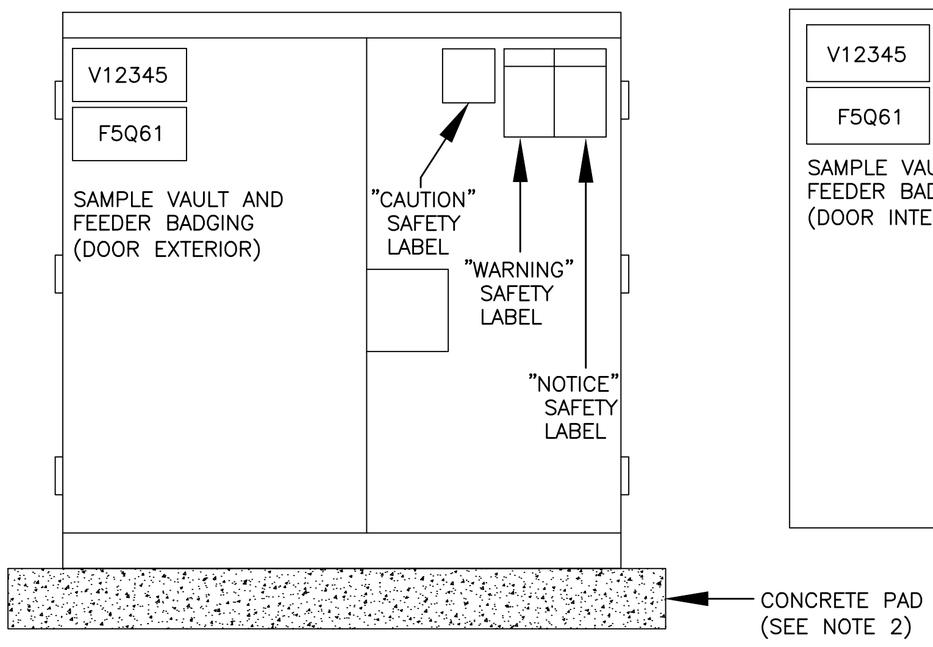
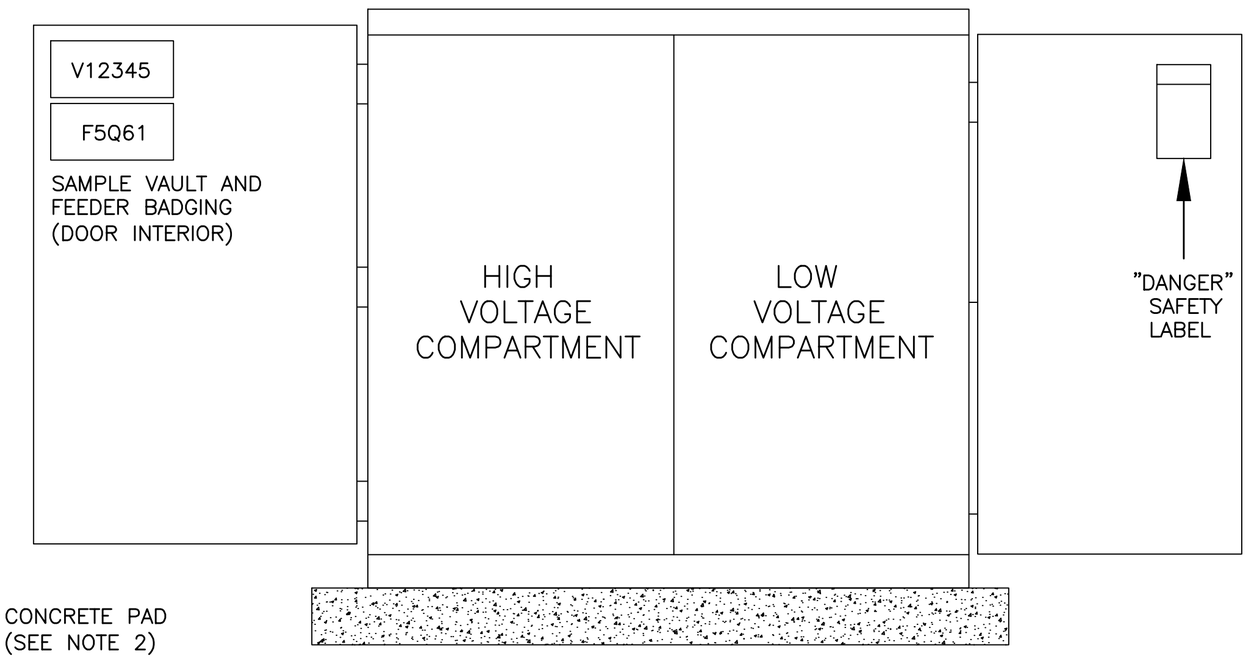
