SECTION I - TRANSFORMERS

Note: Updated or new standards are de-noted with RED text in the table of content.

I-2.0.0	AERIAL TRANSFORMER BUSHING GUARD AND ARRESTER CAP FOR ANIMAL & TREE PROTECTION
I-3.0.0	TRANSFORMER SUPPORTS CLUSTER MOUNTED AND POLE MOUNTED
I-3.0.1	TRANSFORMER CLUSTER MOUNT SQUARE CONCRETE POLES
I-3.1.0	TRANSFORMER WEIGHTS
I-3.2.0	TRANSFORMER POLE WEIGHT LOADING
I-4.1.0	AERIAL TRANSFORMER SCHEMATIC INDEX POLE MOUNTED SINGLE PHASE AERIALS: 10-167 KVA
I-4.2.0	AERIAL TRANSFORMER SCHEMATIC INDEX POLE MOUNTED SINGLE PHASE AERIALS: 10-167 KVA
I-4.3.0	AERIAL TRANSFORMERS KVA TYPE LOADING CONDUCTORS CONNECTORS
I-4.4.0	AERIAL TRANSFORMERS TERMINALS CONNECTORS
I-4.5.0	AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)
I-4.6.0	AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)
I-4.7.0	AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)
I-4.8.0	AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)
I-4.9.0	WYE WYE AERIAL TRANSFORMER BANK 500 KVA, 120/208V, THREE PHASE, 4 WIRE, (3) 167 KVA SINGLE PHASE POLE MOUNTED
I- 5.0.0	SINGLE & DOUBLE BUSHING TRANSFORMERS BONDING AND GROUNDING
I-6.0.0	ARRESTER INSTALLATION FOR AERIAL TRANSFORMERS
I-8.0.0	TYPICAL STEP UP/DOWN PADMOUNT TRANSFORMER INSTALLATION MODIFIED VERTICAL CONSTRUCTION
I-9.0.0	SINGLE PHASE STEPDOWN TRANSFORMER ON URD TERMINATOR POLE
I-10.0.0	SINGLE PHASE LINE REGULATOR INSTALLATION (ALTERNATE METHOD)
I-10.1.0	SINGLE PHASE LINE REGULATOR INSTALLATION VERTICAL CONSTRUCTION, (FOR MAINTENANCE ONLY)
I-10.1.1	SINGLE PHASE LINE REGULATOR INSTALLATION MODIFIED VERTICAL CONSTRUCTION, PREFERRED METHOD
I-19.0.0	TRANSFORMER FUSING TABLE AERIAL FUSE SWITCHES
I-19.2.0	PADMOUNT AND DRY TYPE TRANSFORMER FUSE SIZES
I-32.0.0	TRANSFORMER BANK INSTALLATION 2.4/4 KV WYE DELTA (FOR MAINTENANCE ONLY)
I-35.0.0	DISTRIBUTION TRANSFORMER CONNECTION DELTA PRIMARY SYSTEM, TWO BUSHING TRANSFORMERS, REFERENCE ONLY
I-40.0.0	SINGLE PHASE INSTALLATION 13 & 23 KV CROSSARM CONSTRUCTION
I-41.0.0	TRANSFORMER INSTALLATION 1 PHASE PRIMARY CONSTRUCTION MODIFIED VERTICAL CONSTRUCTION
I-41.0.1	POST CONSTRUCTION 13 & 23 KV SINGLE PHASE INSTALLATION

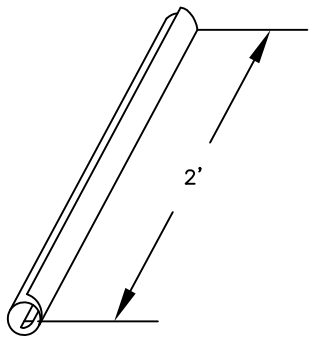
I-42.0.0	SINGLE PHASE INSTALLATION, 13 & 23 KV, (FOR MAINTENANCE ONLY)
I-42.0.1	DEADEND CONSTRUCTION SINGLE PHASE INSTALLATION
I-43.0.1	HENDRIX AERIAL SPACER CABLE SYSTEM THREE PHASE CONSTRUCTION WITH SINGLE PHASE TRANSFORMER
I-43.0.2	HENDRIX AERIAL SPACER CABLE SYSTEM THREE PHASE TANGENT CONSTRUCTION WITH OPEN DELTA TRANSFORMER BANK
I-43.0.3	HENDRIX AERIAL SPACER CABLE SYSTEM THREE PHASE TANGENT CONSTRUCTION WITH 3 PHASE TRANSFORMER BANK
I-44.0.0	SINGLE PHASE INSTALLATION, 13 & 23 KV, OVERHEAD GROUND WIRE, CROSSARM CONSTRUCTION FOR MAINTENANCE ONLY
I-45.0.0	OPEN WYE OPEN DELTA BANK 13 & 23 KV ON WOOD ALLEY ARM ALTERNATE METHOD
I-45.0.1	OPEN WYE-OPEN DELTA BANK STEEL ALLEY ARM ALTERNATE METHOD
I-46.0.0	OPEN WYE OPEN DELTA BANK 13 & 23 KV CROSSARM CONSTRUCTION ALTERNATE METHOD
I-47.0.0	OPEN WYE OPEN DELTA BANK 13 & 23 KV (FOR MAINTENANCE ONLY)
I-48.0.0	WYE CLOSED DELTA BANK 13 & 23 KV CROSSARM CONSTRUCTION
I-48.0.1	OPEN WYE OPEN DELTA BANK 13 & 23 KV DEADEND CONSTRUCTION
I-48.0.2	POST INSULATOR CONSTRUCTION, OPEN WYE OPEN DELTA BANK 13 & 23 KV
I-49.0.0	WYE CLOSED DELTA BANK 13 & 23 KV CROSSARM CONSTRUCTION
I-50.0.0	WYE CLOSED DELTA BANK 13 & 23 KV (FOR MAINTENANCE ONLY)
I-50.1.1	FRAMING DETAIL FOR OVERHEAD GROUND WIRE VERTICAL CONSTRUCTION TYPICAL THREE TRANSFORMER BANK
I-50.1.2	FRAMING DETAIL FOR OVERHEAD GROUND WIRE VERTICAL CONSTRUCTION TRANSFORMER ON A , B OR C PHASE
I-51.0.0	WYE CLOSED DELTA BANK 13 & 23KV MODIFIED VERTICAL CONSTRUCTION
I-52.0.0	WYE WYE BANK 13 & 23 KV CROSSARM CONSTRUCTION
I-52.0.1	WYE WYE BANK 13 & 23 KV VERTICAL CONSTRUCTION (FOR MAINTENANCE ONLY)
I-52.0.2	WYE WYE BANK 13 & 23KV MODIFIED VERTICAL CONSTRUCTION
I-53.0.0	DISTRIBUTION TRANSFORMER CONNECTION WYE PRIMARY SYSTEM SINGLE BUSHING TRANSFORMERS
I-53.1.1	DISTRIBUTION TRANSFORMER CONNECTION WYE PRIMARY SYSTEM TWO BUSHING TRANSFORMERS
I-53.1.2	DISTRIBUTION TRANSFORMER CONNECTION WYE PRIMARY SYSTEM TWO BUSHING TRANSFORMERS
I-53.1.3	SINGLE PHASE AUTO TRANSFORMER AND STEPDOWN TX CONNECTIONS
I-54.0.0	DISTRIBUTION TRANSFORMER CONNECTIONS PARALLELING THREE PHASE TRANSFORMER BANK
I-54.1.0	DISTRIBUTION TRANSFORMER CONNECTIONS PARALLELING SINGLE PHASE TRANSFORMER BANK
I-55.0.0	POLARITY AND TERMINAL MARKINGS STANDARD, SINGLE & TWO BUSHING TRANSFORMERS
I-56.0.1	WYE WYE TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS
I-56.0.2	WYE WYE TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS
I-57.0.1	WYE DELTA TRANSFORMER BANK USING SINGLE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-57.0.2	WYE DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS
I-58.0.1	OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS
I-58.0.2	OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS
I-59.0.0	CONNECTIONS FOR THREE PHASE LIVE FRONT PAD MOUNTED TX WITH SECTIONALIZING SWITCH (FOR MAINTENANCE ONLY)
I-60.0.0	TYPICAL CONNECTIONS SINGLE PHASE LIVE FRONT PADMOUNT TRANSFORMER WITHOUT* SECTIONALIZING SWITCH (MAINTENANCE ONLY)
I-61.0.0	TYPICAL CONNECTIONS LIVE FRONT DUPLEX PADMOUNT TX WITHOUT *SECTIONALIZING SWITCH (MAINTENANCE ONLY)
I-62.0.0	TYPICAL CONNECTIONS FOR SINGLE PHASE DEAD FRONT, 36" REGULAR STYLE PAD MOUNT TRANSFORMER 7620/13200, 13200/22860Y VOLT, AND DUAL VOLT, 50KVA-167KVA
I-63.0.0	SECONDARY BUS BAR INSTALLATION AND THREE PHASE PAD MOUNTED TRANSFORMER CONNECTION
I-63.0.1	MULTITAP CONNECTOR INSTALLATION FOR 3 PHASE TRANSFORMERS 750 KVA OR LARGER
I-63.0.2	NUMBER OF HOLES ON SECONDARY SPADES ON 3 PHASE PADS AND VAULT TXS
I-64.0.0	TEMPORARY SECONDARY GROUND FOR PAD MOUNTED TRANSFORMER
I-65.0.1	TYPICAL CONNECTIONS FOR 100 KVA SINGLE PHASE LOW STYLE PADMOUNT TX. 7620/13200Y OR 13200/22860Y VOLT
I-65.1.1	TYPICAL CONNECTIONS FOR 25-100KVA LOW STYLE, SINGLE PHASE DEAD FRONT PADMOUNT TRANSFORMER, 7620/13200Y OR 13200/22860Y VOLT
I-65.1.2	CONNECTION OF MULTIPLE SECONDARY CABLES TO SINGLE PHASE LOW STYLE PAD MOUNTED TRANSFORMERS
I-65.1.3	MAKEUP OF MULTI TAP & SPADE CONNECTORS IN SINGLE PHASE PADS (LOW AND REGULAR STYLES)
I-65.1.4	MAKEUP OF MULTITAP CONNECTORS IN SINGLE PHASE PADS (REGULAR STYLES)
I-66.0.0	INSULATED SECONDARY BUSHING ON TRANSFORMERS
I-67.0.0	INSTALLATION OF BUSHING WELLTO REPLACE FAILED POTHEAD PILC CABLE TERMINATION IN THREE PHASE VAULT TRANSFORMERS
I-67.0.1	INSTALLATION OF BUSHING WELL (15 OR 25 KV) OR INTERNALLY CLAMPED POTHEAD (15 KV) IN SINGLE PHASE AERIAL TRANSFORMERS
I-67.0.2	INSTALLATION OF BUSHING WELL (15 OR 25 KV) OR INTERNALLY CLAMPED POTHEAD (15 KV) IN SINGLE PHASE AERIAL TRANSFORMERS
I-68.0.1	OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PAD MOUNTED TRANSFORMERS
I-68.0.2	OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PAD MOUNTED TRANSFORMERS
I-68.0.3	OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PADMOUNTED TRANSFORMERS (FOR MAINTENANCE ONLY)
I-69.0.0	TYPICAL CONNECTIONS THREE PHASE DEAD FRONT PADMOUNT TRANSFORMERS 7620/13200Y, OR 13200/22860Y VOLT AND DUAL VOLTAGE
I-70.0.1	TYPICAL CONNECTIONS THREE PHASE DEAD FRONT SECTIONALIZING PADMOUNTED TRANSFORMER 7620/13200Y, 13200/22860Y AND DUAL VOLTAGE
I-70.0.2	TYPICAL CONNECTIONS THREE PHASE DEAD FRONT SECTIONALIZING PAD MOUNT TRANSFORMER AT NORMAL OPEN POINTS 7620/13200Y, 13200/22860Y AND DUAL VOLTAGE
I-71.0.0	TYPICAL CONNECTIONS DEAD FRONT DUPLEX PADMOUNTED TRANSFORMER, 7620/13200 VOLT (FOR MAINTENANCE ONLY)
I-73.0.1	TYPICAL HIGH RISE STACKED VAULT
I-73.0.2	GUIDE FOR THE INSTALLATION OF DISTRIBUTION SYSTEMS IN RESIDENTIAL HIGH RISE BUILDINGS
I-73.0.3	INSTALLATION OF SURGE ARRESTER IN SINGLE PHASE DRY TYPE TRANSFORMER
I-73.0.4	INSTALLATION OF ELBOW ARRESTER ON DRY TYPE TRANSFORMER IN TOP STACK VAULT FOR EACH PHASE

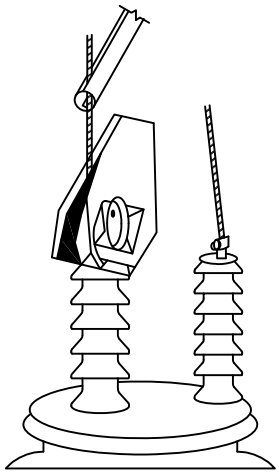
I-74.0.1	REPLACEMENT CABINET INSTALLATION FOR PAD MOUNT TRANSFORMER
I-74.0.2	PAD MOUNT TRANSFORMER REPLACEMENT CABINET INSTALLATION
I-74.1.1	REPLACEMENT CABINET INSTALLATION SECONDARY JUNCTION BOX
I-74.1.2	SECONDARY JUNCTION BOX REPLACEMENT CABINET INSTALLATION
I-75.0.0	3 PHASE LARGE SECONDARY CABINET

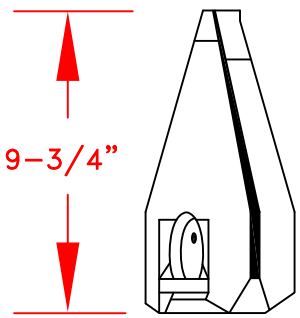
AERIAL TRANSFORMER BUSHING GUARD AND ARRESTER CAP FOR ANIMAL AND TREE PROTECTION

I-2.0.0

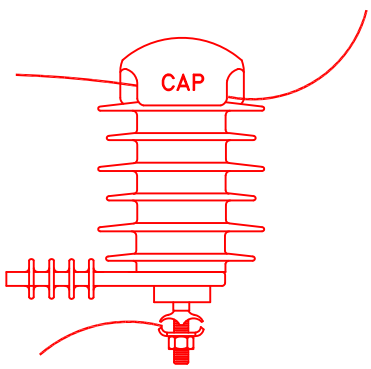


STINGER COVER (HOSE)
(M&S# 130-54004-4)





TRANSFORMER BUSHING ANIMAL GUARD
(M&S# 130-54003-6)
SEE NOTES 1 & 2



ARRESTER CAP
(M&S# 130-56000-2)
SEE NOTE 3

MECA UNIT FORMAT (4911.3)								ANIMAL GUARDS
A.	B..	C..	D...	E...	F.	G..	H..	
T_		GRD		SQRL				ANIMAL GUARD, CONE ONLY
T_		GRD	HOSE					HOSE ONLY
T_		GRD	HOSE	SQRL				ANIMAL GUARD, CONE & HOSE INCLUDED
T_		GRD		CAP_				ANIMAL GUARD, CAP FOR ARRESTOR

NOTES:

1. BUSHING GUARD MAY BE INSTALLED ENERGIZED UTILIZING PROPER HOT STICK.
2. SNAP BUSHING OVER TOP SKIRT OF BUSHING TO SECURE GUARD AND PROVIDE MAXIMUM PROTECTION.
3. ARRESTER CAP TO BE INSTALLED WITH ALL ARRESTERS.

SFHHA 009865
FPL RC-16

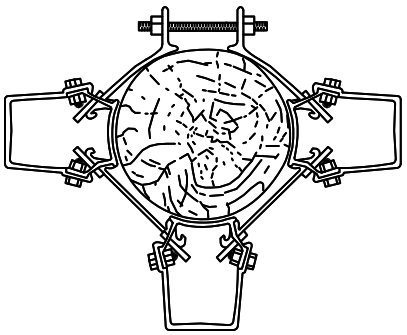
F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	5/23/01	ADDED ARRESTER CAP	GJP	JES	IA
3	6-30-93	REVISED MISCELLANEOUS INFO.	ARR	JRG	RJS
2	6-30-93	REVISED TEXT IN TITLE AND MECA	ARR	BAQ	RJS
1	3-15-91	ADDED ANIMAL GUARD HOSE, STINGER GUARD COVER	MLM	HO	RKC

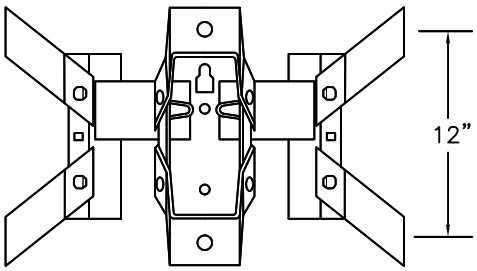
ORIGINATOR: MLM
DRAWN BY: JRF
DATE: 1/1/90
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

TRANSFORMER SUPPORTS
CLUSTER MOUNTED AND POLE MOUNTED

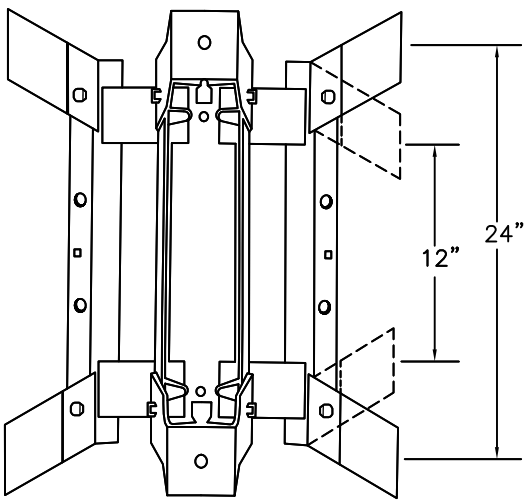
I-3.0.0



TOP VIEW OF BASIC BRACKET
FOR ROUND POLES

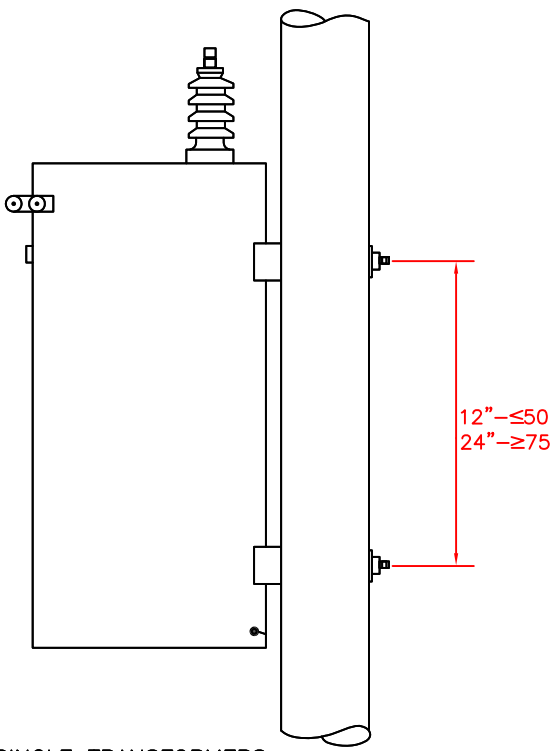


SMALL BRACKET M&S 470-580-017
5/8" OR 3/4" BOLT
FOR 12" LUG SPACING
(TO 50 KVA)
MOUNTING HOLES 7 1/2" O.C.



LARGE BRACKET M&S 470-580-025
3/4" BOLT
FOR 24" LUG SPACING
(75 KVA TO 167 KVA)
MOUNTING HOLES 18" O.C.

dashed lines indicate reversal
for different lug spacings



SINGLE TRANSFORMERS
BOLT DIRECTLY TO POLE
USE 5/8" BOLT FOR 50 KVA & SMALLER
USE 3/4" BOLT FOR 75 KVA & LARGER

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	5/26/15	UPDATE NOTE	DGY	ELS	RDH
3	8/20/02	ADD BOLT SIZE	JNM	JES	JJM
2	7/30/01	UPDATE DRAWING (BY MOVING FIGURE OF CONCRETE POLE TO I-3.0.1.)	JNM	JES	JJM
1	7/22/99	ADDED MOUNTING HOLE TEXT TO DWG	WPC	JES	JJM
0	3/1/89	ORIGINAL DRAWING	ARR	B	JJM

SFHHA 009866
FPL RC-16

FPL

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR

DRAWN BY: E. SCHILLING

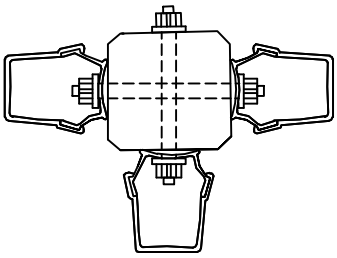
DATE: 3/1/89

APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT
SUPPORT SERVICES

NO SCALE

TRANSFORMER CLUSTER MOUNT SQUARE CONCRETE POLES

I-3.0.1



TOP VIEW

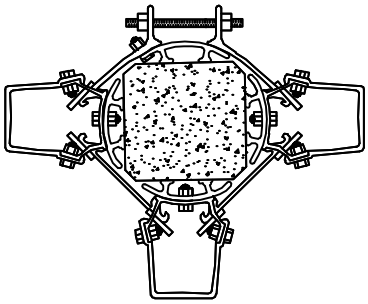
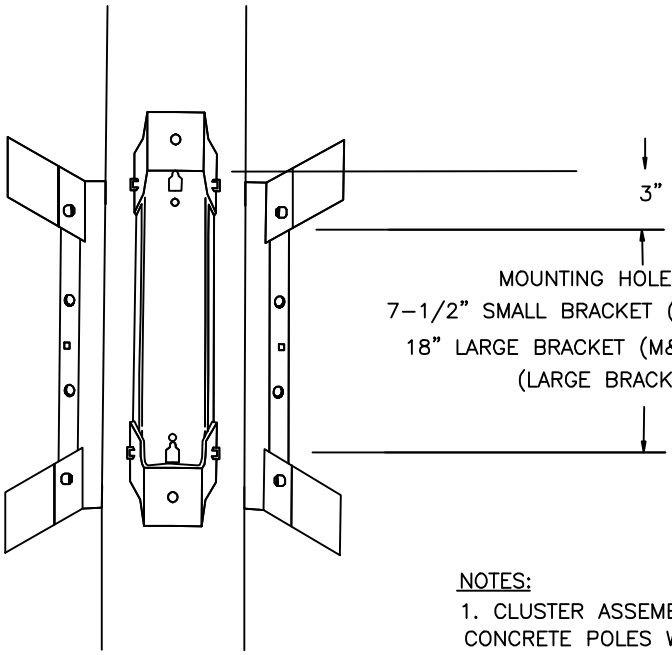


FIG. 2
TOP VIEW OF CLUSTER BRACKET
FOR TYPE III-G CONCRETE POLES
(FACE DIMENSION LESS THAN 9.5")



KIT FOR SMALL BRACKET M&S 470-58003-3
FOR LARGE BRACKET M&S 470-58004-1

FIGURE 1
CLUSTER BRACKET FOR
TYPE III-H CONCRETE POLES
(FACE DIMENSION 9.5" AND GREATER)

NOTES:

1. CLUSTER ASSEMBLY CAN ONLY BE USED ON SQUARE CONCRETE POLES WHERE THE FACE DIMENSION IS LESS THAN 9.5".
2. TO INSTALL THE BRACKET ON POLES WITH A FACE DIMENSION EQUAL TO OR GREATER THAN 9.5".

A. DRILL 4 HOLES IN POLE AS SHOWN.
B. DISASSEMBLE CLUSTER BRACKET BY DISCARDING SPRINGS AND BANDS.
C. MOUNT INDIVIDUAL BRACKETS DIRECTLY TO POLE USING 3/4" MACHINE BOLTS.
D. TIGHTEN BOLTS TO 75 FT-LBS. DO NOT DEFORM CURVATURE IN BRACKET.

SFHHA 009867
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	09/23/02	REVISE MOUNTING HOLE SPACING	JNM	JES	JJM

ORIGINATOR: JNM
DRAWN BY: J. SHOUP
DATE: 07/30/01
APPROVED: J. McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

TRANSFORMER WEIGHTS

I-3.1.0

APPROXIMATE WEIGHT RANGE IN POUNDS

SINGLE PHASE TRANSFOMERS

kVA	AERIAL TYPES	PADMOUNT TYPES
10 15	222–422 252–464	
25 37	357–532 480–751	606–880 755–1070
50 75	603–791 785–1174	856–1543 1059–1410
100 167	1100–1260 1391–1740	1289–1872 1665–2016
250 333	1703–2450 1923–2866	
500	2383–3414	

THREE PHASE TRANSFOMERS

kVA	VAULT/NETWORK TYPES	PADMOUNT TYPES
112 150		2273–2428 2588–3741
225 300	3575–4200	2831–4187 3959–5065
500 750	4700–5250 6000–7640	6227–7908 7500–8500
1000 1500	7840–10400 11000–14550	7250–9000 8000–10000
2000	9000–16000	9000–12000
2500		13500–17500
11.2 MVA AUTO TX		30,000
15 MVA AUTO TX		50,120

NOTE:

THE ABOVE TRANSFORMER WEIGHTS ARE FOR ESTIMATING PURPOSES FOR UNITS PURCHASED IN RECENT YEARS. SOME UNITS, PARTICULARLY OLDER TYPES ARE PROBABLY HEAVIER. TRANSFORMERS SHOULD BE CHECKED AND TAGGED FOR A SPECIFIC JOB WHERE WEIGHT IS IMPORTANT. THE ACTUAL WEIGHT IS USUALLY ON THE NAMEPLATE.

SUPERSEDES I-3A LAST REVISED ON 3-1-89

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	7/24/03	ADDED 15 MVA AUTO INFO	IA	ELS	JMM
3	7/06/01	ADDED 11.2 MVA AUTO TX INFO	GJP	JES	IA
2	7/22/99	ADDED 2500 KVA TX INFO	WPC	JES	JM
1	1/29/92	UPDATE WEIGHTS OF PADMOUNT TRANSFORMERS, 1500 & 2000KVA	MV	BAQ	RKC
0	3/15/91	ORIGINAL	MLM	HO	RKC

SFHHA 009868
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MLM

DRAWN BY: H. OHARRIZ

DATE: 3/15/91

APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

TRANSFORMER POLE WEIGHT LOADING

I-3.2.0

THE USUAL WIND-LOADING CALCULATIONS TO DETERMINE POLE CLASS REQUIREMENTS DO NOT CONSIDER PERMANENT LOAD SUCH AS A HEAVY TRANSFORMER. THIS TYPE OF LOAD CAN CAUSE A POLE TO BEND OR "BOW" OVER A PERIOD OF TIME, EVEN THOUGH CODE STRENGTH REQUIREMENTS ARE EXCEEDED BY A COMFORTABLE MARGIN, TO PREVENT THIS LONG-TERM DEFORMATION, THE TABLE AND CHART BELOW SHOULD BE USED TO DETERMINED THE MINIMUM CLASS OF POLE REQUIRED FOR A PARTICULAR TRANSFORMER WEIGHT. FOR INSTALLATION ON AN EXISTING POLE IN GOOD CONDITION, ONE CLASS SMALLER THAN INDICATED BELOW MAY BE USED.

WHERE LOAD GROWTH REQUIRING FUTURE TRANSFORMER REPLACEMENT CAN BE REASONABLY ANTICIPATED, A CLASS 3 POLE SHOULD BE THE MINIMUM SET FOR A TWO TRANSFORMER BANK.

IT WILL BE NOTED THAT AN OPEN DELTA BANK WILL, IN GENERAL, REQUIRE A LARGER POLE THAN CLOSED DELTA BANK. THIS IS CAUSED BY THE FACT THAT IN A CLOSED DELTA BANK THE TWO POWER TRANSFORMERS BALANCE EACH OTHER*, AND CAUSE NO UNBALANCES MOMENT – AND IT IS THIS UNBALANCED MOMENT, NOT THE WEIGHT IN ITSELF, WHICH INITIATES POLE BOWING.

NOTE, HOWEVER, THAT THE INFORMATION BELOW CANNOT BE CONSIDERED A SUBSTITUTE FOR WIND LOADING CALCULATIONS. WIND LOADING SHOULD BE CONSIDERED SEPARATELY, AND THE METHOD DICTATING THE LARGER POLE SHOULD PREVAIL.

*NOTE – THE CHART AND TABLE BELOW ASSUME THE USE OF CLUSTER-MOUNTS. FOR ARM MOUNTED BANKS, TOTAL THE TRANSFORMER WEIGHT AND USE THE TABLE AS IF ALL WEIGHT WERE CONCENTRATED IN ONE TRANSFORMER.

EXAMPLES:

a. ONE TRANSFORMER WEIGHING 1100 LBS, REQUIRES A CLASS 3 POLE. (FROM TABLE)
b. THREE CLUSTER MOUNTED TRANSFORMERS EACH WEIGHING 1100 LB, REQUIRES A CLASS 3 POLE. (FROM TABLE)
c. ONE 1000 LB. AND ONE 400 LB. TRANSFORMER CLUSTER MOUNTED REQUIRES A CLASS 3 POLE. (EXAMPLE ON CHART)
d. THREE ARM MOUNTED TRANSFORMERS EACH WEIGHING 600 LB. REQUIRE A CLASS 2 POLE (1800LB. TOTAL FROM TABLE)

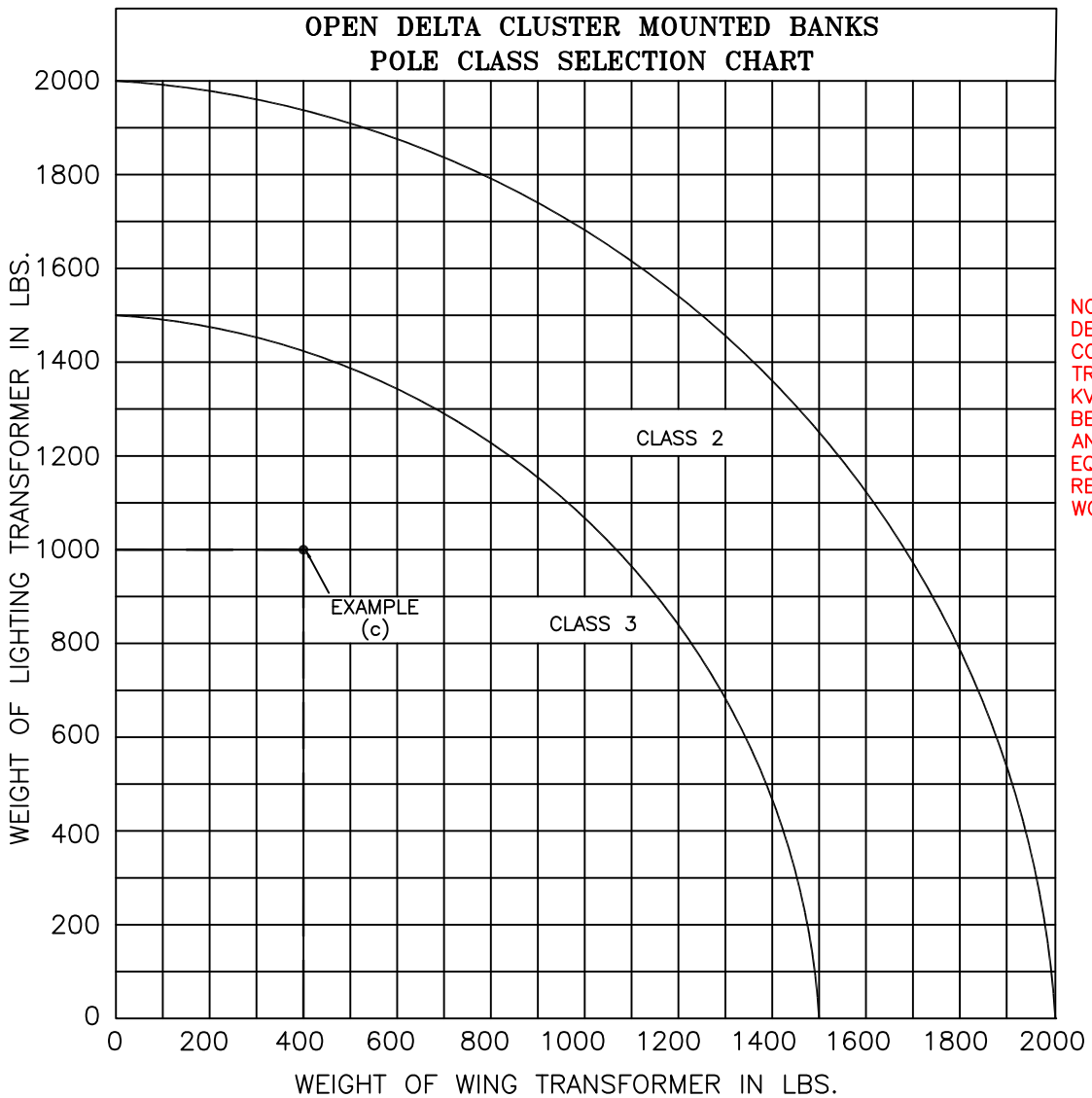


TABLE	
POLE CLASS	SINGLE TX. MAX. LBS.
3	1500
2	2000

NOTE: STANDARD APPLIES TO OPEN DELTA CLUSTERS. ALL NEW CONSTRUCTION OR REPLACEMENT TRANSFORMER POLES WITH 3-100 KVA OR LARGER TRANSFORMERS TO BE TYPE III-H CONCRETE POLES AND ACCESSIBLE BY AERIAL EQUIPMENT. FOR INACCESSIBLE REPLACEMENT POLE USE A CLASS 2 WOOD POLE OR STRONGER.

