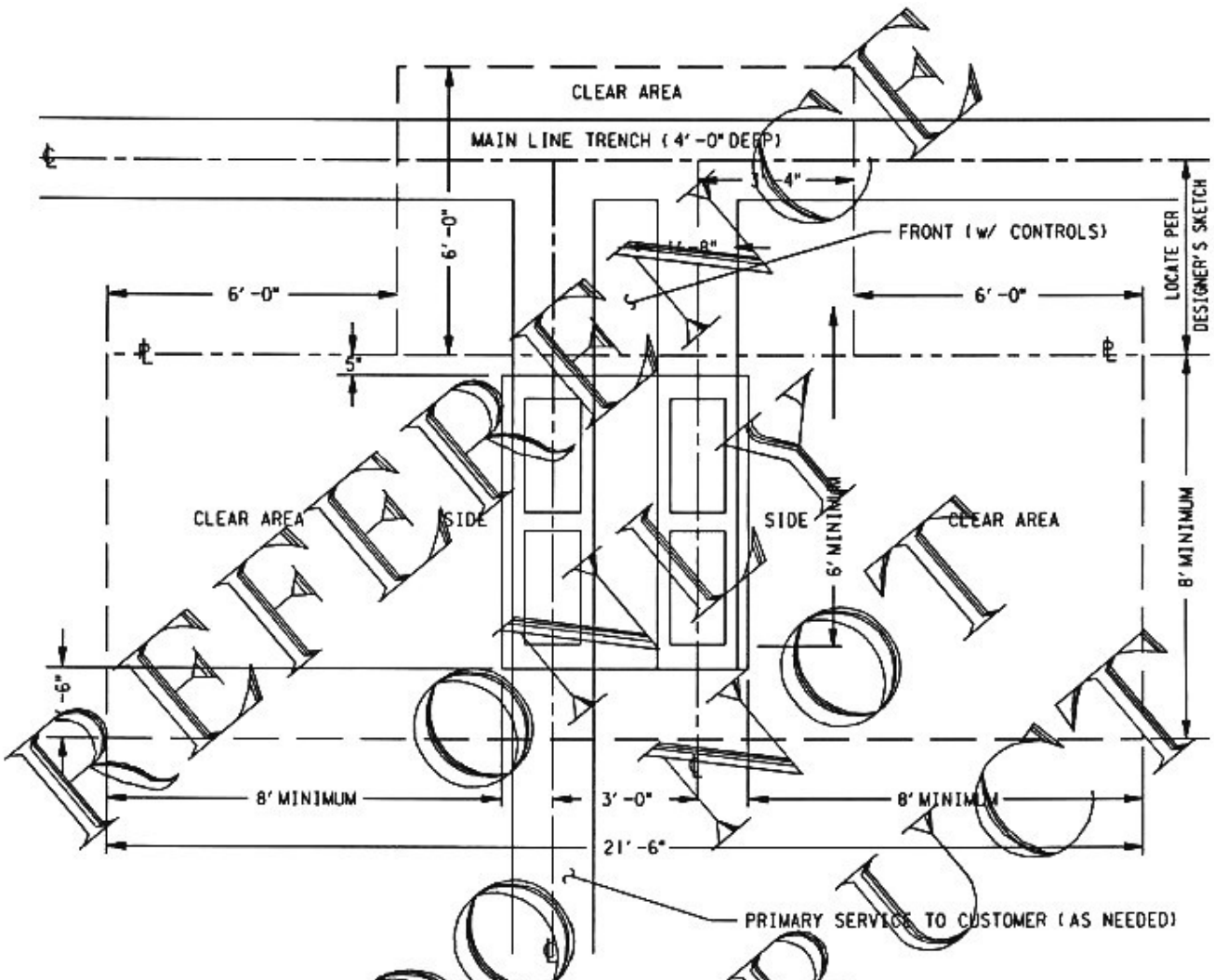
● — 2" CONDUITS FOR COMMUNICATION CONTROL CABLE

NOTES:

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY, (BLUE TOP) AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. IF A 2/0 BARE COPPER NEUTRAL IS NOT AVAILABLE INTO SWITCH, INSTALL TWO 8 FT. GROUND RODS (UBGRD) SO AS NOT TO INTERFERE WITH CABLES AND CONNECT TO CABINET GROUND WITH #4 CU.
5. FOR SINGLE CUSTOMER TAP USE POSITION #1 UNLESS SPECIFIED OTHERWISE BY DESIGNER.

REFERENCE DO NOT CONSTRUCT

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C PMH-9 4-WAY AUTOMATIC TRANSFER SWITCH	ISSUE DATE: 01/07/89 REV. DATE: 05/24/10 APPROVAL: B. Priest
	3-35-1	UG3-35-1.doc

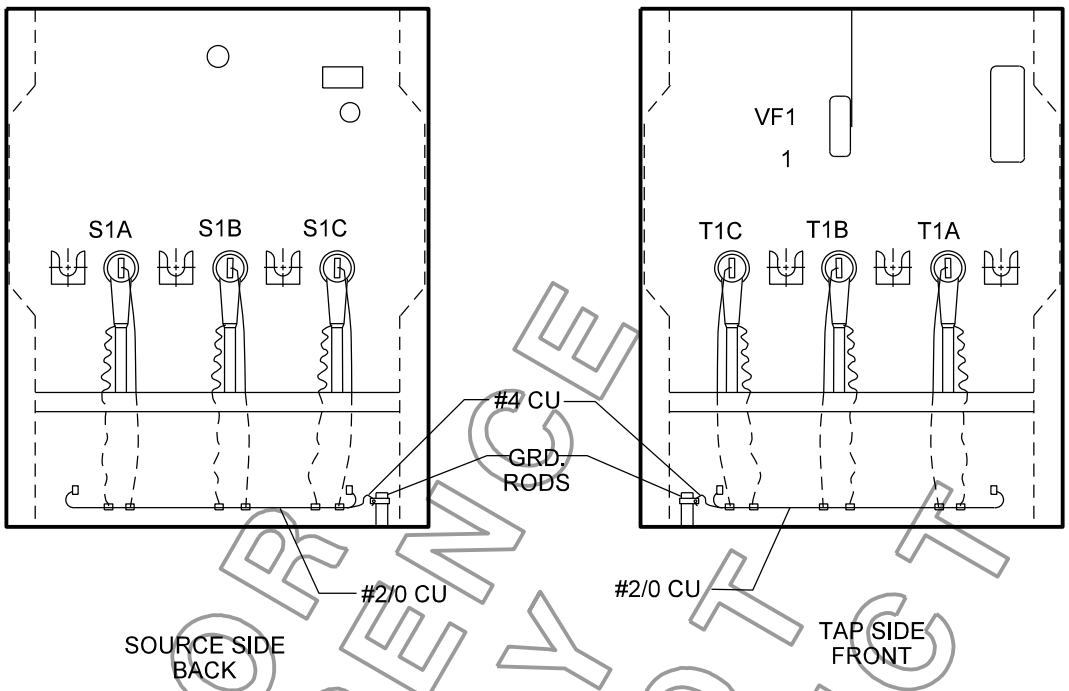


MINIMUM AREA REQUIRED FOR SWITCH OPERATION

REFERENCE ONLY DO NOT COPY DISTRIBUTE

NOTES:

1. NO BUILDINGS, FENCES OR OTHER OBSTRUCTIONS ARE TO BE PERMITTED IN THE INDICATED CLEAR AREA. THIS INCLUDES LANDSCAPING WHICH WOULD RESTRICT ACCESS OR CREATE OTHER SAFETY HAZARDS (i.e. TRIPPING). GATES WITH A MINIMUM 10 FOOT OPENING MAY BE INSTALLED ACROSS THE FRONT OR SIDES OF THE SWITCH, PROVIDED THEY ARE ARE A MINIMUM OF 18 INCHES FROM THE SWITCH PAD AND HAVE NO LOCKS THAT WOULD PREVENT ACCESS BY SRP PERSONNEL.
2. SWITCH MUST HAVE ADEQUATE ACCESS FOR MAINTENANCE OR REMOVAL. TRUCK ACCESS (16 FOOT WIDE) TO THE SWITCH IS REQUIRED.



UFDFD1 - #4/0 IN/OUT

UFDFD2 - 750 IN/OUT

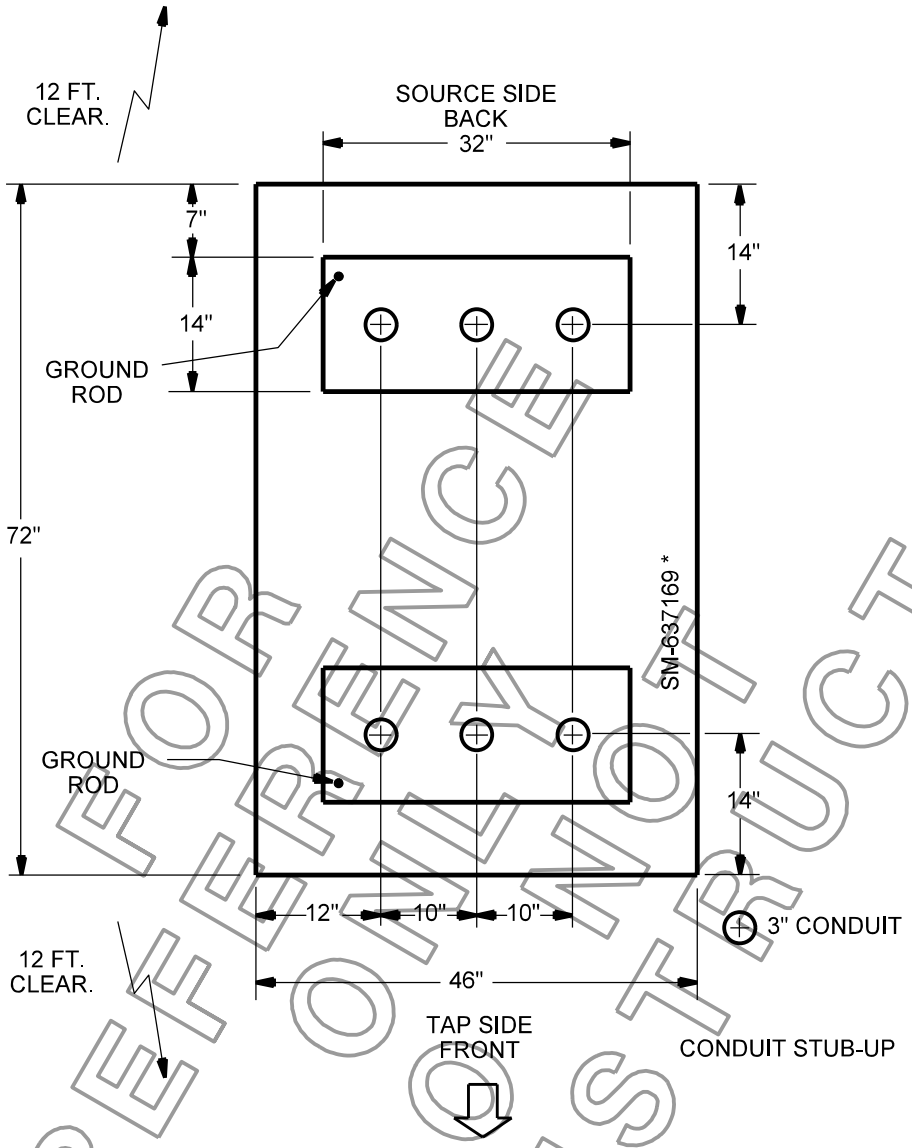
UFDFD3 - 750 IN #4/0 OUT

FOR REFERENCE ONLY DO NOT CONSTRUCT

NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN #2/0 CU ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND RODS TO NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO #2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO #2/0 CU USING SPLIT BOLTS.
4. ENCLOSURE WILL BE BOLTED TO PAD AND LOCKED AT ALL TIMES.
5. CONDUIT SHALL BE STUBBED TO 1" BELOW THE LEVEL OF THE PAD (5" ABOVE GRADE).
6. LOAD BREAK BUSHINGS PROVIDE POINT FOR TESTING AND GROUNDING.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING VACUUM FAULT INTERRUPTER	ISSUE DATE: 04/02/96 REV. DATE: 05/24/10 APPROVAL: B. PRIEST
	3-36-1	8513E245.DGN



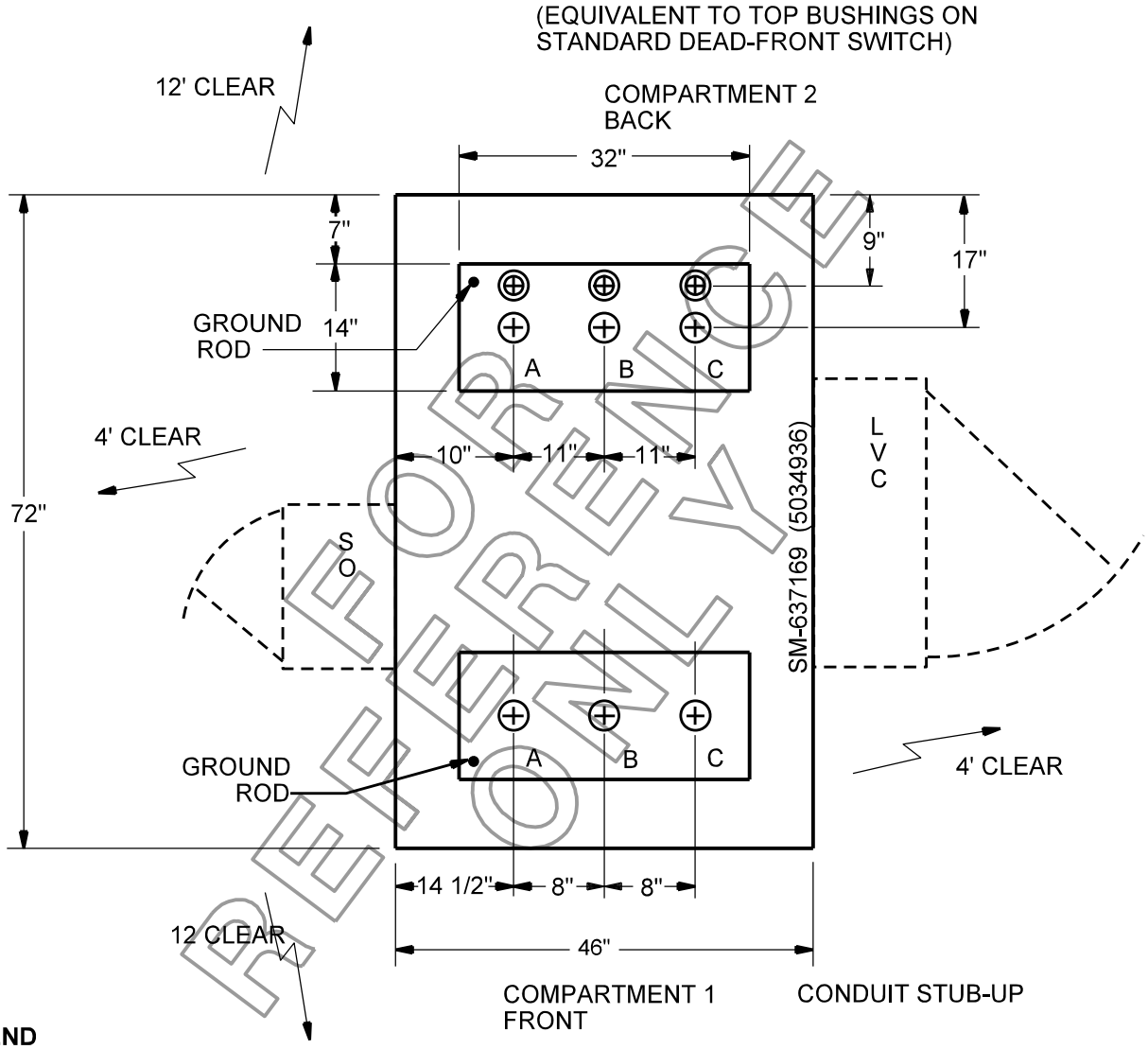
FOR REFERENCE ONLY DO NOT CONSTRUCT

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY, (BLUE TOP) AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM OF 36" SEPARATION BETWEEN SWITCH PAD SIDES AND THE PAD OF ANY ADJACENT EQUIPMENT.
5. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE SWITCH, (E.G. DESIGNATED PARKING) THE SWITCH SHALL BE ROTATED 90 DEG. SO THE SIDE FACES ROAD RIGHT-OF-WAY. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD RIGHT-OF-WAY.

* NO STOCK CODE EQUIVALENT IN SAP.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING VACUUM FAULT INTERRUPTER	ISSUE DATE: 04/20/96 REV. DATE: 01/22/15 APPROVAL: B. PRIEST
	3-36-2	8513E228.DGN



REFERENCE ONLY

LEGEND

⊕ 3" CONDUIT FOR FEEDER

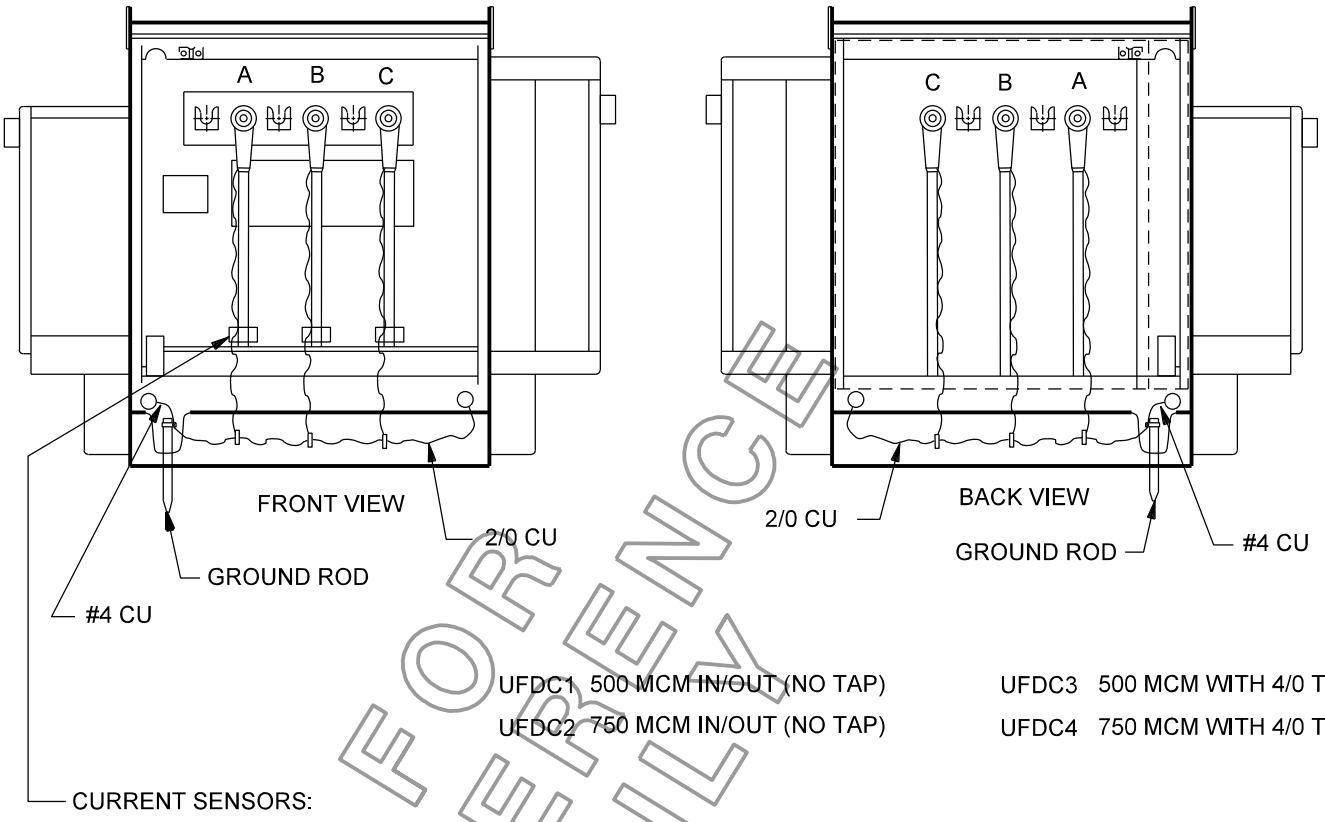
⊕ 3" CONDUIT FOR #4/0 TAP

(EQUIVALENT TO BOTTOM BUSHINGS ON
STANDARD DEAD-FRONT SWITCH)

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. MAINTAIN A MINIMUM OF 36" SEPARATION BETWEEN SWITCH PAD SIDES AND THE PAD OF ANY ADJACENT EQUIPMENT.
5. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE SWITCH (I.E., DESIGNATED PARKING), THE SWITCH SHALL BE ROTATED 90°. SO THE SIDE FACES ROAD RIGHT-OF-WAY. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD RIGHT-OF-WAY.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING REMOTE CONTROL DEAD-FRONT SWITCH	ISSUE DATE: 04/15/97 REV. DATE: 01/22/15 APPROVAL: B. PRIEST
	3-37-1	8513E250.DGN



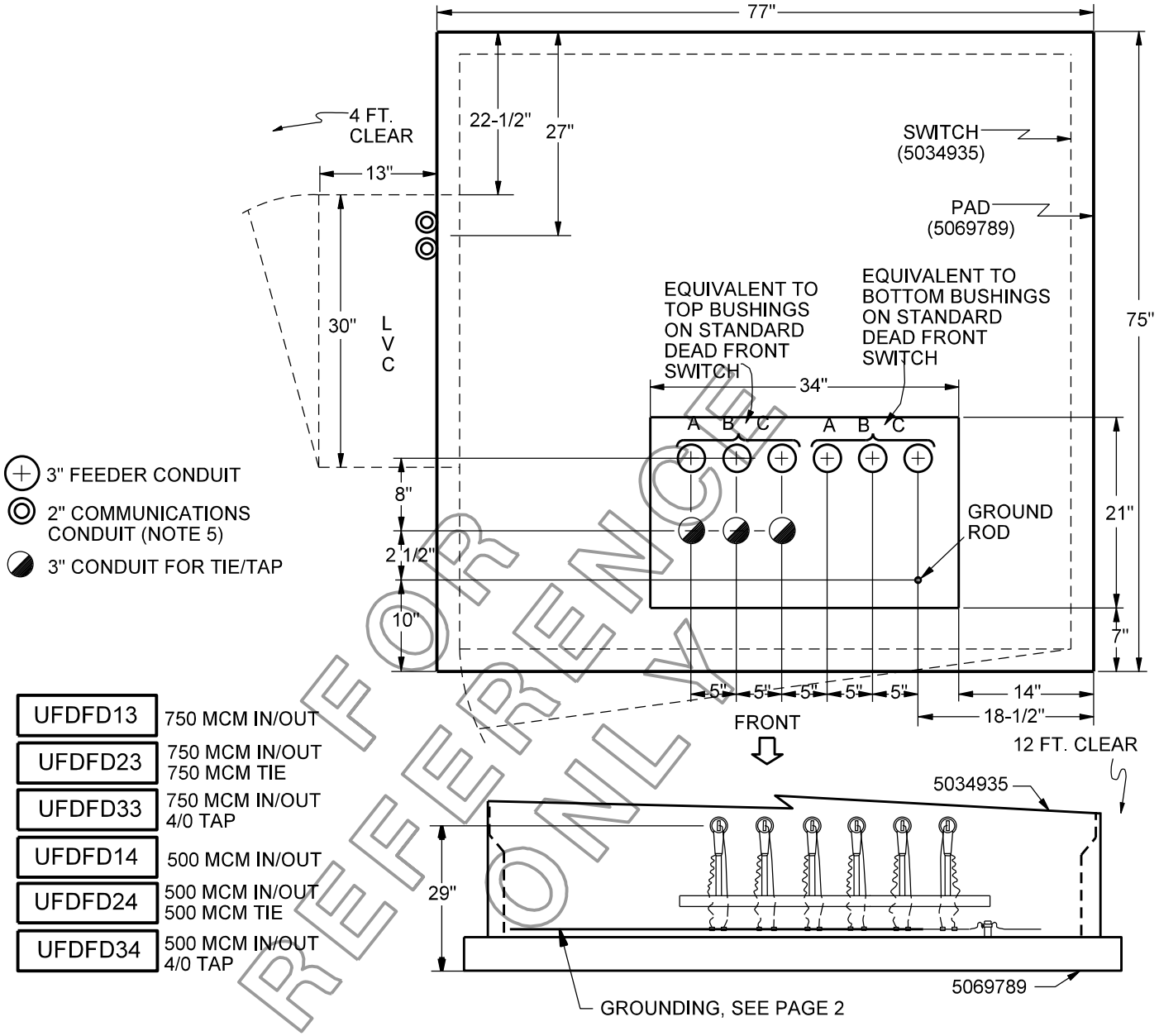
UFDC1 500 MCM IN/OUT (NO TAP)
UFDC2 750 MCM IN/OUT (NO TAP)
UFDC3 500 MCM WITH 4/0 TAP
UFDC4 750 MCM WITH 4/0 TAP

WHEN UNITS ARE INSTALLED IN THIS COMPARTMENT THE INFORMATION ON THE TAGS MUST BE RECORDED AS TO PHASE. (USE YELLOW SHEET LOCATED IN COMMUNICATION CONTROL COMPARTMENT).

REFERENCE ONLY

NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN 2/0 CU ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND RODS TO NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU USING SPLIT BOLTS.
4. ENCLOSURE WILL BE BOLTED TO PAD AND LOCKED AT ALL TIMES.
5. CONDUIT SHALL BE STUBBED TO 1" BELOW THE LEVEL OF THE PAD (5" ABOVE GRADE).
6. LOAD BREAK BUSHINGS PROVIDE POINT FOR TESTING AND GROUNDING.

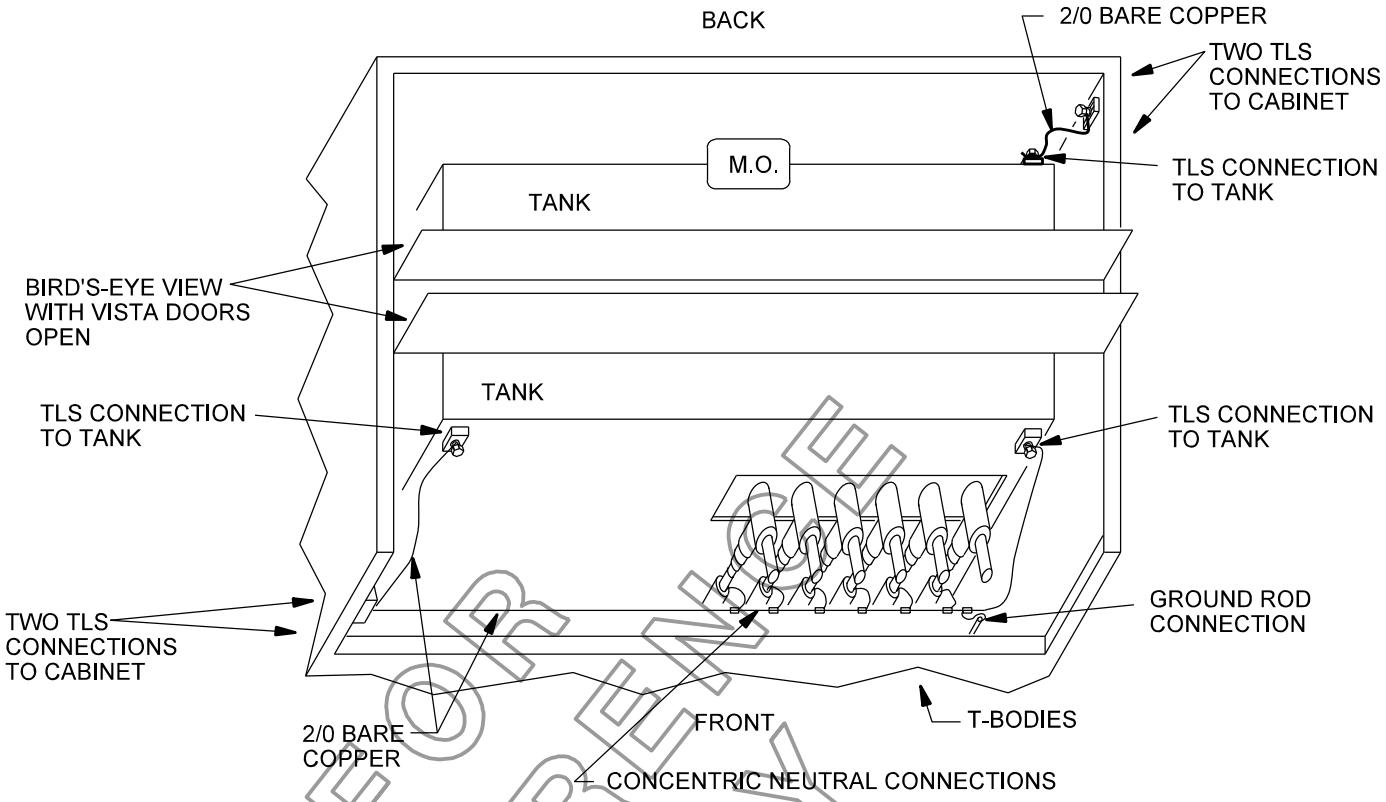


UFDFD13	750 MCM IN/OUT
UFDFD23	750 MCM IN/OUT 750 MCM TIE
UFDFD33	750 MCM IN/OUT 4/0 TAP
UFDFD14	500 MCM IN/OUT
UFDFD24	500 MCM IN/OUT 500 MCM TIE
UFDFD34	500 MCM IN/OUT 4/0 TAP

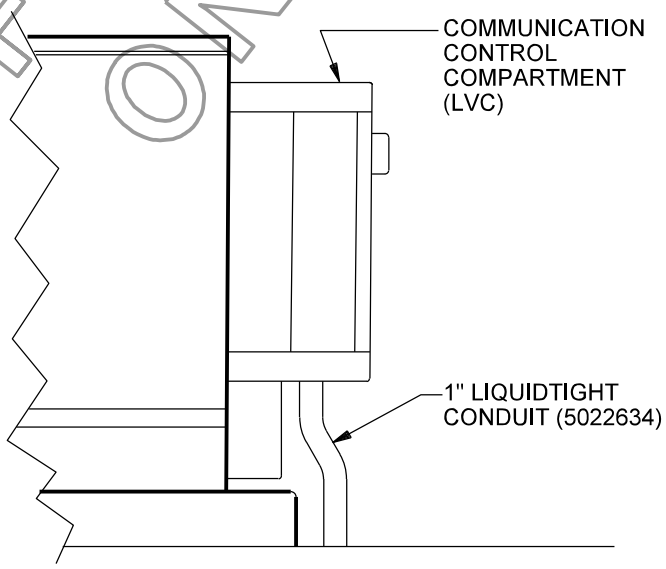
FOR REFERENCE ONLY

NOTES

1. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP), AND TOP OF PAD SHALL BE 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS.
4. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE SWITCH (E.G. DESIGNATED PARKING), THE SWITCH SHALL BE ROTATED 90 DEG. SO THE SIDE FACES ROAD RIGHT OF WAY. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD RIGHT OF WAY.
5. TWO COMMUNICATIONS CONDUIT ENTRANCES AT THIS APPROXIMATE LOCATION ON CABINET BOTTOM.
6. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO 2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT SWITCH TO CABINET AT GROUND PADS IN OPPOSITE CORNERS OF CABINET WITH 2/0 COPPER AND TLS CLAMPS. AT REAR CORNER ALSO CONNECT TOP CABINET GROUND PAD TO LOWER CABINET PAD WITH 2/0 COPPER AND TLS CLAMPS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO 2/0 CU BUS USING SPLIT BOLTS. CONNECT 2/0 BUS TO GROUND ROD.



TLS CLAMP IS STOCK CODE #5016629



FOR REFERENCE ONLY

NOTES

1. CONNECTION OF THE 1" PLASTIC COMMUNICATION CONDUIT TO THE COMMUNICATION CONTROL COMPARTMENT IS ACCOMPLISHED WITH THREADED ADAPTER.
2. SEE ANTENNA DETAIL UFAP26.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING EQUIPMENT INSTALLATION DETAILS S&C AUTOMATED REMOTE SUPERVISORY CONTROL COMMUNICATIONS CONDUIT & GROUNDING	ISSUE DATE: 03/11/02 REV. DATE: 07/29/13 APPROVAL: B.PRIEST
	3-38-2	8513E306.DGN

ENCLOSURE PLUS SWITCH OR FUSE(S)

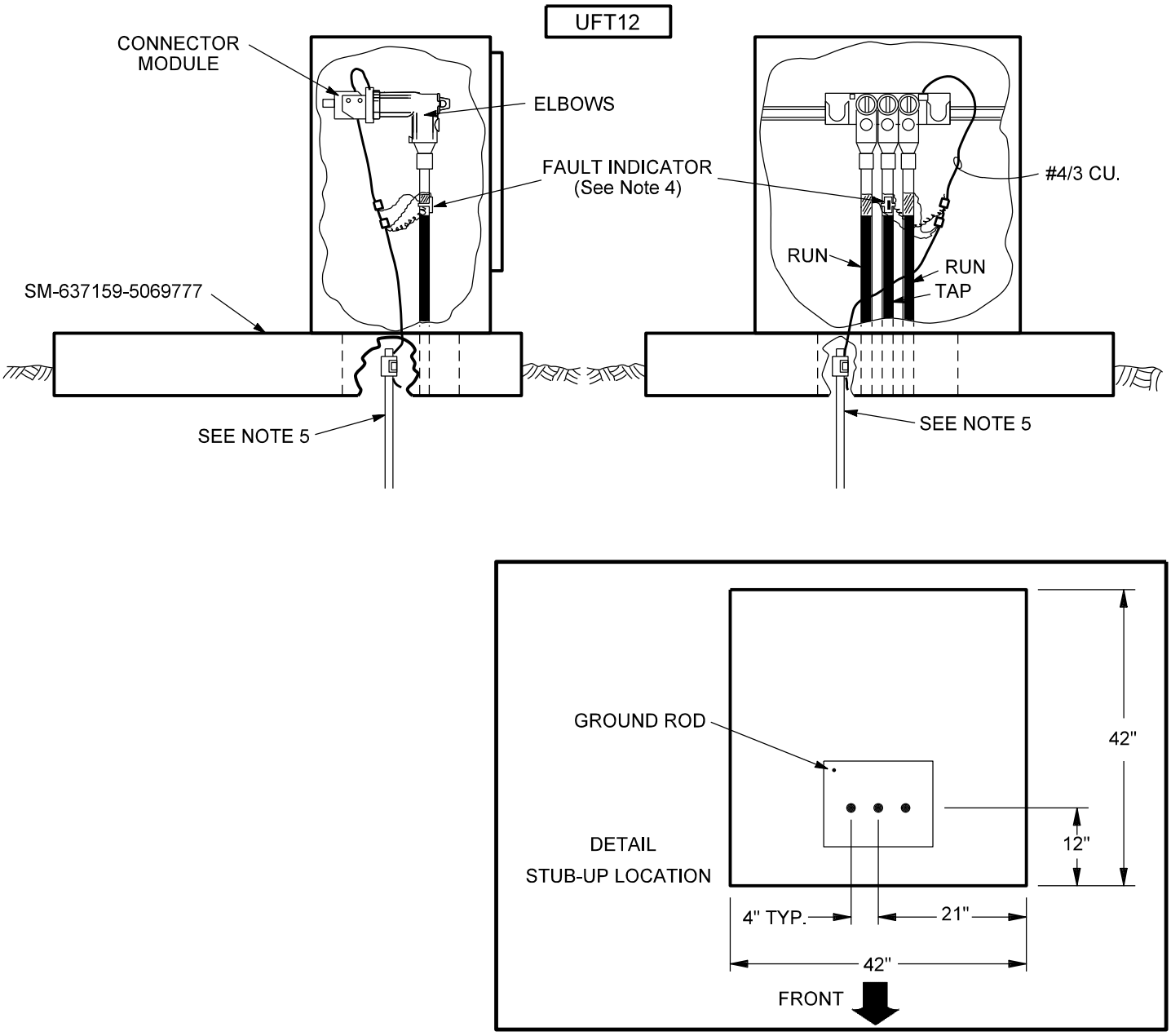
DESCRIPTION	COMPATIBLE UNIT
SWITCH, 600A, 15KV, ISO QUENSUR	RUFA1
SWITCH, 6 - 200A, 15KV & 6 FUSES	RUFA2
SWITCH CUBICLE; 3 - SINGLE ∅ SWITCHES, 15KV, 600A	RUFA3
FUSE CUBICLE; 15KV - 15 TAPS	RUFA4
FUSING ENCLOSURE, 54” X 54”	RUFA5
ENCLOSURE, SPECIAL, GET-3114 GE (9 TAPS)	RUFA6
ENCLOSURE, SPECIAL, S&C, PMH-6 (9 TAPS)	RUFA7
ENCLOSURE, SPECIAL, S&C, PMH-9 (11 TAPS)	RUFA8

ENCLOSURE ONLY

NUMBER OF UNITS	SIZE	COMPATIBLE UNIT
SINGLE	30” X 36” X 66-1/2”	RUFB20
SINGLE	42” X 42” X 46”	RUFB21
SINGLE	42” X 42” X 53”	RUFB22
SINGLE	42” X 42” X 63”	RUFB23
SINGLE	54” X 54” X 61”	RUFB24
SINGLE	54” X 54” X 71”	RUFB25
DOUBLE	42” X 84” X 54”	RUFB26
DOUBLE	42” X 84” X 56”	RUFB27
DOUBLE	42” X 84” X 63”	RUFB28
DOUBLE	54” X 108” X 71”	RUFB29
DOUBLE	54” X 108” X 63”	RUFB30
TRIPLE	42” X 126” X 63”	RUFB31
TRIPLE	54” X 162” X 71”	RUFB32
TRIPLE	54” X 162” X 91”	RUFB33
ENCLOSURE, SPECIAL, S&C ESD7023	54” X 55” X 72”	RUFB34

SWITCH ONLY

DESCRIPTION	RATING	COMPATIBLE UNIT
SWITCH, BLADE, 1-THROW, 1-POLE	15KV, 1-WAY, 400A	RUFC50
SWITCH, BLADE, 1-THROW, 1-POLE	15KV, 1-WAY, 600A	RUFC51
SWITCH, OIL, MANUALLY OPERATED	15KV, 4-WAY, 300A	RUFC52
SWITCH, SECTIONALIZER	15KV, 1-WAY, 185A	RUFC53
SWITCH, ISO QUENSUR	15KV, 1-WAY, 600A	RUFC54

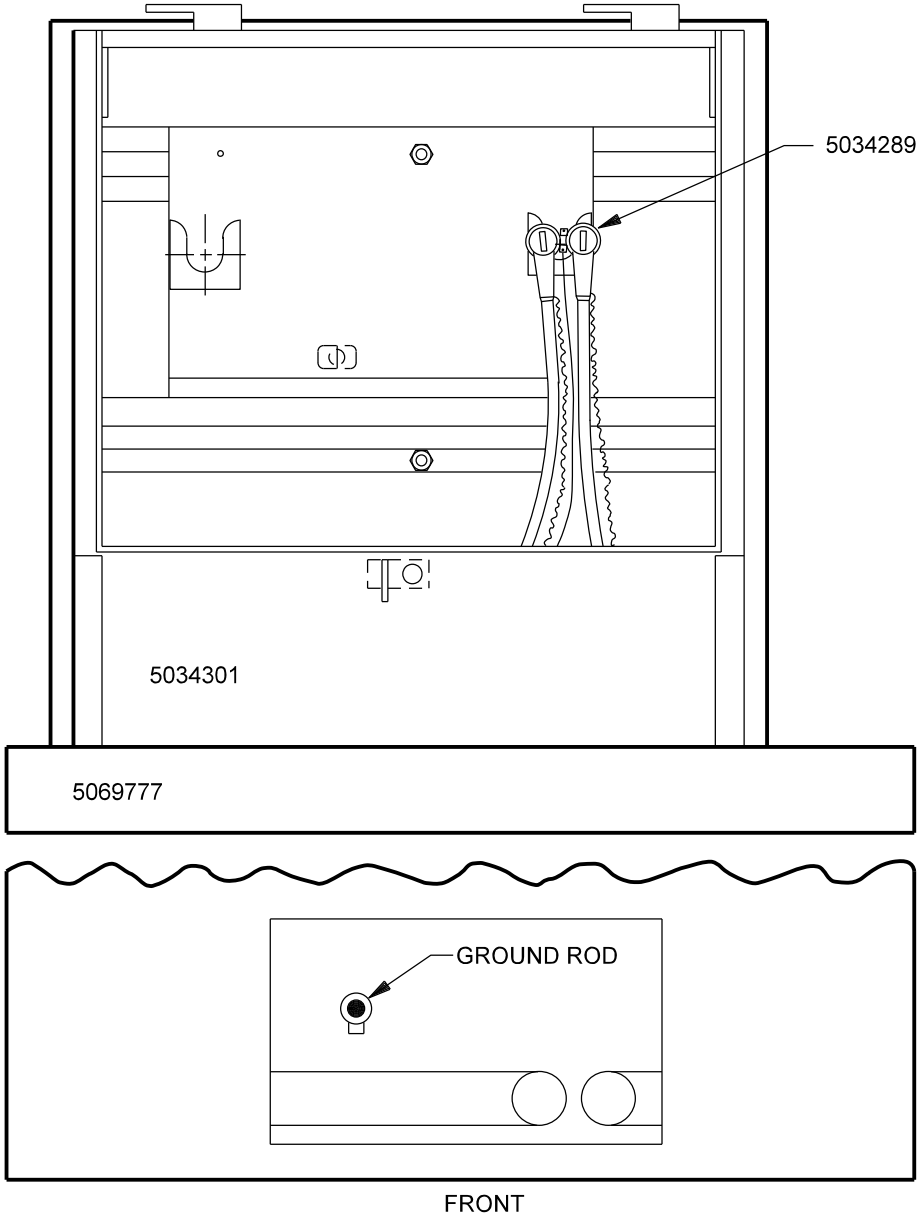


NOTES

1. A FAULT INDICATOR SHALL BE INSTALLED ON THE "TAP" CABLE.
2. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF ENCLOSURE. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL.
3. SEE DISTRIBUTION DESIGN STANDARDS,INDEX,PRIMARY CONDUCTOR,TEE-TAP,SINGLE-PHASE UNDERGROUND FOR APPLICATION.
4. LOCATE THE FAULT INDICATOR (UFB1F) JUST BELOW THE I.D. STRIP ON THE CABLE. MAKE SURE IT SURROUNDS ALL CONCENTRIC WIRES,INCLUDING THE PIGTAIL.
5. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CABLES. CONNECT TO CABINET SWITCHING DEVICE GROUND WITH #4 COPPER WIRE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING & FUSING 22kV PRIMARY TAP ENCLOSURE 1/0 TAP & RUN	ISSUE DATE: 04/30/93 REV. DATE: 10/30/13 APPROVAL: B.PRIEST
	3-40-1	8513E199.DGN

UFP12
#1/0 1Ø (22kv)



NOTES

1. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUNDING NUTS. TRAIN #2/0 ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
2. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH CONDUITS. CONNECT #4 CU LEAD FROM GROUND ROD TO GROUND CONNECTOR.
3. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLES AND CONNECT TO #2/0 CU BUS USING COMPRESSION CONNECTORS. CONNECT GROUND LEADS FROM INSULATED BUSHING CAPS TO #2/0 CU USING SPLIT BOLTS.
4. GROUND FEED THRU BUSHING TO #2/0 CU GROUND BUS.
5. UFP12 HAS NO CONDUIT STUB UP SPACER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	SWITCHING AND FUSING 22kV 1Ø PRIMARY PULLING ENCLOSURE	ISSUE DATE: 04/03/00 REV. DATE: 07/29/13 APPROVAL: B.PRIEST
	3-41-1	8513E512.DGN

CONDUIT

TITLE/DESCRIPTION	PAGE NO.
PROCEDURE FOR CEMENTING JOINTS	4-1-1
DIRECT BURIED CONDUIT INSTALLATION INSTRUCTIONS	4-2-1
COMMUNICATIONS OR STREET LIGHT CONDUIT INSTALLATION INSTRUCTIONS	4-3-1
COMMUNICATIONS AND POWER CONDUIT AT MANHOLE AND PULL BOXES	4-4-1
EXPANSION COUPLINGS INSTALLATION GUIDELINES	4-5-1
ELBOW REINFORCEMENT DETAILS	4-6-1
SPOOLED DUCT AND CONDUIT STUB-OUTS	4-7-1
#2-15KV CIC OR SPOOL-DUCT REPAIR	4-8-1
SHORT RADIUS CORNER AND SPOOL-DUCT OR PVC TO SPOOL-DUCT JOINT	4-9-1
SERVICE INSTALLATION CONDUIT REPAIR FOR WRONG METER LOCATIONS	4-10-1
CODES FOR ELBOWS, END CAPS, SPACERS, CEMENT, PULL TAPE, CONDUIT AND COUPLINGS	4-11-1
CODES	4-12-1
FEEDER OR PRIMARY 3" CONDUIT BANK SPECIFICATION CODES	4-13-1
CONDUIT SPACERS IN BORE CASING	4-14-1
SERVICE, 4” CONDUIT BANK SPECIFICATION	4-14-2
CONDUIT STUB UP TEMPLATES	4-15-1
DUCT BANK SUPPORT	4-16-1
POLYETHYLENE SPOOLED DUCT, MINIMUM LENGTH RETAINED	4-17-1
COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD DUCT BANKS	4-18-1

PROCEDURE FOR JOINING CONDUIT

THIS METHOD SHALL BE USED TO JOIN PVC TO PVC.

1. SELECT THE PROPER CEMENT AND PRIMER BY REFERRING TO THE CHART BELOW:

TYPE OF CONDUIT BEING JOINED	SRP STOCK NO.
ABS TO ABS	CEMENT = 10-1135 *
ABS TO PVC	CEMENT = 5011975
PVC TO PVC	PRIMER = 5012035
PVC TO PVC	CEMENT = 5011976

CAUTION: CEMENT THAT IS JELLY-LIKE OR THAT HAS NOT BEEN USED WITHIN ONE YEAR OF THE DATE STAMPED ON THE CAN SHOULD BE REPLACED.

2. CUT THE CONDUIT SQUARE AND REMOVE ALL BURRS FROM BOTH THE INSIDE AND OUTSIDE WITH A FILE OR KNIFE.
3. REMOVE DIRT, GREASE AND MOISTURE FROM THE END OF THE CONDUIT AND INSIDE THE COUPLING.
4. APPLY PRIMER (PVC TO PVC) TO ALL SURFACES OF THE CONDUIT AND COUPLING TO BE JOINED.
5. APPLY AN EVEN LAYER OF CEMENT TO THE CONDUIT AND INSIDE THE COUPLING. A SECOND LAYER SHOULD BE APPLIED TO THE CONDUIT IF NECESSARY TO COMPLETELY FILL THE GAP.
6. ASSEMBLE THE JOINT IMMEDIATELY WHILE THE CEMENT IS STILL SOFT AND WET. FORCEFULLY BOTTOM THE CONDUIT INTO THE COUPLING. TURN THE PIPE OR FITTING DURING (BUT NOT AFTER) ASSEMBLY TO DISTRIBUTE THE CEMENT EVENLY. HOLD IN POSITION FOR 30 SECONDS. WIPE OFF EXCESS CEMENT.
7. ALLOW 15 MINUTES SETTING TIME FOR GOOD HANDLING STRENGTH. THE JOINT WILL BE COMPLETELY SET WITHIN 24 HOURS.
8. THE AVERAGE NUMBER OF CONDUIT JOINTS THAT MAY BE OBTAINED PER QUART OF CEMENT AND 1/2 QUART OF PRIMER IS:

SIZE OF CONDUIT (INCHES)	2	2.5	3	4	5
NUMBER OF JOINTS	60	50	40	30	20

FOR STRAIGHT CONDUIT, FIGURE 1 JOINT PER 20 FEET.

FOR SWITCH/FUSE STUB-UP, FIGURE 24 JOINTS.

FOR SINGLE PHASE TRANSFORMER STUB-UP, FIGURE 30 JOINTS.

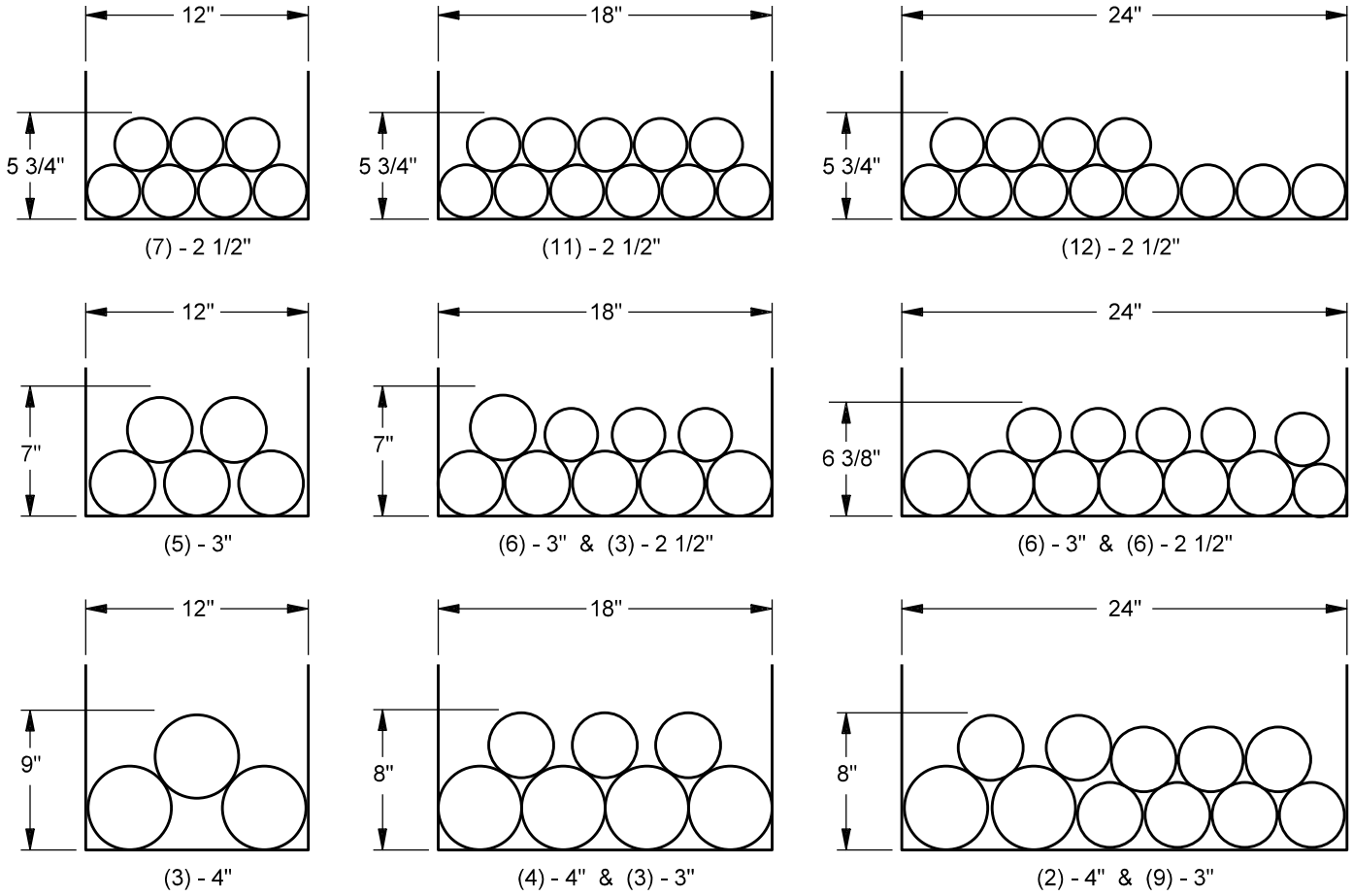
FOR ALL OTHER ELBOWS, FIGURE 2 JOINTS EACH.

9. ABS CONDUIT SHALL NOT BE USED.

* NO STOCK CODE EQUIVALENT EXISTS IN SAP.

INSTALLATION OF DIRECT BURIED CONDUITS

MAXIMUM CONDUIT EXAMPLES

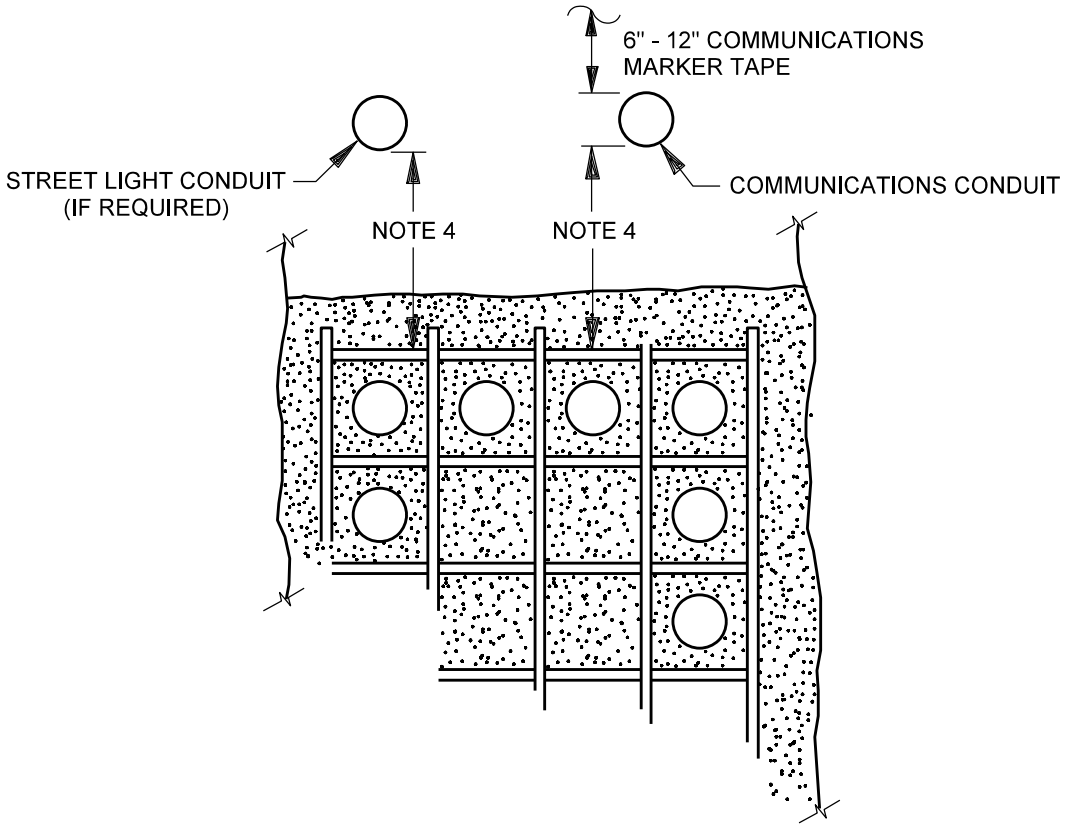


NOTES

1. CONDUIT SHALL BE INSTALLED IN A STRAIGHT AND ORDERLY FASHION AND SHALL NOT BE STACKED MORE THAN 2 LAYERS HIGH. THE TOP LAYER SHALL CONTAIN LESS CONDUIT THAN THE BOTTOM LAYER.
2. CONDUIT SHALL NOT OCCUPY MORE THAN 30 INCHES OF HORIZONTAL WIDTH. FOR TRENCHES WIDER THAN 30 INCHES, THE CONDUIT SHALL BE CONTAINED WITHIN 30 INCHES OF WIDTH.
3. THE LARGER SIZED CONDUITS SHOULD BE ARRANGED ON THE BOTTOM OF THE TRENCH WHENEVER POSSIBLE.
4. ALL OF THE CONDUITS SHALL BE SECURED FROM "FLOATING" DUE TO TYPE OF BACKFILL MATERIAL OR INSTALLATION METHODS. INDIVIDUAL CONDUITS ARE NOT TO BE ENCIRCLED WITH STEEL SUCH AS WIRE OR REBAR AS EXCESSIVE HEATING WILL RESULT. ENCIRCLEMENT AROUND ALL OF THE CONDUITS IN A TRENCH IS PERMISSABLE.
5. DEPTH DIMENSION SHOWN IS FOR ONE CONDUIT DIRECTLY ABOVE ANOTHER, SUCH AS WILL OCCUR AT ELBOW TURNOUTS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT DIRECT BURIED CONDUIT INSTALLATION INSTRUCTIONS	ISSUE DATE: 08/15/90 REV. DATE: 07/05/13 APPROVAL: B.PRIEST
	4-2-1	8513E196.DGN

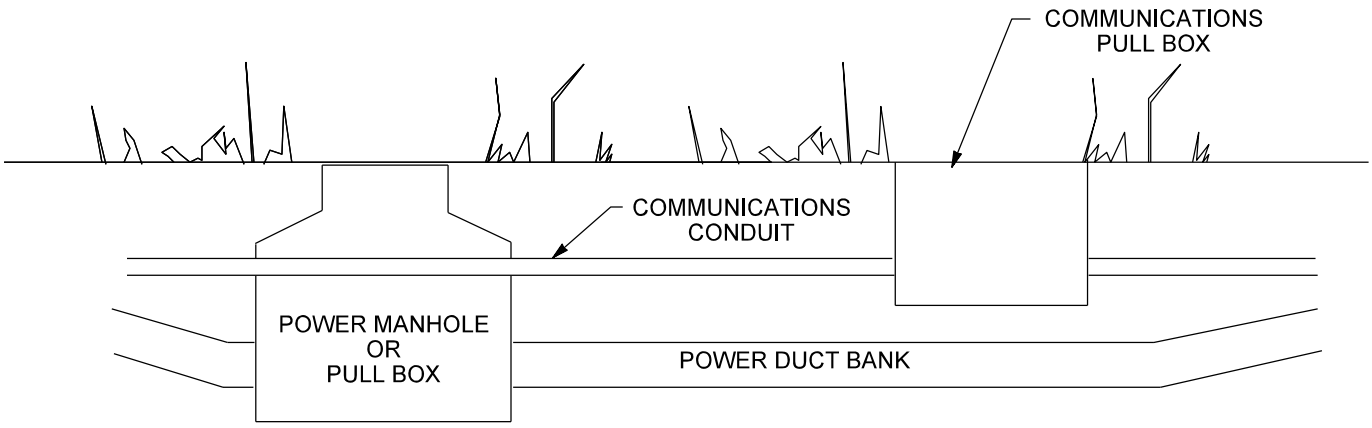
INSTALLATION OF COMMUNICATIONS CONDUIT AND/OR STREET LIGHTS CONDUIT



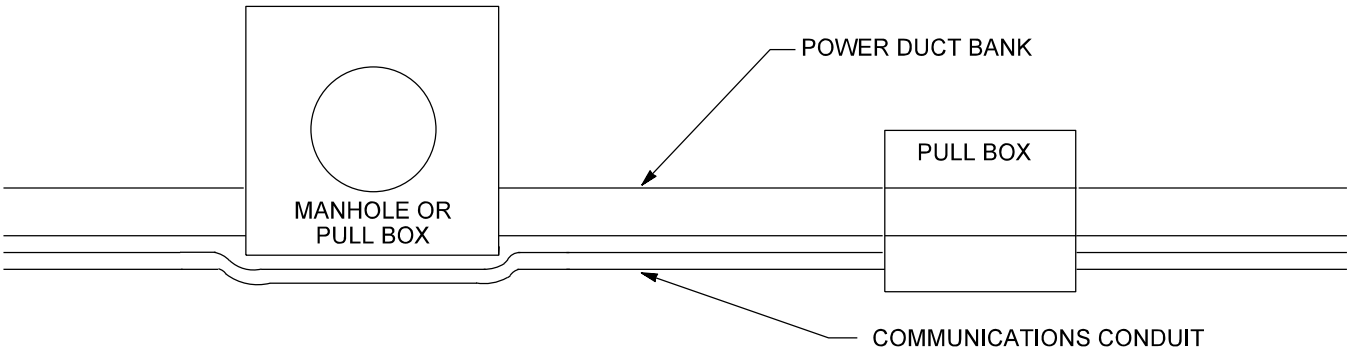
NOTES

1. COMMUNICATIONS CONDUIT MAY BE INSTALLED WITH POWER CABLE DUCT BANK. POWER CABLE DUCT REQUIRES FULL ENCASEMENT (CLSM 1-1/2 SACK). COMMUNICATIONS CONDUIT (AND STREET LIGHT CONDUIT) WILL BE ENCASED WITH DUCT BANK ENCASEMENT.IT IS NOT NECESSARY TO CALL FOR ENCASEMENT WITH COMMUNICATIONS OR STREET LIGHT CONDUIT WHEN IT IS INSTALLED WITH POWER DUCT BANK.
2. STREET LIGHT CONDUIT SHOULD BE PLACED ON SIDE OF TRENC CLOSEST TO STREET LIGHT POLE LOCATION.
3. COMMUNICATIONS CONDUIT MAY BE TIED TO DUCT BANK SPACERS, AND SHOULD BE LOCATED ON FIELD SIDE OF BANK IF POSSIBLE.
4. COMMUNICATIONS & STREET LIGHT CONDUIT MAY NOT BE DIRECT BURIED NEXT TO POWER CABLE OR POWER CABLE IN CONDUIT. IT MUST BE SEPARATED BY A MINIMUM OF 3 INCHES OF CLSM 1-1/2 SACK CONCRETE OR 12 INCHES OF EARTH.
5. FERROUS OR MAGNETIC TIE WIRE MUST NOT ENCIRCLE POWER CONDUIT WHEN INSTALLING COMMUNICATIONS OR STREET LIGHT CONDUIT.
6. INSTALL SRP COMMUNICATIONS WARNING TAPE 6" - 12" ABOVE COMMUNICATIONS CONDUIT. SEE COMMUNICATIONS CONSTRUCTION STANDARDS, CONDUIT SECTION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT COMMUNICATIONS OR STREET LIGHT CONDUIT INSTALLATION INSTRUCTIONS	ISSUE DATE: 09/09/87 REV. DATE: 02/22/11 APPROVAL: B.PRIEST
	4-3-1	8513E9.DGN



ELEVATION

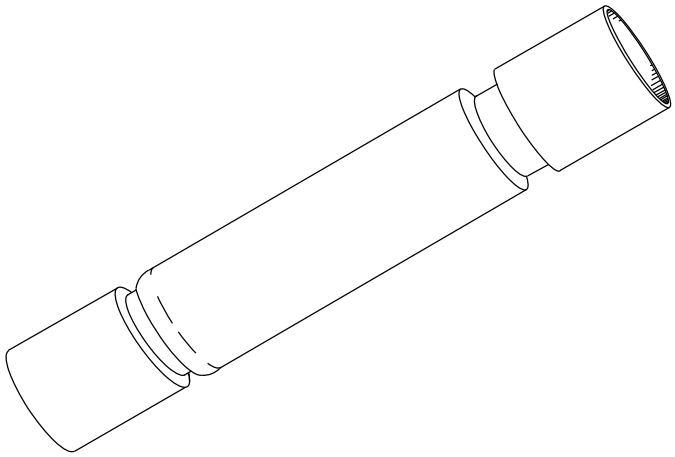


PLAN

NOTES

1. COMMUNICATIONS CONDUIT SHALL NOT PASS THROUGH ANY MANHOLE OR PULL BOX USED FOR POWER CABLE.
2. POWER DUCT BANK TO BE ROUTED UNDER COMMUNICATIONS PULL BOX.
3. ALL DIELECTRIC FIBER OPTIC CABLE MAY BE PLACED IN POWER CABLE MANHOLE WHEN INSTALLED INTO FEEDER DUCT DURING FEEDER UPGRADE.

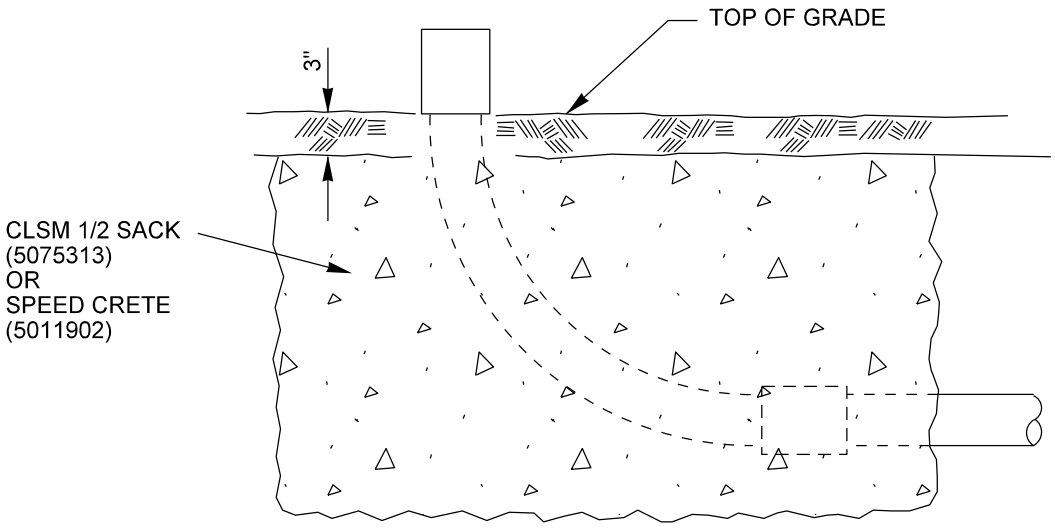
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT COMMUNICATIONS AND POWER CONDUIT AT MANHOLE AND PULL BOXES	ISSUE DATE: 07/15/88 REV. DATE: 04/05/10 APPROVAL: B. PRIEST
	4-4-1	8513E10.DGN



CONDUIT SIZE	STOCK CODE
2"	5033573
3"	5033574
4"	5033575

NOTES

1. EXPANSION JOINTS ARE INSTALLED IN CONDUIT SYSTEMS AS NEEDED TO PREVENT EXCESSIVE CONDUIT MOVEMENT WHICH COULD CAUSE CONDUIT TO BUCKLE, BREAK, OR OTHERWISE BE DAMAGED.
2. EXPANSION JOINTS ARE TO BE USED WHEN THE FOLLOWING CONDITIONS EXIST
   A. LARGE TEMPERATURE CHANGES ARE EXPECTED BETWEEN THE TIME THE CONDUIT IS INSTALLED AND THEN SHADED (MOSTLY A PROBLEM IN THE SUMMER.)
   AND
   B. STRAIGHT RUNS OF CONDUIT EXCEED 100 FT WITH NO INTERSET EQUIPMENT
   AND
   C. SHADING CANNOT BE COMPLETED THE SAME DAY THE CONDUIT IS INSTALLED IN THE TRENCH.
3. WHEN THE ABOVE CONDITIONS ARE MET, INSTALL EXPANSION JOINTS AS FOLLOWS.
   A. INSTALL ONE EXPANSION JOINT IN THE MIDDLE OF A STRAIGHT CONDUIT SECTION 100 TO 250 FT IN LENGTH.
   B. WHEN A STRAIGHT SECTION OF CONDUIT EXCEEDS 250 FT IN LENGTH, INSTALL ONE ADDITIONAL 250 FT, OR PORTION THEREOF, SECTION OF STRAIGHT CONDUIT REMAINING.

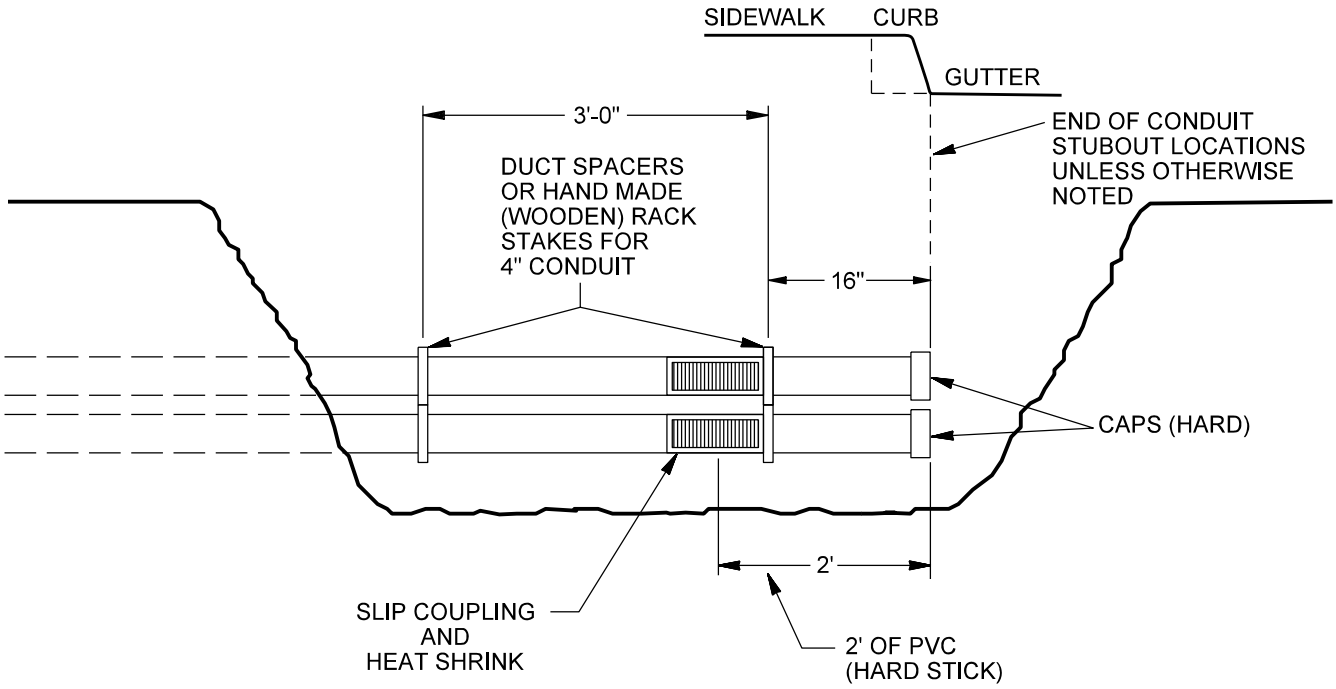


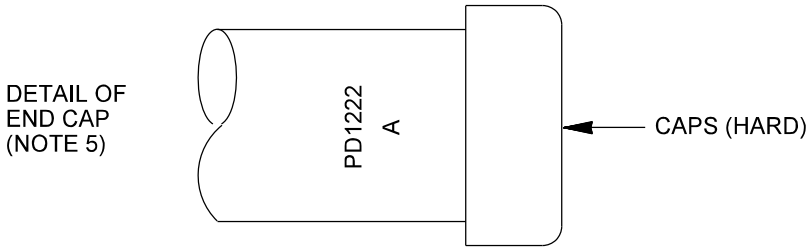
TOTAL ENCASEMENT
ACCEPTABLE PER DETAIL
VERTICAL ELBOW REINFORCEMENT

NOTES

1. FOR ELBOWS WHICH WILL HAVE SIDEWALL PRESSURE GREATER THAN 300 LBS/FT OR FOROTHER SITUATIONS AS REQUIRED.
2. DOES NOT APPLY TO CABLE PREASSEMBLED IN CONDUIT (C-I-C) OR TO CONTINUOUS SPOOLED DUCT.
3. BACKFILL AROUND ELBOWS WITH CLSM 1/2 SACK (5075313). SPEED CRETE (5011902) MAY ALSO BE USED.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	CONDUIT ELBOW REINFORCEMENT DETAILS	ISSUE DATE: 03/13/87 REV. DATE: 06/29/17 APPROVAL: S. DURAN
	4-6-1	8513E1.DGN

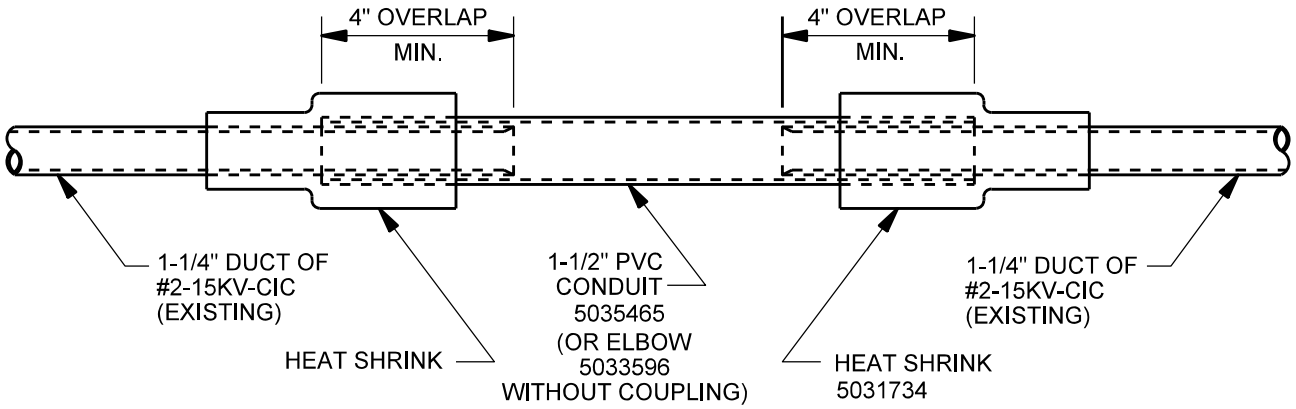




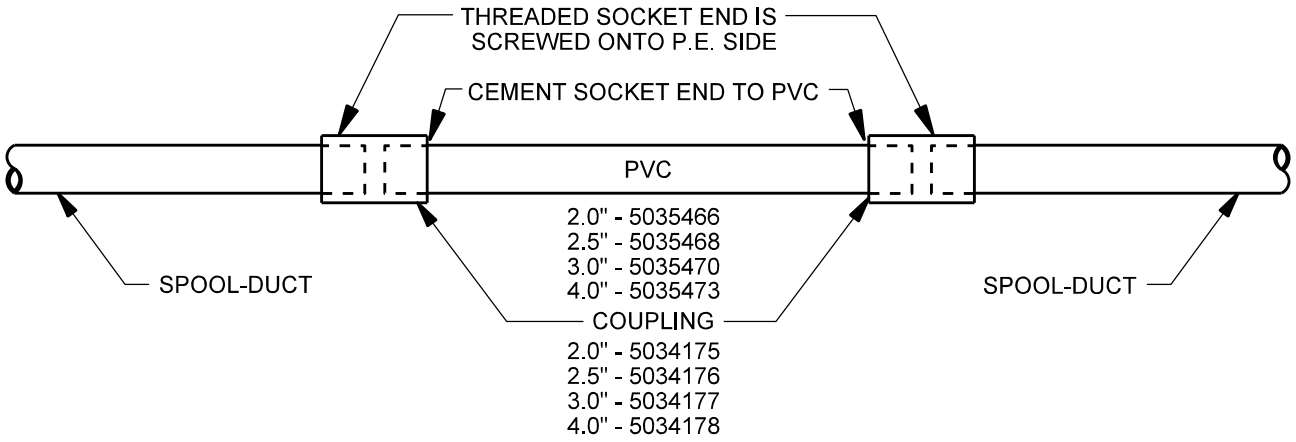
NOTES

1. SPOOL DUCT STUB-OUTS SHALL BE INSTALLED STRAIGHT AND AT REQUIRED SPECIFIED DEPTH.
2. TWO OR MORE SPOOL DUCTS SHALL HAVE DUCT SPACERS INSTALLED. WHERE THREE FEET OR MORE OF SPOOLED DUCT IS EXPOSED IN BORE PIT, TWO SETS OF DUCT SPACERS SHALL BE INSTALLED AND SHOWN AND ARRANGED WITH SPECIFIED CONDUIT RACKING.
3. SPOOL DUCT STUB-OUTS SHALL BE CAPPED WITH PVC CONDUIT CAPS, BUT NOT GLUED.
4. STUB-OUT PIT MAY BE BACKFILLED IF REQUIRED, BUT MUST HAVE ELECTRONIC MARKER AND ARED FLAG OVER END OF CONDUIT.
5. WITH BLACK FELT TIP PEN, WRITE THE DEVICE CONDUIT IS FROM AND PHASE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT SPOOLED DUCT AND CONDUIT STUB-OUTS	ISSUE DATE: 12/15/93 REV. DATE: 04/05/10 APPROVAL: B. PRIEST
	4-7-1	8513E174.DGN



UKJC2 #2-15kV CIC REPAIR



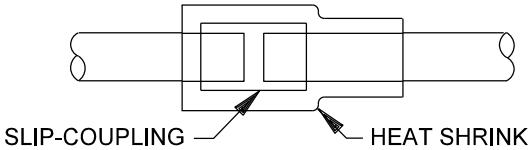
UKJ22	2" SPOOL-DUCT REPAIR
UKJ252	2.5" SPOOL-DUCT REPAIR
UKJ32	3" SPOOL-DUCT REPAIR
UKJ42	4" SPOOL-DUCT REPAIR

NOTES

1. REMOVE ANY CABLE FROM THE DUCT, ATTACH PULL STRING TO OPPOSITE END OF CABLE BEFORE PULLING IT OUT.
2. REMOVE THE DAMAGED PORTION OF THE DUCT.
3. BEVEL THE INSIDE ENDS OF THE DUCT BEING REPAIRED 30 DEG - 60 DEG.
4. PLACE HEAT SHRINK SLEEVES OVER THE ENDS OF THE DUCT, FOR CIC REPAIR ONLY.
5. CUT PVC CONDUIT TO LENGTH REQUIRED AND THREAD COUPLINGS COMPLETELY ONTO SPOOL-DUCT.
6. INSERT PULL STRING (IF PRESENT) THROUGH PVC CONDUIT AND TIE TOGETHER. INSTALL PVC CONDUIT INTO PLACE.
7. CEMENT LENGTH OF PVC ONTO COUPLINGS.

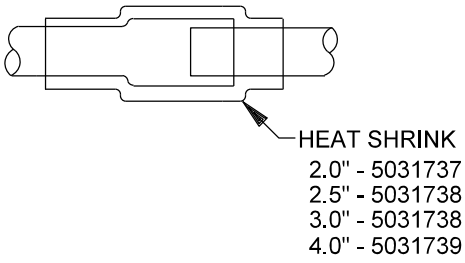
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT #2-15kV CIC OR SPOOL-DUCT REPAIR	ISSUE DATE: 02/13/90 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	4-8-1	8513E14.DGN

SPOOL-DUCT TO SPOOL-DUCT
OR
PVC CONDUIT TO SPOOL-DUCT



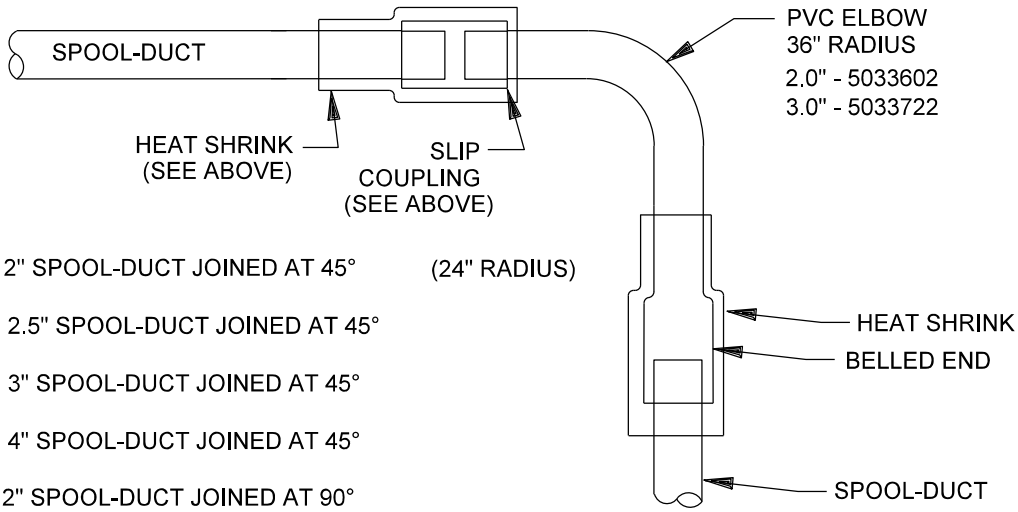
UKJ21	2"
UKJ251	2.5"
UKJ31	3"
UKJ41	4"

PVC CONDUIT WITH BELLED END TO SPOOL-DUCT



UKJB2	2"
UKJB25	2.5"
UKJB3	3"
UKJB4	4"

JOIN SPOOL-DUCT ENDS AT 45° OR 90° IN CLOSE QUARTERS



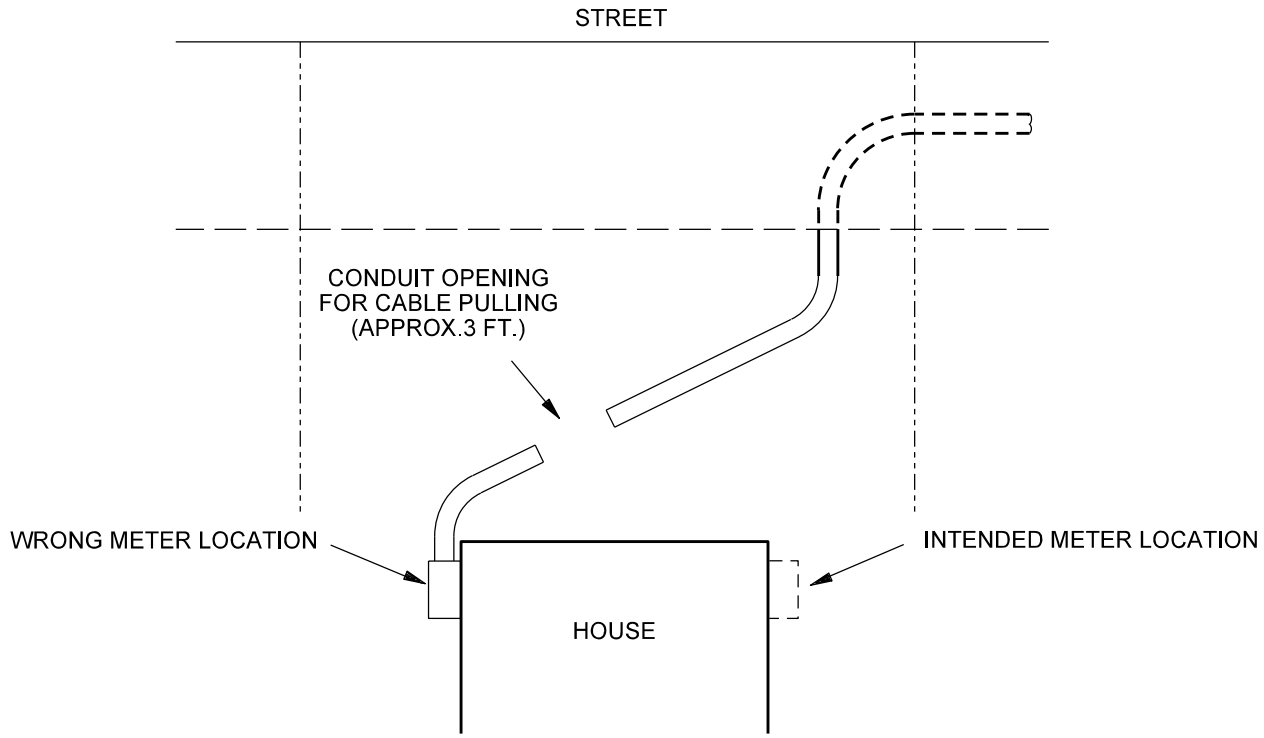
UKJE42	2" SPOOL-DUCT JOINED AT 45°
UKJE425	2.5" SPOOL-DUCT JOINED AT 45°
UKJE43	3" SPOOL-DUCT JOINED AT 45°
UKJE44	4" SPOOL-DUCT JOINED AT 45°
UKJE2	2" SPOOL-DUCT JOINED AT 90°
UKJE25	2.5" SPOOL-DUCT JOINED AT 90°
UKJE3	3" SPOOL-DUCT JOINED AT 90°
UKJE4	4" SPOOL-DUCT JOINED AT 90°

UKJE225	2.5" SPOOL-DUCT JOINED AT 22.5°
UKJE23	3" SPOOL-DUCT JOINED AT 22.5°
UKJE24	4" SPOOL-DUCT JOINED AT 22.5°

NOTES

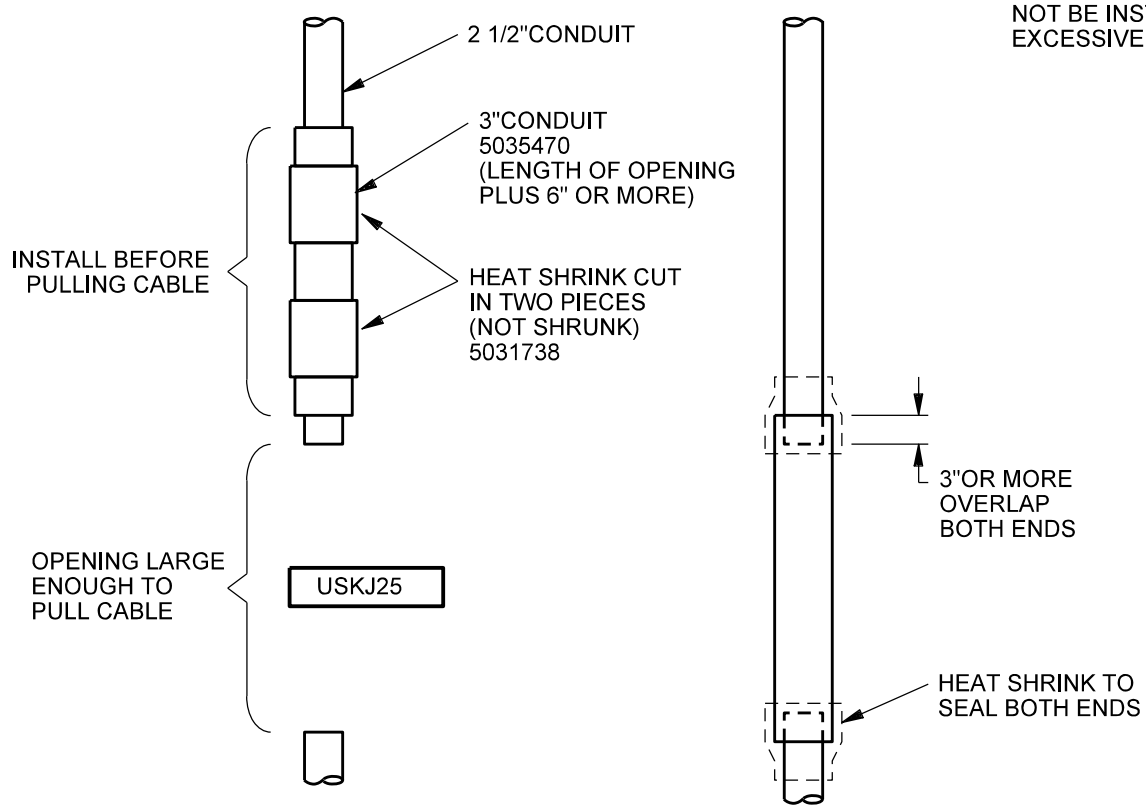
1. GLUE COUPLING ONTO PVC CONDUIT AND BEVEL INSIDE ENDS OF SPOOL-DUCT 30°-60°.
2. PLACE HEAT SHRINK SLEEVES OVER ENDS OF DUCT AND INSERT SPOOL-DUCT INTO COUPLING (OR BELL END).
3. SHRINK HEAT SHRINK TUBE OVER COUPLING AND ONTO SPOOL-DUCT TO HOLD THEM TOGETHER.
4. GROUT FINAL ASSEMBLY PER CONDUIT ELBOW REINFORCEMENT DETAILS ON PAGE 4-6-1.
5. JOINING SPOOL-DUCT WITH A PVC ELBOW IS TO BE USED IN CLOSE QUARTERS WHERESPOOL-DUCT CAN NOT BE INSTALLED IN ONE CONTINUOUS PIECE.
6. ADD A "G" TO THE END OF ANY ABOVE COMPATIBLE UNIT FOR MATERIAL PROVIDED BY SRP AND INSTALLED BY CUSTOMER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT SHORT RADIUS CORNER AND SPOOL-DUCT OR PVC TO SPOOL-DUCT JOINT	ISSUE DATE: 02/14/90 REV. DATE: 07/29/13 APPROVAL: B. PRIEST
	4-9-1	8513E12.DGN



NOTES

1. TO BE USED WHEN SERVICE CAN NOT BE INSTALLED DUE TO EXCESSIVE PULLING TENSION.



Underground Distribution Construction Standards PROPRIETARY MATERIAL	CONDUIT SERVICE INSTALLATION CONDUIT REPAIR FOR WRONG METER LOCATIONS	ISSUE DATE: 06/10/92 REV. DATE: 07/29/13 APPROVAL: B.PRIEST
	4-10-1	8513E176.DGN

(NOTE 1)	CODE NUMBER	DESCRIPTION	STOCK NO.
		ELBOWS FOR PRIMARY AND SECONDARY	
	UKES1*	ELBOW, 1", 90 DEG, 24"R	5033594
UKES24G	UKES24*	ELBOW, 2", 45 DEG, 24"R	5033587
UKE2G	UKE2*	ELBOW, 2", 90 DEG, 36"R	5033602
UKE252G	UKE252 *	ELBOW, 2.5", 22.5 DEG, 36"R	5033708
UKE254G	UKE254 *	ELBOW, 2.5", 45 DEG, 36"R	5033707
UKES25G	UKES25*	ELBOW, 2.5", 90 DEG, 24"R	5033706
UKE25G	UKE25 *	ELBOW, 2.5", 90 DEG, 36"R	5033603
UKE32G	UKE32*	ELBOW, 3", 22.5 DEG, 36"R	5033589
UKE34G	UKE34*	ELBOW, 3", 45 DEG, 36"R	5033590
UKE3G	UKE3*	ELBOW, 3", 90 DEG, 36"R	5033722
UKES3G	UKES3*	ELBOW, 3", 90 DEG, 24"R	5033711
	* * USE35 *	ELBOW, 3.5" 90 DEG, 36"R	
UKE42G	UKE42*	ELBOW, 4", 22.5 DEG, 36"R	5033721
UKE44G	UKE44 *	ELBOW, 4", 45 DEG, 36"R	5033591
UKE4G	UKE4*	ELBOW, 4", 90 DEG, 36"R	5033723
	UKE5*	ELBOW, 5", 90 DEG, 36"R	5033725
		ELBOWS FOR SERVICES	
	USE2 *	ELBOW, 2", 90 DEG, 36"R	5033602
	USES24 *	ELBOW, 2", 45 DEG, 24"R	5033587
	USE25*	ELBOW, 2.5", 90 DEG, 36"R	5033603
	USE3 *	ELBOW, 3", 90 DEG, 36"R	5033722
	USE34*	ELBOW, 3", 45 DEG, 36"R	5033590
	**USE35 *	ELBOW, 3.5" 90 DEG, 36"R	
	USE4 *	ELBOW, 4", 90 DEG, 36"R	5033723
	USE44 *	ELBOW, 4", 45 DEG, 36"R	5033591
	USE5 *	ELBOW, 5", 90 DEG, 36"R	5033725
	USE54*	ELBOW, 5", 45 DEG, 36"R	5033724
		END CAPS	
	UK1EC	END CAP 1"	5035083
	UK15EC	END CAP 1.5"	5035084
UK2ECG	UK2EC	END CAP 2"	5035085
UK25ECG	UK25EC	END CAP 2.5"	5035082
UK3ECG	UK3EC	END CAP 3"	5035086
UK4ECG	UK4EC	END CAP 4"	5035180
		END CAP 5"	5035181
		SPACERS ARE FOR 3" CONDUIT	
UK3AG	UK3A	SPACER, 3 HOLE	5031862
UK4AG	UK4A	SPACER, 4 HOLE	5031863
UK6AG	UK6A	SPACER, 6 HOLE	5031864
UK8AG	UK8A	SPACER, 8 HOLE	5031865
UK9AG	UK9A	SPACER, 9 HOLE	5031866
UK12AG	UK12A	SPACER, 12 HOLE	5031867
UK16AG	UK16A	SPACER, 16 HOLE	5031868
UKXG	UKX	SPACER, 1Ø TRANSFORMER STUB-UP	5031848

* ADD "E" TO THE ELBOW CODE FOR GROUT REINFORCEMENT. SEE ELBOW REINFORCEMENT DETAILS ON PG. 4-6-1

* * NOT STOCKED BY SRP (PROVIDED BY CUSTOMER ONLY).

NOTES

1. UNITS ENDING IN "G" ARE PROVIDED BY SRP AND INSTALLED BY A CONTRACTOR.

(NOTE 1)	CODE NUMBER	DESCRIPTION	STOCK NO.
		PVC SOLVENT CEMENT	
UKSCG	UKSC	CEMENT, 1 QUART	5011976
		PRIMER, 0.5 QUART	5012035
		PULL TAPE FOR SERVICES	
UKMTG	UKMT	MULETAPE, 1500 FT. ROLL	5031726
		END CAP, PLUG, 15" MARKER FOR SERVICES (2.5")	
UK25ECPMG	UK25ECPM	CAP, PLUG, E-MARKER, RED MARKER	5035082 5035183 5035671 5035669
		PVC CONDUIT COUPLINGS	
	UK1C	COUPLING, 1"	5034161
	UK12C	COUPLING, 1.25"	5034164
UK2CG	UK2C	COUPLING, 2"	5034163
UK25CG	UK25C	COUPLING, 2.5"	5034166
UK3CG	UK3C	COUPLING, 3"	5034168
UK4CG	UK4C	COUPLING, 4"	5034171
		COUPLING, 5"	5034173
		PVC 5 DEG. ANGLE COUPLINGS	
	UK25AC	2.5"	5034167
	UK3AC	3"	5034169
	UK4AC	4"	5034172
		PVC REPAIR SLEEVE COUPLING	
		SLEEVE, 1.25" X 6" LONG	5034184
		SLEEVE, 2" X 6" LONG	5034180
		SLEEVE, 2.5" X 6" LONG	5034179
		SLEEVE, 3" X 6" LONG	5034181
		SLEEVE, 3" X 9" LONG	5034182
		SLEEVE, 4" X 9" LONG	5034183
		SPLIT DUCT FOR CONDUIT REPAIR	
		SPLIT DUCT, 2"	5035467
		SPLIT DUCT, 2.5"	5035469
		SPLIT DUCT 3"	5035471
		SPLIT DUCT 4"	5035474
		SPLIT COUPLING	
		SPLIT COUPLING, 2"	5034186
		SPLIT COUPLING, 2.5"	5033570
		SPLIT COUPLING, 3"	5033571
		SPLIT COUPLING, 4"	5033572
		CONDUIT END PLUGS	
	UK2EP	END PLUG, 2"	5035182
UK25EPG	UK25EP	END PLUG, 2.5"	5035183
UK3EPG	UK3EP	END PLUG, 3"	5035184
UK4EPG	UK4EP	END PLUG, 4"	5035185
		CONDUIT TO CABLE SEALING PLUG	
		SEAL PLUG, 3",500 & 750 MCM FEEDER	5031729
	UKFS	SEAL, FOAM	5012047

NOTES

1. UNITS ENDING IN "G" ARE PROVIDED BY SRP AND INSTALLED BY A CONTRACTOR.

CONDUIT	CODE	
STRAIGHT PVC	UK1 _ _ _ _	(5035464)
	UK2 _ _ _ _	(5035466)
	UK25 _ _ _ _	(5035468)
	UK3 _ _ _ _	(5035470)
	UK4 _ _ _ _	(5035473)
	UK5 _ _ _ _	(5035475)
POLYETHYLENE SPOOLED - DUCT	UKF2 _ * _ _	(5031714)
	UKF25 _ * _ _	(5031713)
	UKF3 _ * _ _	(5033738)
	UKF4 _ * _ _	(5033737)

CONDUIT SIZE (IN.)
SEE NOTE 1
SEE NOTE 2
SEE NOTE 3
SEE NOTE 4

INSTRUCTIONS

TO OBTAIN THE COMPLETE CODE NUMBER, SELECT THE APPROPRIATE SUFFIXES. DO NOT LEAVE BLANK SPACES IF SUFFIX DOES NOT APPLY.

EXAMPLE

FOR A DISTRIBUTION DUCT BANK OF 12 STRAIGHT 3" PVC CONDUITS CONCRETE ENCASED:

UK312F

* NOT APPLICABLE

NOTES

1. NUMBER OF CONDUITS (DISTRIBUTION ACCOUNT ONLY)
   STRAIGHT PVC. .....1 & 5" = 1 OR 4 CONDUITS
   2, 2 1/2, 3 & 4" = 1 TO 12 CONDUITS
   SPOOLED - DUCT.....2, 2 1/2 & 3" = 1 TO 12 CONDUITS
   4 INCH = 1 OR 2 CONDUITS

   NUMBER OF CONDUITS (DUSK TO DAWN, STREET LIGHTS & COMMUNICATIONS)
   STRAIGHT PVC.....SEE NOTE.....2 & 2-1/2" = 1 OR 2 CONDUITS
   SPOOLED - DUCT.....2 & 2 1/2" = 1 OR 2 CONDUITS
   INSTALL PULL TAPE (0646901) TIED TO END PLUGS ON BOTH ENDS OF RUN WHEN ANY SPOOL-DUCT IS INSTALLED.
2. CONDUIT ENCASEMENT
   E = LEAN MIX BACKFILL (1-1/2 SACK 5075315).
   F = 2,000 PSI CONCRETE (SRP STOCK # 5075320 OR MAG C MAY BE USED WITH 2, 2.5, 3 & 4 INCH STRAIGHT PVC CONDUIT, DEVELOPER OR CONTRACTOR INSTALLED)
   FE = RED CONCRETE (EL PASO GAS CROSSING ONLY, SEE RED CONCRETE, TRENCHING SPECIAL CODES)
3. ACCOUNTS OTHER THAN DISTRIBUTION (1 OR 2 CONDUITS ONLY)
   D = DUSK TO DAWN LIGHTING (1", 2" OR 2 1/2" CONDUIT ONLY)
   L = STREET LIGHTING (1", 2" OR 2 1/2" CONDUIT ONLY)
   K = SEE COMMUNICATIONS BOOK
4. CONDUIT SUPPLIED BY SRP & INSTALLED BY OTHERS
   G = DEVELOPER OR CONTRACTOR INSTALLED (MAXIMUM CONDUITS-SAME AS NOTE 1)

SERVICE CONDUIT IS TYPICALLY PROVIDED AND INSTALLED BY THE CUSTOMER.

SIZE	CODES FOR: PVC STRAIGHT	POLYETHYLENE SPOOLED-DUCT
2"	USK2_ _	—
2 1/2"	USK25_ _	USKF25_ _
3"	USK3_ _	USKF3_ _
4"	USK4_ _	USKF4_ _
5"	USK5_ _	—

E=LEAN MIX BACK-FILL (1-1/2 SACK 5075315)

G=DEVELOPER OR CONTRACTOR INSTALLED

FLEXIBLE CONDUIT (CORRUGATED)

UKX1G	UKX1	CONDUIT , FLEXIBLE, 1"	5033732
		CONDUIT , FLEXIBLE, 2"	5033733
		CONDUIT , FLEXIBLE, 2.5"	5033734
		CONDUIT , FLEXIBLE, 3"	5033735
		CONDUIT , FLEXIBLE, 4"	5033736

Underground Distribution Construction Standards

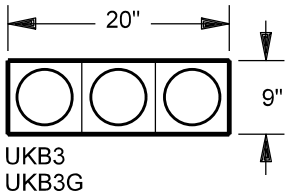
SRP®

PROPRIETARY MATERIAL

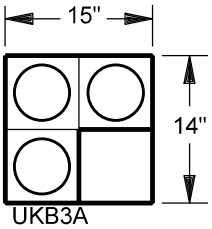
CONDUIT CODES

ISSUE DATE: 07/31/90
REV. DATE: 12/04/14
APPROVAL: B.PRIEST

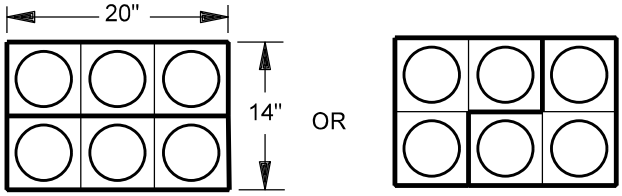
8513E186.DGN



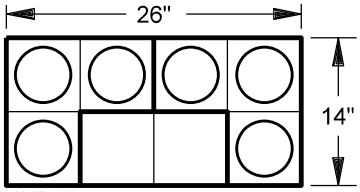
UKB3
UKB3G
UKB3NG*
SPACER: #5031862



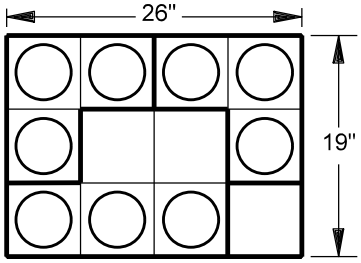
UKB3A
UKB3AG
UKB3ANG*
SPACER: #5031863



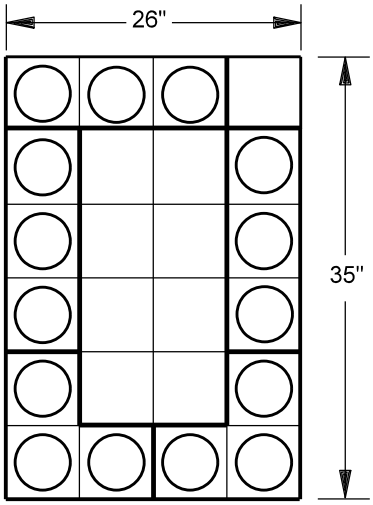
UKB6
UKB6G
UKB6NG*
SPACER: #5031864



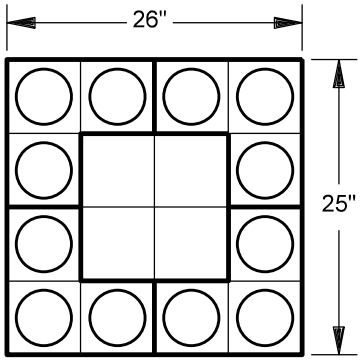
UKB6A
UKB6AG
UKB6ANG*
SPACER: #5031865



UKB9
UKB9G
UKB9NG*
SPACER: #5031867



UKB15
UKB15G
UKB15NG*
SPACER: #5031870



UKB12
UKB12G
UKB12NG*
SPACER: #5031868

"UKB" DUCT BANK SPECIFICATIONS

* ENCASEMENT BACKFILL SUPPLIED BY OTHERS

1. WHEN IDENTIFIED ON CONSTRUCTION PRINTS, 2/0 BARE COPPER NEUTRALS SHALL BE INSTALLED PER INSTRUCTIONS ON PAGE 4-13-2.

2. DUCT BANKS SHALL BE CONSTRUCTED AS FOLLOWS:
   A. SPACERS CONFIGURED AS ABOVE OR AS SHOWN ON CONSTRUCTION PRINTS.
   B. SPACERS SHALL BE PLACE ON THE BOTTOM OF THE TRENCH AND SPACED AT 6 FOOT INTERVALS.
   C. UNLESS NOTED OTHERWISE, DUCT BANK SHALL BE ENCASED IN CONTROLLED LOW STRENGTH MATERIAL (CLSM) 1-1/2 SACK CEMENT PER CUBIC YARD (SRP MATERIAL ITEM 5075315/0000106). MINIMUM ENCASEMENT SHALL BE 2 INCHES ON SIDES AND 3 INCHES ON TOP. SEE NOTES BELOW WHEN A DIFFERENT ENCASEMENT BACKFILL IS REQUIRED.

3. INDIVIDUAL CONDUITS ARE NOT TO BE ENCIRCLED WITH STEEL SUCH AS WIRE OR REBAR. ENCIRCLEMENT OF THE COMPLETE DUCT BANK IS PERMISSIBLE.

4. THE ABOVE DIMENSIONS ARE NOMINAL BASED ON SPACER DIMENSIONS AND ENCASEMENT REQUIREMENTS.

NOTES

1. FOR THE FOLLOWING ENCASEMENT BACKFILLS, THE DUCT BANK CODE SHALL INCLUDE A SUFFIX AS SHOWN:
   A. ADD “F” FOR 2000 PSI MINIMUM CONCRETE (SRP MATERIAL ITEM 5075320). I.E. UKB6F.
   B. ADD “FE” FOR 2000 PSI MINIMUM RED CONCRETE (CONTACT SRP TO ORDER). I.E. UKB6FE.

2. WHEN CROSSING UNDER EXISTING DUCT BANKS, REFER TO PAGE 4-16-1 FOR SUPPORTING SPECIFICATIONS.

3. THE INNER SPACES SHALL NOT BE USED.

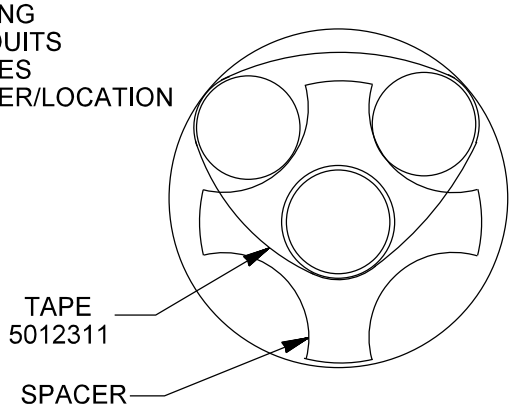
4. DUCT BANKS CONTAINING NINE CONDUITS OR LESS MAY BE ROTATED 90 OR 180 DEGREES.

INSTALLATION NOTES FOR 2/0 BARE COPPER NEUTRALS

1. INSTALL 2/0 BARE COPPER NEUTRALS AS SHOWN ON THE CONDUIT ONE LINE UNLESS NOTED OTHERWISE. NEUTRALS SHALL BE PLACED ON THE BOTTOM OF THE TRENCH AS SHOWN ON THE DUCT BANK DETAILS.
2. DIRECT BURIED CONNECTIONS OF 2/0 BARE COPPER NEUTRALS SHALL USE TWO (2) COMPRESSION CONNECTORS, STOCK CODE #5035168. INSTALLED BY SRP PERSONNEL.
3. COIL 8 FT ON THE END OF THE 2/0 BARE COPPER INSIDE MANHOLES. SEE DETAIL ON PAGE 7-9-3 FOR CONNECTION OF 2/0 BARE COPPER NEUTRAL TO 2/0 BARE COPPER RINGS INSIDE EACH MANHOLE.
4. PROVIDE AN 8 FT LOOP OF 2/0 BARE COPPER INTO THE WINDOW OF EACH PAD MOUNT DEVICE WHERE 2/0 BARE COPPER RUNS IN AND OUT OF THE DEVICE. ON A RADIAL 2/0 BARE COPPER RUN INTO A PAD MOUNTED DEVICE, PROVIDE AN 8' COIL INTO THE WINDOW.
5. ON 2/0 BARE COPPER RUNS INTO A FOUR WAY SWITCH, PROVIDE AN 8 FT COIL INTO THE WINDOWS AS SHOWN. CREWS TO CONSTRUCT 2/0 BARE COPPER LOOP UNDER THE PAD TO BOND ALL FOUR COMPARTMENTS TOGETHER.
6. LEAVE 12 INCHES 2/0 BARE COPPER STUBBED UP AT RISER POLE. WHERE A ONE INCH CONDUIT STUB UP HAS BEEN PROVIDED, RUN THE 2/0 BARE COPPER THROUGH THE ONE INCH CONDUIT.

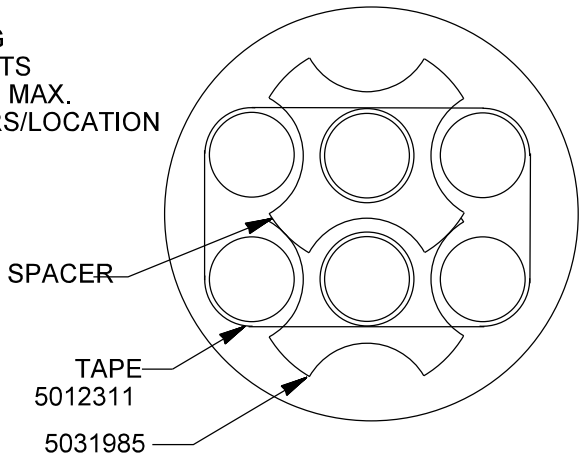
UKB3C

12" CASING
3 CONDUITS
0 SPARES
1 SPACER/LOCATION



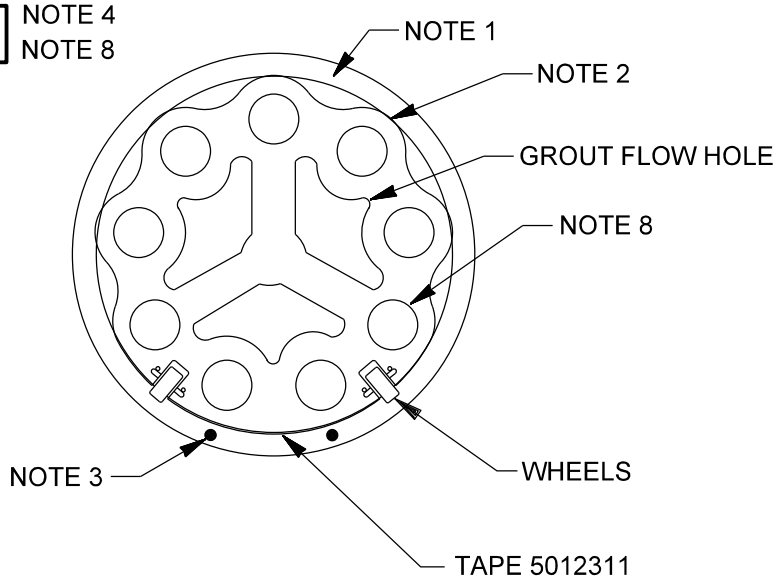
UKB6C

18" CASING
6 CONDUITS
1 SPARES MAX.
2 SPACERS/LOCATION



UKBS

NOTE 4
NOTE 8



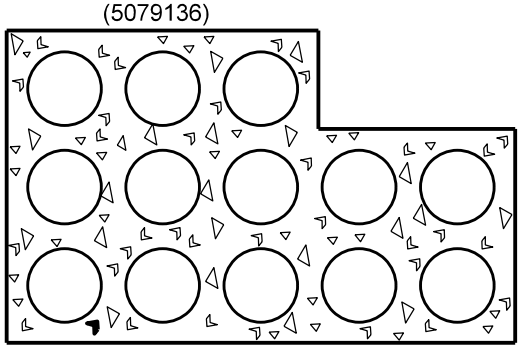
NOTES

1. STEEL BORE CASING NOT INCLUDED IN THESE UNITS.
2. LOCATE SPACERS AT 6' INTERVALS.
3. INSTALL COPPER NEUTRAL IN CASING AS REQUIRED FOR NUMBER OF FEEDER CIRCUITS.
4. SPACERS FOR UKBS ARE NOT STOCKED AND MUST BE SPECIAL ORDERED. CASE BORE CONTRACTOR SHALL ORDER SPACERS AND PROVIDE SRP WITH CASE BORE AND SPACER PROJECT PLANS FOR APPROVAL. ELECTRICAL CONDUIT SHALL BE PLACED ON THE OUTSIDE POSITIONS, NOT INSIDE, FOR HEAT DISSIPATION. MINIMUM 2" SEPARATION BETWEEN CONDUITS.
5. CONDUIT AND COPPER NEUTRAL TO EXTEND 2' BEYOND CASE ON EACH END FOR FUTURE EXTENSION.
6. SPARE CONDUIT ENDS MUST BE CAPPED.
7. GROUT SHALL BE PUMPED INTO CASING UNTIL FULL FOR THERMAL CONDUCTIVITY (5075316 DBS).
8. CONDUIT NOT INCLUDED IN UKBS ONLY.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT CONDUIT SPACERS IN BORE CASING	ISSUE DATE: 01/15/87 REV. DATE: 05/14/19 APPROVAL: N. SABBAH
	4-14-1	8513E120.DGN

SERVICE CONDUIT DUCT BANK DETAIL

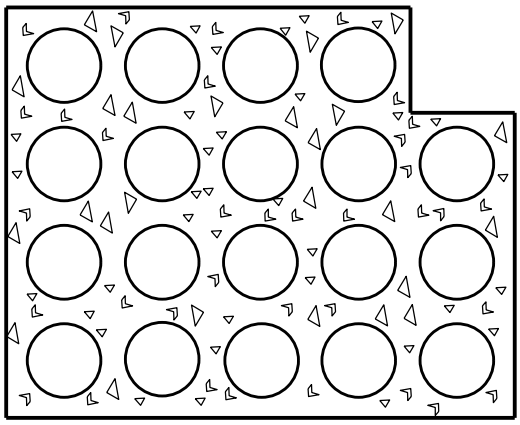
(5079136)



13 - 4" CONDUITS

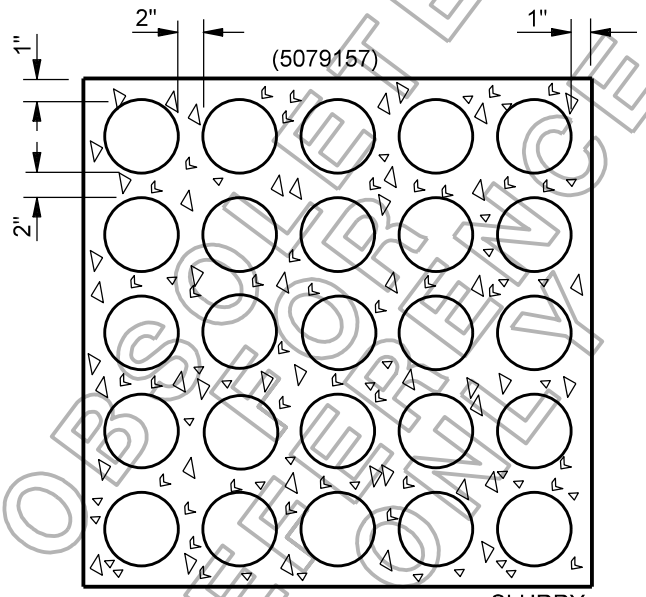
SLURRY SUPPLIED BY OTHERS

(5079136)



19 - 4" CONDUITS

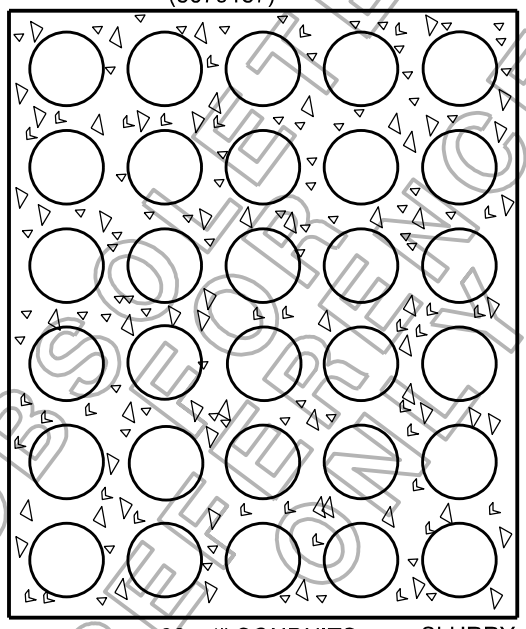
SLURRY SUPPLIED BY OTHERS



25 - 4" CONDUITS

SLURRY SUPPLIED BY OTHERS

(5079157)



30 - 4" CONDUITS

SLURRY SUPPLIED BY OTHERS

OBSOLETE REFERENCE

NOTES

1. DUCT BANKS WITH 13 OR MORE CONDUIT SHALL BE RACKED AND ENCASED AS FOLLOWS:
   RACKING: PLASTIC SPACERS LOCATED AT 6' INTERVALS WITH 2" MINIMUM SEPARATION BETWEEN CONDUITS.

ENCASEMENT

A. SRP 106 CSLM 1 1/2 SACK WASHED GRAVEL AND SAND OR CLEAN ABC, WITH CEMENT, STRUCTURAL BACKFILL UNDER FOUNDATIONS AND AS THERMAL FILL AND/OR MECHANICAL PROTECTION OF DUCT BANKS.

B. 1" ENCASEMENT AROUND DUCT BANK.

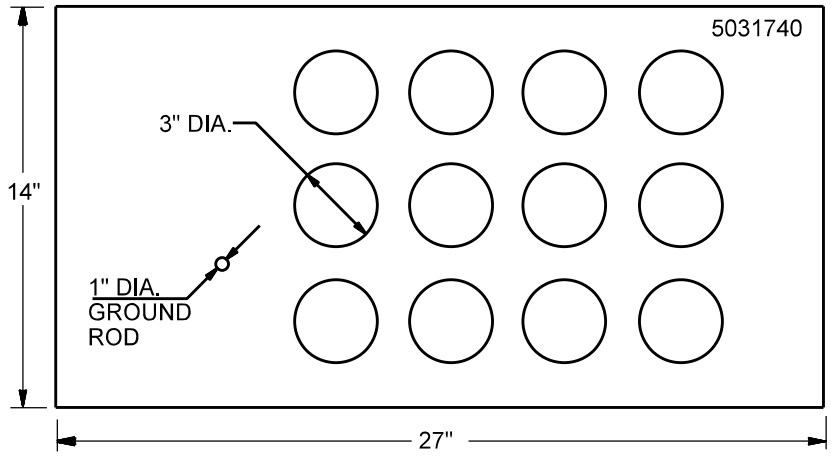
C. 3" MINIMUM SLURRY CAP ON TOP OF DUCT BANK.

D. BACKFILL - SLURRY RECEIPTS TO BE SAVED AND PRESENTED TO SRP INSPECTIONS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT SERVICE 4" CONDUIT BANK SPECIFICATION	ISSUE DATE: 01/27/16 REV. DATE: 01/04/17 APPROVAL: N. SABBAH
	4-14-2	8513E584.DGN

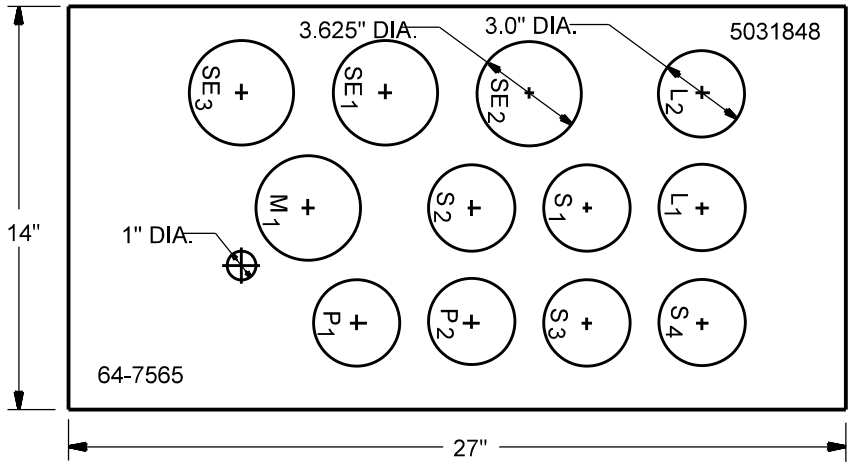
1Ø TRANSFORMER WITHOUT ABOVE GROUND J-BOX SERVICES

UKY	STUB-UP TEMPLATE
UKYG	STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



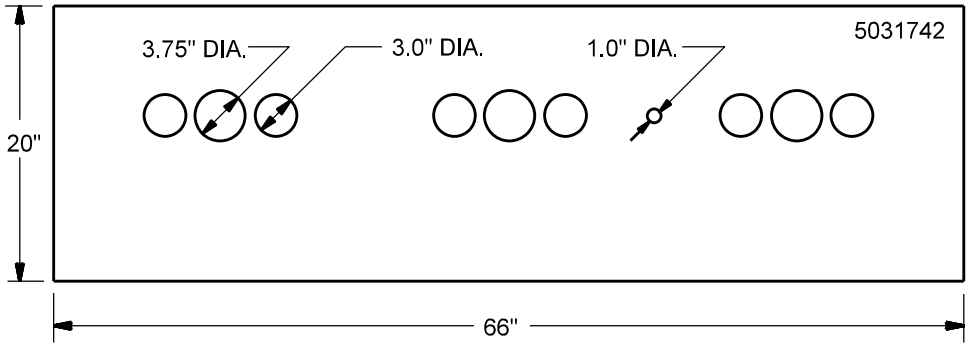
1Ø TRANSFORMER W/ABOVE GROUND J-BOX SERVICES

UKX	STUB-UP TEMPLATE
UKXG	STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



AIR INSULATED FUSE

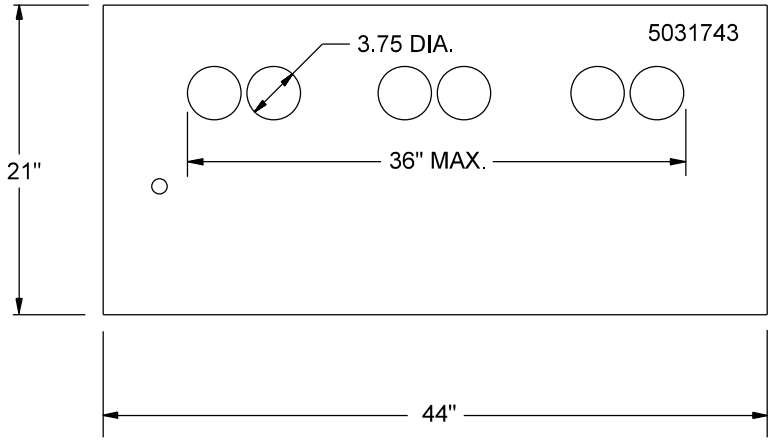
UKF	STUB-UP TEMPLATE
UKFG	AIR INSULATED FUSE STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT CONDUIT STUB UP TEMPLATES	ISSUE DATE: 09/29/97 REV. DATE: 07/30/13 APPROVAL: B.PRIEST
	4-15-1	8513E242.DGN

UKFP STUB-UP TEMPLATE

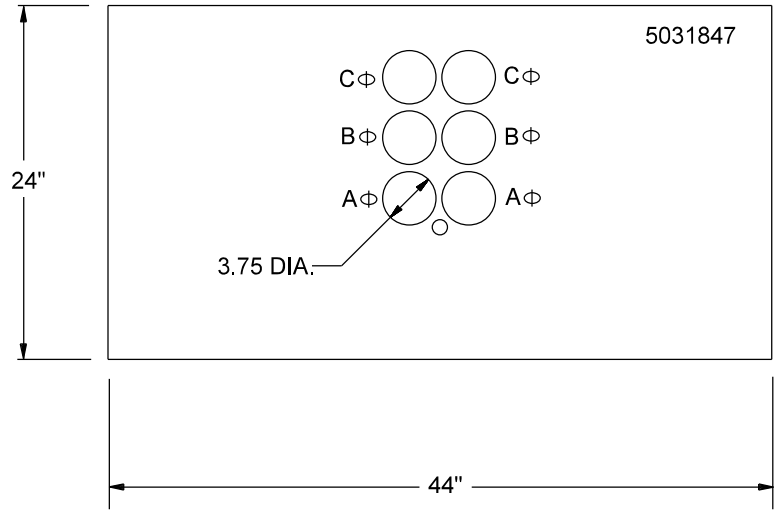
UKFPG STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



750 MCM FEEDER PULLING ENCLOSURE

UKPP STUB-UP TEMPLATE

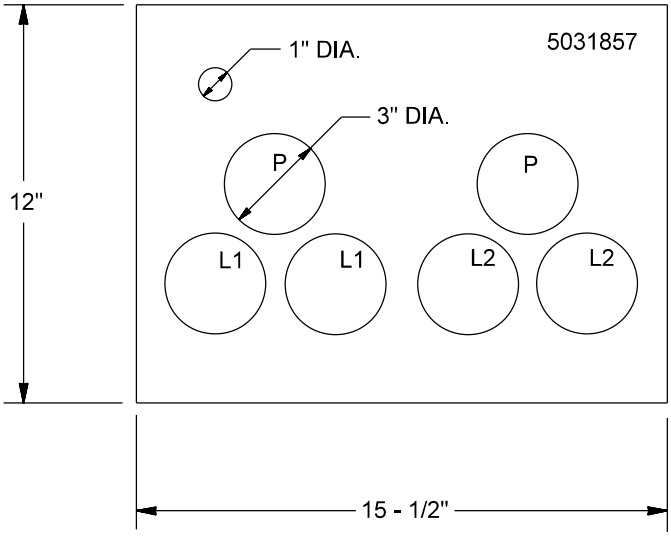
UKPPG STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



3Φ PRIMARY PULLING ENCLOSURE

UK2L STUB-UP TEMPLATE

UK2LG STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



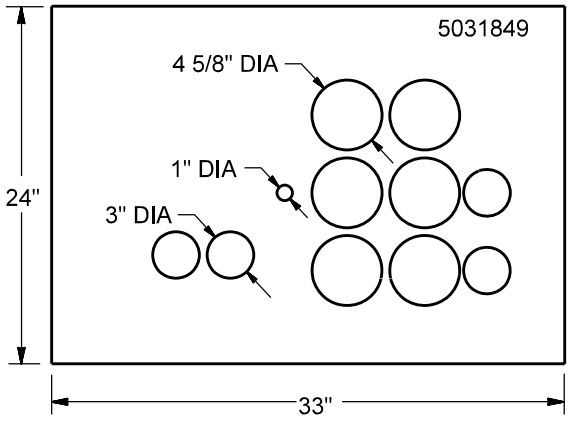
#2 SINGLE PHASE PRIMARY LOOP

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT CONDUIT STUB-UP TEMPLATES	ISSUE DATE: 11/08/95 REV. DATE: 07/30/13 APPROVAL: B.PRIEST
	4-15-2	8513E239.DGN

1 Φ TRANSFORMER W/6 - 4" CONDUITS FOR APARTMENTS

UKD STUB-UP TEMPLATE

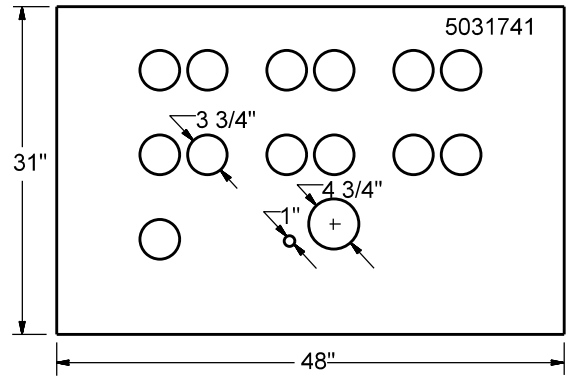
UKDG STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



DEAD FRONT SWITCH

UKS STUB-UP TEMPLATE

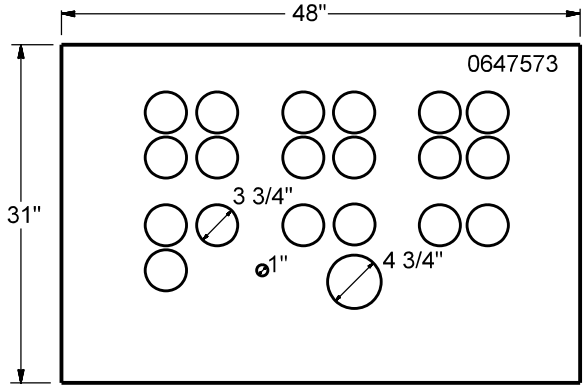
UKSG DEAD FRONT SWITCH STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



DEAD FRONT SWITCH IN DIRECT BURIED AREAS

UKSD STUB-UP TEMPLATE

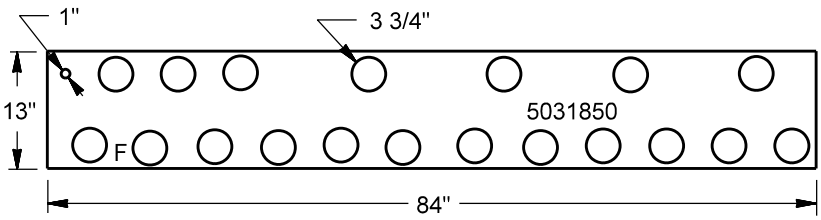
UKSDG STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



4/0 TAP ENCLOSURE

UK4T STUB-UP TEMPLATE

UK4TG STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



THE TEMPLATE HAS "F" STAMPED INTO THE TOP FRONT LEFT AS SHOWN.

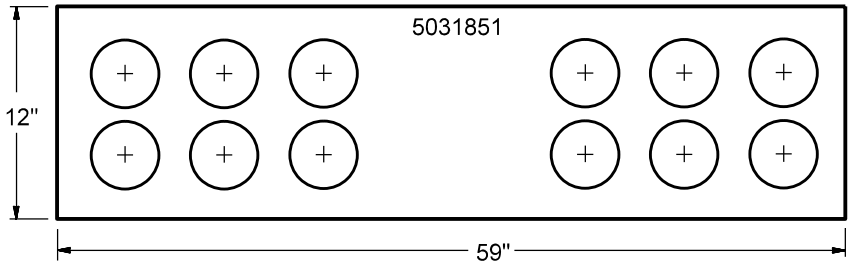
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT CONDUIT STUB-UP TEMPLATES	ISSUE DATE: 04/18/02 REV. DATE: 07/30/13 APPROVAL: B.PRIEST
	4-15-3	8513E309.DGN

4 - WAY SWITCH, PME10

2 PER PAD

AUTO TRANFER SWITCH, PME9

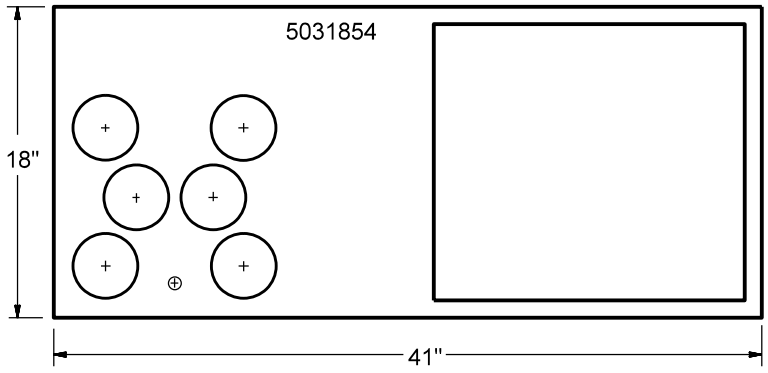
2 PER PAD



0-500KVA 3Φ TRANSFORMER

UK500 STUB-UP TEMPLATE

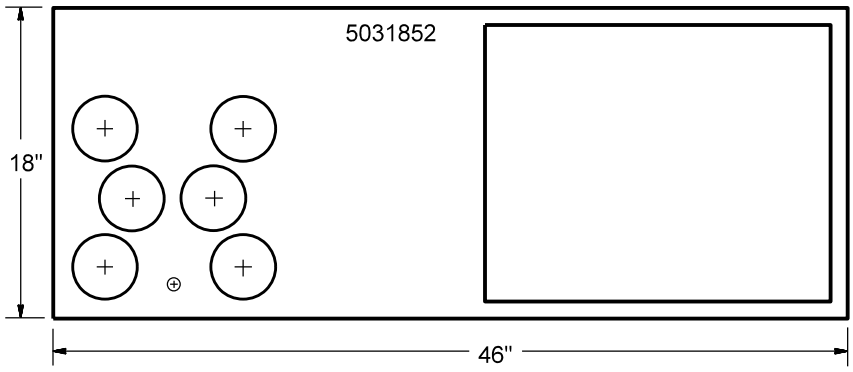
UK500G STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



750KVA 3Φ TRANSFORMER

UK750 STUB-UP TEMPLATE

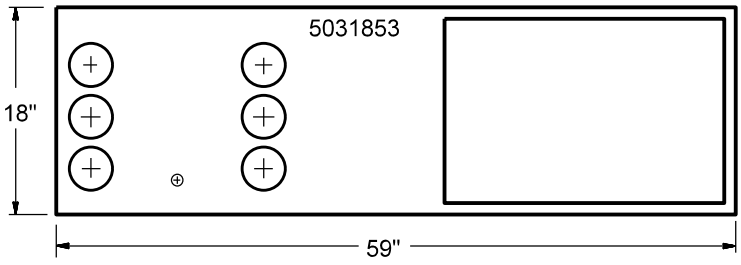
UK750G STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION



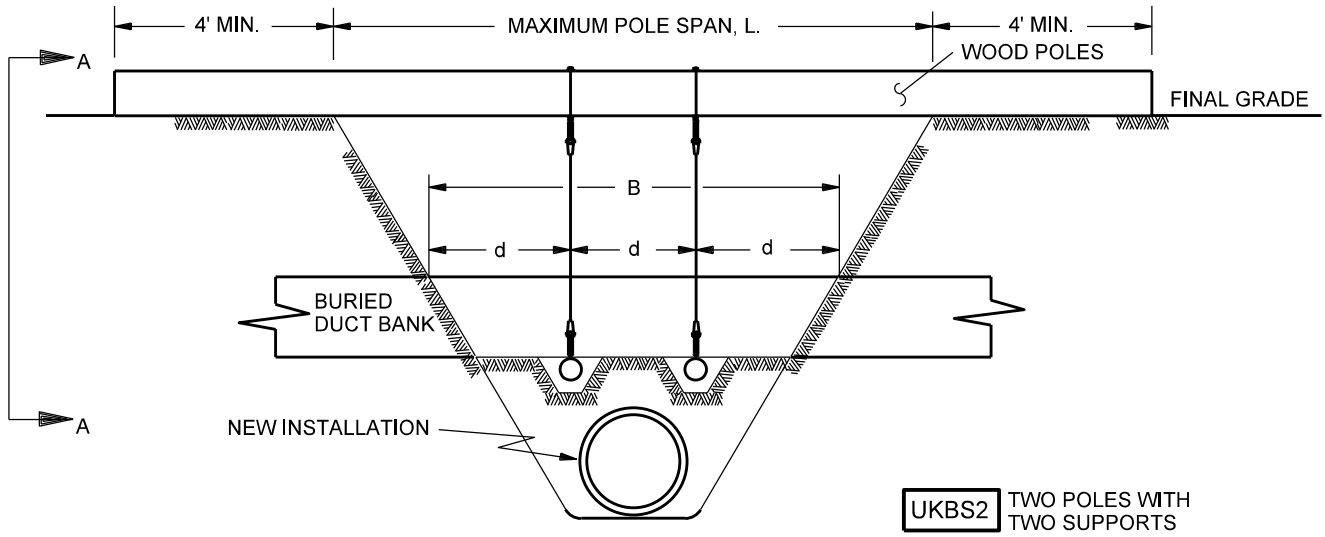
1000-2500KVA 3Φ TRANSFORMER

UK2500 STUB-UP TEMPLATE

UK2500G STUB-UP TEMPLATE FOR CONTRACTOR INSTALLATION

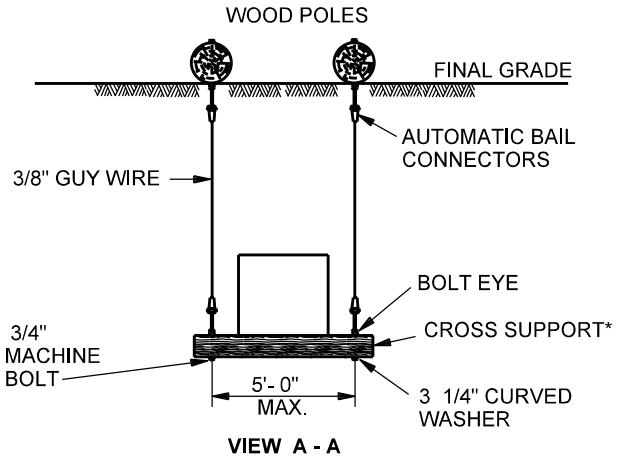


Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT CONDUIT STUB-UP TEMPLATES	ISSUE DATE: 11/25/02 REV. DATE: 07/30/13 APPROVAL: B.PRIEST
	4-15-4	8513E343.DGN



UKBS2 TWO POLES WITH TWO SUPPORTS

COMPATIBLE UNIT	MAXIMUM SELF-SUPPORTING SPACING,d	MAXIMUM POLE SPAN, L, WITH TWO 40' CLASS 1 POLES
UKB3	10 FEET	26 FEET
UKB3A	10 FEET	26 FEET
UKB6	10 FEET	23 FEET
UKB6A	10 FEET	21 FEET
UKB9	10 FEET	20 FEET
UKB12	8 FEET	18 FEET
ALL OTHERS		SEE NOTE 3



VIEW A - A

*CROSS SUPPORT: (ONE OF THE FOLLOWING)

PREFERRED 1. WOOD POLE SEGMENT - MIN. 11" DIAMETER

ALTERNATE { 2. 4" X 4" X 3/8" STEEL TUBE
3. 6" X 14" DOUGLAS FIR #2 BEAM

NOTES

1. INSTALL SUPPORTS BEFORE FULL EXCAVATION: EXCESS POLES AND SALVAGEABLE MATERIAL BACK INTO STOCK AFTER COMPLETION OF WORK.
2. BACK FILL TO BOTTOM OF EXISTING DUCT BANK WITH LEAN CONCRETE OR ABC SLURRY. DO NOT COMPACT UNDER DUCT BANK WITH SOIL.
3. FOR SUPPORT OF EXISTING DUCT BANKS NOT SPECIFIED OR SUPPORT OF DUCT BANKS MORE THAN 12" LARGER THAN THE DIMENSIONS NOTED FOR THE COMPATIBLE UNIT, CONTACT ELECTRIC SYSTEM ENGINEERING.
4. IF THE TOP WIDTH OF THE TRENCH EXCEEDS THE MAXIMUM POLE SPAN DISTANCE L, CONTACT ELECTRIC SYSTEM ENGINEERING.
5. SPACING BETWEEN SUPPORTS d, SHALL NOT EXCEED THE MAXIMUM SELF-SUPPORTING DISTANCE SHOWN IN THE TABLE.
6. THE MAXIMUM EXPOSED DUCT BANK LENGTH B, SHALL NOT EXCEED THE MAXIMUM POLE SPAN DISTANCE L.
7. TRENCH WALLS SHALL BE SHORED OR SLOPED AS REQUIRED BY THE SRP EXCAVATION SAFETY MANUAL; LATEST REVISION.
8. CONTACT ELECTRIC SYSTEM ENGINEERING PRIOR TO USING THIS STANDARD FOR CIVIL REQUIREMENTS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CONDUIT DUCT BANK SUPPORT	ISSUE DATE: 07/31/90 REV. DATE: 06/28/12 APPROVAL: B.PRIEST
	4-16-1	8513E261.DGN

POLYETHYLENE SPOOLED DUCT NOMINAL SIZE (INCHES)	SRP STOCK CODE NUMBER	MINIMUM LENGTH TO RETAIN * (FEET)
2	5031714	300
2.5	5031713	250
3	5033738	250
4	5033737	250

*BASED ON THE COST OF MAKING A SPLICE PLUS ADDITIONAL MARGIN FOR OTHER FACTORS AND THEN ROUNDED UP.

COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD DUCT BANKS

SIZE	NO. OF DUCTS	TYPE	ENCASED	USE	COMPATIBLE UNIT
1”	1	PLASTIC	YES	ST. LT.	RUK11LE
1”	1	STEEL	NO	D TO D	RUK11RD
1”	1	STEEL	YES	---	RUK11RE
1”	1	STEEL	NO	ST. LT.	RUK11RL
2”	1	TRANSITE	NO	---	RUK21T
2”	1	TRANSITE	YES	---	RUK21TE
2”	2	PLASTIC	NO	ST. LT.	RUK22L
2”	2	PLASTIC	YES	ST. LT.	RUK22LE
2”	2	TRANSITE	NO	---	RUK22T
2”	2	TRANSITE	YES	---	RUK22TE
2”	5	PLASTIC	NO	---	RUK25
2”	6	PLASTIC	NO	---	RUK26
2”	6	PLASTIC	YES	---	RUK26E
3”	1	ALUMINUM	NO	---	RUK31A
3”	1	PLASTIC	NO	ST. LT.	RUK31L
3”	1	TRANSITE	NO	---	RUK31T
3”	1	TRANSITE	YES	---	RUK31TE
3”	2	TRANSITE	NO	---	RUK32T
3”	2	TRANSITE	YES	---	RUK32TE
3”	3	TRANSITE	YES	---	RUK33TE
3”	4	ALUMINUM	NO	---	RUK34A
3”	4	TRANSITE	YES	---	RUK34TE
3”	5	PLASTIC	NO	---	RUK35
3”	5	PLASTIC	YES	---	RUK35E
3”	6	PLASTIC	NO	---	RUK36
3”	6	ALUMINUM	NO	---	RUK36A
3”	7	ALUMINUM	NO	---	RUK37A
3”	7	PLASTIC	YES	---	RUK37E
3”	8	ALUMINUM	NO	---	RUK38A
3”	8	PLASTIC	YES	---	RUK38E
3”	10	PLASTIC	YES	---	RUK310E
3”	11	PLASTIC	YES	---	RUK311E
3”	12	ALUMINUM	NO	---	RUK312A
3”	13	PLASTIC	YES	---	RUK313E
3”	14	PLASTIC	YES	---	RUK314E
3”	15	PLASTIC	YES	---	RUK315E
3”	16	PLASTIC	YES	---	RUK316E

COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD DUCT BANKS

SIZE	NO. OF DUCTS	TYPE	ENCASED	USE	COMPATIBLE UNIT
3”	18	PLASTIC	YES	---	RUK318E
4”	1	STEEL	YES	---	RUK41RE
4”	1	TRANSITE	NO	---	RUK41T
4”	1	TRANSITE	YES	---	RUK41TE
4”	2	FIBER	YES	---	RUK42FE
4”	2	STEEL	YES	---	RUK42RE
4”	2	TRANSITE	YES	---	RUK42TE
4”	3	TRANSITE	YES	---	RUK43TE
4”	4	TRANSITE	YES	---	RUK44TE
5”	1	PLASTIC	NO	---	RUK51
5”	1	ALUMINUM	NO	---	RUK51A
5”	1	ALUMINUM	YES	---	RUK51AE
5”	1	PLASTIC	YES	---	RUK51E
5”	1	STEEL	NO	---	RUK51R
5”	1	TRANSITE	NO	---	RUK51T
5”	1	TRANSITE	YES	---	RUK51TE
5”	2	PLASTIC	NO	---	RUK52
5”	2	PLASTIC	YES	---	RUK52E
6”	1	STEEL	NO	---	RUK61R
6”	1	STEEL	YES	---	RUK61RE
6”	1	TRANSITE	YES	---	RUK61TE
6”	2	FIBER	YES	---	RUK62FE
6”	2	STEEL	YES	---	RUK62RE
6”	2	TRANSITE	NO	---	RUK62T
6”	2	TRANSITE	YES	---	RUK62TE
6”	3	FIBER	YES	---	RUK63FE
6”	3	TRANSITE	YES	---	RUK63TE
6”	4	STEEL	NO	---	RUK64R
6”	4	TRANSITE	NO	---	RUK64T
6”	4	TRANSITE	YES	---	RUK64TE
6”	6	PLASTIC	YES	---	RUK66E
6”	8	PLASTIC	YES	---	RUK68E

RISERS

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE	5-1-1
RISER MOLD AND SUPPORT GRIP, SIZING CHART	5-2-1
750 MCM FEEDER RISER TERMINATION DETAILS	5-3-1
HOT STICK OPERATED SWITCHES AND CUTOUTS	5-4-1
BIRD INSULATION	5-5-1
EQUIPMENT MOUNTING BRACKETS	5-6-1
300A BLADE DISCONNECT, SINGLE PHASE BLADE DISCONNECT	5-7-1
100A CUTOUT ARRESTER ASSEMBLIES	5-8-1
TERMINATING EQUIPMENT	5-9-1
STEEL POLE MOUNTING	5-10-1
EXTENDED BRACKET, STEEL POLE MOUNTING	5-11-1
PLASTIC RISER MOLD	5-12-1
STANDOFF RISER CONVERSION OPTIONS	5-13-1
ENCASED RISER FOR FUTURE FEEDER STUB-UP	5-14-1
SECONDARY RISER FROM OVERHEAD SECONDARY	5-15-1
SECONDARY RISER FROM OVERHEAD TRANSFORMER	5-16-1
PRIMARY RISER - SINGLE CONDUCTOR #2 AL.	5-17-1
PRIMARY RISER - SINGLE CONDUCTOR #2 AL., FEEDING AN OVERHEAD LINE	5-18-1
PRIMARY RISER - SINGLE CONDUCTOR #2 AL., FEEDING AN OVERHEAD TRANSFORMER	5-19-1
PRIMARY RISER - TWO CONDUCTORS #2 AL.	5-20-1
PRIMARY RISER - TWO CONDUCTORS #2 AL., FEEDING AN OVERHEAD LINE	5-21-1
PRIMARY RISER - TWO CONDUCTORS #2 AL., FEEDING AN OVERHEAD 2-POT BANK	5-22-1

RISERS

TITLE/DESCRIPTION	PAGE NO.
PRIMARY RISER - THREE CONDUCTORS #2 AL., FEEDING AN OVERHEAD TRANSFORMER	5-23-1
PRIMARY RISER - THREE CONDUCTORS #2 AL.	5-24-1
PRIMARY RISER - THREE CONDUCTORS #2 AL., FEEDING AN OVERHEAD LINE	5-25-1
PRIMARY RISER - THREE CONDUCTORS #2 AL. FOR DOUBLE CIRCUIT TANGENT	5-26-1
PRIMARY RISER - FOUR CONDUCTORS #2 AL. OR THREE 4/0 AL. WITH ONE #2 AL.	5-27-1
PRIMARY RISER - SINGLE CONDUCTOR, #4/0 AL., FEEDING AN OVERHEAD LINE	5-28-1
PRIMARY RISER - THREE CONDUCTORS, #4/0 AL.	5-29-1
PRIMARY RISER - THREE CONDUCTORS, #4/0 AL., FEEDING AN OVERHEAD LINE	5-30-1
PRIMARY RISER - THREE CONDUCTORS, #4/0 AL. FOR DOUBLE CIRCUIT TANGENT	5-31-1
FEEDER RISER - POLE MOUNTED DISCONNECTS	5-32-1
FEEDER RISER - POLE MOUNTED DISCONNECTS, STEEL POLES	5-33-1
SUBSTATION RISER, POLE MOUNTED DISCONNECTS, DOUBLE CIRCUIT WITH ONE CIRCUIT DEAD-ENDED	5-34-1
FEEDER RISER - THREE CONDUCTORS, FOR FUTURE OVERHEAD LINE RELOCATION	5-35-1
FEEDER RISER WITH GANG OPERATED SWITCH	5-36-1
FEEDER RISER WITH GANG OPERATED SWITCH - STEEL POLE	5-37-1

OBSOLETE - FOR REFERENCE ONLY

TITLE/DESCRIPTION	PAGE NO.
APPLICATION OF BANDIT CLAMPS AND CONDUIT ON STEEL POLES	5-38-1
STREET LIGHT, 1” STEEL CONDUIT	5-39-1
1" STEEL RISER, SECONDARY OR SERVICE	5-40-1
100A CUTOUT-ARRESTER COMBINATIONS	5-41-1

RISERS

TITLE/DESCRIPTION	PAGE NO.
FEEDER RISER - THREE CONDUCTORS	5-42-1
FEEDER RISER, POLE MOUNTED DISCONNECTS	5-43-1
SUBSTATION RISER - POLE MOUNTED DISCONNECTS	5-44-1
SUBSTATION RISER, POLE MOUNTED DISCONNECTS, DOUBLE CIRCUIT WITH ONE CIRCUIT DEAD-ENDED	5-45-1
COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD POLE RISERS	5-46-1
PRIMARY, FEEDER OR SECONDARY, DIRECT BURIED CABLE	5-47-1

22KV SECTION

TITLE/DESCRIPTION	PAGE NO.
22KV TERMINATIONS	5-48-1
CUTOUT-ARRESTER COMBINATIONS	5-49-1
PRIMARY RISER - SINGLE CONDUCTOR	5-50-1
PRIMARY RISER - TWO CONDUCTORS	5-51-1
PRIMARY RISER - THREE CONDUCTORS	5-52-1

INSTRUCTIONAL GUIDE

PURPOSE

FOR INSTALLATION, REMOVAL OR REPLACEMENT OF POLE RISERS USED IN UNDERGROUND DISTRIBUTION CONSTRUCTION.

COMPATIBLE UNIT CODING FOR "UR" SECTION

POLE RISERS

PRIMARY AND SECONDARY POLE RISERS ARE CODED WITH THE PREFIX UR. THE NEXT DIGIT FOLLOWING THE PREFIX IS A NUMBER THAT DESIGNATES A VARIATION IN MATERIAL AND FRAMING. THE LETTER "K" IS ADDED TO THE COMPATIBLE UNIT NUMBER IF A CONDUIT STUB UP IS REQUIRED.

FEEDER RISERS

FEEDER RISERS ARE CODED WITH THE PREFIX URF. THE NEXT DIGIT IS A NUMBER ASSIGNED TO A VARIATION IN MATERIAL AND FRAMING. EXAMPLE: URF1UA750K
THE SHADING ON THE STANDARD DRAWINGS INDICATES WHICH MATERIAL IS INCLUDED IN THE BILL OF MATERIAL AND FRAMING.

GRID SKETCH APPLICATION

THE COMPATIBLE UNIT IS SHOWN ON EACH DRAWING ENCLOSED IN A BLOCK WITH TWO DASHES TO INDICATE THAT A CONDUCTOR/CABLE SIZE IDENTIFIER IS NEEDED TO COMPLETE THE CODE NUMBER.

EXAMPLE

UR1: TO COMPLETE THE CODE NUMBER, UA2K HAS TO BE ADDED TO UR1K. THIS CAN BE DONE BY EITHER OF TWO METHODS:

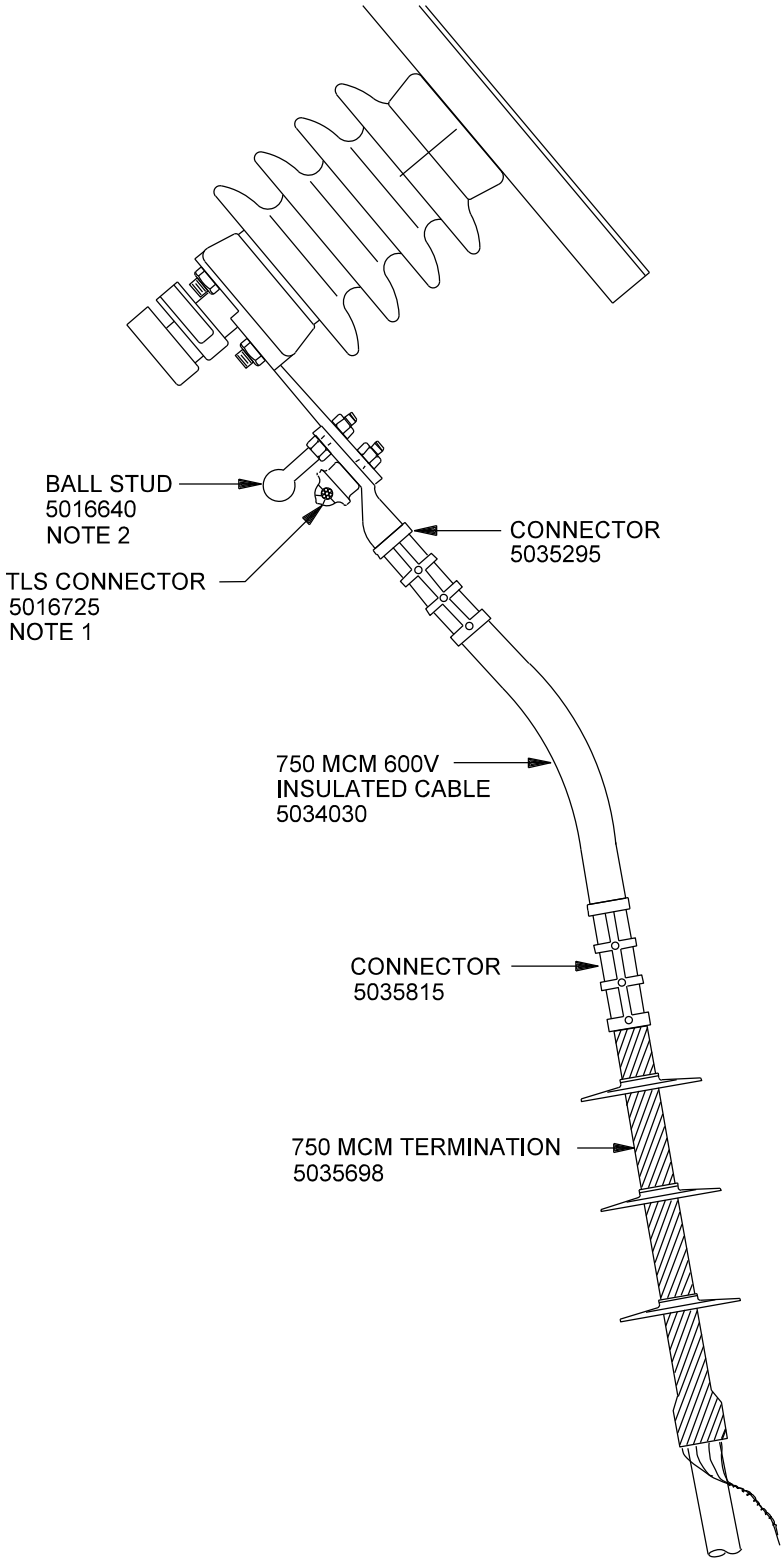
1. ENTER THE WIRE SIZE UA2K ON LINE 4 OF THE GRID SKETCH AND UR1K ON LINE 5.
2. ENTER UR1KUA2K IN THE AREA OF LINE 13 THROUGH LINE 18 ON THE GRID.

600V

PHASE	CABLE SIZE	RISER SIZE
SINGLE PHASE	2 – 1/0, (#2 N)	2”
	2 – 4/0, (1/0 N)	2”
	2 – 350MCM,(4/0 N)	3”
	2 – 500MCM,(350MCM N)	3”
THREE PHASE (120/240 V)	2 – 1/0, #2 PL, (#2 N)	2”
	2 – 4/0, 1/0 PL, (1/0 N)	2”
	2 – 350MCM,4/0 PL, (4/0 N)	3”
	2 – 500MCM, 350MCM PL, (350MCM N)	3”
THREE PHASE (120/208 V OR 277/480 V)	3 – 1/0, (#2 N)	2”
	3 – 4/0, (1/0 N)	3”
	3 – 350MCM,(4/0 N)	3”
	3 – 500MCM,(350MCM N)	3”

15KV

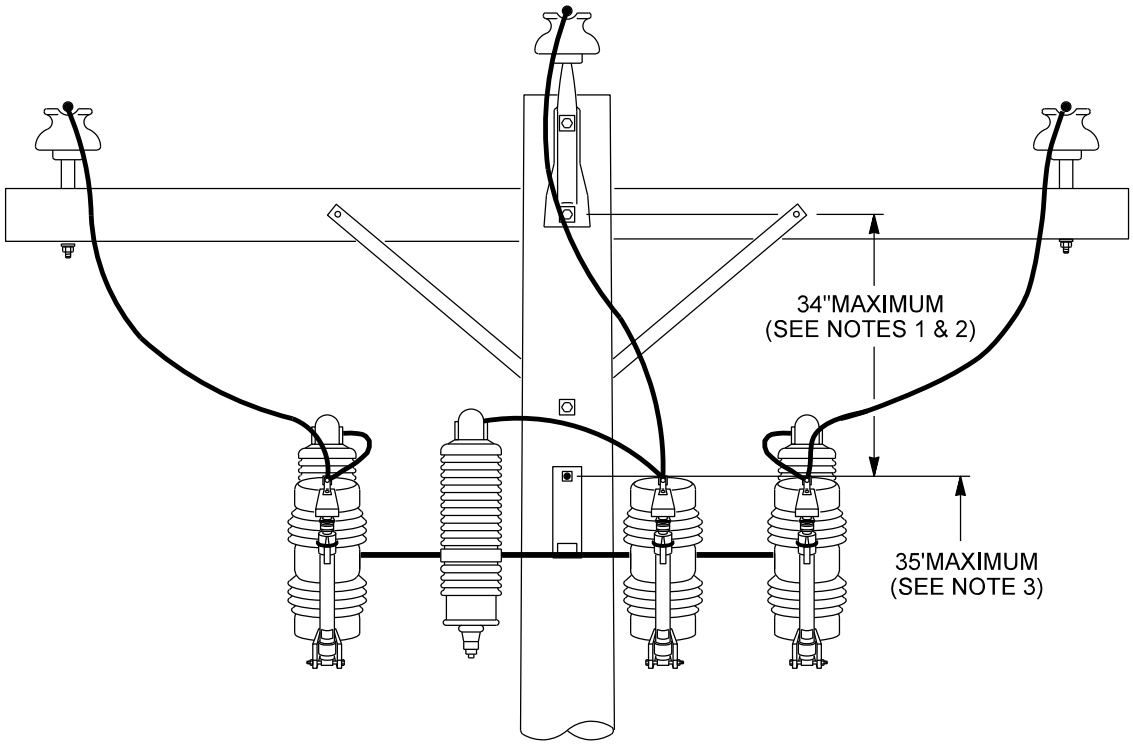
PHASE	CABLE SIZE	RISER SIZE
SINGLE PHASE	1 – #2	2”
	1 – 1/0	2”
	2 – #2	3”
THREE PHASE	3 – #2	3”
	3 – 1/0	3”
	3 – 4/0	3”
	3 – 500MCM	4”
	3 – 750MCM	4”

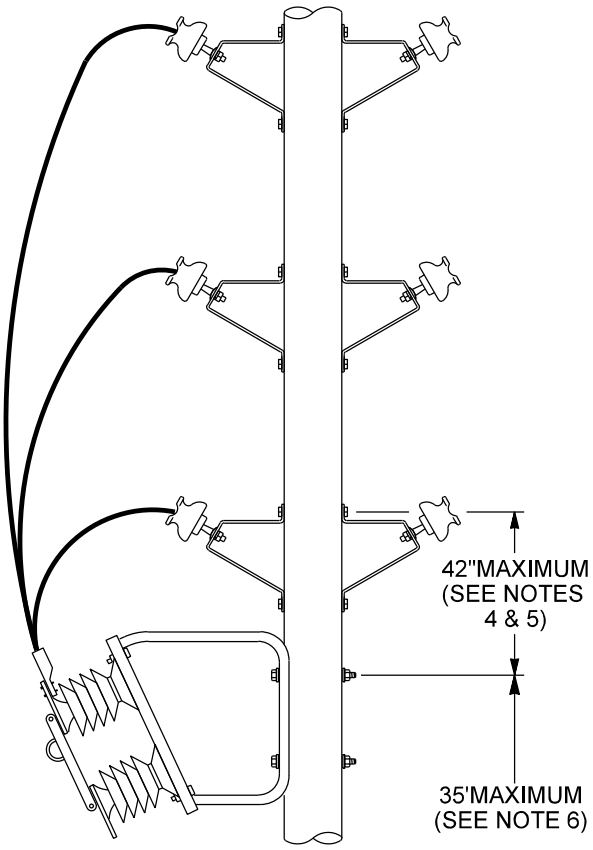


NOTES

1. TLS CONNECTOR IS FOR ARRESTER EXTENSION ROD CONNECTION TO LIGHTING ARRESTER.
2. BALL STUD IS FOR GROUNDING.
3. BALL STUD IS TO BE INSTALLED WITH FLAT WASHERS AND BELLEVILLE WASHER AS SHOWN ON PAGE 8-12-1.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	RISERS 750 MCM FEEDER RISER TERMINATION REPAIR DETAILS	ISSUE DATE: 01/30/93 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-3-1	8513E190.DGN

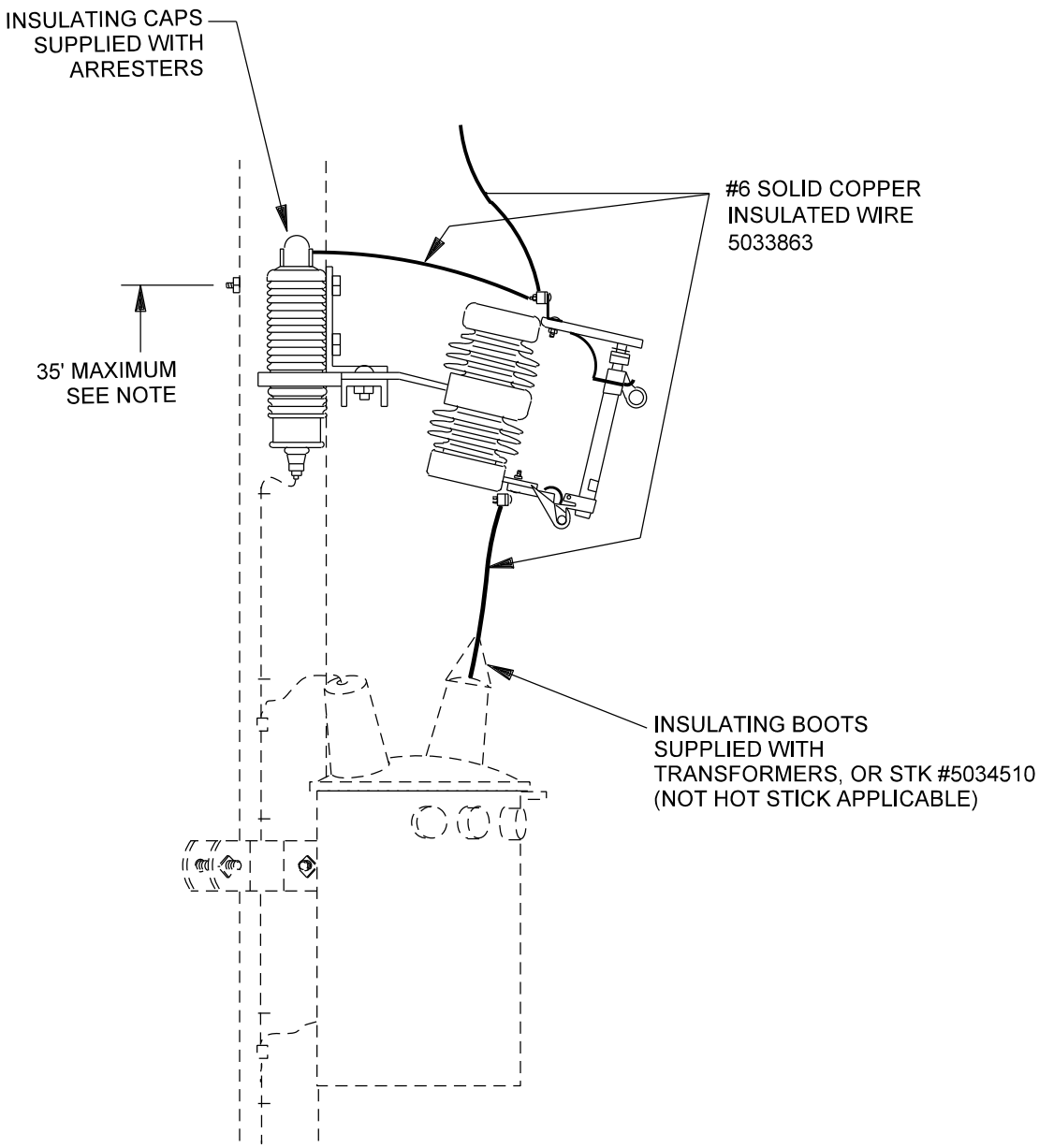




NOTES

1. 24" SPACING MAY BE USED WHEN CROSSARM IS LOCATED AT OR BELOW 37' ABOVE FINAL GRADE. 34" SPACING MUST BE USED WHEN CROSSARM IS LOCATED AT 37'-10" ABOVE FINAL GRADE.
2. WHEN CROSSARM IS MOUNTED AT 35' AND BELOW, CUTOUT AND ARRESTORS MAY BE MOUNTED DIRECTLY ON ARM.
3. FUSED CUTOUTS AND SWITCHES ON RISERS SHALL BE LIMITED TO 35' ABOVE GROUND.
4. 18" SPACING MAY BE USED WHEN BOTTOM PHASE IS LOCATED AT OR BELOW 36'-6" ABOVE FINAL GRADE. 42" SPACING MUST BE USED WHEN BOTTOM PHASE IS LOCATED AT 38'-6" ABOVE FINAL GRADE.
5. THERE SHALL NOT BE MORE THAN 42" BETWEEN THE TOP MOUNTING BOLT OF THE SWITCHES AND THE BOTTOM PHASE CONDUCTOR. FOR PRIMARY CONDUCTOR CONSTRUCTION AT LEVELS HIGHER THAN THOSE INDICATED IN NOTES 1 & 3, CONSULT ENGINEERING SERVICES.
6. THE MOUNTING HEIGHT OF BLADE DISCONNECT SWITCHES IS LIMITED TO 35' ABOVE GROUND.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS HOT STICK OPERATED SWITCHES AND CUTOUTS	ISSUE DATE: 01/31/92 REV. DATE: 09/28/12 APPROVAL: B.PRIEST
	5-4-1	8513E147.DGN

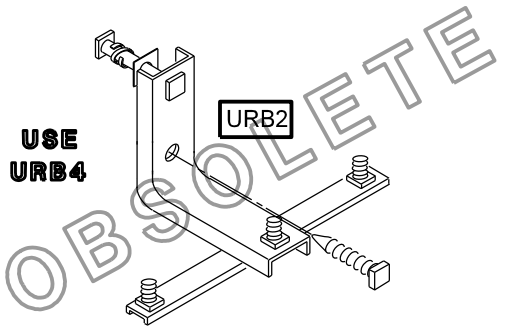


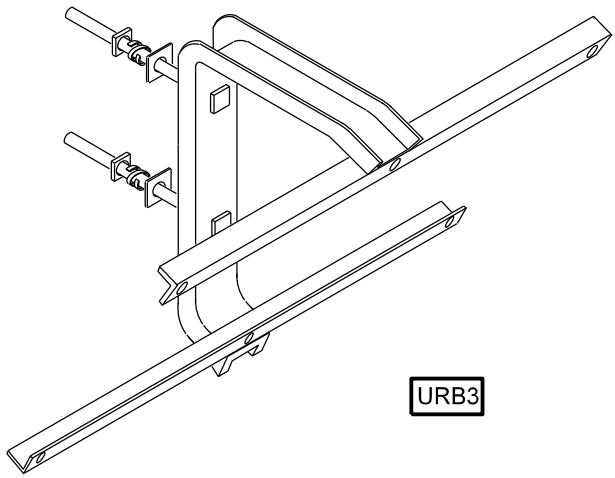
NOTES

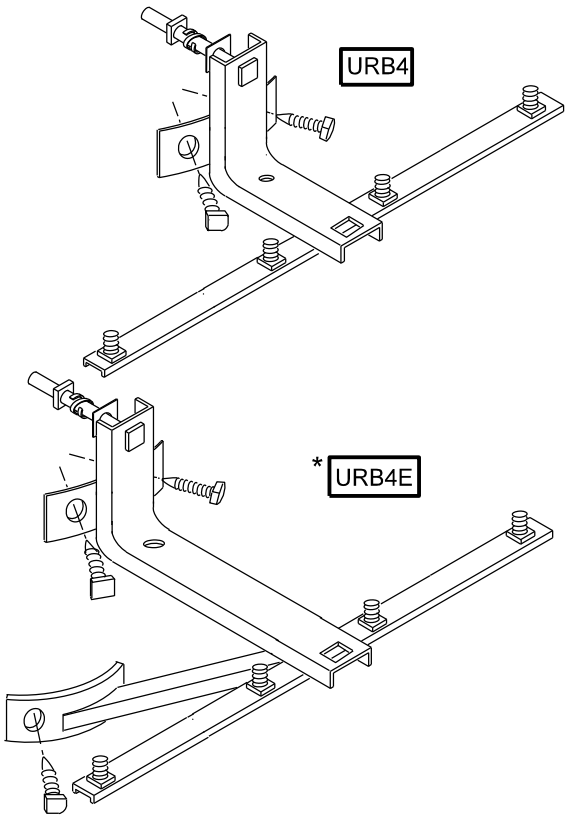
1. ALL PRIMARY HIGH VOLTAGE LEADS AND JUMPERS SHALL BE INSULATED FOR PROTECTION OF BIRDS.THIS INSULATION IS NOT ADEQUATE FOR PERSONNEL PROTECTION OR CLEARANCE REDUCTION.THESE CONDUCTORS SHALL BE INSTALLED AND OPERATED THE SAME AS BARE CONDUCTORS.