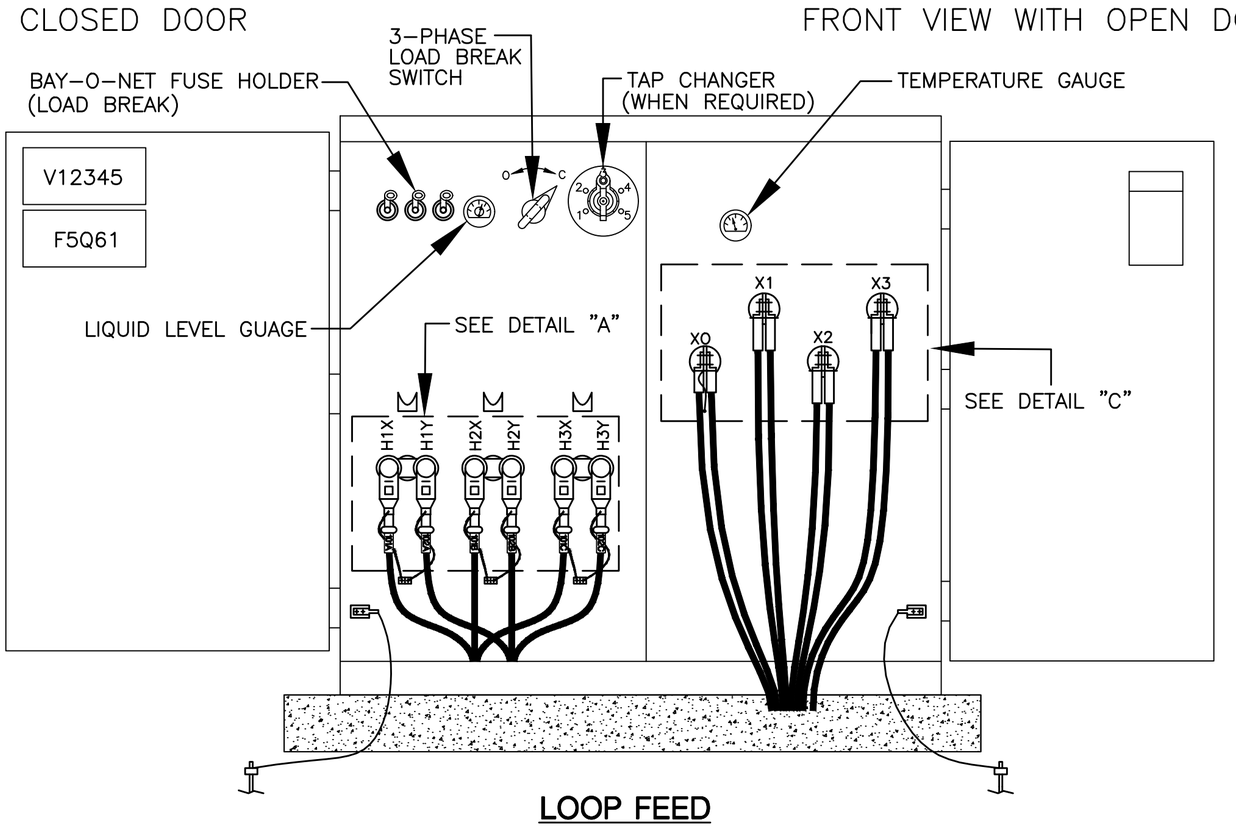
EO-13827-B