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	2/8/16	UPDATE DRAWING AND NOTES	DGY	ELS	RDH
3	3/19/08	REMOVE REFERENCE TO 3 PHASE BANKS. INSERTED NOTE ON CONCRETE POLES.	RR	ELS	JRD
2	6/30/93	REVISE NOTES	ARR	JRG	RJS
1	1/29/92	ADDED CLASS 4 & 5 POLES	ARR	HO	RJS
0	1/29/92	ORIGINAL DRAWING	MLM	JRF	RKC

SFHHA 009869
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MLM DRAWN BY: JRF

DATE: 3/15/91 APPROVED: R.K. CIELO

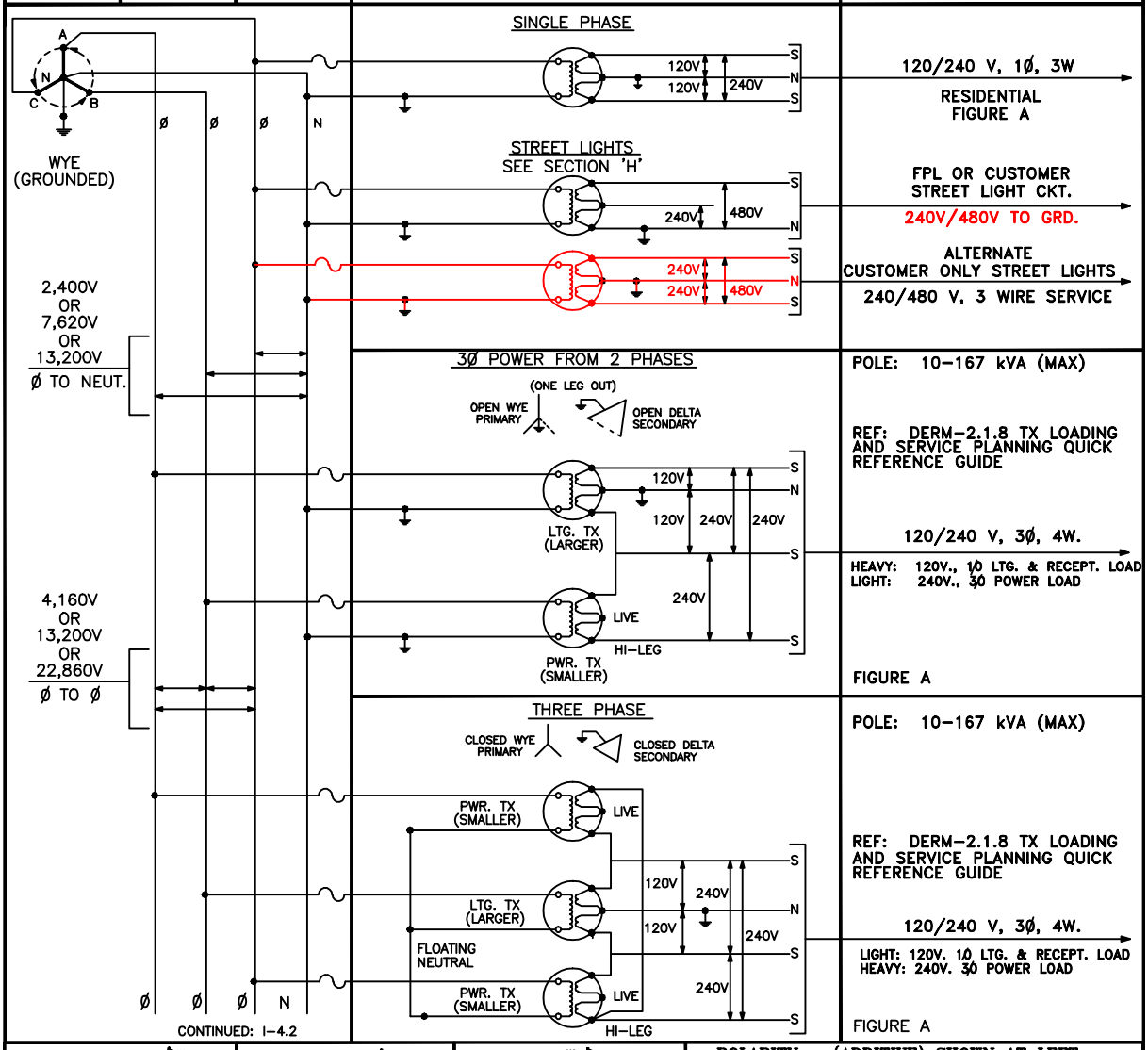
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

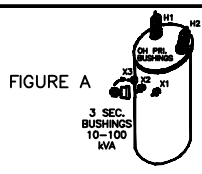
NO SCALE

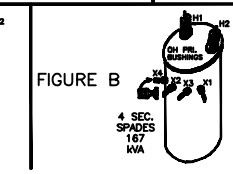
AERIAL TRANSFORMER SCHEMATIC INDEX
POLE MOUNTED SINGLE PHASE
AERIALS: 10-167KVA

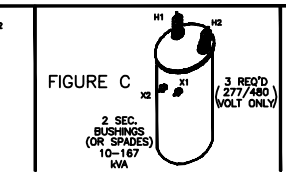
I-4.1.0

PRIMARY DISTRIBUTION VOLTAGES			ONE, TWO OR THREE 1Ø AERIAL TRANSFORMER(S)	(COMMON) CUSTOMER UTILIZATION VOLTAGES SECONDARY SERVICE
4KV SYSTEM 2,400/4,160 V	13 KV SYSTEM 7,620/13,200 V	23KV SYSTEM 13,200/22,860 V		









POLARITY - (ADDITIVE) SHOWN AT LEFT

BY INDUSTRY STANDARDS, ALL SINGLE PHASE DISTRIBUTION TRANSFORMERS 200 kVA AND SMALLER, HAVING HIGH VOLTAGES 8660 VOLTS AND BELOW (WINDING VOLTAGE) HAVE ADDITIVE POLARITY. ALL OTHER SINGLE-PHASE TRANSFORMERS HAVE A SUBTRACTIVE POLARITY. IN CASES THAT A STRAIGHT VOLTAGE 7620 V TRANSFORMER WITH ADDITIVE POLARITY IN A BANK, IS BEING REPLACED WITH A SIMILAR DUAL VOLTAGE UNIT, PLEASE NOTE THAT THE REPLACEMENT DUAL VOLTAGE UNIT WILL HAVE SUBTRACTIVE POLARITY.

SUPERSEDES I-4.1 LAST REVISED ON 7-1-88

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	1/4/10	ADDED 480/240V GND. CIRCUIT	RR	ELS	JRD
2	10/17/05	ADD TO POLARITY NOTE	IA	ELS	JJM
1	9/16/05	UPDATE REF NOTE	IA	ELS	JJM
0	3/15/91	ORIGINAL DRAWING	MV	JRF	RKC

SFHHA 009870
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MV
DRAWN BY: JRF
DATE: 3/15/91
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

AERIAL TRANSFORMER SCHEMATIC INDEX
POLE MOUNTED SINGLE PHASE
AERIALS: 10-167KVA

I-4.2.0

PRIMARY DISTRIBUTION VOLTAGES	THREE 1ø AERIAL TRANSFORMERS	(COMMON) CUSTOMER UTILIZATION VOLTAGES SECONDARY SERVICE
(1-4.1) CONTINUED	THREE PHASE WYE PRIMARY / WYE SECONDARY — SEE NOTE-1	120/208V., 3ø, 4W. COMMERCIAL/INDUSTRIAL
	THREE PHASE WYE PRIMARY / WYE SECONDARY — SEE NOTE-1	277/480V., 3ø, 4W. COMMERCIAL/INDUSTRIAL

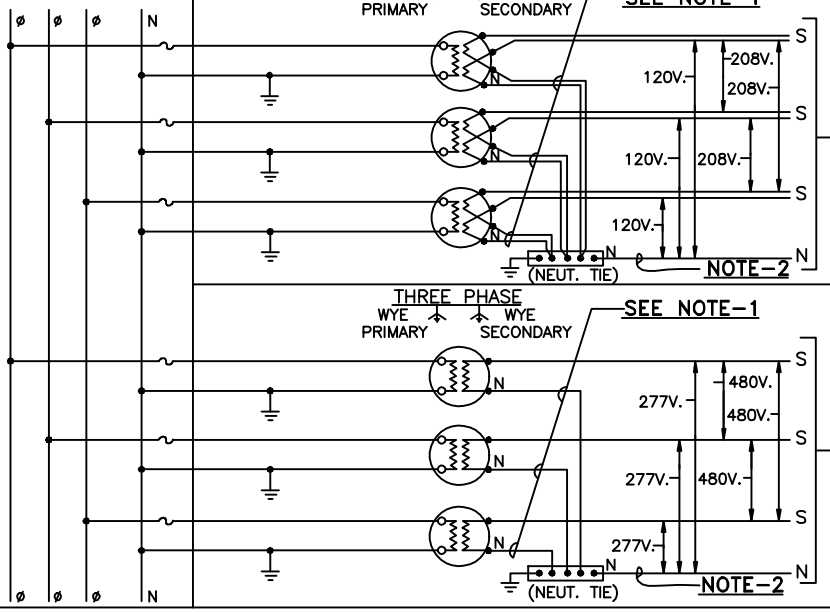


FIGURE: B (1-4.1.0)

FIGURE: C (1-4.1.0)

NOTE-1

DO NOT REDUCE CAPACITY OF NEUTRAL CONDUCTORS UNTIL THEY TIE TOGETHER AT FPL'S "NEUTRAL COLLECTOR" OR "CUSTOMER'S NEUTRAL" AT WEATHERHEAD.

NOTE-2

NEUTRAL CAN BE REDUCED AT THIS POINT.

TRANSFORMER CURRENT RATINGS				
KVA RATING	PRIMARY FULL LOAD AMPERES AT: 2400V.	7620V.	13,200V.	22,860V.
10	4.17	1.31	.76	.44
15	6.25	1.97	1.14	.66
25	10.41	3.28	1.89	1.09
37.5	15.62	4.92	2.84	1.64
50	20.83	6.55	3.79	2.18
75	31.25	9.84	5.68	3.27
100	41.67	13.12	7.58	4.37
167	69.60	21.92	12.65	7.30

SFHHA 009871
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	9/16/05	UPDATE NOTES	IA	ELS	JJM
0	9/15/99	CONVERTED TO CAD	WPC	DLW	JJM

ORIGINATOR: ET DRAWN BY: ET

DATE: 7/1/88 APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

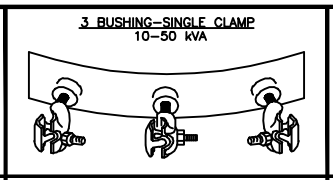
NO SCALE

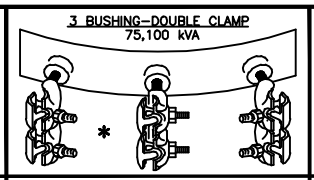
AERIAL TRANSFORMERS
KVA-TYPE-LOADING-
CONDUCTORS-CONNECTORS

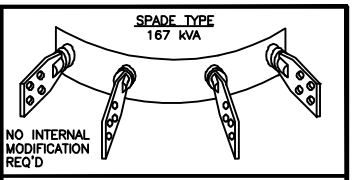
I-4.3.0

SECONDARY TERMINALS

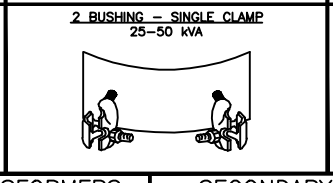
120/240V, 1Ø
OR
120/240V, 3Ø
OR
120/208V, 3Ø

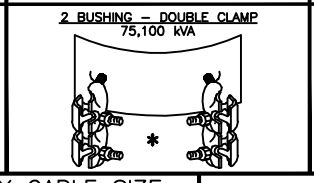


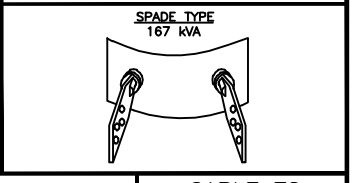




277/480V, 3Ø



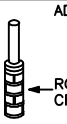




POLE MOUNTED 1Ø TRANSFORMERS						SECONDARY CABLE SIZE								NOTES
kVA	SECONDARY CONNECTED	PHASE	No. OF TRANSF.	AMPERES NAMEPLATE	AMPERES NP+25%	** SEE FIGURE	NEUT. RISER AL.	NEUT. RISER CU.	HOT RISERS AL.	HOT RISERS CU.	JUMP (JU) AL.	JUMP (JU) CU.		
10	120/240V	1Ø	1	41.7	52.1	1	1/0	2	3/0	2	NONE			
15	120/240V	1Ø	1	62.5	78.1	1	1/0	2	3/0	2	NONE			
25	120/240V	1Ø	1	104.1	130.1	1	1/0	2	3/0	2	NONE			
	120/240V OPEN DELTA	3Ø	2	104.1	130.1	3	1/0	2	3/0	2	SEE FIG. 3			HOT RISERS ARE SIZED EQUALLY FOR STANDARDIZATION
	120/240V CLOSED DELTA	3Ø	3	104.1	130.1	3	1/0	2	3/0	2	SEE FIG. 4			FOR BANKS WITH 25 kVA LIGHTING TX.
	120/208V	3Ø	3	208.3	260.3	6	3/0	1/0	336	4/0	336	4/0		
	277/480V	3Ø	3	90.3	112.9	8	1/0	2	3/0	1/0	3/0	1/0		
37.5	120/240V	1Ø	1	156.2	195.2	1	1/0	2	3/0	1/0	NONE			
	120/240V OPEN DELTA	3Ø	2	156.2	195.2	3	3/0	2	336	1/0	SEE FIG. 3			HOT RISERS ARE SIZED EQUALLY FOR STANDARDIZATION
	120/240V CLOSED DELTA	3Ø	3	156.2	195.2	4	3/0	2	336	1/0	SEE FIG. 4			FOR BANKS WITH 37.5 kVA LIGHTING TX.
	120/208V	3Ø	3	312.5	390.6	6	3/0	1/0	556	4/0	556	4/0		
	277/480V	3Ø	3	135.4	169.2	8	1/0	2	3/0	1/0	3/0	1/0		
50	120/240V	1Ø	1	208.3	260.3	1	3/0	1/0	336	4/0	NONE			
	120/240V OPEN DELTA	3Ø	2	208.3	260.3	3	3/0	1/0	556	4/0	SEE FIG. 3			HOT RISERS ARE SIZED EQUALLY FOR STANDARDIZATION
	120/240V CLOSED DELTA	3Ø	3	208.3	260.3	4	3/0	1/0	556	4/0	SEE FIG. 4			FOR BANKS WITH 50 kVA LIGHTING TX.
	120/208V	3Ø	3	416.7	520.9	7	2 3/0	4/0	2 336	500	2 336	500		
	277/480V	3Ø	3	180.5	225.6	8	3/0	2	336	1/0	3/0	1/0		
75	120/240V	1Ø	1	312.5	390.6	1	3/0	1/0	556	4/0	NONE			
	120/240V OPEN DELTA	3Ø	2	312.5	390.6	3	3/0	4/0	556	4/0	SEE FIG. 3			HOT RISERS ARE SIZED EQUALLY FOR STANDARDIZATION
	120/240V CLOSED DELTA	3Ø	3	312.5	390.6	4	3/0	4/0	556	4/0	SEE FIG. 4			FOR BANKS WITH 75 kVA LIGHTING TX.
	120/208V	3Ø	3	625.0	781.2	7	2 3/0	4/0	2 336	2 4/0	2 336	2 4/0		
	277/480V	3Ø	3	270.7	338.3	8	3/0	1/0	336	4/0	336	4/0		
100	120/240V	1Ø	1	416.7	520.9	1	3/0	4/0	556	500	NONE			
	120/240V OPEN DELTA	3Ø	2	416.7	520.9	3	3/0	4/0	556	500	SEE FIG. 3			HOT RISERS ARE SIZED EQUALLY FOR STANDARDIZATION
	120/240V CLOSED DELTA	3Ø	3	416.7	520.9	4	3/0	4/0	556	500	SEE FIG. 4			FOR BANKS WITH 100 kVA LIGHTING TX.
	120/208V	3Ø	3	833.3	1041.6	7	2 3/0	500	2 556	2 500	2 556	2 500		
	277/480V	3Ø	3	361.1	451.3	9	3/0	4/0	556	500	556	500		
167	120/240V	1Ø	1	696	870	2	2 3/0	500	2 556	2 4/0	SEE FIG. 2			
	120/240V CLOSED DELTA	3Ø	3	696	870	5	3 3/0	500	3 556	3 500	SEE FIG. 5			FOR BANKS WITH 167 kVA LIGHTING TX.
	120/208V	3Ø	3	1392	1740	11								SEE FIG. 11
	277/480V	3Ø	3	602.9	753.6	10	2 3/0	4/0	2 556	2 4/0	2 556	2 4/0		

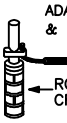
CABLE TO TRANSFORMER CONNECTORS

Ⓐ ADAPTER



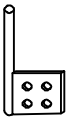
(3/0) = 103-44300-9
(336) = 103-44600-8
(556) = 103-44700-4

Ⓐ$_J$ ADAPTER & JUMPER



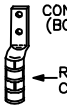
(M&S - SAME AS ABOVE)

Ⓕ FLAG



120-56400-5

Ⓒ CONNECTOR (BOLT TYPE)

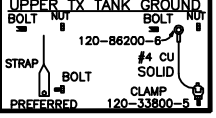


(3/0)=103-82300-6
(336)=103-82400-2
(556)=103-83600-1
(750 CU) = 103-82600-5

Ⓜ MULTI-TAP

(6-3/0) = 102-78000-1

UPPER TX TANK GROUND



* CONNECTIONS ARE SAME AS SINGLE CLAMP TYPE

** THESE FIGURES SHOWN ON SHEET I-4.5 THROUGH I-4.8.

SUPERSEDES I-4.3 LAST REVISED ON 7-1-88

SFHHA 009872

FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	6/30/93	LINE CLAMP AND REMOVE	RWS	HO	RKC
0	7/1/88	ORIGINAL DRAWING	ARR	BAQ	RJS

ORIGINATOR: ARR DRAWN BY: BAQ

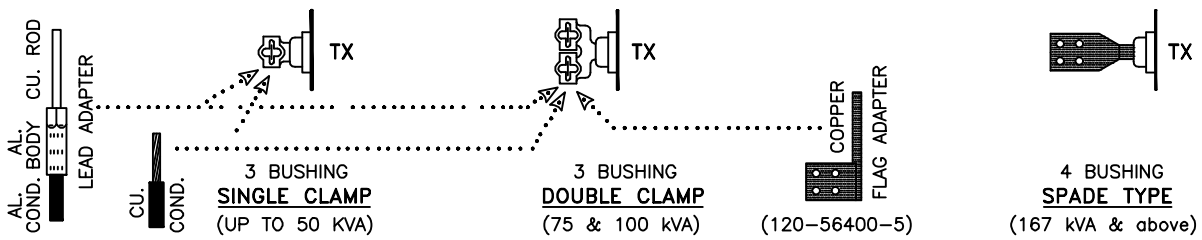
DATE: 6/30/93 APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING AND OPERATIONS SERVICES

NO SCALE

AERIAL TRANSFORMERS
TERMINALS AND CONNECTORS

I-4.4.0

COPPER TRANSFORMER TERMINALS



3 BUSHING
SINGLE CLAMP
(UP TO 50 KVA)

3 BUSHING
DOUBLE CLAMP
(75 & 100 kVA)

(120-56400-5)

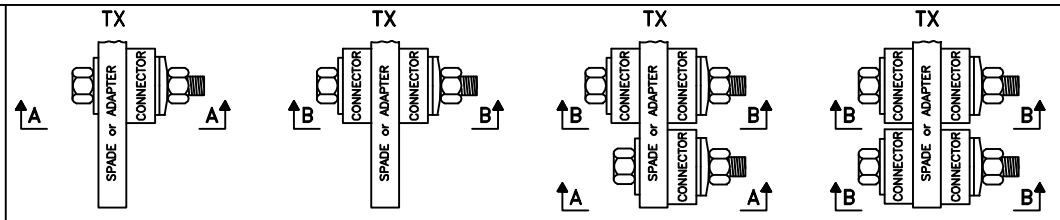
4 BUSHING
SPADE TYPE
(167 kVA & above)

SEQUENTIAL ASSEMBLYING

TERMINALS AND CONNECTORS

AL. CONNECTORS SHOWN
(CU. CONNECTORS, SIMILAR)

TOP VIEW

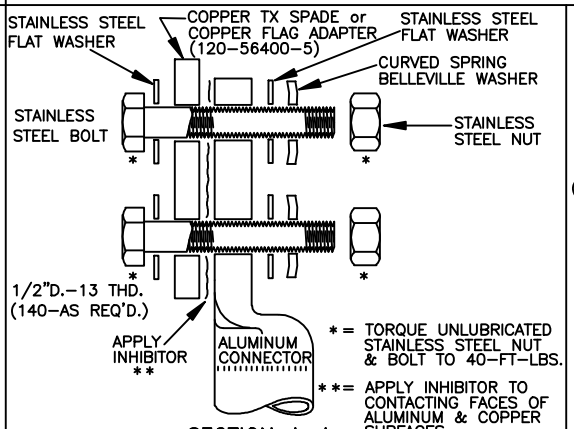


1-CONNECTOR | 2-CONNECTORS | 3-CONNECTORS | 4-CONNECTORS

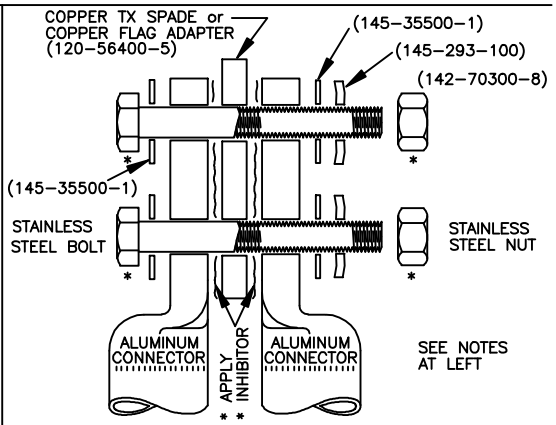
ALL ALUMINUM CONNECTORS

USE OPPOSING WRENCHES WHEN TIGHTENING ASSEMBLIES SO AS NOT TO TAX TX BUSHINGS.

FRONT VIEW



1-CONNECTOR **SECTION A-A**

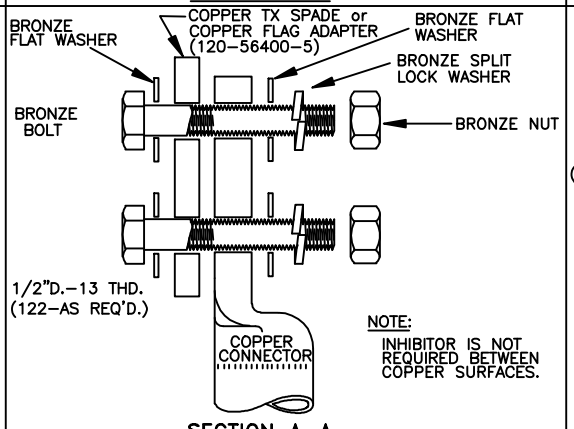


SECTION B-B 2-CONNECTORS

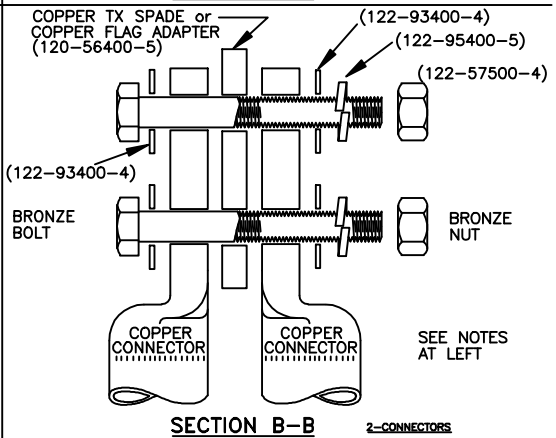
ALL COPPER CONNECTORS

USE OPPOSING WRENCHES WHEN TIGHTENING ASSEMBLIES SO AS NOT TO TAX TX BUSHINGS.

FRONT VIEW



1-CONNECTOR **SECTION A-A**



SECTION B-B 2-CONNECTORS

SFHHA 009873
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	6/27/08	UPDATE M&S NUMBER	GAP	ELS	JJM
1	9/15/99	CONVERTED TO CAD	WPC	RQF	JJM
0	7/1/88	ORIGINAL DRAWING	ET	ET	GH

ORIGINATOR: ET

DRAWN BY: ET

DATE: 7/1/88

APPROVED: HAMMOND FOR RKC
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)

I-4.5.0

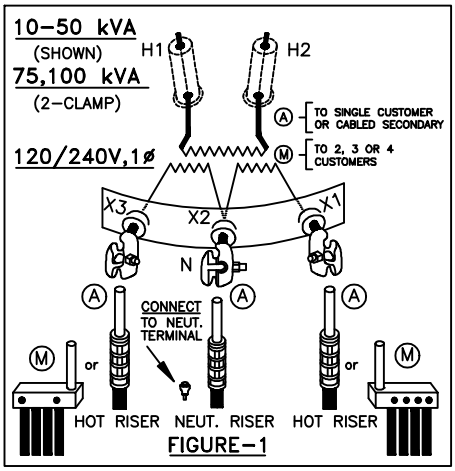


FIGURE-1

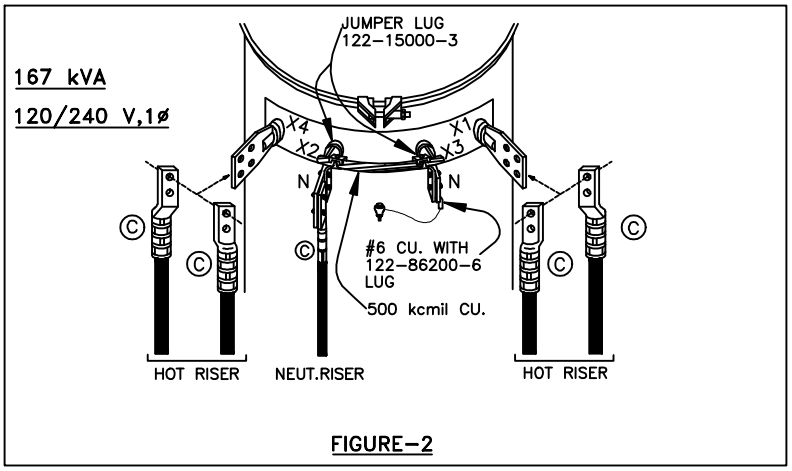


FIGURE-2

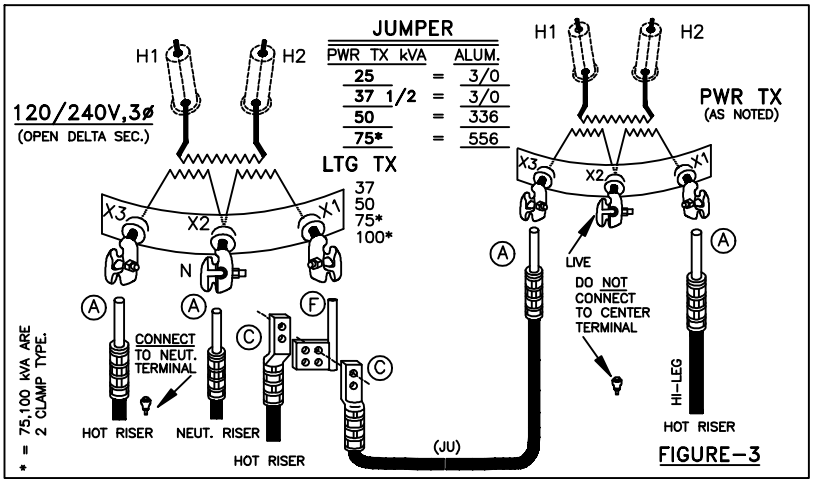


FIGURE-3

NOTE:

ALL DIAGRAMS ARE PICTORIAL. JUMPER RADIUS BENDS ARE SHOWN IN THIS MANNER DUE TO SPACE LIMITATIONS OF STANDARDS SHEETS.

WHEN REPLACING STRAIGHT VOLTAGE UNITS IN A BANK WITH DUAL VOLTAGE UNITS PLEASE SEE POLARITY NOTE ON DCS I-4.1.0.