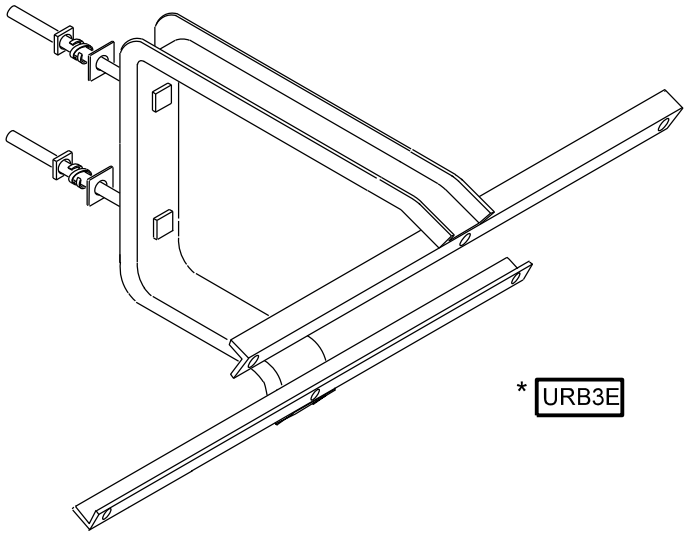
2. THE MOUNTING HEIGHT OF BLADE DISCONNECT SWITCHES IS LIMITED TO 35 FT ABOVE GROUND.

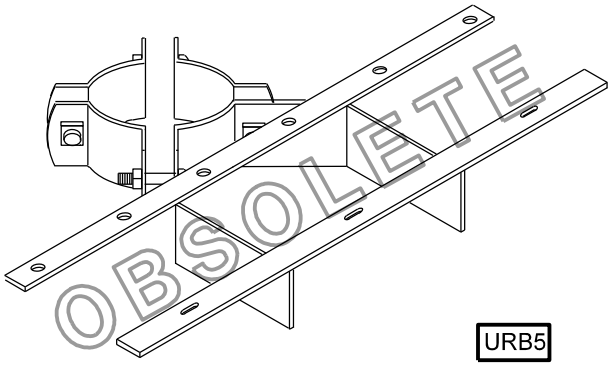
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS BIRD INSULATION	ISSUE DATE: 07/30/93 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-5-1	8513E209.DGN

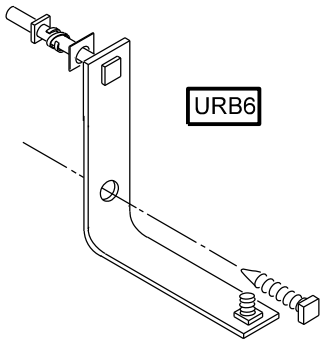


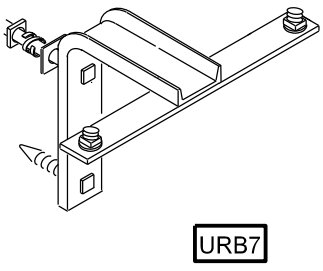












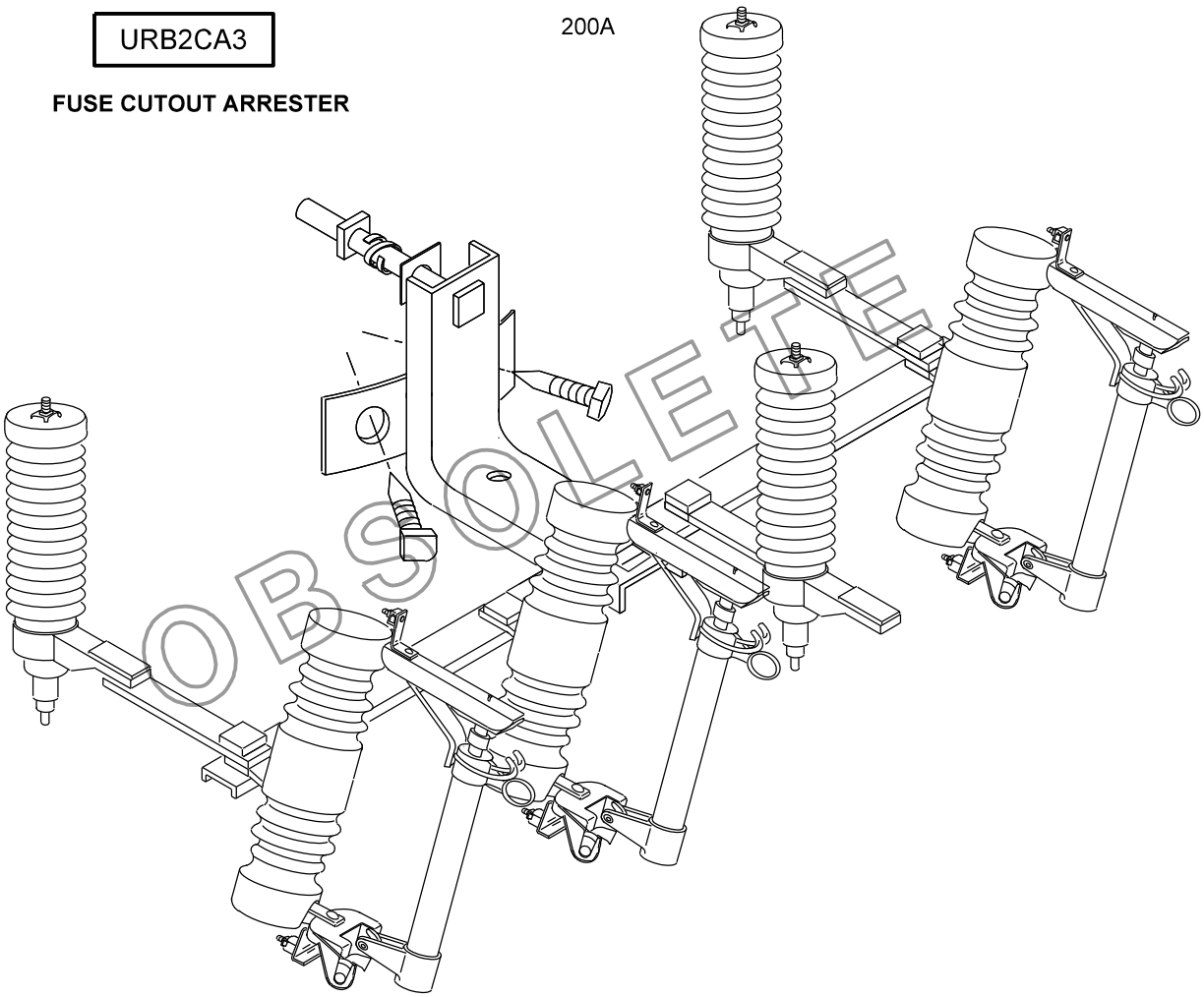
* EXTENDED BRACKETS TO BE USED WITH DOUBLE CIRCUIT OVERHEAD.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	RISERS EQUIPMENT MOUNTING BRACKETS	ISSUE DATE: 10/19/88 REV. DATE: 09/28/12 APPROVAL: B.PRIEST
	5-6-1	8513E70.DGN

URB2CA3

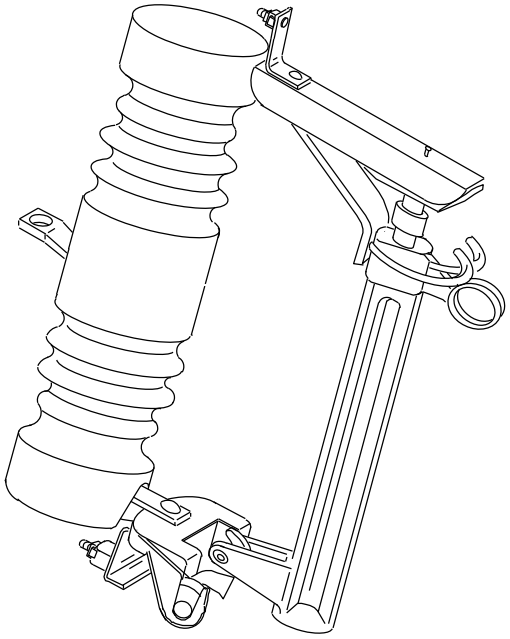
FUSE CUTOUT ARRESTER

200A



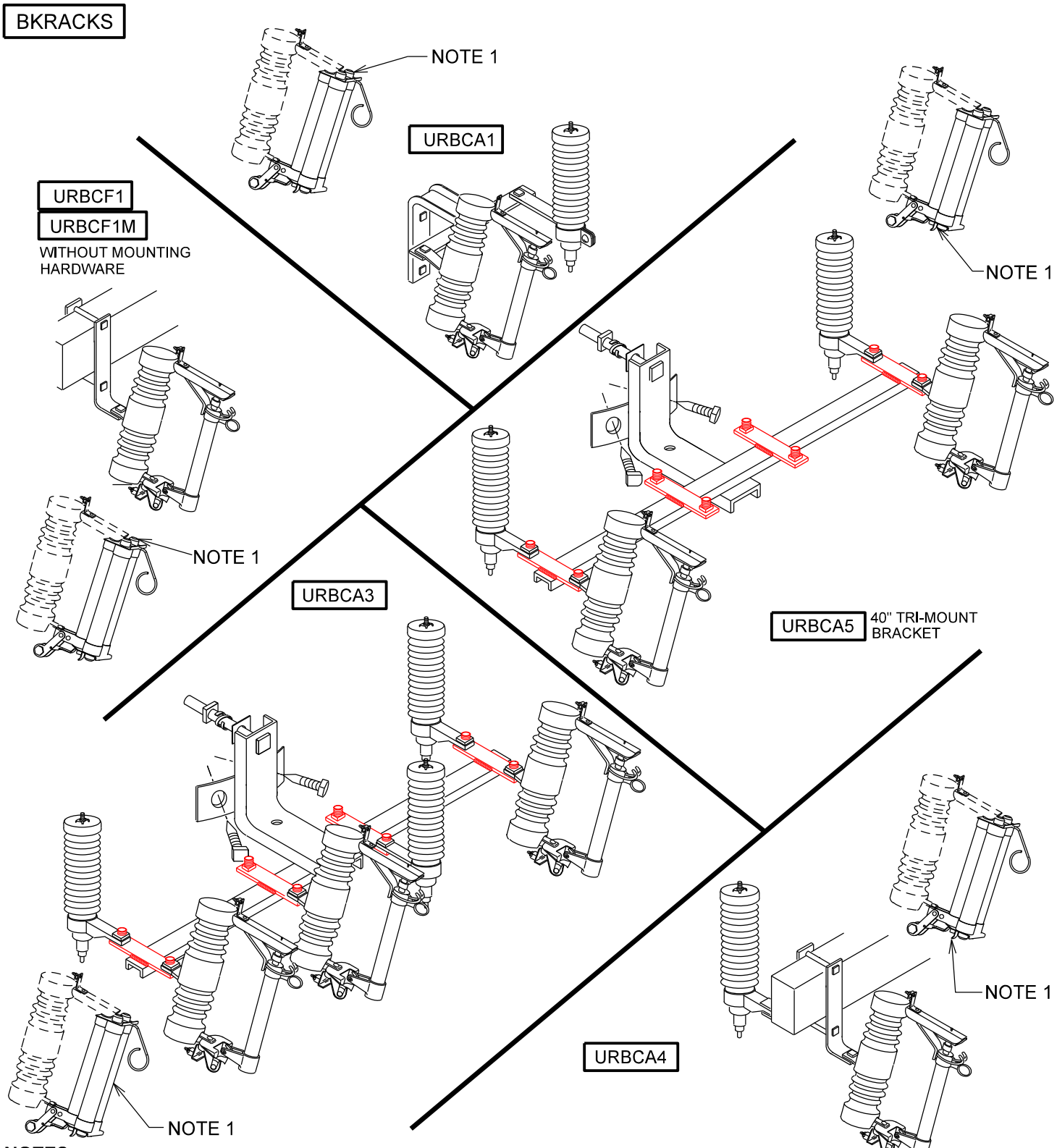
URBD3

300A BLADE DISCONNECT



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS 300A BLADE DISCONNECT SINGLE PHASE BLADE DISCONNECT	ISSUE DATE: 11/14/88 REV. DATE: 09/28/12 APPROVAL: B. PRIEST
	5-7-1	8513E72.DGN

BKRACKS



NOTES

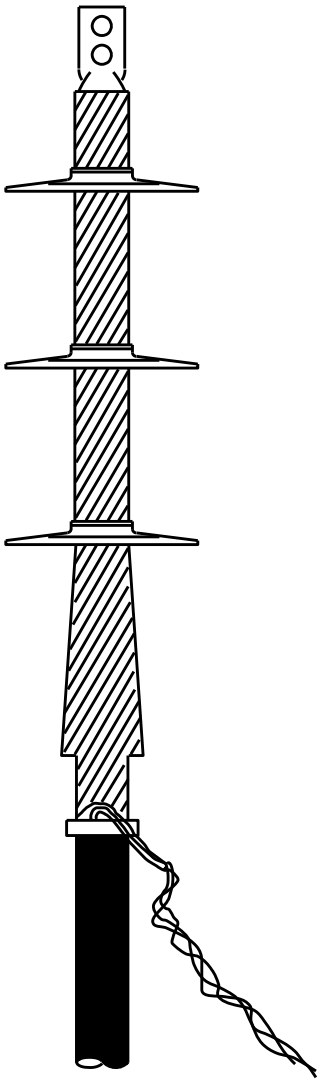
1. REPLACES FUSE TUBE IN HIGH FIRE RISK AREAS 5091194.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	REV: ILLUSTRATION TO REFLECT THE WELDED STEEL STOCK THAT REPL 3-BOLT CLAMP	
	RISERS 100A CUTOUT ARRESTER ASSEMBLIES	ISSUE DATE: 11/14/88 REV. DATE: 09/12/24 APPROVAL: J. ROBBINS
	5-8-1	8513E71.DGN

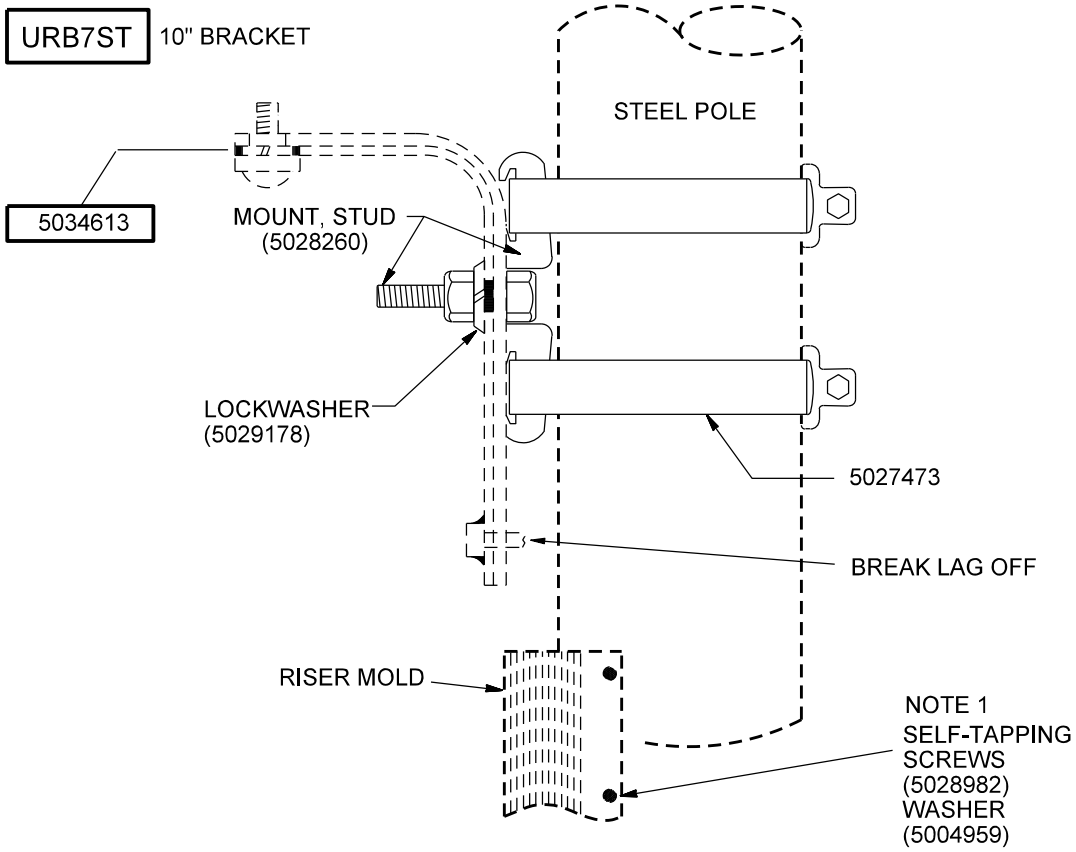
OUTDOOR TERMINATIONS-FOR #2, #4/0,
500MCM AND 750MCM PRIMARY CABLE:

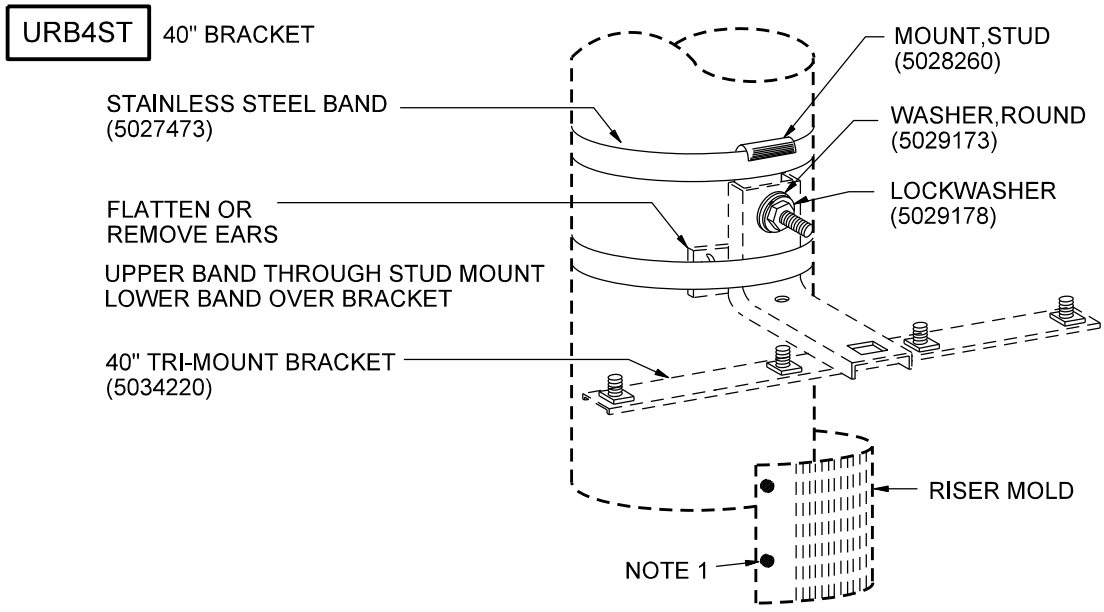
URBT2A	FOR SHRINK-TYPE TERMINATIONS
URBT40A	
URBT500A	
URBT750A	

SHRINK TYPE



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS TERMINATING EQUIPMENT	ISSUE DATE: 01/15/87 REV. DATE: 09/28/12 APPROVAL: B. PRIEST
	5-9-1	8513E116.DGN



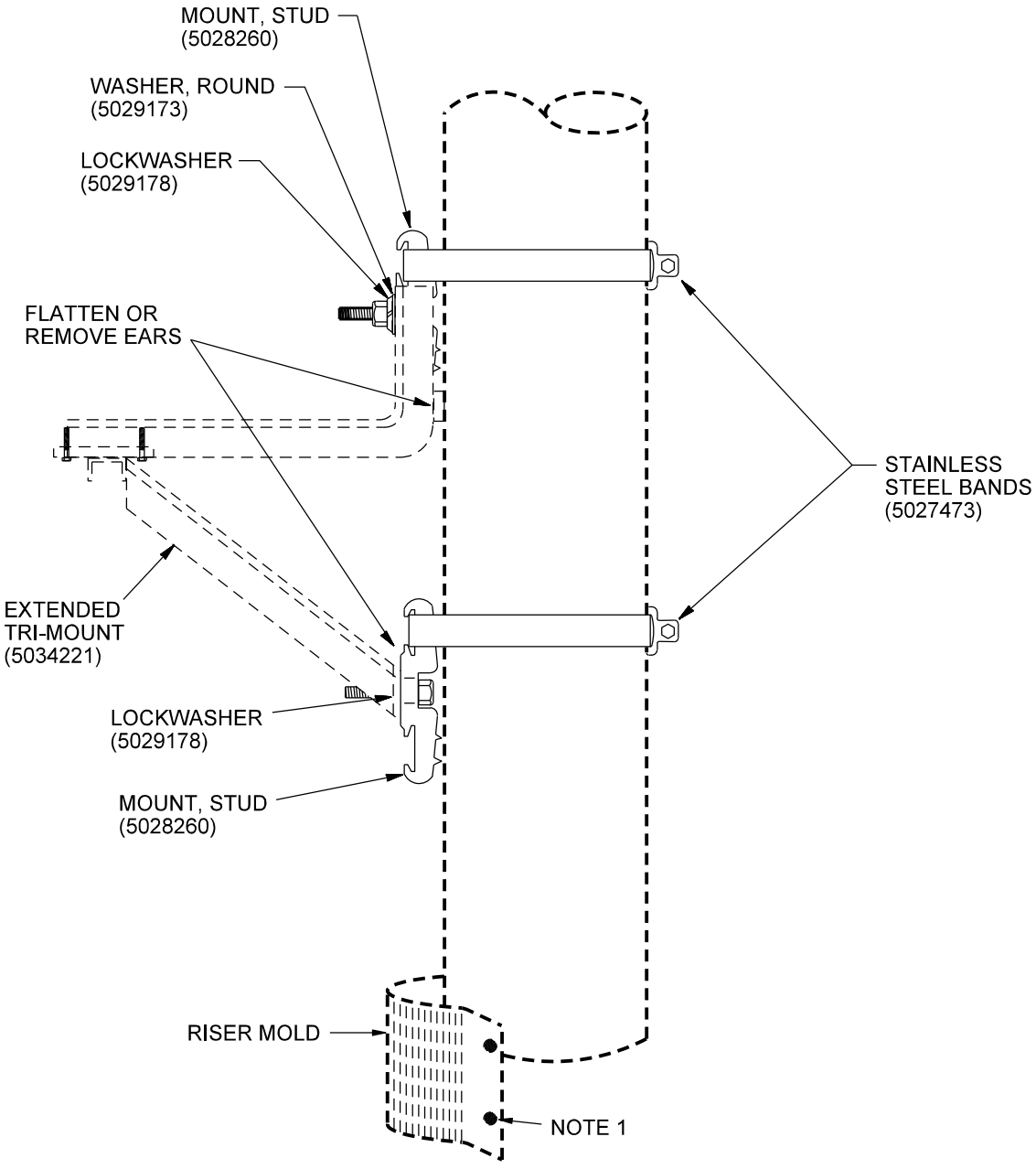


NOTES

1. IF PLATE THICKNESS IS 1/2" OR LESS THE SELF DRILL/SELF TAPPING SCREWS (5028982) MAY BE USED. IF PLATE THICKNESS IS GREATER THAN 1/2" DRILL 3/16" DIAMETER HOLE FOR SELF DRILL/SELF TAP SCREWS (5028982). SCREWS SHALL BE PLACED IN SLOTS AND NOT DRILLED THROUGH U-GUARD FLANGE TO ALLOW THERMAL EXPANSION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS STEEL POLE MOUNTING	ISSUE DATE: 07/19/04 REV. DATE: 12/08/14 APPROVAL: B. PRIEST
	5-10-1	8513E347.DGN

URB4EST

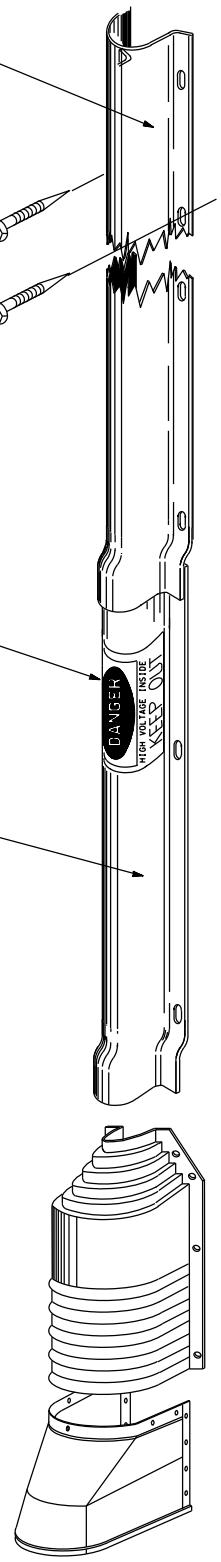


NOTES

1. IF PLATE THICKNESS IS 1/2" OR LESS THE SELF DRILL/SELF TAPPING SCREWS (5028982) MAY BE USED. IF PLATE THICKNESS IS GREATER THAN 1/2" DRILL 3/16" DIAMETER HOLE FOR SELF DRILL/SELF TAP SCREWS (5028982). SCREWS SHALL BE PLACED IN SLOTS AND NOT DRILLED THROUGH U-GUARD FLANGE TO ALLOW THERMAL EXPANSION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS EXTENDED BRACKET STEEL POLE MOUNTING	ISSUE DATE: 07/19/04 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-11-1	8513E360.DGN

URBSR2BM	2" SERVICE RISER WITH BOOT FOR STEEL POLE
URBSR3BM	3" SERVICE RISER WITH BOOT FOR STEEL POLE
URBSR4BM	4" SERVICE RISER WITH BOOT FOR STEEL POLE
URBSR5BM	5" SERVICE RISER WITH BOOT FOR STEEL POLE
URBSR6BM	6" SERVICE RISER WITH BOOT FOR STEEL POLE
URBSR2B	2" SERVICE RISER WITH BOOT
URBSR3B	3" SERVICE RISER WITH BOOT
URBSR4B	4" SERVICE RISER WITH BOOT
URBSR5B	5" SERVICE RISER WITH BOOT
URBSR6B	6" SERVICE RISER WITH BOOT



WOOD POLE RISERS

MATERIAL ITEM	DESCRIPTION	QTY	UOI
5028002	SCREW, LAG, HOT DIP GALVANIZED, 1/4" DIA.	36	EA.
5039124	SIGN, DECAL, 5" X 9"	1	EA.
5035064	BOOT, POLE RISER, CLASS 2 AND LOWER POLES	1	EA.
5031717 - 5031721 5091123, 5091465	MOLD, POLE RISER	VARIOUS	EA.
5035065	BOOT, POLE RISER	1	EA.
5087791	BOOT, EXTENSION (NOTE 1)	1	EA.

STEEL POLE RISERS

MATERIAL ITEM	DESCRIPTION	QTY	UOI
5004959	WASHER, FLAT, CUT STEEL, ZINC PLATED, 1/4"	0.25	LB.
5028982	SCREW, STEEL, SELF DRILLING	36	EA.
5039124	SIGN, DECAL, 5" X 9"	1	EA.
5035065	BOOT POLE RISER	1	EA.
5031717 - 5031721 5091123, 5091465	MOLD, POLE RISER	VARIOUS	EA.
5087791	BOOT, EXTENSION (NOTE 1)	1	EA.

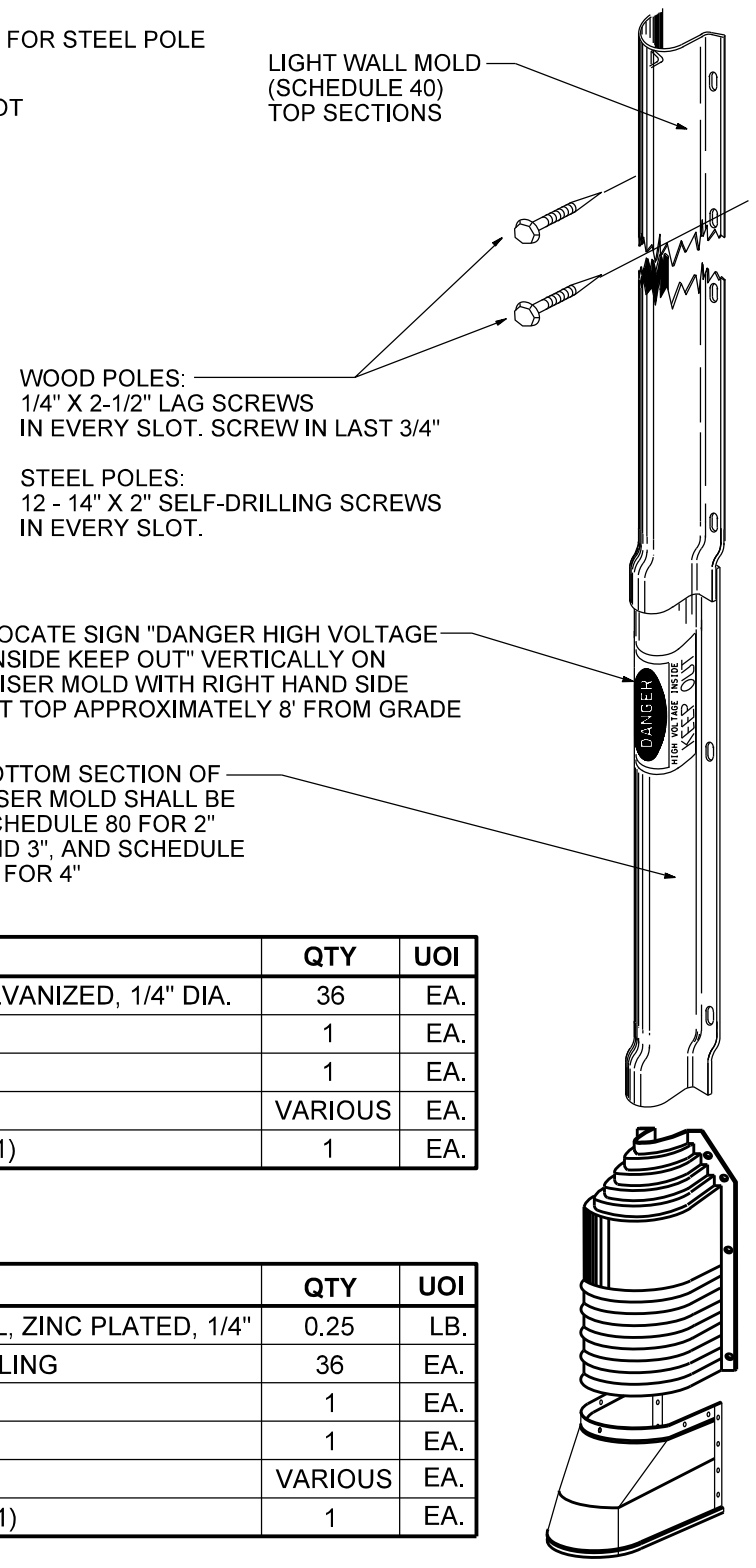
NOTES

1. OPTIONAL BOTTOM BOOT EXTENSION USED WHEN CONDUIT IS OFFSET FROM POLE (MAX. 16"). USE MATERIAL ITEM TO ORDER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PLASTIC RISER MOLD SERVICE	ISSUE DATE: 01/31/89 REV. DATE: 11/11/20 APPROVAL: J. LUERA
	5-12-1	8513E76.DGN

URBR2BDM	2" DUSK-TO-DAWN RISER - STEEL POLE
URBR2BLM	2" STREETLIGHT RISER WITH BOOT FOR STEEL POLE
* URBR2BD	2" DUSK-TO-DAWN RISER WITH BOOT
* URBR2BL	2" STREETLIGHT RISER WITH BOOT

* FOR USE WHEN CUSTOMER INSTALLS CONDUIT.



WOOD POLE RISERS

MATERIAL ITEM	DESCRIPTION	QTY	UOI
5028002	SCREW, LAG, HOT DIP GALVANIZED, 1/4" DIA.	36	EA.
5039124	SIGN, DECAL, 5" X 9"	1	EA.
5035065	BOOT, POLE RISER	1	EA.
5031717 - 5031720	MOLD, POLE RISER	VARIOUS	EA.
5087791	BOOT, EXTENSION (NOTE 1)	1	EA.

STEEL POLE RISERS

MATERIAL ITEM	DESCRIPTION	QTY	UOI
5004959	WASHER, FLAT, CUT STEEL, ZINC PLATED, 1/4"	0.25	LB.
5028982	SCREW, STEEL, SELF DRILLING	36	EA.
5039124	SIGN, DECAL, 5" X 9"	1	EA.
5035065	BOOT POLE RISER	1	EA.
5031717 - 5031720	MOLD, POLE RISER	VARIOUS	EA.
5087791	BOOT, EXTENSION (NOTE 1)	1	EA.

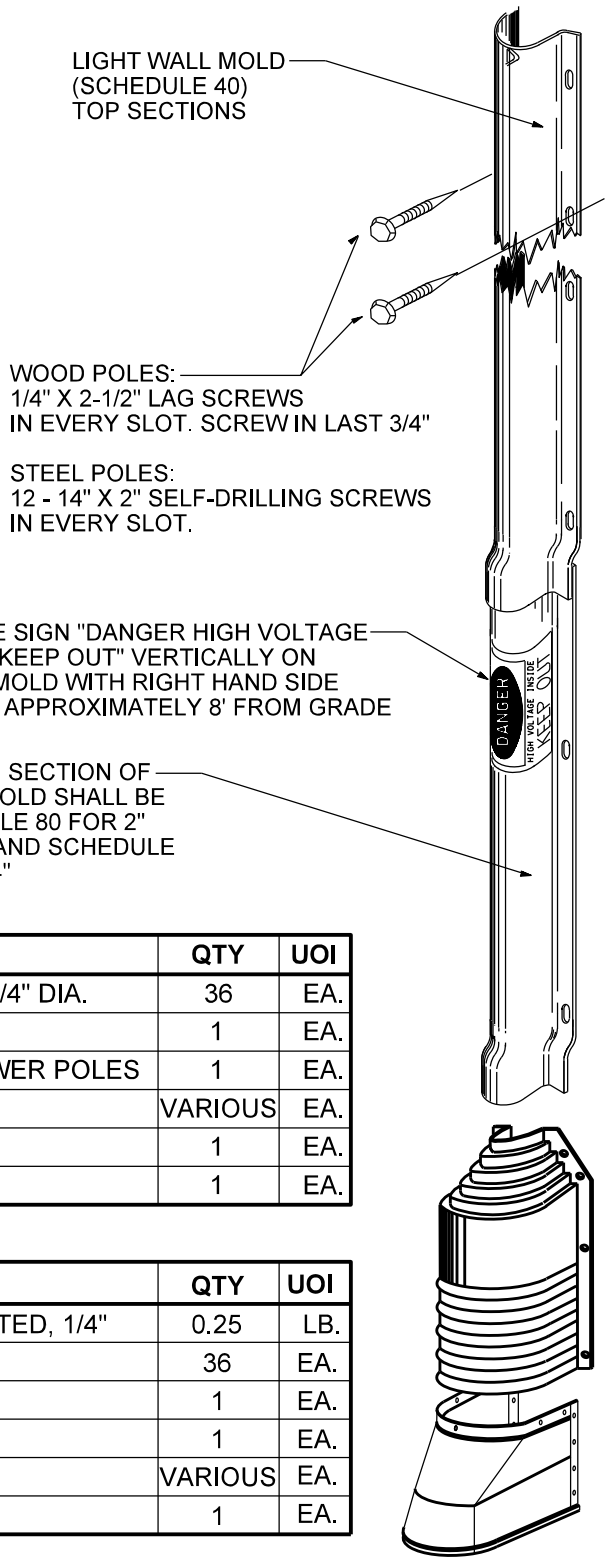
NOTES

1. OPTIONAL BOTTOM BOOT EXTENSION USED WHEN CONDUIT IS OFFSET FROM POLE (MAX. 16") USE MATERIAL ITEM TO ORDER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PLASTIC RISER MOLD STREETLIGHT AND SECURITY LIGHTING	ISSUE DATE: 01/31/89 REV. DATE: 04/18/19 APPROVAL: K. WALIA
	5-12-2	8513E589.DGN

URBR2BM	2" RISER - STEEL POLE
URBR2B	2" RISER - WOOD POLE
URBR2BS	2" RISER - CLASS 2 POLE OR SMALLER
URBR3BM	3" RISER - STEEL POLE
URBR3B	3" RISER - WOOD POLE
URBR3BS	3" RISERS - CLASS 2 POLE OR SMALLER
* URBR4BM	4" RISER WITH LARGE BOOT - STEEL POLE
* URBR4B	4" RISER WITH LARGE BOOT - WOOD POLE
URBR4BEM	4" RISER WITH CONVERSION BOOT - STEEL POLE
URBR4BE	4" RISER WITH CONVERSION BOOT - WOOD POLE

* FOR USE WITH FOUR 2 1/2" CONDUIT.



WOOD POLE RISERS

MATERIAL ITEM	DESCRIPTION	QTY	UOI
5028002	SCREW, LAG, HOT DIP GALVANIZED, 1/4" DIA.	36	EA.
5039124	SIGN, DECAL, 5" X 9"	1	EA.
5035064	BOOT, POLE RISER, CLASS 2 AND LOWER POLES	1	EA.
5031717 - 5031721	MOLD, POLE RISER	VARIOUS	EA.
5035065	BOOT, POLE RISER	1	EA.
5087791	BOOT, EXTENSION (NOTE 1)	1	EA.

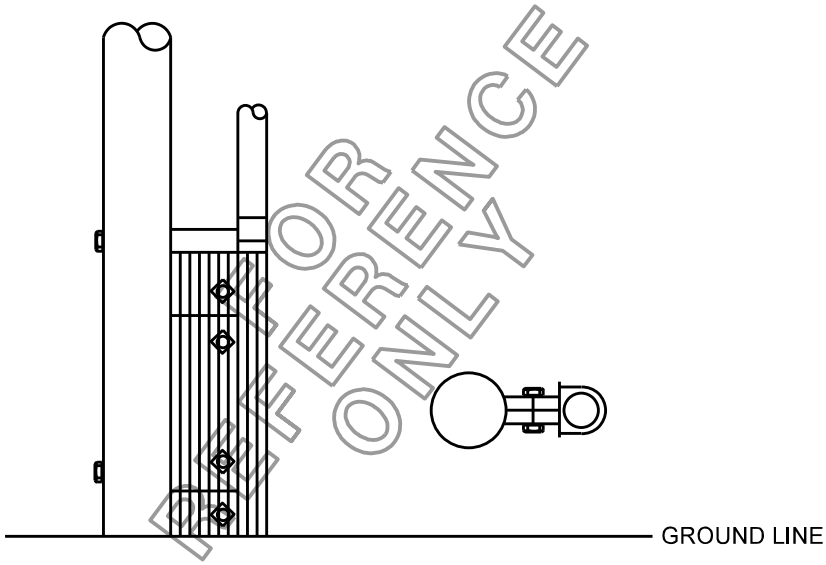
STEEL POLE RISERS

MATERIAL ITEM	DESCRIPTION	QTY	UOI
5004959	WASHER, FLAT, CUT STEEL, ZINC PLATED, 1/4"	0.25	LB.
5028982	SCREW, STEEL, SELF DRILLING	36	EA.
5039124	SIGN, DECAL, 5" X 9"	1	EA.
5035065	BOOT POLE RISER	1	EA.
5031717 - 5031721	MOLD, POLE RISER	VARIOUS	EA.
5087791	BOOT, EXTENSION (NOTE 1)	1	EA.

NOTES

1. OPTIONAL BOTTOM BOOT EXTENSION USED WHEN CONDUIT IS OFFSET FROM POLE (MAX. 16"). USE MATERIAL ITEM TO ORDER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PLASTIC RISER MOLD PRIMARY AND SECONDARY	ISSUE DATE: 01/31/89 REV. DATE: 04/18/19 APPROVAL: K. WALIA
	5-12-3	8513E590.DGN



FOR REFERENCE ONLY

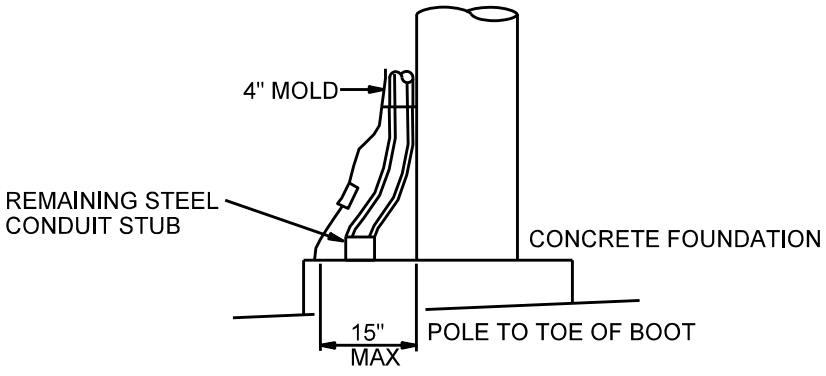
ANTI-CLIMBING BARRIER FOR STEEL CONDUIT RISERS WITH STANDOFF BRACKETS.

URCB

INSTALLATION: ONE PAIR OF FLAT SHEET BARRIERS ARE POSITIONED FROM GROUND LINE UP ON EACH SIDE OF THE RISER. BOLTS, WASHERS AND NUTS ARE INSTALLED ACROSS THE STANDOFF BRACKETS TO SECURE. ADDITIONAL BOLTS, WASHERS AND NUTS MAY BE INSTALLED IF NECESSARY.

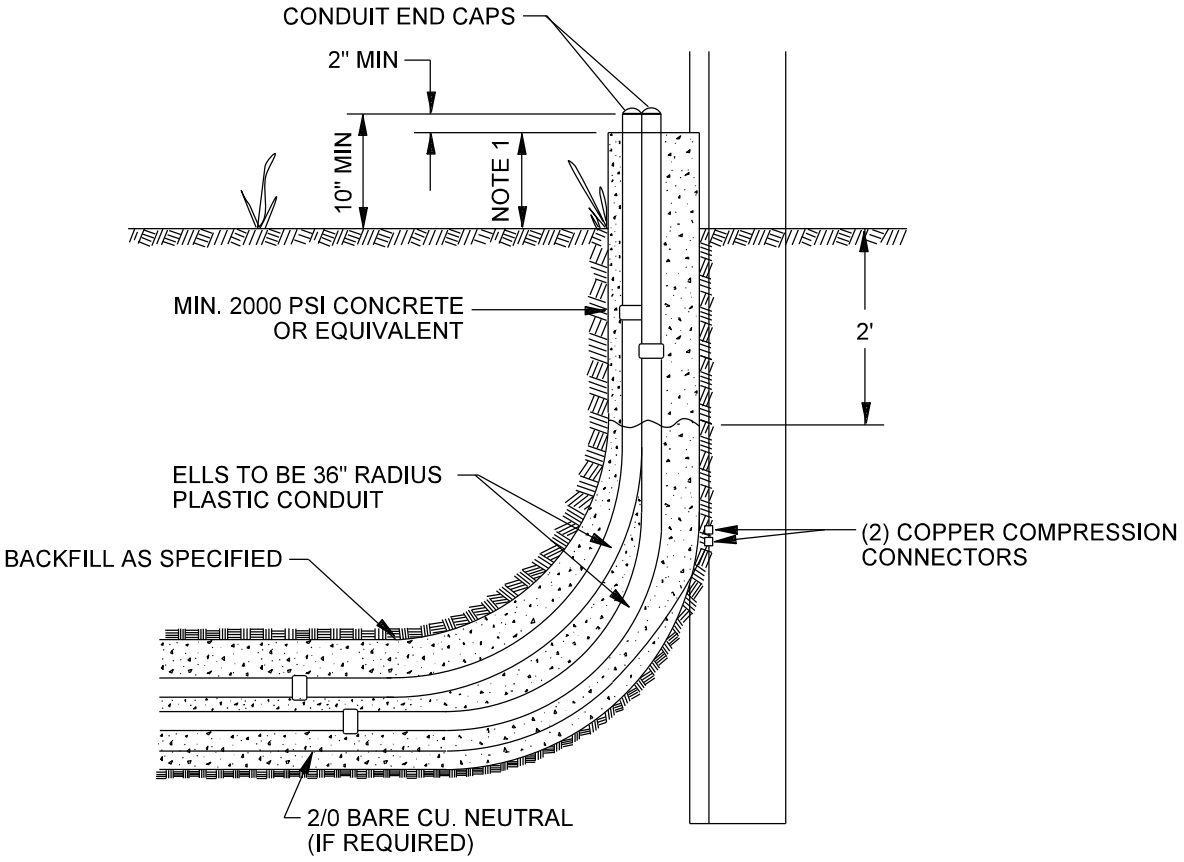
URBR4BE

IF THE STEEL CONDUIT MUST BE REMOVED AND A CONCRETE FOUNDATION PREVENTS THE CONDUIT FROM BEING MOVED TO THE POLE, USE URBR4BE WITH BOOT 5035065.



URBRF

(DOES NOT INCLUDE BOOT, SEE PAGE 2)



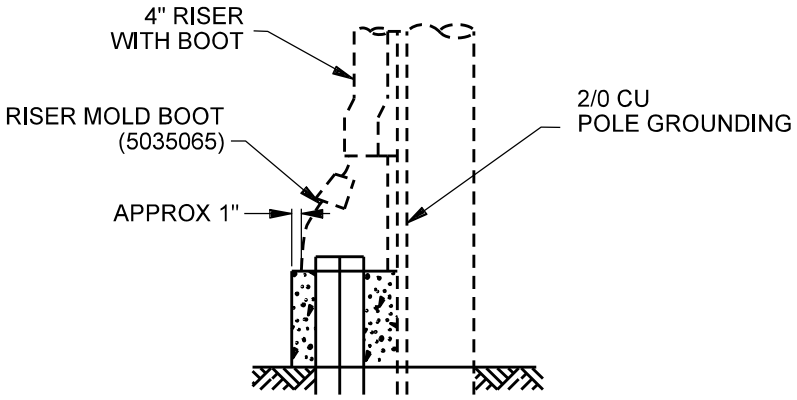
NOTES

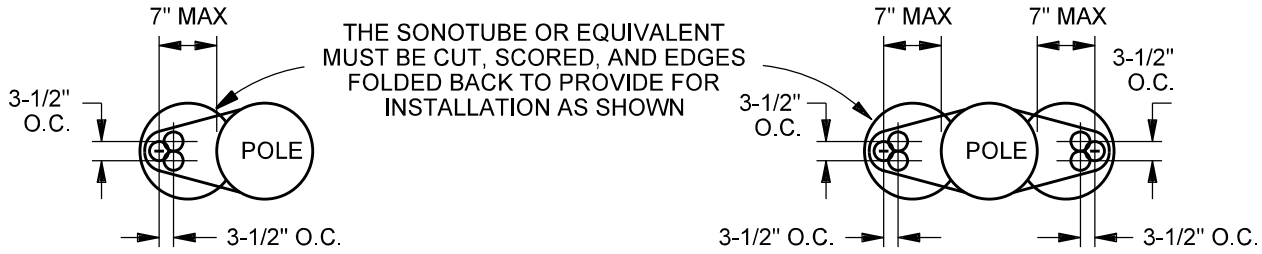
1. HEIGHT OF CONCRETE ENCASEMENT TO BE:
   2 INCHES ABOVE GRADE TYPICAL FOR WOOD POLE.
   24 INCHES ABOVE GRADE WHERE PROTECTION FROM VEHICLES IS NECESSARY.
   FLUSH WITH FOUNDATION OF STEEL POLE OR AS SPECIFIED.

2. CONCRETE SHALL NOT FLOW AROUND WOOD POLE. 12" SONOTUBE OR EQUIVALENT FORM MAY BE USED FOR CONCRETE ENCASEMENT FROM 2 FEET BELOW GRADE TO TOP. SLOPE TOP AWAY FROM POLE.

3. RISER INSTALLATION DETAILS FOR STEEL POLE MUST BE APPROVED BY CIVIL ENGINEERING SERVICES PRIOR TO CONSTRUCTION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	RISERS ENCASED RISER FOR FUTURE FEEDER STUB-UP	ISSUE DATE: 01/15/87 REV. DATE: 09/27/12 APPROVAL: B.PRIEST
	5-14-1	8513E121.DGN





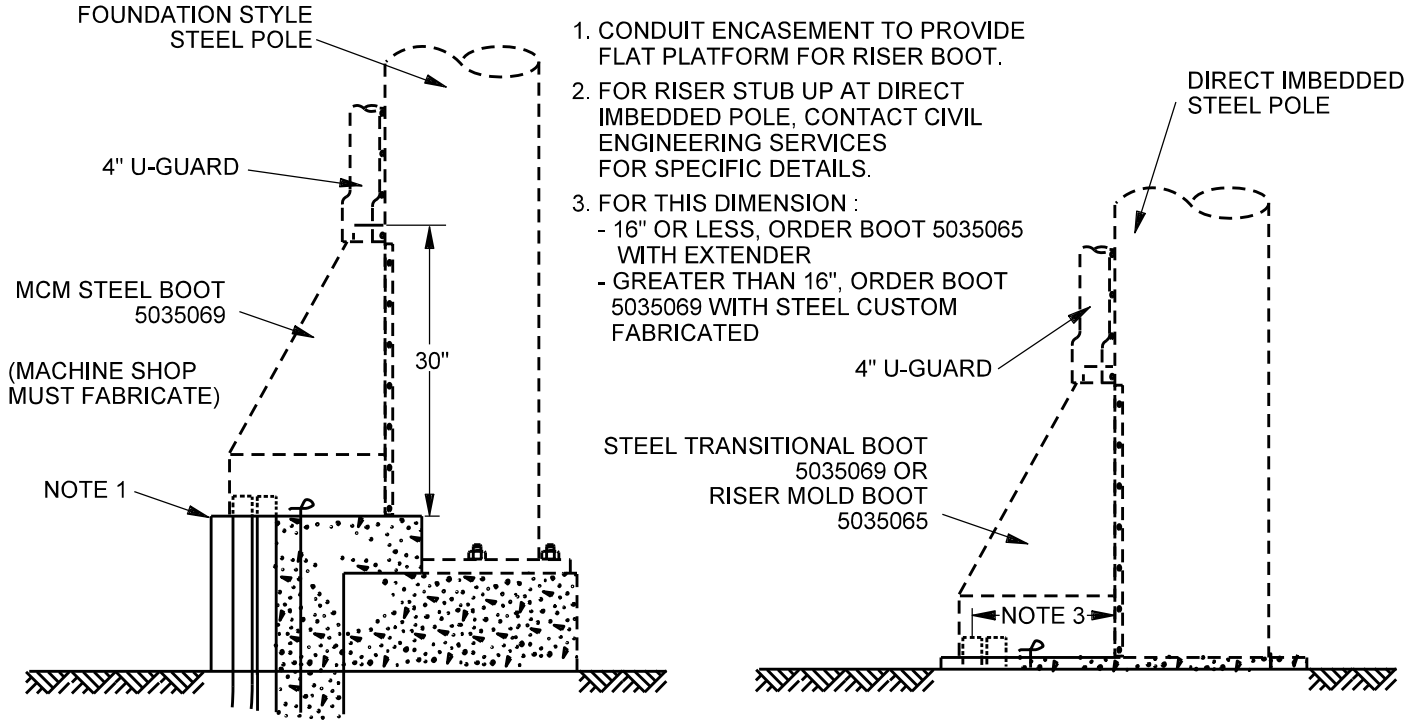
SINGLE RISER PLAN

DUAL RISER PLAN

WOOD POLE DETAILS

NOTES

1. CONDUIT ENCASEMENT TO PROVIDE FLAT PLATFORM FOR RISER BOOT.
2. FOR RISER STUB UP AT DIRECT IMBEDDED POLE, CONTACT CIVIL ENGINEERING SERVICES FOR SPECIFIC DETAILS.
3. FOR THIS DIMENSION :
   - 16" OR LESS, ORDER BOOT 5035065 WITH EXTENDER
   - GREATER THAN 16", ORDER BOOT 5035069 WITH STEEL CUSTOM FABRICATED

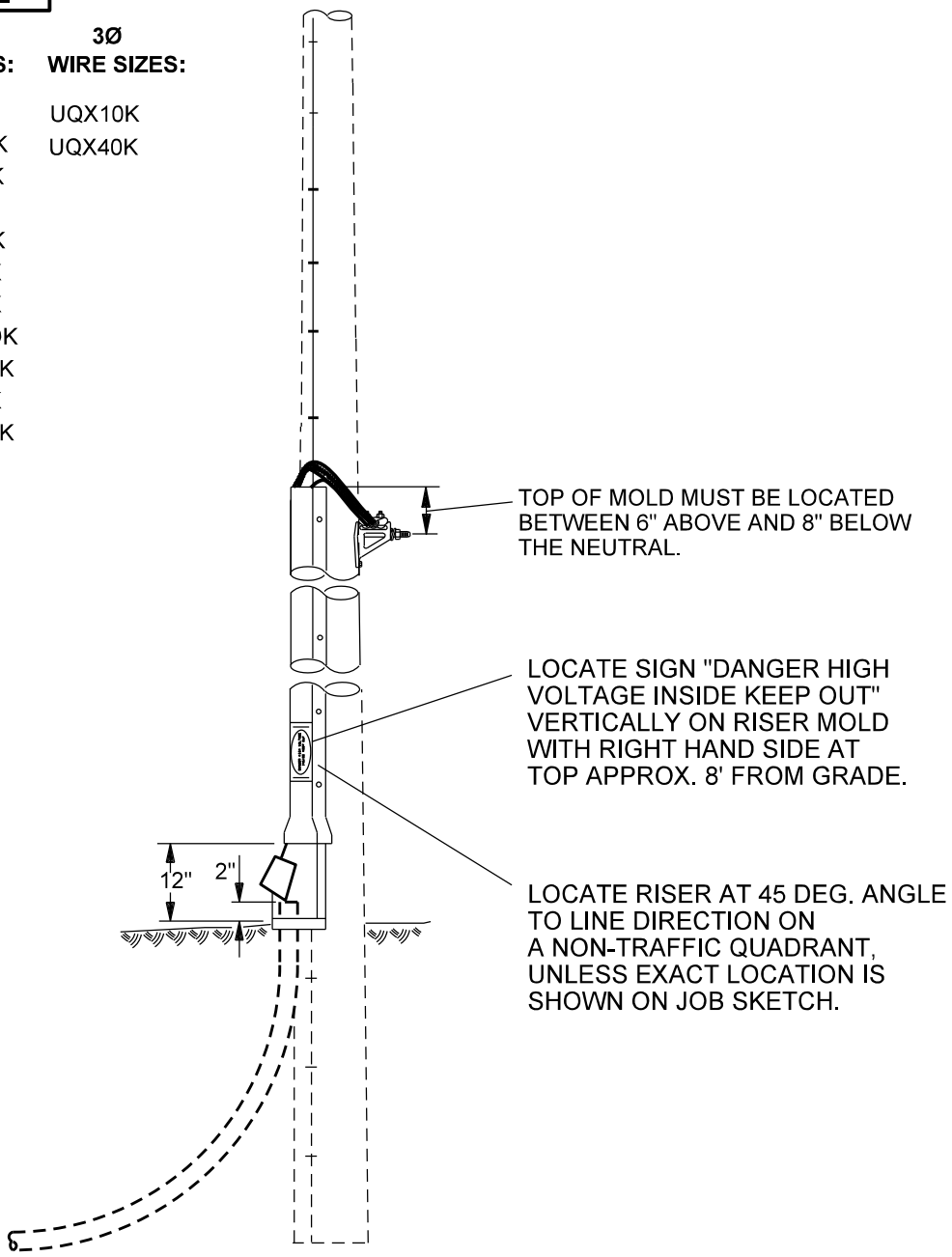


STEEL POLE DETAILS

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS ENCASED RISER FOR FUTURE FEEDER STUB-UP DETAILS	ISSUE DATE: 01/15/87 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-14-2	8513E150.DGN

URL1_ _

1Ø WIRE SIZES:	3Ø WIRE SIZES:
UDX6K	UQX10K
UDX6DK	UQX40K
UDX6LK	
UTX6K	
UTX6DK	
UTX6LK	
UTX10K	
UTX10DK	
UTX10LK	
UTX40K	
UTX350K	



NOTES

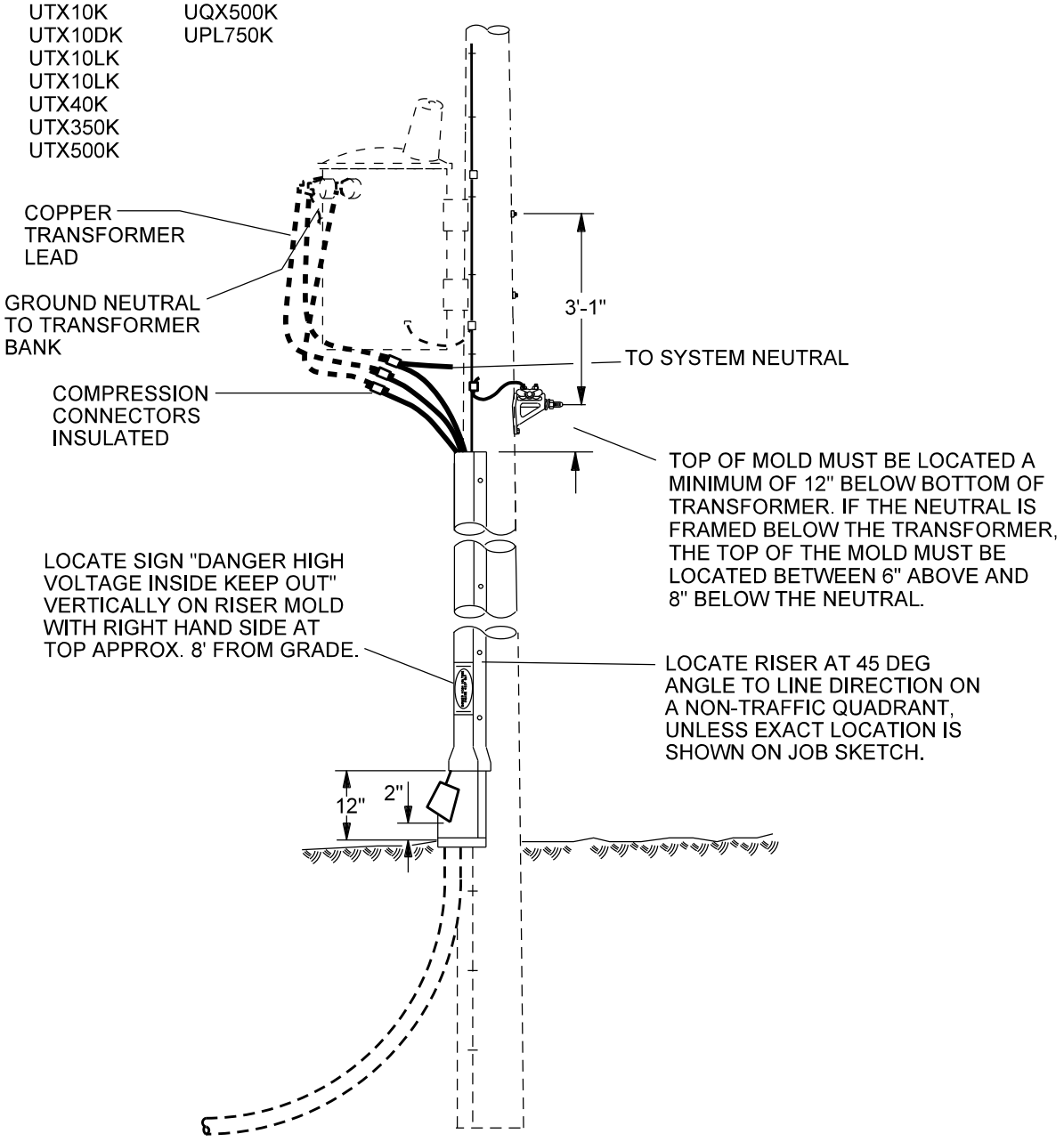
1. FOR STEEL POLE ADD AN "S" TO SUPPLY SELF DRILL / SELF TAP SCREWS AND WASHERS.

2. IF PLATE THICKNESS IS 1/2" OR LESS THE SELF DRILL / SELF TAPPING SCREWS (5028982) MAY BE USED. IF PLATE THICKNESS IS GREATER THAN 1/2" DRILL 3/16" DIAMETER HOLE FOR SELF DRILL / SELF TAP SCREWS (5028982).

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS SECONDARY RISER FROM OVERHEAD SECONDARY	ISSUE DATE: 01/15/87 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-15-1	8513E213.DGN

URL1X_ _

1Ø WIRE SIZES:	3Ø WIRE SIZES:
UDX6K	UQX10K
UDX6DK	UQX40K
UDX6LK	UQX350K
UTX10K	UQX500K
UTX10DK	UPL750K
UTX10LK	
UTX10LK	
UTX40K	
UTX350K	
UTX500K	



NOTES

1. FOR STEEL POLE ADD AN "S" TO SUPPLY SELF DRILL / SELF TAP SCREWS AND WASHERS.

2. IF PLATE THICKNESS IS 1/2" OR LESS THE SELF DRILL / SELF TAPPING SCREWS (5028982) MAY BE USED. IF PLATE THICKNESS IS GREATER THAN 1/2" DRILL 3/16" DIAMETER HOLE FOR SELF DRILL / SELF TAP SCREWS (5028982).

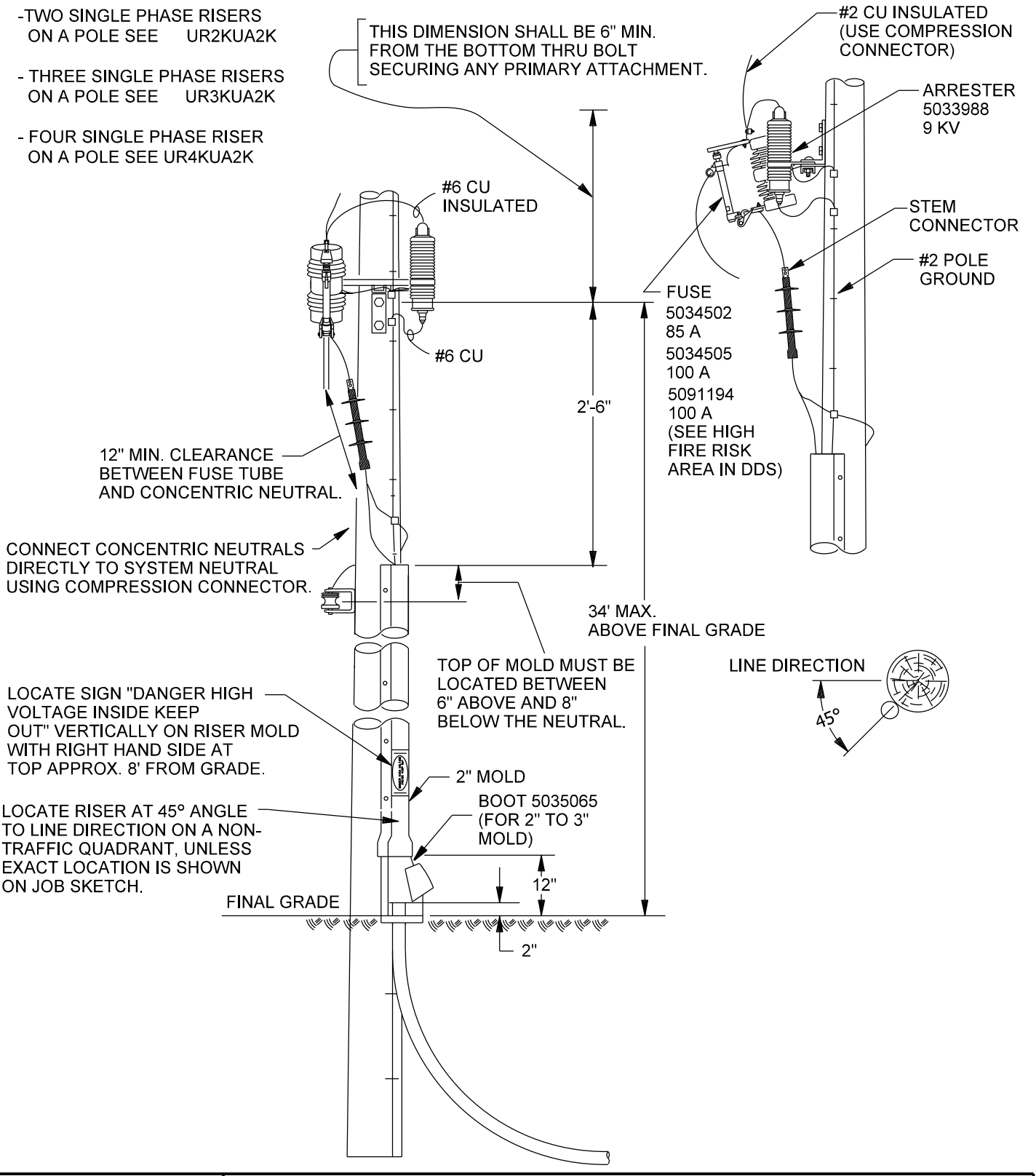
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	RISERS SECONDARY RISER FROM OVERHEAD TRANSFORMER	ISSUE DATE: 01/15/87 REV. DATE: 12/10/14 APPROVAL: B. PRIEST
	5-16-1	8513E513.DGN

UR1KUA2K POLE RISER WITH CONDUIT STUB-UP

-TWO SINGLE PHASE RISERS ON A POLE SEE UR2KUA2K

- THREE SINGLE PHASE RISERS ON A POLE SEE UR3KUA2K

- FOUR SINGLE PHASE RISER ON A POLE SEE UR4KUA2K

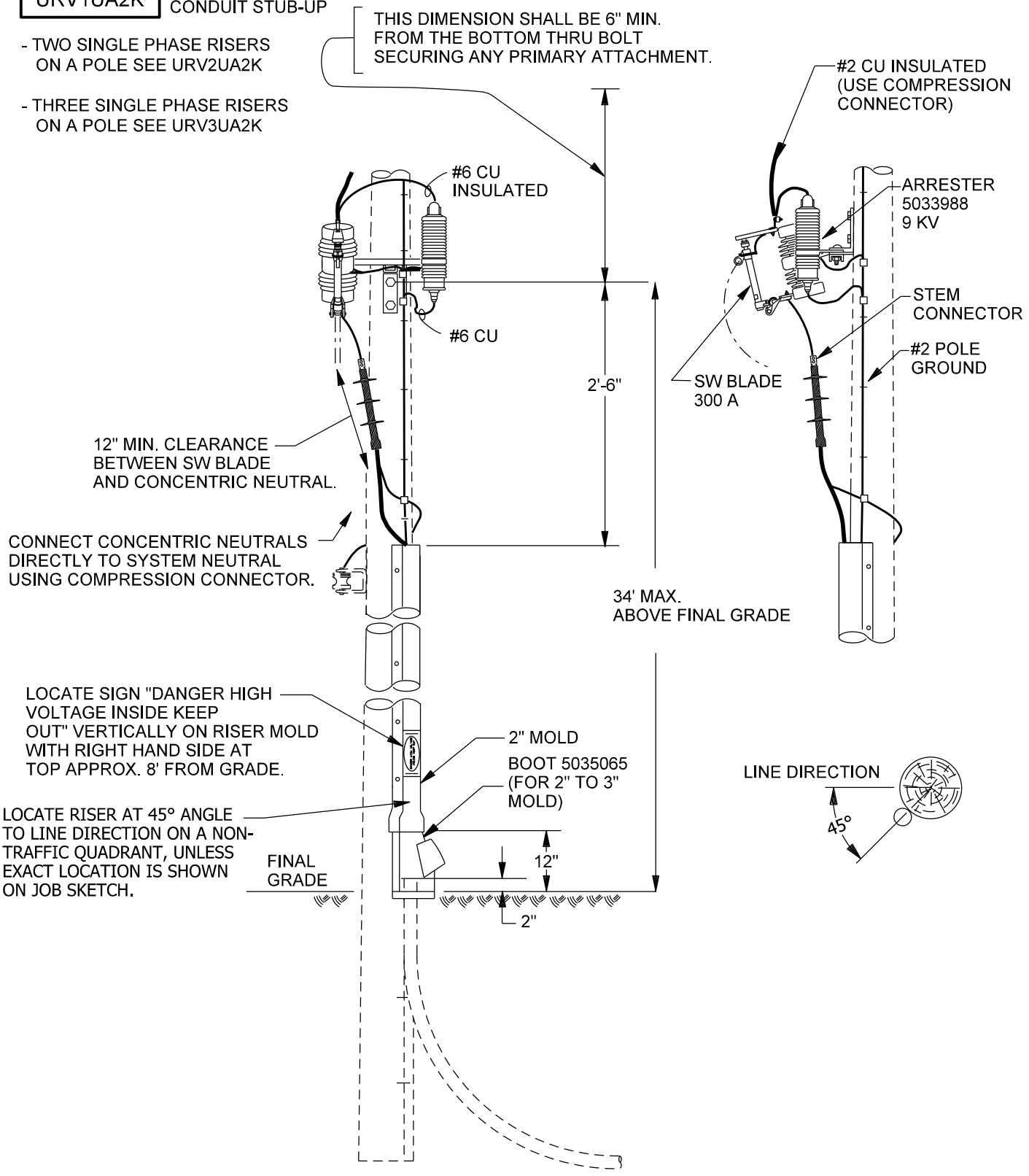


Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER SINGLE CONDUCTOR #2 AL.	ISSUE DATE: 01/15/87 REV. DATE: 09/16/21 APPROVAL: J. LUERA
	5-17-1	8513E148.DGN

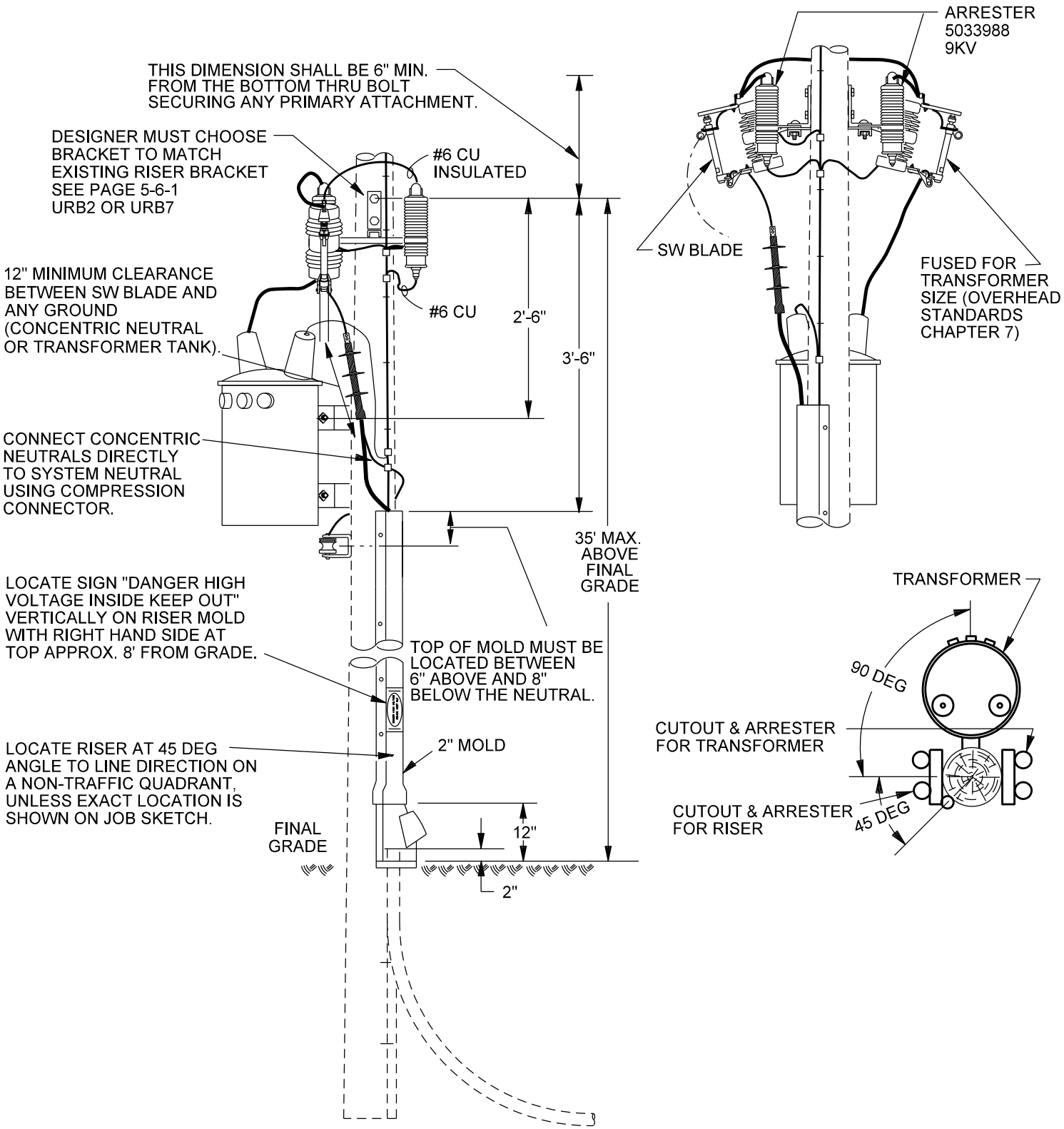
URV1UA2K POLE RISER WITH CONDUIT STUB-UP

- TWO SINGLE PHASE RISERS ON A POLE SEE URV2UA2K

- THREE SINGLE PHASE RISERS ON A POLE SEE URV3UA2K



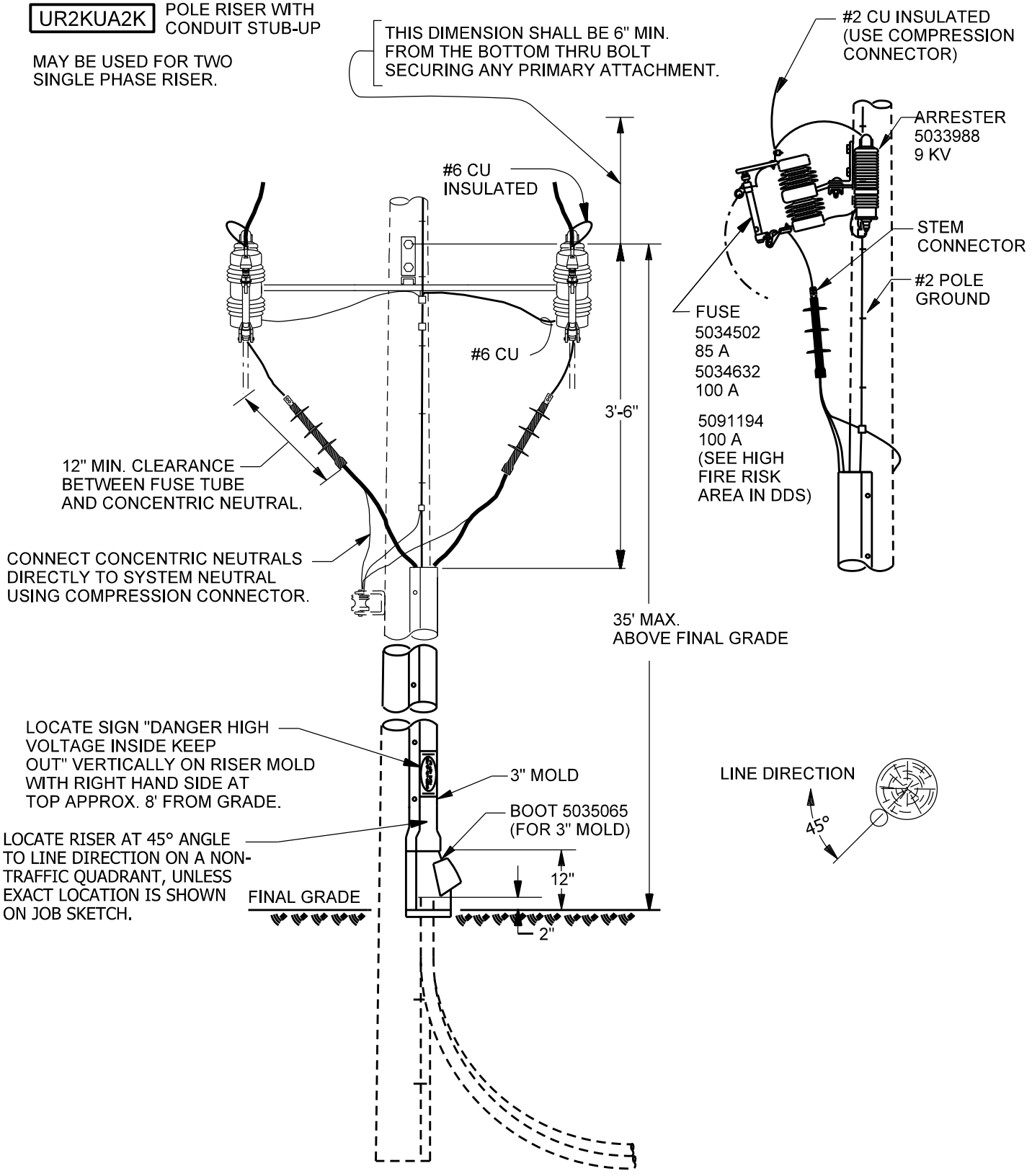
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - SINGLE CONDUCTOR #2 AL. FEEDING AN OVERHEAD LINE	ISSUE DATE: 01/15/87 REV. DATE: 09/16/19 APPROVAL: N. SABBAH
	5-18-1	8513E92.DGN



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - SINGLE CONDUCTOR #2 AL. FEEDING AN OVERHEAD TRANSFORMER	ISSUE DATE: 03/18/02 REV. DATE: 07/30/13 APPROVAL: B.PRIEST
	5-19-1	8513E341.DGN

UR2KUA2K POLE RISER WITH CONDUIT STUB-UP

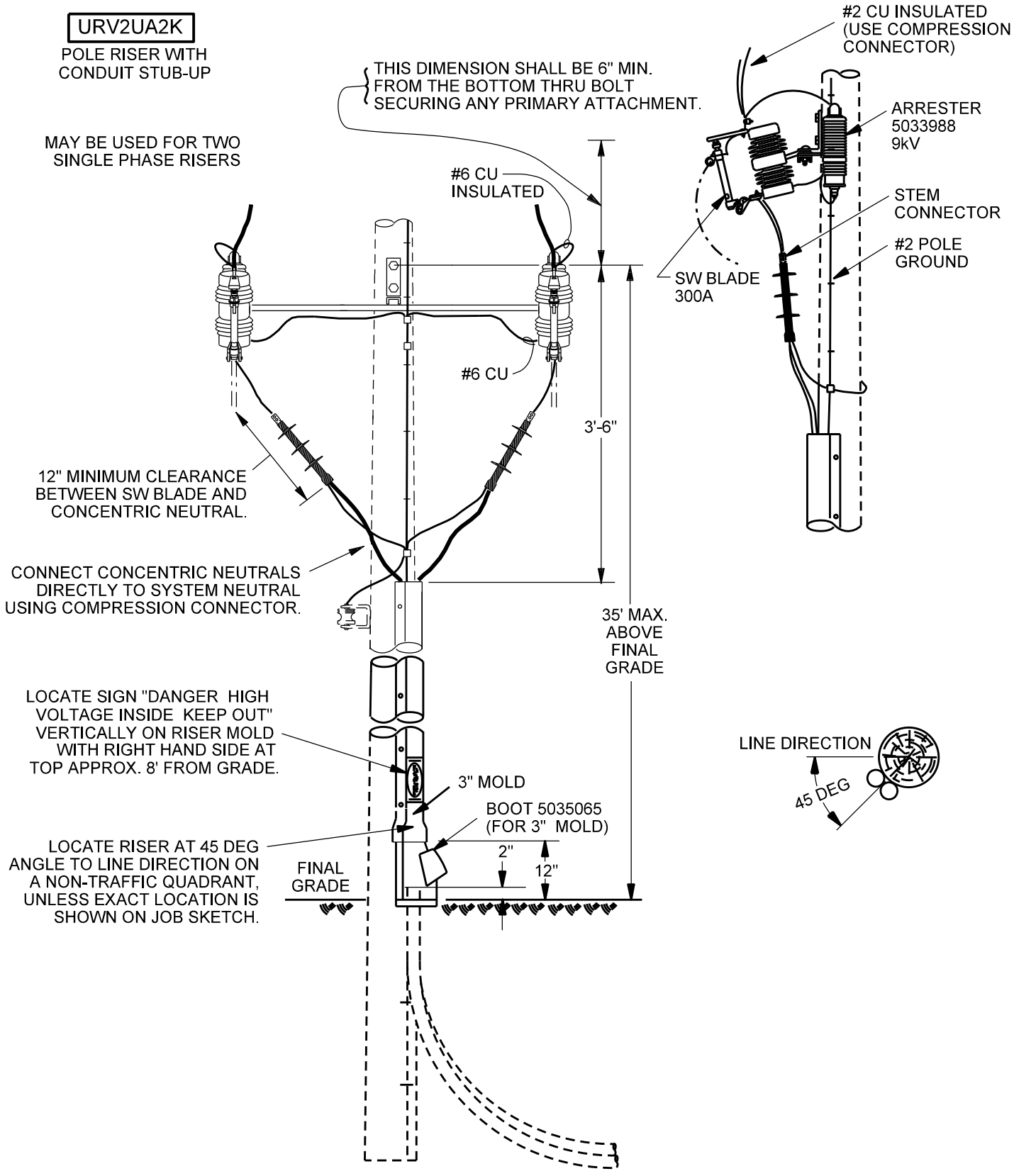
MAY BE USED FOR TWO SINGLE PHASE RISER.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER TWO CONDUCTORS #2 AL.	ISSUE DATE: 01/30/87 REV. DATE: 09/16/21 APPROVAL: J. LUERA
	5-20-1	8513E130.DGN

URV2UA2K

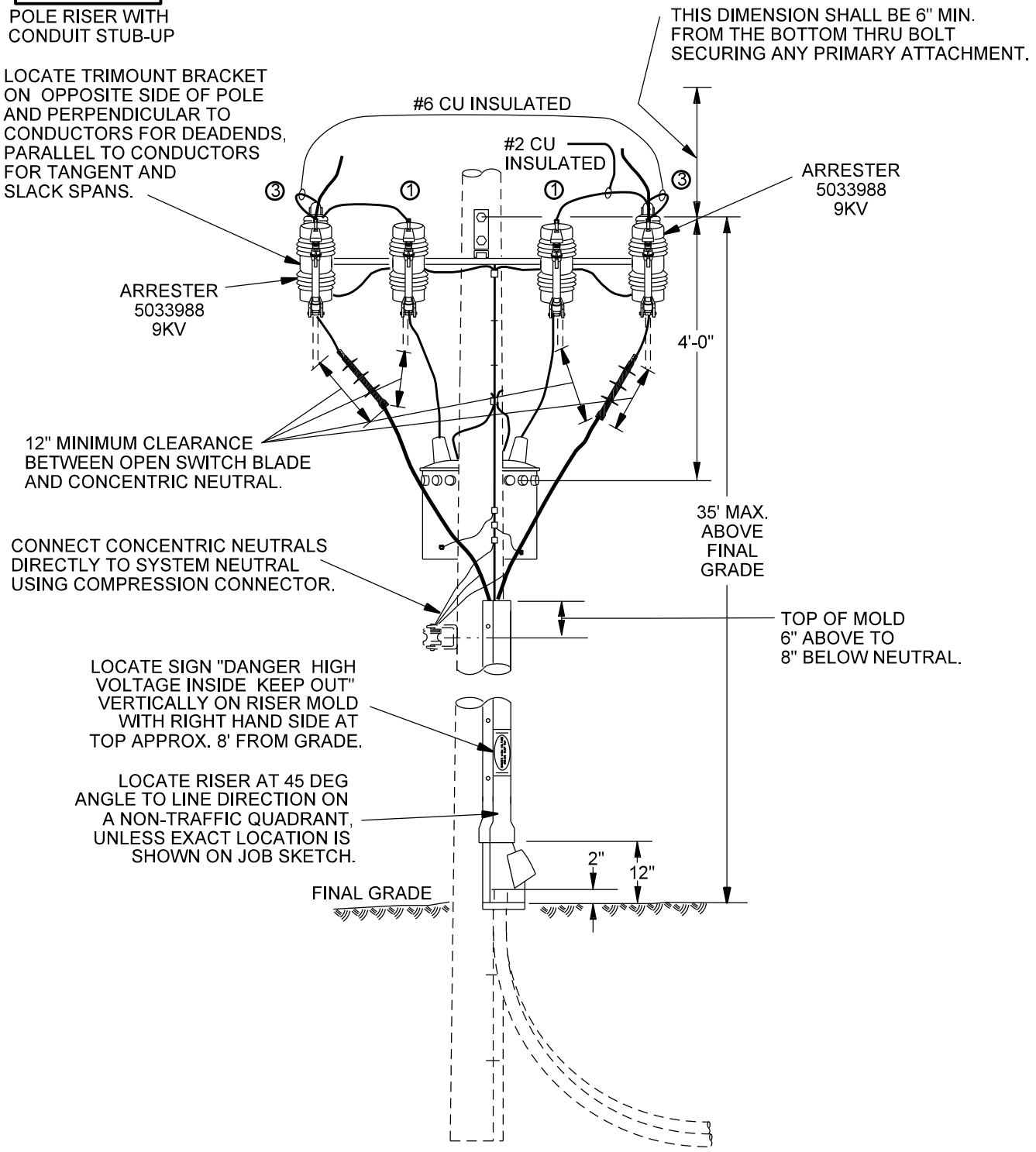
POLE RISER WITH CONDUIT STUB-UP



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - TWO CONDUCTORS #2 AL. FEEDING AN OVERHEAD LINE	ISSUE DATE: 01/15/87 REV. DATE: 07/30/13 APPROVAL: B.PRIEST
	5-21-1	8513E93.DGN

URV2UA2KT

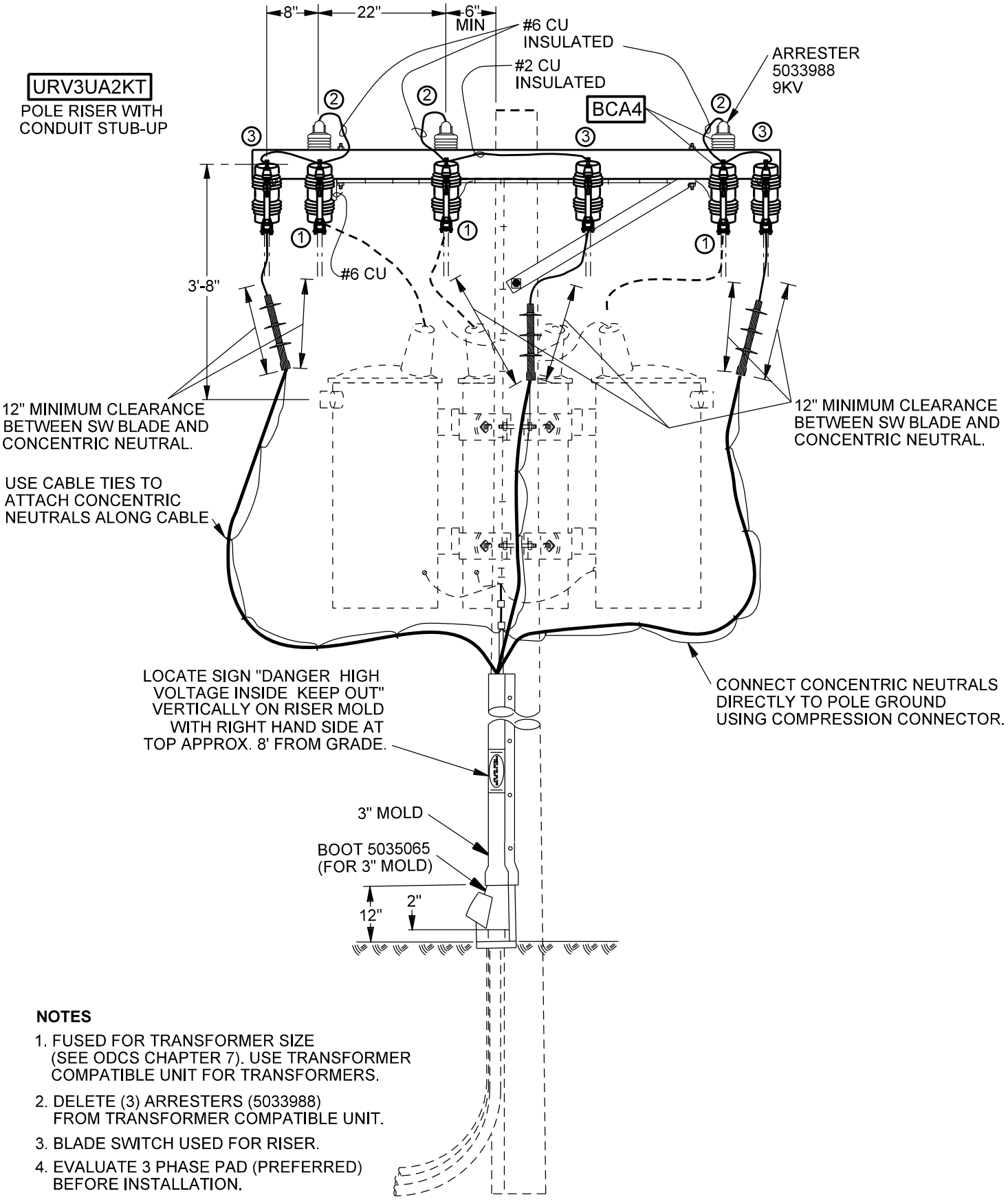
POLE RISER WITH
CONDUIT STUB-UP



NOTES

1. FUSED FOR TRANSFORMER SIZE (SEE ODCS CHAPTER 7), USE TRANSFORMER COMPATIBLE UNIT FOR TRANSFORMERS.
2. DELETE (2) ARRESTERS (5033988) FROM TRANSFORMER COMPATIBLE UNIT.
3. BLADE SWITCH USED FOR RISER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - TWO CONDUCTORS #2 AL. FEEDING AN OVERHEAD 2 POT BANK	ISSUE DATE: 10/15/01 REV. DATE: 12/10/14 APPROVAL: B.PRIEST
	5-22-1	8513E310.DGN

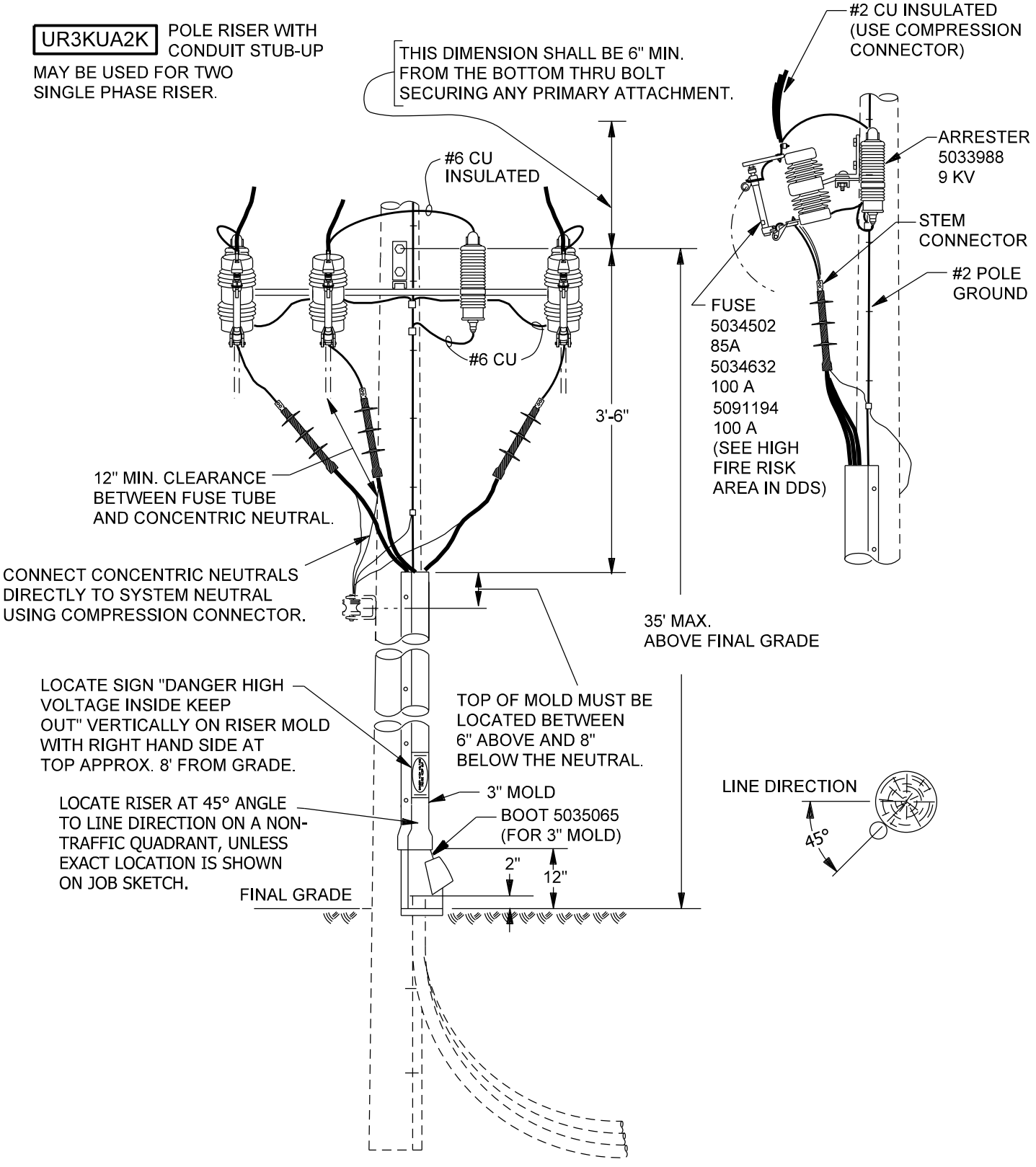


NOTES

1. FUSED FOR TRANSFORMER SIZE (SEE ODCS CHAPTER 7). USE TRANSFORMER COMPATIBLE UNIT FOR TRANSFORMERS.
2. DELETE (3) ARRESTERS (5033988) FROM TRANSFORMER COMPATIBLE UNIT.
3. BLADE SWITCH USED FOR RISER.
4. EVALUATE 3 PHASE PAD (PREFERRED) BEFORE INSTALLATION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - THREE CONDUCTORS #2 AL FEEDING AN OVERHEAD TRANSFORMER	ISSUE DATE: 02/13/07 REV. DATE: 12/10/14 APPROVAL: B. PRIEST
	5-23-1	8513E492.DGN

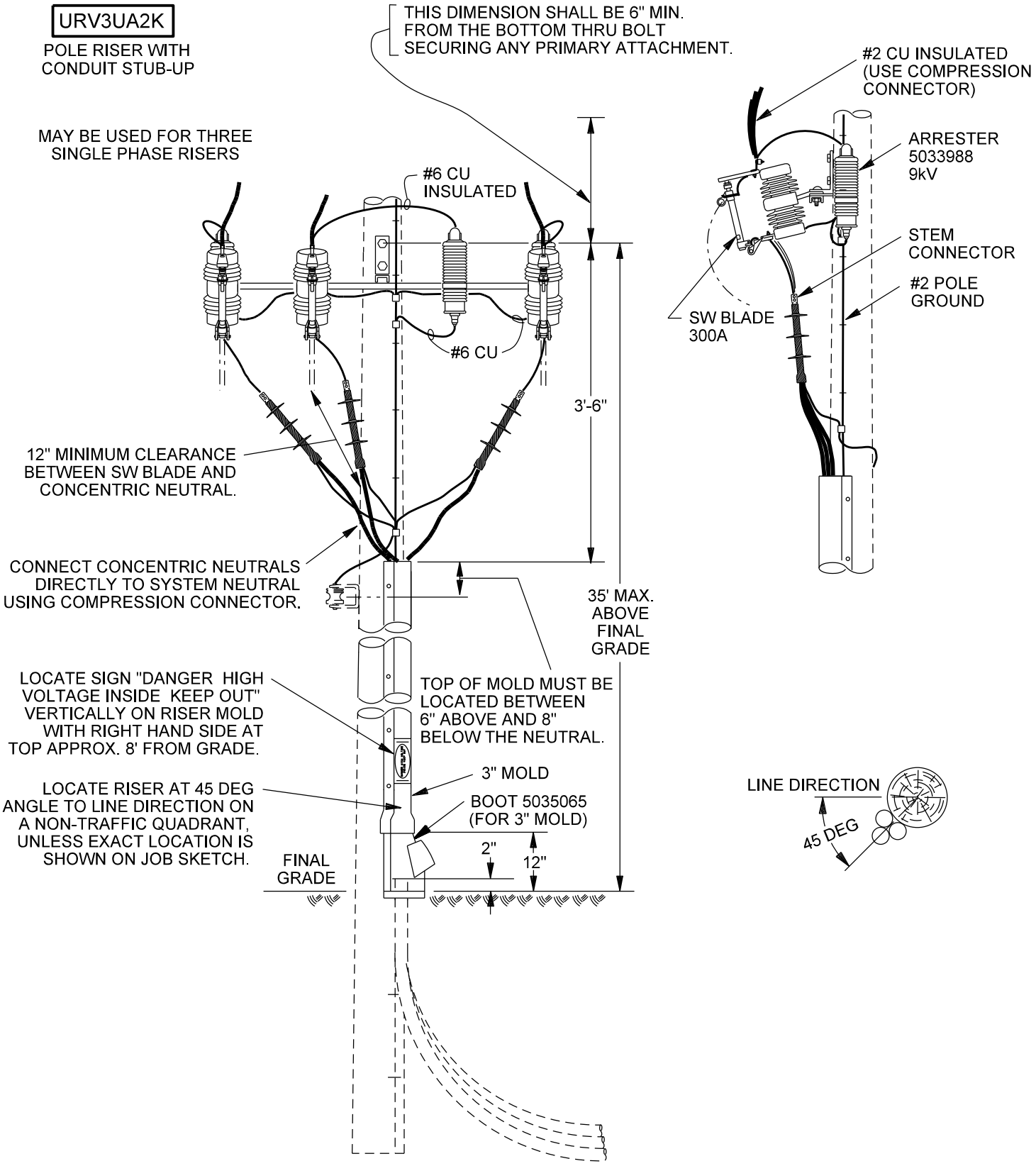
UR3KUA2K POLE RISER WITH CONDUIT STUB-UP MAY BE USED FOR TWO SINGLE PHASE RISER.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER THREE CONDUCTORS #2 AL.	ISSUE DATE: 01/15/87 REV. DATE: 09/16/21 APPROVAL: J. LUERA
	5-24-1	8513E131.DGN

URV3UA2K

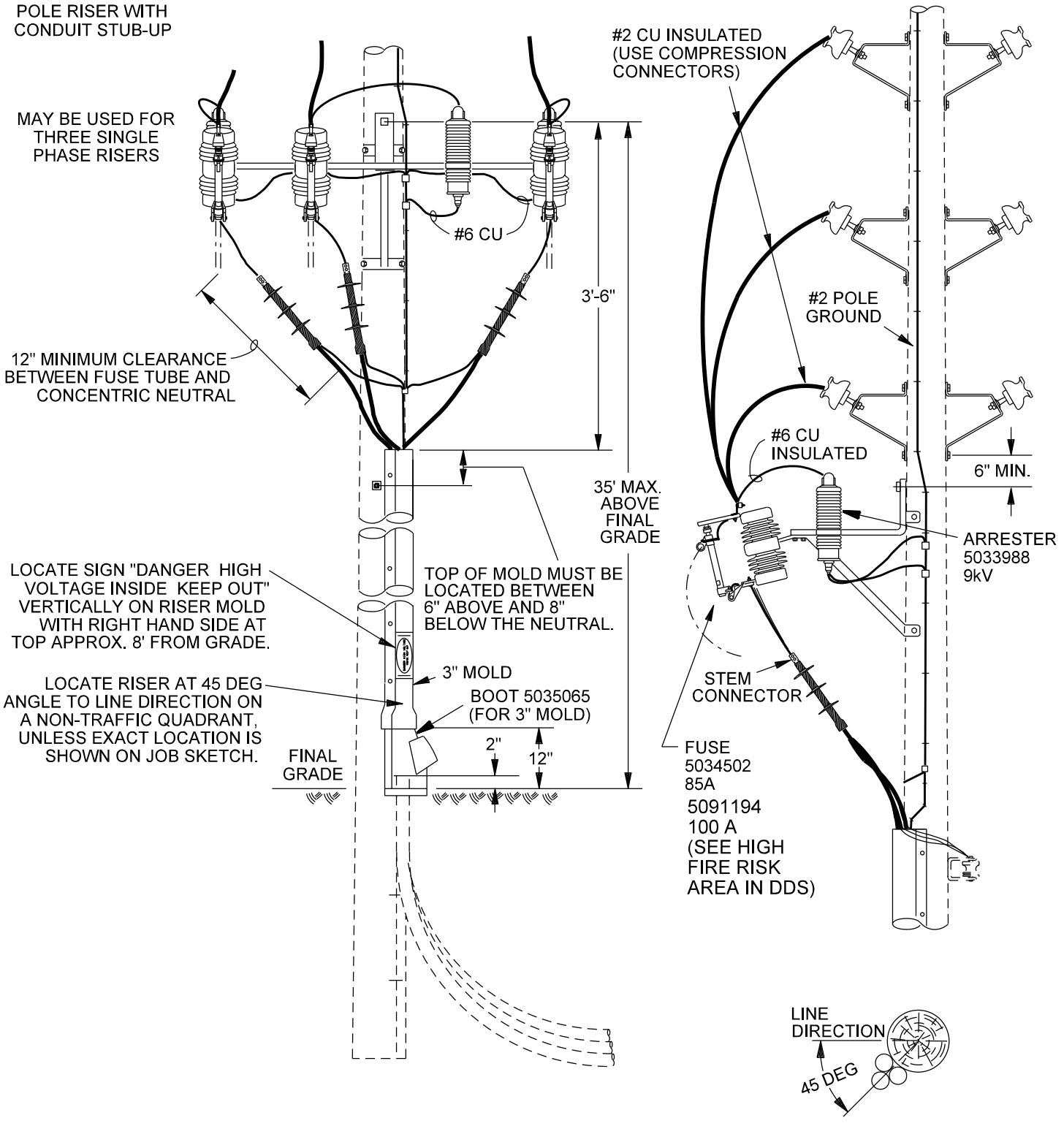
POLE RISER WITH CONDUIT STUB-UP



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - THREE CONDUCTORS #2 AL. FEEDING AN OVERHEAD LINE	ISSUE DATE: 01/15/87 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-25-1	8513E94.DGN

UR3EKUA2K

POLE RISER WITH CONDUIT STUB-UP

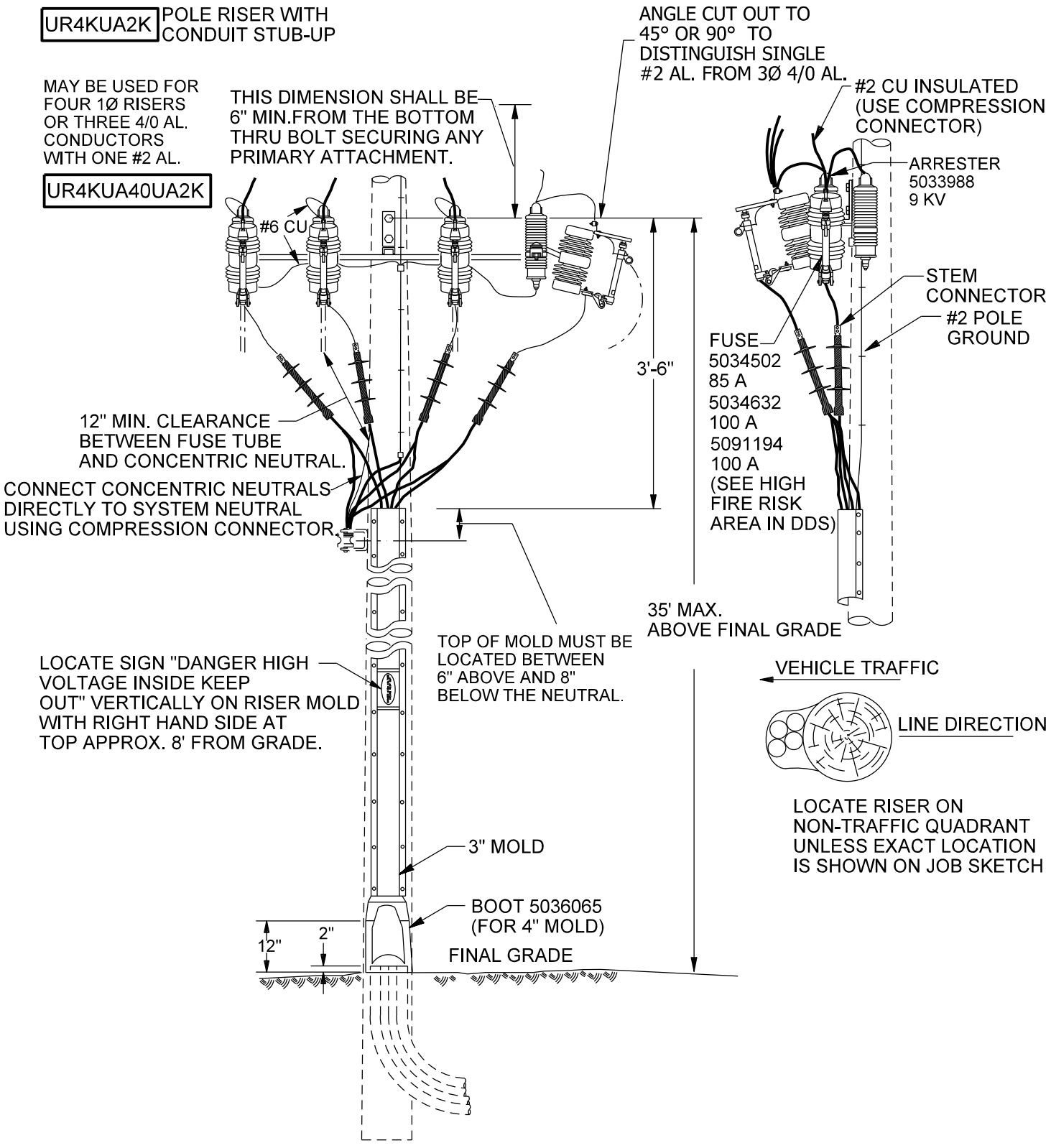


Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - THREE CONDUCTORS #2 AL. FOR DOUBLE CIRCUIT TANGENT	ISSUE DATE: 01/15/87 REV. DATE: 09/16/21 APPROVAL: J. LUERA
	5-26-1	8513E132.DGN

UR4KUA2K POLE RISER WITH CONDUIT STUB-UP

MAY BE USED FOR FOUR 1Ø RISERS OR THREE 4/0 AL. CONDUCTORS WITH ONE #2 AL.

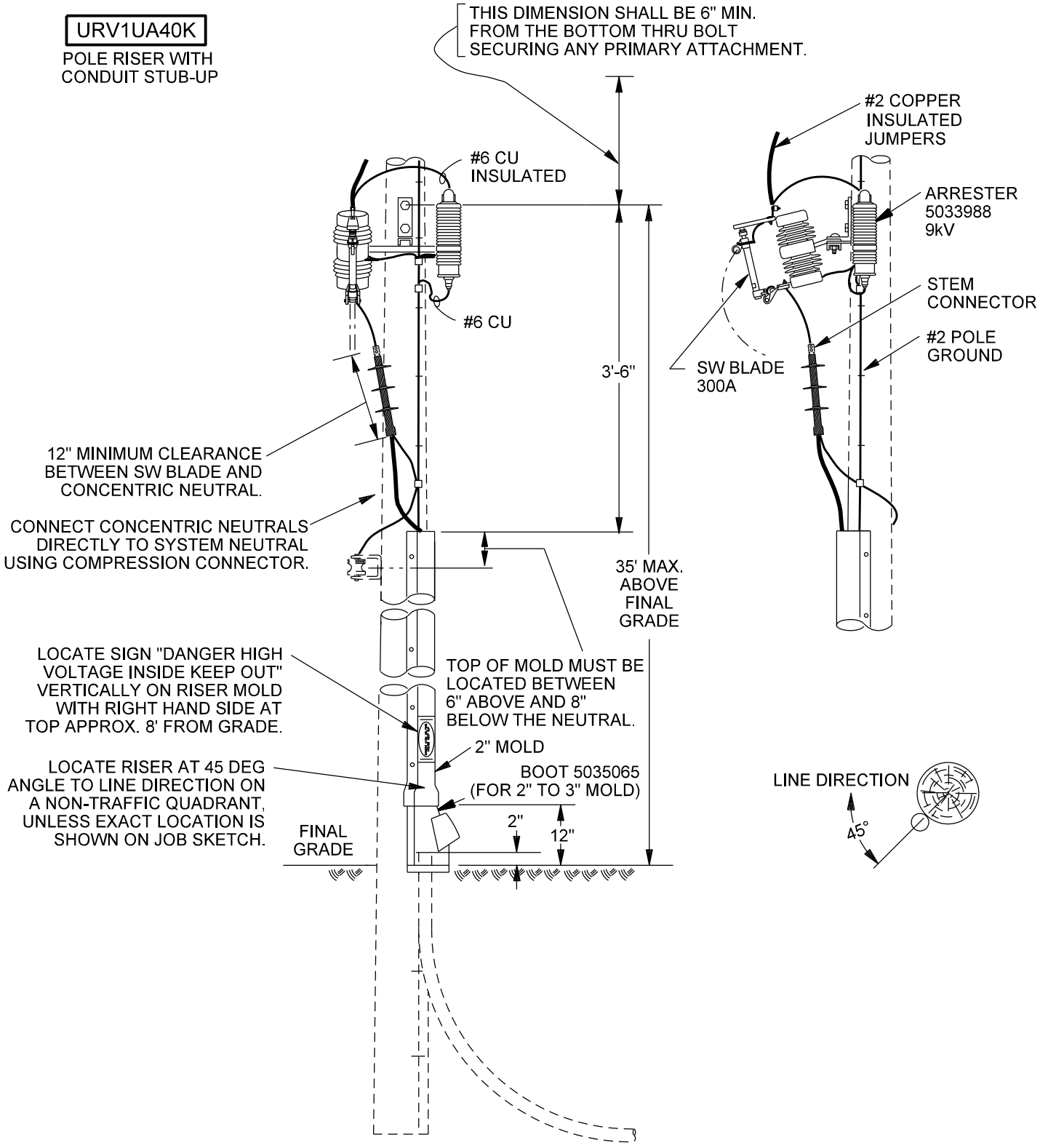
UR4KUA40UA2K



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER FOUR CONDUCTORS #2 AL. OR THREE 4/0 WITH ONE #2 AL.	ISSUE DATE: 01/15/87 REV. DATE: 09/16/21 APPROVAL: J. LUERA
	5-27-1	8513E95.DGN

URV1UA40K

POLE RISER WITH
CONDUIT STUB-UP



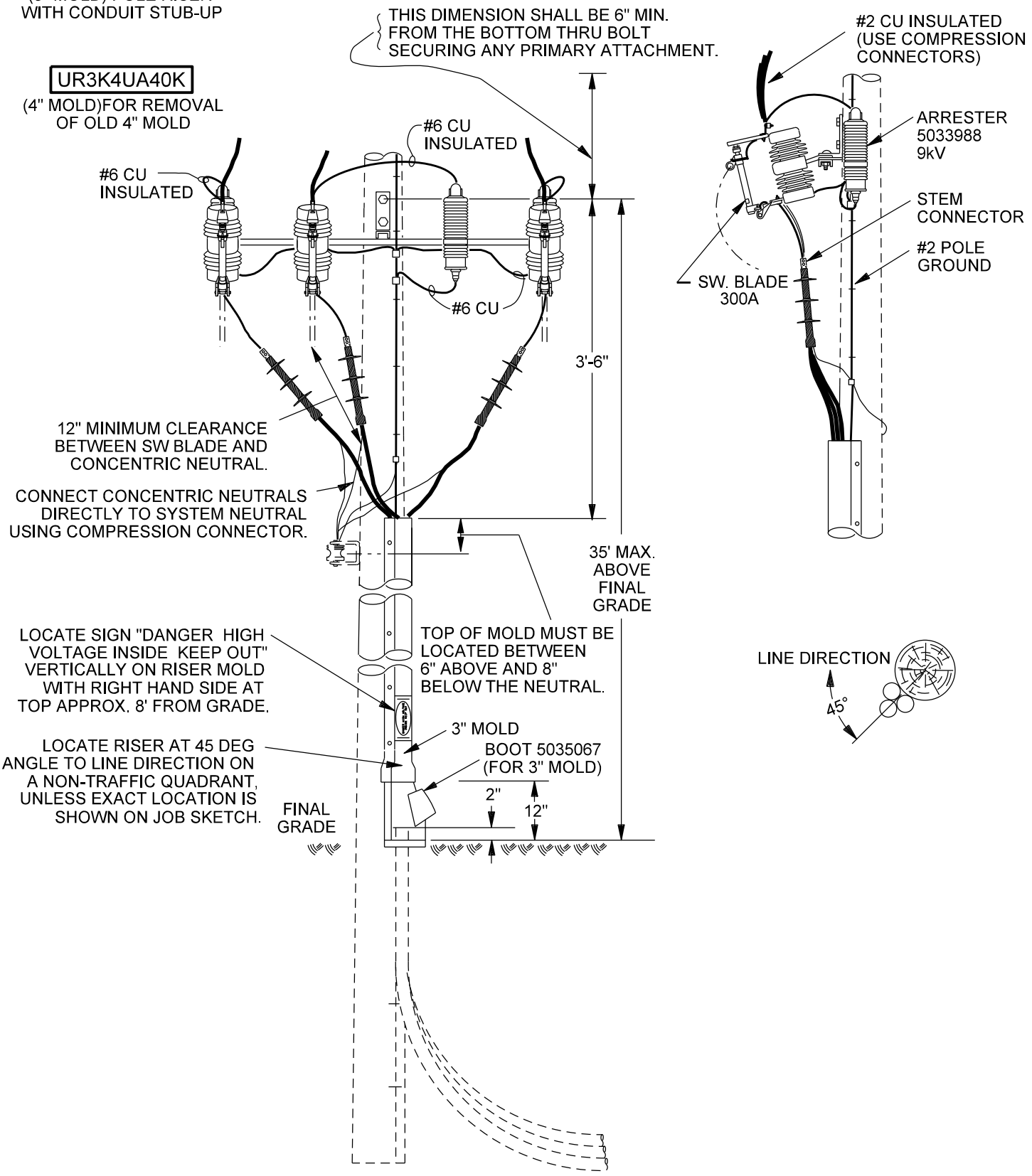
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - SINGLE CONDUCTOR #4/0 AL. FEEDING AN OVERHEAD LINE	ISSUE DATE: 01/15/87 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-28-1	8513E96.DGN

UR3KUA40K

(3" MOLD) POLE RISER
WITH CONDUIT STUB-UP

UR3K4UA40K

(4" MOLD)FOR REMOVAL
OF OLD 4" MOLD



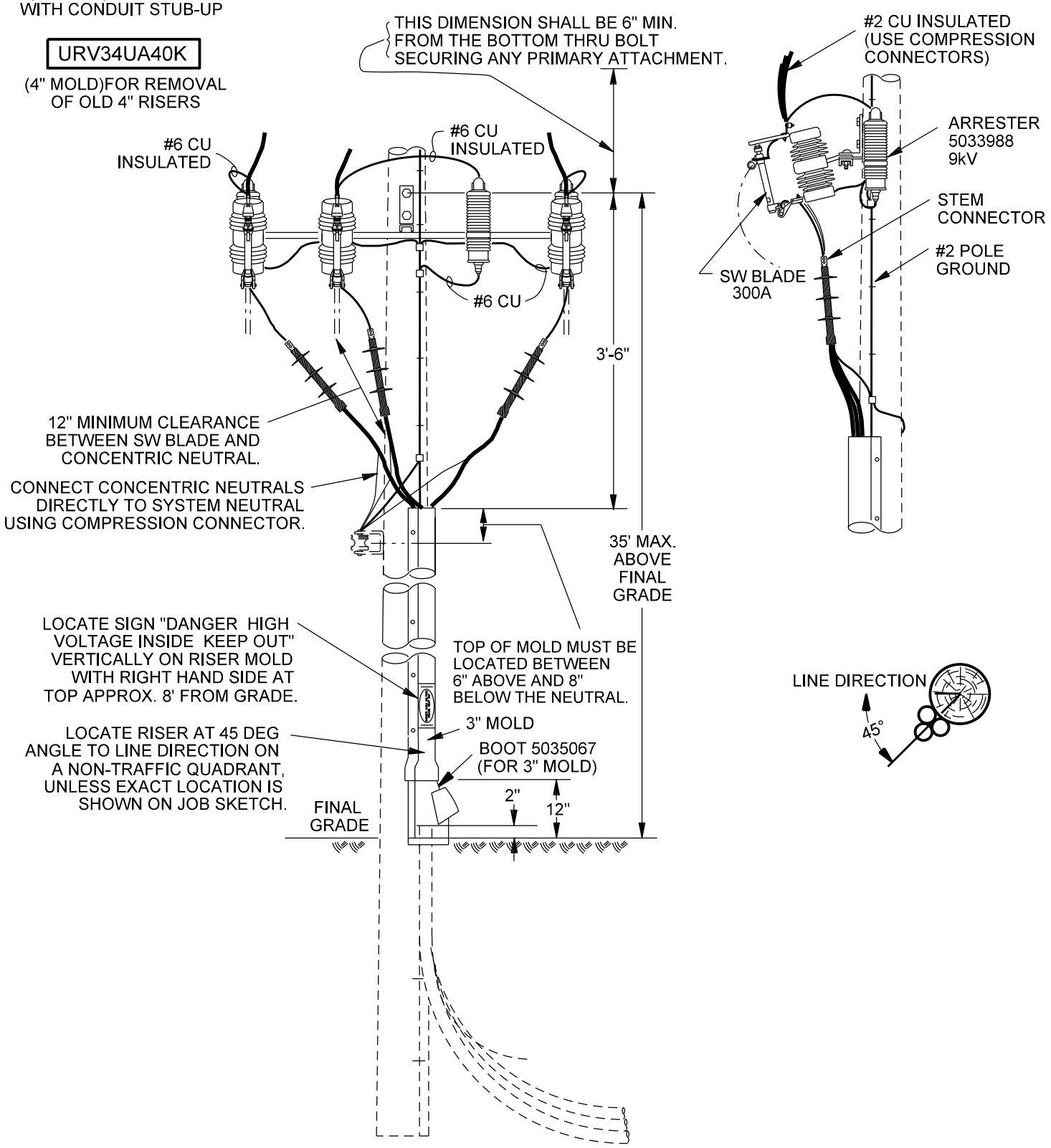
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER THREE CONDUCTORS #4/0 AL.	ISSUE DATE: 01/15/87 REV. DATE: 07/30/13 APPROVAL: B. PRIEST
	5-29-1	8513E133.DGN

URV3UA40K

(3" MOLD) POLE RISER
WITH CONDUIT STUB-UP

URV34UA40K

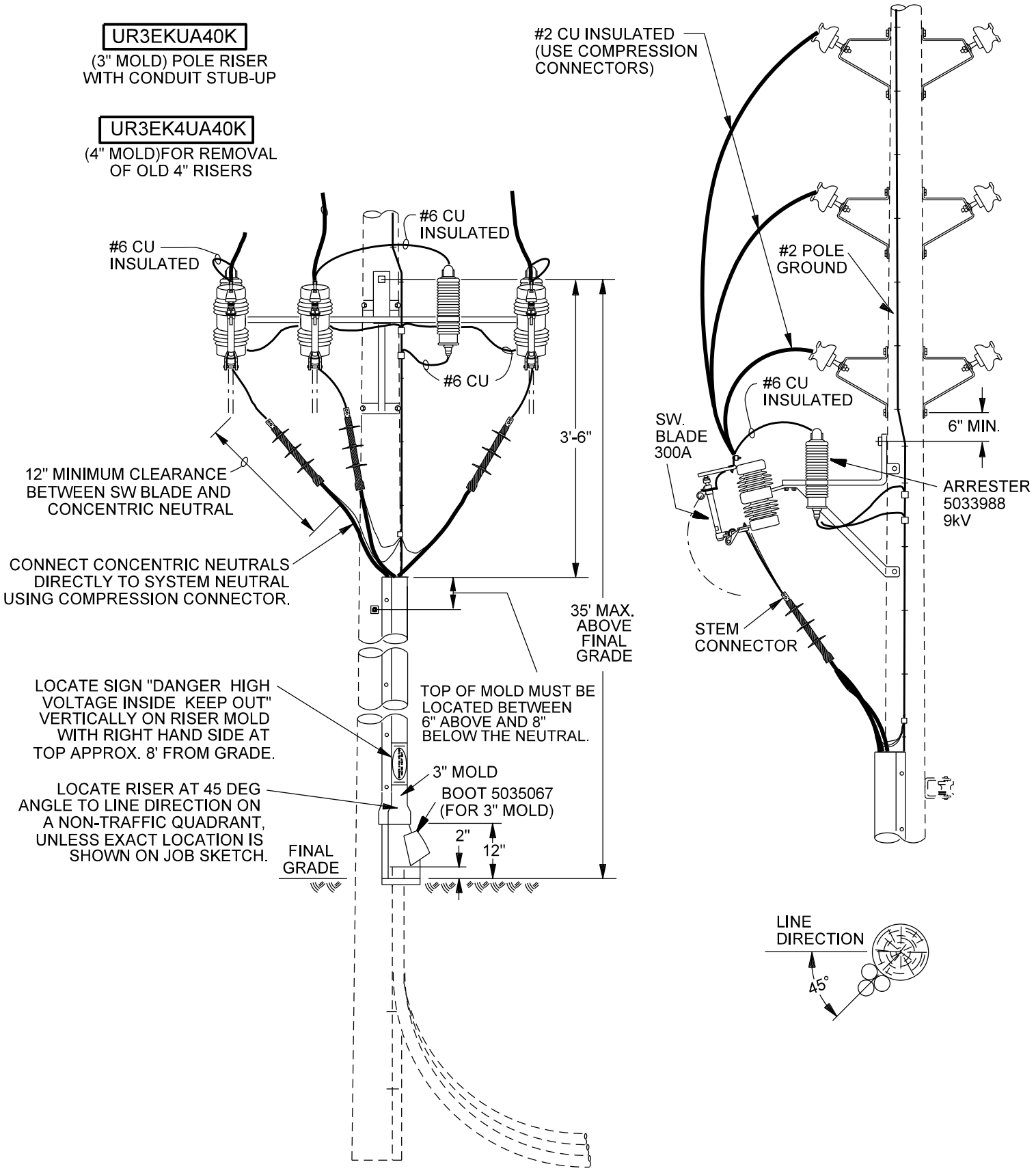
(4" MOLD)FOR REMOVAL
OF OLD 4" RISERS



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER - THREE CONDUCTORS #4/0 AL. FEEDING AN OVERHEAD LINE	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-30-1	8513E97.DGN

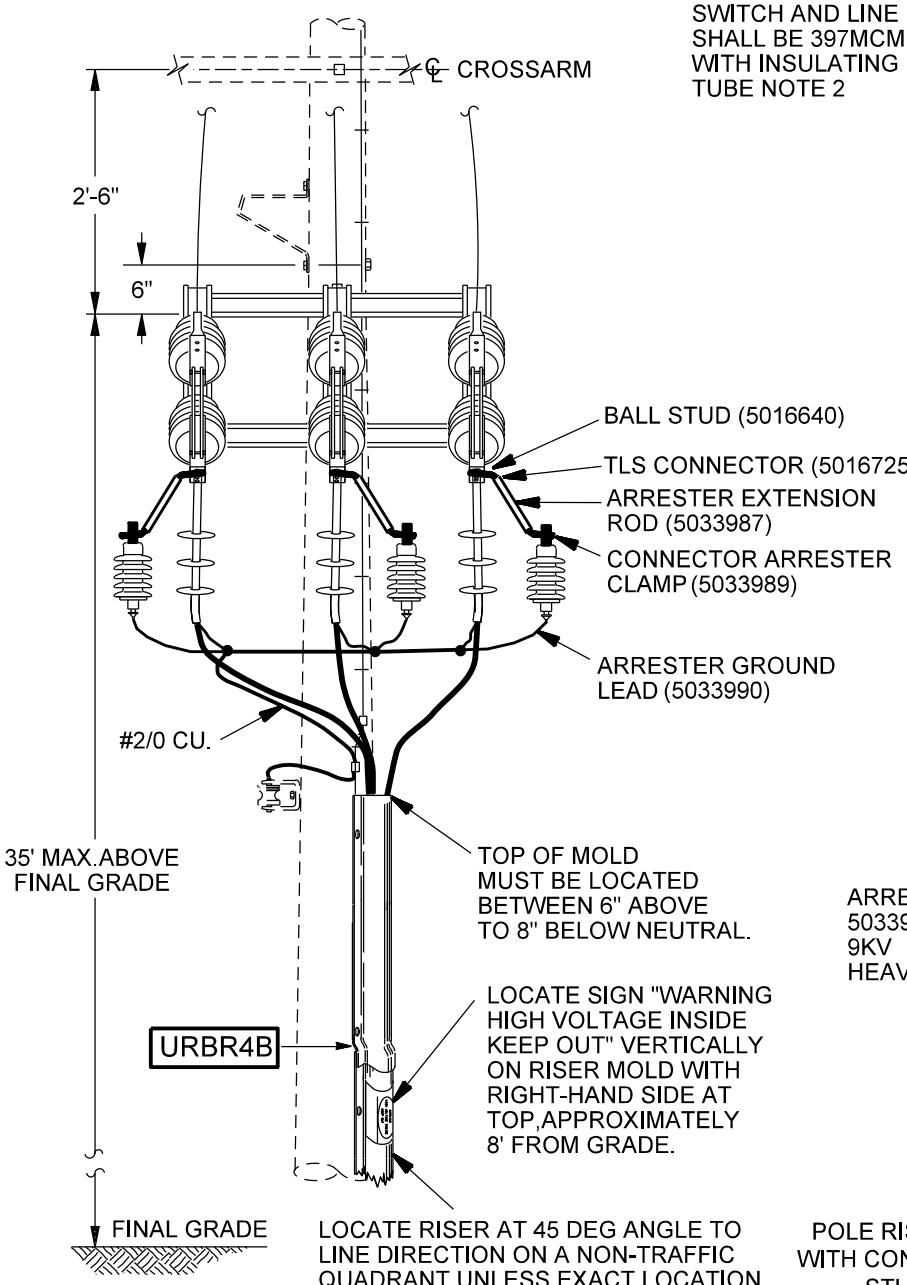
UR3EKUA40K
(3" MOLD) POLE RISER
WITH CONDUIT STUB-UP

UR3EK4UA40K
(4" MOLD)FOR REMOVAL
OF OLD 4" RISERS

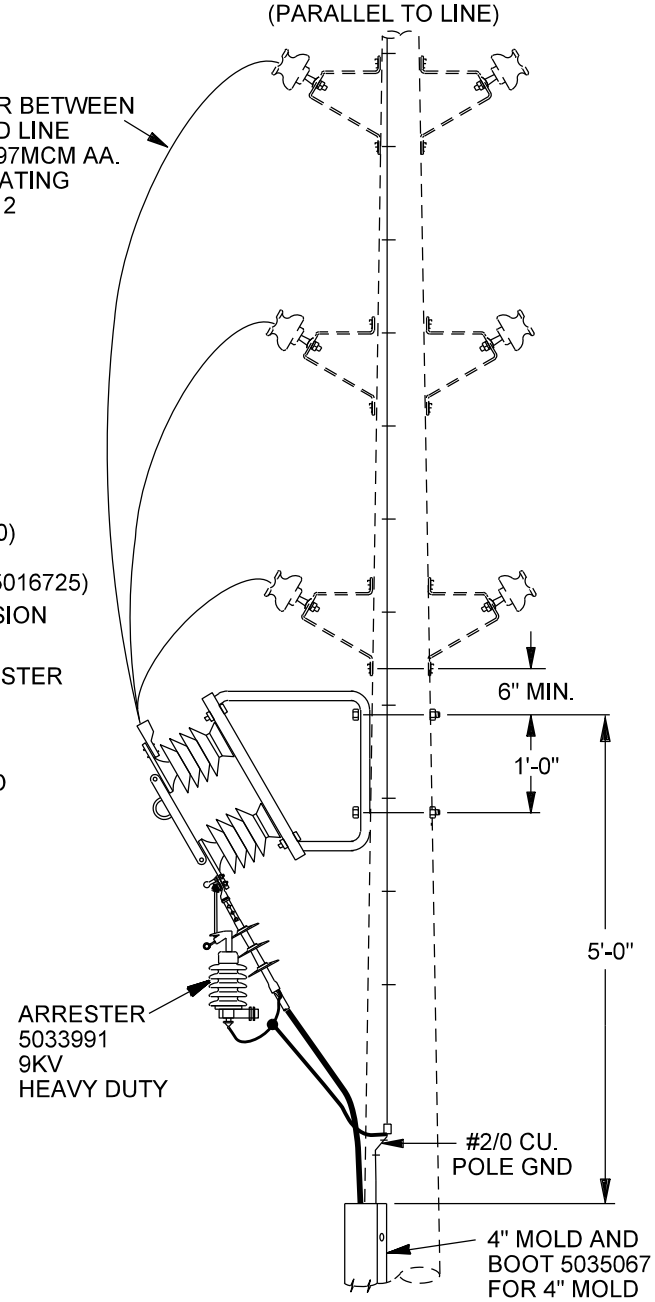


Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY RISER THREE CONDUCTORS #4/0 AL. FOUR DOUBLE CIRCUIT TANGENT	ISSUE DATE: 06/10/87 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-31-1	8513E134.DGN

SINGLE CIRCUIT OR CROSSARM
(PERPENDICULAR TO LINE)



DOUBLE CIRCUIT VERTICAL
(PARALLEL TO LINE)



POLE RISERS WITH CONDUIT STUB-UP AND BOOT

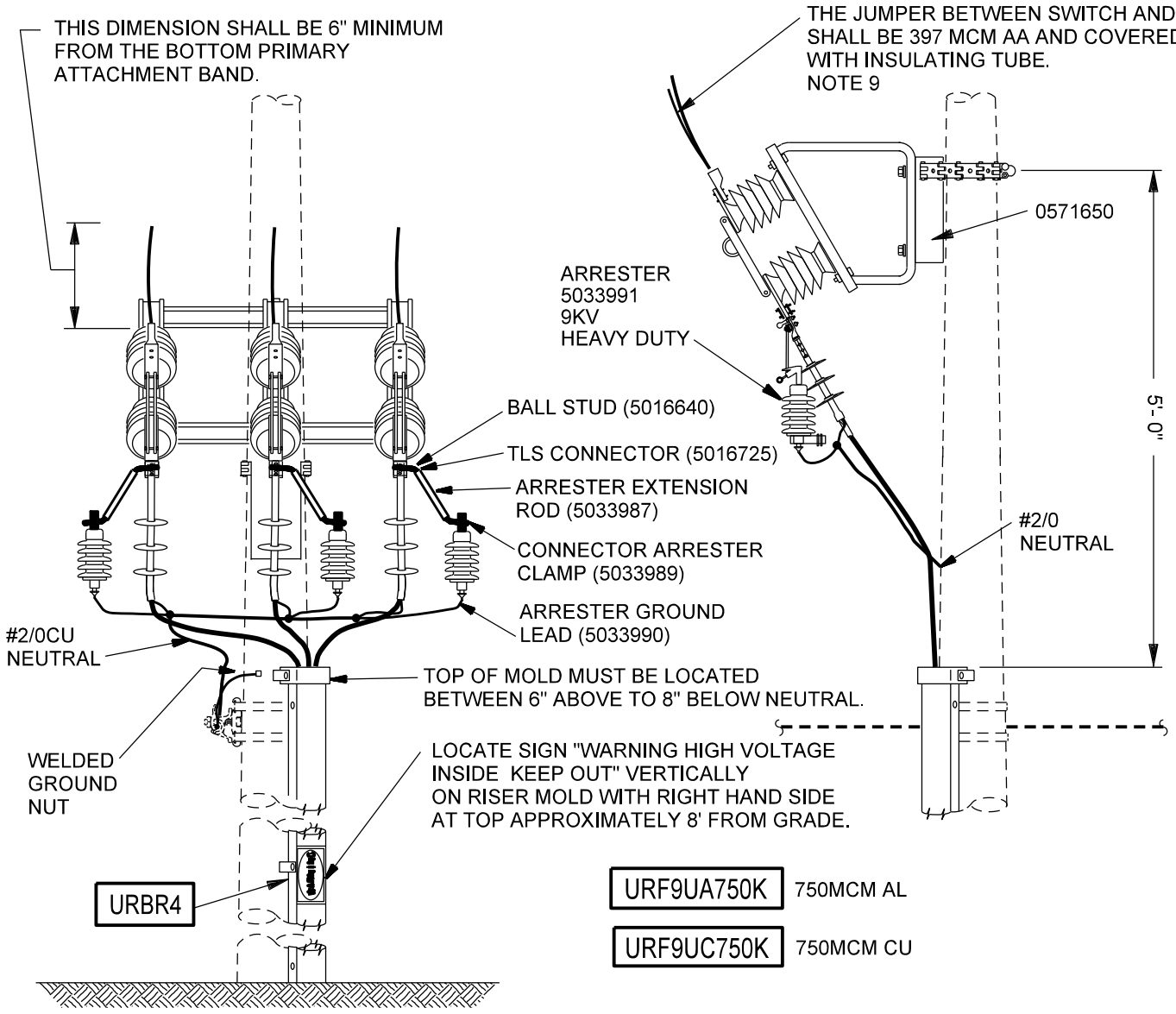
URF6EUA500K	500MCM AL
URF6EUA750K	750MCM AL
URF6EUC750K	750MCM CU

MAINTENANCE ONLY — DGR6B — ARRESTER, MATERIAL FOR UPGRADE FROM TRI-BRACKET WHEN BLADES FAIL

NOTES

1. FOR 750MCM CABLE,SEE TERMINATION DETAILS ON PAGE 5-3-1.
2. IF RUNNING LINE IS 266A, 600V 350A JUMPER MAY BE USED.
3. TO CONVERT EXISTING TO G.O.S., REMOVE ONE DB6VE AND CONSTRUCT ONE DGR6. SEE DGR6 CLEARANCE REQUIREMENTS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS FEEDER RISER POLE MOUNTED DISCONNECTS	ISSUE DATE: 06/09/87 REV. DATE: 12/11/14 APPROVAL: B. PRIEST
	5-32-1	8513E189.DGN

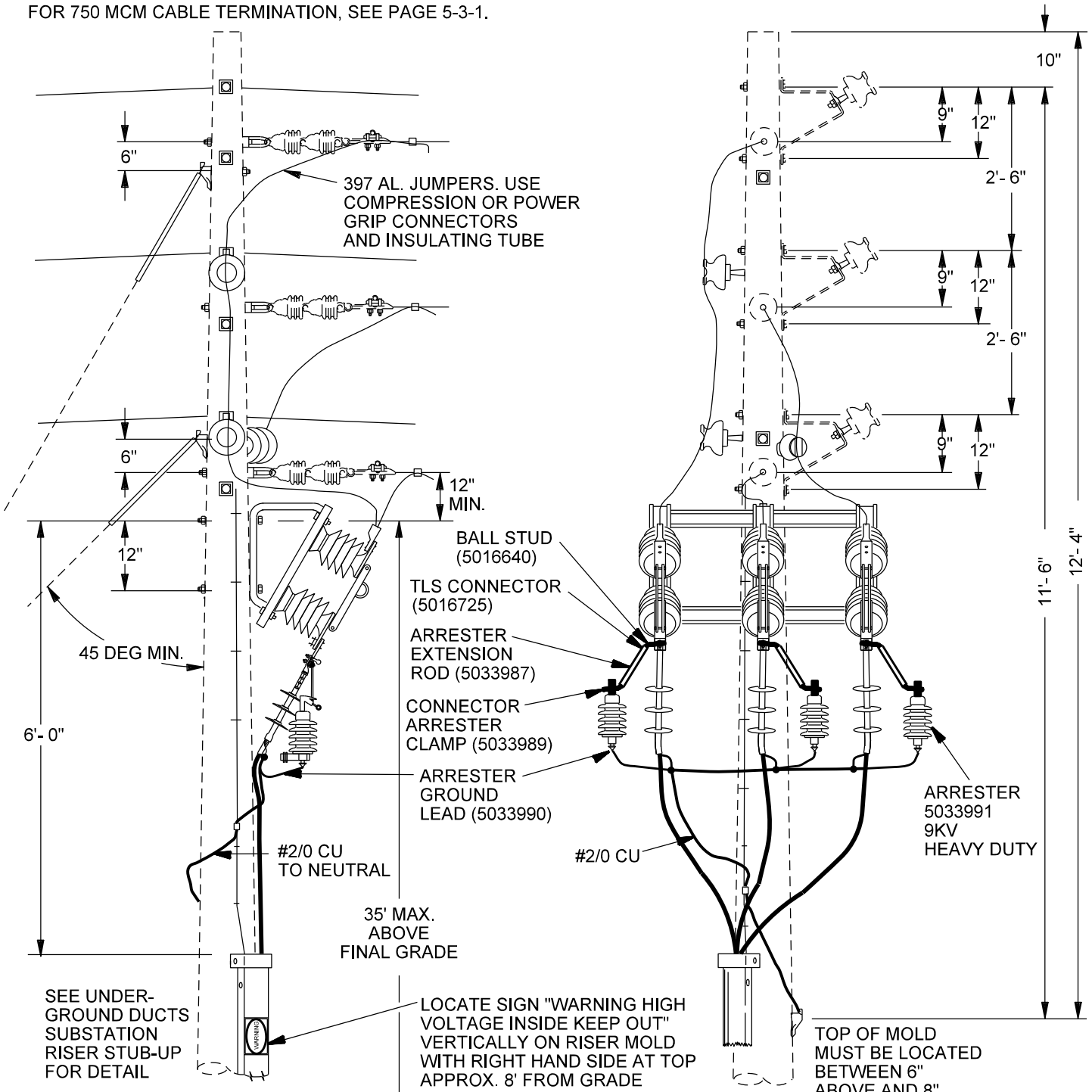


U-GUARD RISERS CAN BE BOLTED TO THE STEEL POLES BY DRILLING AND TAPPING HOLES IN THE POLE,OR BY USING SELF DRILL/SELF TAP SCREWS (5028982),WHEN THE FOLLOWING CONDITIONAL REQUIREMENTS ARE MET:

1. IF PLATE THICKNESS IS 1/2 INCH OR LESS, THE SELF DRILL/SELF TAPPING SCREWS (5028982) MAY BE USED.
2. IF PLATE THICKNESS IS 5/8 INCH OR GREATER, DRILL AND TAP FOR THE 1/4 INCH BOLTS. USE 3/16 INCH DRILL BIT.
3. USE LOCK-TITE WITH THE 1/4 INCH BOLTS.
4. IF U-GUARD IS EVER REMOVED, THE DRILLED AND TAPPED HOLES MUST HAVE BOLTS REINSTALLED.
5. THE ATTACHING SCREWS SHALL BE INSTALLED IN ALL AVAILABLE SLOTS. SEE "STEEL POLE MOUNTING" PAGES 5-10-1 AND 5-11-1.
6. INDIVIDUAL PROPOSED INSTALLATION MUST BE APPROVED BY MANAGER OF TRANSMISSION.
7. FOR 750MCM CABLE, SEE TERMINATION DETAILS ON PAGE 5-3-1.
8. **DESIGNER:** A BOOT IS NOT INCLUDED IN THIS COMPATIBLE UNIT AND MUST BE ORDERED. SEE URBRF, "STEEL POLE DETAILS" NOTE 3 TO DETERMINE PROPER BOOT. IF BOOT URBRBS IS NEEDED, CONTACT MACHINE SHOP.
9. IF RUNNING LINE IS 266A, 600V 350A JUMPER MAY BE USED.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS FEEDER RISER POLE MOUNTED DISCONNECTS STEEL POLE	ISSUE DATE: 05/02/90 REV. DATE: 01/23/15 APPROVAL: B. PRIEST
	5-33-1	8513E74.DGN

FOR 750 MCM CABLE TERMINATION, SEE PAGE 5-3-1.



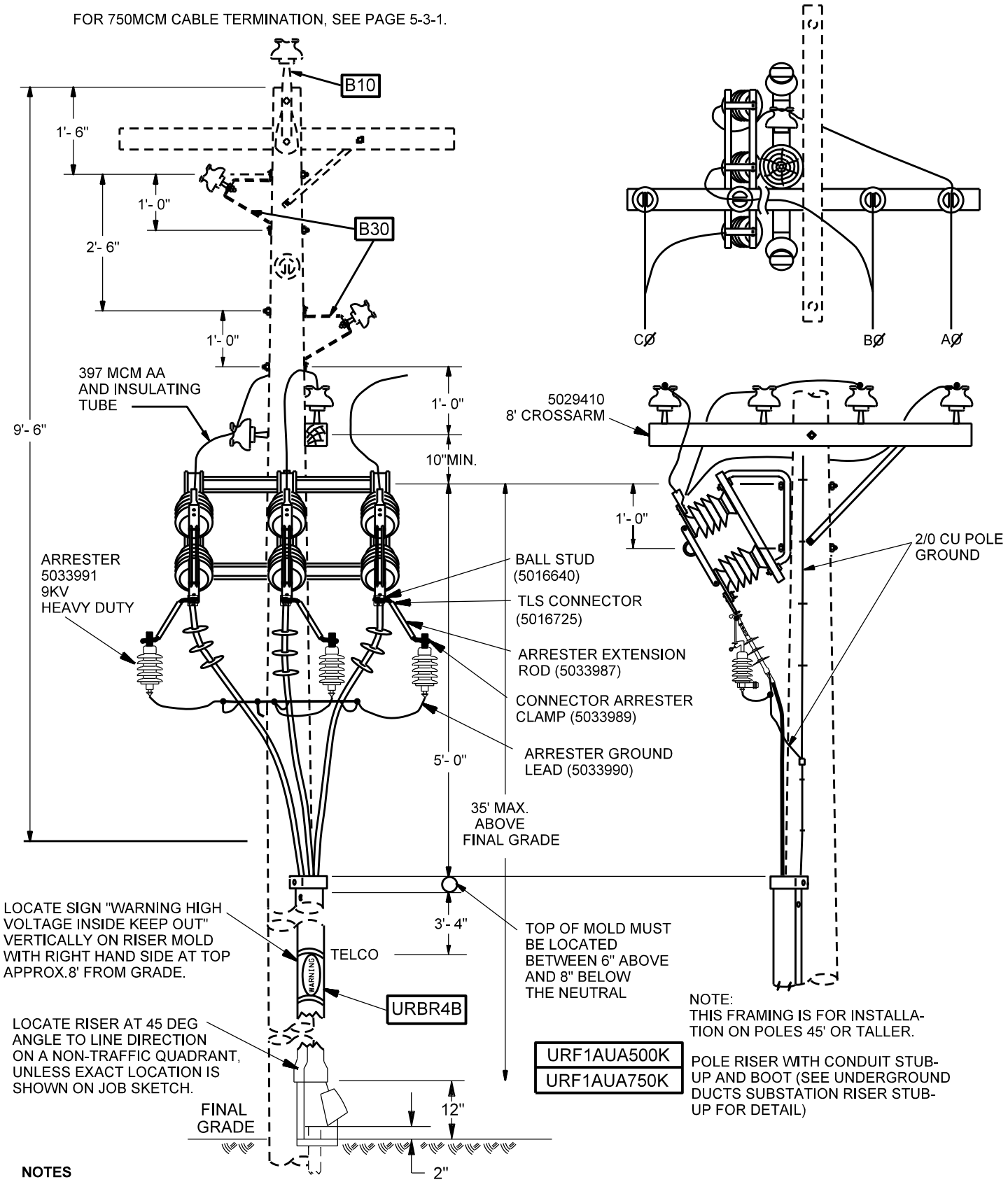
LOCATE RISER AT 45 DEG ANGLE TO LINE DIRECTION ON A NON-TRAFFIC QUADRANT UNLESS EXACT LOCATION IS SHOWN ON JOB SKETCH

URF7UA500K	500MCM AL
URF7UA750K	750MCM AL
URF7UC750K	750MCM CU

POLE RISER WITH STUB-UP AND BOOT

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS SUBSTATION RISER POLE MOUNTED DISCONNECTS DOUBLE CIRCUIT WITH ONE CIRCUIT DEAD-ENDED	ISSUE DATE: 02/04/88 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-34-1	8513E262.DGN

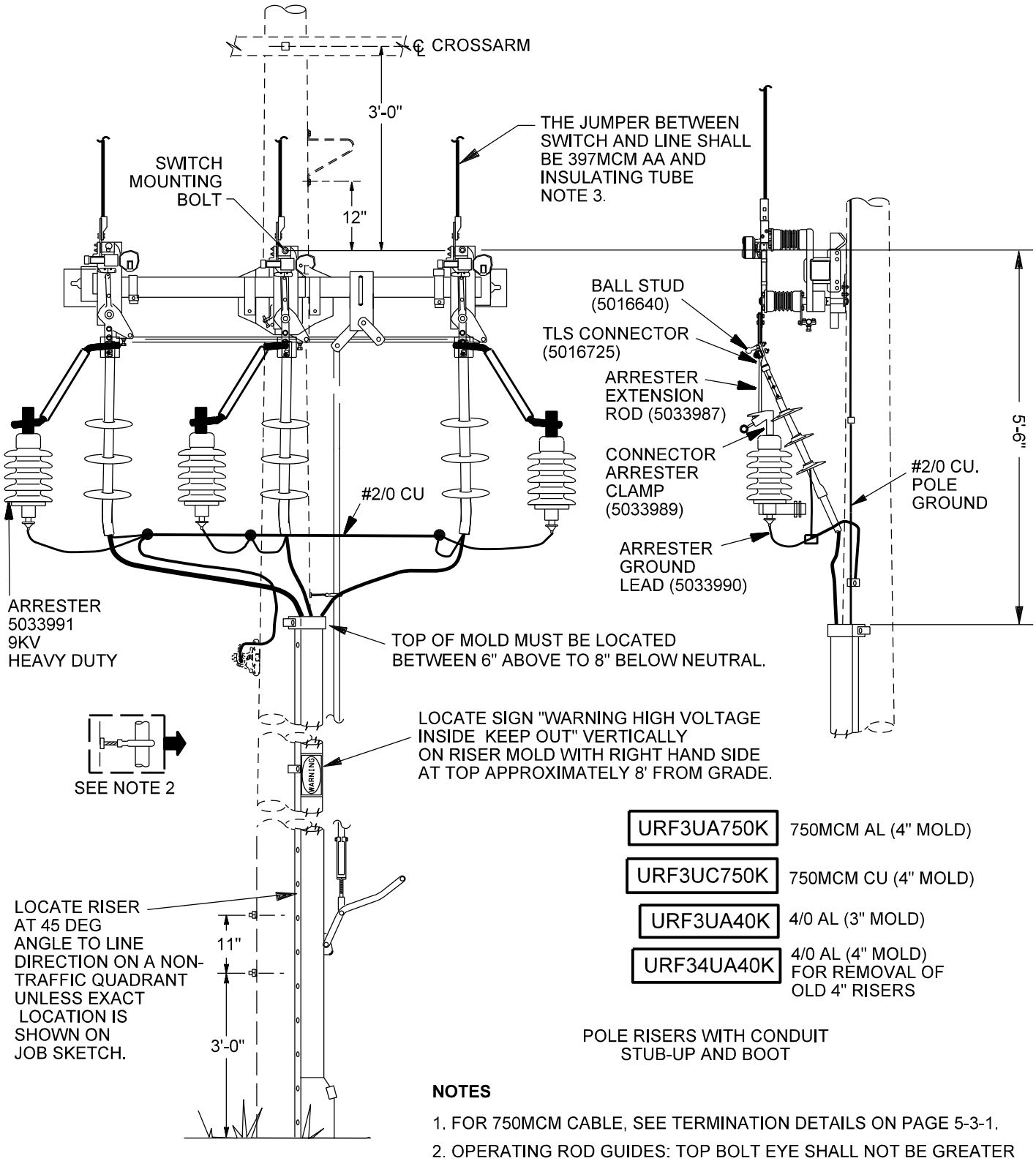
FOR 750MCM CABLE TERMINATION, SEE PAGE 5-3-1.



NOTES

1. THIS STANDARD IS PROVIDED FOR USE WHEN INSTALLING A FEEDER RISER OUT OF LINE WITH AN OVERHEAD WHICH IS GOING TO BE RELOCATED. THE RISER POLE IS TO BE SET IN THE NEW ALIGNMENT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS FEEDER RISER - THREE CONDUCTORS FOR FUTURE OVERHEAD LINE RELOCATION	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	5-35-1	8513E263.DGN



URF3UA750K	750MCM AL (4" MOLD)
URF3UC750K	750MCM CU (4" MOLD)
URF3UA40K	4/0 AL (3" MOLD)
URF34UA40K	4/0 AL (4" MOLD) FOR REMOVAL OF OLD 4" RISERS

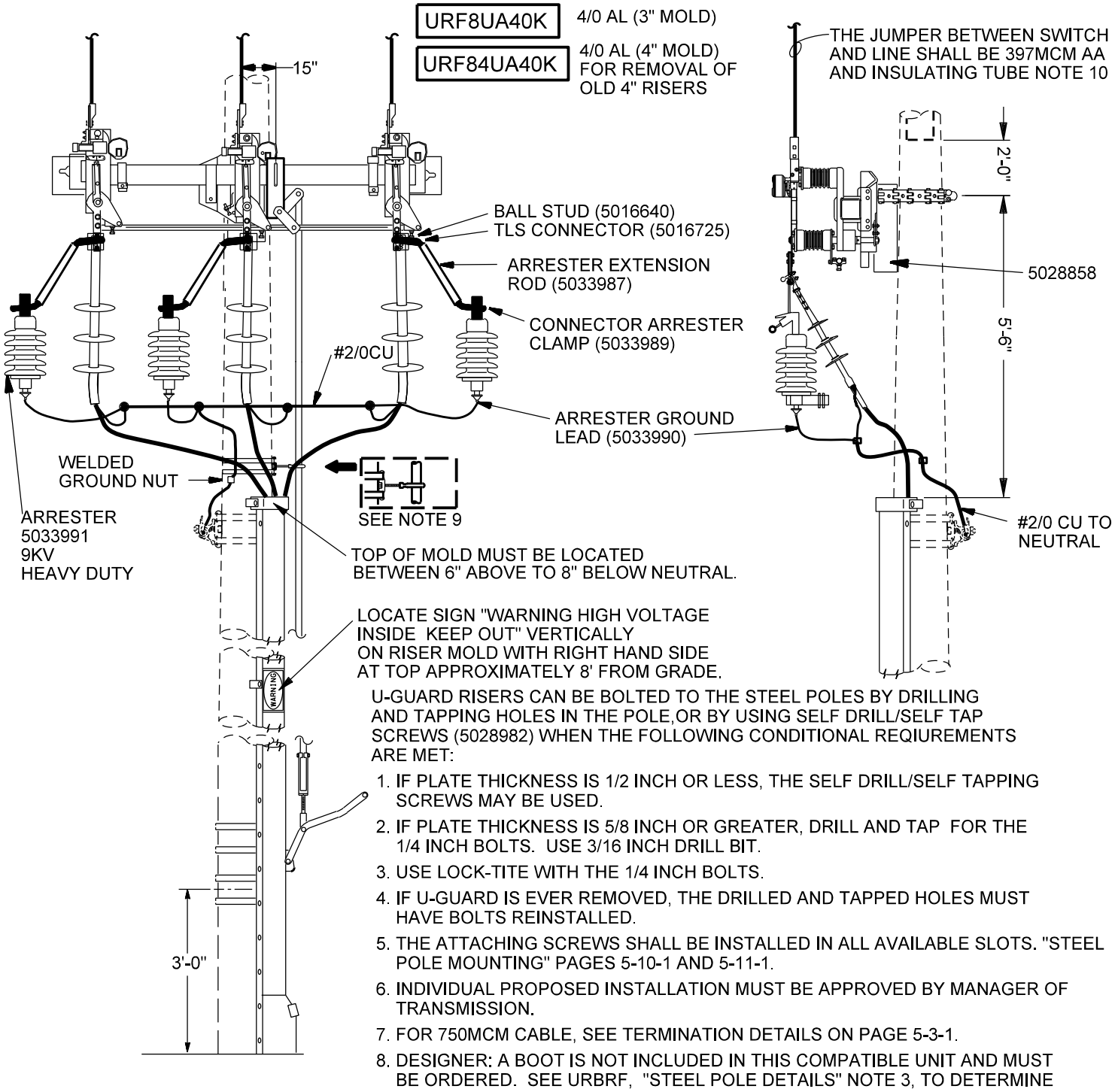
POLE RISERS WITH CONDUIT STUB-UP AND BOOT

NOTES

1. FOR 750MCM CABLE, SEE TERMINATION DETAILS ON PAGE 5-3-1.
2. OPERATING ROD GUIDES: TOP BOLT EYE SHALL NOT BE GREATER THAN 5 FT FROM SWITCH CRANK; BOTTOM BOLT EYE SHALL NOT BE LOWER THAN 8 FT FROM GRADE; INTERMEDIATE BOLT EYES SHALL NOT BE SPACED GREATER THAN 5 FT.
3. IF RUNNING LINE IS 266A, 600V 350A JUMPER MAY BE USED.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS FEEDER RISER WITH GANG-OPERATED SWITCH	ISSUE DATE: 01/31/92 REV. DATE: 12/11/14 APPROVAL: B. PRIEST
	5-36-1	8513E149.DGN

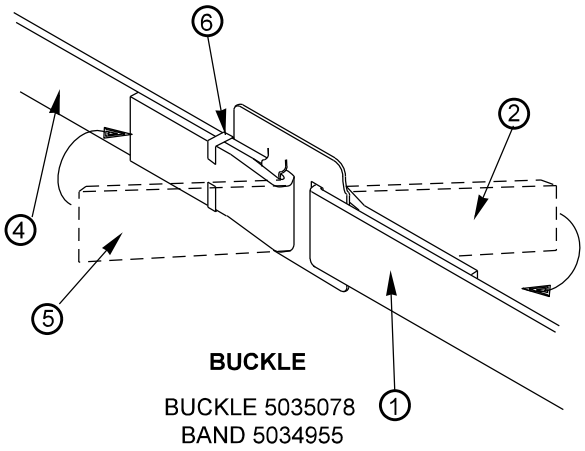
URF8UA750K	750MCM AL (4" MOLD)
URF8UC750K	750MCM CU (4" MOLD)
URF8UA40K	4/0 AL (3" MOLD)
URF84UA40K	4/0 AL (4" MOLD) FOR REMOVAL OF OLD 4" RISERS



U-GUARD RISERS CAN BE BOLTED TO THE STEEL POLES BY DRILLING AND TAPPING HOLES IN THE POLE,OR BY USING SELF DRILL/SELF TAP SCREWS (5028982) WHEN THE FOLLOWING CONDITIONAL REQIUREMENTS ARE MET:

1. IF PLATE THICKNESS IS 1/2 INCH OR LESS, THE SELF DRILL/SELF TAPPING SCREWS MAY BE USED.
2. IF PLATE THICKNESS IS 5/8 INCH OR GREATER, DRILL AND TAP FOR THE 1/4 INCH BOLTS. USE 3/16 INCH DRILL BIT.
3. USE LOCK-TITE WITH THE 1/4 INCH BOLTS.
4. IF U-GUARD IS EVER REMOVED, THE DRILLED AND TAPPED HOLES MUST HAVE BOLTS REINSTALLED.
5. THE ATTACHING SCREWS SHALL BE INSTALLED IN ALL AVAILABLE SLOTS. "STEEL POLE MOUNTING" PAGES 5-10-1 AND 5-11-1.
6. INDIVIDUAL PROPOSED INSTALLATION MUST BE APPROVED BY MANAGER OF TRANSMISSION.
7. FOR 750MCM CABLE, SEE TERMINATION DETAILS ON PAGE 5-3-1.
8. DESIGNER: A BOOT IS NOT INCLUDED IN THIS COMPATIBLE UNIT AND MUST BE ORDERED. SEE URBRF, "STEEL POLE DETAILS" NOTE 3, TO DETERMINE PROPER BOOT. IF BOOT URBRBS IS NEEDED, CONTACT MACHINE SHOP.
9. OPERATING ROD GUIDES: TOP BOLT EYE SHALL NOT BE GREATER THAN 5 FT FROM SWITCH CRANK; BOTTOM BOLT EYE SHALL NOT BE LOWER THAN 8 FT FROM GRADE; INTERMEDIATE BOLT EYES SHALL NOT BE SPACED GREATER THAN 5 FT.
10. IF RUNNING LINE IS 266A, 600V 350A JUMPER MAY BE USED.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	RISERS FEEDER RISER WITH GANG-OPERATED SWITCH STEEL POLE	ISSUE DATE: 11/30/93 REV. DATE: 12/11/14 APPROVAL: B. PRIEST
	5-37-1	8513E158.DGN



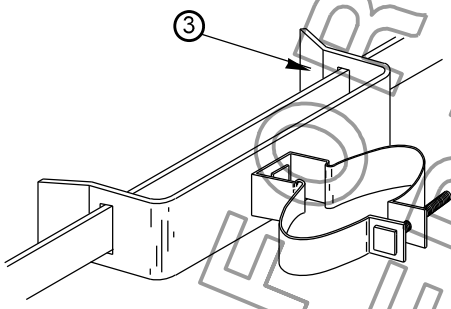
BUCKLE

BUCKLE 5035078
BAND 5034955

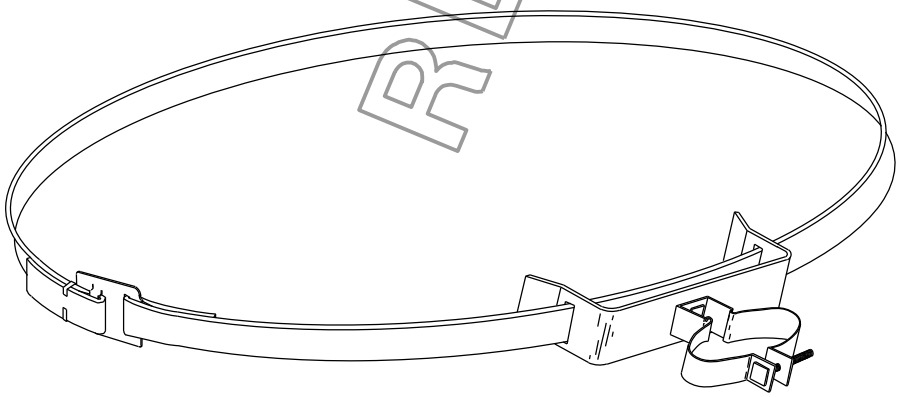
APPLICATION INSTRUCTIONS

1. USE BAND FROM ROLL AND CUT TO FIT.
2. BEND END OF BAND UNDER BUCKLE.
3. SLIDE BRACKET AND CLAMP ONTO BAND.
4. PLACE REMAINING END OF BAND THRU BUCKLE AND USING TOOL, TIGHTEN UNTIL BAND DOESN'T MOVE.
5. BEND BAND OVER BUCKLE USING THE TOOL WHILE RELEASING TENSION.
6. CUT BAND AND BEND TABS OVER BAND.