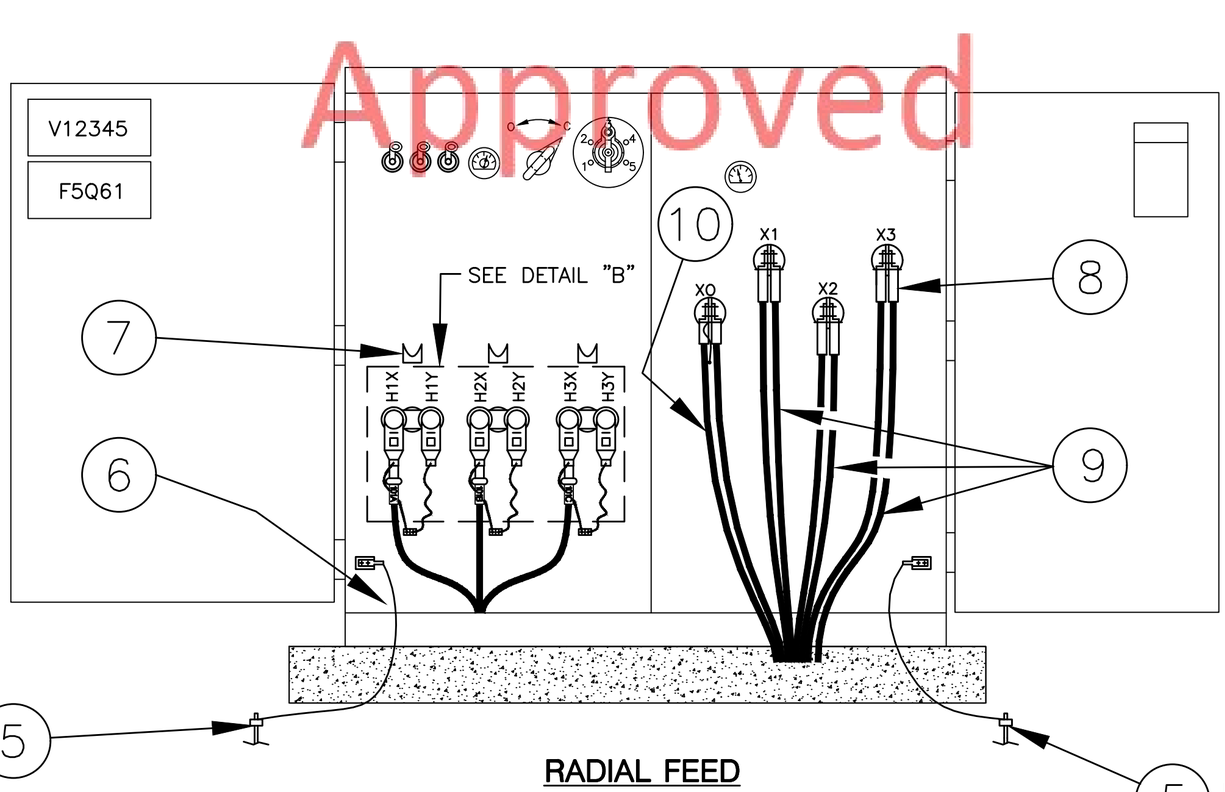
FRONT VIEW WITH CLOSED DOOR



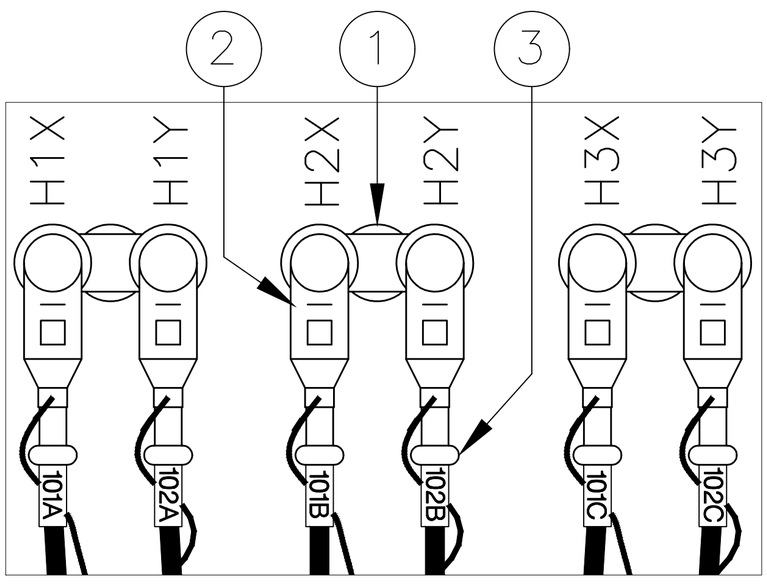
FRONT VIEW WITH OPEN DOORS



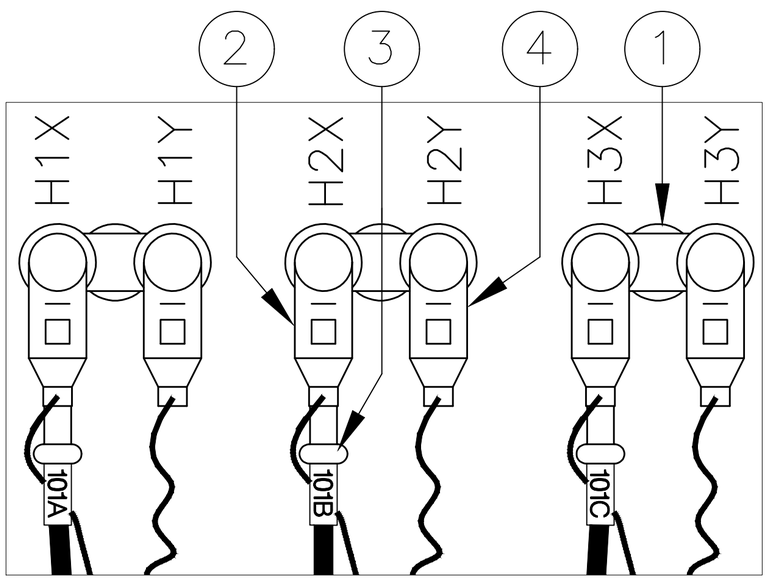
LOOP FEED



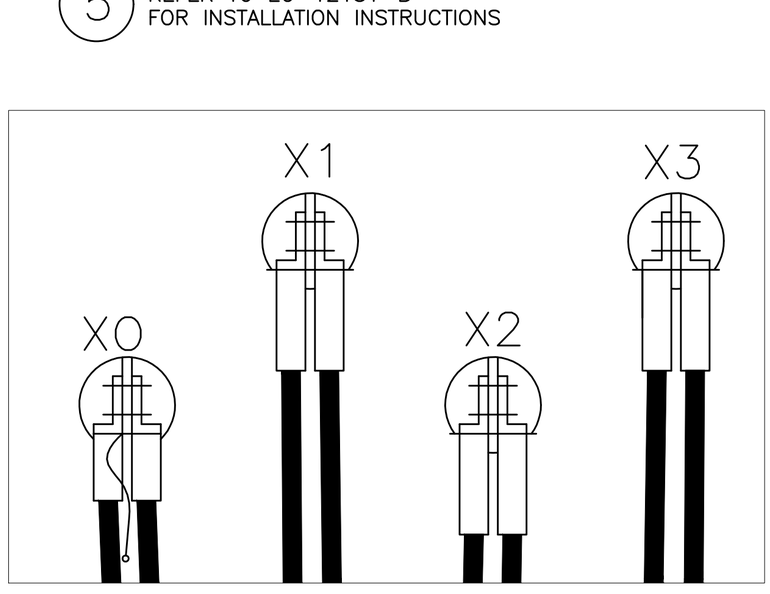
RADIAL FEED



DETAIL "A"



DETAIL "B"



DETAIL "C"

INSTALLATION PROCEDURE FOR 4kV, 13kV & 27kV. THREE PHASE DEAD FRONT PADMOUNT TRANSFORMER

CONSOLIDATED EDISON COMPANY OF N.Y., INC.
DISTRIBUTION ENGINEERING DEPT

DATE 09/10/70
LAST REV. 1/17/2020

DWG. NO. EO-13827-B REV. 15 SH. 1 OF 3

COMPUTER GENERATED DRAWING
NOT TO BE HAND REVISED

No.	REVISIONS	PROJ. ENG'R	DATE
15	SEE ABOVE REVISION BOX ON SHEET 3 OF 3 FOR CHANGES.	O. CHILAKA	1/17/20

DRAWN BY DATE
CHECKED BY DATE
APPROVED
MGR. NON-RADIAL SYSTEMS MANAGER DATE
DISCIPLINE CODE DE
SCALE NONE