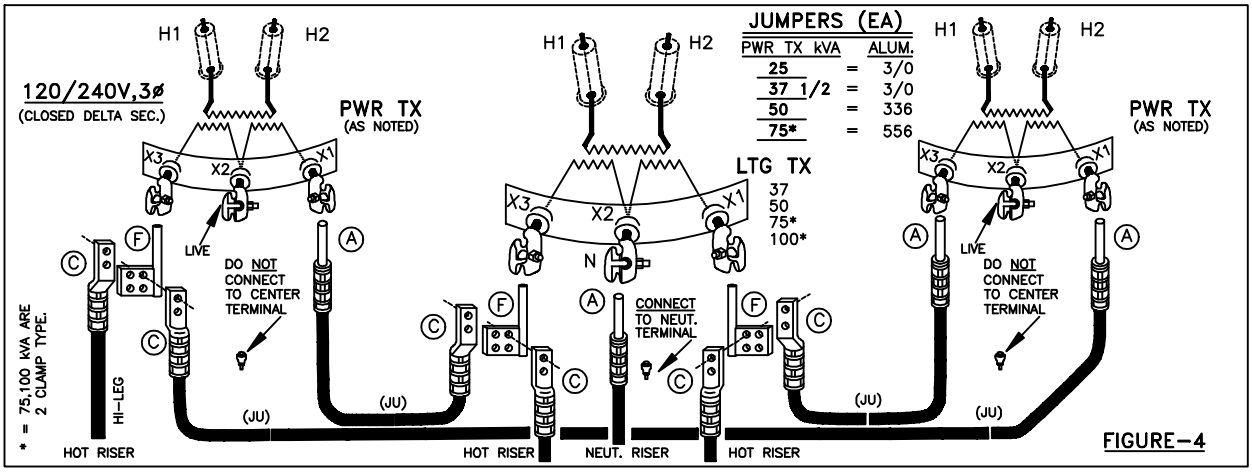


FIGURE-4

SFHHA 009874
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	10/17/05	ADD NOTE		IA	ELS JRD
1	9/16/99	CONVERTED TO CAD	WPC	DLW	JJM

ORIGINATOR: ET

DRAWN BY: ET

DATE: 7/1/88

APPROVED: HAMMOND FOR RKC
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)

I-4.6.0

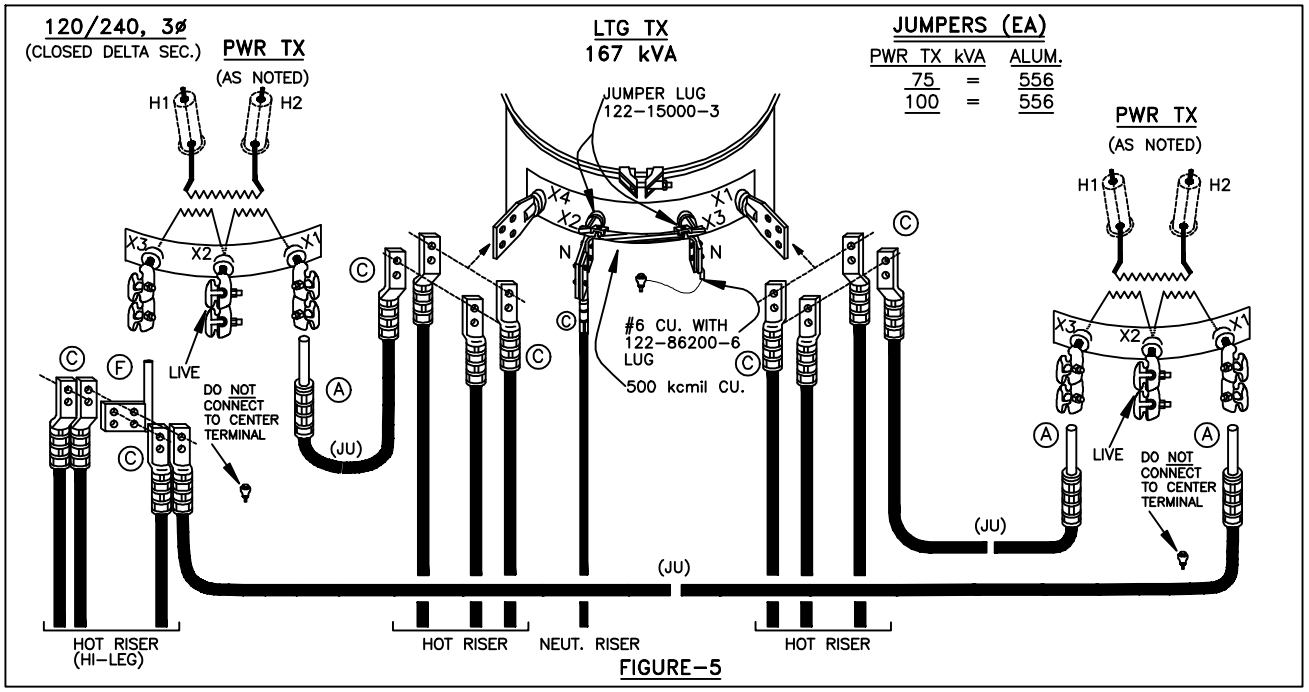


FIGURE-5

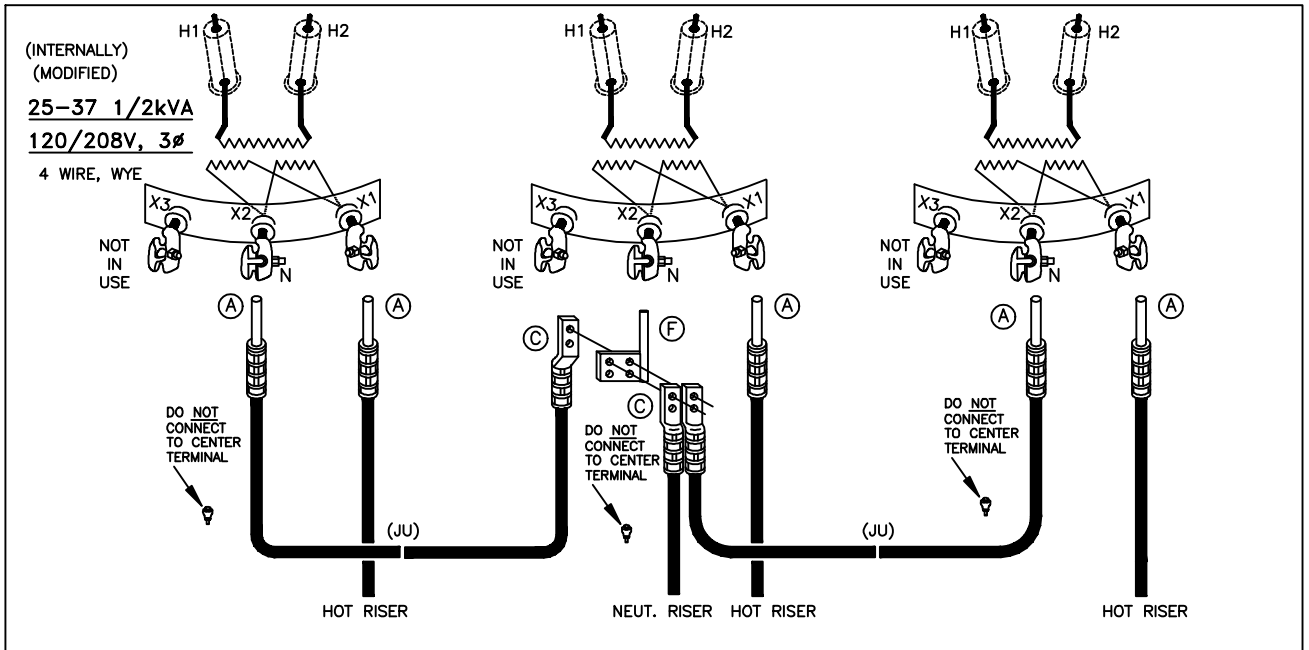


FIGURE-6

SFHHA 009875
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0	9/15/99	CONVERTED TO CAD	WPC	DLW	JJM

ORIGINATOR: ET

DRAWN BY: ET

DATE: 7/1/88

APPROVED: HAMMOND FOR RKC
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)

I-4.7.0

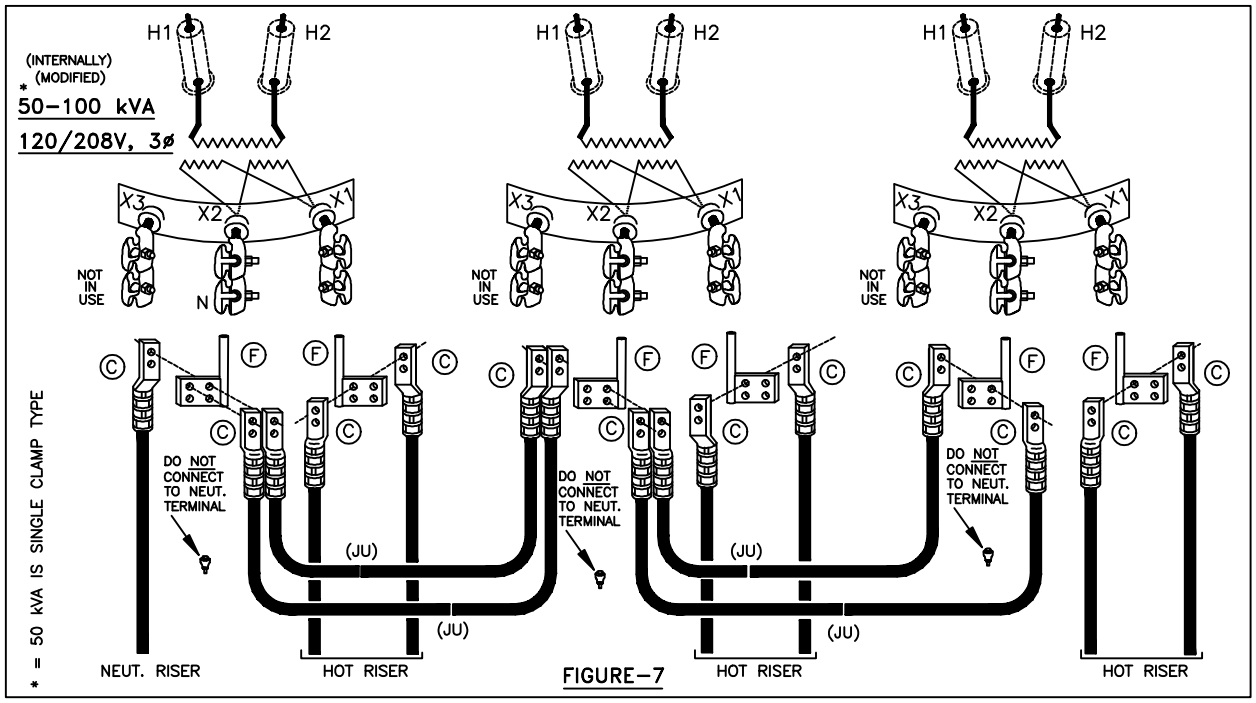


FIGURE-7

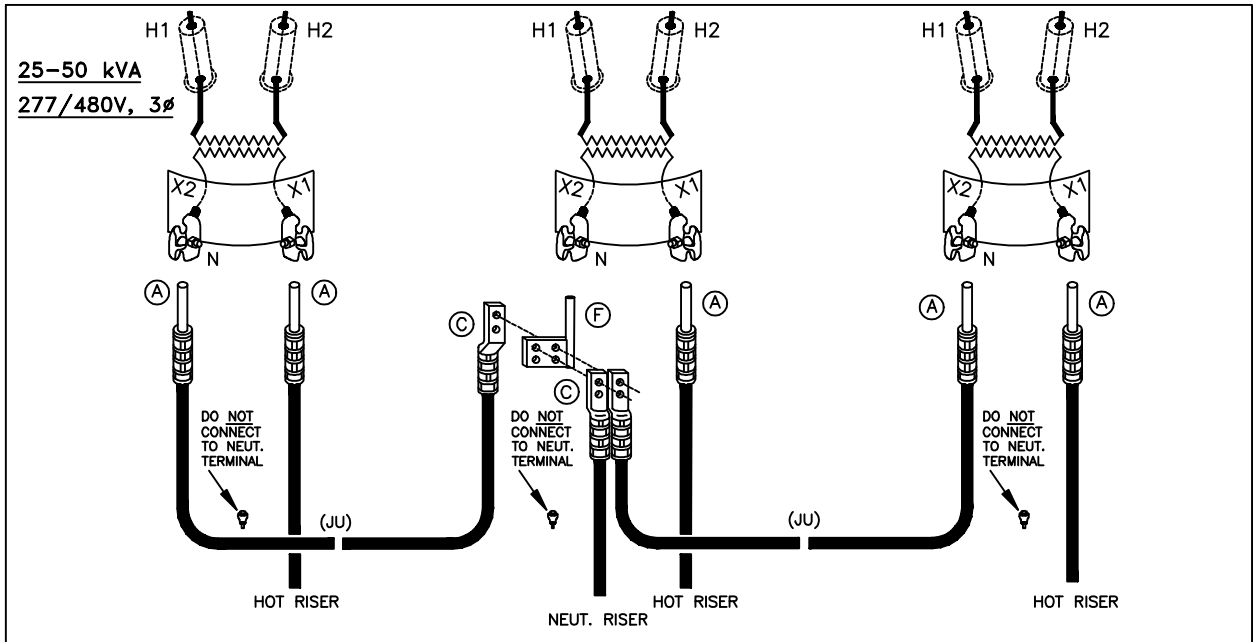


FIGURE-8

SFHHA 009876
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ET

DRAWN BY: ET

DATE: 7/1/88

APPROVED: HAMMOND FOR RKC
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	9/15/99	CONVERTED TO CAD	WPC	DLW	JJM

AERIAL TRANSFORMERS SECONDARY CONNECTIONS (ADDITIVE SHOWN)

I-4.8.0

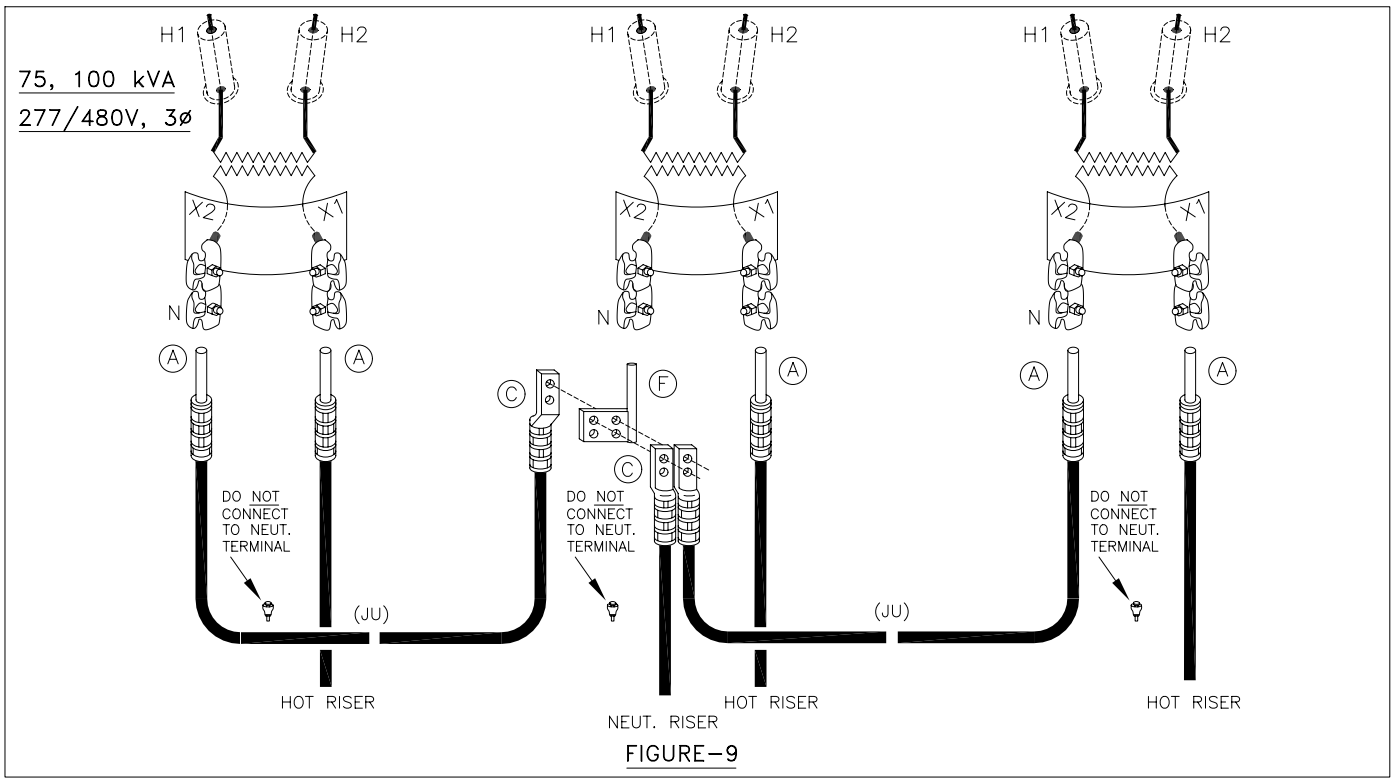


FIGURE-9

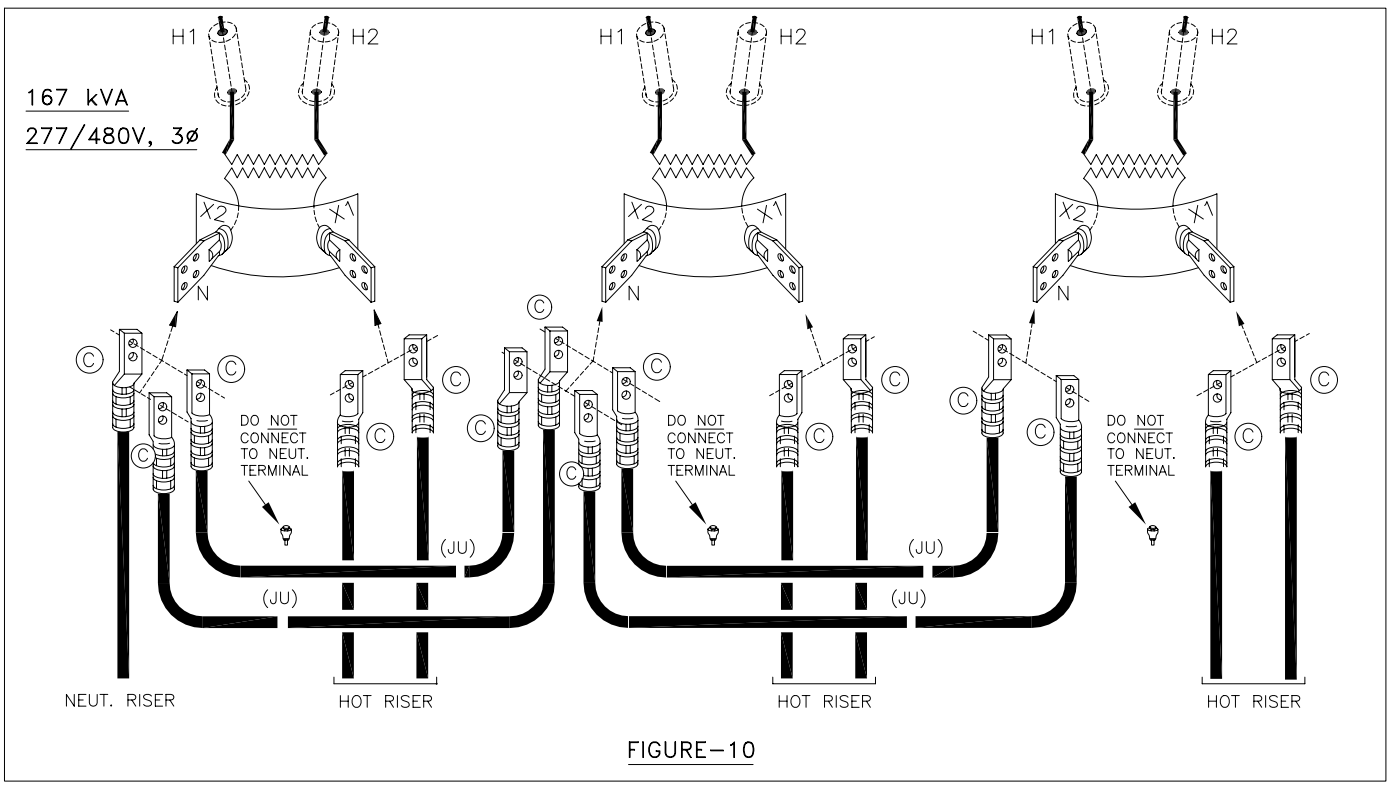


FIGURE-10

SFHHA 009877
FPL RC-16

FPL

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: DRAWN BY: HV

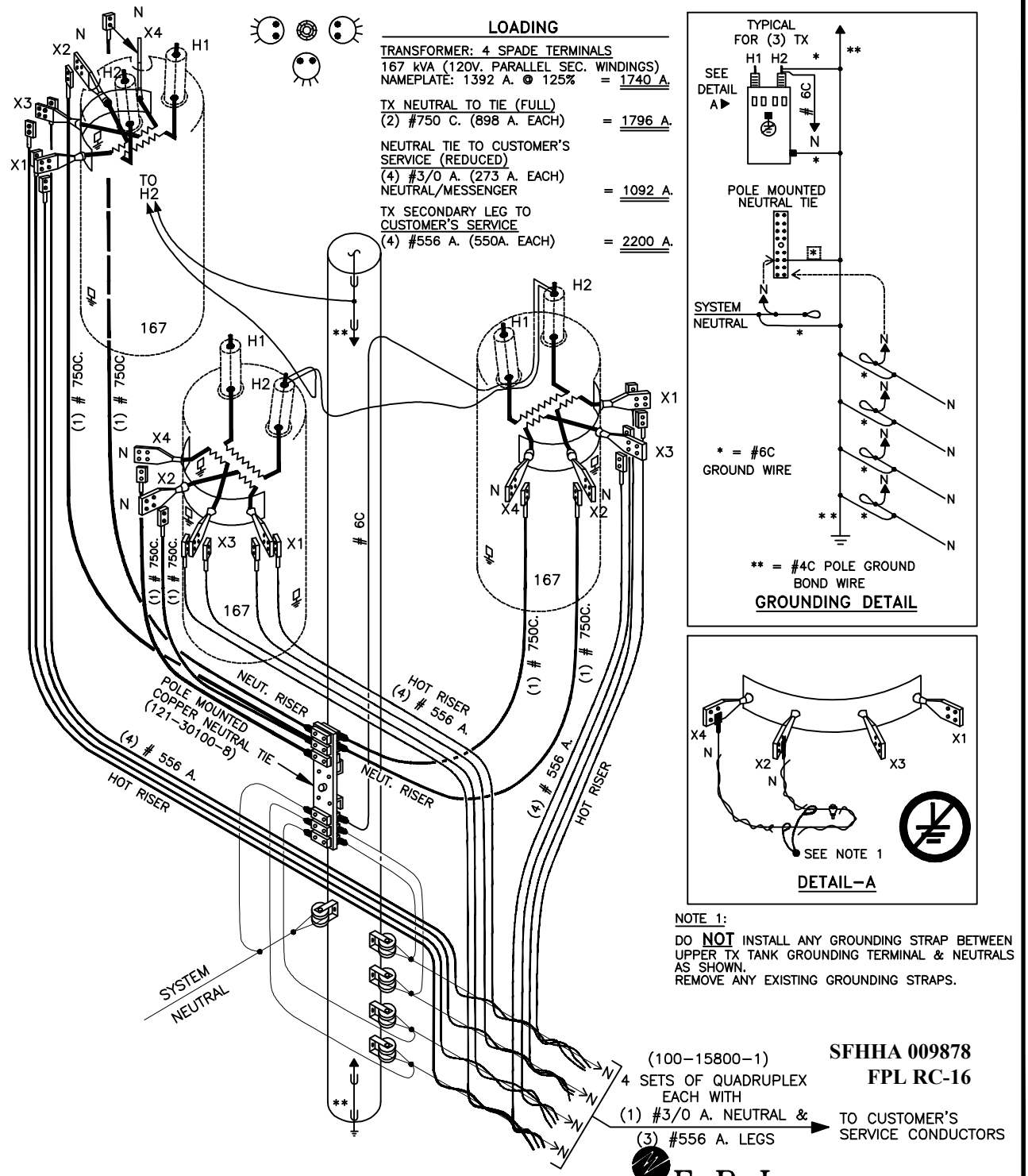
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0		CONVERTED TO CAD		HV	

DATE: APPROVED: JOSE R. DIAZ
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

WYE-WYE AERIAL TRANSFORMER BANK
500KVA 120/208V 3ø 4 WIRE
(3) 167KVA 1ø POLE MOUNTED

I-4.9.0



NOTE 1:

DO **NOT** INSTALL ANY GROUNDING STRAP BETWEEN UPPER TX TANK GROUNDING TERMINAL & NEUTRALS AS SHOWN.
REMOVE ANY EXISTING GROUNDING STRAPS.

SFHHA 009878
FPL RC-16

FIGURE-11

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0	9/16/99	CONVERTED TO CAD	WPC	DLW	JJM

ORIGINATOR: ET DRAWN BY: ET

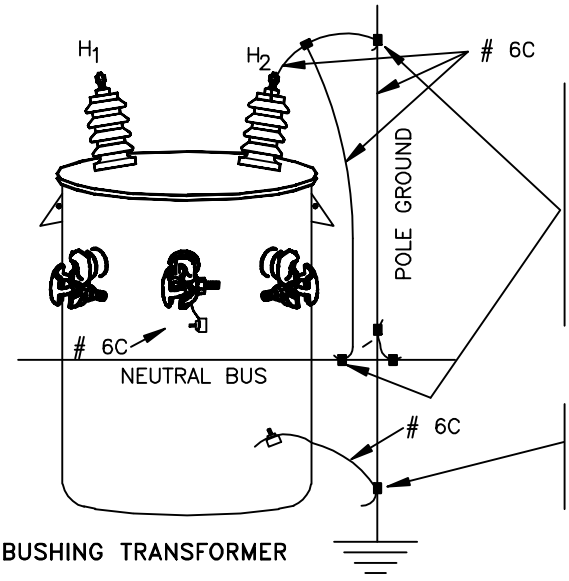
DATE: 7/1/88 APPROVED: HAMMOND FOR RKC
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

SINGLE AND DOUBLE BUSHING TRANSFORMER BONDING AND GROUNDING

I-5.0.0

TRANSFORMERS. WHERE POLE FRAMING PERMITS, THE PRIMARY NEUTRAL IS THE H_2 BUSHING. FOR A DISCUSSION OF TRANSFORMER GROUNDING, SEE DERM SECTION 2.4.2, PAGE 4.

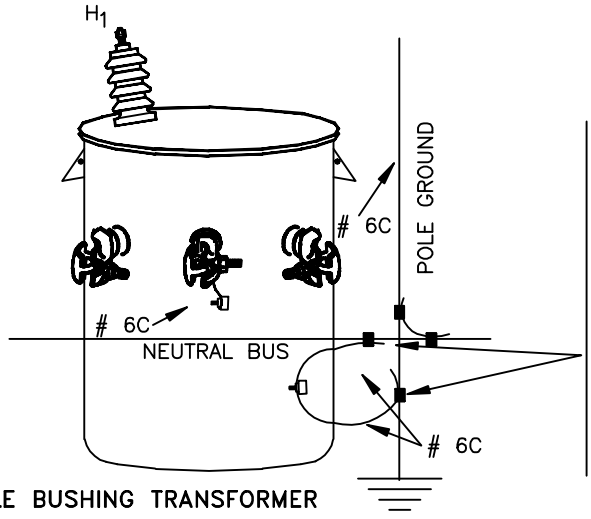


DOUBLE BUSHING TRANSFORMER

IN A SINGLE PHASE OR GROUNDED WYE 3 PHASE PRIMARY INSTALLATION, THE H_2 BUSHING IS BONDED TO BOTH THE NEUTRAL BUS AND THE POLE GROUND.

(IN A CLOSED WYE-DELTA BANK, ALL 3 PRIMARY NEUTRAL BUSHINGS ARE BONDED TOGETHER, BUT NOT GROUNDED - THE PRIMARY NEUTRAL "FLOATS".)

EACH TRANSFORMER TANK IS BONDED TO THE POLE GROUND IN ALL CASES, REGARDLESS OF THE TRANSFORMER TYPE OR THE CONNECTION TYPE.



SINGLE BUSHING TRANSFORMER

A SINGLE PRIMARY BUSHING TRANSFORMER DOES NOT HAVE AN H_2 BUSHING, SO THE NEUTRAL END OF THE PRIMARY WINDING IS BONDED INTERNALLY TO THE TANK. IN EFFECT, THE TANK IS THE PRIMARY NEUTRAL, AND THEREFORE IT IS MOST IMPORTANT THAT THE TANK BE BONDED TO THE NEUTRAL BUS IN ADDITION TO THE POLE GROUND. SINGLE PRIMARY BUSHING TRANSFORMERS ARE NOT USED FOR CLOSED WYE-DELTA BANKS.

SFHHA 009879
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	06/06/01	REVISED DERM REFERENCE	GJP	JES	IA
2	8/9/96	REVISED BONDING	MV	RAS	JJM
1	9/30/94	REVISED TEXT & ADDED NEW BORDER	MV	JRF	SBO

ORIGINATOR: MV DRAWN BY: RAS

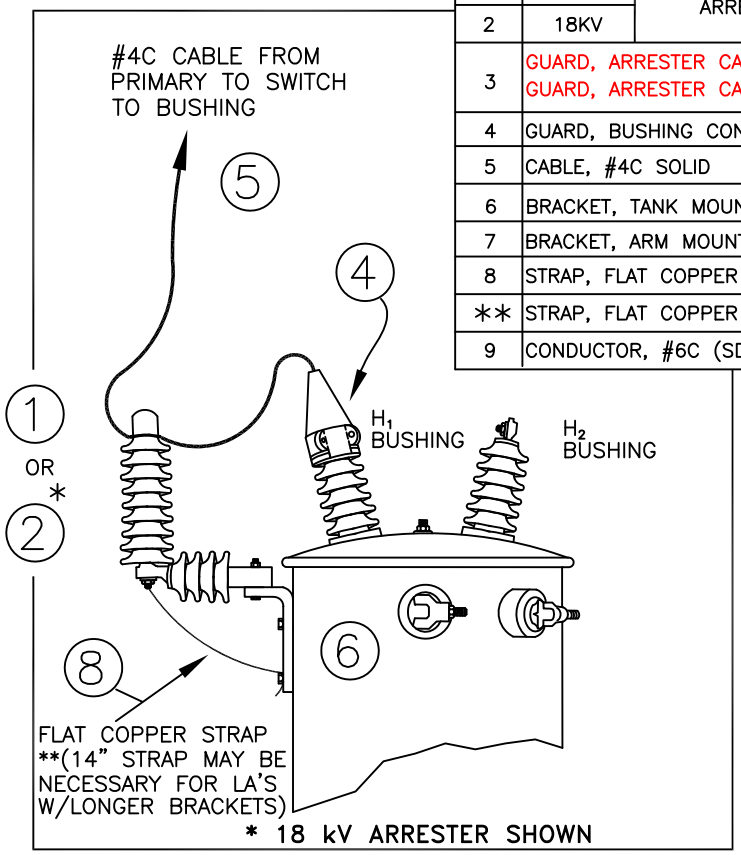
DATE: 3/15/91 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

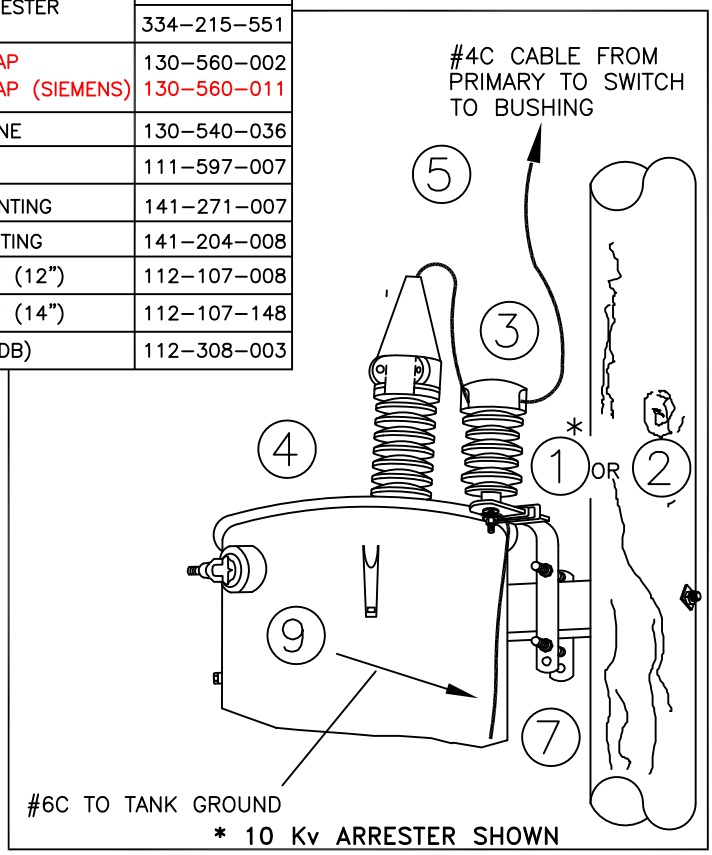
ARRESTER INSTALLATION FOR AERIAL TRANSFORMERS

I–6.0.0

ITEM	DESCRIPTION		M & S
1	10KV	ARRESTER	334–175–002
2	18KV		334–215–551
3	GUARD, ARRESTER CAP GUARD, ARRESTER CAP (SIEMENS)		130–560–002 130–560–011
4	GUARD, BUSHING CONE		130–540–036
5	CABLE, #4C SOLID		111–597–007
6	BRACKET, TANK MOUNTING		141–271–007
7	BRACKET, ARM MOUNTING		141–204–008
8	STRAP, FLAT COPPER (12")		112–107–008
**	STRAP, FLAT COPPER (14")		112–107–148
9	CONDUCTOR, #6C (SDB)		112–308–003



NEW TRANSFORMER INSTALLATION



INSTALLATION ON EXISTING TRANSFORMER

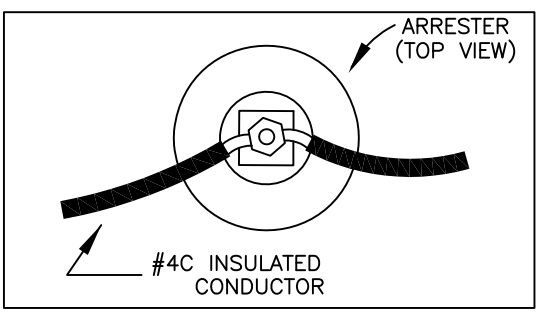


FIGURE 1
ARRESTER CONNECTION

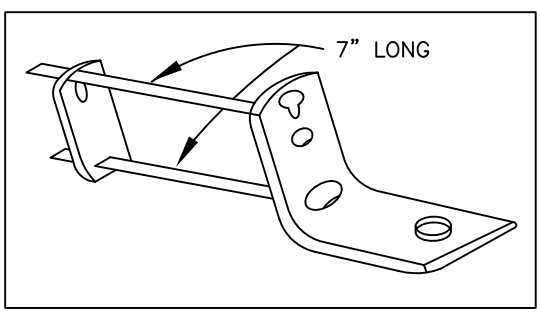


FIGURE 2
BRACKET FOR EXISTING UNITS
(SAME AS ARM MOUNTING BRACKET)

NOTES:

1. USE ONE PIECE OF INSULATED CONDUCTOR FROM THE FUSE SWITCH TO THE BUSHING. CONNECTION TO THE H BUSHING IS PREFERRED.
2. REMOVE INSULATION AR ARRESTER LOCATION AND ATTACH CONDUCTOR TO ARRESTER AS SHOWN IN FIGURE 1.
3. CONDUCTOR LEADS SHOULD BE KEPT AS SHORT AS POSSIBLE TO REDUCE SURGE VOLTAGE, REFER TO DCS G–2.0.1.
4. SEE I–19.0.0 FOR PROPER FUSE SELECTION.
5. MAINTAIN A 5 INCH CLEARANCE FROM THE CENTER OF THE BOTTOM STUD ON THE ARRESTER TO ANY METAL PART (I.E. TRANSFORMER TANK, "L" BRACKET.) IF THE CLEARANCE CANNOT BE MET, MOUNT ARRESTER NEAR CUTOUT SWITCH AS SHOWN ON I–42.0.0. "THE ARRESTER SHOULD ALSO BE MOUNTED SUCH THAT THE BOTTOM OF THE ARRESTER WILL NOT BE LOWER THAN 2" FROM THE TOP OF THE TRANSFORMER TANK."
6. FOR ADDITIONAL INFORMATION ON ANIMAL GUARDS PLEASE REFER TO 1–2.0.0.