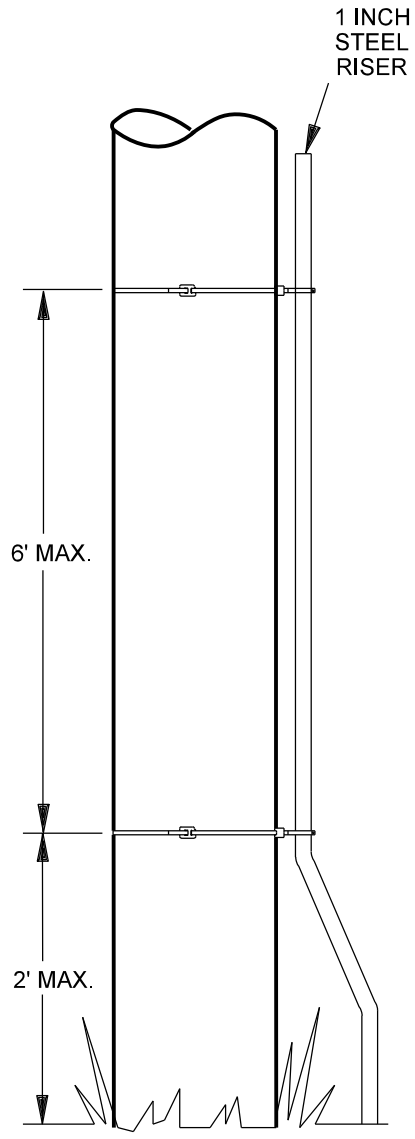
REFERENCE ONLY



BRACKET 5035071
CLAMP 5021105

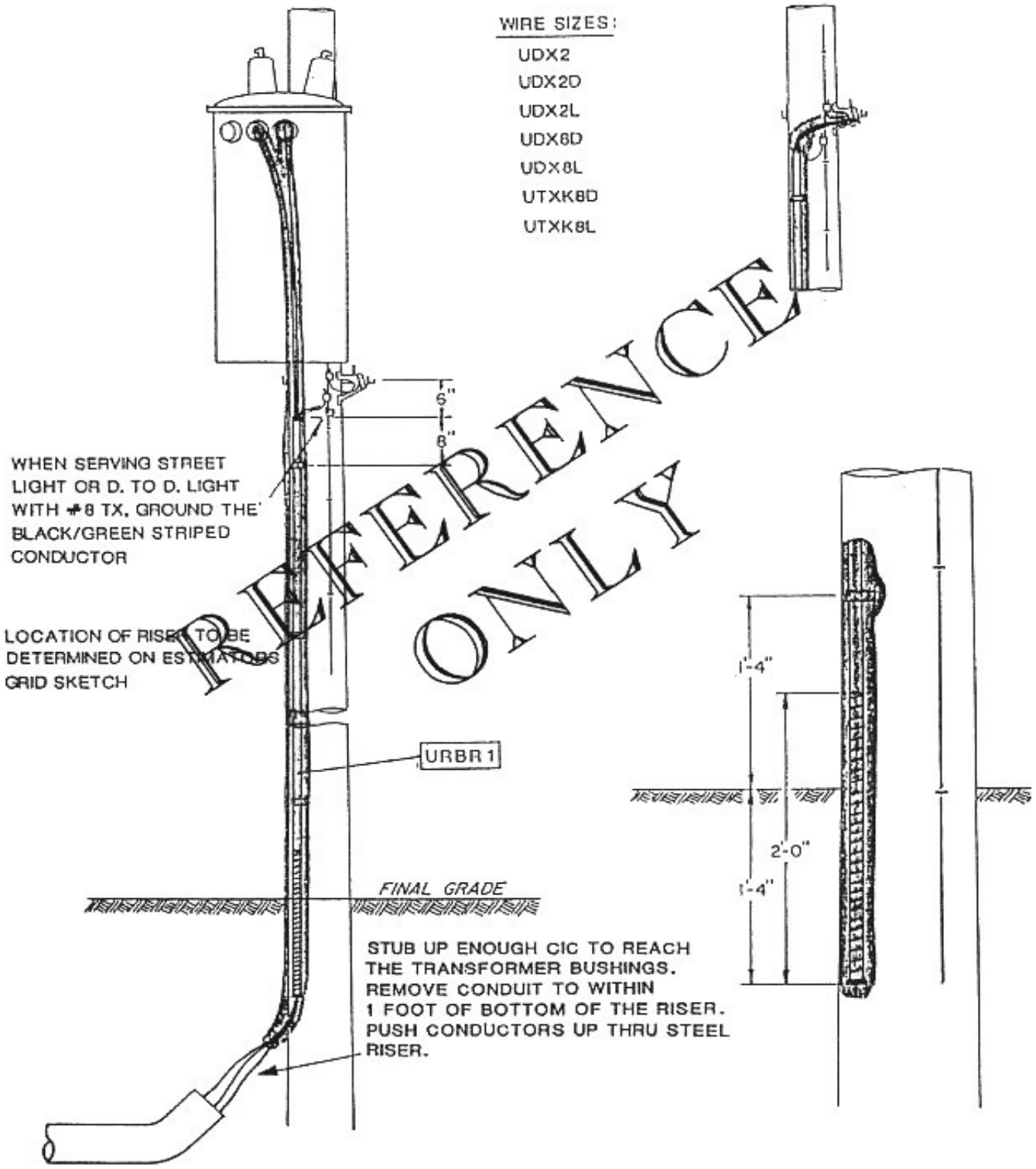


COMPLETE ASSEMBLY



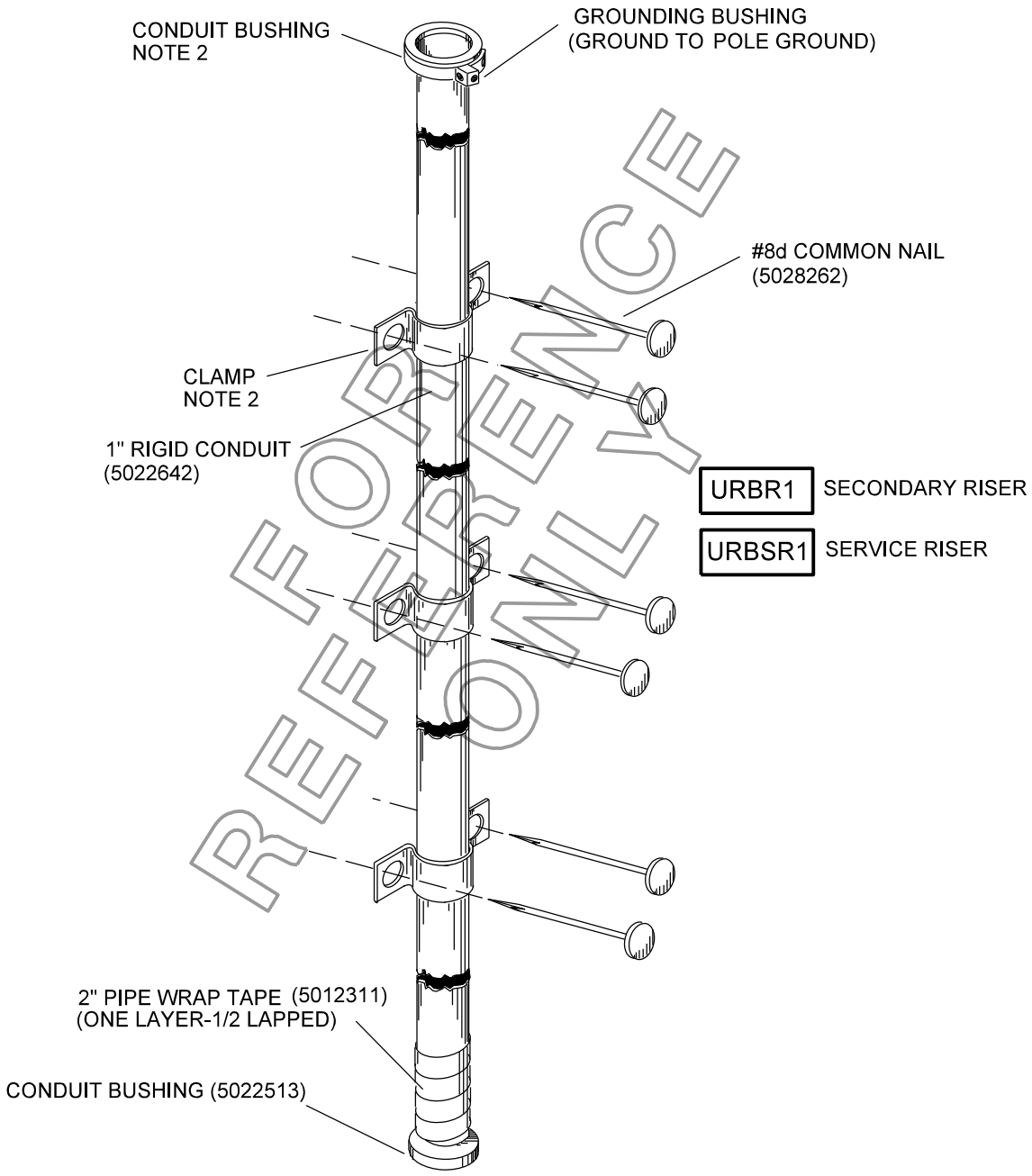
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS APPLICATION OF BANDIT-CLAMPS AND CONDUIT ON STEEL POLES	ISSUE DATE: 08/11/88 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-38-1	8513E69.DGN

URL2 _ _



REFERENCE ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS STREET LIGHT ONE INCH STEEL CONDUIT	ISSUE DATE: 01/15/82 REV. DATE: 09/28/12 APPROVAL: B. Priest
	5-39-1	UG5-39-1.doc

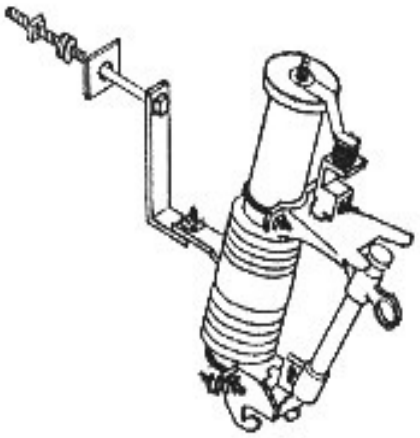


REFERENCE ONLY

NOTES

1. A MINIMUM OF SIX CLAMPS ARE TO BE UTILIZED SPACED AT EVEN INTERVALS.
2. NO SAP MATERIAL NUMBER EXISTS.

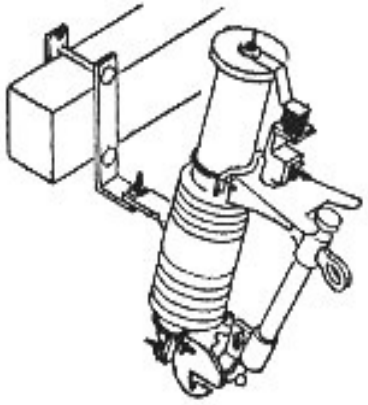
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS 1" STEEL RISER SECONDARY OR SERVICE	ISSUE DATE: 02/20/89 REV. DATE: 12/11/14 APPROVAL: B. PRIEST
	5-40-1	8513E99.DGN



URBC1

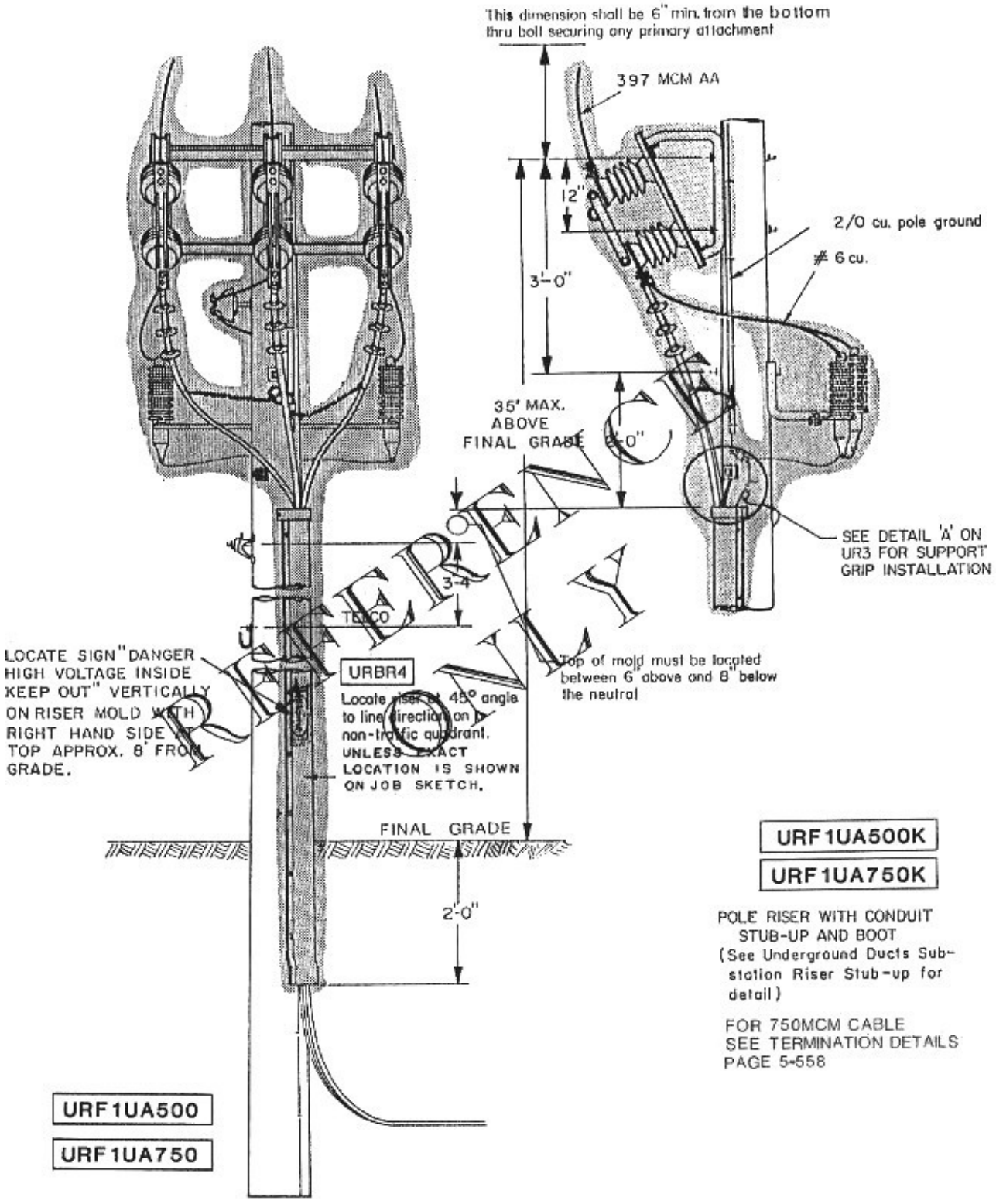
URBC1M WITHOUT MOUNTING HARDWARE

OBSOLETE: FOR REFERENCE ONLY

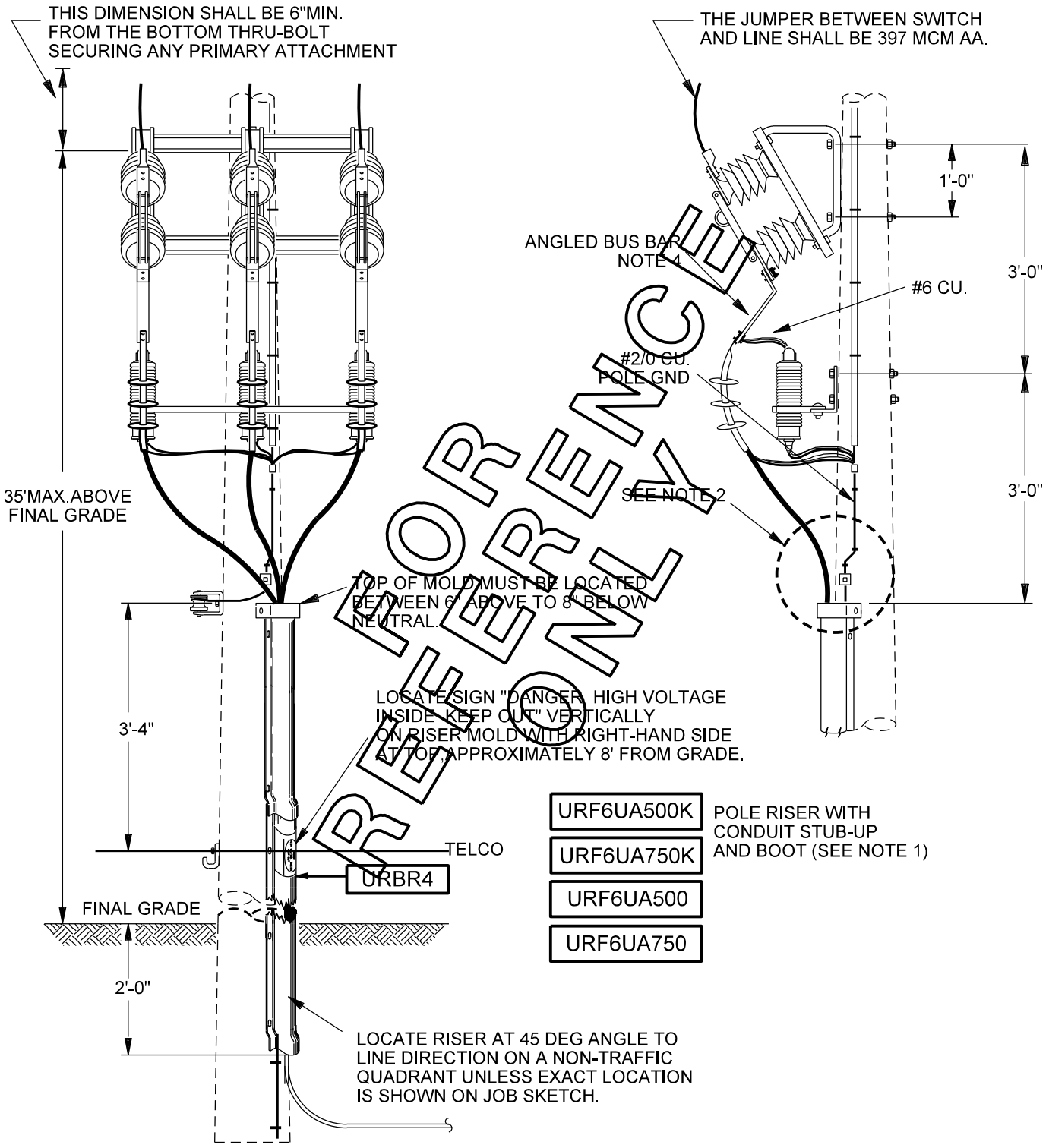


URBC4

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS 100A CUTOUT – ARRESTER COMBINATIONS	ISSUE DATE: 01/15/87 REV. DATE: 09/28/12 APPROVAL: B. Priest
	5-41-1	UG5-41-1.doc



PRELIMINARY



REFERENCE ONLY

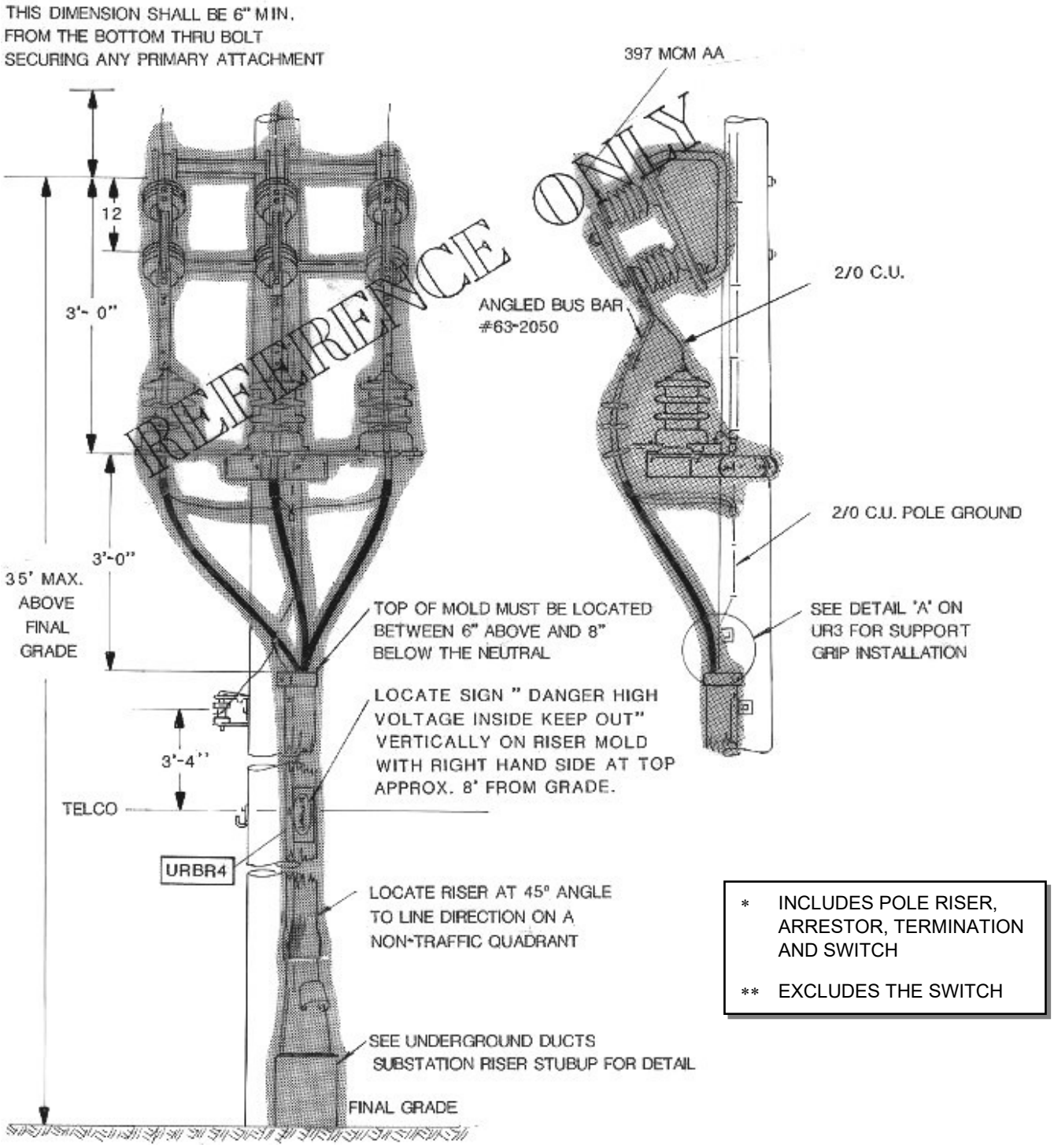
NOTES

1. SEE UNDERGROUND DUCTS SUBSTATION RISER STUB-UP FOR DETAIL.
2. SEE DETAIL "A" ON UR3 FOR SUPPORT GRIP INSTALLATION.
3. FOR 750MCM CABLE, SEE TERMINATION DETAILS ON PAGE 5-3-1.
4. NO SAP MATERIAL NUMBER EXISTS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS FEEDER RISER POLE MOUNTED DISCONNECTS	ISSUE DATE: 06/10/87 REV. DATE: 01/23/15 APPROVAL: B. PRIEST
	5-43-1	8513E188.DGN

URF2AUA500K *

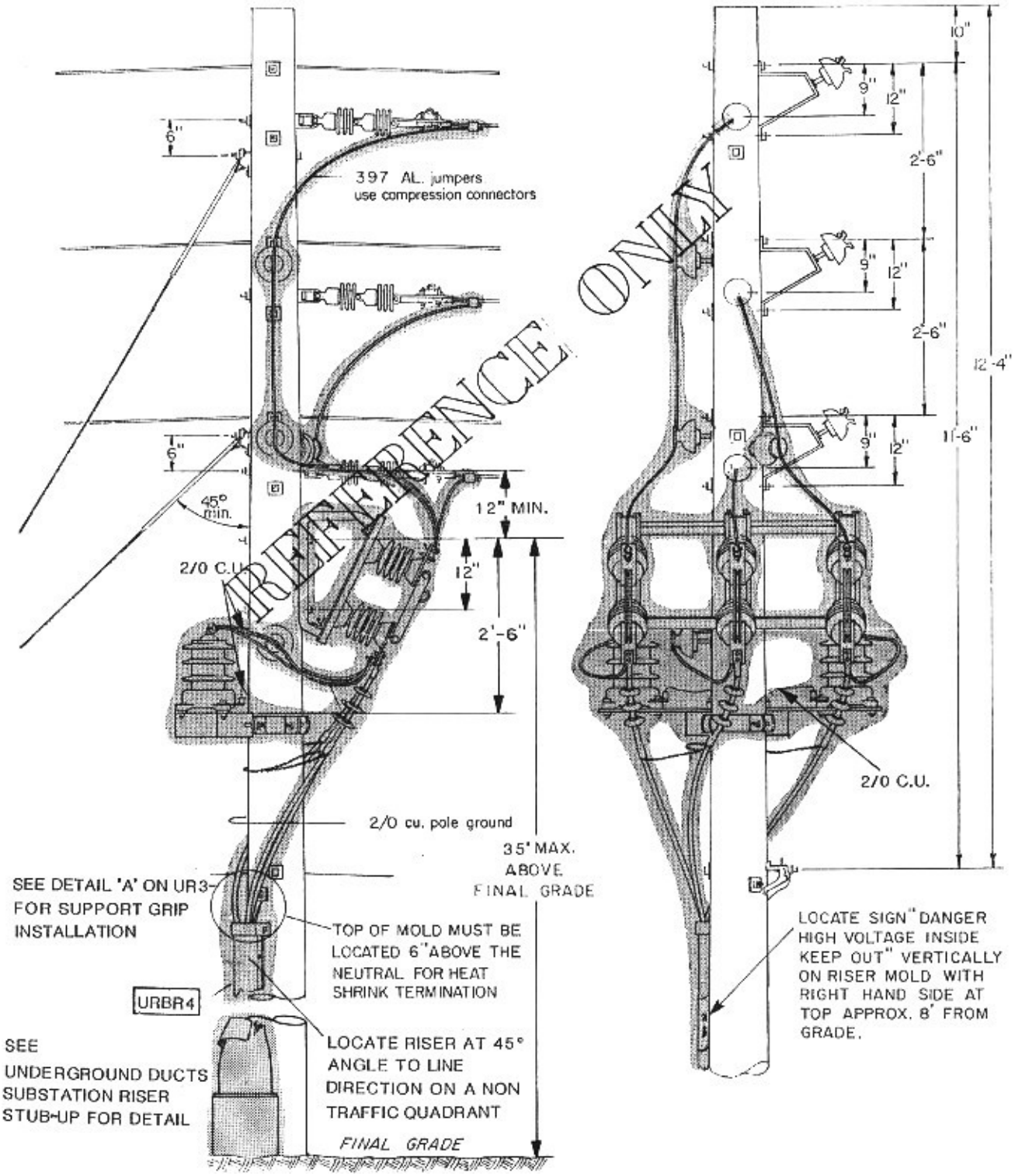
URF5AUA500K **



* INCLUDES POLE RISER, ARRESTOR, TERMINATION AND SWITCH

** EXCLUDES THE SWITCH

URF4UA500K



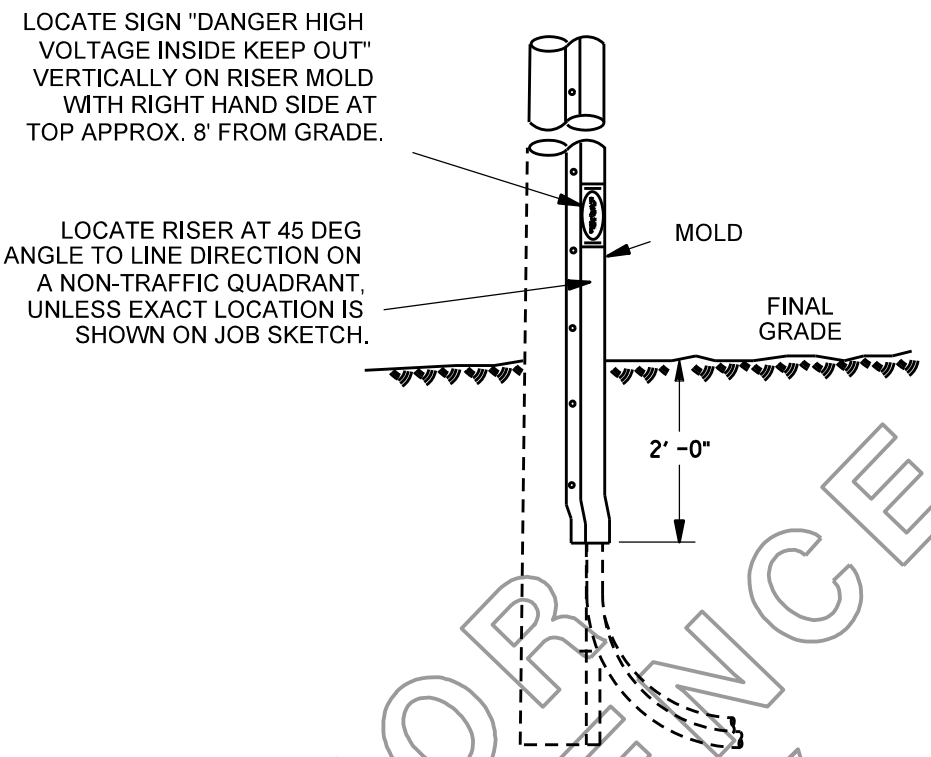
FOR REFERENCE ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS SUBSTATION RISER POLE MOUNTED DISCONNECTS, DOUBLE CIRCUIT WITH ONE CIRCUIT DEAD-ENDED	ISSUE DATE: 06/90 REV. DATE: 09/28/12 APPROVAL: B. Priest
	5-45-1	UG5-45-1.doc

COMPATIBLE UNIT CODING FOR RETIREMENT OF
NON-STANDARD POLE RISERS

RISER DIMENSIONS (INCHES)	COMPATIBLE UNIT CODES		
	DISTRIBUTION (PRIMARY & SECONDARY)	STREETLIGHT	SECURITY LIGHT
RISER MATERIAL: STEEL			
1”	RUR1	RUR1L	RUR1D
1-1/2”		RUR15L	
2”	RUR2	RUR2L	
3”	RUR3		
4”	RUR4	RUR4L	
5”	RUR5		
6”	RUR6		
RISER MATERIAL: ALUMINUM			
3”	RUR3A		
4”	RUR4A		
5”	RUR5A		
RISER MATERIAL: PLASTIC			
1”	RURBR1	RURBR1L	RURBR1D
2”	RURBR2		
3”	RURBR3		
4”	RURBR4		
SERVICE RISERS			
PLASTIC – ALL SIZES	RURBSR		
STEEL – ALL SIZES	RURBSRS		

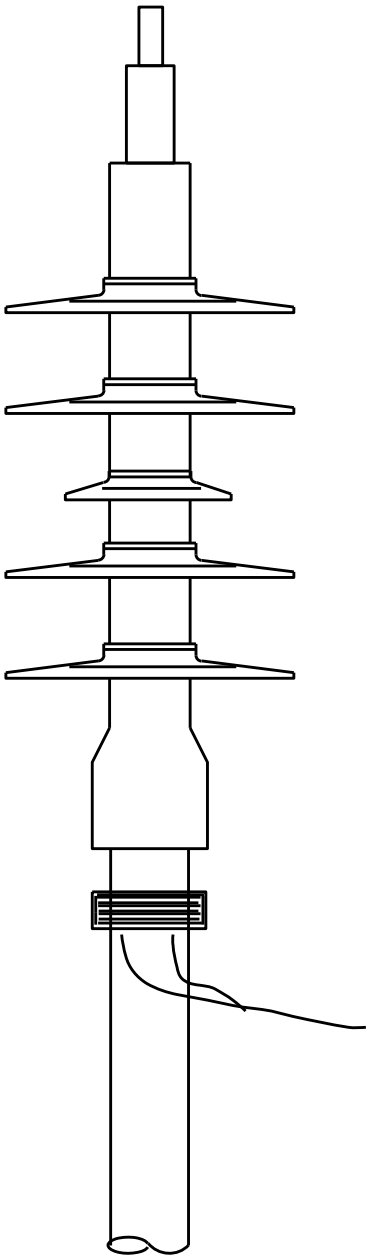
THE REMOVAL OF THE WIRE IN THE RISER SHOULD BE SHOWN SEPARATELY ON THE GRID, USING THE CONDUCTOR CODE FROM PG. 8-35-1.



FOR REFERENCE ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	RISERS PRIMARY, FEEDER, OR SECONDARY DIRECT BURIED CABLE	ISSUE DATE: 09/27/12 REV. DATE: 0 APPROVAL: B. PRIEST
	5-47-1	8513E579.DGN

URBT10P2

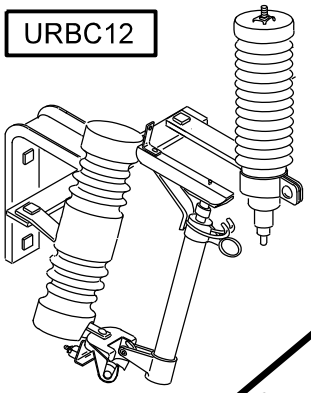


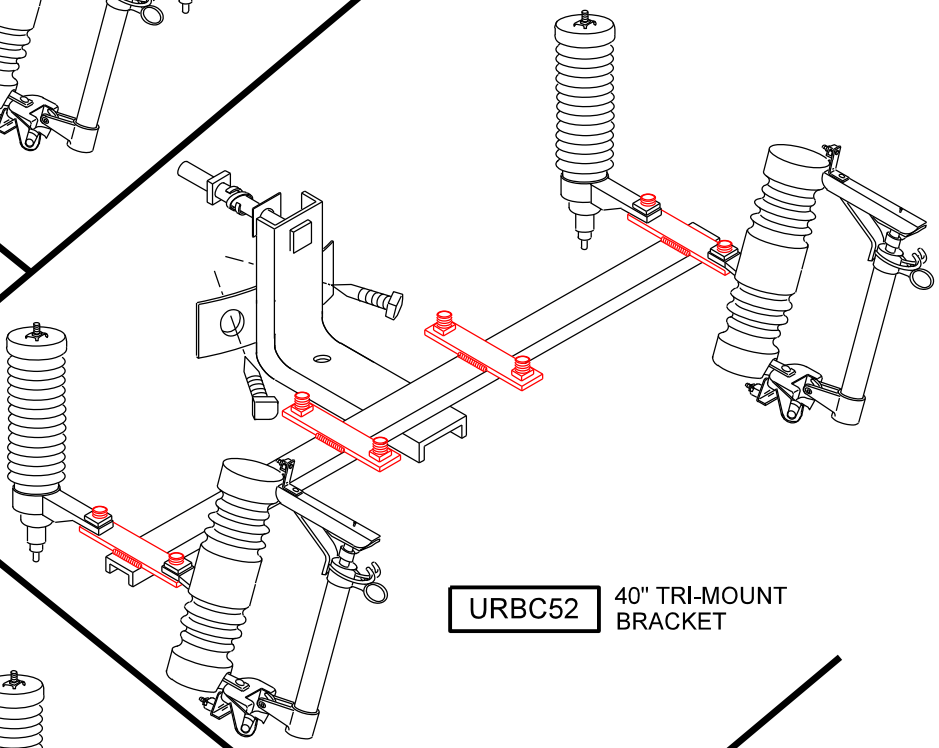
NOTES

1. SEE 12kV RISER SECTION FOR BRACKETS ONLY.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	22 kV RISERS TERMINATIONS	ISSUE DATE: 05/24/04 REV. DATE: 09/28/12 APPROVAL: B. PRIEST
	5-48-1	8513E264.DGN

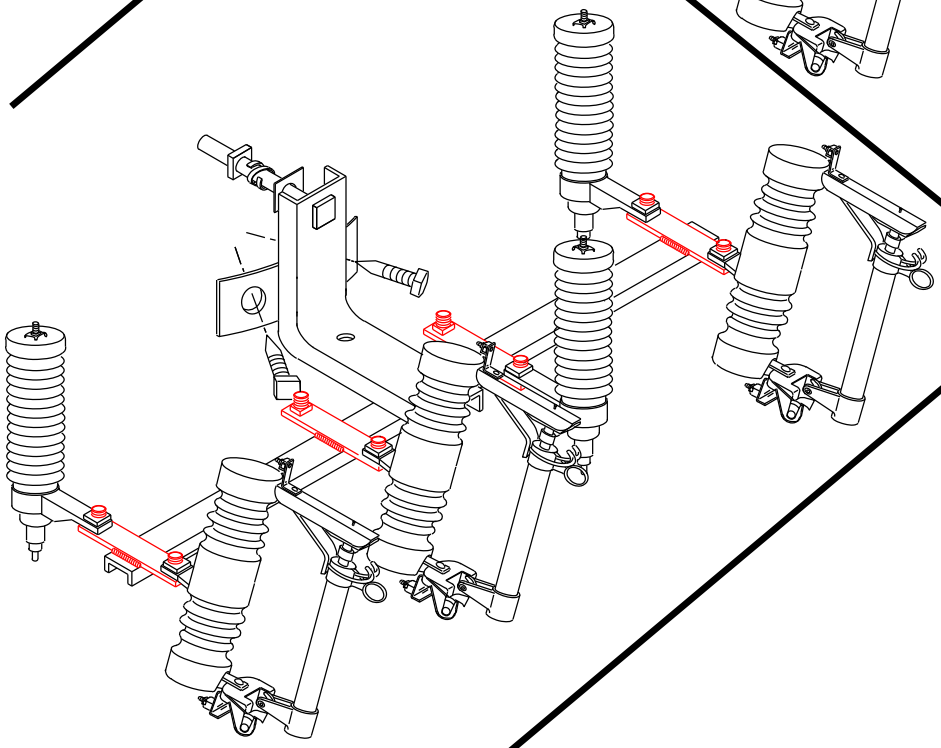
URBC12





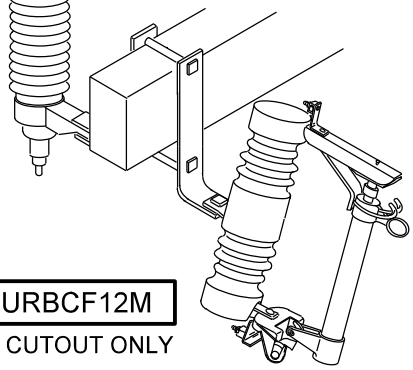
URBC52 40" TRI-MOUNT BRACKET

URBC32



URBC42
BRACKET, ARRESTER AND ALL HARDWARE

URBA18
ARRESTER ONLY

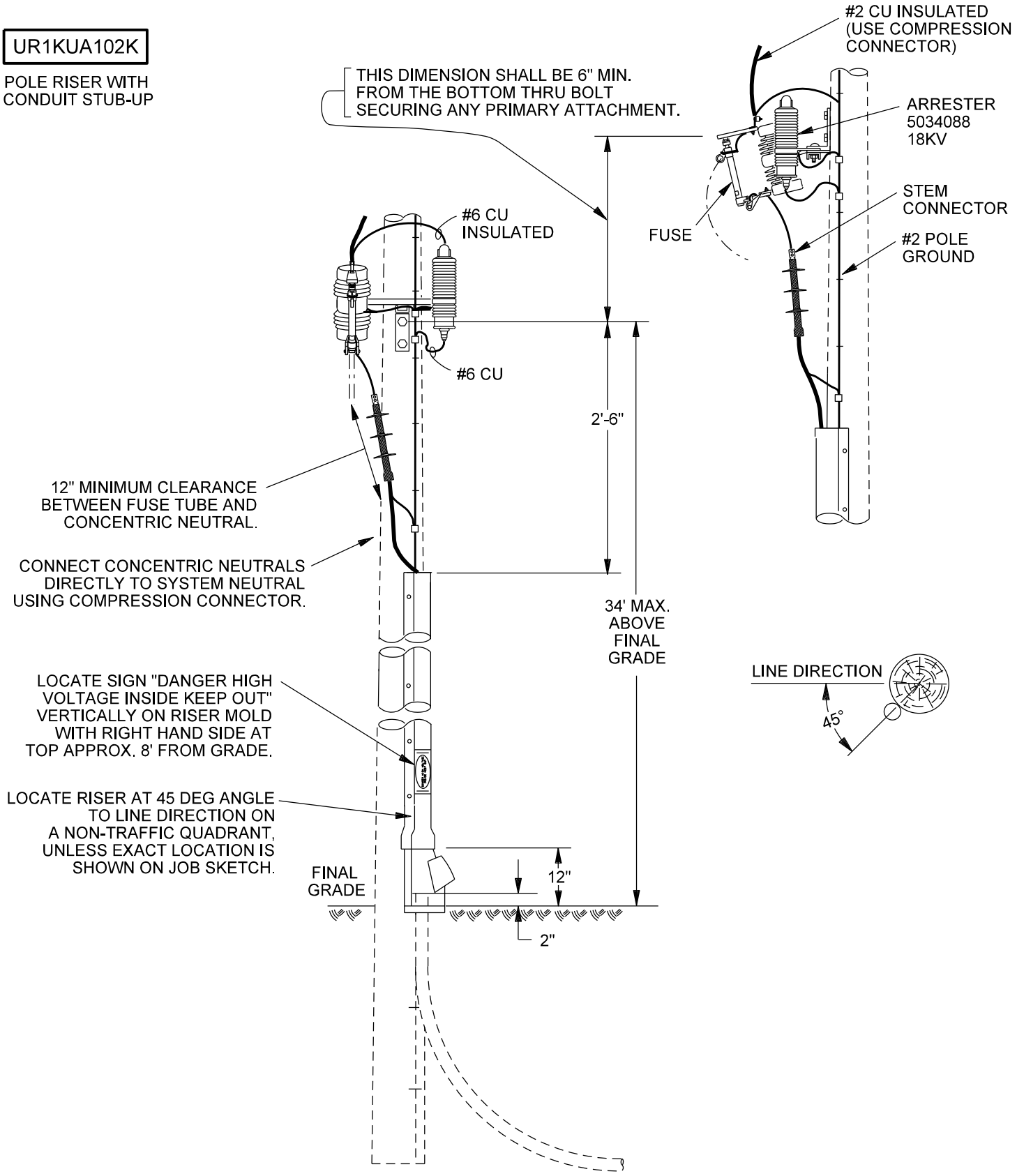


URBCF12M
CUTOUT ONLY

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	REV: ILLUSTRATION TO REFLECT THE WELDED STEEL STOCK THAT REPL 3-BOLT CLAMP	
	22kV RISERS CUTOUT-ARRESTER COMBINATIONS	ISSUE DATE: 11/15/87 REV. DATE: 09/12/24 APPROVAL: J. ROBBINS
	5-49-1	8513E358.DGN

UR1KUA102K

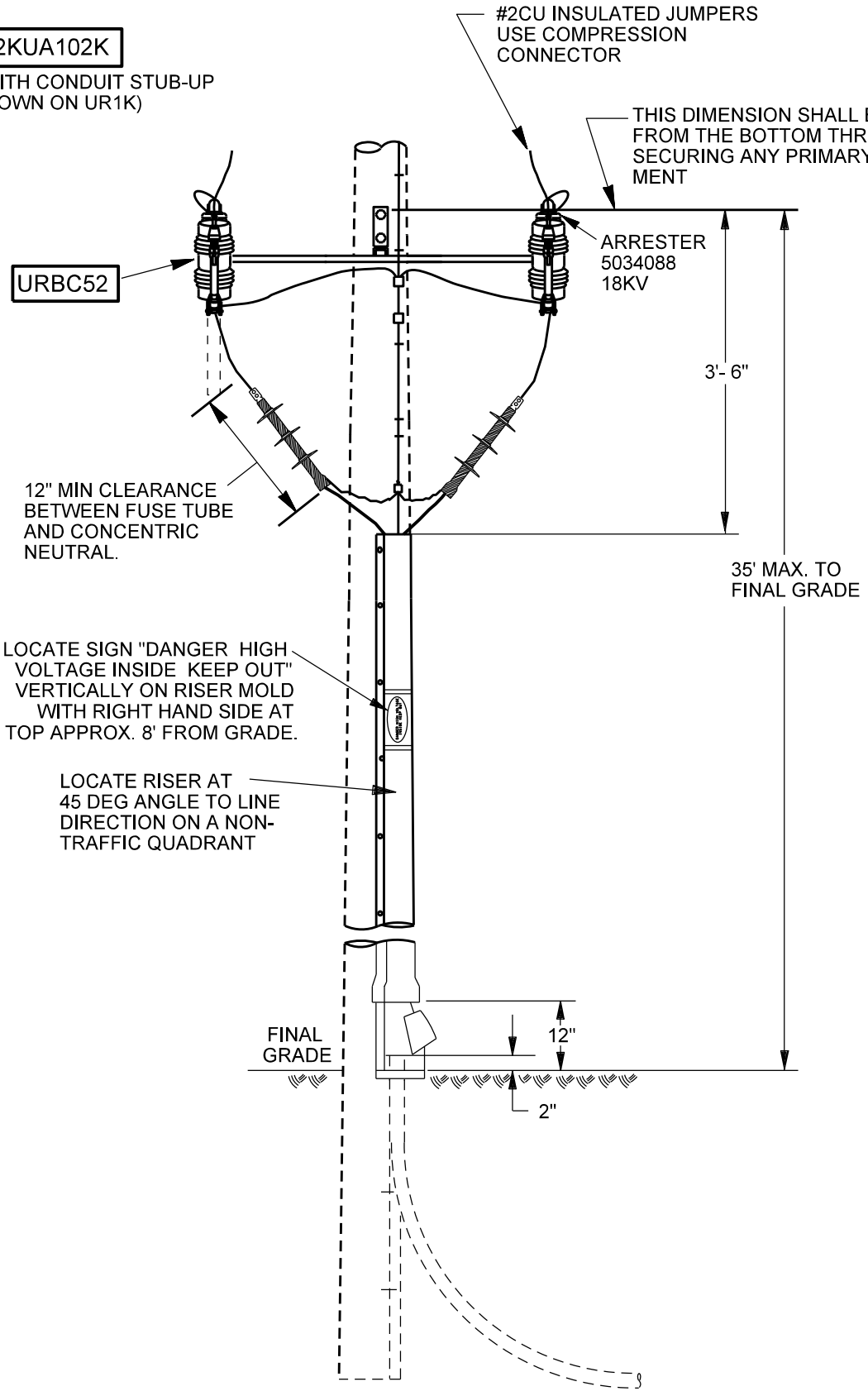
POLE RISER WITH
CONDUIT STUB-UP



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	22kV RISERS PRIMARY RISER SINGLE CONDUCTOR	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-50-1	8513E224.DGN

UR2KUA102K

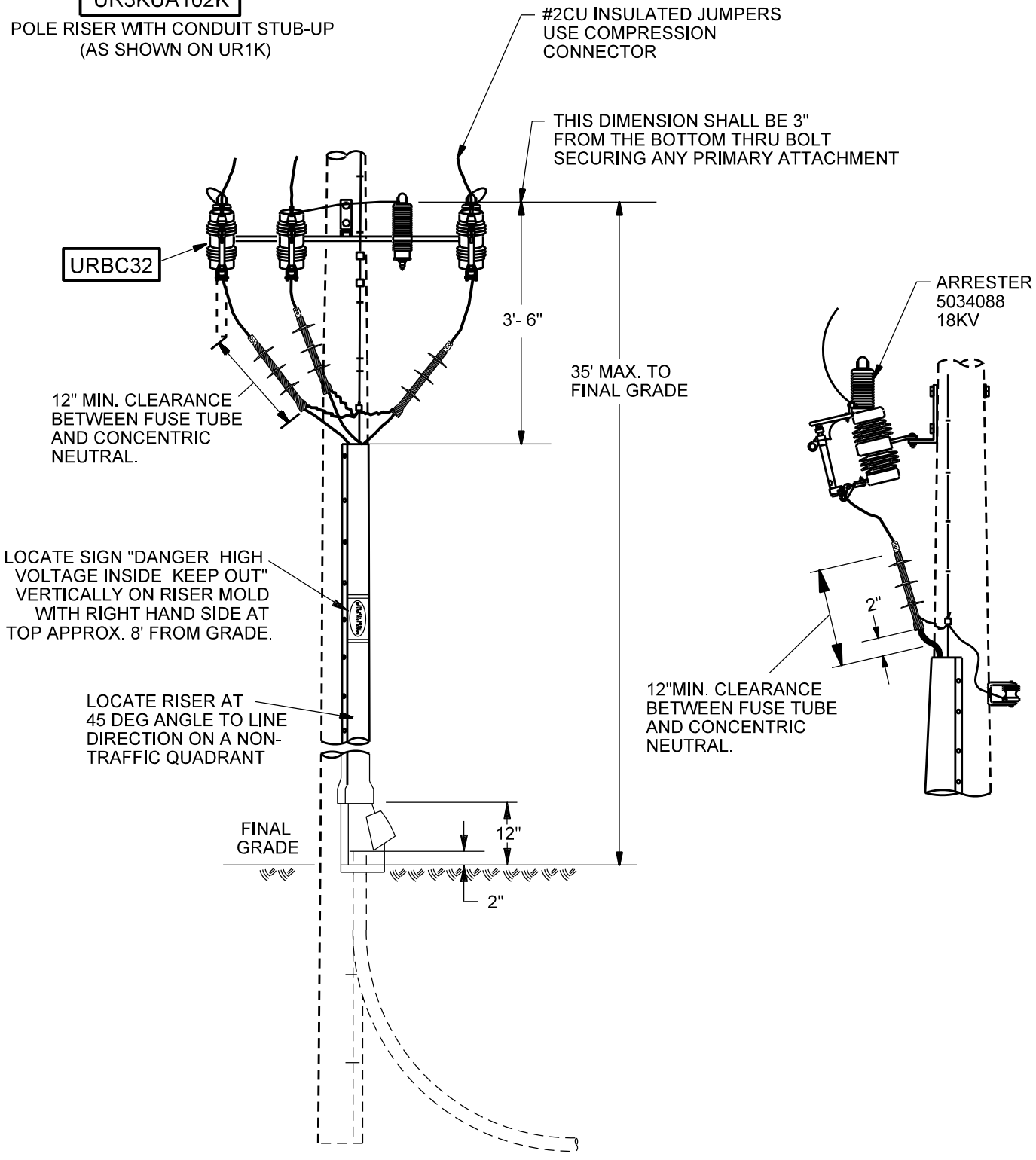
POLE RISER WITH CONDUIT STUB-UP
(AS SHOWN ON UR1K)



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	22kV RISERS PRIMARY RISER-TWO CONDUCTORS	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-51-1	8513E266.DGN

UR3KUA102K

POLE RISER WITH CONDUIT STUB-UP
(AS SHOWN ON UR1K)



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	22kV RISERS PRIMARY RISER-THREE CONDUCTORS	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	5-52-1	8513E267.DGN

TRENCHING

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE	6-1-1
CONDUIT STUB-OUT TO RESIDENCE, JOINT TRENCH WITH GAS	6-2-1
CITY OWNED STREET LIGHTS, POINT OF DELIVERY DETAIL	6-3-1
SERVICE TO MOBILE HOMES, RENTAL OR PURCHASE LOTS	6-4-1
FEEDER AND PRIMARY CABLE LOCATION, FRONT LOT INSTALLATION	6-5-1
JOINT TRENCH WITH GAS, ACCEPTABLE LOCATIONS	6-6-1
JOINT USE WITH GAS, TRENCH REQUIREMENTS	6-7-1
JOINT GAS/ELECTRIC, SUBDIVISION TRENCH, SHELF-TYPE INSTALLATION	6-8-1
SOIL TYPES, BACKFILL MATERIAL AND COMPACTION REQUIREMENTS	6-9-1
SPECIAL CODES	6-10-1
EXCAVATION CODES	6-11-1
EXCAVATION BACKFILL CODES	6-12-1
STREET CROSSING, SURFACE REPAIR CODES	6-13-1
TRENCH CODES EXAMPLE	6-14-1
BORING SPECIFICATION GUIDE	6-15-1
BORING SPECIFICATION CODES	6-16-1
GUIDED BORING CODES	6-17-1

OBSOLETE - FOR REFERENCE ONLY

TITLE/DESCRIPTION	PAGE NO.
RESIDENTIAL CONDUIT, STUB-UP DETAIL – SMALL LOT	6-18-1
RESIDENTIAL CONDUIT, STUB-UP DETAIL – LARGE LOT	6-19-1
RESIDENTIAL CONDUIT SYSTEM, LARGE LOT	6-20-1

TITLE/DESCRIPTION	PAGE NO.
SERVICE STUB-OUT LOCATION, FRONT LOT INSTALLATION	6-21-1
SERVICE STUB-OUT LOCATION, REAR LOT INSTALLATION	6-22-1
TYPICAL SECONDARY AND SERVICE, REAR LOT INSTALLATION	6-23-1
PREFERRED LOCATIONS, REAR LOT	6-24-1
SERVICE STUB-UP, FRONT LOT INSTALLATION, 1-PHASE - 200 AMP WITH TRANSFORMER	6-25-1
SERVICE STUB-UP, FRONT LOT INSTALLATION, 1-PHASE - 200 AMP WITHOUT TRANSFORMER	6-26-1
PRIMARY CABLE STUB-OUT, COMMERCIAL/INDUSTRIAL DEVELOPMENT APPLICATION	6-27-1
STREET CROSSING, SURFACE REPAIRS	6-28-1
INSTALLATION PROCEDURE FOR LID OR JUNCTION BOX	6-29-1
TRANSFORMER AND SERVICE LOCATION, FRONT LOT INSTALLATION	6-30-1
TRANSFORMER AND SECONDARY LOCATION, FRONT LOT INSTALLATION	6-31-1

INSTRUCTIONAL GUIDE

PURPOSE

TO PROVIDE SPECIFICATIONS FOR TRENCHING.

COMPATIBLE UNIT CODING FOR "UT" SECTION

1. TRENCHING

   EXCAVATION CODES HAVE BEEN ESTABLISHED FOR TRENCH DIGGING ONLY. USE MULTIPLIERS TO ACCOMMODATE A WIDE VARIATION OF WIDTHS AND DEPTHS.

2. BACKFILL

   BACKFILL CODES HAVE BEEN ESTABLISHED TO BACKFILL A TRENCH AND REMOVE NATIVE SOIL WHEN REQUIRED. USE MUTIPLIERS TO PROVIDE THE CORRECT QUANTITY OF BACKFILL. VARIOUS TYPES OF BACKFILL MATERIAL ARE REPRESENTED.

3. STREET REPAIR

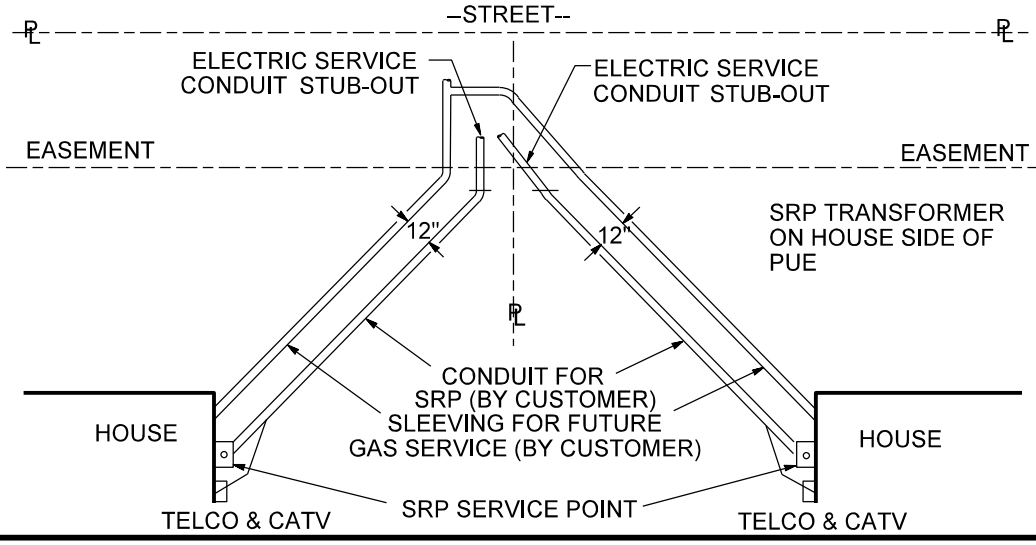
   STREET REPAIR CODES HAVE BEEN ESTABLISHED TO PERFORM VARIOUS KINDS OF STREET REPAIRS.

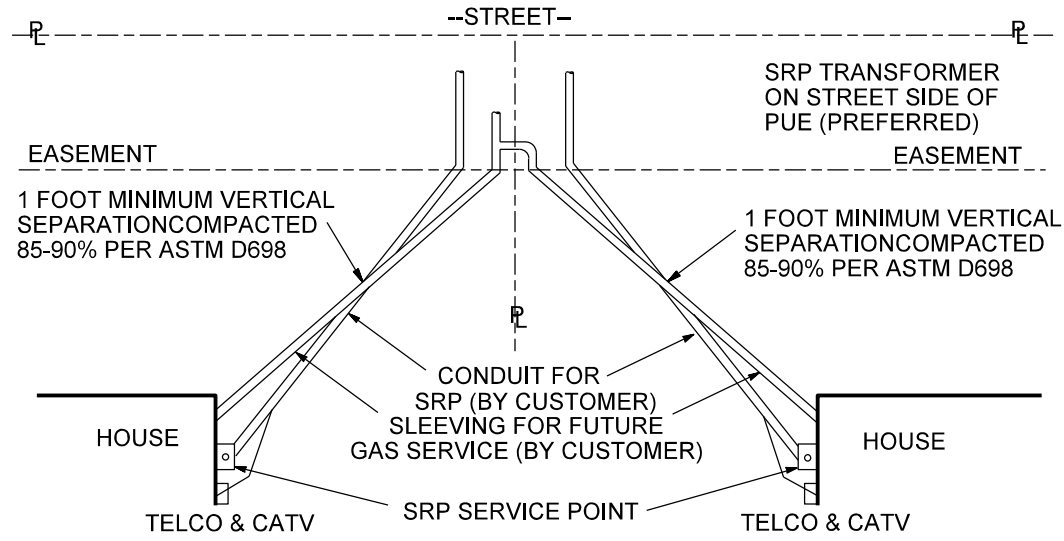
4. ENCASEMENT

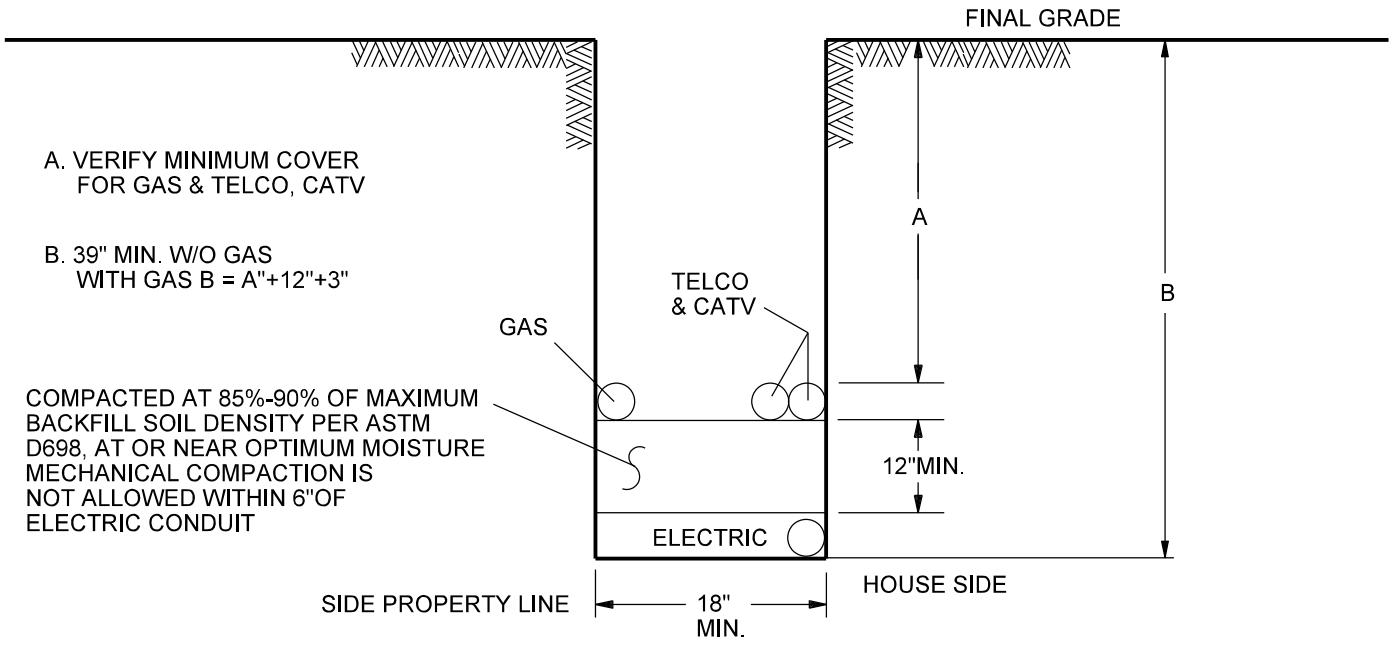
   USE FULL STRENGTH CONCRETE (MAG B), RATED AT A MINIMUM OF 2,500 PSI, FOR MAXIMUM PHYSICAL PROTECTION. USE 1 - 1/2 SACK CLSM (5075315) FOR NORMAL PHYSICAL PROTECTION. USE DBS (5075316) FOR GROUTING AROUND CONDUIT IN STEEL PIPE SLEEVES. THESE TYPES OF ENCASEMENT PROVIDE THERMAL CONDUCTIVITY FOR THE CABLE.

5. TRENCH SHORING AND SAFETY

   FOR TRENCH SHORING AND SAFETY SPECIFICATIONS, REFER TO THE **EXCAVATION SAFETY RESOURCE MANUAL** PUBLISHED BY THE SAFETY SERVICES DEPARTMENT. FOR SUPPORTING EXISTING CONDUIT BANKS FOR NEW EXCAVATIONS, SEE UKBS2 IN CONDUIT SECTION.

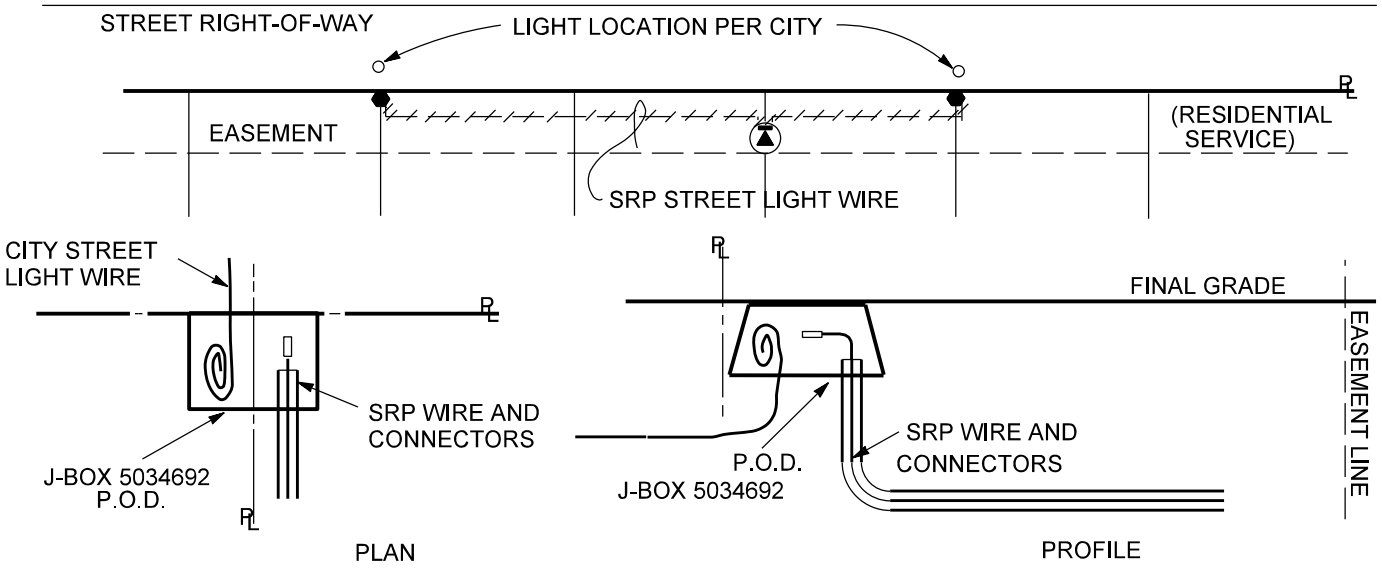




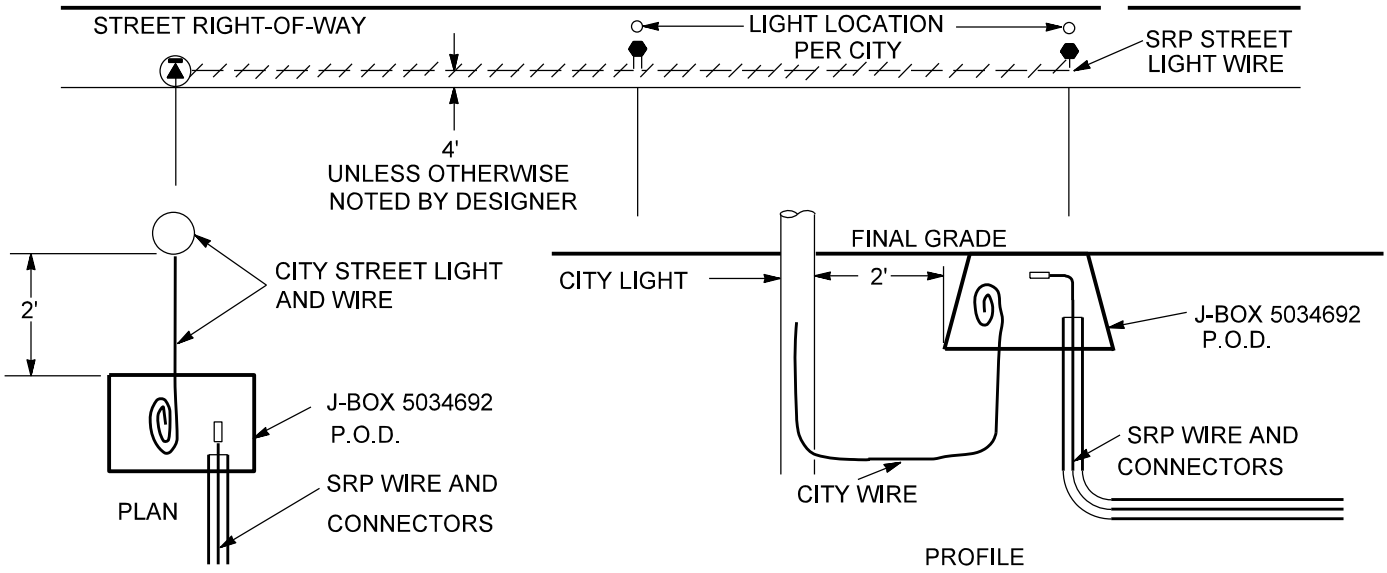


Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING CONDUIT STUB-OUT TO RESIDENCE JOINT TRENCH WITH GAS	ISSUE DATE: 04/02/02 REV. DATE: 08/28/12 APPROVAL: B. PRIEST
	6-2-1	8513E289.DGN

RESIDENTIAL STREET LIGHTING



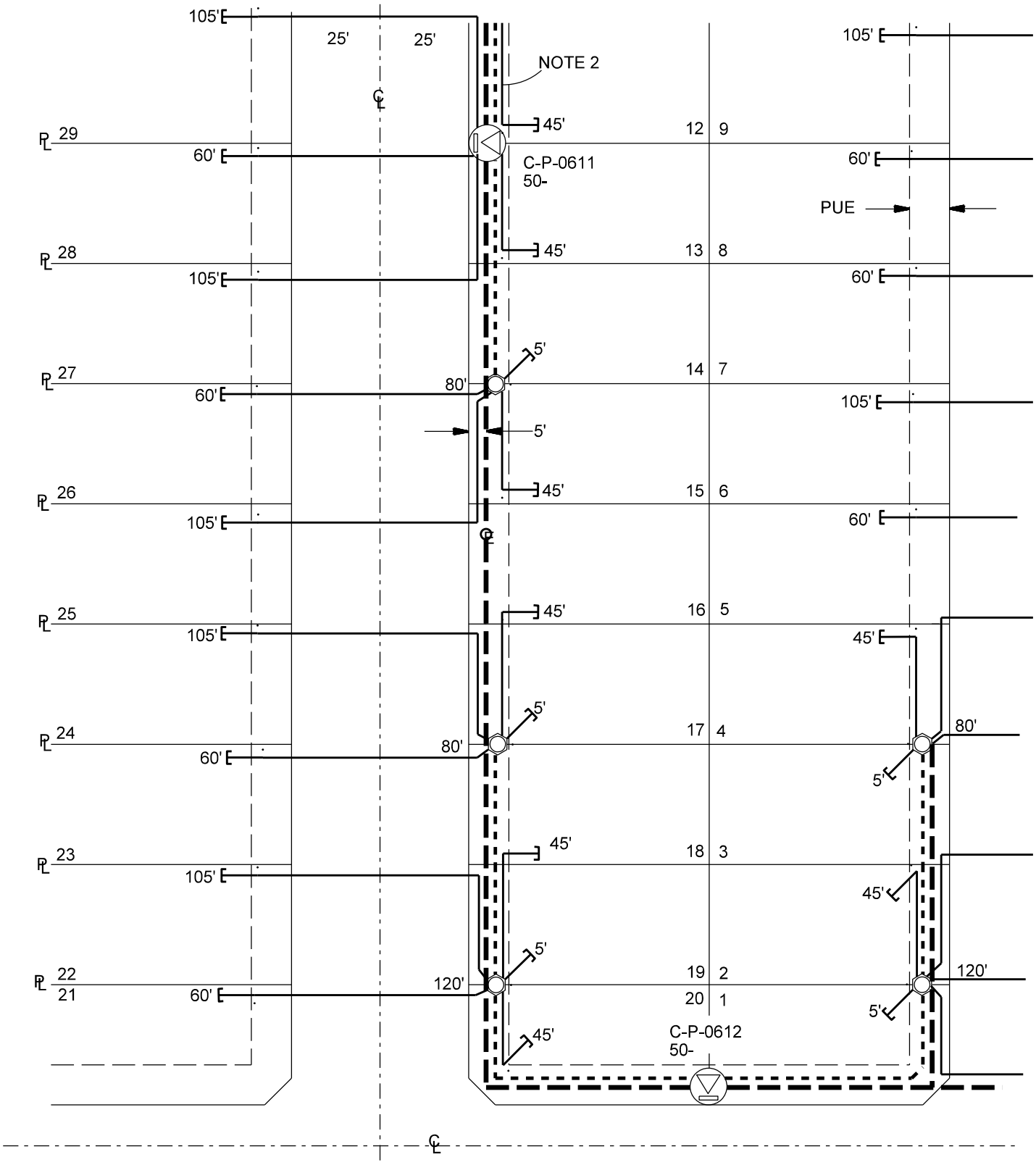
COMMERCIAL/INDUSTRIAL AND MAJOR ROAD STREET LIGHTING



NOTES

1. FOR CITY OWNED AND INSTALLED STREET LIGHTS TO BE SERVED BY SRP WITH UNDERGOUND WIRE, THE POINT OF DELIVERY (P.O.D.) WILL BE IN A JUNCTION BOX INSTALLED BY SRP OR AN APPROVED BOX INSTALLED BY THE CITY. THE CITY IS TO PROVIDE THE LOCATION OF THE LIGHTS.
2. A 3 FT PIGTAIL OF STREET LIGHT WIRE FROM THE CITY'S LIGHT IS TI BE INSERTED INTO THE JUNCTION BOX. THE CITY MAY INCLUDE THEIR OWN IN-LINE FUSE IN THE JUNCTION BOX. SRP IS TO MAKE THE ELECTRICAL CONNECTION IN THE JUNCTION BOX (PHASE & NEUTRAL ONLY).
3. THE CITY IS TO PROVIDE APPROPRIATE POLE GROUNDING IF METAL POLES ARE USED. THE CITY MAY INSTALL A GROUND ROD IN THE JUNCTION BOX IF THEY DO NOT DAMAGE SRP CONDUCTORS.
4. IN RESIDENTIAL STREETS, P.O.D. JUNCTION BOX IS TO BE AT FRONT OF UTILITY EASEMENT AND ON PROPERLY LINE BETWEEN LOTS.

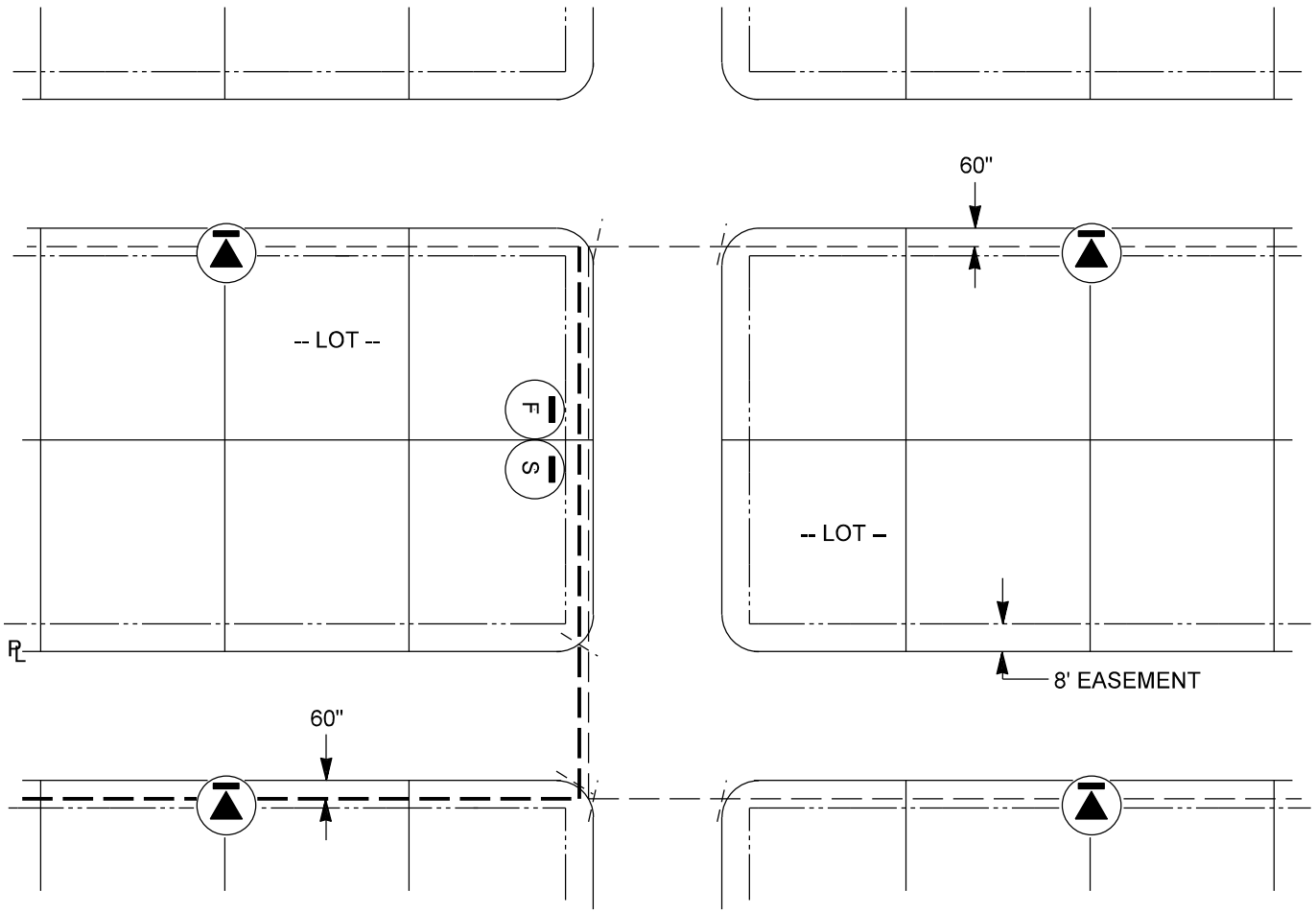
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING CITY OWNED STREET LIGHTS POINT OF DELIVERY DETAIL	ISSUE DATE: 10/25/88 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	6-3-1	8513E516.DGN



NOTES

1. PREFER RIGHT SIDE OF LOT SERVICE

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	TRENCHING SERVICE TO MOBILE HOMES RENTAL OR PURCHASE LOTS	ISSUE DATE: 02/08/02 REV. DATE: 04/08/10 APPROVAL: B. PRIEST
	6-4-1	8513E82.DGN



NOTES

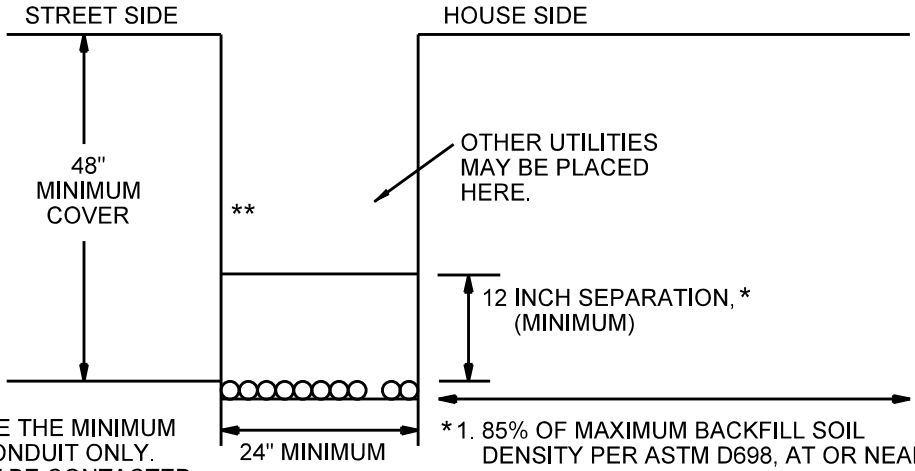
1. IDENTIFY CABLES PER MISCELLANEOUS SECTION OF THIS BOOK.
2. LOCATE THE SWITCH, FUSE, AND OR CAPACITOR BANK ON SIDE LOT LINES WHENEVER POSSIBLE AND DO NOT INSTALL IN FRONT OF HOUSES.
3. INSTALL EQUIPMENT AWAY FROM DRIVEWAYS. IF A DRIVEWAY IS WITHIN 2' OF THE EQUIPMENT, INSTALL A GUARD POST AS SHOWN IN THE UBG OF THE BASIC ASSEMBLY UNITS SECTION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING FEEDER AND PRIMARY CABLE LOCATION FRONT LOT INSTALLATION	ISSUE DATE: 11/05/87 REV. DATE: 04/08/10 APPROVAL: B. PRIEST
	6-5-1	8513E83.DGN

CONDUCTOR TYPE	ACCEPTABLE LOCATIONS FOR JOINT TRENCH WITH GAS
SERVICE, SECONDARY AND #2 PRIMARY	ALL LOCATIONS IN RESIDENTIAL SUBDIVISIONS
SERVICE, SECONDARY, #2 AND 4/0 PRIMARY	COMMERCIAL PRIVATE PROPERTY ONLY (NOT IN PUE)
FEEDER	NONE (SEE NOTE 2)

NOTES

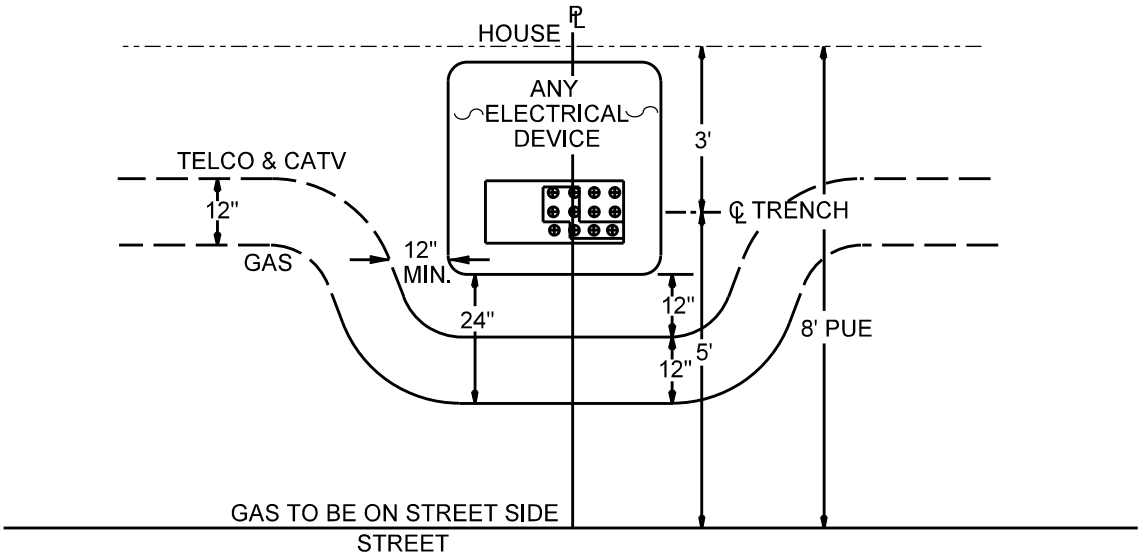
1. ALL JOINT TRENCH LOCATIONS SHALL HAVE A MAXIMUM BACK FILL SOIL DENSITY PER ASTM D698, AT OR NEAR OPTIMUM MOISTURE (SEE PAGE 6-9-1). MECHANICAL COMPACTION IS NOT ALLOWED WITHIN 6" OF ELECTRICAL CONDUIT.
2. JOINT USE TRENCH WITH FEEDER IS NOT ALLOWED BECAUSE IT PRESENTS AN OBSTACLE TO FUTURE FEEDER ACCESS. THE FOLLOWING ACCEPTABLE ALTERNATIVES WILL BE ALLOWED:
   A. A SEPARATE FEEDER AND GAS TRENCH WITH A MINIMUM OF 2 FEET OF UNDISTURBED EARTH BETWEEN THE TWO TRENCHES.
   B. A SHELF-TYPE TRENCH WITH A MINIMUM HORIZONTAL CLEARANCE OF 6’ AND A MINIMUM VERTICAL CLEARANCE OF 12” BETWEEN THE FEEDER AND GAS.

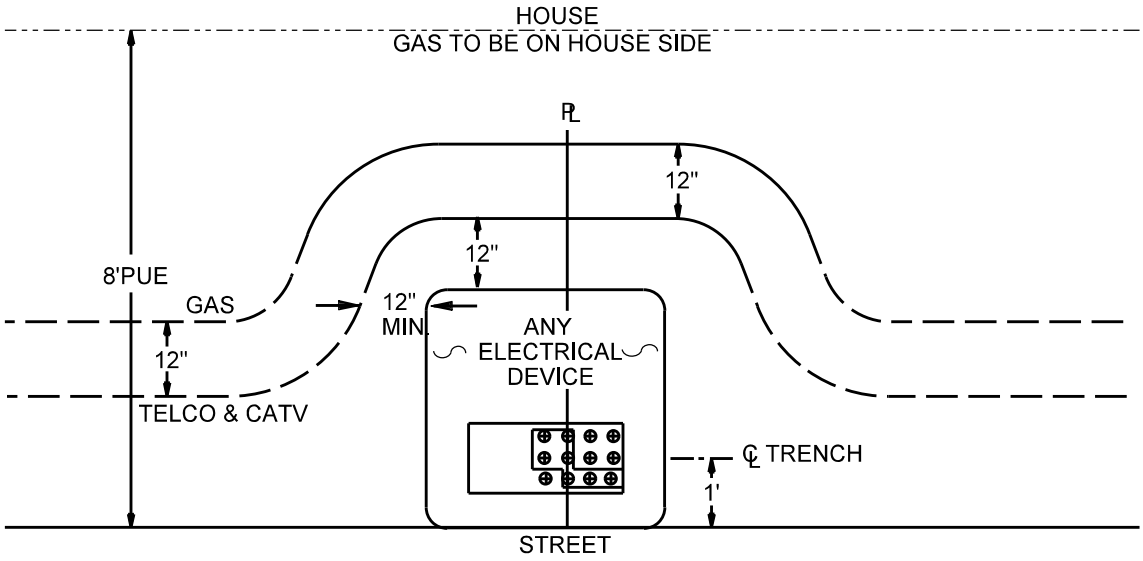


** TRENCH WIDTHS SHOWN ARE THE MINIMUM REQUIRED FOR ELECTRIC CONDUIT ONLY. TELCO, CATV AND GAS MUST BE CONTACTED ON A JOB-BY-JOB BASIS TO DETERMINE THEIR SPECIFIC TRENCH WIDTH AND SEPARATION NEEDS.

* 1. 85% OF MAXIMUM BACKFILL SOIL DENSITY PER ASTM D698, AT OR NEAR OPTIMUM MOISTURE (SEE CHAPTER 6, SECTION 9).

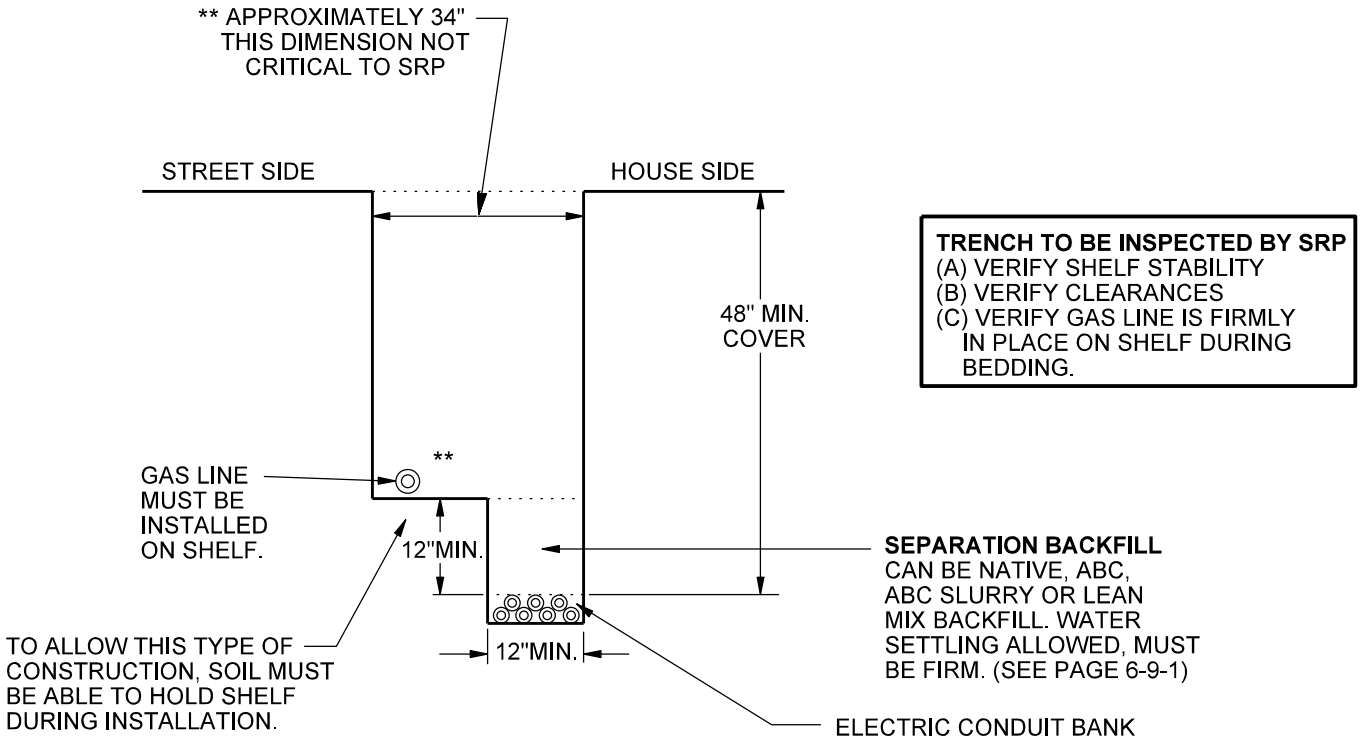
2. MECHANICAL COMPACTION NOT ALLOWED WITHIN 6" OF ELECTRICAL CONDUIT.





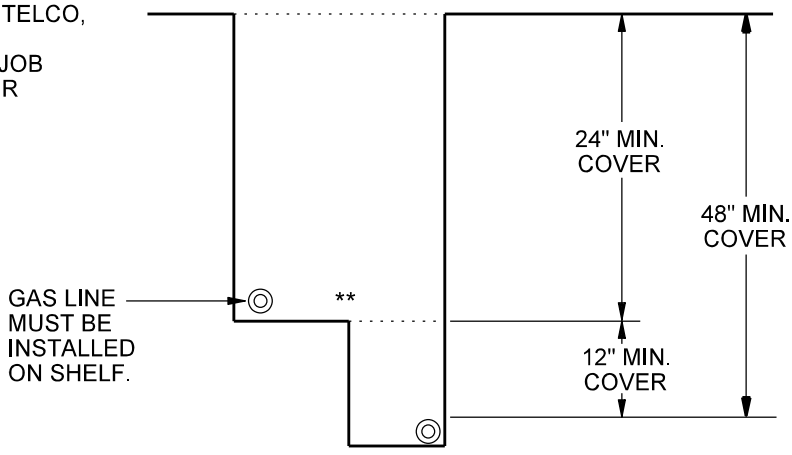
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	PRIMARY TRENCHING JOINT USE WITH GAS TRENCH REQUIREMENTS	ISSUE DATE: 12/18/01 REV. DATE: 05/25/10 APPROVAL: B. PRIEST
	6-7-1	8513E519.DGN

JOINT GAS/ELECTRIC
SUBDIVISION TRENCH
SHELF-TYPE INSTALLATION



PRIMARY/SECONDARY TRENCH

** TRENCH WIDTHS SHOWN ARE THE MINIMUM REQUIRED FOR ELECTRIC CONDUIT ONLY. TELCO, CATV AND GAS MUST BE CONTACTED ON A JOB-BY-JOB BASIS TO DETERMINE THEIR SPECIFIC TRENCH WIDTH AND SEPARATION NEEDS.



SERVICE TRENCH

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING JOINT GAS/ELECTRIC, SUBDIVISION TRENCH SHELF-TYPE INSTALLATION	ISSUE DATE: 02/08/02 REV. DATE: 04/08/10 APPROVAL: B. PRIEST
	6-8-1	8513E304.DGN

SOIL TYPES, BACKFILL MATERIAL AND COMPACTION REQUIREMENTS

THIS INFORMATION IS TO BE SUPERSEDED BY ANY CONFLICTING INFORMATION THAT MAY BE PUBLISHED IN THE SRP
"EXCAVATION SAFETY RESOURCE MANUAL".

NOTES

1. MEASURE TRENCH DEPTHS FROM FINAL GRADE STAKES. FOLLOW ALL TRENCH DEPTHS SPECIFIED ON A JOB DRAWING. SEE CLEARANCE SECTION FOR MINIMUM COVER AND SEPARATION REQUIREMENTS.
2. SHORE OR SLOPE TRENCH WALLS AS REQUIRED BY THE LATEST REVISION OF THE SRP EXCAVATION SAFETY MANUAL.
3. BACKFILL AND COMPACTION FOR CONDUIT IN NATIVE SOIL

   WITHIN 6 INCHES OF THE CONDUIT, BACKFILL MATERIAL SHALL BE FREE OF BROKEN CONCRETE, PAVING, WOOD, GLASS OR OTHER SOLID MATERIAL GREATER THAN 1-1/2 INCHES. THIS BACKFILL SHALL CONTAIN MORE THAN 50 PERCENT FINES OF A SIZE THAT IS 3/8 INCH OR SMALLER. THE BALANCE OF THE TRENCH BACKFILL SHALL BE FREE OF SOLID MATERIAL GREATER THAN 4 INCHES IN MAXIMUM DIMENSION AND SHALL CONTAIN MORE THAN 50 PERCENT FINES OF A SIZE THAT IS 3/8 INCH OR SMALLER.

COMPACTED FILLS

STOCK CODE	MATERIAL	DESCRIPTION	RECOMMENDED COMPACTION METHOD
5075319	GRANULAR MAG AGGREGATE BASE COARSE (ABC)	WELL GRADED UNWASHED SAND AND GRAVEL USED IN COMPACTED SUBGRADES FOR PAVEMENTS AND GENERAL BACKFILL	STEEL WHEEL, VIBRATORY PLATE OR RUBBER-TIRED COMPACTION
	SAND	SOIL MOSTLY MADE OF PARTICLES LESS THAN 3/16" IN SIZE, BUT CONTAINING LITTLE OR NO SILT OR CLAY	STEEL WHEEL, VIBRATORY PLATE OR RUBBER-TIRED COMPACTION
	NATIVE SOIL	SOIL PLACED BY NATURE THAT HAS NOT BEEN ALTERED BY MAN AND MEETS REQUIREMENTS OF NOTE 3	SHEEPSFOOT OR RUBBER-TIRED ROLLER (KNEADING)

4. USE OTHER BACKFILL IF IT IS MORE ECONOMICAL. NOTIFY CIVIL INSPECTORS AT LEAST 48 HOURS PRIOR TO START OF WORK TO ARRANGE FOR COMPACTION TESTING.

5. COMPACT BACKFILL TO AT LEAST THE PERCENTAGE OF MAXIMUM DENSITY LISTED IN THE FOLLOWING M.A.G. SPECIFICATION (AS DETERMINED BY ASTM D698) UNLESS OTHERWISE SPECIFIED.

CONTACT THE MUNICIPALITY CONCERNED FOR REPAIR REQUIREMENTS WHEN A TRENCH WILL BE UNDER PAVEMENT. THE FOLLOWING TABLE APPLIES WHEN THERE ARE NO SUPPLEMENTAL MUNICIPAL REQUIREMENTS.

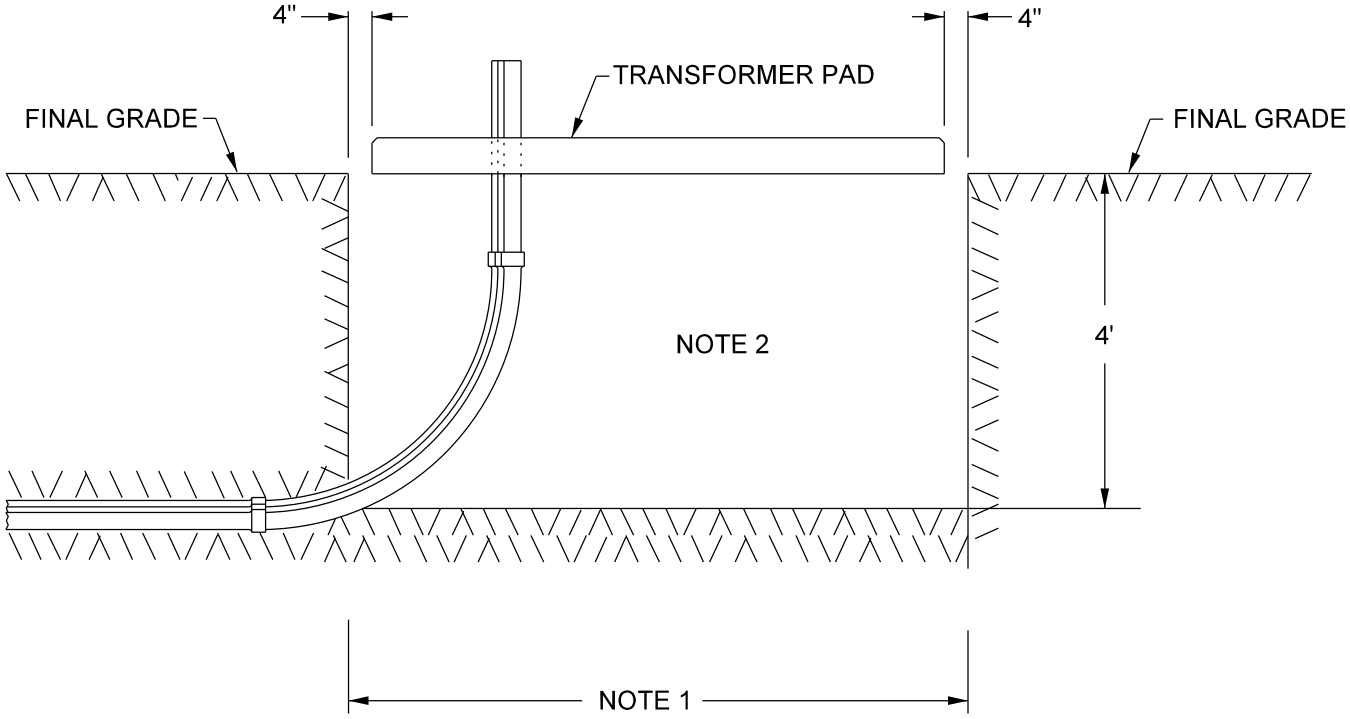
M.A.G. SPEC. 601-2 MODIFIED TO MEET MOST MAG AGENCY REQUIREMENTS.	FROM SURFACE TO **2' BELOW SURFACE**	FROM 2' BELOW SURFACE **TO TRENCH BOTTOM**
A. UNDER OR WITHIN 2' EXISTING OR PROPOSED PAVEMENT, CURB, GUTTER OR SIDEWALK	NATIVE .....95% GRANULAR .100%	ALL 95%
B. ON ANY UTILITY EASEMENT STREET, ROAD OR ALLEY RIGHT-OF-WAY OUTSIDE LIMITS OF 'A'	90%	90%
C. AROUND AND UNDER ANY STRUCTURES OR PAD MOUNTED EQUIPMENT OR EXPOSED UTILITIES	95%	95%
D. ALL OTHER AREAS	80%	80%

NOTE: DO NOT USE MACHINE COMPACTION WITHIN 6 INCHES OF CABLE OR CONDUIT.

SLURRY BACKFILL MIXES (NO COMPACTION REQUIRED)

STOCK NO.	ABBV.	SLURRY TYPE	DESCRIPTION	COARSE AGGREGATE ASTM C33	FINE AGGRE -GATE	SLUMP RANGE	MIN. CEMENT CONTENT (LBS/CU. YD.)
5075311	ASB	AGGREGATE SLURRY BACKFILL	WASHED GRAVEL AND SAND OR CLEAN ABC, NO CEMENT, BACKFILL AROUND WOOD AND CONCRETE TRANSMISSION LINE POLES AND IN TRENCHES (NO LOADS).	NO. 67 [3/4" (19MM) NOM. MAX.]	NOTES 11, 12	6"-9"	NONE
5075313	CLSM 1/2 SACK	CONTROLLED LOW STRENGTH MATERIAL W/ 1/2 SACK CEMENT PCY	WASHED GRAVEL AND SAND OR CLEAN ABC, WITH CEMENT, TRENCH BACKFILL (LOW LOAD AREAS-STREETS AND LOTS).	MIXES IN ACCORDANCE WITH MAG 728 (13)			
5075314	CLSM 1 SACK	CONTROLLED LOW STRENGTH MATERIAL W/ 1 SACK CEMENT PCY	WASHED GRAVEL AND SAND OR CLEAN ABC, WITH CEMENT, TRENCH BACKFILL IN LOW LOAD AREAS (STREETS AND LOTS). USE IN LIEU OF CLSM 1/2 SACK AS REQUIRED BY CITIES.				
5075315	CLSM 1- 1/2 SACK	CONTROLLED LOW STRENGTH MATERIAL W/1- 1/2 SACK CEMENT PCY	WASHED GRAVEL AND SAND OR CLEAN ABC, WITH CEMENT, STRUCTURAL BACKFILL UNDER FOUNDATIONS AND AS THERMAL FILL AND/OR MECHANICAL PROTECTION OF DUCT BANKS.				
5075316	DBS	DUCT BANK BACKFILL W/SAND SLURRY	GROUT FOR PUMPING AROUND CONDUITS PLACED IN PIPE SLEEVES.	NONE	NOTE 11	6"-9"	376

6. WHEN TRENCHING IN AN AREA WHERE MANY UNDERCROSSINGS OF OTHER UTILITY LINES OR CONFLICTS ARE ENCOUNTERED, INSTALLATION OF CONDUIT UNDER ALL OF THE CONFLICTS IS MORE DIFFICULT. WIDER TRENCHES SHOULD BE USED FOR THESE INSTALLATIONS.
7. WATER FLOODING OF TRENCHES, IN ORDER TO PROVIDE COMPACTION, IS ONLY ALLOWED PROVIDED THE VOLUME OF WATER DOES NOT SATURATE THE BACKFILL, WATER PRESSURE DOES NOT DISPLACE THE BACKFILL, AND IS PRE-APPROVED BY ESE. (STANDING WATER IS AN INDICATION OF SATURATION.)
8. TRENCH SPOIL SHALL BE PLACED 6 TO 10 FT. FROM EDGE OF A TRENCH. IF NOT POSSIBLE, TRENCH SPOIL MAY BE PLACED ON ONE SIDE OF THE TRENCH, WITHIN 4 FT. OF THE EDGE, PROVIDED THE OPPOSITE SIDE OF THE TRENCH IS LEVEL, WITHOUT OBSTRUCTIONS, AND ACCESSIBLE BY MEN AND EQUIPMENT.
9. IF COMPACTION IS UNECONOMICAL AROUND OR UNDER STRUCTURES, PAD MOUNTED EQUIPMENT OR EXPOSED UTILITIES, CLSM 1/2 SACK (5075313) MAY BE USED.
10. FINE AGGREGATES (SAND) SHALL BE IN ACCORDANCE WITH ASTM C33.
11. FINE AGGREGATES 45-50% OF THE TOTAL AGGREGATE WEIGHT.
12. PURCHASER MAY REQUEST MATERIAL AT LOWER SLUMPS.



NOTES

1. EXCAVATE 4' BELOW PAD. PIT SHALL EXTEND ON ALL SIDES 4" PAST EDGE OF PAD.
2. BACKFILL MATERIAL UNDER TRANSFORMER PAD SHALL BE CLSM 1/2" SACK MATERIAL ITEM 5075313. FOR INSTALLATIONS IN WHICH SERVICE CONDUITS REQUIRE RACKING AND ENCASEMENT, BACKFILL MATERIAL SHALL BE 1 - 1/2 SACK CLSM MATERIAL ITEM 5075315.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	THREE-PHASE TRANSFORMER INSTALLATION REINFORCED EXCAVATION	ISSUE DATE: 10/20/17 REV. DATE: 01/15/19 APPROVAL: S. DURAN
	6-9-4	8513E585.DGN

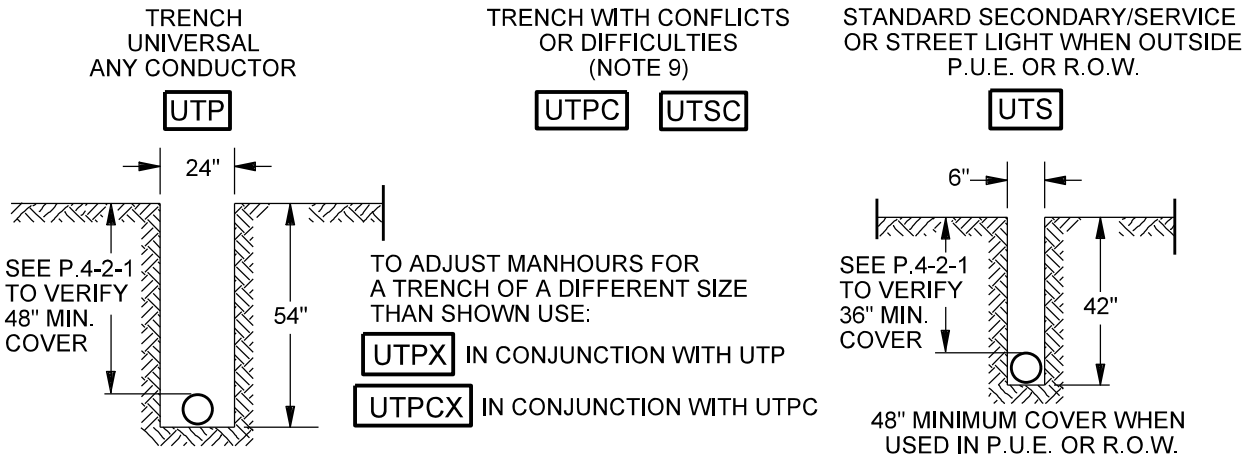
UTCRA	CUT AND REMOVE ASPHALT. PER LINEAR FOOT.
UTCRC	CUT AND REMOVE CONCRETE. COMPATIBLE UNIT CODES FOR CUTTING AND REMOVING PAVED AREAS. *DOES NOT INCLUDE TRENCHING OR BACKFILL*. PER LINEAR FOOT.
UTCP	COMPATIBLE UNIT CODE FOR 3000 PSI CONCRETE PATCHING ONLY, COVERS 2' X 2' AREA, 4" THICK. USE FOR AREAS 60 SQUARE FEET OR LESS (STOCK #5075323).
UTSW	COMPATIBLE UNIT CODE FOR 3000 PSI CONCRETE NEW SIDEWALK, COVERS 4' X 1' AREA, 4" THICK. TO BE USED FOR AREAS GREATER THAN 60 SQUARE FEET (STOCK #5075323).
UTEXS	COMPATIBLE UNIT CODE FOR EXCAVATIONS AT OR NEAR EXISTING FACILITIES. APPROXIMATELY 15 CUBIC FEET. INCLUDES 2.25 MAN-HOURS ONLY.
UTEX	COMPATIBLE UNIT CODE FOR EXCAVATIONS AT OR NEAR EXISTING FACILITIES. APPROXIMATELY 30 CUBIC FT. INCLUDES 4.5 MAN-HOURS ONLY.
UTEXH	COMPATIBLE UNIT CODE FOR HAND-DIG AT OR NEAR EXISTING FACILITIES. APPROXIMATELY 30 CUBIC FT. INCLUDES 12 MAN-HOURS ONLY.
UTDP	THIS COMPATIBLE UNIT WILL BE USED TO COMMUNICATE TO CONSTRUCTION THE NEED FOR A DUST CONTROL PLAN AND PERMIT. THIS UNIT MUST BE SHOWN ON LINES 13 THROUGH 18 OF THE GRID SKETCH BY DESIGN PERSONNEL. UNDERGROUND ELECTRICAL EXTENSIONS IN EXCESS OF 2,000 LINEAR FEET IN LENGTH OUTSIDE A SUBDIVISION CURRENTLY UNDER CONSTRUCTION WILL REQUIRE THE DUST CONTROL PLAN AND PERMIT.
UTT	MARKER TAPE; INSTALL DIRECTLY ON TOP OF PRIMARY DIRECT BURIED CABLES OR CONDUITS. USE WHEN REQUIRED BY OTHER AUTHORITIES.

RED CONCRETE

RED CONCRETE COLORANT FOR UNDERGROUND DUCT BANKS SHALL BE DRY POWDERED MIX READY DISINTEGRATING BAG CONCRETE COLORANT AS MANUFACTURED BY DAVIS COLORS AND SUPPLIED LOCALLY BY BORDER PRODUCTS, OR EQUAL PRODUCT. COLOR SHALL BE BAJA RED OR EQUAL COLOR, MIXED AT THE RATE OF 9 POUNDS OF DRY COLORANT PER CUBIC YARD OF CONCRETE (SRP STOCK NUMBER 5075320, MAG 'C' 2000 PSI). COLORANT SHALL BE ADDED TO THE CONCRETE MIX AT THE JOB SITE BY THE READY-MIX TRUCK OPERATOR, AND THEN MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNTIL THOROUGHLY BLENDED (TYPICALLY AT CHARGING SPEED FOR 5 MINUTES).

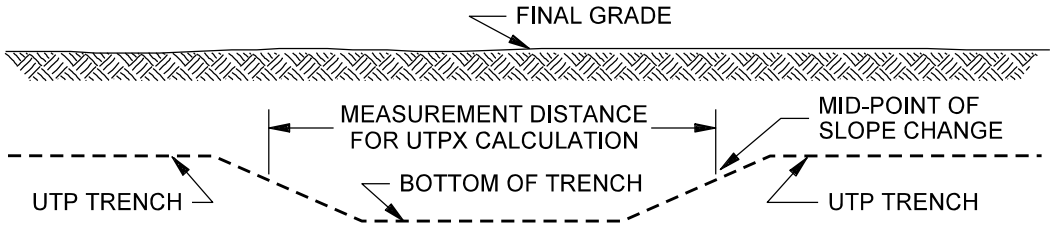
NOTES

1. ALL COMPATIBLE UNIT HOURS INCLUDE BACKFILL TIME.



NOTES

1. TRENCH DEPTHS AND CONDUIT COVER ARE TO BE MEASURED FROM FINAL GRADE STAKES. ALL TRENCH DEPTHS OR CONDUIT COVER REQUIREMENTS SPECIFIED ON A JOB DRAWING SHALL BE FOLLOWED.
2. THESE TRENCH CODES PROVIDE MAN-HOURS FOR EXCAVATION ONLY AND DO NOT PROVIDE FOR TRENCH BACKFILL.
3. THE TOTAL TRENCH FOOTAGE LENGTH WILL BE SHOWN IN THE GRID AS STANDARD TRENCH, EITHER UTP FOR PRIMARY OR UTS FOR SECONDARY, STREET LIGHT, OR SERVICE. WHEN TRENCH IS PROVIDED BY CUSTOMER, THIS IS THE ONLY CODING REQUIRED ON THE JOB GRID.
4. NON STANDARD TRENCH LOCATIONS WILL BE IDENTIFIED ON THE JOB ORDER SKETCH WITH REQUIRED WIDTH AND DEPTH DIMENSIONS GIVEN.
5. WHEN TRENCHING IS PROVIDED BY SRP, NON STANDARD TRENCHES SHALL HAVE 2 COMPATIBLE UNIT CODES IN THE GRID, UTP PLUS THE UTPX, TO ADJUST THE TIME FOR DIGGING.
6. WHEN SPECIFIED DEPTH CANNOT BE OBTAINED BECAUSE OF SOLID ROCK, A MINIMUM EARTH COVER OF 24" IS ACCEPTABLE, PROVIDED A MINIMUM 2" ENCASEMENT OF CONCRETE SURROUNDS THE CONDUIT.
7. USE EXAMPLE SHOWN TO FIGURE LENGTH OF UTPX TRENCH, UNLESS THE ENTIRE TRENCH IS NON STANDARD.



UTPX QUANTITY = THE FACTOR FROM THE UT-X CHART MULTIPLIED BY THE TRENCH FOOTAGE LENGTH WHICH IS NON-STANDARD, AS CALCULATED IN ITEM 4. IF MULTIPLE CALCULATIONS FOR NON-STANDARD TRENCH ARE MADE, ADD ALL TOTALS TOGETHER, ONLY ONE ENTRY IS NEEDED FOR UTPX QUANTITY IN THE GRID.

8. IF SECONDARY/SERVICE OR STREET LIGHT MUST BE PLACED IN P.U.E. OR ROAD R.O.W.,USE UTP TRENCH DIMENSIONS AND ENTER UTS AS THE COMPATIBLE UNIT.
9. PROVIDES 1.5 TIMES REGULAR MAN-HOURS.
10. TRENCH BOTTOM TO BE SMOOTH AND FREE OF SHARP ROCKS. WHERE EXCAVATION IS IN ROCK, BOTTOM OF TRENCH TO HAVE PROTECTIVE LAYER OF CLEAN, LEVEL, TAMPED BACKFILL OR SAND.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING EXCAVATION CODES	ISSUE DATE: 01/15/87 REV. DATE: 03/06/13 APPROVAL: B. PRIEST
	6-11-1	8513E135.DGN

	TRENCH WIDTH (INCHES)							
TRENCH DEPTH (FEET) ↓	**6**	**12**	**18**	**24**	**30**	**18**	**24**	**30**
2	-0.9	-0.8	-0.7	-0.6	-0.4	—	—	—
2.5	-0.9	-0.7	-0.6	-0.4	-0.3	—	—	—
3	-0.8	-0.7	-0.5	-0.3	-0.2	—	—	—
3.5	-0.8	-0.6	-0.4	-0.2	0.0	—	—	—
4	-0.8	-0.6	-0.3	-0.1	0.1	—	—	—
4.5	-0.8	-0.5	-0.3	0.0	0.3	—	—	—
5	-0.7	-0.4	-0.2	0.1	0.4	—	—	—
	PERSONNEL IN TRENCH REQUIRE PROTECTION*							
6	—	-0.3	0.0	0.3	0.7	0.4	0.8	1.1
7	—	-0.2	0.2	0.6	0.9	1.2	1.6	1.9
8	—	-0.1	0.3	0.8	1.2	2.1	2.6	3.0
9	—	—	0.5	1.0	1.5	3.3	3.8	4.3
10	—	—	0.7	1.2	1.8	4.7	5.2	5.8
11	—	—	0.8	1.4	2.1	6.3	6.9	7.5
12	—	—	1.0	1.7	2.3	8.1	8.8	9.4
13	—	—	1.2	1.9	2.6	—	—	—
14	—	—	1.3	2.1	2.9	—	—	—
15	—	—	1.5	2.3	3.2	—	—	—

* SEE EXCAVATION SAFETY RESOURCE MANUAL NOTES

1. THE MULTIPLIERS ON THIS CHART ARE USED TO CALCULATE AND ADJUST CONSTRUCTION MAN-HOURS AND MATERIAL WHEN DIGGING AND/OR BACKFILLING TRENCHES THAT ARE DIFFERENT THAN THE “STANDARD” COMPATIBLE UNITS.
2. THE MULTIPLIERS ARE USED WITH COMPATIBLE UNITS UTPX, UTPCX, UTNBPX, UTSBPX, UTABPX, AND UT1BPX TO ADD OR DELETE THE DIFFERENCES FROM THE STANDARD PRIMARY TRENCH COMPATIBLE UNITS.
3. WHEN A NEGATIVE MULTIPLIER IS NEEDED IN THE COMPATIBLE UNIT ESTIMATING (CUE) APPLICATION, ENTER “C” IN THE WORK FUNCTION FIELD, AND A NEGATIVE VALUE IN THE QUANTITY FIELD. THIS ENTRY WILL LAUNCH THE EXPANDED/SUBTRACTING FROM FIELD WHERE THE TRENCH TYPE CU BEING ADJUSTED IS ENTERED.
4. USE THE VALUES IN THE CHART THAT ARE THE **CLOSEST** TO THE ACTUAL TRENCH DIMENSIONS BY ROUNDING UP **OR** DOWN.
5. THESE MULTIPLIERS AND THE UTPX CODE MAY **NOT** BE USED WITH THE TRENCH CODE UTS.
6. SEE PG. 6-14-1 FOR AN EXAMPLE.

EXCAVATION BACKFILL CODES

1. UTNBP = COMPLETE NATIVE BACKFILL FOR A UTP TRENCH
2. UTNBS = COMPLETE NATIVE BACKFILL FOR A UTS TRENCH
3. UTNBPX = NATIVE BACKFILL, USE FOR ADDING OR DELETING MAN-HOURS FOR NON-STANDARD TRENCH (SEE UT-X CHART, PG. 6-11-2)
4. UTABP = COMPLETE ABC BACKFILL (5075318) FOR A UTP TRENCH
5. UTABX = COMPLETE ABC BACKFILL (5075318) FOR UTS TRENCH
6. UTABPX = ABC BACKFILL (5075318), USED FOR ADDING OR DELETING MAN-HOURS AND MATERIAL FOR NON-STANDARD SIZE TRENCH (SEE UT-X CHART AND EXCAVATION NOTES)
7. UTLBP = COMPLETE LEAN MIX BACKFILL (CLSM 1/2 SACK 5075313) OF A UTP TRENCH
8. UTLBS = COMPLETE LEAN MIX BACKFILL (CLSM 1/2 SACK 5075313) OF A UTS TRENCH
9. UTLBPX = LEAN MIX (CLSM 1/2 SACK 5075313) USED FOR ADDING OR DELETING MAN-HOURS AND MATERIAL FOR NON-STANDARD SIZE TRENCH (SEE UT-X CHART AND EXCAVATION NOTES)
10. UTSBP = COMPLETE SLURRY BACKFILL (CLSM 1-1/2 SACK 5075315) OF A UTP TRENCH
11. UTSBS = COMPLETE SLURRY BACKFILL (CLSM 1-1/2 SACK 5075315) OF A UTS TRENCH
12. UTSBPX = SLURRY (CLSM 1-1/2 SACK 5075315) USED FOR ADDING OR DELETING MAN-HOURS AND MATERIAL FOR NON-STANDARD SIZE TRENCH (SEE UT-X CHART AND EXCAVATION NOTES)
13. UT1BP = COMPLETE 1 SACK BACKFILL (5075314) OF A UTP TRENCH
14. UT1BS = COMPLETE 1 SACK BACKFILL (5075314) OF A UTS TRENCH
15. UT1BPX = 1 SACK (5075314) USED FOR ADDING OR DELETING MAN-HOURS AND MATERIAL FOR NON-STANDARD SIZE TRENCH (SEE UT-X CHART AND EXCAVATION NOTES)

NOTES

THE UT-X CHART (PG. 6-11-2) IS TO BE USED WHEN CALCULATING MAN-HOUR AND MATERIAL ADJUSTMENTS FOR NON-STANDARD PRIMARY TRENCH BACKFILL WHEN THE FOLLOWING CONDITIONS EXIST:

1. THE TRENCH IS NARROWER, SHALLOWER, WIDER AND/OR DEEPER THAN THE STANDARD UTP TRENCH BY 6" OR MORE.
2. THE BACKFILL CONSISTS OF TWO OR MORE DIFFERENT TYPES (I.E. ABC AND NATIVE WILL BE USED TO FILL THE TRENCH).
3. THERE IS A CONCRETE ENCASED CONDUIT BANK PARTIALLY BACKFILLING THE TRENCH AND ADJUSTMENT TO THE REMAINING AMOUNT OF BACKFILL NEEDS TO BE MADE.

EXCEPTION: TRENCHES REQUIRING SLOPING ASSUME A DUCT BANK WILL BE INSTALLED. TIME AND MATERIAL HAVE BEEN ADJUSTED ALREADY.

4. ANYTIME IT IS KNOWN THAT APPROXIMATELY ONE FOOT OR MORE OF THE TRENCH BOTTOM WILL BE COMPLETELY FILLED WITH SOMETHING OTHER THAN THE NATIVE FILL. EXCESS NATIVE FILL CANNOT BE PLACED BACK INTO THE TRENCH AND WILL HAVE TO BE HAULED OFF SITE.
5. THE MAN-HOURS INCLUDE TIME TO HAUL AWAY NATIVE BACKFILL.

STREET CROSSING SURFACE REPAIR CODES

1. UTSRAP= ASPHALT CONCRETE (A.C.) HOT MIX PAVEMENT STREET REPAIR FOR A UTP TRENCH, 1' X 2' WIDTH X 2" DEPTH (0.06 TON HOT MIX ASPHALT). SEE NOTE 5.

2. UTSRAPX= SAME AS #1 BUT IN 1 SQ. FT. INCREMENTS (0.03 TON HOT MIX ASPHALT). SEE NOTES 1 AND 5.

3. UTSRC= CONCRETE STREET REPAIR, 1' X 4' WIDTH X 8" DEPTH (0.1 CUBIC YARD STOCK #5075323).

4. UTSRCX= SAME AS #3 BUT IN 1 SQ. FT. INCREMENTS (0.03 CUBIC YARD STOCK #5075323. SEE NOTE 1.

5. UTSRAC= ABC AND A.C. PAVEMENT COURSE REPAIR, 1' X 4' WIDTH X 2" DEPTH (0.1 TON HOT MIX ASPHALT). SEE NOTE 5

6. UTSRACX= SAME AS #5 BUT IN 1 SQ. FT. INCREMENTS (0.03 TON HOT MIX ASPHALT). SEE NOTES 1 AND 5.

7. UTSRCA= COMPACTED ABC OR 1 SACK CLSM AND A.C. PAVEMENT COURSE REPAIR, 1' X 4' WIDTH X 2" DEPTH EACH (0.15 CUBIC YARD STOCK #5075134 & 0.10 TON HOT MIX ASPHALT). SEE NOTE 5.

8. UTSRCAX= SAME AS #7 BUT IN 1 SQ. FT. INCREMENTS (0.04 CUBIC YARD STOCK #5075134 & 0.03 TON HOT MIX ASPHALT). SEE NOTES 1 AND 5.

9. UTRGC= CURB AND GUTTER REPAIR (ROLLED OR SQUARE) FOR ONE FOOT OF LENGTH (0.04 CUBIC YARD STOCK #5075323).

NOTES

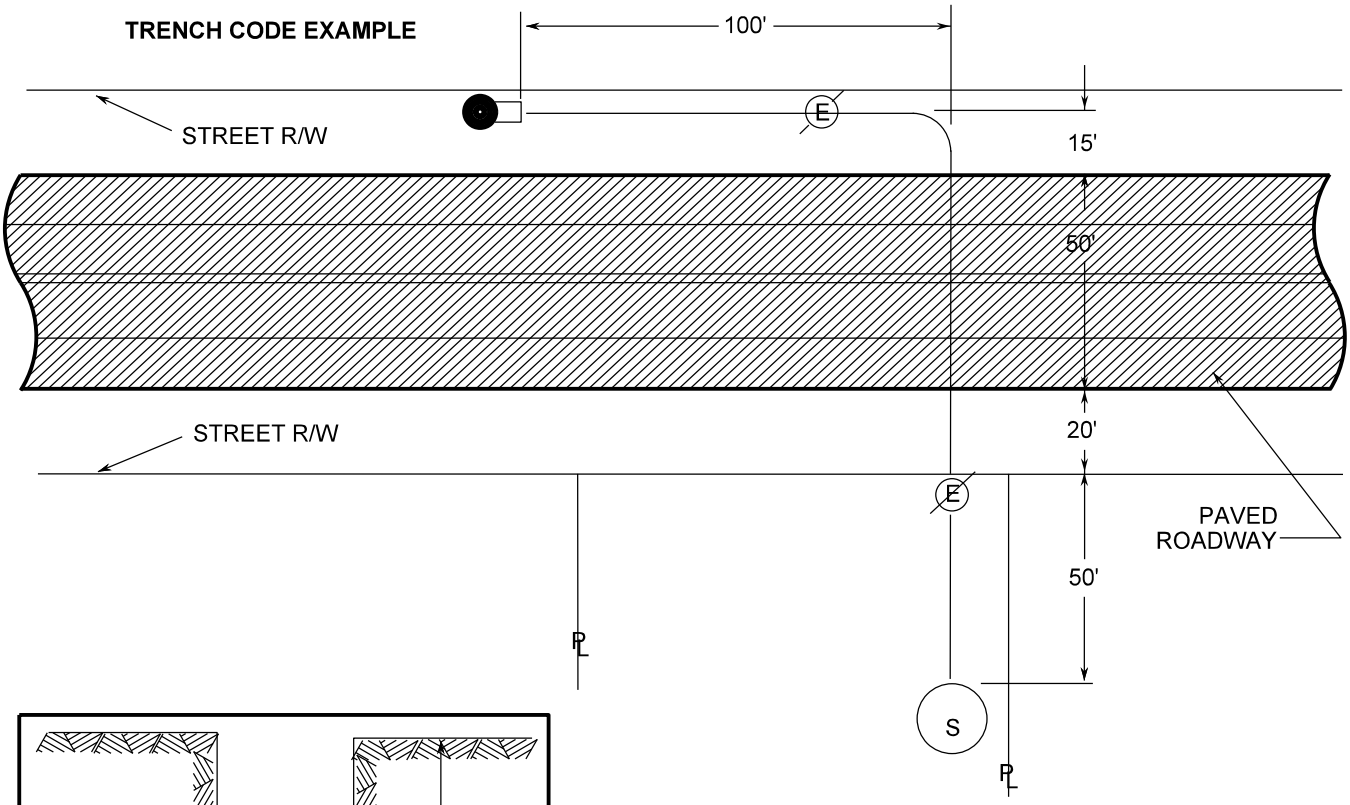
1. MULTIPLY THE LENGTH OF THE REPAIR (IN FEET) TIMES THE WIDTH OF THE REPAIR (IN FEET) FOR THE QUANTITY TO BE USED. ROUND OFF DIMENSIONS TO NEAREST FOOT.

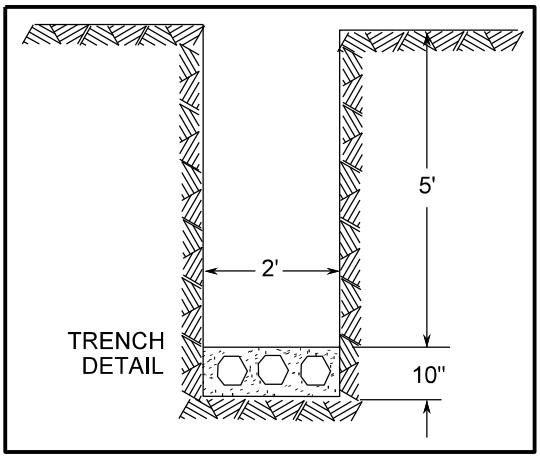
2. MINIMUM TRENCH WIDTH IN PUBLIC RIGHT-OF-WAY IS 12".

3. THESE CODES MAY BE USED TO REPAIR ASPHALT OR CONCRETE IN OTHER LOCATIONS, NOT IN A PUBLIC RIGHT-OF-WAY (E.G. PARKING LOTS OR PRIVATE DRIVEWAYS).

4. SPOIL REMOVAL TIME IS INCLUDED IN THE CONCRETE, CLSM AND ABC BACKFILL COMPATIBLE UNIT CODES.

5. HOT MIX ASPHALT SHALL MEET THE GOVERNING MUNICIPALITIES' REQUIREMENTS.





THIS EXAMPLE REQURIES A 24" WIDE BY 70" (6 FEET) DEEP TRENCH WITH A UKB3 DUCT BANK INSTALLED IN IT. THE BACKFILL IS NATIVE, EXCEPT FOR THE STREET CROSSING, BECAUSE THE CITY HAS REQURIED A SPECIFIC TYPE OF STREET REPAIR WITH CLSM, UNDER THE PAVED PORTION OF THE STREET.

1. FIRST, ACCOUNT FOR THE NECESSARY STANDARD TRENCH DIGGING CODES IN THE GRID:
   A. THE STANDARD TRENCH DIGGING CODE WILL ALWAYS BE IN THE GRID WITH THE ACTUAL LENGTH OF THE TRENCH. IN THIS CASE, 235 FEET OF PRIMARY TRENCH IS NEEDED.

      THE GRID SHOWS UTP = 235

   B. EXTRA TIME IS NEEDED TO DIG BECAUSE THE TRENCH IS 6 FEET DEEP. USING THE UT-X CHART, LOOK UP THE MULTIPLIER FOR A 2-FOOT WIDE BY 6-FOOT DEEP TRENCH, WHICH IS 0.3. MULTIPLY THE LENGTH OF THE TRENCH BEING DUG, IN THIS CASE ALL 235 FEET, BY THE MULTIPLIER, 235 X 0.3 = (70.5), ROUND TO 71.

      THE GRID SHOWS UTPX = 71

   C. TO CUT AND REMOVE THE ASPHALT, SHOW THE LEGTH OF CUT REQUIRED.

      THE GRID SHOWS UTCRA = 50

NOTE: *THIS COMPLETES DIGGING OF THE TRENCH AND REMOVAL OF ASPHALT.*

2. SECOND, ACCOUNT FOR THE NECESSARY STANDARD TRENCH BACKFILL CODES IN THE GRID. THE STANDARD TRENCH BACKFILL CODES WILL ALWAYS BE IN THE GRID WITH THE ACTUAL TRENCH LENGTH OF EACH TYPE OF BACKFILL REQURIED. THIS CASE HAS MULTIPLE TYPES OF BACKFILL REQUIRED.

   A. NATIVE BACKFILL MAY BE USED FOR THE ENTIRE TRENCH EXCEPT UNDER THE ASPHALT. PER THE EXAMPLE, 185 FEET WILL HAVE NATIVE BACKFILL.

      THE GRID SHOWS UTNBP = 185

   B. NEXT, CALCULATE MAN-HOURS AND MATERIAL. THIS TRENCH HAS BEEN PARTIALLY FILLED WITH A DUCT BANK AND IS DEEPER THAN THE STANDARD. USING THE UT-X CHART, LOOK UP THE MULTIPLIER FOR THE SIZE OF TRENCH REMAINING TO BE FILLED WITH NATIVE BACKFILL. IN THIS CASE, THE MULTIPLIER IS 0.1 (2 FT. WIDE X 5 FT. DEEP). MUTIPLY THE LENGTH OF TRENCH, 185 X 0.1 = 18.5, ROUND TO 19.

      THE GRID SHOWS UTNBPX = 19

3. CONTROLLED LOW STRENGTH MATERIAL BACKFILL IS REQURIED FOR THE ROAD-CROSSING PORTION OF THE TRENCH.

   THE GRID SHOWS UTSBP = 50

4. CALCULATE THE MAN-HOURS AND MATERIAL AS IN 2.B. USING THE UT-X CHART, THE MULTIPLIER IS THE SAME AS 2.B. MULTIPLY 50 FT. X 0.1 = 5.0

   THE GRID SHOWS UTSBPX = 5.0

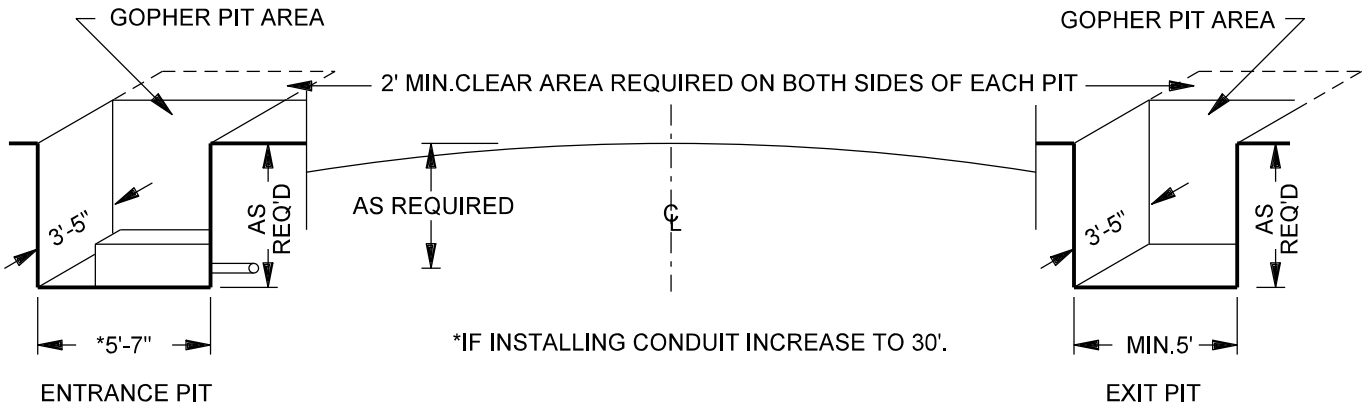
5. A.C. PAVEMENT REPAIR IS REQUIRED FOR THE STREET-CROSSING PORTION OF THE TRENCH. STANDARD REPAIR IS FOR A 2 FT. WIDE TRENCH WITH 1 FT. ON EACH SIDE FOR "T" TOP.

   THE GRID SHOWS UTSRAC = 50

6. ADJUSTMENT FOR ADDITIONAL TRENCH WIDTH IS NOT REQUIRED IN THIS CASE. FOR THIS TYPE OF REPAIR IN ANY OTHER WIDTH TRENCH, USE THE COMPATIBLE UNIT UTSRACX INSTEAD FOR THE ACTUAL WIDTH INVOLVED.

GOPHER BORE

NO CASING



SEE NOTE 8

UTH2	2"BORE
UTH3	3"BORE
UTH4	4"BORE
UTH5	5"BORE
UTH6	6"BORE

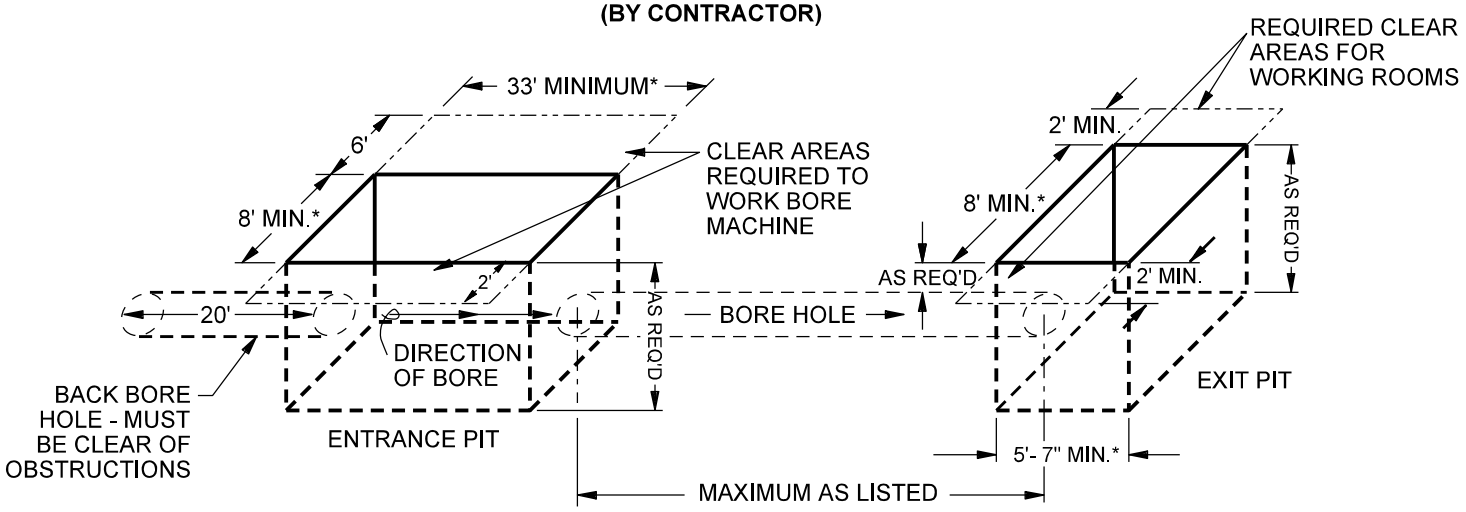
NOTES

1. THIS BORE IS INSTALLED WITH A GOPHER (UNGUIDED).
2. PLASTIC CONDUIT SIZED AT LEAST 1/2" SMALLER THAN THE BORE MAY BE INSTALLED BUT MUST BE CALLED FOR SEPARATELY.
3. NO MULTIPLE BORES MAY BE INSTALLED.
4. FOR 2" & 3" BORES, MAINTAIN A MINIMUM CLEARANCE OF 2' FROM OTHER UTILITIES TO AVOID POSSIBLE DAMAGE. FOR 4" & 5" BORES, MAINTAIN A MINIMUM CLEARANCE OF 3'.
5. MAXIMUM LENGTH OF THIS BORE IS 80'.
6. THIS BORE IS MAINLY FOR USE UNDER SIDEWALKS, DRIVEWAYS AND PARKING LOTS.
7. ENTRANCE AND EXIT PITS SHALL BE SHORED OR SLOPED AS REQUIRED BY THE SRP EXCAVATION SAFETY MANUAL, LATEST REVISION.
8. COMPATIBLE UNITS MUST BE REQUESTED ON A PER FOOT BASIS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING BORING SPECIFICATION GUIDE	ISSUE DATE: 01/15/87 REV. DATE: 04/09/10 APPROVAL: B. PRIEST
	6-15-1	8513E89.DGN

AUGER BORE

CASING
(BY CONTRACTOR)



*ACTUAL DIMENSIONS REQUIRED TO BE PROVIDED BY CONTRACTOR(S) AND SHALL BE PROVIDED TO SRP PRIOR TO AWARDING OF THE CONTRACT.

SEE NOTE 7

UTH12	12"BORE (MAXIMUM LENGTH: 120')
UTH18	18"BORE (MAXIMUM LENGTH: 180')
UTH24	24"BORE (MAXIMUM LENGTH: 300')
UTH30	30"BORE (MAXIMUM LENGTH: 300')

NOTES

1. THIS CASING IS INSTALLED WITH A BORE AUGER MACHINE. MINIMUM CASING THICKNESS SHALL BE:
   12 INCH I.D. CASING = 3/16"
   18 INCH I.D. CASING = 1/4"
   24 INCH I.D. CASING = 1/4"
   30 INCH I.D. CASING = 5/16"
   THE GRADE OF STEEL SHALL BE ASTM A-283, GRADE C. CASINGS OF GREATER THICKNESS MAY BE REQUIRED FOR SOME OR ALL OF DIFFICULT INSTALLATIONS OR FOR OTHER GOVERNING AGENCIES' REQUIREMENTS.
2. SEE UKB3C-UKB12C FOR CONDUIT ARRANGEMENTS.
3. USE DB TYPE CONDUITS INSIDE BORE CASING.
4. THE INSIDE CASING AREA AROUND THE CONDUITS MUST BE FILLED WITH GROUT TO PROVIDE ADEQUATE COOLING FOR THE CONDUCTORS AND MUST BE INSTALLED BY PRESSURE PUMPING.
   A. INSTALL A 2" PVC CONDUIT THROUGH THE BORE CASING (ON TOP OF THE RACKED CONDUITS
   B. GROUT ONE END OF CASING TO CAP. (END OPPOSITE GROUT PUMPING EQUIPMENT)
   C. PUMP GROUT THROUGH THE 2" CONDUIT INTO THE CAPPED END OF THE BORE CASING. AS THE GROUT FILLS THE BORE CASING, THE 2" CONDUIT WILL BE FORCED OUT OF THE OPEN END.
      NOTE: SUFFICIENT FORCE MUST BE MAINTAINED ON THE 2" CONDUIT WHILE PUMPING TO ENSURE COMPLETE CASING FILL
   D. THE EXCESS 2" CONDUIT WILL NEED TO BE CUT OFF AS IT IS FORCED OUT OF THE CASING THE LENGTH OF THE SECTIONS DEPENDS ON THE SIZE OF THE BORE PIT.
   E. FILL CASING COMPLETELY FROM END CAP TO FILLING END.
5. LARGER CASINGS THAN CALLED FOR MAY BE REQUIRED IF RIVER ROCK OR ADVERSE CONDITIONS ARE ENCOUNTERED.
6. AREA FOR SPOIL NEEDS TO BE PROVIDED FOR AT THE JOB SITE. IF NOT POSSIBLE, SPECIAL ARRANGEMENTS MUST BE MADE TO HAUL SPOIL OFF SITE AND RETURN IT. THE AVERAGE SIZE ENTRANCE PIT WILL NEED AN AREA 25' SQUARE FOR SPOILS.
7. COMPATIBLE UNITS MUST BE REQUESTED ON A PER FOOT BASIS.
8. CASE BORE CONTRACTOR TO PROVIDE SRP WITH CASE BORE AND SPACER PROJECT PLANS FOR APPROVAL. ELECTRICAL CONDUIT SHALL BE PLACED ON THE OUTSIDE POSITIONS FOR HEAT DISSIPATION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING BORING SPECIFICATION CODES	ISSUE DATE: 06/27/90 REV. DATE: 04/09/10 APPROVAL: B. PRIEST
	6-16-1	8513E90.DGN

GUIDED BORING

COMPATIBLE UNITS FOR GENERATING ESTIMATED COSTS:

1. OUTSIDE CONTRACTORS PROVIDE ALL GUIDED BORES. TO GENERATE ESTIMATED JOB COSTS, DO NOT USE THE "G" (GIFT) WORK FUNCTION, SINCE SRP IS RESPONSIBLE FOR THE COSTS.

2. LISTED BELOW ARE THE GUIDED BORING COMPATIBLE UNITS. CHOOSE THE APPROPRIATE CU DEPENDING ON THE DIAMETER AND LENGTH OF THE BORE. ENTER THE ACTUAL BORE FOOTAGE INTO THE COMPATIBLE UNIT ESTIMATING SYSTEM.

3. THE GUIDED BORING COMPATIBLE UNITS LISTED BELOW INCLUDE COSTS ASSOCIATED WITH BORE PITS, SUCH AS BACKFILL, AND CONCRETE AND ASPHALT CUTTING AND REPAIR.

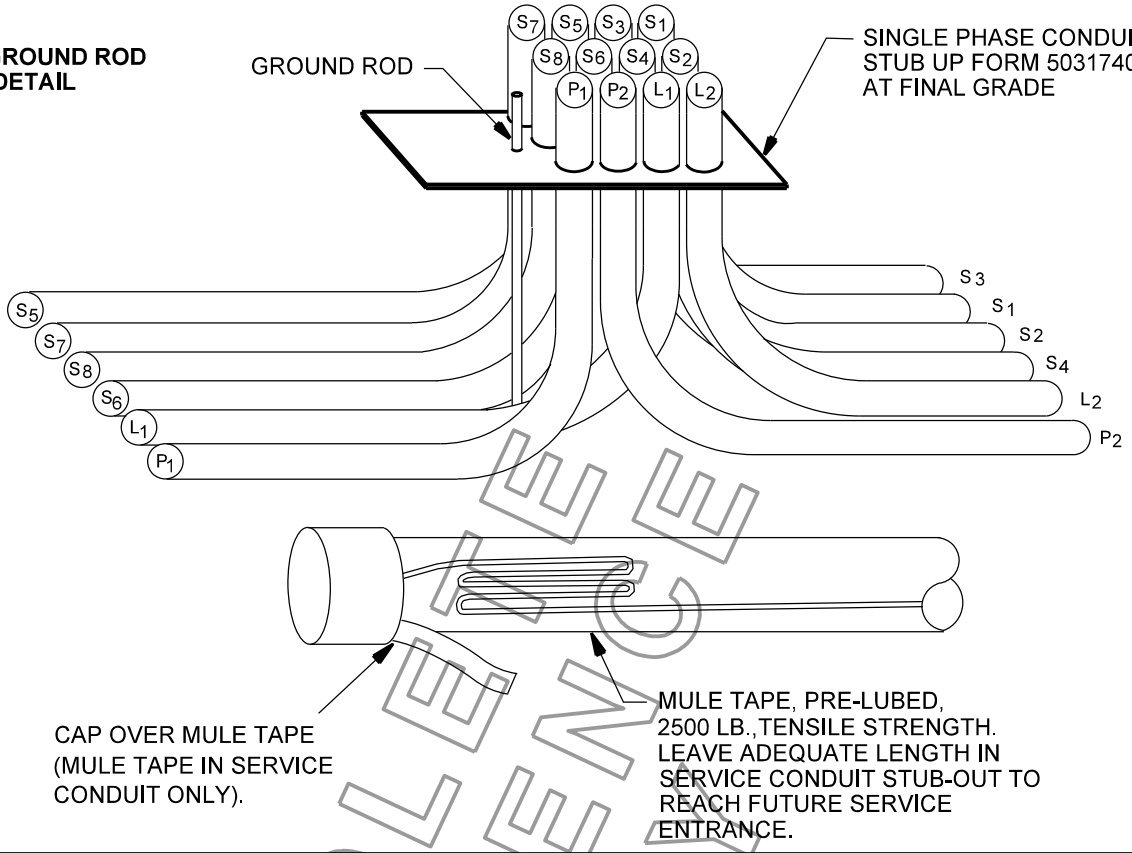
GUIDED BORING, 200 LINEAR FEET OR LESS

UTHG41	4" GUIDED BORE
UTHG61	6" GUIDED BORE
UTHG81	8" GUIDED BORE
UTHG101	10" GUIDED BORE
UTHG121	12" GUIDED BORE
UTHG141	14" GUIDED BORE
UTHG161	16" GUIDED BORE

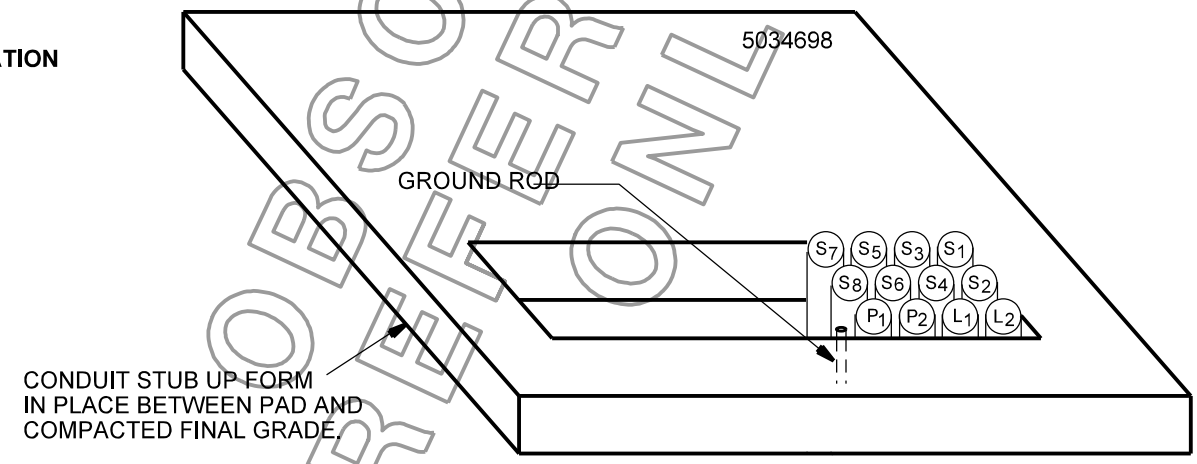
GUIDED BORING, MORE THAN 200 LINEAR FEET

UTHG42	4" GUIDED BORE
UTHG62	6" GUIDED BORE
UTHG82	8" GUIDED BORE
UTHG102	10" GUIDED BORE
UTHG122	12" GUIDED BORE
UTHG142	14" GUIDED BORE
UTHG162	16" GUIDED BORE

CONDUIT AND GROUND ROD INSTALLATION DETAIL



FINAL CONFIGURATION



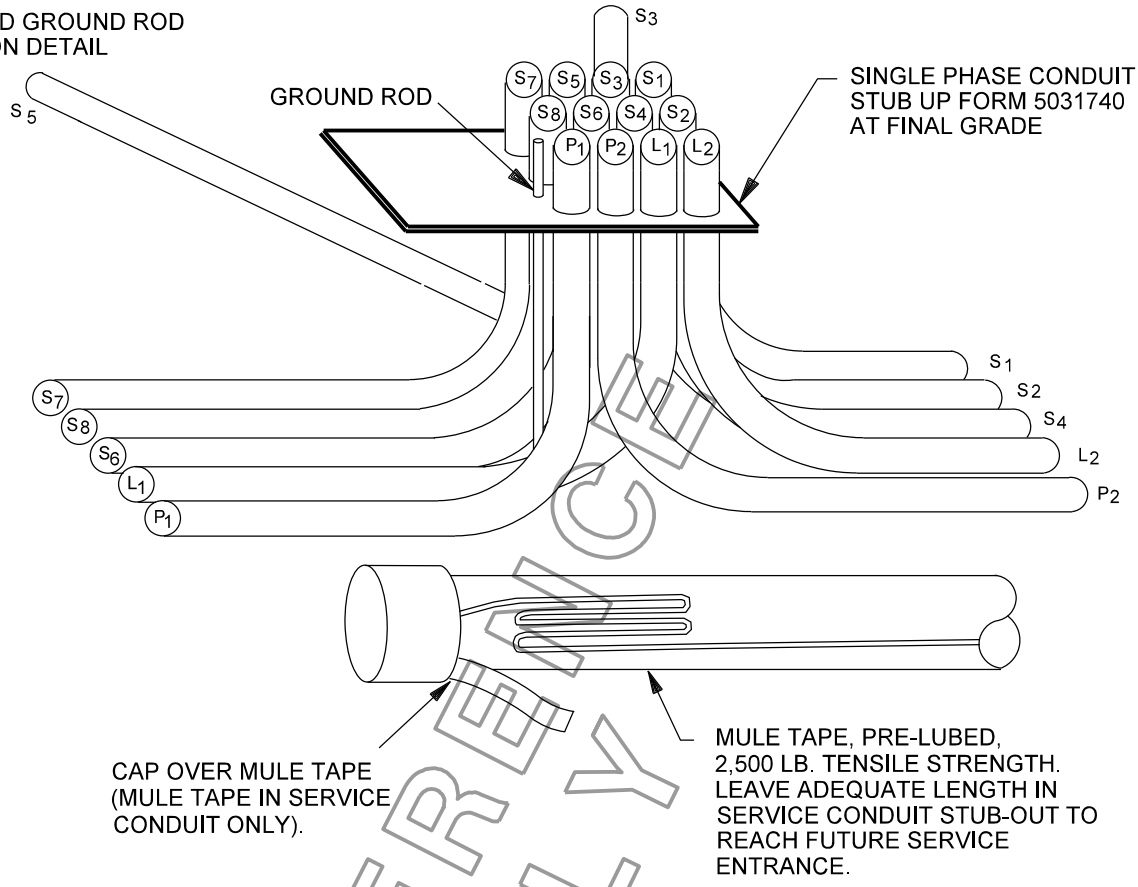
OBSOLENCE REFERENCE ONLY

NOTES

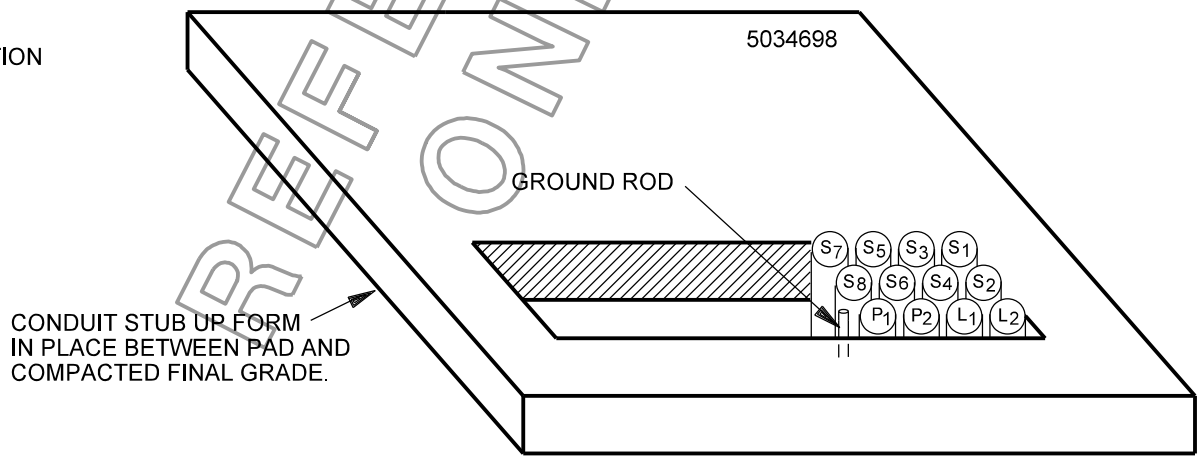
1. CONDUIT STUB UP INTO TRANSFORMER PAD IS TO BE PER DETAIL ON PAGE 9-11-1.
2. EVERY CONDUIT END SHALL BE CAPPED BUT NOT GLUED.
3. CUSTOMER SERVICE CONDUIT EXTENSION IS TO BE PER ELECTRIC SERVICE SPECIFICATION (ESS) PAGES 317-320.
4. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS AND LEVELED TO FINAL GRADE.
5. PAD TO BE SET ON TOP OF SINGLE PHASE CONDUIT STUB-UP FORM.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	REV: UPDATED STOCK CODES.	
	TRENCHING RESIDENTIAL CONDUIT STUB UP DETAIL - SMALL LOT	ISSUE DATE: 07/15/94 REV. DATE: 11/31/14 APPROVAL: B.PRIEST
	6-18-1	8513E209.DGN

CONDUIT AND GROUND ROD
INSTALLATION DETAIL



FINAL
CONFIGURATION

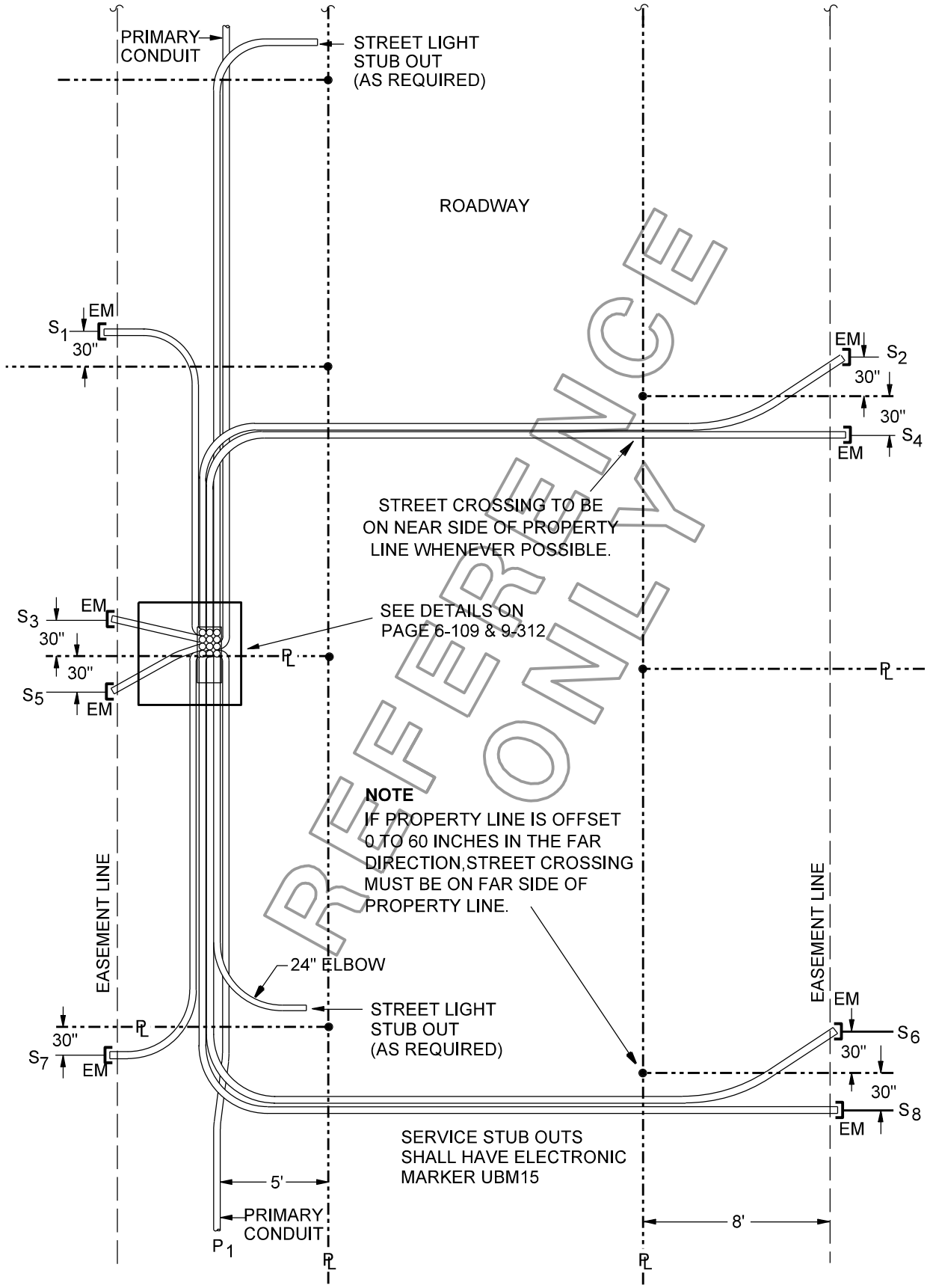


REFERENCE ONLY

NOTES

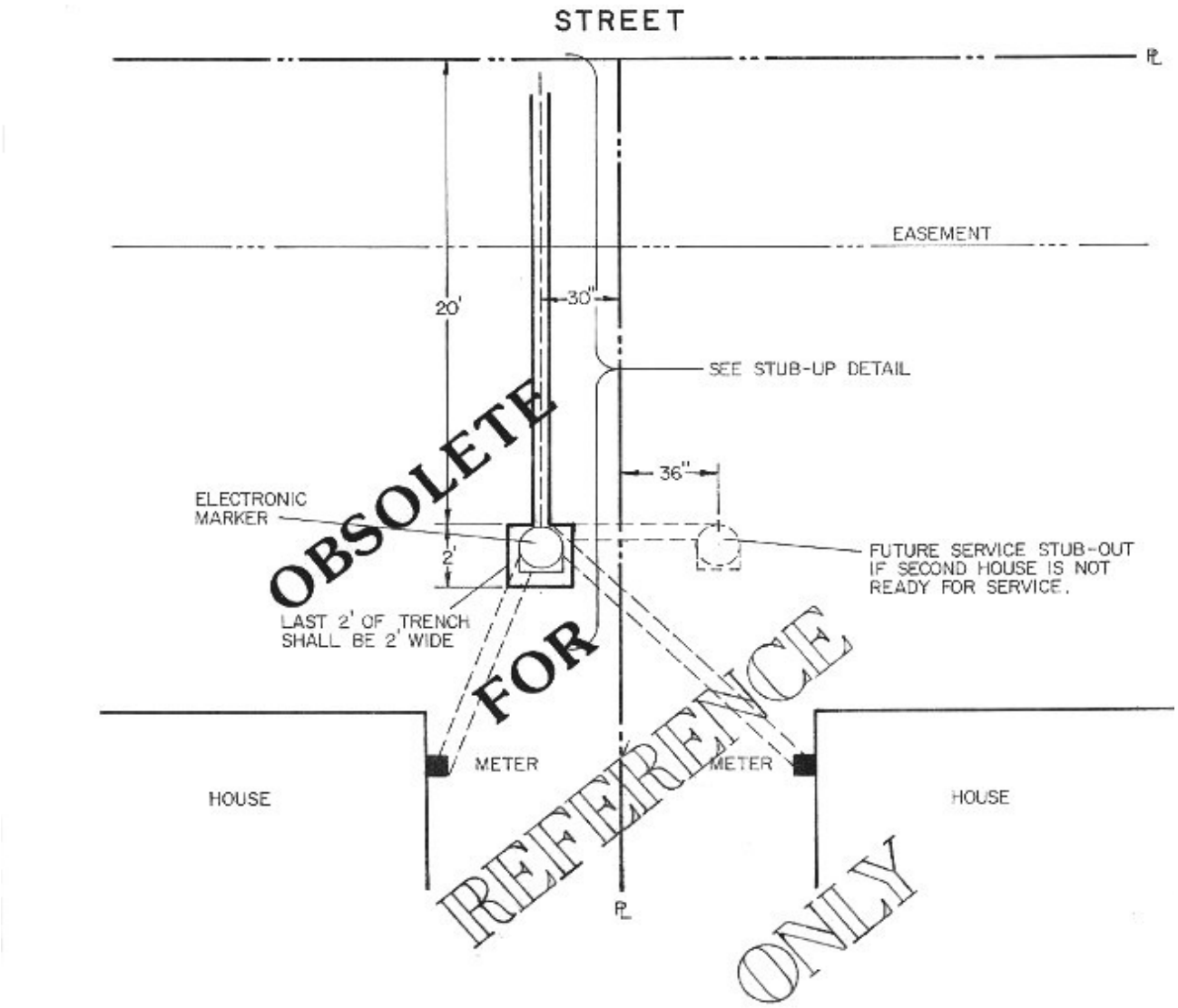
1. CONDUIT STUB UP INTO TRANSFORMER PAD IS TO BE PER DETAIL ON PAGE 9-11-1.
2. EVERY CONDUIT END SHALL BE CAPPED BUT NOT GLUED.
3. CUSTOMER SERVICE CONDUIT EXTENSION IS TO BE PER ELECTRIC SERVICE SPECIFICATIONS (ESS) PAGES 317-320.
4. AREA UNDER PAD MUST BE COMPACTED PER TRENCH SPECIFICATIONS AND LEVELED TO FINAL GRADE.
5. PAD TO BE SET ON TOP OF SINGLE PHASE CONDUIT STUB UP FORM.