PROJECT ENGINEER DATE

CONSTRUCTION INSTRUCTIONS:

1. CONDUIT: INSTALL CONDUIT FOR PRIMARY CABLE AND SECONDARY CABLE IN ACCORDANCE TO EO–12482–B. ALL CONDUITS SHALL BE SEALED ACCORDING TO EO–1100 AND EO–6217–C.
2. DETERMINE THE PROPER CONCRETE PAD SIZE ACCORDING TO EO–13775–B. REFER TO EO–6242 FOR CLEARANCE REQUIREMENTS BETWEEN THE PAD AND OTHER STRUCTURES/BUILDINGS, AND INDOOR INSTALLATIONS.
3. INSTALL 2 GROUND RODS AROUND THE CONCRETE PAD A MINIMUM OF 6' APART. REFER TO EO–12181–B FOR GROUND ROD INSTALLATION PROCEDURE.
4. WHENEVER POSSIBLE, THE FRONT END OF THE PAD (THE EDGE WITH THE CABLE OPENING) SHOULD BE POSITIONED FACING THE STREET TO ENABLE VISIBILITY OF TRANSFORMER BADGING AND ACTIVATED FAULT INDICATORS FROM THE ROAD.

TRANSFORMER INSTALLATION INSTRUCTIONS:

1. TRANSFORMERS SHALL BE STENCILED WITH THE STRUCTURE AND FEEDER NUMBERS AS SHOWN IN FIGURE 1 ABOVE.
2. TRANSFORMERS SHALL BE CENTRALLY PLACED ON THE PAD. THE TRANSFORMER BODY SHALL NOT OVERHANG ON THE EDGE OF THE PAD BY OVER 2". THE TRANSFORMER'S RADIATOR MAY OVERHANG ON THE PAD.
3. THE PRIMARY AND SECONDARY TRANSFORMER GROUND PADS SHALL BE CONNECTED TO THE GROUND RODS USING #2 COPPER LEADS. REFER TO EO–12181–B FOR INSTRUCTIONS.
4. PREFERABLY BEFORE TRANSPORTING THE TRANSFORMER TO LOCATION, VISUAL INSPECTION AND ELECTRICAL TESTING SHOULD BE PERFORMED AS DESCRIBED IN EO–3115.
5. BEFORE ENERGIZATION, A FINAL VISUAL INSPECTION SHALL BE PERFORMED TO CONFIRM THAT THE TRANSFORMER SIZE AND CLASS MATCHES THE LAYOUT. ALSO CONFIRM TAP CHANGER POSITION, PRIMARY AND SECONDARY VOLTAGES, OIL LEVEL, AND PRIMARY FUSE SIZE.