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
6	10/19/15	UPDATE DRAWING	DGY	ELS	RDH
5	5/26/15	UPDATE DRAWING	DGY	ELS	RDH
4	12/1/14	UPDATE DRAWING	DGY	ELS	RDH
3	9/25/08	ADDED NOTE 6	RR	ELS	JRD
2	8/17/01	UPDATED DRAWING (TEXT, REVISED MATERIAL SUMMARY AND ADDED NOTE 5)	LFV	JES	JJM
1	9/30/94	CHANGED INSULATED WIRE SIZE AND M&S NO.	MV	RAS	RJS

SFHHA 009880
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MV

DRAWN BY: FRAGA

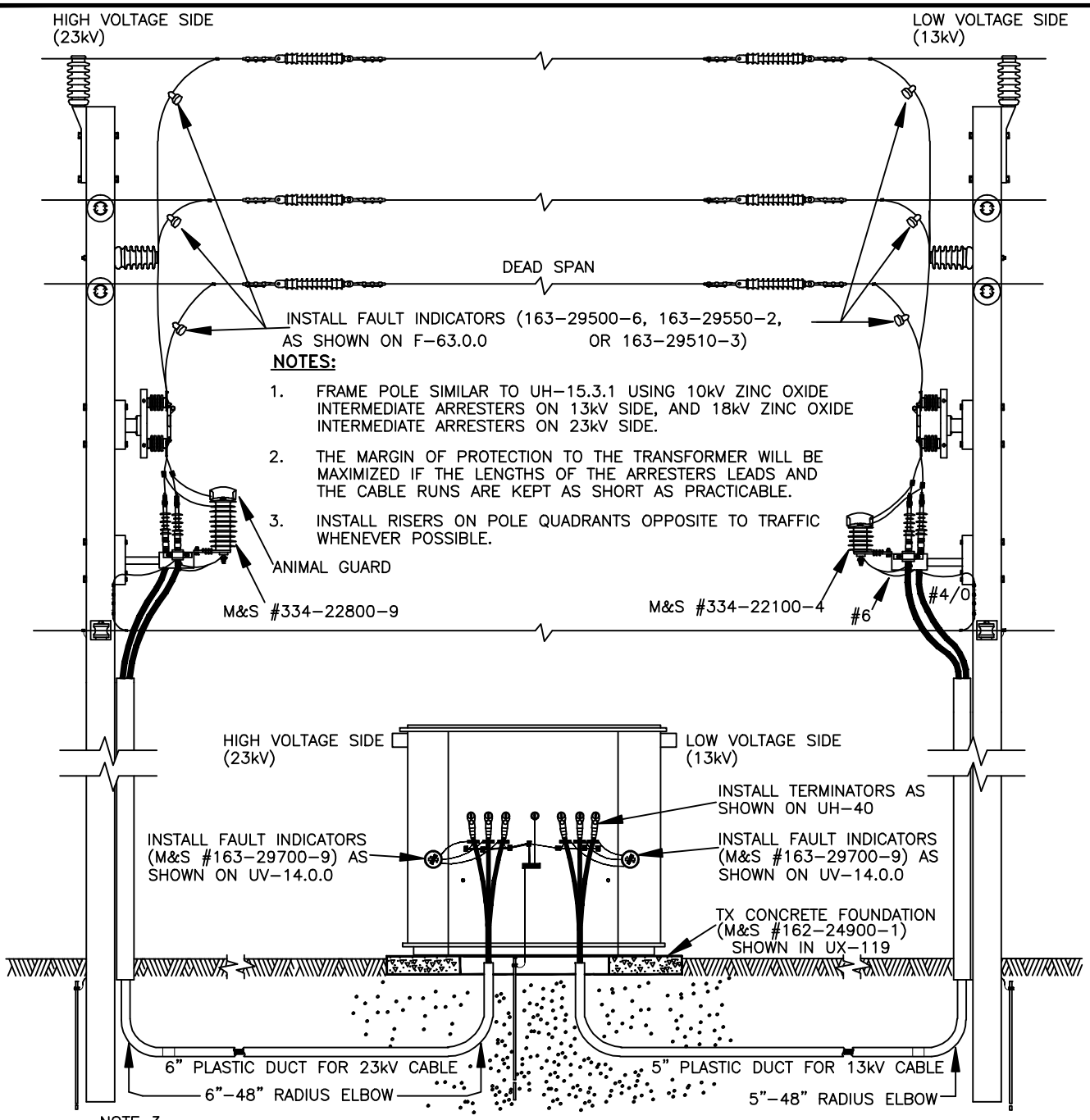
DATE: 5/13/93

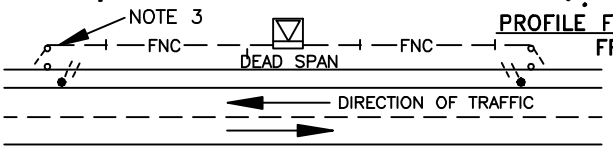
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

TYPICAL STEP UP/DOWN PADMOUNT AUTOTRANSFORMER INSTALLATION MODIFIED VERTICAL CONSTRUCTION

I-8.0.0





PROFILE FACING TRANSFORMER FROM ROAD

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	9/16/05	UPDATE TITLE	IA	ELS	JJM
4	10/15/04	ADD ANIMAL GUARD	LFV	ELS	JJM
3	8/27/03	UPDATE DRAWING	LFV	ELS	JJM
2	07/21/01	UPDATED DRAWING (REFERENCE NOTES, TEXT AND DETAIL)	GJP/RAP	JES	JJM
1	8/9/96	CORRECTED SWITCH ORIENTATION AND CHANGED PORCELAIN SUSPENSION INSULATORS TO POLYMER	PMG	RAS	JJM
0	6/30/93	CHANGED PORCELAIN SUSPENSION	PMG	RAS	JJM

SFHHA 009881
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: PMG
DRAWN BY: RAS
DATE: 8/9/96
APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

SINGLE PHASE STEPDOWN TRANSFORMER ON URD TERMINATOR POLE

I–9.0.0

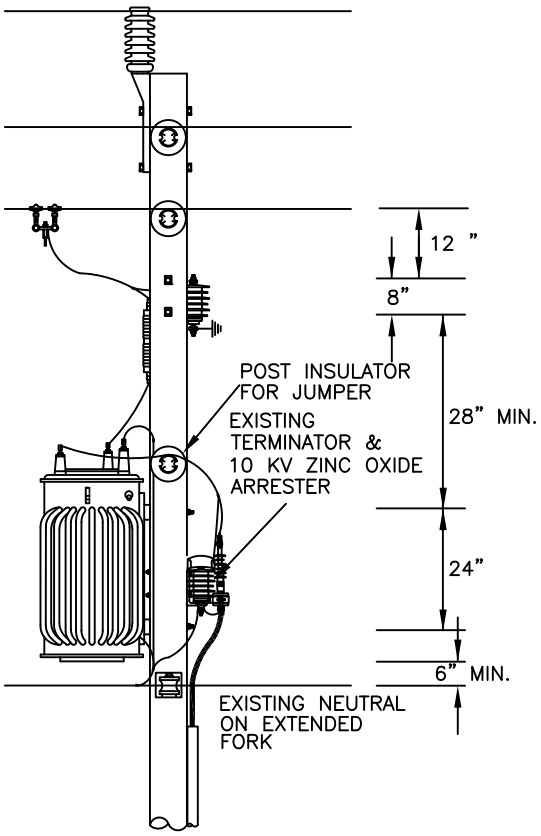


FIG. 1

TABLE 1

SIZE TX.	CONC. POLE TYPE REQ.	
	NEW	EXISTING
100 KVA	ALL TYPE III–H OR BETTER	
167 KVA		
333 KVA		
1000 KVA		

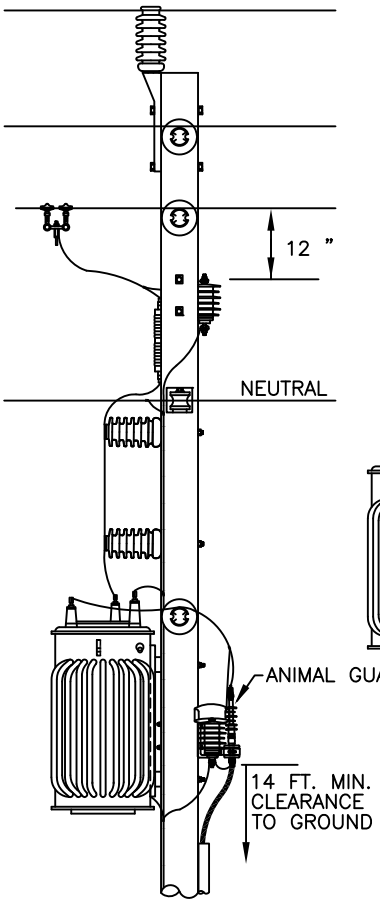


FIG. 2

ALTERNATE METHOD LOWERING TRANSFORMER AND TERMINATOR (SEE NOTE 2)

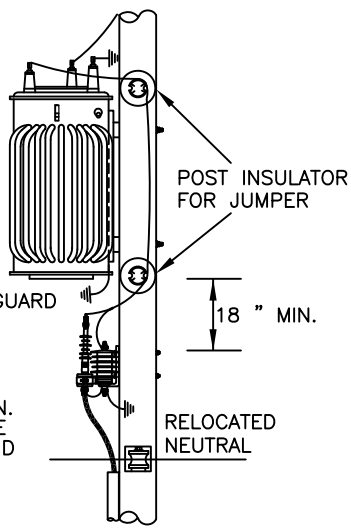


FIG. 3

ALTERNATE METHOD LOWERING TERMINATOR

NOTES:

1. FRAMED ACCORDING TO FIG. 1, AN EXISTING TERMINATOR/ARRESTER NEED NOT BE RELOCATED. IF CLIMBING SPACE IS A CONCERN (AND SPACE PERMITS), LOWER THE TERMINATOR AND INSTALL THE TRANSFOMER ABOVE IT. SEE FIG. 3.
2. AUTO TRANSFORMER IS SHOWN (H2 & X2 COMMON TO ONE BUSHING), ON TWO WINDING TRANSFORMER, TIE H2 & X2 TOGETHER, AND GROUND.
3. #6 COPPER IS ADEQUATE TO CARRY THE CURRENTS INVOLVED. BECAUSE OF ITS MECHANICAL STRENGTH, #4 COPPER (OR BETTER) SHOULD BE USED FOR PRIMARY AND NEUTRAL JUMPERS.
4. VERTICAL CONFIGURATION AND A 333 KVA TRANSFORMER ARE SHOWN AS TYPICAL. ALL POLE MOUNTED STEP UP/DOWN TRANSFORMERS SHOULD HAVE MOUNTING LUGS COVERED IN DETAILS ON SHEET I–3. AVOID USING CLUSTER MOUNTS IF POSSIBLE (KEEP IT CLOSE TO POLE).
5. UNLESS OTHERWISE DIRECTED, PROTECT THE STEP DOWN TRANSFORMER WITH THE FOLLOWING FUSE SIZES AS A MINIMUM: 100 KVA, 8 AMP KS; 167 KVA, 15 AMP KS; 333 KVA, 25 AMP KS; 1000 KVA, 80 AMP KS ALSO SEE DCS I–19.0.0 AND I–19.2.0.
6. WHEN USED FOR OVERHEAD TO OVERHEAD TRANSFORMATION, THE MINIMUM FUSE SIZE IS 15 AMPS KS.
7. REFER TO I–53.1.3 FOR TRANSFOMER CONNECTION DIAGRAM.

SFHHA 009882
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	4/23/14	UPDATE DRAWING	DGY	ELS	RDH
4	2/14/07	REMOVED WOOD POLE CLASS REQ., ENGINEERS NOTE & NOTE 2	RR	ELS	JRD
3	9/16/05	UPDATE NOTE #6	IA	ELS	JJM
2	10/15/04	ADD ANIMAL GUARD	LFV	ELS	JJM
1	6/30/93	REDRAWN FROM MANUAL–COMBINED I–9.0.1 & 1–9 SH. 2	MV	CB	RJS
0	3/1/89	ORIGINAL DRAWING	MV	CB	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MV

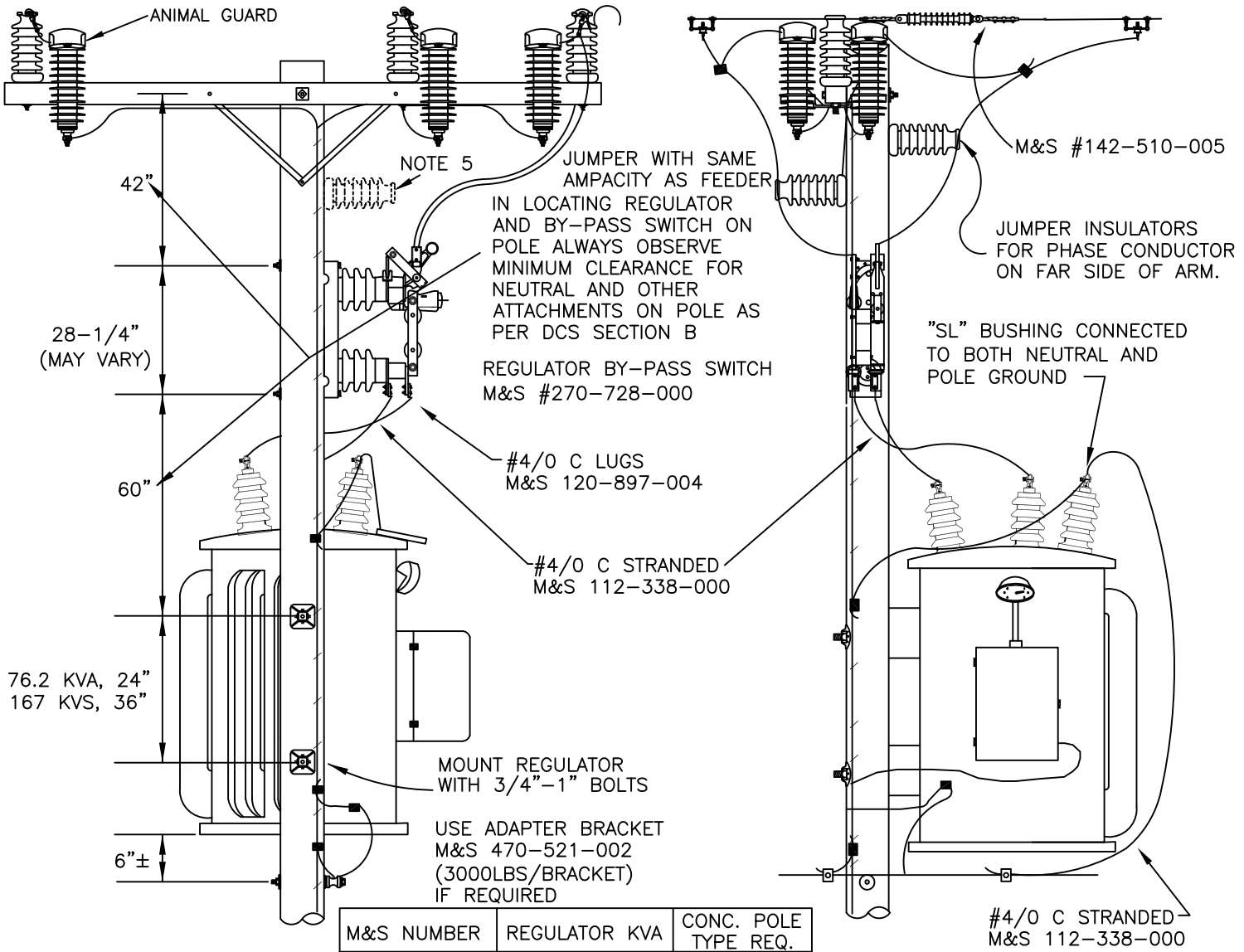
DRAWN BY: CB

DATE: 6/30/93

APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING AND OPERATIONS SERVICES

NO SCALE

I-10.0.0 SINGLE PHASE LINE REGULATOR INSTALLATION (ALTERNATE METHOD) I-10.0.0



M&S NUMBER	REGULATOR KVA	CONC. POLE TYPE REQ.
327-066-007	38 (13 KV)	50', 55" ALL TYPE III-H OR BETTER
327-070-004	76.2 (13 KV)	
327-100-001	144 (23 KV)	
327-102-003	167 (13 KV)	
327-101-007	250 (13 KV)	
327-101-503	250 (13 KV-SS)	
327-102-500	288 (23 KV)	

NOTES:
1. CROSSARM FRAMING SHOWN AS TYPICAL. MAY BE ADAPTED TO OTHER FRAMING AS REQUIRED.
2. ONE PHASE OF THREE PHASE INSTALLATION ARE ILLUSTRATED. INSTALL A,B, & C PHASE REGULATORS ON THREE ADJACENT POLES.
3. SOURCE AND LOAD SIDES MAY BE SWITCHED TO SUIT FIELD CONDITIONS. IN ANY EVENT "S" BUSHING MUST BE TAPPED SOURCE CONDUCTOR, AND "L" BUSHING TAPPED TO LOAD CONDUCTOR.
4. DIMENSIONS SHOWN ASSUME CURRENTLY PURCHASED REGULATORS. OLDER MODELS MAY REQUIRE SOME DIMENSIONAL ADJUSTMENTS.
5. INSULATOR USED WHEN CONNECTING TO MIDDLE PHASE.
6. 15 FT SEPARATION BETWEEN CONCRETE POLES. INSTALL REGULATOR WITH CABINET FACING ROAD.

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
10	1/27/16	UPDATE TABLE	NPL	ELS	RDH
9	3/23/15	UPDATE TABLE	DGY	ELS	RDH
8	5/19/14	UPDATE DRAWING	DGY	ELS	RDH
7	8/31/12	UPDATE NOTE	EI	ELS	WM
6	5/17/10	REVISE JUMPER AMPACITY. REPLACE JD'S WITH POLY'S	RR	ELS	JRD
5	1/4/10	REVISE M&S TABLE. ADDED NOTE 6. REVISED COMPONENT SPACING ON POLE.	RR	ELS	JRD

SFHHA 009883
FPL RC-16

SUPERSEDES I-10.0.0 LAST REVISED ON 1-29-92

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: IA DRAWN BY: CL

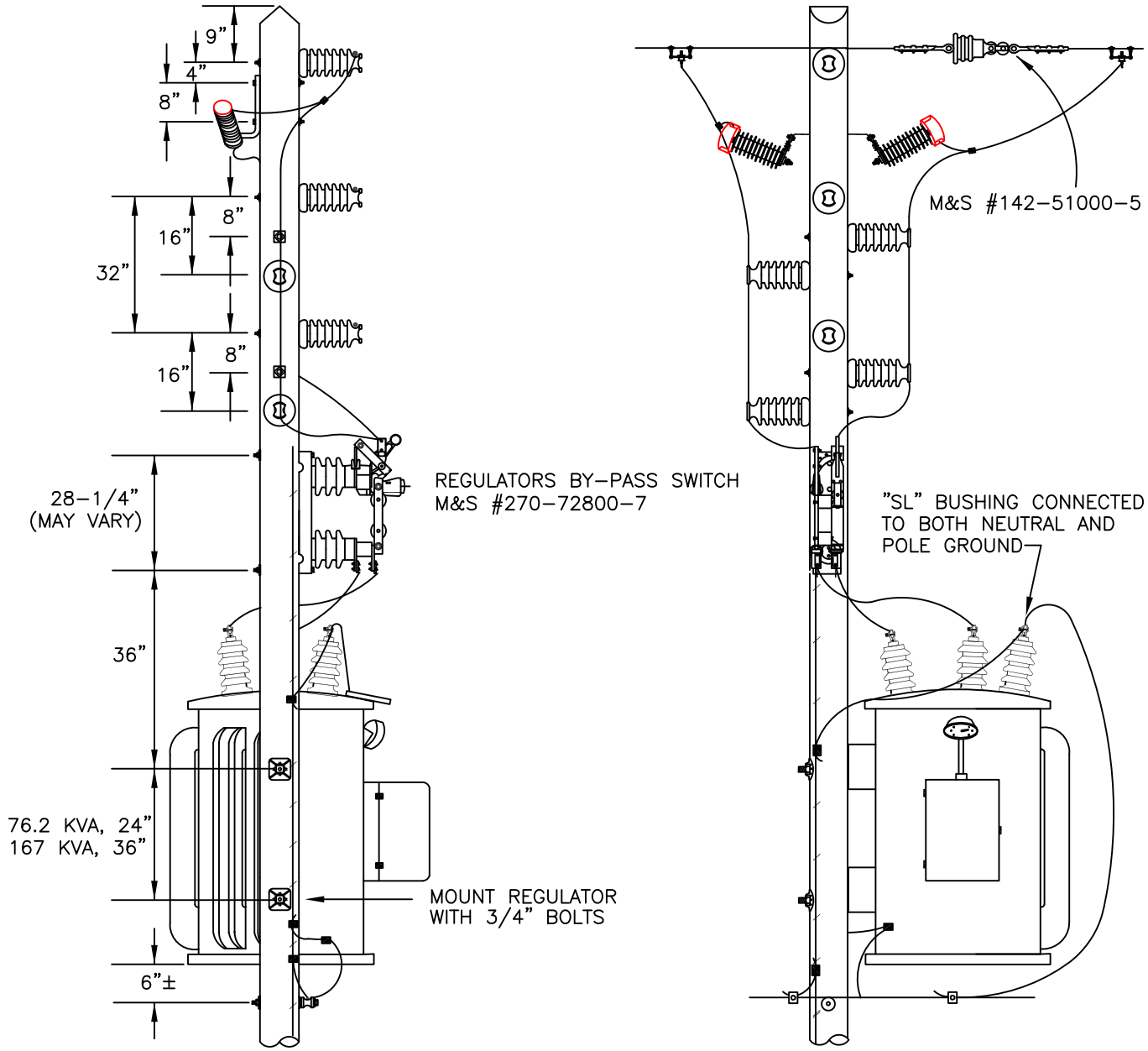
DATE: 6/30/93 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

I-10.1.0

SINGLE PHASE LINE REGULATOR INSTALLATION VERTICAL CONSTRUCTION FOR MAINTENANCE ONLY

I-10.1.0



M&S NUMBER	REGULATOR KVA	MINIMUM WOOD POLE CLASS REQ.		CONC. POLE TYPE REQ.	
		NEW	EXISTING	NEW	EXISTING
327-07000-4	76.2 (13 KV)	4	5	ALL TYPE III-H OR BETTER	
327-10200-3	167 (13 KV)	2	3		
327-10000-1	144 (23 KV)	2	3		

ENGINEER'S NOTE: WIND LOADING HAS NOT BEEN CONSIDERED (USE 11 SQUARE FEET FOR THE THREE SIZES LISTED).

SFHHA 009884
FPL RC-16

NOTES:

1. ONE PHASE OF THREE PHASE INSTALLATION IS ILLUSTRATED. INSTALL A, B, & C PHASE REGULATORS ON THREE ADJACENT POLES.
2. SOURCE AND LOAD SIDES MAY BE SWITCHED TO SUIT FIELD CONDITIONS. IN THE EVENT "S" BUSHING MUST BE TAPPED TO SOURCE CONDUCTOR, AND "L" BUSHING TAPPED TO LOAD CONDUCTOR.
3. DIMENSIONS SHOWN ASSUME CURRENTLY PURCHASED REGULATORS. OLDER MODELS MAY REQUIRE SOME DIMENSIONAL ADJUSTMENTS.

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	4/23/14	UPDATE DRAWING	DGY	ELS	RDH
4	10/15/04	ADD ANIMAL GUARD	LFV	ELS	JMM
3	5/22/01	ADDED CASE GROUND	GJP	JES	IA
2	7/23/99	UPDATE DRAWING REMOVE SOME TEXT	WPC	JES	JM
1	6/30/93	ADDED FOR MAINTENANCE ONLY NOTE	IA	PS	FOR
0	3/15/91	ORIGINAL DRAWING	IA	GD	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR

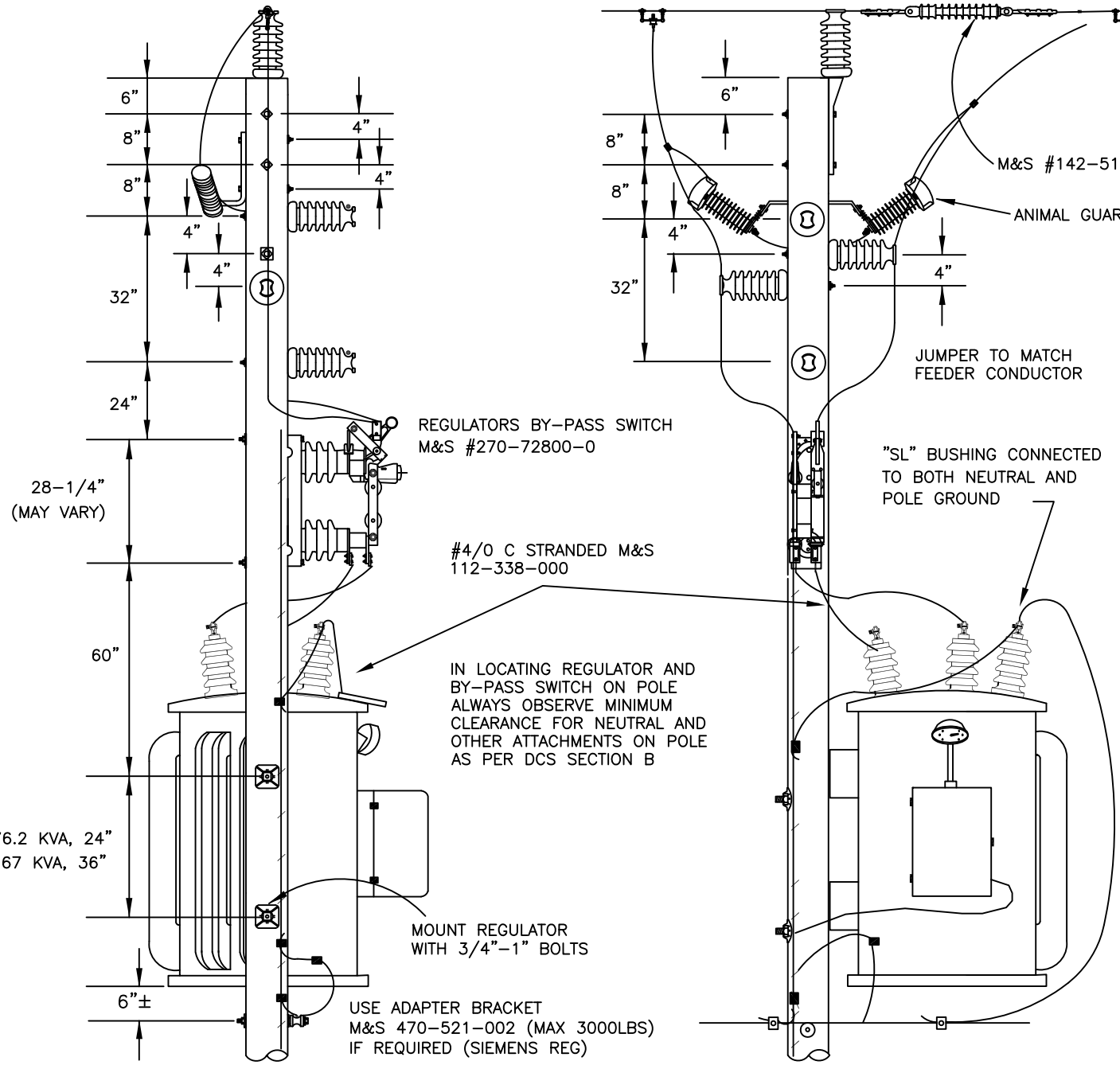
DRAWN BY: G. DAVIS

DATE: 3/15/91

APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

I-10.1.1 SINGLE PHASE LINE REGULATOR INSTALLATION MODIFIED VERTICAL CONSTRUCTION - (PREFERRED METHOD) I-10.1.1



NOTES:

1. ONE PHASE OF THREE PHASE INSTALLATION IS ILLUSTRATED INSTALL A, B, & C PHASE REGULATORS ON ADJACENT POLES.
2. SOURCE AND LOAD SIDES MAY BE SWITCHED TO SUIT FIELD CONDITIONS. IN ANY EVENT, "S" BUSHING MUST BE TAPPED TO THE SOURCE CONDUCTOR, AND "L" BUSHING TAPPED TO THE LOAD CONDUCTOR.
3. DIMENSIONS SHOWN ASSUME CURRENTLY PURCHASED REGULATORS. OLDER MODELS MAY REQUIRE SOME DIMENSIONAL ADJUSTMENTS.
4. 12 TO 14 FEET SEPARATION BETWEEN CONCRETE POLES. INSTALL REGULATOR WITH CABINET FACING ROAD.

M&S NUMBER	REGULATOR KVA	CONC. POLE TYPE REQ.
327-066-007	38 (13 KV)	50', 55" ALL TYPE III-H OR BETTER
327-070-004	76.2 (13 KV)	
327-100-001	144 (23 KV)	
327-102-003	167 (13 KV)	
327-101-007	250 (13 KV)	
327-101-503	250 (23 KV-SS)	
327-102-500	288 (23 KV)	

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
11	4/1/15	UPDATE TABLE	DGY	ELS	RDH
10	5/19/14	UPDATE DRAWING	DGY	ELS	RDH
9	4/29/13	MODIFIED NOTE #2	EI	ELS	BXN
8	1/13/11	UPDATE NOTES	LFV	ELS	BXN
7	5/17/10	REVISED JUMPER AMPACITY. REPLACE JD'S WITH POLY'S	RR	ELS	JRD
6	1/4/10	REVISED M&S TABLE. ADDED NOTE 4. REVISED COMPONENT SPACING ON POLE.	RR	ELS	JRD
5	7/2/09	REVISE INSULATOR SPACING	JNM	ELS	JRD

SFHHA 009885
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: IA

DRAWN BY: FRAGA

DATE: 6/30/93

APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT
SUPPORT SERVICES

NO SCALE

TRANSFORMER FUSING TABLE
AERIAL FUSE SWITCHES

I-19.0.0

ALL FUSES ARE TYPE "KS", "MS", OR "S" EXCEPT AS NOTED
("MS" AND "S" ARE EQUIVALENT TO "KS")

TRANSFORMER KVA PER PHASE (EXCEPT AS NOTED)	PRIMARY OPERATING VOLTAGE		
	2.4KV PHASE TO GROUND OR 4.16KV PHASE TO PHASE	7.62KV PHASE TO GROUND OR 13.2KV PHASE TO PHASE	13.2KV PHASE TO GROUND OR 22.86KV PHASE TO PHASE
	FUSE SIZE		
3	1-1/2"X"	3/4"X"	3/4"X"
5	2-1/2"X"	3/4"X"	3/4"X"
7-1/2	4	1-1/4"X"	3/4"X"
10	5	1-1/2"X"	3/4"X"
15	8	2-1/2"X"	1-1/2"X"
25	10	4 OR 10*	2-1/2"X"OR 10*
37-1/2	20	6 OR 10*	4 OR 10*
50	25	8 OR 10*	5 OR 10*
75	40	10	6 OR 10*
100	50 (7)	15	8 OR 10*
150	65 (7)	20	10
167	80 (7)	25	15
200	80 (7)	30	15
250	100 (7)	40	20
333	-	50 (7)	25
500	-	65 (7)	40
2000 3ø	-	100 (7)	65 (7)
2500 3ø	-	140 (7)	80 (7)

* SEE NOTE 1

NOTES:

1. FOR FUSE SIZES SHOWN WITH *, USE THE SMALLER SIZE FUSE IF THERE ARE ANY BARE OPEN WIRE CONDUCTORS (SECONDARY OR SERVICE) ON LOAD SIDE OF TRANSFORMER. USE 10 AMP FUSE ONLY IF ALL SECONDARY/SERVICE CONDUCTORS ARE INSULATED. FOR ANY TRANSFORMER ON A LATERAL THAT IS FUSED AT LESS THAN 40 AMPS, USE THE SMALLER SIZE TRANSFORMER FUSE.
2. THE FUSE SIZES SHOWN IN THE ABOVE TABLE MAY BE USED AS A GUIDE IN FUSING STEP-UP OR STEP-DOWN BANKS, FOR BOTH POLE MOUNTED TRANSFORMERS AND UG RADIALS TO SINGLE TRANSFORMER (OR BANK) WHEN FUSED AT RISER POLE. UNUSUAL CIRCUMSTANCES OR COORDINATION PROBLEMS MAY REQUIRE A CHANGE FROM THE ABOVE TABLE.
3. STREET LIGHTING TRANSFORMERS (RO'S) SHALL BE FUSED ON SOURCE SIDE AS FOLLOWS WITHOUT REGARD TO THEIR KW RATING: IF INSTALLED ON 2.4KV CIRCUIT, FUSE WITH 25 AMPERE FUSES. IF INSTALLED ON 7.6KV CIRCUIT, FUSE WITH 10 AMPERE FUSES. CONSULT THE ENGINEERING DEPARTMENT FOR RO FUSE SIZE WHEN IT IS INSTALLED ON THE LOAD SIDE OF A LATERAL FUSE THAT IS THE SAME SIZE OR SMALLER THAN THE ABOVE OR THE LOAD SIDE OF AN OIL CIRCUIT RECLOSER.
4. FUSING INSTRUCTIONS FOR TRANSFORMERS LARGER THAN THOSE SHOWN IN THE ABOVE TABLE SHOULD BE OBTAINED FROM DISTRIBUTION PLANNING.
5. WHEN ONE FUSE LINK IS BLOWN ON A THREE PHASE BANK, THE FUSES IN ALL PHASES SHALL BE REPLACED.
6. NEUTRAL LEADS SHALL NOT BE FUSED.
7. RISER POLE FUSES SHALL BE TYPE "K" WHEN 50 AMP OR LARGER IS REQUIRED AND TYPE "KS", "MS", OR "S" WHEN SMALLER THAN 50 AMP.
8. THESE FUSE SIZES APPLY ONLY IN CASES WHERE THE TRANSFORMER DOES NOT HAVE INTERNAL FUSING OR IS OTHERWISE SUB-FUSED. IN CASES WITH INTERNAL OR OTHER SUB-FUSING, FUSING SHOULD BE PER NORMAL LATERAL/LOOP GUIDELINES.