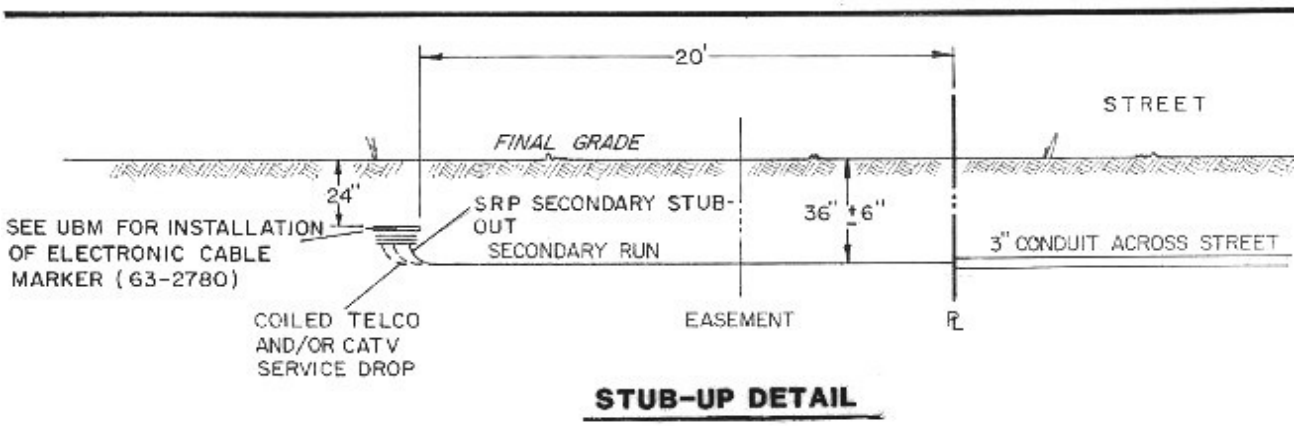
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING RESIDENTIAL CONDUIT STUB UP DETAIL - LARGE LOT	ISSUE DATE: 03/15/93 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	6-19-1	8513E171.DGN



REFERENCE ONLY

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	TRENCHING RESIDENTIAL CONDUIT SYSTEM LARGE LOT	ISSUE DATE: 03/15/93 REV. DATE: 04/11/10 APPROVAL: B.PRIEST
	6-20-1	8513E172.DGN

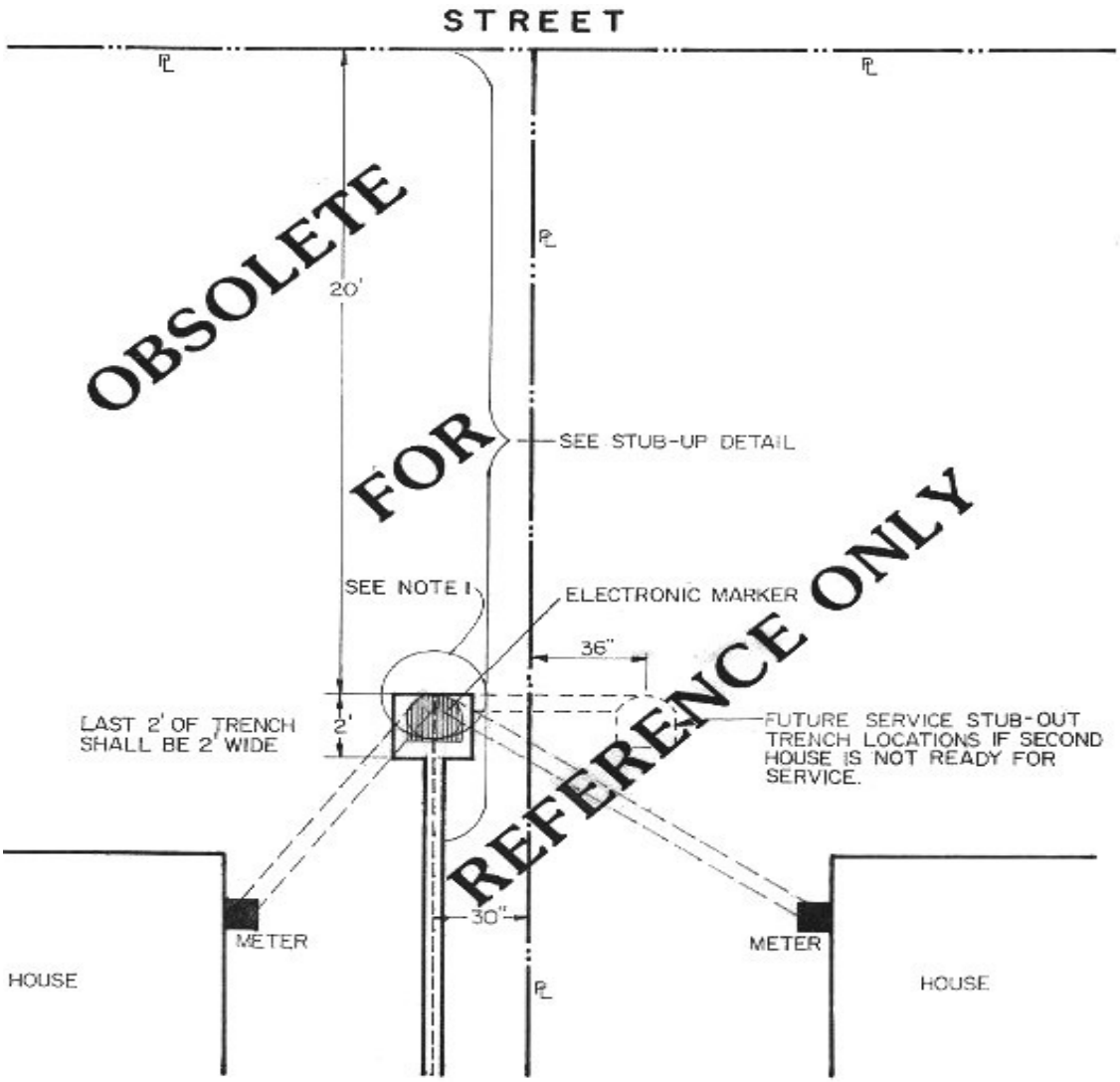




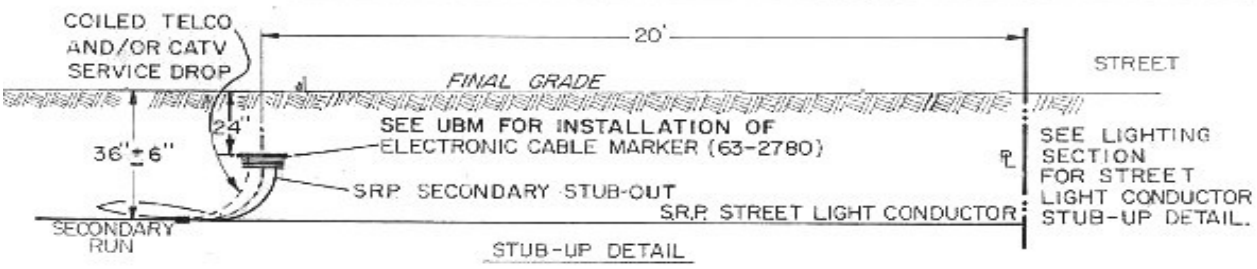
STUB-UP DETAIL

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING SERVICE STUB-OUT LOCATION FRONT LOT INSTALLATION	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-21-1	UG6-21-1.doc

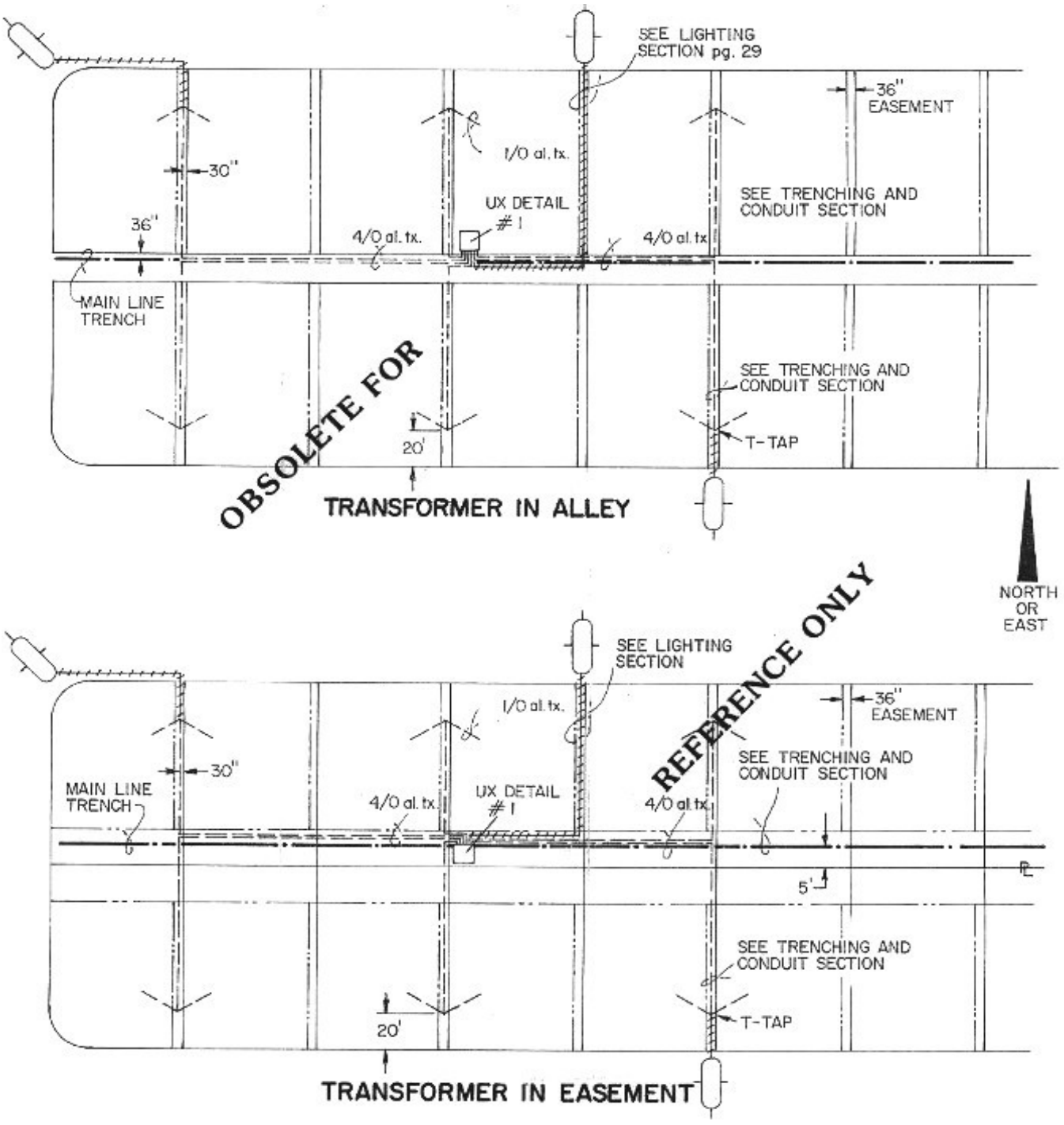
OBSOLETE FOR REFERENCE ONLY



1. Street light conductors will be connected when secondary is installed.
2. A T-tap connector shall be installed at the end of the secondary run when the services are installed. If the location of the second meter cannot be determined, stub service out as shown.
3. Refer to CONNECTORS, SPLICES AND TERMINATIONS section for installation of T-tap and street light conductors where applicable.



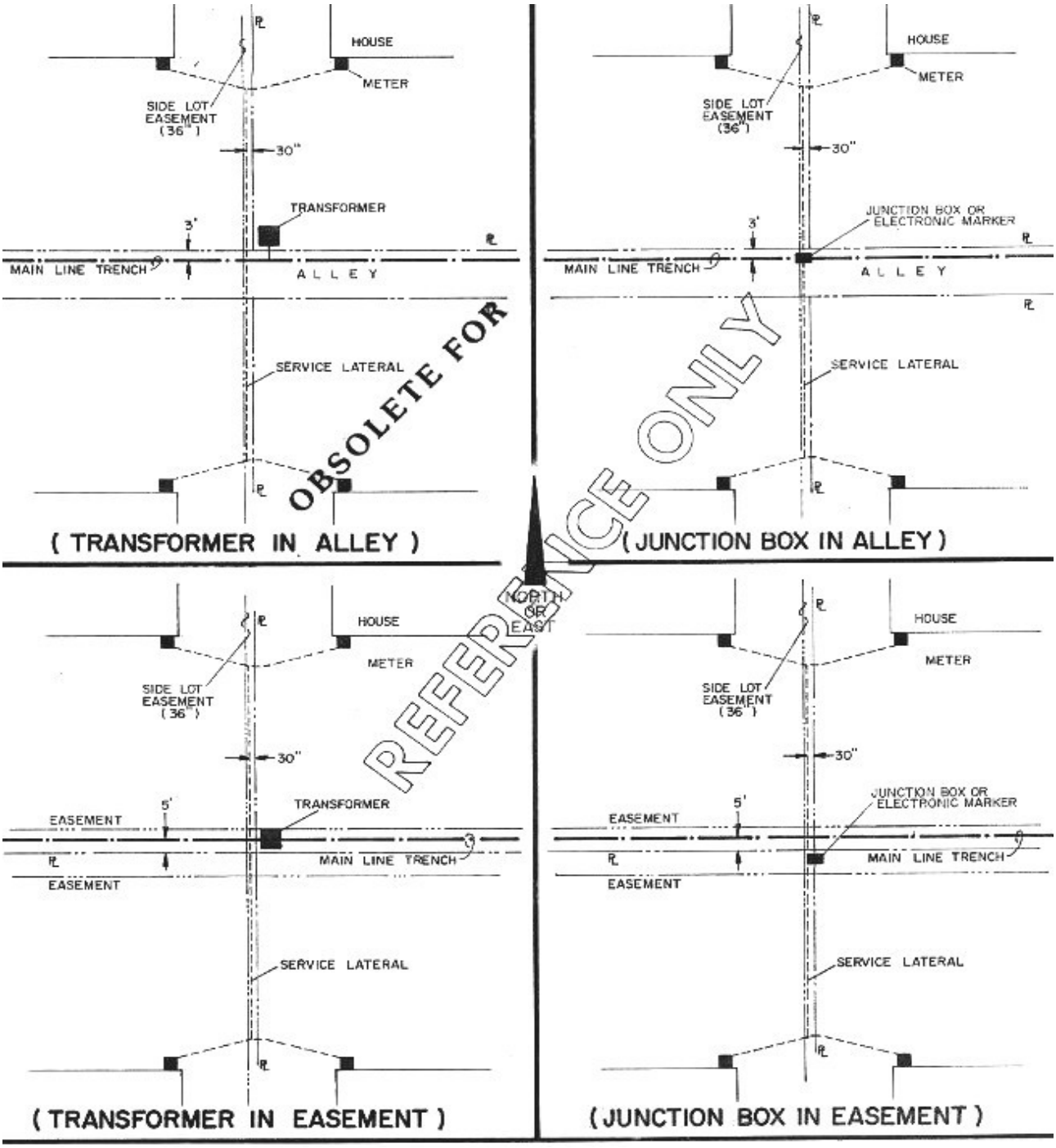
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING SERVICE STUB-OUT LOCATION REAR LOT INSTALLATION	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-22-1	UG6-22-1.doc



NOTES

1. Cable shall be identified per Miscellaneous section, Procedure #1.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING TYPICAL SECONDARY AND SERVICE REAR LOT INSTALLATION	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-23-1	UG6-23-1.doc

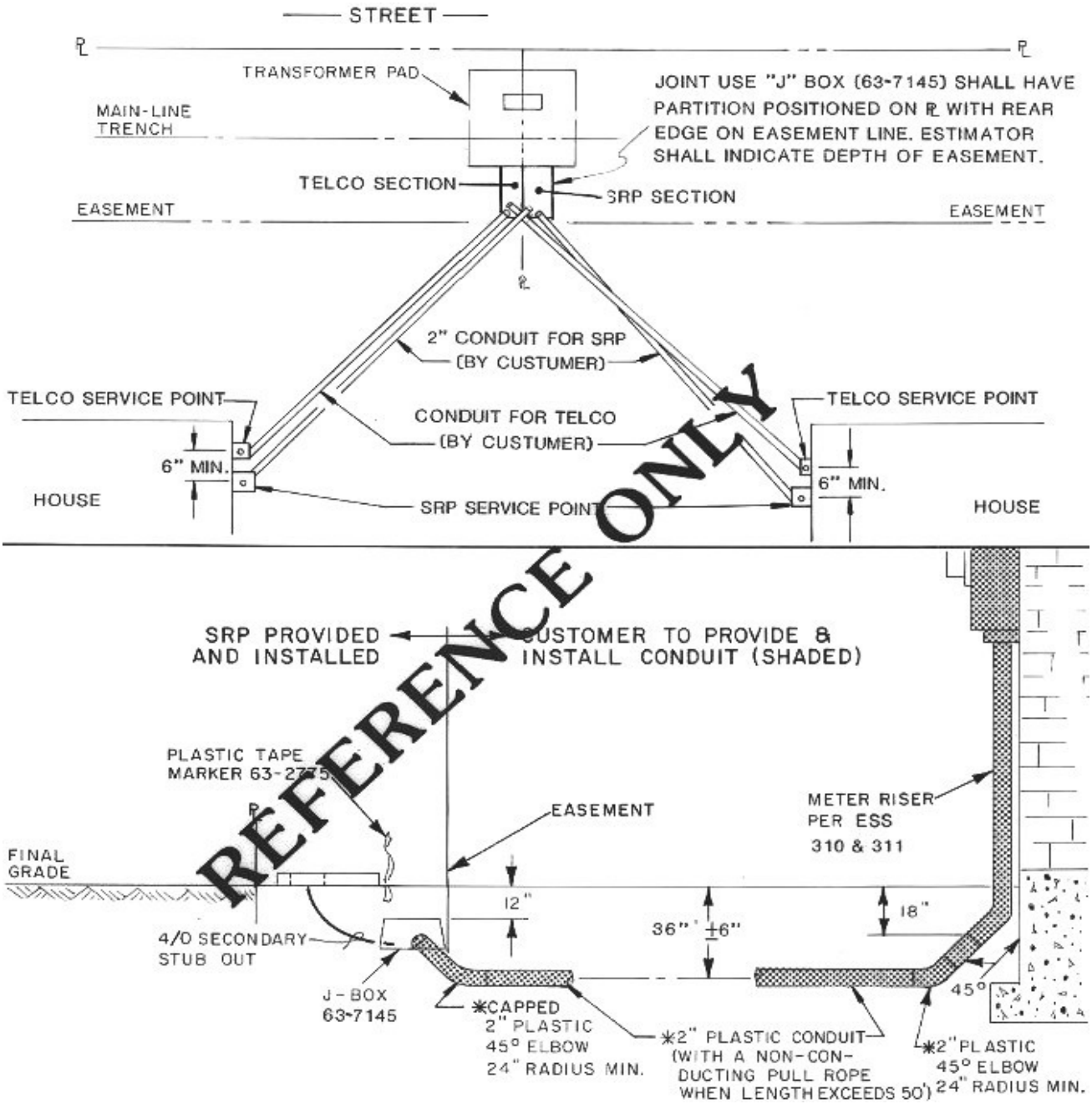


OBSOLETE FOR REFERENCE ONLY

NOTES

1. For typical service entrance details, see *Electric Service Specifications*.
2. Locate meter on corner of building nearest to the transformer or junction box. Location must be approved by SRP prior to installation of meter loop.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING PREFERRED LOCATIONS REAR LOT	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-24-1	UG6-24-1.doc



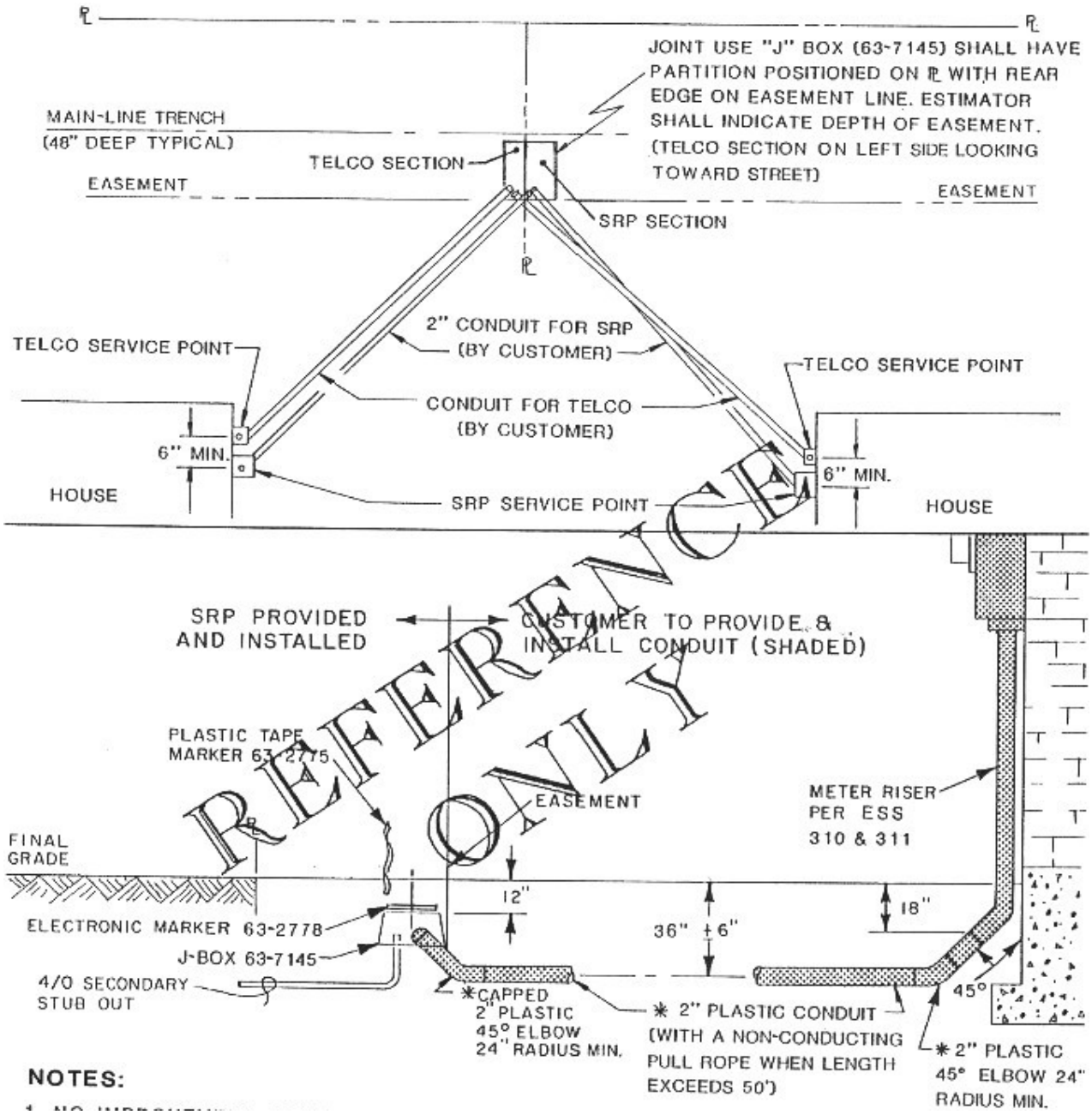
REFERENCE ONLY

NOTES

1. No improvement shall be made which will prevent access to the j-box (i.e. paving or concrete cover).
2. For service other than 1 Ø, 200 amp, consult *Electric Service Specifications* for conduit size.
3. Maximum service length shall be 100 ft. with equivalent bends not exceeding 270°.
4. Contact Policies, Procedures and Standards for situations not covered.

∗ SRP service conduit shown; phone conduit is as specified by TELCO.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING SERVICE STUB-UP, FRONT LOT INSTALLATION 1 Ø, 200 AMP WITH TRANSFORMER (SEE NOTE 2)	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-25-1	UG6-25-1.doc



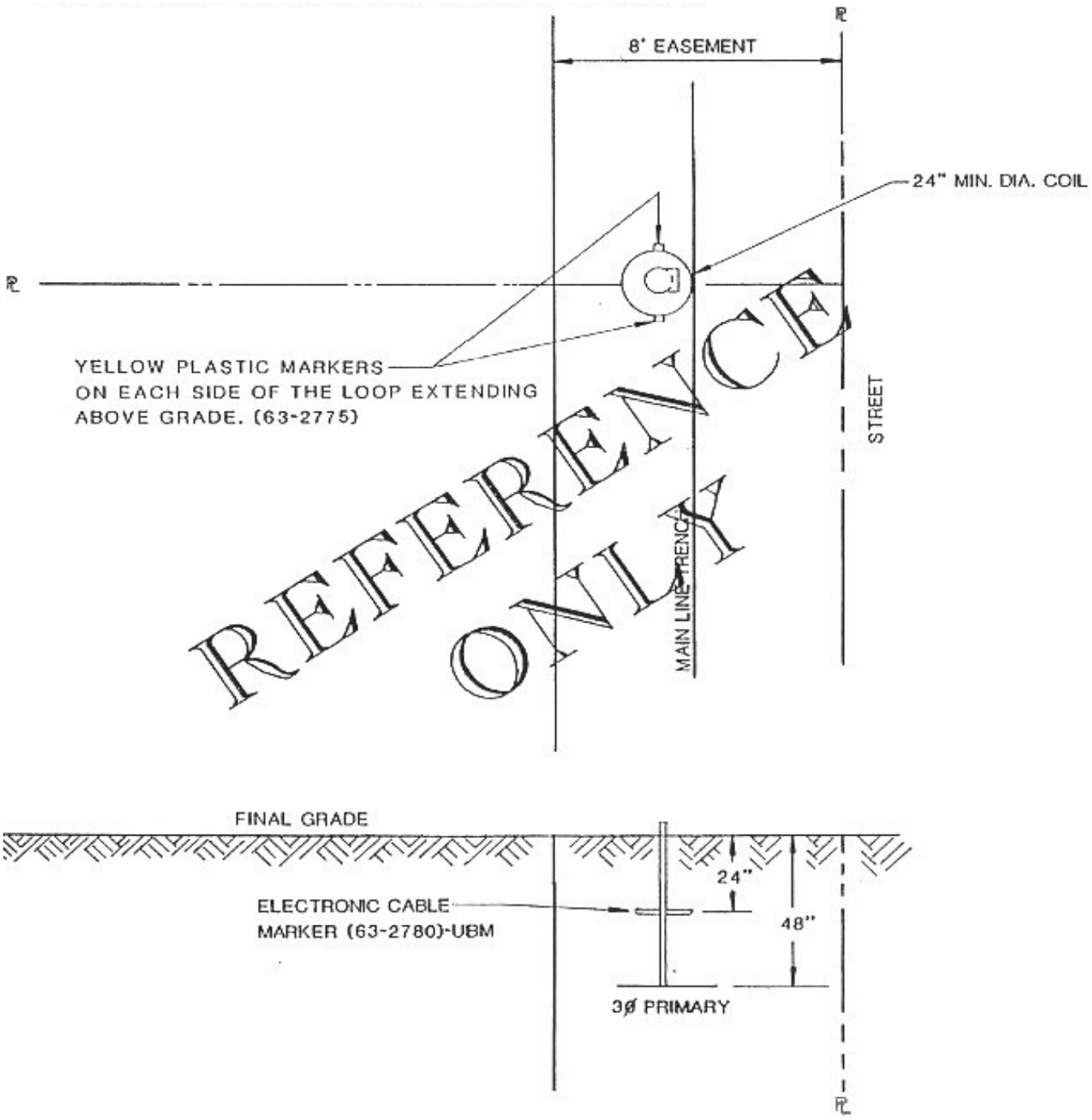
REFERENCE ONLY

NOTES

1. No improvement shall be made which will prevent access to the j-box (i.e. paving or concrete cover).
2. For service other than 1 Ø, 200 amp, consult *Electric Service Specifications* for conduit size.
3. Maximum service length shall be 100 ft. with equivalent bends not exceeding 270°.
4. Contact Policies, Procedures and Standards for situations not covered.

* SRP service conduit shown; phone conduit is as specified by TELCO.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING SERVICE STUB-UP FRONT LOT INSTALLATION 1 Ø, 200A W/O TRANSFORMER (SEE NOTE 2)	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-26-1	UG6-26-1.doc

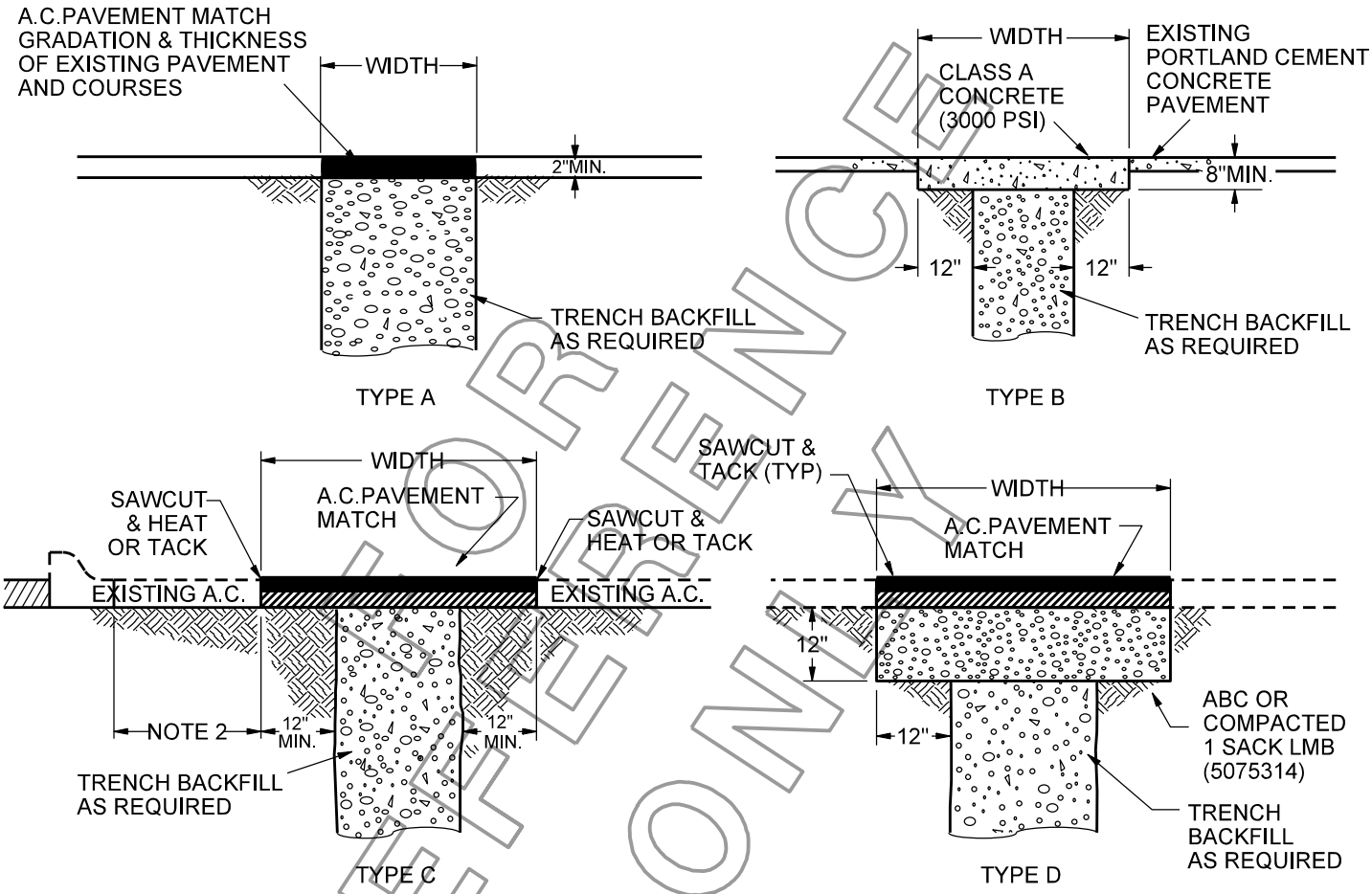


NOTES

1. This installation, as indicated, is when transformer location is unknown.
2. If location is known, cable shall be extended to that point and looped.
3. Mark the cable with dymo tape indicating which existing facilities they are located between. (Example: from PE-0603 to PE-0604)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING PRIMARY CABLE STUB-OUT COMMERCIAL / INDUSTRIAL DEVELOPMENT APPLICATION	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-27-1	UG6-27-1.doc

TYPICAL STREET CROSSING SURFACE REPAIRS

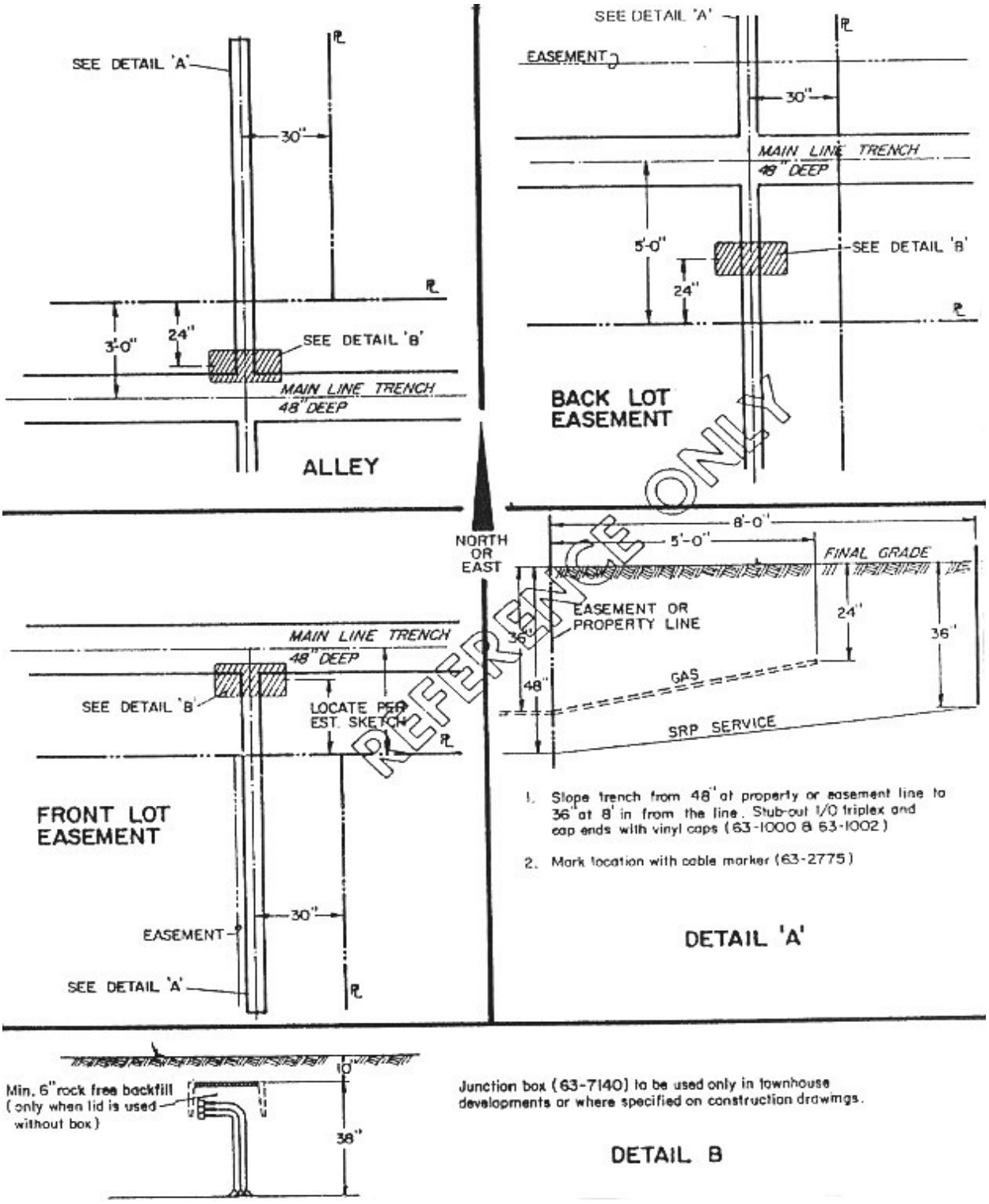


REFERENCE ONLY

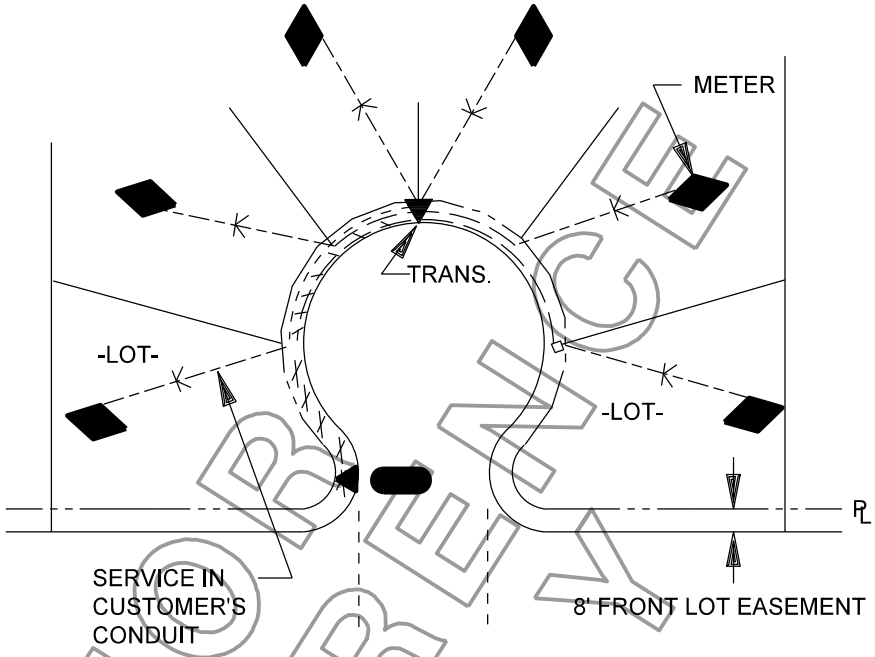
NOTES

1. ASPHALT CONCRETE (AC) SHALL MEET THE GOVERNING MUNICIPALITIES' REQUIREMENTS FOR REPAIR IN ROAD RIGHT-OF-WAY.
2. WHEN TRENCH IS PARALLEL TO THE CURB:
   a. CITY OF TEMPE -
      REMOVE AND REPLACE ASPHALT TO CURB IF 18" OR LESS.
   b. CITY OF MESA -
      REMOVE AND REPLACE ASPHALT TO CURB IF 48" OR LESS.
3. THE JOB ORDER DRAWING WILL SPECIFY WHICH TYPE TRENCH BACKFILL AND STREET REPAIR IS REQUIRED.
4. BACKFILLS ARE DEFINED ON PAGES 6-9-1 AND 6-9-2.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING STREET CROSSING SURFACE REPAIRS	ISSUE DATE: 11/06/91 REV. DATE: 01/26/15 APPROVAL: B.PRIEST
	6-28-1	8513E139.DGN



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING INSTALLATION PROCEDURE FOR LID OR JUNCTION BOX	ISSUE DATE: 01/15/87 REV. DATE: 05/10/10 APPROVAL: B. Priest
	6-29-1	UG6-29-1.doc

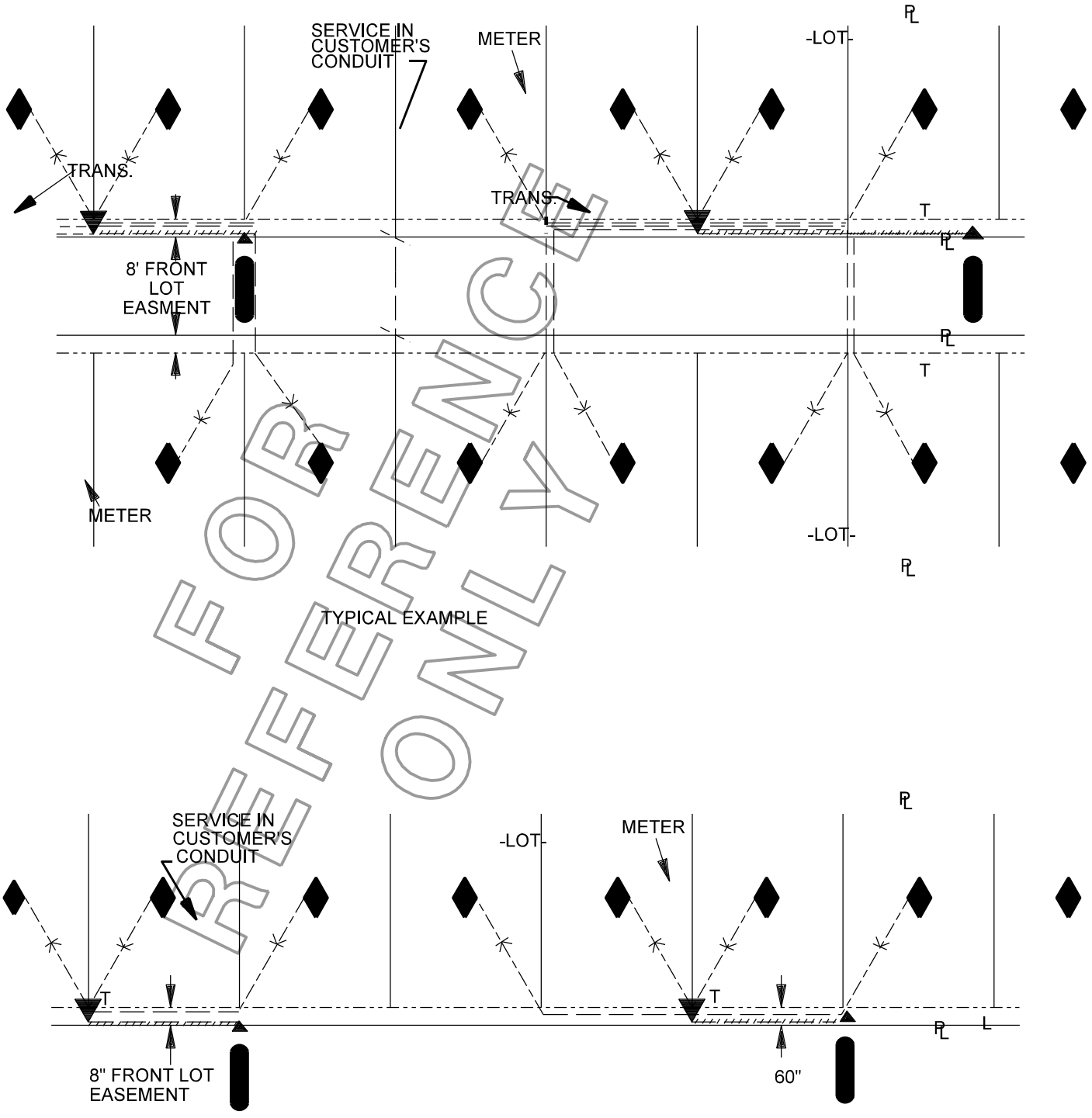


FOR REFERENCE ONLY

NOTES

1. IDENTIFY CABLES PER THE MISCELLANEOUS SECTION OF THIS BOOK.
2. CONNECT STREET LIGHT CONDUCTORS AT XFMR. WHEN STREET LIGHTS MUST BE INSTALLED AT PAD MOUNTED EQUIPMENT LOCATIONS/LOT LINE, LOCATE THE STREET LIGHT POLES A MINIMUM OF 18" FROM EITHER SIDE OF EQUIPMENT TO ALLOW FOR MAINTENANCE AND OPERATION. IF LOCATED NEXT TO PAD MOUNTED TRANSFORMER, PLACE LIGHT POLE ON SECONDARY SIDE OF TRANSFORMER TO ALLOW FOR MAINTENANCE AND OPERATION.
3. THE TRANSFORMER SHOULD BE LOCATED AWAY FROM DRIVEWAYS. IF A DRIVEWAY IS WITHIN 2' OF THE TRANSFORMER, INSTALL A GUARD POST AS SHOWN IN UBG OF THE BASIC ASSEMBLY UNITS SECTION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING TRANSFORMER AND SERVICE LOCATION FRONT LOT INSTALLATION	ISSUE DATE: 01/30/93 REV. DATE: 04/11/10 APPROVAL: B.PRIEST
	6-30-1	8513E192.DGN

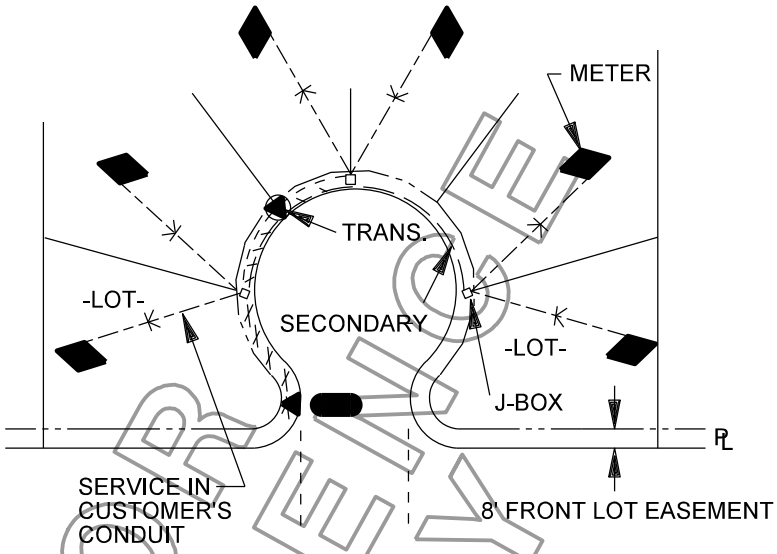


FOR REFERENCE ONLY

TYPICAL EXAMPLE

(FOR DEVELOPMENTS ON ONE SIDE OF STREET ONLY)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING TRANSFORMER AND SERVICE LOCATION FRONT LOT INSTALLATION	ISSUE DATE: 01/30/92 REV. DATE: 04/11/10 APPROVAL: B.PRIEST
	6-30-2	8513E191.DGN



FOR REFERENCE ONLY

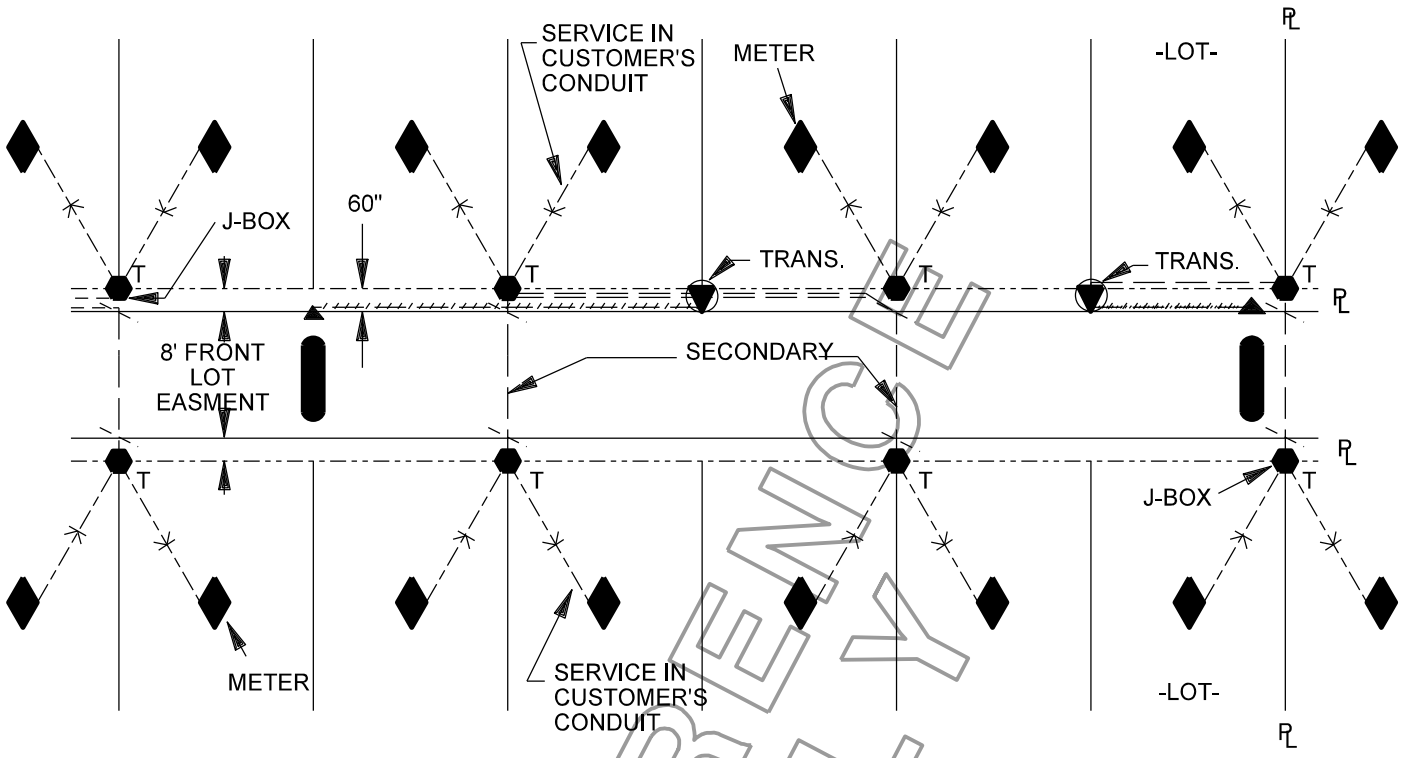
NOTES

1. CABLES SHALL BE IDENTIFIED PER UNDERGROUND MISCELLANEOUS SECTION PROCEDURE OF THE STANDARDS BOOK.

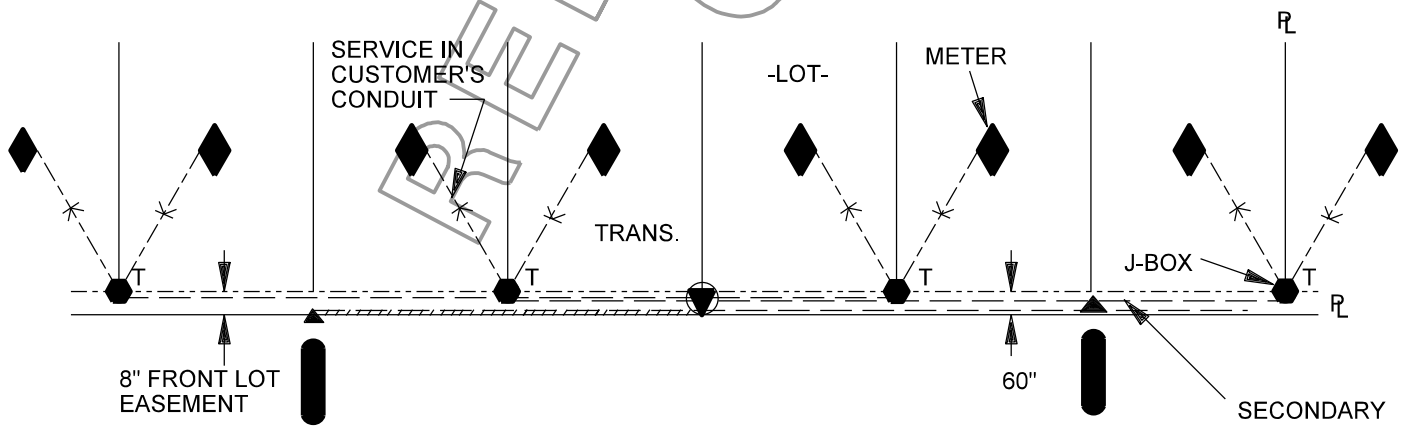
2. A MOLE CONNECTOR SHALL BE INSTALLED AT THE END OF THE SECONDARY RUN WHEN THE SERVICES ARE INSTALLED. (SEE SERVICE STUB-UP DETAIL IN THIS SECTION.)

3. STREET LIGHT CONDUCTORS WILL BE CONNECTED AT XFMR WHEN SECONDARY IS INSTALLED, SEE LIGHTING SECTION FOR STREET LIGHT CONDUCTOR STUB-UP DETAIL. WHEN STREET LIGHTS MUST BE INSTALLED AT PAD MOUNTED EQUIPMENT LOCATIONS/LOT LINE, THE STREET LIGHT POLES SHALL BE LOCATED A MINIMUM OF 18" FROM EITHER SIDE OF EQUIPMENT TO ALLOW FOR MAINTENANCE AND OPERATION. IF LOCATED NEXT TO PAD MOUNTED TRANSFORMER, LIGHT POLE SHOULD BE SET ON SECONDARY SIDE OF TRANSFORMER TO ALLOW FOR MAINTENANCE AND OPERATION.
   REFER TO UNDERGROUND CABLE AND ACCESSORIES SECTION OF THE STANDARDS BOOK FOR INSTALATION OF CONNECTORS AND STREET LIGHT CONDUCTOR WHERE APPLICABLE.

4. THE TRANSFORMER SHOULD BE LOCATED AWAY FROM DRIVEWAYS. IF A DRIVEWAY IS WITHIN 2' OF THE TRANSFORMER, A GUARD POST MUST BE INSTALLED AS SHOWN IN UBG OF THE BASIC ASSEMBLY UNIT SECTION



TYPICAL EXAMPLE



STREET

TYPICAL EXAMPLE

(FOR DEVELOPMENTS ON ONE SIDE OF STREET ONLY)

REFERENCE ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRENCHING TRANSFORMER AND SECONDARY LOCATION FRONT LOT INSTALLATION	ISSUE DATE: 03/15/93 REV. DATE: 05/16/10 APPROVAL: B.PRIEST
	6-31-2	8513E84.DGN

VAULTS, MANHOLES, AND BOXES

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE	7-1-1
NEUTRALS & GROUNDINGS	7-2-1
JUNCTION BOX INSTALLATION	7-3-1
PEDESTAL, DUAL ENCLOSURE, ABOVE GRADE	7-4-1
FLUSH-MOUNTED, SINGLE PHASE, SECONDARY JUNCTION BOX	7-5-1
THREE PHASE SECONDARY JUNCTION BOX, PAD MOUNTED	7-5-2
PEDESTAL STAKING, BACK OF PUE	7-5-3
PEDESTAL STAKING, FRONT OF PUE	7-5-4
5' X 3' X 3' PULL BOX, BELOW GRADE, LOAD BEARING	7-6-1
5' X 3' X 3' PULL BOX, FLUSH MOUNT, LOAD BEARING	7-7-1
LOAD BEARING PULL BOX, FLUSH MOUNTING DETAILS	7-7-2
9’ X 9’ MANHOLE, CABLE RACKING	7-8-1
5’ X 10’ MANHOLE, CABLE RACKING	7-8-2
2/0 BARE COPPER NEUTRALS, CONNECTIONS IN MANHOLES	7-8-3
MANHOLE COVER ADJUSTMENT	7-8-4
VAULT INSTALLATION, PAD-MOUNTED SWITCH VAULT	7-9-1
VAULT INSTALLATION, PAD-MOUNTED TRANSFORMER VAULT	7-10-1
VAULT INSTALLATION POLE TYPE TRANSFORMERS	7-11-1
TEMPORARY CABLE ENCLOSURE	7-12-1
4' X 4' X 4' PULL BOX, LOAD BEARING	7-13-1
PEDESTAL, DUAL ENCLOSURE, ABOVE GRADE	7-14-1
COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD VAULTS	7-15-1

INSTRUCTIONAL GUIDE

PURPOSE

FOR INSTALLATION, REMOVAL OR REPLACEMENT OF VAULTS, MANHOLES AND BOXES USED IN UNDERGROUND DISTRIBUTION CONSTRUCTION.

COMPATIBLE UNIT CODING FOR "UV" SECTION

1. *TEMPORARY CABLE ENCLOSURES*

   ENCLOSURE IS CODED WITH THE PREFIX UVB. THE NEXT DIGIT IS A NUMBER DESIGNATING SPECIFIC MATERIAL.

2. *VAULTS*

   VAULTS ARE CODED WITH THE PREFIX UVE. THE NEXT DIGITS DESIGNATE KVA SIZE OF THE VAULT.

3. *JUNCTION BOXES*

   JUNCTION BOXES ARE CODED WITH THE PREFIX UVJB. THE NEXT DIGIT DESIGNATES A VARIATION IN SIZE AND MATERIAL.

4. *MANHOLE AND CABLE RACKING*

   MANHOLES ARE CODED WITH THE PREFIX UVMH. THE NEXT DIGIT DESIGNATES A VARIATION IN SIZE. CABLE RACKING CODES HAVE A PREFIX UVMW. THE NEXT DIGIT DESIGNATES THE NUMBER OF CIRCUITS TO BE RACKED.

5. *PULL BOXES*

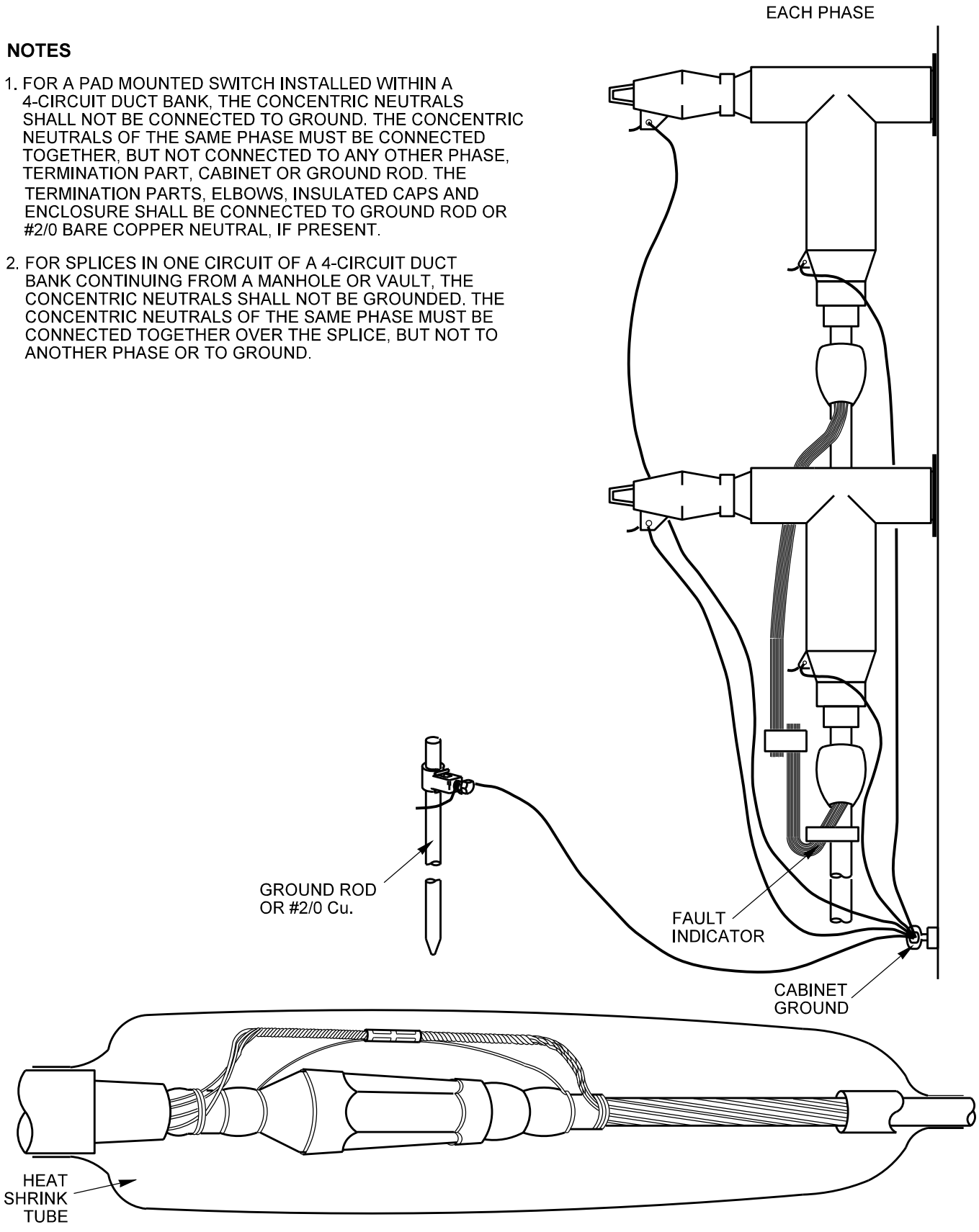
   PULL BOXES ARE CODED WITH THE PREFIX UVPB. THE NEXT DIGIT DESIGNATES A VARIATION IN MATERIAL.

6. *GRID SKETCH APPLICATION*

   ALL COMPATIBLE UNIT CODES IN THE UV SECTION ARE ENTERED ON LINES 13 THRU 18 ONLY.

NOTES

1. FOR A PAD MOUNTED SWITCH INSTALLED WITHIN A 4-CIRCUIT DUCT BANK, THE CONCENTRIC NEUTRALS SHALL NOT BE CONNECTED TO GROUND. THE CONCENTRIC NEUTRALS OF THE SAME PHASE MUST BE CONNECTED TOGETHER, BUT NOT CONNECTED TO ANY OTHER PHASE, TERMINATION PART, CABINET OR GROUND ROD. THE TERMINATION PARTS, ELBOWS, INSULATED CAPS AND ENCLOSURE SHALL BE CONNECTED TO GROUND ROD OR #2/0 BARE COPPER NEUTRAL, IF PRESENT.
2. FOR SPLICES IN ONE CIRCUIT OF A 4-CIRCUIT DUCT BANK CONTINUING FROM A MANHOLE OR VAULT, THE CONCENTRIC NEUTRALS SHALL NOT BE GROUNDED. THE CONCENTRIC NEUTRALS OF THE SAME PHASE MUST BE CONNECTED TOGETHER OVER THE SPLICE, BUT NOT TO ANOTHER PHASE OR TO GROUND.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES NEUTRALS AND GROUNDINGS	ISSUE DATE: 12/15/93 REV. DATE: 05/16/10 APPROVAL: B.PRIEST
	7-2-1	8513E205.DGN

NUMBER OF FEEDER CIRCUITS IN TRENCH OR DUCT BANK	SIZE/TYPE OF FEEDER CABLE TO BE INSTALLED	NUMBER OF 2/0 COPPER BARE REQUIRED IN BOTTOM OF TRENCH	DRAIN WIRE OR CONCENTRIC NEUTRALAT SPLICE OR TERMINATION
1	750 CU	1	NOTE 5
	750 AL	0	GROUNDED
2	750 CU	1	NOTE 5
	750 AL	0	GROUNDED
3	750 CU	2	NOTE 5
	750 AL	0	GROUNDED
4	750 CU	2	NOTE 5
	750 AL	2	NOT GROUNDED
5	750 CU	3	NOTE 5
	750 AL	Note 1	NOTE 1

EXAMPLES

FOR EACH EXAMPLE BELOW, ASSUME YOU ARE IN THE MANHOLE WITH THE EXAMPLE DUCT BANK ENTERING OR LEAVING THE MANHOLE. IT DOESN'T MATTER WHERE THE DUCT GOES, ONLY THE NUMBER AND TYPE OF CIRCUITS IN THE DUCT.



ONE CIRCUIT OF 750 MCM CU REQUIRES ONE 2/0 CU BARE IN BOTTOM OF TRENCH.



ONE CIRCUIT OF 750 MCM AL REQUIRES NO 2/0 CU BARE.



TWO CIRCUITS OF 750 MCM CU REQUIRE ONE 2/0 BARE IN THE TRENCH BOTTOM.



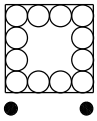
TWO CIRCUITS OF 750 MCM AL REQUIRE NO 2/0 BARE.



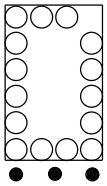
THREE CIRCUITS OF 750 MCM CU REQUIRES TWO 2/0 CU BARE IN BOTTOM OF TRENCH.



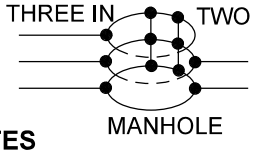
THREE CIRCUITS OF 750 MCM AL REQUIRE NO 2/0 BARE.



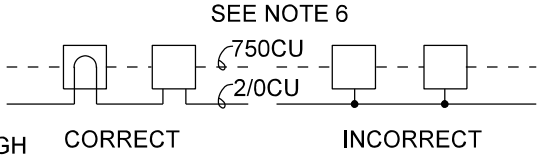
FOUR CIRCUITS OF 750 MCM CU OR AL REQUIRE TWO 2/0 CU BARE IN BOTTOM OF TRENCH. THE 750 MCM AL CONCENTRIC NEUTRAL IS NOT CONNECTED TO GROUND IN THE MANHOLE.



FIVE CIRCUITS OF 750 MCM CU REQUIRE THREE 2/0 CU BARE IN BOTTOM OF TRENCH.

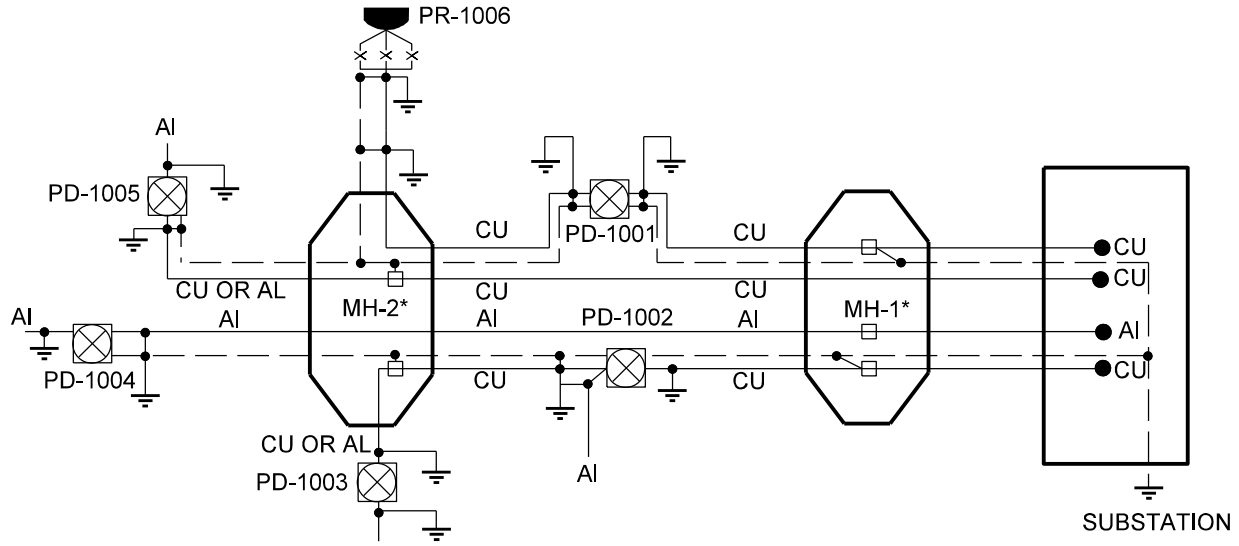


THE NUMBER OF 2/0 BARE COPPER RINGS IN MANHOLES SHALL BE EQUAL TO THE HIGHEST NUMBER OF 2/0 BARE COPPER NEUTRALS ENTERING THROUGH ANY ONE SIDE OF THE MANHOLE.



NOTES

1. NOT TO BE USED.
2. DISTRIBUTION PLANNING WILL ADVISE THE TYPE OF FEEDER CABLE, COPPER OR ALUMINUM, TO BE USED AND THE DUCT OR TRENCH SEGMENTS THE CABLE TYPE IS TO OCCUPY.
3. THE CONCENTRIC NEUTRAL OR WIRE SHIELD DRAIN WIRE SHALL NOT BE CONNECTED TO GROUND IN A SUBSTATION BREAKER. SEE CHAPTER 8 "SUBSTATION SWITCHGEAR TERMINATION". SHOW EXAMPLE ON JOB PRINT.
4. DESIGNER SHALL IDENTIFY ON ELECTRICAL SCHEMATIC THE GROUNDING REQUIREMENTS FOR 750AL SPLICES AND TERMINATIONS.
5. EXCEPT WHEN LOCATED AT THE SUBSTATION BREAKER, THE WIRE SHIELD OF THE 750 MCM CU IS TO BE CONNECTED TO GROUND IF EXPOSED.
6. CONNECTIONS TO THE 2/0 COPPER SHALL OCCUR IN A PAD-MOUNTED DEVICE, MANHOLE OR PULL BOX. DIRECT BURIED CONNECTIONS SHALL BE AVOIDED. IF A DIRECT BURIED CONNECTION IS UNAVOIDABLE, INSTALL TWO COMPRESSION CONNECTORS AT THAT POINT. COIL 8 FT. ON EACH END OF 2/0 COPPER IN MANHOLE. PROVIDE AN 8 FOOT LOOP OF 2/0 COPPER IN PAD MOUNTED DEVICE WINDOW. LEAVE 12 IN. OF 2/0 COPPER STUBBED UP AT POLE RISER.
7. FOR EXAMPLES NOT SHOWN, CONTACT DISTRIBUTION DESIGN ENGINEER.



LEGEND

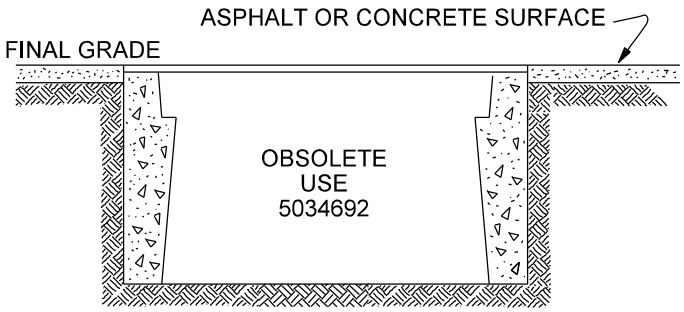
- □ SPLICE
- GROUND CONNECTION
- 3 PHASE 750 MCM CONDUCTOR (Cu OR Al AS INDICATED)
- BARE DIRECT BURIED #2/0 Cu NEUTRAL

* GROUNDING SCENARIOS APPLY TO BOTH MANHOLES AND PULL BOXES

NOTES

1. AT SUBSTATION BREAKER. WIRE SHIELDS OR CONCENTRIC NEUTRALS ARE NEVER GROUNDED IN THE BREAKER. SEE CHAPTER 8. A #2/0 BARE COPPER NEUTRAL IS REQUIRED FOR TWO FEEDER CIRCUITS, AN ADDITIONAL #2/0 BARE COPPER NEUTRAL IS REQUIRED FOR AN ODD NUMBER OF FEEDER CIRCUITS.
2. AT MH-1 . ANY EXPOSED WIRE SHIELDS ARE CONNECTED TO THE GROUND. ANY EXPOSED CONCENTRIC NEUTRALS ARE NOT CONNECTED TO GROUND SINCE FOUR CIRCUITS ENTER AND EXIT THIS MANHOLE IN THE SAME DUCT BANK.
3. AT PD-1001. ANY EXPOSED WIRE SHIELDS ARE CONNECTED TO GROUND. ANY CONCENTRIC NEUTRALS ARE NOT CONNECTED TO GROUND SINCE THE CIRCUIT EXITS AND RE-ENTERS A FOUR CIRCUIT DUCT BANK.
4. AT PD-1002. ANY EXPOSED WIRE SHIELDS ARE CONNECTED TO GROUND. THE CONCENTRIC NEUTRALS OF THE CIRCUIT EXITING THE FOUR CIRCUIT DUCT BANK BUT NOT RE-ENTERING ARE CONNECTED TO GROUND. A 750MCM CU MAY NOT TRANSITION TO 750MCM AL WITHIN A FOUR CIRCUIT DUCT BANK.
5. AT MH-2. A FOUR CIRCUIT DUCT BANK ENTERS BUT DOES NOT EXIT. ANY EXPOSED WIRE SHEILDS ARE CONNECTED TO GROUND. ANY EXPOSED CONCENTRIC NEUTRALS ARE CONNECTED TO GROUND. A 750MCM CU MAY TRANSITION TO 750MCM AL. IF A 750MCM CU ENTERS AND LEAVES THIS MANHOLE. THE #2/0 BARE CU MUST ACCOMPANY IT. 750MCM AL 750MCM AL ENTERS AND LEAVES THIS MANHOLE WITHOUT SPLICES THEREFORE THE CONCENTRIC NEUTRALS ARE NOT EXPOSED AND CAN'T BE GROUNDED, SPLICES THEREFORE THE CONCENTRIC NEUTRALS ARE NOT EXPOSED AND CAN'T BE GROUNDED, SO THE #2/0 BARE COPPER CONTINUES TO THE NEXT DEVICE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES NEUTRALS AND GROUNDINGS	ISSUE DATE: 02/04/92 REV. DATE: 05/10/10 APPROVAL: B.PRIEST
	7-2-3	8513E165.DGN



5034683

UVJB1

FLUSH MOUNTED-BOLT ON STEEL LID
(APPROX. 15" x 25" x 12")



5034692

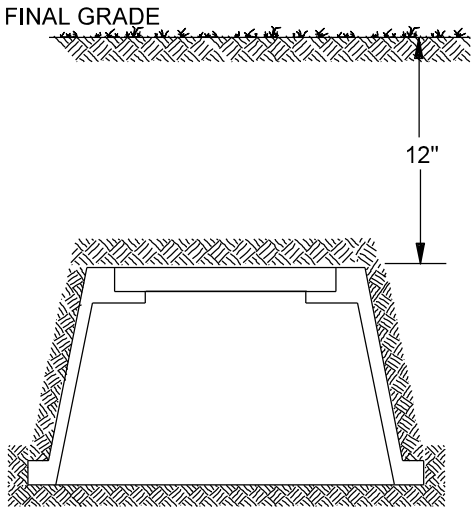
UVJB4

UVJB4G CONTRACTOR INSTALLED

FLUSH MOUNTED-BOLT ON COMPOSLITE LID
(APPROX. 15" x 21" x 12")
NOTE: UVJB4G INCLUDES A GROUND ROD

NOTES

1. CARE MUST BE TAKEN TO PROVIDE A SMOOTH,LEVEL,WELL COMPACTED BASE TO SET THE BOX ON. COMPACT AROUND SIDES OF BOX TO PREVENT SETTLING.

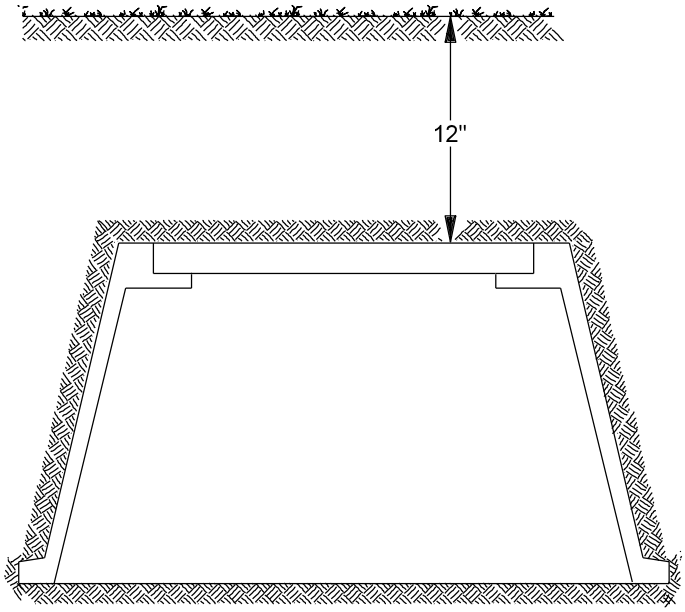


5034686

UVJB2

UVJB2G CONTRACTOR INSTALLED

BURIED PLASTIC BOX AND LID
(APPROX. 15" x 21" x 12")



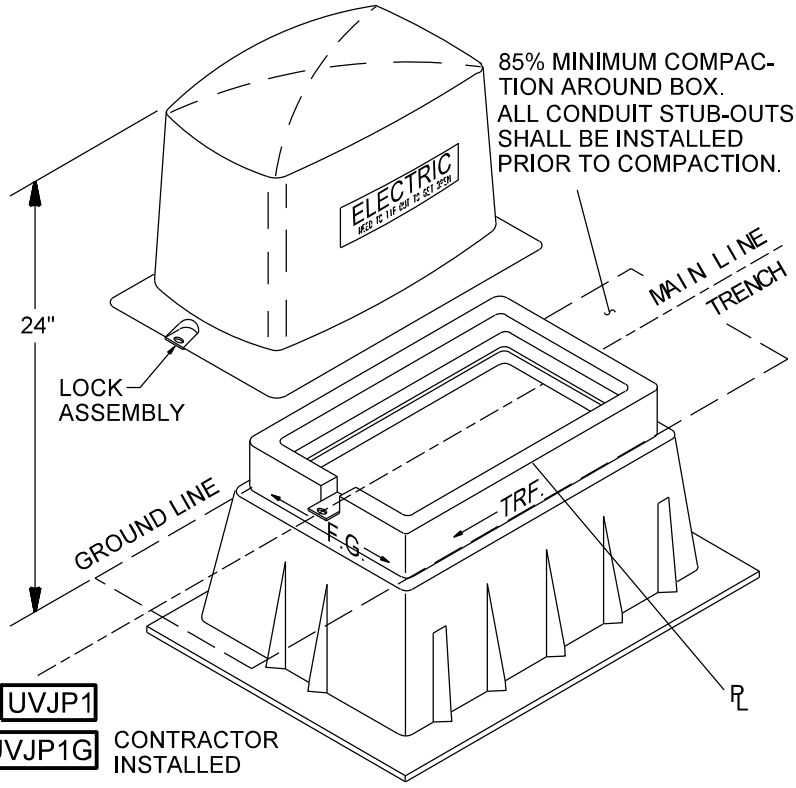
5034689

UVJB3

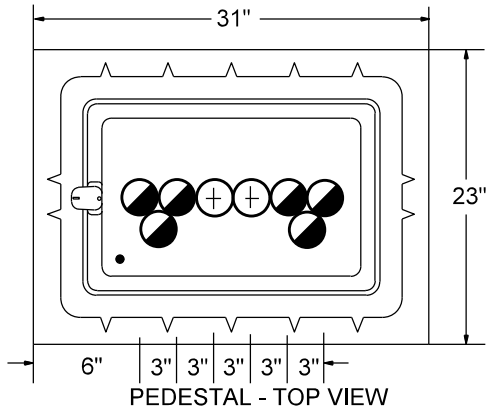
UVJB3G CONTRACTOR INSTALLED

BURIED-LARGE PLASTIC BOX AND LID
(APPROX. 23-1/4" x 32-3/4" x 15")

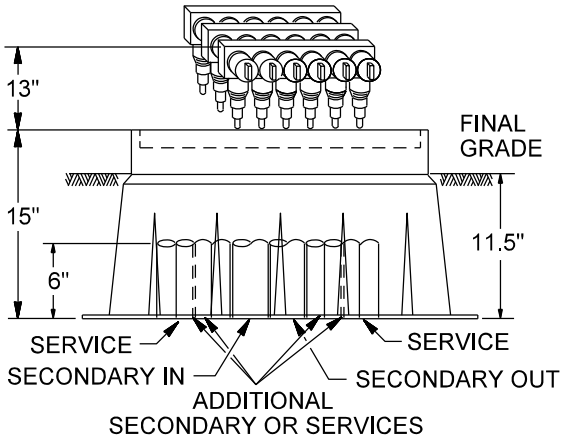
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES JUNCTION BOX INSTALLATION	ISSUE DATE: 01/15/87 REV. DATE: 05/09/16 APPROVAL: N.SABBAH
	7-3-1	8513E21.DGN



NOT JOINTLY USED WITH COMMUNICATION

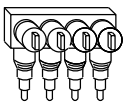


PEDESTAL - TOP VIEW

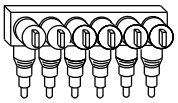


LOCATIONS FOR:

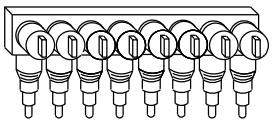
- 2 1/2"CONDUITS
- 3"CONDUITS
- GROUND ROD NEEDED ONLY FOR DUSK TO DAWN LIGHT POLE SERVED DIRECT FROM PEDESTAL



UWMB 4-POSITION
SET OF 3 (5034923)
4 CONDUCTORS MAX.

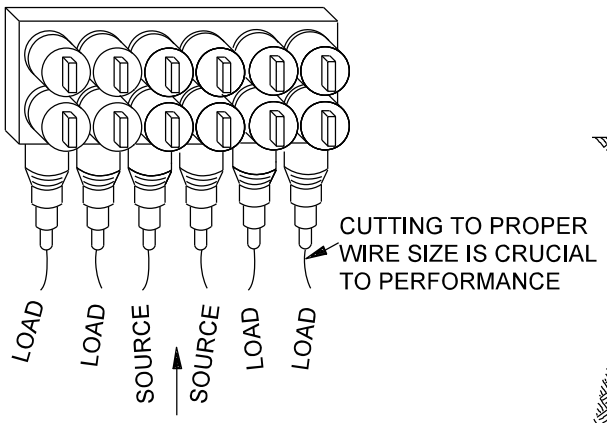


UBM6 6-POSITION
SET OF 3 (5034924)
6 CONDUCTORS MAX.

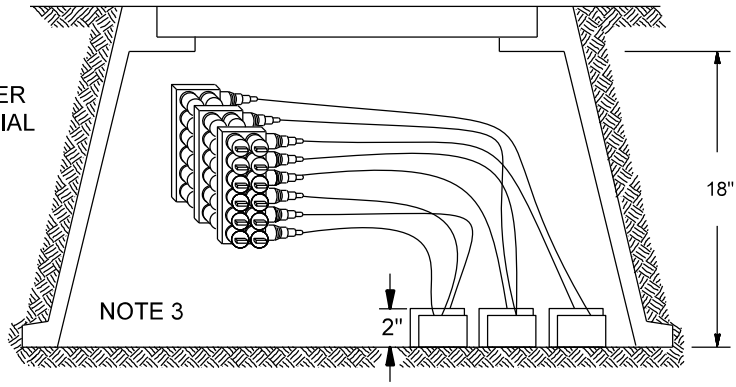


UBM8P 8-POSITION
SET OF 3 (5034925)
8 CONDUCTORS MAX.

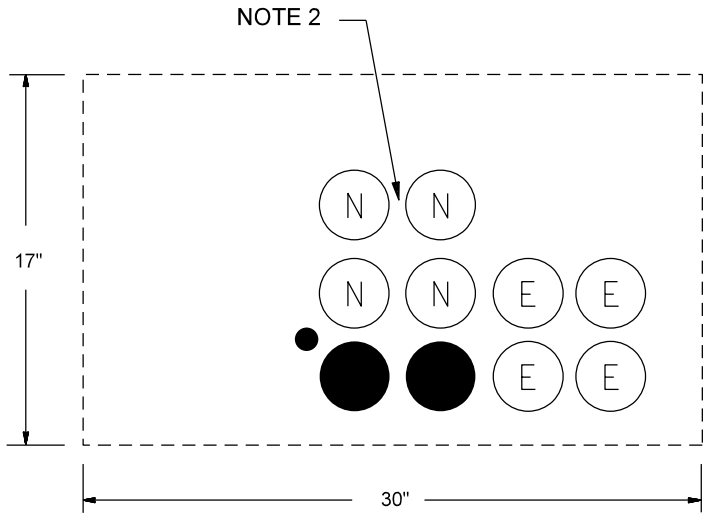
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES PEDESTAL, DUAL ENCLOSURE ABOVE GRADE	ISSUE DATE: 12/02/97 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	7-4-1	8513E105.DGN



SPLIT LOAD CONDUCTORS AND PLACE ON
EACH SIDE OF SOURCE CONDUCTOR



UVJB6	5078600
UVJB6G	CONTRACTOR INSTALLED



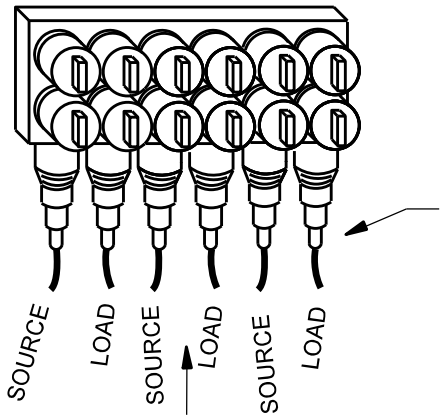
SYMBOL LEGEND

- N — NEW SECONDARY CONDUITS
- E — EXISTING SERVICE CONDUCTORS
- ABANDONED DIRECT BURIED PRIMARY CONDUCTORS
- EXISTING GROUND ROD

NOTES

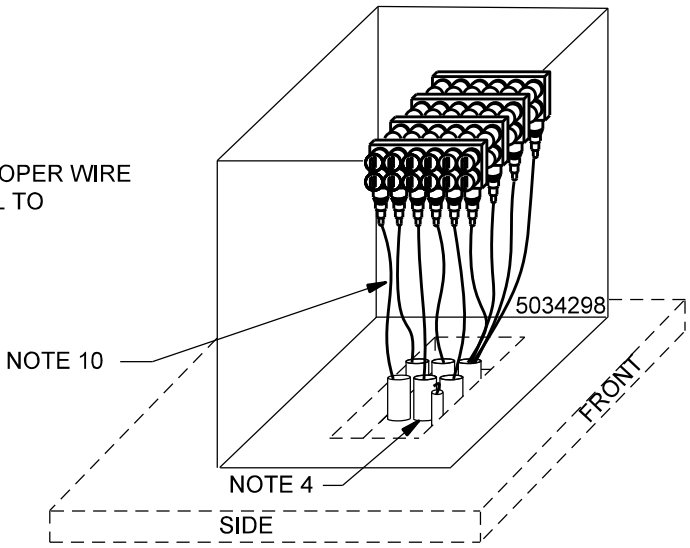
1. SET LOCATION TO PLACE EXISTING SERVICE CONDUCTORS AS CLOSE AS POSSIBLE TO WALL/CORNER OF THE JUNCTION BOX.
2. INSTALL NEW CONDUITS IN CLOSE PROXIMITY TO EXISTING SERVICE CONDUCTORS TO PROVIDE SUFFICIENT LENGTH FOR CONNECTIONS TO THE MOLE CONNECTORS.
3. BEND CONDUCTORS AND MOLE CONNECTORS TOWARDS THE UNOCCUPIED SIDE OF THE BOX.

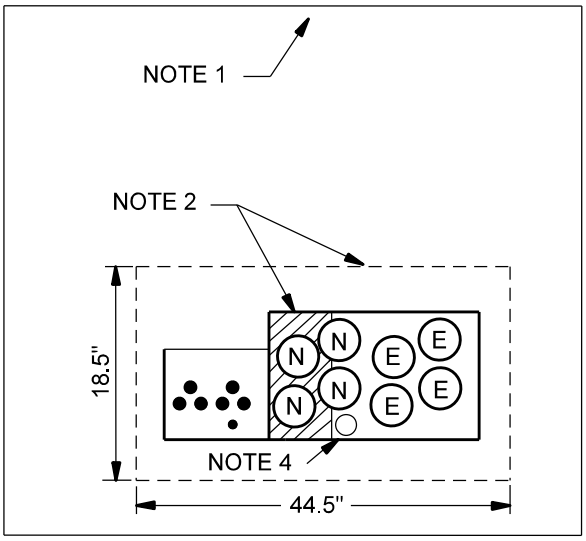
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	FLUSH - MOUNTED SINGLE-PHASE SECONDARY JUNCTION BOX	ISSUE DATE: 01/15/19 REV. DATE: APPROVAL: S.DURAN
	7-5-1	8513E588.DGN



CUTTING TO PROPER WIRE SIZE IS CRUCIAL TO PERFORMANCE

ALTERNATE SOURCE AND LOAD CONDUCTORS ACROSS MOLE BAR ASSEMBLY





UVJB5	5034298 (WITH PAD)
UVJB5N	(NO PAD)

SYMBOLS

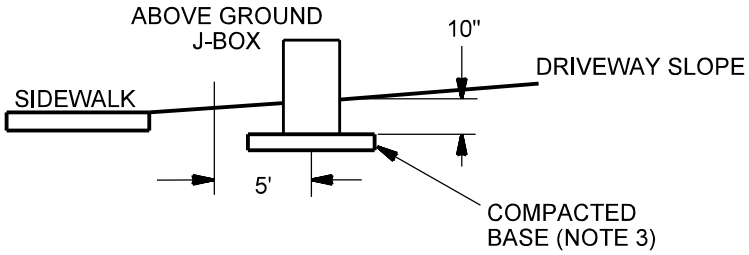
- (N) NEW SECONDARY CONDUITS
- (E) EXISTING SERVICE CONDUITS
- ○ 2" CONDUIT FOR 2/0 BARE CU GROUND
- ● ABANDON DIRECT BURIED PRIMARY CONDUCTORS
- • EXISTING GROUND ROD

NOTES

1. EXISTING TRANSFORMER PAD TO REMAIN IF IN GOOD CONDITION. OTHERWISE, REPLACE WITH PULLING ENCLOSURE PAD.
2. SAW CUT WINDOW OF EXISTING PAD AS NECESSARY TO INSTALL NEW SECONDARY CONDUITS. DO NOT CUT PAD BEYOND DIMENSIONED FLANGE ON THE BOTTOM OF ENCLOSURE.
3. INSTALL GROUND CONNECTORS INTO ENCLOSURE GROUND NUT. TRAIN 2/0 ALONG FRONT BASE OF ENCLOSURE AND CONNECT TO GROUND CONNECTORS.
4. INSTALL 2" CONDUIT WITH BARE 2/0 CU GROUND WIRE FROM NEW TRANSFORMER. CONNECT TO 2/0 CU ENCLOSURE GROUND WIRE.
5. CONNECT #4 CU LEAD FROM EXISTING GROUND ROD (IF PRESENT) TO 2/0 CU ENCLOSURE GROUND WIRE.
6. FASTEN ENCLOSURE TO PAD AT ALL FOUR CORNERS. SEE BASIC ASSEMBLY UNITS SECTION FOR FASTENING METHODS.
7. INSTALL MAXIMUM TWO MOLE BAR ASSEMBLIES PER PHASE AND NEUTRAL (MAX. 8 TOTAL). SEE CABLES AND ACCESSORIES SECTION FOR AVAILABLE MOLE BAR ASSEMBLIES. EIGHT POSITION MOLE BAR ASSEMBLIES SHALL NOT BE USED.
8. EXISTING STREET LIGHT CIRCUITS SHALL NOT BE SERVED OUT OF THE JUNCTION BOX, BUT SUPPLIED BY NEW TRANSFORMER.
9. SEE THE MISCELLANEOUS SECTION FOR JUNCTION BOX MARKING METHODS.
10. SEE CHAPTER 11 FOR UNIQUE SERVICE COLOR ID STANDARDS.

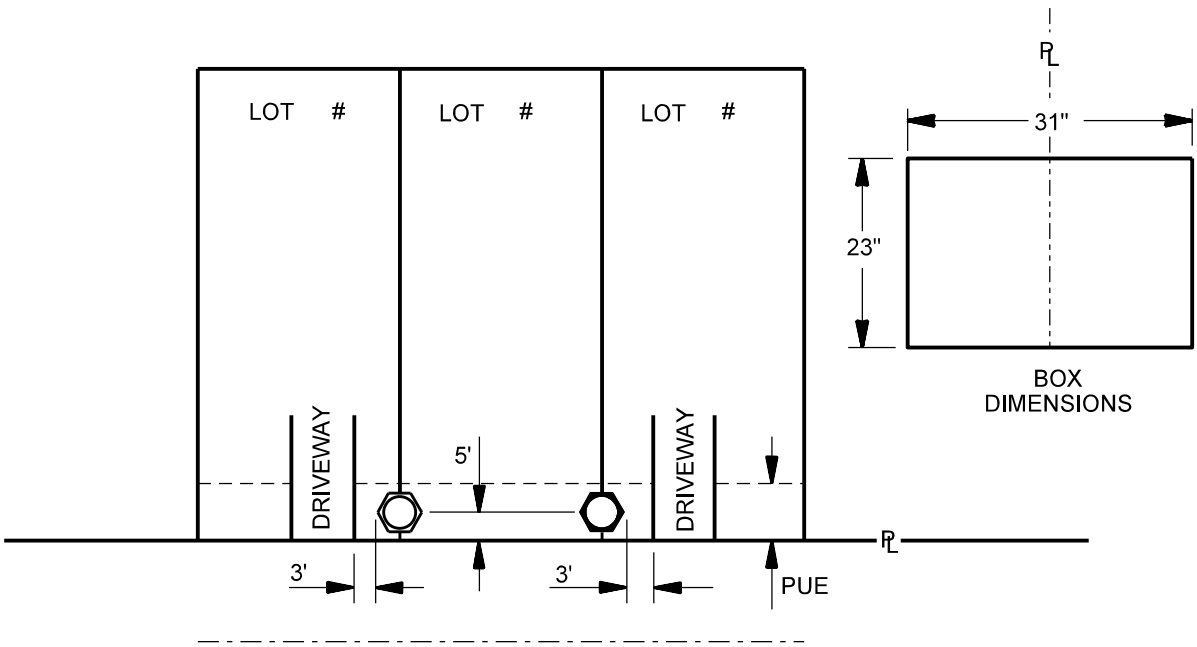
DETERMINATION OF ABOVE GROUND J-BOX ELEVATION

1. FIND THE ELEVATION OF THE DRIVEWAY AT THE EASEMENT LINE CROSSING.
2. THE BOTTOM OF THE ABOVE GROUND J-BOX SHALL BE SET 0.85 FEET BELOW THIS ELEVATION.
3. THE COMPACTED BASE SHALL BE LEVEL AND EXTEND 2 FEET ON ALL SIDES.
4. THE MOLDED GROUND LINE MARK ON THE SIDE OF THE J-BOX WILL BE 1 INCH ABOVE THIS ELEVATION.



NOTES

1. ALL SRP EQUIPMENT IN PUE AND ON ROAD RIGHT-OF-WAYS MUST BE SET AT TOP OF BLUE TOP STAKES UNLESS OTHERWISE NOTED.

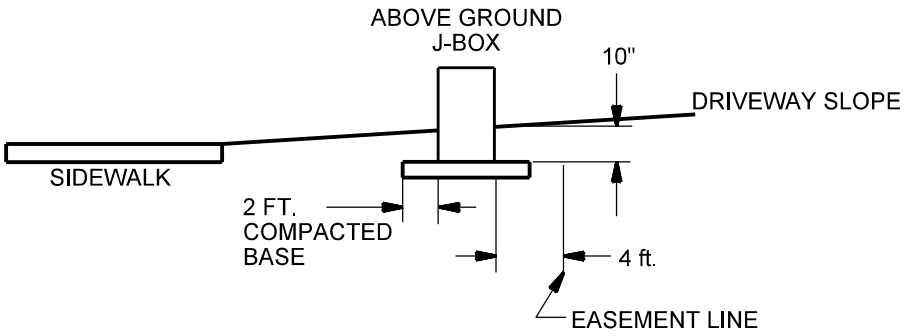


ABOVE GROUND J-BOX MUST
HAVE A 3' MIN. CLEARANCE FROM
DRIVEWAYS OR TRAFFIC AREAS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES & BOXES PEDESTAL STAKING BACK OF PUE	ISSUE DATE: 04/04/02 REV. DATE: 02/25/16 APPROVAL: S.DURAN
	7-5-3	8513E329.DGN

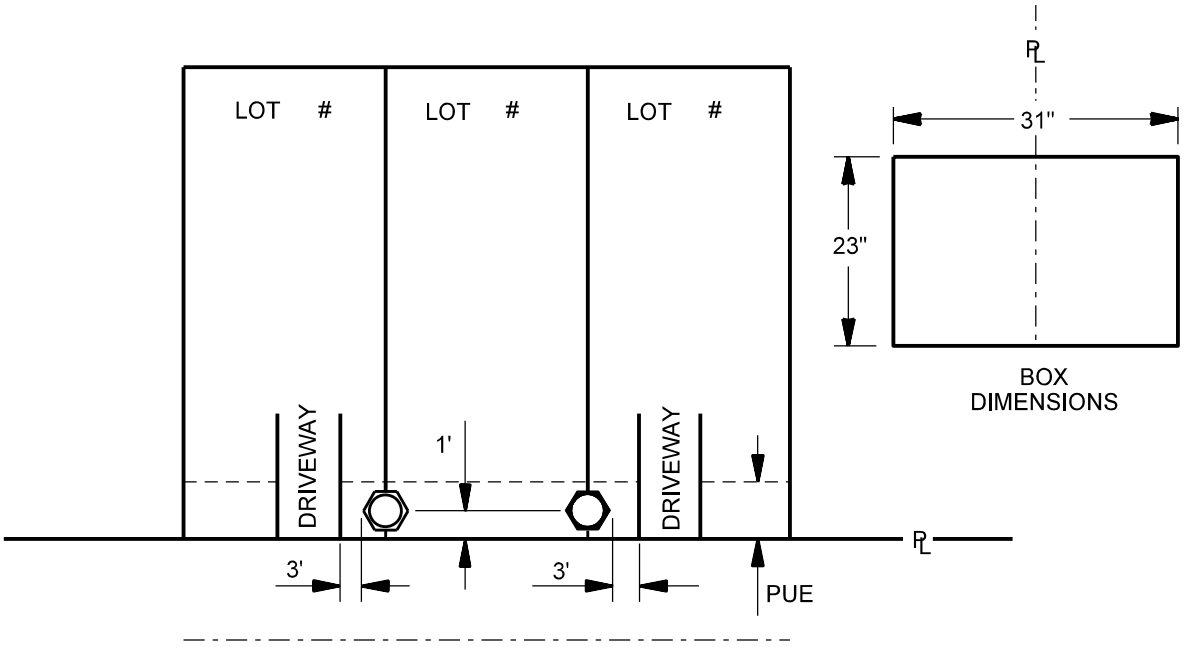
DETERMINATION OF ABOVE GROUND J-BOX ELEVATION

1. FIND THE ELEVATION OF THE DRIVEWAY AT THE EASEMENT LINE CROSSING.
2. THE BOTTOM OF THE ABOVE GROUND J-BOX SHALL BE SET 0.85 FEET BELOW THIS ELEVATION.
3. THE COMPACTED BASE SHALL BE LEVEL AND EXTEND 2 FEET ON ALL SIDES.
4. THE MOLDED GROUND LINE MARK ON THE SIDE OF THE J-BOX WILL BE 1 INCH ABOVE THIS ELEVATION.



NOTES

1. ALL SRP EQUIPMENT IN PUE AND ON ROAD RIGHT-OF-WAYS MUST BE SET AT TOP OF BLUE TOP STAKES UNLESS OTHERWISE NOTED.

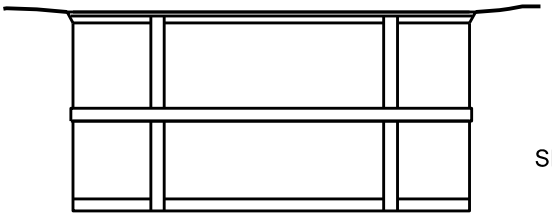


ABOVE GROUND J-BOX MUST
HAVE A 3' MIN. CLEARANCE FROM
DRIVEWAYS OR TRAFFIC AREAS.

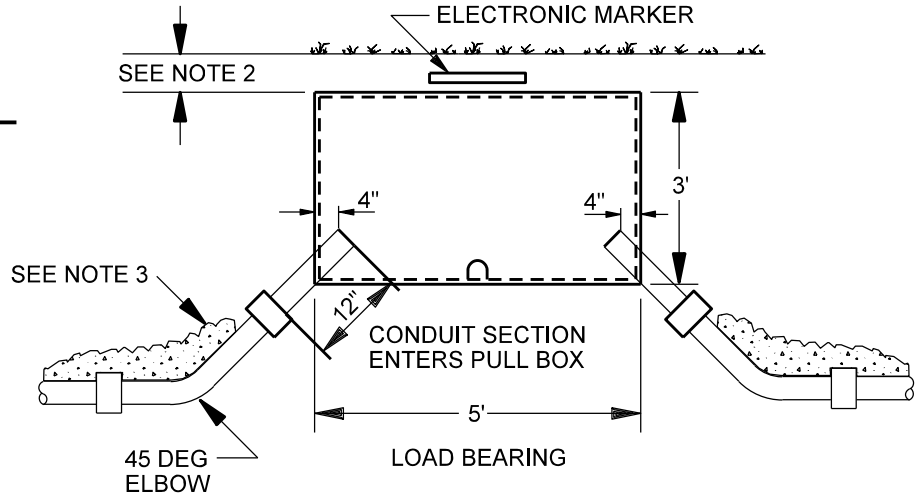
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLE & BOXES PEDESTAL STAKING FRONT OF PUE	ISSUE DATE: 04/04/02 REV. DATE: 02/25/16 APPROVAL: S.DURAN
	7-5-4	8513E518.DGN

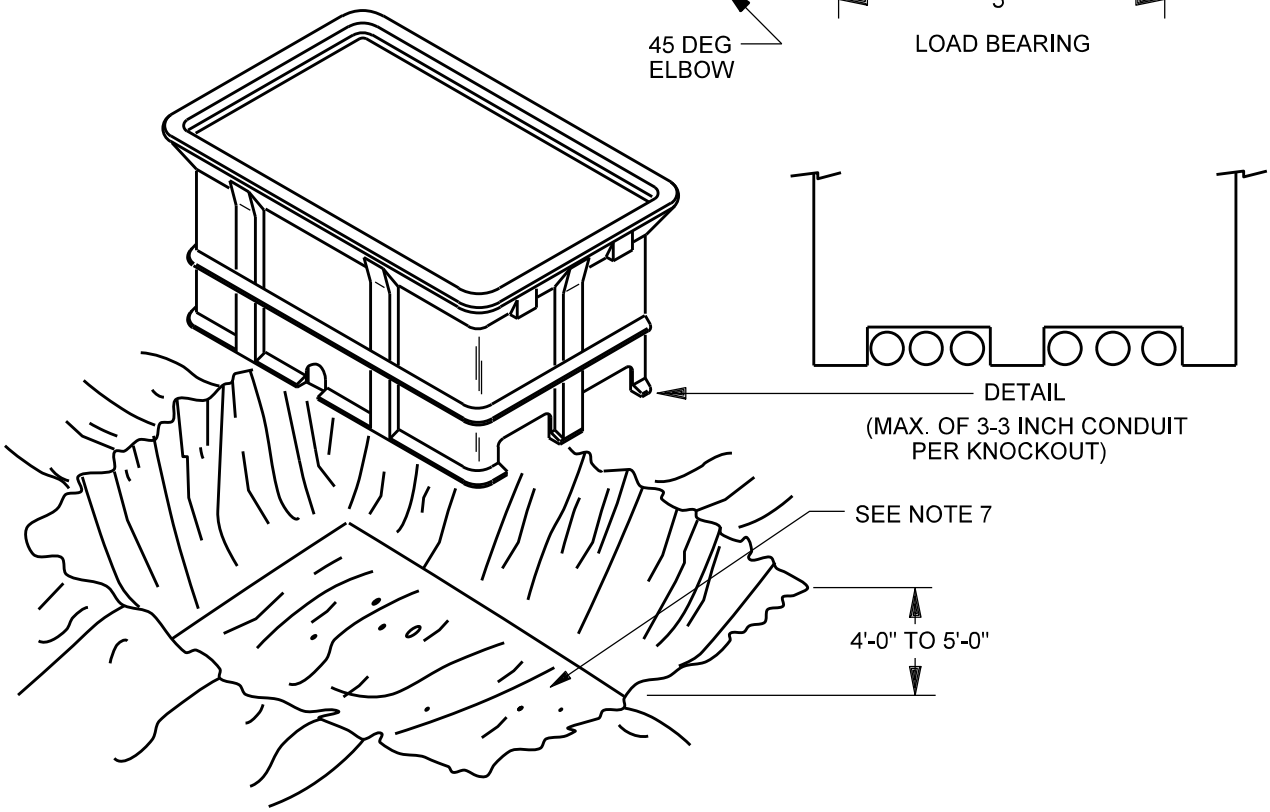
UVPB1 5034694

UVPBG FOR DEVELOPER INSTALLATION



NON-LOAD BEARING
(SEE NOTE 1)





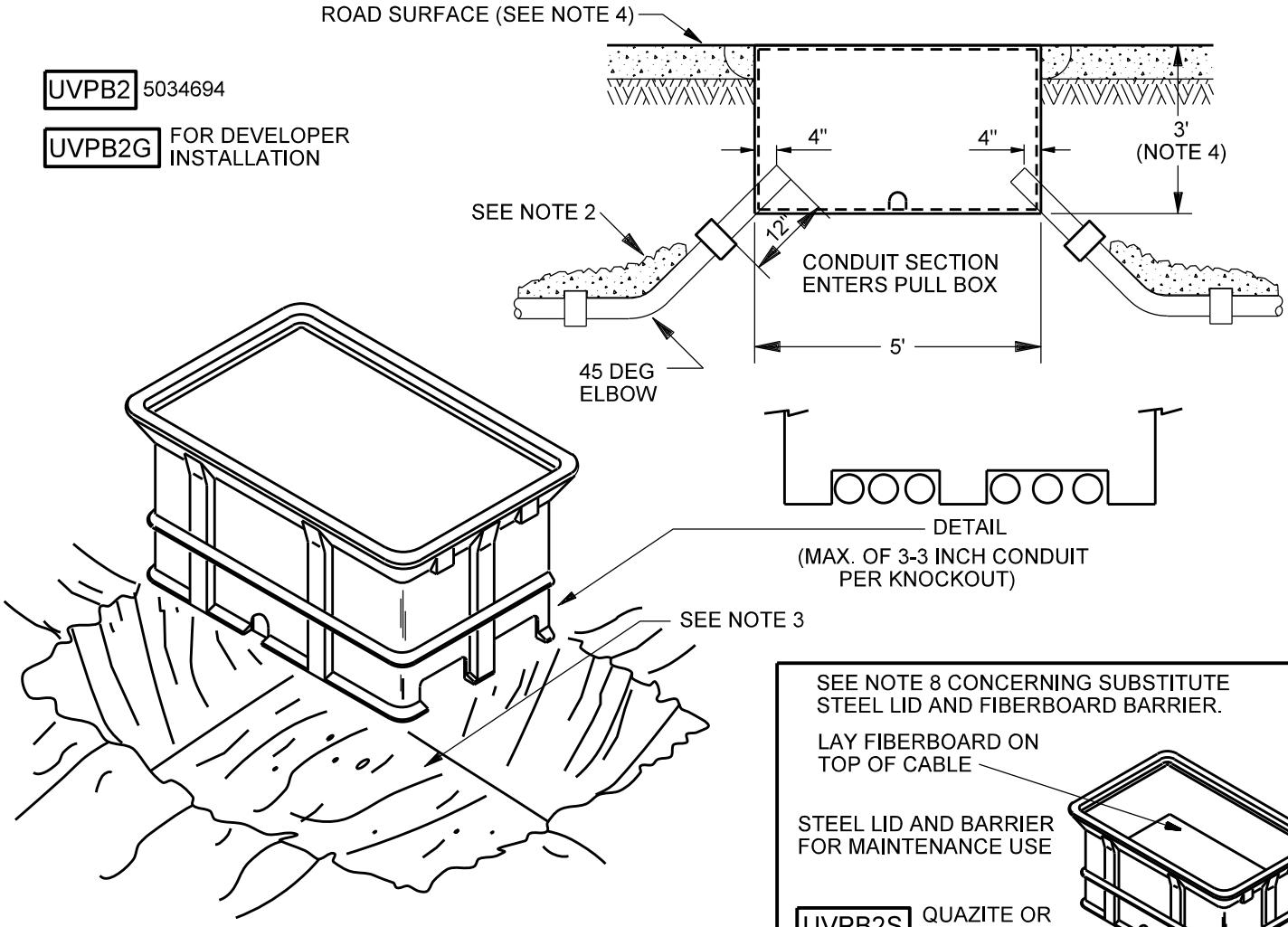
NOTES

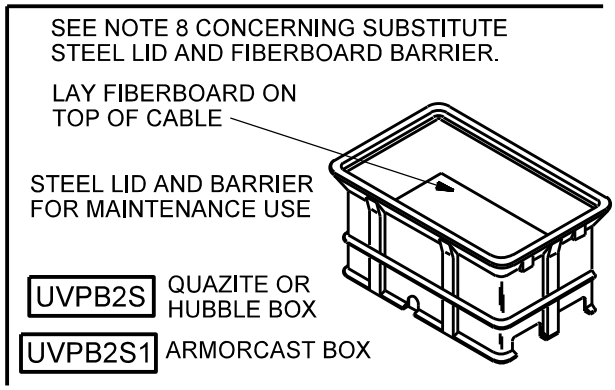
1. FOR NO TRAFFIC, NON-LOAD BEARING APPLICATIONS., SUCH AS LANDSCAPED AREAS.
2. FOR LOAD BEARING APPLICATIONS, SUCH AS AN ALLEY WITH LOW SPEED VEHICLES THIS BOX SHALL HAVE 12 INCHES OF COVER. WHEN INSTALLED IN AREAS WHERE SUBJECT TO FINAL GRADE CHANGES, THIS BOX SHALL HAVE 18 TO 24 INCHES OF COVER.
3. ELBOWS INTO PULL BOX SHALL BE GROUTED IN . (ELBOWS NOT INCLUDED IN THIS COMPATIBLE UNIT).
4. CARE SHALL BE TAKEN TO PROVIDE A SMOOTH, LEVEL, WELL COMPACTED BASE TO SET THE BOX ON. COMPACT AROUND SIDES OF BOX TO PREVENT SETTLING.
5. CUSTOMER SUPPLIED PULL BOX MUST MEET SPECIFICATIONS LISTED IN STOCK DESCRIPTION # 5034694.
6. CONDUITS MUST EXTEND A MINIMUM OF 4 INCHES INSIDE OF BOX.
7. DIMENSIONS AT BOTTOM OF EXCAVATION SHALL BE A MINIMUM OF 6 FEET BY 8 FEET.
8. ABOVE GROUND PULL BOXES ARE PREFERRED. USE UVPB1 OR UVPBG AS A LAST RESORT ONLY.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES 5'x 3'x 3' PULL BOX BELOW GRADE (LOAD BEARING)	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	7-6-1	8513E101.DGN

UVPB2 5034694

UVPB2G FOR DEVELOPER INSTALLATION

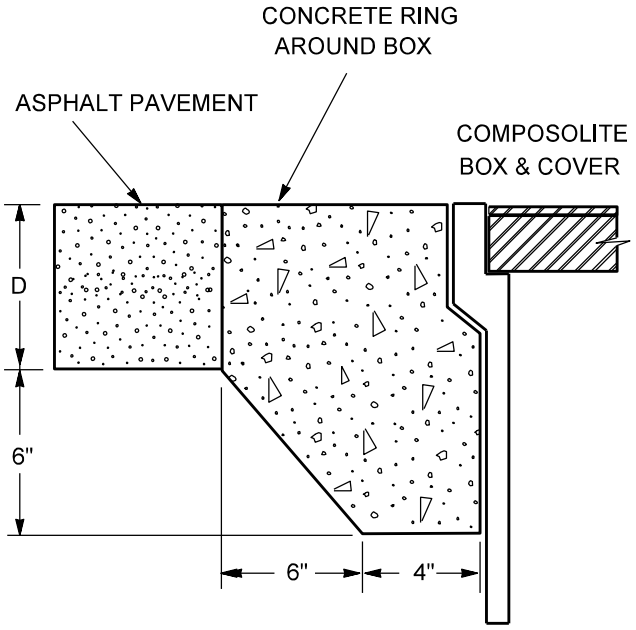




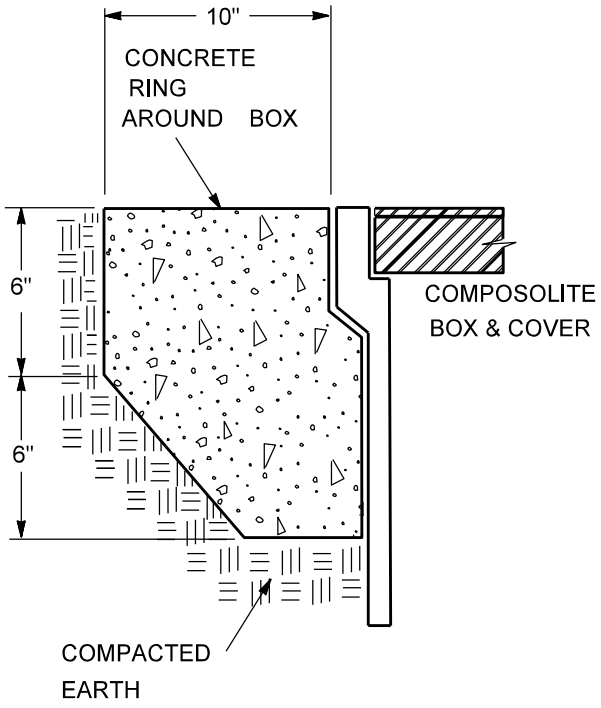
NOTES

1. THIS UNIT IS LOAD BEARING FOR USE IN AREAS SUCH AS A PARKING LOT, BUT NOT IN THE TRAVELLED WAY. FOR APPLICATION WHERE NO VEHICLE TRAFFIC EXISTS THIS BOX MAY BE INSTALLED WITHOUT THE CONCRETE RING.
2. ELBOWS INTO PULL BOX SHALL BE GROUTED IN (ELBOWS NOT INCLUDED IN THIS COMPATIBLE UNIT).
3. CARE SHALL BE TAKEN TO PROVIDE A SMOOTH, LEVEL, WELL COMPACTED BASE TO SET THE BOX ON. DIMENSIONS AT BOTTOM OF EXCAVATION SHALL BE A MINIMUM OF 6 FEET BY 8 FT. COMPACT AROUND SIDES OF BOX TO PREVENT SETTLING AROUND BOX.
4. WHEN INSTALLED IN CONCRETE, ASPHALT, OR A FIXED GRADE, THE BOX SHALL BE FLUSH MOUNTED WITH EXISTING GRADE PER DETAIL ON NEXT PAGE.
5. CUSTOMER SUPPLIED PULL BOX MUST MEET SPECIFICATIONS LISTED IN STOCK DESCRIPTION OF 5034694.
6. CONDUITS MUST EXTEND A MINIMUM OF 4 INCHES INSIDE OF BOX.
7. ABOVE GROUND PULL BOXES ARE PREFERRED. USE UVPB2 OR UVPB2G AS A LAST RESORT ONLY.
8. A STEEL LID (#5034693 FOR A QUAZITE/HUBBLE BOX, OR #5034688 FOR AN ARMORCAST BOX) IS AVAILABLE FOR REPLACEMENT OF DAMAGED LIDS.NOT FOR STREET INSTALLATION. BEFORE STEEL LID IS SET,LAY FIBERBOARD (#5034048) ON TOP OF CABLE. ALL CABLE SHOULD BE BELOW THE FIBERBOARD BARRIER.

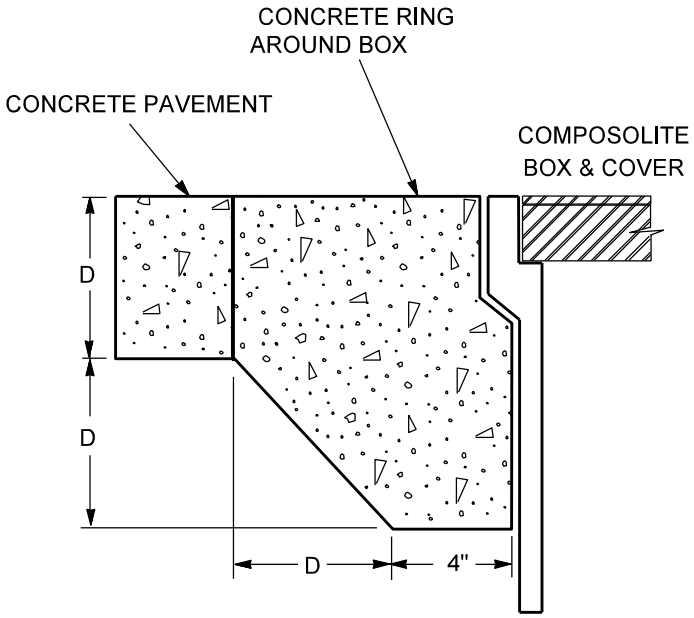
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES 5'x 3'x 3' PULL BOX FLUSH MOUNT (LOAD BEARING)	ISSUE DATE: 01/15/87 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	7-7-1	8513E102.DGN



IN ASPHALT PAVEMENTS



IN COMPACTED EARTH

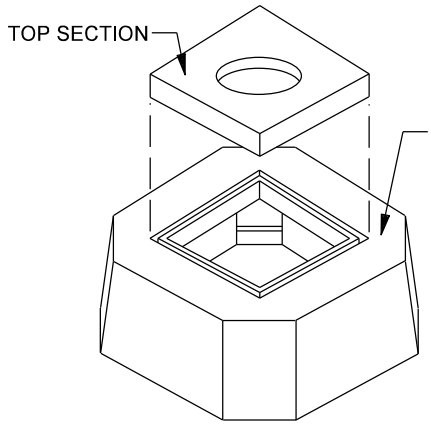


IN CONCRETE PAVEMENTS

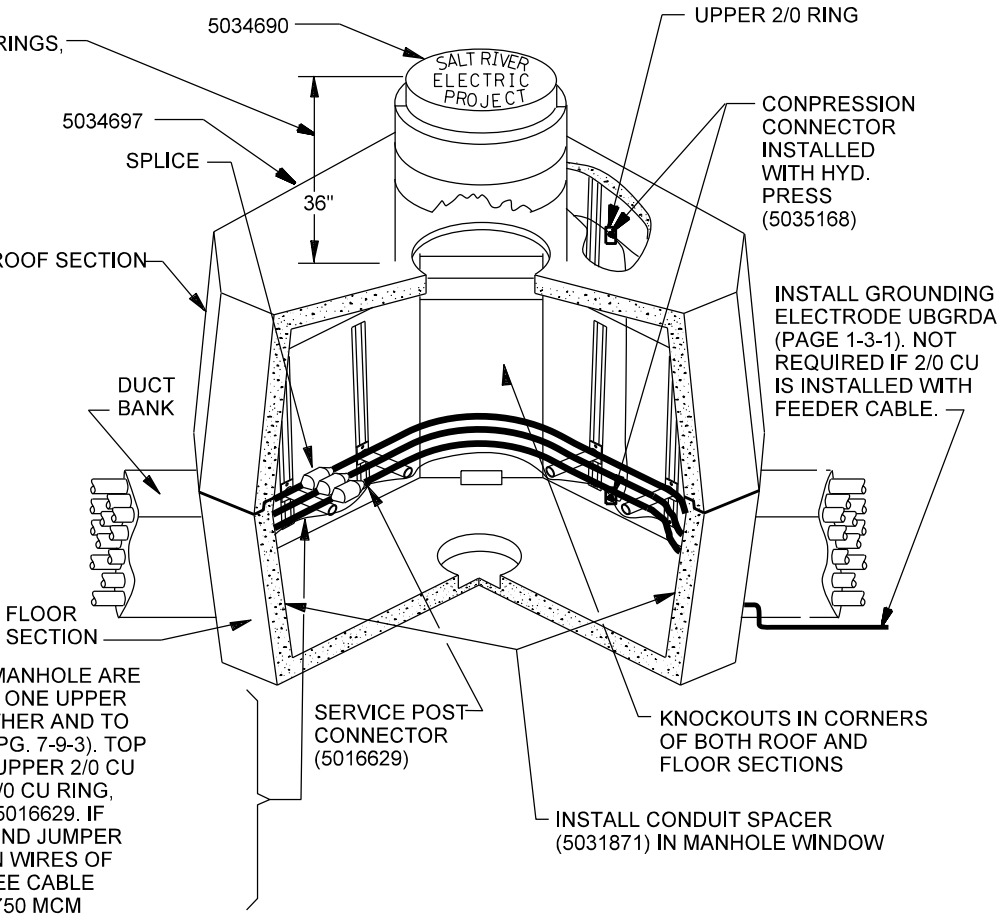
NOTES

1. CONCRETE ENCASEMENT TO BE 3,000 PSI MINIMUM.
2. CONCRETE ENCASEMENT RING DIMENSION, D, TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
3. PAVEMENT AND SUBGRADE TO BE AS SHOWN ON THE ENGINEERING PLANS.

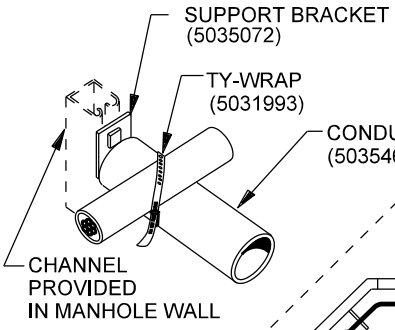
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES LOAD BEARING PULL BOX FLUSH MOUNTING DETAILS	ISSUE DATE: 07/29/88 REV. DATE: 05/16/10 APPROVAL: B.PRIEST
	7-7-2	8513E23.DGN

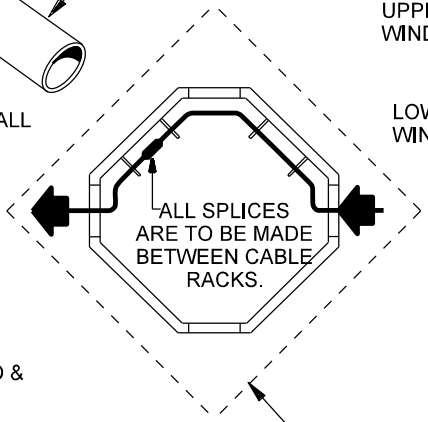


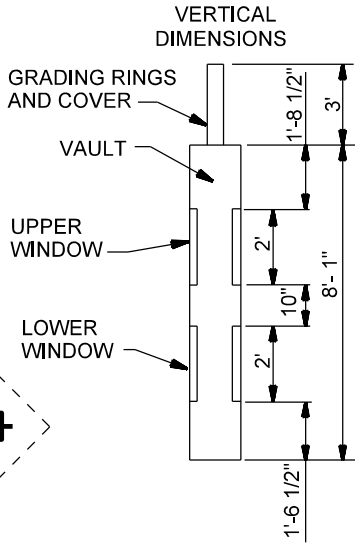
ALTERNATE ROOF SECTION

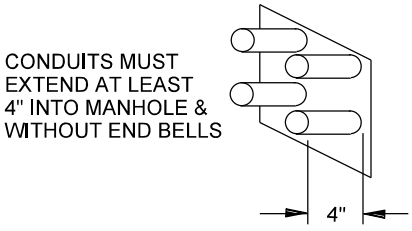


TWO 2/0 BARE CU RINGS INCLUDED WITH MANHOLE ARE TO BE INSTALLED AROUND THE MANHOLE, ONE UPPER AND ONE LOWER AND CONNECTED TOGETHER AND TO SYSTEM NEUTRALS WHEN PRESENT (SEE PG. 7-9-3). TOP CABLE RACKS SHALL BE BONDED TO THE UPPER 2/0 CU RING, BOTTOM CABLE RACKS TO LOWER 2/0 CU RING, BOTH USING SERVICE POST CONNECTOR 5016629. IF SPLICES ARE TO BE GROUNDED, USE A BOND JUMPER TO THE CONCENTRIC NEUTRALS OR DRAIN WIRES OF SPLICES TO THE CLOSEST 2/0 CU RING. (SEE CABLE AND ACCESSORIES, SEALING OF 500 AND 750 MCM JACKET AT SPLICES).









1. USE BOTTOM WINDOWS FOR INITIAL FACILITIES. USE UPPER WINDOWS FOR FUTURE ADDITIONAL FACILITIES.
2. MAXIMUM 12 CONDUITS PER WINDOW.
3. DO NOT ENTER AND EXIT SAME WALL.

UVMH2

9' x 9' MANHOLE
SRP EXCAVATED & BACKFILLED

UVMH2C

CUSTOMER EXCAVATED & BACKFILLED

UVMW1G

ADD ONE RING OF 2/0 BARE CU NEUTRAL (SEE PAGE 7-9-3)

VAULT
OUTSIDE DIMENSIONS
9'- 4" X 9'- 4"
EXCAVATION TO BE
12' x 12' x 11' DEEP
FROM FINAL GRADE

CABLE RACKING DETAIL

CODE NO.	DESCRIPTION
UVMW1L	CABLE RACKING FOR 1 CIRCUIT
UVMW2L	CABLE RACKING FOR 2 CIRCUIT
UVMW3L	CABLE RACKING FOR 3 CIRCUIT
UVMW4L	CABLE RACKING FOR 4 CIRCUIT

Underground Distribution Construction Standards

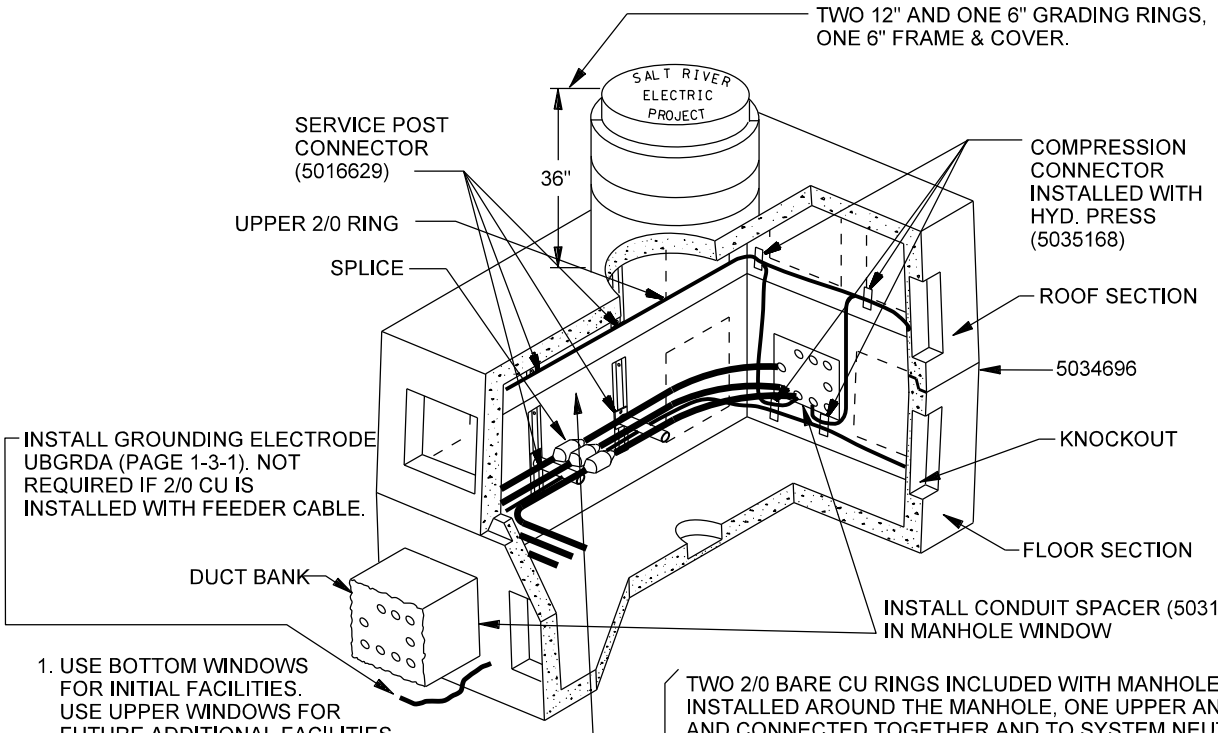
SRP®

PROPRIETARY MATERIAL

VAULTS, MANHOLES, AND BOXES
9' x 9' MANHOLE, CABLE RACKING

ISSUE DATE: 01/15/87
REV. DATE: 07/31/13
APPROVAL: B.PRIEST

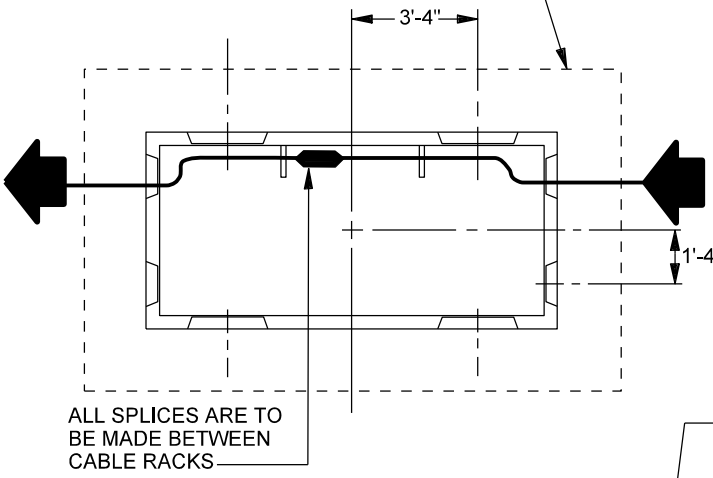
8513E123.DGN

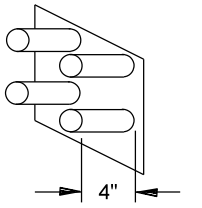


1. USE BOTTOM WINDOWS FOR INITIAL FACILITIES. USE UPPER WINDOWS FOR FUTURE ADDITIONAL FACILITIES.
2. MAXIMUM OF 12 CONDUITS PER WINDOW.
3. DO NOT ENTER AND EXIT SAME WALL.

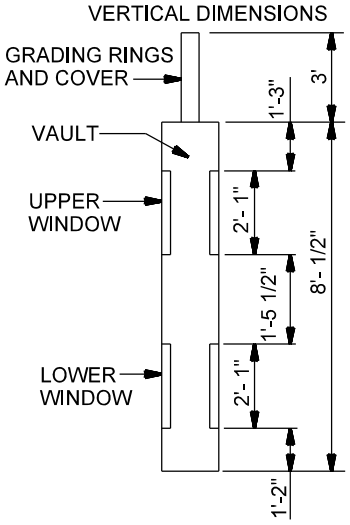
TWO 2/0 BARE CU RINGS INCLUDED WITH MANHOLE ARE TO BE INSTALLED AROUND THE MANHOLE, ONE UPPER AND ONE LOWER AND CONNECTED TOGETHER AND TO SYSTEM NEUTRALS WHEN PRESENT (SEE PG.7-9-3).
TOP CABLE RACKS SHALL BE BONDED TO THE UPPER 2/0 CU RING, BOTTOM CABLE RACKS TO LOWER 2/0 CU RING, BOTH USING SERVICE POST CONNECTOR 5016629.
IF SPLICES ARE TO BE GROUNDED, USE A BOND JUMPER TO THE CONCENTRIC NEUTRALS OR DRAIN WIRES OF SPLICES TO THE CLOSEST 2/0 CU RING. (SEE CABLE AND ACCESSORIES, SEALING OF 500 AND 750 MCM JACKET AT SPLICES).

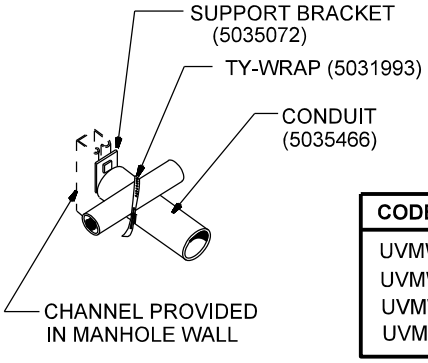
EXCAVATION TO BE 8' x 13' x 11' DEEP FROM FINAL GRADE AND OFFSET FROM CENTER OF TRENCH TO WINDOW LOCATIONS
VAULT OUTSIDE DIMENSIONS 11' X 5'- 10"





CONDUITS MUST EXTEND AT LEAST 4" INTO MANHOLE & WITHOUT END BELLS





UVMH1
5' x 10' MANHOLE SRP EXCAVATED & BACKFILLED

UVMW1G
ADD ONE RING OF 2/0 BARE CU NEUTRAL SEE PAGE 7-9-3.

UVMH1C
CUSTOMER EXCAVATED & BACKFILLED

CABLE RACKING DETAIL

CODE NO.	DESCRIPTION
UVMW1	CABLE RACKING FOR 1 CIRCUIT
UVMW2	CABLE RACKING FOR 2 CIRCUIT
UVMW3	CABLE RACKING FOR 3 CIRCUIT
UVMW4	CABLE RACKING FOR 4 CIRCUIT

Underground Distribution Construction Standards

SRP®

PROPRIETARY MATERIAL

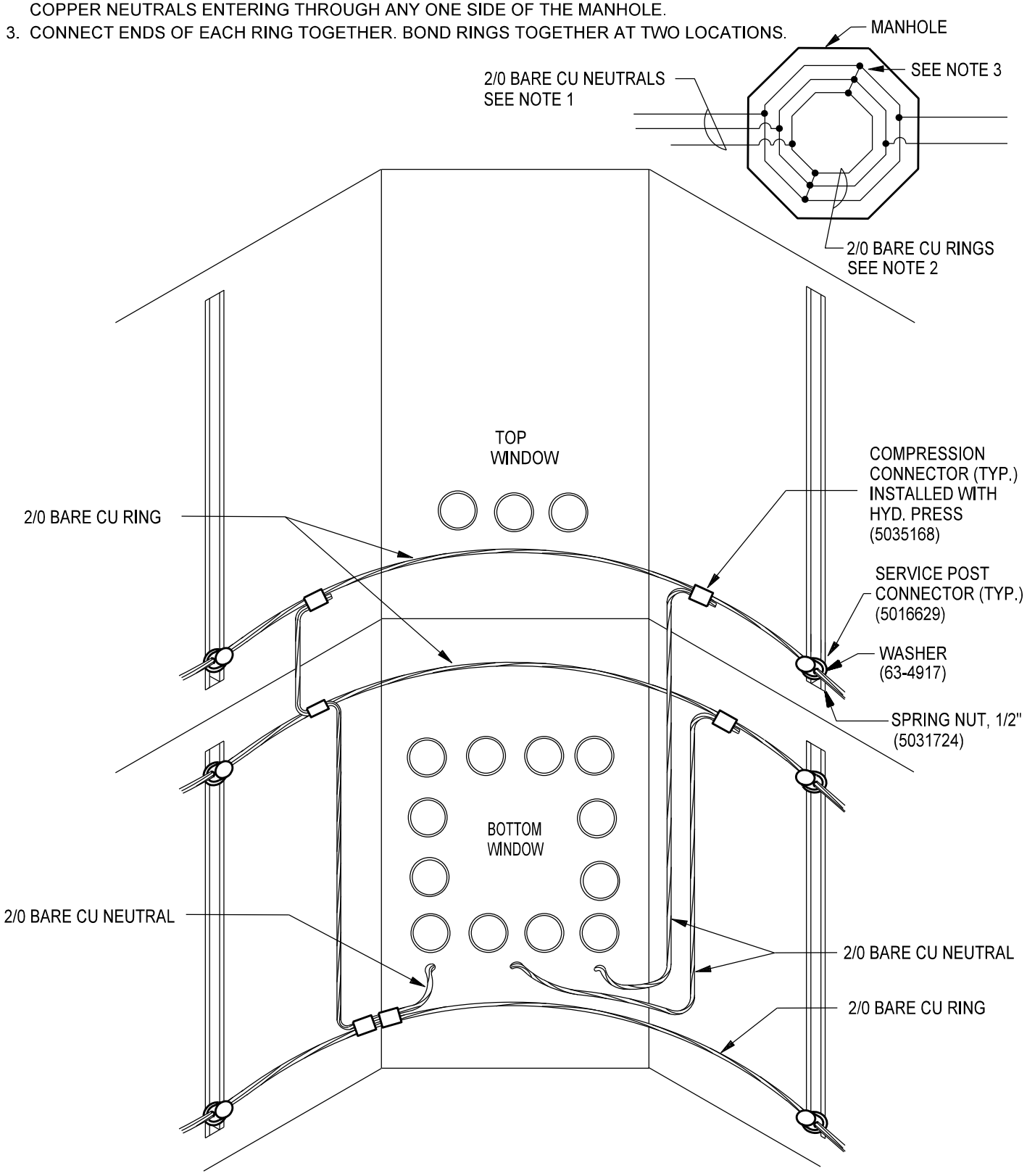
VAULTS, MANHOLES AND BOXES
5' x 10' MANHOLE, CABLE RACKING

ISSUE DATE: 01/15/87
REV. DATE: 07/31/13
APPROVAL: B.PRIEST

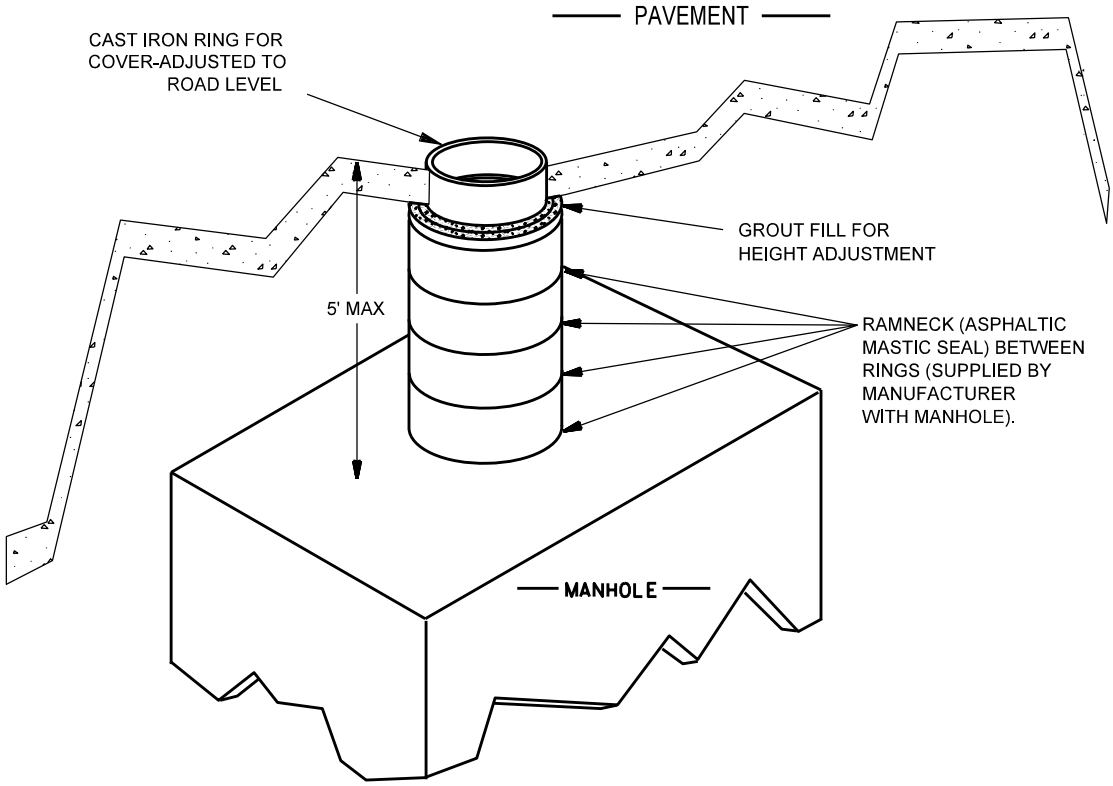
8513E124.DGN

NOTES

1. SEE CONDUIT ONE LINE AND / OR ELECTRICAL SCHEMATIC FOR NUMBER OF 2/0 BARE COPPER NEUTRAL RUNS INTO MANHOLE.
2. THE NUMBER OF 2/0 BARE COPPER RINGS IN MANHOLES SHALL BE EQUAL TO THE HIGHEST NUMBER OF 2/0 BARE COPPER NEUTRALS ENTERING THROUGH ANY ONE SIDE OF THE MANHOLE.
3. CONNECT ENDS OF EACH RING TOGETHER. BOND RINGS TOGETHER AT TWO LOCATIONS.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES, AND BOXES 2/0 BARE COPPER NEUTRALS CONNECTIONS IN MANHOLES	ISSUE DATE: 04/30/04 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	7-8-3	8513E356.DGN



FOR ADDITIONAL GRADING RINGS
6" HIGH #5034695

UVMHR # 5034695

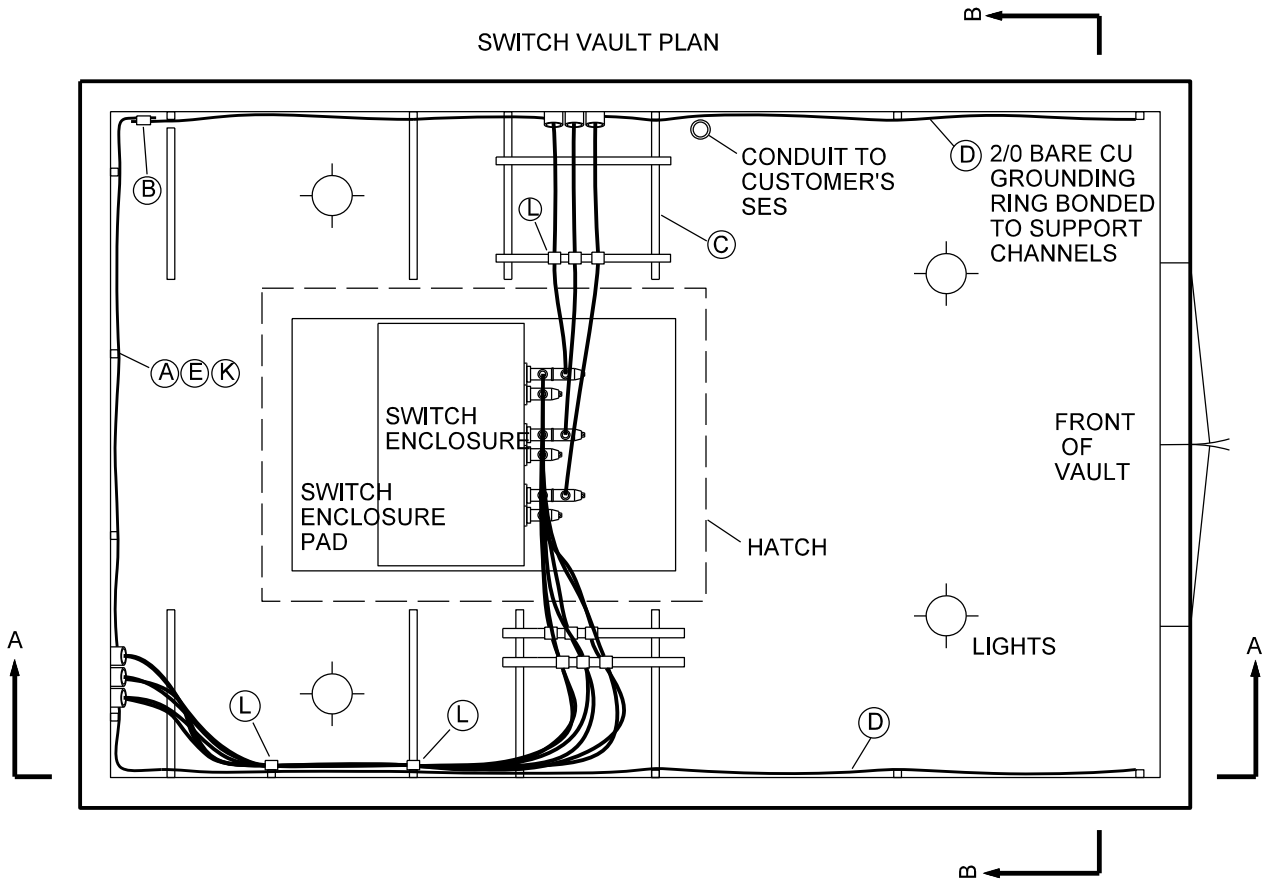
MATERIAL ONLY
(GENERALLY INSTALLED BY OTHERS)

UVMHCA

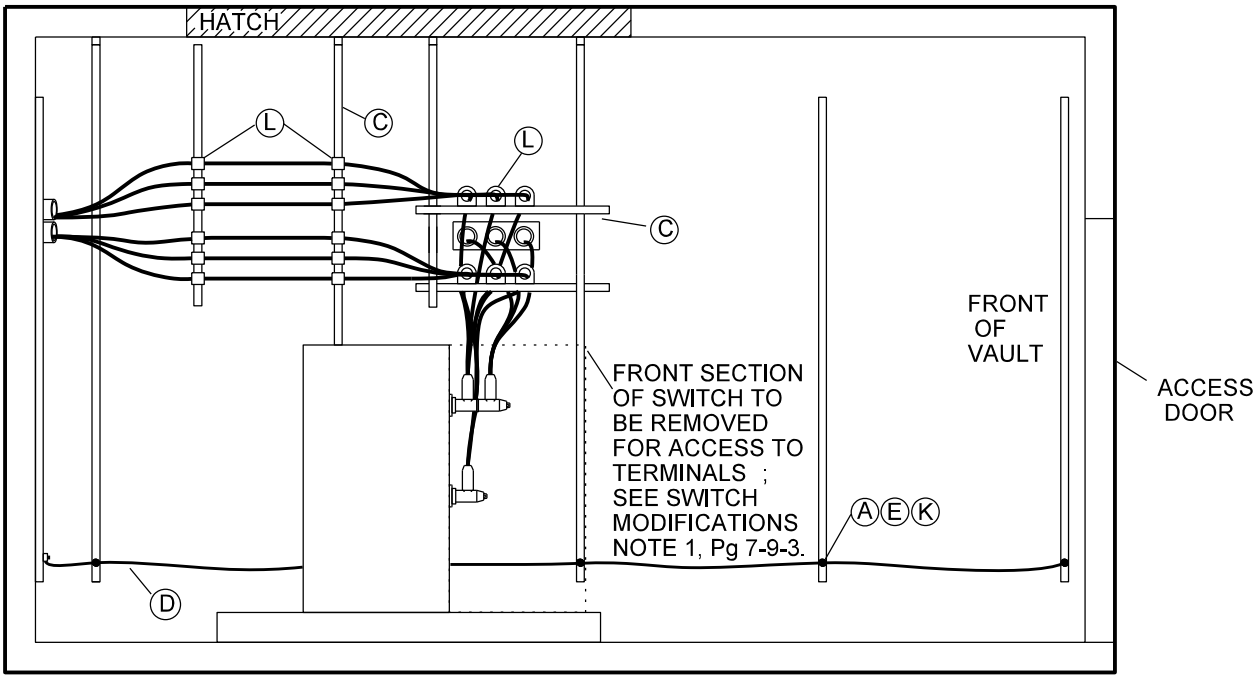
(LABOR ONLY)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES MANHOLE COVER ADJUSTMENT	ISSUE DATE: 02/17/10 REV. DATE: 02/08/17 APPROVAL: N.SABBAH
	7-8-4	8513E24.DGN

SWITCH VAULT PLAN

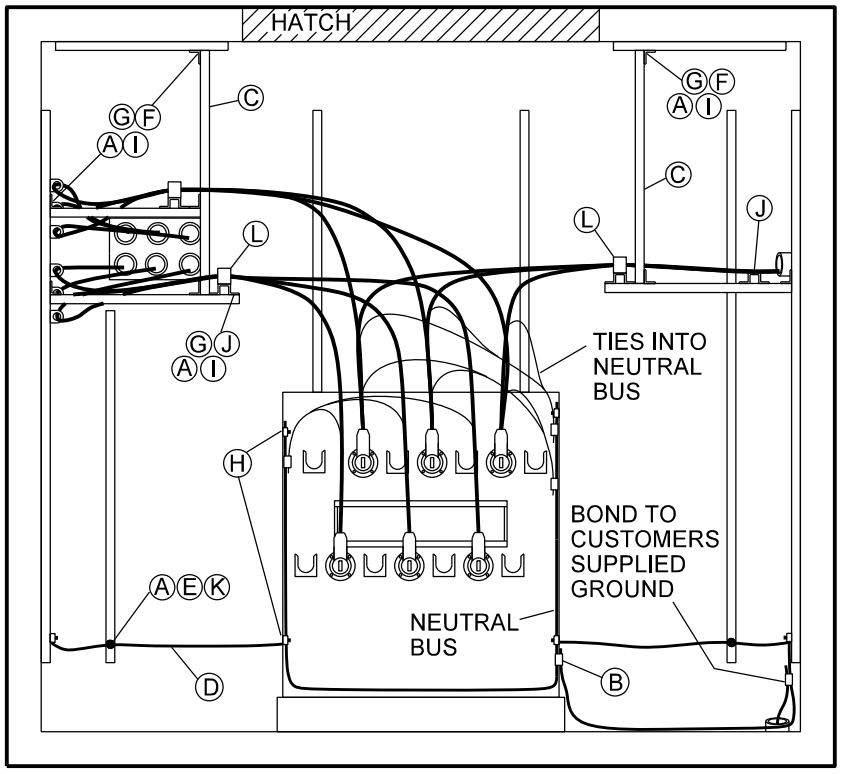


SECTION A-A



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES VAULT INSTALLATION PAD-MOUNTED SWITCH VAULT	ISSUE DATE: 10/16/12 REV. DATE: 09/16/19 APPROVAL: N.SABBAH
	7-9-1	8513E578.DGN

SECTION B-B



SWITCH VAULT LEGEND			
ITEM	**DESCRIPTION**	**MATERIAL IETM**	**QUANTITY**
A	SPRING NUT CLAMP	5031724	100 EACH
B	COMPRESSION CONNECTOR FOR 2/0 CU	5035168	15 EACH
C	CHANNEL FRAMING	5035191	60 FEET
D	WIRE, BARE 2/0 CU	5033854	70 FEET
E	CONNECTOR, GROUND RING, 1/2"	5016629	20 EACH
F	ANGLE, CORNER FOR FRAMING	5034954	30 EACH
G	HEX BOLTS FOR FRAMING, 1/2"	5069527	2 BOXES
H	TAP LUG, SINGLE 1/2"	5016730	4 EACH
I	WASHER, LOCKING, 1/2"	5004977	2 BOXES
J	U-BRACKET FOR FRAMING	5035076	10 EACH
K	WASHER, FLAT, 1/2"	5004974	2 BOXES
L	CONDUCTOR CHANNEL CLAMPS	SEE STANDARDS ENGINEERING	21 EACH

NOTES

CHANNEL FRAMING CONSTRUCTION

1. CUSTOMER TO SUPPLY AND INSTALL SUPPORT CHANNELS ATTACHED TO WALLS AND CEILING.
2. SRP CREWS TO CONSTRUCT CHANNEL FRAMING STRUCTURE TO SUPPORT CONDUCTORS AS SHOWN.
3. CHANNEL FRAMING SHALL INCLUDE LOCKING WASHERS AT ALL CONNECTIONS.

SWITCH MODIFICATION

1. PRIOR TO CONSTRUCTION IN A VAULT, A SWITCH SHALL HAVE THE TOP OF THE TERMINATING COMPARTMENT REMOVED BY THE TRANSFORMER SHOP. IF THE SWITCH IS FROM AZZ THE ROOF CAN BE REMOVED AND REPLACED WITH A PARTIAL ROOF USING SAP ITEM 5088393.
2. SRP TO SUPPLY AND INSTALL SWITCH PAD.

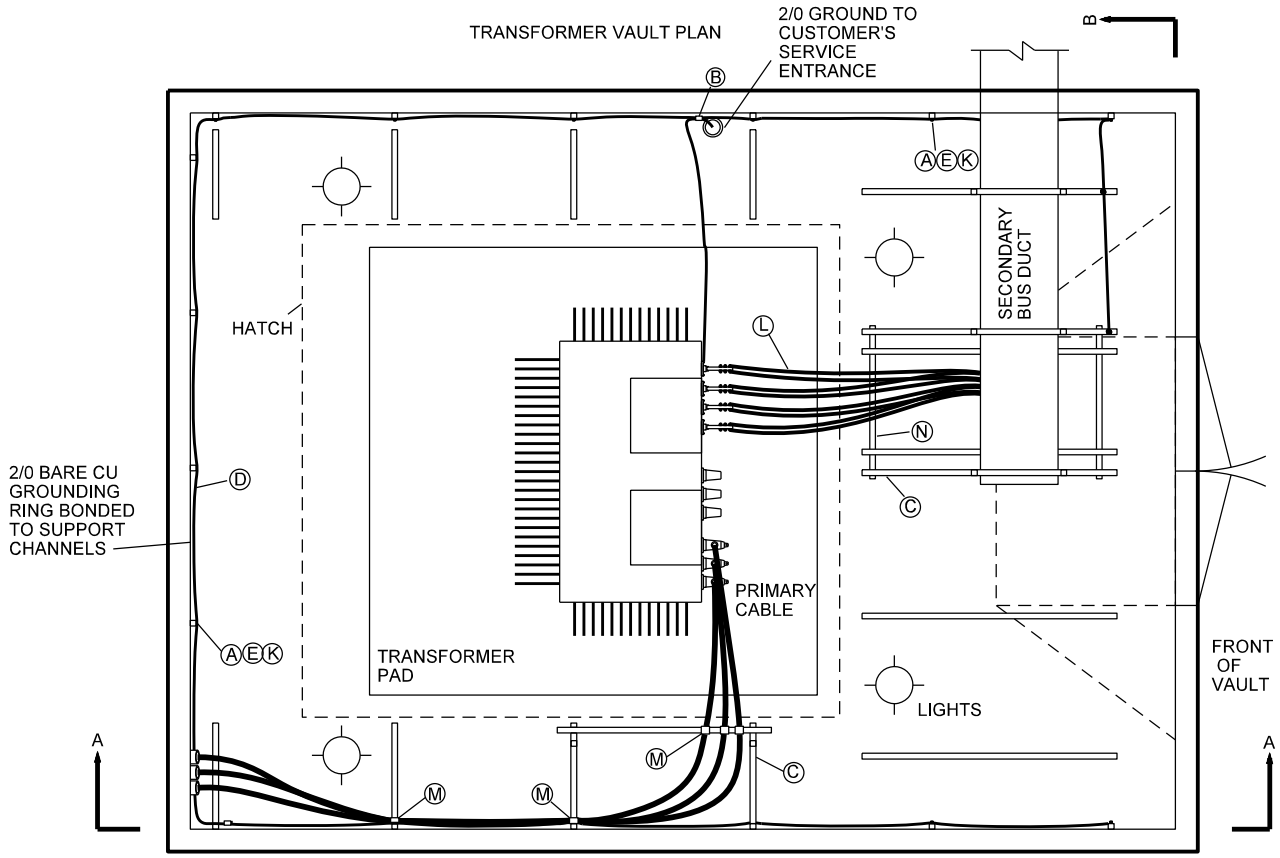
GROUNDING INSTRUCTIONS

1. INSTALL 2/0 BARE CU RING AROUND THE VAULT PERIMETER. BOND 2/0 TO SUPPORT CHANNELS ATTACHED TO THE WALL
2. BOND CUSTOMER'S SUPPLIED GROUND TO VAULT GROUND RING.
3. INSTALL 2/0 BARE CU AROUND THE REAR PANEL OF THE SWITCH ENCLOSURE. BOND 2/0 TO ENCLOSURE AT PRE-DRILL HOLES ON THE TOP AND BOTTOM OF ENCLOSURE. CONNECT DRAIN WIRES AND CONCENTRIC NEUTRALS TO THIS GROUND BUS.
4. INSTALL AND BOND 2/0 BARE CU FROM GROUND RING TO SWITCH GROUND, CLAMP WIRE TO THE FLOOR.

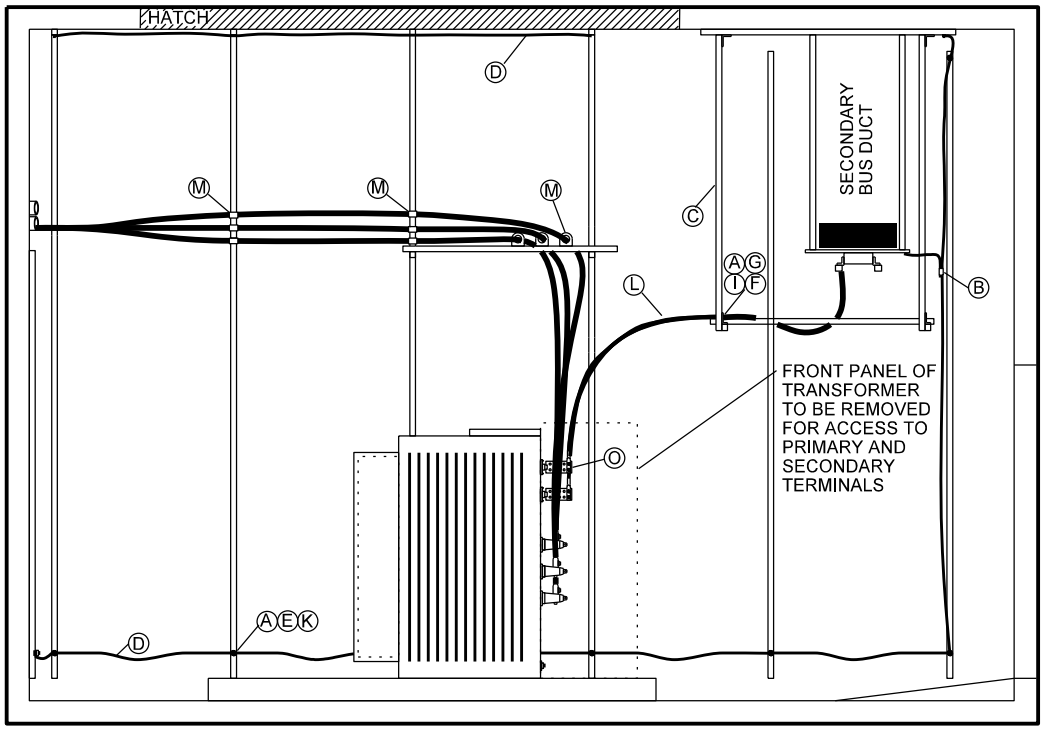
DIMENSIONS

FOR THE DRIVE IN SWITCH VAULT, CONSTRUCTION STANDARDS WILL BE THE SAME AS THE WALK IN VAULT EXCEPT FOR VAULT HEIGHT AND DOOR HEIGHT. SEE GENERAL DESIGN CRITERIA UNDERGROUND DESIGN VAULT SPECIFICATIONS IN THE DISTRIBUTION LINE DESIGN STANDARDS FOR ACTUAL DIMENSIONS.

TRANSFORMER VAULT PLAN

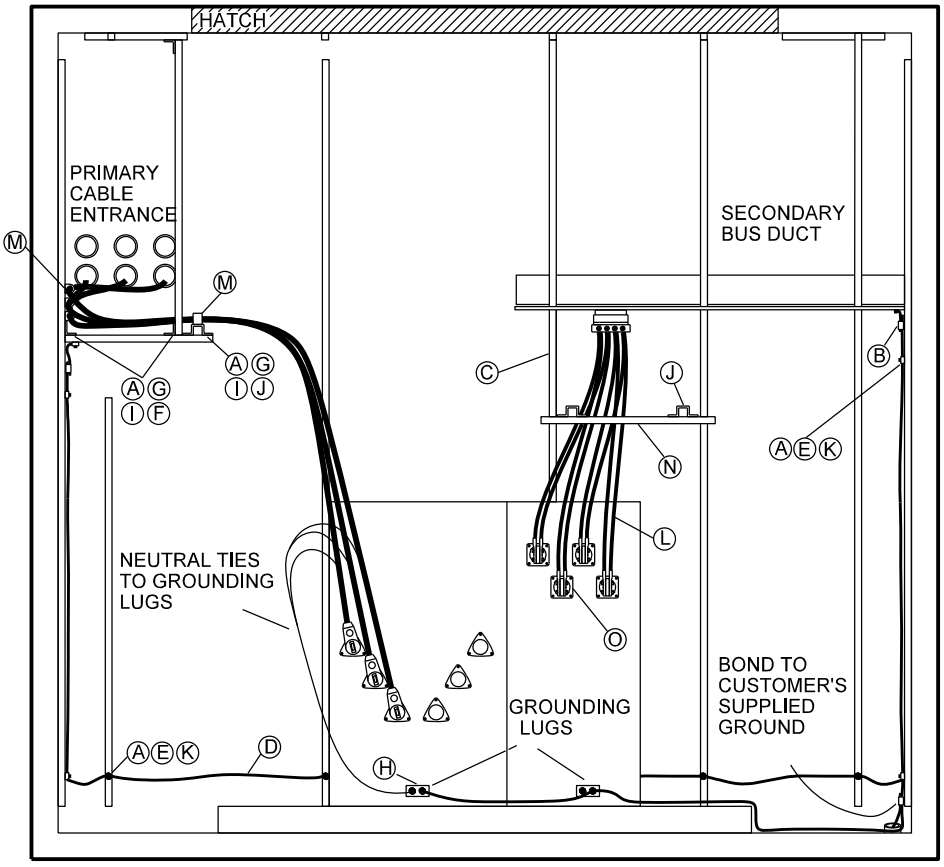


SECTION A-A



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES VAULT INSTALLATION PAD-MOUNTED TRANSFORMER VAULT	ISSUE DATE: 10/16/12 REV. DATE: 0 APPROVAL: B.PRIEST
	7-10-1	8513E577.DGN

SECTION B-B



NOTES

CHANNEL FRAMING CONSTRUCTION
1. CUSTOMER TO SUPPLY AND INSTALL SUPPORT CHANNELS ATTACHED TO WALLS AND CEILING.
2. SRP CREWS TO CONSTRUCT CHANNEL FRAMING STRUCTURE TO SUPPORT CONDUCTORS AS SHOWN.
3. CHANNEL FRAMING SHALL INCLUDE LOCKING WASHERS AT ALL CONNECTIONS.
4. COVER CHANNELING THAT SUPPORTS SERVICE RUNS (SHOWN IN ITEM N) WITH 3 FOOT CONDUIT.