PRIMARY COMPARTMENT

1. ACCEPTABLE PRIMARY CABLE SIZES FOR URD PRIMARY ARE SHOWN BELOW:

VOLTAGE	CABLE SIZE/MATERIAL	CABLE TERMINAL C&S	CABLE SPEC
4kV/13kV	1/0 AL	571–6527	EO–7238–A
	2/0 CU	571–6766	EO–7555
	4/0 AL	571–7376	EO–7274
27kV	2/0 CU	571–8101	EO–7556
35kV	4/0 CU	577–8691	EO–7577

2. THE PRIMARY CONDUIT SHALL BE ALIGNED WITH THE TRANSFORMER'S PRIMARY BUSHINGS. PROVIDE A MINIMUM OF 36" SLACK DURING PRIMARY CABLE INSTALLATION. MAINTAIN A MINIMUM LENGTH OF 12" ON THE CONCENTRIC NEUTRAL DURING CABLE PREPARATION.
3. PREPARE CABLES AND ATTACH CABLE TERMINALS ACCORDING TO INSTRUCTIONS IN DRAWING 325613.
4. REPLACE ALL TRANSFORMER SINGLE PRIMARY BUSHING INSERTS WITH FEED–THRU INSERTS TO ENABLE A LOOP FEED. REFER TO EO–100501 FOR VARIOUS BUSHING INSERT CLASS & STOCK NUMBERS.
5. FOR 4kV AND 13kV, INSTALL APPROPRIATELY–RATED ELBOW SURGE ARRESTERS ON OPEN POINTS OF A LOOP FEED, OR THE END TRANSFORMER ON A RADIAL FEED. REFER TO EO–100501 FOR VARIOUS SURGE ARRESTER SIZES.
6. INSTALL FAULT INDICATORS ON PRIMARY CABLES ACCORDING TO INSTRUCTIONS IN 335556. FOR LOOP FEEDS, FAULT INDICATORS ARE REQUIRED ONLY ON "101" LEGS.
7. ESTABLISH THE TRANSFORMER AS A KNOWN POINT BY RUNNING A TRACING CURRENT (TC) CONTINUITY TEST ACCORDING TO EO–4039, AND ATTACHING FEEDER AND PHASE IDENTIFICATION TAGS TO ELBOW TERMINALS AS SHOWN BELOW:

LOOP FEED:

	INCOMING BUSHING			OUTGOING BUSHING		
PHASE IDENTIFICATION	A	B	C	A	B	C
CABLE TAG	101A	101B	101C	102A	102B	102C
TRANSFORMER STENCIL (PHASE SEQUENCING)	H1X	H2X	H3X	H1Y	H2Y	H3Y

RADIAL FEED:

PHASE IDENTIFICATION	A	B	C
CABLE TAG	101A	101B	101C
TRANSFORMER STENCIL (PHASE SEQUENCING)	H1	H2	H3

SECONDARY COMPARTMENT

1. CONNECT SECONDARY CABLES TO THE TRANSFORMER SECONDARY STABS USING APPROPRIATELY–SIZED COMPRESSION LUGS. REFER TO EO–14929–C FOR COMPRESSION LUGS.
2. FOR TRANSFORMERS EQUIPPED WITH INTERNAL EXPULSION FUSES, DO NOT INSTALL SECONDARY LIMITERS. 2000KVA 4kV TRANSFORMERS ARE NOT EQUIPPED WITH INTERNAL (BAY–O–NET) FUSES, AND SHALL HAVE LIMITER LUGS INSTALLED ON SECONDARY LIVE LEGS. DO NOT INSTALL LIMITERS ON SECONDARY NEUTRALS.
3. REFER TO ACCOMPANYING ENGINEERING LAYOUT FOR APPROPRIATE SECONDARY CABLE SIZE.
4. SECONDARY CABLE LENGTHS CAN BE EXTENDED TO REACH THE TRANSFORMER'S SECONDARY SPADES. REFER TO EXHIBIT 1 IN EO–5403 FOR APPROPRIATE CONNECTORS.
5. SECONDARY CABLE ARRANGEMENT SHALL NOT BE PHASE GROUPED IN METAL CONDUITS.

ENVIRONMENTAL NOTE:

IMMEDIATELY NOTIFY EH&S CONTROL DESK AT (212) 580–8383, AND NOTIFY SUPERVISOR. TAKE APPROPRIATE ACTIONS TO MINIMIZE ENVIRONMENTAL IMPACT.

INSTALLATION PROCEDURE FOR 4kV, 13kV & 27kV. THREE PHASE DEAD FRONT PADMOUNT TRANSFORMER

CONSOLIDATED EDISON COMPANY OF N.Y., INC.
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DWG. NO. EO-13827-B REV. 15 SH. 2 OF 3

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15	SEE ABOVE REVISION BOX ON SHEET 3 OF 3 FOR CHANGES.	O. CHILAKA	1/17/20

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EO-13827-B

BILL OF MATERIAL

PRIMARY COMPARTMENT

ITEM NO.	DESCRIPTION	DWG. OR SPEC.	VOLTAGE CLASS	CLASS/STOCK	NOTES
1	FEED-THRU INSERT	EO-100501 EO-16248-B	15kV	571-8192	
			25kV	SPOT BUY	
			35kV	SPOT BUY	
2	LOADBREAK ELBOW CONNECTOR (WITH TEST POINT)	EO-100501 325613	SEE TABLE IN PRIMARY COMPARTMENT NOTE 1 ON SHEET 2 OF 3 FOR CORRESPONDING C/S NUMBERS		
3	TIME-CURRENT FAULT INDICATOR	335556	ALL VOLTAGE CLASSES	598-4521	INSTALL ON 101 ELBOWS
4	ELBOW SURGE ARRESTER	EO-2012	4kV	592-3685	NO APPROVED ARRESTER FOR 27kV
		EO-100059	13kV	502-4955	
5	8' GROUND ROD (1/2" DIAMETER)	EO-12181-B EO-8265-B	———	007-0961	INSTALL TWO GROUND RODS A MINIMUM OF 6' APART AS SHOWN
6	#2 BARE BOND WIRE	EO-06	ALL CLASSES	564-0073	
7	PARKING STAND	———	———	———	

SECONDARY COMPARTMENT

ITEM NO.	DESCRIPTION	DWG. OR SPEC.	VOLTAGE CLASS	CLASS/STOCK	NOTES
8	COMPRESSION LUGS	EO-14929-C	VARIOUS	VARIOUS	SEE SPEC FOR PROPER SIZES
9	SECONDARY CABLES	———	———	———	REFER TO LAYOUT FOR CABLE SIZING
10	SECONDARY NEUTRAL CABLES	———	———	———	REFER TO LAYOUT FOR CABLE SIZING

REFERENCE SPECIFICATIONS AND DRAWINGS:

BARE BOND WIRE ---------- EO-06
APPLICATION OF SURGE PROTECTION ON THE NON-NETWORK DISTRIBUTION SYSTEM ---------- EO-2012
INSTALLATION OF DIRECT BURIED HDPE CONDUIT ---------- EO-3036
USE OF CERTIFICATION, REGISTERED, DEFECTIVE EQUIPMENT, CABLE INFORMATION AND BLUE TAGS ---------- EO-4039
DESIGN FEATURES FOR 480 VOLT LIMITER LUGS USED ON PAD MOUNTED TRANSFORMERS ---------- EO-5212
PURCHASE REQUIREMENTS FOR DISTRIBUTION CLASS SURGE ARRESTERS ---------- EO-5430
INSTALLATION REQUIREMENTS FOR PAD MOUNT TRANSFORMERS ---------- EO-6229
ALUMINUM CONNECTORS FOR UNDERGROUND MAINS CABLES ---------- EO-7879-D
GROUNDING FOR PAD-MOUNTED TRANSFORMERS AND SWITCHES ---------- EO-12181-B
CONDUIT AND PAD INSTALLATION FOR THREE PHASE PAD MOUNTED URD EQUIPMENT ---------- EO-12482-B
CONCRETE PADS FOR THREE PHASE PAD MOUNTED TRANSFORMERS ---------- EO-13775-B
ASSEMBLY AND INSTALLATION OF ELBOW TERMINALS FOR 4kV. 13kV, AND 27kV DEAD FRONT PAD MOUNT TRANSFORMERS ---------- 325613
NEMA – TYPE COMPRESSION LUGS, COPPER & ALUMINUM ---------- EO-14929-C
INSTALLATION OF LOAD BREAK FEED-THRU BUSHING ---------- EO-16248-B
INSTALLATION OF TIME-CURRENT AUTO-RESET FAULT INDICATORS FOR 4KV & 13KV URD SYSTEMS ---------- 335556
SEALING OF SERVICE DUCTS, ENTRANCES AND BUS OPENINGS IN ELECTRICAL DISTRIBUTION STRUCTURES ---------- EO-1100
ACCESSORIES & TERMINATIONS FOR ELECTRIC DISTRIBUTION SYSTEMS ---------- EO-100501
PRE-INSTALLATION INSPECTION AND TESTING OF RADIAL DISTRIBUTION TRANSFORMER ---------- EO-3115
METHOD OF SEALING PHASE GROUPED CABLES AND CONDUITS FOR SERVICES, MANHOLES AND VAULTS ---------- EO-6217-C

No.	REVISIONS	PROJ ENG'R	DATE
15	SHEET 1 OF 3: MADE DRAWING 3 SHEETS INSTEAD OF 4. ADDED FRONT VIEWS OF TRANSFORMER PAD WITH OPEN AND CLOSED DOORS. REMOVED ALTERNATE PRIMARY POSITION DETAIL. REMOVED TYPICAL SECONDARY EXTENSION BUS ASSEMBLIES. ADDED DETAILS "A", "B", & "C". UPDATED CONFIGURATION IN HIGH AND LOW VOLTAGE COMPARTMENTS. SHEET 2 OF 3: REMOVED DRAWINGS OF ELBOWS ARRESTERS ON RADIAL FEED AND OPEN POINT. ADDED AND UPDATED CONSTRUCTION INSTRUCTIONS, TRANSFORMER INSTALLATION INSTRUCTIONS, AND NOTES FOR PRIMARY AND SECONDARY COMPARTMENTS. ADDED TABLE FOR ACCEPTABLE PRIMARY CABLE SIZES FOR URD PRIMARY. ADDED TABLES TO SHOW TAGGING FOR LOOP AND RADIAL FEEDS. ADDED AND UPDATED ENVIRONMENTAL NOTE. SHEET 3 OF 3: ADDED AND UPDATED BILL OF MATERIAL AND REFERENCE SPECIFICATIONS AND DRAWINGS. K.T. 1/17/2020	O. CHILAKA	1/17/2020

FILING INFORMATION

FIELD MANUAL No. 24: U.R.D., SECT. 8; TRANSFORMERS
FIELD MANUAL No. 22: U.R.D., SECT. 8; TRANSFORMERS
CONSTRUCTION STDS. MANUAL No. 3 SECT. 16: U.R.D.

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