SUPERSEDES I-19.0.0 LAST REVISED ON 9-30-94

SFHHA 009886
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	10/23/08	ADDED NOTE 8	CEA	ELS	JJM
0	9/11/99	REVISED FUSE CHART & NOTE 1	PMG	RAS	JJM

ORIGINATOR: PMG DRAWN BY: RAS

DATE: 8/9/96 APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

PADMOUNT AND DRY TYPE TRANSFORMER FUSE SIZES

I–19.2.0

TRANSFORMER	RTE BAYONET FUSE FIG. 1			S & C TYPE PM (OBSOLETE) FIG. 2		McGRAW EDISON TYPE NX FIG. 3			TRANSFORMER
	SINGLE PHASE OR 3ø GND. WYE PRIMARY			SINGLE PHASE OR 3ø GND. WYE PRIMARY		SINGLE PHASE OR 3ø GND. WYE PRIMARY		CLOSE DELTA PRIMARY	
SYSTEM VOLTAGE (KV)	4	13	23	4	13	13	23	23	SYSTEM VOLTAGE (KV)
WINDING VOLTAGE	2400	7620	13200	2400	7620	7620	13200	13200	WINDING VOLTAGE
SINGLE PHASE KVA	FUSE SIZE			FUSE SIZE		FUSE SIZE (SEE NOTE 2)			SINGLE PHASE KVA
15	15	3	– –	12	6	3	3	3	15
25	25	8	3	20	6	8	3	8	25
37–1/2	25	8	8	30	8	10	6	10	37–1/2
50	40	15	8	40	8	12	8	12	50
75	65	25 (7)	15 (7)	– –	10	18	10	18	75
100	65	25 (7)	15	– –	12	30	12	30	100
167	140(6)	25	15	– –	20	40	18	40	167
250	– –	40(6)	25	– –	– –	60(3)	30	60	250
333	– –	65(6)	40(6)	– –	– –	80	40	80	333
500	– –	– –	– –	– –	– –	– –	60	– –	500

NOTES:

1. THE ABOVE TABLE APPLIES ONLY TO FUSES CONTAINED IN DRY TYPE OR PAD MOUNTED TRANSFORMERS.WHERE TRANSFORMERS ARE FUSED AT OTHER LOCATIONS, SEE THE APPROPRIATE TABLE: STANDARD SHEETS UJ–1, I–19.0.0 AND UJ–7.
2. M.E. 8.3 KV RATED FUSES MAY BE USED ONLY ON TRANSFORMERS WITH A 7620 VOLT WINDING IN SINGLE PHASE OR GROUNDED WYE OPERATION. THIS IS A SHORT BARREL FUSE AND IS NOT TO BE USED FOR NEW CONSTRUCTION.

   M.E. 15.5 KV RATED FUSES MUST BE USED ON TRANSFORMERS WITH A 7620 VOLT WINDING IN UNGROUNDED WYE OPERATION.

   M.E. 15.5 KV RATED FUSES MAY BE USED ON TRANSFORMERS WITH A 7620 OR 13200 VOLT WINDING IN SINGLE PHASE, CLOSE DELTA, OR GROUNDED WYE OPERATION.
3. M.E. 40 AMP. NX FUSE MAY BE USED ON 250 KVA DRY TYPE TRANSFORMERS.
4. M.E. 25 AMP. NX FUSE MAY BE USED ON ALL SIZES OF 7.6 KV RO TRANSFORMERS.
5. FOR FUSE M&S NUMBERS SEE UJ–17.
6. THESE 40, 65 AND 140A BAYONET FUSES ARE CURRENT SENSING TYPE.
7. FOR 75 AND 100 KVA TRANSFORMERS INSTALLED BEYOND A 70A OR SMALLER RECLOSER CONTACT THE RELIABILITY PLANNING DEPARTMENT.

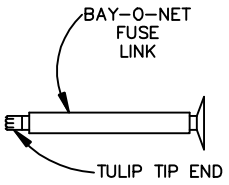
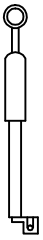
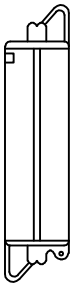


FIG. 1

FIG. 2



3 TO 40 AMPS.



60 TO 80 AMPS

FIG. 3

SFHHA 009887
FPL RC-16

SUPERSEDES I–19.2.0 LAST REVISED ON 1–29–92

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	5/17/10	UPDATE TABLE	RR	ELS	JRD
4	2/6/08	UPDATE TABLE	RR	ELS	JJM
3	7/24/03	REVISED FUSE SIZES FOR 75 & 100KVA. ADDED NOTE 7	IA	ELS	JJM
2	8/9/96	REVISED FUSE SIZES.	PMG	RAS	JJM
1	1/29/92	ADDED FUSE SIZES	PMG	RAS	RJS

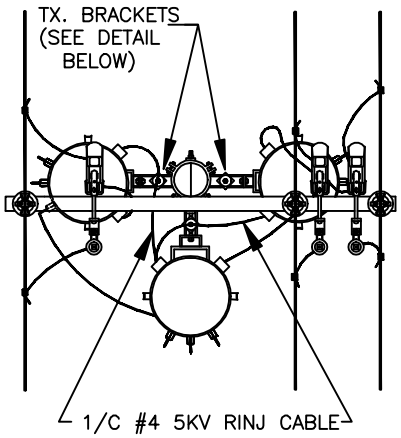
ORIGINATOR: PMG DRAWN BY: RAS

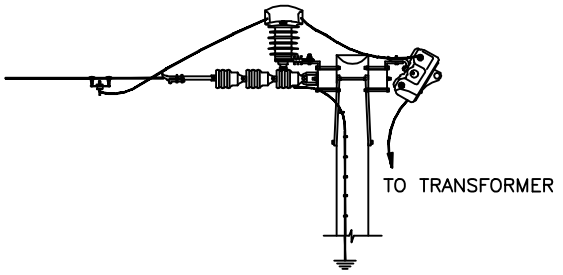
DATE: 1/29/92 APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING AND OPERATIONS SERVICES

NO SCALE

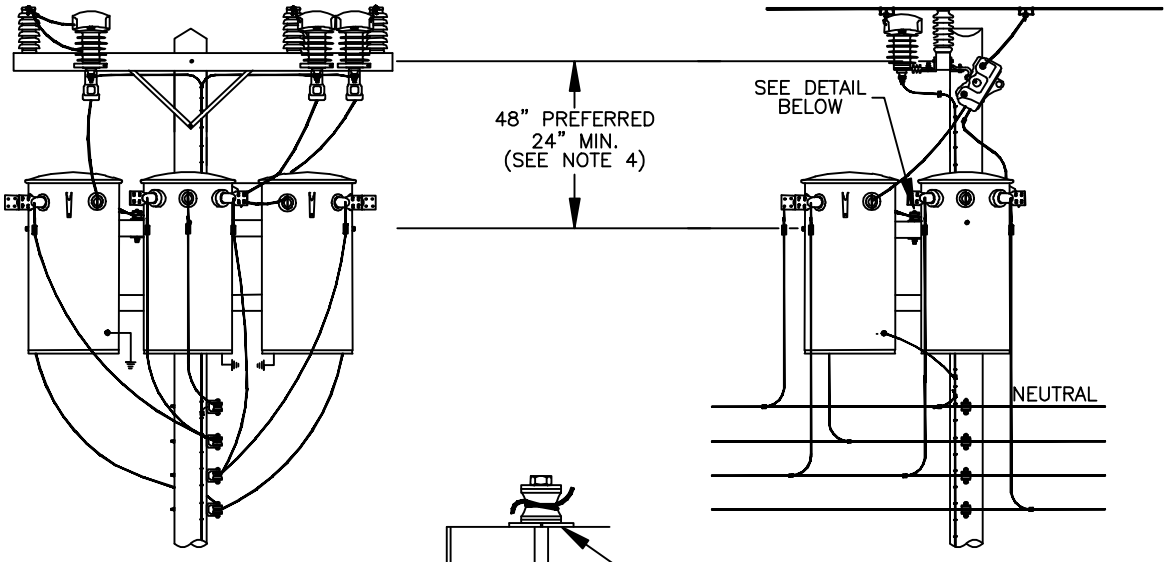
TRNASFORMER BANK INSTALLATION 2.4/4KV WYE-DELTA (FOR MAINTENANCE ONLY)

I-32.0.0





ARRANGEMENT ON DEADEND POLE



FLOATING NEUTRAL SUPPORT DETAIL

NOTES:

1. SEE PAGE I-3.2.0 FOR POLE CLASS REQUIRED.
2. SEE SHEET I-53.1.1. FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
3. SEE SECTION "G" FOR GROUNDING DETAILS.
4. IF PRACTICAL IN RE-FRAMING INCREASE 48" PREFERED TO 60".

SFHHA 009888
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	10/15/04	ADD ANIMAL GUARD	LFV	ELS	JJM
2	7/05/01	CHANGED MIN. DIMENSIONS IF POLE RE-FRAMED	GJP	JES	IA
1	6/30/93	ADDED MAINTENANCE ONLY NOTE	MV	EF	RJS

ORIGINATOR: MV DRAWN BY: FRAGA

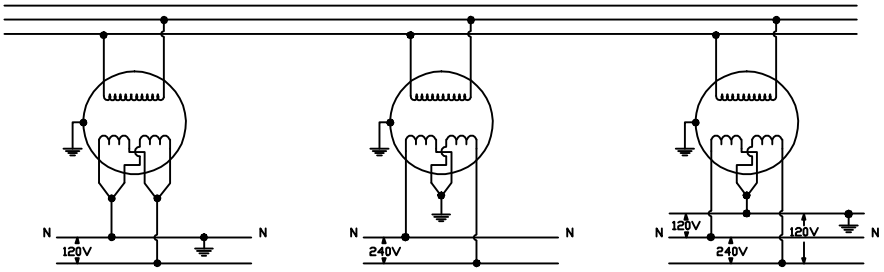
DATE: 6/30/93 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

DISTRIBUTION TRANSFORMER-CONNECTION
DELTA PRIMARY SYSTEM
TWO BUSHING TRANSFORMERS
(REFERENCE ONLY)

I-35.0.0

2.4 KV DELTA SYSTEM

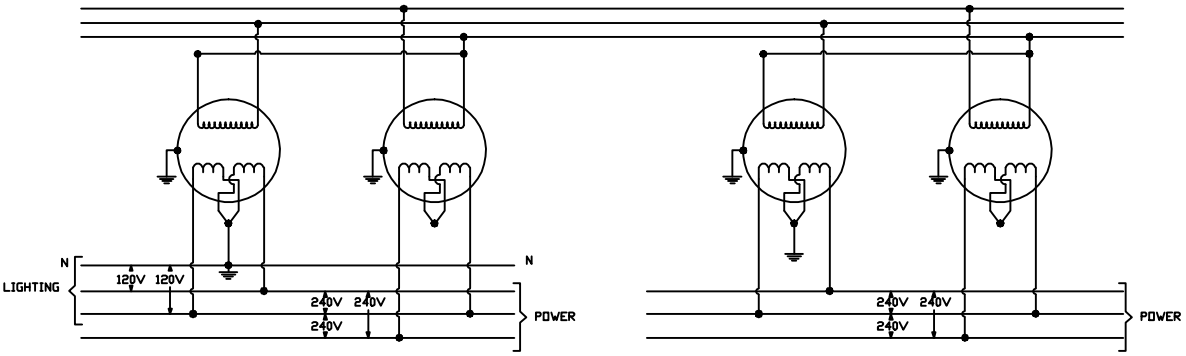


120V SINGLE PHASE
2 WIRE SECONDARY

240V SINGLE PHASE
2 WIRE SECONDARY

120/240V SINGLE PHASE
3 WIRE SECONDARY

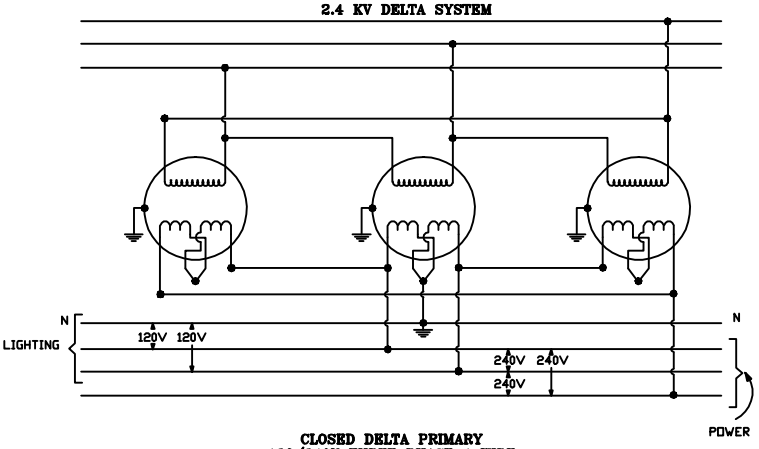
2.4 KV DELTA SYSTEM



OPEN DELTA PRIMARY
120/240V THREE PHASE 4 WIRE
OPEN DELTA SECONDARY

OPEN DELTA PRIMARY
240V THREE PHASE 3 WIRE
OPEN DELTA SECONDARY

2.4 KV DELTA SYSTEM



CLOSED DELTA PRIMARY
120/240V THREE PHASE 4 WIRE
CLOSED DELTA SECONDARY

VOLTAGE RATINGS		
PRIMARY	SYSTEM	STANDARD TRANSFORMER VOLTAGE RATING
13,200 V	DELTA	13,200-120/240
13,200 V	WYE	7,620-120/240
4,160 V	WYE	2,400-120/240
2,400 V	DELTA	2,400-120/240
3,800 V	WYE	2,200-122/244
2,160 V	DELTA	2,200-122/244

NOTES:

1. THE KVA CAPACITY OF AN OPEN DELTA BANK IS BUT 86 PERCENT OF ITS TOTAL NAME PLATE CAPACITY.
2. ALL TRANSFORMERS IN THREE PHASE BANK SHALL BE OF THE SAME POLARITY.
3. DIAGRAMS SHOWN ABOVE REPRESENT OLD STYLE TRANSFORMERS WITH ALL LEADS TO LOW VOLTAGE COILS BROUGHT OUT OF CASE AND COIL CONNECTIONS MADE EXTERNALLY. SEE PAGE I-55 FOR EQUIVALENT DIAGRAMS OF STANDARD TYPE TRANSFORMERS.
4. FOR DETAIL OF GROUNDING, SEE SECTION G.
5. WHEN REPLACING STRAIGHT VOLTAGE UNITS IN A BANK WITH DUAL VOLTAGE UNITS PLEASE SEE POLARITY NOTE ON DCS I-4.1.0.

SUPERSEDES I-35 LAST REVISED ON 1-1-90

SFHHA 009889
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	10/17/05	ADD NOTE # 5	IA	ELS	JRD
1	9/30/94	NO CHANGE-ADDED NEW FRAME	BAQ	JRF	RJS
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV

DRAWN BY: JRF

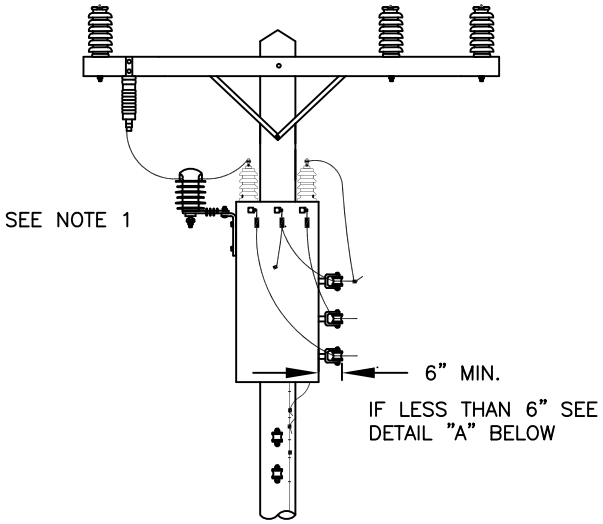
DATE: 1/1/90

APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

SINGLE PHASE INSTALLATION 13 AND 23KV CROSSARM CONSTRUCTION

I-40.0.0



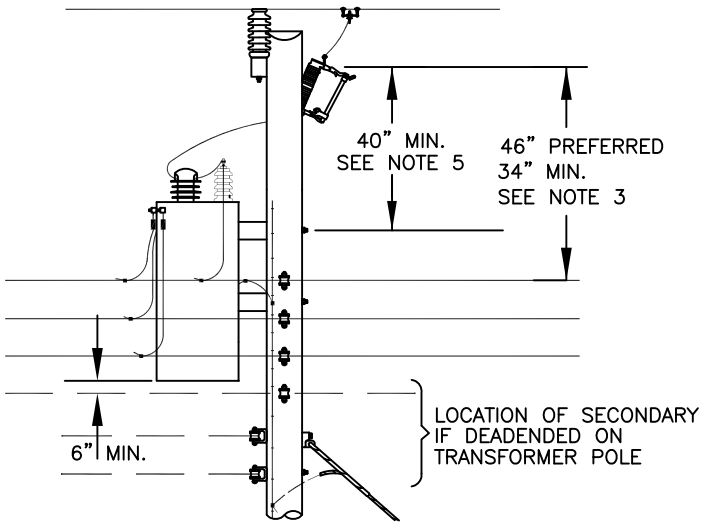


FIG. 1

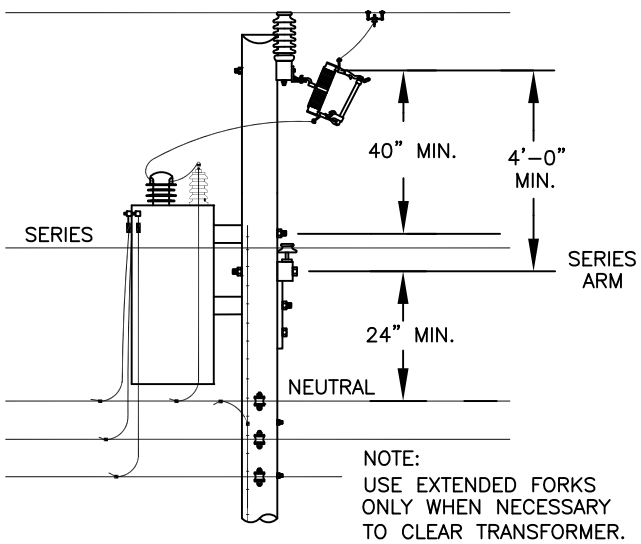


FIG. 2

INSTALLATION WHERE SERIES IS EXISTING.

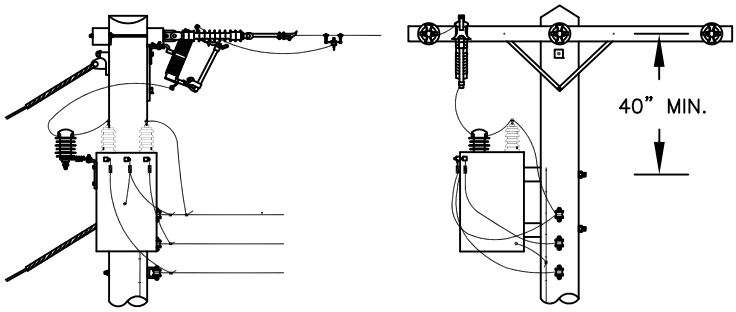
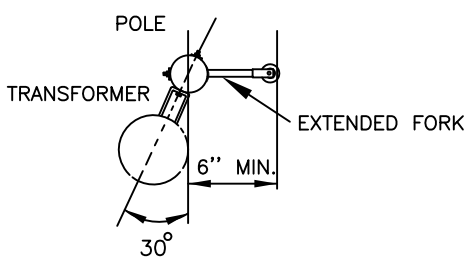


FIG. 3

TRANSFORMER QUARTER MOUNTED ON D.E. POLE



DETAIL "A"

ANGLE MOUNTING OF TRANSFORMER TO PROVIDE CLEARANCE TO SECONDARY BUS. TO BE USED ONLY IF EXTENDED FORKS DO NOT PROVIDE MINIMUM CLEARANCE.

NOTES:

1. FOR ARRESTER INSTALLATION SEE I-6.0.0.
2. IN SALT SPRAY ARRESTERS, AND SALT SPRAY CUTOUT.
3. PREFERRED LOCATION FOR NEUTRAL IS 6" MINIMUM BELOW TOP TRANSFORMER MOUNTING BRACKET BOLT.
4. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
5. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED. FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING SEE I-5.0.0.

SFHHA 009890
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	1/28/16	UPDATE NOTES	DGY	ELS	RDH
2	06/07/01	REMOVE NOTE	GJP	JES	IA
1	8/9/96	CHANGED PORCELAIN SUSPENSION INSULATORS TO POLYMER AND DIM IN FIGURE 3	PMG	RAS	JJM

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: PMG DRAWN BY: RAS

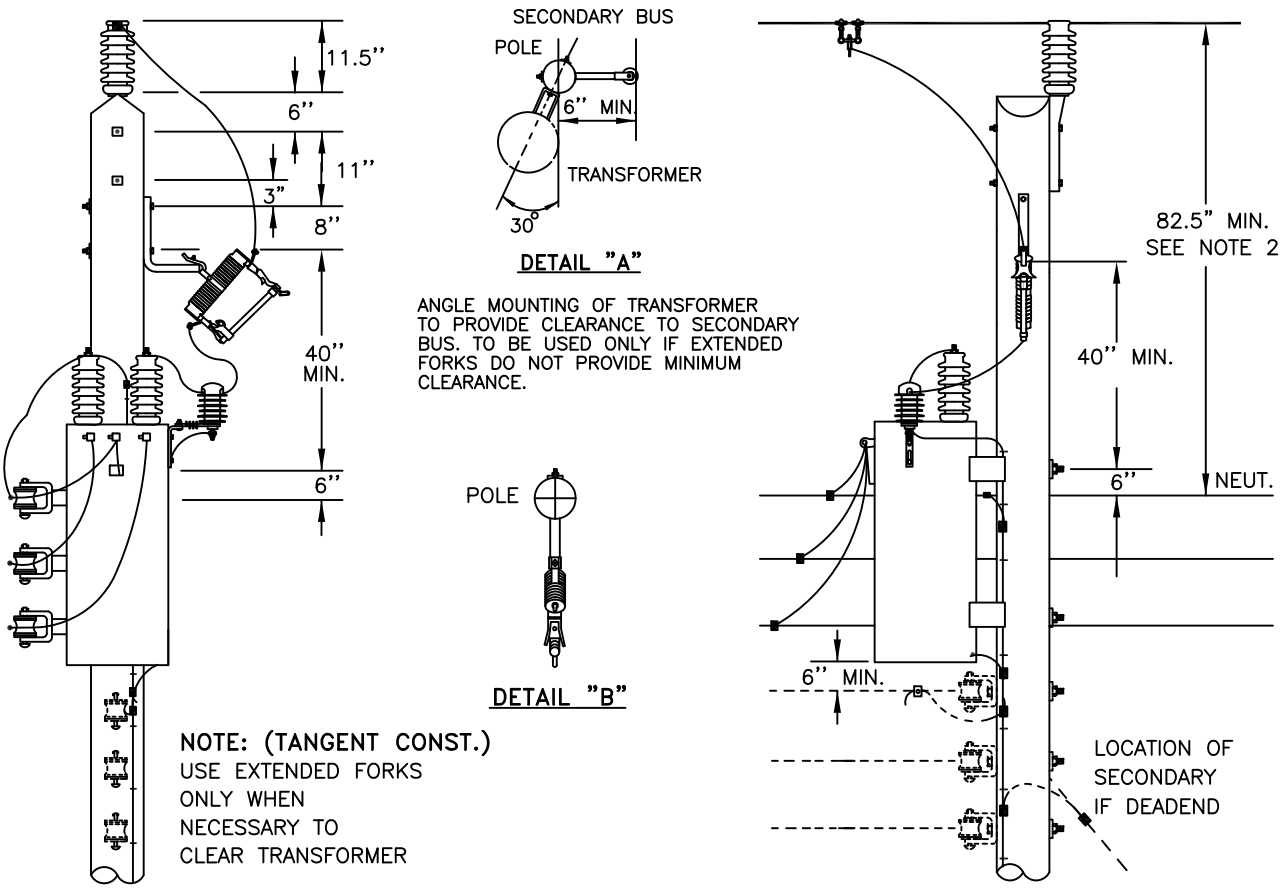
DATE: 8/9/96 APPROVED: J.J McEVOY

SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

TRANSFORMER INSTALLATION SINGLE PHASE PRIMARY CONSTRUCTION & MODIFIED VERTICAL CONSTRUCTION

I-41.0.0



TANGENT TRANSFORMER POLE

NOTES:

1. IN SALT SPRAY AREAS USE SALT SPRAY TRANSFORMER, SALT SPRAY ARRESTERS, AND SALT SPRAY CUTOUTS.
2. PREFERRED LOCATION FOR NEUTRAL IS 6" MINIMUM BELOW TOP TRANSFORMER MOUNTING BRACKET BOLT.
3. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMERS CONNECTIONS.
4. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING, SEE SHEET I-5.0.0.
5. FOR ARRESTER INSTALLATION SEE I-6.0.0.

SFHHA 009891
FPL RC-16

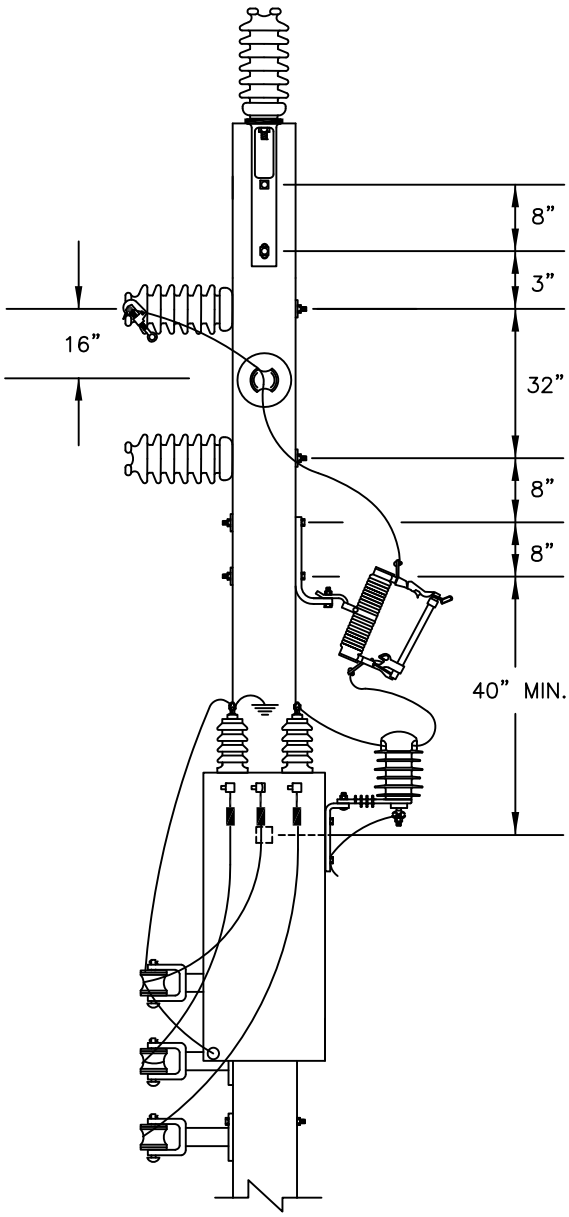
F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	1/28/16	UPDATE NOTES	DGY	ELS	RDH
2	06/06/01	INCREASED MIN DIMENSIONS	GJP	JES	IA
1	8/9/96	CHANGED PAGE FORMAT	PMG	RAS	JJM

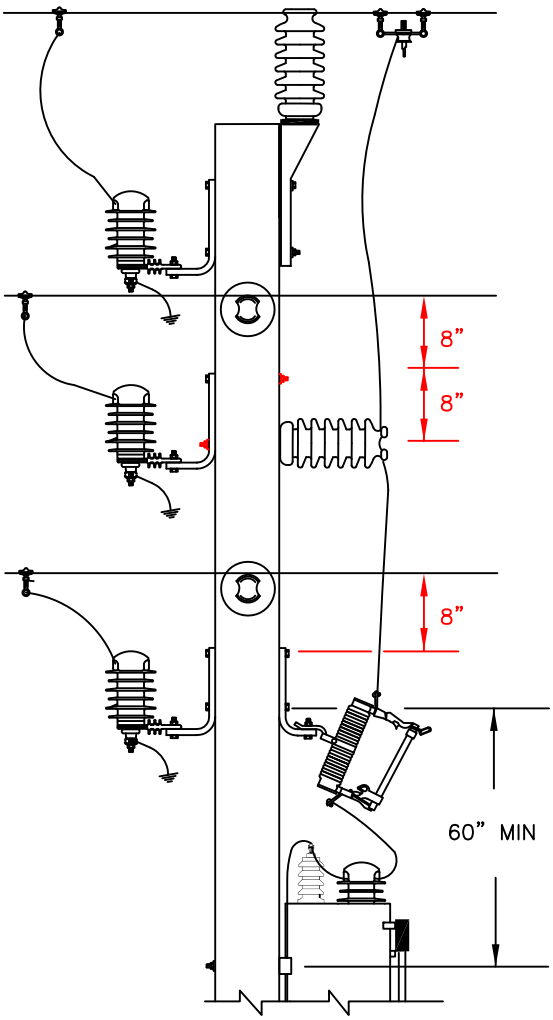
ORIGINATOR: PMG
DRAWN BY: RAS
DATE: 8/9/96
APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

POST CONSTRUCTION
13KV, 23KV, & SALT SPRAY
SINGLE PHASE TX INSTALLATION

I-41.0.1



ARRANGEMENT ON
TANGENT POLE
FIG. 1



ARRANGEMENT ON TANGENT POLE
USED AS 3ø ARRESTER STATION
FIG. 2

SYMBOL ⏚ MEANS TO POLE GROUND

NOTES:

1. REFER TO I-41.0.0 FOR NOTES

SFHHA 009892
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	5/13/15	UPDATE DRAWING	DGY	ELS	RDH
4	12/1/14	UPDATE DRAWING	DGY	ELS	RDH
3	6/9/09	REVISE INSULATOR SPACING	JNM	ELS	JRD
2	06/06/01	INCREASED MIN. DIMENSIONS	GJP	JES	IA
1	9/30/94	ADDED SALT SPRAY AREA NOTE	ARR	RAS	RJS
0	9/30/94	ADDED NEW BORDER AND ARROWHEADS	ARR	MRB	RJS

ORIGINATOR: ARR

DRAWN BY: MRB

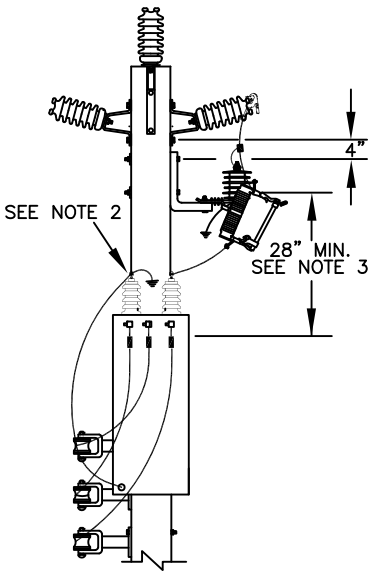
DATE: 9/30/94

APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING
AND OPERATIONS SERVICES

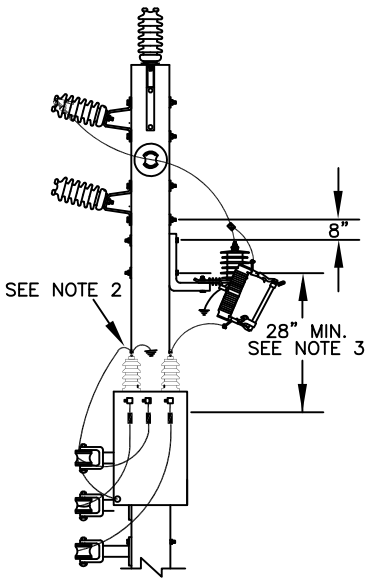
NO SCALE

SINGLE PHASE TX INSTALLATION 13 & 23KV (FOR MAINTENANCE ONLY)

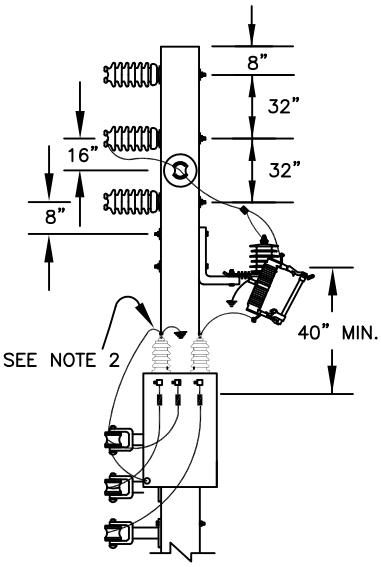
I-42.0.0



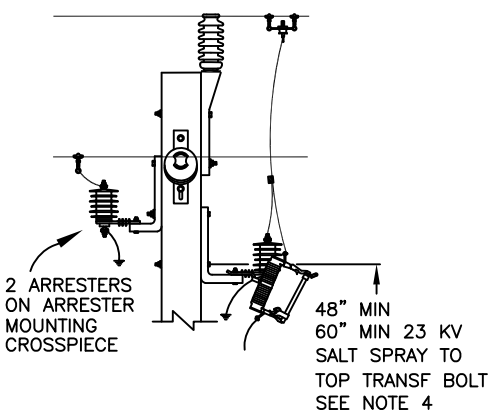
ARRANGEMENT ON TANGENT POLE
FIG. 1



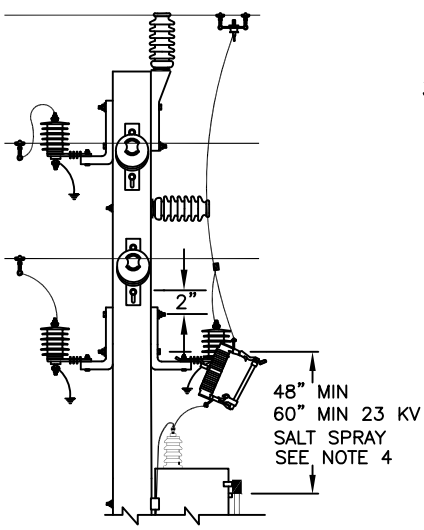
ARRANGEMENT ON TANGENT POLE
FIG. 2



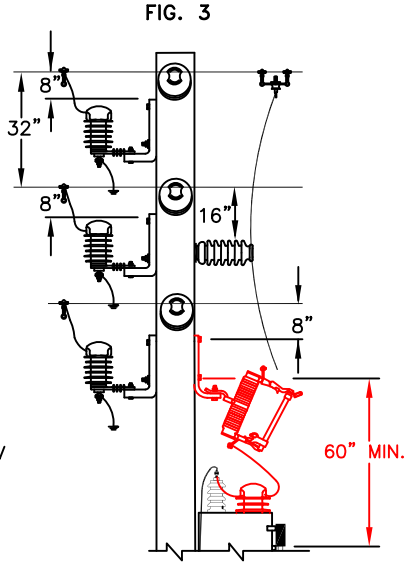
ARRANGEMENT ON TANGENT POLE
FIG. 3



ARRANGEMENT ON TANGENT POLE USED AS 3ø ARRESTER STATION
FIG. 1A



ARRANGEMENT ON TANGENT POLE USED AS 3ø ARRESTER STATION
FIG. 2A



ARRANGEMENT ON TANGENT POLE USED AS 3ø ARRESTER STATION
FIG. 3A

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED. FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING SEE SHEET I-5.0.0.
3. IF PRACTICAL IN RE-FRAMING INCREASE 28" MIN. TO 40" WHERE TX IS INSTALLED AT 90° TO SWITCH.
4. IF PRACTICAL IN RE-FRAMING INCREASE 48" MIN. TO 60" WHERE TX IS INSTALLED AT 90° UNDER SWITCH.