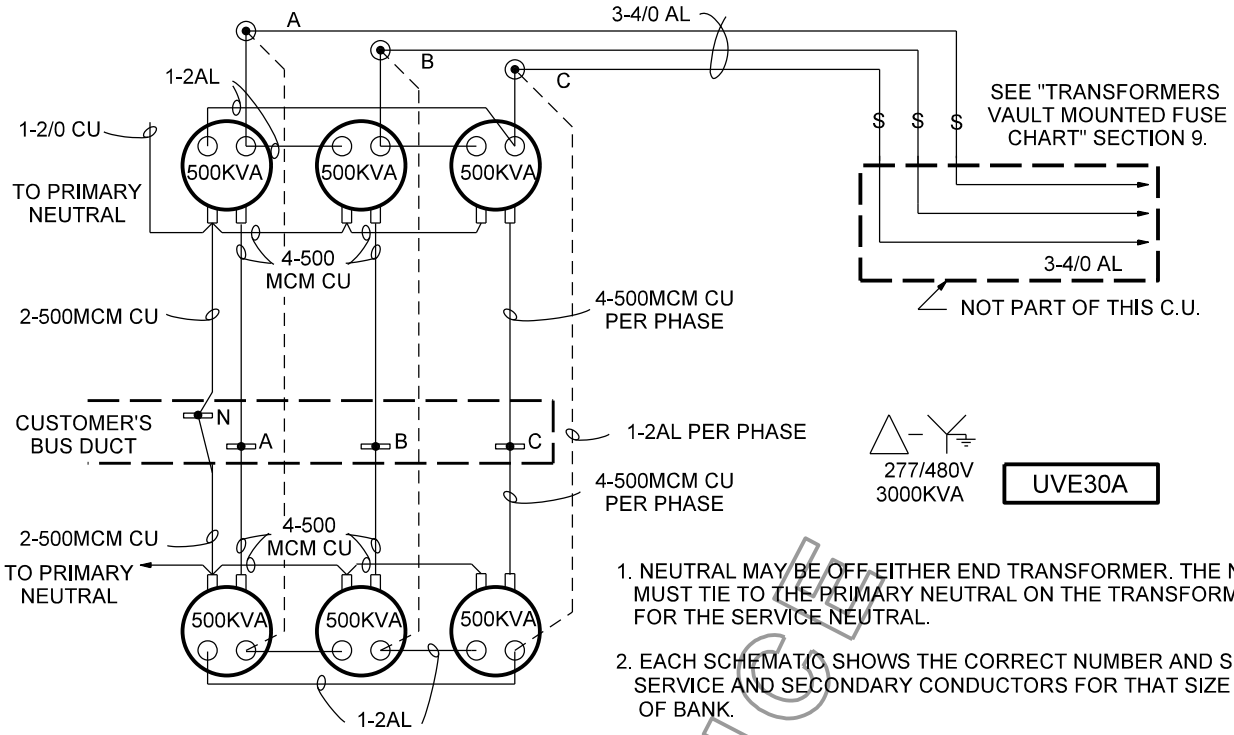
SECTION B-B

TRANSFORMER CONSTRUCTION
1. SRP CREW REMOVE FRONT END OF TRANSFORMER.
2. CUSTOMER TO SUPPLY AND INSTALL TRANSFORMER PAD.

GROUNDING INSTRUCTIONS
1. INSTALL 2/0 BARE CU RING AROUND THE VAULT PERIMETER. BOND 2/0 TO SUPPORT CHANNELS ATTACHED TO THE WALL.
2. BOND CUSTOMER'S SUPPLIED GROUND TO VAULT GROUNDING RING.
3. INSTALL AND BOND 2/0 CU FROM GROUND RING TO TRANSFORMER GROUNDING LUG IN PRIMARY COMPARTMENT.
4. TRAIN AND CLAMP THE GROUND WIRE TO THE TRANSFORMER TO THE VAULT FLOOR.

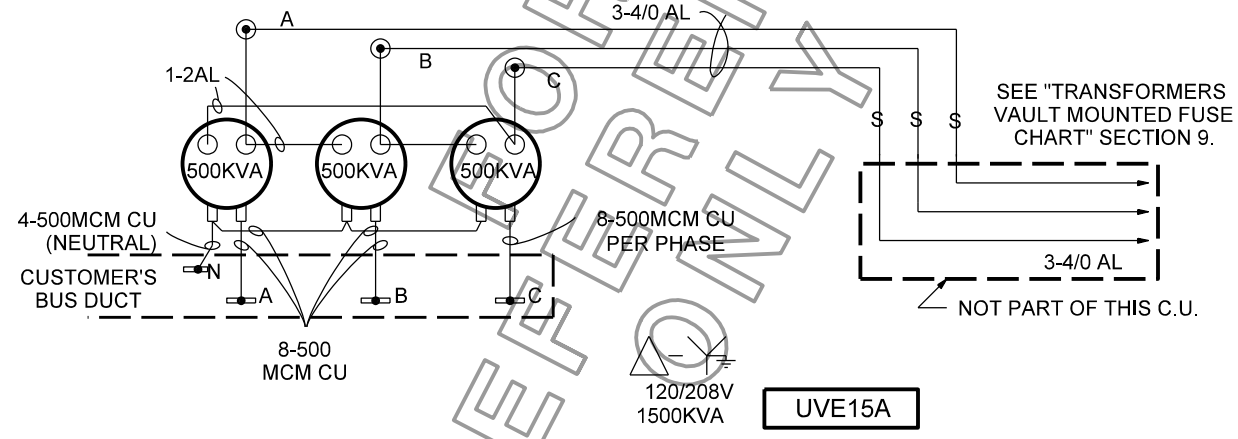
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES VAULT INSTALLATION PAD-MOUNTED TRANSFORMER VAULT	ISSUE DATE: 09/25/12 REV. DATE: 0 APPROVAL: B.PRIEST
	7-10-2	8513E577.DGN

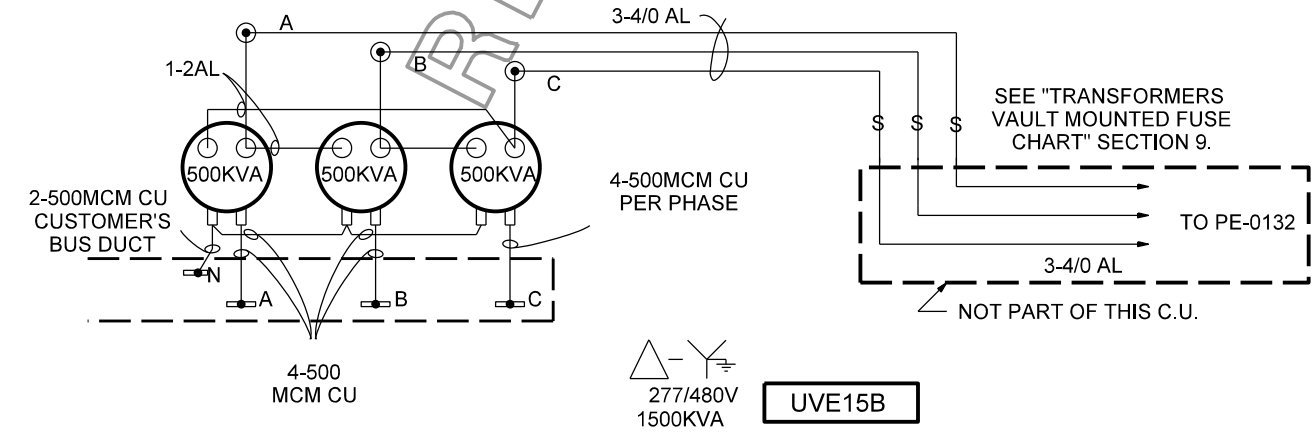
TRANSFORMER VAULT DETAIL					
ITEM	**DESCRIPTION**	**STOCK NO.**	**1500KVA 277/480V (120/208V)**	**2000KVA 277/480V**	**2500KVA 277/480V**
A	SPRING NUT CLAMP	5031724	100 EA.	100 EA.	100 EA.
B	COMPRESSION CONNECTOR FOR 2/0 CU	5035168	15 EA.	15 EA.	15 EA.
C	CHANNEL FRAMING	5035191	70 FT.	70 FT.	70 FT.
D	WIRE, BARE 2/0 CU	5033854	100 FT.	100 FT.	100 FT.
E	CONNECTOR, GROUND RING, 1/2"	5016629	30 EA.	30 EA.	30 EA.
F	ANGLE, CORNER FOR FRAMING	5034954	25 EA.	25 EA.	25 EA.
G	HEX BOLTS FOR FRAMING, 1/2"	5069527	2 BX.	2 BX.	2 BX.
H	TAP LUG, SINGLE, 1/2"	5016730	2 EA.	2 EA.	2 EA.
I	WASHER, LOCKING, 1/2"	5004977	1 BX.	1 BX.	1 BX.
J	U-BRACKET FOR FRAMING	5035076	10 EA.	10 EA.	10 EA.
K	WASHER, FLAT, 1/2"	5004974	1 BX.	1 BX.	1 BX.
L	WIRE, 500 MCM CU, 600V	5008580	240 FT. (480 FT)	360 FT.	480 FT.
M	CONDUCTOR CHANNEL CLAMPS	SEE STANDARDS ENGINEERING	9 EA.	9 EA.	9 EA.
N	CONDUIT, PVC, 3"	5035470	3 FT.	3 FT.	3 FT.
O	WASHER, CONICAL	5034050	32 EA. (16 EA.)	48 EA.	16 EA.
	CONNECTOR, COMPR, 500 MCM	5035292	16 EA. (32 EA.)	24 EA.	32 EA.
	TAPE, PLASTIC, YELLOW	5016173	40 EA. (80 EA.)	60 EA.	80 EA.
	WASHER, FLAT, 1/2"	5004963	21 EA. (45 EA.)	32 EA.	45 EA.
	BOLT, HEX 1/2"	5069529	40 EA. (80 EA.)	60 EA.	80 EA.
	NUT, HEX 1/2"	5069398	80 EA. (160 EA.)	120 EA.	160 EA.



1. NEUTRAL MAY BE OFF EITHER END TRANSFORMER. THE NEUTRAL MUST TIE TO THE PRIMARY NEUTRAL ON THE TRANSFORMER USED FOR THE SERVICE NEUTRAL.

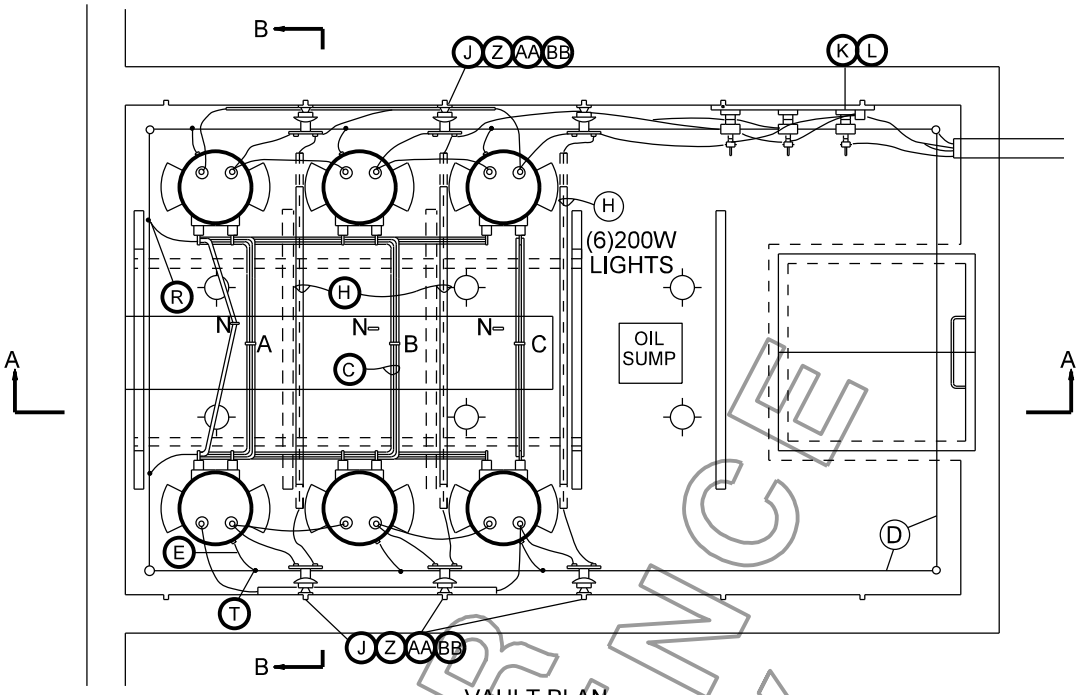
2. EACH SCHEMATIC SHOWS THE CORRECT NUMBER AND SIZE OF SERVICE AND SECONDARY CONDUCTORS FOR THAT SIZE AND VOLTAGE OF BANK.



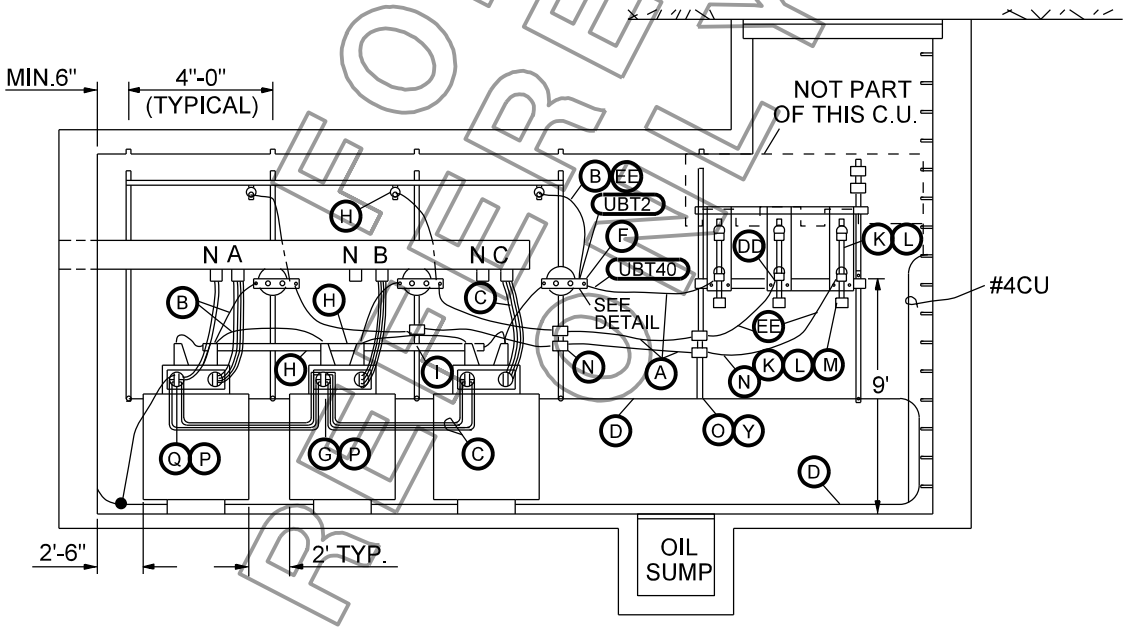


FOR REFERENCE ONLY

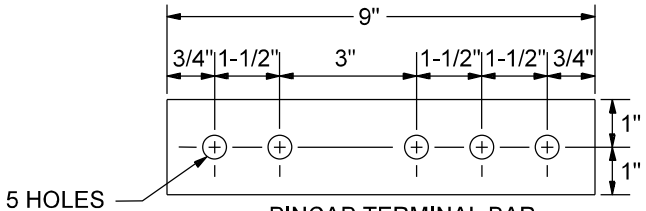
Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	VAULTS, MANHOLES AND BOXES VAULT INSTALLATION POLE TYPE TRANSFORMERS	ISSUE DATE: 05/29/90 REV. DATE: 09/25/12 APPROVAL: B.PRIEST
	7-11-1	8513E68.DGN



VAULT PLAN



SECTION A-A

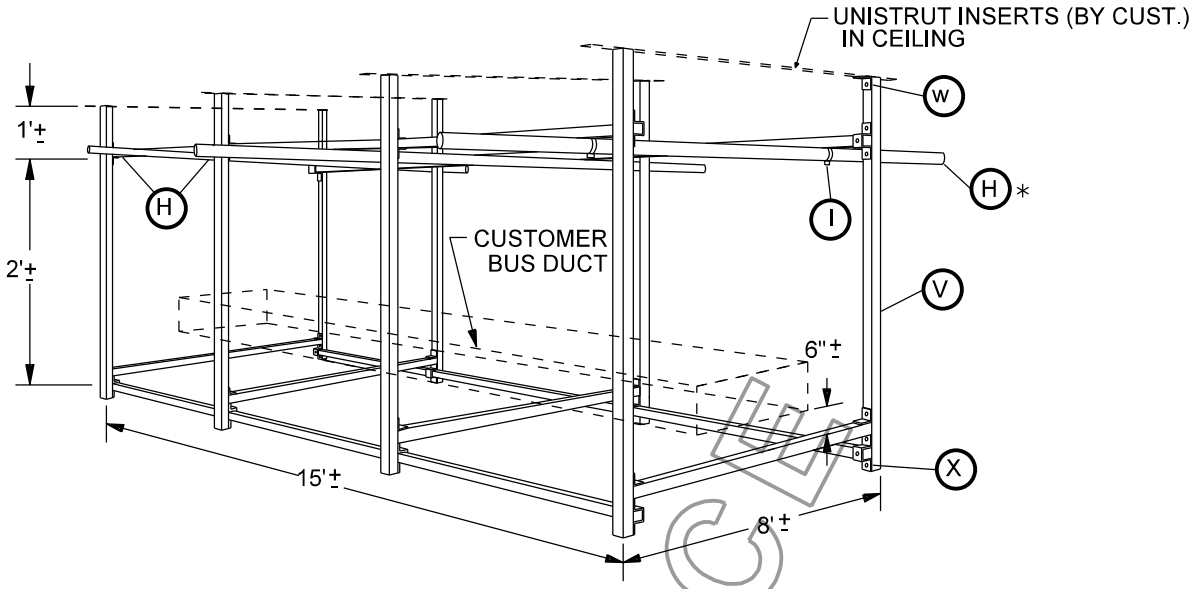


PINCAP TERMINAL BAR
DRILLING DETAIL
1/4"X2"X9" COPPER 3 BARS REQUIRED

DETAIL F

FOR REFERENCE ONLY

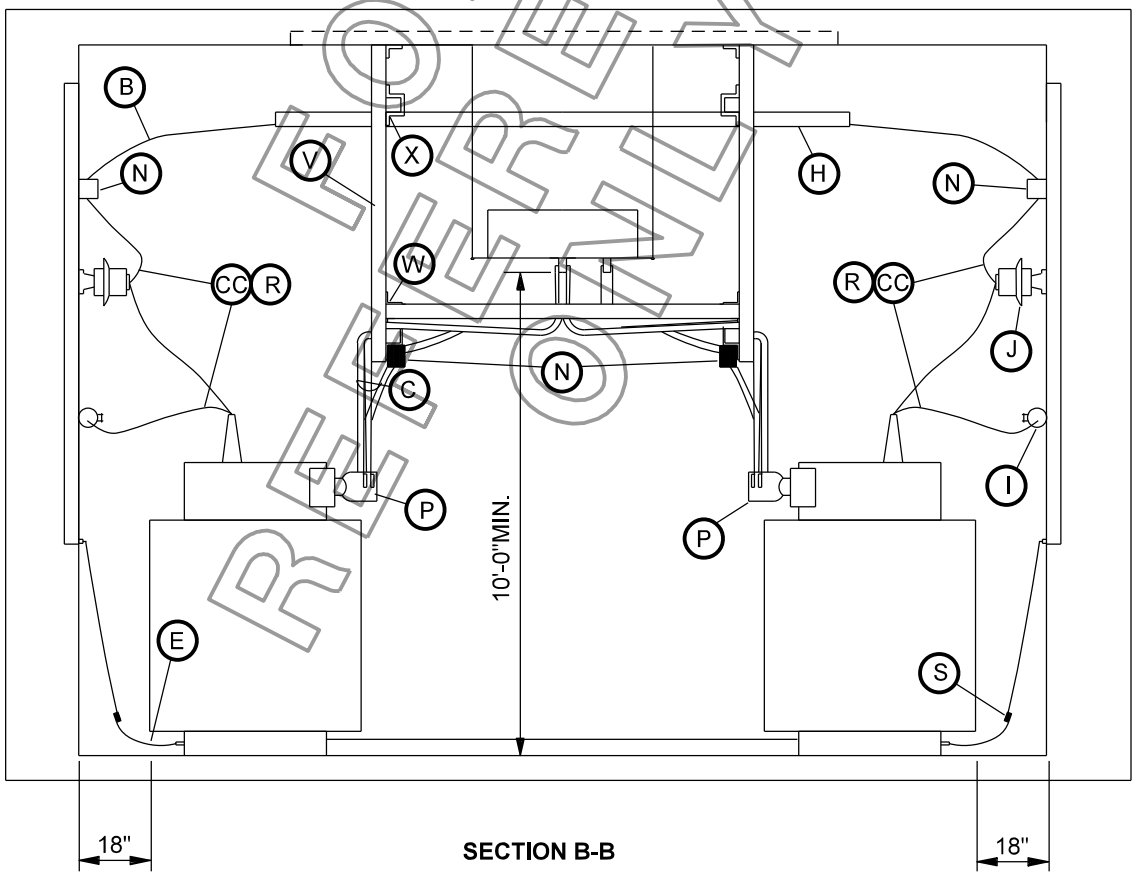
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES VAULT INSTALLATION POLE TYPE TRANSFORMERS	ISSUE DATE: 05/29/90 REV. DATE: 09/25/12 APPROVAL: B.PRIEST
	7-11-2	8513E65.DGN



CHANNEL FRAMING DETAIL

*REQUIRED WHEN SIX TRANSFORMERS ARE INSTALLED IN VAULT
NOT REQUIRED FOR A THREE TRANSFORMER VAULT.

FOR REFERENCE ONLY



SECTION B-B

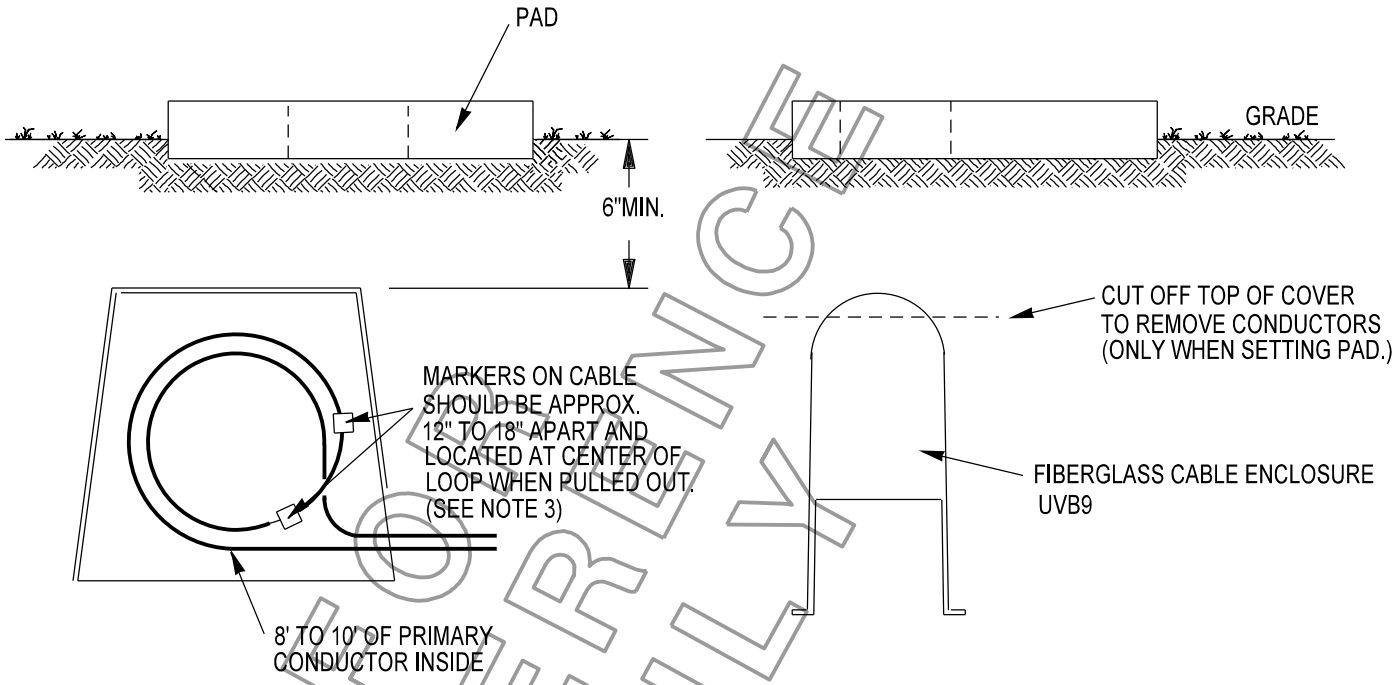
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES VAULT INSTALLATION POLE TYPE TRANSFORMERS	ISSUE DATE: 05/29/90 REV. DATE: 09/25/12 APPROVAL: B.PRIEST
	7-11-3	8513E66.DGN

Item No.	Description	Stock No.	UVE15B 3-500kVA 277/480V Delta Grounded Wye 1500kVA	UVE30A 6-500kVA 277/480V 3000kVA	UVE15A 3-500kVA 120/208V 1500kVA
A	Alum. Cable, 15kV, 4/0	5035037	120 ft.	120 ft.	120 ft.
B	Alum. Cable, 15kV, #2 (220 Mil.)	5035034	150 ft.	300 ft.	150 ft.
C	Wire, 600V, THHN/THWN, 500 MCM Cu	5008580	275 ft.	550 ft.	550 ft.
D	Wire, Bare, Cu, 2/0 Soft	5033854	300 ft.	300 ft.	300 ft.
E	Wire, Bare, Cu, #6 Medium	5033844	100 ft.	100 ft.	100 ft.
F	Bus Bar, Cu, for Pin Cap, 1/4" x 2" x 9"	—	3 ea.	6 ea.	3 ea.
G	Bus Bar, Cu, for Trans., 8-Hole	5034307	2 ea.	4 ea.	5 ea.
H	Conduit, Plastic, 2" DB	5035466	—	80 ft.	—
I	Pipe Clamp, Steel	5035462	3 ea.	15 ea.	3 ea.
J	Insulator, Pincap	5016793	3 ea.	6 ea.	3 ea.
K	Fuse Mounting, 200A (UFBF2)	note 2	3 ea.	3 ea.	3 ea.
L	Fuse Holder, 200A, 14.4kV	note 2	3 ea.	3 ea.	3 ea.
M	Fuse Refill, 14.4kV	note 2	3 ea.	—	3 ea.
N	Clamp Ass'y, Cable Support, 1.25 O.D.	5035163	67 ea.	67 ea.	67 ea.
O	Connector, T.L.S., 1/4" #1	5016723	9 ea.	18 ea.	9 ea.
P	Connector, T.L.S., 1/4" 500 MCM Bronze	5016727	30 ea.	60 ea.	60 ea.
Q	Bus Bar, Cu, for Trans., 12-Hole (Neut.)	5034309	—	—	1 ea.
R	Connector, Term., Comp., #2 Al, Stem	5035297	12 ea.	30 ea.	12 ea.
S	Connector, Service, Cu, Max. 4/0	5016635	2 ea.	12 ea.	12 ea.
T	Connector, Ground	5016629	35 ea.	35 ea.	35 ea.
U	Fuse Refill, 200A, 14.4kV, SC SM4	5034420	—	3 ea.	—
V	Channel, Framing	5035191	200 ft.	200 ft.	200 ft.
W	Angle, Corner for Channel Framing	5034954	16 ea.	16 ea.	16 ea.
X	Bracket, U-Shape for Channel Framing	5035076	30 ea.	30 ea.	60 ea.
Y	Nut, Clamping, w/Spring, 3/8"	5031723	12 ea.	12 ea.	12 ea.
Z	Nut, Clamping, w/Spring, 1/2"	5031724	250 ea.	250 ea.	250 ea.
AA	Screw, Cap, Steel, 1/2" X 1"	5069527	4 bx.	4 bx.	4 bx.
BB	Washer, Flat, 1/2" CAD	5004963	50 ea.	50 ea.	50 ea.
CC	Kit, Terminator, Indoor	5035696	12 ea.	30 ea.	12 ea.
DD	Kit, Stress Relief Cone, 15kV, 4/0	5035696	6 ea.	6 ea.	6 ea.
EE	Tape, Track Resistant Silicone	5033912	13 rl.	25 rl.	13 rl.
FF	Connector, Term., Comp., 4/0 Al, Stem	5035299	6 ea.	6 ea.	6 ea.

REFERENCE ONLY

NOTES

1. See pg. 9-28-1 for transformer Compatible Unit coding.
2. See pg. 9-29-1 for fusing Compatible Unit coding.

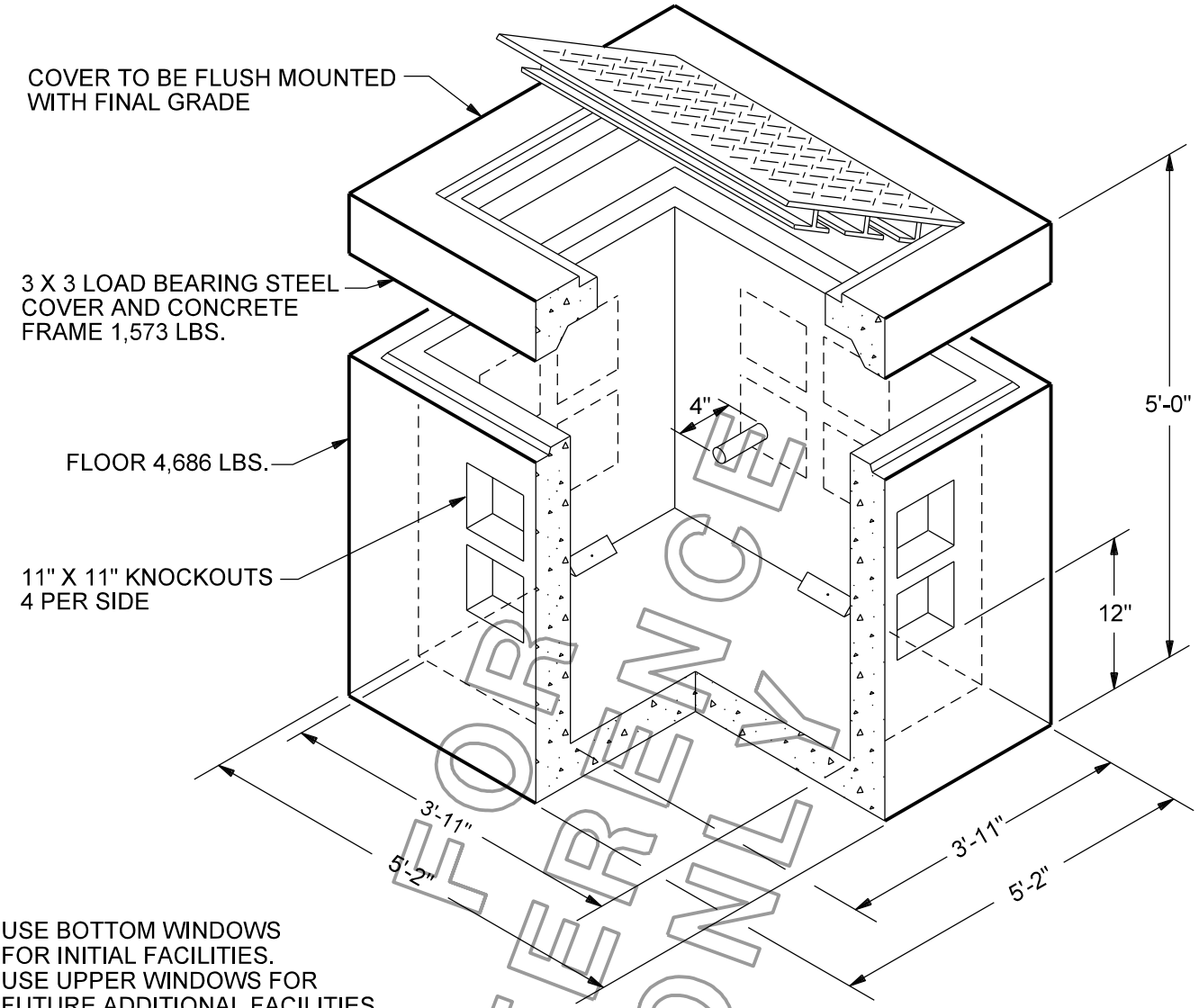


REFERENCE ONLY

1. LOCATE THE TEMORARY CABLE ENCLOSURE WHERE THE PAD OPENING WILL BE WHEN THE PAD IS INSTALLED (SEE APPROPRIATE CABLE STUB-UP DETAIL)
2. LOOP THE PRIMARY CABLES (#2 OR #4/0 ONLY) THRU THE ENCLOSURE SO THAT IT MAY BE ENERGIZED PRIOR TO THE INSTALLATION OF THE PAD AND EQUIPMENT.
3. MARK THE CABLES WITH "DYMO" TAPE INDICATING WHICH EXISTING FACILITIES THEY ARE LOOPED BETWEEN. (EXAMPLE :FROM PE-0603 TO PR-0604)
4. UNIT UVB9 IS TO BE USED IN INDUSTRAL TRACTS AND IN THE FOUNTAIN HILLS AREA WHERE THE FINAL LOCATION IS KNOWN BUT THE INSTALLATION OF TRANSFORMERS OR OTHER ENCLOSURES IS TO BE DEFERRED.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	VAULTS,MANHOLE AND BOXES TEMPORARY CABLE ENCLOSURE	ISSUE DATE: 01/15/87 REV. DATE: 09/25/12 APPROVAL: B.PRIEST
	7-12-1	8513E22.DGN

UVPB3 ONE CIRCUIT OF PRIMARY
5034699



USE BOTTOM WINDOWS FOR INITIAL FACILITIES.
USE UPPER WINDOWS FOR FUTURE ADDITIONAL FACILITIES.

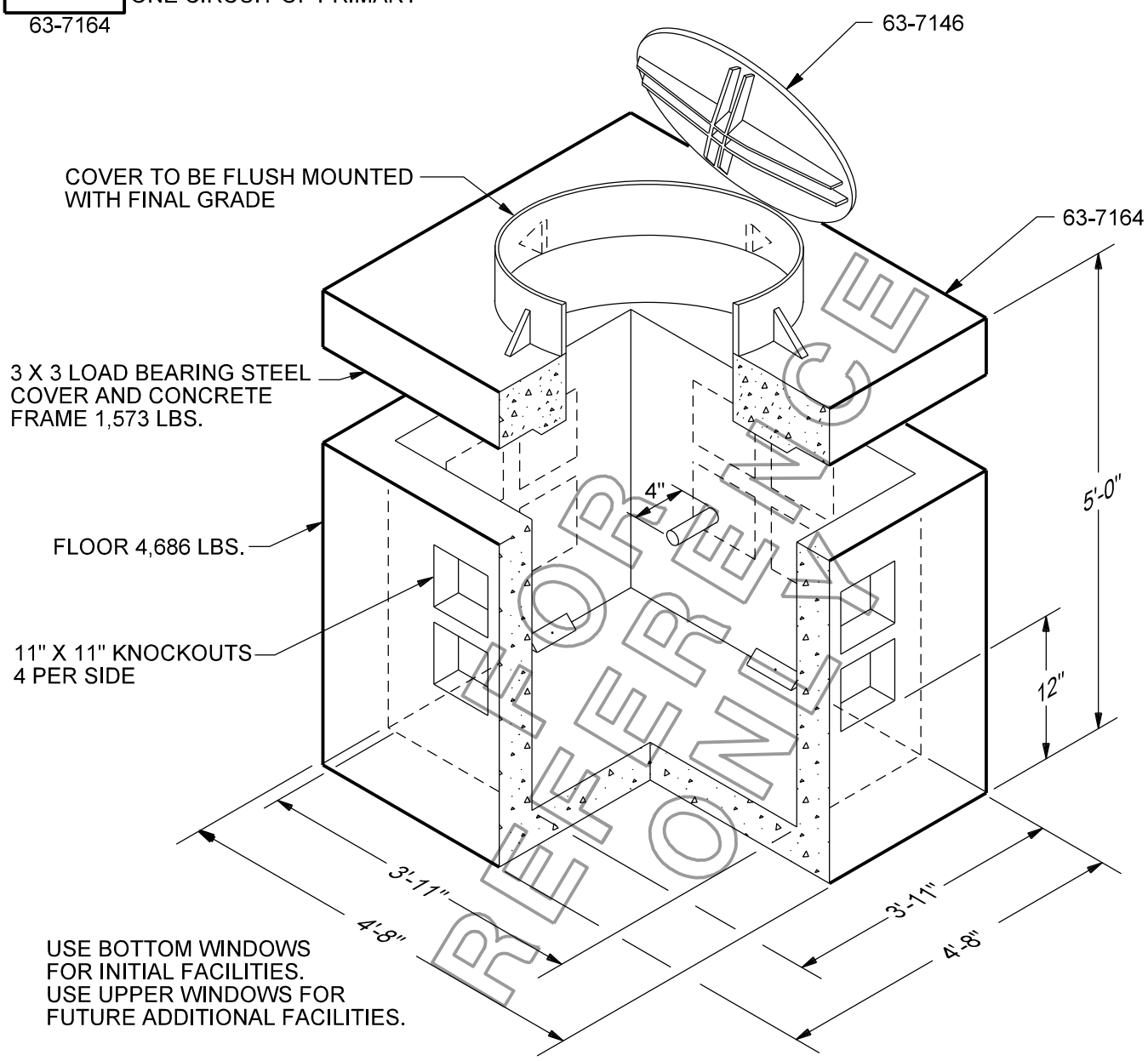
REFERENCE ONLY

NOTES

1. THIS UNIT MAY BE USED IN SUBSTATION, SIDEWALK OR LIGHTLY LOADED TRAFFIC AREAS (MAXIMUM OF ONE 18000 lb. SINGLE AXLE LOAD/DAY).
2. MINIMUM EXCAVATION SIZE TO BE 6'- 6" X 6'- 6" DEPTH REQUIRED.
3. CARE SHALL BE TAKEN TO PROVIDE A SMOOTH, LEVEL, WELL COMPACTED BASE TO SET THE BOX ON. COMPACT AROUND SIDES OF BOX TO PREVENT SETTLING AROUND BOX.
4. CONDUITS MUST EXTEND A MINIMUM OF 4 INCHES INSIDE OF BOX.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES 4' X 4' X 4' PULL BOX LOAD BEARING	ISSUE DATE: 09/09/87 REV. DATE: 07/31/13 APPROVAL: B. PRIEST
	7-13-1	8513E122.DGN

UVPB4 ONE CIRCUIT OF PRIMARY
63-7164



REFERENCE ONLY

NOTES

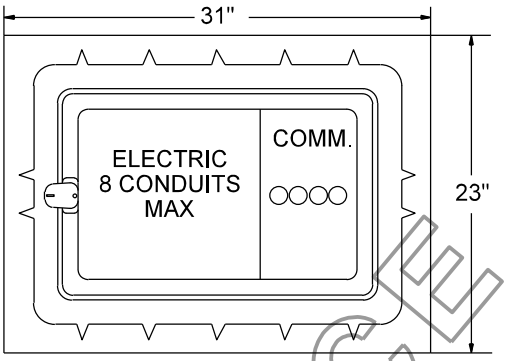
1. THIS UNIT IS LOAD BEARING AND MAY BE USED IN TRAFFIC AREAS.

2. MINIMUM EXCAVATION SIZE TO BE 6'- 6" X 6'- 6" DEPTH REQUIRED.

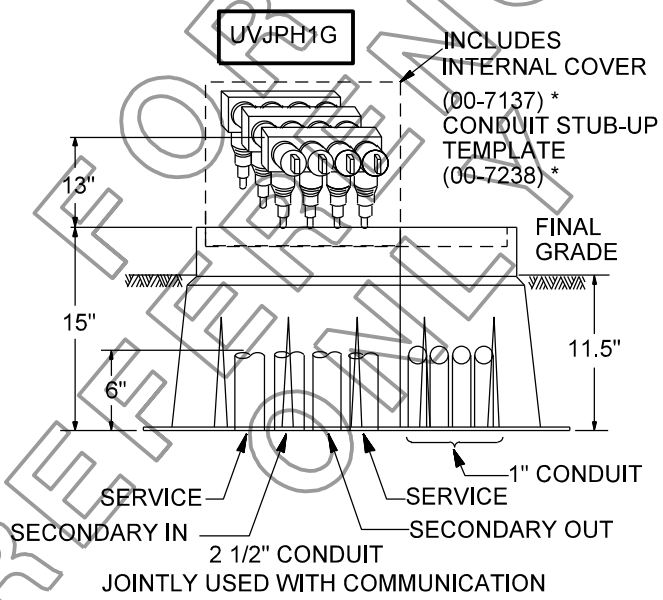
3. CARE SHALL BE TAKEN TO PROVIDE A SMOOTH, LEVEL, WELL COMPACTED BASE TO SET THE BOX ON. COMPACT AROUND SIDES OF BOX TO PREVENT SETTLING AROUND BOX.

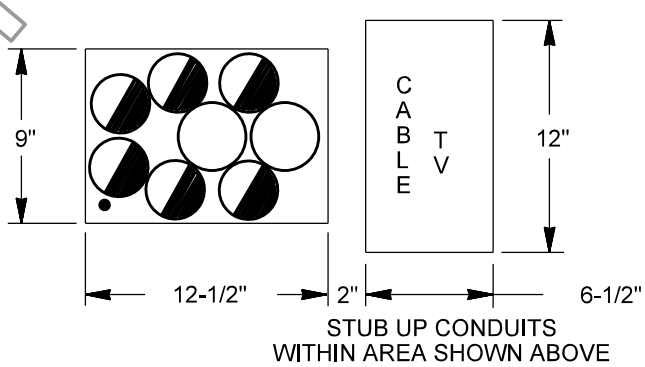
4. CONDUITS MUST EXTEND A MINIMUM OF 4 INCHES INSIDE OF BOX.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	VAULTS, MANHOLES AND BOXES 4' X 4' X 4' PULL BOX LOAD BEARING	ISSUE DATE: 01/22/02 REV. DATE: 07/31/13 APPROVAL: B.PRIEST
	7-13-2	8513E303.DGN



PEDESTAL - TOP VIEW





STUB UP CONDUITS
WITHIN AREA SHOWN ABOVE

FOR REFERENCE ONLY

* NO EQUIVALENT STOCK NUMBER EXISTS IN SAP

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	VAULTS, MANHOLES AND BOXES PEDESTAL, DUAL ENCLOSURE ABOVE GRADE	ISSUE DATE: 09/27/05 REV. DATE: 02/02/15 APPROVAL: B.PRIEST
	7-14-1	8513E105.DGN

COMPATIBLE UNIT CODING FOR RETIREMENT OF NON-STANDARD VAULTS

DESCRIPTION	COMPATIBLE UNIT
VAULT, ELECTRICAL, 4,000KVA OR LESS, SRP OWNED	RUVEP40
VAULT, ELECTRICAL, 4,000KVA OR LESS, CUSTOMER OWNED	RUVE40

CABLE AND ACCESSORIES

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE, CONDUCTOR CODING	8-1-1
INSTRUCTIONAL GUIDE, GENERAL INSTRUCTIONS FOR CONNECTIONS	8-2-1
INSTRUCTIONAL GUIDE, GENERAL INSTRUCTIONS FOR SPLICING	8-3-1
INSTRUCTIONAL GUIDE, CABLE BENDING AND LUBRICATION	8-4-1
INSTRUCTIONAL GUIDE, CABLE PULLING TENSION LIMITS	8-5-1
TAPS TO OVERHEAD PRIMARY	8-6-1
CONNECTOR - AMPACT, HOT OR COLD PRIMARY WORK, #2 THRU 397.5 MCM	8-7-1
CONNECTOR AND DIE CHART (NON-TENSION) FOR USE WITH SECONDARY OR COLD PRIMARY RISERS, 1/0 THRU 1033.5 STR.	8-8-1
CONNECTOR AND DIE CHART (NON-TENSION) FOR USE WITH HOT PRIMARY AT RISER LOCATIONS, #6 SOL. THRU 397.5 STR.	8-9-1
CONNECTOR AND DIE CHART (NON-TENSION) FOR USE WITH SECONDARY AND COLD PRIMARY RISERS, #6 SOL. THRU 500 STR.	8-10-1
COPPER COMPRESSION CONNECTORS FOR GROUND/NEUTRAL CONDUCTORS, #6 SOL. THRU 4/0	8-11-1
2-HOLE TERMINAL CONNECTORS	8-12-1
SLEEVE AND CONNECTORS	8-13-1
REEL HANDLING AND STORAGE GUIDELINES	8-14-1
PRIMARY AND SECONDARY CABLE END MOISTURE SEAL	8-15-1
CONNECTORS, SPLICES, AND TERMINATORS, GENERAL INFORMATION, 600V CLASS	8-16-1
CONNECTORS, SPLICES, AND TERMINATORS, GENERAL INFORMATION, 15 & 25KV CLASS	8-17-1
SEALING OF PRIMARY AND FEEDER CABLE JACKET	8-18-1
SEALING OF SPLICED, JACKETED #2 AND 4/0 CONCENTRIC NEUTRAL CABLE	8-19-1
SEALING OF SPLICED, JACKETED TO UNJACKETED CONCENTRIC NEUTRAL CABLE	8-20-1
SEALING OF 500 AND 750 MCM JACKETS AT SPLICES	8-21-1

CABLE AND ACCESSORIES

TITLE/DESCRIPTION	PAGE NO.
ALTERNATE NEUTRAL BONDING AT SPLICE, BARE CONCENTRIC NEUTRAL CABLE	8-22-1
CABLE SEMICON EXTENSION FOR CONVERTING LIVE FRONT TO ELBOW TERMINATIONS ON EXISTING #2 & 4/0 15KV CABLE	8-23-1
MULTIPLE CABLE TERMINATION (DOUBLE LUG)	8-24-1
SUBSTATION SWITCHGEAR TERMINATION	8-25-1
TERMINATION GROUNDING INSTRUCTIONS	8-26-1
LUBRICATING PROCEDURE FOR BUSHING/TERMINATION INTERFACES ON DEAD FRONT, PAD MOUNTED EQUIPMENT	8-27-1
TAP INTO PRIMARY OR FEEDER	8-28-1
SPLICING INTO EXISTING CIC CABLE RUNS	8-29-1
0-600V TAP, MOLE CONNECTORS	8-30-1
ALTERNATE STREET LIGHT TAP ON EXISTING SERVICE OR SECONDARY	8-31-1
SET SCREW BAR CONNECTORS, TORQUE VALUES	8-32-1
600V SPLICES, JACKET REPAIR SLEEVE	8-33-1
15KV SPLICING AND TERMINATING DEVICES	8-34-1
ALUMINUM CONDUCTOR CODING	8-35-1
COPPER CONDUCTOR CODING	8-36-1
SINGLE PHASE SERVICE CONDUCTOR CODING	8-37-1
THREE PHASE SERVICE CONDUCTOR CODING	8-38-1
600V MOLE ASSEMBLY	8-39-1
600V T-TAP ASSEMBLY	8-40-1
ALTERNATE STREET LIGHT TAP ON EXISTING SERVICE OR SECONDARY	8-41-1
GROUNDING JACKETED CONCENTRIC NEUTRAL PRIMARY CABLE #2, 1/0 & 4/0, 500 MCM, 750 MCM	8-42-1

CABLE AND ACCESSORIES

TITLE/DESCRIPTION	PAGE NO.
15KV CIC, INSTALLATION INSTRUCTIONS	8-43-1
PRIMARY CABLE MOISTURE SEAL FOR STUB-OUT AND STUB-UP ENDS	8-44-1
GROUNDING PROVISIONS, LIVE FRONT EQUIPMENT	8-45-1
SERVICE REMOVAL CODES	8-46-1
CONDUCTOR CODING, REMOVAL OR ABANDONMENT ONLY	8-47-1

22KV SECTION (YELLOW PAGES)

TITLE/DESCRIPTION	PAGE NO.
CONDUCTOR CODING	8-48-1
INDOOR TERMINATION DEVICES	8-49-1

INSTRUCTIONAL GUIDE

PURPOSE

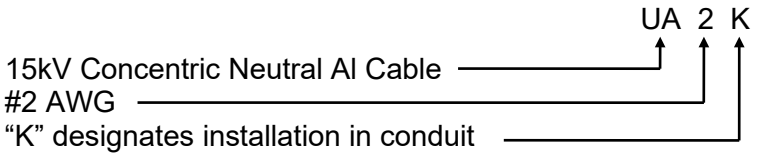
TO PROVIDE COMPATIBLE UNIT CODE NUMBERS FOR CABLE/CONDUCTORS, SPLICES, TERMINATIONS AND INSTRUCTIONS IN THEIR USE.

COMPATIBLE UNIT CODING FOR "UW" SECTION

1. TERMINATIONS AND SPLICES ARE CODED WITH THE PREFIX UWB. THE NEXT DIGIT IS A NUMBER DESIGNATING SPECIFIC MATERIAL.
2. SERVICES ARE CODED WITH THE PREFIX US. THE NEXT DIGITS ARE NUMBERS DESIGNATING SPECIFIC COMBINATIONS OF CONDUCTORS AND ASSOCIATED MATERIALS.
3. CONDUCTOR AND CABLE CODES CONSIST OF A LETTER PREFIX DESIGNATING THE TYPE (CONSTRUCTION) OF THE CONDUCTOR AND A NUMBER DESIGNATING THE CONDUCTOR SIZE.

EXAMPLE:

Compatible Unit



CODING SYMBOLS ARE AS FOLLOWS:

CODE LETTERS	TYPE OF CONDUCTORS
UA	15KV ALUMINUM CABLE
UC	15KV COPPER CABLE
U6A	600V INSULATED SINGLE CONDUCTOR, ALUMINUM
U6C	600V INSULATED SINGLE CONDUCTOR, COPPER
UDX	DUPLEX CABLE, ALUMINUM
UTX	TRIPLEX CABLE, ALUMINUM
_ _ _ _ K	CONDUCTOR INSTALLED IN CONDUIT

CODE NUMBERS	CONDUCTOR SIZE
8	#8 AWG
6	#6 AWG
4	#4 AWG
2	#2 AWG
10	1/0 AWG
20	2/0 AWG
40	4/0 AWG
250	250 MCM
350	350 MCM
500	500 MCM
750	750 MCM

4. CONDUCTORS (REMOVAL): USE CODES LISTED IN THE REMOVAL ONLY CONDUCTOR CODING CHART FOR THE REMOVAL AND RETIREMENT OF NON-STANDARD CONDUCTORS.

PURPOSE

THE PRIMARY PURPOSE OF THIS SECTION IS TO PROVIDE INSTALLATION INSTRUCTIONS SUPPLEMENTAL TO THOSE SUPPLIED BY THE MANUFACTURER WHICH ARE PARTICULAR TO SRP FOR CONNECTORS, SPLICES AND TERMINATIONS USED ON THE UNDERGROUND DISTRIBUTION SYSTEM.

GENERAL INSTRUCTIONS FOR CONNECTORS

1. AFTER REMOVING THE CONDUCTOR'S INSULATION, WIRE BRUSH THE CONDUCTOR STRANDS AND APPLY INHIBITING GREASE (5012038).

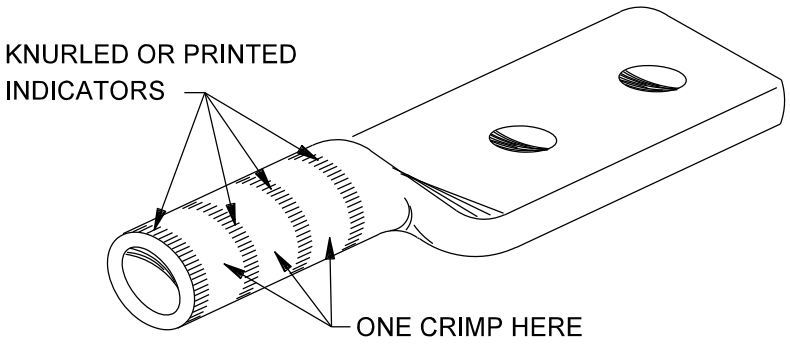
2. DO NOT REMOVE THE PENETROX GREASE SUPPLIED IN THE CONNECTOR. ALLOW EXCESS GREASE TO OOZE OUT WHEN THE CONDUCTOR IS PLACED IN THE CONNECTOR.

3. CONNECTOR RANGE AND DIE OR SHELL SIZES ARE INDICATED ON THE CONNECTOR BODY. CONNECTORS STOCKED BY SRP ARE ALSO SHOWN IN THIS SECTION. ONE CRIMP IS REQUIRED BETWEEN EACH SET OF KNURLED OR PRINTED INDICATORS FOUND ON THE CONNECTOR. IF THESE INDICATORS ARE ABSENT, CRIMP THE CONNECTOR OVER ITS ENTIRE LENGTH.

4. WHEN CRIMPING END-TO-END OR TERMINAL CONNECTORS, BEGIN AT THE END OF THE CONDUCTOR AND WORK IN SEQUENCE TOWARD THE CABLE. CRIMP PARALLEL GROVE CONNECTORS BY BEGINNING AT ONE END OF THE CONNECTOR AND PROCEEDING TO THE OTHER END, OR BY BEGINNING IN THE MIDDLE OF THE CONNECTOR AND PROCEEDING TOWARD ONE END, THEN TO THE OTHER.

5. APPLY EACH SUCCESSIVE CRIMP WITH THE TOOL ROTATED 90° ABOUT THE CONNECTOR TO HELP PREVENT BENDING OR BOWING. IF LIMITED SPACE PREVENTS ROTATING THE TOOL ABOUT THE CONNECTOR, THE ROTATE TOOL 180° ABOUT ITS OWN HANDLE AXIS WITH EACH CRIMP.

6. EXCESS GREASE SHOULD BE REMOVED.



INSTRUCTIONAL GUIDE

PRIMARY CABLE SPLICING GUIDE

CONSTRUCT PRIMARY CABLE SYSTEMS SO AS TO REDUCE THE NUMBER OF CABLE SPLICES TO A MINIMUM. DO NOT SPLICE SHORT PIECES OF CABLE TOGETHER TO COMPLETE A RUN. SIZE CABLE LENGTHS TO THE RUN, SO THAT SPLICES ARE NOT REQUIRED.

DO NOT "STUB OUT" PRIMARY CABLES FOR FUTURE CONNECTION. INSTEAD, INSTALL CONDUIT RUNS FOR FUTURE CONNECTIONS. THE JOB DESIGNER IS RESPONSIBLE FOR CALCULATING PULLING TENSIONS TO ASSURE THAT CABLE CAN BE PULLED THROUGH THE CONDUIT RUN.

CONDITIONS THAT PERMIT THE USE OF SPLICES ARE:

1. TAPPING INTO EXISTING SYSTEMS, E.G. INDUSTRIAL SUBDIVISIONS.
2. WHEN A CABLE RUN IS LONGER THAN AVAILABLE FULL REEL LENGTHS.
3. CONDUIT SYSTEM MANHOLES AND PULL BOXES.
4. REPAIR OF DAMAGED CABLES.

CONTACT POLICIES, PROCEDURES AND STANDARDS WITH PRIMARY SPLICE APPLICATIONS THAT DIFFER FROM THOSE ABOVE.

NOTES IF CABLE LENGTHS ARE LESS THAN THE FOLLOWING, SEND TO MATERIAL RECLAMATION:

CABLE	LENGTH *
#2 AL, 15KV	500 FT.
4/0 AL, 15KV	400 FT.
500 MCM AL, 15KV	500 FT.
750 MCM AL, 15KV	700 FT.
750 MCM CU, 15KV	400 FT.

* BASED ON 2X THE AMOUNT OF CABLE COST EQUALLING AN INSTALLED SPLICE.

MATERIAL RECLAMATION WILL RETAIN CABLE LENGTHS, LESS THAN THOSE LISTED ABOVE, FOR USE IN CABLE REPAIR AND FOR JOBS WHERE ONLY SHORT LENGTHS OF CABLE ARE REQUIRED.

INSTRUCTIONAL GUIDE

CABLE BENDING - PRIMARY AND FEEDER (15KV & 25KV)

THE MINIMUM BENDING RADIUS FOR #2, 1/0, 4/0, 500 MCM AND 750 MCM PRIMARY CABLES SHALL NOT BE LESS THAN 12". IN NO CASE SHALL THE ABOVE PRIMARY CABLES BE BENT INTO AN ARC THAT IS SMALLER THAN A 12" RADIUS (24" DIAMETER CIRCLE). CONTACT POLICIES, PROCEDURES AND STANDARDS TO OBTAIN THE PROPER MINIMUM BENDING RADIUS FOR PRIMARY CABLES OTHER THAN THOSE LISTED ABOVE.

WHEN INSTALLING PRIMARY CABLE, TRAVERSES MUST HAVE A MINIMUM DIAMETER OF 24" IN ORDER TO MAINTAIN A MINIMUM BENDING RADIUS OF 12".

CABLE BENDING - SECONDARY AND SERVICE (600V AND LESS)

CABLE SIZE SINGLE CONDUCTOR OR TRIPLEX	MINIMUM BENDING RADIUS IN INCHES
1/0	2.5
4/0	3.0
350	3.5
500	4.0
750	6.0

TRAVERSES MUST HAVE A MINIMUM DIAMETER OF TWICE THE MINIMUM BENDING RADIUS FOR THE CABLE BEING PULLED.

CABLE LUBRICATION REQUIREMENTS
(IN GALLONS)

	CONDUIT SIZE (IN INCHES)				
LENGTH OF PULL (IN FEET)	2	2.5	3	4	5
200	1	1	1	1	1
300	1	1	2	2	2
400	1	2	2	3	3
500	2	2	3	3	4
600	2	3	3	4	5
700	2	3	4	5	6
800	3	3	4	5	6
900	3	4	5	6	7
1000	3	4	5	6	8
1100	4	5	5	7	8
1200	4	5	6	8	9
1300	4	5	6	8	10

INSTRUCTIONAL GUIDE

THE FOLLOWING TABLE LISTS THE MAXIMUM ALLOWABLE PULLING TENSIONS FOR VARIOUS CABLES AND THEIR COMBINATIONS UTILIZING BASKET GRIPS.

MAXIMUM ALLOWABLE CABLE PULLING TENSIONS			MAXIMUM ALLOWABLE SIDEWALL BEARING PRESSURE (LBS./FT.)
25KV CABLE	1/C 1/0	1440 LBS.	502
	2/C 1/0	2880	566
	3/C 1/0	2880	490
15KV CABLE	1/C #2 AL	880 LBS.	466
	2/C #2 AL	1760	548
	3/C #2 AL	1760	313
	1/C 4/0 AL	2882	1544
	2/C 4/0 AL	5000	2754
	3/C 4/0 AL	5000	1044
	1/C 500 MCM	5466	1500
	3/C 500 MCM	5000	1059
	1/C 750 MCM	5466	1907
	3/C 750 MCM	5000	1341
600V CABLE	#8 TRIPLEX	360 LBS.	95
	#6 TRIPLEX	577	154
	ALL OTHERS *	2000	599

* ANY COMBINATION OF 1 TO 4 CONDUCTORS

BASIS FOR TENSION LIMITS

600V: #8 & #6, CONDUCTOR STRESS LIMITED TO 14,000 PSI.
ALL OTHERS: EPRI GUIDE LIMIT

15KV: #2 & 4/0, CONDUCTOR STRESS LIMITED TO 14,000 PSI.
500 & 750 MCM: LIMITED BY BASKET GRIP TENSION WITH SAFETY FACTOR OF 3

25KV: 1/0, CONDUCTOR STRESS LIMITED TO 14,000 PSI.
COMMUNICATIONS: MANUFACTURER RECOMMENDED LIMITS

FIG.1

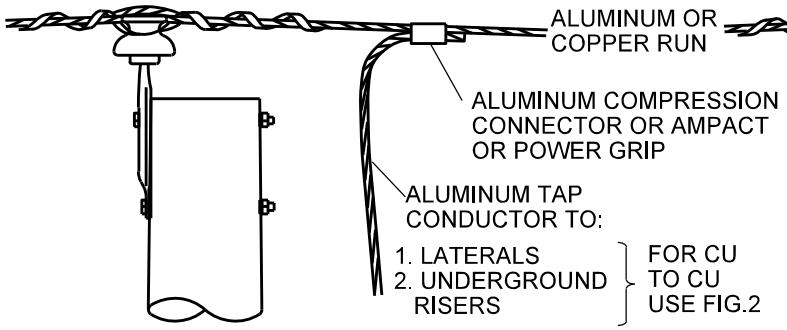


FIG.2

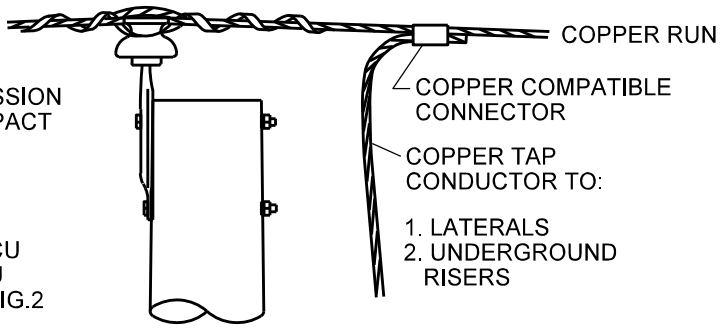
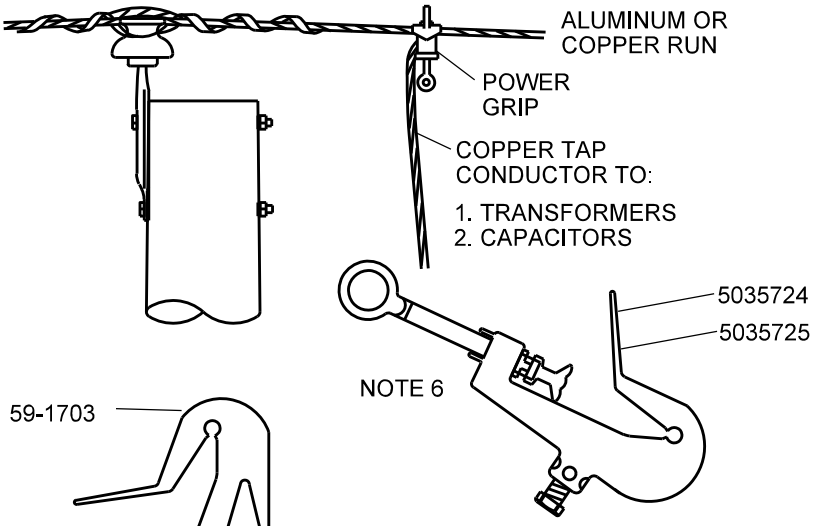


FIG.3



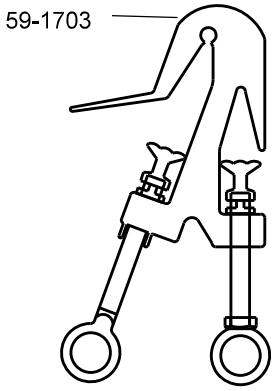
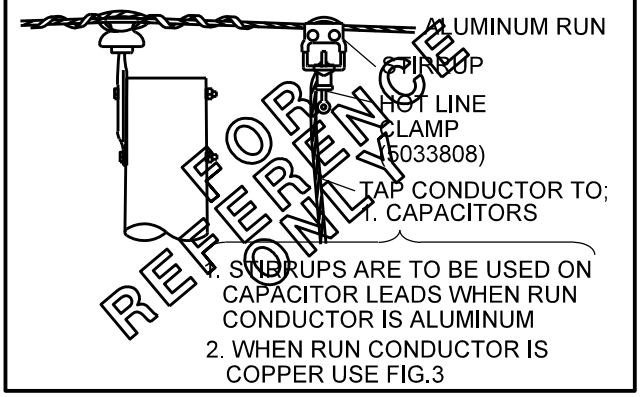


FIG.4



FOR REFERENCE ONLY

POWER GRIP CONNECTOR FOR ALUMINUM OR COPPER CONDUCTORS

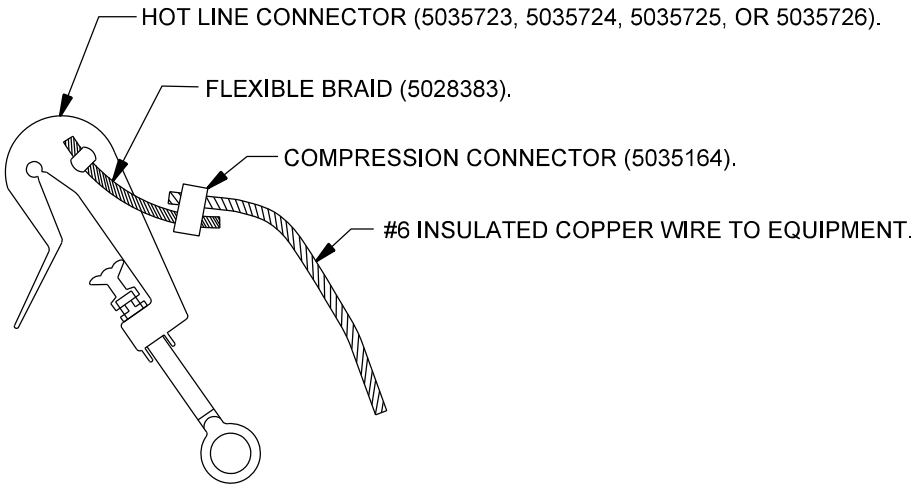
STOCK #	TAP SIZE	RUN SIZE
5035724	#8 - #2	#4 - 1/0
5035725	#8 - #2	1/0 - 397
5033937*	1/0 - 397	1/0 - 397

* THE END OF THE TAP CONDUCTOR SHALL PROTRUDE APPROXIMATELY 3 IN. FROM SIDE OF CONNECTOR.

NOTES

1. CONDUCTORS MUST BE BRUSHED AND GREASED BEFORE APPLYING COMPRESSION CONNECTORS.
2. WHEN COMPRESSING ALUMINUM TO COPPER, THE ALUMINUM CONDUCTOR MUST BE ABOVE THE COPPER IN THE CONNECTOR.
3. ALUMINUM COMPRESSION CONNECTORS SHALL BE USED ON ALUMINUM OR COPPER RUNS TO ALUMINUM TAPS.
4. COPPER COMPRESSION CONNECTORS SHALL BE USED ON COPPER RUNS TO COPPER TAPS.
5. TWO OR THREE PHASE TAPS MUST BE INSTALLED SO THAT ALL OF THE TAPS ARE FED FROM THE SAME SIDE OF ANY JUMPERS OR SWITCHES IN THE PRIMARY LINE.
6. WITH HOT STICK TIGHTEN 2 TO 2 1/2 TURNS AFTER FINGER TIGHT.

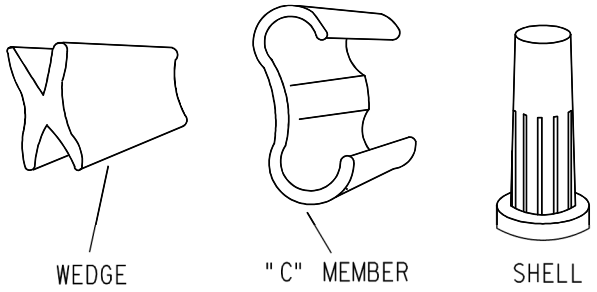
FLEXIBLE BRAID CONNECTOR



FLEXIBLE BRAID FOR #6 COPPER EQUIPMENT TAPS FOR USE ON SPANS SUBJECT TO VIBRATION (200 FT. AND GREATER) AND AS REPLACEMENT ON BROKEN TAP CONDUCTOR.

NOTES

1. REMOVE SUFFICIENT INSULATION FROM TAP CONDUCTOR FOR DEPTH OF COMPRESSION CONNECTOR.
2. COMPRESS CONNECTION BETWEEN CABLE AND FLEXIBLE BRAID.
3. INSTALL FLEXIBLE BRAID INTO TAP POSITION ON HOT LINK OR POWER GRIP CONNECTOR.
4. BRUSH AND GREASE CONDUCTOR PRIOR TO INSTALLATION ONTO RUNNING LINE.



"A" Groove						
Conductor Dia.	**Conductor Size & Configuration**					
.464	3/0 Str.	1	2			
.586	266.8 Str.	3	4			
.642	312.8 AAAC				5	
.724	397.5 Str.			6		
"B" Groove Conductor Size & Configuration		#2 Str.	3/0 Str.	266.8 Str.	312.8 AAAC	397.5 Str.

Range	Tap	Shell	Amp No.
1	5033834	5033935	600448
2	59-1663**	5033935	600459
3	5033835	5033936	602000
4	59-1665**	5033936	602003
5	5033836	5033936	602007
6 *	5033837	5033936	1-602031-5

* Connector #6 has a large and small groove. The smaller conductor must be in the smaller groove.

** No stock code equivalent exists in SAP.

Obsolete
For Reference Only

Tap Conductor "B" Groove		Run Conductor "A" Groove	.679	.724	.728	.735	.811	.814	.893	.897	1.03	1.03	1.06	1.12	1.140	1.15	1.17	1.170
			350 MCM Str.	397.5 MCM Str.	400 MCM Str.	500 MCM Comp.	500 MCM Str.	477 MCM ACSR	600 MCM Str.	750 MCM Str.	795 MCM Str.	800 MCM Str.	795 MCM ACSR	954 MCM Str.	795, 30/19 ACSR	1000 MCM Str.	954, 45/7 ACSR	1033.5 MCM Str.
.398	1/0, 6/1 ACSR																	
.414	2/0 Str.																	
.426	3/0 Comp.																	
.447	2/0, 4/3 ACSR																	
.464	3/0 Str.																	
.480	4/0 Comp.																	
.502	3/0, 6/1 ACSR																	
.522	4/0 Str.																	
.523	250 MCM Comp.																	
.574	250 MCM Str.																	
.586	266.8 MCM Str.																	
.613	350 MCM Comp.																	
.628	300 MCM Str.																	
.642	266.8 MCM ACSR																	
.642	312 AAAC																	
.679	350 MCM Str.																	
.724	397.5 MCM Str.																	
.728	400 MCM Str.																	
.735	500 MCM Comp.																	
.811	500 MCM Str.																	
.814	477 MCM ACSR																	
.893	600 MCM Str.																	
.897	750 MCM Str.																	
1.026	795 MCM Str.																	
1.031	800 MCM Str.																	
1.063	795, 45/7 ACSR																	
1.124	954 MCM Str.																	
1.140	795, 30/19 ACSR																	
1.151	1000 MCM Str.																	
1.165	954, 45/7 MCM ACSR																	
1.170	1033.5 Str.																	

1 — Blackburn - 4 crimps; Others - 3 crimps

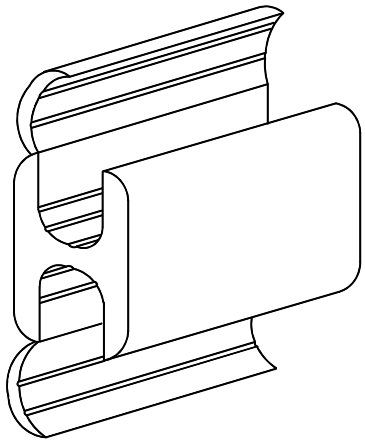
2 — Blackburn - 4 crimps; Others - 3 crimps

3 — 4 crimps

4 — 4 crimps

5 — 4 crimps

6 — 4 crimps

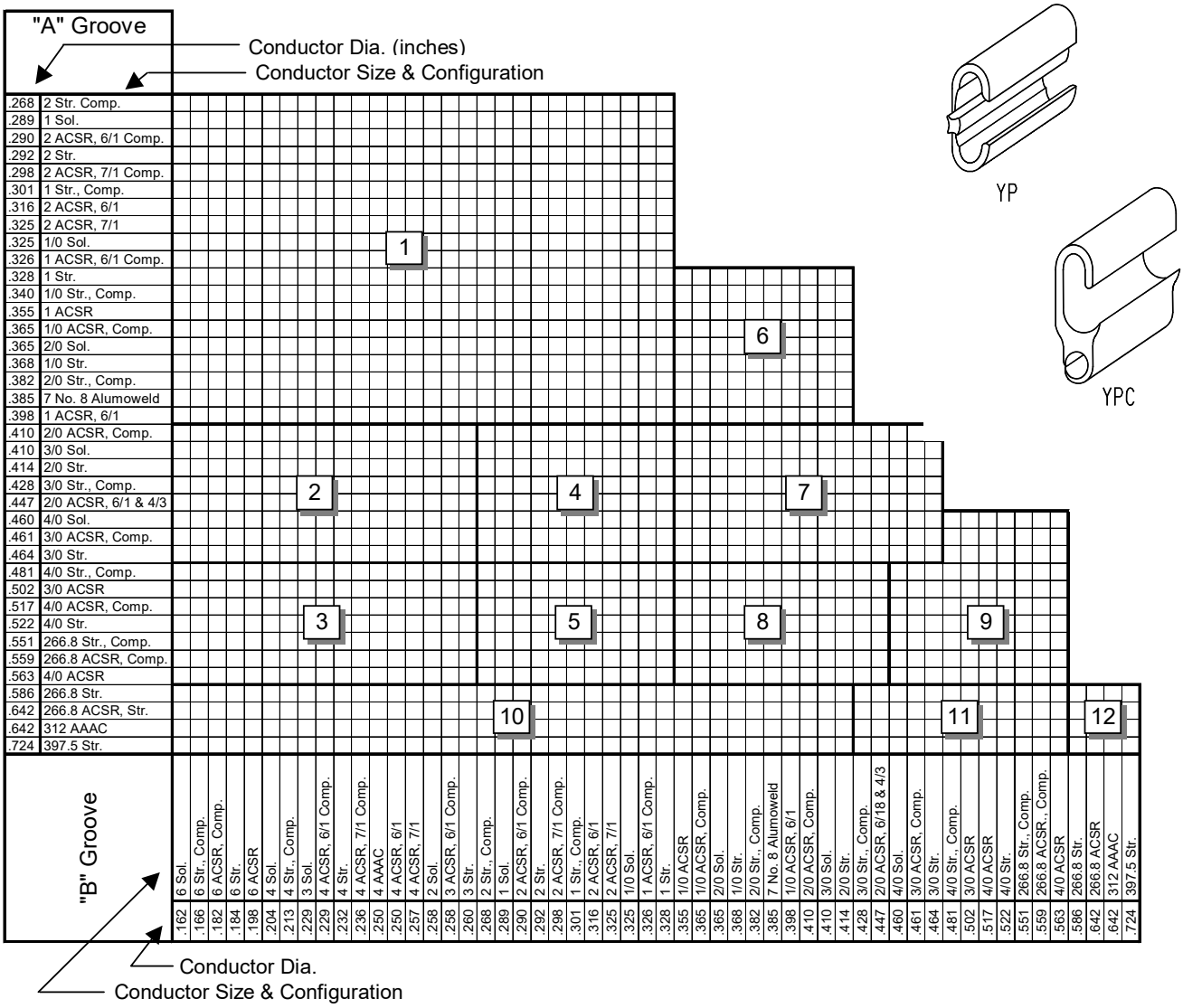


Range No.	Material Item
1	5035728
2	5035729
3	5035730
4	5035731
5	5031526
6	5031527

Tool	Dies
Y46	P-DR
Y45	S-KR or S-Z
With S-Z die overlap crimps	

NOTES

1. ALUMINUM CONNECTORS MAY BE USED ON ALUMINUM OR COPPER CONDUCTORS.



RANGE	STOCK NO. =	BURNDY **	DIE
1	5033822	YP26 AU2 (4)	O
2	5033823	YP27 AU4 (4)	D
3	5033824	YPC 28U4 (4)	D
4	5033825	YP27 AU2 (4)	D
5	5033826	YP 28U2 (4)	D
6	5033827	YP25 U25 (4)	D
7	5033828	YP27 AU26 (4)	D
8	5033829	YP28 U26 (9)	D
9	5033830	YPC28U28 (2)	D*
10	5033831	YPC33R26U (2)	N
11	5033832	YPC33R28R (3)	N
12	5033833	YPC33R33R (3)	N

( ) INDICATES NUMBER OF CRIMPS
* HYDRAULIC ONLY
** THESE CONNECTORS ARE ALSO ACCEPTABLE FOR COPPER-TO-COPPER CONNECTIONS.
= NOT IMPREST BIN STOCK

NOTES

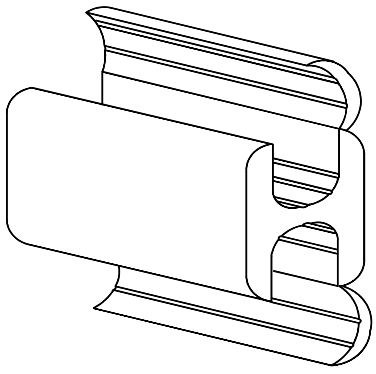
1. ALUMINUM CONNECTORS MAY BE USED ON ALUMINUM OR COPPER CONDUCTORS.

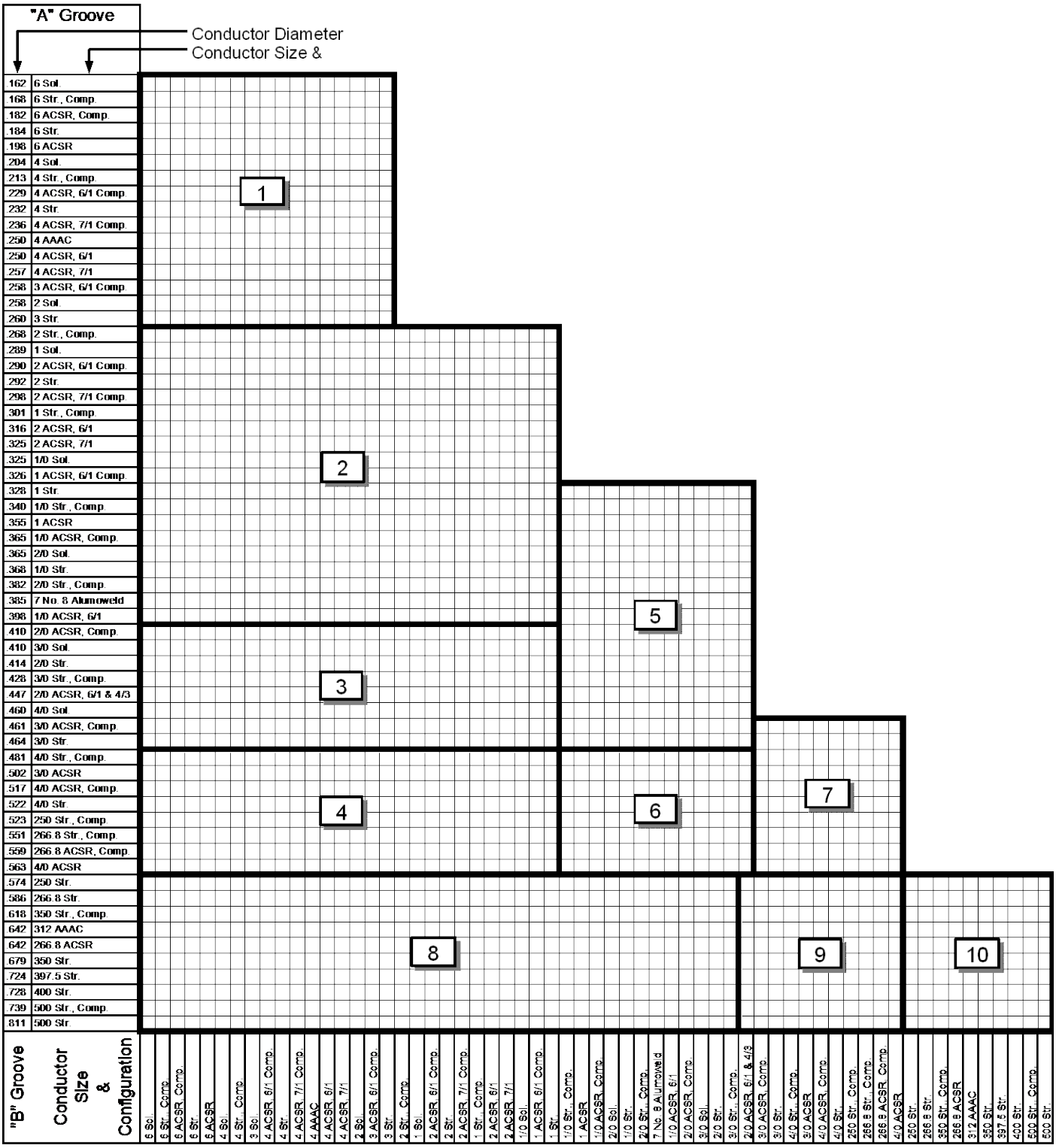
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES CONNECTOR & DIE CHART (NON – TENSION) FOR USE WITH HOT PRIMARY AT RISER LOCATIONS, #6 SOL. THRU 397.5 STR.	ISSUE DATE: 01/15/87 REV. DATE: 08/09/13 APPROVAL: B. Priest
	8-9-1	UG8-9-1.doc

CONDUCTOR SIZE AND CONFIGURATION	VENDOR NO. & CRIMPS ( )		STOCK NO.	DIE	SIZING CHART NO.	SECONDARY COVERS
	BURNDY	HOMAC				
#6 SOL. - #3 STR. TO #6 SOL. - #3 STR.	YHO-100 (4)	OB44 (4)	5033812	0	1	5034083
#2 STR. – 1/0 ACSR TO #6 SOL. - #1 STR.	YHO-150 (5)	OB101 (4)	5033813	0	2	5034083
2/0 ACSR – 3/0 STR. TO #6 SOL. - #1 STR.	YHD-200 (5)	DB202 (4)	5033814	D3	3	5034080
4/0 STR. – 4/0 ACSR TO #6 SOL. - #1 STR.	YHD-250 (5)	DB404 (4)	5033815	D3	4	5034080
1/0 STR. – 3/0 STR. TO 1/0 STR. – 2/0 ACSR	YHD-300 (5)	DB2020 (5)	5033816	D3	5	5034080
4/0 STR. – 4/0 ACSR TO 1/0 STR. – 2/0 ACSR	YHD-350 (7)	DB4020 (6)	5033817	D3	6	5034080
3/0 ACSR – 4/0 ACSR TO 3/0 ACSR – 4/0 ACSR	YHD-400 (7)	DB4040 (6)	5033818	D3	7	5034080
250 STR. – 500 STR. TO #6 SOL. – 3/0 STR.	YHN-500 (2)	NB50040 (2)	5033819	N	8	5034081
250 STR. – 500 STR. TO 2/0 ACSR – 4/0 ACSR	YHN-550 (2)	NB50040 (2)	5033820	N	9	5034081
250 STR. – 500 STR. TO 250 STR. – 500 STR.	YHN-525 (3)	NB500 (3)	5033821	N	10	5034081

NOTES

1. USE THESE CONNECTORS ON ALUMINUM OR COPPER CONDUCTORS.
2. NUMBER OF CRIMPS SHOWN IN PARENTHESIS ( ).





162	6 Sol.
168	6 Str., Comp.
182	6 ACSR, Comp.
184	6 Str.
198	6 ACSR
204	4 Sol.
213	4 Str., Comp.
229	4 ACSR, 6/1 Comp.
232	4 Str.
236	4 ACSR, 7/1 Comp.
250	4 AAAC
250	4 ACSR, 6/1
257	4 ACSR, 7/1
258	3 ACSR, 6/1 Comp.
258	2 Sol.
260	3 Str.
268	2 Str., Comp.
289	1 Sol.
290	2 ACSR, 6/1 Comp.
292	2 Str.
298	2 ACSR, 7/1 Comp.
301	1 Str., Comp.
316	2 ACSR, 6/1
325	2 ACSR, 7/1
325	1/0 Sol.
326	1 ACSR, 6/1 Comp.
328	1 Str.
340	1/0 Str., Comp.
355	1 ACSR
365	1/0 ACSR, Comp.
365	2/0 Sol.
368	1/0 Str.
382	2/0 Str., Comp.
385	7 No. 8 Alumoweld
398	1/0 ACSR, 6/1
410	2/0 ACSR, Comp.
410	3/0 Sol.
414	2/0 Str.
428	3/0 Str., Comp.
447	2/0 ACSR, 6/1 & 4/3
460	4/0 Sol.
461	3/0 ACSR, Comp.
464	3/0 Str.
481	4/0 Str., Comp.
502	3/0 ACSR
517	4/0 ACSR, Comp.
522	4/0 Str.
523	250 Str., Comp.
551	266.8 Str., Comp.
559	266.8 ACSR, Comp.
563	4/0 ACSR
574	250 Str.
586	266.8 Str.
618	350 Str., Comp.
642	312 AAAC
642	266.8 ACSR
679	350 Str.
724	397.5 Str.
728	400 Str.
739	500 Str., Comp.
811	500 Str.

6 Sol.	4/0 Str., Comp.
6 Str., Comp.	3/0 ACSR
6 ACSR, Comp.	4/0 ACSR, Comp.
6 Str.	4/0 Str.
6 ACSR	250 Str., Comp.
4 Sol.	266.8 Str., Comp.
4 Str., Comp.	266.8 ACSR, Comp.
3 Sol.	4/0 ACSR
4 ACSR, 6/1 Comp.	250 Str.
4 Str.	266.8 Str.
4 ACSR, 7/1 Comp.	350 Str., Comp.
4 AAAC	266.8 ACSR
4 ACSR, 6/1	312 AAAC
4 ACSR, 7/1	350 Str.
2 Sol.	397.5 Str.
3 ACSR, 6/1 Comp.	400 Str.
3 Str.	500 Str., Comp.
2 Str., Comp.	500 Str.
1 Sol.	
2 ACSR, 6/1 Comp.	
2 Str.	
2 ACSR, 7/1 Comp.	
1 Str., Comp.	
2 ACSR, 6/1	
2 ACSR, 7/1	
1/0 Sol.	
1 ACSR, 6/1 Comp.	
1 Str.	
1/0 Str., Comp.	
1 ACSR	
1/0 ACSR, Comp.	
2/0 Sol.	
1/0 Str.	
2/0 Str., Comp.	
7 No. 8 Alumoweld	
1/0 ACSR, 6/1	
2/0 ACSR, Comp.	
3/0 Sol.	
2/0 Str.	
3/0 Str., Comp.	
2/0 ACSR, 6/1 & 4/3	
3/0 ACSR, Comp.	

NOTES

1. USE ALUMINUM CONNECTORS ON ALUMINUM OR COPPER CONDUCTORS.
2. SEE PREVIOUS PAGE FOR STOCK CODE NUMBER, VENDOR NUMBER AND DIE INFORMATION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES CONNECTOR AND DIE CHART (NON – TENSION) FOR USE WITH SECONDARY AND COLD PRIMARY RISERS, #6 SOL. THRU 500 STR.	ISSUE DATE: 01/15/87 REV. DATE: 05/11/10 APPROVAL: B. Priest
	8-10-2	UG8-10-2.doc

STOCK CODE NUMBER	CONDUCTOR RANGE		CABLE CONCENTRIC RANGE		TOOLS (CRIMPS)	
	RUN	TAP	CONCENTRIC OF THIS CABLE (NOTE 1)	TO CONDUCTOR	MD6-8 (HAND TOOL)	Y-35 (HYD. TOOL) 12 TON MIN.
5033933	2 SOL. 2 STR.	8 SOL. 4 STR.	—	—	W-C (2)	U-C (1)
5035164	6 SOL. 2 STR.	6 SOL. 2 STR.	1 #2AA 1 #1/0AA 1 #4/0AA	#4CU	—	U-0 (1)
5035165	2 STR. 1/0 STR.	4 STR.	—	—	—	U-0 (1)
5035166	2 STR. 1/0 STR.	2 STR. 1/0 STR.	—	—	—	U-0 (1)
5035167	2/0 STR. 4/0 STR.	2 STR. 1/0 STR.	1 750AA 4 500AA (DRAIN WIRE) 4 750CU (DRAIN WIRE) 2 #2AA 2 #4/0AA	#2/0CU	—	D (1)
5035168	2/0 STR. 4/0 STR.	2/0 STR. 4/0 STR.	3 #4/0AA 2 OR 3 750AA	#2/0CU	—	U-D3 (1)
5035169	1 STR. 2/0 STR.	1 STR. 2/0 STR.	3 #2AA	#2/0CU	—	U-0 (1)

5033933
SMALL "C"



5035169
LARGE "C"



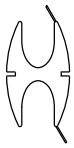
5035164
SMALL "6"



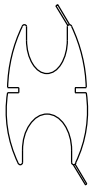
5035168
LARGE "6"



5035166
SMALL "H"



5035167
LARGE "H"



NOTES

1. "MULTIPLES OF CONCENTRIC NEUTRALS" MEANS FOLDING OR INSTALLING SEPARATE FILLER WIRES IN THE CONNECTOR. IT DOES NOT MEAN USING A SINGLE CONNECTOR FOR MULTIPLE CABLES. EXCEPTION: THE NEUTRALS OF 2 OR 3 FEEDER CABLES CONNECTED TO THE SAME PHASE WITHIN AN ENCLOSURE MAY USE A SINGLE CONNECTOR PROVIDED THE NEUTRALS ARE TRAINED WITH SUFFICIENT SLACK TO ALLOW THE TERMINATIONS TO BE MOVED TO A PARKING BUSHING.
2. BASIS: CROSS SECTIONAL AREA OF CONDUCTOR IS WITHIN WIRE RANGE OF CONNECTOR.
3.

PRIMARY CABLE	CONCENTRIC NEUTRAL EQUIVALENTS
#2AA	#4CU
#1/0AA	#2CU
#4/0AA	#4CU
750AA	#1CU
500AA & 750CU DRAIN WIRES	#7CU

Underground Distribution Construction Standards

SRP®

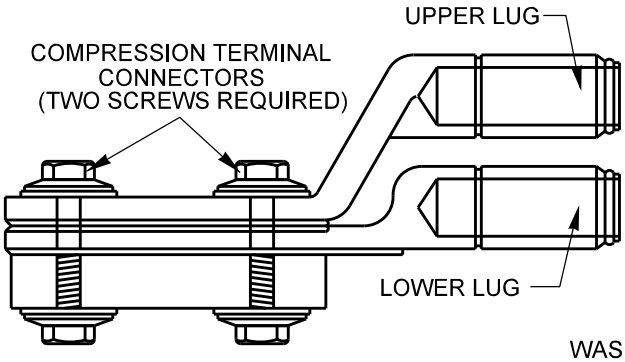
PROPRIETARY MATERIAL

CABLES AND ACCESSORIES
COPPER COMPRESSION CONNECTORS FOR GROUND / NEUTRAL CONDUCTORS
#6 SOL. THRU 4/0

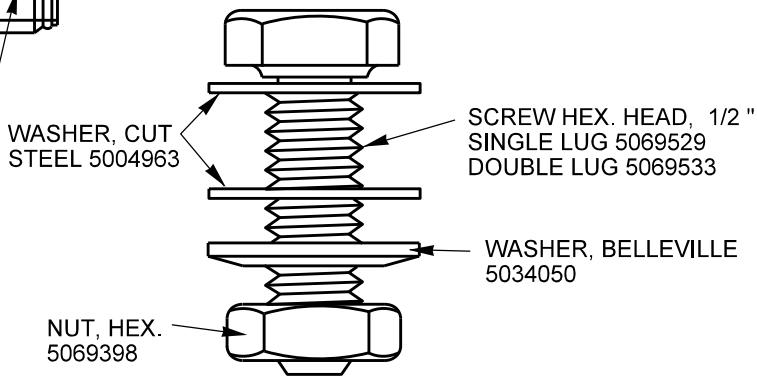
ISSUE DATE: 01/15/87
REV. DATE: 01/01/15
APPROVAL: B. PRIEST

8-11-1

8513E399.DGN



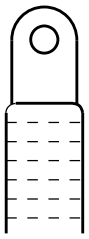
TIGHTEN NUT JUST ENOUGH TO FLATTEN BELLEVILLE WASHER, THEN BACK OFF 1/2 TURN.



			BURNDY COMPRESSION TOOLS & DIE INDEX NUMBERS	
WIRE SIZE CU OR AL	**LUG**	**STOCK CODE NO.**	**MD6-HAND TOOL**	**Y35 OR Y39 HYDRAULIC TOOL**
#2		5035281	BG	BG OR 243
1/0	LOWER	5035282	BG	BG OR 243
1/0	UPPER	5035283	BG	BG OR 243
2/0		5035284	249 OR 840	249 OR 840
3/0		5035285	249 OR 840	249 OR 840
4/0	LOWER	5035286	249 OR 840	249 OR 840
4/0	UPPER	5035287	249 OR 840	249 OR 840
266.8 MCM		5035288	NONE	251
350 MCM	LOWER	5035289	NONE	299 OR 31ART
350 MCM	UPPER	5035290	NONE	299 OR 31ART
397 MCM		5035291	NONE	316
500 MCM	LOWER	5035292	NONE	317
500 MCM	UPPER	5035293	NONE	317
750 MCM	UPPER	5035294	NONE	608
750 MCM	LOWER	5035295	NONE	608

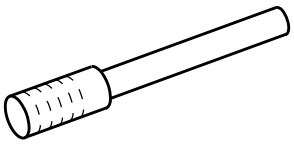
1. THE LETTER "W" USUALLY PRECEDES MD6 DIE NUMBERS
2. THE LETTER "U" USUALLY PRECEDES Y35 DIE NUMBERS
3. "U" DIES MAY BE USED IN Y45 TOOLS WITH BURNDY ADAPTER PT-6515.
4. "U" DIES MAY BE USED IN Y46 TOOLS WITH BURNDY ADAPTER P-UADP

DEAD FRONT T-BODY CONNECTOR



WIRE SIZE	STOCK CODE	DIE
4/0 AL.	5033798	U28 ART
500 MCM AL.	5033801	U34 ART
750 MCM AL. CU.	5033795	S39 ART

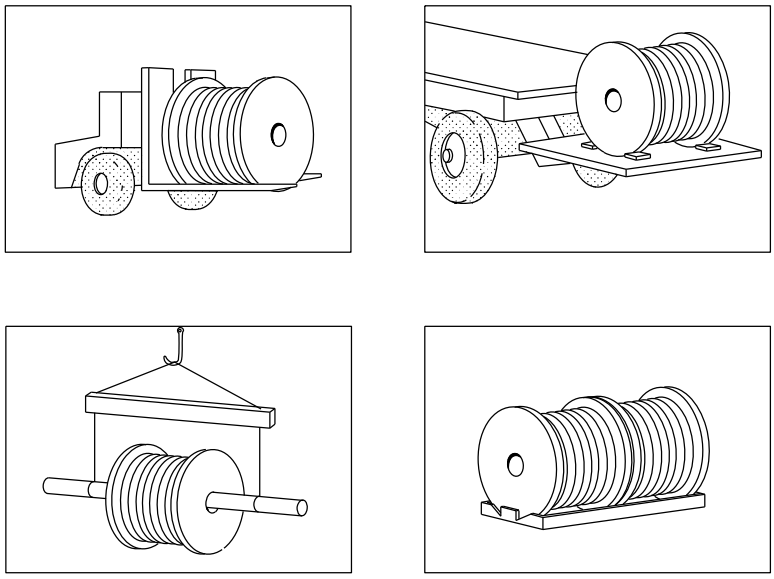
STEM CONNECTOR



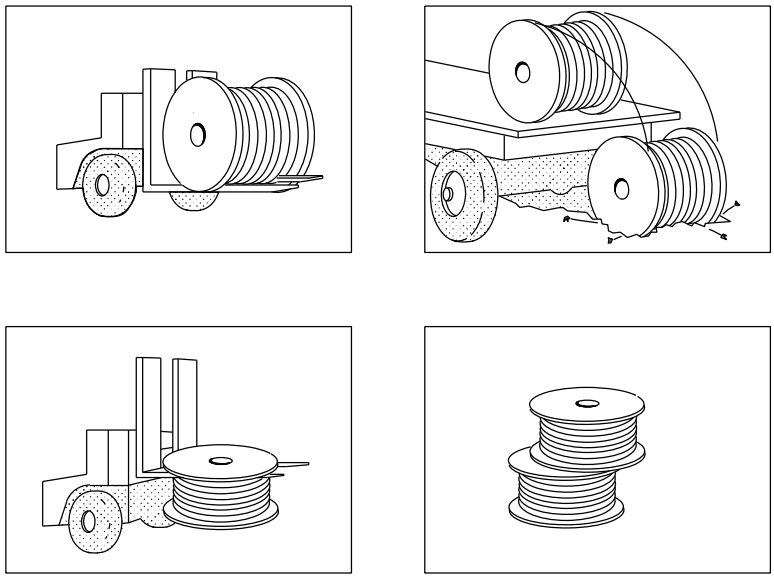
WIRE SIZE	STOCK CODE	DIE
# 1/0	5035298	BG
# 2 AL.	5035297	BG
4/0 AL.	5035299	840

REDUCER SLEEVE-ALUMINUM

WIRE SIZE	STOCK CODE	DIE	
350 MCM TO 4/0	5035816	U317	
4/0 TO # 1/0	5035817	840	
4/0 TO # 2	5035818	840	
# 1/0 TO # 2	5035819	840	
600 MCM TO 500 MCM OR LESS	5035820	U34ART	REQUIRE BORING SOLID END
750 MCM TO 500 MCM	5035821	608	



PROPER REEL HANDLING

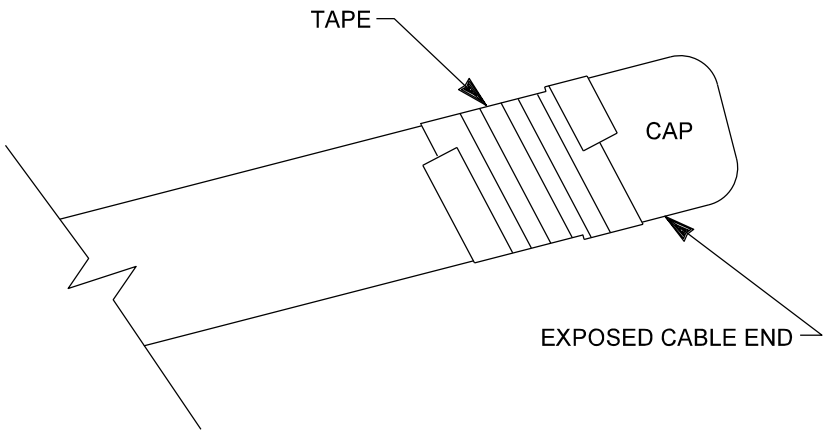


IMPROPER REEL HANDLING

NOTES

1. UNLOADING EQUIPMENT SHALL NOT COME IN CONTACT WITH THE CABLE OR IT'S PROTECTIVE COVERING.
2. IF A CRANE IS USED TO UNLOAD CABLE, A SHAFT THROUGH THE ARBOR HOLE OR A CRADLE SUPPORTING BOTH REEL FLANGES SHALL BE USED.
3. FORKLIFTS MUST LIFT THE REEL BY CONTACTING BOTH FLANGES.
4. STORE REELS ON HARD SURFACE SO THAT THE FLANGES WILL NOT SINK AND ALLOW REEL WEIGHT TO REST ON CABLE.
5. PLACE A BOARD UNDER BOTH FLANGES TO PREVENT ROLLING WHEN IN STORAGE, IN ADDITION TO OTHER SECURING METHODS IN SHIPPING.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES REEL HANDLING AND STORAGE GUIDELINES	ISSUE DATE: 04/07/03 REV. DATE: 04/12/10 APPROVAL: B. PRIEST
	8-14-1	8513E348.DGN



15kV

CABLE SIZE	CAP STOCK CODE	CAP COLOR	SIZE (INCH IDxL)
#2 AL	5035159	GRAY	1.062x1.5
4/0 AL	5035160	ORANGE	1.25x1.5
500MCM (WIRE SHIELD)	5035161	BLACK	1.5x1.5
750MCM AL or CU	5035162	BLUE	1.875x1.5

25kV

CABLE SIZE	CAP STOCK CODE	CAP COLOR	SIZE (INCH IDxL)
1/0 AL (CN)	5035159	GRAY	1.062x1.5

600 VOLT

CABLE SIZE	CAP STOCK CODE	CAP COLOR	SIZE (INCH IDxL)
#6 AL			
#2 AL	5035154	BLUE	0.375x1.5
1#1/0 AL	5035155	RED	0.437 I.D.x1.5 LONG
4/0 AL	5035156	YELLOW	0.625x1.5
350MCM	5035159	GRAY	1.062x1.5
500MCM	5035159	GRAY	1.062x1.5
750MCM	5035160	ORANGE	1.25x1.5

NOTES

1. ALL EXPOSED PRIMARY AND SECONDARY CABLE ENDS SHOULD BE SEALED IF LEFT EXPOSED TO PREVENT MOISTURE INGRESS.
2. COVER EXPOSED ENDS WITH A CAP AND TAPE THE CAP ON AS SHOWN.

CONNECTORS, SPLICES & TERMINATORS
600V CLASS - GENERAL INFORMATION

THIS SECTION CONSISTS OF INFORMATION DESCRIBING THE VARIOUS TYPES OF 600V CLASS CONDUCTORS AND THEIR TYPICAL INSTALLATIONS.

USE THE SPECIFIC INSTRUCTIONS, PACKAGED WITH EACH DEVICE BY THE MANUFACTURER, FOR ASSEMBLY.

EXCEPTION: DETAILED INSTRUCTIONS ARE PROVIDED FOR STREETLIGHTS AND SPLICES.

DEVICES COVERED BY THIS SECTION INCLUDE:

1. STREET LIGHT
2. SECONDARY STUB OUT
3. MOLE CONNECTOR
4. T-TAP INSTALLATION
5. SPLICES

CONNECTORS, SPLICES AND TERMINATORS
15KV & 25KV CLASS - GENERAL INFORMATION

THIS SECTION IS PROVIDED SO THE INSTALLER CAN DETERMINE WHICH MANUFACTURER'S INSTRUCTIONS APPLY.

TYPES OF UNDERGROUND CABLE

	VOLTAGE CLASS	SIZE	INSULATION THICKNESS (MILS)	INSULATION O.D. (INCHES)
JACKETED CONCENTRIC NEUTRAL CABLE	15KV	4/0	175	0.89 - 0.99
	15KV	750 MCM	175	1.32 - 1.43
	15KV	#2	220	0.75 – 0.83
	25KV	1/0	260	0.93 - 1.00
UN-JACKETED CONCENTRIC NEUTRAL CABLE	15KV	#2	220	0.75 – 0.83
JACKETED DRAIN WIRE (WIRE SHIELD) CABLE	15KV	500 MCM	175	1.18 - 1.28

NOTES

1. SRP DOES NOT USE GROUNDING ADAPTERS ON DRAIN WIRE CABLE. INSTEAD, THE DRAIN WIRES ARE TWISTED TOGETHER AND CONNECTED TO GROUND (AS IS DONE WITH CONCENTRIC NEUTRALS).

TERMINATIONS AND SPLICES

CONSULT THE FOLLOWING SUPPLEMENTAL SRP INSTRUCTIONS IN ADDITION TO THE MANUFACTURER'S INSTRUCTIONS.

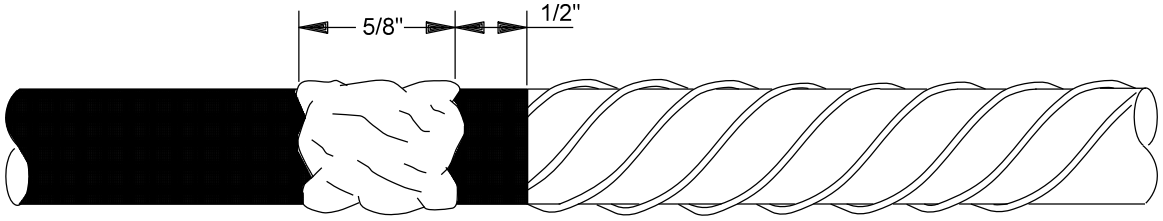
1. CABLE PREPARATION
2. CONNECTOR SELECTION AND BOLTING PROCEDURE (NOT APPLICABLE FOR ELBOWS AND SPLICES)
3. END SEALING OF PRIMARY STUB OUTS AND STUB UPS
4. JACKET RESEALING, TERMINATIONS AND SPLICES

5. CIC TERMINATION SEALING (15KV)
6. ANTI-TRACKING PROCEDURE, NOT APPLICABLE FOR OUTDOOR TERMINATIONS, ELBOWS, SPLICES AND HEAT SHRINK INDOOR TERMINATIONS
7. MULTIPLE CABLE TERMINATIONS ON THE SAME PHASE (NOT APPLICABLE FOR OUTDOOR TERMINATIONS, ELBOWS AND SPLICES)
8. GROUNDING
9. LUBRICATING

CABLE PREPARATION

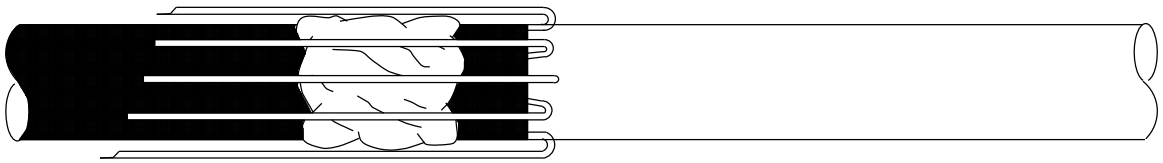
1. TRAIN CABLE SO THAT ITS PATH IS STRAIGHT AND STRAIN FREE.
2. DO NOT CUT OR NICK CABLE SEMI-CONDUCTING LAYER WHEN REMOVING CABLE JACKET.
3. CUT CABLE SQUARELY TO PROPER LENGTH, LEAVING ENOUGH CONCENTRIC NEUTRALS OR DRAIN WIRES TO FORM A GROUND PROTECTION.
4. DO NOT CUT OR NICK THE CABLE INSULATION WHEN REMOVING THE SEMI-CONDUCTING LAYER.
5. DO NOT USE WATER FOR CABLE CLEANING.
6. DO NOT USE CLEANING SOLVENT (5012124, TOWELETTES) ON CABLE SEMI-CONDUCTING LAYER.
7. THOROUGHLY CLEAN THE SURFACE OF THE EXPOSED CABLE INSULATION USING CLEANING SOLVENT (5069354, GAL.).
8. USE MARKING TAPE, TEMPORARILY**,** FOR ALL REQUIRED REFERENCE MARKS. REMOVE TAPE BEFORE COMPLETING THE INSTALLATION.
9. KEEP THE CABLE INSULATION CLEAN.
10. SILICONE LUBRICANT, DOW CORNING 5 (5012044), MAY BE USED TO SUPPLEMENT LUBRICANT PROVIDED IN THE KIT.
11. FOR LUBRICATION OF TRANSFORMER, DEAD FRONT SWITCH BUSHINGS AND DEAD FRONT TERMINATIONS (SEE SPECIFIC PROCEDURE FOR THIS PURPOSE).

STEP 1



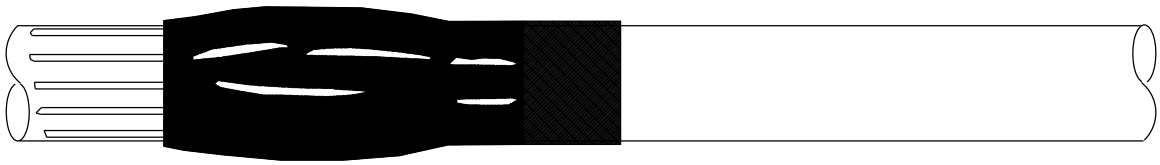
CUT A STRIP OF WATER SEALANT (5035804) 3" LONG
AND WRAP AROUND JACKET 1/2 " FROM JACKET END.

STEP 2



BEND CONCENTRIC NEUTRAL WIRES BACK OVER SEALANT AND IMBED.

STEP 3



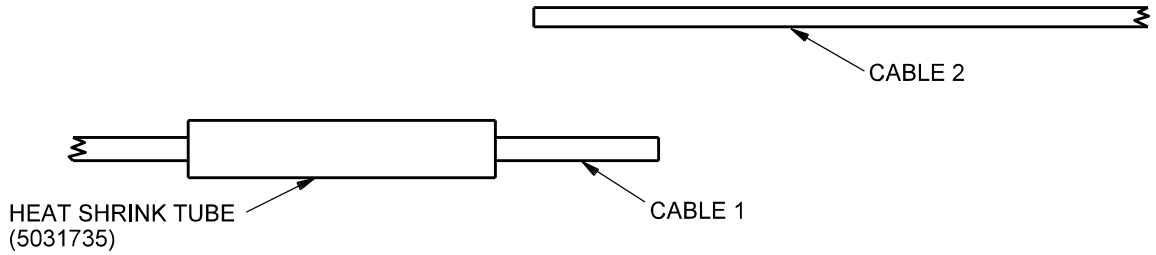
INSTALL HEAT SHRINK TUBE TO COVER WATER SEALANT.

(5031733) FOR #2
(5031733) FOR # 4/0
(5031734) FOR 500 & 750

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES SEALING OF PRIMARY AND FEEDER CABLE JACKET	ISSUE DATE: 01/15/87 REV. DATE: 08/01/13 APPROVAL: B. PRIEST
	8-18-1	8513E277.DGN

STEP 1

PRIOR TO SPLICE INSTALLATION, SLIDE HEAT SHRINK TUBE (5031735) OVER ONE OF THE CABLE ENDS.

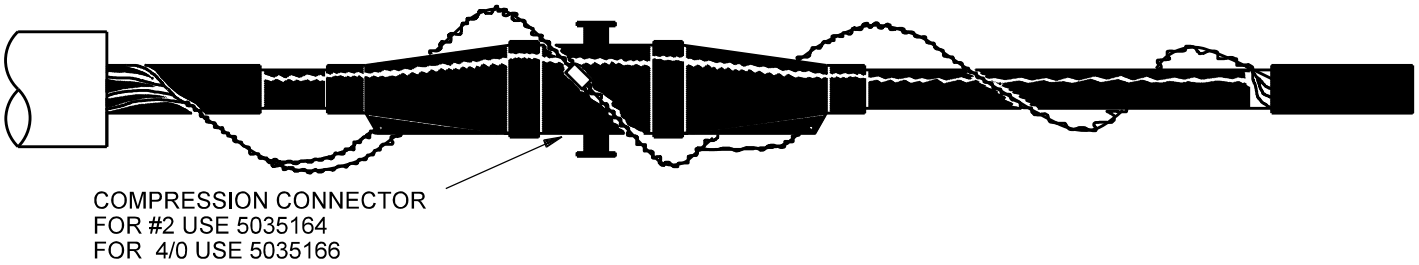


STEP 2

INSTALL SPLICE PER THE MANUFACTURER'S INSTRUCTIONS PACKAGED WITH THE SPLICE.

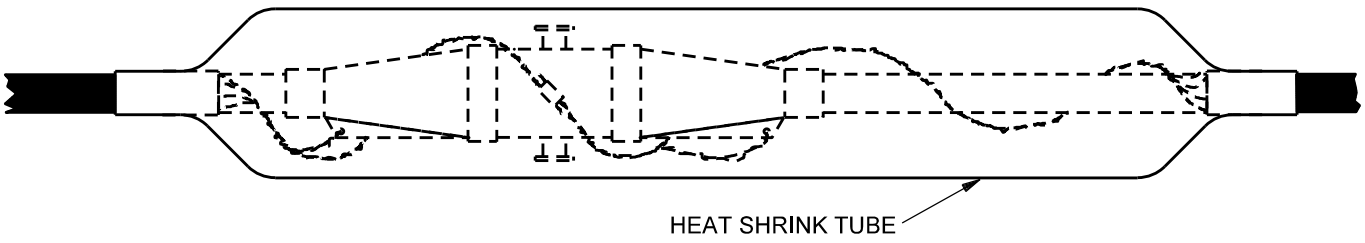
STEP 3

USING THE INDICATED COMPRESSION CONNECTOR BOND THE TWO NEUTRALS TOGETHER.



STEP 4

SLIDE THE HEAT SHRINK TUBE OVER THE COMPLETED SPLICE, AND SHRINK ONLY THE ENDS OF THE TUBE DOWN ONTO THE CABLE JACKET.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES SEALING OF SPLICED, JACKETED #2 AND 4/0 CONCENTRIC NEUTRAL CABLE	ISSUE DATE: 01/15/87 REV. DATE: 08/01/13 APPROVAL: B. PRIEST
	8-19-1	8513E240.DGN

STEP 1

INSTALL SPLICE PER THE MANUFACTURER'S INSTRUCTIONS PACKAGED WITH THE SPLICE.

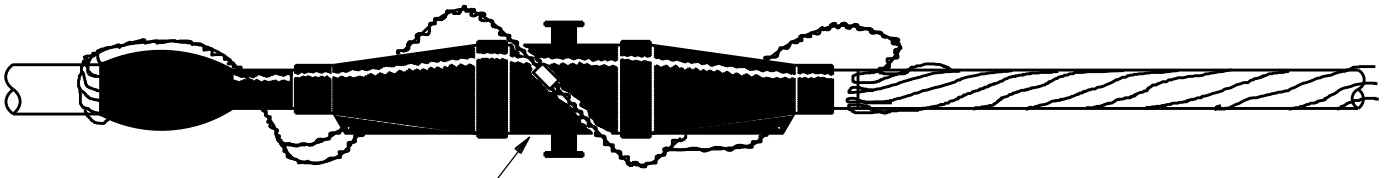
STEP 2

PRIOR TO TWISTING AND BONDING THE TWO NEUTRALS, SEAL ONLY THE JACKETED CABLE END USING AQUA SEAL (5035803) AND VULCANIZING RUBBER TAPE OR HEAT SHRINK TUBE AS SHOWN FOR JACKET RESEALING FOR TERMINATIONS.



STEP 3

TWIST EACH CABLE NEUTRAL INTO A CABLE AND USING THE INDICATED COMPRESSION CONNECTOR, BOND THE TWO NEUTRALS TOGETHER.

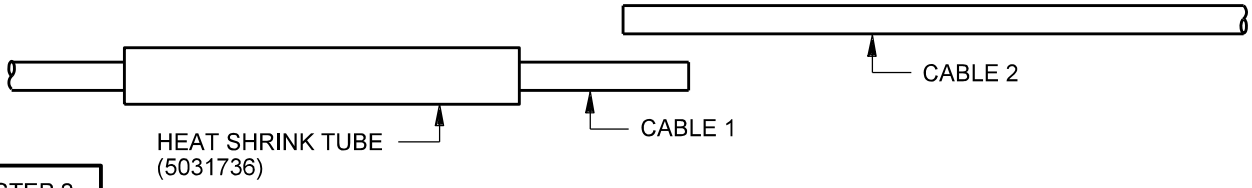


COMPRESSION CONNECTOR
FOR #2 USE 5035164
FOR 4/0 USE 5035166

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES SEALING OF SPLICED, JACKETED TO UNJACKETED CONCENTRIC NEUTRAL CABLE	ISSUE DATE: 01/15/87 REV. DATE: 08/01/13 APPROVAL: B. PRIEST
	8-20-1	8513E241.DGN

STEP 1

PRIOR TO SPLICE INSTALLATION SLIDE HEAT SHRINK TUBE (5031736) OVER ONE OF THE CABLE ENDS.

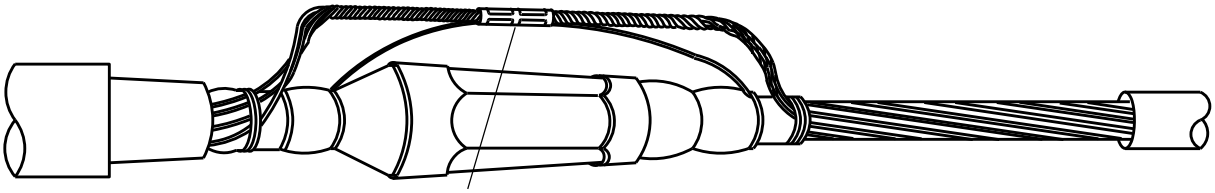


STEP 2

INSTALL SPLICE PER THE MANUFACTURER'S INSTRUCTIONS PACKAGED WITH THE SPLICE.

STEP 3

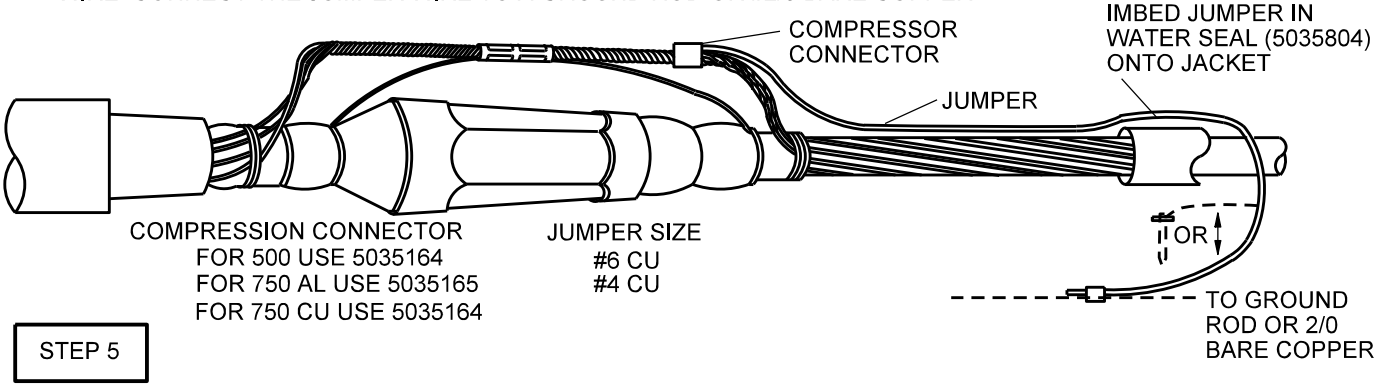
USING THE INDICATED COMPRESSION CONNECTOR, BOND THE TWO WIRES TOGETHER.



COMPRESSION CONNECTOR
FOR 500 USE 5035164
FOR 750 AL USE 5035166
FOR 750 CU USE 5035164

STEP 4 WHEN GROUNDING IS REQUIRED - (GO TO STEP 5 WHEN GROUNDING IS NOT REQUIRED)

USING THE INDICATED COMPRESSION CONNECTOR AND JUMPER SIZE, RUN THE JUMPER ALONG THE CABLE TOWARDS THE JACKET. PLACE A STRIP OF WATER SEAL (5035804) ON THE JACKET AND IMBED THE JUMPER WIRE. CONNECT THE JUMPER WIRE TO A GROUND ROD OR #2/0 BARE COPPER.

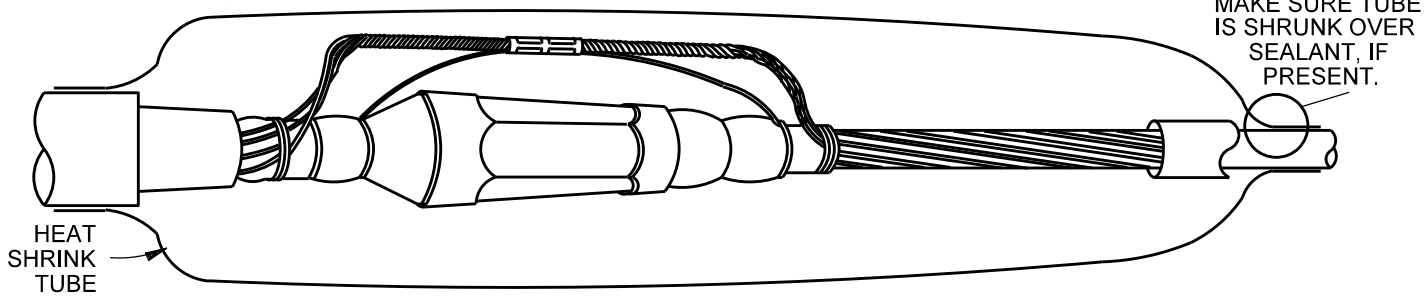


COMPRESSION CONNECTOR
FOR 500 USE 5035164
FOR 750 AL USE 5035165
FOR 750 CU USE 5035164

JUMPER SIZE
#6 CU
#4 CU

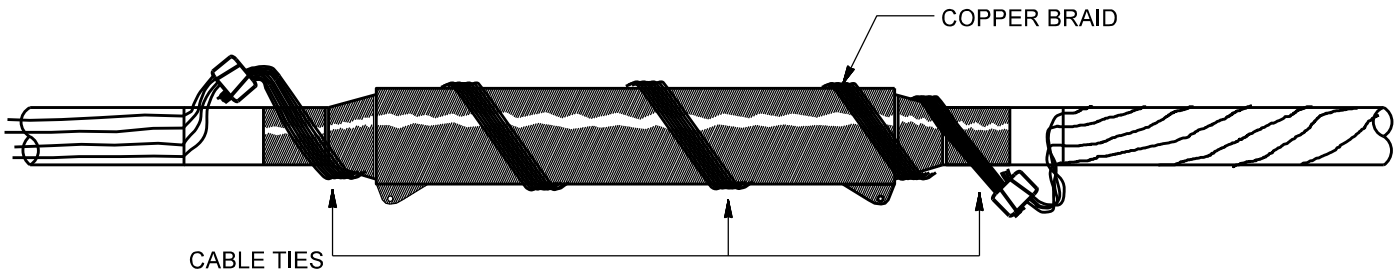
STEP 5

SLIDE THE HEAT SHRINK TUBE OVER THE COMPLETED SPLICE, AND SHRINK ONLY THE ENDS OF THE TUBE DOWN ONTO THE CABLE JACKET. MAKE SURE THE TUBE IS SHRINK OVER THE AQUA SEAL IMBEDED JUMPER, IF PRESENT.



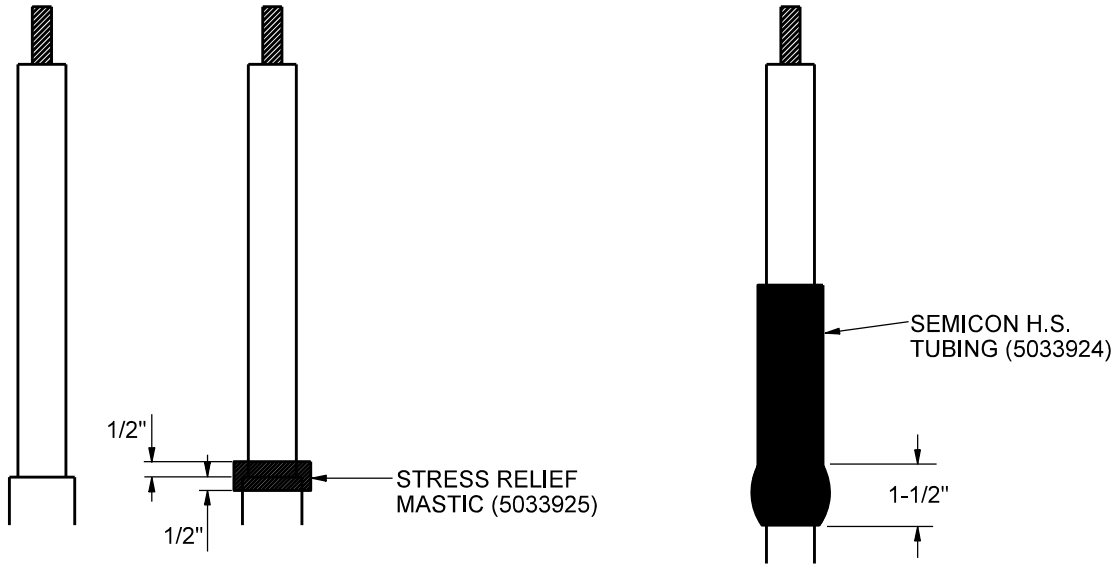
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES SEALING OF 500 AND 750 MCM JACKETS AT SPLICES	ISSUE DATE: 01/15/87 REV. DATE: 08/01/13 APPROVAL: B. PRIEST
	8-21-1	8513E175.DGN

STEP 1	INSTALL SPLICE PER THE MANUFACTURER'S INSTRUCTIONS PACKAGED WITH THE SPLICE.
STEP 2	TWIST THE CONCENTRIC NEUTRALS TOGETHER TO FORM PIGTAILS ON EACH END.
STEP 3	WRAP A LENGTH OF COPPER BRAID (5033904) APPROXIMATELY 4 TIMES AROUND AND ALONG THE SPLICE BODY.
STEP 4	SECURE THE COPPER BRAID TO THE SPLICE BODY USING THREE CABLE TIES, TWO AT EACH END AND ONE IN THE MIDDLE OF THE SPLICE BODY.



STEP 5	CONNECT THE COPPER BRAID TO THE CONCENTRIC NEUTRAL PIGTAILS USING COMPRESSION CONNECTORS. 5035164 FOR #2 5035166 FOR 4/0

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES ALTERNATE NEUTRAL BONDING AT SPLICE BARE CONCENTRIC NEUTRAL CABLE	ISSUE DATE: 08/22/02 REV. DATE: 08/01/13 APPROVAL: B. PRIEST
	8-22-1	8513E241.DGN



NOTES

1. REMOVE EXISTING LIVE FRONT TERMINATION AND ANTI-TRACKING TAPE. DO NOT NICK CABLE INSULATION.
2. MEASURE AND CUT REQUIRED LENGTH OF CABLE FOR NEW ELBOW TERMINATION AND NEW BUSHING HEIGHT.
3. CLEAN EXPOSED CABLE INSULATION.
4. APPLY STRESS RELIEF MASTIC BEGINNING ON CABLE INSULATION AT EDGE OF SEMICON. TENSION TO 1/2 ITS WIDTH, APPLY 3 WRAPS EVENLY OVERLAPPING THE CABLE SEMICON AND INSULATION FILLING THE STEP. TEAR OFF EXCESS AND DISPOSE.
5. DETERMINE REQUIRED LENGTH OF SEMICON HEAT SHRINK TUBING. CUT SQUARE AND SMOOTH.
6. PLACE CUT LENGTH OF SEMICON TUBING ONTO CABLE. OVERLAP CABLE SEMICON BY 1-1/2 IN. HEAT SHRINK ONTO CABLE INSULATION STARTING AT THE BOTTOM AND WORKING UP TOWARD TOP. SHRINK COMPLETELY LEAVING NO VOIDS.
7. ALLOW TO COOL AND INSTALL NEW ELBOW TERMINATION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES CABLE SEMICON EXTENSION FOR CONVERTING LIVE FRONT TO ELBOW TERMINATIONS ON EXISTING #2 & 4/0 15 KV CABLE	ISSUE DATE: 05/07/97 REV. DATE: 08/01/13 APPROVAL: B.PRIEST
	8-23-1	8513E291.DGN

GUIDELINES FOR MULTIPLE CABLE TERMINATIONS (DOUBLE-LUG) ON THE SAME PHASE

WHEN MAKING MULTIPLE CABLE TERMINATIONS ON THE SAME PHASE, CABLES SHOULD BE TRAINED SO THE GROUND PLANES ARE WITHIN 45 DEG OF EACH OTHER (e.g., 1" - OUT, 1" UP OR DOWN)(FIG. 1). NOTE: HORIZONTAL SEPARATION SHALL NOT BE LESS THAN 1". IN ORDER TO ADJUST THE POSITION OF THE GROUND PLANE OF A TERMINATION, THE CUT BACK LENGTH OF THE SEMICON SHALL BE INCREASED AS REQUIRED TO PLACE ITS GROUND PLANE IN THE SHADED AREA. THIS WILL RESULT IN EXPOSED CABLE INSULATION FROM THE TOP OF TERMINATION TO THE LUG, WHICH SHALL BE HALF-LAPPED WRAPPED WITH TWO LAYERS OF TRACK RESISTANT SILICONE TAPE (5033912).

FIG. 2 SHOWS THE APPROXIMATE LOCATION OF THE GROUND PLANES.

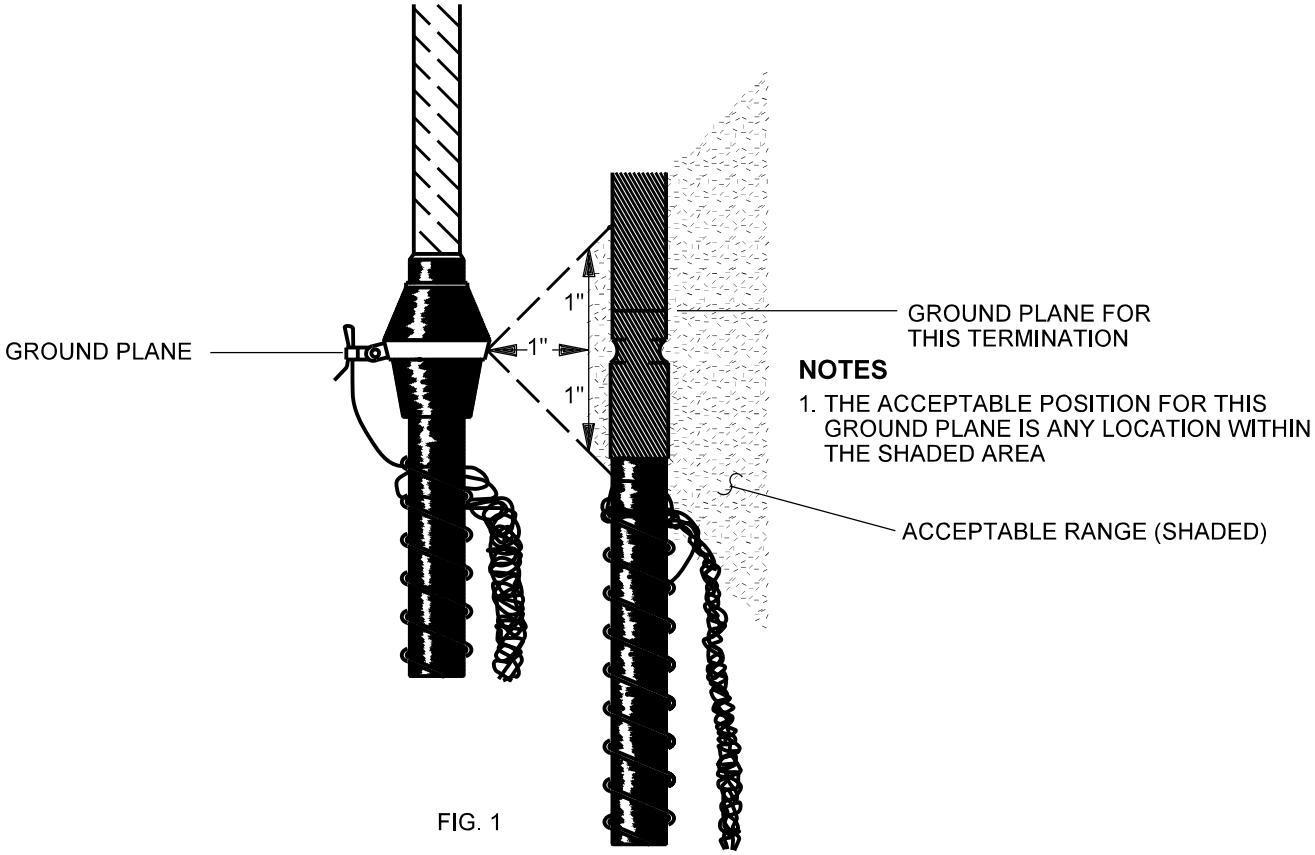
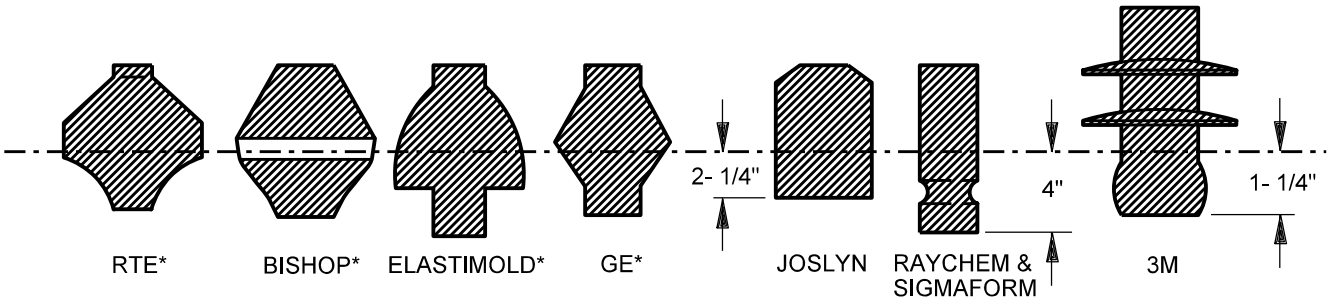


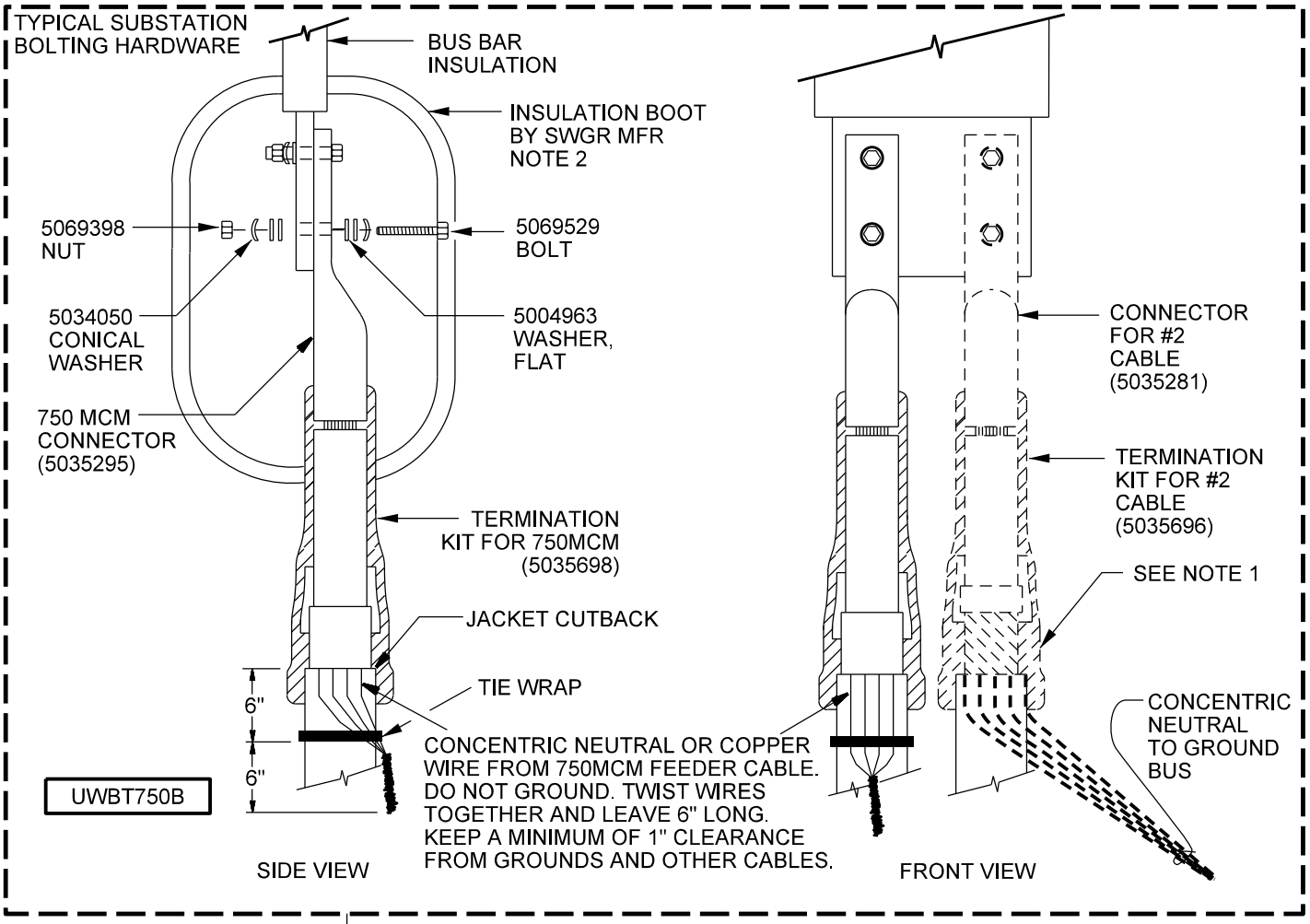
FIG. 1

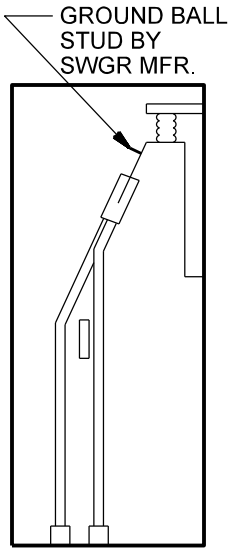


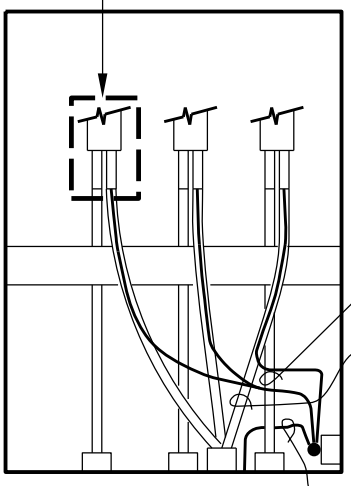
*APPROXIMATE MIDDLE OF TERMINATION

FIG. 2

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES MULTIPLE CABLE TERMINATION (DOUBLE LUG)	ISSUE DATE: 01/15/87 REV. DATE: 08/01/13 APPROVAL: B. PRIEST
	8-24-1	8513E280.DGN

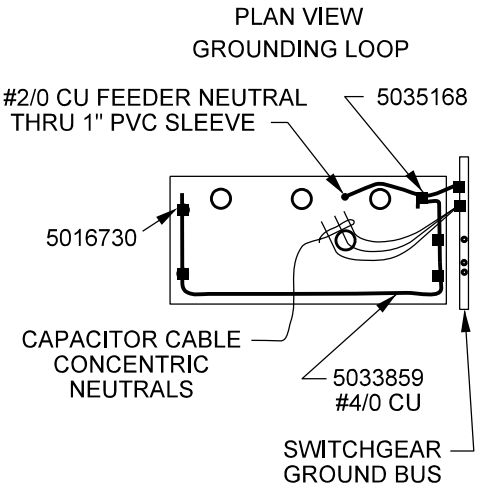






NOTES

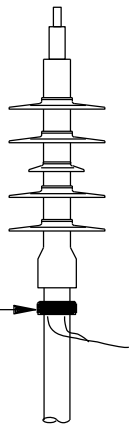
1. SEE PAGE 8-24-1 FOR GROUND PLANE INSTRUCTIONS.
2. FOR ADDITION OF FEEDER TO EXISTING SUBSTATION USE 4" HEAT SHRINK SRP # 5033923.



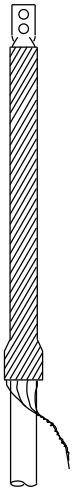
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE & ACCESSORIES SUBSTATION SWITCHGEAR TERMINATION	ISSUE DATE: 01/15/87 REV. DATE: 07/11/18 APPROVAL: D. FOX
	8-25-1	8513E6.DGN

INDOOR TERMINATIONS FOR #2, 4/0, 500 MCM AND 750 MCM PRIMARY CABLE

COLD SHRINK

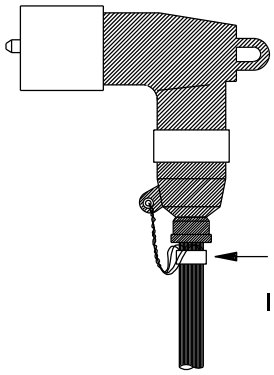


HEAT SHRINK



CONCENTRIC NEUTRAL
OR DRAIN WIRES TWISTED
TOGETHER AND BOND TO GROUND
USING COMPRESSION CONNECTOR
FOR TERMINATIONS IN SUBSTATION SWITCHGEAR
SEE SWITCHGEAR TERMINATION

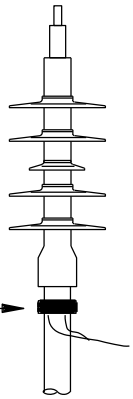
INDOOR TERMINATION (ELBOW) FOR #2 AND 4/0 PRIMARY CABLE



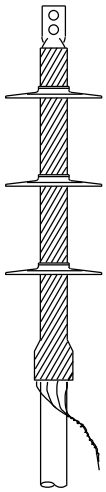
CONCENTRIC NEUTRAL
OR DRAIN WIRES TWISTED
TOGETHER AND BOND TO GROUND
USING COMPRESSION CONNECTOR

OUTDOOR TERMINATIONS FOR #2, 4/0, 500 MCM AND 750 MCM PRIMARY CABLE

COLD SHRINK



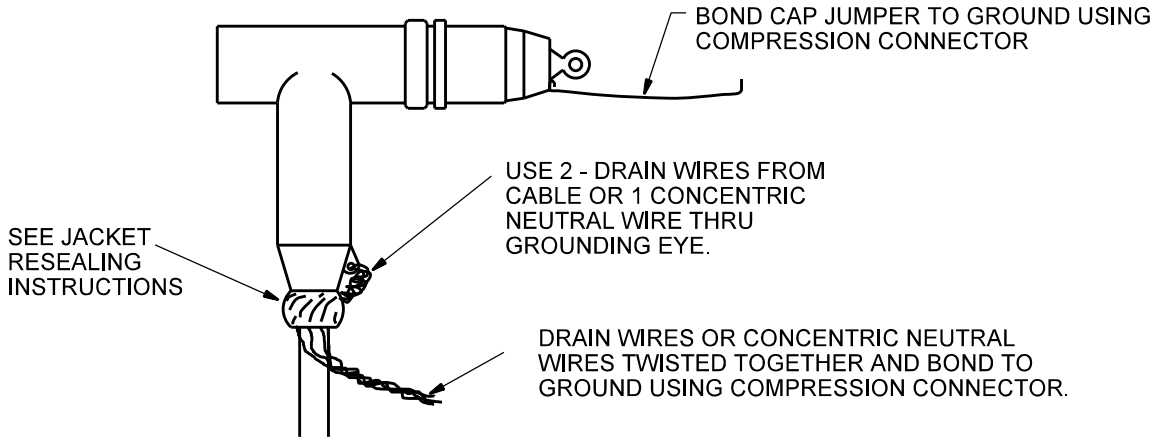
HEAT SHRINK



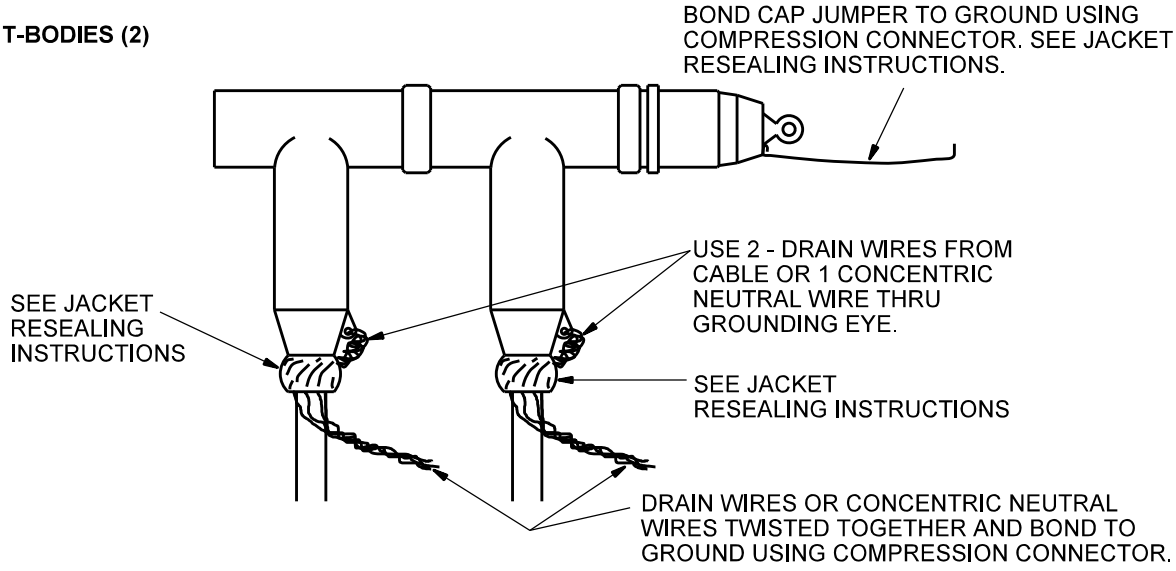
DRAIN WIRES OR
CONCENTRIC NEUTRALS
TWISTED TOGETHER
AND BOND TO GROUND
USING COMPRESSION CONNECTOR

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES TERMINATION GROUNDING INSTRUCTIONS	ISSUE DATE: 01/15/87 REV. DATE: 04/12/10 APPROVAL: B. PRIEST
	8-26-1	8513E152.DGN

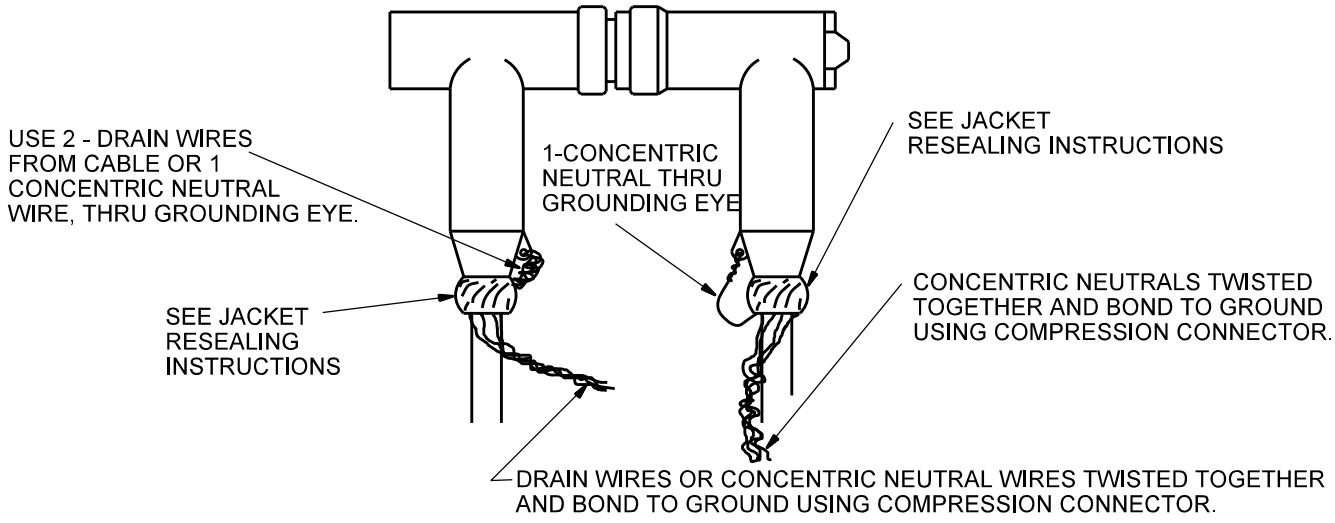
INDOOR TERMINATION T-BODY (1)



INDOOR TERMINATION T-BODIES (2)



INDOOR TERMINATION T-BODY WITH 4/0 TAP



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES TERMINATION GROUNDING INSTRUCTIONS	ISSUE DATE: 01/15/87 REV. DATE: 05/24/10 APPROVAL: B. PRIEST
	8-26-2	8513E281.DGN

LUBRICATING PROCEDURE FOR BUSHINGS / TERMINATION INTERFACES ON DEAD FRONT, PAD MOUNTED EQUIPMENT

DE-ENERGIZED CONDITIONS

1. USING A CLEAN, DRY RAG, WIPE THE MATING SURFACES OF THE BUSHING AND DEAD FRONT TERMINATION. DO NOT USE A SOLVENT-SATURATED RAG.
2. UNIFORMLY COAT THE OUTER SURFACE OF THE BUSHING USING ONLY NOVAGUARD OR POLYSI SILICON LUBRICANT (S/C 5012043). DO NOT APPLY LUBRICANT TO THE ARC INTERRUPTING MATERIAL, CONTACTS OR TO THE INSIDE SURFACE OF THE TERMINATION.
3. INSTALL THE TERMINATION ON THE LUBRICATED BUSHING.

NOTES

1. IN A PAD MOUNT TRANSFORMER OR SWITCH WHERE AN ELBOW WILL NOT INITIALLY BE INSTALLED ON A BUSHING (OPEN POINT), THE ELBOW MUST BE INSTALLED ON A LUBRICATED PARKING BUSHING (S/C 5034295) AND THE UNUSED BUSHING MUST BE LUBRICATED AND COVERED BY A PROTECTIVE INSULATING CAP (S/C 5034291) WITH ITS WIRE LEAD CONNECTED TO GROUND, USING A COMPRESSION CONNECTION.
2. THE PROTECTIVE COVERS PROVIDED BY THE MANUFACTURER ON TRANSFORMER OR SWITCH BUSHINGS ARE NOT SUITABLE FOR ENERGIZED USE AND ARE TO BE DISCARDED WHEN INSTALLING THE DEVICE.

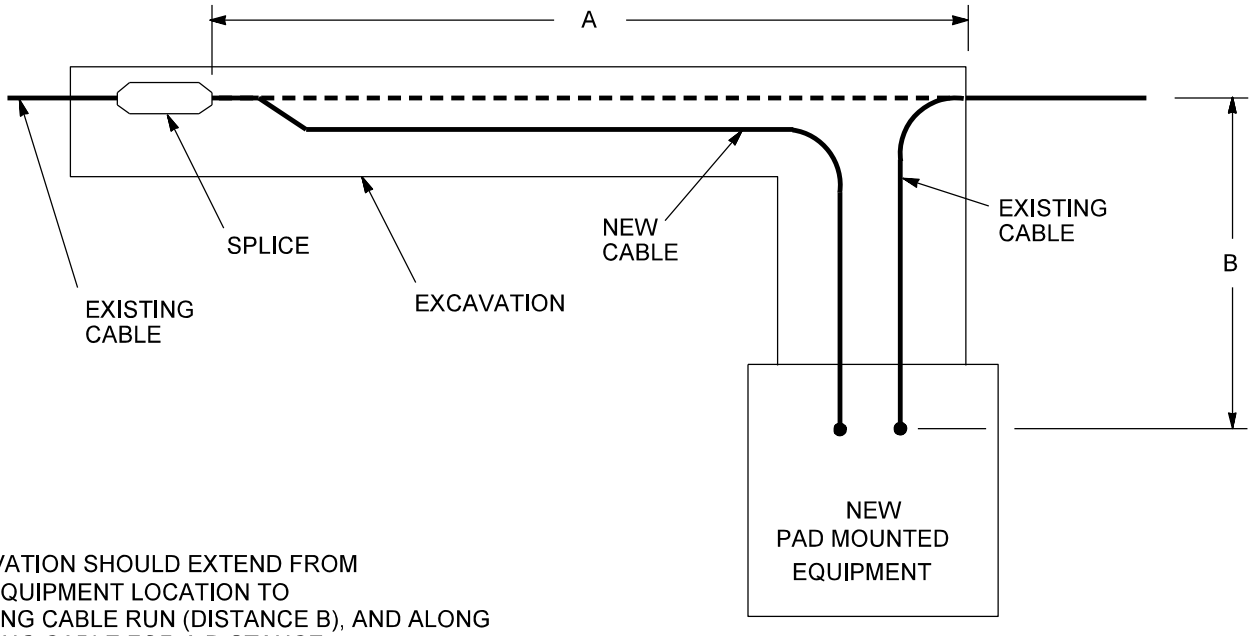
ENERGIZED CONDITIONS

GENERAL NOTICE: AVOID CONTACT WITH ADJACENT PARKED ENERGIZED ELBOW.

1. THE MATING SURFACES OF BUSHINGS AND TERMINATION MUST BE FREE OF DIRT OR DUST. IF CLEANING IS REQUIRED, THE UNIT AND CABLE MUST BE DE-ENERGIZED AND GROUNDED. AT THIS POINT, CLEAN AND LUBRICATE THE SURFACES, ACCORDING TO THE DE-ENERGIZED CONDITIONS PROCEDURE.
2. TO LUBRICATE AN ENERGIZED ELBOW: COAT THE OUTER SURFACE OF THE PARKING BUSHING (S/C 5034291) WITH NOVAGUARD OR POLYSI SILICON LUBRICANT ONLY (S/C 5012043). USING A HOT STICK, INSTALL THE PARKING BUSHING ADJACENT TO THE ELBOW. DO NOT APPLY LUBRICANT TO THE ARC INTERRUPTING MATERIAL.
3. USING A HOT STICK, REMOVE THE ELBOW AND INSTALL ON THE LUBRICATED PARKING BUSHING. THEN REMOVE THE NOW LUBRICATED ELBOW AND REINSTALL ON THE BUSHING.
4. A 200A BUSHING MAY ALSO BE LUBRICATED BY COATING THE INSIDE SURFACE OF AN INSULATED CAP (S/C 5034295 15KV 5034296 25KV) WITH ONLY NOVAGUARD OR POLYSI SILICON LUBRICANT (S/C 5012043). INSTALL THE LUBRICTED CAP ON THE BUSHING WITH A HOT STICK, ROTATE THE CAP TO TRANSFER THE GREASE AND REMOVE THE CAP.

NOTES

1. THE 600A BUSHING ON A SWITCH CANNOT BE LUBRICATED WHEN IT IS ENERGIZED.



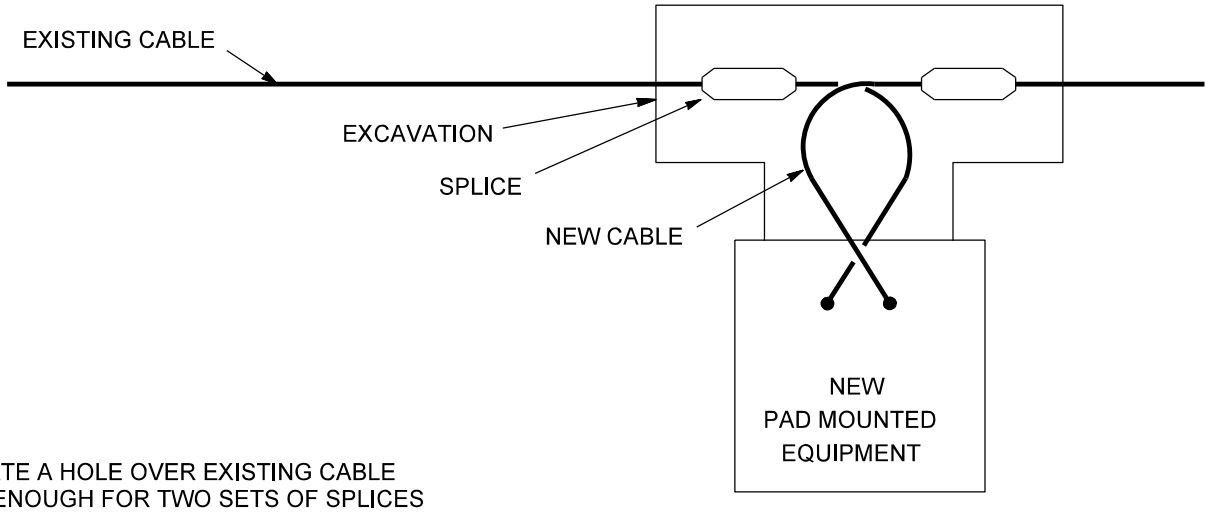
PREFERRED METHOD

PLAN

NOTES

1. EXCAVATION SHOULD EXTEND FROM NEW EQUIPMENT LOCATION TO EXISTING CABLE RUN (DISTANCE B), AND ALONG EXISTING CABLE FOR A DISTANCE OF "A" PLUS THE DISTANCE TO MAKE CABLE SPLICES.
2. DISTANCE "A" SHOULD EQUAL DISTANCE "B" PLUS TOTAL STUB-UP LENGTH TO EQUIPMENT TERMINATIONS.
3. "B" DISTANCE: WIRE SIZE

	#2 D.B.	4/O D.B.	500 D.B.
FEET	0-30	0-60	0-90



ALTERNATE METHOD

(EXTRA SET OF SPLICES)

PLAN

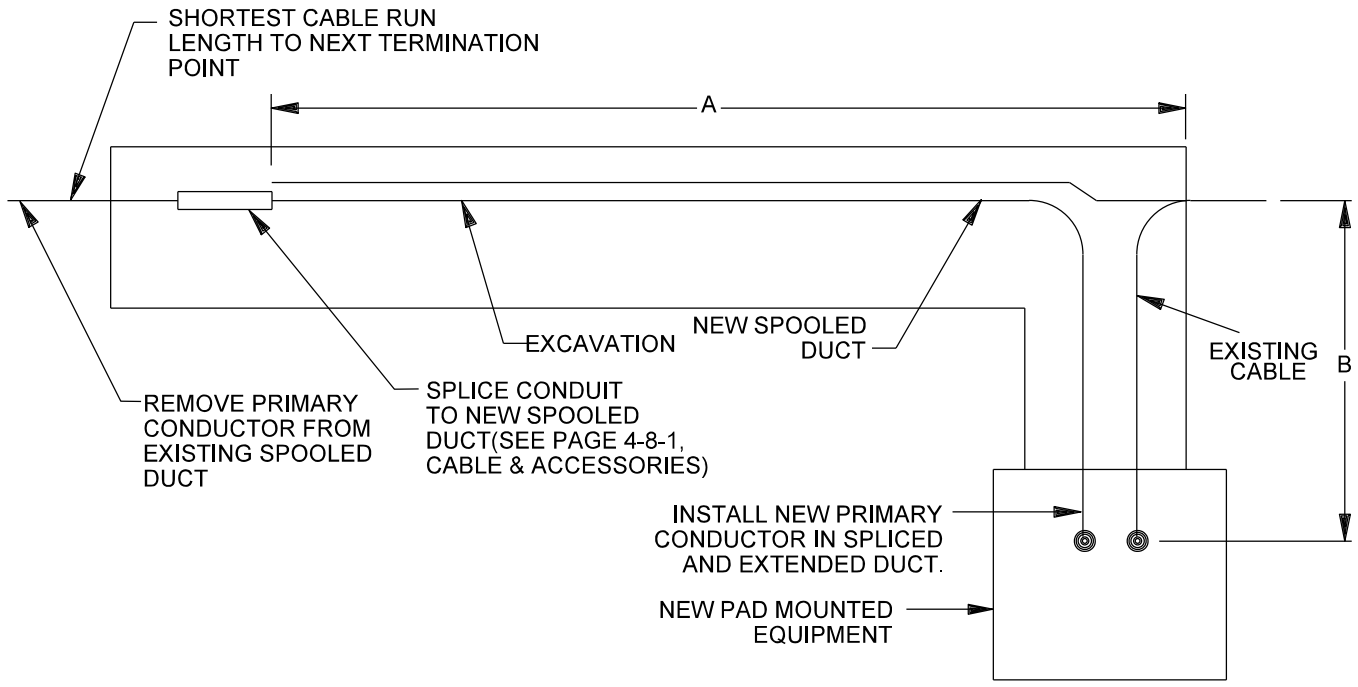
NOTES

1. EXCAVATE A HOLE OVER EXISTING CABLE LARGE ENOUGH FOR TWO SETS OF SPLICES
2. CABLE TRAINING SHOULD BE SUCH THAT NO CABLE BENDING OCURRS AT THE SPLICE.
3. IF NEW EQUIPMENT IS TO BE DIRECTLY OVER EXISTING CABLE, SPLICES SHOULD BE TO ONE SIDE OF EQUIPMENT.
4. "B" DISTANCE: WIRE SIZE

	#2 D.B.	4/0 D.B.	500 D.B.
FEET	OVER 30	0VER 60	OVER 90

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES TAP INTO PRIMARY OR FEEDER	ISSUE DATE: 07/28/88 REV. DATE: 04/13/10 APPROVAL: B.PRIEST
	8-28-1	8513E28.DGN

FOR PRIMARY CONDUCTOR ONLY



NOTES

1. EXCAVATION SHOULD EXTEND FROM NEW EQUIPMENT LOCATION TO EXISTING CABLE RUN (DISTANCE "B") AND ALONG EXISTING CABLE FOR A DISTANCE OF "A".