SFHHA 009893
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	6/13/16	UPDATE DRAWING	DGY	ELS	RDH
4	6/8/16	UPDATE DRAWING	DGY	ELS	RDH
3	6/06/01	CHANGED MIN. DIMENSIONS IF POLE RE-FRAMED	GJP	JES	IA
2	9/30/94	ADDED SALT SPRAY CLEARANCE NOTE TO FIGS 1A, 2A & 3A	ARR	RAS	RJS
1	9/30/94	REVISE L BRACKET DIMENSIONS	ARR	EMR	RJS
0	6-30-93	REVISED NOTES	MV/AR	MB	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR/MV

DRAWN BY: REED

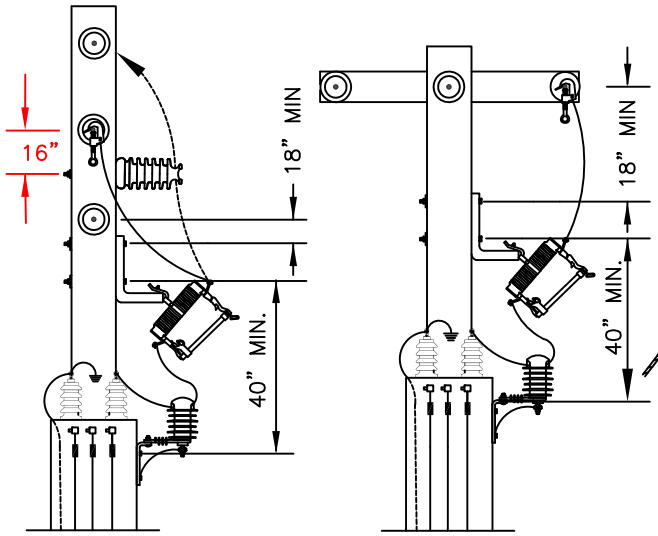
DATE: 6/30/93

APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

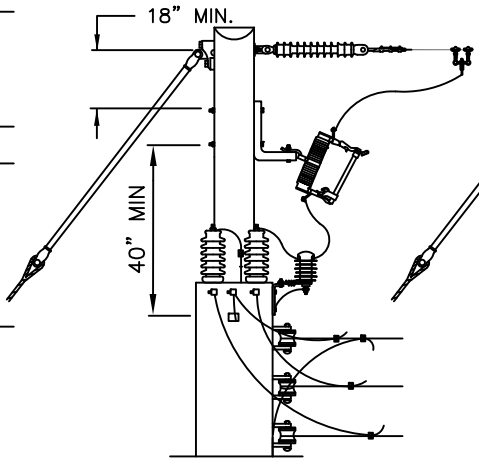
NO SCALE

DEADEND CONSTRUCTION
SINGLE PHASE TX INSTALLATION

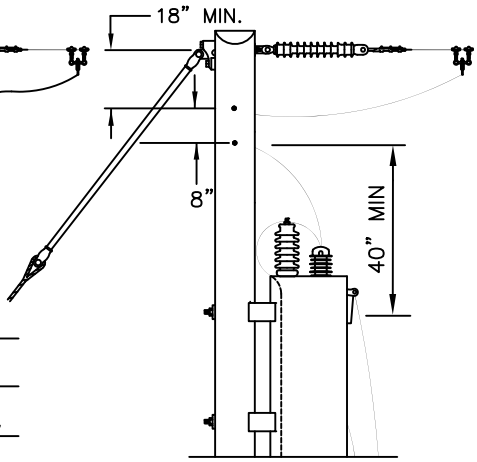
I-42.0.1



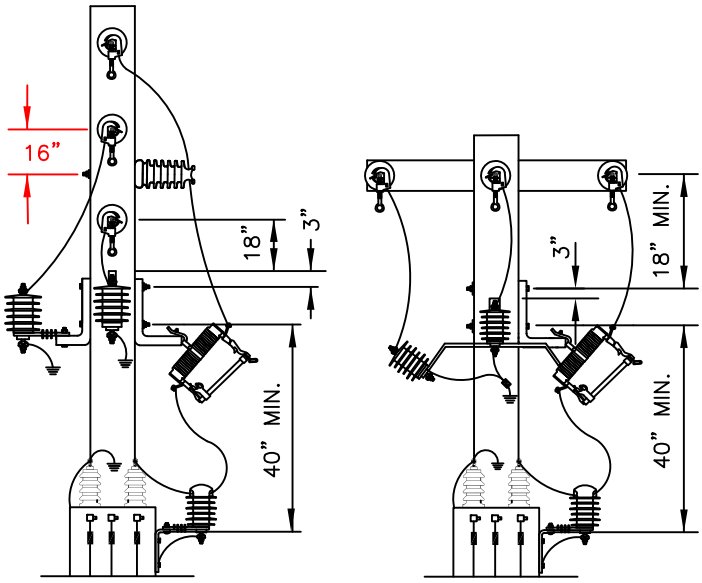
ARRANGEMENT ON
DEADEND POLE
FIG. 1



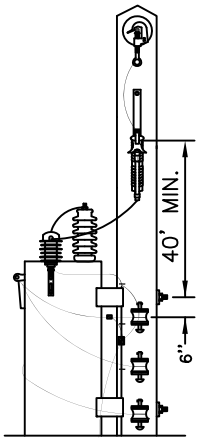
TRANSFORMER QUARTER
MOUNTED ON DEADEND POLE
FIG. 2



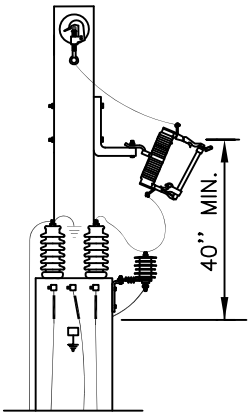
ARRANGEMENT ON
DEADEND POLE
FIG. 3



ARRANGEMENT ON DEADEND POLE
USED AS 3ø ARRESTER STATION
FIG 1A



TRANSFORMER QUARTER
MOUNTED ON DEADEND POLE
FIG. 2A



ARRANGEMENT ON
DEADEND POLE
FIG. 3A

NOTES:
1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED. FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING, SEE SHEET I-5.0.0.
3. FOR ARRESTER INSTALLATION SEE I-6.0.0.

SFHHA 009894
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	3/16/16	UPDATE DRAWING	DGY	ELS	RDH
3	7/1/03	INCREASE LENGTH OF FGI FIG 2 & 3	JNM	ELS	JJM
2	07/02/01	INCREASED MIN DIMENSIONS	GJP	JES	IA
1	9/30/94	COMPLETELY REVISED ENTIRE PAGE.	ARR	RS/EF	RJS
0	9/30/94	CHANGED FIG. 1 & 2	ARR	EF	RJS

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR
DRAWN BY: RAS
DATE: 9/30/94
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

I-43.0.1

HENDRIX AERIAL SPACER CABLE SYSTEM 3 PHASE TANGENT CONSTRUCTION WITH SINGLE PHASE TRANSFORMER

I-43.0.1

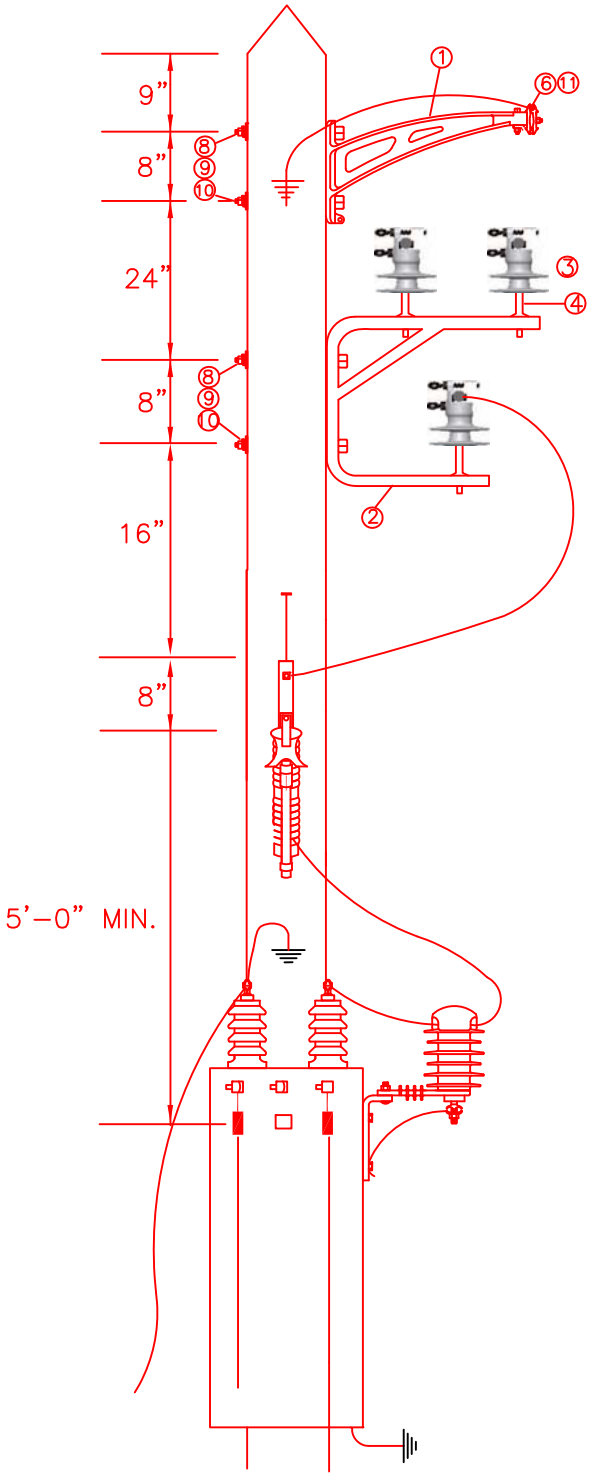


FIG. 1

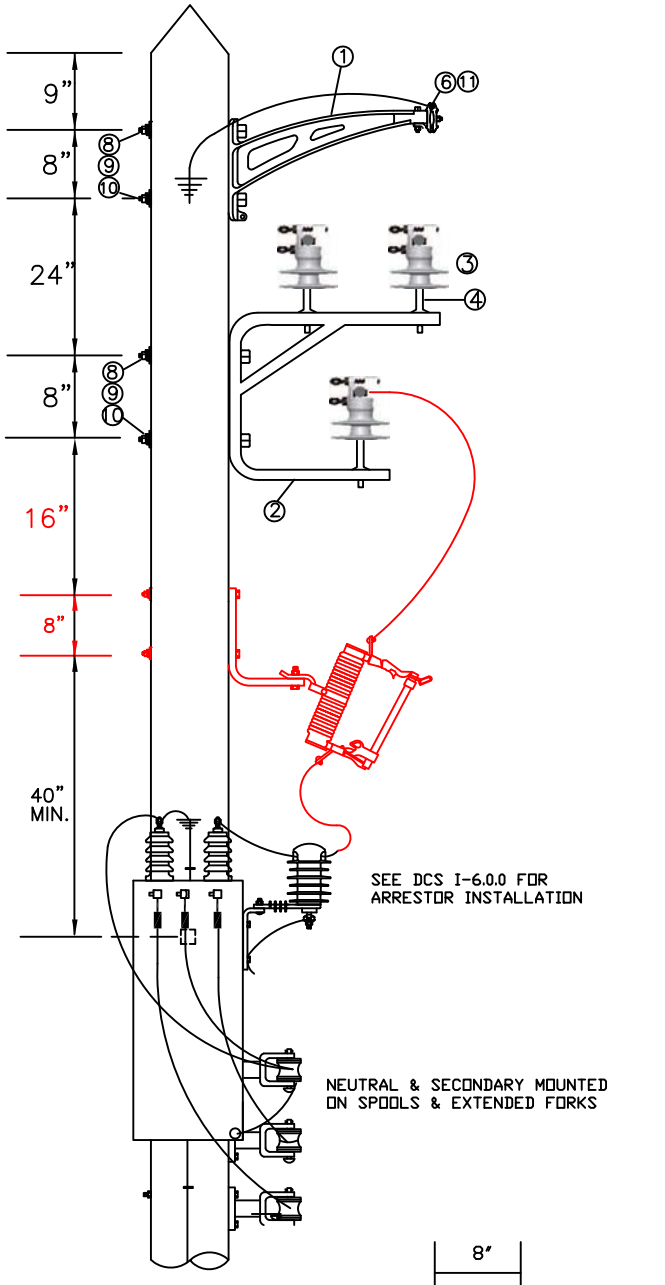
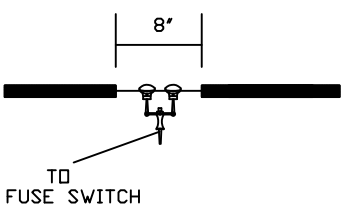


FIG. 2



DETAIL "A"

REMOVE INSULATION TO INSTALL STIRRUP ON BARE CONDUCTOR

NOTES:
1. DO NOT INSTALL STIRRUP OR GROUND UNTIL CONDUCTORS ARE INSTALLED.
2. TRAIN JUMPER WIRE TO MAINTAIN A 12" MINIMUM SEPARATION TO OTHER PHASES.
3. SEE E-32.2.3 FOR PARTS LIST.

SFHHA 009895
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	5/13/15	UPDATE DRAWING	DGY	ELS	RDH
3	3/3/15	UPDATE DRAWING	DGY	ELS	RDH
2	07/02/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	05/04/00	REVISE ITEM 16	JNM	JES	JJM

ORIGINATOR: JNM

DRAWN BY: E. SCHILLING

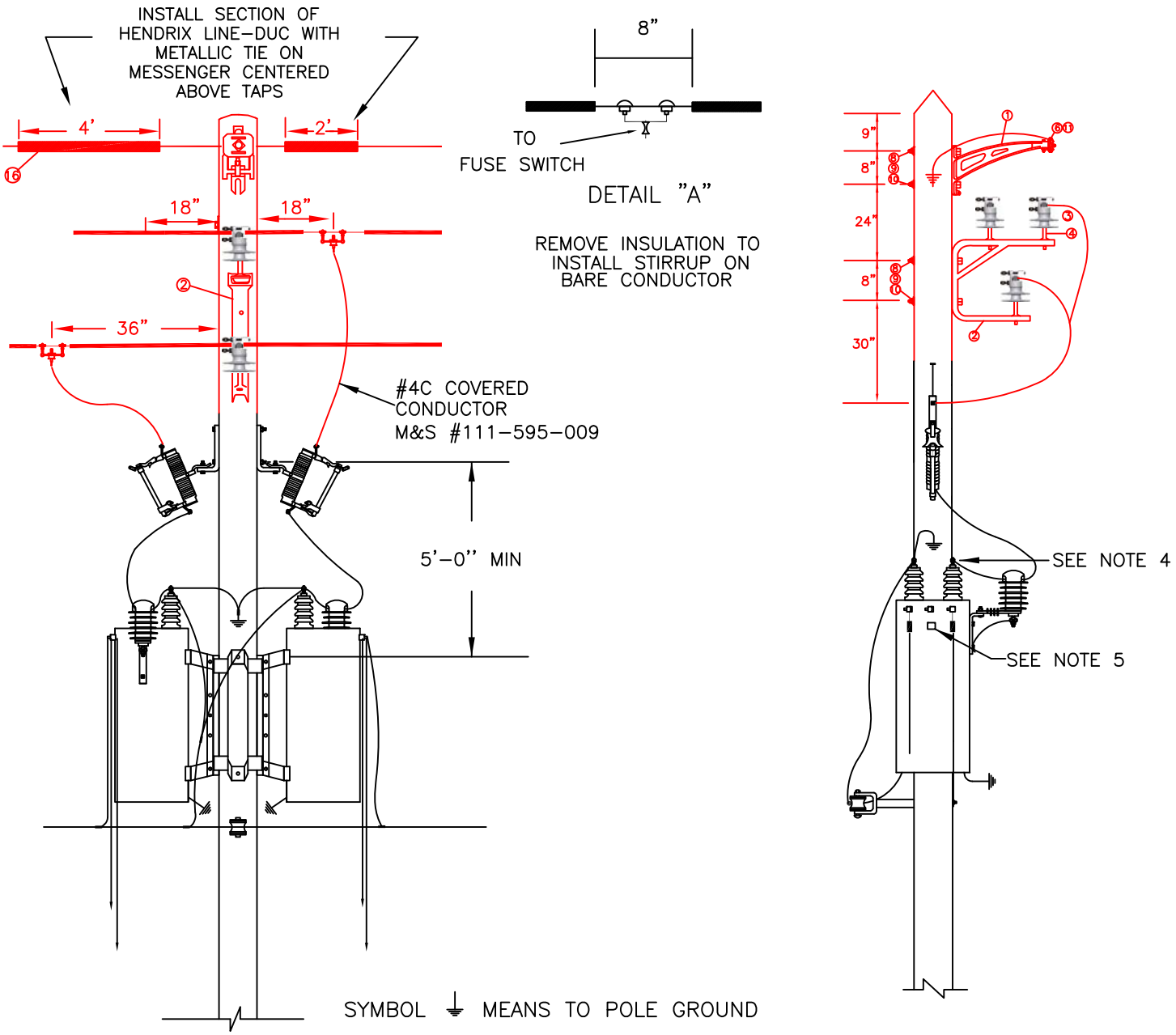
DATE: 6/14/99

APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

HENDRIX AERIAL SPACER CABLE SYSTEM 3 PHASE TANGENT CONSTRUCTION WITH OPEN DELTA TRANSFORMER BANK

I-43.0.2



NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. IF TRANSFORMER POLE IS TO BE USED AS A LINE PROTECTION STATION (ARRESTERS ON ALL 3 PHASES), FRAME CUTOUTS AND ARRESTERS AS FOR A CLOSED DELTA BANK USING ONLY TWO CUTOUTS.
3. THIS ARRANGEMENT DOES NOT LEAD ITSELF TO THE INSTALLATION OF A THIRD TRANSFORMER, AND IS NOT RECOMMENDED WHERE THIS IS ANTICIPATED. IN SUCH CASES, FRAME AS SHOWN FOR CLOSED WYE-DELTA BANKS, BUT HOOK UP OPEN WYE-DELTA.
4. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
5. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
6. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.
7. SEE E-32.2.3 FOR PARTS LIST.

SFHHA 009896
FPL RC-16

F P L

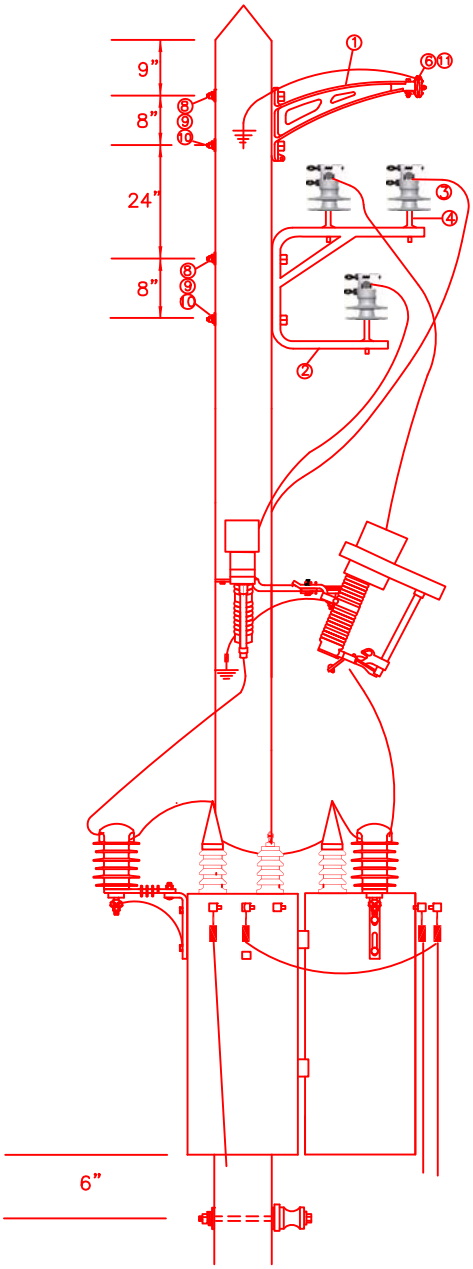
OH & UG DISTRIBUTION SYSTEM STANDARDS

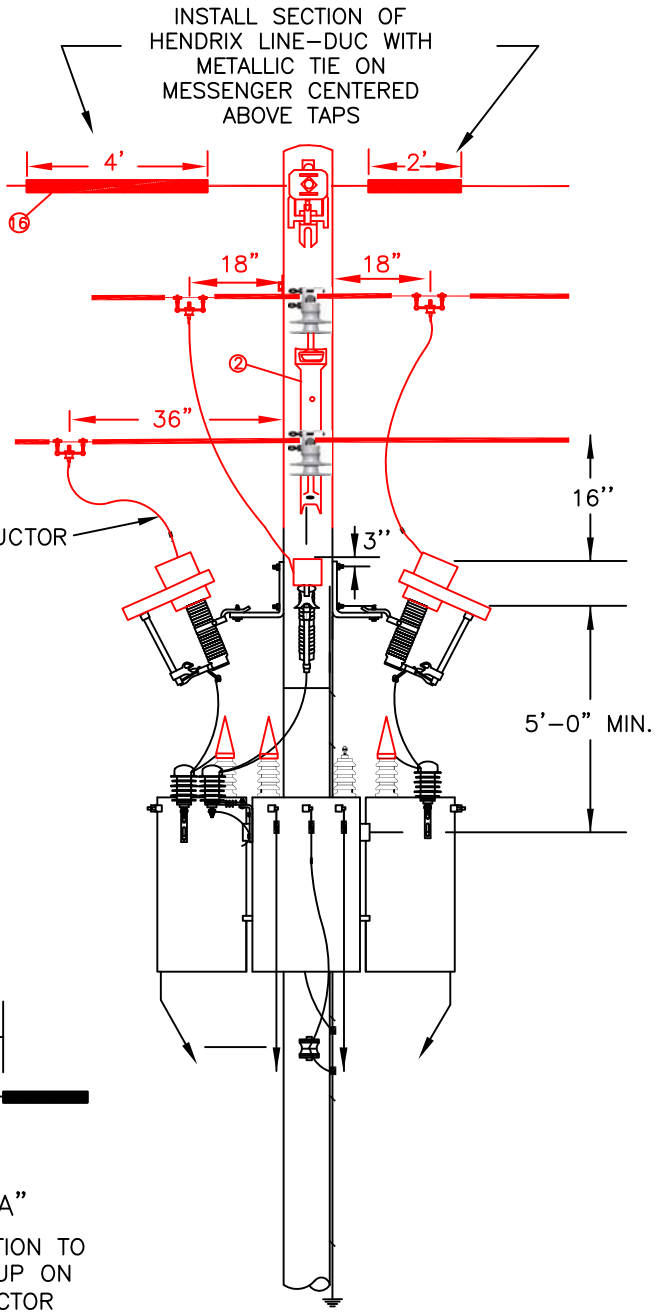
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	3/2/15	UPDATE DRAWING	DGY	ELS	RDH
1	7/02/01	INCREASED MIN. DIMENSION	GJP	JES	IA

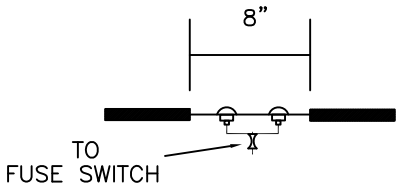
ORIGINATOR: JNM
DRAWN BY: J.SHOUP
DATE: 6/23/99
APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

HENDRIX AERIAL SPACER CABLE SYSTEM 3 PHASE TANGENT CONSTRUCTION WITH 3 PHASE TRANSFORMER BANK

I-43.0.3







DETAIL "A"

REMOVE INSULATION TO INSTALL STIRRUP ON BARE CONDUCTOR

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHINGS GROUNDING. SEE SHEET I-5.0.0.
3. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
4. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.

SFHHA 009897
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	3/6/15	UPDATE DRAWING	DGY	ELS	RDH
1	7/02/01	INCREASED MIN. DIMENSION	GJP	JES	IA

ORIGINATOR: JNM

DRAWN BY: PRH

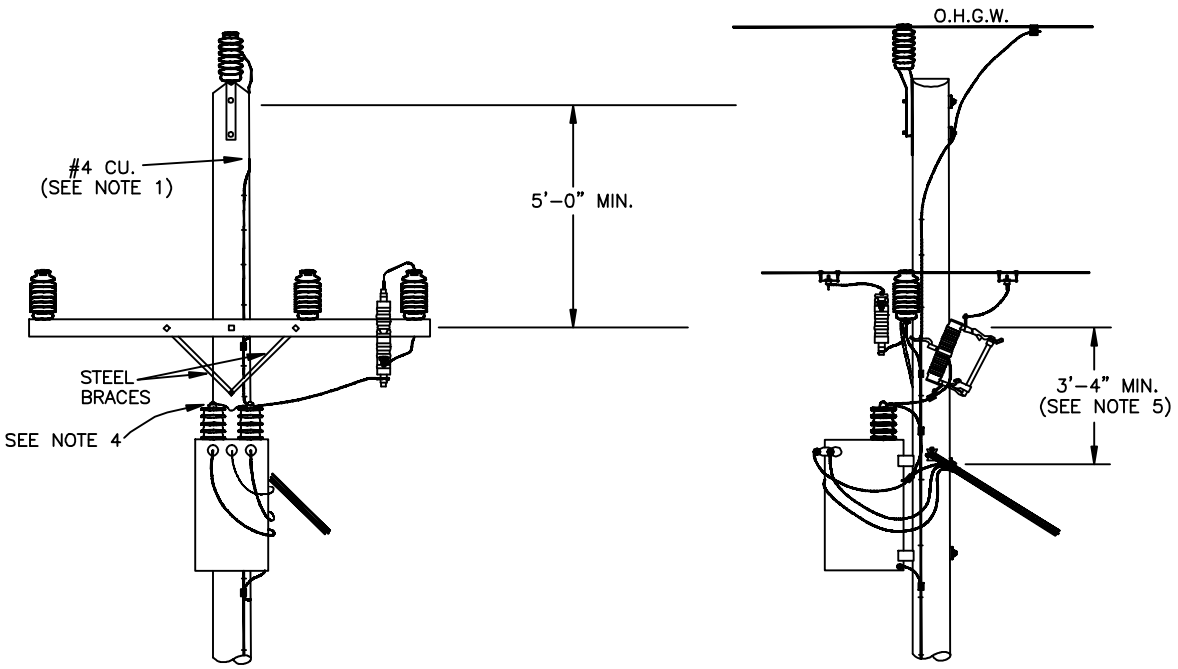
DATE: 7/29/99

APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

SINGLE PHASE INSTALLATION-13 & 23KV OVERHEAD GROUND WIRE-CROSSARM CONSTRUCTION (FOR MAINTENANCE ONLY)

I-44.0.0



NOTES:

1. IF POLE IS KNOWN TO BE A TRANSFORMER STATION AT THE TIME IT IS SET, INSTALL A #4 POLE GROUND. IF TRANSFORMER IS ADDED LATER, PORTION OF POLE GROUND BETWEEN TRANSFORMER AND O.H.G.W. SHOULD BE REPLACED WITH #4 CU.
2. PHASE TO BE TAPPED MUST HAVE A SURGE ARRESTER INSTALLED ON THAT PHASE, IF ARRESTER GROUND IS INSTALLED UNDER THE ARM PASSING OR BONDED TO THE INSULATOR PIN OR STUD OF ANOTHER PHASE, THAT PHASE (Bø) MUST ALSO HAVE AN ARRESTER.
3. SEE SHEET I-53.0.0 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
4. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED. FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0
5. IF PRACTICAL IN RE-FRAMING INCREASE 3'-4" MIN. TO 5'.

SFHHA 009898
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	7/02/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	9/30/94	CONVERTED TO CAD	RJS	J.H.	RJS
0	2/15/80	ORIGINAL DRAWING	LBR	KRB	SB

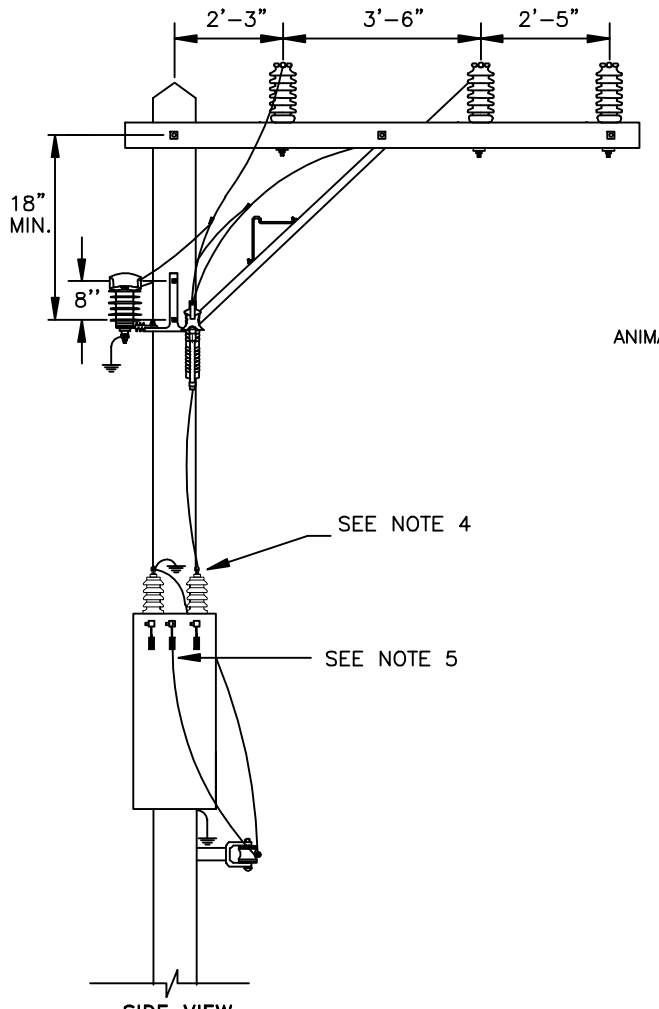
ORIGINATOR: LBR DRAWN BY: KRB

DATE: 4/10/85 APPROVED: SAM BELL JR.
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

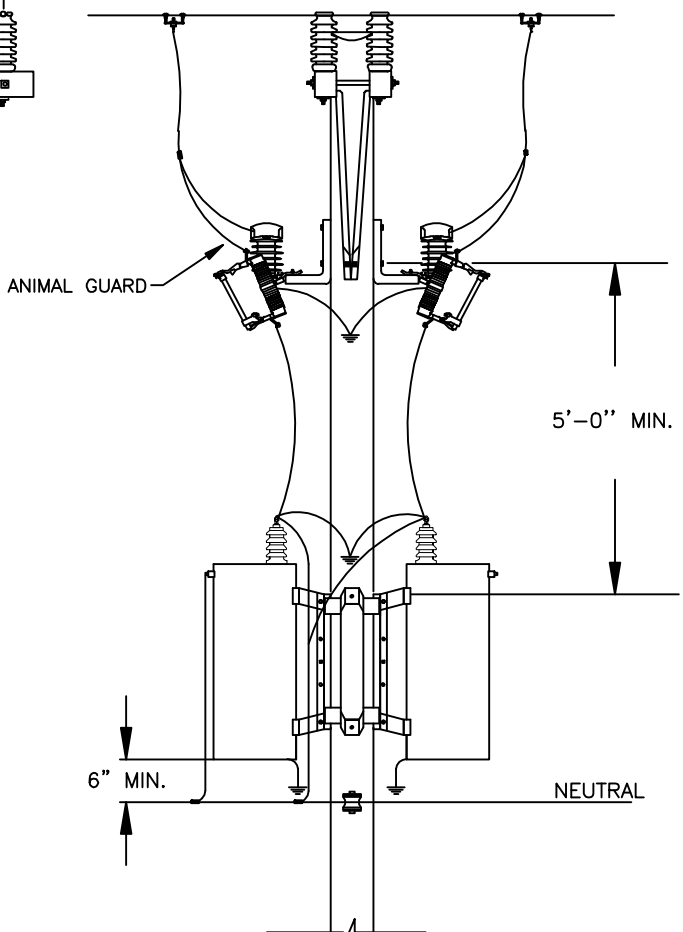
NO SCALE

OPEN WYE-OPEN DELTA BANK
13 & 23KV ON WOOD ALLEY ARM
ALTERNATE METHOD

I-45.0.0



SIDE VIEW



FRONT VIEW

SFHHA 009899
FPL RC-16

SYMBOL MEANS TO POLE GROUND

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. IF TRANSFORMER POLE IS TO BE USED AS A LINE PROTECTION STATION (ARRESTERS ON ALL 3 PHASES), FRAME CUTOUTS AND ARRESTERS AS FOR A CLOSED DELTA BANK USING ONLY TWO CUTOUTS.
3. THIS ARRANGEMENT DOES NOT LEND ITSELF TO THE INSTALLATION OF A THIRD TRANSFORMER, AND IS NOT RECOMMENDED WHERE THIS IS ANTICIPATED.
4. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED. FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING, SEE SHEET I-5.0.0
5. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
6. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.