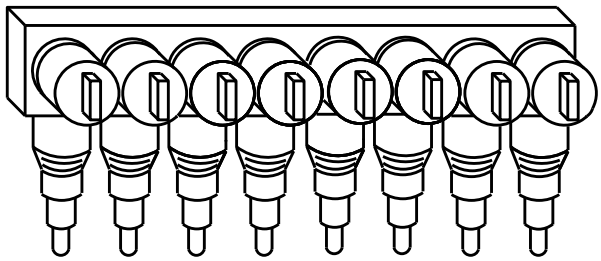
2. DISTANCE "A" EQUALS DISTANCE "B" PLUS TOTAL STUB-UP LENGTH NEEDED TO TERMINATE EXISTING CABLE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES SPLICING INTO EXISTING CIC CABLE RUNS	ISSUE DATE: 08/15/90 REV. DATE: 04/13/10 APPROVAL: B.PRIEST
	8-29-1	8513E26.DGN

8 PLACE MOLE

UBM8P

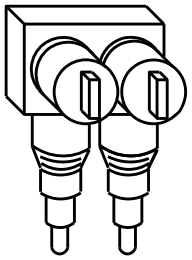
SET OF 3 (5034925) #12 - 350 MCM



2 PLACE MOLE

UWMC

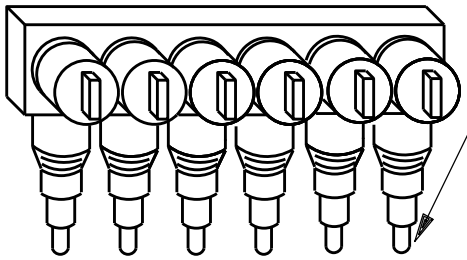
SET OF 2 (5034921) #12 - 350 MCM



6 PLACE MOLE

UBM6 SET OF 3 (5034924) #12 - 350 MCM

UBM62 SET OF 2 (5094799) #10 - 500 MCM



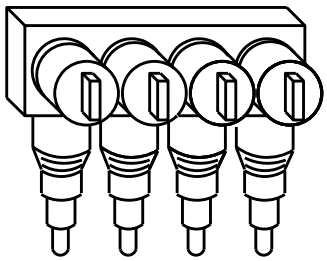
CUTTING TO PROPER WIRE SIZE IS CRUCIAL TO PERFORMANCE

FOR 350 MCM THE REMOVABLE CABLE SEAL IS NOT USED

4 PLACE MOLE

UBM4 SET OF 3 (5034926) #10 - 500 MCM

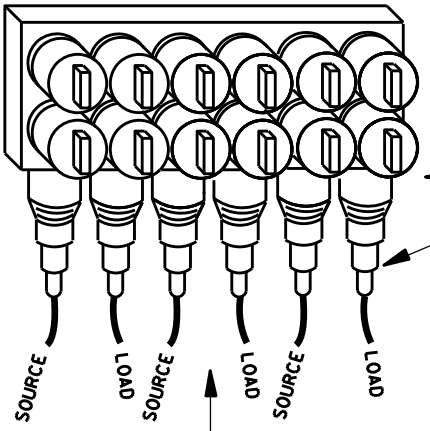
UBM44 SET OF 4 (5034926) #10 - 500 MCM



6 PLACE MOLE

UBM6R

SET OF 4 (5075652) #2 SOLID - 750 MCM



REMOVE PVC LINER FOR 500 MCM AND ABOVE

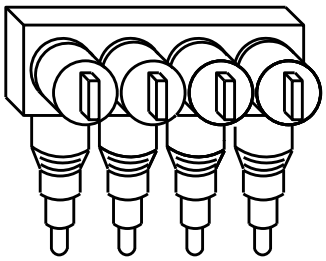
CUTTING TO PROPER WIRE SIZE IS CRUCIAL TO PERFORMANCE

ALTERNATE SOURCE AND LOAD CONDUCTORS ACROSS MOLE BAR ASSEMBLY

4 PLACE MOLE

UWMB SET OF 3 (5034923) #12 - 350 MCM

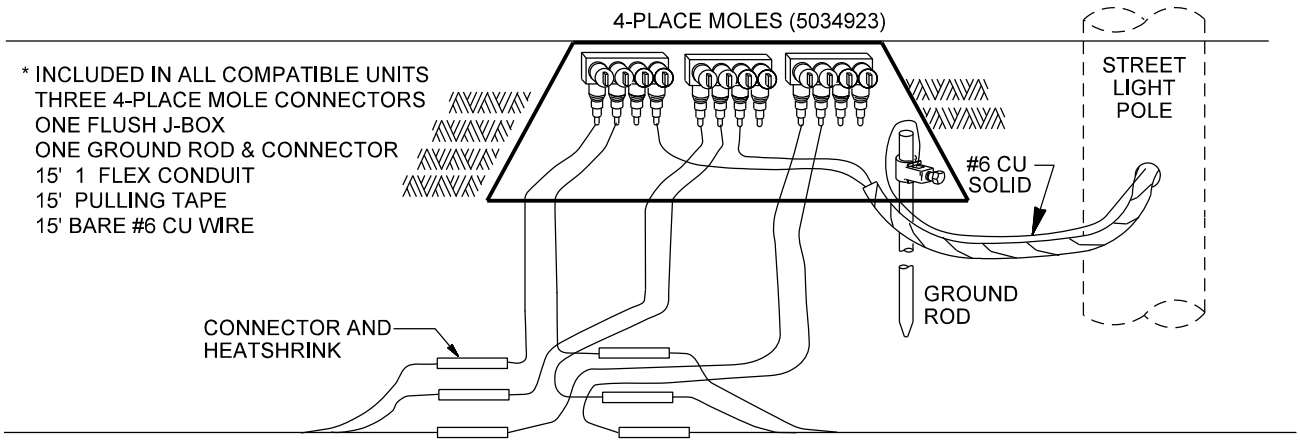
UWMB2 SET OF 2 (5034923) #12-350 MCM



Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	CABLE AND ACCESSORIES 0 - 600V TAP MOLE CONNECTORS	ISSUE DATE: 01/31/92 REV. DATE: 02/25/16 APPROVAL: S.DURAN
	8-30-1	8513E156.DGN

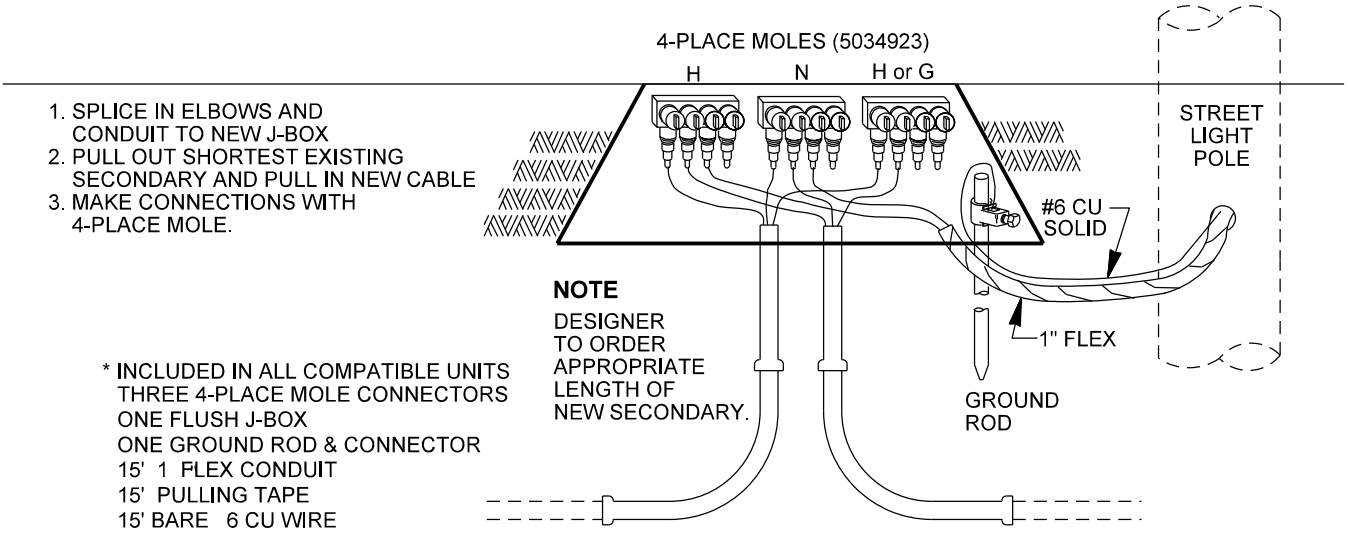
STREET LIGHT TAP TO EXISTING DIRECT BURIED TX SECONDARY

OR STREET LIGHT SECONDARY



COMPATIBLE UNIT *	EXISTING DIRECT BURIED SECONDARY	ADDITIONAL MATERIAL INCLUDED		
		CONDUCTOR	6-CONNECTORS	6-HEAT SHRINK
UWB8	8TX OR DX	60' 6 DX 5034032	5035807	5031731
UWB6	6TX OR DX	60' 6 DX 5034032	5035806	5031731
UWB1	1/0 TX	40' 1/0 AA 5034035	5035809	5031731
UWB4	4/0 TX	40' 4/0 AA 5034038	5035812	5031732
UWB350	350 TX	40' 350 AA 5034041	5035813	5031733

STREET LIGHT TAP TO SECONDARY IN CONDUIT



COMPATIBLE UNIT *	EXISTING CONDUIT	ADDITIONAL MATERIAL INCLUDED
UWB2	2.0"	2-2" (90 DEG 36" SWEEP) ELBOWS, 2-2" X 20' CONDUIT
UWB25	2.5"	2-2.5" (90 DEG 36" SWEEP) ELBOWS, 2-2.5" X 20' CONDUIT
UWB3	3.0"	2-3" (90 DEG 36" SWEEP) ELBOWS, 2-3" X 20' CONDUIT

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES ALTERNATE STREET LIGHT TAP ON EXISTING SERVICE OR SECONDARY	ISSUE DATE: 01/02/13 REV. DATE: 08/02/13 APPROVAL: B. PRIEST
	8-31-1	8513E292.DGN

SET SCREW BAR CONNECTORS
RECOMMENDED TORQUE VALUES

WIRE SIZE	INCH-POUNDS	FOOT-POUNDS
#14 TO #3	120	10
#2 TO 350 MCM	240	20
400 MCM TO 750 MCM	360	30
800 MCM TO 1,000 MCM	500	42

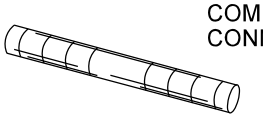
240 INCH-POUNDS FOR 5/8” AND 1” STUD.

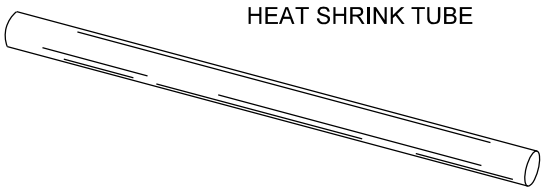
480 INCH-POUNDS FOR HARDWARE TO PAD.

600V CONDUCTOR SPLICES

TYPICAL INSTALLATION







COMPONENT PARTS

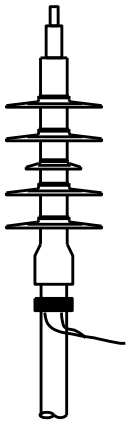
CODE NUMBER	CONDUCTOR SIZE SIDE A	SIDE B	CONNECTOR	DIE	INSULATING DEVICE
UWB6C010	#10 CU	#10 CU	5016563		SEALANT & TAPE
UWB6A8	#8 AL	#8 AL	5035805	BG	H.S. TUBE 5031731
UWB6A6	#6 AL	#6 AL	5035806	BG	H.S. TUBE 5031731
UWB6A68	#6 AL	#8 AL	5035807	BG	H.S. TUBE 5031731
UWB6A2	#2 AL	#2 AL	5035808	BG	H.S. TUBE 5031731*
UWB6A10	#1/0 AL	#1/0 AL	5035809	BG	H.S. TUBE 5031731*
UWB6A40	#4/0 AL	#4/0 AL	5035812	K840	H.S. TUBE 5031732*
UWB6A350	350 MCM AL	350 MCM AL	5035813	U31ART	H.S. TUBE 5031733*
UWB6A500	500 MCM AL	500 MCM AL	5035814	U34ART	H.S. TUBE 5031733*
UWB6A750	750 MCM AL	750 MCM AL	5035815	608	H.S. TUBE 5031733*

* USE 5035825 WRAP AROUND GEL INSULATED SLEEVE, IN JOINT USE TRENCHES WITH GAS

INSTRUCTIONS

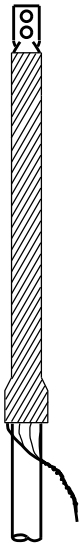
1. PRIOR TO SPLICE INSTALLATION, SLIDE HEAT SHRINK TUBE OVER ONE OF THE CABLE ENDS.
2. REMOVE INSULATION FROM BOTH CABLE ENDS, AS REQUIRED FOR THE CONNECTOR, AND APPLY COMPRESSION CONNECTOR.
3. CENTER HEAT SHRINK TUBE OVER THE CONNECTOR AND CABLE. SHRINK INTO PLACE.
4. ALLOW HEAT SHRINK TO COOL BEFORE MOVING CABLE.
5. EXCAVATIONS MUST BE CALLED FOR SEPARATELY.

COLD SHRINK



UWBT2	(X)
UWBT40	(X)
UWBT500	(X)
UWBT750	(X)
UWBT500B	(SEE NOTE 2)
UWBT750B	(SEE NOTE 2)

HEAT SHRINK

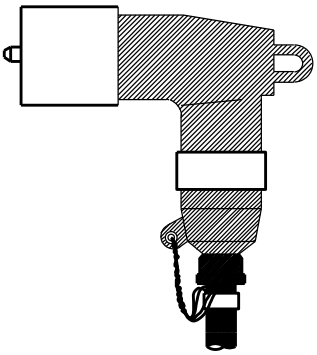


INDOOR TERMINATIONS FOR
#2,#4/0,500 MCM AND
750 MCM PRIMARY CABLE

NOTES

1. ADD "X" TO COMPATIBLE UNIT NUMBER WHEN USED WITH TRANSFORMERS.
2. FOR USE WITH SUBSTATION SWITCHGEAR.

UWBT2EF	#2 ELBOW WITH FAULT INDICATOR
UWBT2E	(X)
UWBT2ER	REPAIR ELBOW
UWBT2EV	#2 ELBOW WITH VOLTAGE INDICATOR
UWBT40E	(X)
UWBT40ER	REPAIR ELBOW (CABLE DAMAGE 3 1/4" MAX.)



INDOOR
TERMINATION
(ELBOW)
FOR #2 AND #4/0
PRIMARY CABLE

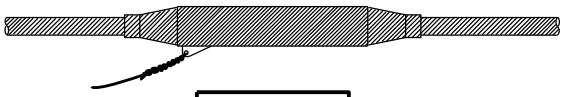
NOTES

1. ADD "X" TO COMPATIBLE UNIT NUMBER WHEN USED WITH TRANSFORMERS.

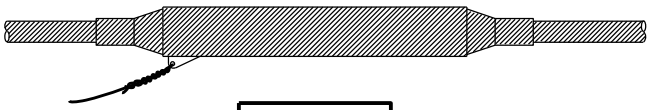
SPLICE STOCK CODE

15kV CABLE SPLICES

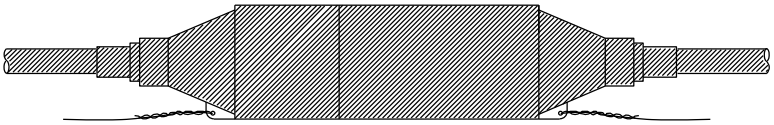
5033779	UWBA2	#2 (220 MIL OR 175 MIL)
5033779	UWBA2J	#2 JACKETED (220 MIL)
5033781	UWBA2R	#2 REPAIR SPLICE



5033780	UWBA40	#4/0
5033780	UWBA40J	#4/0 JACKETED
5033783	UWBA40R	#4/0 REPAIR SPLICE



5033784	UWBA500	500 MCM AL
5033785	UWBA750	750 MCM AL
5033786	UWBA575	500 MCM TO 750 MCM
5033785	UWBC750	750 MCM CU



NOTES

1. WHEN EXCAVATION IS REQUIRED, USE COMPATIBLE UNIT UTEX. THIS UNIT PROVIDES THE ADDITIONAL MAN HOURS NECESSARY TO DIG A HOLE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLES AND ACCESSORIES 15kV SPLICING AND TERMINATING DEVICES	ISSUE DATE: 01/15/87 REV. DATE: 01/27/15 APPROVAL: B. PRIEST
	8-34-1	8513E129.DGN

CONDUCTOR DESCRIPTION	STOCK CODES	COMPATIBLE UNIT CODING PER CONDUCTOR CODING APPLICATION		
		DISTRIBUTION (PRI.& SEC.)	STREET LIGHTS	D TO D LIGHTS
CABLE, 15KV ALUMINUM				
#2AL (CN)	5035034	UA2K		
4/0 AL (CN)	5035037	UA40K		
500 MCM AL WIRE SHIELD	5035039	UA500K		
750 MCM AL (CN)	5035041	UA750K		
CABLE, 25KV ALUMINUM				
1/0 AL (CN)	50345036	UA102K		
WIRE, 600 VOLT ALUMINUM				
#6 DUPLEX	5034032	UDX6K	UDX6LK	UDX6DK
1/0 TRIPLEX	5034035	UTX10K	UTX10LK	UTX10DK
4/0 TRIPLEX	5034038	UTX40K		
1/0 QUADRUPLEX	5034037	UQX10K		
4/0 QUADRUPLEX	5034040	UQX40K		
350 MCM TRIPLEX	5034041	UTX350K		
500 MCM TRIPLEX	5034044	UTX500K		
350 MCM QUADRUPLEX	5034043	UQX350K		
500 MCM QUADRUPLEX	5034045	UQX500K		
750 MCM QUADRUPLEX	5034046	UPL750K		

REMOVE "K" ON THE ABOVE COMPATIBLE UNIT CODE NUMBER IF THE CONDUCTOR WILL NOT BE INSTALLED IN CONDUIT OR SPOOLED DUCT.

CONDUCTOR DESCRIPTION	STOCK CODES	COMPATIBLE UNIT CODING PER CONDUCTOR CODING APPLICATION		
		DISTRIBUTION (PRI. & SEC.)	STREET LIGHTS	D TO D LIGHTS
CABLE, 15KV COPPER				
750 MCM CU (DRAIN WIRE)	5035046	UC750K		
WIRE, 600 VOLT XLPE COPPER - SINGLE CONDUCTOR				
#8	5008698	U6C8K	U6C8LK	U6C8DK
#4	5008703	U6C4K	U6C4LK	U6C4DK
#2	5008704	U6C2K	U6C2LK	U6C2DK
1/0	5008706	U6C10K	U6C10LK	U6C10DK
2/0	5008707	U6C20K		
4/0	5008708	U6C40K		
350 MCM	5033965	U6C350K		
500 MCM	5033966	U6C500K		
WIRE, BARE COPPER				
#6 SOLID	5033845	UC6B		
#4 STRANDED	5033847	UC4B		
#2 STRANDED	5033850	UC2B		
2/0 STRANDED	5033854	UC20B		
4/0 STRANDED	5033859	UC40B		

REMOVE “K” ON THE ABOVE COMPATIBLE UNIT CODE NUMBER IF THE CONDUCTOR WILL NOT BE INSTALLED IN CONDUIT, OR SPOOLED DUCT.

* NO STOCK CODE EQUIVALENT EXISTS IN SAP.

SINGLE PHASE SERVICES

LENGTH OF WIRE IN COMP. UNIT (FEET)	TYPE OF SERVICE INSTALLATION		COMPATIBLE UNIT CODING FOR SINGLE PHASE SERVICES SERVICE STOCK CODE NUMBER AND CONDUCTOR SIZE						
			ALUM. DUPLEX	ALUMINUM TRIPLEX				SINGLE CONDUCTORS	
	FROM	TO	5034032 #6	5034035 1/0	5034038 4/0	5034041 350 MCM	5034044 PHASE 500 MCM	5034030 PHASE 750 MCM	5033930 NEUTRAL 350 MCM
100	MOLE ASSEMBLY	P.O.D.	USD6M	US10M	US40M	US350M	———	———	
125	SERVICE RISER	P.O.D.	USD6R	US10R	US40R	US350R	———	———	
125	POLE TYPE TRANSF.	P.O.D.	USD6RX	US10RX	US40RX	US350RX	US500RX*	———	
100	PAD MOUNT TRANSF.	P.O.D.	USD6X	US10X	US40X	US350X	US500X*	US750X*	
100	PEDESTAL	P.O.D.	USD6B	US10B	US40B	US350B	———	———	

NOTES

1. ALL SERVICES ARE INSTALLED IN CONDUIT.
2. THE COMPATIBLE UNIT WITH AN R INCLUDES THE RISER MATERIAL.
3. SINGLE PHASE SERVICE CONDUCTOR FOOTAGE MUST BE ADJUSTED WHEN THE LENGTH EXCEEDS THE “LENGTH OF WIRE IN COMP. UNIT (FEET)” IN THE TABLE ABOVE. ADDITIONAL FOOTAGE MUST BE ORDERED BY SAP STOCK CODE.

*SEE PAGE 9-7-1 FOR ADDITIONAL CONNECTORS REQUIRED. COMPATIBLE UNIT HAD CONNECTORS TO FIT 5/8” TRANSFORMER STUD, WILL NOT FIT TRANSFORMERS LARGER THAN 75KVA.

THREE PHASE SERVICES

CONDUCTOR RATING, TYPE, NUMBER, AND SIZE				COMPATIBLE UNIT CODE		
VOLTAGE RATING	TYPE	PHASE CONDUCTOR 3	NEUTRAL CONDUCTOR 1	4 SINGLE CONDUCTORS	QUADRUPLEX	QUADRUPLEX CONDUCTOR & POLE RISER NOTE 2
600 V	ALUMINUM	#1/0 #4/0 350 MCM 500 MCM 750 MCM	#2 #1/0 #4/0 #4/0 350 MCM	-- -- -- -- --	USC10A USC40A USC350A USC500A USC750A	USC10AR USC40AR USC350AR USC500AR USC750AR
	COPPER	#1/0 #4/0 350 MCM 500 MCM 750 MCM	#2 #1/0 #4/0 #4/0 350 MCM	USC10C USC4OC USC350C USC500C USC750C	-- -- -- -- --	-- -- -- -- --
15 KV NOTES 3 & 4	ALUMINUM	750 MCM 750 MCM	#2/0 BARE CU. --	USCUA750N USCUA750	-- --	-- --

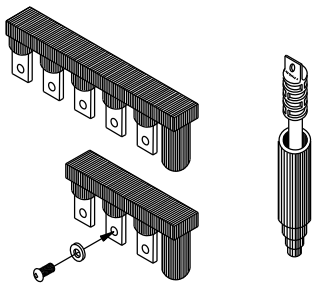
NOTES

1. ALL SERVICES ARE INSTALLED IN CONDUIT.
2. THE COMPATIBLE UNIT WITH AN R INCLUDES THE RISER MATERIAL.
3. COMPATIBLE UNITS FOR 15 KV RATED CABLE INCLUDE TERMINATIONS AT TRANSFORMER AND SERVICE ENTRANCE SECTION.
4. 2400/4160 V WYE AND 2400 V DELTA SERVICES USE 15 KV RATED CABLE. 2400/4160 V SERVICES REQUIRE A NEUTRAL CONDUCTOR; 2400 V SERVICES DO NOT.

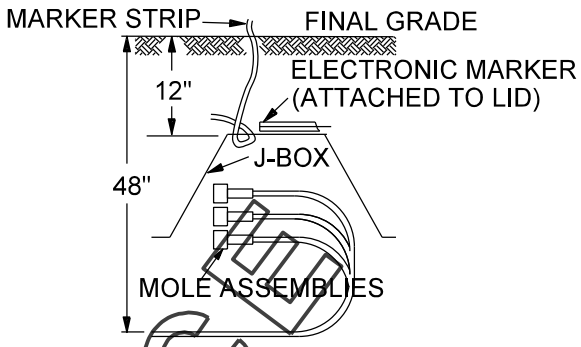
COMPATIBLE UNITS INCLUDE 65 FEET OF CONDUCTORS; SERVICES FROM A POLE RISER INCLUDE 90 FEET. THIS LENGTH SHALL INCLUDE THE STUB-UPS AND RISERS FIELD CREWS WILL INSTALL AMOUNT AS REQUIRED. SERVICE SIZES 350 MCM AND LARGER AND FOR CABLE LENGTHS EXCEEDING 65 FEET (90 FEET FOR RISER), ADDITIONAL CABLE SHALL BE ORDERED. ADDITIONAL SERVICES SHALL BE ORDER BY FOOTAGE USING THE MATERIAL ITEM NUMBERS BELOW.

VOLTAGE RATING	CONDUCTOR SIZE	SINGLE CONDUCTOR COPPER	QUADRUPLEX ALUMINUM	SINGLE CONDUCTOR ALUMINUM
--	#2/0 BARE	5033854	--	--
600 V	#2	5008704	--	--
	#1/0	5008706	5034037	--
	#4/0	5008708	5034040	--
	350 MCM	5033965	5034043	--
	500 MCM	5033966	5034045	--
	750 MCM	5033967	5034046	--
15 KV	750 MCM	--	--	5035041

MOLE BARS AND CONNECTOR



TYPICAL INSTALLATION



COMPATIBLE UNIT	UNIT DESCRIPTION
UWM4_	THREE 4-POSITION MOLES W/EM-NO SECONDARY OUT
UWM41_	THREE 4-POSITION MOLES W/EM-1/0 SECONDARY OUT
UWM43_	THREE 4-POSITION MOLES W/EM-350 MCM SECONDARY OUT
UWM44_	THREE 4-POSITION MOLES W/EM-4/0 SECONDARY OUT
UWM6_	THREE 4-POSITION MOLES W/EM-NO SECONDARY OUT
UWM61_	THREE 4-POSITION MOLES W/EM-1/0 SECONDARY OUT
UWM63_	THREE 6-POSITION MOLES W/EM-350 MCM SECONDARY OUT
UWM64_	THREE 6-POSITION MOLES W/EM-4/0 SECONDARY OUT

OBSOLETE
REFERENCE

NOTES

1. ONE MARKER STRIP 5035669 INCLUDED WITH EACH COMPATIBLE UNIT.
2. SECONDARY SIDE INTO MOLE IS SPECIFIED BY WIRE SIZE ADDED TO COMPATIBLE UNIT NUMBER (UTX10, UTX40 OR UTX350 AND DIRECT BURIED, J C1C OR CONDUIT).

EXAMPLE: (UTX10 IN-UTX10 OUT-4 POSITION MOLE)
DB-UWM41UTX10
C1C-UWM41UTXK10
RIGID CONDUIT UWM41UTX10K

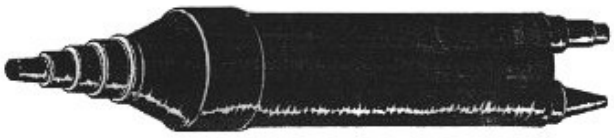
CONNECTORS FOR SECONDARDY OR SERVICES

CONDUCTOR SIZE		MATERIAL ITEM	DIE INDEX	TOOLS, DIESET & NO. OF CRIMPS	
ALUMINUM	COPPER			MD6	Y35
#4 STR.	#2SOL.-#4STR.	5035170	BG 5/8-1 243	W-BG (1) BG (3) W-243 (2)	U-BG (1) UK58-1T (3) U-243 (1)
#2 STR.	#2STR.-#1/0SOL.	5035171			
#1/0 STR.	#1/0STR.	5035172			
#2/0 STR.	#2/0STR.	63-1896*	249 OR 840	WK840 (5)	U-249 (2) UK84OT (3)
#4/0 STR.	#4/0STR.	5035174		WK840 (7)	U-249 (2) UK84OT (4)
250 MCM	250 MCM	5035173	299	-	299 U31ART
350 MCM	-	5088392			

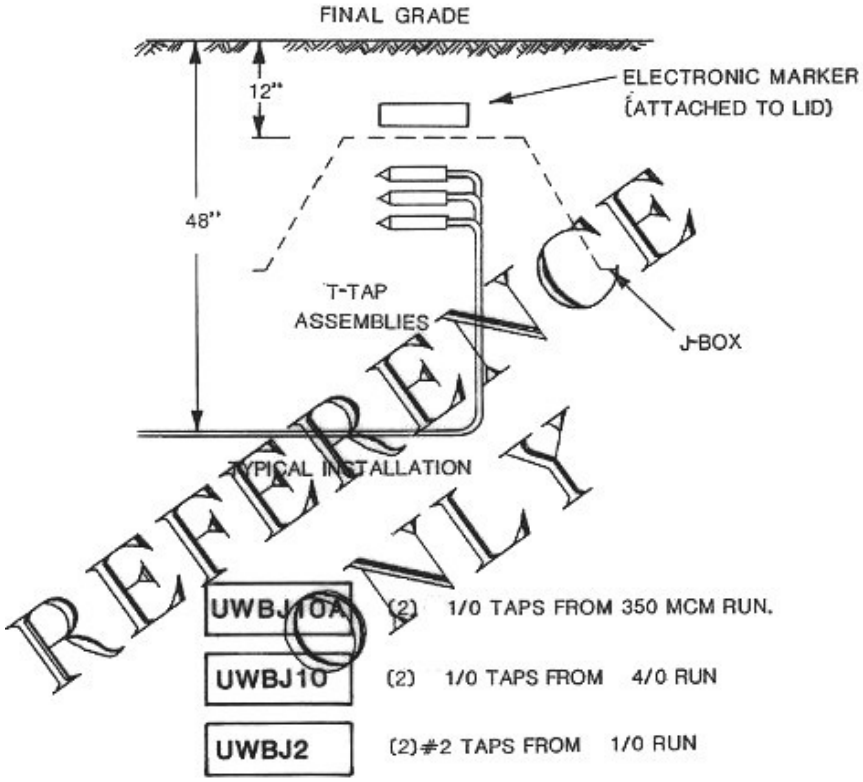
* NO MATERIAL ITEM EQUIVALENT IN SAP

NOTES

1. CONDUCTORS MUST EMERGE FROM THE FLOOD SEAL SLEEVE IN A STRAIGHT LINE FOR A MINIMUM OF 4" BEFORE BEING TRAINED IN A RADIUS.



T-TAP ASSEMBLY



REFERENCE ONLY

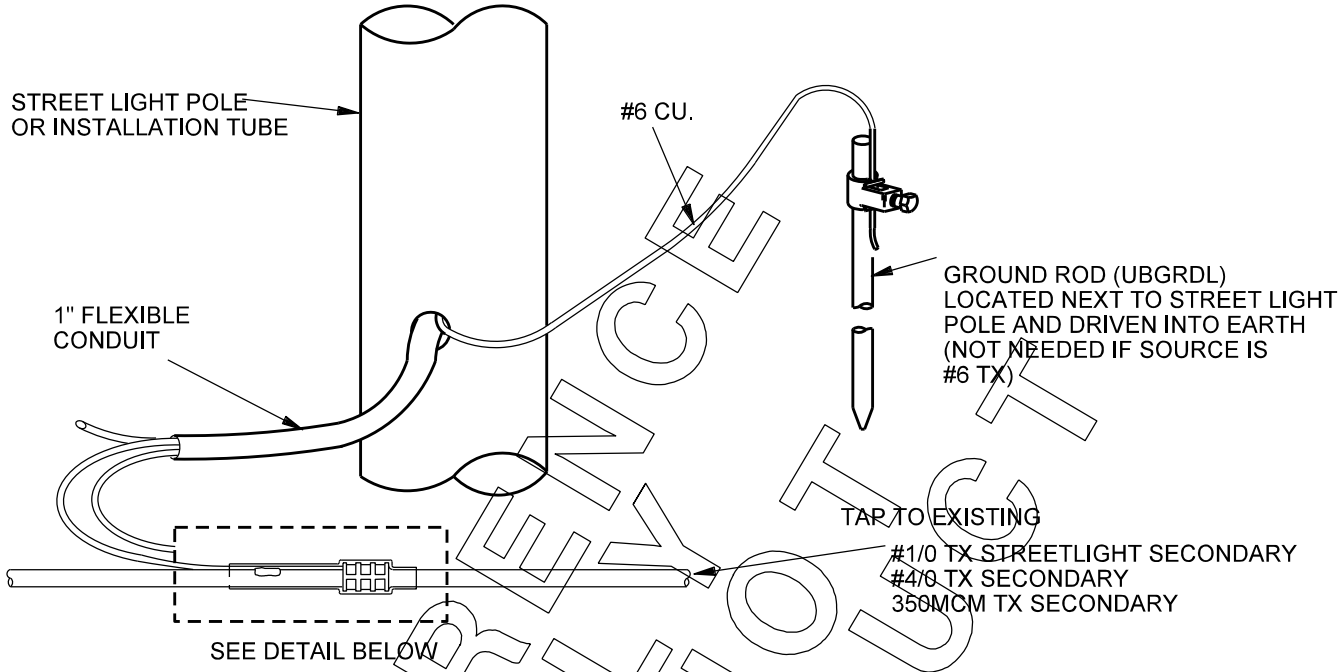
T-CONN STOCK NO.	WIRE SIZE		DIE & CRIMPS	
63-1880 *	1/0 Run	#2 Tap	W-O	(8)
63-1882 *	4/0 Run	1/0 Tap	W-D	(8)
63-1884 *	350 MCM Run	1/0 Tap	U-N	(2)

NOTES

1. CONDUCTORS MUST EMERGE FROM THE T-TAP IN A STRAIGHT LINE FOR A MINIMUM OF 6” BEFORE BEING TRAINED INTO A RADIUS.

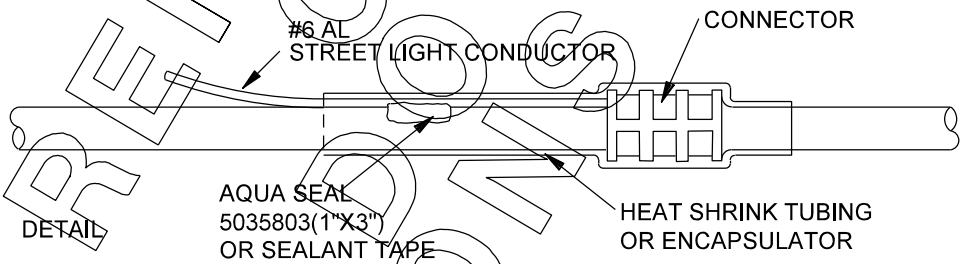
* NO STOCK CODE EQUIVALENT EXISTS IN SAP.

THIS METHOD IS TO BE USED WHEN #1/0 TX. STREET LIGHT SECONDARY, #4/0 TX SECONDARY OR 350MCM TX SECONDARY IS THE SOURCE OF SUPPLY FOR THE STREET LIGHT. OTHERWISE STREET LIGHT IS SUPPLIED USING #6 TX FROM TRANSFORMER, FOR WHICH GROUND IS FROM TRANSFORMER AND NO GROUND ROD IS NEEDED AT POLE.



NOTES

1. ABANDON THE BLACK/GREEN STRIPE #8 FROM STREET LIGHT CONDUCTOR AND REPLACE WITH BARE #6 C.U. FROM GROUND ROD.



SECONDARY OR SERVICE CONDUCTOR	CONDUCTOR SIZE	CONNECTOR STOCK NO.	DIE	SECONDARY CONDUCTOR CUT-SPLICING REQUIRED: TAP WORKED DEAD — HEAT SHRINK TUBING STOCK NO.	SECONDARY CONDUCTOR CUT-SPLICING REQUIRED: TAP WORKED DEAD — COMPATIBLE UNIT CODE	SECONDARY CONDUCTOR CUT-SPLICING NOT REQUIRED: TAP WORKED HOT (OR DEAD) — HEAT SHRINK ENCAPSULATOR STOCK NO.	SECONDARY CONDUCTOR CUT-SPLICING NOT REQUIRED: TAP WORKED HOT (OR DEAD) — COMPATIBLE UNIT CODE
#1/0 AL.TX.	#2	61-1120	0	5031732	UWMTC5	5035302	UWMTC7
	#1/0						
#4/0 AL.TX.	#1/0	61-1120	0	5031732	UWMTC6	5035302	UWMTC8
	#4/0	61-1125					
350MCM TX.	350MCM	59-1727	N			5035823	

REFERENCE NOT TO CONSTRUCT

Underground Distribution Construction Standards

SRP®

PROPRIETARY MATERIAL

CABLE AND ACCESSORIES
ALTERNATE STREET LIGHT TAP
ON EXISTING SERVICE OR SECONDARY

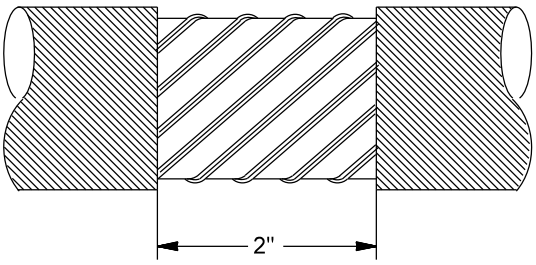
ISSUE DATE: 01/15/87
REV. DATE: 08/02/13
APPROVAL: B. PRIEST

8-41-1

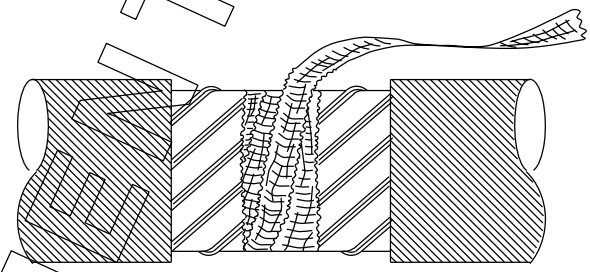
8513E157.DGN

UWBGRD1	SINGLE PHASE
UWBGRD2	2 PHASE
UWBGRD3	3 PHASE

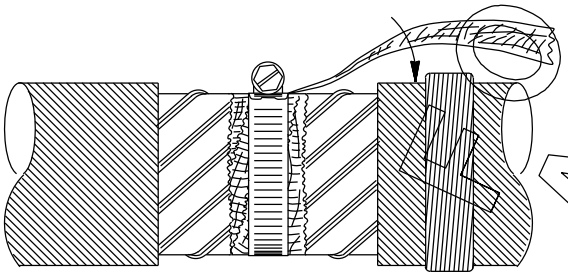
1) CAREFULLY REMOVE OUTER JACKET FROM CABLE.



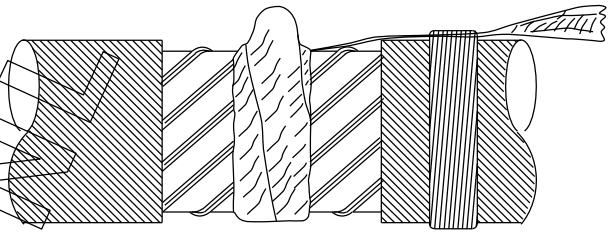
2) WRAP THE 3 / 8" COPPER BRAID (5033904) OVER EXPOSED CONCENTRIC NEUTRAL ABOUT 3 WRAPS.



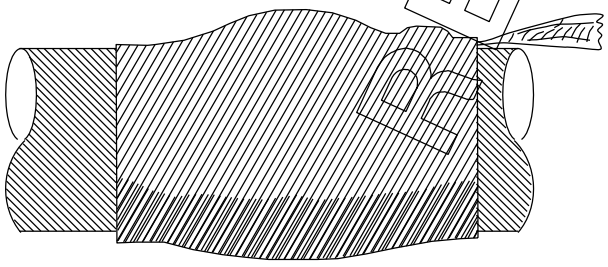
3) INSTALL HOSE CLAMP (5035519) OVER COPPER BRAID. WRAP WATER SEALANT (5035804) AROUND CABLE JACKET. PRESS COPPER BRAID DOWN INTO SEALANT.



4) COMPLETELY WRAP THE HOSE CLAMP WITH ELECTRICAL TAPE TO COVER ALL SHARP EDGES AND HOLD THE EXTRA LENGTH OF CLAMP STRAP DOWN.

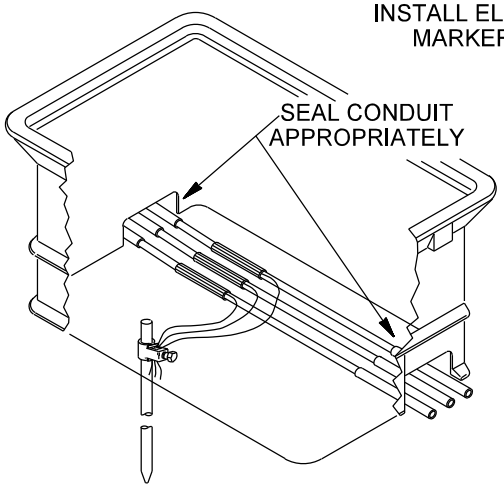


5) INSTALL WRAP AROUND HEAT SHRINK SLEEVE OVER EXPOSED NEUTRAL.



6) ATTACH 3 / 8" COPPER BRAID TO THE GROUND ROD. SEE SECTION 7 TO ORDER BOX.

ON BURIED PULL BOXES INSTALL ELECTRONIC MARKER (5035671)



REPLACEMENT

FOR REPLACEMENT ONLY. USE ABOVE GROUND DEVICE FOR NEW CONSTRUCTION

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	CABLE AND ACCESSORIES GROUNDING JACKETED CONCENTRIC NEUTRAL PRIMARY CABLE #2, 1/0, 4/0, 500 MCM, 750 MCM	ISSUE DATE: 11/17/87 REV. DATE: 08/05/13 APPROVAL: B. PRIEST
	8-42-1	8513E282.DGN

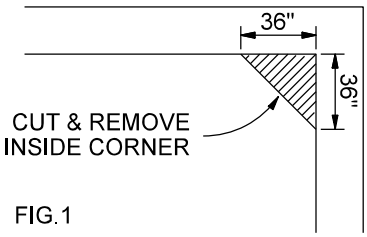


FIG.1

TRENCH DETAIL AT BENDS

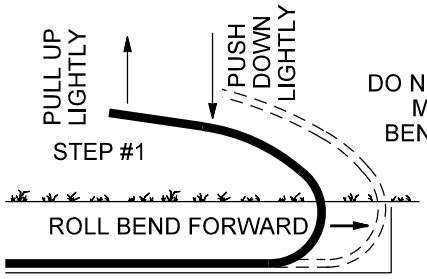
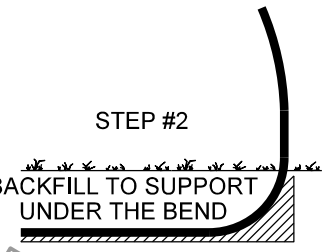


FIG.2



STUB-UP INTO EQUIPMENT

1. THE MINIMUM BENDING RADIUS OF #2 C-I-C IS 18 INCHES.THEREFORE, A MIN. 36 INCH DIA. SHEAVE IS REQUIRED FOR PULLING OPERATIONS. (SEE FIG.'s 1 & 2)

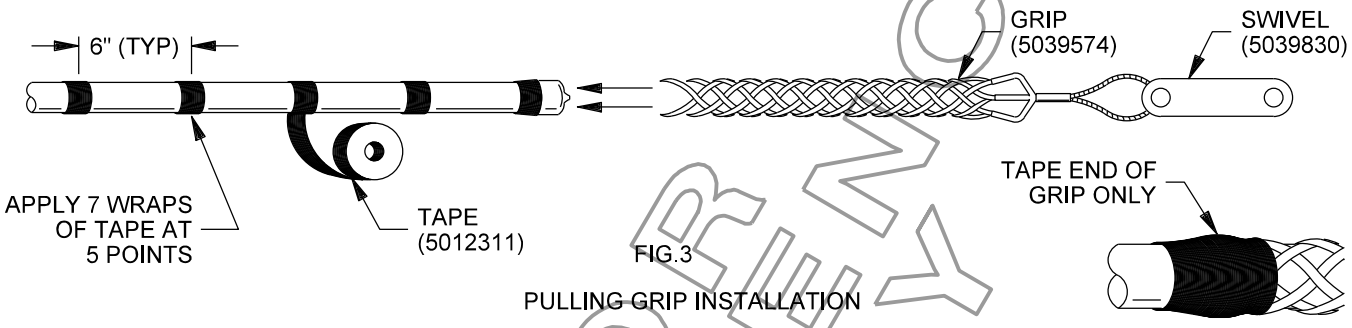


FIG.3

PULLING GRIP INSTALLATION

2. THE SAFE PULLING TENSION FOR 1-1/4 INCH DUCT IS 1,040 #. A PULLING GRIP WITH A MINIMUM 32 INCH LONG MESH MUST BE USED. THE PULLING GRIP MUST BE INSTALLED AS SHOWN IN FIG. 3.
3. END CAPS MUST BE INSTALLED DURING ALL OPERATIONS EXCEPT TERMINATING, WHEN THE CAP IS REPLACED BY THE END SEAL.
4. THE MAXIMUM PULLING LENGTH IS 1,000 FEET, AND THE TOTAL NUMBER OF BENDS (BOTH HORIZONTAL & VERTICAL) IS LIMITED TO 6 (90°) WHEN EQUIPMENT ACCESS IS POSSIBLE.
   WHEN EQUIPMENT ACCESS IS NOT AVAILABLE, THE LIMIT FOR STRAIGHT LENGTHS WITHOUT ANY BENDS IS 450 FT. WHERE HORIZONTAL BENDS EXIST, BUT THE SUM IS LESS THAN 90°, THE LENGTH LIMIT IS 350 FT
5. TWO METHODS ARE POSSIBLE, WHEN INSTALLING IN AN OPEN TRENCH.

NOTE A LENGTH DIFFERENCE BETWEEN THE DUCT AND THE CABLE WILL OCCUR WHEN THE C-I-C IS INSTALLED. THIS DIFFERENCE SHOULD BE NO MORE THAN 15 FT IN 1,000 FT. (THE CONDUCTOR LENGTH WILL BE 15 FT LESS THAN THE LENGTH OF THE DUCT FOR A 1,000 FT RUN)

A) PRIOR TO REMOVING C.I.C. CABLE FROM THE REEL,THE ATTACHMENTS (BOTH ENDS) OF THE CABLE TO THE DUCT, AND THE DUCT TO THE REEL MUST BE REMOVED.

B) UNROLL THE C-I-C FROM A STATIONARY REEL TRAILER. (THE DUCT WILL BE LONGER THAN THE CABLE AT TEH END BEING PULLED.)

C) SECURE THE END AND MOVE THE REEL TRAILER ALONG THE TRENCH ROUTE. (THE DUCT WILL BE LONGER THAN THE CABLE AT THE SECURED END.)

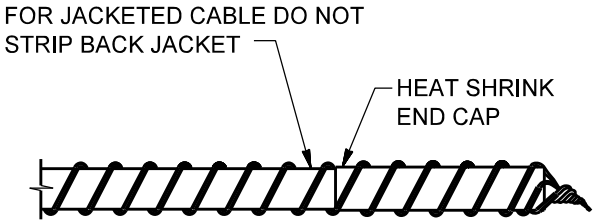
6. C-I-C IS TO BE INSTALLED AS A CONTINUOUS RUN (NO SPLICES), AND LAID IN THE TRENCH AS STRAIGHT AS POSSIBLE, AND BACKFILLED. THE BACKFILL SHOULD BE FREE OF AGGREGATE LARGER THAN 1-1/2 INCH, WITHIN 2 INCHES OF THE DUCT. WHEN PULLING LENGTHS OR BEND LIMITS ARE EXCEEDED A PULL BOX IS NECESSARY, TO PROVIDE A TERMINATING POINT.

REPAIR

1. WHEN C-I-C HAS BEEN DAMAGED THE CABLE IS TO BE REMOVED, THE DUCT REPAIRED, AND NEW CABLE INSTALLED. (SEE PAGE 4-8-1.)

REFERENCE ONLY

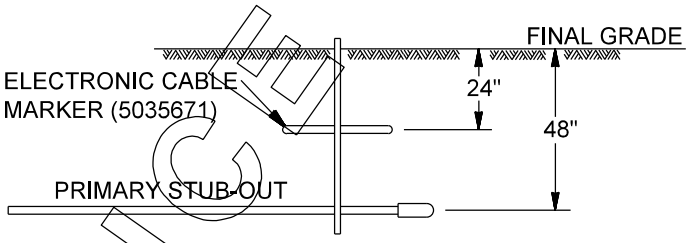
PRIMARY AND FEEDER STUB-OUT



CABLE SIZE	VOLTAGE CLASS	HEAT SHRINK END CAP STOCK NUMBER
#2	15 KV	5035152
1/0	25 KV	5035153
4/0	15 KV	5035153
500 MCM	15 KV	5035153
#2CIC	15 KV	5035153

WRAP CONCENTRIC NEUTRAL OVER END CAP AFTER INSTALLATION

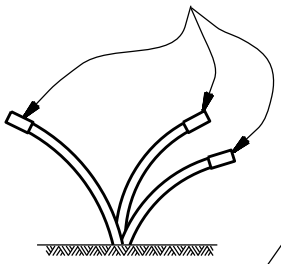
THIS MOISTURE SEAL INSTALLATION IS FOR DE-ENERGIZED CABLE ONLY.



NOTE: ALL NEW STUB-OUTS WILL BE CONDUIT.

REMOVED
REFERENCE ONLY

PRIMARY AND FEEDER STUB-OUT



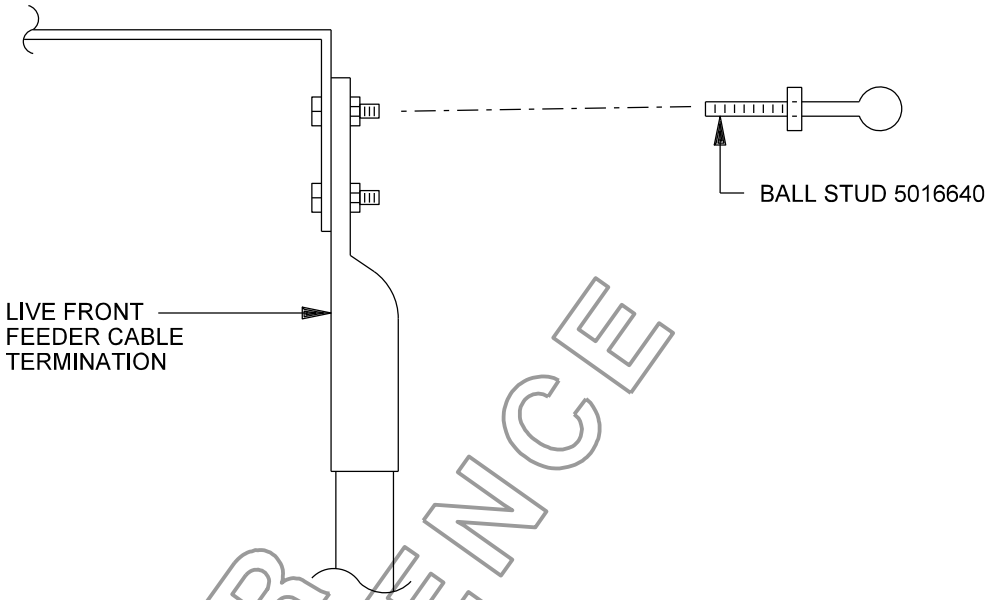
END CAP COLOR	CABLE SIZE	VOLTAGE CLASS	VINYL CAP * STOCK NUMBER
GRAY	#2	15 KV	5035159
	1/0	25 KV	
BROWN	4/0	15 KV	5035160
BLACK	500 MCM	15 KV	5035161
	#2CIC	15 KV	
BLUE	750 MCM	15 KV	5035162

* FOR DE-ENERGIZED USE ONLY

MOISTURE SEALS MUST BE USED ON ALL PRIMARY CABLE ENDS UNTIL THEY ARE TERMINATED.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	CABLE AND ACCESSORIES PRIMARY CABLE MOISTURE SEAL FOR STUB-OUT AND STUB-UP ENDS	ISSUE DATE: 01/15/87 REV. DATE: 08/05/13 APPROVAL: B. PRIEST
	8-44-1	8513E336.DGN

LIVE FRONT SWITCHES, FUSING ENCLOSURES AND CAPACITORS



FOR REFERENCE ONLY

NOTES

1. WHEN WORKING IN DE-ENERGIZED LIVE FRONT EQUIPMENT;
   A. REMOVE ONE BOLT FROM EACH FEEDER CABLE TERMINATION CONNECTION.
   B. INSTALL A BALL STUD IN PLACE OF EACH REMOVED BOLT WITH BALL END TOWARD DOOR OPENING.

   THE BALL STUD WILL PROVIDE EASY EQUIPMENT GROUNDING WITH SPECIAL BALL STUD SOCKET ON GROUNDING CABLE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	CABLE AND ACCESSORIES GROUNDING PROVISIONS LIVE FRONT EQUIPMENT	ISSUE DATE: 01/28/92 REV. DATE: 08/05/13 APPROVAL: B. PRIEST
	8-45-1	8513E155.DGN

SERVICE REMOVAL CODES

RU2W ..... 2-WIRE SERVICE, REGARDLESS OF SIZE

RU3W ..... 3-WIRE SERVICE, REGARDLESS OF SIZE

RU4W ..... 4-WIRE SERVICE, REGARDLESS OF SIZE

COMPATIBLE UNITS FOR REMOVAL OR ABANDONMENT OF NON-STANDARD CONDUCTORS

DESCRIPTION		COMPATIBLE UNIT
CABLE, 15KV		
#2	COPPER	RUC2
2/0	COPPER	RUC20
4/0	COPPER	RUC40
400 MCM	COPPER	RUC400
500 MCM	COPPER	RUC500
600 MCM	COPPER	RUC600
2/0	ALUMINUM	RUA20
#2	ALUMINUM C-I-C	RUAK2
CABLE, 5KV COPPER, LEAD SHEATH		
#8 OR SMALLER	3 CONDUCTORS	RUL8
#6	3 CONDUCTORS	RUL6
#4	3 CONDUCTORS	RUL4
#2	3 CONDUCTORS	RUL2
1/0	3 CONDUCTORS	RUL10
2/0	3 CONDUCTORS	RUL20
3/0	3 CONDUCTORS	RUL30
250 MCM	3 CONDUCTORS	RUL250
#6	1 CONDUCTOR	RUL61
CABLE, 600V		
1/0	ALUMINUM	RU6A10
1/0	ALUMINUM D TO D	RU6A10D
1/0	ALUMINUM ST. LT.	RU6A10L
4/0	ALUMINUM	RU6A40
350 MCM	ALUMINUM	RU6A350
500 MCM	ALUMINUM	RU6A500
750 MCM	ALUMINUM	RU6A750
#10	2 CONDUCTOR COPPER	RU6CDX010
#10	2 CONDUCTOR COPPER D TO D	RU6CDX010D
#10	2 CONDUCTOR COPPER ST. LT.	RU6CDX010L
#2	ALUMINUM	RU6A2
#2	ALUMINUM ST. LT.	RU6A2L
3/0	COPPER	RU6C30
300 MCM	COPPER	RU6C300
#6	COPPER	RU6C6
600 MCM	COPPER	RU6C600

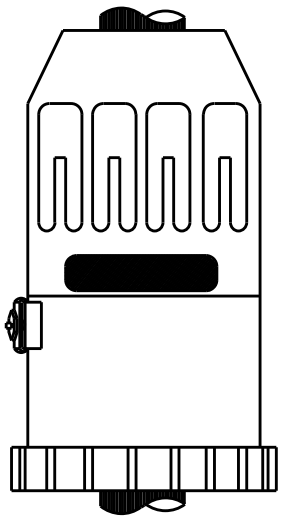
COMPATIBLE UNITS FOR REMOVAL OR ABANDONMENT OF NON-STANDARD CONDUCTORS
(CONTINUED FROM PREVIOUS PAGE…)

DESCRIPTION			COMPATIBLE UNIT
CABLE, 600V			
#2	TRIPLEX	ALUMINUM	RUTX2
#2	TRIPLEX	ALUMINUM D TO D	RUTX2D
#2	TRIPLEX	ALUMINUM ST. LT.	RUTX2L
#6	TRIPLEX	ALUMINUM	RUTX6
#6	TRIPLEX	ALUMINUM IN DUCT	RUTX6K
#6	TRIPLEX	ALUMINUM D TO D	RUTX6DK
#6	TRIPLEX	ALUMINUM ST. LT.	RUTX6LK
#8	TRIPLEX	ALUMINUM	RUTX8
#8	TRIPLEX	ALUMINUM D TO D	RUTX8D
#8	TRIPLEX	ALUMINUM ST. LT.	RUTX8L
#8	TRIPLEX C-I-C	ALUMINUM	RUTXK8
#8	TRIPLEX C-I-C	ALUMINUM D TO D	RUTXK8D
#8	TRIPLEX C-I-C	ALUMINUM ST. LT.	RUTXK8L
#6	TRIPLEX C-I-C	ALUMINUM	RUTXK6
#6	TRIPLEX C-I-C	ALUMINUM D TO D	RUTXK6D
#6	TRIPLEX C-I-C	ALUMINUM ST. LT.	RUTXK6L
1/0	TRIPLEX C-I-C	ALUMINUM	RUTXK10
1/0	TRIPLEX C-I-C	ALUMINUM D TO D	RUTXK10D
1/0	TRIPLEX C-I-C	ALUMINUM ST. LT.	RUTXK10L
4/0	TRIPLEX C-I-C	ALUMINUM	RUTXK40
#2	DUPLEX	ALUMINUM	RUDX2
#2	DUPLEX	ALUMINUM D TO D	RUDX2D
#2	DUPLEX	ALUMINUM ST. LT.	RUDX2L
#8	DUPLEX	ALUMINUM	RUDX8
#8	DUPLEX	ALUMINUM D TO D	RUDX8D
#8	DUPLEX	ALUMINUM ST. LT.	RUDX8L
#8	DUPLEXC-I-C	ALUMINUM	RUDXK8
#8	DUPLEXC-I-C	ALUMINUM D TO D	RUDXK8D
#8	DUPLEXC-I-C	ALUMINUM ST. LT.	RUDXK8L
CABLE, 600V COPPER, LEAD SHEATH			
#6		3 CONDUCTORS	RUL36C6
#4		3 CONDUCTORS	RUL36C4
#2		3 CONDUCTORS	RUL36C2
1/0		3 CONDUCTORS	RUL36C10
2/0		3 CONDUCTORS	RUL36C20
4/0		3 CONDUCTORS	RUL36C40
CABLE, BARE COPPER			
3/0			RUC30B

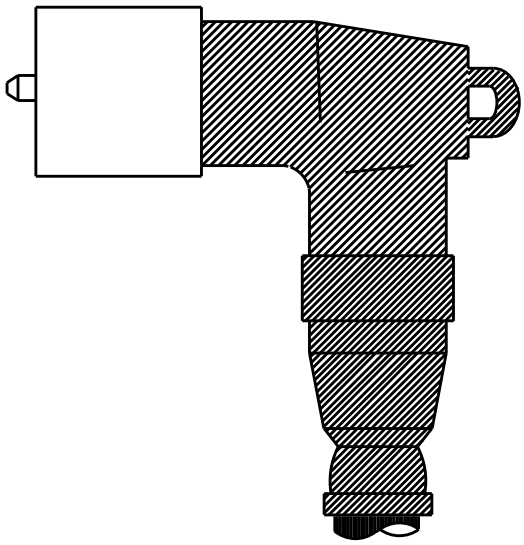
CONDUCTOR CODING

	COMPATIBLE UNIT CODING PER CONDUCTOR CODING APPLICATION		
CONDUCTOR DESCRIPTION	**DISTRIBUTION (PRIMARY & SECONDARY)**	**STREET LIGHTS**	**D TO D LIGHTS**
25KV ALUMINUM CABLE			
1/0 AL (CN)	UA102K		

UWBT102

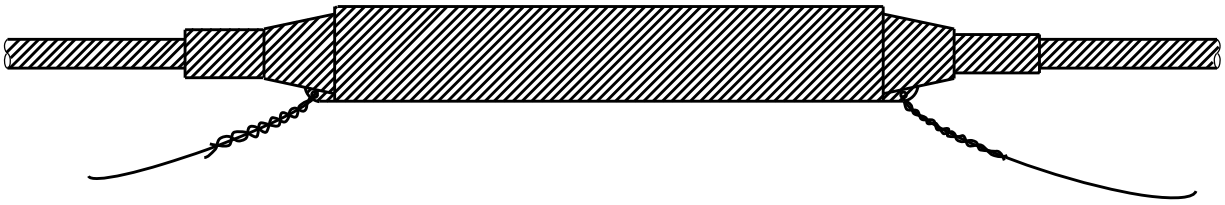


UWBT10E2



22kV CABLE SPLICE

UWBA102	1/0 TO 1/0
UWBA2102	#2 TO 1/0 (SEE NOTE)



NOTES

1. DO NOT USE KIT-SUPPLIED CONNECTOR, USE 1/0 TO #2 REDUCER, STOCK # 5033788, THAT IS SUPPLIED IN THE COMPATIBLE UNIT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	22kV CABLE AND ACCESSORIES INDOOR TERMINATION DEVICES	ISSUE DATE: 04/15/87 REV. DATE: 01/03/15 APPROVAL: B.PRIEST
	8-49-1	8513E29.DGN

TRANSFORMERS

TITLE/DESCRIPTION	PAGE NO.
INSTRUCTIONAL GUIDE	9-1-1
FERRO-RESONANCE	9-2-1
SINGLE AND THREE PHASE ENERGIZATION PROCEDURE	9-3-1
EXISTING SINGLE PHASE PAD, SERVICE ADDITION	9-4-1
PARKING BUSHING AND INSULATED COVERS	9-5-1
MOUNTING PADS	9-6-1
SINGLE PHASE PAD MOUNTED TRANSFORMER CODING	9-7-1
SINGLE PHASE SECONDARY CONNECTORS	9-8-1
SINGLE PHASE PAD MOUNTED FUSE CHART	9-9-1
SINGLE PHASE PAD MOUNTED INSTALLATION	9-10-1
PRECAST CONCRETE FIRE BARRIER WALL FOR SINGLE PHASE (ONLY), PAD MOUNTED TRANSFORMER	9-10-2
SINGLE PHASE RESIDENTIAL TRANSFORMER PAD CONDUIT STUB-UP DETAIL WITH ABOVE GROUND JUNCTION BOXES. ALSO, TYPICAL PAD STAKING, BACK OF PUE	9-11-1
SINGLE PHASE RESIDENTIAL TRANSFORMER PAD CONDUIT STUB-UP DETAIL WITH ABOVE GROUND JUNCTION BOXES. ALSO, TYPICAL PAD STAKING, FRONT OF PUE, PREFERRED	9-11-3
MULTIPLE SERVICE CONDUITS IN A SINGLE PHASE TRANSFORMER SERVING APARTMENTS, CONDUIT STUB-UP	9-12-1
RESIDENTIAL TRANSFORMER PAD LOCATION DETAIL, BACK OF PUE	9-13-1
RESIDENTIAL TRANSFORMER PAD LOCATION DETAIL, FRONT OF PUE	9-13-2
THREE PHASE, 2 TRANSFORMER BANK, OPEN WYE PRIMARY - OPEN DELTA SECONDARY	9-14-1
THREE PHASE, 3 TRANSFORMER BANK, WYE PRIMARY - DELTA SECONDARY	9-15-1
THREE PHASE, PAD MOUNTED TRANSFORMER CODING	9-16-1
SUBSTITUTE ENCLOSURE FOR THREE PHASE, 75 - 2500KVA TRANSFORMERS	9-17-1

TRANSFORMERS

TITLE/DESCRIPTION	PAGE NO.
THREE PHASE, PAD MOUNT 7.2/12.47KV FUSE CHART	9-18-1
TAP SETTING CHART	9-19-1
FULL LOAD CURRENT IN AMPS	9-20-1
THREE PHASE PAD INSTALLATION DETAILS	9-22-1
SECONDARY PULL BOX PLACEMENT FOR THREE PHASE TRANSFORMER, 750 – 3,000KVA	9-23-1
THREE PHASE TRANSFORMER, SECONDARY GUARD	9-24-1
THREE PHASE LOOP-THRU, DEAD FRONT	9-25-1
THREE PHASE LOOP-THRU SWITCHING	9-26-1
4160Y/2400V 4-WIRE OR 2400V DELTA 3-WIRE, SECONDARY VOLTAGE TERMINATIONS	9-27-1
VAULT OR ENCLOSURE MOUNTED TRANSFORMER CODING	9-28-1
VAULT MOUNTED FUSE CHART	9-29-1
STUB UP AND LOCATION DETAILS, SINGLE PHASE PAD MOUNTED TRANSFORMER	9-30-1
THREE PHASE RADIAL LIVE FRONT TERMINATION	9-31-1
THREE PHASE, RADIAL 1500KVA AND LARGER TERMINATIONS	9-32-1
WITH DOUBLE PULL BOX, SECONDARY PIT (FROM FRONT)	9-33-1
WITH DOUBLE PULL BOX, SECONDARY PIT (FROM REAR)	9-33-2

22KV SECTION

TITLE/DESCRIPTION	PAGE NO.
SINGLE PHASE PAD MOUNT TRANSFORMER CODING	9-35-1
SINGLE PHASE, PAD MOUNTED FUSE CHART	9-36-1
THREE PHASE PAD MOUNT TRANSFORMER CODING	9-37-1
THREE PHASE PAD MOUNTED FUSE CHART, 12.47/21.6KV	9-38-1

INSTRUCTIONAL GUIDE

PURPOSE

FOR INSTALLATION, REMOVAL, OR REPLACEMENT OF TRANSFORMERS USED ON THE UNDERGROUND DISTRIBUTION SYSTEM.

COMPATIBLE UNIT CODING FOR "UX" SECTION

SIZE AND TYPE CODING:

EACH UNDERGROUND SERVED TRANSFORMER, OR BANK OF TRANSFORMERS, HAS BEEN ASSIGNED AN INDIVIDUAL CODE NUMBER. "UX" IS THE PREFIX FOR ALL TRANSFORMER CODE NUMBERS.

"UX" CODED MATERIAL:

THE FOLLOWING MATERIALS WILL BE PROVIDED WITH PAD MOUNTED TRANSFORMERS WHEN ANY COMPATIBLE UNIT FROM UX21 THROUGH UX68 IS REQUESTED.

- TRANSFORMER REQUIRED
- TRANSFORMER PAD (IF REQUIRED)
- PRIMARY TERMINATIONS
- SECONDARY TERMINALS
- FUSE LINK
- GROUND ROD
- CONNECTORS, HARDWARE, ETC.

TO PROVIDE THE TRANSFORMER PAD, REMOVE "N" FROM THE COMPATIBLE UNIT.

"UPX" CODED MATERIAL:

USE UPX CODING WHEN BANKING SINGLE PHASE TRANSFORMERS TO PROVIDE THREE PHASE SERVICE. THE FOLLOWING MATERIAL WILL BE PROVIDED WHEN UXP2 AND UXP3 ARE REQUESTED:

- WARNING DECALS
- 4/0 CU GROUND WIRE
- CONDUIT

THE SINGLE PHASE PAD MOUNTED TRANSFORMERS WHICH WILL MAKE UP THE THREE PHASE BANK ARE TO BE SELECTED FROM THE TABLE CONTAINING UNITS UX64 THROUGH UX68 OF THE TRANSFORMER SECTION.

TRANSFORMER REPLACEMENT:

WHEN EXISTING TRANSFORMERS MUST BE REPLACED, THE REPLACEMENT TRANSFORMERS SHOULD BE THE SAME SIZE AS THE ONES THEY ARE REPLACING, UNLESS INFORMATION FROM ELECTRIC SYSTEM PLANNING & PERFORMANCE SHOWS THEM TO BE OVERLOADED, OR A FIELD MEASUREMENT OF LOAD CURRENT INDICATES AN OVERLOAD. PEELING PAINT MAY OR MAY NOT INDICATE AN OVERLOAD.

FERRO-RESONANCE IS A COMPLEX ELECTRICAL PHENOMENON THAT CAN CAUSE AN OVERVOLTAGE OF UP TO 10 TIMES NORMAL SYSTEM VOLTAGE.

CONDITIONS THAT MAY CAUSE FERRO-RESONANCE ON SRP'S DISTRIBUTION SYSTEM ARE SINGLE PHASE SWITCHING, THROUGH A LENGTH OF UNDERGROUND CABLE, OF A THREE-PHASE DELTA PRIMARY WINDING TRANSFORMER WITH NO SECONDARY LOAD.

TO AVOID THE POSSIBLE OCCURRENCE OF FERRO-RESONANCE DO ONE OF THE FOLLOWING:

A. PERFORM THREE-PHASE SWITCHING. ACCEPTABLE THREE PHASE SWITCH LOCATIONS:
   - OIL SWITCH IN TRANSFORMER
   - FEEDER GANG SWITCH
   - SUBSTATION BREAKER

B. SWITCH AT THE TRANSFORMER BEING ENERGIZED OR DE-ENERGIZED USING LOAD BREAK ELBOWS OR LOAD BREAK FUSES, SO CABLE IS NOT IN SERIES WITH THE TRANSFORMER.

   CAUTION: THIS METHOD PREVENTS REMOTE SWITCHING.

C. LOAD THE TRANSFORMER PER THE MINIMUM LOAD TABLE BELOW, AND UTILIZE LOAD BREAK SWITCHING (ELBOWS OR LOAD-BUSTER TOOL)

D. PERFORM SINGLE-PHASE SWITCHING IF THE CABLE LENGTH IN SERIES WITH THE TRANSFORMER IS LESS THAN OR EQUAL TO THE VALUES IN THE TABLE.

	MAXIMUM LENGTH ALLOWABLE TO AVOID FERRO-RESONANCE (FT.)		**MINIMUM LOAD TO AVOID FERRO-RESONANCE (AMPS)**		
KVA	#2	4/0	120 VOLTS	277 VOLTS	2400 VOLTS
75	8	5	21	10	–
150	17	10	42	19	–
225	26	15	63	28	–
300	35	20	84	37	5
500	59	33	139	61	7
750	88	50	209	91	11
1000	118	67	278	121	14
1500	177	101	417	181	21
2000	236	135	556	241	28
2500	295	169	695	301	35
3000	354	203	834	362	42

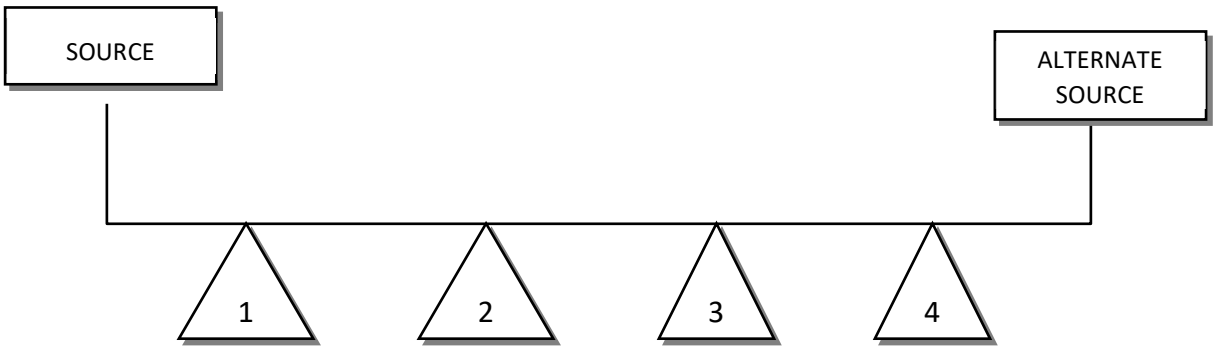
EXAMPLE:

AS SHOWN ABOVE AN UNLOADED 75 KVA TRANSFORMER THAT IS SWITCHED 1 POLE AT A TIME, WITH MORE THAN 8 FEET OF #2 AND LESS THAN 21 AMPS OF LOAD, AT 120 VOLTS, MAY PRODUCE A FERRO-RESONANCE CONDITION.

NOTES

1. ANY ARRESTER ON A 3 PHASE RISER WHICH HAS BEEN BACK FED BECAUSE OF A HIGH SIDE STINGER FAILURE SHOULD BE REPLACED BECAUSE OF POSSIBLE DAMAGE FROM FERRO-RESONANCE.

ENERGIZATION PROCEDURE FOR NEW 1 PHASE UNDERGROUND LOOPS
CONTAINING SINGLE PHASE PADMOUNT TRANSFORMERS

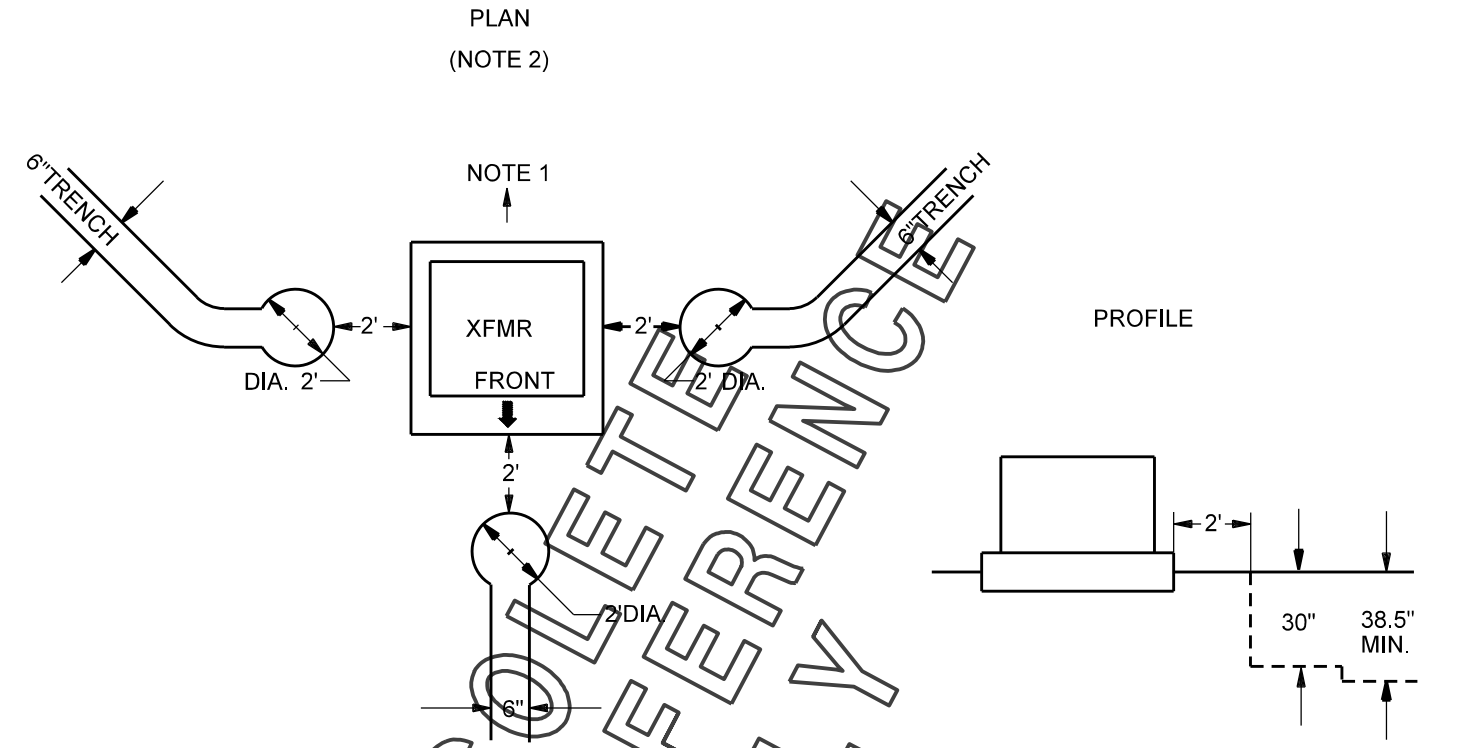


1. TERMINATE CABLES IN ALL TRANSFORMERS PER STANDARDS.
2. REMOVE FUSES FROM ALL TRANSFORMERS.
3. HI-POT CABLE USING HI-POT TOOL FROM SOURCE TO END. PREFERRED END IS AN ALTERNATE SOURCE OF THE LOOP. THIS ALLOWS ONE HI-POT TEST FOR THE ENTIRE CABLE RUN. WHEN THE ALTERNATE SOURCE CANNOT BE USED AS THE END, THE END SHALL BE A NORMAL OPEN POINT LOCATED WITHIN THE LOOP. TWO HI-POT TESTS WILL BE REQUIRED TO TEST THE WHOLE LOOP.
4. IF THE HI-POT TEST IS NOT SUCCESSFUL, LOCATE FAULT AND REPAIR BEFORE PROCEEDING.
5. BEGINNING AT TRANSFORMER 1:
   A. CHECK TORQUE OF FUSE CARTRIDGE (BOTH HOLDER AND NUT ENDS). INSTALL FUSE AND ENERGIZE TRANSFORMER 1 FROM THE SOURCE.
   B. VERIFY CABLE MARKINGS ARE CORRECT BY SWITCHING OPEN THE CABLE LABELED AS GOING TO TRANSFORMER 2, TOWARDS THE ALTERNATE SOURCE.
      1) IF TRANSFORMER 1 REMAINS ENERGIZED, CABLES ARE CORRECTLY MARKED.
      2) IF TRANSFORMER 1 BECOMES DE-ENERGIZED, CABLE MARKING IS REVERSED. CORRECT LABELING BEFORE PROCEEDING.
   C. TEST FOR CORRECT SECONDARY VOLTAGE.
6. REPEAT STEP 5 FOR THE REMAINING TRANSFORMERS, ENERGIZING THE TRANSFORMER FROM THE PREVIOUS TRANSFORMER.
7. AT THE END, VERIFY THE PHASING IS CORRECT. IF NOT CORRECT, LOCATE CAUSE AND CORRECT.
8. ESTABLISH NORMAL OPEN PER JOB.

ENERGIZATION PROCEDURE

FOR NEW 3 PHASE PAD MOUNT TRANSFORMERS

1. OBTAIN HOLD TAG(S) ON CIRCUIT(S):
   A. FROM THE PLANNED ENERGIZATION POINT.
   B. FROM THE PHASING POINT.
2. VERIFY WITH DOC THAT THE HOLD TAG(S) ARE ON THE CORRECT CIRCUIT(S)
3. PARK ALL ELBOWS IN THE TRANSFORMER BEING BROUGHT ONLINE. (ALL SOURCES TO THIS TRANSFORMER SHALL BE REMOVED.)
4. REMOVE FUSES FROM TRANSFORMER.
5. CLOSE ALL SWITCHES IN TRANSFORMER.
6. USING AN OHMMETER, VERIFY ACROSS BUSHINGS THAT CONNECTIONS ONLY EXIST ACROSS SAME PHASE. A-A, B-B, C-C SHALL SHOW CONTINUITY. A-B, A-C, B-C SHALL SHOW NO CONTINUITY.
7. REPLACE FUSES.
8. INSTALL ELBOW CONNECTIONS. (ALL CONNECTIONS IN ADJACENT SOURCES SHALL BE PARKED.)
9. AT THE PLANNED REMOTE ENERGIZATION POINT, APPLY THE A-B CHANCE HOT STICK HI-POT TOOL ACROSS ANY PHASE CONNECTION TO THE NEW TRANSFORMER AND AN ENERGIZED BUSHING.
10. IF A CONNECTION TO GROUND EXISTS IN EITHER THE TRANSFORMER OR THE CABLES TO AND FROM THIS TRANSFORMER, THE HI-POT WILL INDICATE A POTENTIAL DIFFERENCE. IF SUCH A CONDITION IS DISCOVERED, THE PROBLEM MUST BE CORRECTED.
11. THIS TEST WILL NOT DETERMINE IF A CONNECTION ACROSS PHASES, BUT ISOLATED FROM GROUND, EXISTS. IN ORDER TO TEST FOR THIS CONDITION, THE FUSES NEED TO BE REMOVED FROM THE TRANSFORMER. ALL SWITCHES NEED TO BE CLOSED AND THE SOURCE CABLES, EXCEPT THE ONE UNDER TEST, GROUNDED IN THE ADJACENT SOURCE. THE HI-POT TOOL IS THEN APPLIED TO EACH PHASE WHILE THE OTHER PHASES ARE GROUNDED.



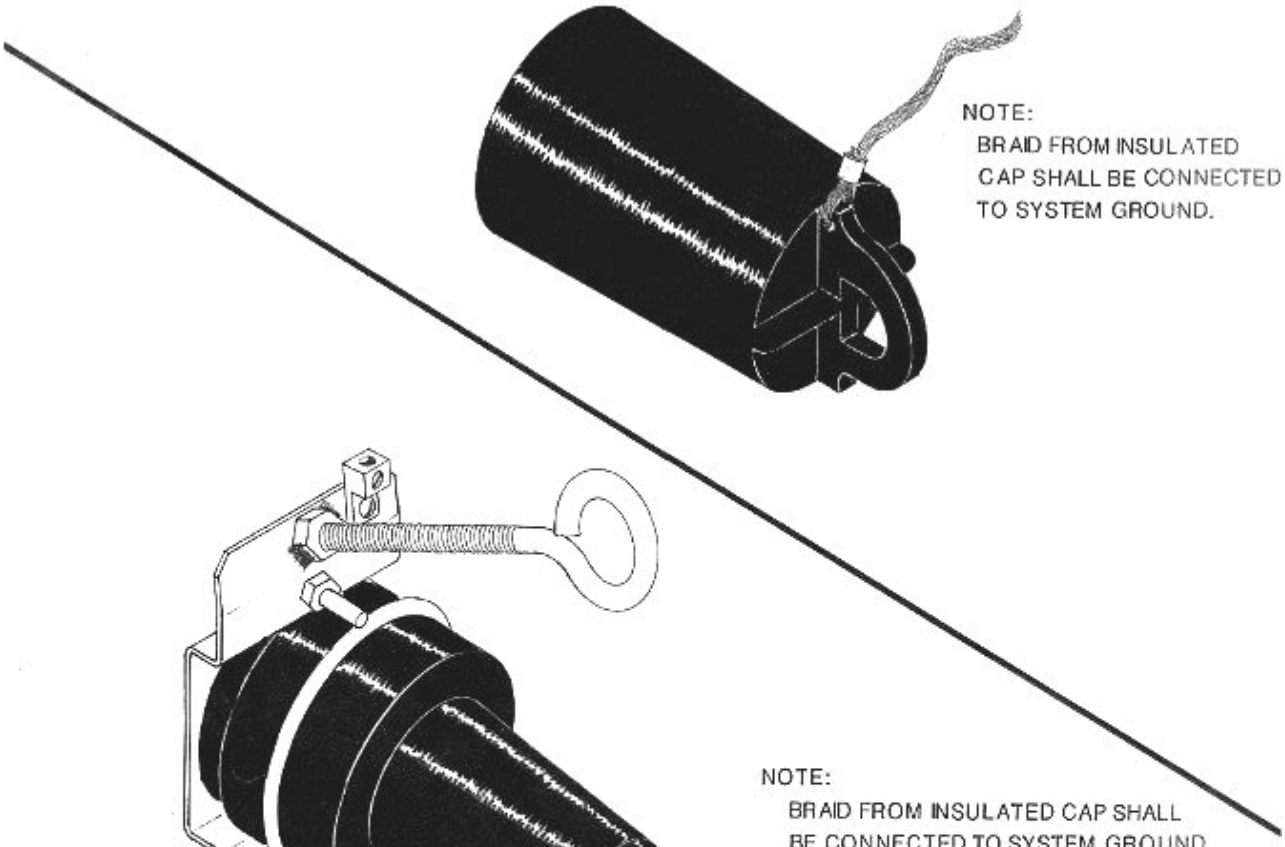
OBSOLETE REFERENCE FOR REFERENCE ONLY

NOTES

1. TRENCH SHALL NOT APPROACH A SINGLE PHASE TRANSFORMER FROM BEHIND. TRENCH MAY APPROACH SINGLE PHASE TRANSFORMER FROM EITHER SIDE OR FRONT.
2. WHEN A NEW SERVICE IS ADDED TO AN EXISTING SINGLE PHASE TRANSFORMER THE CONTRACTOR SHOULD TRENCH TO WITHIN 2 FEET OF THE PAD AND DIG A 2 FOOT DIAMETER HOLE 30 INCHES DEEP TO ALLOW LATER HAND - DIG TO CONNECT CONDUCTOR.
3. COVER ALL OPEN TRENCH AND HOLE BEFORE LEAVING SITE WITH PLYWOOD OR EQUIVALENT FOR SAFETY.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS EXISTING SINGLE PHASE PAD SERVICE ADDITION	ISSUE DATE: 09/09/96 REV. DATE: 08/25/10 APPROVAL: B.PRIEST
	9-4-1	8513E531.DGN

UXBC INSULATED COVER FOR AN ENERGIZED BUSHING.
THIS COVER MUST BE USED ON ENERGIZED BUSHINGS AT ALL TIMES WHEN A CABLE TERMINATION ELBOW IS NOT INSTALLED.



NOTE:
BRAID FROM INSULATED CAP SHALL BE CONNECTED TO SYSTEM GROUND.

NOTE:
BECAUSE THE PARKING BUSHING IS NOT GROUNDED IT MUST BE CONSIDERED AT LINE POTENTIAL WHEN CARRYING AN ELBOW.

NOTE:
BRAID FROM INSULATED CAP SHALL BE CONNECTED TO SYSTEM GROUND.



UXBPB PARKING BUSHING AND INSULATED COVER FOR PARKING AN ENERGIZED ELBOW TERMINATOR AND COVERING AN ENERGIZED BUSHING.

UXBP1 FOR 1 ∅ TRANSFORMER PAD, 25-100KVA (SM-637155-5034698)
APPROX. WT:. 90 LBS. (POLYMER PAD)
825 LBS. (CONCRETE PAD)

UXBP1G CONTRACTOR INSTALLED 1 TRANSFORMER PAD.

UXBP3 FOR 3 ∅ TRANSFORMER PAD, 0-500KVA (SM-637160-5069778)
APPROX. WT.: 2,700 LBS.

UXBP3A FOR 3 ∅ TRANSFORMER PAD, 750KVA (SM-637162-5069779)
APPROX. WT.: 6,000 LBS.

UXBP3B FOR 3 ∅ TRANSFORMER PAD, 1000-2500KVA (SM-637163-5034800)
APPROX. WT.: 9,500 LBS.

UXBP4 FOR PADS TO BE POURED IN PLACE (NON-STANDARD). DIMENSIONS AND CONSTRUCTION RESPONSIBILITY ARE TO BE NOTED ON THE JOB ORDER SKETCH.

STANDARD DRAWINGS

SM-637160-5069778	3 ∅ TRANSFORMER PAD, 0-500KVA
SM-637161-5034704	3 ∅ TRANSFORMER PAD, 750KVA (WITH PIT)
SM-637163-5034800	3 ∅ TRANSFORMER PAD, 1000-2500KVA

SINGLE PHASE 240/480 V (PRIMARY VOLTAGE 12.47 KV GROUND WYE/7.2 KV)

TRANSFORMER SIZE (KVA)	COMPATIBLE UNIT	APPROXIMATE WEIGHT
25	UX74	850 LBS.
50	UX76	1,100 LBS.

SINGLE PHASE 120/240 V (PRIMARY VOLTAGE 12.47 KV GROUND WYE/7.2 KV)

TRANSFORMER SIZE (KVA)	COMPATIBLE UNIT	APPROXIMATE WEIGHT
25	UX64 (NOTE 1)	850 LBS.
50	UX66 (NOTE 1)	1,100 LBS.
75	UX67 (NOTE 1)	1,250 LBS.
100	UX68 (NOTE 1)	1,400 LBS.
167 (NOTE 2)	UX69N	2,100 LBS.

SINGLE PHASE 120/240 V, CORROSION RESISTANT (PRIMARY VOLTAGE 12.47 KV GROUND WYE/7.2 KV)

TRANSFORMER SIZE (KVA)	COMPATIBLE UNIT	APPROXIMATE WEIGHT
25 (NOTE 3) #5091777	UXC64 (NOTE 1)	850LBS.
50 (NOTE 3) #5039324	UXC66 (NOTE 1)	1,100 LBS.
75 (NOTE 3) #5039328	UXC67 (NOTE 1)	1,250 LBS.

SINGLE PHASE 120/240 V, LESS FLAMMABLE FLUID FILL (PRIMARY VOLTAGE 12.47 KV GROUND WYE/7.2 KV)

TRANSFORMER SIZE (KVA)	COMPATIBLE UNIT	APPROXIMATE WEIGHT
25 (NOTE 4) #5039322	UXF64 (NOTE 1)	1,000 LBS.
50 (NOTES 3 & 4) #5039325	UXF66 (NOTES 1 & 4)	1,100 LBS.
75 (NOTES 3 & 4) #5039329	UXF67 (NOTES 1 & 4)	1,250 LBS.

SINGLE PHASE 120/240 V, CORROSION RESISTANT W/LESS FLAMMABLE FLUID FILL (PRIMARY VOLTAGE 12.47 KV GROUND WYE/7.2 KV)

TRANSFORMER SIZE (KVA)	COMPATIBLE UNIT	APPROXIMATE WEIGHT
50 (NOTES 3 & 4) #5039326	UXCF66 (NOTES 1 & 4)	1,100 LBS.
75 (NOTES 3 & 4) #5039330	UXCF67 (NOTES 1 & 4)	1,250 LBS.

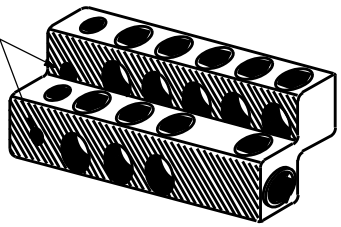
ACCESSORIES FOR SINGLE PHASE PAD-MOUNTED TRANSFORMERS

- UXBC INSULATED BUSHING CAP FOR RADIAL INSTALLATION.
- UXBPB INSULATED BUSHING CAP AND INSULATED PARKING BUSING FOR NORMAL OPEN OR RADIAL INSTALLATION WITH CABLE STUB OUTS.

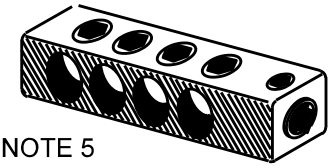
NOTES

1. ADD “N” TO THE COMPATIBLE UNIT WHEN A PAD IS NOT REQUIRED.
2. ONLY TO BE USED FOR CHANGE OUT OF OVERLOADED 100 KVA PAD MOUNTS.
3. CORROSION RESISTANT TRANSFORMER. USED FOR REPLACEMENT OF EXISTING CORRODED TRANSFORMER.
4. RESTRICTED USE. SEE THE DISTRIBUTION DESIGN STANDARDS, GENERAL DESIGN CRITERIA FOR REQUIREMENTS.
5. UXBPB QTY (1) INSULATED BUSHING CAP AND INSULATED PARKING BUSHING INCLUDED FOR ALL INSTALLATIONS.

NOTE 4



5035177 FITS 5/8" OR 1" STUD THREAD STUD BUSHING ON 25 TO 167 KVA UNITS ONE SET OF 3" EACH "KIT" (5035175). #2 TO 500 MCM 8 MAX. PLUS 2 STREETLIGHTS.



NOTE 5

5035178 FITS 5/8" OR 1" THREAD STUD BUSHING ON 25 TO 167 KVA UNITS. 1/0 TO 750 MCM AL OR CU MAX. WITH ONE STREETLIGHT.

NOTES

1. 25-100 KVA SINGLE PHASE TRANSFORMER (NOT CORROSION RESISTANT) COMES WITH A KIT (5035175). THE KIT IS MADE UP OF:
   #2 ELBOWS (2)
   SECONDARY CONNECTORS (5035177) (3)
   GROUND ROD CLAMP AND LUG (1)
   BRACKETS, BOLTS & WASHERS (2)
   CONNECTOR, COPPER, COMPRESSION (5033933) (1)

2. SECONDARY STUDS ON 25, 50 AND 75 KVA TRANSFORMERS ARE 5/8" - 11 THREAD.
   SECONDARY STUDS ON 100 AND 167 KVA TRANSFORMERS ARE 1" - 14 THREAD.

3. TORQUE: STREETLIGHT - 120 IN - LB (10 FT - LB). ALL OTHERS AND STUDS 240 IN - LB (20 FT - LB).

4. PLACE STREETLIGHT CONDUCTOR IN ONE OF THE TWO STREET LIGHT CONDUCTOR POSITIONS ONLY UNLESS MORE THAN TWO POSITIONS ARE REQUIRED. STREETLIGHT POSITIONS FIT #6 TO 1/0 AL. DO NOT PLACE MORE THAN ONE CABLE IN EACH CONNECTOR POSITION.

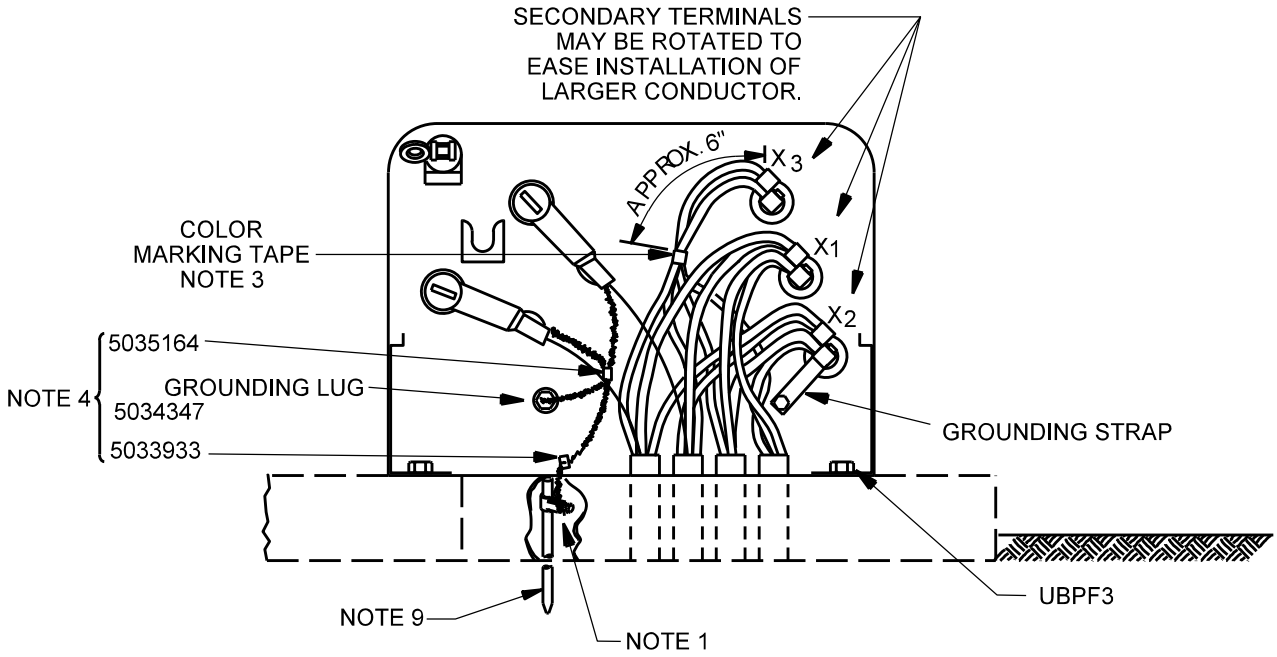
5. FOR MAINTENANCE USE ONLY IN EXISTING TRANSFORMERS WITH EXISTING 750 MCM.

7.2/12.47KV SYSTEM

SINGLE PHASE TRANSFORMER (KVA)	FUSE MOUNTING	FUSE SIZE (IN AMPS)	STOCK CODE NO.	SEE NOTE #
15 AND 25	RTE - BAYONET STYLE	8	5034437	1
	S&C	6	5034565	2
	LM - ARC STRANGLER	8	5034550	2
	WEST. - EFD OR EFD11	5	5034560	2
37-1/2	RTE - BAYONET STYLE	15	5034438	1
	LM - ARC STRANGLER	10	5034551	2
	WEST. - EFD OR EFD11	8	5034561	2
	S&C	8	5034566	2
50	RTE - BAYONET STYLE	15	5034438	1
	LM - ARC STRANGLER	12	5034552	2
	WEST. - EFD OR EFD11	12	5034562	2
	S&C	10	5034567	2
75	RTE - BAYONET STYLE	25	5034439	1
	WEST. - EFD OR EFD11	18	5034563	2
	LM - ARC STRANGLER	18	5034554	2
	S&C	15	5034568	2
100	RTE - BAYONET STYLE	25	5034439	1
	LM - ARC STRANGLER	25	5034556	2
	WEST. - EFD OR EFD11	25	5034564	2
	S&C	25	5034569	2
167	RTE - BAYONET STYLE	50	5034440	1
	LM - ARC STRANGLER	40	5034558	2
	S&C	30	5034570	2

NOTES

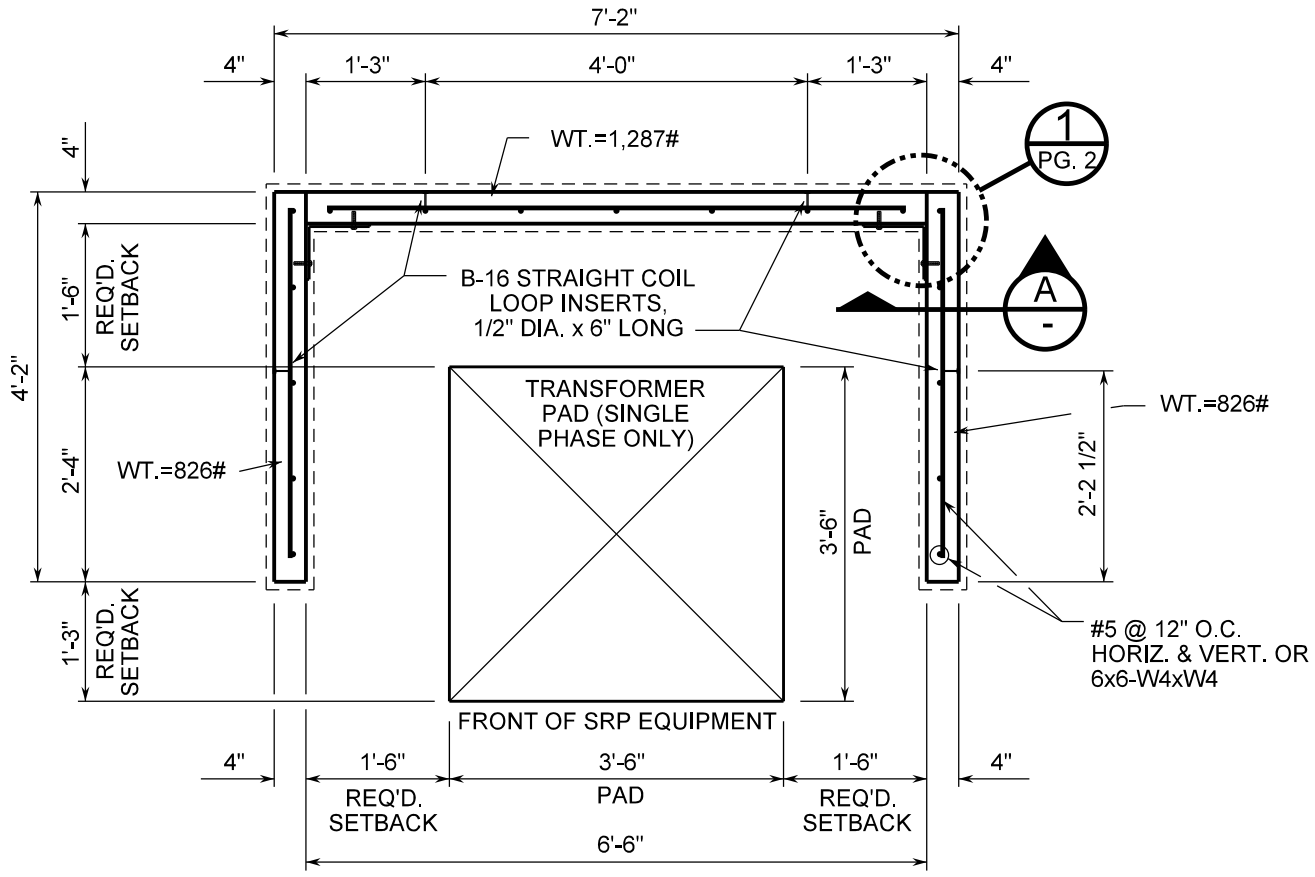
1. ALL DEAD FRONT TRANSFORMERS UTILIZE THE RTE BAYONET STYLE FUSE. PRIOR TO ENERGIZING THE TRANSFORMER, THE INSTALLATION CREW MUST CHECK FUSE FOR PROPER SIZE AND TIGHTNESS OF FUSE ASSEMBLY.
2. FOR RE-FUSING LIVE FRONT TRANSFORMERS, UTILIZE THE INDICATED FUSE MOUNTINGS.



NOTES

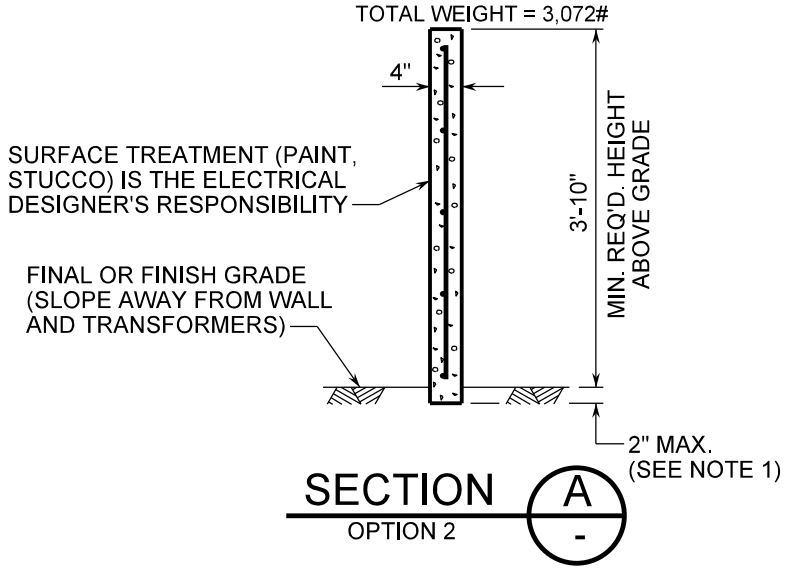
1. PRIOR TO THE TRANSFORMER PAD BEING SET, TELCO AND/OR CABLE TV WILL STUB A BONDING WIRE TO THE GROUND ROD. SRP WILL CONNECT THIS BOND WIRE TO THE GROUND ROD.
2. A FENCE IS NOT ALLOWED TO BE BUILT ACROSS FRONT OF TRANSFORMER. A GATE IS PERMISSIBLE IF IT IS FREE OF LOCKS THAT WOULD PROHIBIT ACCESS BY SRP PERSONNEL.
3. FOR CABLE AND TRANSFORMER IDENTIFICATION, SEE IDENTIFICATION MARKING METHODS IN THE MISCELLANEOUS SECTION.
4. ALL CONCENTRIC NEUTRAL WIRES MUST BE CONNECTED TOGETHER WITH A COMPRESSION CONNECTOR. ONE CONCENTRIC NEUTRAL IS TO BE CONNECTED TO THE GROUND ROD. THE OTHER CONCENTRIC NEUTRAL IS TO BE CONNECTED TO THE TANK GROUND.
5. SEE LUBRICATING PROCEDURE FOR TRANSFORMER BUSHINGS AND ELBOWS IN THE CABLE AND ACCESSORIES SECTION.
6. WHEN PRIMARY CABLES ARE CUT TO LENGTH, THEY MUST BE LONG ENOUGH TO REACH ONE BUSHING AND PARKING STAND.
7. THE PENTA BOLT MUST BE TIGHTENED AND THE CABINET LOCKED AT ALL TIMES.
8. SECONDARY PHASE BUSHINGS X1 AND X3 ARE TO HAVE A QUICK CONNECT BAR INSTALLED WITHOUT USE OF JAM NUTS. REMOVE FACTORY INSTALLED JAM NUTS. THE NEUTRAL BUSHING X2 WILL REQUIRE THE USE OF ONE JAM NUT TO TIGHTEN THE GROUND STRAP AGAINST THE INSTALLED BAR CONNECTOR. THE NEUTRAL BUSHING DOES NOT REQUIRE AN INSULATING COVER.
9. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH PRIMARY AND SECONDARY SERVICE CABLES. NOT REQUIRED WHEN DIRECT-BURIED BARE CONCENTRIC NEUTRAL CABLE IS PRESENT.
10. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP) AND TOP OF PAD SHALL BE MINIMUM OF 4" ABOVE FINAL GRADE IN IMMEDIATE AREA.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS SINGLE PHASE PAD-MOUNTED INSTALLATION	ISSUE DATE: 08/05/13 REV. DATE: 02/02/15 APPROVAL: B. PRIEST
	9-10-1	8513E179.DGN



PLAN VIEW

(3 SECTIONS OR 3 SEPARATE PIECES BOLTED TOGETHER OPTION)



SECTION A -
OPTION 2

REFERENCES:

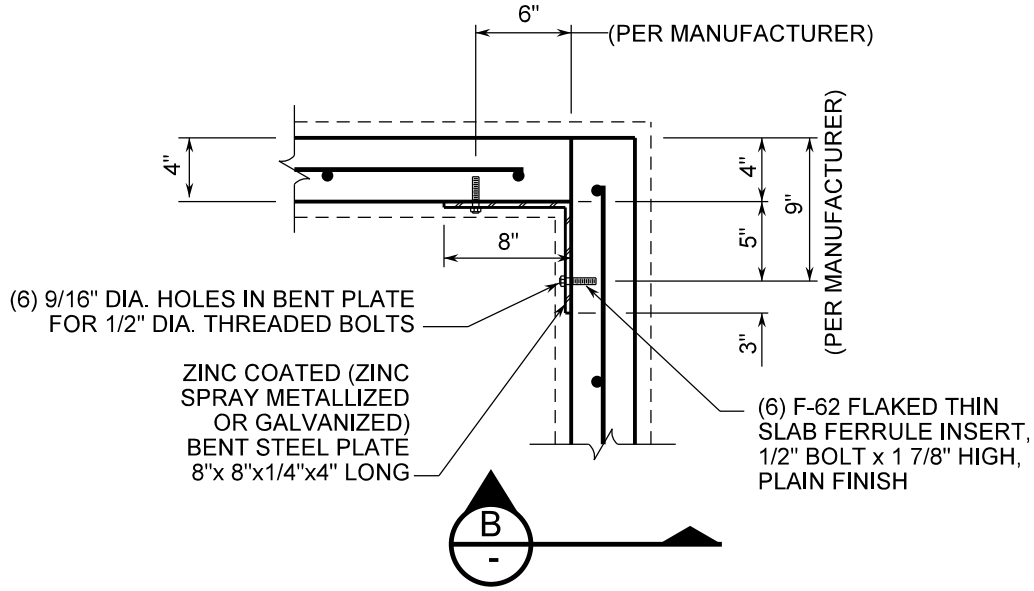
SRP ELECTRICAL CLEARANCE STANDARDS PG. 2-13-1.

CONCRETE SHALL BE IN ACCORDANCE WITH CES-05500-001, -003 & -004.

NOTES

1. ORDER BY MATERIAL ITEM NUMBER 5077557.
2. INSURE GROUND IS LEVEL AND COMPACTED UNDER WALL.
3. NO GROUNDING OF THIS FIRE BARRIER WALL IS REQUIRED.
4. CONCRETE: f 'c TO BE A MINIMUM OF 4000 PSI AT 28 DAYS.
5. CONCRETE FINISH TO BE SMOOTH, ANY AGGREGATE HOLES/GAPS TO BE FILLED IN WITH APPROVED FILLER.

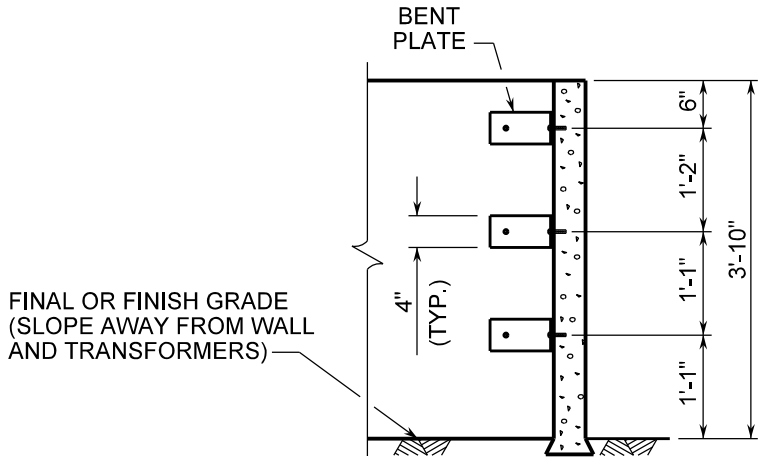
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS PRECAST CONCRETE FIRE BARRIER WALL FOR SINGLE PHASE (ONLY) TITLE LINE 4PAD MOUNTED TRANSFORMER	ISSUE DATE: 05/28/15 REV. DATE: 0 APPROVAL: S.DURAN
	9-10-2	8513E582.DGN



NOTES

1. IN LIEU OF F-62'S AND BENT STEEL PLATE, B-16 COIL LOOP INSERTS, 1/2" DIA. x 6" LONG MAY BE USED TO ATTACH WALLS

DETAIL 1 -



SECTION B -

REFERENCES:

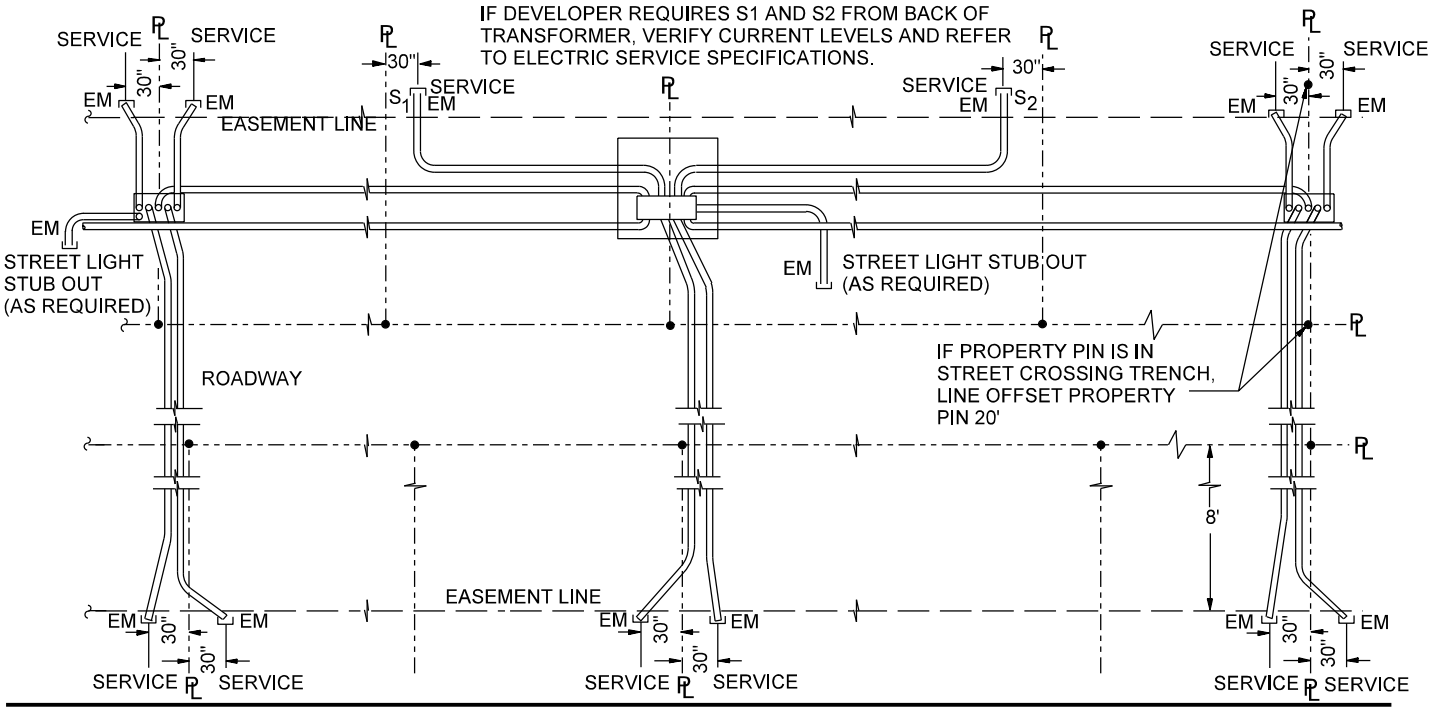
SRP ELECTRICAL CLEARANCE STANDARDS PG. 2-13-1.

CONCRETE SHALL BE IN ACCORDANCE WITH CES-05500-001, -003 & -004.

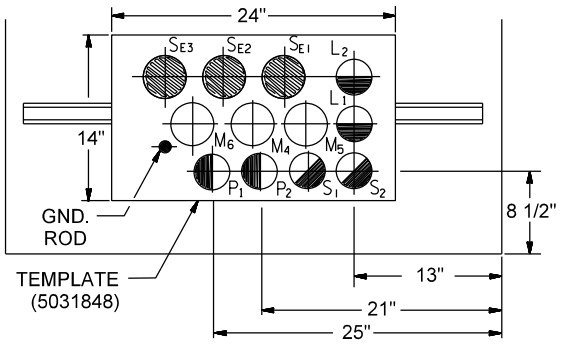
NOTES

1. ORDER BY MATERIAL ITEM NUMBER 5077557.
2. INSURE GROUND IS LEVEL AND COMPACTED UNDER WALL.
3. NO GROUNDING OF THIS FIRE BARRIER WALL IS REQUIRED.
4. CONCRETE: f 'c TO BE A MINIMUM OF 4000 PSI AT 28 DAYS.
5. CONCRETE FINISH TO BE SMOOTH, ANY AGGREGATE HOLES/GAPS TO BE FILLED IN WITH APPROVED FILLER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS PRECAST CONCRETE FIRE BARRIER WALL FOR SINGLE PHASE (ONLY) PAD MOUNTED TRANSFORMER	ISSUE DATE: 05/28/15 REV. DATE: 0 APPROVAL: S.DURAN
	9-10-3	8513E582.DGN



CONDUIT ARRANGEMENT IN PAD



THE MAX. NO. OF SERVICE & SECONDARY CONDUITS IS 8.

SE - SECONDARY CONDUIT 3" POPULATE FIRST FOR SECONDARY

L - LIGHT CONDUIT 2-1/2"

S - SERVICE CONDUIT 2-1/2"

P - PRIMARY CONDUIT 2-1/2"

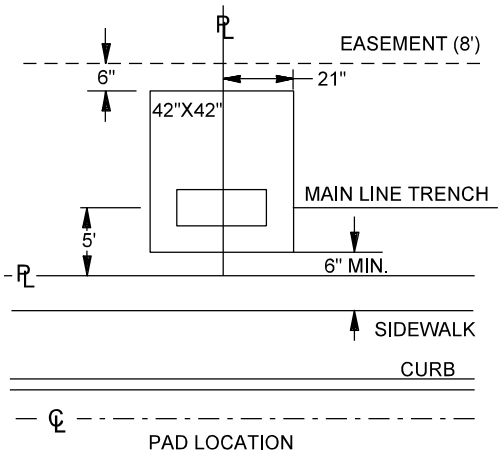
M1 - MULTI-USE, EITHER SERVICE OR A SECONDARY (2-1/2" OR 3" CONDUIT)

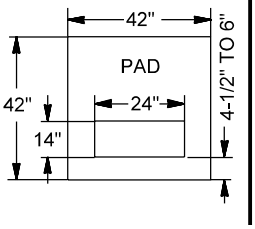
2 1/2" O.D. = 2.875

3" O.D. = 3.5"

NOTES

1. CONNECT GROUND ROD TO TRANSFORMER GROUND LUG WITH #4 CU WIRE.
2. TOP OF GROUND ROD AND ALL CONDUITS ARE TO BE 5 INCHES ABOVE FINAL GRADE FOR ALL NEW TRANSFORMER INSTALLATIONS.
3. ALL REQUIRED CONDUITS SHALL BE INSTALLED PRIOR TO BACKFILL.
4. INSTALL PLUGS IN ALL CONDUIT STUB-UPS. DO NOT GLUE PLUGS.
5. IF ONLY ONE SECONDARY IS TO BE INSTALLED, PLACE IT IN POSITION SE2.
6. IF NO SECONDARY NEEDED, SE1, SE2 & SE3 MAY BE USED FOR SERVICES 6, 7 & 8.

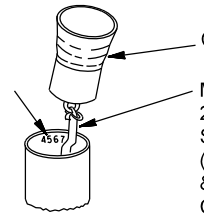




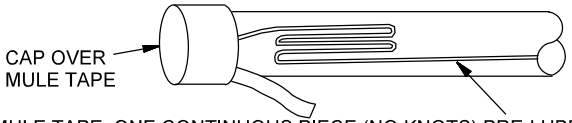
SECONDARY/SERVICE CONDUIT MARKING & MULE TAPE

(BY PARTY INSTALLING THE CONDUIT)

PRINT LOT # INSIDE CONDUIT BACK SIDE FACING STREET. ALSO MARK "SPARE" CONDUIT.



(MULE TAPE IN SERVICE CONDUIT ONLY)



MULE TAPE, ONE CONTINUOUS PIECE (NO KNOTS) PRE-LUBED, 2500 LB.TENSILE STRENGTH. LEAVE 50 FT. OF LENGTH IN SERVICE CONDUIT STUB-OUT TOREACH FUTURE SERVICE ENTRANCE.

Underground Distribution Construction Standards

SRP®

PROPRIETARY MATERIAL

TRANSFORMERS
SINGLE PHASE RESIDENTIAL
TRANSFORMER PAD CONDUIT STUB-UP DETAIL
WITH ABOVE GROUND JUNCTION BOXES (BACK OF PUE)

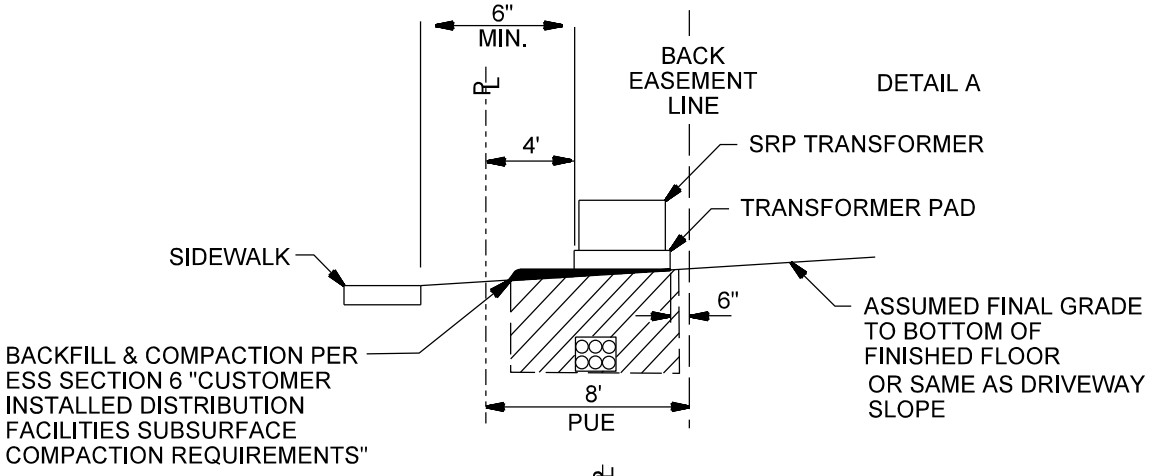
ISSUE DATE: 04/30/93

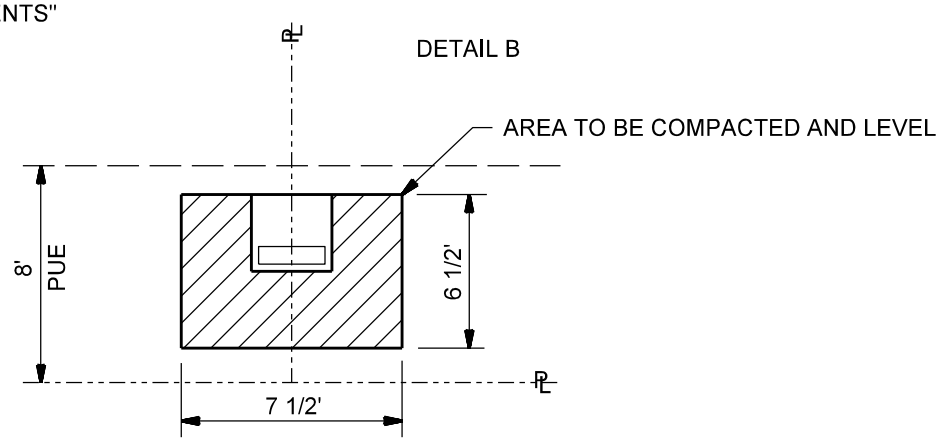
REV. DATE: 08/04/21

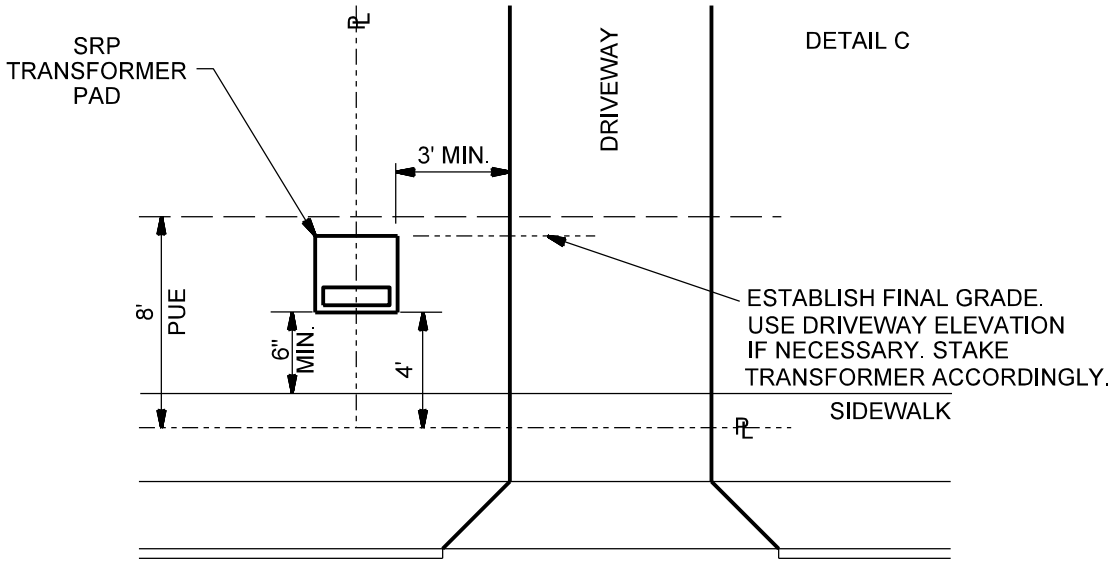
APPROVAL: J. LUERA

9-11-1

8513E170.DGN



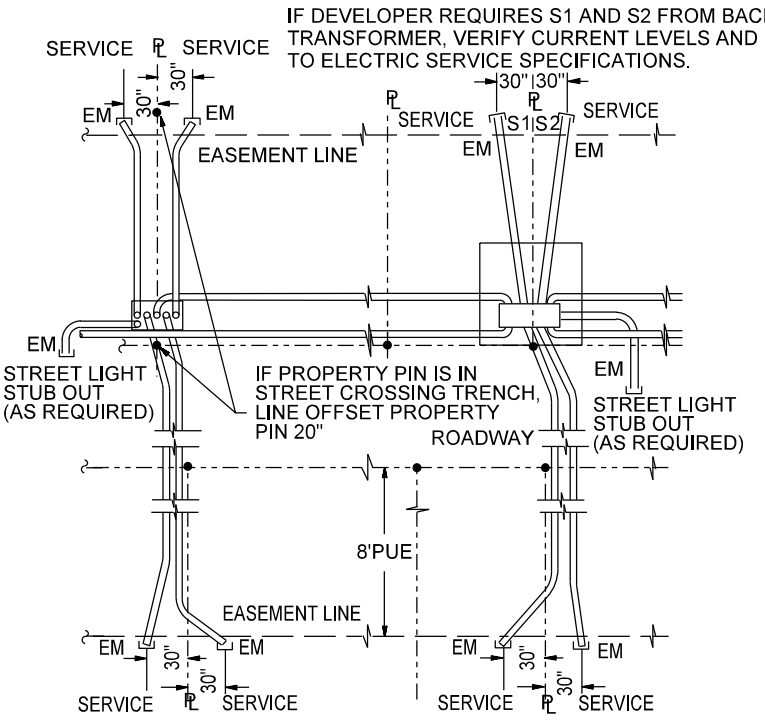




NOTES

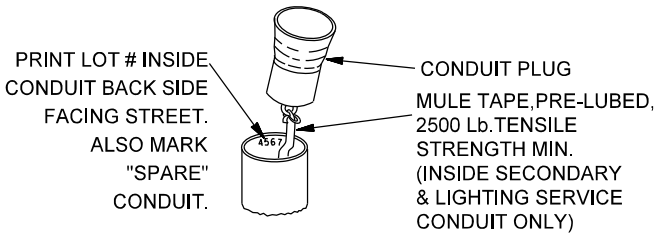
1. DEVELOPER TO ESTABLISH FINAL GRADE AT REAR (HOUSE SIDE) OF PUE. THE BACK OF THE TRANSFORMER PAD WILL BE 6" FROM THE BACK EASEMENT LINE. THE FINAL GRADE FOR THE TRANSFORMER PADS WILL BE STAKED BY THE DEVELOPER'S ENGINEERS, PER SRP PLAN, AND SHALL BE EQUAL TO THE ELEVATION OF THE DRIVEWAY AT A POINT 7 - 1/2 FEET INTO PUE.
2. THE PAD WILL BE PLACED ON A COMPACTED LEVEL SOIL BASE 6 - 1/2 X 7 - 1/2 FEET.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS SINGLE PHASE RESIDENTIAL TYPICAL PAD STAKING BACK OF PUE	ISSUE DATE: 01/15/87 REV. DATE: 08/04/21 APPROVAL: J. LUERA
	9-11-2	8513E532.DGN

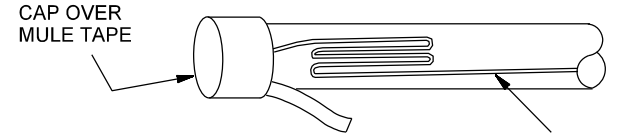


SECONDARY/SERVICE CONDUIT MARKING & MULE TAPE

(BY PARTY INSTALLING THE CONDUIT)

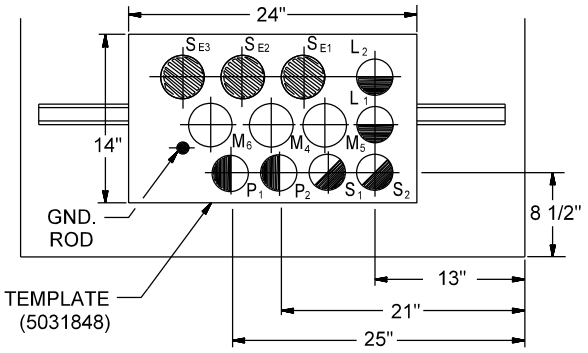


(MULE TAPE IN SERVICE CONDUIT ONLY)



MULE TAPE, ONE CONTINUOUS PIECE (NO KNOTS) PRE-LUBED, 2500 LB.TENSILE STRENGTH. LEAVE 50 FT. OF LENGTH IN SERVICE CONDUIT STUB-OUT TO REACH FUTURE SERVICE ENTRANCE.

CONDUIT ARRANGEMENT IN PAD



LEGEND

THE MAX. NO. OF SERVICE & SECONDARY CONDUITS IS 8.

S_E ◍ - SECONDARY CONDUIT 3" POPULATE FIRST FOR SECONDARY

L ◒ - LIGHT CONDUIT 2-1/2"

S ◪ - SERVICE CONDUIT 2-1/2"

P ◐ - PRIMARY CONDUIT 2-1/2"

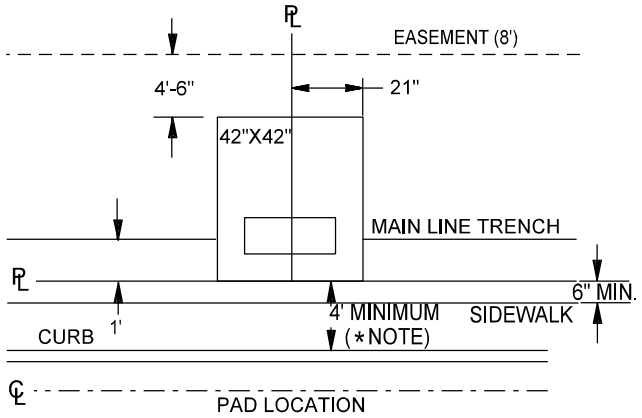
M1 ○ MULTI-USE, EITHER SERVICE OR A SECONDARY (2-1/2" OR 3" CONDUIT)

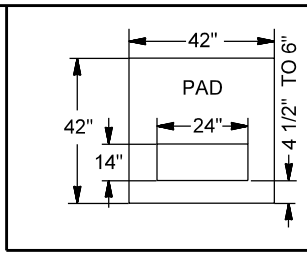
2 1/2" O.D. = 2.875

3" O.D. = 3.5"

NOTES

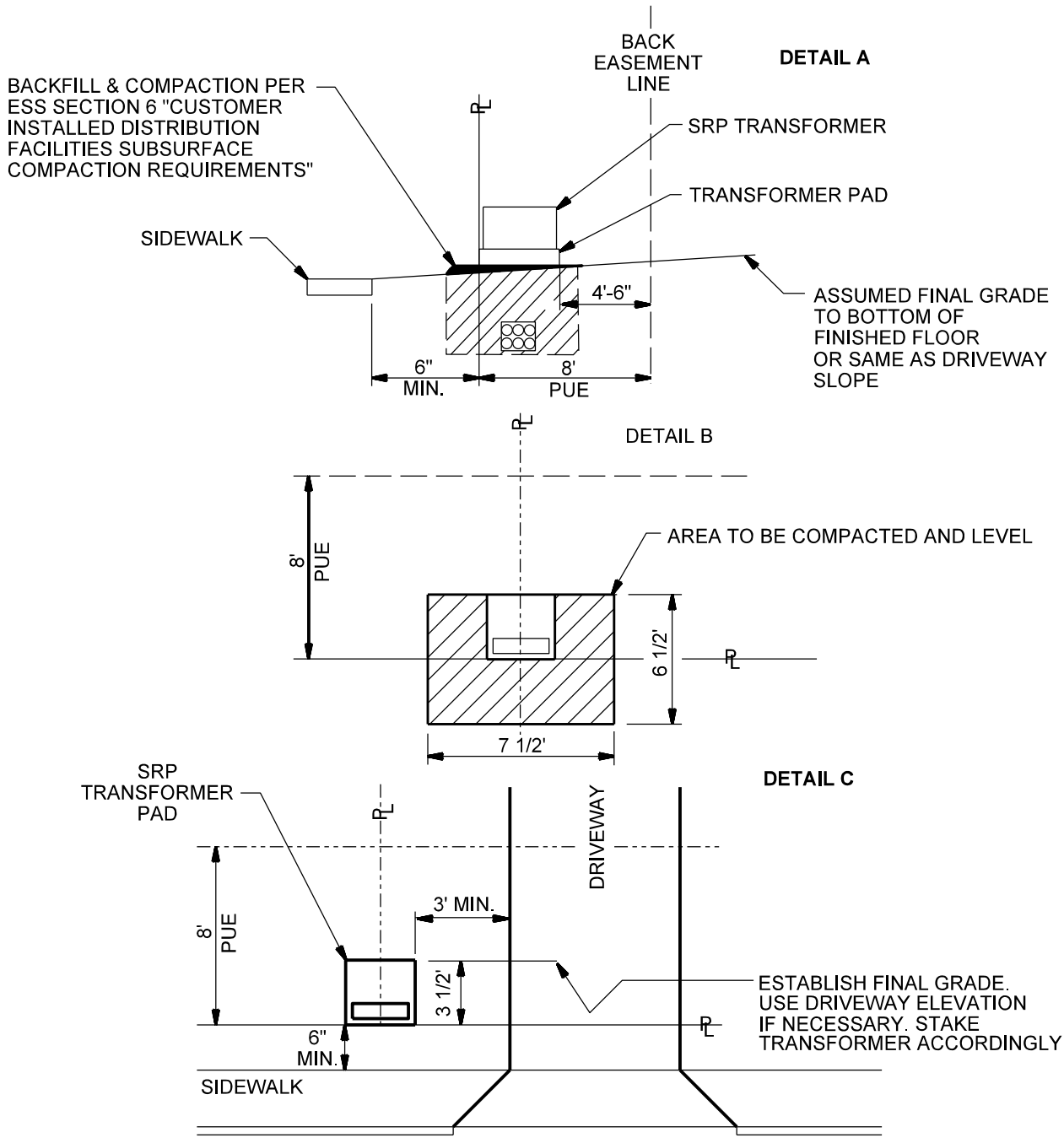
1. CONNECT GROUND ROD TO TRANSFORMER GROUND LUG WITH #4 CU WIRE.
2. TOP OF GROUND ROD AND ALL CONDUITS ARE TO BE 5 INCHES ABOVE FINAL GRADE FOR ALL NEW TRANSFORMER INSTALLATIONS.
3. ALL REQUIRED CONDUITS SHALL BE INSTALLED PRIOR TO BACKFILL.
4. INSTALL PLUGS IN ALL CONDUIT STUB-UPS. DO NOT GLUE PLUGS.
5. IF ONLY ONE SECONDARY IS TO BE INSTALLED, PLACE IT IN POSITION SE2.
6. IF NO SECONDARY NEEDED, SE1, SE2 & SE3 MAY BE USED FOR SERVICES 6, 7 & 8.





*** NOTES** FOUR FOOT MINIMUM FROM HOUSE BACK OF CURB TO PAD IS REQUIRED FOR SAFE OPERATION AND MAY NOT BE REDUCED BY USE OF A GUARD POST.

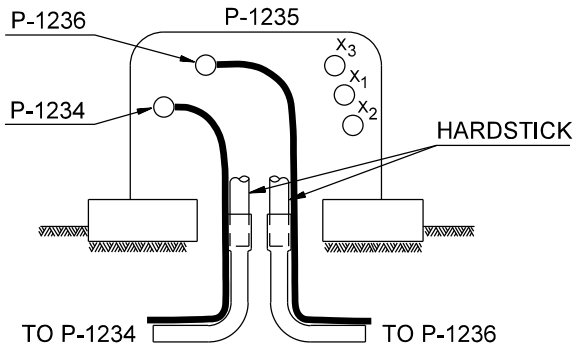
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS - SINGLE PHASE RESIDENTAL TRANSFORMER PAD CONDUIT STUB-UP DETAIL WITH ABOVE GROUND JUNCTION BOXES (FRONT OF PUE, PREFERRED)	ISSUE DATE: 09/24/03 REV. DATE: 08/04/21 APPROVAL: J. LUERA
	9-11-3	8513E511.DGN



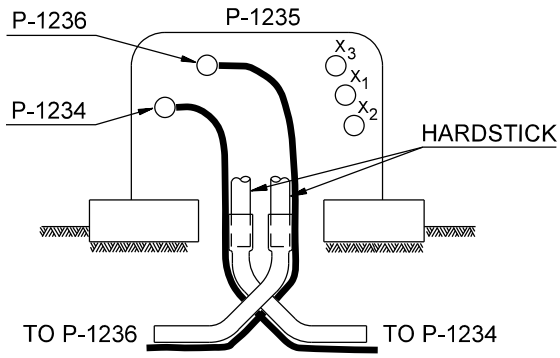
NOTES

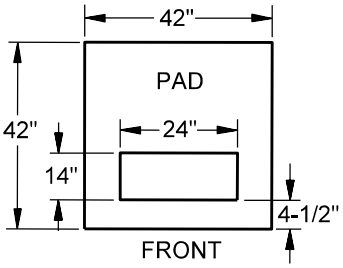
1. DEVELOPER TO ESTABLISH FINAL GRADE AT REAR (HOUSE SIDE) OF PUE. THE BACK OF THE TRANSFORMER PAD WILL BE 4' - 6" FROM THE BACK EASEMENT LINE. THE FINAL GRADE FOR THE TRANSFORMER PADS WILL BE STAKED BY THE DEVELOPER'S ENGINEERS, PER SRP PLAN, AND SHALL BE EQUAL TO THE ELEVATION OF THE DRIVEWAY AT A POINT 3 - 1/2 FEET INTO PUE.
2. THE PAD WILL BE PLACED ON A COMPACTED LEVEL SOIL BASE 6 - 1/2 X 7 - 1/2 FEET.
3. IN THE SCENARIO SHOWN, THERE IS A SIDEWALK ASSUMED TO BE A MINIMUM OF 4' WIDE AND SOME ADDITIONAL SPACE BETWEEN THE SIDEWALK AND THE TRANSFORMER PAD. WHEN THE SIDEWALK DOES NOT EXIST, A 4' MINIMUM DISTANCE BETWEEN THE TRANSFORMER PAD AND THE HOUSE SIDE EDGE OF CURB IS STILL REQUIRED. THIS SPACE IS THE ABSOLUTE MINIMUM DETERMINED TO SAFELY OPERATE THE TRANSFORMER CONNECTIONS. GUARD POSTS, WHEN REQUIRED TO PROTECT THE TRANSFORMER, DO NOT REDUCE THIS 4' MINIMUM REQUIREMENT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS SINGLE PHASE RESIDENTIAL TYPICAL PAD STAKING FRONT OF PUE (PREFERRED)	ISSUE DATE: 09/29/03 REV. DATE: 08/04/21 APPROVAL: J. LUERA
	9-11-4	8513E533.DGN

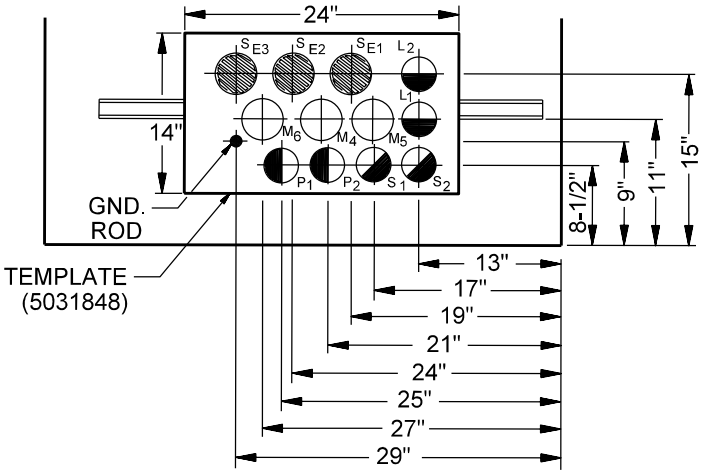


-OR-





CONDUIT ARRANGEMENT IN PAD



NOTES

1. EXISTING CONDITIONS WILL VARY. VERIFY STUB UP LOCATION BY OPENING TRANSFORMER.
2. DO NOT STUB UP CONDUITS PER THE CONDUIT ONE LINE DRAWING. CONDUIT ONE LINE SHOWS ONLY THE NUMBER OF CONDUITS TO STUB UP. PLEASE REFER TO THE UNDERGROUND DISTRIBUTION LINE CONSTRUCTION STANDARDS,PAGE 9-11-1, FOR PROPER CONDUIT PLACEMENT.
3. WHEN STUBBING UP PRIMARY CONDUITS INTO EXISTING TRANSFORMER WINDOWS WITH EXISTING DIRECT BURIED PRIMARY CABLES, POSITION THE CONDUITS TO MATCH UP WITH THE EXISTING PRIMARY CABLES.
4. THE TOP OF THE GROUND ROD AND ALL CONDUITS ARE TO BE 1 INCH ABOVE THE TOP OF THE PAD WHEN INSTALLED IN EXISTING TRANSFORMERS. INSTALL A MINIMUM OF 6 INCHES OF PVC HARD STICK FROM THE ELBOWS INTO THE TRANSFORMER PAD WINDOW.
4. INSTALL PLUGS IN ALL CONDUIT STUB UPS. DO NOT GLUE PLUGS.
6. IF ONLY ONE SECONDARY CONDUIT IS TO BE INSTALLED, PLACE IT IN POSITION SE2.

LEGEND

MAXIMUM NUMBER OF SERVICE/ SECONDARY CONDUITS IS 8.

SE - SECONDARY CONDUIT 3" POPULATE FIRST POPULATE FIRST FOR SECONDARY

L - LIGHT CONDUIT 2-1/2"

S - SERVICE CONDUIT 2-1/2"

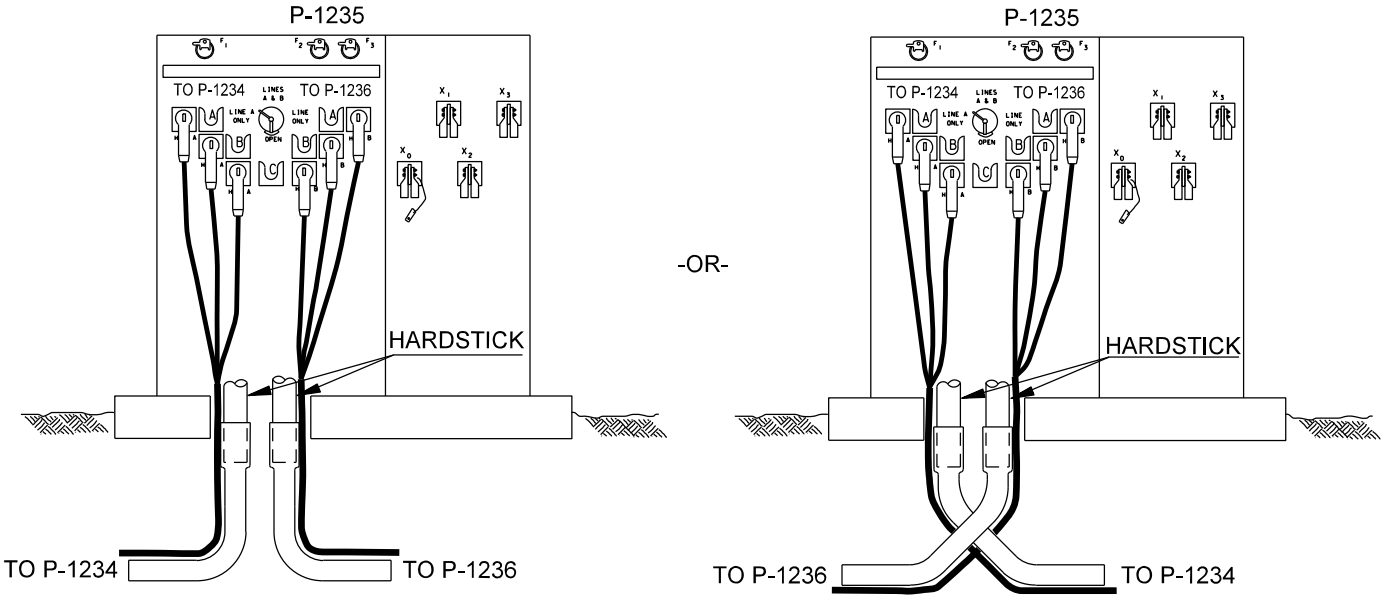
P - PRIMARY CONDUIT 2-1/2"

M1 - MULTI-USE, EITHER SERVICE OR A SECONDARY (2-1/2" OR 3" CONDUIT)

2 - 1/2" O.D = 2.875"

3" O.D. = 3.5"

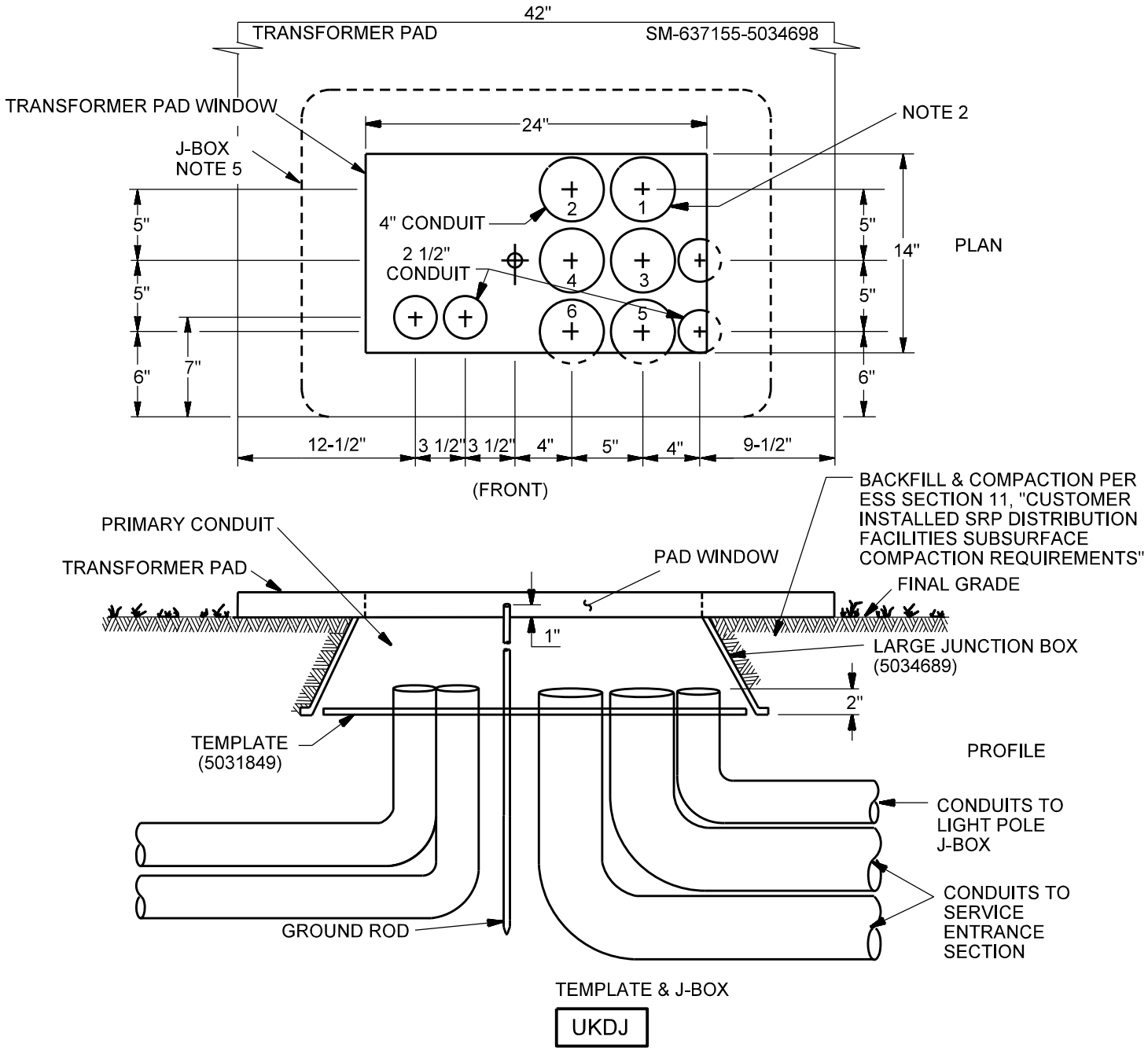
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMER 1Ø TRANSFORMER STUB - UP DETAIL FOR EXISTING TRANSFORMERS (CABLE REPLACEMENT)	ISSUE DATE: 02/16/12 REV. DATE: 08/05/21 APPROVAL: J. LUERA
	9-11-5	8513E573.DGN



NOTES

1. EXISTING CONDITIONS WILL VARY. VERIFY STUB UP LOCATION BY OPENING TRANSFORMER.
2. DO NOT STUB UP CONDUITS PER THE CONDUIT ONE LINE DRAWING. CONDUIT ONE LINE SHOWS ONLY THE NUMBER OF CONDUITS TO STUB UP. PLEASE REFER TO THE UNDERGROUND DISTRIBUTION LINE CONSTRUCTION STANDARDS, PAGE 9-22-1, FOR PROPER CONDUIT PLACEMENT, AND PAD WINDOW DETAIL.
3. WHEN STUBBING UP PRIMARY CONDUITS INTO EXISTING TRANSFORMER WINDOWS WITH EXISTING DIRECT BURIED PRIMARY CABLES, POSITION THE CONDUITSTO MATCH UP WITH THE EXISTING PRIMARY CABLES.
4. THE TOP OF THE GROUND ROD AND ALL CONDUITS ARE TO BE 1 INCH ABOVE THE TOP OF THE PAD WHEN INSTALLED IN EXISTING TRANSFORMERS. INSTALL A MINIMUM OF 6 INCHES OF PVC HARD STICK FROM THE ELBOWS INTO THE TRANSFORMER PAD WINDOW.
5. INSTALL PLUGS IN ALL CONDUIT STUB UPS. DO NOT GLUE PLUGS.

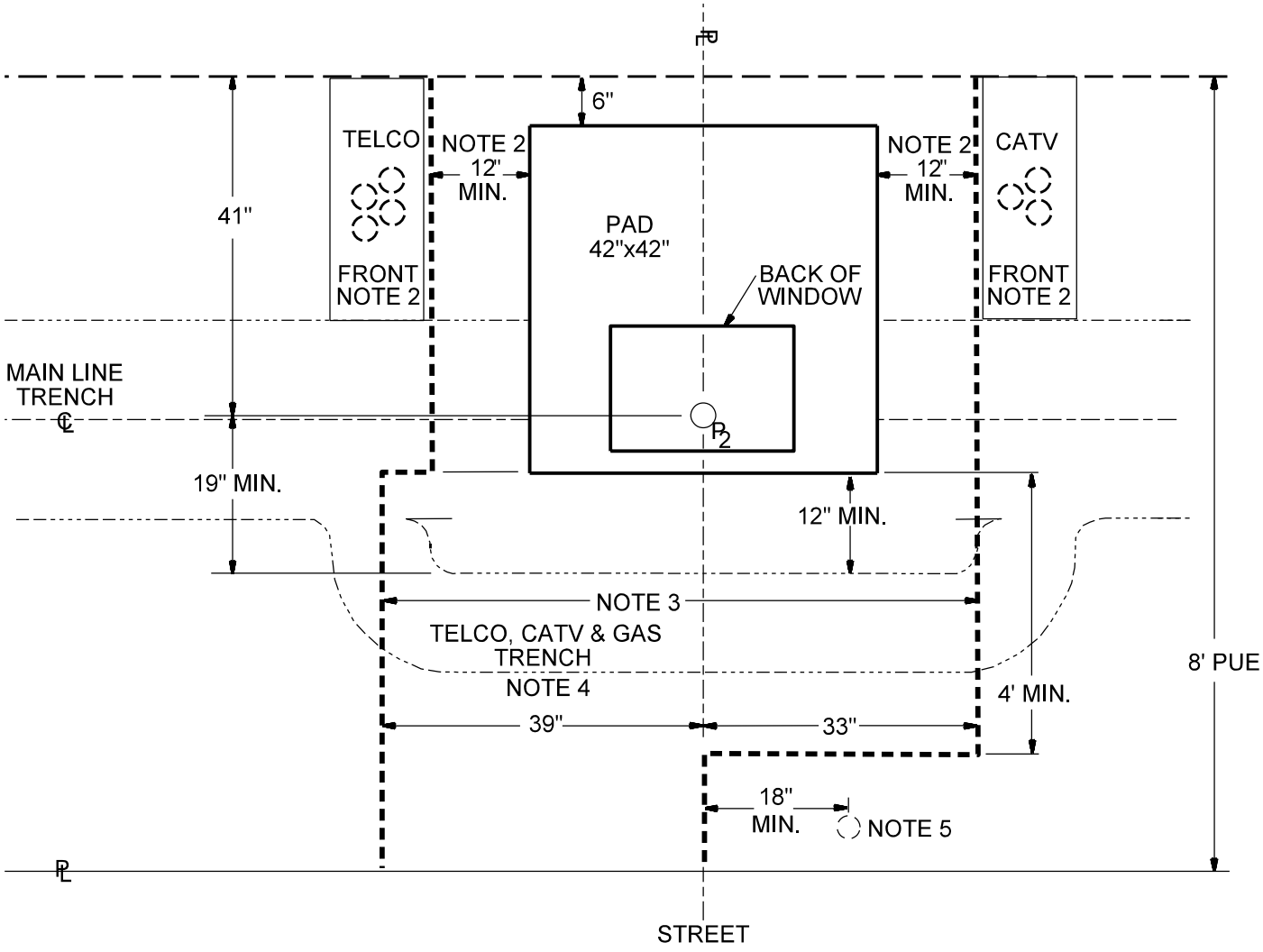
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS 3Ø TRANSFORMER STUB-UP DETAIL FOR EXISTING TRANSFORMERS (CABLE REPLACEMENT)	ISSUE DATE: 02/16/12 REV. DATE: 09/26/12 APPROVAL: B.PRIEST
	9-11-6	8513E574.DGN



NOTES

1. THE J-BOX SHALL BE INSTALLED IN ALL MULTI-FAMILY HOUSING COMPLEXES OR WHEN THREE OR MORE 4" SERVICE CONDUITS ARE REQUIRED. WHEN ONE OR TWO 4" SERVICE CONDUITS (NON MULTI-FAMILY) ARE REQUIRED, CONDUITS ARE PERMITTED TO BE STUBBED UP AT GRADE USING TEMPLATE (50314848).
2. FILL SERVICE CONDUIT IN THIS ORDER.
3. 6 - 4" CONDUITS MAXIMUM.
4. INSTALL ONE 5/8" X 8' GROUND ROD THRU THE 1" HOLE IN THE TEMPLATE TO 1" ABOVE THE TOP OF THE J-BOX.
5. CENTER THE BOTTOM OPENING OF J-BOX (5034689) OVER THE TEMPLATE (5031849).
6. PULL TAPE INSTALLED IN 4" CONDUITS, AND 2 - 1/2" STREET LIGHT CONDUITS. (PRE-LUBED 2500 LB TENSILE STRENGTH MINIMUM)
7. CUTALL CONDUITS 2" ABOVE THE BOTTOM OF J-BOX.

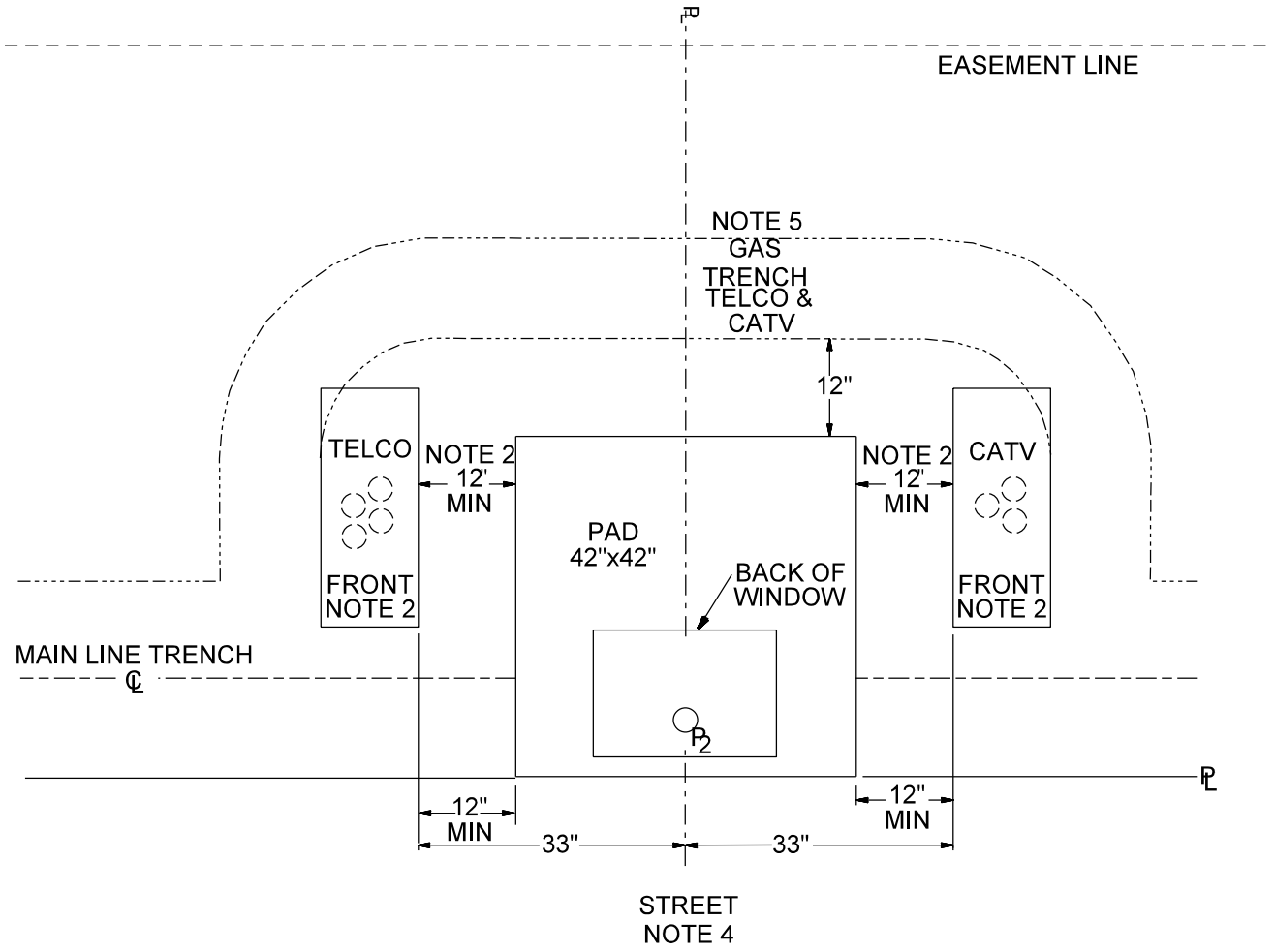
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS SINGLE PHASE TRANSFORMER CONDUIT STUB-UP DETAIL WITH 4 INCH SERVICE CONDUITS	ISSUE DATE: 01/15/87 REV. DATE: 09/17/21 APPROVAL: J. LUERA
	9-12-1	8513E118.DGN



NOTES

1. ALL MEASUREMENTS ARE WITH RESPECT TO THE P2 PRIMARY CONDUIT CENTER.
2. THIS 12" MINIMUM DIMENSION DESCRIBES THE SPACE REQUIREMENT BETWEEN THE SRP PAD AND THE TELCO OR CATV PEDESTAL. WHEN STUBBING UP TELCO OR CATV CONDUIT ALLOW ADDITIONAL SPACE TO INSURE THE TELCO OR CATV PEDESTAL DOES NOT ENTER THE 12 INCH MINIMUM SPACE REQUIREMENT AND THAT THE FRONT OF EITHER PEDESTAL LANDS BEHIND THE BACK OF THE TRANSFORMER WINDOW.
3. NO TELCO OR CATV PEDESTALS, WATER BOXES, POLES, PERMANENT OBSTRUCTIONS OR TRIPPIN HAZARDS BETWEEN LINES. CLEAR AREA IS FROM PUE (HOUSE SIDE) TO STREET OR 12 FEET MAX IN FRONT OF PAD.
4. GAS TO ALWAYS BE ON STREET SIDE.
5. IF A LIGHT POLE OR OTHER UTILITY IS REQUIRED IN THIS AREA, IT IS PREFERRED THAT IT BE INSTALLED A MINIMUM OF 18" FROM THE PROPERTY LINE.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS RESIDENTIAL TRANSFORMER PAD LOCATION DETAIL BACK OF PUE	ISSUE DATE: 10/08/01 REV. DATE: 08/05/21 APPROVAL: J. LUERA
	9-13-1	8513E315.DGN



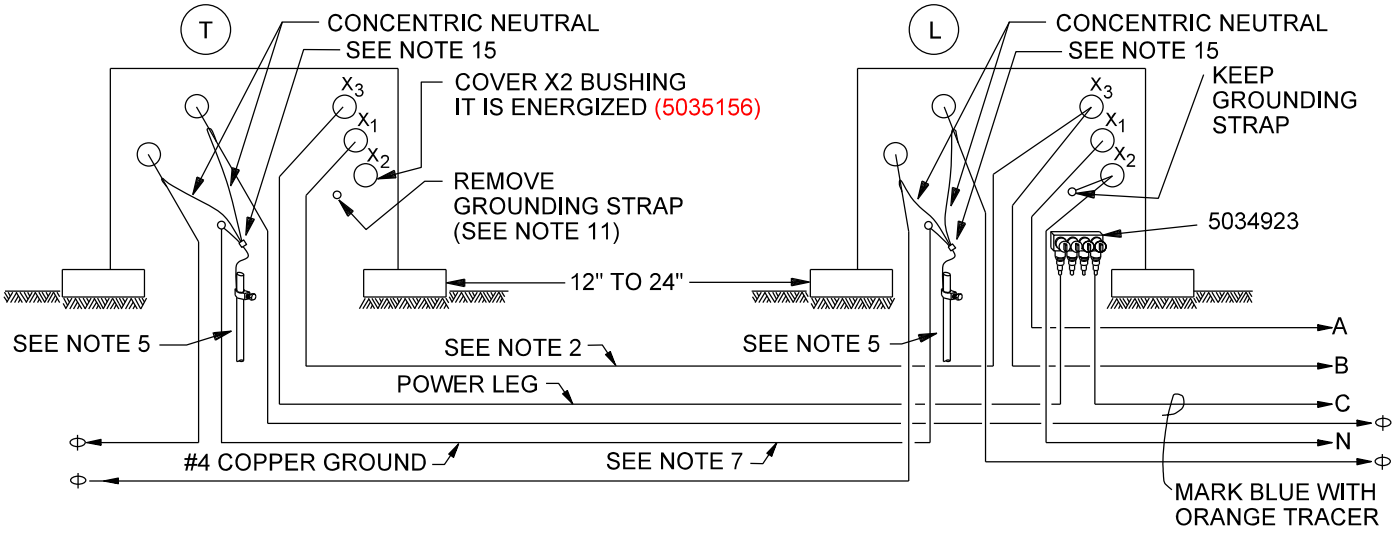
NOTES

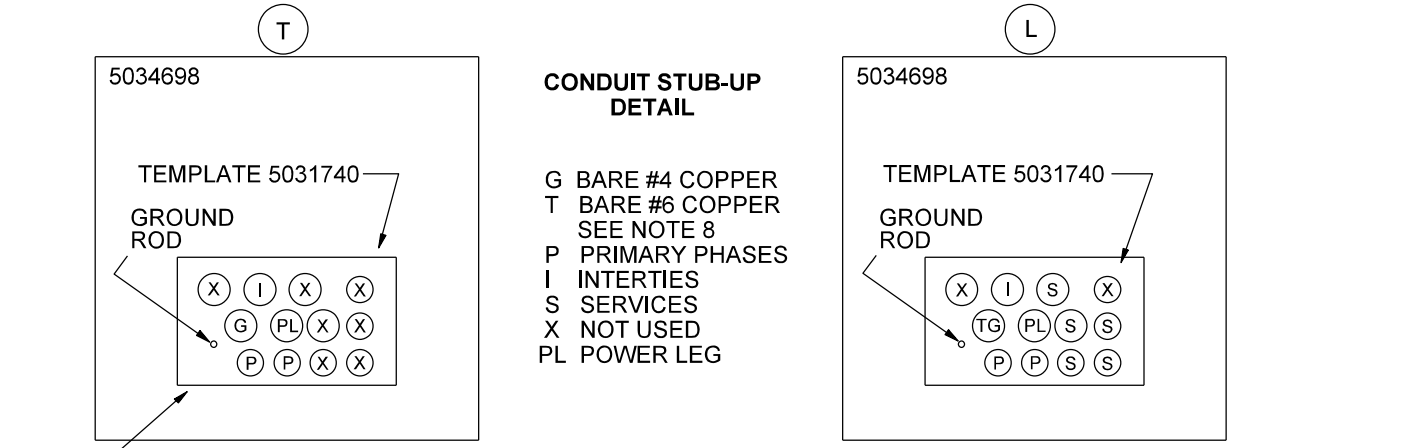
1. ALL MEASUREMENTS ARE WITH RESPECT TO THE P2 PRIMARY CONDUIT CENTER.
2. THIS 12" MINIMUM DIMENSION DESCRIBES THE SPACE REQUIREMENT BETWEEN THE SRP PAD AND THE TELCO OR CATV PEDESTAL. WHEN STUBBING UP TELCO OR CATV CONDUIT ALLOW ADDITIONAL SPACE TO INSURE THE TELCO OR CATV PEDESTAL DOES NOT ENTER THE 12 INCH MINIMUM SPACE REQUIREMENT AND THAT THE FRONT OF EITHER PEDESTAL LANDS BEHIND THE BACK OF THE TRANSFORMER WINDOW.
3. GUARD POSTS MAY BE NEEDED. SEE UBGP
4. THIS DETAIL ASSUMES THE PAD IS BEHIND A SIDEWALK. IF NO SIDEWALK EXISTS, THE PAD WOULD BE BACK, AWAY FROM THE STREET. SEE TRANSFORMERS, RESIDENTIAL TRANSFORMER PAD LOCATION DETAIL, BACK OF PUE.
5. WITH THE TRANSFORMER AT THE FRONT OF THE PUE, AS SHOWN, THE GAS LINE IS ON THE HOUSE SIDE OF TRENCH. SEE ELECTRIC SERVICE SPECIFICATIONS, CLEARANCES, CONDUIT STUB-OUT TO RESIDENCE, JOINT TRENCH WITH GAS.