SUPERSEDES I-45.0.0 LAST REVISED ON 1-29-92

FPL

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	10/15/04	ADD ANIMAL GUARD	LFV	ELS	JJM
3	4/16/04	REV CROSSARM DIMENSIONS	JNM	ELS	JJM
2	7/02/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	9/30/94	ADDED DIMENSION TEXT ADD NEW FRAME	ARR	PTH	RJS
0	9/30/94	ORIGINAL DRAWING	ARR	PTH	RJS

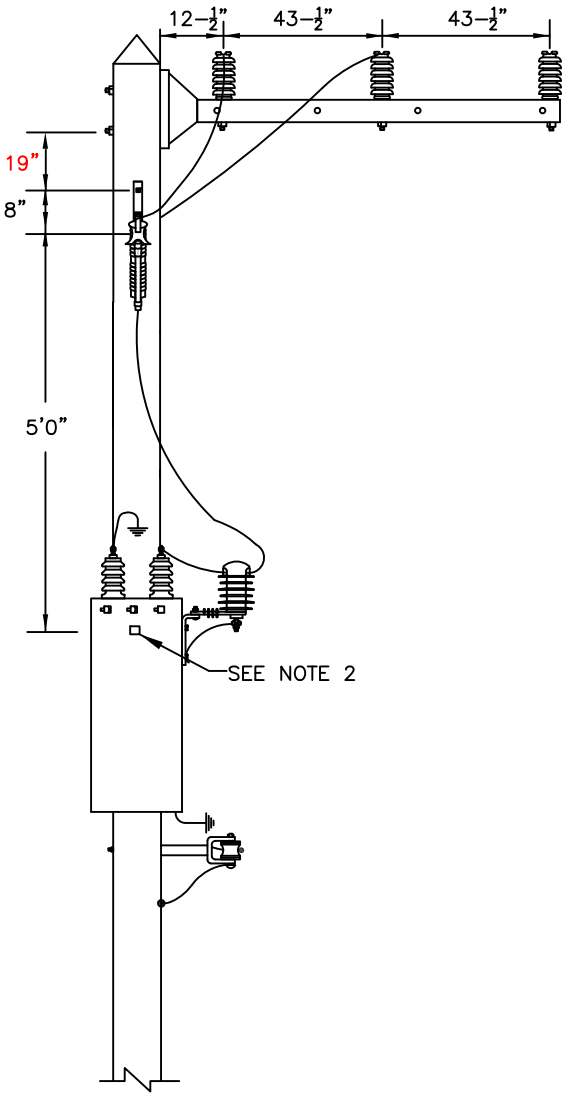
ORIGINATOR: ARR DRAWN BY: PTH

DATE: 9/30/94 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

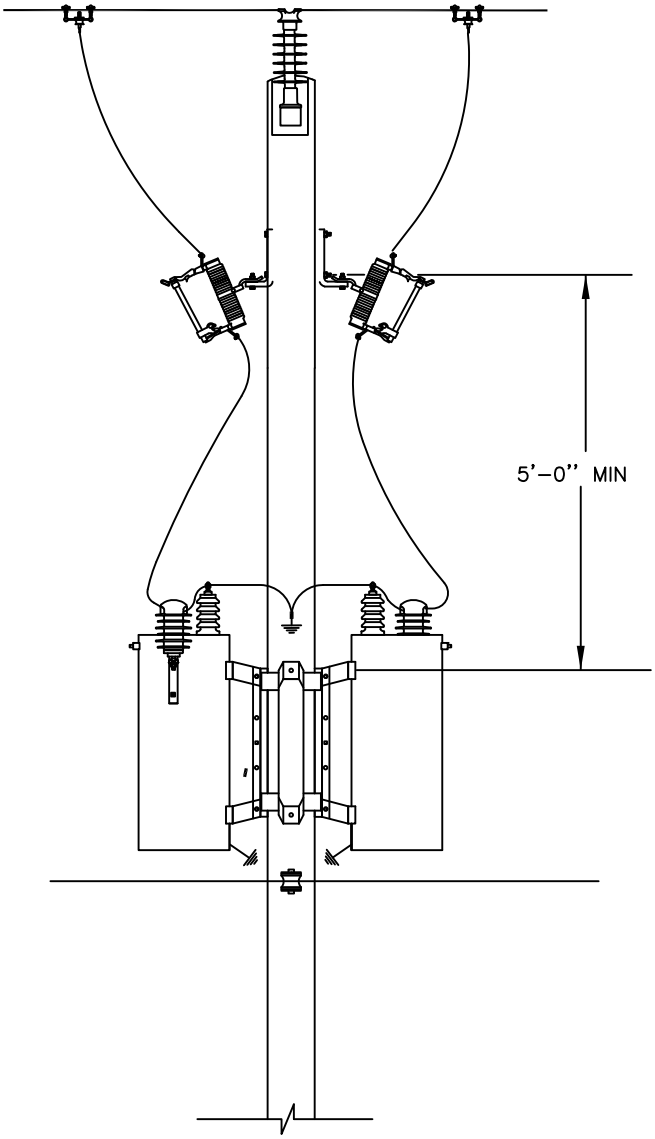
NO SCALE

OPEN WYE-OPEN DELTA BANK STEEL ALLEY ARM ALTERNATE METHOD

I-45.0.1



SIDE VIEW – CONCRETE POLE



FRONT VIEW – CONCRETE POLE

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
3. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.

SYMBOL MEANS TO POLE GROUND

SFHHA 009900
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

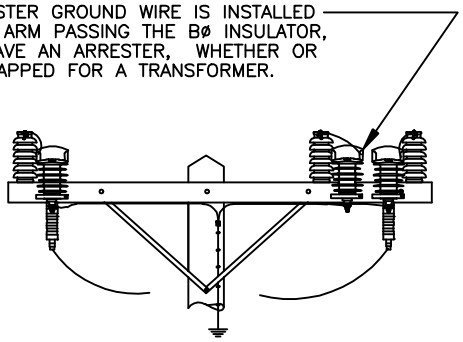
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	11/12/15	UPDATE DRAWING	DGY	ELS	RDH

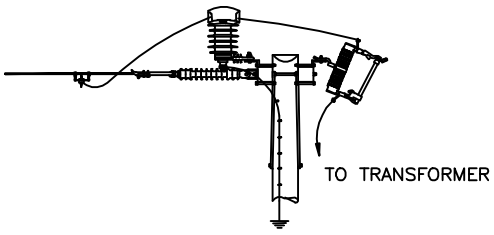
ORIGINATOR: D. YOUNG
DRAWN BY: E. SCHILLING
DATE: 6/15/15
APPROVED: RICK D. HUFF
MANAGER OF ELECTRICAL STANDARDS
NO SCALE

OPEN WYE-OPEN DELTA BANK
13 AND 23KV
CROSSARM CONSTRUCTION
ALTERNATE METHOD

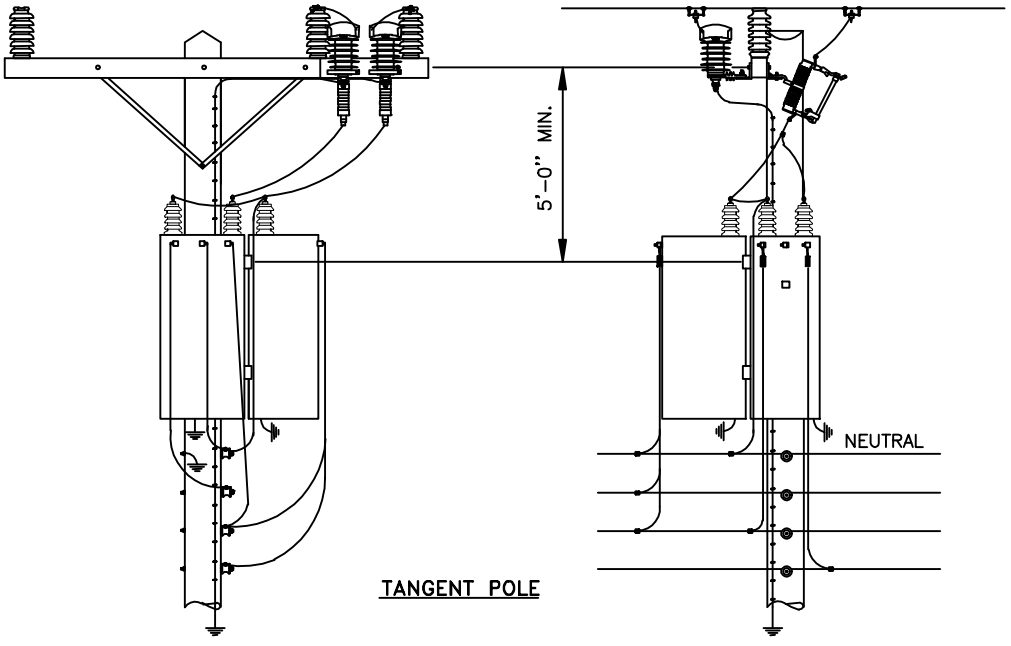
I-46.0.0

IF AN ARRESTER GROUND WIRE IS INSTALLED UNDER THE ARM PASSING THE Bø INSULATOR, Bø MUST HAVE AN ARRESTER, WHETHER OR NOT IT IS TAPPED FOR A TRANSFORMER.





DEADEND POLE



TANGENT POLE

BACK

SIDE

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. IF TRANSFORMER POLE IS TO BE USED AS A LINE PROTECTION STATION (ARRESTERS ON ALL 3 PHASES), FRAME CUTOUTS AND ARRESTERS AS FOR A CLOSED DELTA BANK USING ONLY TWO CUTOUTS.
3. THIS ARRANGEMENT DOES NOT LEND ITSELF TO THE INSTALLATION OF A THIRD TRANSFORMER, AND IS NOT RECOMMENDED WHERE THIS IS ANTICIPATED. IN SUCH CASE, FRAME AS SHOWN FOR CLOSED WYE-DELTA BANKS, BUT HOOK UP OPEN WYE-OPEN DELTA.
4. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0
5. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
6. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.

⏚ TO POLE GROUND.

SFHHA 009901
FPL RC-16

SUPERSEDES I-46.0.0 LAST REVISED ON 9-30-94

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	10/18/04	ADD ANIMAL GUARD	LFV	ELS	JJM
2	7/2/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	9/30/94	CHANGED PORCELAIN SUSPENSION INSULATORS TO POLYMER	ARR	RAS	JJM
0	8/9/96	ORIGINAL DRAWING	ARR	RAS	JJM

ORIGINATOR: PMG

DRAWN BY: RAS

DATE: 8/9/96

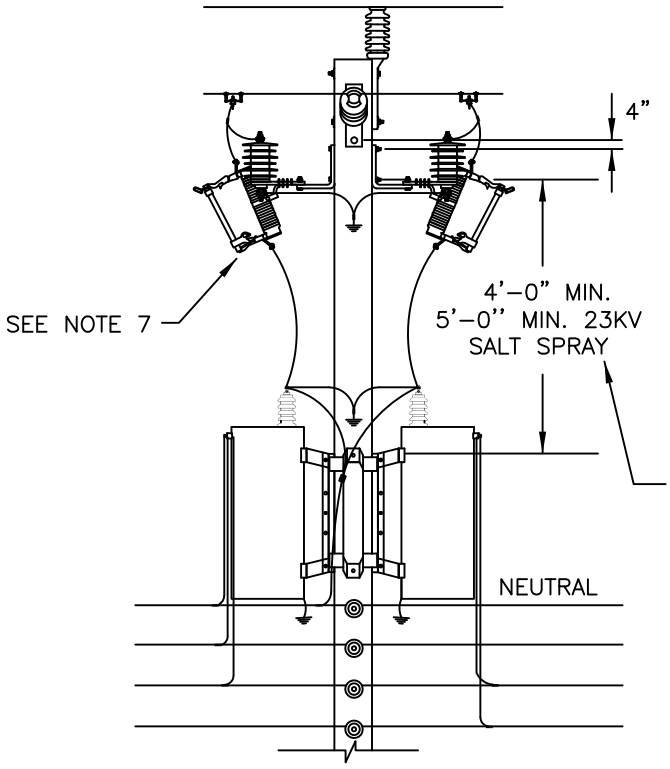
APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

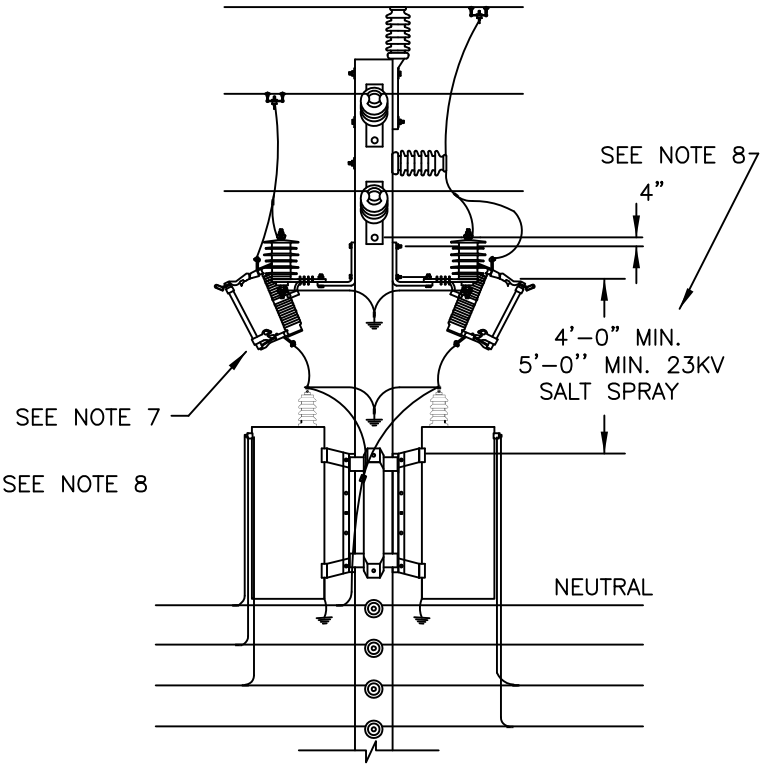
OPEN WYE-OPEN DELTA BANK 13 & 23KV (FOR MAINTENANCE ONLY)

I-47.0.0

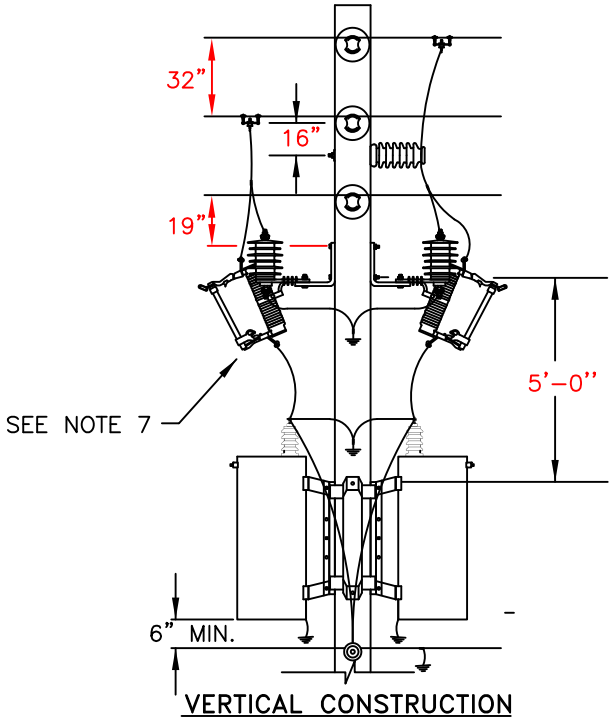
DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED.
FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING, SEE I-5.0.0



TRIANGULAR CONSTRUCTION



MODIFIED VERTICAL CONSTRUCTION
USING SIDE POST BRACKETS



VERTICAL CONSTRUCTION

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. IF TRANSFORMER POLE IS TO BE USED AS A LINE PROTECTION STATION (ARRESTERS ON ALL 3 PHASES), FRAME CUTOUTS AND ARRESTERS AS FOR A CLOSED DELTA BANK USING ONLY TWO CUTOUTS.
3. THIS ARRANGEMENT DOES NOT LEAD ITSELF TO THE INSTALLATION OF A THIRD TRANSFORMER, AND IS NOT RECOMMENDED WHERE THIS IS ANTICIPATED. IN SUCH CASES, FRAME AS SHOWN FOR CLOSED WYE-DELTA BANKS, BUT HOOK UP OPEN WYE-OPEN DELTA.
4. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
5. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
6. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.
7. THIS DRAWING IS PROVIDED FOR RECORD PURPOSES. IF INSTALLING A TX OR A TX BANK ON AN EXISTING POLE FRAMED VERTICAL, TRIANGULAR, OR MODIFIED VERTICAL (USING SIDE POST BRACKETS), THE LA'S SHOULD BE ON THE TX TANKS. (SEE I-600).

SFHHA 009902
FPL RC-16

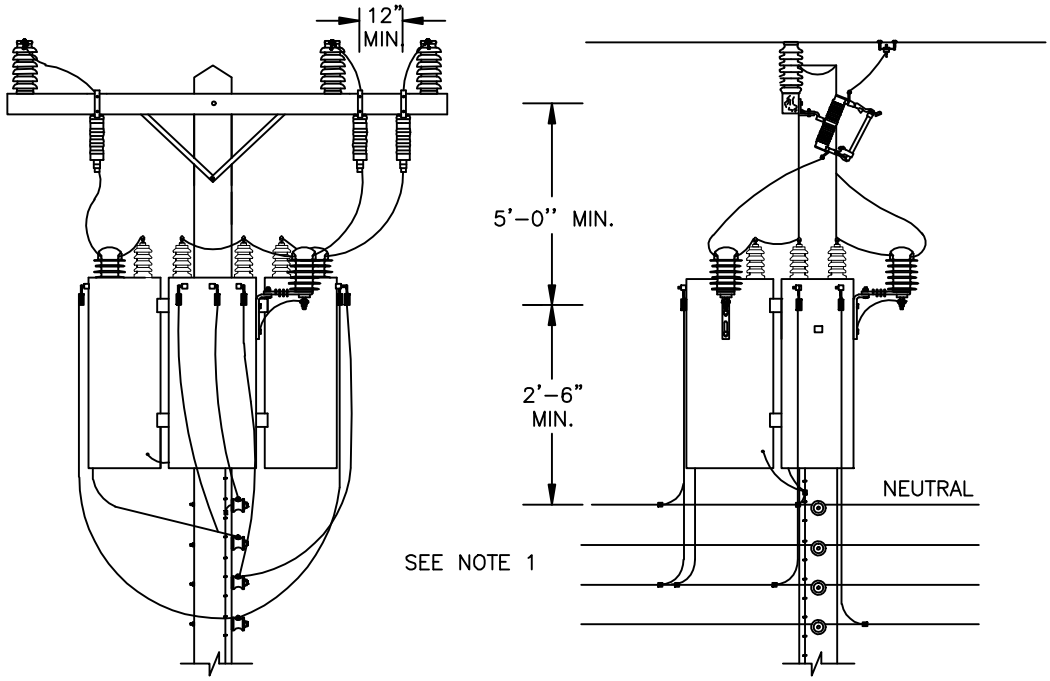
F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	6/8/16	UPDATE DRAWING	DGY	ELS	RDH
2	7/02/01	CHANGED MIN. DIMENSIONS IF POLE RE-FRAMED	GJP	JES	IA
1	9/30/94	ADDED DIMENSION TEXT AND CHANGED SPOOLS	ARR	RAS	RJS
0	9/30/94	ORIGINAL DRAWING	ARR	RAS	RJS

ORIGINATOR: ARR
DRAWN BY: RAS
DATE: 9/30/94
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

WYE-CLOSED DELTA BANK
13 & 23KV
CROSSARM CONSTRUCTION

I-48.0.0



NOTES

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.
3. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMERS.
4. FOR ARRESTER INSTALLATION SEE I-6.0.0.

SFHHA 009903
FPL RC-16

SUPERSEDES I-48.0.0 LAST REVISED ON 5-13-93

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	7/02/01	INCREASED MIN. DIMENSION	GJP	JES	IA
2	9/30/94	ADDED DIMENSION TEXT	ARR	PTH	RJS
1	9/30/94	CHANGED SPOOLS	ARR	EF	RJS
0	9/30/94	REDRAWN-REVISED NOTES & ADDED POLYMER ARRESTERS	MV	EF	RJS

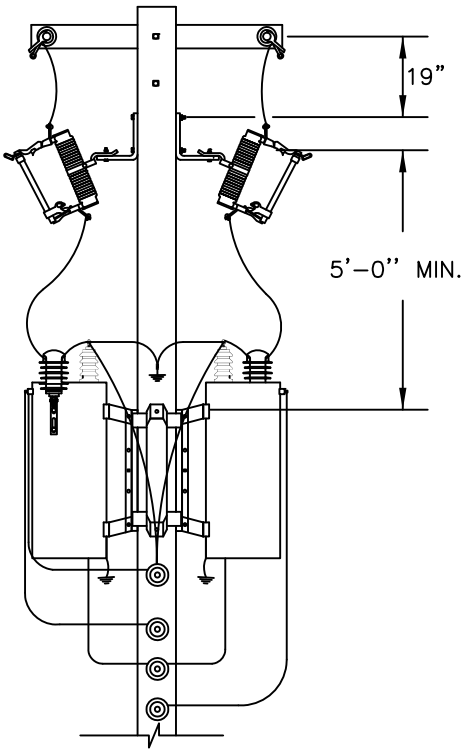
ORIGINATOR: MV DRAWN BY: EF

DATE: 9/30/94 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

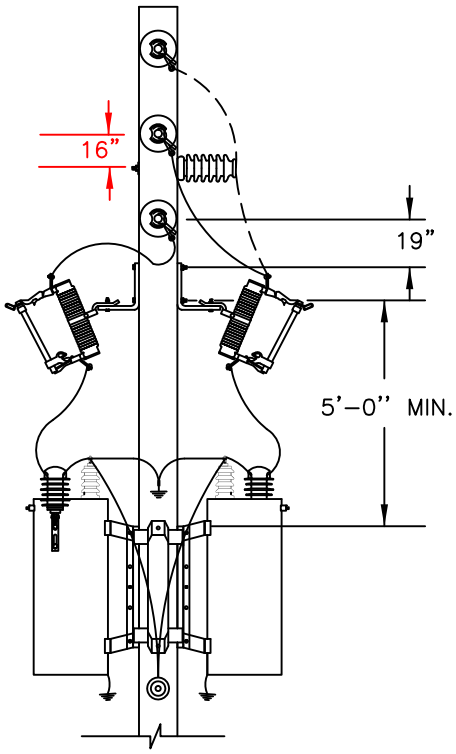
NO SCALE

OPEN WYE–DELTA BANK
13 & 23KV DEADEND CONSTRUCTION

I–48.0.1

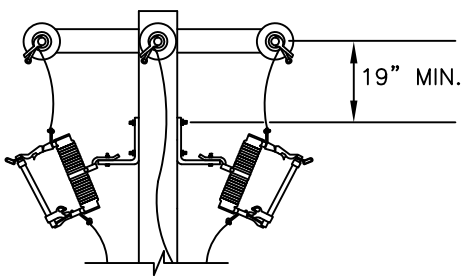


ARRANGEMENT ON DEADEND POLE
USING STEEL ARM
FIG. 1



ARRANGEMENT ON VERTICAL
DEADEND POLES
FIG. 2

NOTES:
1. SEE SHEETS I–53.1.1 FOR SCHEMATIC DIAGRAMS OF TRANSFORMER CONNECTIONS.
2. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMERS.
3. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING, SEE SHEET I–5.0.0.
4. SEE SECTION G–3.0.1 FOR GROUNDING DETAILS.
5. FOR ARRESTER INSTALLATION SEE I–6.0.0.



ARRANGEMENT ON
DEADEND POLE
USING STEEL ARM
FIG. 3

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	3/16/16	UPDATE DRAWING	DGY	ELS	RDH
3	11/12/15	UPDATE DRAWING	DGY	ELS	RDH
2	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	9/30/94	ADDED DIMENSION TEXT	ARR	PTH	RJS
0	9/30/94	CHANGED SPOOLS	ARR	EF	RJS

F P L

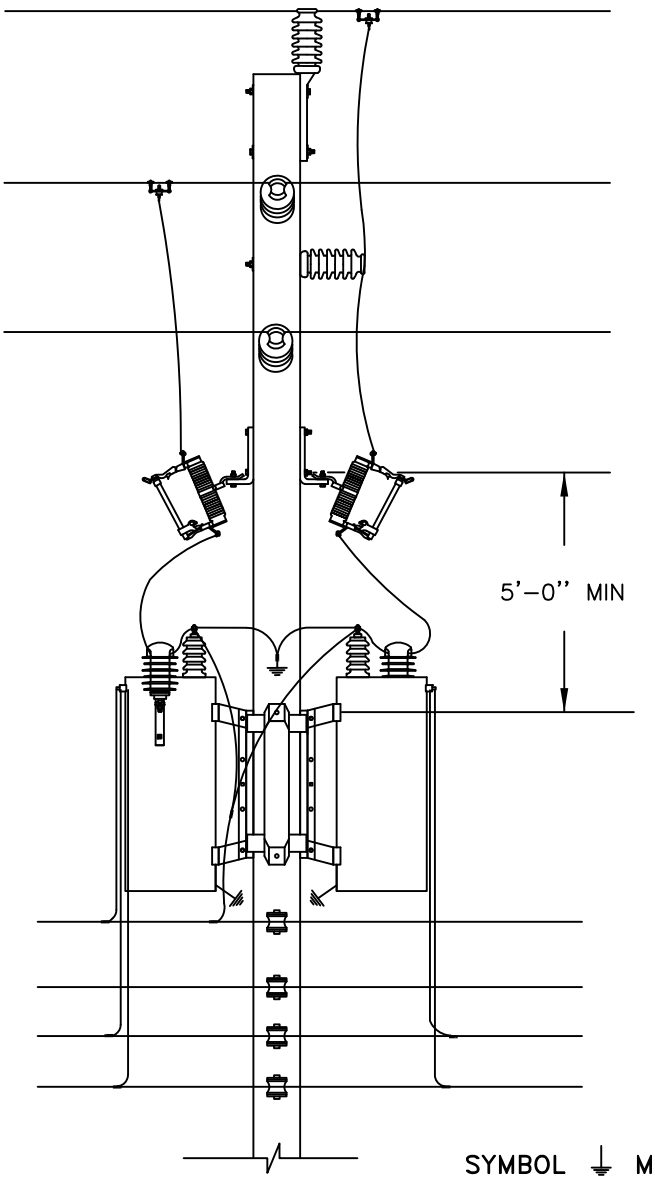
SFHHA 009904
FPL RC-16

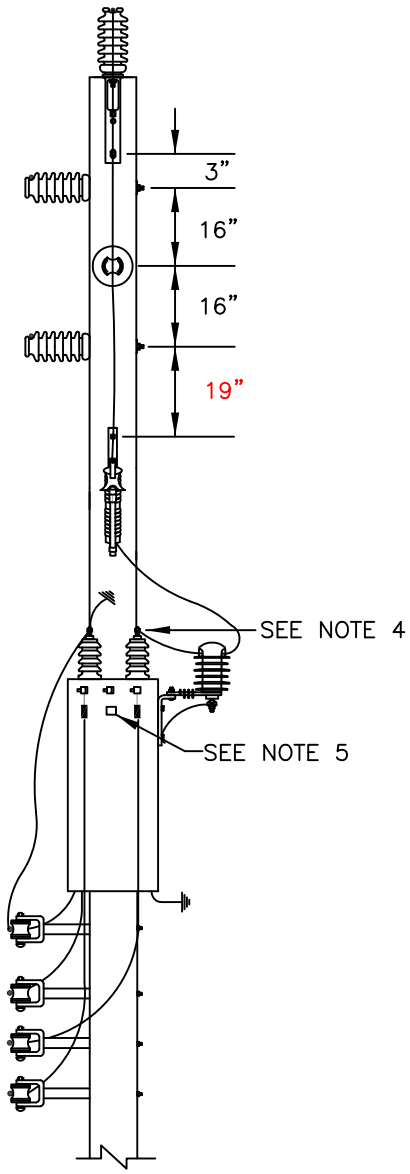
OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR
DRAWN BY: E. SCHILLING
DATE: 9/30/94
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT
NO SCALE

POST INSULATOR CONSTRUCTION OPEN WYE-OPEN DELTA BANK 13 & 23KV

I-48.0.2





SYMBOL ⏚ MEANS TO POLE GROUND

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. IF TRANSFORMER POLE IS TO BE USED AS A LINE PROTECTION STATION (ARRESTERS ON ALL 3 PHASES), FRAME CUTOUTS AND ARRESTERS AS FOR A CLOSED DELTA BANK USING ONLY TWO CUTOUTS.
3. THIS ARRANGEMENT DOES NOT LEAN ITSELF TO THE INSTALLATION OF A THIRD TRANSFORMER, AND IS NOT RECOMMENDED WHERE THIS IS ANTICIPATED. IN SUCH CASES, FRAME AS SHOWN FOR CLOSED WYE-DELTA BANKS, BUT HOOK UP OPEN WYE-DELTA
.
4. DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
5. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMER.
6. SEE SECTION G-3.0.1 FRO GROUNDING DETAILS.

SFHHA 009905
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	11/12/15	UPDATE DRAWING	DGY	ELS	RDH
3	6/9/09	REVISE INSULATOR SPACING	JNM	ELS	JRD
2	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	9/30/94	ADDED DIMENSION TEXT	ARR	PTH	RJS
0	5/13/93	ORIGINAL DRAWING	ARR	MM	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR

DRAWN BY: MM

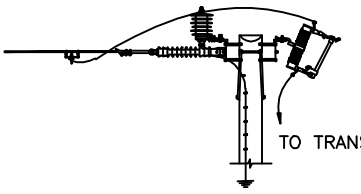
DATE: 5/13/93

APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

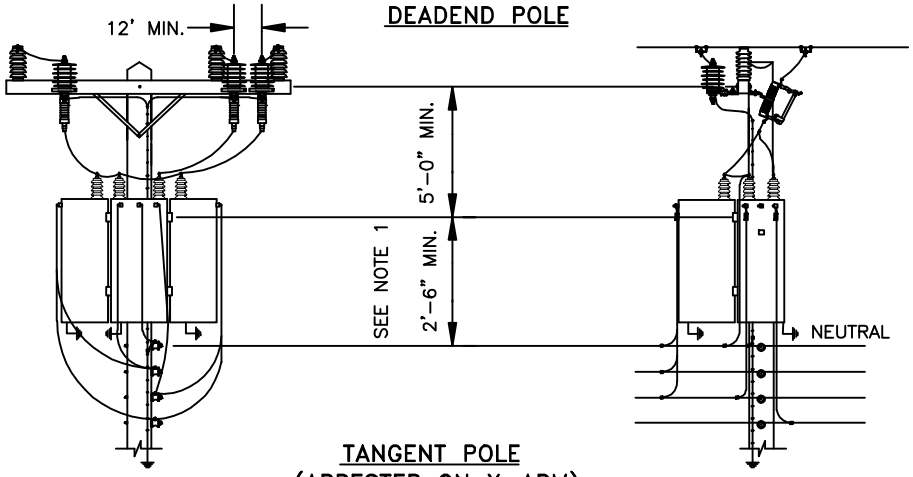
NO SCALE

WYE-CLOSED DELTA
13 & 23KV
CROSSARM CONSTRUCTION

I-49.0.0



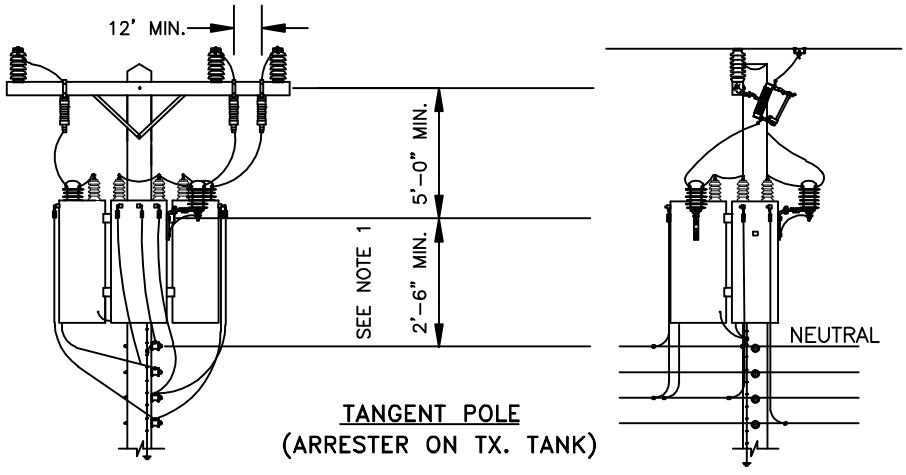
DEADEND POLE



FRONT

TANGENT POLE
(ARRESTER ON X-ARM)

SIDE



TANGENT POLE
(ARRESTER ON TX. TANK)

TO POLE GROUND

NOTES:

1. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
2. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMERS.
3. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0
4. USE DOUBLE WOOD CROSSARMS ON WOOD POLES. USE 8'-6" STEEL CROSSARMS ON CONCRETE POLES AND BOND CROSSARM TO POLE GROUND.
5. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.
6. FOR ARRESTER INSTALLATION SEE I-6.0.0.