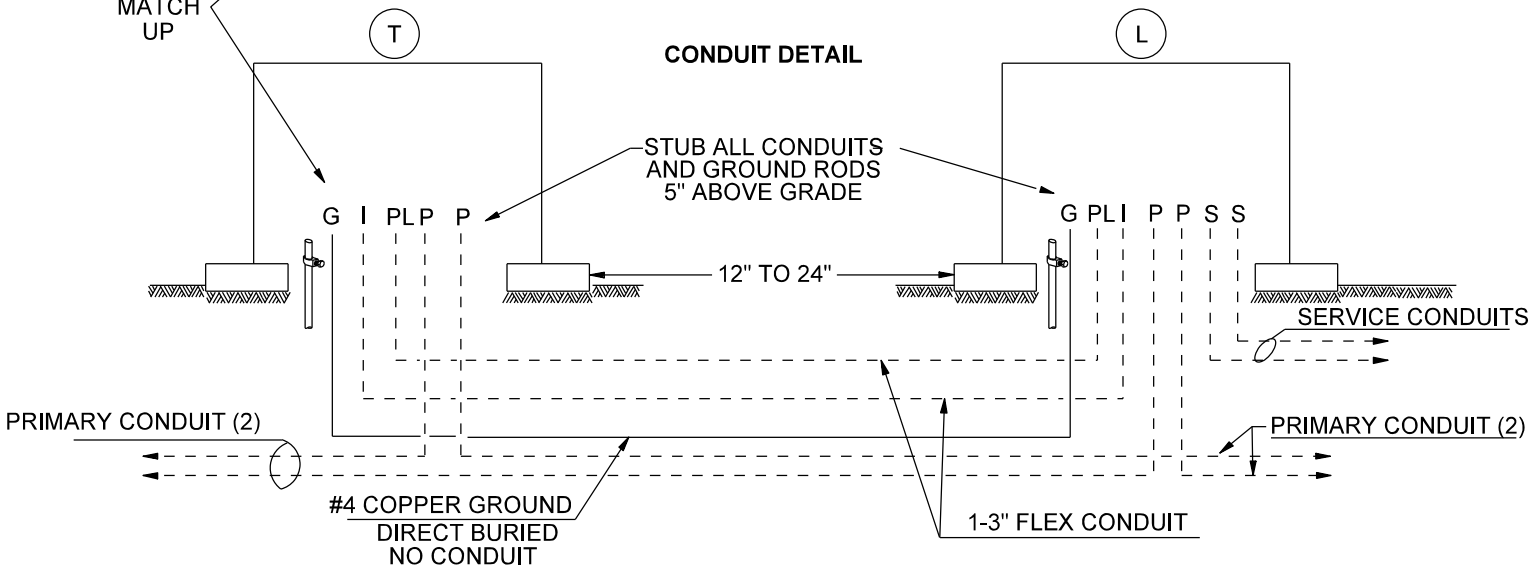
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS RESIDENTIAL TRANSFORMER PAD LOCATION DETAIL FRONT OF PUE	ISSUE DATE: 10/08/01 REV. DATE: 08/05/21 APPROVAL: J. LUERA
	9-13-2	8513E520.DGN

UXP2 | UXP22 (22 KV) SEE NOTES 1 & 2 FOR ADDITIONAL MATERIAL ORDERING

ELECTRICAL DETAIL







Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	REV: UPDATED MATERIAL ITEM	
	TRANSFORMERS 3Ø-2 TRANSFORMER BANK OPEN WYE PRIMARY - OPEN DELTA SECONDARY	ISSUE DATE: 07/17/96 REV. DATE: 07/05/23 APPROVAL: J. LUERA
	9-14-1	8513E252.DGN

NOTES

1. SEE PAGE 9-7-1 FOR PAD-MOUNTED TRANSFORMER CODING WHEN ORDERING TRANSFORMERS.
2. SECONDARY INTERTIE CONDUCTORS ARE BASED ON TEASER TRANSFORMER SIZE. ORDER BY THE MATERIAL ITEM NUMBER LISTED BELOW.

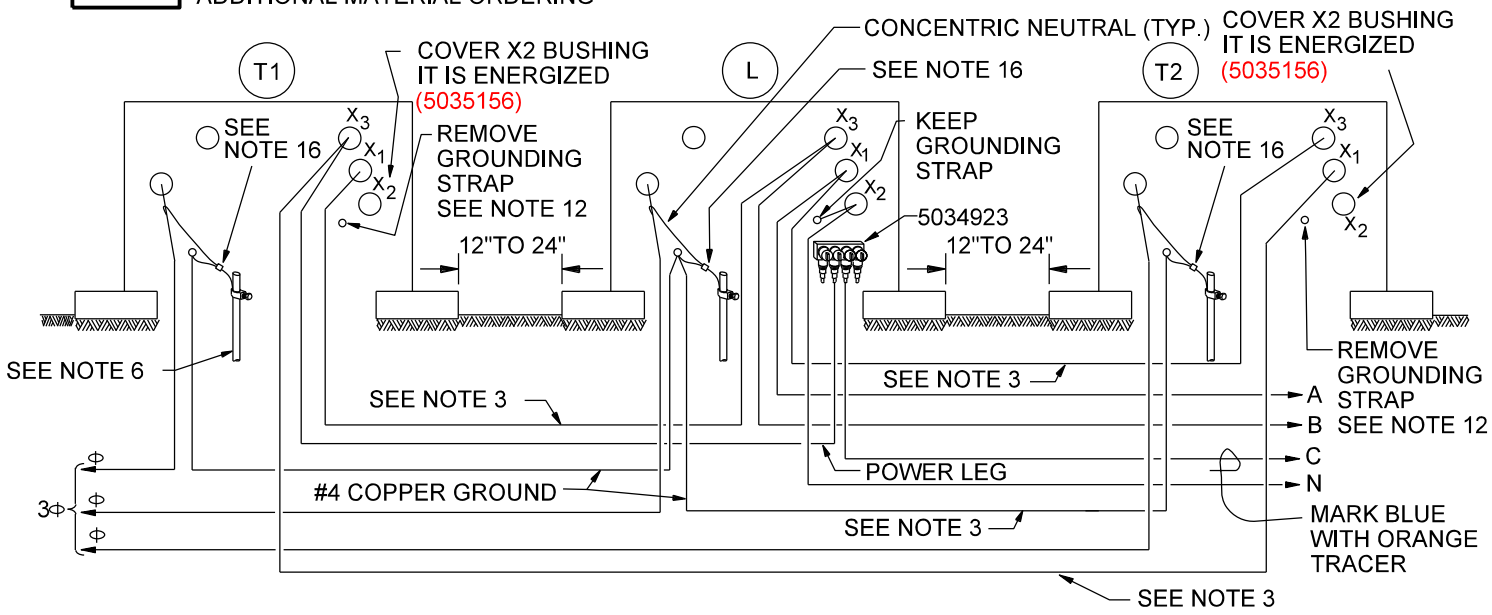
TEASER (kVA)	INTERTIE NUMBER, SIZE, & TYPE	MATERIAL ITEM #	LENGTH (FT.)
25	2-1/0 Al.	5033926	40
50	2-4/0 Al.	5033928	40
75	2-350 MCM Al.	5033930	40
100	3-350 MCM Al.	5033930	60

3. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP).
4. TOP OF GROUND ROD AND ALL CONDUITS SHALL BE 5" INCHES ABOVE FINAL GRADE.
5. INSTALL 5/8" X 8' GROUND ROD AT EACH TRANSFORMER AT LOCATION SHOWN ON TEMPLATE.
6. INTERTIE CONDUITS BETWEEN TRANSFORMER SHALL BE CORRUGATED 3" PVC.
7. INSTALL #4 BARE CU GROUNDS BETWEEN TRANSFORMER AS SHOWN. LEAVE 2' LEADS ABOVE GRADE.
8. FOR TELCO OR CATV BONDING (WHEN REQUIRED), INSTALL #6 BARE CU TO A POINT 12" OUTSIDE OF LIGHTER TRANSFORMER PAD IN PRIMARY TRENCH AT A DEPTH OF 12". LEAVE 2' LEAD ABOVE GRADE.
9. CONDUIT AND GROUNDS RUNS BETWEEN TRANSFORMERS SHALL HAVE MINIMUM OF 36" OF COVER.
10. PADS SHALL BE LEVEL BEFORE SETTING TRANSFORMERS.
11. REMOVE GROUNDING STRAP AND MAKE NO CONNECTIONS TO THE X2 BUSHING IN TEASER TRANSFORMER. COVER BUSHING STUDS USING 5035156.
12. NEUTRAL CONDUCTOR OF ALL SERVICE CABLE SHALL BE CONNECTED TO SECONDARY NEUTRAL X2 BUSHING IN LIGHTER TRANSFORMER ONLY.
13. VOLTAGE MEASURED BETWEEN POWER LEG C AND NEUTRAL N SHOULD BE APPROXIMATELY 208 V. DO NOT CONNECT ANY 120 V SERVICES TO THIS PHASE.
14. CONNECT #4 CU FROM GROUND RODS, #4 CU GROUND INTERTIES, AND #6 CU TELCO/CATV GROUND TO GROUND LUGS IN TRANSFORMERS.
15. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLE AND CONNECT TO #4 CU FROM GROUND ROD USING COMPRESSION CONNECTORS. SEE PAGE 8-11-1 FOR COMPRESSION CONNECTORS.
16. SEE MISCELLANEOUS SECTION FOR TRANSFORMER AND CABLE MARKING REQUIREMENTS AND METHODS.
17. INSTALL WARNING DECAL (MATERIAL ITEM # 5035826) INSIDE COMPARTMENT THAT STATES "THIS TRANSFORMER IS BANKED WITH THE ADJACENT TRANSFORMER OR TRANSFORMERS AND REMAINS ENERGIZED UNTIL ALL TRANSFORMERS IN THE BANK ARE DE-ENERGIZED."
18. INSTALL CAUTION DECAL (MATERIAL ITEM # 5034939) WARNING AGAINST SINGLE PHASING IN EACH TRANSFORMER TERMINATING COMPARTMENTS AND THE FUSING ENCLOSURE IN THE LOOP ON THE PRIMARY CABLES.
19. SEE CONNECTORS, SPLICES, AND TERMINATIONS IN CABLES AND ACCESSORIES SECTION FOR LUBRICATION PROCEDURES FOR TRANSFORMER BUSHINGS.
20. WHEN A NORMAL OPEN IS LOCATED AT A TWO POT BANK, IT APPLIES TO BOTH PHASES.
21. TIGHTEN PENTA BOLT AND LOCK CABINET AT ALL TIMES.

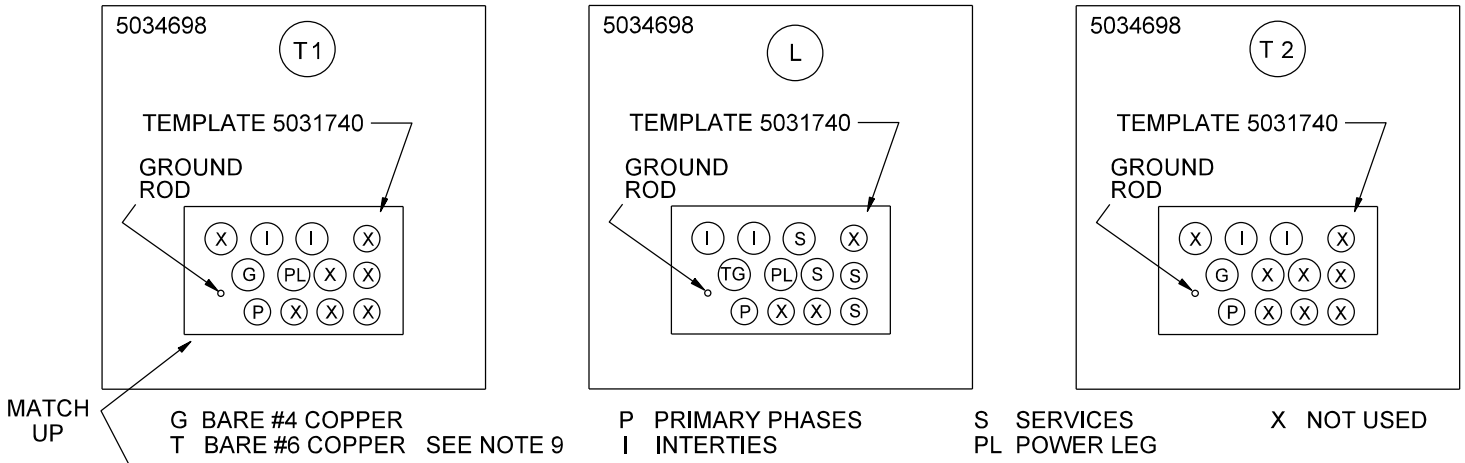
UXP3

SEE NOTES 1 THROUGH 3 FOR ADDITIONAL MATERIAL ORDERING

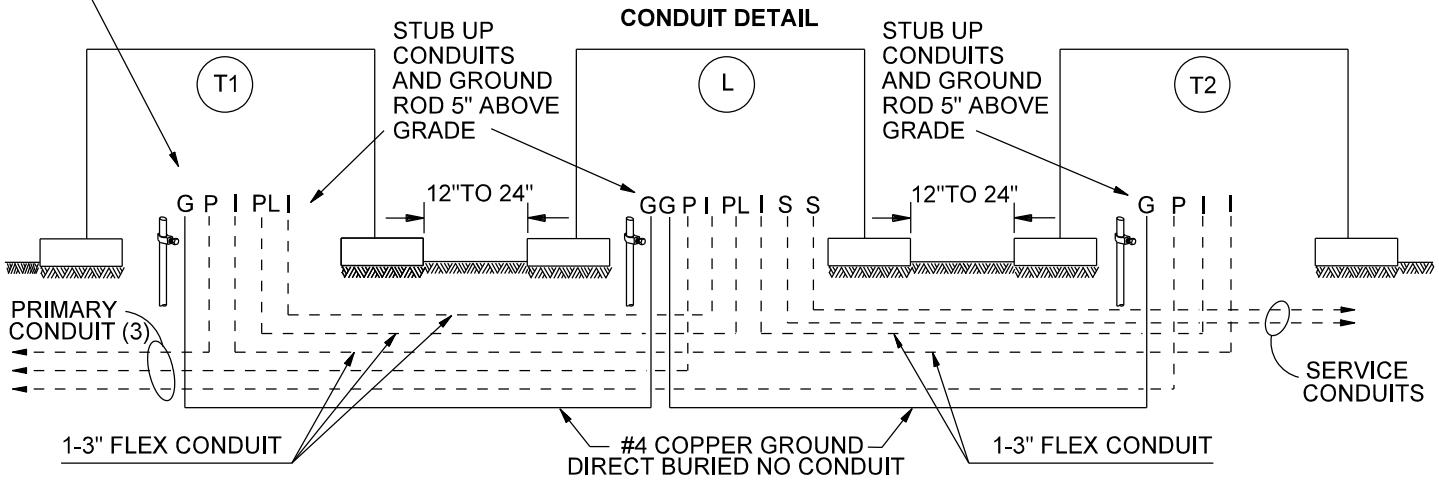
ELECTRICAL DETAIL



CONDUIT STUB-UP DETAIL



CONDUIT DETAIL



Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	REV: UPDATED MATERIAL ITEM	
	TRANSFORMERS 3Ø-3 TRANSFORMER BANK WYE PRIMARY - DELTA SECONDARY	ISSUE DATE: 07/17/96 REV. DATE: 07/05/23 APPROVAL: J. LUERA
	9-15-1	8513E528.DGN

NOTES

1. SEE PAGE 9-7-1 FOR PAD-MOUNTED TRANSFORMER CODING WHEN ORDERING TRANSFORMERS.
2. THE IMPEDANCE OF LIGHTER TRANSFORMER L SHALL NOT EXCEED 4.1%. THE LARGEST NAME PLATE IMPEDANCE SHALL NOT BE MORE THAN 1.14 TIMES THE SMALLEST IMPEDANCE.
3. SECONDARY INTERTIE CONDUCTORS ARE BASED ON TEASER TRANSFORMER SIZE. ORDER BY THE MATERIAL ITEM NUMBER LISTED BELOW.

TEASER (kVA)	INTERTIE NUMBER, SIZE, & TYPE	MATERIAL ITEM #	LENGTH (FT.)
25	2-1/0 Al.	5033926	140
50	2-4/0 Al.	5033928	140
75	2-350 MCM Al.	5033930	140
100	3-350 MCM Al.	5033930	210

4. ALL PAD ELEVATIONS SHALL BE ESTABLISHED BY SURVEY (BLUE TOP).
5. TOP OF GROUND ROD AND ALL CONDUITS SHALL BE 5" INCHES ABOVE FINAL GRADE.
6. INSTALL 5/8" X 8' GROUND ROD AT EACH TRANSFORMER AT LOCATION SHOWN ON TEMPLATE.
7. INTERTIE CONDUITS BETWEEN TRANSFORMERS SHALL BE CORRUGATED 3" PVC.
8. INSTALL #4 BARE CU GROUNDS BETWEEN TRANSFORMER AS SHOWN. LEAVE 2' LEADS ABOVE GRADE.
9. FOR TELCO OR CATV BONDING (WHEN REQUIRED), INSTALL #6 BARE CU TO A POINT 12" OUTSIDE OF LIGHTER TRANSFORMER PAD IN PRIMARY TRENCH AT A DEPTH OF 12". LEAVE 2' LEAD ABOVE GRADE.
10. CONDUIT AND GROUNDS RUNS BETWEEN TRANSFORMERS SHALL HAVE MINIMUM OF 36" OF COVER.
11. PADS SHALL BE LEVEL BEFORE SETTING TRANSFORMERS.
12. REMOVE GROUNDING STRAP AND MAKE NO CONNECTIONS TO THE X2 BUSHING IN TEASER TRANSFORMERS T1 AND T2. COVER BUSHING STUDS USING 5035156.
13. NEUTRAL CONDUCTOR OF ALL SERVICE CABLE SHALL BE CONNECTED TO SECONDARY NEUTRAL X2 BUSHING IN LIGHTER TRANSFORMER ONLY.
14. VOLTAGE MEASURED BETWEEN POWER LEG C AND NEUTRAL N SHOULD BE APPROXIMATELY 208 V. DO NOT CONNECT ANY 120 V SERVICES TO THIS PHASE.
15. CONNECT #4 CU FROM GROUND RODS, #4 CU GROUND INTERTIES, AND #6 CU TELCO/CATV GROUND TO GROUND LUGS IN TRANSFORMERS.
16. TRAIN CONCENTRIC NEUTRAL WIRES DOWN ALONG CABLE AND CONNECT TO #4 CU FROM GROUND ROD USING COMPRESSION CONNECTORS. SEE PAGE 8-11-1 FOR COMPRESSION CONNECTORS.
17. SEE MISCELLANEOUS SECTION FOR TRANSFORMER AND CABLE MARKING REQUIREMENTS AND METHODS.
18. INSTALL WARNING DECAL (MATERIAL ITEM # 5035826) INSIDE COMPARTMENT THAT STATES "THIS TRANSFORMER IS BANKED WITH THE ADJACENT TRANSFORMER OR TRANSFORMERS AND REMAINS ENERGIZED UNTIL ALL TRANSFORMERS IN THE BANK ARE DE-ENERGIZED."
19. INSTALL CAUTION DECAL (MATERIAL ITEM # 5034939) WARNING AGAINST SINGLE PHASING IN EACH TRANSFORMER TERMINATION COMPARTMENT AND THE SOURCE FUSING ENCLOSURE ON THE PRIMARY CABLES.
20. SEE CONNECTORS, SPLICES, AND TERMINATIONS IN CABLES AND ACCESSORIES SECTION FOR LUBRICATION PROCEDURES FOR TRANSFORMER BUSHINGS.
21. TIGHTEN PENTA BOLT AND LOCK CABINET AT ALL TIMES.

THREE-PHASE PRIMARY VOLTAGE 12.47KV L-L, DELTA CONNECTED

SECONDARY VOLTAGE

TRANSF. SIZE (KVA)	208Y/120 V LOOP THRU (SEE NOTES)	480Y/277 V LOOP THRU (SEE NOTES)	2400 V DELTA RADIAL FEED	2400 V DELTA LOOP THRU (SEE NOTES)	4160Y/2400 V	
					RADIAL FEED	LOOP THRU (SEE NOTES)
75	UX41LN	UX31LN				
150	UX43LN	UX33LN				
225	UX44LN	UX34LN				
300	UX45LN	UX35LN	UX21DN	UXS25DLN**	UX21N	UXS25LN**
500	UX46LN	UX36LN	UX22DN	UXS26DLN**	UX22N	UXS26LN**
750	UX47LN	UX37LN	UX23DN	UXS27DLN**	UX23N	UXS27LN**
1,000	UX48LN	UX38LN	UX24DN	UXS28DLN**	UX24N	UXS28LN**
1,500	UX49LN	UX39LN	UX25DN	UXS29DLN**	UX25N	UXS29LN**
2,000		UX310LN		UXS210DLN**		UXS210LN**
2,500		UX311LN		UXS211DLN**		UXS211LN**
3,000		UX313LN*				UX28LN

* NOT FOR NORMAL USE (NOT STOCKED). CONTACT ELECTRIC SYSTEM ENGINEERING IF THIS ITEM IS NECESSARY.

** THESE UNITS ARE SET 4160Y/2400V FROM THE MANUFACTURER BUT MAY BE CONVERTED TO 2400 V DELTA.

PROCEDURE FOR CONVERTING 4160Y/2400 V TRANSFORMERS TO 2400 V DELTA:

1. DESIGN WILL REQUEST SHOPS CONVERT THE REQUIRED SIZE TRANSFORMER FROM 4160Y/2400 V TO 2400 V DELTA.
2. SHOPS WILL OPERATE THE SWITCH, RE-LABEL THE VOLTAGE ON THE DOOR TO "2400 V DELTA", CHANGE THE MATERIAL ITEM NUMBER, ADVISE DESIGN WHEN WORK IS COMPLETED AND ADVISE WAREHOUSING TO REFLECT THE CHANGE IN STOCK ON HAND.

THREE-PHASE PRIMARY VOLTAGE 12.47 KV – GROUNDED Y CONNECTED

FOR CO-GENERATION SERVICE ONLY

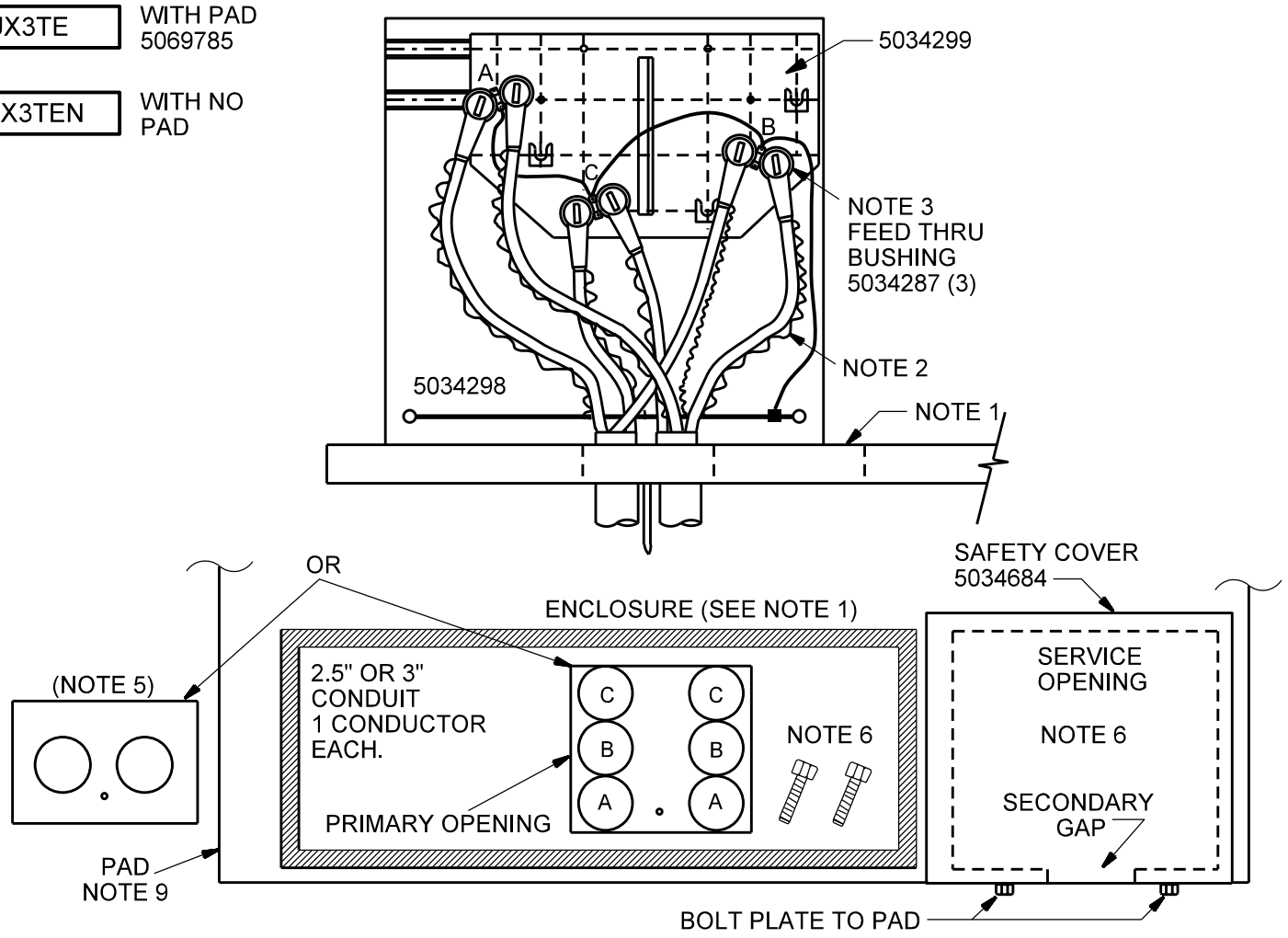
SECONDARY VOLTAGE

TRANSF. SIZE (KVA)	480Y/277 V	
	RADIAL FEED	LOOP THRU (SEE NOTES)
1,000		UX38GLN
2,000	UX310GN	
2.500	UX311GN	

NOTES

1. ALL LOOP-THRU TRANSFORMERS ARE PROVIDED ELBOWS FOR 4/0 AL.
2. REMOVE "N" FROM THE COMPATIBLE UNIT WHEN A PAD IS TO BE PROVIDED BY SRP.
3. FOR RADIAL FEED, ORDER 3 UXBC AND DELETE 3 OF #5035425.
4. UXBPB QTY (3) INSULATED BUSHING CAP AND INSULATED PARKING BUSHING INCLUDED FOR ALL INSTALLATIONS.

UX3TE	WITH PAD 5069785
UX3TEN	WITH NO PAD



NOTES

1. INSTALL ENCLOSURE ON PAD SO THAT IT IS NEXT TO, BUT NOT COVERING SERVICE OPENING IN TRANSFORMER PAD.
2. TERMINATE PRIMARY CONDUCTORS 6" HIGHER THAN PARKING BUSHING TO PROVIDE SLACK TRAINING.
3. INSTALL FEED THRU PARKING BUSHING AS SHOWN FOR FEED THRU APPLICATION OF 4/0 LOOP.
4. FASTEN ENCLOSURE TO PAD.
5. WHEN INSTALLING THIS ENCLOSURE IN AN AREA WITH EXISTING 4" CONDUIT, USE THIS PRIMARY WINDOW CONFIGURATION, NOT THE ONE SHOWN WITH 6 - 2.5" OR 3" CONDUIT.
6. USE 1/2" - 13 X 1 - 3/4" BOLTS AND WASHERS, SUPPLIED WITH SAFETY COVER (5034684), TO FASTEN THE SAFETY COVER TO PAD OVER THE PAD SECONDARY WINDOW GAP COVER PLATE. PLACE THE 1/2" BOLTS, SUPPLIED WITH THE PAD'S SECONDARY GAP COVER PLATE, INSIDE THE PDP ENCLOSURE.COVER SHOULD LAY FLAT ON PAD, DO NOT OVER-TIGHTEN BOLTS.
7. TOP OF PAD SHALL BE 4" MINIMUM ABOVE SURROUNDING FINISH GRADE AND AT SUFFICIENT ELEVATION TO PREVENT FLOODING.
8. GROUND FEED THRU BUSHING TO 2/0 CU GROUND BUS.
9. SIZE OF PADS VARY. SEE STANDARD DETAIL FOR CONDUIT CONFIGURATIONS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS SUBSTITUTE ENCLOSURE FOR 30 75 - 2500 kVA TRANSFORMERS	ISSUE DATE: 06/15/94 REV. DATE: 01/28/15 APPROVAL: B. PRIEST
	9-17-1	8513E207.DGN

RADIAL FEED TRANSFORMERS – FUSING

THREE PHASE TRANSFORMER (KVA)	IN TRANSFORMER PRIMARY COMPARTMENT		IN LIVE-FRONT OR DEAD-FRONT AIR INSULATED FUSE ENCLOSURE (NOTE 3)		IN DEAD-FRONT OIL INSULATED FUSE ENCLOSURE (NOTE 4)		AT POLE RISER	
	SIZE (AMP)	STOCK CODE NO.	SIZE (AMP)	STOCK CODE NO.	SIZE (AMP)	STOCK CODE	SIZE & TYPE (AMP)	STOCK CODE NO.
75	(NOTE 1)		8	5091265	N/A	N/A	4X	5034488
112.5			10	5091259	N/A	N/A	5-1/2X	5034489
150			12	5034553	8	5034437	10KS	5034491
225			18	5034555	15	5034438	15KS	5034492
300			25	5034557	15	5034438	20KS	5034493
500			40	5034559	25	5034439	30KS	5034495
750			80	5034573	50	5034440	50KS	5034497
1,000	(NOTE 2)		80	5034573	50	5034440	85N	5034502
1,500 (NOTE 5)	100	5034416	N/A		N/A		N/A	
2,000 (NOTE 5)	125	5034417						
2,500 (NOTE 5)	150	5034418						

NOTES

1. CHECK UNIT FOR FUSING IN THE TRANSFORMER'S PRIMARY COMPARTMENT. FOLLOW RULES ON PAGE 9-18-2 FOR UNITS WITH BAYONET FUSING. CONTACT STANDARDS IF FUSING OTHER THAN BAYONET EXISTS.
2. CHECK UNIT FOR FUSING IN THE TRANSFORMER'S PRIMARY COMPARTMENT. UNITS MAY CONTAIN PARALLEL 40A FUSES PER PHASE, STOCK CODE NUMBER 5034559.
3. REMOVE PULLING EYE AND ARC STRANGLER ON 8 A TO 40 A FUSES WHEN INSTALLED IN DEAD-FRONT, AIR-INSULATED FUSING ENCLOSURE.
4. FUSE IN USED IN SERIES WITH A CURRENT LIMITING FUSE, STOCK CODE NUMBER 5034572.
5. FUSE HOLDERS ARE STOCK CODE NUMBER 5034427 (SM-4Z) OR 5034428 (SML-4Z)

LOOP FEED TRANSFORMERS - FUSING

IN TRANSFORMER PRIMARY COMPARTMENT (NOTE 1)			IN LIVE-FRONT OR DEAD-FRONT AIR INSULATED FUSE ENCLOSURE (NOTE 4)	IN DEAD-FRONT OIL INSULATED FUSE ENCLOSURE	AT POLE RISER (NOTE 4)
THREE PHASE TRANSFORMER (KVA)	**FUSE SIZE (AMPS)**	**STOCK CODE NO.**	100 A FUSE • STOCK CODE NO. 5034574 SEE PAGE 3-12-1	80 A FUSE • STOCK CODE NO. 5034440 (50 A BAY-O-NET) WITH 5034572 (CURRENT LIMITER) --------OR-------- 5034572 (FULL RANGE FUSE) SEE PAGE 3-3-1	85 A FUSE • STOCK CODE NO. 5034502 -------OR--------- 100 A FUSE • STOCK CODE NO. 5034632 • WHEN LOOP EXCEEDS 1500 KVA
75	8	5034437			
112.5	15	5034438			
150	15	5034438			
225	25	5034439			
300	25	5034439			
500	50	5034440			
750	65	5034441			
1,000	65	5034441			
1,500	140	5034443	N/A	N/A	N/A
2,000	140 ---OR--- 125	5034443 -----OR----- 5034442			
2,500 (NOTE 2)	125	5034442			
3,000 (NOTE 3)	146	N/A			

NOTES

1. PRIOR TO ENERGIZING ANY TRANSFORMER WITH A BAYONET FUSE, THE INSTALLATION CREW MUST CHECK FUSE FOR PROPER SIZE AND TIGHTNESS OF FUSE ASSEMBLY. 5034442 IS AN INTEGRAL CARTRIDGE.
2. UNITS HAVE EITHER BAYONET FUSE OR INTERNALLY MOUNTED EXPULSION FUSES. BAYONET IS FIELD REPLACEABLE, OTHERS ARE NOT.
3. INTERNALLY MOUNTED EXPULSION FUSE. NON-FIELD REPLACEABLE.
4. USE BLADE DISCONNECTS WHEN LOAD CABLE IS #4/0 AL.

TRANSFORMER NAME PLATE VOLTAGE RATING		CUSTOMER'S SERVICE VOLTAGE	TRANSFORMER TAPS PROVIDED 2-1/2% EACH	TAP SETTING	
PRIMARY	SECONDARY			7.2/12.47KV AREA	12/21.6KV AREA
7200 12470	240/120	240/120	4 BELOW	1 OR A	---
	208Y/120	208Y/120	4 BELOW	1 OR A	---
	208Y/120	208Y/120	2 ABOVE, 2 BELOW	3 OR C	---
	480Y/277	480Y/277	2 ABOVE, 2 BELOW	3 OR C *	---
	480Y/277	480Y/277	4 BELOW	1 OR A **	---
	2400/4160Y/2400	2400/4160Y/2400	2 ABOVE, 2 BELOW	3 OR C	---
12000	240/120	240/120	2 ABOVE, 2 BELOW	---	3 OR C
12470 21600	208Y/120	208Y/120	4 BELOW	---	4 OR D
	480Y/277	480Y/277	2 ABOVE, 2 BELOW	---	4 OR D
	2400/4160Y/2400	2400/4160Y/2400	2 ABOVE, 2 BELOW	---	4 OR D

TAP SETTINGS OTHER THAN SHOWN ABOVE SHOULD BE USED TO MAINTAIN THE VOLTAGE AT THE CUSTOMER'S METER WITHIN THE FOLLOWING LIMITS (SEE PAGE 9-19-2):

NOMINAL SYSTEM VOLTAGE	SERVICE VOLTAGE	
	MINIMUM	MAXIMUM
240/120	228/114	252/126
208Y/120	197/114	218/126
480Y/277	456/263	504/291
480	456	504

NOTE MINIMUM SERVICE VOLTAGE IS GIVEN AT FULL LOAD.
MAXIMUM SERVICE VOLTAGE IS GIVEN AT NO LOAD.

NOTES

* THIS TAP SETTING IS FOR ALL NEW INSTALLATIONS. FOR CHANGE OUT OF EXISTING TRANSFORMERS, CHECK THE EXISTING TAP SETTING AND VOLTAGE, AS SOME OLDER EQUIPMENT WAS DESIGNED FOR 440 VOLTS. FOR THOSE CASES THE TAP SETTING SHOULD BE 2 OR B.

** THIS TAP RESULTS IN HIGHER THAN DESIRED NOMINAL VOLTAGE. REMAINING TAPS WILL INCREASE SECONDARY VOLTAGE FURTHER.

DISTRIBUTION TRANSFORMER
TAP SETTING ADJUSTMENT PROCEDURE

1. PRIMARY TAP SETTINGS TO ADJUST SECONDARY VOLTAGE:

   TRANSFORMER NAMEPLATE WILL SHOW TAP POSITION AND ASSOCIATED PRIMARY VOLTAGE. THE HIGHEST PRIMARY VOLTAGE IS LABELED TAP 1 OR “A”, BY STANDARDS.

2. FOR A TRANSFORMER WITH 2 ABOVE AND 2 BELOW PRIMARY TAPS:

   NOMINAL TAP POSITION IS 3 OR “C” (E.G. 12470 V OR 100%)

   MOVING TO TAP 4 (E.G. 12158 V OR 97.5%, A LOWER PRIMARY VOLTAGE) WILL **INCREASE** THE SECONDARY VOLTAGE BY APPROXIMATELY 2.5%.

   MOVING TO TAP 2 (E.G. 12781 V OR 102.5%, A HIGHER PRIMARY VOLTAGE) WILL **DECREASE** THE SECONDARY VOLTAGE BY APPROXIMATELY 2.5%.

3. FOR A TRANSFORMER WITH 4 BELOW PRIMARY TAPS:

   NOMINAL TAP POSITION IS 1 OR “A” (E.G. 12470 V OR 100%). BECAUSE ALL TAP POSITIONS ARE BELOW, EACH TAP POSITION WILL **INCREASE** THE SECONDARY VOLTAGE BY APPROXIMATELY 2.5%.

   THE TAP SETTING TABLE PROVIDES THE RECOMMENDED INITIAL PRIMARY TAP FOR NEW INSTALLATIONS.

   TAKE VOLTAGE MEASUREMENTS AT THE SERVICE ENTRANCE SECTION(S) AND ADJUST TAP POSITION, IF NECESSARY, TO PROVIDE THE SECONDARY VOLTAGE WITHIN THE ACCEPTABLE RANGE, PER THE TABLE. THESE VALUES ARE CONTINUOUS LIMITS. DO NOT USE TAP POSITIONS TO COMPENSATE FOR FLICKER, AS THIS WILL LIKELY RESULT IN VALUES EXCEEDING THE MAXIMUM, UNDER NO LOAD CONDITIONS.

   NOTE: OBTAIN THE *MAXIMUM* VOLTAGE *WITHOUT* LOAD APPLIED (BREAKERS OPEN). OBTAIN THE *MINIMUM* VOLTAGE *WITH* LOAD APPLIED (BREAKERS CLOSED).

DISTRIBUTION TRANSFORMER
TAP SETTING ADJUSTMENT PROCEDURE

1. PRIMARY TAP SETTINGS TO ADJUST SECONDARY VOLTAGE:

   TRANSFORMER NAMEPLATE WILL SHOW TAP POSITION AND ASSOCIATED PRIMARY VOLTAGE. THE HIGHEST PRIMARY VOLTAGE IS LABELED TAP 1 OR “A”, BY STANDARDS.

2. FOR A TRANSFORMER WITH 2 ABOVE AND 2 BELOW PRIMARY TAPS:

   NOMINAL TAP POSITION IS 3 OR “C” (E.G. 12470 V OR 100%)

   MOVING TO TAP 4 (E.G. 12158 V OR 97.5%, A LOWER PRIMARY VOLTAGE) WILL **INCREASE** THE SECONDARY VOLTAGE BY APPROXIMATELY 2.5%.

   MOVING TO TAP 2 (E.G. 12781 V OR 102.5%, A HIGHER PRIMARY VOLTAGE) WILL **DECREASE** THE SECONDARY VOLTAGE BY APPROXIMATELY 2.5%.

3. FOR A TRANSFORMER WITH 4 BELOW PRIMARY TAPS:

   NOMINAL TAP POSITION IS 1 OR “A” (E.G. 12470 V OR 100%). BECAUSE ALL TAP POSITIONS ARE BELOW, EACH TAP POSITION WILL **INCREASE** THE SECONDARY VOLTAGE BY APPROXIMATELY 2.5%.

   THE TAP SETTING TABLE PROVIDES THE RECOMMENDED INITIAL PRIMARY TAP FOR NEW INSTALLATIONS.

   TAKE VOLTAGE MEASUREMENTS AT THE SERVICE ENTRANCE SECTION(S) AND ADJUST TAP POSITION, IF NECESSARY, TO PROVIDE THE SECONDARY VOLTAGE WITHIN THE ACCEPTABLE RANGE, PER THE TABLE. THESE VALUES ARE CONTINUOUS LIMITS. DO NOT USE TAP POSITIONS TO COMPENSATE FOR FLICKER, AS THIS WILL LIKELY RESULT IN VALUES EXCEEDING THE MAXIMUM, UNDER NO LOAD CONDITIONS.

   NOTE: OBTAIN THE *MAXIMUM* VOLTAGE *WITHOUT* LOAD APPLIED (BREAKERS OPEN). OBTAIN THE *MINIMUM* VOLTAGE *WITH* LOAD APPLIED (BREAKERS CLOSED).

SINGLE PHASE

kVA	VOLTS								
	120	240	277	480	2400	4160	7200	12000	12470
3	25.0	12.5	10.8	6.3	1.25	.72	.42	.25	.24
5	41.7	20.8	18.1	10.4	2.08	1.20	.69	.42	.40
10	83.3	41.7	36.1	20.8	4.17	2.40	1.39	.83	.80
15	125.0	62.5	54.2	31.3	6.25	3.61	2.08	1.25	1.20
25	208.0	104.0	90.3	52.1	10.40	6.01	3.47	2.08	2.00
37.5	313.0	156.0	135.0	78.1	15.60	9.01	5.21	3.13	3.01
50	417.0	208.0	180.0	104.0	20.80	12.00	6.94	4.17	4.01
75	625.0	313.0	271.0	156.0	31.30	18.00	10.40	6.25	6.01
100	833.0	417.0	361.0	208.0	41.70	24.00	13.90	8.33	8.02
167	1392.0	696.0	603.0	348.0	69.60	40.10	23.20	13.90	13.40
250	2083.0	1042.0	903.0	521.0	104.00	60.10	34.70	20.80	20.00
333	2775.0	1388.0	1191.0	694.0	139.00	80.00	46.30	27.70	26.70
500	4167.0	2083.0	1805.0	1042.0	208.00	120.00	69.40	41.70	40.10

$$\text{FULL LOAD CURRENT} = \frac{\text{KVA X 1000}}{\text{LINE TO GROUND VOLTAGE}}$$

THREE PHASE *

kVA	VOLTS								
	208	240	480	2400	4160	7200	12000	12470	21600
15	41.6	36.1	18.0	3.61	2.08	1.20	.72	.69	.40
30	83.3	72.2	36.1	7.22	4.17	2.41	1.44	1.39	.80
45	125.0	108.0	54.1	10.80	6.25	3.61	2.17	2.08	1.20
75	208.0	180.0	90.2	18.00	10.4	6.01	3.61	3.48	2.00
112.5	312.0	271.0	135.0	27.10	15.6	9.02	5.41	5.21	3.01
150	416.0	361.0	180.0	36.10	20.8	12.00	7.22	6.95	4.01
225	625.0	541.0	271.0	54.10	31.3	18.00	10.80	10.40	6.01
300	833.0	722.0	361.0	72.20	41.7	24.10	14.40	13.90	8.02
500	1388.0	1203.0	601.0	120.0	69.4	40.10	24.10	23.20	13.40
750	2082.0	1804.0	902.0	180.0	104.0	60.10	36.10	34.70	20.00
1000	2776.0	2406.0	1203.0	241.0	139.0	80.20	48.10	46.30	26.70
1500	4164.0	3608.0	1804.0	361.0	208.0	120.00	72.20	69.40	40.10
2000	5552.0	4811.0	2406.0	481.0	278.0	160.00	96.20	92.60	53.50
2500	6940.0	6014.0	3007.0	601.0	347.0	200.00	120.00	116.00	66.80

* APPLIES TO 3-POT BANKS HAVING EQUAL SIZE TRANSFORMERS, OR THREE PHASE PAD MOUNT.

$$\text{FULL LOAD CURRENT} = \frac{\text{KVA X 1000}}{(1.732 \text{ X LINE TO LINE VOLTAGE})}$$

Underground Distribution Construction Standards

SRP®

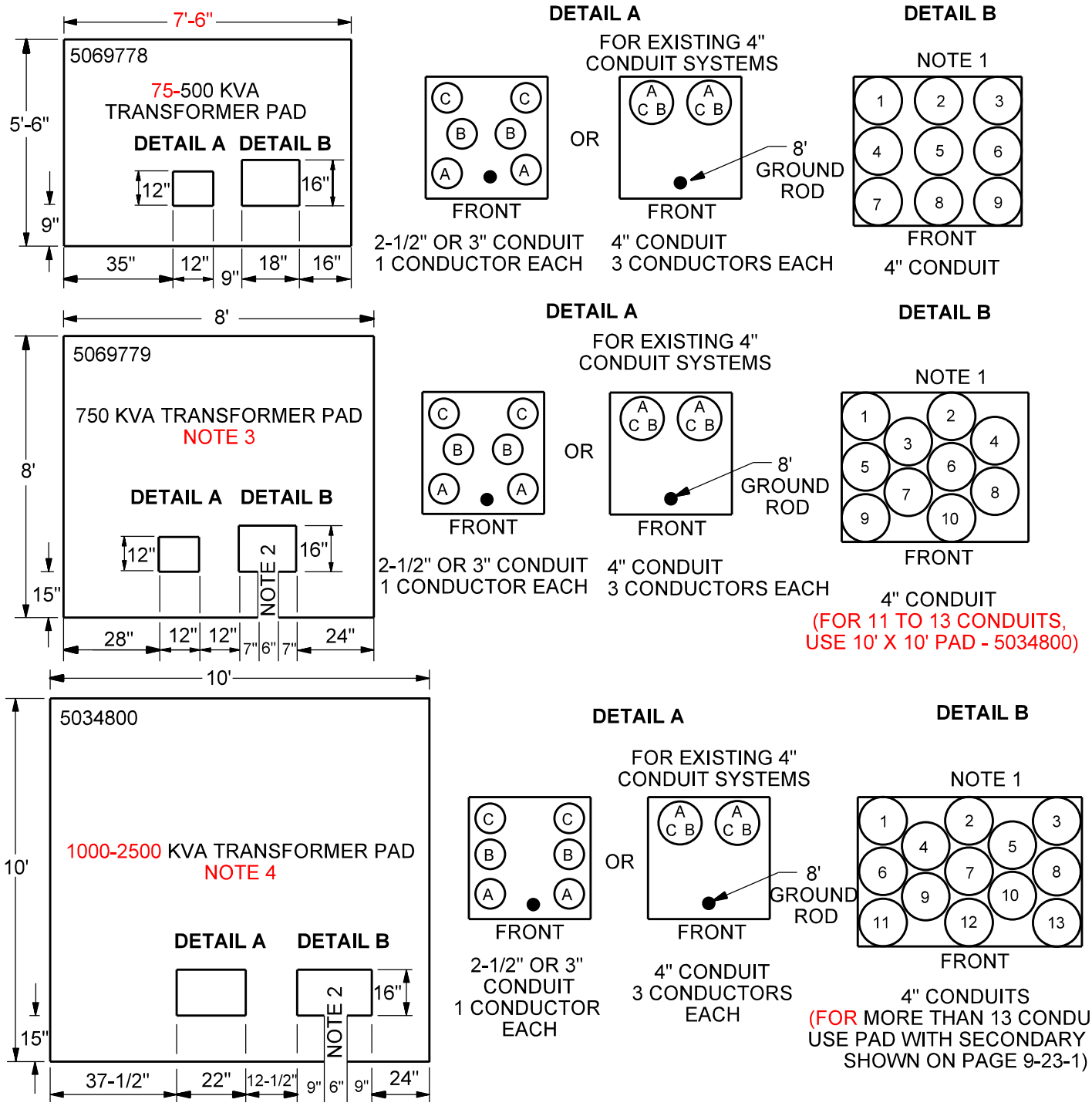
PROPRIETARY MATERIAL

TRANSFORMERS
FULL LOAD CURRENT IN AMPS

ISSUE DATE: 06/15/05
REV. DATE: 04/15/10
APPROVAL: B.PRIEST

9-20-1

8513E382.DGN

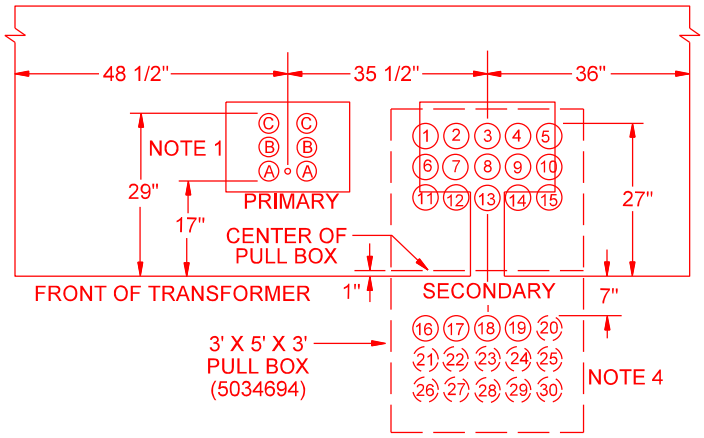


NOTES

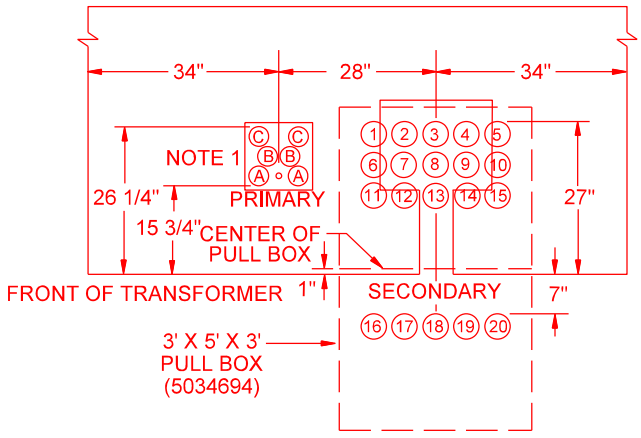
1. SERVICE CONDUIT ORDER IS FROM THE REAR IN BOTH THE TRANSFORMER PAD WINDOW AND SES.
2. SECONDARY WINDOW GAP COVER PLATE PROVIDED BY THE PAD MANUFACTURER.
3. EXCEPTION: PAD 5069779 WILL ALSO ACCOMMODATE A 1000 kVA TRANSFORMER, WITH 10 SERVICE CONDUITS MAX.
4. EXCEPTION: PAD 5034800 WILL ALSO ACCOMMODATE A 750 kVA OR 3000 kVA TRANSFORMER.
5. EXISTING TRANSFORMER PAD SIZES AND CONFIGURATIONS ARE PERMITTED TO BE RETAINED TO FIT NEW TRANSFORMER EQUIPMENT, PER THE EXCEPTIONS, FOR: MAINTENANCE, MODIFICATIONS, OR UPGRADES. ALL EFFORTS SHOULD BE MADE TO DESIGN NEW TRANSFORMER PAD INSTALLATIONS ACCORDING TO ITS INTENDED USE AND NOT PER EXCEPTIONS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	REV: REVISED XMFR PAD RANGE SIZES AND UPDATED NOTES	
	TRANSFORMERS THREE-PHASE PAD INSTALLATION DETAILS	ISSUE DATE: 01/15/87 REV. DATE: 01/08/25 APPROVAL: C. OBRIEN
	9-22-1	8513E141.DGN

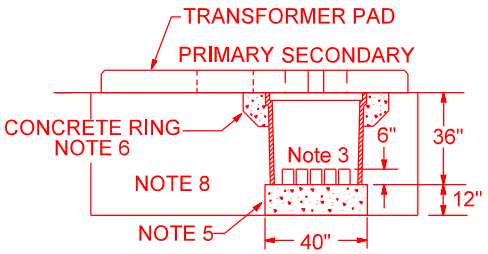
TOP VIEW
10' X 10' TRANSFORMER PAD
(5034800)



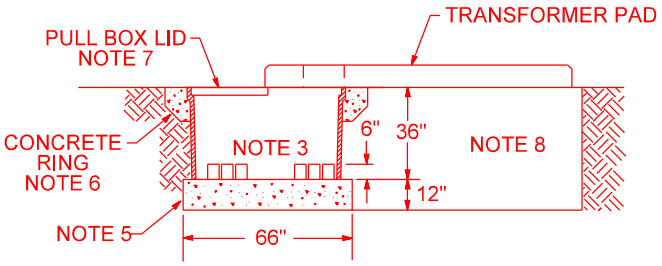
TOP VIEW
8' X 8' TRANSFORMER PAD
(5069779)



FRONT VIEW



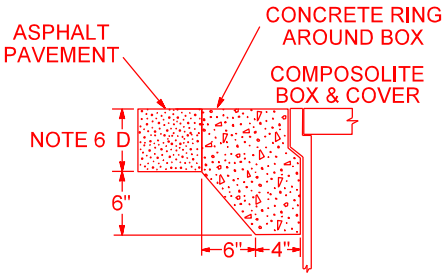
SIDE VIEW



TOP VIEW
FRONT OF CUSTOMER SES
(NOTE 2)



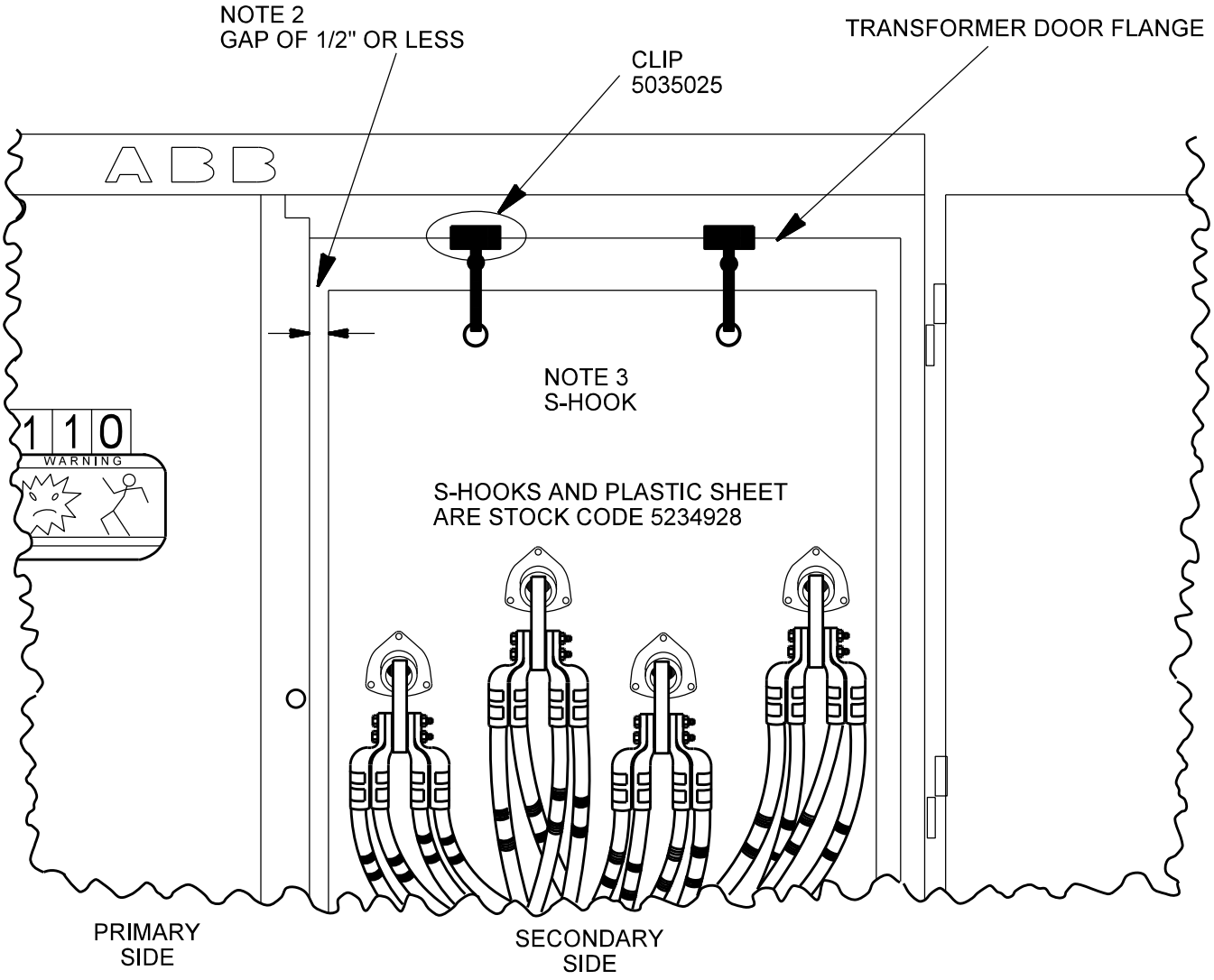
PULL BOX INSTALLED IN ASPHALT PAVEMENT



NOTES

1. SEE PAGE 9-22-1 AND ELECTRIC SERVICE SPECIFICATIONS SECTION 7 FOR PRIMARY CONDUIT AND GROUND ROD INSTALLATION REQUIREMENTS.
2. SERVICE CONDUIT STUBBED UP IN THE REAR OFF THE PULL BOX/WINDOW SHALL STUB UP IN REAR OF THE SES PAD. EACH CONSECUTIVE ROW SHALL MATCH THE CONDUIT STUB UP LOCATION IN THE TRANSFORMER AND SES. STRAIGHT RUNS OF RACKED AND ENCASED SERVICE CONDUITS OF 50 FEET AND GREATER MAY BE ROLLED TO MEET THE ABOVE REQUIREMENTS. ROUTE CONDUITS OUT OF THE FRONT, REAR, OR (NON-PRIMARY) SIDE OF THE PAD.
3. SERVICE CONDUITS INTO PULL BOX AND SES SHALL BE SPACED 1" APART. CONDUITS TO BE STUBBED UP 6" ABOVE THE BOTTOM OF PULL BOX.
4. CONDUITS 20 AND ABOVE ARE RESERVED FOR EXISTING SERVICES GREATER THAN 3,000 A.
5. BACKFILL UNDER PULL BOX SHALL BE 1/2 SACK CLSM (MATERIAL ITEM 5075313). WHEN SERVICE CONDUITS ARE RACKED AND ENCASED, 1-1/2 SACK CLSM (MATERIAL ITEM 5075315) MAY BE SUBSTITUTED FOR 1/2 SACK CLSM.
6. WHEN PULL BOX IS PLACED IN ASPHALT PAVEMENT SUBJECT TO VEHICLE TRAFFIC, INSTALL CONCRETE RING AROUND ENTIRE BOX PER DETAIL SHOWN. CONCRETE ENCASEMENT RING DIMENSION "D" TO BE EQUAL TO DESIGN PAVEMENT DEPTH PLANS. CONCRETE ENCASEMENT TO BE 3,000 PSI MINIMUM. SEE ENGINEERING PLANS FOR PAVEMENT AND SUBGRADE REQUIREMENTS.
7. 1" MAXIMUM OVERLAP OF PAD AND BOX LID.
8. FOR NEW TRANSFORMER INSTALLATIONS, SEE UNDERGROUND DISTRIBUTION CONSTRUCTION STANDARDS SECTION 6, FOR BACKFILL REQUIREMENTS UNDER THE PAD. UNDISTRIBUTED NATIVE BACKFILL CAN REMAIN FOR MODIFICATIONS WHEN A PULL BOX IS ADDED.

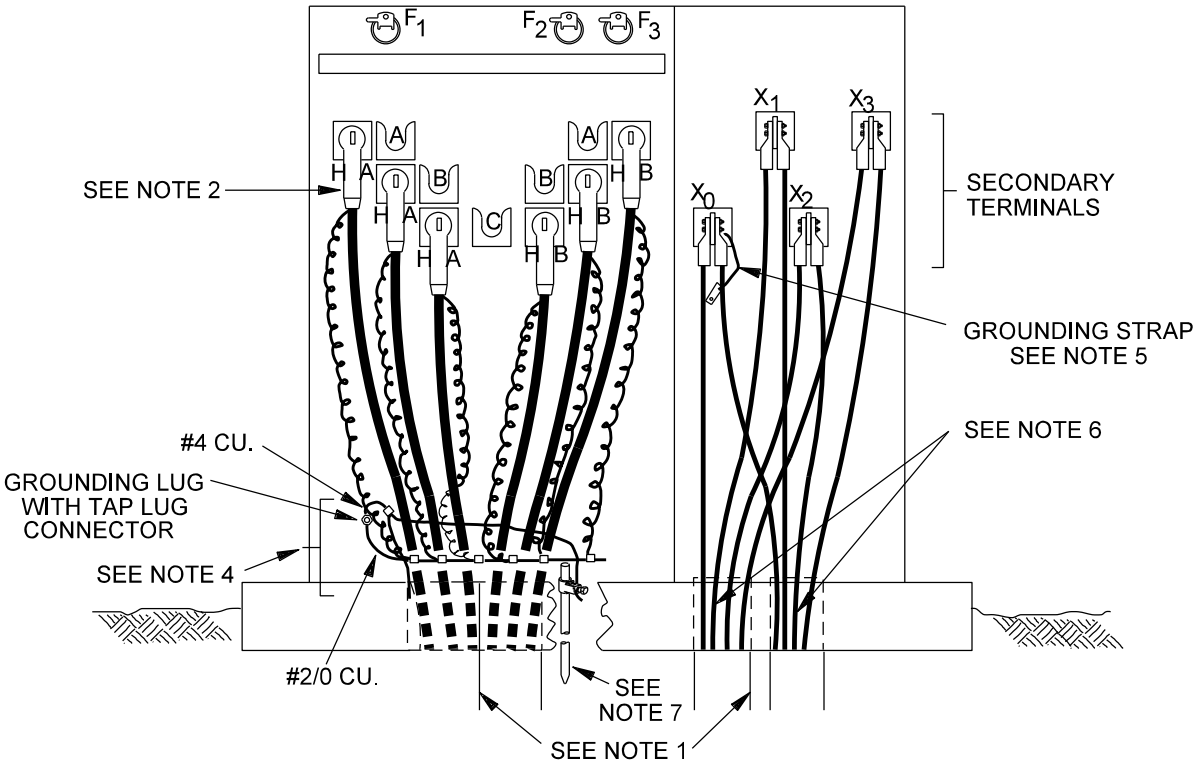
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	REV: UPDATE GRAPHICS TO MATCH ESS	
	TRANSFORMERS SECONDARY PULL BOX PLACEMENT FOR 3Ø TRANSFORMER 750 - 3000 kVA	ISSUE DATE: 02/07/02 REV. DATE: 10/29/24 APPROVAL: J. LUERA
	9-23-1	8513E357.DGN



NOTES

1. UXBG IS ONLY NEEDED IF EXTENSIONS ARE INSTALLED, AND THE CLEARANCE BETWEEN THE EXTENSIONS AND THE TRANSFORMER DOOR IS LESS THAN 2 INCHES.
2. IF THE GAP IS OVER 1/2" THE DOOR LATCH MECHANISM MAY GET JAMMED.
3. MAKE SURE THE S-HOOK IS BENT OVER THE PLASTIC SUCH THAT IT CANNOT BE REMOVED FROM THE PLASTIC SHEET.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS THREE PHASE TRANSFORMER SECONDARY GUARD	ISSUE DATE: 10/20/05 REV. DATE: 01/05/15 APPROVAL: B.PRIEST
	9-24-1	8513E398.DGN



NOTES

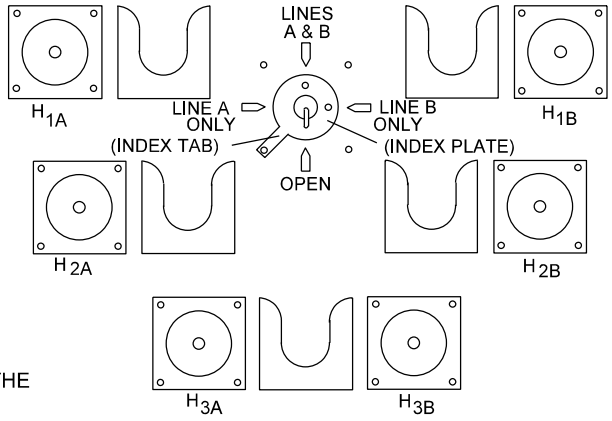
1. PRIMARY AND SECONDARY CONDUITS ARE STUBBED-UP SIDE BY SIDE IN THE CENTER OF EACH PAD OPENING. CONDUIT STUB-OUTS SHALL BE PER SRP JOB ORDER DRAWINGS. IF INDIVIDUAL CONDUITS ARE USED FOR PRIMARY CONDUCTOR, ARRANGE 3 IN LINE FRONT TO BACK FOR INCOMING AND FOR OUTGOING CIRCUITS.
2. SEE LUBRICATING PROCEDURE FOR BUSHINGS AND DEAD FRONT TERMINATIONS IN THE CABLE AND ACCESSORIES SECTION.
3. TRANSFORMER SHALL BE LOCKED AT ALL TIMES.
4. INSTALL A TAP LUG (5016730) ONTO THE TRANSFORMER GROUNDING PAD. TERMINATE THE 2/0 CU. GROUND BUS AND #4 CU. GROUND ROD WIRE INTO THIS CONNECTOR. TRAIN THE 2/0 CU. GROUND BUS IN FRONT AND ALONG THE BASE OF THE TRANSFORMER. THE #4 CU. GROUND ROD WIRE IS TRAINED ACROSS THE BACK AND ALONG THE BASE OF THE TRANSFORMER. TRAIN THE CONCENTRIC NEUTRALS DOWN ALONG THE PRIMARY CABLES AND CONNECT TO THE 2/0 CU. GROUND BUS USING COMPRESSION CONNECTORS.
5. THE GROUNDING STRAP FROM THE SECONDARY X_0 BUSHING SHALL BE CONNECTED TO THE CASE GROUND IN THE SECONDARY COMPARTMENT.
6. SRP STANDARDS REQUIRE THAT EACH CONDUIT HAVE ONE (1) 3Φ, 4-WIRE CIRCUIT. FOR ANY EXCEPTION, CONTACT ELECTRIC SYSTEM ENGINEERING.
7. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH ANY CONDUCTORS. CONNECT THE #4 CU. LEAD TO THE GROUND ROD. THE GROUND ROD IS NOT REQUIRED WHEN BARE CONCENTRIC NEUTRAL IS DIRECT BURIED.
8. ORDER 3 UXBC WHEN USED AS A RADIAL.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS THREE PHASE LOOP-THRU, DEAD FRONT	ISSUE DATE: 02/23/87 REV. DATE: 01/28/15 APPROVAL: B.PRIEST
	9-25-1	8513E183.DGN

FOUR POSITION ROTARY SWITCH

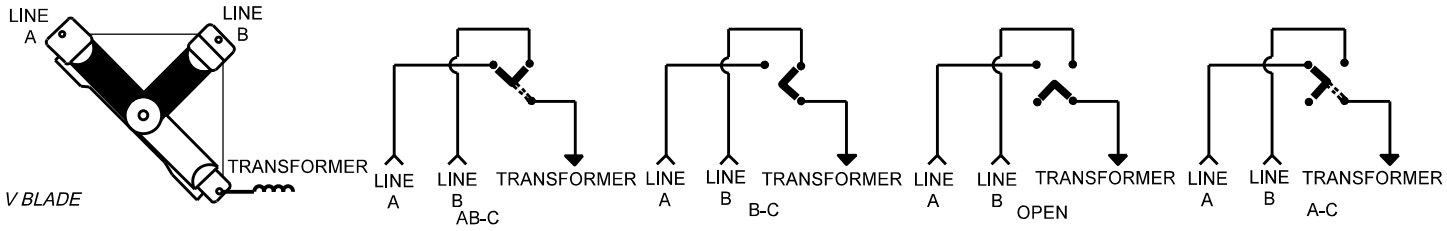
SWITCH POSITION

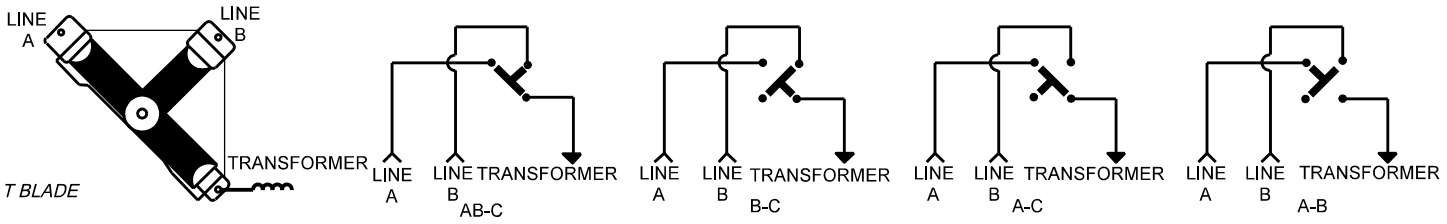
1. LINE "A" - TRANSFORMER IS CONNECTED TO SOURCE "A" ONLY.
2. LINE "A & B" - TRANSFORMER IS CONNECTED TO SOURCE "A" AND SOURCE "B" (SOURCES FEED-THRU)
3. LINE "B" - TRANSFORMER IS CONNECTED TO SOURCE "B" ONLY.
4. OPEN - TRANSFORMER IS NOT CONNECTED TO EITHER SOURCE.
   IF THE INTERNAL SWITCH IS A "T" BLADE:
   SOURCE "A" AND "B" ARE TIED TOGETHER
   IF THE INTERNAL SWITCH IS A "V" BLADE:
   SOURCE "A" AND "B" ARE NOT TIED TOGETHER



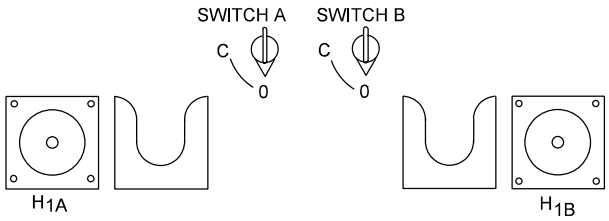
NOTES

1. ON SOME TRANSFORMERS THE INDEX PLATE MUST FIRST BE SET TO THE NEXT DESIRED POSITION OF THE SWITCH AS IT PREVENTS THE SWITCH FROM ROTATING MORE THAN ONE POSITION AT A TIME. IF SWITCH IS NOT AS SHOWN, REFER TO NAMEPLATE.
2. OPERATION OF A V BLADE OR T BLADE SWITCH RESULTS IN A MOMENTARY OUTAGE (LESS THAN A SECOND).

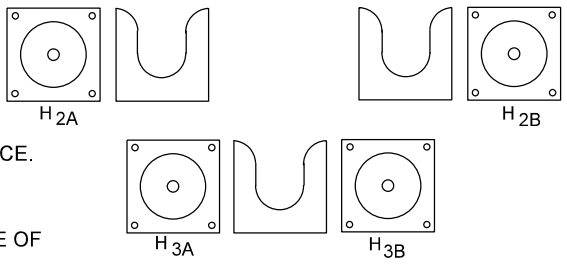




TWO SWITCHES (TWO POSITION)



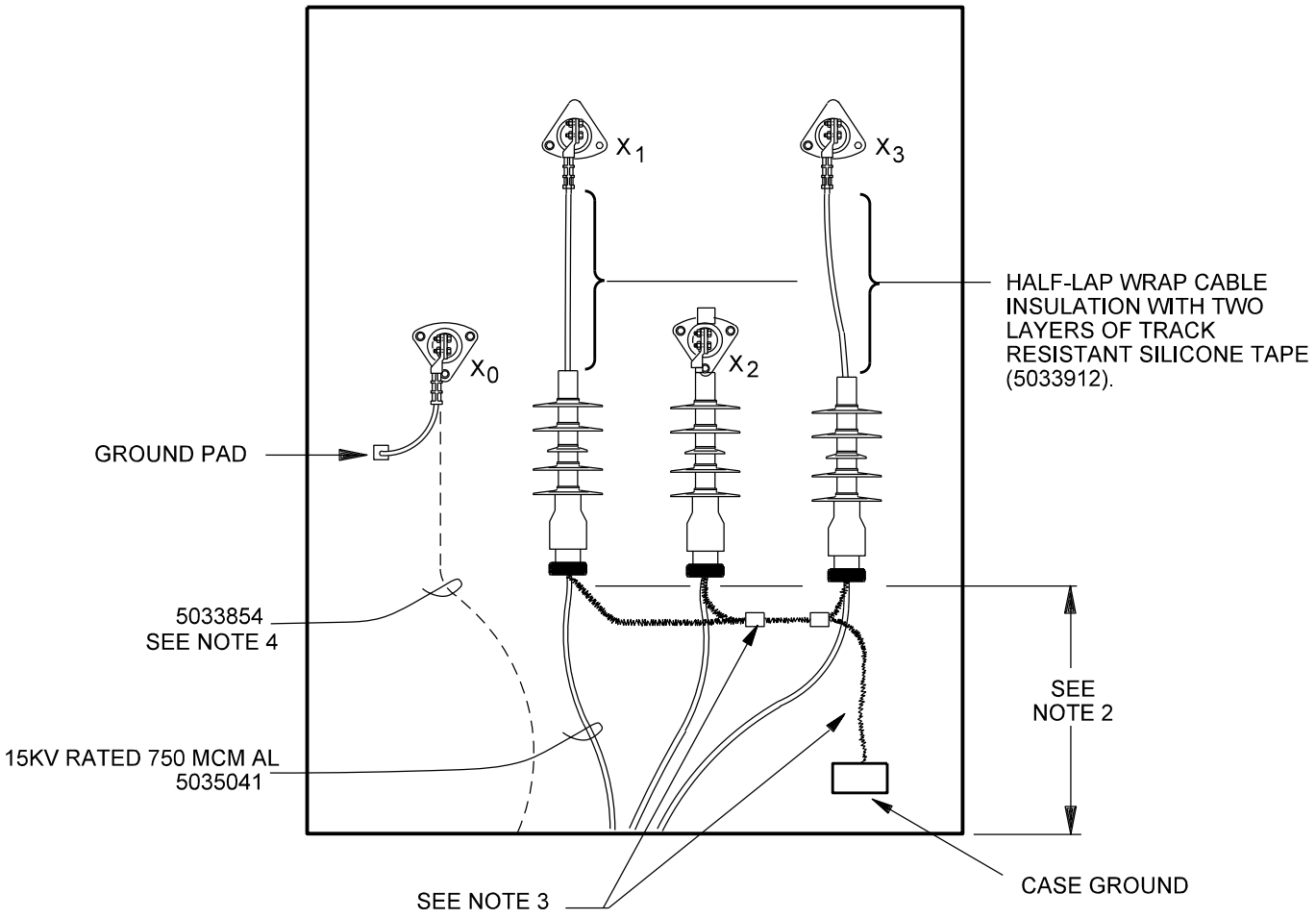
SWITCH "A"	SWITCH "B"	
1. CLOSE	OPEN -	TRANSFORMER IS CONNECTED TO SOURCE "A" ONLY.
2. CLOSED	CLOSED -	TRANSFORMER IS CONNECTED TO SOURCE "A" AND SOURCE "B" (SOURCES FEED-THRU)
3. OPEN	CLOSED -	TRANSFORMER IS CONNECTED TO SOURCE "B" ONLY
4. OPEN	OPEN -	TRANSFORMER IS NOT CONNECTED TO EITHER SOURCE. SOURCES ARE NOT TIED TOGETHER.



NOTES

1. THERE IS NO MOMENTARY OUTAGE DURING THE OPERATION OF THIS TYPE OF SWITCH AS THERE IS WITH THE ABOVE V AND T BLADES.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS THREE PHASE LOOP THRU SWITCHING	ISSUE DATE: 08/15/89 REV. DATE: 08/09/12 APPROVAL: B.PRIEST
	9-26-1	8513E31.DGN



NOTES

1. ALL DIMENSIONS SHOWN ARE MINIMUMS.
2. USING 750MCM 15kV CLASS INDOOR/OUTDOOR TERMINATIONS (SEE CH. 8, CABLE AND ACCESSORIES), INSTALL THE LOWEST PHASE BUSHING (X 2) TERMINATION PER COMPATIBLE UNIT STANDARDS INSTRUCTIONS. FOR THE "X" AND "X" BUSHINGS THE SEMICON CUTBACK MUST BE INCREASED TO LOCATE ALL TERMINATIONS ON THE SAME PLANE. TRAIN THE CABLES SO THEY RISE VERTICALLY TO THE BUSHINGS, MAINTAINING A MINIMUM OF 3" FROM THE TRANSFORMER TANK OR OTHER METAL SURFACES
3. ALL CONCENTRIC NEUTRAL WIRES MUST BE CONNECTED TOGETHER WITH A COMPRESSION CONNECTOR AND THEN ATTACHED TO THE TRANSFORMER GROUNDING LUG.
4. IF A NEUTRAL CONDUCTOR IS REQUIRED (4-WIRE SERVICES) TRAIN THE CABLE SO IT RISES VERTICALLY TO THE "X" BUSHING.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS 4160Y/2400V 4-WIRE OR 2400V DELTA 3-WIRE SECONDARY VOLTAGE TERMINATIONS	ISSUE DATE: 01/15/87 REV. DATE: 02/04/15 APPROVAL: B.PRIEST
	9-27-1	8513E184.DGN

POLE TYPE TRANSFORMER FOR USE IN VAULTS OR ENCLOSURES

120/208V
(7.2 / 12.47KV PRIMARY)

COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX815	15
UX825	25
UX837	37
UX850	50
UX875	75
UX8100	100
UX8167	167
UX8250	250
UX8333	333
UX8500	500

120/240V
(7.2/12.47KV PRIMARY)

COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX910	10
UX915	15
UX925	25
UX937	37
UX950	50
UX975	75
UX9100	100
UX9167	167

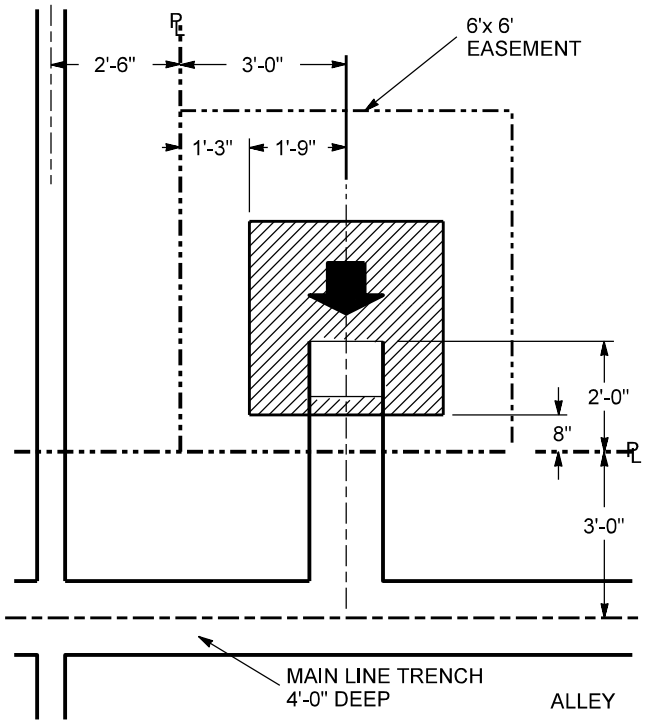
277/480V
(7.2/12.47KV PRIMARY)

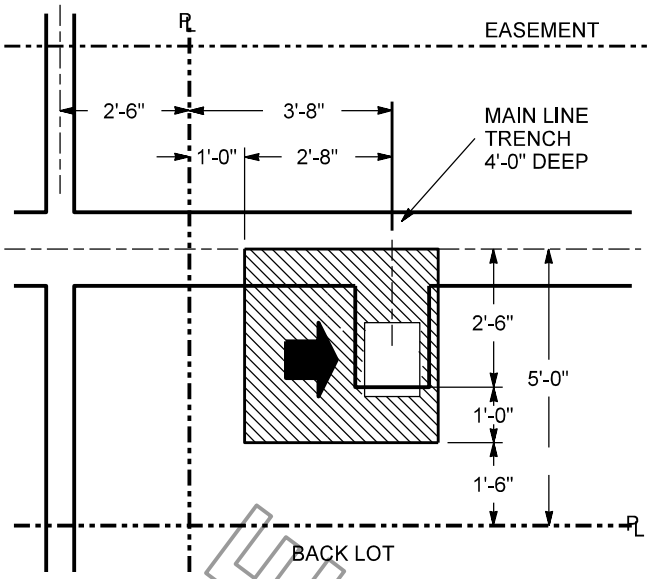
COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX1025	25
UX1050	50
UX1075	75
UX10100	100
UX10167	167
UX10250	250
UX10333	333
UX10500	500

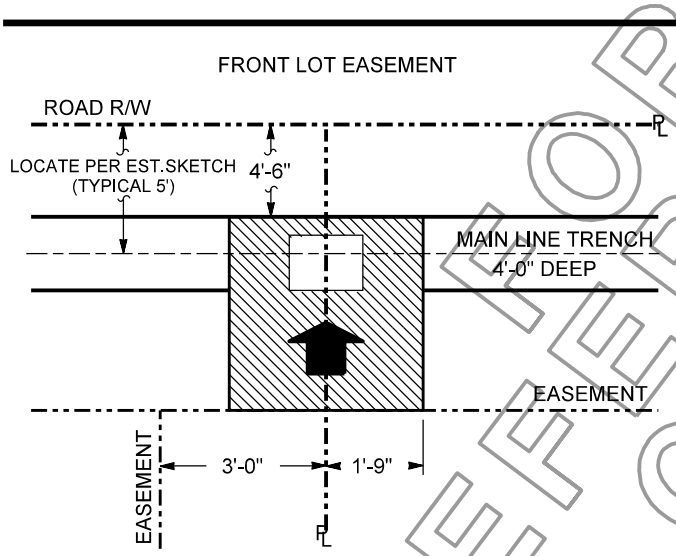
FUSING FOR POLE TYPE TRANSFORMERS INSTALLED IN A VAULT 7.2KV, 12.47KV SYSTEM			
3 PHASE TRANSFORMER BANK KVA	**FUSE MOUNTING**	**FUSE HOLDER**	**FUSE**
500	5034434 UFBF1 MCGRAW EDISON	NONE REQUIRED	40 AMP 5034559 MCGRAW EDISON FA4A40
750	5034432 UFBF2 S & C	5034428 S & C NOTE 1	50E AMP 5034314 S & C 122075R4
1000	5034432 UFBF2 S & C	5034428 S & C NOTE 1	65E AMP 5034411 S & C 122100R3
1500	5034432 UFBF2 S & C	5034428 S & C NOTE 1	100E AMP 5034416 S & C 122150R3
2000	5034432 UFBF2 S & C	5034428 S & C NOTE 1	125E AMP 5034417 S & C 122200R4
2500	5034432 UFBF2 S & C	5034428 S & C NOTE 1	150E AMP 5034418 S & C 122250R4
3000	5034432 UFBF2 S & C	5034428 S & C NOTE 1	200E AMP 5034420 S & C 122300R4

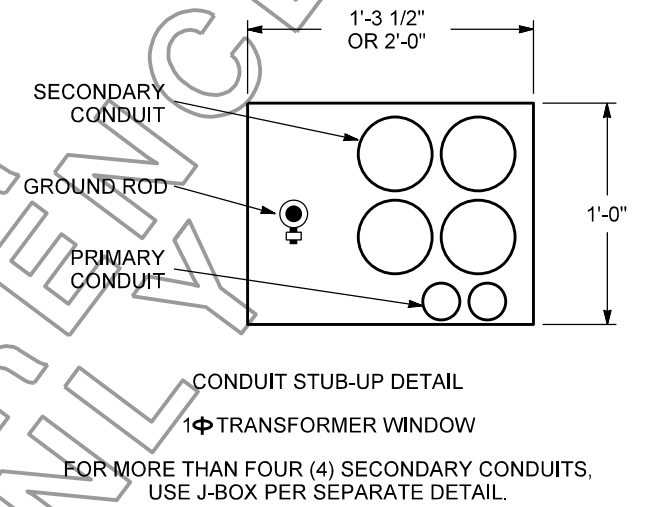
NOTES

1. THE FUSE HOLDER IS INCLUDED IN UFBF2 BUT NOT THE FUSE. REQUEST FUSE SEPARATELY.
2. FUSE MOUNTINGS ARE SINGLE PHASE UNITS. THREE SEPARATE MOUNTINGS, FUSE HOLDERS AND FUSES ARE REQUIRED FOR A 3 PHASE TRANSFORMER BANK.



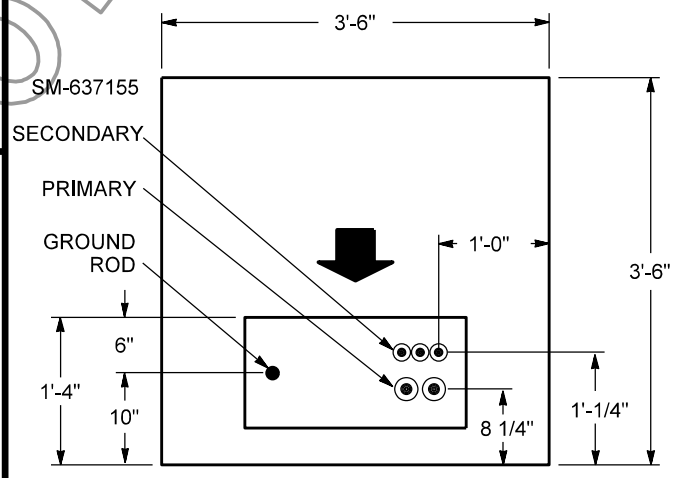






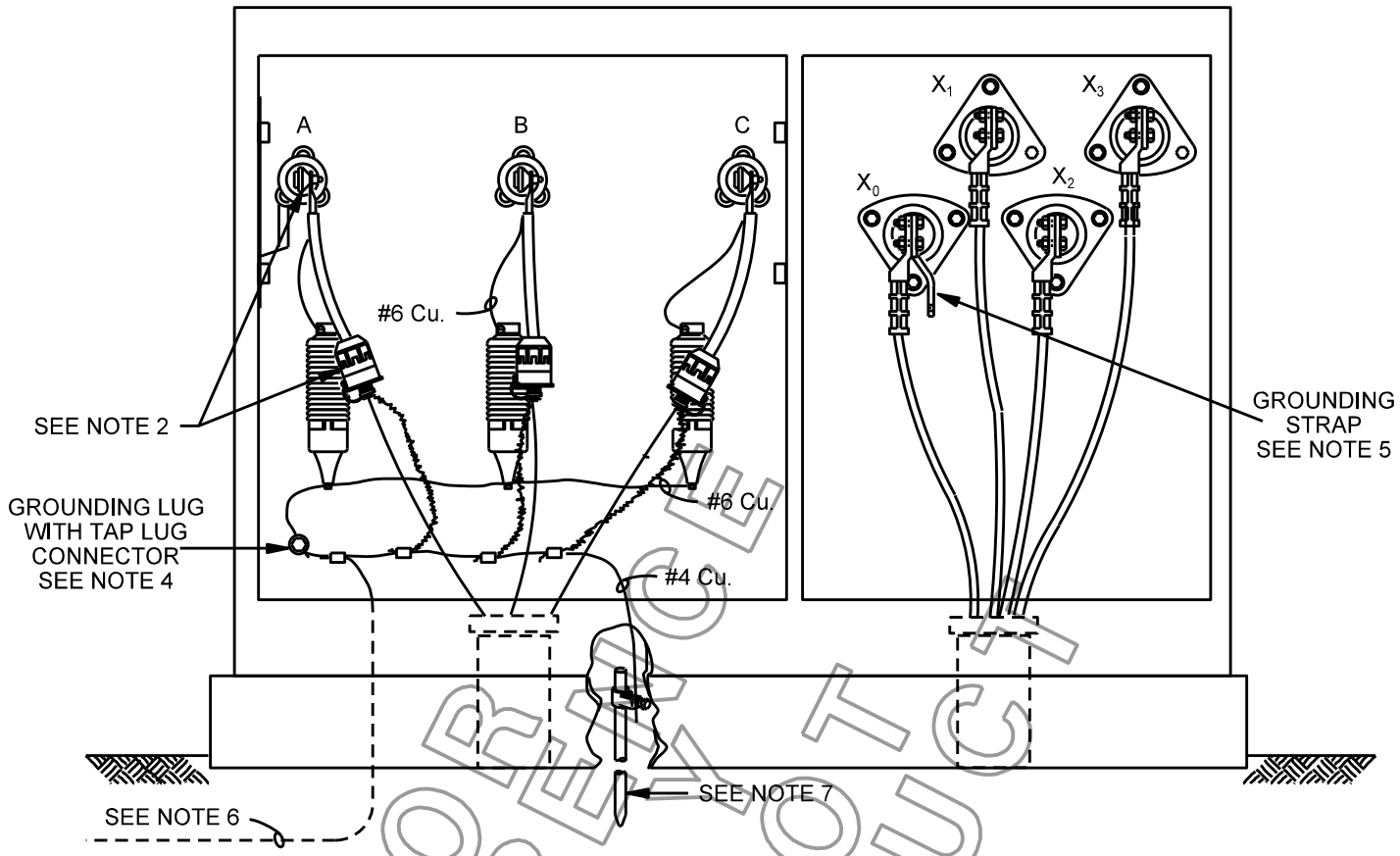
NOTES

1. TOP OF PAD MUST BE 2" ABOVE FINAL GRADE.
2. PAD MUST BE LEVEL BEFORE SETTING ENCLOSURE.
3. AREA UNDER PAD TO BE COMPACTED PER TRENCH SPECIFICATION NOTES IN TRENCHING SECTION.
4. SEE TRENCHING AND CONDUIT SECTIONS FOR SERVICE STUB-OUT DETAIL.
5. IF OBSTACLES ARE ANTICIPATED IN FRONT OF THE TRANSFORMER (DESIGNATED PARKING), FRONT OF TRANSFORMER SHALL BE ROTATED 90 DEG INTO EASEMENT. ADDITIONAL LABELING SHALL BE PLACED ON THE SIDE OF THE ENCLOSURE FACING ROAD R/W.



FOR REFERENCE ONLY

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	TRANSFORMERS STUB-UP AND LOCATION DETAILS SINGLE PHASE PAD MOUNTED TRANSFORMER	ISSUE DATE: 01/15/87 REV. DATE: 04/22/10 APPROVAL: B.PRIEST
	9-30-1	8513E159.DGN



FOR REFERENCE ONLY NOT FOR CONSTRUCTION

NOTES

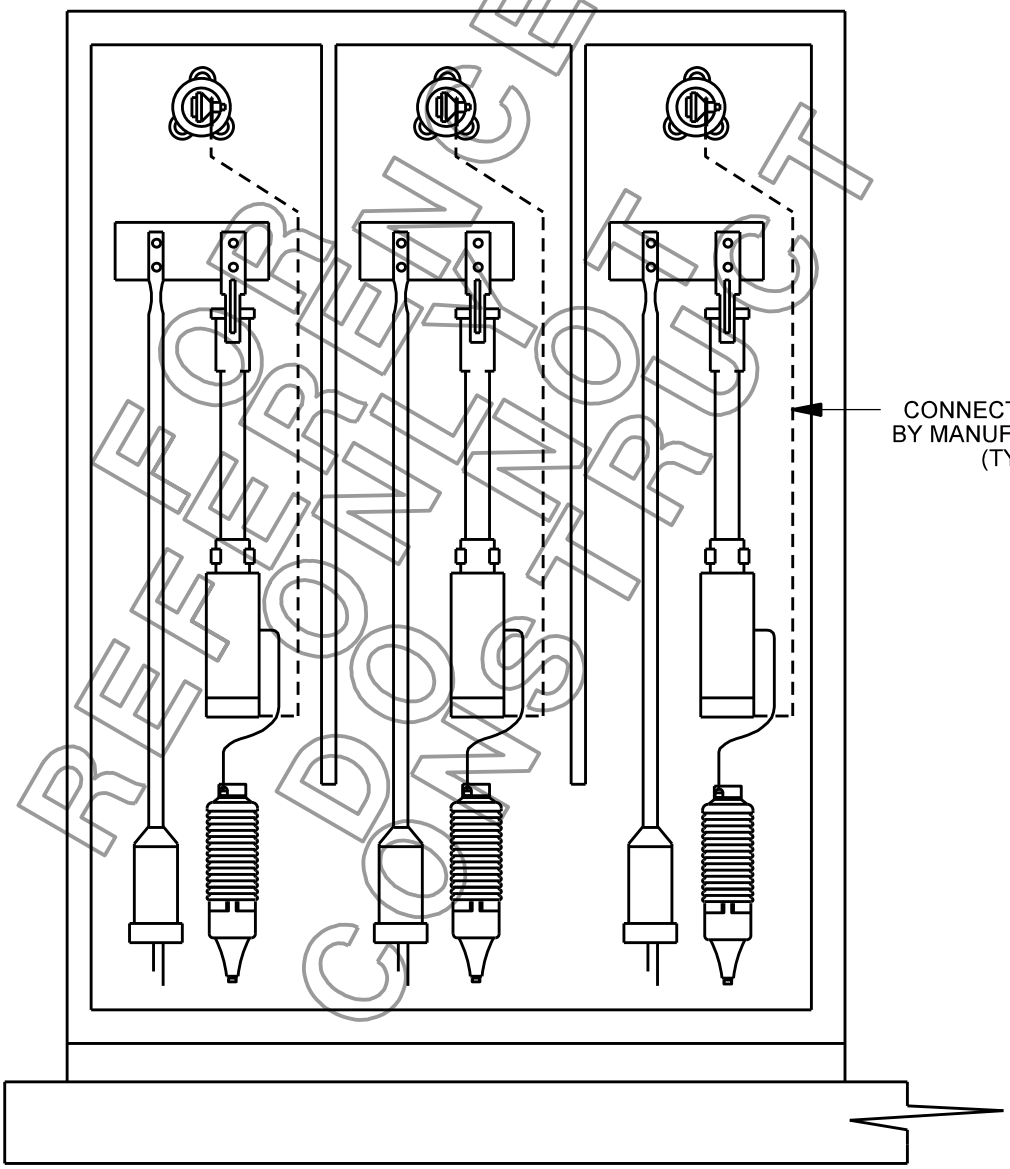
1. LIGHTNING ARRESTERS ARE REQUIRED ON 500KVA AND LARGER TRANSFORMERS. ALL ARRESTER CONNECTIONS SHALL BE MADE USING #6 CU.
2. TRAIN THE PRIMARY CABLES TO MAINTAIN A MINIMUM 3 INCH CLEARANCE BETWEEN THE ARRESTERS AND TERMINATIONS. THE CLEARANCE BETWEEN ANY PRIMARY TERMINAL AND THE GROUNDED TRANSFORMERTANK MUST BE A MINIMUM OF 6 INCHES. OTHERWISE, THE CONNECTOR MUST BE PROPERLY INSULATED.
3. TRANSFORMER SHALL BE LOCKED AT ALL TIMES.
4. INSTALL A TAP LUG (5016730) ONTO THE TRANSFORMER GROUNDING PAD. TERMINATE THE #4 CU GROUND BUS AND THE #6 CU ARRESTER GROUND LEAD INTO THIS CONNECTOR. TRAIN THE #4 CU GROUND BUS IN FRONT AND ALONG THE BASE OF THE TRANSFORMER. TRAIN THE CONCENTRIC NEUTRALS DOWN ALONG THE PRIMARY CABLES AND CONNECT TO THE #4 CU GROUND BUS USING COMPRESSION CONNECTORS.
5. THE GROUNDING STRAP FROM THE SECONDARY X_0 BUSHING SHALL BE CONNECTED TO THE CASE GROUND IN THE SECONDARY COMPARTMENT.
6. FOR TELCO BOND: A #6 CU WIRE CONNECTED TO THE #4 CU GROUND BUS USING A COMPRESSION CONNECTOR SHALL BE RUN TO A POINT 12 INCHES OUTSIDE THE PAD AT A DEPTH OF 12 INCHES IN THE PRIMARY TRENCH.
7. INSTALL GROUND ROD SO IT DOES NOT INTERFERE WITH ANY CONDUCTORS. CONNECT THE #4 CU LEAD TO THE GROUND ROD. NOT REQUIRED WHEN DIRECT BURIED BARE CONCENTRIC NEUTRAL IS PRESENT.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS THREE PHASE RADIAL LIVE FRONT TERMINATION	ISSUE DATE: 02/13/87 REV. DATE: 01/28/15 APPROVAL: B.PRIEST
	9-31-1	8513E180.DGN

GUIDELINES FOR TERMINATIONS IN THE PRIMARY COMPARTMENT OF PAD MOUNTED TRANSFORMERS WITH S&C FUSING:

WHEN MAKING TERMINATIONS IN THE PRIMARY COMPARTMENT OF A PAD MOUNTED TRANSFORMER WITH S&C FUSING, THE CUT BACK LENGTH FOR THE TERMINATION SHOULD BE INCREASED SO THE GROUND PLANE OF THE TERMINATION IS 8" BELOW THE BOTTOM OF THE FUSE. (SEE CONNECTORS,SPLICES AND TERMINATIONS FOR LOCATIONS OF GROUND PLANES.) THE CABLES SHOULD BE TRAINED TO MAINTAIN A MINIMUM OF 3" BETWEEN THE TERMINATION AND THE ARRESTER.

PRIOR TO TERMINATING, VERIFY THAT CONNECTION TO THE TRANSFORMER BUSHINGS IS FROM THE BOTTOM OF THE FUSE MOUNTING. IF THEY ARE DIFFERENT, CONTACT ENGINEERING SERVICES.

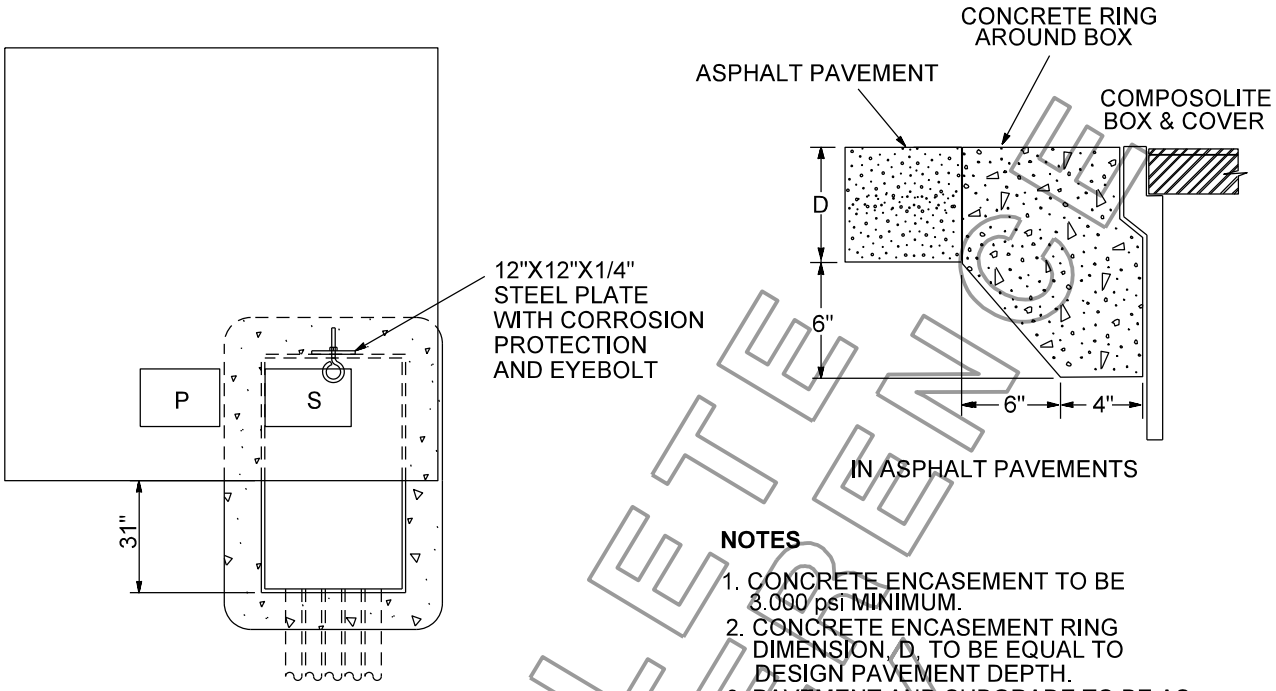


REFERENCE DRAWING
REFERENCE ONLY
DO NOT
CONTROL

FUSE HOLDERS ARE 5034427 (SM-4Z) OR 5034428 (SML-4Z)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS 3 PHASE-RADIAL 1500 KVA AND LARGER TERMINATIONS	ISSUE DATE: 11/15/87 REV. DATE: 08/06/13 APPROVAL: B.PRIEST
	9-32-1	8513E30.DGN

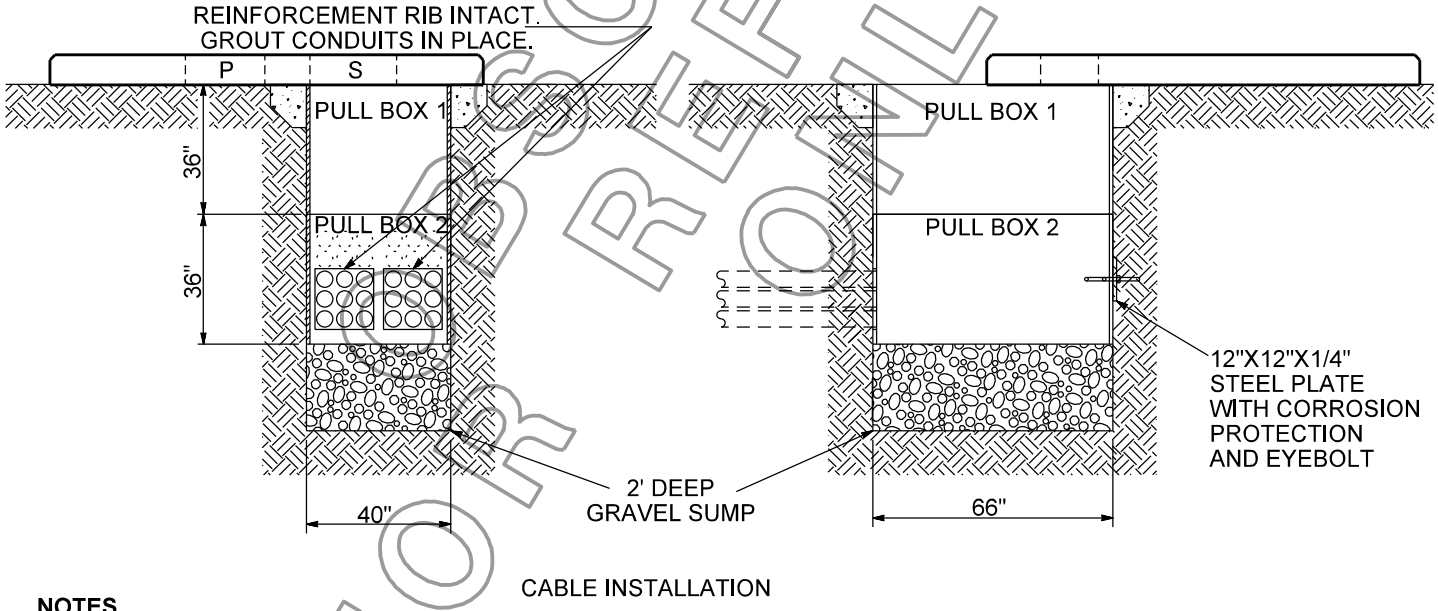
PULL BOX PLACEMENT DETAIL
TWO 36"X60"X36" BOXES INSTALLED UNDER TRANSFORMER PAD



IN ASPHALT PAVEMENTS

NOTES

1. CONCRETE ENCASEMENT TO BE 3,000 psi MINIMUM.
2. CONCRETE ENCASEMENT RING DIMENSION, D, TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
3. PAVEMENT AND SUBGRADE TO BE AS SHOWN ON THE ENGINEERING PLANS.



CABLE INSTALLATION

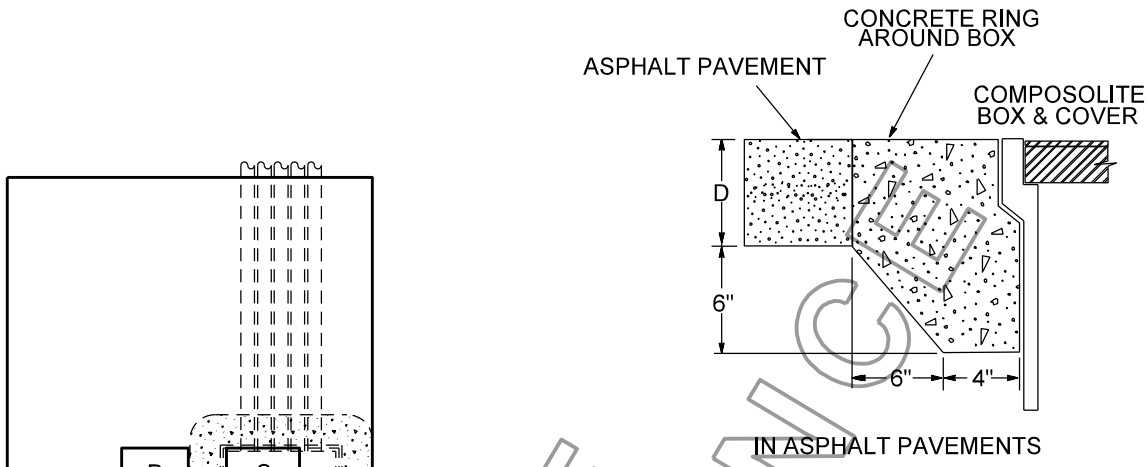
NOTES

1. BOX IS INSTALLED TO ALLOW A COVER TO BE USED FOR A SECURED ACCESS TO PIT.
2. INITIAL CABLES INSTALLED SHALL OCCUPY LOWER MOST CONDUITS AND TERMINATE ON BACK MOST BUSHING POSITIONS. COMPLETE ROWS SHALL BE USED.
3. CABLE PULLING SHALL BEGIN WITH THE BOTTOM ROW. THIS PLACES THE ROWS TO BE USED IN THE FUTURE ABOVE THOSE OCCUPIED BY CABLES.
4. WHEN CABLES ARE INSTALLED, THEY ARE PULLED THROUGH THE PAD WINDOW.
5. THE ANCHOR AND EYEBOLT PROVIDE RIGGING LOCATION.

INCOMPLETE
NOT RELEASED
FOR ROW

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS WITH DOUBLE PULL BOX SECONDARY PIT (FROM FRONT)	ISSUE DATE: 02/07/02 REV. DATE: 04/22/10 APPROVAL: B.PRIEST
	9-33-1	8513E334.DGN

PULL BOX PLACEMENT DETAIL
TWO 36"X60"X36" BOXES INSTALLED UNDER TRANSFORMER PAD



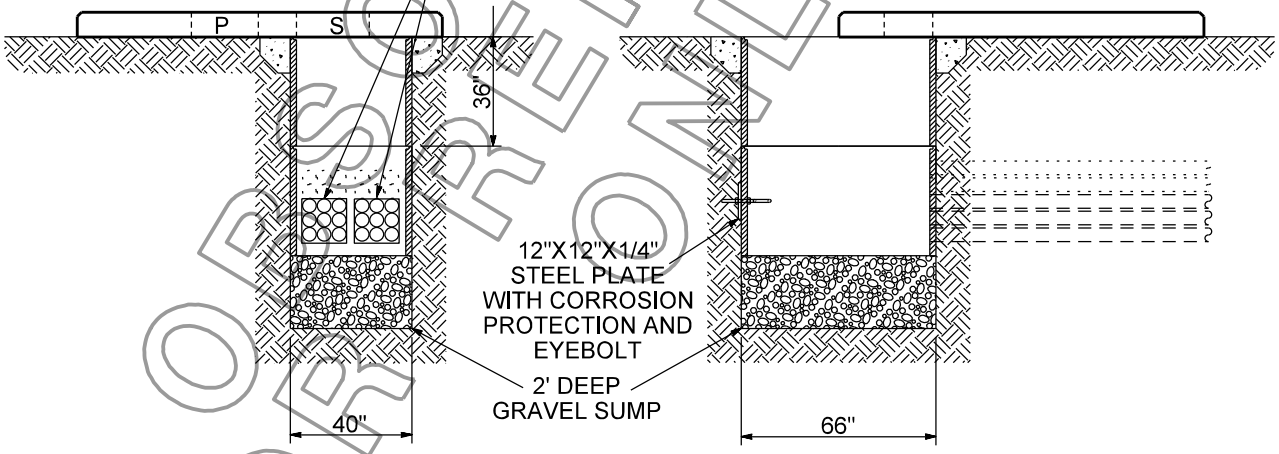
IN ASPHALT PAVEMENTS

NOTES

1. CONCRETE ENCASEMENT TO BE 3,000 psi MINIMUM.
2. CONCRETE ENCASEMENT RING DIMENSION, D, TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
3. PAVEMENT AND SUBGRADE TO BE AS SHOWN ON THE ENGINEERING PLANS.

12"X12"X1/4" STEEL PLATE WITH CORROSION PROTECTION AND EYEBOLT

CUT 2 - 15" X 15" WINDOWS IN LOWER PULL BOX FOR CONDUIT ACCESS. LEAVE VERTICAL REINFORCEMENT RIB INTACT. GROUT CONDUITS IN PLACE.



CABLE INSTALLATION

NOTES

1. BOX IS INSTALLED TO ALLOW A COVER TO BE USED FOR A SECURED ACCESS TO PIT.
2. INITIAL CABLES INSTALLED SHALL OCCUPY UPPER MOST CONDUITS AND TERMINATE ON BACK MOST BUSHING POSITIONS. COMPLETE ROWS SHALL BE USED.
3. CABLE PULLING SHALL BEGIN WITH THE TOP ROW. THIS PLACES THE ROWS TO BE USEDIN THE FUTURE BELOW THOSE OCCUPIED BY CABLES.
4. WHEN CABLES ARE INSTALLED, THEY ARE PULLED THROUGH THE PAD WINDOW.
5. THE ANCHOR AND EYEBOLT PROVIDE RIGGING LOCATION.

FOR ONLINE VIEWING ONLY

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	TRANSFORMERS WITH DOUBLE PULL BOX SECONDARY PIT (FROM REAR)	ISSUE DATE: 02/07/02 REV. DATE: 04/22/10 APPROVAL: B.PRIEST
	9-33-2	8513E334.DGN

SINGLE PHASE, PAD MOUNTED TRANSFORMER

120/240V
(21.6KV PRIMARY)

COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX642	25
UX662	50
UX672	75
UX682	100

120/240V - NO PAD
(21.6KV PRIMARY)

COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX642N	25
UX662N	50
UX672N	75
UX682N	100

240/480V
(21.6KV PRIMARY)

COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX742	25

240/480V - NO PAD
(21.6KV PRIMARY)

COMPATIBLE UNIT NO.	TRANSFORMER SIZE (KVA)
UX742N	25

12.47 / 21.6KV SYSTEM				
SINGLE PHASE TRANSFORMER KVA	**FUSE AND/OR SWITCH ASSEMBLY TYPE**	**FUSE SIZE**	**STOCK CODE NO.**	**SEE NOTE #**
15 AND 25	RTE - BAYONET STYLE	3 AMP	5034436	1
37-1/2	RTE - BAYONET STYLE	8 AMP	5034437	1
50	RTE - BAYONET STYLE	8 AMP	5034437	1
75	RTE - BAYONET STYLE	15 AMP	5034438	1
100	RTE - BAYONET STYLE	15 AMP	5034438	1
167	RTE - BAYONET STYLE	25 AMP	5034439	1

NOTES

1. ALL DEAD FRONT TRANSFORMERS UTILIZE THE RTE BAYONET STYLE FUSE. PRIOR TO ENERGIZING THE TRANSFORMER, THE INSTALLATION CREW MUST CHECK FUSE FOR PROPER SIZE AND TIGHTNESS OF FUSE ASSEMBLY.

THREE PHASE, PAD MOUNTED TRANSFORMER

PRIMARY VOLTAGE 21.6KV

SECONDARY VOLTAGE							
TRANSFORMER SIZE (KVA)	120/208V		277/480V		2400V	4160/ 2400V	APPROX. WEIGHT (IN LBS.)
	RADIAL FEED	LOOP-THRU (SEE NOTE 1)	RADIAL FEED	LOOP-THRU (SEE NOTE 1)	DELTA SECONDARY		
75		UX412L		UX312L			2500
150		UX432L		UX332L			3000
300		UX452L		UX352L			5000
500		UX462L		UX362L			6700
750		UX472LN		UX372LN			8000
1000		UX482LN		UX382LN			11000
1500							12000
2000							20000
2500							21000

PRIMARY VOLTAGE 21.6KV, Y CONNECTED
– FOR CO-GENERATION SERVICE ONLY –

SECONDARY VOLTAGE		
TRANSFORMER SIZE (KVA)	277/480V	APPROX. WEIGHT (IN LBS.)
	RADIAL FEED	
500	UX362G	6700
750		8000
1000		11000
2000		20000
2500		21000

NOTES

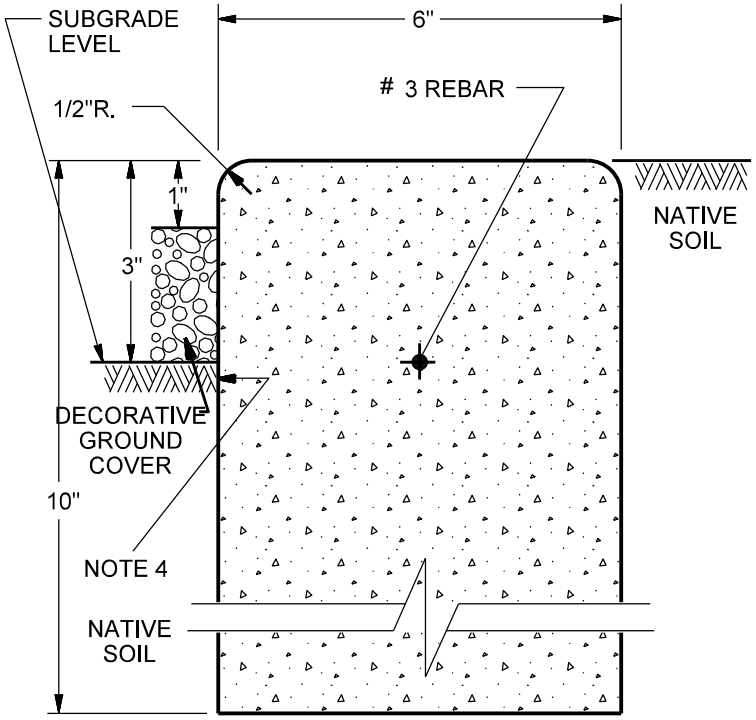
1. ALL LOOP THRU TRANSFORMERS ARE PROVIDED ELBOWS FOR 1/0 AL.
2. ADD ‘N’ TO THE COMPATIBLE UNIT CODE FOR TRANSFORMERS 500KVA AND SMALLER WHEN A PAD IS NOT REQUIRED.

THREE PHASE TRANSFORMER KVA	FUSING IN THE TRANSFORMER PRIMARY COMPARTMENT	FUSING IN DEAD FRONT FUSE ENCLOSURE	FUSING AT THE POLE RISER
RADIAL FEED TRANSFORMERS			
75	NONE	N.A.	2-1/2 AMP 5034487
150			5-1/2 AMP 5034489
300			10 AMP 5034491
500			20 AMP 5034493
750			30 AMP 5034495
1000			40 AMP 5034496
1500			65 AMP 5034500
2000			75 AMP 5034501
2500			85 AMP 5034502
LOOP FEED TRANSFORMERS			
75	3 AMP 5034436 RTE * 358C03	N.A.	PREFERRED: 1/0 AL PRIMARY, 85 AMP, TYPE 'N' FUSES (5034502) AND 100 AMP CUTOUTS (5034371), REQUESTED BY COMPATIBLE UNIT. NOTE: MAX. 3∅ LOOP LOADING = 3000KVA
150	8 AMP 5034437 RTE * 358C05		
300	15 AMP 5034438 RTE * 358C08		
500	25 AMP 5034439 RTE * 358C10		
750	50 AMP 5034440 RTE * 358C12		
1000			

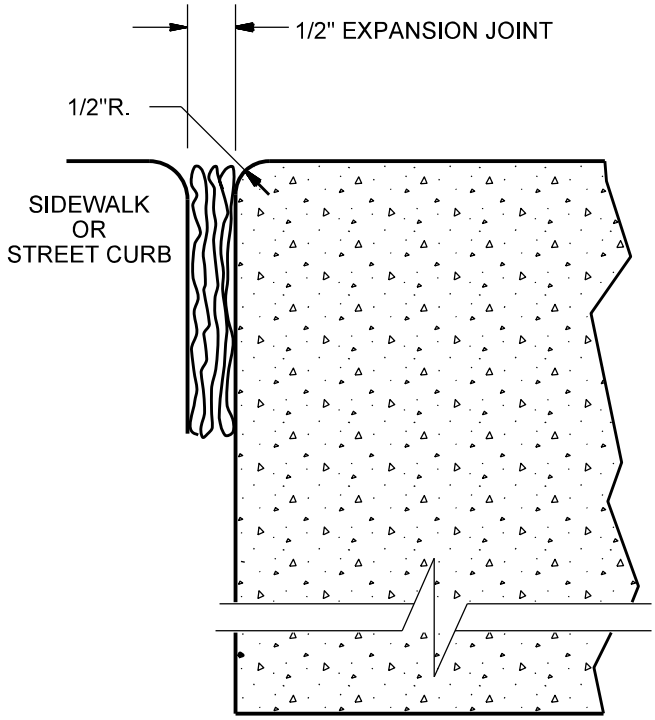
* ON ALL TRANSFORMERS WITH RTE "BAYONET" STYLE FUSES, THE FUSE LINK MUST BE CHECKED BY THE INSTALLATION CREW FOR PROPER SIZE PRIOR TO ENERGIZING THE TRANSFORMER.

LANDSCAPING

TITLE/DESCRIPTION	PAGE NO.
DRY LANDSCAPE, BORDER DETAILS	10-1-1
DRY LANDSCAPE, CONTROLLED AREA DETAIL	10-2-1
GROUND SLOPE, FILL AND HORIZONTAL CLEARANCE REQUIREMENTS FOR PAD MOUNTED EQUIPMENT	10-3-1
EROSION PREVENTION METHOD, ENCLOSURES INSTALLED ON SLOPES	10-4-1
EROSION PREVENTION METHODS, PRE-MANUFACTURED WALL	10-5-1
CONDUIT INSTALLATION NEAR TREES	10-6-1

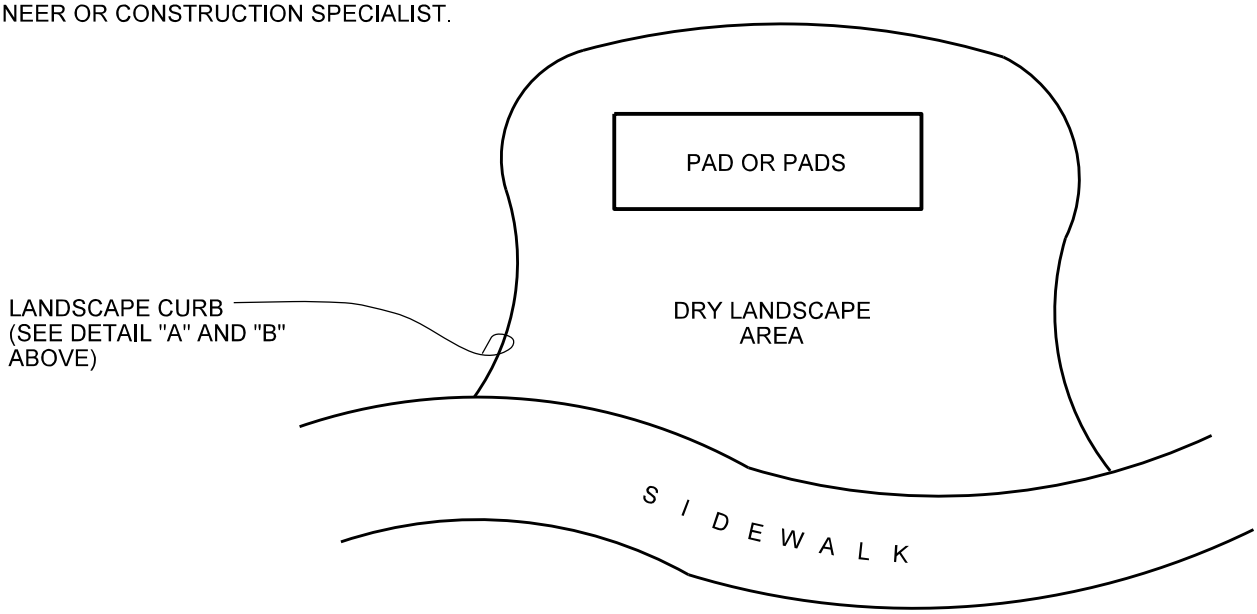


DETAIL A

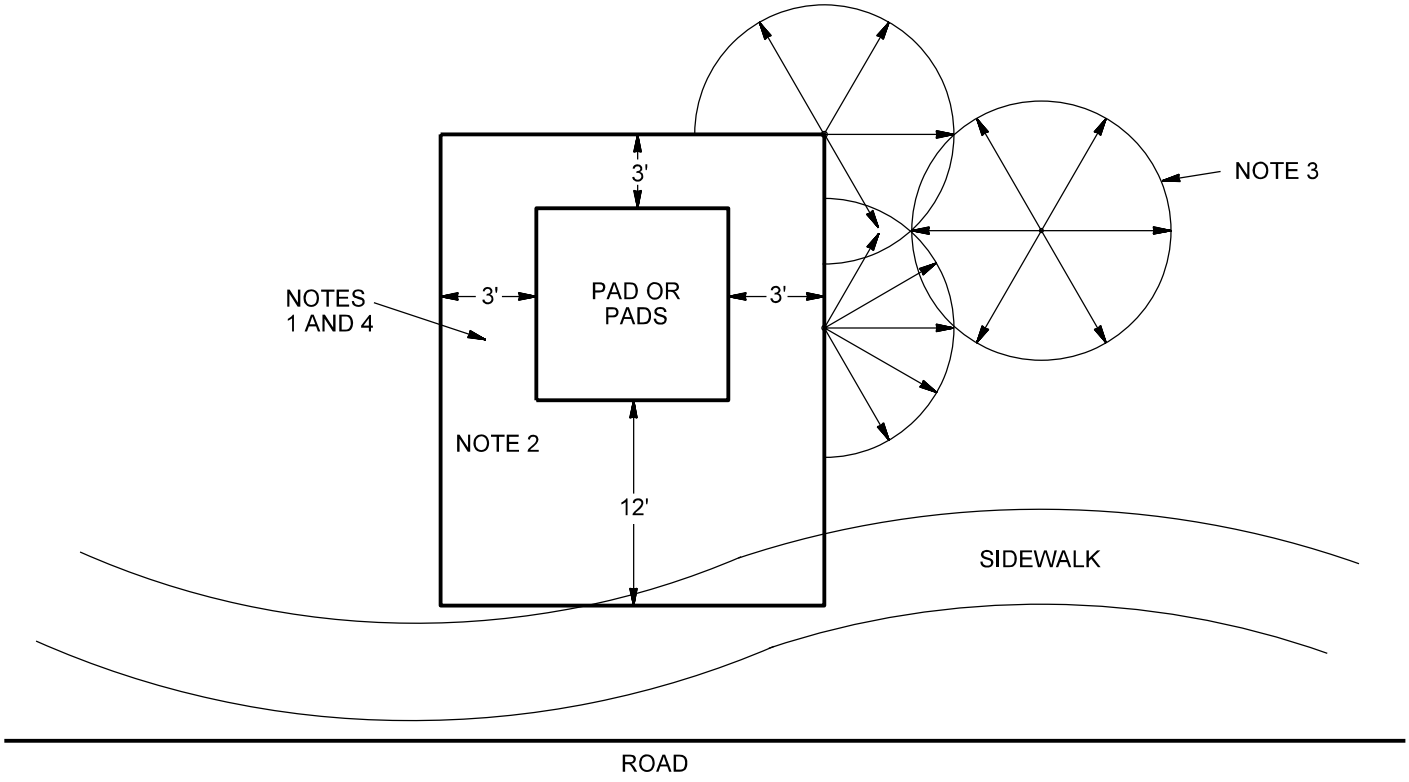


DETAIL B

1. ELEVATION OF LANDSCAPE CURB TO MATCH SIDEWALK OR TOP OF STREET CURB.
2. ALL CONCRETE CURB WORK SHALL BE DONE IN ACCORDANCE WITH MAG SECTION 340.
3. CURBING OF OTHER MATERIAL OR DESIGN IS ALLOWED WITH THE APPROVAL OF THE HOME BUILDER MANAGEMENT CENTER ENGINEER OR CONSTRUCTION SPECIALIST.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	LANDSCAPING DRY-LANDSCAPE BORDER DETAILS	ISSUE DATE: 02/15/02 REV. DATE: 08/07/12 APPROVAL: B.PRIEST
	10-1-1	8513E321.DGN



NOTES

1. EASEMENT GRANTOR SHALL MAINTAIN A CLEAR AREA THAT EXTENDS 3 FEET FROM AND AROUND ALL EDGES OF ALL TRANSFORMER PADS AND OTHER EQUIPMENT PADS AND A CLEAR OPERATIONAL AREA THAT EXTENDS 12 FEET IMMEDIATELY IN FRONT OF ALL TRANSFORMER AND OTHER EQUIPMENT OPENINGS. NO OBSTRUCTION, TREES, SHRUBS FIXTURES OR PERMANENT STRUCTURES SHALL BE PLACED WITHIN SAID AREAS.

2. AREA TO BE DRY LANDSCAPED.

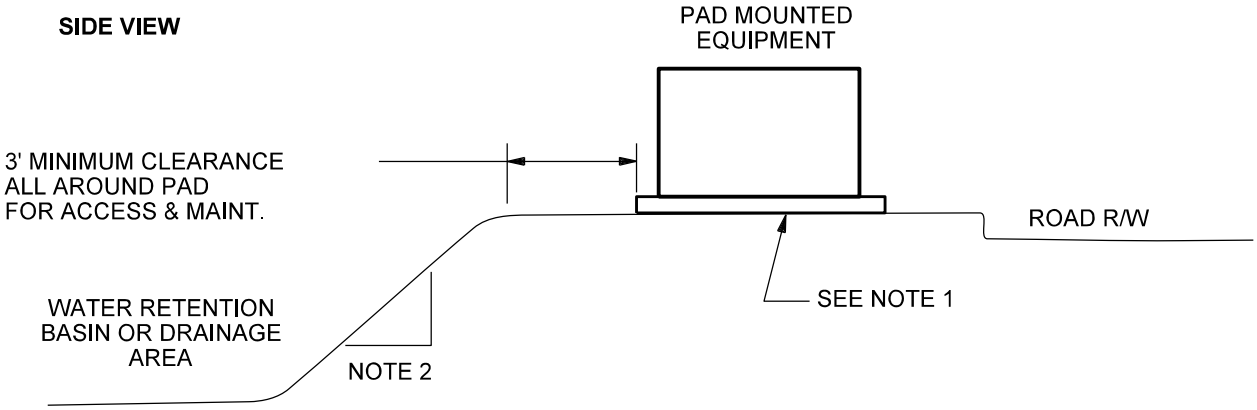
3. SPRINKLER HEADS SHALL BE DIRECTED AWAY FROM PAD MOUNTED EQUIPMENT, AS SHOWN ABOVE. SPRINKLER HEADS SHALL NOT SPRAY ON PAD MOUNTED EQUIPMENT OR DRY LANDSCAPED AREA AROUND EQUIPMENT.

4. DRY LANDSCAPE SURFACE MAY BE CRUSHED GRANITE OR GRAVEL WITH A MAXIMUM PARTICLE SIZE NO GREATER THAN 1", NATIVE SOIL, CONCRETE OR ASPHALT PAVEMENT.

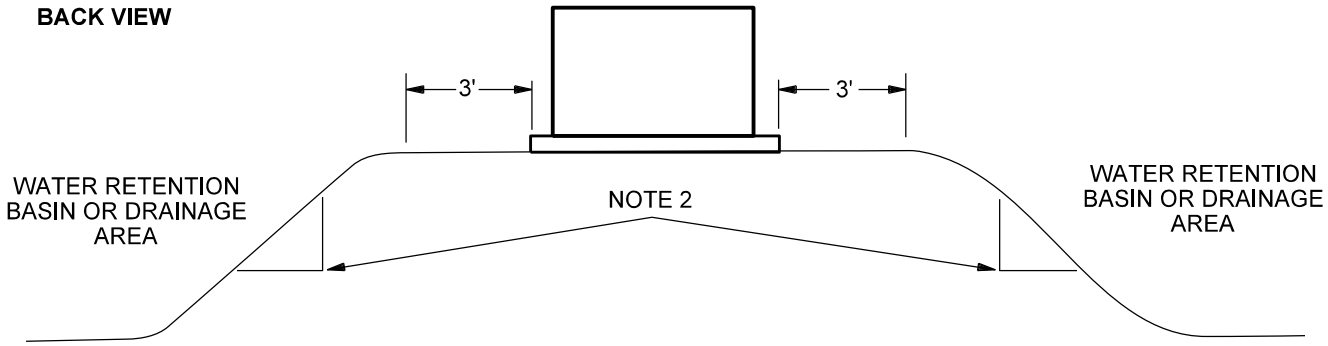
5. SEE PG. 10-1-1 FOR LANDSCAPE BORDER IF REQUIRED.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	LANDSCAPING DRY-LANDSCAPE CONTROLLED AREA DETAIL	ISSUE DATE: 02/20/02 REV. DATE: 08/29/12 APPROVAL: B.PRIEST
	10-2-1	8513E322.DGN

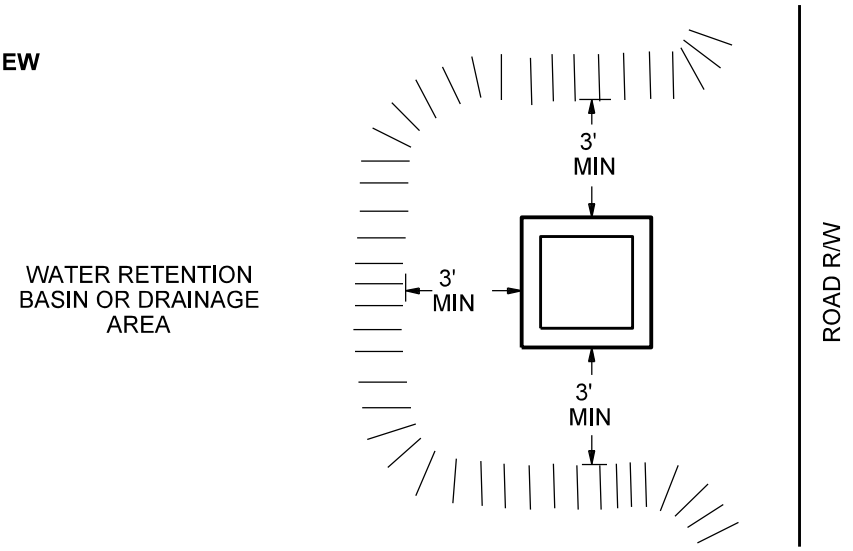
SIDE VIEW



BACK VIEW



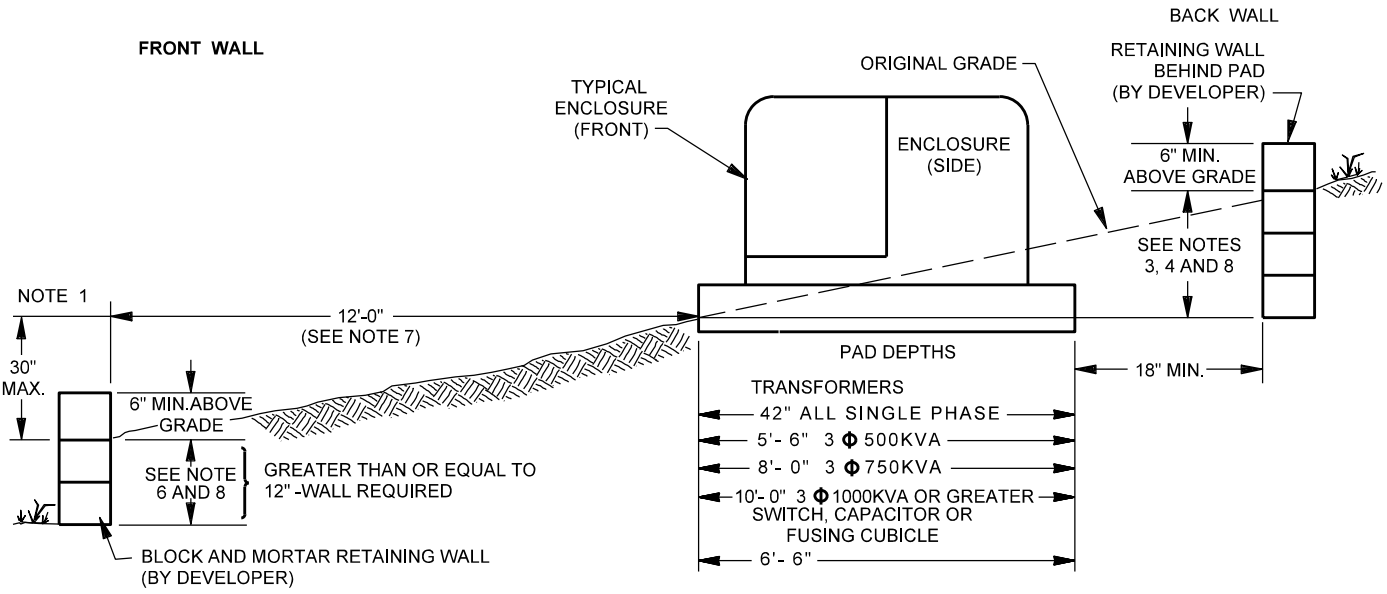
PLAN VIEW

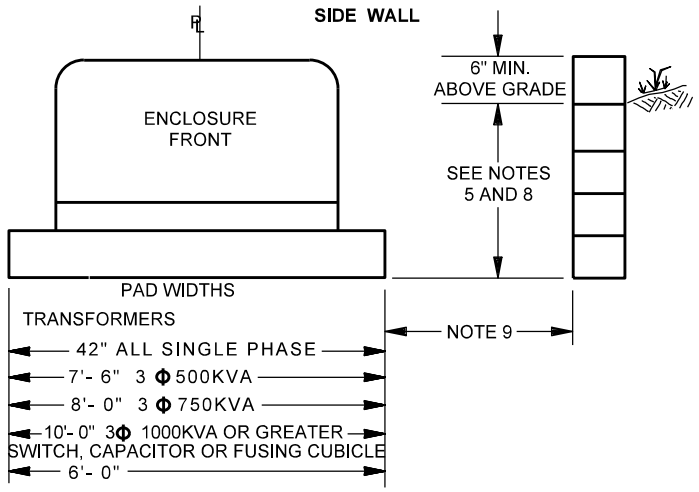


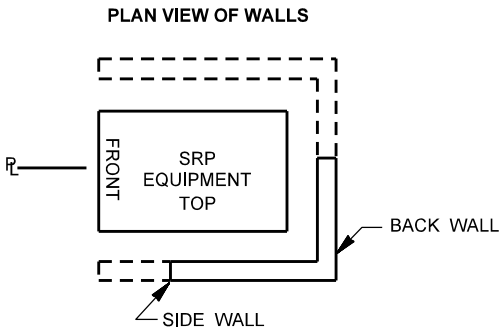
NOTES

1. REVIEW GEOTECHNICAL REPORT OF AREA FOR PROPER COMPACTION OF FILL OR SOIL BELOW ELECTRICAL EQUIPMENT PADS. FILL SHALL BE NATIVE COMPACTED FILL. ALL FILL MATERIAL SHALL BE IN COMPLIANCE WITH THE GEOTECHNICAL REPORT.SEE TRENCHING, SOIL TYPES, BACKFILL MATERIAL AND COMPACTION REQUIREMENTS.
2. THE MAXIMUM SLOPE PER SRP REQUIREMENTS IS 3 HORIZONTAL TO 1 VERTICAL. IF 3 HORIZONTAL TO 1 VERTICAL SLOPE IS EXCEEDED, SUBMIT A SET OF ENGINEERED CALCULATIONS SHOWING A SLOPE STABILITY ANALYSIS OR A RETAINING WALL DESIGN TO POLICIES, PROCEDURES AND STANDARDS FOR APPROVAL.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	LANDSCAPING GROUND SLOPE, FILL AND HORIZONTAL CLEARANCE REQUIREMENTS FOR PAD MOUNTED EQUIPMENT	ISSUE DATE: 04/18/02 REV. DATE: 04/15/10 APPROVAL: B.PRIEST
	10-3-1	8513E318.DGN







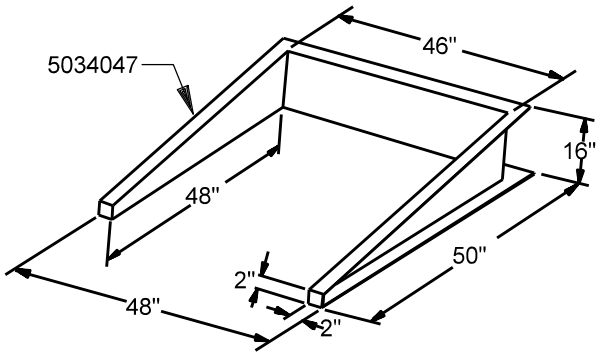
NOTES

1. WHEN IT BECOMES NECESSARY TO NOTCH OUT OR FILL A SLOPE TO INSTALL AN ENCLOSURE, THE CLEARED AREA SHOULD BE OF SUFFICIENT SIZE TO ACCOMODATE THE ENCLOSURE AND SHORINGS. SLOPE IN FRONT OF ENCLOSURE SHALL NOT BE GREATER THAN 30" IN 12 FEET.

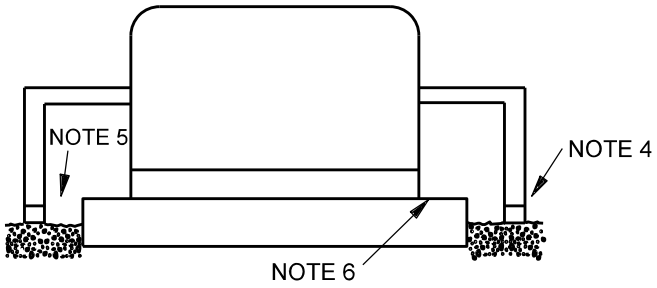
   ALL GRADING IS TO BE DONE BY DEVELOPER.
2. AREA UNDER AND BEHIND PAD MUST BE LEVEL AND COMPACTED TO 95% DENSITY (SEE BACKFILL REQUIREMENTS ON PAGE 6-9-2).
3. A BACK RETAINING WALL IS REQUIRED WHEN THE CHANGE IN GROUND ELEVATION IS 12 INCHES OR MORE AT ANY POINT 18 INCHES OR LESS BEHIND THE PAD.
4. A SIDE RETAINING WALL IS REQUIRED WHEN THE CHANGE IN THE GROUND ELEVATION IS 18" OR MORE AT ANY POINT 18 INCHES OR LESS BEHIND THE PAD.
5. A SIDE RETAINING WALL IS REQUIRED WHEN THE CHANGE IN GROUND ELEVATION IS 12" OR MORE AT ANY POINT 18 INCHES OR LESS TO THE SIDE OF THE PAD.
6. A FRONT RETAINING WALL IS REQUIRED WHEN THE CHANGE IN GROUND ELEVATION IS 12" OR MORE AT ANY POINT 12 FEET OR LESS IN FRONT OF THE PAD.
7. THIS DIMENSION MAY BE REDUCED TO 4 FEET IF MEASURED FROM A STREET CURB.
8. DEVELOPER SHALL INSTALL GUARDRAIL PER THE AUTHORITY HAVING JURISDICTION.
9. 3 FOOT MINIMUM ON ALL EQUIPMENT EXCEPT SINGLE PHASE TRANSFORMERS. ON SINGLE PHASE TRANSFORMERS 18 INCH MINIMUM ALLOWED FOR FIRE AND RETENTION WALLS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	LANDSCAPING EROSION PREVENTION METHOD ENCLOSURES INSTALLED ON SLOPES	ISSUE DATE: 01/15/87 REV. DATE: 08/07/12 APPROVAL: B.PRIEST
	10-4-1	8513E17.DGN

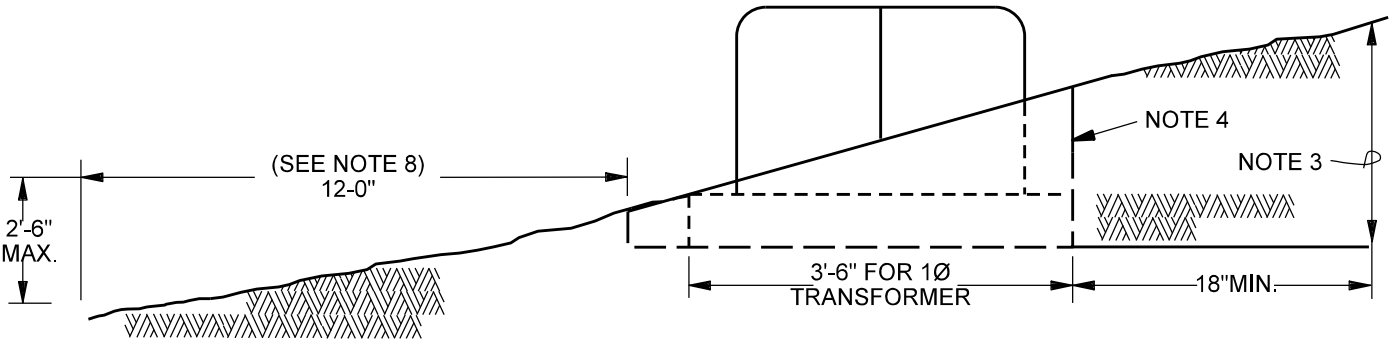
PRE-MANUFACTURED WALL DIMENSIONS



FRONT VIEW



SIDE VIEW



UXBW	SRP INSTALL
UXBWG	CONTRACTOR INSTALLATION SRP SUPPLIED CUSTOMER INSTALLED

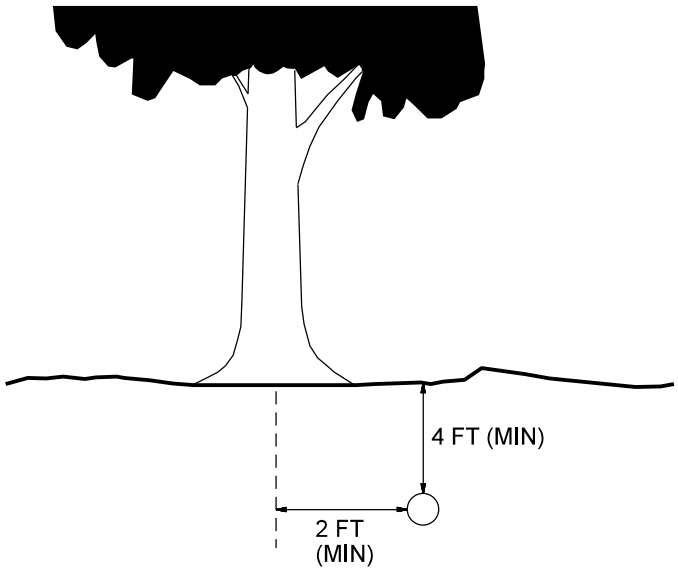
NOTES

1. WHEN IT BECOMES NECESSARY TO NOTCH-OUT OR FILL A SLOPE TO INSTALL AN ENCLOSURE, THE CLEARED AREA SHOULD BE OF SUFFICIENT SIZE TO ACCOMMODATE THE ENCLOSURE AND SHORINGS. SLOPE IN FRONT OF ENCLOSURE SHALL NOT BE GREATER THAN 30 INCHES IN 12 FEET.
2. AREA UNDER AND BEHIND PAD MUST BE LEVEL AND COMPACTED, PER TRENCH SPECIFICATION NOTES IN TRENCHING SECTION.
3. A WALL IS REQUIRED IF THIS DIMENSION IS 12" OR MORE.
4. PACK SOIL AROUND WALL TO SURROUNDING GRADE TO HOLD WALL IN PLACE.
5. PACK SOIL BETWEEN WALL AND PAD TO ONE HALF PAD LEVEL.
6. REMOVE ALL SOIL FROM SURFACE OF PAD.
7. IF ASSISTANCE IS REQUIRED, CONTACT ELECTRIC SYSTEM ENGINEERING.
8. THIS DIMENSION MAY BE REDUCED TO 4 FEET IF MEASURED FROM A STREET CURB.
9. SEE ALSO ELECTRICAL CLEARANCE STANDARDS BOOK.
10. THIS WALL FOR 1Ø PADS ONLY.
11. TOP OF PAD SHALL BE 4" MINIMUM ABOVE SURROUNDING FINISH GRADE AND AT SUFFICIENT ELEVATION TO PREVENT FLOODING.

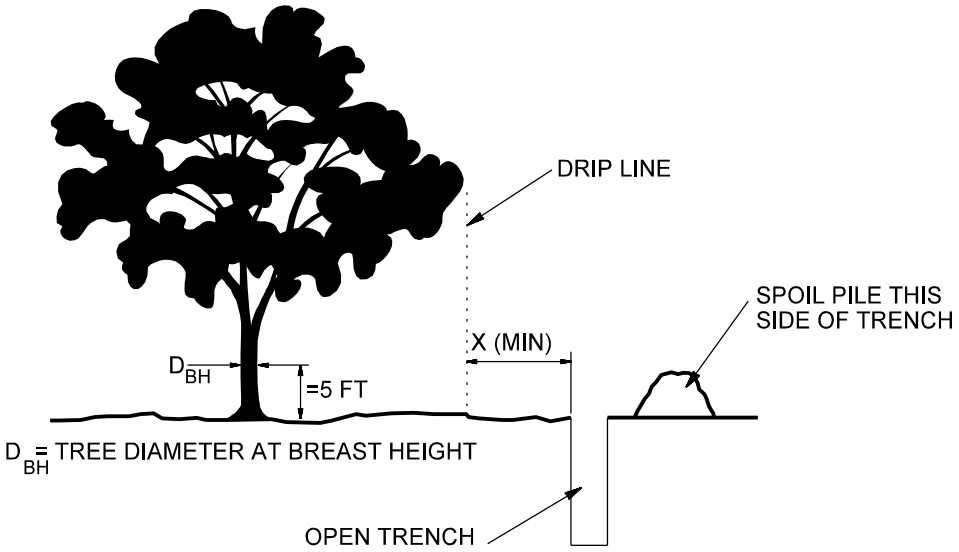
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	LANDSCAPING EROSION PREVENTION METHODS PRE-MANUFACTURED WALL	ISSUE DATE: 11/29/94 REV. DATE: 08/06/13 APPROVAL: B.PRIEST
	10-5-1	8513E178.DGN

CONDUIT INSTALLATION NEAR TREES

1. WHEN POSSIBLE, KEEP BORES ADJACENT TO TREES AT THE MINIMUM DIMENSIONS SHOWN BELOW:



2. WHEN POSSIBLE, KEEP OPEN CUTS AT LEAST AS FAR AWAY FROM TREES AS SHOWN BELOW:



D_{BH}	X
$\leq$ 6"	0
6"-9"	5'
10"-14"	10'
15"-19"	12'
$>$ 19"	15'

GENERAL GUIDELINES

A. WHEN POSSIBLE, ADHERE TO THE NATIONAL ARBOR DAY FOUNDATION'S GUIDE, "TRENCHING AND TUNNELING NEAR TREES - A FIELD POCKET GUIDE FOR QUALIFIED UTILITY WORKERS" (LATEST EDITION).

B. ANY ROOT 2" OR LARGER THAT IS ACCIDENTALLY CUT SHALL BE SAWED CLEAN THROUGH AN UNDAMAGED PORTION OF THE ROOT. MAKE CUTS FLUSH WITH THE SIDE OF THE TRENCH CLOSEST TO THE TREE.

C. MOISTEN CLEAN SOIL TO BE PLACED BACK INTO THE TRENCH. BACKFILL AS SOON AS POSSIBLE TO PREVENT ROOT DRYING. TAMP SOIL TO ITS ORIGINAL FIRMNESS, BUT DO NOT COMPACT. WATER BACKFILL AFTER PLACEMENT.

D. DO NOT DRIVE EQUIPMENT OR VEHICLES UNDER TREES OR WITHIN THE DRIP LINE. IF NEEDED, PROTECT TREE TRUNK FROM SCRAPING OR GOUGING BY EQUIPMENT WITH FENCING, WOOD SLATS OR OTHER METHODS.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	LANDSCAPING CONDUIT INSTALLATION NEAR TREES	ISSUE DATE: 12/20/01 REV. DATE: 08/07/12 APPROVAL: B.PRIEST
	10-6-1	8513E324.DGN

UNDERGROUND MISCELLANEOUS SECTION

TITLE/DESCRIPTION	PAGE NO.
UNDERGROUND POLE MARKING AND IDENTIFICATION	11-1-1
UNDERGROUND LOCATION DESIGN SYMBOLS	11-2-1
UNDERGROUND SCHEMATIC SYMBOLS	11-3-1
UNDERGROUND CONDUIT ONELINE SYMBOLS	11-4-1
UNDERGROUND POLE MARKING AND IDENTIFICATION	11-5-1
MARKING OF CONSTRUCTION STAKES, UNDERGROUND	11-6-1
IDENTIFICATION MARKING METHODS, CABLE/CONDUCTORS	11-7-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED SINGLE PHASE TRANSFORMERS	11-8-1
IDENTIFICATION MARKING METHODS, THREE PHASE PAD MOUNTED TRANSFORMERS	11-9-1
IDENTIFICATION MARKING METHODS, CAPACITOR	11-10-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED, 4-WAY GANG-OPERATED DEAD FRONT SWITCHES	11-11-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED, DEAD FRONT SWITCHES	11-12-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED AUTOMATIC LIVE FRONT TRANSFER SWITCH WITH REMOTE SUPERVISORY CONTROL	11-13-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED 4/0 TAP	11-14-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED FEEDER PULLING ENCLOSURE	11-15-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED THREE PHASE SECONDARY JUNCTION BOX	11-15-2
IDENTIFICATION MARKING METHODS, PAD MOUNTED, DEAD FRONT, AIR INSULATED FUSE	11-16-1
IDENTIFICATION MARKING METHODS, SWITCHING CUBICLE, DEAD FRONT, CONTROLLED SWITCH (UFDCF7 – UFDCF12)	11-17-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED #2 PRIMARY LOOP TAP	11-18-1

UNDERGROUND MISCELLANEOUS SECTION

TITLE/DESCRIPTION	PAGE NO.
IDENTIFICATION MARKING METHODS, PRIMARY TAP ENCLOSURE AND SINGLE PHASE PRIMARY PULLING ENCLOSURE	11-19-1
IDENTIFICATION MARKING METHODS, PRIMARY TAP ENCLOSURE	11-19-2
IDENTIFICATION MARKING METHODS, LIVE FRONT SWITCHES	11-20-1
IDENTIFICATION MARKING METHODS, PAD MOUNTED AUTOMATIC TRANSFER DEAD FRONT SWITCH WITH SUPERVISORY CONTROL	11-21-1
IDENTIFICATION MARKING METHODS, PRIMARY METERING ENCLOSURE	11-22-1
IDENTIFICATION MARKING METHODS, CONDUIT	11-23-1
IDENTIFICATION MARKING METHODS, MAPPING	11-24-1
CABLE IDENTIFICATION PLATE	11-25-1
SIGN, CAUTION, UNDERGROUND ELECTRIC FACILITIES	11-26-1
TAG, NOTICE	11-27-1
CODE FOR ADDITIONAL TIME AND PHASE BALANCE	11-28-1
IDENTIFICATION MARKING METHODS, LIVE FRONT FUSING ENCLOSURE (OBSOLETE)	11-29-1
IDENTIFICATION MARKING METHODS, LIVE FRONT SWITCH (OBSOLETE)	11-30-1

MAPPING SYMBOLS

SRP STANDARDS FOR DESIGN SYMBOLS, SCHEMATIC AND CONDUIT ONE-LINE SYMBOLS ARE CATALOGUED IN THE *OVERHEAD* AND *DISTRIBUTION DESIGN STANDARDS BOOK*. NEW ADDITIONS OR MODIFICATIONS TO THESE SYMBOLS ARE COORDINATED THROUGH POLICY, PROCEDURES & STANDARDS.

NEW OR CHANGED SYMBOL OPTIONS CAN BE SUBMITTED FOR CONSIDERATION THROUGH THE STANDARDS CHANGE PROCESS BY SUBMITTING A CHANGE REQUEST FORM TO DEPARTMENT ENGINEER OR DEPARTMENT MANAGER.

DISTRIBUTION LINE DEVICE NUMBER (RISER, RECLOSER, SECTIONALIZER, CAPACITOR BANK, SINGLE BLADE DISCONNECTS,FRINGE AREA INTERCONNECTION FUSE OR GANG OPERATED SWITCH) 1X1.5" ADHESIVE BACKED ALPHA CHARACTERS AND 1-3/4" X 2-7/8"ADHESIVE BACKED NUMERIC CHARACTERS PLACED ON ALUMINUM SHEET (5035692) (FOR RISERS SEE PAGE 11-3-7. NOT ALL RISERS ARE MARKED ON THE POLE.)

STREET LIGHT NUMBER-1X1.5" CHARACTERS PLACED ON AN ADHESIVE BACKED 1-1/2" X 12" PLATE (5035695) (DISTRIBUTION USE ONLY)

MILE POST COORDINATES 1" ALPHA, 1-3/4"X2-7/8" NUMERIC PSL ON ALUMINUM PLATE (5035692)

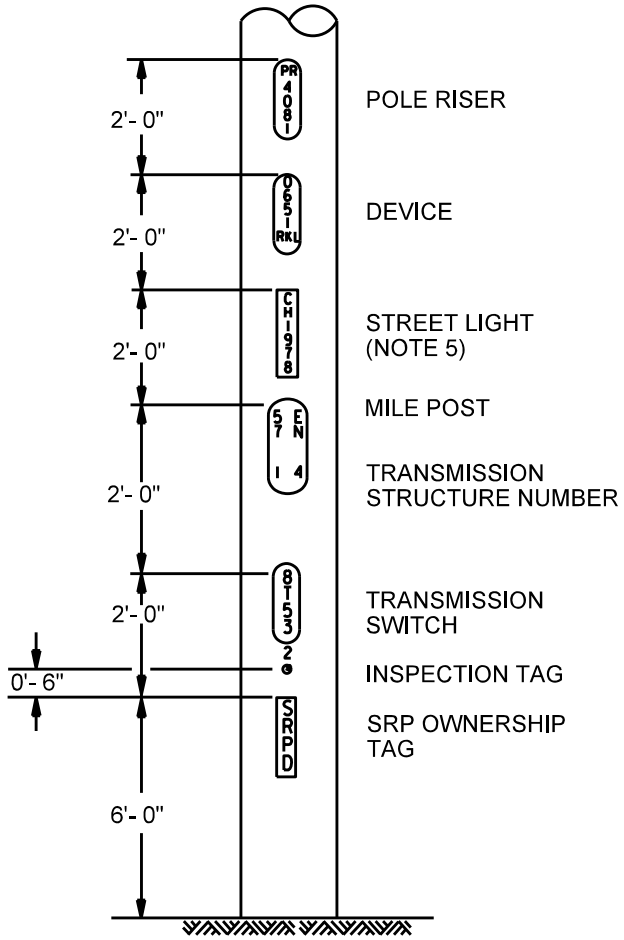
TRANSMISSION STRUCTURE NUMBER 1-3/4"X2-7/8" NUMERIC PSL ON ALUMINUM PLATE (5035692).

TRANSMISSION SWITCH NUMBER, 1"x 1-1/2" ALPHA, 1-3/4"x2-7-8" NUMERIC PSL ON ALUMINUM PLATE (5035692)

POLE INSPECTION TAGS - ALL POLES (POLE INSPECTION CREW USE)

POLE TAG SHOWING SRP OWNERSHIP (5029151). (TRANSMISSION USE ONLY)

IF DISTRIBUTION TRANSFORMER ON POLE HAS CO-GENERATION, PLACE "CO-GEN", 1-3/4" X 2-7/8" NUMERIC PSL ON ALUMINUM PLATE (5035692).



NOTES

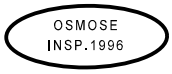
1. ANY POLE LOCATED AT A MILE COORDINATE POINT IN AN AREA LACKING AN INTERSECTION OF BOTH MILE ROADS IS TO BE LABELED WITH THAT COORDINATE POINT. THE COORDINATE LABELING IS TO READ IN A HORIZONTAL DIRECTION ON THE POLE, WITH ONE DIRECTION COORDINATE IMMEDIATELY BELOW THE OTHER.
2. ANY POLE HAVING A STREETLIGHT, RECLOSER, CAPACITOR BANK, SET OF SINGLE BLADE DISCONNECTS, GANGED LOADBREAK SWITCH, OR POLE RISER IS TO BE LABELED WITH THE PROPER LINE DEVICE NUMBER. THIS NUMBER IS TO BE ATTACHED IN A VERTICAL DIRECTION READING TOP TO BOTTOM ON THE POLE.
3. POLES ARE TO HAVE MARKINGS INSTALLED ON THE MOST VISIBLE SIDE OF THE POLE; e.g; A POLE ON A NORTHEAST CORNER OF AN INTERSECTION SHOULD HAVE MARKINGS FACING WEST, OR SOUTH. THE MARKINGS SHALL NOT COVER THE POLE BRAND
4. THE ALUMINUM SHEETS ARE ATTACHED TO THE WOOD POLES WITH SPECIAL SCREW NAILS STOCK # 5006221. THE 1 INCH ADHESIVE LABELS FOR STREETLIGHTS ARE APPLIED TO A 10 INCH PLASTIC LATE WHICH IS THEN ATTACHED TO THE POLE WITH THE SPECIAL SCREW NAILS. ON STEEL POLES, IF PLATE THICKNESS IS 1/2" OR LESS THE SELF DRILL/SELF TAPPING SCREWS (5028982) MAY BE USED. IF PLATE THICKNESS IS GREATER THAN 1/2" DRILL 3/16" DIAMETER HOLE FOR SELF DRILL/SELF TAP SCREWS (5028982).
5. SRP CREW SHALL PLACE STREET LIGHT NUMBERS AT 12' ON SHARED POLES (AS SOWN ABOVE) AND 8' ON DEDICATED "STREET LIGHT" POLES.
6. PLACEMENT OF POLE MARKINGS SHALL BE IN ACCORDANCE WITH FIGURE 1. IF THRU-BOLTS OR OTHER SRP HARDWARE IMPEDE THE SPECIFIED LOCATION OF THE POLE MARKINGS, PLACEMENT OF POLE MARKINGS MAY BE ADJUSTED. EVERY EFFORT MUST BE MADE TO LOCATE THE MARKINGS AS CLOSE AS POSSIBLE TO THE INDICTAED POSITIONS.

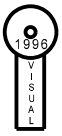
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS UNDERGROUND POLE MARKING AND IDENTIFICATION	ISSUE DATE: 08/25/87 REV. DATE: 12/23/20 APPROVAL: J.LUERA
	11-1-1	8513E237.DGN

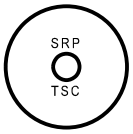
WOOD POLES ARE INSPECTED AND CLASSIFIED AS: SERVICEABLE - POLE STRENGTH MEETS CODE REQUIREMENTS.
REINFORCEABLE - POLE MUST BE REINFORCED DUE TO WEAKENED GROUND LINE.

MOST INSPECTED POLES HAVE ALUMINUM INSPECTION TAGS WITH THE YEAR OF INSPECTION AND THE NAME OF THE INSPECTION CONTRACTOR. POLES TREATED WITH OSMOPLASTIC HAVE NO TAG. THE VARIOUS TYPES OF INSPECTION TAGS ARE SHOWN BELOW. FOR QUESTIONS REGARDING OBSOLETE OR INDISCERNIBLE POLE TAGS, CONTACT LINE MAINTENANCE ENGINEERING.

INSPECTED VISUALLY NO TREATMENT: POLE VISUALLY INSPECTED ON DATE BY CONTRACTOR SHOWN. NO TREATMENTS.



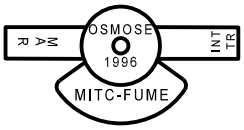




INSPECTED VISUALLY AND TREATED: SERVICEABLE POLE INSPECTED ON DATE BY CONTRACTOR SHOWN AND TREATED WITH PRODUCT SHOWN.

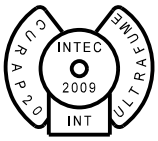
TREATMENT TAGS

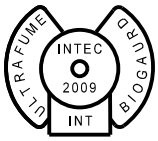
FUMIGANT, INTERNAL VOID



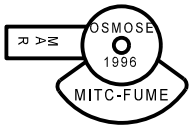
REFERENCE ONLY







FUMIGANT

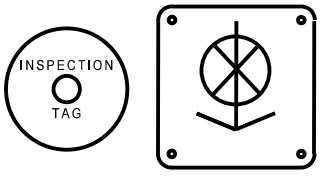


REFERENCE ONLY



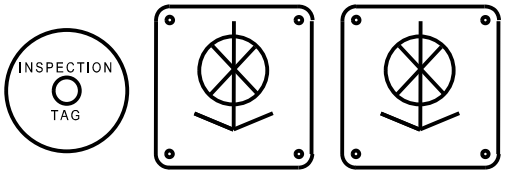


REINFORCE POLE, INSPECTED AND TREATED: CAPACITY LESS THAN 70%. SCHEDULED FOR REINFORCEMENT SINGLE TAG WHITE



(TAG COLOR: WHITE)

PRIORITY REINFORCE POLE, INSPECTED AND TREATED: CAPACITY LESS THAN 40%. SCHEDULED FOR IMMEDIATE REINFORCEMENT DOUBLE TAG WHITE

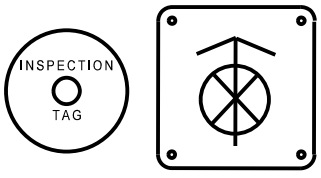


(TAG COLOR: WHITE)(TAG COLOR: WHITE)

NOTES

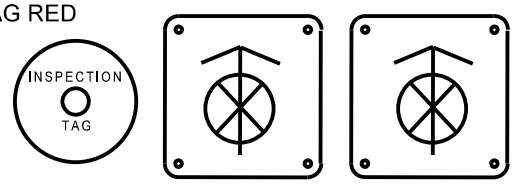
1. CONTACT LINE MAINTENANCE ENGINEERING PRIOR TO UPGRADING OR ADDING FACILITIES TO TAGGED POLES.

REJECT AND REPLACE POLE, NOT SERVICEABLE OR REINFORCEABLE.CAPACITY LESS THAN 70%. NO TREATMENT APPLIED. SCHEDULED FOR REPLACEMENT



(TAG COLOR: RED)

PRIORITY REJECT AND REPLACE POLE, NOT SERVICEABLE OR REINFORCEABLE. CAPACITY LESS THAN 40%. NO TREATMENT APPLIED. SCHEDULED FOR IMMEDIATE REPLACEMENT DOUBLE TAG RED



(TAG COLOR: RED) (TAG COLOR: RED)

NOTES

1. FOR REPLACEMENT POLES, ARROW DENOTES DIRECTION OF REJECTION.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS POLE MARKING AND IDENTIFICATION WOOD POLE INSPECTION TAGGING SYSTEM	ISSUE DATE: 04/15/99 REV. DATE: 08/19/13 APPROVAL: B.PRIEST
	11-1-2	8513E237.DGN

THE THREE TYPES OF PRESERVATIVE TREATMENTS ON SRP POLES ARE:

1) EXTERIOR:

BRAND NAMES INCLUDE "OSMOPLASTIC", "CURAP 20" AND "BIO GUARD PASTE". THESE TREATMENTS ARE APPLIED TO THE POLE BELOW GROUND LEVEL AND COVERED WITH PAPER THAT HAS A PROTECTIVE MEMBRANE FACING THE POLE TO CONFINE THE CHEMICALS. OSMOPLASTIC IS A BLACK CREOSOTE PASTE APPLIED TO THE POLE AND COVERED WITH A BLACK KRAFT PAPER (NOT TAGGED - LOOK FOR KRAFT PAPER TO DETERMINE IF TREATED). BOTH THE CURAP 20 AND BIO GUARD PASTE ARE COVERED WITH A TAN PAPER SIMILAR TO BUTCHER PAPER WITH A WAXY INSIDE MEMBRANE TO CONFINE THE CHEMICALS. POLES TREATED WITH CURAP 20 AND BIO GUARD PASTE ARE TAGGED.

2) INTERNAL VOID:

EITHER COPPER-NAPTHENATE OR PERME8. BOTH ARE A GREEN LIQUID CONSISTING OF COPPER AND DIESEL OIL, APPLIED TO VOIDS IN POLE (TAG "INT TR" OR "IT").

3) FUMIGANT:

EITHER "MITC-FUME" OR "ULTRA-FUME". "MITC-FUME" CONSISTS OF METHYLISOTHICOCYANATE IN ALUMINUM CARTRIDGES, INSERTED INTO HOLES DRILLED IN POLE (TAG "MITC-FUME"). "ULTRA-FUME CONSIST OF DAZOMET IN GRANULAR FORM AND IS "ACTIVATED" USING PERM E8 AND SHOULD BE ABSORBED INTO THE POLE AND LEAVES NO RESIDUAL EVIDENCE IN THE HOLES DRILLED IN POLE (TAG "ULTRA-FUME" AND "PERM E8").

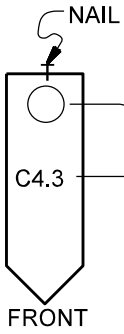
POLES TREATED WITH MITC-FUME WILL ALSO HAVE A MONTH TAG INDICATING THE MONTH THE POLE WAS TREATED.

MSDS SHEETS FOR THESE CHEMICALS ARE ON FILE AND AVAILABLE ON-LINE FOR MSDS SEARCH.

PRECAUTIONS FOR HANDLING:

- FOR SKIN CONTACT WITH ANY OF THESE CHEMICALS, WASH IMMEDIATELY WITH SOAP AND WATER.
- TO DISPOSE OF LOOSE MITC-FUME CARTRIDGES, PICK UP ALUMINUM CARTRIDGES WITH A SHOVEL - DO NOT PICK UP WITH HANDS! PUT IN PLASTIC BUCKET AND COVER WITH DIRT. TRANSPORT ON OUTSIDE OF VEHICLE AND RETURN BUCKET TO TEMPE SERVICE CENTER.

MARKING OF CONSTRUCTION STAKES



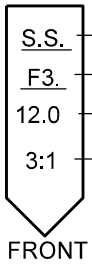
CUT OR FILL STAKES:

OFFSET DISTANCE FROM NAIL TO CONSTRUCTION.

CUT OR FILL FROM TOP OF STAKE TO GRADE.

NOTES 1. CUT OR FILL STAKES ARE NEVER BLUE TOPPED. STAKES THAT ARE BLUE TOPPED ARE GRADE. OFFSET DISTANCE ALWAYS FACES CONSTRUCTION.

SLOPE STAKES:

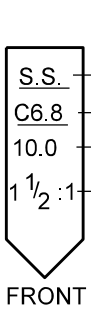


SLOPE STAKE

FILL FROM GROUND AT STAKE TO TOP OF FILL.

DISTANCE FROM STAKE TO TOP OF FILL.

SLOPE OF FILL SECTION.



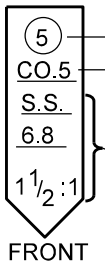
SLOPE STAKE

CUT FROM GROUND AT STAKE TO TOE OF CUT.

DISTANCE FROM STAKE TO TOE OF CUT.

SLOPE OF CUT SECTION.

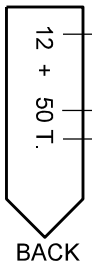
OFFSET SLOPE STAKES:



OFFSET DISTANCE FROM STAKE TO TOP OF CUT.

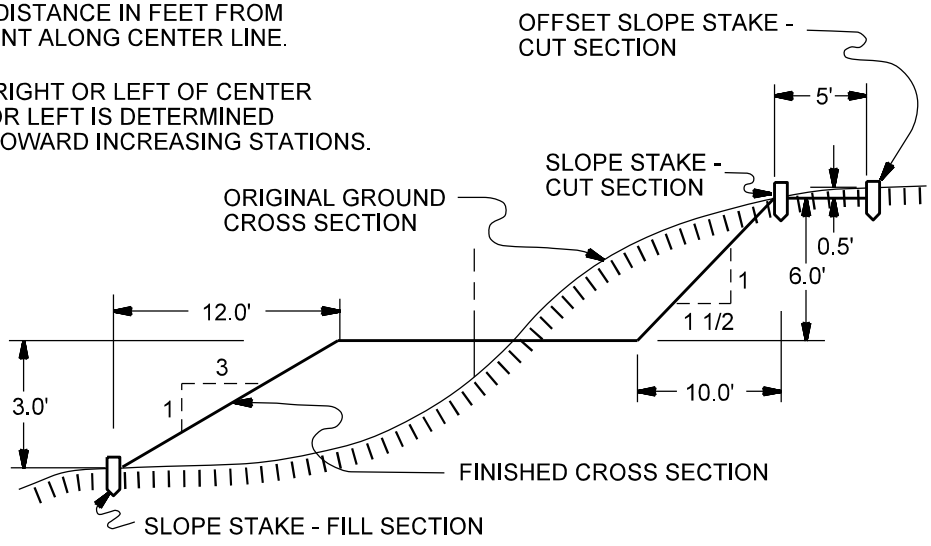
CUT FROM GROUND AT STAKE TO TOP OF CUT.

INFORMATION IS SAME AS ON SLOPE STAKE.



STATION NUMBER - DESIGNATES DISTANCE IN FEET FROM STARTING POINT ALONG CENTER LINE.

DESIGNATES RIGHT OR LEFT OF CENTER LINE. RIGHT OR LEFT IS DETERMINED BY LOOKING TOWARD INCREASING STATIONS.



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS MARKING OF CONSTRUCTION STAKES UNDERGROUND	ISSUE DATE: 01/15/87 REV. DATE: 08/10/12 APPROVAL: B.PRIEST
	11-2-1	8513E331.DGN

LETTER ABBREVIATION – 4-DIGIT NUMBER IDENTIFICATION STANDARD

1. EACH SYSTEM COMPONENT SHALL BE IDENTIFIED BY A TYPE LETTER AND DEVICE NUMBER.

   THE FOLLOWING TYPE STANDARD ABBREVIATIONS SHALL BE USED ON CONSTRUCTION DRAWINGS AND AS THE FIELD IDENTIFICATION.

   A SINGLE UNIT MAY HAVE MULTIPLE TYPES AND DEVICE NUMBERS.

4/0 PRIMARY TAP ENCLOSURE	PDT
CAPACITOR	CB
PULLING ENCLOSURE	PDP
INDIVIDUAL CONTROLLED SWITCH COMPARTMENTS OF A REMOTE CONTROLLED AUTO TRANSFER (COMPARTMENTS WITHIN A PEA OR PDA)	C
INDIVIDUAL MANUAL SWITCH COMPARTMENTS OF A MULTIPLE SWITCH ENCLOSURE (COMPARTMENTS WITHIN A PEA OR PDA)	U
INTERRUPTER, VACUUM	PDI
MANHOLE	MH
PAD ENCLOSURE – DEAD FRONT	PD
PAD ENCLOSURE – LIVE FRONT	PE
POLE, ANTENNA, RC SWITCH	AP
PRIMARY METER	PM
PRIMARY POLE RISER	PR
PRIMARY POLE RISER WITH GANG OPERATED LOAD BREAK SWITCH	PRL
PRIMARY POLE RISER WITH REMOTE OPERATED LOAD BREAK SWITCH	PRC
PULL BOX	PB
RECLOSER	PD…R
SWITCH ENCLOSURE, DEAD FRONT, 4 COMPARTMENT REMOTE CONTROLLED AUTO TRANSFER	PDA
SWITCH ENCLOSURE, LIVE FRONT, 4 COMPARTMENT REMOTE CONTROLLED AUTO TRANSFER	PEA
SWITCH, DEAD FRONT, REMOTE CONTROLLED	PDC
SECTIONALIZER	PE…S
TRANSFORMER – PAD MOUNTED	P
VAULT	V

2. A 4-DIGIT DEVICE NUMBER WILL FOLLOW THE LETTER TYPE ABBREVIATION. THE FIRST TWO DIGITS INDICATE THE 40-ACRE SECTION NUMBER WHERE THE DEVICE IS LOCATED. THE THIRD AND FOURTH DIGITS (01-99) INDICATE SUCCESSIVE DEVICES. THE FIRST DEVICE INSTALLED IN A SECTION IS "01", THE SECOND "02", ETC. THE HUNDREDTH AND SUCCESSIVE DEVICES WILL CONTAIN ONE OF THE FOLLOWING SEQUENCE OF LETTERS AS THE THIRD DIGIT (INSTEAD OF A NUMBER): A, C, E, H, J, K, L, P, R, T, W, X, Y. EXAMPLE: PR11A1, PR11C2. (NUMERALS 51 THROUGH 99 ARE NO LONGER RESERVED EXCLUSIVELY FOR OVERHEAD EQUIPMENT.)

   "U" OR "C" FOLLOWED BY 1-4, AS APPLICABLE, IS USED TO IDENTIFY SWITCH COMPARTMENTS WITHIN A MULTIPLE SWITCHING DEVICE (PD, PE, PDA, AND PEA). "C" INDICATES THE SWITCH HAS REMOTE SUPERVISORY CONTROL. "U" INDICATES LOCAL MANUAL OPERATION.

   PROPERTY MAPPING ASSIGNS THESE NUMBERS PRIOR TO DESIGN ISSUE.

3. CABLE IDENTIFICATION

A. PRIMARY & FEEDER

PRIMARY AND FEEDER SHALL HAVE AT LEAST TWO MARKINGS AT EACH DEVICE.

1) PHASE ID (COLORED TAPE)

THE ENDS OF EACH PRIMARY OR FEEDER CABLE SHALL BE IDENTIFIED WITH COLORED TAPE AS FOLLOWS:

RED - “A” PHASE, YELLOW - “B” PHASE, BLUE – “C” PHASE.

NOTE:
PHASE LOCATIONS IN ENCLOSURES: PHASES SHALL BE A-B-C LEFT TO RIGHT WHEN FACING THE FRONT OF THE ENCLOSURE, EXCEPT AS SHOWN IN FIGURE 9, PAGE 11-7-1 FOR THE 4-WAY, GANG-OPERATED DEAD FRONT SWITCH.

(DO NOT RELY ON TAPE COLOR ALONE; VERIFY PHASING WITH A PHASING TOOL.)

2) OPERATING AND/OR INTERMEDIATE DEVICE (LETTER NUMBER CODE)

EACH CABLE END SHALL BE LABELLED WITH THE NEXT OPERATING DEVICE TO WHICH THE CABLE IS CONNECTED.

IF THE CABLE PASSES THROUGH AN INTERMEDIATE NON-OPERATING DEVICE, A SECOND LABEL ON EACH CABLE END SHALL IDENTIFY THE DEVICE’S NUMBER. (SEE EXAMPLE A-G PAGES 11-3-4 THROUGH 11-3-6)

EXCEPTION: CABLES BETWEEN PDTS SHALL BE LABELED WITH THE NEXT DEVICE ONLY.

THE DEVICE’S CODE SHALL BE PRINTED ON DYMO TAPE AND ATTACHED TO THE CABLE. IN ADDITION, THE DEVICE’S CODE SHALL ALSO BE IDENTIFIED USING EITHER PLACARDS ON THE CABLES OR ADHESIVE LETTERS ON THE INTERNAL SURFACE OF THE DEVICE, AS DEPICTED ON PAGES 11-3-3 THROUGH 11-18-1.

WHEN AN INTERMEDIATE SINGLE-PHASE TRANSFORMER IS INSTALLED BETWEEN TWO DEVICES, THE SINGLE-PHASE TRANSFORMER SHALL BE IDENTIFIED EITHER BY INSTALLING AN ADDITIONAL CABLE PLACARD ON THE END OF THE PHASE CONDUCTORS AT EACH OF THE NEXT OPERABLE DEVICES IN EITHER DIRECTION, OR BY LABELING APPLIED TO THE INTERNAL SURFACE OF OPERABLE DEVICES.

CABLE PLACARD

CABLE SHALL BE IDENTIFIED BY PLACING 1” X 1 ½” ADHESIVE LETTERS AND NUMBERS ON A 1 ½” X 10” PLASTIC STRIP SECURED WITH PLASTIC TIES. PLACARDS SHALL BE USED FOR THE FOLLOWING EQUIPMENT TYPES (SEE FIGURES FOR SPECIFIC REQUIREMENTS):

- GENERAL CABLE/CONDUCTOR: 11-3-7, FIG. 1 THROUGH 4
- PAD MOUNTED 4/0 TAPPING ENCLOSURE: 11-10-1, FIG. 11
- PAD MOUNTED FEEDER PULLING ENCLOSURE: 11-11-1, FIG. 12
- #2 PRIMARY LOOP TAPPING ENCLOSURE: 11-14-1, FIG. 16
- PAD MOUNTED SINGLE PHASE PRIMARY PULLING ENCLOSURE: 11-15-1, FIG 17
- PRIMARY TAP ENCLOSURE: 11-15-2

DEVICE INTERNAL SURFACE

CABLE SHALL BE IDENTIFIED BY PLACING 1 ¾" X 2 ⅞" ADHESIVE LETTERS AND NUMBERS ON THE INTERNAL SURFACE OF THE DEVICE FOR THE FOLLOWING EQUIPMENT TYPES (SEE FIGURES FOR SPECIFIC REQUIREMENTS):

- PAD MOUNTED SINGLE PHASE TRANSFORMERS: 11-4-1, FIG. 5
- PAD MOUNTED THREE PHASE TRANSFORMERS: 11-5-1, FIG. 6
- PAD MOUNTED CAPACITOR BANKS: 11-6-1, FIG. 7
- PAD MOUNTED 4-WAY GANG-OPERATED DEAD FRONT SWITCHES: 11-7-1, FIG. 8
- PAD MOUNTED DEAD FRONT SWITCHES: 11-8-1, FIG. 9
- PAD MOUNTED AUTOMATIC TRANSFER LIVE FRONT SWITCH WITH REMOTE SUPERVISORY CONTROL: 11-9-1, FIG. 10
- PAD MOUNTED DEAD FRONT AIR INSULATED FUSING ENCLOSURE: 11-21-1, FIG. 14
- DEAD FRONT CONTROLLED SWITCHING CUBICLE: 11-13-1, FIG. 15
- LIVE FRONT SWITCHING ENCLOSURE: 11-16-1, FIG. 19
- AUTOMATIC TRANSFER SWITCH: 11-17-1, FIG. 20

B. SECONDARY, SERVICE & STREETLIGHT

1) SINGLE PHASE

THE ENDS OF EACH SECONDARY CABLE SUPPLIED FROM A TRANSFORMER SHALL BE IDENTIFIED WITH A UNIQUE COLOR TAPE.

WHEN MULTIPLE SERVICES ARE SUPPLIED FROM A SINGLE TRANSFORMER OR JUNCTION BOX, THE ENDS OF EACH SERVICE CABLE SHALL BE IDENTIFIED WITH A UNIQUE COLOR TAPE. (SEE EXAMPLE F, PG. 11-3-6)

2) THREE PHASE

THE ENDS OF EACH CABLE ARE IDENTIFIED BY THE EXTRUDED COLOR AS FOLLOWS:

RED – "A" PHASE, NO COLOR – "B" PHASE, BLUE – "C" PHASE. IF TAPING, RED – A, YELLOW – B & BLUE – C.

CUSTOMER-OWNED SERVICE CABLES: WHERE SRP FACILITIES CONNECT TO CUSTOMER-OWNED CABLES, THE CUSTOMER SHALL IDENTIFY THE ENDS OF EACH CABLE ACCORDING TO SRP COLOR IDENTIFICATION STANDARDS.

THE ENDS OF THE "C" PHASE CABLE OF A 120/240 V FOUR-WIRE DELTA SERVICE (WILD LEG) SHALL ALSO BE IDENTIFIED WITH ORANGE COLORED TAPE.

WHEN MULTIPLE SERVICE SECTIONS ARE SUPPLIED FROM A SINGLE TRANSFORMER, THE ENDS OF EACH CABLE(S) SUPPLING THAT SECTION SHALL BE IDENTIFIED WITH A UNIQUE COLOR TAPE.

C. SINGLE RISER (PRIMARY & FEEDER)

AN ALUMINUM SHEET ATTACHED TO THE POLE WILL CARRY THE RISER IDENTIFICATION NUMBER USING ADHESIVE LABELS, PG. 11-1-1.

D. SINGLE RISER (PRIMARY & FEEDER)

MULTIPLE SINGLE- OR TWO-PHASE RISERS: THE RISER IDENTIFICATION SHALL BE ON THE CABLES, FIG. 1, PG. 11-3-7.

THE MOLDING SHALL HAVE NO IDENTIFICATION.

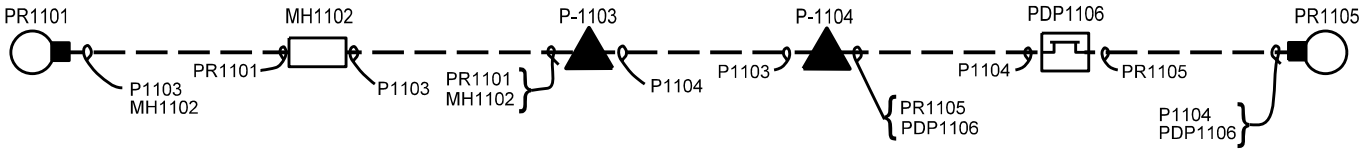
COMBINED SINGLE- AND THREE-PHASE RISERS: THE SINGLE-PHASE RISER IDENTIFICATION SHALL BE ON THE SINGLE - PHASE CABLE, FIG.1, PG. 11-3-7. THE THREE-PHASE RISER SHALL BE IDENTIFIED BY ADHESIVE LABELS ON AN ALUMINUM SHEET ATTACHED TO THE POLE, PG. 11-1-1.

4. ENCLOSURE IDENTIFICATION

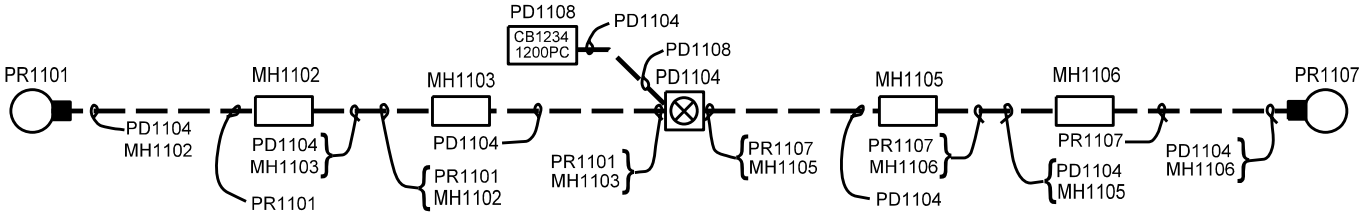
EACH PAD-MOUNTED ENCLOSURE SHALL BE MARKED WITH IDENTIFICATION OF THE DEVICE, ITS LOCATION, INFORMATION FOR THE PUBLIC, AND WARNINGS TO OPERATORS. SEE THE FIGURE FOR EACH DEVICE ON THE FOLLOWING PAGES FOR THESE MARKINGS.

EXAMPLES

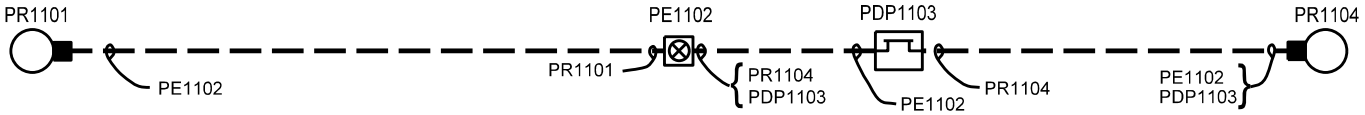
EXAMPLE A - SINGLE PHASE PRIMARY



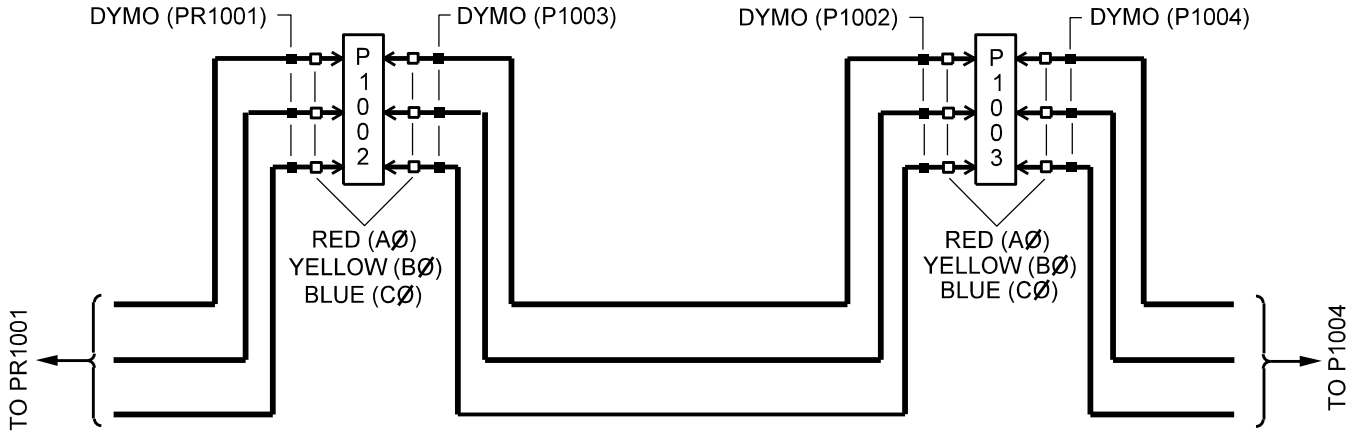
EXAMPLE B - THREE PHASE PRIMARY



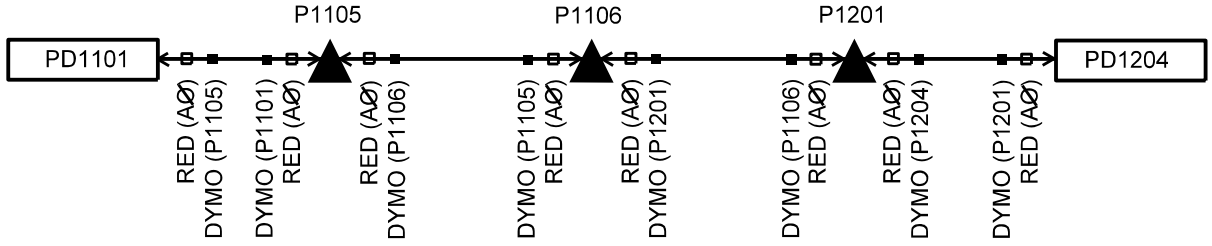
EXAMPLE C - UNDERGROUND TIE BETWEEN TWO OVERHEAD CIRCUITS



EXAMPLE D- WIRE COLOR AND IDENTIFICATION CODING AT 3Ø TRANSFORMERS

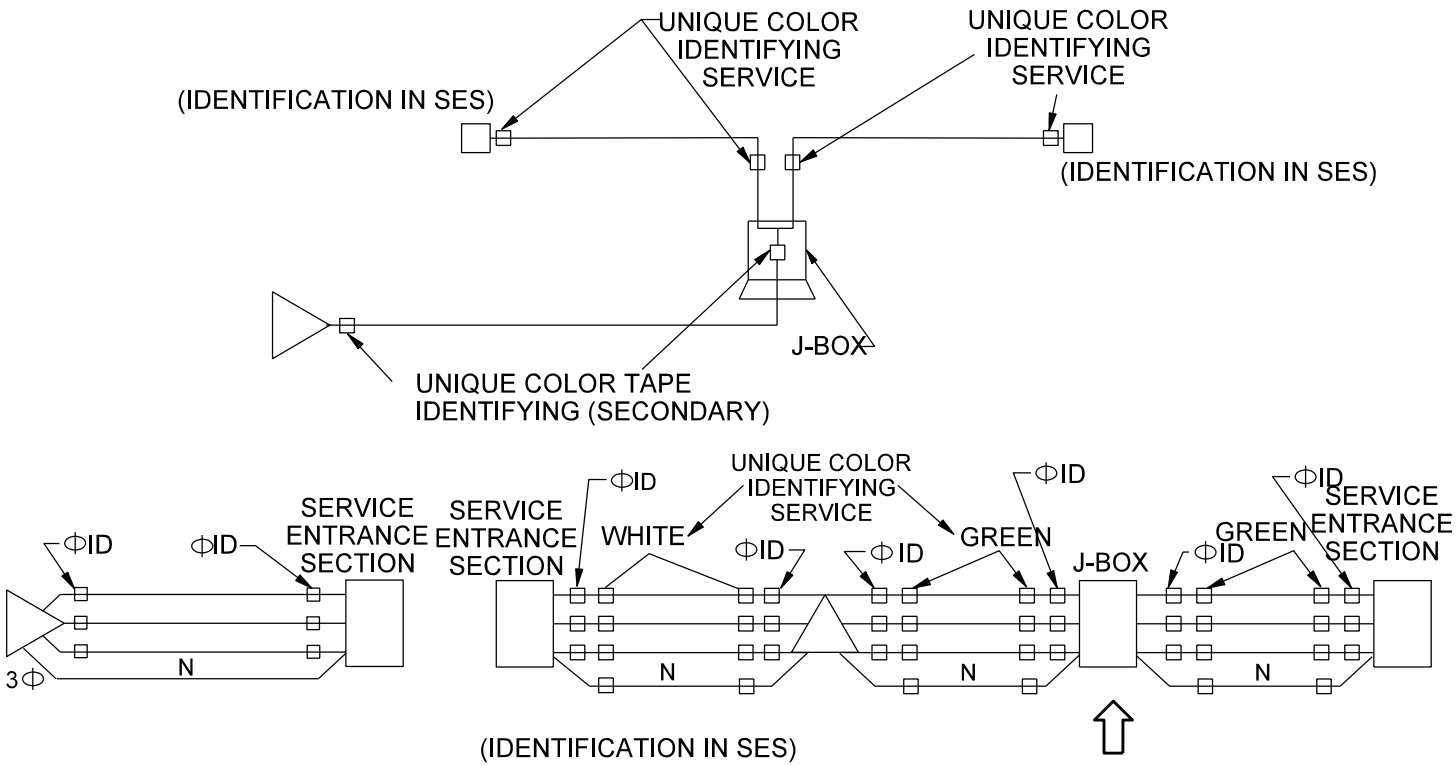


EXAMPLE E-1Ø CIRCUITS FROM DEAD FRONT FUSE ENCLOSURE AØ SHOWN

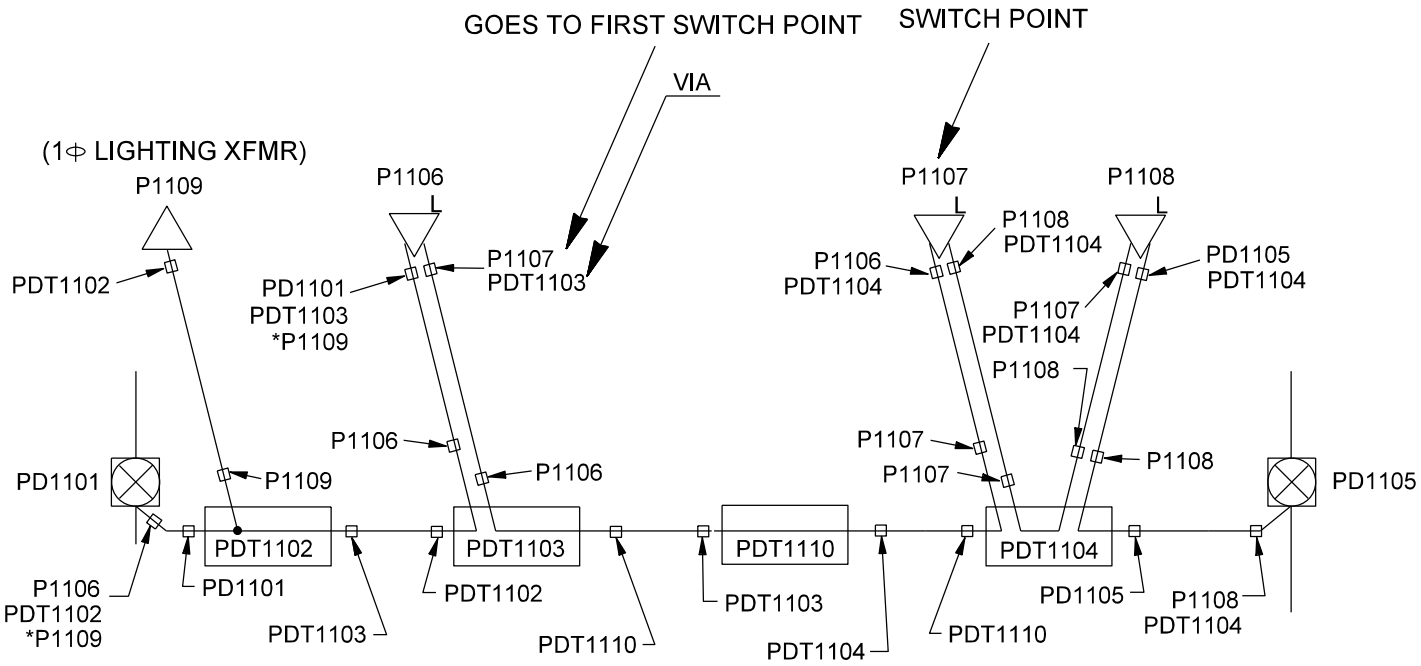


Underground Distribution Construction Standards PROPRIETARY MATERIAL	MISCELLANEOUS IDENTIFICATION MARKING METHODS CABLE/CONDUCTORS	ISSUE DATE: 01/15/87 REV. DATE: 09/16/12 APPROVAL: B.PRIEST
	11-3-5	8513E206.DGN

EXAMPLE F - SECONDARY AND SERVICE CODING
TAPE IDENTIFICATION UNLESS EXTRUDED STRIPES



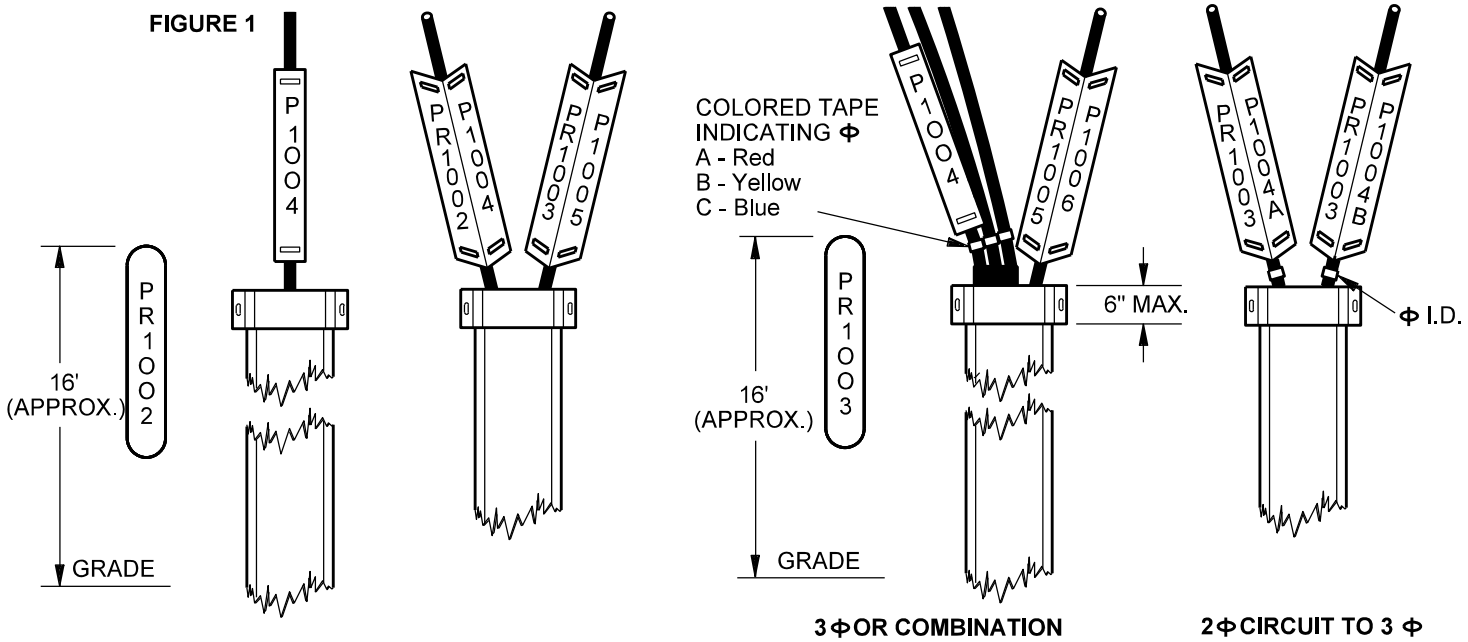
EXAMPLE G - 3Φ 4/0 LOOPS THROUGH PAD MOUNTED TAP ENCLOSURES



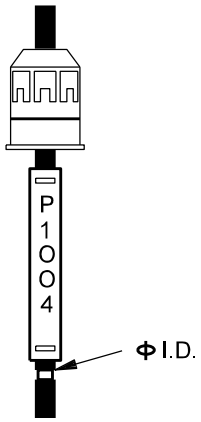
*PLACARD INSTALLED ON PHASE CONDUCTOR FEEDING INTERMEDIATE SINGLE-PHASE TRANSFORMER.

Underground Distribution Construction Standards SRP® PROPRIETARY MATERIAL	MISCELLANEOUS IDENTIFICATION MARKING METHODS CABLE / CONDUCTORS	ISSUE DATE: 01/15/87 REV. DATE: 01/15/19 APPROVAL: N.SABBAH
	11-3-6	8513E187.DGN

FIGURE 1



SINGLE 1Φ CIRCUITS | MULTIPLE 1Φ CIRCUITS | 3Φ OR COMBINATION 3Φ & 1Φ CIRCUITS | 2Φ CIRCUIT TO 3 Φ OPEN Y - OPEN △ BANK



FEEDER AND PRIMARY

FIGURE 2

INDOOR TERMINATIONS

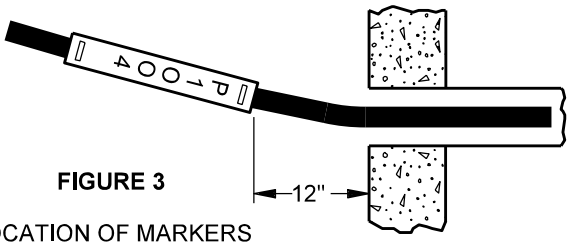


FIGURE 3

LOCATION OF MARKERS IN VAULTS,MANHOLES & PULL BOXES

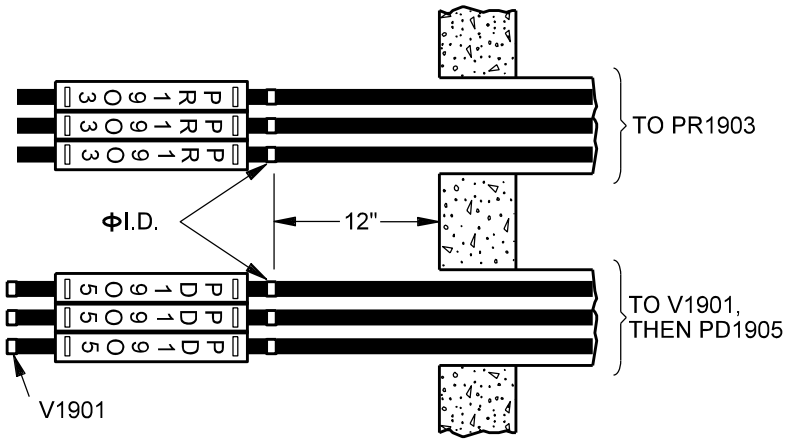


FIGURE 4

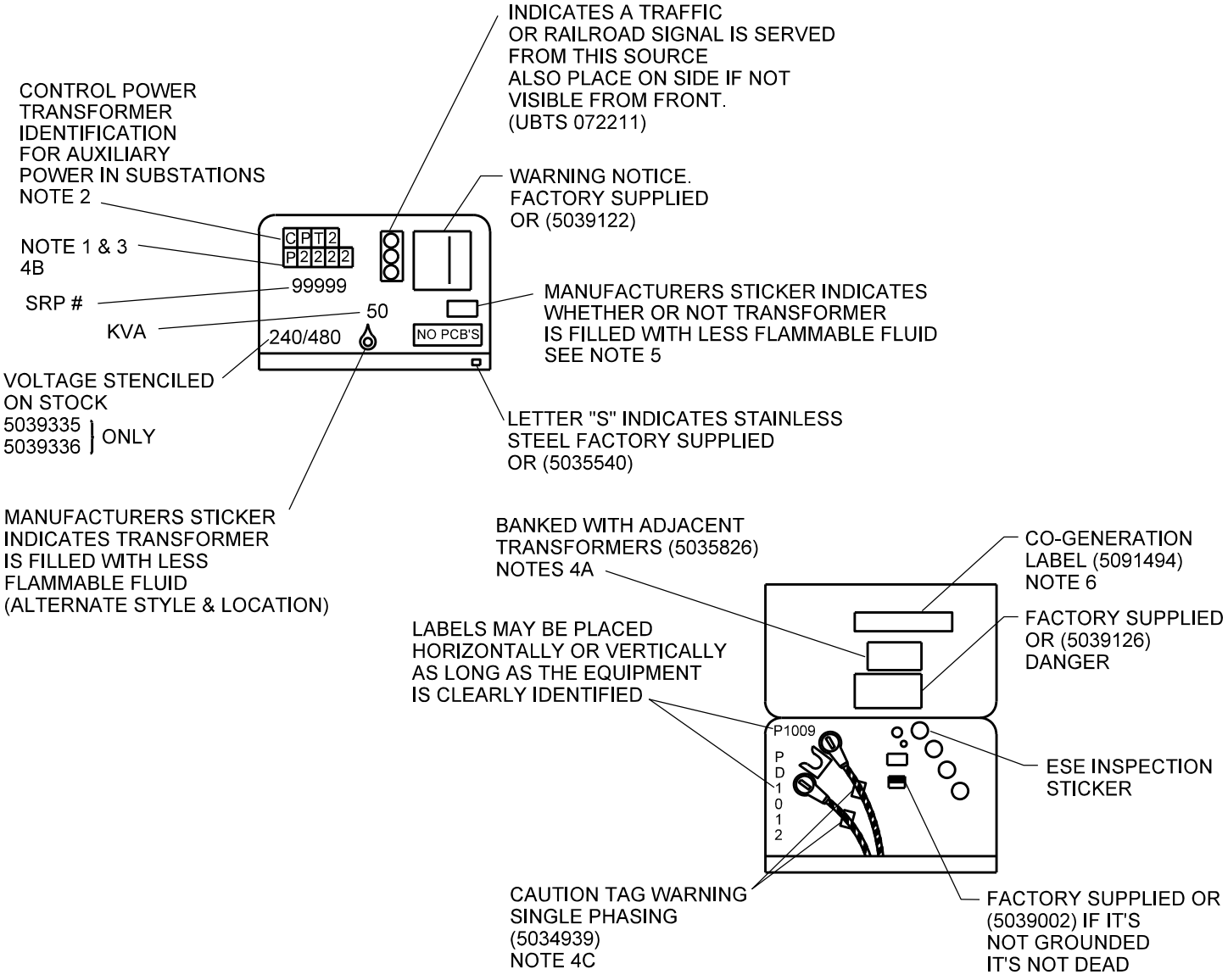
IDENTIFICATION OF TWO 3Φ CIRCUITS IN A SINGLE DUCT BANK ENTERING VAULT OR MANHOLE

NOTES

1. CONDUCTORS OF DIFFERENT VOLTAGE CLASSIFICATIONS (PRIMARY, SECONDARY OR COMMUNICATION CABLE) SHALL NOT BE INSTALLED IN THE SAME RISER MOLD.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS CABLE/CONDUCTORS	ISSUE DATE: 01/15/87 REV. DATE: 09/15/12 APPROVAL: B.PRIEST
	11-3-7	8513E185.DGN

FIGURE 5

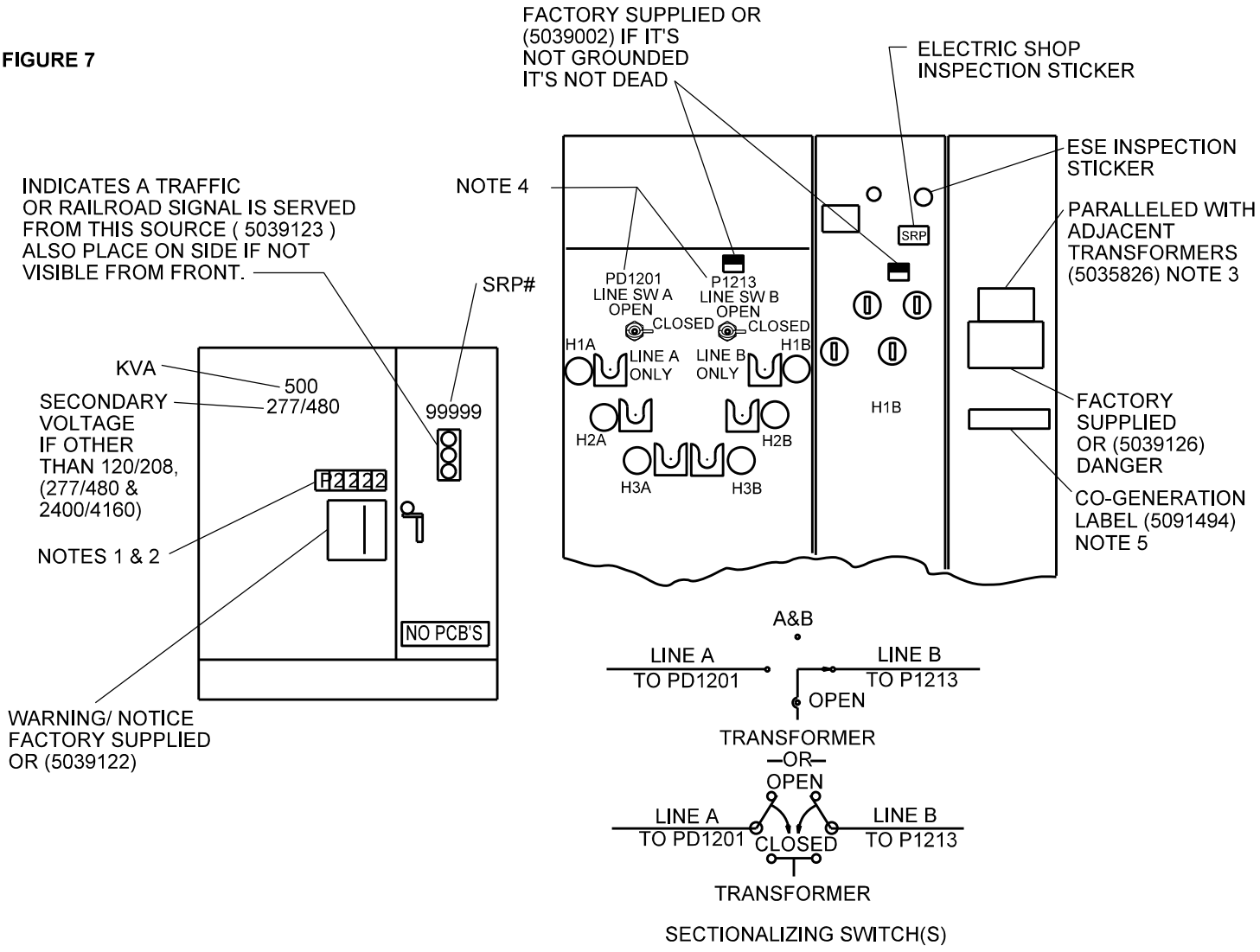


NOTES

1. THE LETTER NUMBER CODE AS DESIGNATED IN FRONT AND BACK DETAIL, PAGE 11-7-1 (P2222).
2. THE CPT NUMBER IS ONLY NEEDED ON AUXILIARY POWER TRANSFORMERS IN SUBSTATIONS.
3. CUSTOMER OWNED/SRP MAINTAINED PAD MOUNTED TRANSFORMERS SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN "F" (P2222F)
4. A. BANKED UNITS - PLACE STICKER (5035826) "CAUTION - THIS TRANSFORMER IS BANKED WITH THE ADJACENT..." ON EACH SINGLE PHASE TRANSFORMER MAKING UP THE BANK.
   B. THE "P" NUMBER WILL END WITH THE PHASE IDENTIFICATION CHARACTER ADDED (A, B, C) CUSTOMER OWNED/SRP MAINTAINED BANKED SINGLE PHASE UNITS WILL EACH BE MARKED WITH A PAD NUMBER FOLLOWED BY AN "F" FOLLOWED BY THE PHASE (P2222FA) (P2222FB) (P2222FC) NOTES 3 & 4A, B COVER THIS.
   C. ATTACH CAUTION TAG 5034939 TO CABLES.
5. TRANSFORMER IS FILLED WITH LESS FLAMMABLE FLUID ONLY IF "BIO TEMP" CHECK BOX IS CHECKED BY MANUFACTURER.
6. CO-GENERATION - PLACE STICKER (5091494) "CAUTION - POSSIBLE BACKFEED - EQUIPMENT CONNECTED TO TWO OR MORE SOURCES OF POWER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS PAD MOUNTED SINGLE PHASE TRANSFORMERS	ISSUE DATE: 09/19/08 REV. DATE: 12/23/20 APPROVAL: J.LUERA
	11-4-1	8513E498.DGN

FIGURE 7



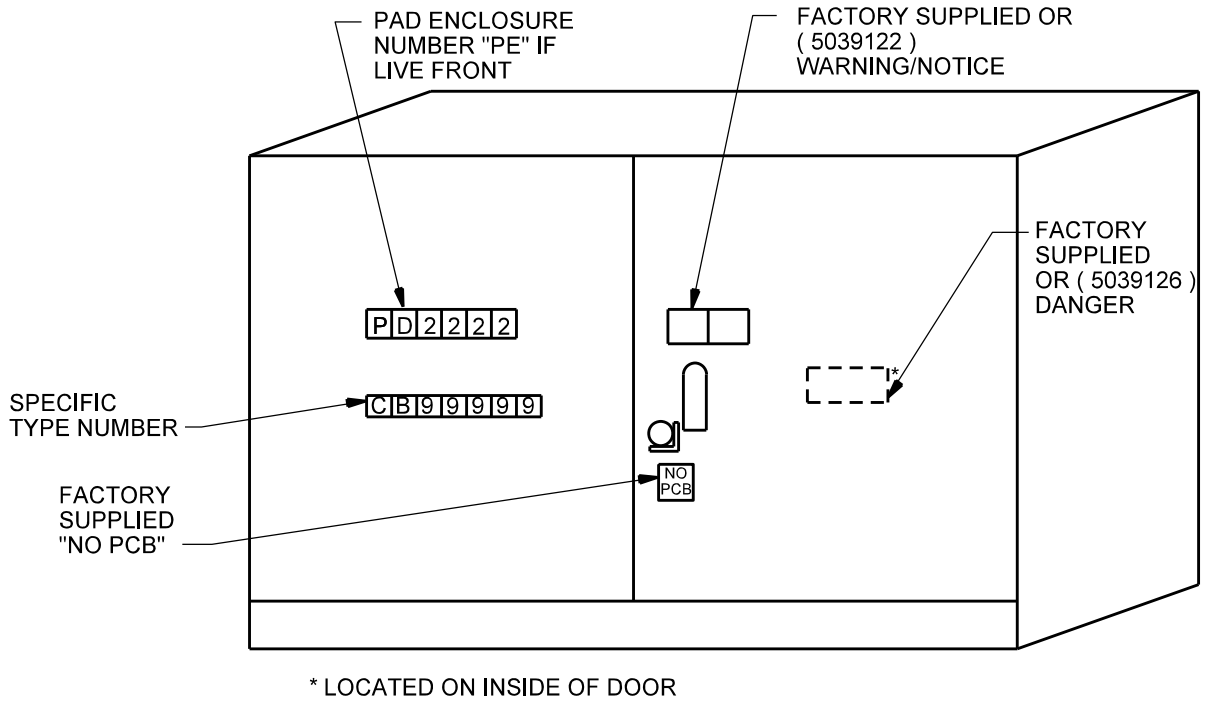
NOTES

1. THE LETTER NUMBER CODE AS DESIGNATED IN FRONT AND BACK DETAIL, PAGE 11-7-1 (P2222).
2. CUSTOMER OWNED/SRP MAINTAINED PAD MOUNTED TRANSFORMERS SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN "F" (P2222F)
3. ON PARALLELED THREE PHASE TRANSFORMERS PLACE STICKER (5035826) "CAUTION - THIS TRANSFORMER IS BANKED WITH THE ADJACENT..." (5035826)
4. NEXT OPERATING DEVICE IDENTIFICATION.
5. CO-GENERATION - PLACE STICKER (5091494) "CAUTION - POSSIBLE BACKFEED - EQUIPMENT CONNECTED TO TWO OR MORE SOURCES OF POWER.

FIGURE 8

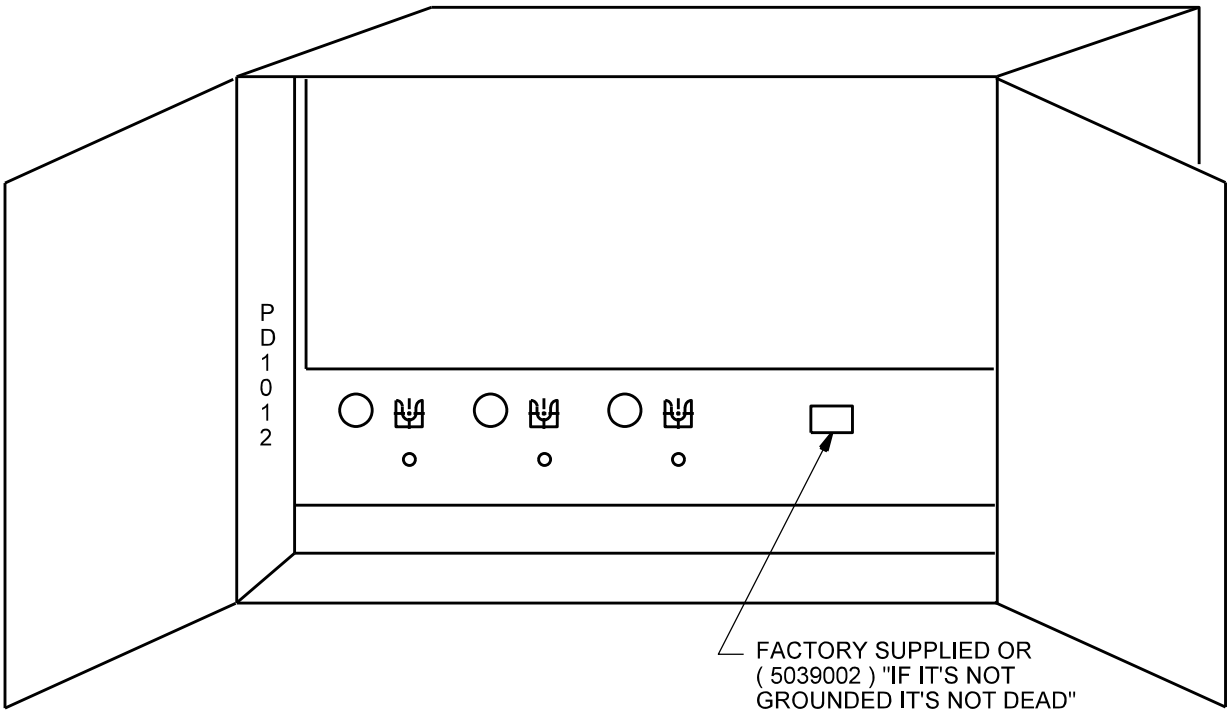
PAD MOUNTED CAPACITOR

FRONT



* LOCATED ON INSIDE OF DOOR

INSIDE FRONT COVERS

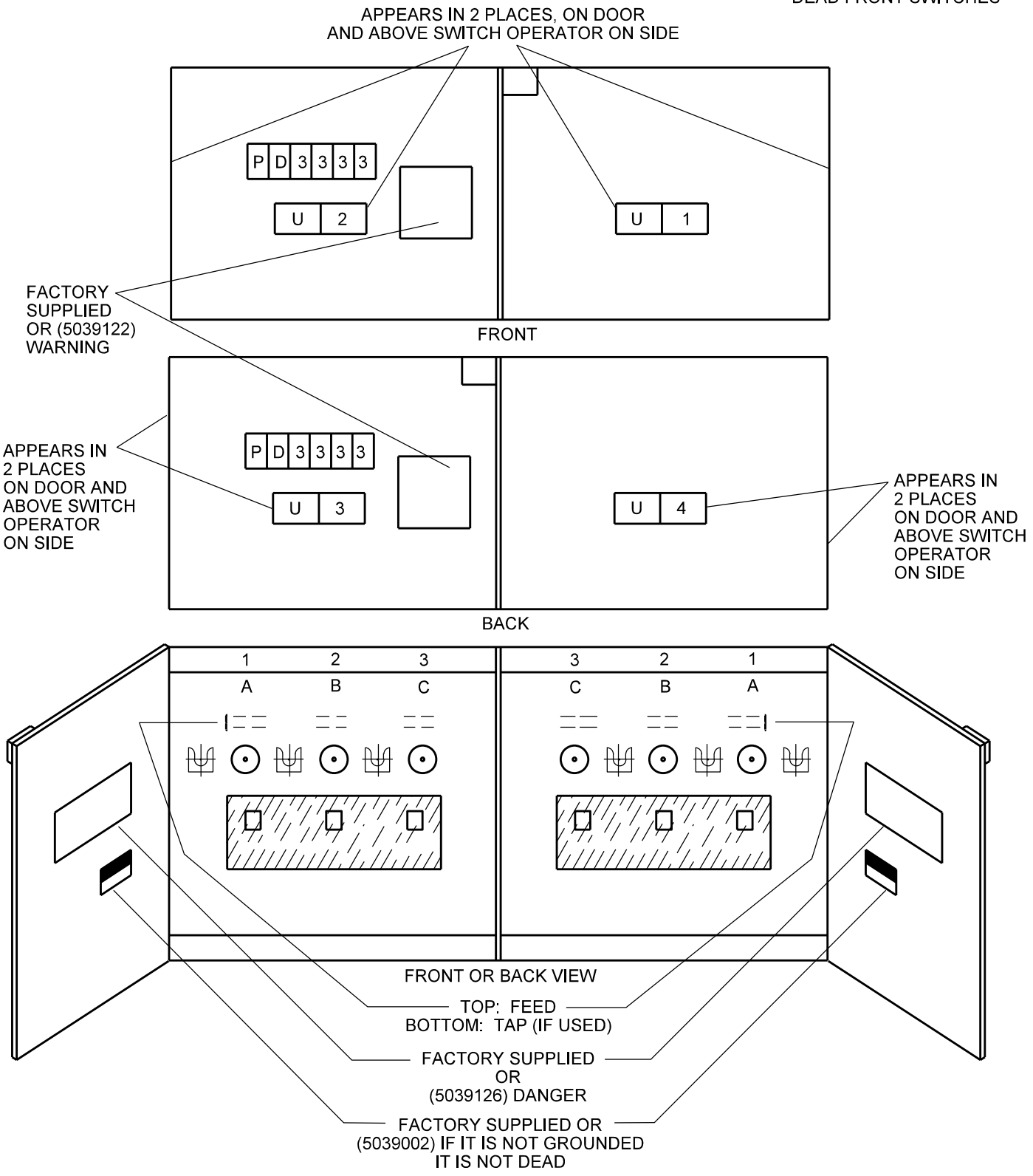


CUSTOMER OWNED/SRP MAINTAINED PAD MOUNTED CAPACITOR SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN 'F' (PD2222F).

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS (CAPACITOR)	ISSUE DATE: 01/15/87 REV. DATE: 01/06/15 APPROVAL: B.PRIEST
	11-6-1	8513E220.DGN

FIGURE 8

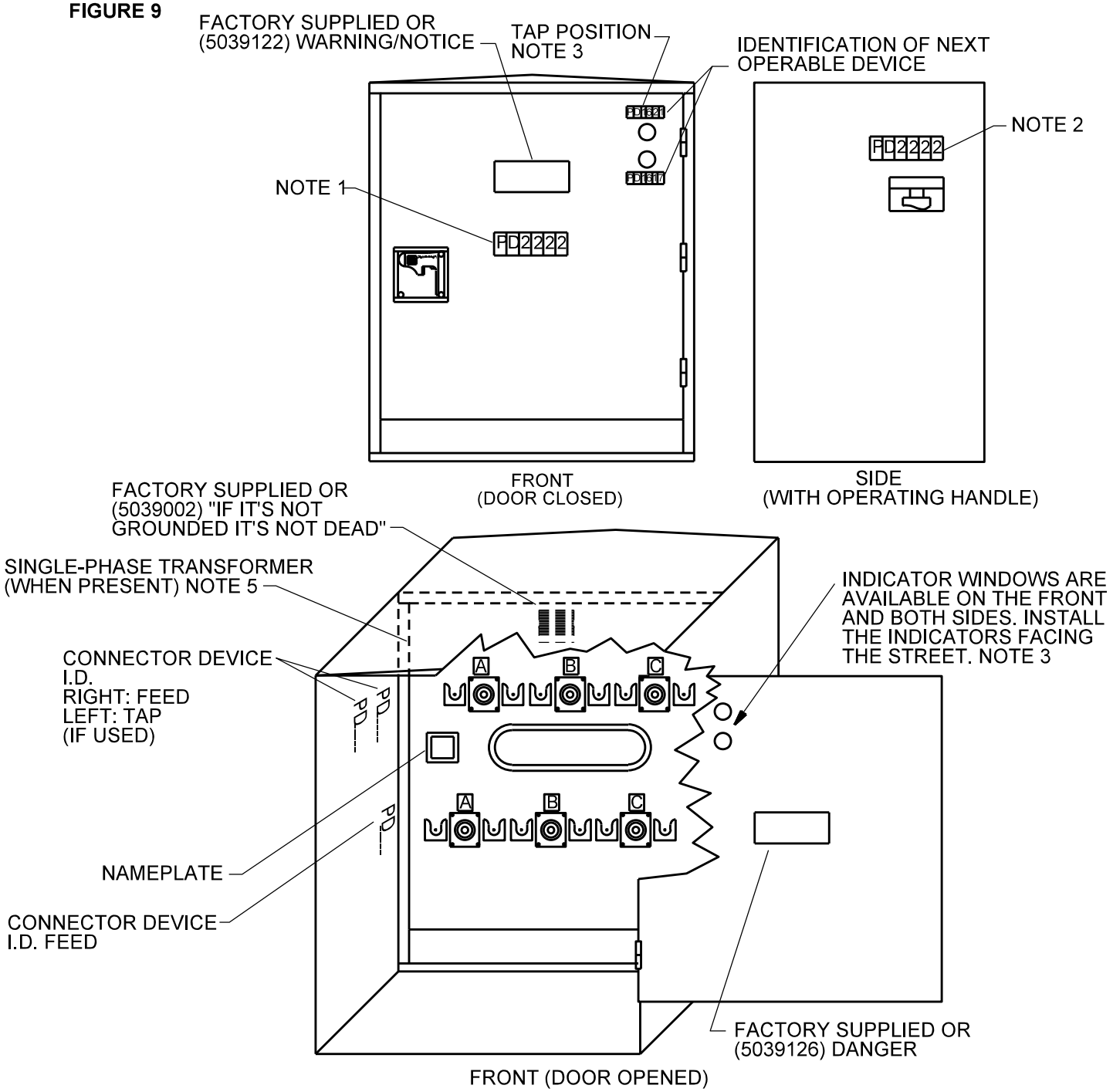
PAD MOUNTED 4-WAY GANG OPERATED
DEAD FRONT SWITCHES



CUSTOMER OWNED/SRP MAINTAINED 4-WAY GANG OPERATED DEAD FRONT SWITCH SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN 'F' (PD333F).

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS PAD MOUNTED 4-WAY GANG-OPERATED DEAD FRONT SWITCHES	ISSUE DATE: 01/15/87 REV. DATE: 08/06/13 APPROVAL: B.PRIEST
	11-7-1	8513E222.DGN

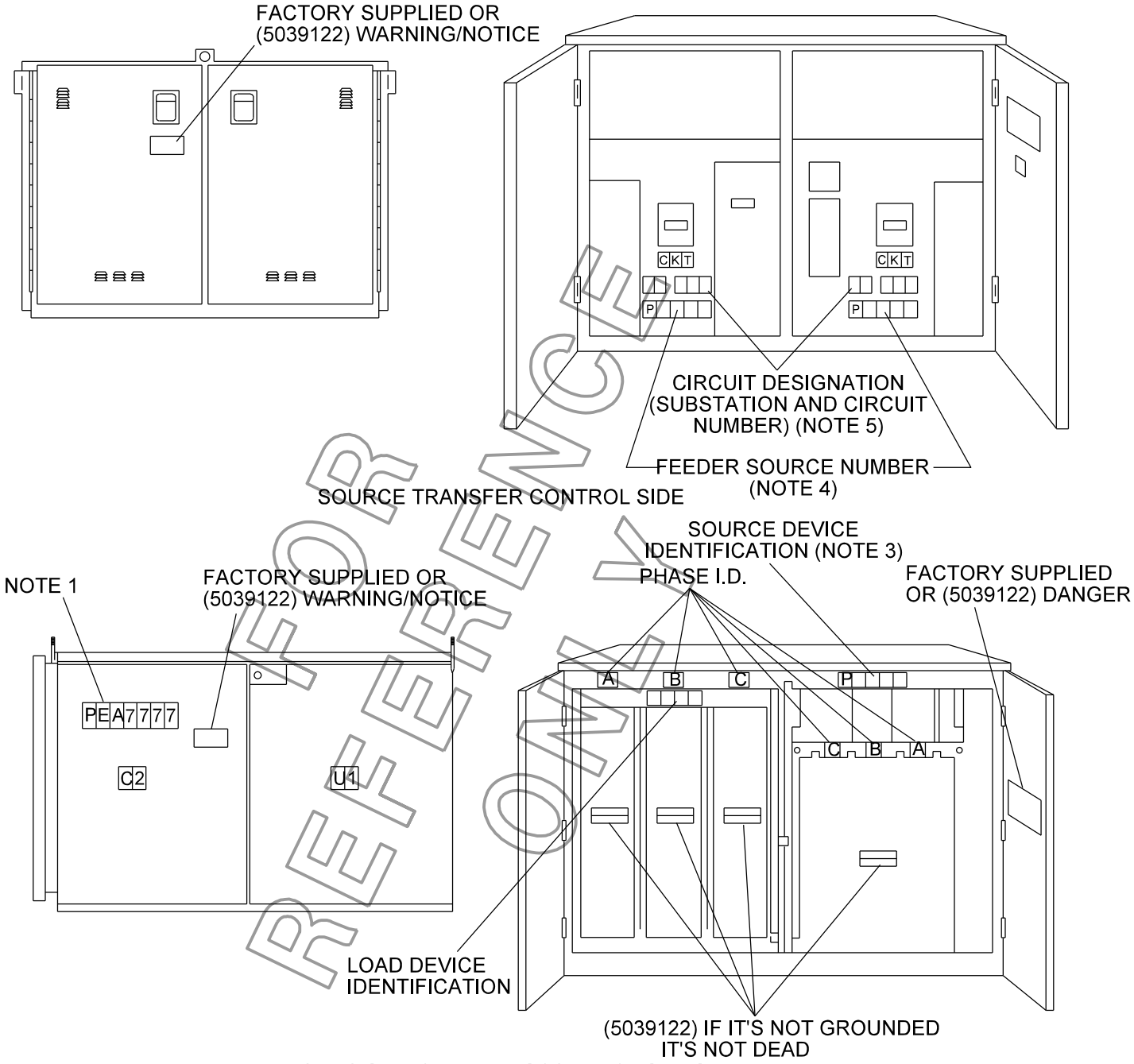
FIGURE 9



NOTES

1. THE LETTER NUMBER CODE AS DESIGNATED IN FRONT AND BACK DETAIL, PAGE 11-7-1 (PD2222).
2. THE LETTER NUMBER CODE AS DESIGNATED IN 1 (PD2222) SHALL ALSO BE PLACED ABOVE THE OPERATOR ACCESS DOOR.
3. FAULT INDICATOR WINDOWS - PLACE THE LABELS WITH DEVICE IDENTIFICATION OF THE NEXT OPERATING DEVICE TO WHICH THE MONITORED FEEDER CONNECTS.
4. CUSTOMER OWNED/SRP MAINTAINED DEAD FRONT SWITCH SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN "F" (PD2222F).
5. WHEN THE SINGLE-PHASE TAP POSITION IS UTILIZED, THE TRANSFORMER SHALL BE IDENTIFIED USING DYMO TAPE AND CABLE PLACARD.

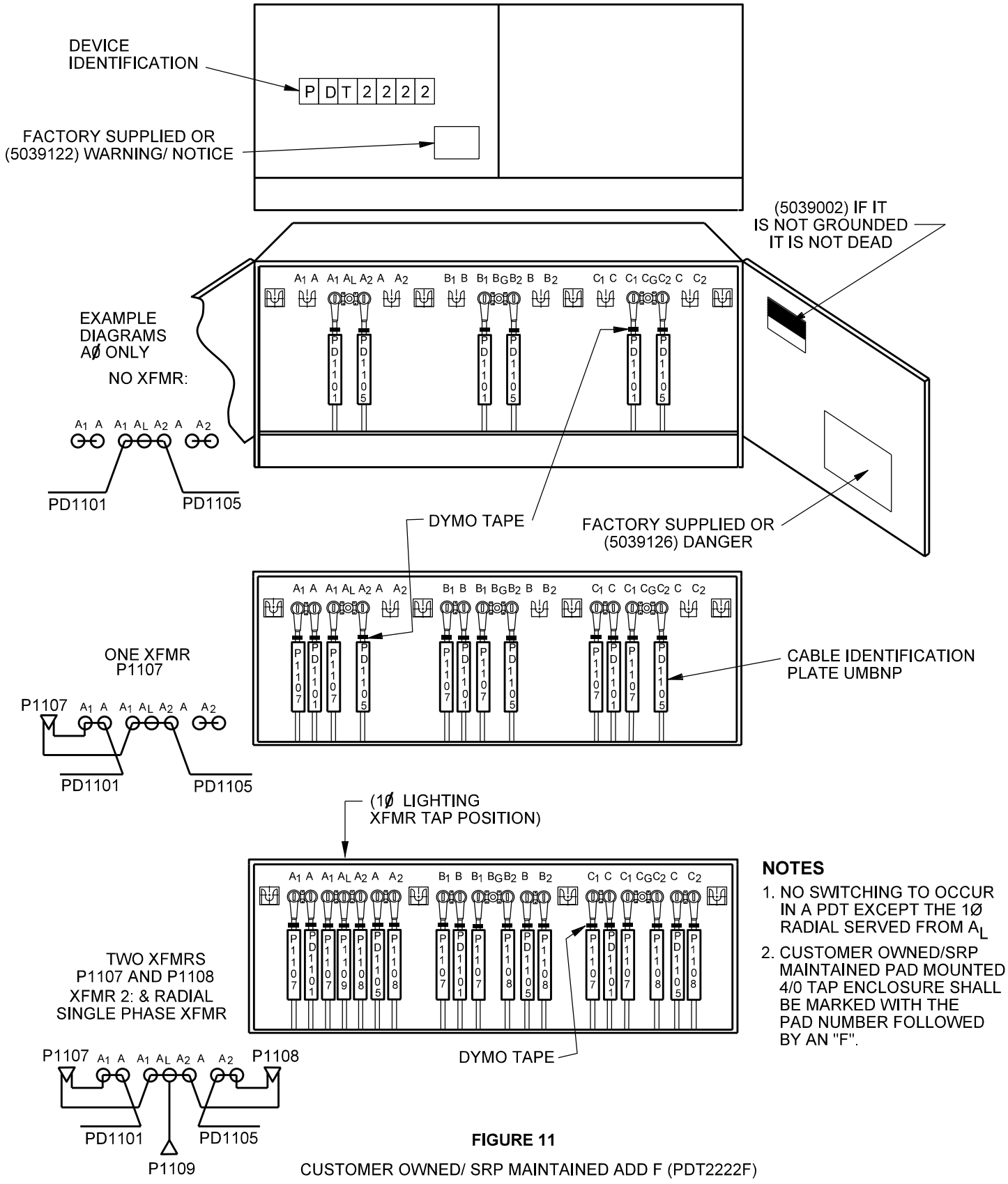
FIGURE 10



FOR REFERENCE ONLY

NOTES

1. THE LETTER NUMBER CODE AS DESIGNATED IN FRONT AND BACK DETAIL, PAGE 11-7-1 (PEA2222).
2. CUSTOMER OWNED/SRP MAINTAINED PAD MOUNTED AUTOMATIC TRANSFER SWITCH SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN 'F' (PEA2222F).
3. THE SOURCE DEVICE I.D. OF THE NEXT OPERABLE DEVICE IS MARKED IN THE GANG SWITCH COMPARTMENTS.
4. THE SOURCE DEVICE I.D. OF THE NEXT OPERABLE DEVICE IS MARKED IN THE SOURCE TRANSFER CONTROL (STC) COMPARTMENT.
5. THE SUBSTATION LETTER CODE AND SUBSTATION CIRCUIT NUMBER IS MARKED IN THE STC COMPARTMENT.



NOTES

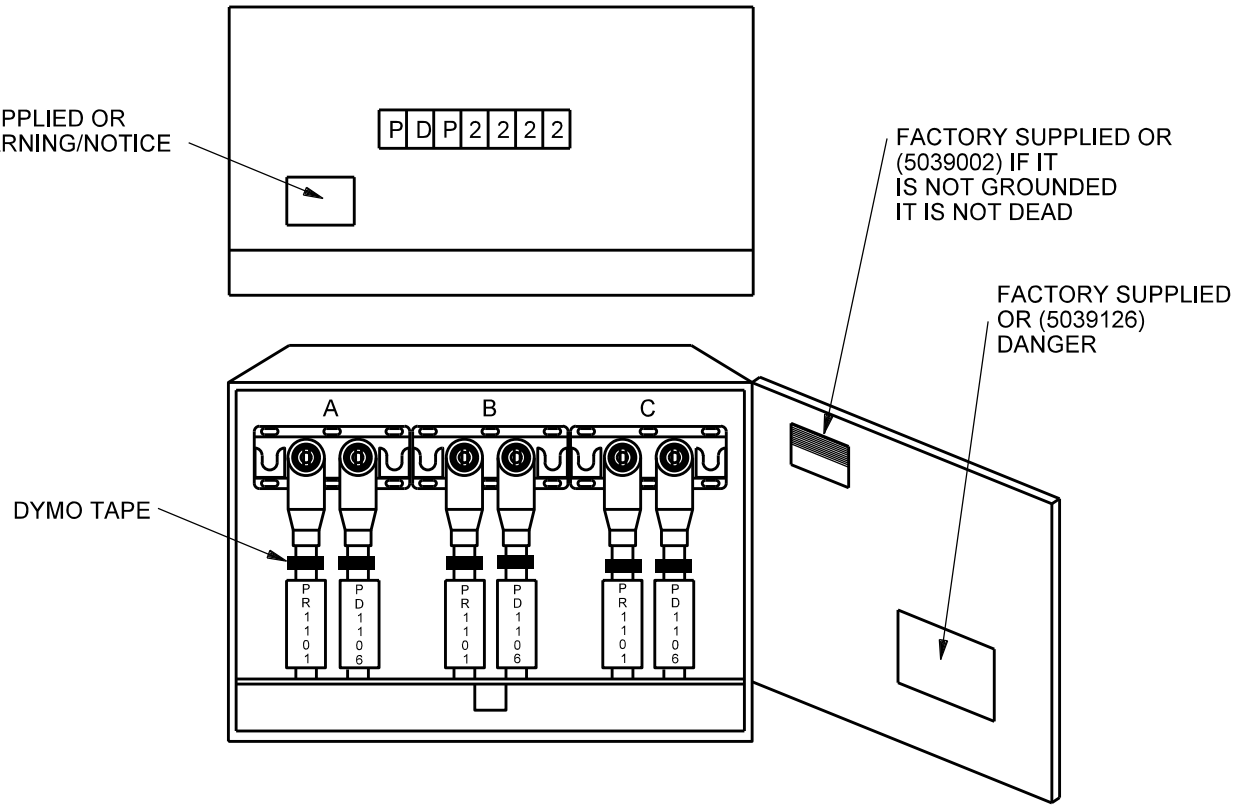
1. NO SWITCHING TO OCCUR IN A PDT EXCEPT THE 1Ø RADIAL SERVED FROM A_L
2. CUSTOMER OWNED/SRP MAINTAINED PAD MOUNTED 4/0 TAP ENCLOSURE SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN "F".

FIGURE 11

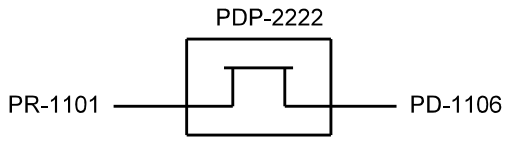
CUSTOMER OWNED/ SRP MAINTAINED ADD F (PDT2222F)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS (PAD MOUNTED 4/0 TAP)	ISSUE DATE: 03/03/93 REV. DATE: 1/06/15 APPROVAL: B.PRIEST
	11-10-1	8513E32.DGN

FIGURE 12



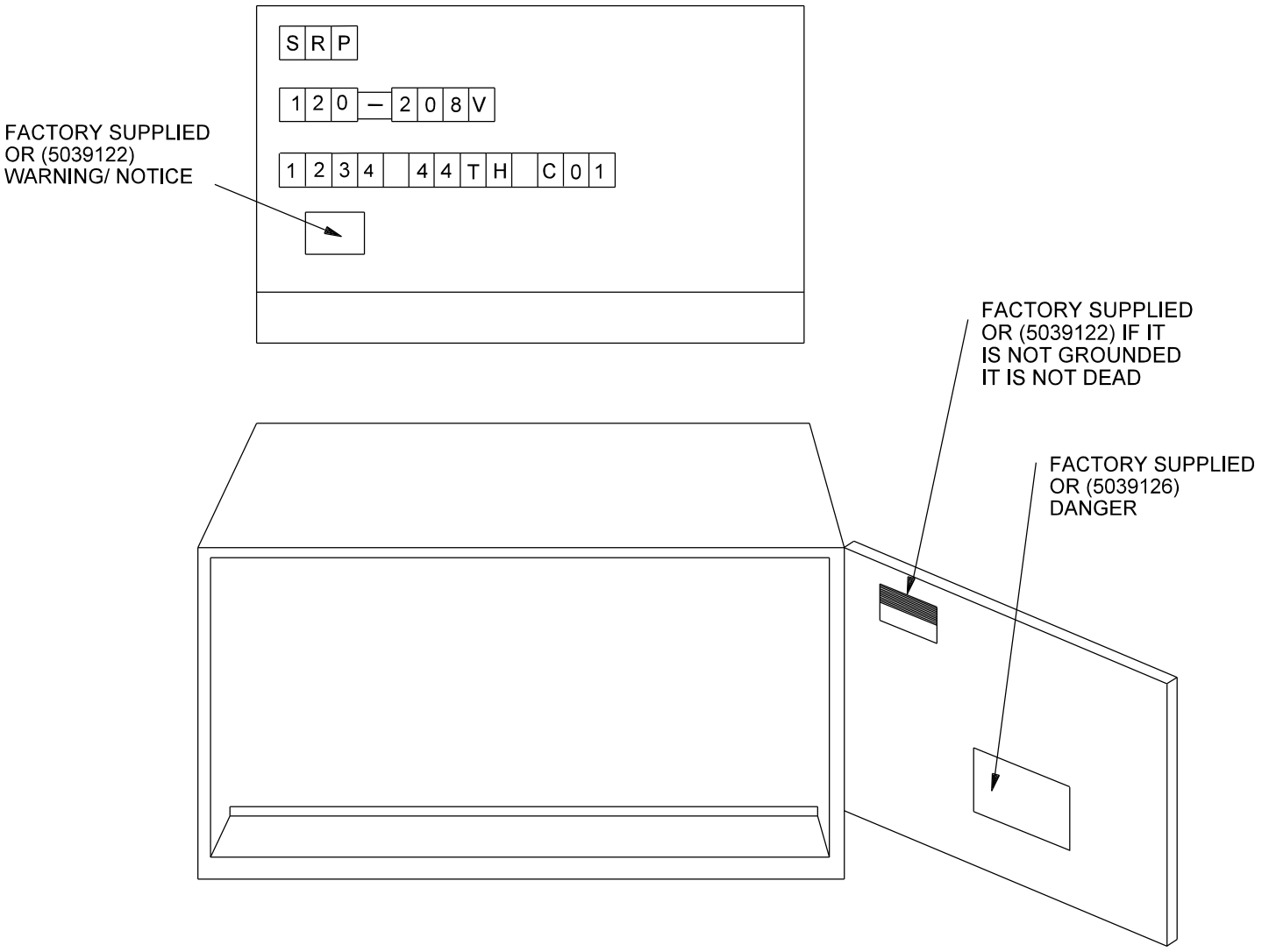
SCHEMATIC DIAGRAM



CUSTOMER OWNED/SRP MAINTAINED FEEDER PULLING ENCLOSURE SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN 'F'. (PDP2222F)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS PAD MOUNTED FEEDER PULLING ENCLOSURE	ISSUE DATE: 02/14/95 REV. DATE: 01/06/15 APPROVAL: B. PRIEST
	11-11-1	8513E221.DGN

FIGURE 13

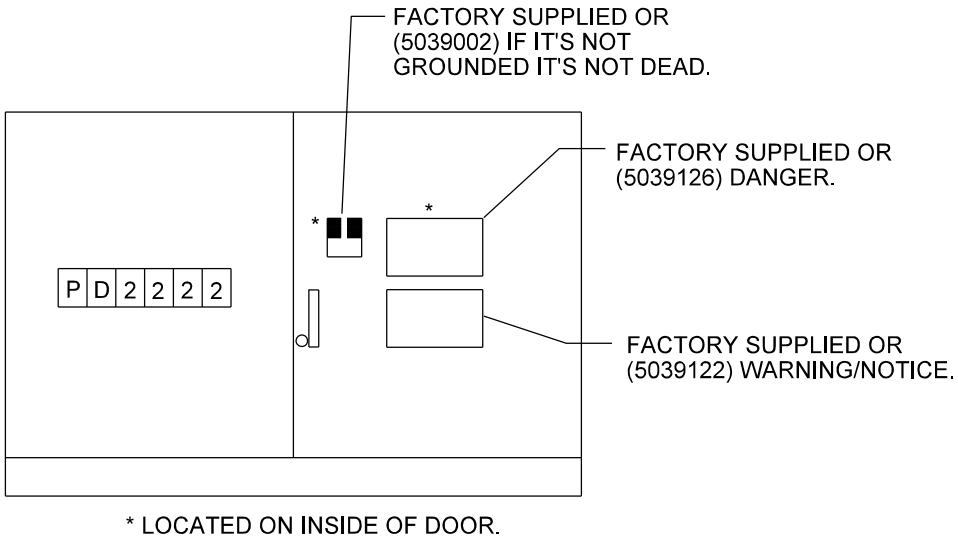


NOTES

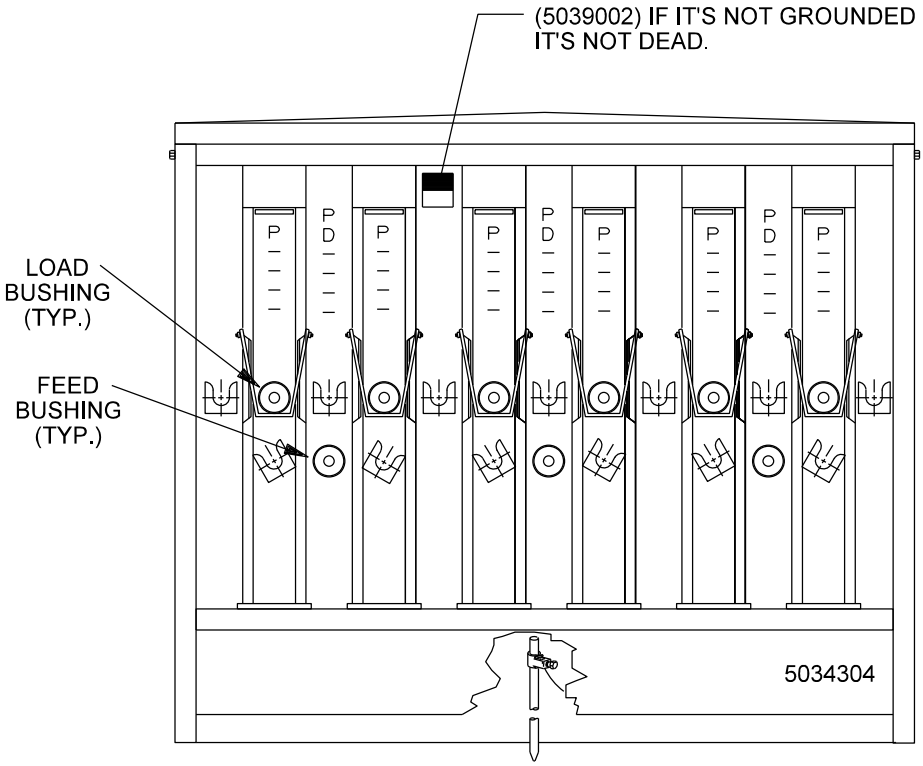
LABEL CABINET IN THE FOLLOWING ORDER:

1) SRP.
2) SECONDARY VOLTAGE I.E. 120-208 V. ROTATE LETTER "I" TO REPRESENT THE DASH LINE SYMBOL.
3) SERVICE(S) ADDRESS (ES) SHALL CONSIST OF STREET NUMBER, STREET NAME (DO NOT INCLUDE AVE, PL, ST, DR) AND SERVICE IDENTIFICATION I.E. " C01 ".

FIGURE 14



* LOCATED ON INSIDE OF DOOR.



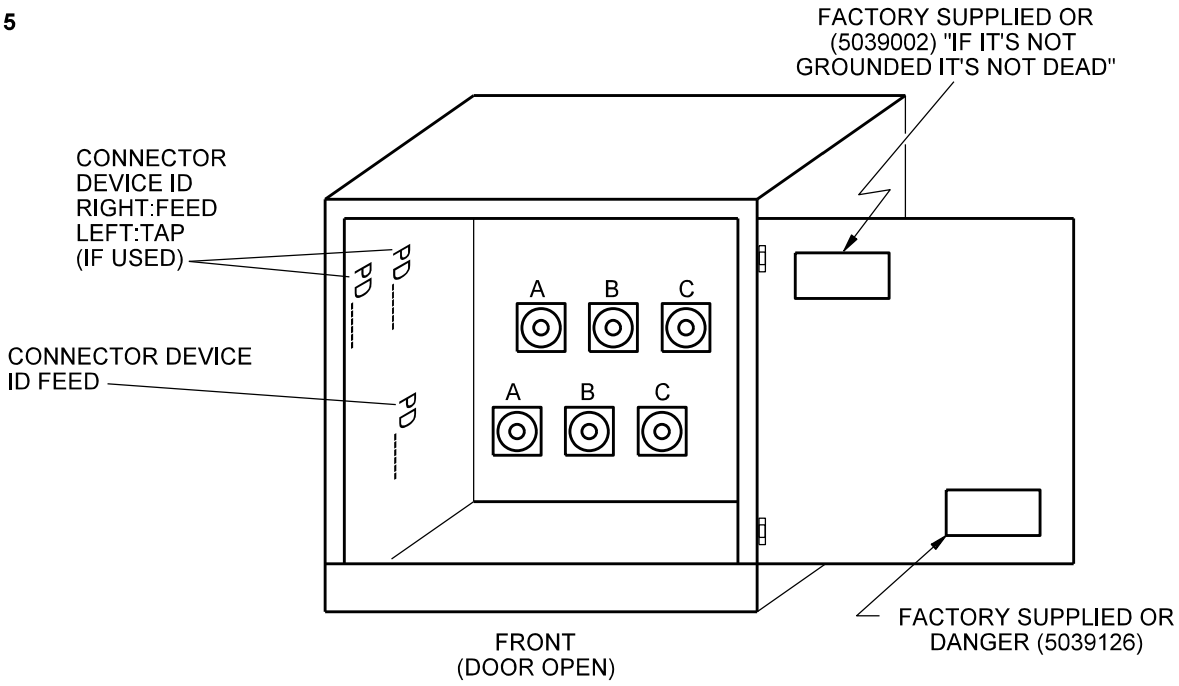
NOTES

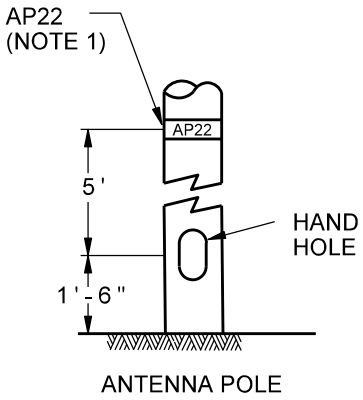
1. FOR THREE PHASE LOAD TAPS, MAKE ALL CONNECTIONS TO LEFT OR RIGHT HAND BUSHINGS OF EACH PHASE.

CUSTOMER OWNED/SRP MAINTAINED AIR INSULATED FUSE SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN 'F' (PD2222F)

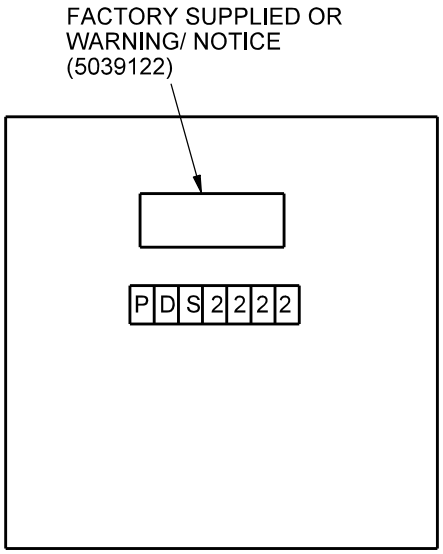
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS PAD MOUNTED, DEAD FRONT AIR INSULATED FUSE	ISSUE DATE: 04/30/93 REV. DATE: 01/19/17 APPROVAL: S. DURAN
	11-12-1	8513E243.DGN

FIGURE 15





ANTENNA POLE



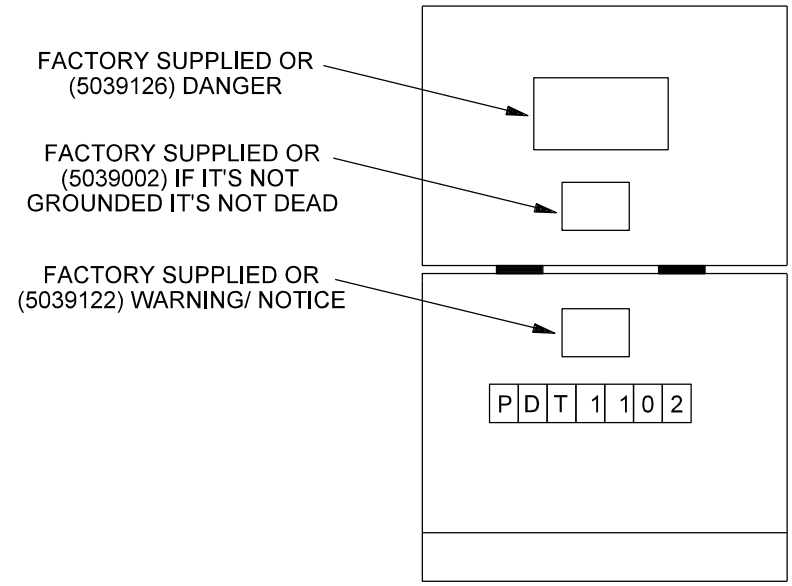
TERMINATION COMPARTMENT
(DOOR CLOSED)

NOTES

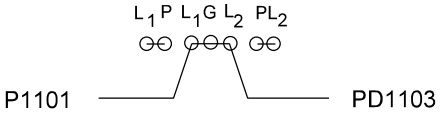
1. ANTENNA POLE NUMBER IS "AP" FOLLOWED BY LAST 2 DIGITS OF SWITCH NUMBER.
2. CUSTOMER OWNED/ SRP MAINTAINED ADD F (PDS2222F)

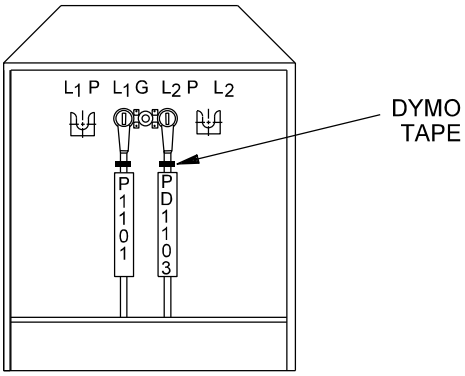
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS SWITCHING CUBICLE DEAD FRONT CONTROLLED SWITCH (UFDCF7-UFDCF12)	ISSUE DATE: 07/08/09 REV. DATE: 01/06/15 APPROVAL: B. PRIEST
	11-13-1	8513E507.DGN

FIGURE 16

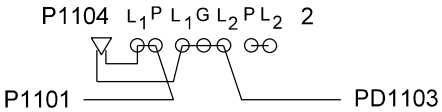


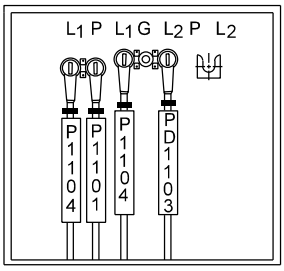
NO XFMR:



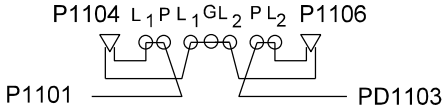


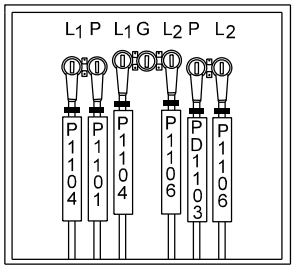
XFMR LOOP 1:





XFMR LOOP 2:

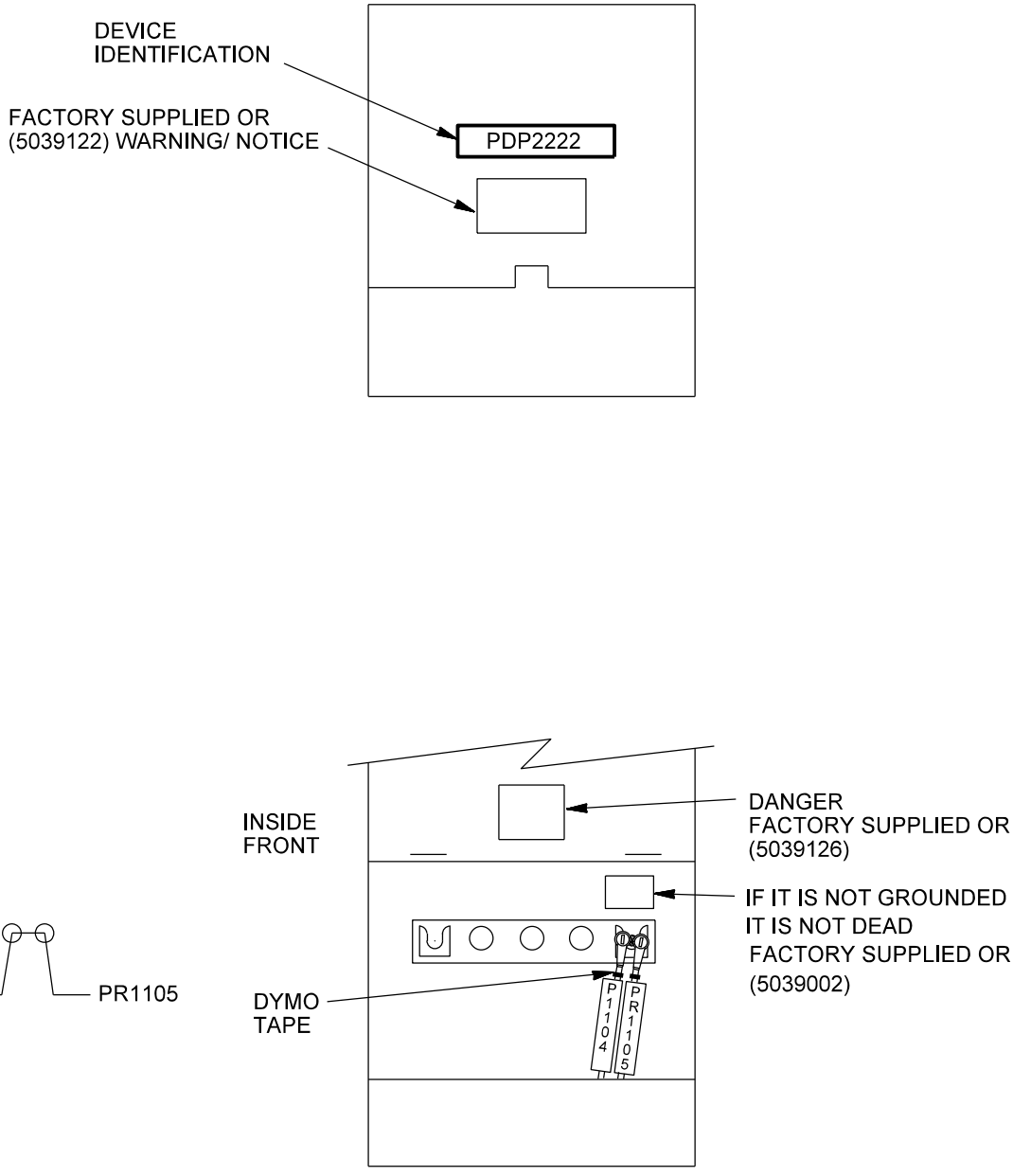




CUSTOMER OWNED/ SRP MAINTAINED ADD F (PDT1102F)

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*		
	MISCELLANEOUS IDENTIFICATION MARKING METHODS PAD MOUNTED #2 PRIMARY LOOP	ISSUE DATE: 01/29/03 REV. DATE: 01/06/15 APPROVAL: B. PRIEST
	11-14-1	8513E344.DGN

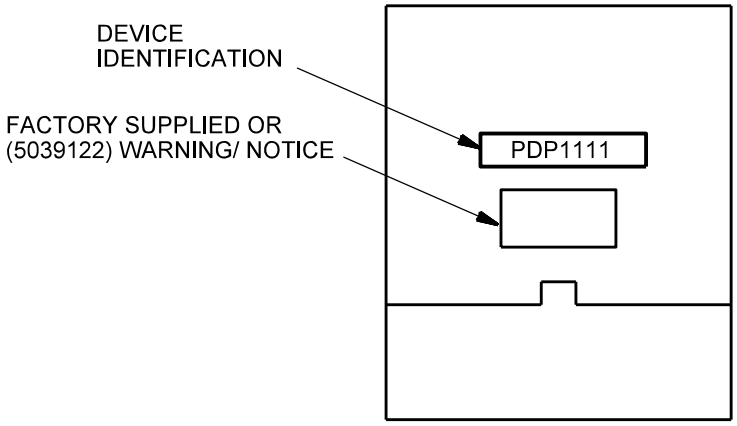
FIGURE 17

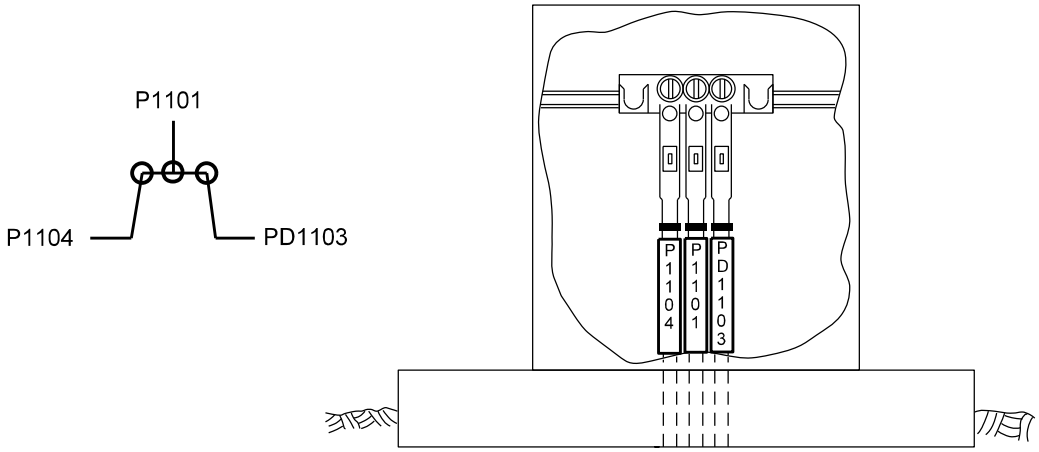


CUSTOMER OWNED/ SRP MAINTAINED ADD F (PDP2222F)

Underground Distribution Construction Standards PROPRIETARY MATERIAL	MISCELLANEOUS IDENTIFICATION MARKING METHODS 1 Ø PRIMARY PULLING ENCLOSURE	ISSUE DATE: 07/06/04 REV. DATE: 01/06/15 APPROVAL: B. PRIEST
	11-15-1	8513E359.DGN

FIGURE 18

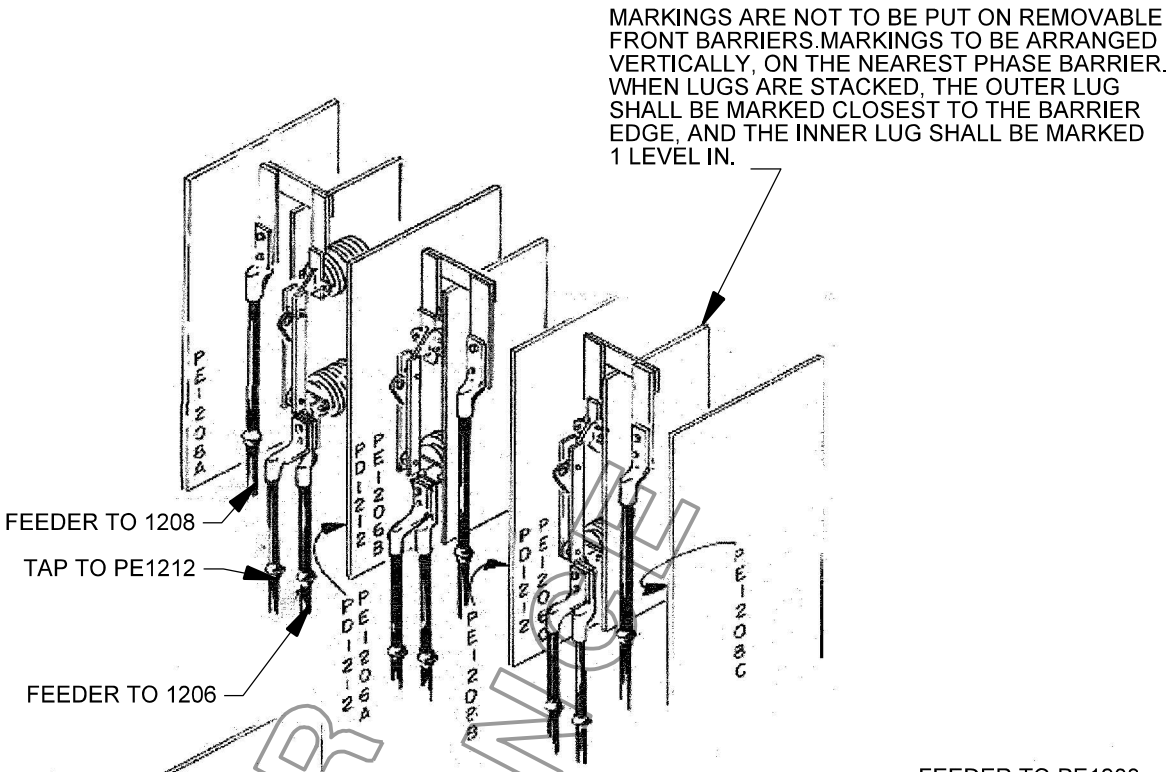




Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS PRIMARY TAP ENCLOSURE	ISSUE DATE: 09/19/12 REV. DATE: 08/06/13 APPROVAL: B. PRIEST
	11-15-2	8513E575.DGN

FIGURE 19

FIGURE 18a
3 PHASE BLADE DISCONNECT SWITCH



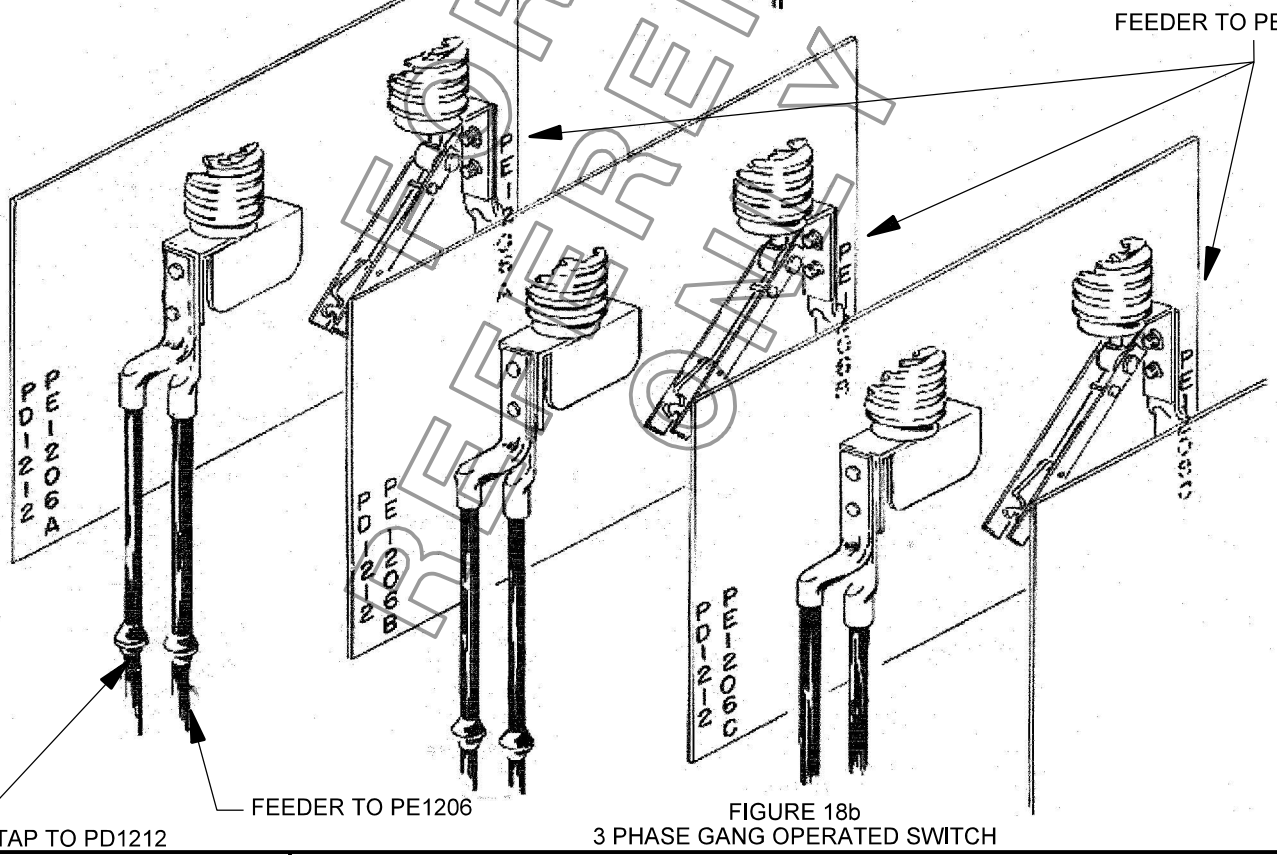
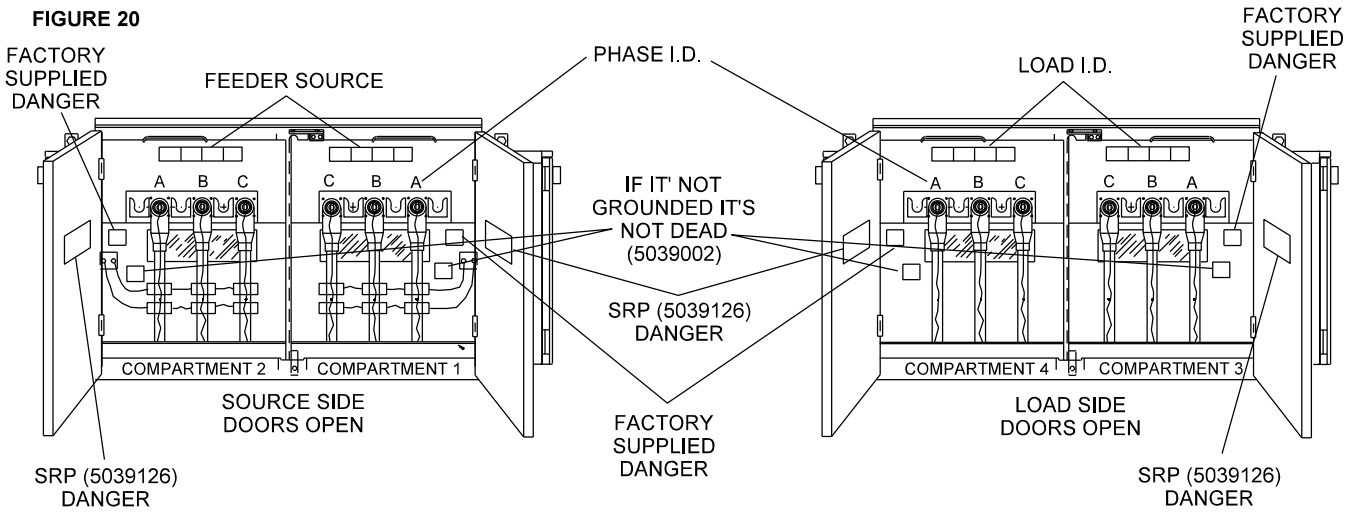


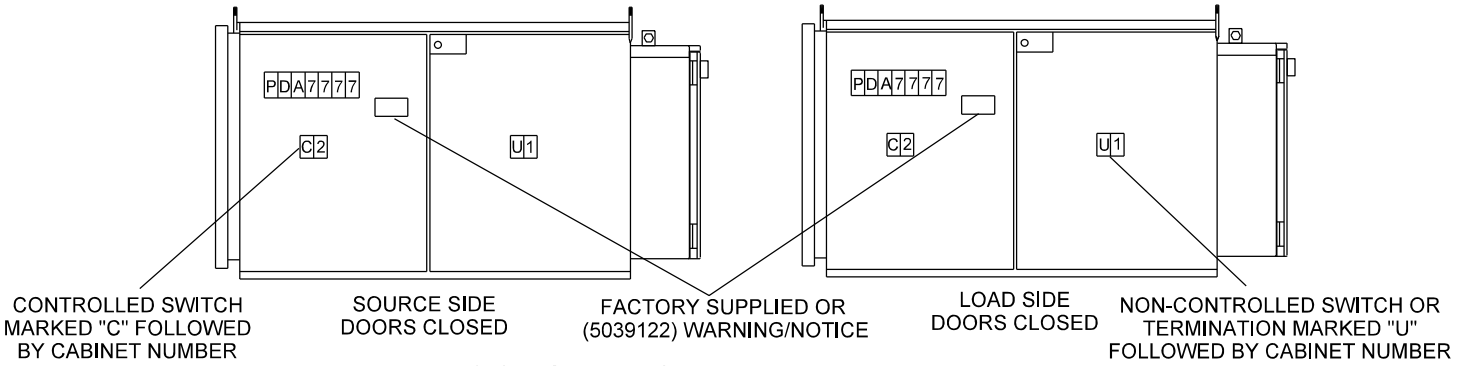
FIGURE 18b
3 PHASE GANG OPERATED SWITCH

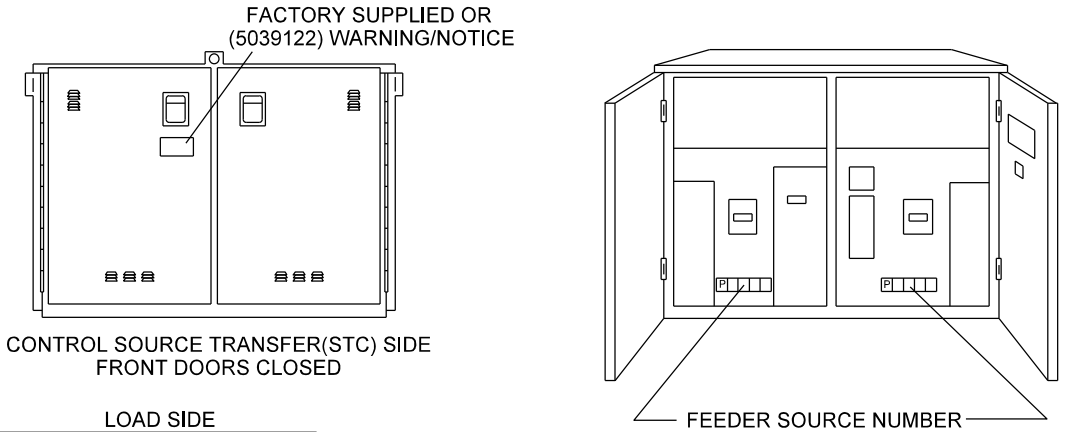
FOR REVIEW ONLY

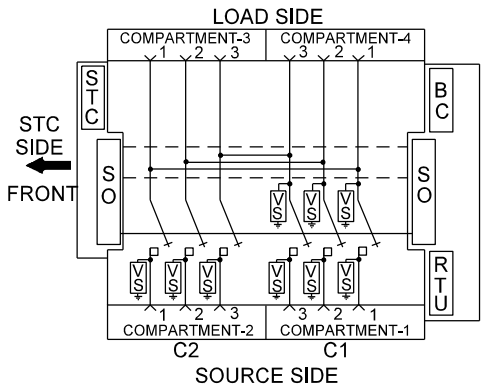
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS LIVE FRONT SWITCHES	ISSUE DATE: 01/15/87 REV. DATE: 08/10/12 APPROVAL: B. PRIEST
	11-16-1	8513E499.DGN

FIGURE 20





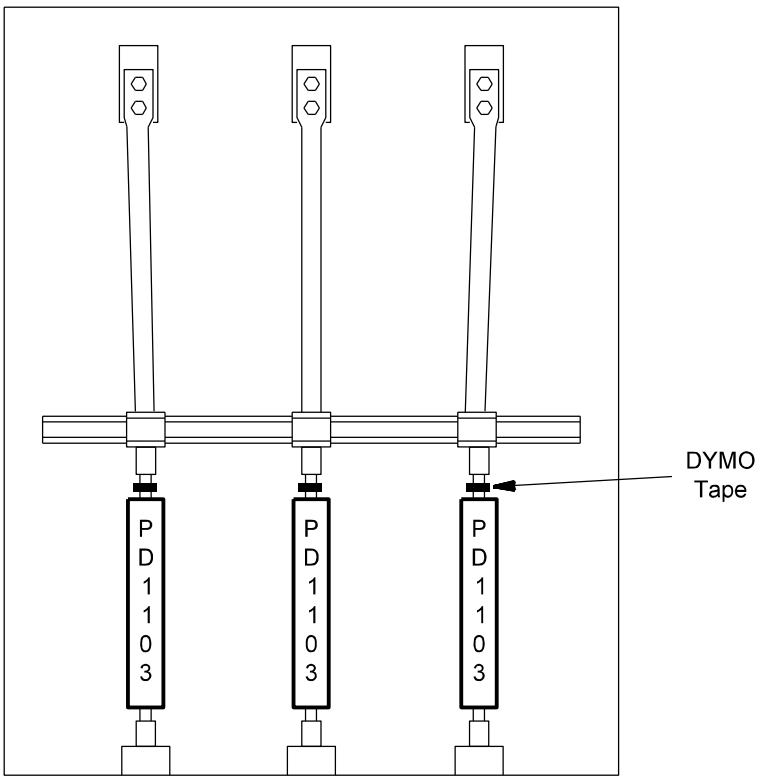




NO MARKINGS ON THIS SIDE (COMMUNICATIONS CABINET)

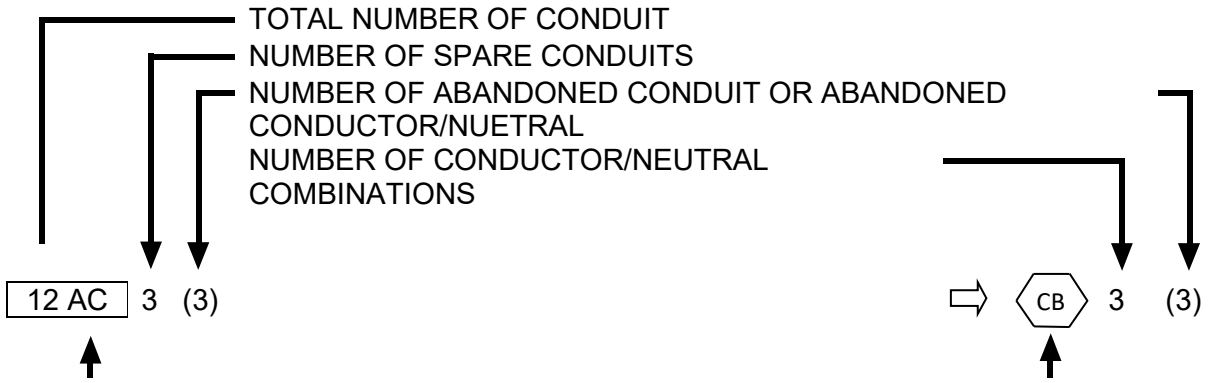
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS PAD MOUNTED AUTOMATIC TRANSFER DEAD FRONT SWITCH WITH REMOTE SUPERVISORY CONTROL	ISSUE DATE: 09/18/08 REV. DATE: 01/06/15 APPROVAL: B. PRIEST
	11-17-1	8513E503.DGN

FIGURE 21



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS 12kV PRIMARY METERING ENCLOSURE	ISSUE DATE: 09/20/12 REV. DATE: 0 APPROVAL: B. PRIEST
	11-18-1	8513E576.DGN

CONDUIT AND CONDUCTOR CODE KEY TO SRP UNDERGROUND DISTRIBUTION MAPS



EXAMPLE – CONDUIT MAPPING CODE:

3" PL-EC-RD-B

DUCT BANK (CONDUIT INSTALLED WITH SPACERS)
B = CONDUIT INSTALLED IN A DUCT BANK
* = DUCT BANK STATUS UNKNOWN
BLANK INDICATES CONDUIT IS NOT INSTALLED WITH SPACERS

ENCASEMENT COLOR
RD = RED
** = ENCASEMENT COLOR UNKNOWN
BLANK INDICATES COLOR OTHER THAN RED.

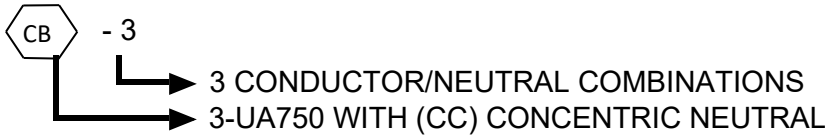
ENCASEMENT
EC = CONCRETE
EG = GROUT (CLSM BACKFILL)
E* = ENCASEMENT MATERIAL UNKNOWN
NE = NO ENCASEMENT

MATERIAL
A = ALUMINUM
PL = PVC OR PLASTIC
PF = FLEXIBLE PLASTIC OR SPOOLED DUCT
ST = STEEL
TR = TRANSITE (ASBETOS)
** = MATERIAL TYPE UNKNOWN

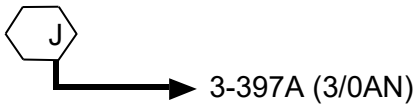
SIZE
CONDUIT NOMINAL DIAMETER IN INCHES.
** = SIZE UNKNOWN

EXAMPLE – CONDUCTOR MAPPING CODE:

UNDERGROUND

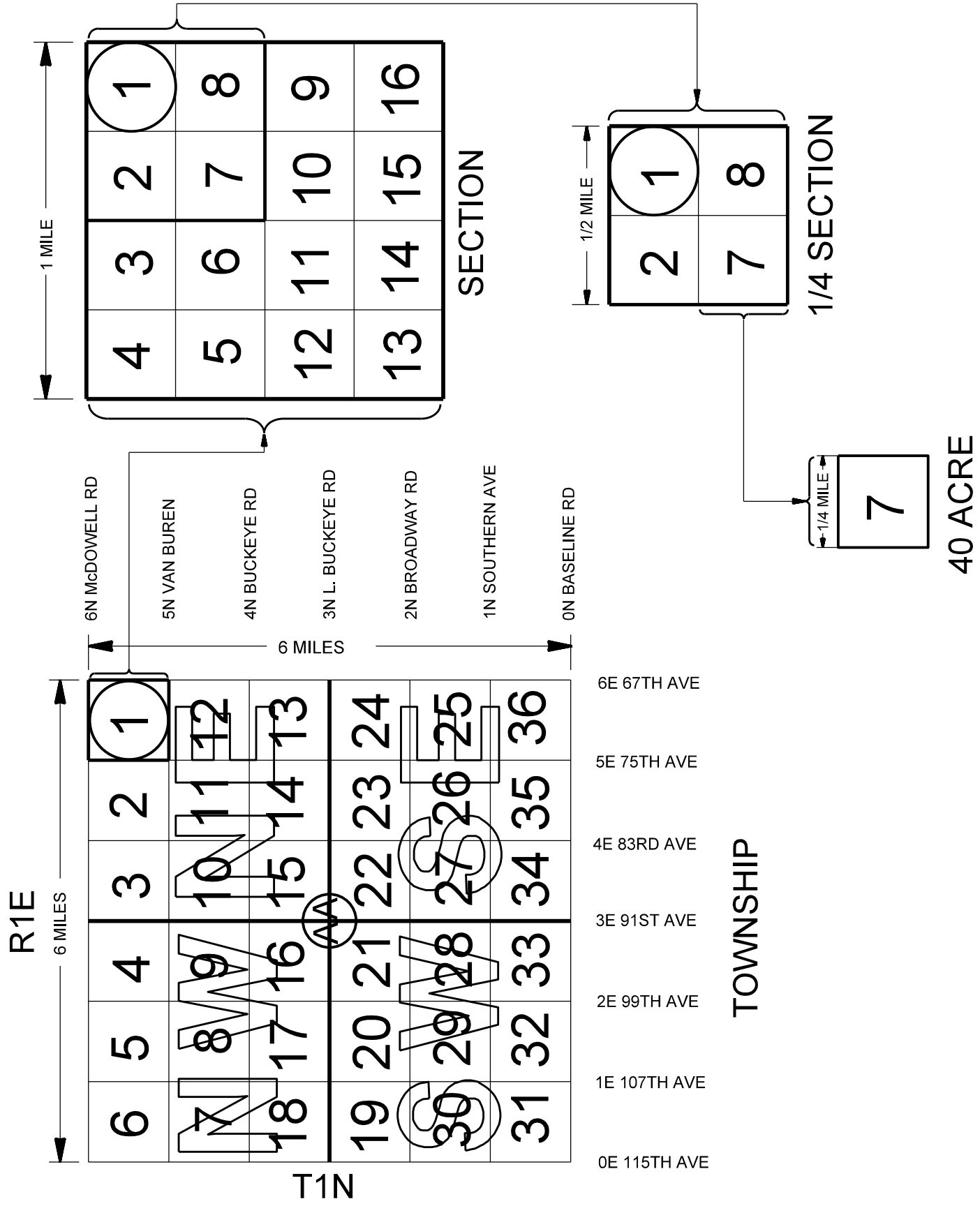


OVERHEAD

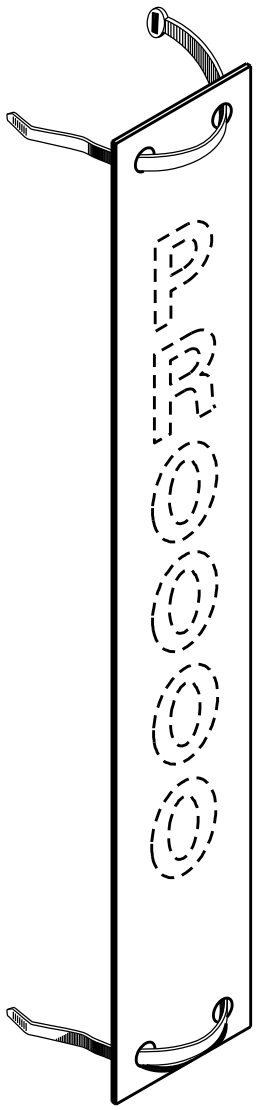


NOTES

1. FOR A COMPLETE LIST OF CONDUIT INDEX BY CODE MAP SYMBOLOGIES, GO TO HTTPS://INSRPTEAMS/COMMUNITY/IS/DDA/RESOURCES/CONDUIT%20INDEX%20BY%20CODE.XLSX
2. FOR A COMPLETE LIST OF PRIMARY INDEX BY CODE MAP SYMBOLOGIES, GO TO INSRPTEAMS/COMMUNITY/IS/DDA/RESOURCES/PRIMARY%20INDEX%20BY%20CODE.XLSX



Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS MAPPING	ISSUE DATE: 12/20/01 REV. DATE: 09/20/12 APPROVAL: B.PRIEST
	11-20-1	8513E323.DGN



NOTES

1. USED FOR IDENTIFICATION OF MULTIPLE CIRCUITS IN ONE RISER.
2. USED FOR IDENTIFICATION OF INDIVIDUAL CABLES IN PAD MOUNTED EQUIPMENT.
3. REQUEST ONE UMBNP FOR EACH CABLE TO BE MARKED.
4. REQUEST ONE UMBNR FOR EACH EXISTING CABLE TO BE RE-MARKED.

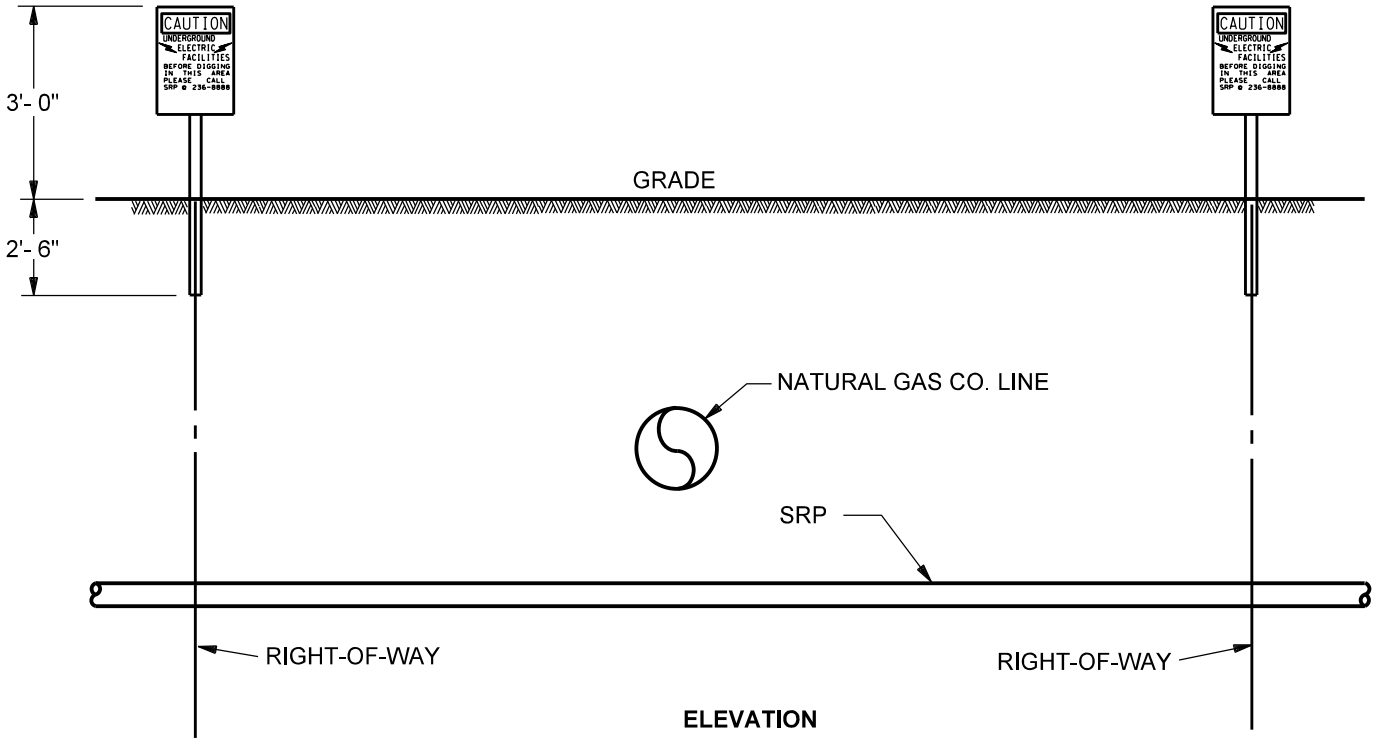
Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS CABLE IDENTIFICATION PLATE	ISSUE DATE: 01/15/87 REV. DATE: 09/20/12 APPROVAL: B. PRIEST
	11-21-1	8513E354.DGN



NOTES

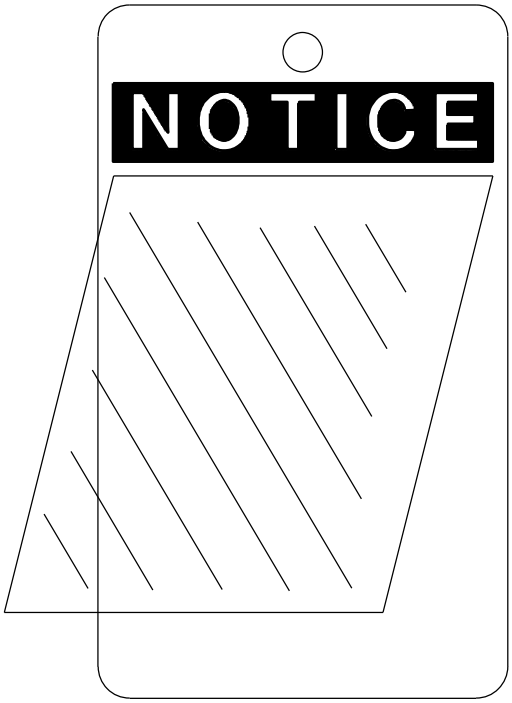
1. SECURE SIGN TO POST WITH NUTS, BOLTS AND LOCK WASHERS.
2. BEND BOLTS TO PREVENT UNAUTHORIZED REMOVAL.
3. THESE SIGNS ARE ALSO REQUIRED WHEN UNDERGROUND FACILITIES ARE PLACED WITHIN RAILROAD RIGHT OF WAY. REFER TO ELECTRICAL CLEARANCE STANDARDS.

UMCM	SRP INSTALLED
UMCMG	CONTRACTOR/ CUSTOMER INSTALLED SRP SUPPLIED



ELEVATION

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS SIGN, CAUTION UNDERGROUND ELECTRIC FACILITIES	ISSUE DATE: 01/15/87 REV. DATE: 09/20/12 APPROVAL: B. PRIEST
	11-22-1	8513E270.DGN

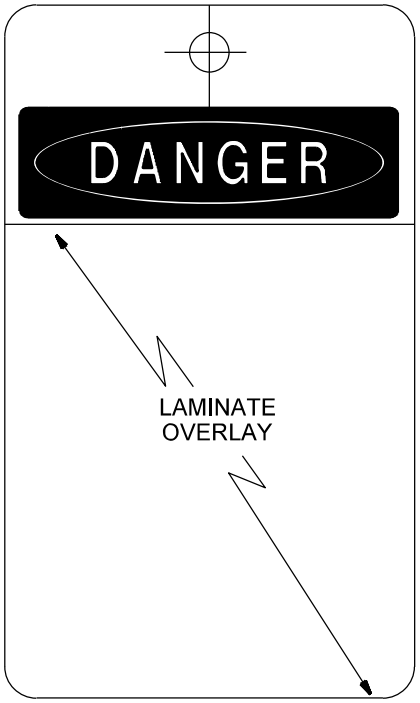


FRONT

SRP STOCK CODE
5039251

3 1/4" X 5 1/2" BLANK UNDER
CLEAR PLASTIC LAMINATE
OVERLAY.

SRP STOCK CODE
5039248



FRONT



BACK

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS TAG, NOTICE	ISSUE DATE: 04/24/00 REV. DATE: 08/06/13 APPROVAL: B. PRIEST
	11-23-1	8513E320.DGN

NOTICE

THE SERVICE CONDUCTORS FEEDING THIS SERVICE ENTRANCE SECTION HAVE THE INSTALLED CAPACITY OF XXXX AMPS AT A LOAD FACTOR OF XXX%. PER SRP RULES AND REGULATIONS, "CUSTOMER MUST OBTAIN PRIOR WRITTEN CONSENT OF SRP TO INCREASE THE CONNECT LOAD." PLEASE CONTACT SRP AT 602-236-8833 FOR ASSISTANCE.

NOTES

1. AMPACITY AND LOAD FACTOR WILL BE DETERMINED BY ENGINEERING

UGHOUR

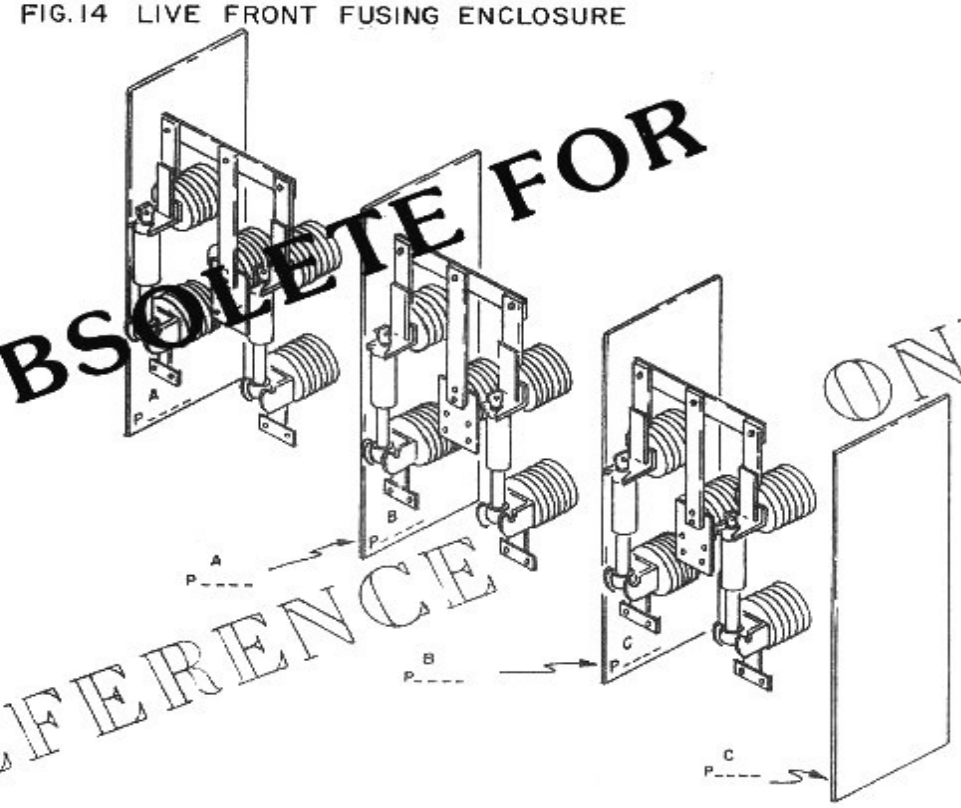
COMPATIBLE UNIT TO GENERATE ADDITIONAL MANHOURS TO PERFORM WORK THAT WILL TAKE MORE TIME THAN WHAT WAS GENERATED BY THE JOB FOR THE LABOR ESTIMATE. THE CODE GENERATES ONE (1) HOUR AND IS TO BE USED WITH A QUANTITY APPROPRIATE FOR THE CONDITIONS AND NEEDS TO THE JOB. THIS CODE SHOULD BE USED ONLY FOR UNUSUAL CIRCUMSTANCES.

UPB

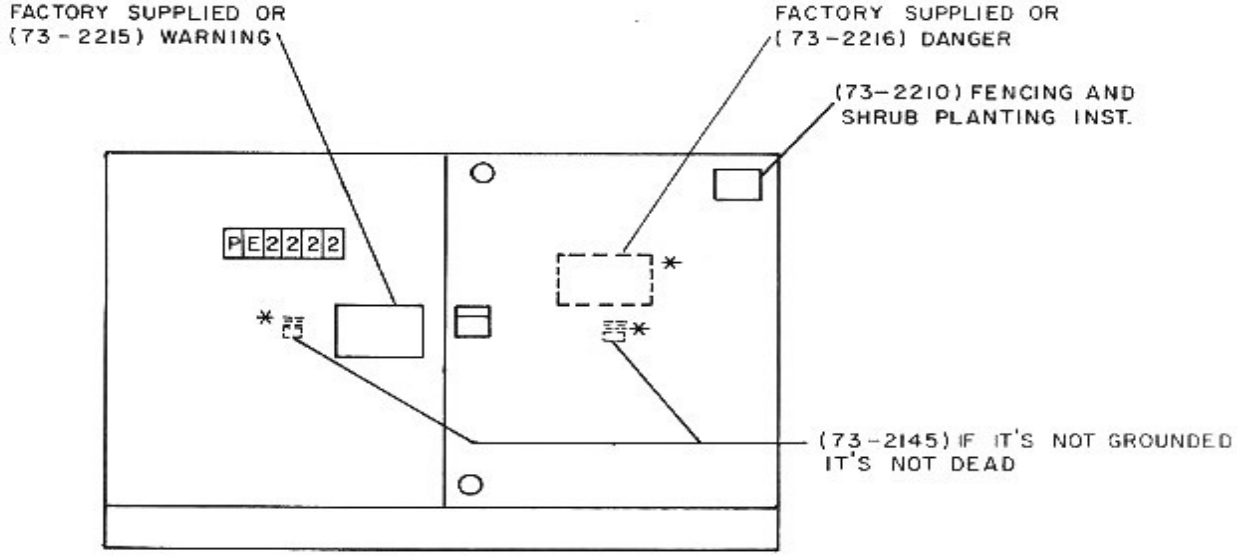
INCLUDES 5 HOURS FOR A 4-MAN CREW FOR PHASE BALANCE WORK. INCLUDES #2 SPLICE AT BOTH ENDS (STOCK #5033779) AND 8 FEET OF #2 CABLE (STOCK #5035034).

FIG. 14 LIVE FRONT FUSING ENCLOSURE

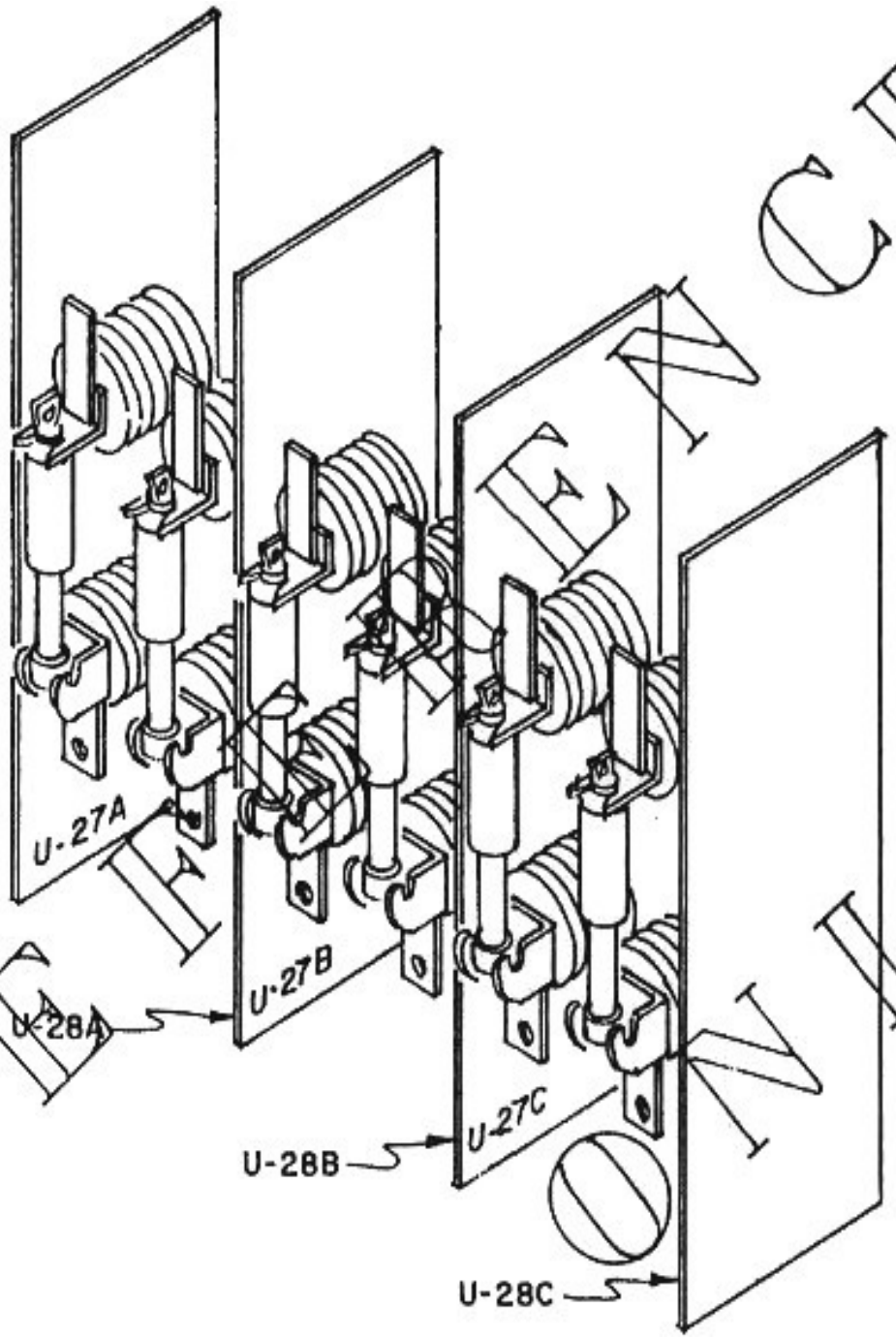
OBSOLETE FOR REFERENCE ONLY



MARKINGS ARE NOT TO BE PLACED ON THE REMOVABLE FRONT BARRIERS



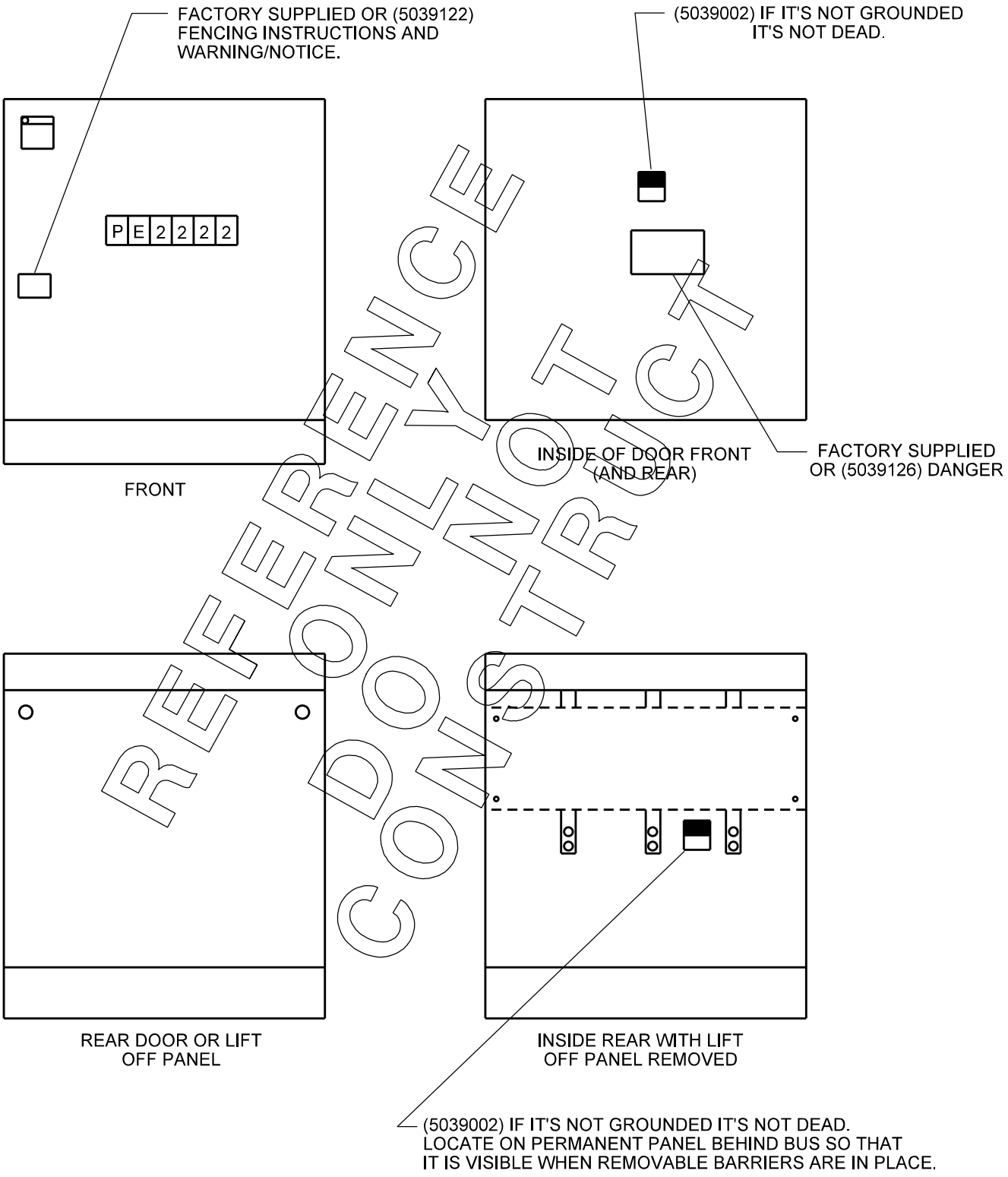
* LOCATED ON INSIDE OF DOOR



REFERENCE ONLY

FIGURE 11

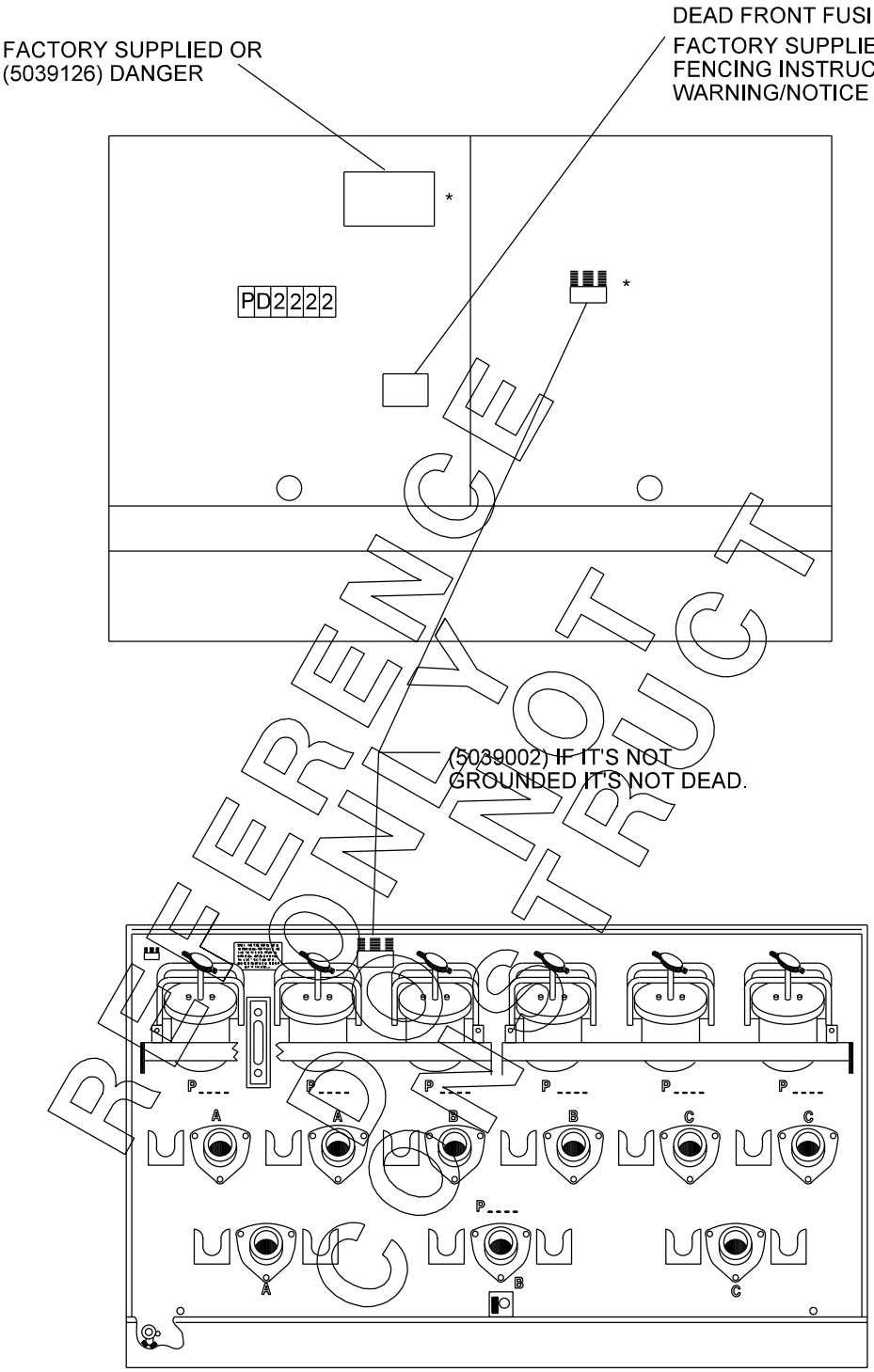
LIVE FRONT PAD MOUNTED SWITCHES



REFERENCE ONLY DO NOT CONSTRUCT

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS (PAD MOUNTED, LIVE FRONT SWITCHES)	ISSUE DATE: 01/15/87 REV. DATE: 08/06/13 APPROVAL: B. PRIEST
	11-27-1	8513E231.DGN

FIGURE 13



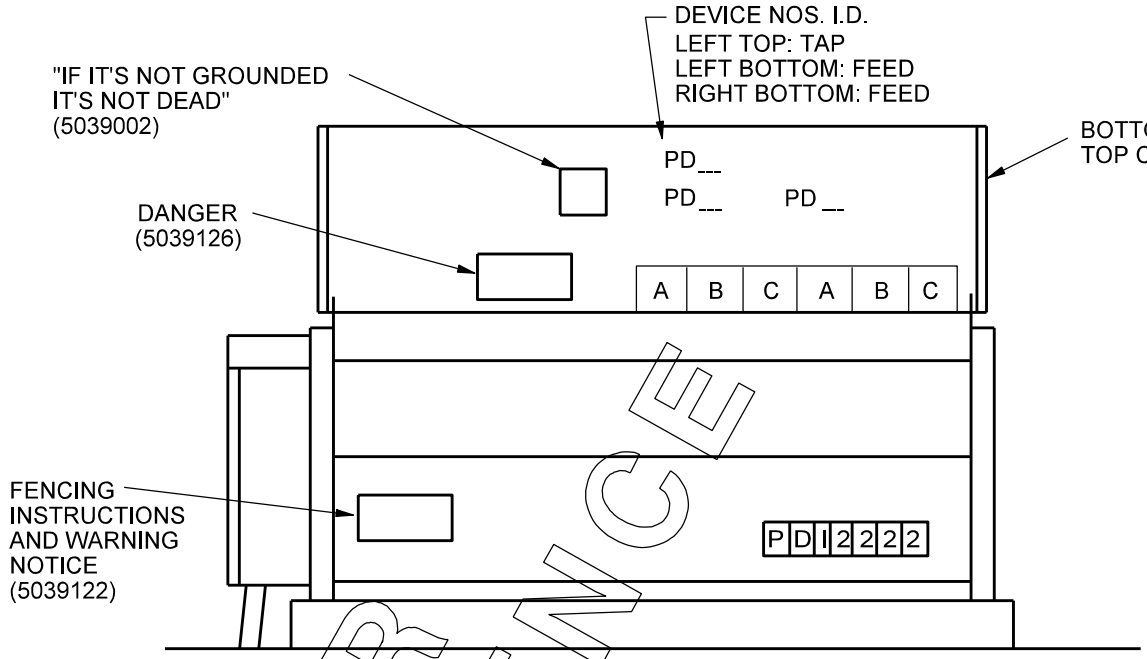
REFERENCE ONLY DO NOT REPRODUCT

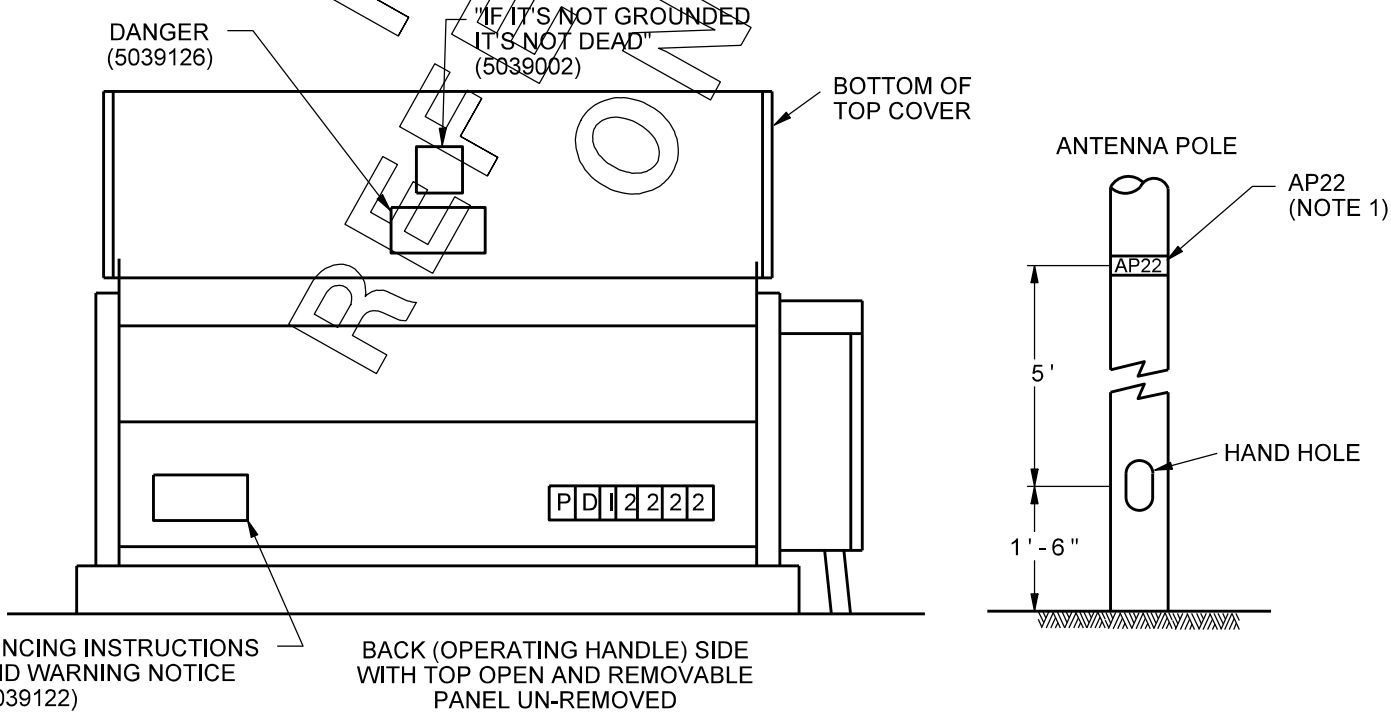
NOTES

1. FOR THREE PHASE LOAD TAPS, MAKE ALL CONNECTIONS TO LEFT HAND BUSHING OF EACH PHASE OR MAKE ALL CONNECTIONS TO RIGHT HAND BUSHING OF EACH PHASE.

* LOCATED ON INSIDE OF DOOR

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS (PAD MOUNTED, DEAD FRONT FUSING ENCLOSURE)	ISSUE DATE: 01/15/87 REV. DATE: 08/06/13 APPROVAL: B. PRIEST
	11-28-1	8513E233.DGN



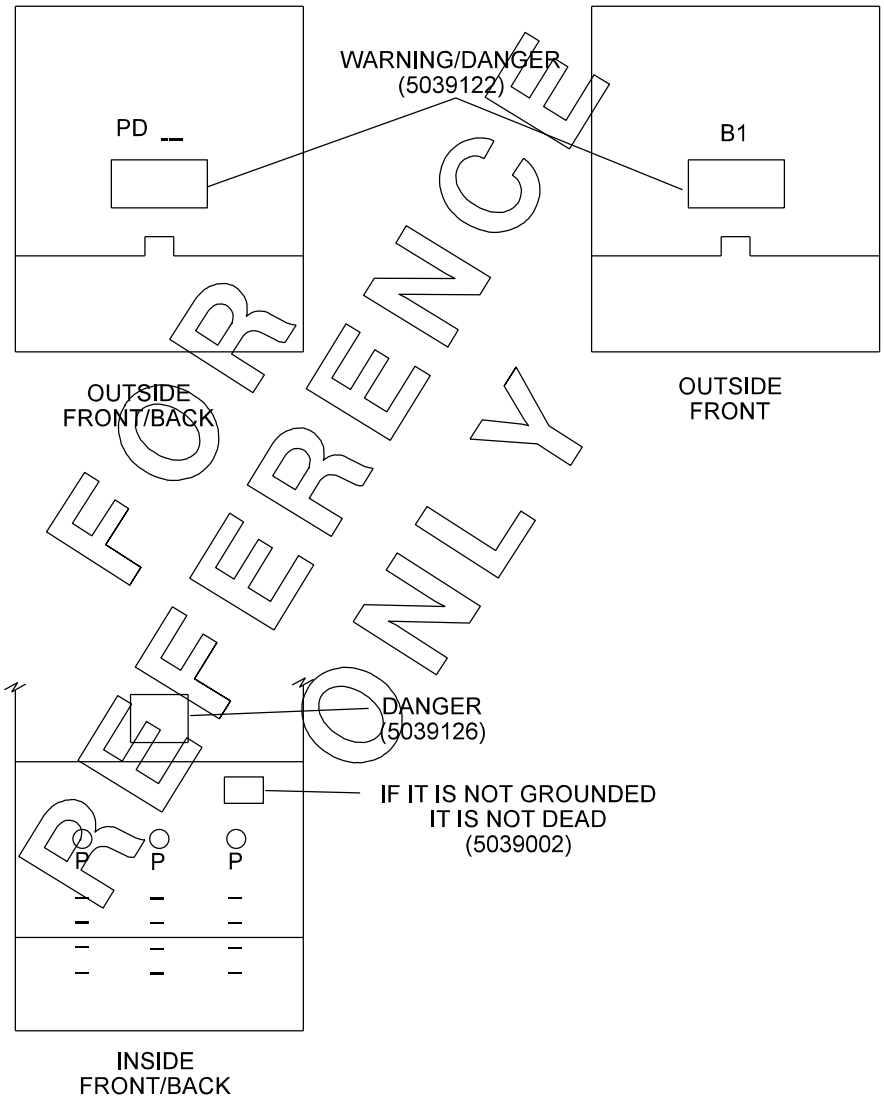


REFERENCE ONLY

NOTES

1. ANTENNA POLE NUMBER IS "AP" FOLLOWED BY LAST 2 DIGITS OF SWITCH NUMBER.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS SWITCHING CUBICLE VACUUM INTERRUPTER CONTROLLED (UFDFD13-UFDFD34)	ISSUE DATE: 04/27/99 REV. DATE: 08/06/13 APPROVAL: B. PRIEST
	11-29-1	8513E311.DGN



REFERENCE ONLY

CUSTOMER OWNED/SRP MAINTAINED VACUUM INTERRUPTERS SHALL BE MARKED WITH THE PAD NUMBER FOLLOWED BY AN 'F'.

Underground Distribution Construction Standards SRP® *PROPRIETARY MATERIAL*	MISCELLANEOUS IDENTIFICATION MARKING METHODS SWITCHING CUBICLE, VACUUM INTERRUPTER	ISSUE DATE: 06/03/97 REV. DATE: 08/06/13 APPROVAL: B. PRIEST
	11-30-1	8513E238.DGN