SFHHA 009906
FPL RC-16

SUPERSEDES I-49.0.0 LAST REVISED ON 9-30-94

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	8/9/96	CHANGED PORCELAIN SUSPENSION INSULATORS TO POLYMER	PMG	RAS	JJM
0	8/9/96	ORIGINAL DRAWING	PMG	RAS	JJM

ORIGINATOR: PMG

DRAWN BY: RAS

DATE: 8/9/96

APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

WYE-CLOSED DELTA BANK 13 & 23KV (FOR MAINTENANCE ONLY)

I-50.0.0

TRIANGULAR CONSTRUCTION

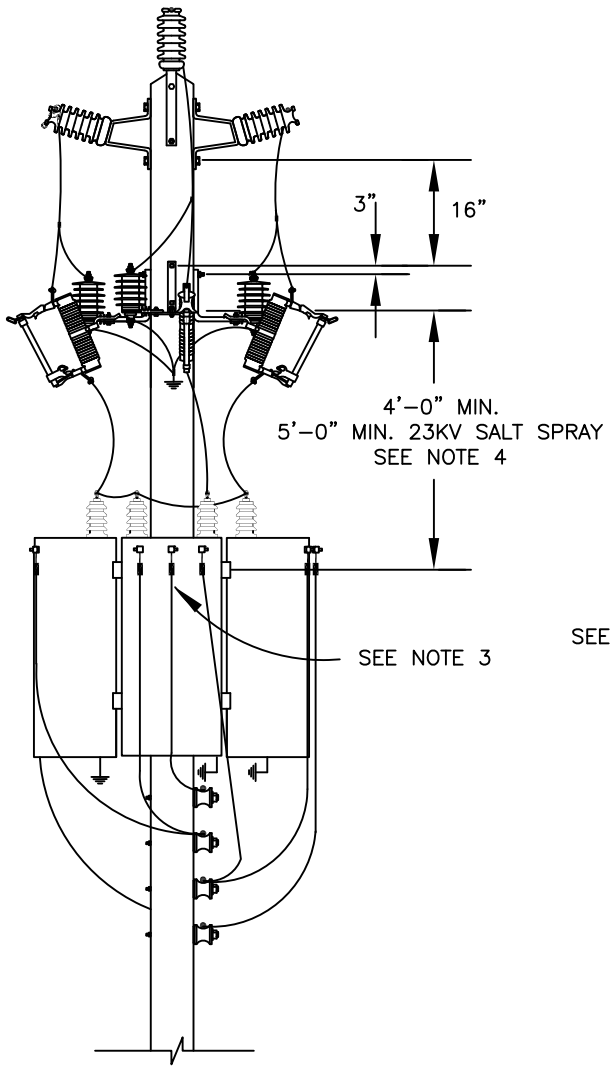


FIG. 1

VERTICAL CONSTRUCTION

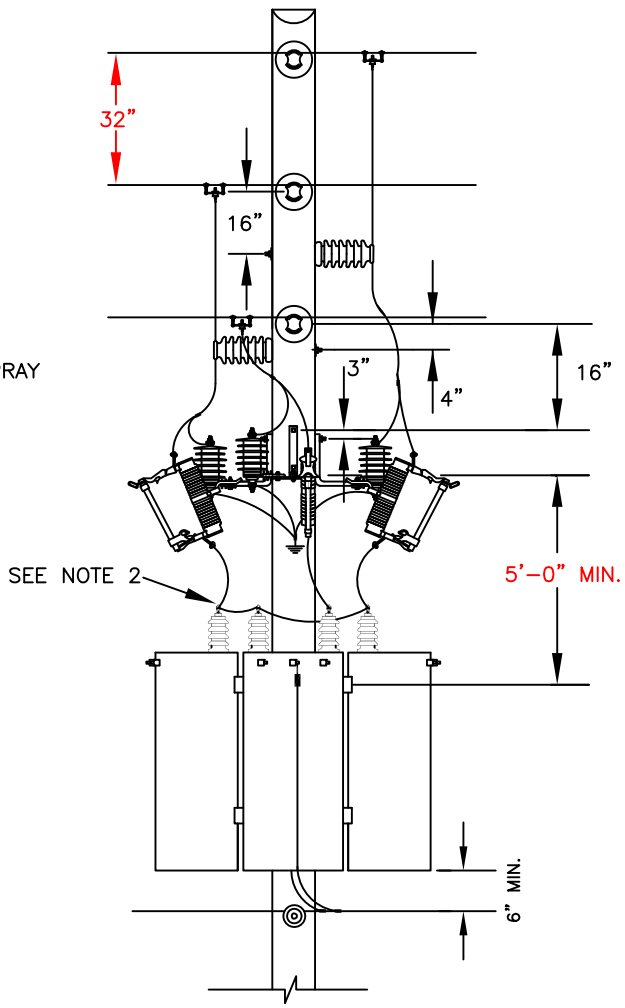


FIG. 2

NOTES:

1. SEE SHEETS I-53.1.1 FOR SCHEMATIC DIAGRAMS OF TRANSFORMER CONNECTIONS.
2. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
3. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMERS.
4. IF PRACTICAL IN RE-FRAMING INCREASE 4' TO 5'.
5. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.

SYMBOL ⏚ MEANS TO POLE GROUND.

SFHHA 009907
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	6/8/16	UPDATE DRAWING	DGY	ELS	RDH
2	7/05/01	CHANGED MIN. DIMENSION IF POLE RE-FRAMED	GJP	JES	IA
1	6/30/93	CHANGED SPOOLS	ARR	EF	RJS
0	6/30/93	REDRAWN-COMBINED I-50.0.0 & I-51.0.0 REVISED NOTES	MV	EF	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MV

DRAWN BY: EF

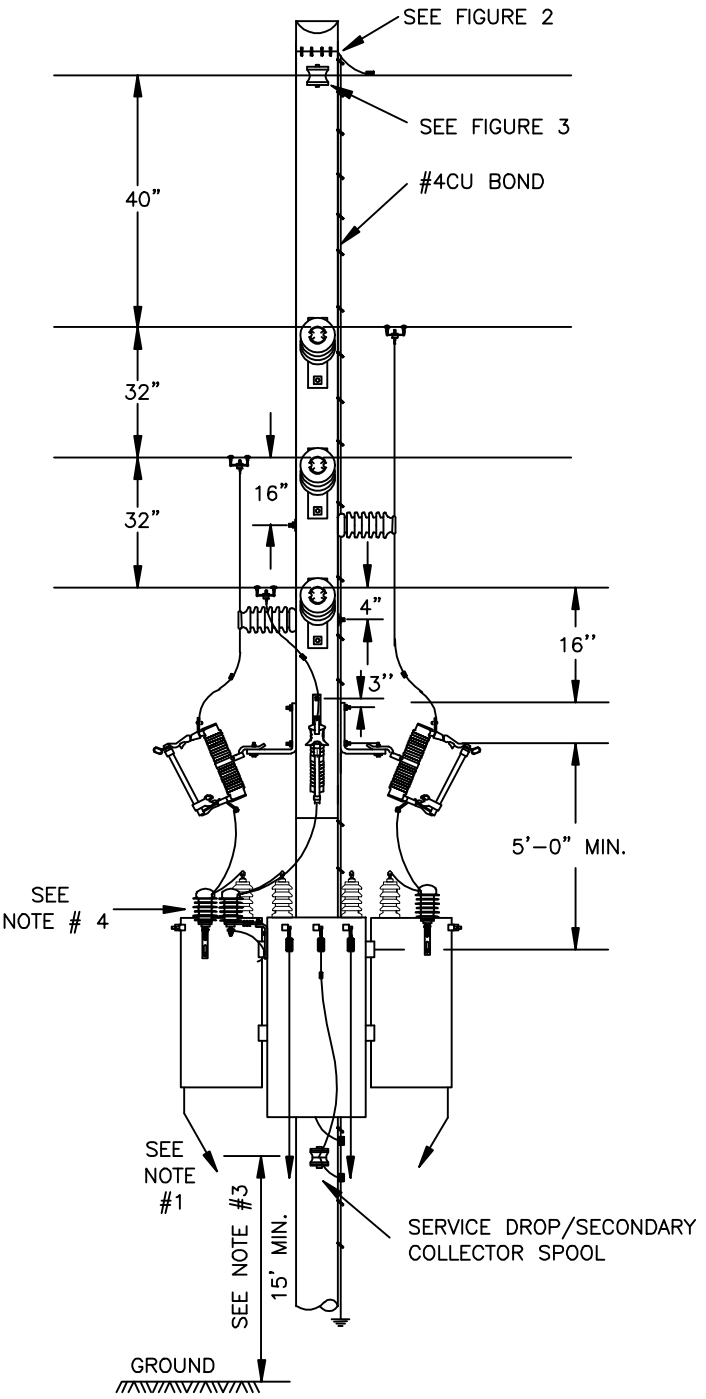
DATE: 6/23/08

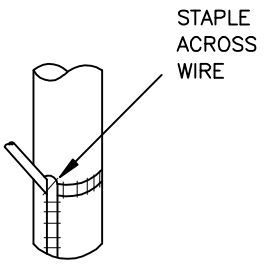
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

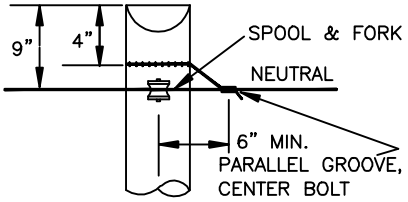
FRAMING DETAIL FOR OVERHEAD GROUND WIRE VERTICAL CONSTRUCTION TYPICAL THREE TRANSFORMER BANK

I-50.1.1





HALF HITCH DETAIL
FIGURE 2



BOND TO NEUTRAL CONNECTION DETAIL
FIGURE 3

NOTES:

1. CONNECT ALL SERVICE NEUTRALS AND ALL HOT LEGS TO TX SECONDARY BUSHING USING MULTITAPS OR TERMINAL FLAGS. (DO NOT CONNECT NEUTRALS TO POLE BOND)
2. FOR TX WIRING AND DIAGRAM SEE I-53.0.0
3. FOR GENERAL DISCUSSION OF OVERHEAD GROUND WIRE CONSTRUCTION AND LOW RESISTANCE GROUNDS, REFER TO G-2.0.2 AND E-1.0.2.
4. MUST MEET NESC REQUIREMENT FOR MIDSPAN CLEARANCE. (DCS SECTION "B")
5. FOR ARRESTER INSTALLATION SEE I-6.0.0

SFHHA 009908
FPL RC-16

SUPERSEDES I-50.1.1 LAST REVISED ON 6-30-93

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	4/23/01	ADD FORK TO OVERHEAD GROUND WIRE AND REPLACE 5" ADAPTER WITH BRACKET	JNM	JES	JJM
2	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	8/9/96	CHANGED POLE BOND & NOTE 1	PMG	RAS	JJM
0	8/9/96	ORIGINAL DRAWING	PMG	RAS	JJM

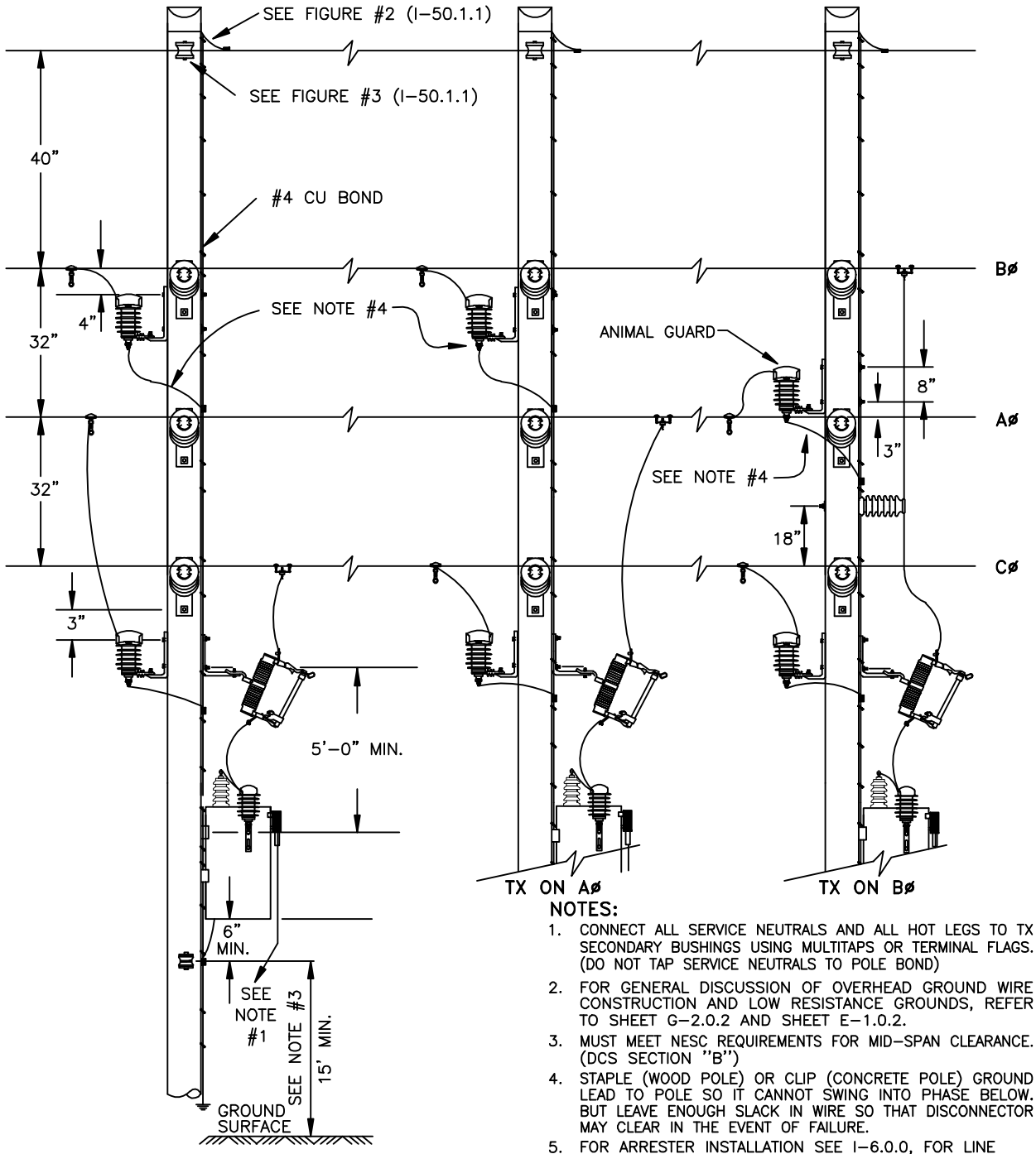
ORIGINATOR: PMG DRAWN BY: RAS

DATE: 8/9/96 APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

FRAMING DETAIL FOR OVERHEAD GROUND WIRE VERTICAL CONSTRUCTION TRANSFORMER ON A,B, OR C PHASE

I-50.1.2



TRANSFORMER ON Cø

NOTES:

1. CONNECT ALL SERVICE NEUTRALS AND ALL HOT LEGS TO TX SECONDARY BUSHINGS USING MULTITAPS OR TERMINAL FLAGS. (DO NOT TAP SERVICE NEUTRALS TO POLE BOND)
2. FOR GENERAL DISCUSSION OF OVERHEAD GROUND WIRE CONSTRUCTION AND LOW RESISTANCE GROUNDS, REFER TO SHEET G-2.0.2 AND SHEET E-1.0.2.
3. MUST MEET NESC REQUIREMENTS FOR MID-SPAN CLEARANCE. (DCS SECTION "B")
4. STAPLE (WOOD POLE) OR CLIP (CONCRETE POLE) GROUND LEAD TO POLE SO IT CANNOT SWING INTO PHASE BELOW. BUT LEAVE ENOUGH SLACK IN WIRE SO THAT DISCONNECTOR MAY CLEAR IN THE EVENT OF FAILURE.
5. FOR ARRESTER INSTALLATION SEE I-6.0.0, FOR LINE ARRESTER INSTALLATION SEE E-1.0.2 (2nd PARAGRAPH)

SUPERSEDES I-50.1.2 LAST REVISED ON 9-30-94

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	10/18/04	ADD ANIMAL GUARD	LFV	ELS	JJM
3	4/23/01	ADD FORK TO OVERHEAD GROUND WIRE AND REPLACE 5" ADAPTER WITH BRACKET	JNM	JES	JJM
2	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
1	8/9/96	CHANGED BOND & NOTE 1	PMG	RAS	JJM
0	8/9/96	ORIGINAL DRAWING	PMG	RAS	JJM

FPL

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: PMG SFHHA 009909 FPL RC-16 DRAWN BY: RAS

DATE: 8/9/96 APPROVED: J.J. MCEVOY SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES NO SCALE

WYE-CLOSED DELTA BANK
13 & 23KV
MODIFIED VERTICAL CONSTRUCTION

I-51.0.0

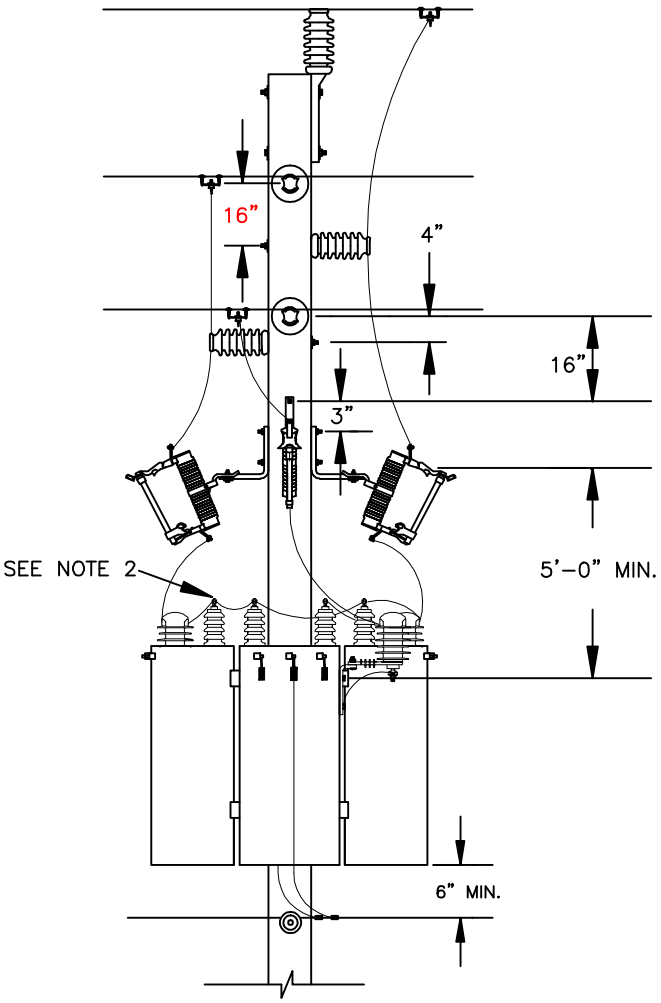


FIGURE 1

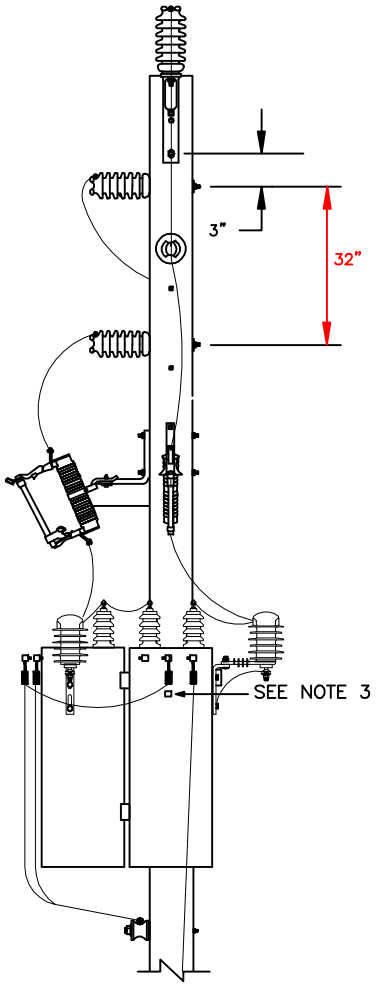


FIGURE 2

NOTES:

1. SEE SHEETS I-53.1.1 FOR SCHEMATIC DIAGRAMS OF TRANSFORMER CONNECTIONS.
2. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
3. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON THE POWER TRANSFORMERS
4. SEE SECTION G-3.0.1 FOR GROUNDING DETAILS.
5. ALL NEW CONSTRUCTION OR REPLACEMENT TRANSFORMER POLES WITH 3-100 KVA OR LARGER TRANSFORMERS TO BE TYPE III-H OR 4.7 KIP SPUN CONCRETE POLES AND ACEESSIBLE BY AERIAL EQUIPMENT. FOR INNACCESSIBLE REPLACEMENT POLE USE A CLASS 2 WOOD POLE OR STRONGER.

SFHHA 009910
FPL RC-16

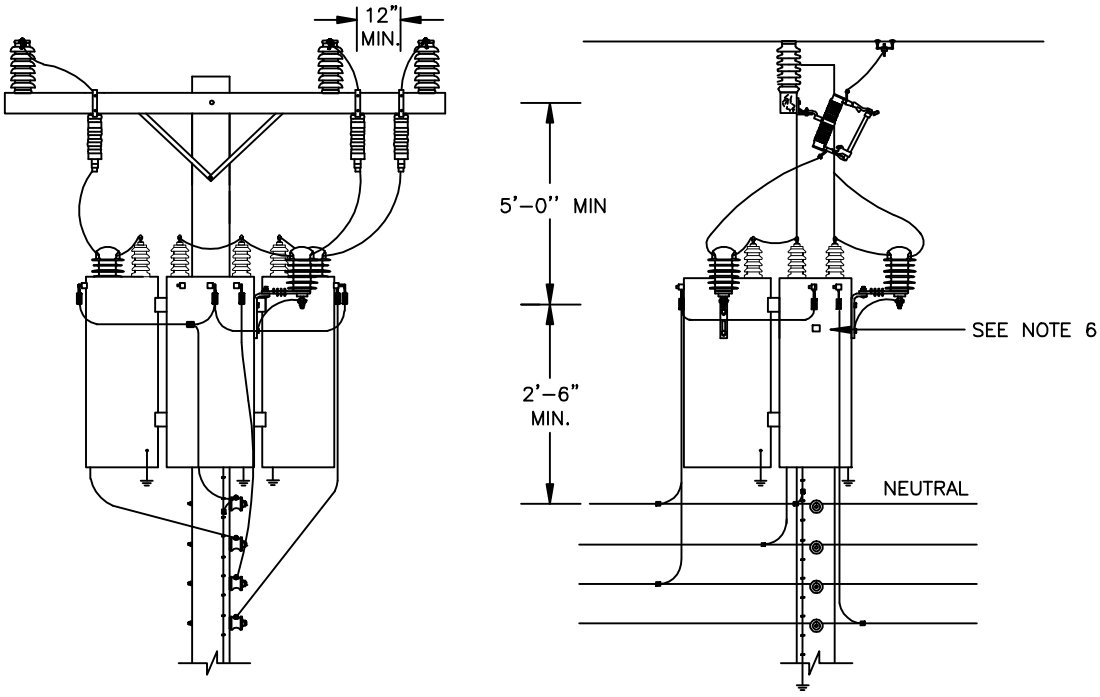
F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	8/5/10	REVISE INSULATOR SPACING	JNM	ELS	JRD
2	3/19/08	INSERTED NOTE 5	RR	ELS	JRD
1	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
0	9/30/94	ORIGINAL DRAWING	ARR	RAS	RJS

ORIGINATOR: ARR
DRAWN BY: RAS
DATE: 9/30/94
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

WYE-WYE BANK
13 & 23KV
CROSSARM CONSTRUCTION

I-52.0.0



FRONT SIDE

NOTES

1. SEE SHEET I-3.2.0 FOR POLE CLASS REQUIRED.
2. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM OF TRANSFORMER CONNECTIONS.
3. SEE PAGE I-3.0.0 FOR DETAILS OF CLUSTER BRACKET INSTALLATION.
4. SEE SECTION "G" FOR GROUNDING DETAILS.
5. IN SALT SPRAY CONTAMINATED AREAS BOND ALL STEEL PINS AND MOUNTING BRACKETS, USE SALT SPRAY ARRESTERS AND CUTOUTS AND INSTALL SALT SPRAY TYPE TRANSFORMERS.
6. THE GROUNDING STRAP FROM THE LOW VOLTAGE NEUTRAL BUSHING TO THE TANK MUST BE REMOVED ON ALL THREE TRANSFORMERS.
7. ALL NEW CONSTRUCTION OR REPLACEMENT TRANSFORMER POLES WITH 3-100 KVA OR LARGER TRANSFORMERS TO BE TYPE III-H OR 4.7 KIP SPUN CONCRETE POLES AND ACEESSIBLE BY AERIAL EQUIPMENT. FOR INNACCESSIBLE REPLACEMENT POLE USE A CLASS 2 WOOD POLE OR STRONGER.

SFHHA 009911
FPL RC-16

SUPERSEDES I-52.0.0 LAST REVISED ON 3-1-89

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	3/19/08	INSERTED NOTE 7	RR	ELS	JRD
3	7/03/01	INCREASED MIN. DIMENSION	GJP	JES	IA
2	9/30/94	ADDED DIMENSION TEXT	ARR	PTH	RJS
1		CHANGED SPOOLS	ARR	EF	RJS
0	5/13/93	REDRAWN FROM MANUAL AND ADDED NEW FRAME	MV	EMH	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

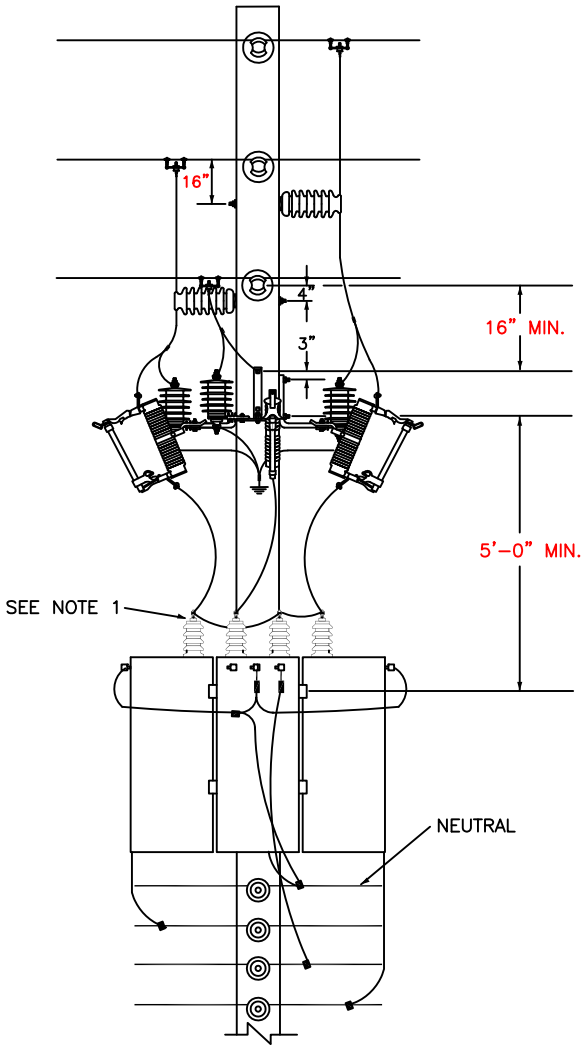
ORIGINATOR: MV DRAWN BY: EMH

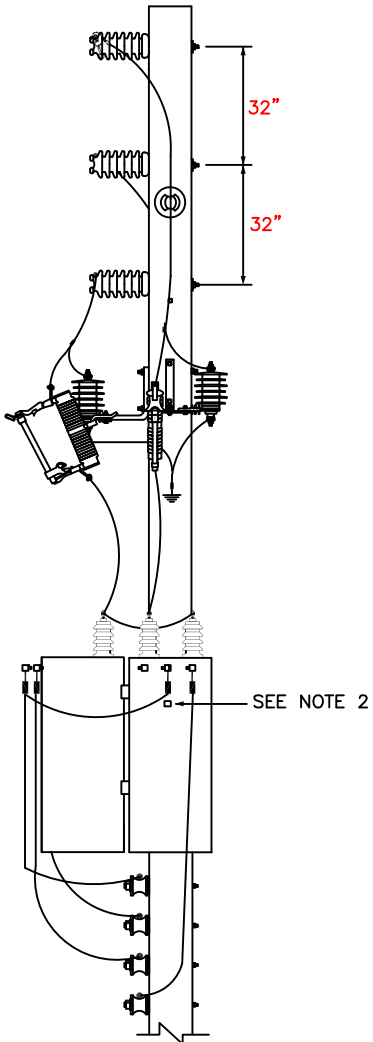
DATE: 5/13/93 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

WYE-WYE BANK, 13 & 23KV VERTICAL CONSTRUCTION (FOR MAINTENANCE ONLY)

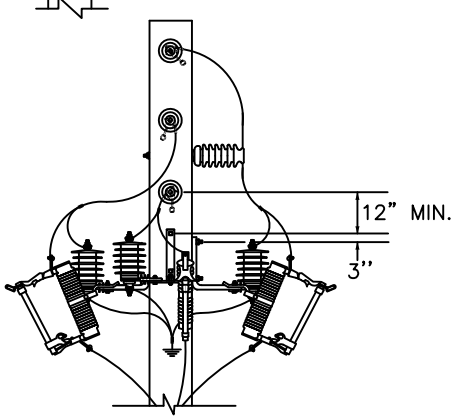
I-52.0.1





SYMBOL ⏚ MEANS TO POLE GROUND

NOTES:
1. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
2. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON ALL THREE TRANSFORMERS.
3. IF PRACTICAL IN RE-FRAMING INCREASE 4' MIN. TO 5'.
4. SEE SHEET I-3.2.0 FOR POLE CLASS REQUIRED.
5. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM ON TRANSFORMER CONNECTIONS.
6. SEE PAGE I-3 FOR DETAILS OF CLUSTER BRACKET INSTALLATION.
7. SEE SECTION "G" FOR GROUNDING DETAILS.
8. IN SALT SPRAY CONTAMINATED AREAS BOND ALL POLE HARDWARE MOUNTING BRACKETS, TO POLE BOND.
9. THIS DRAWING PROVIDED FOR RECORD PURPOSES. IF INSTALLING A TRANSFORMER OR TRANSFORMER BANK ON EXISTING POLE FRAMED VERTICAL, THE LA'S SHOULD BE ON THE TRANSFORMER TANK (SEE I-6.0.0).



ARRANGEMENT ON VERTICAL DEADEND POLE

SFHHA 009912
FPL RC-16

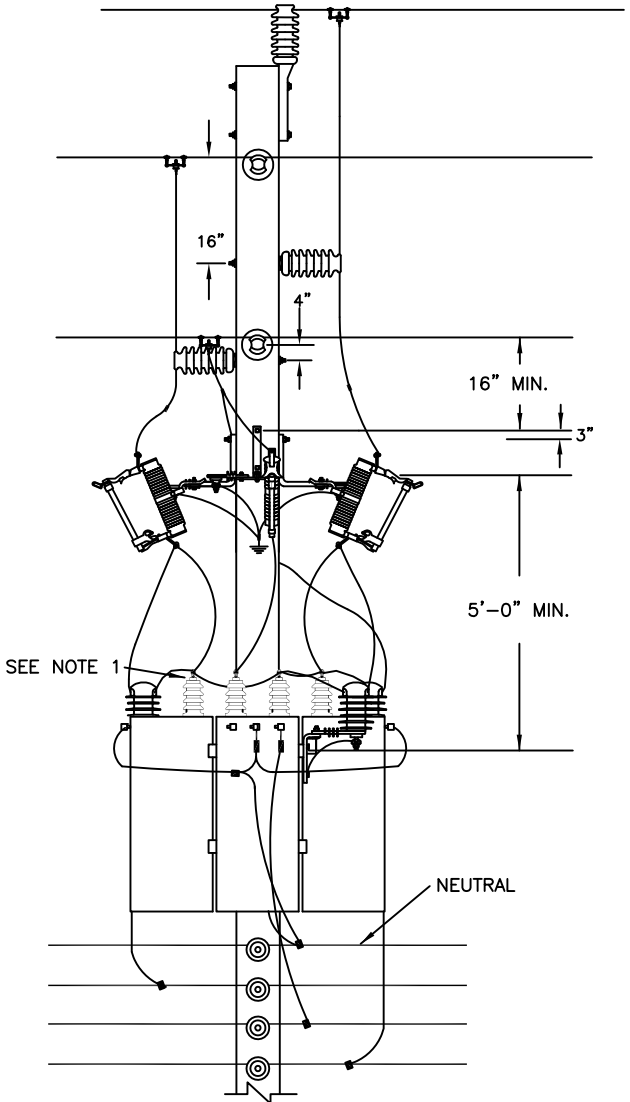
F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

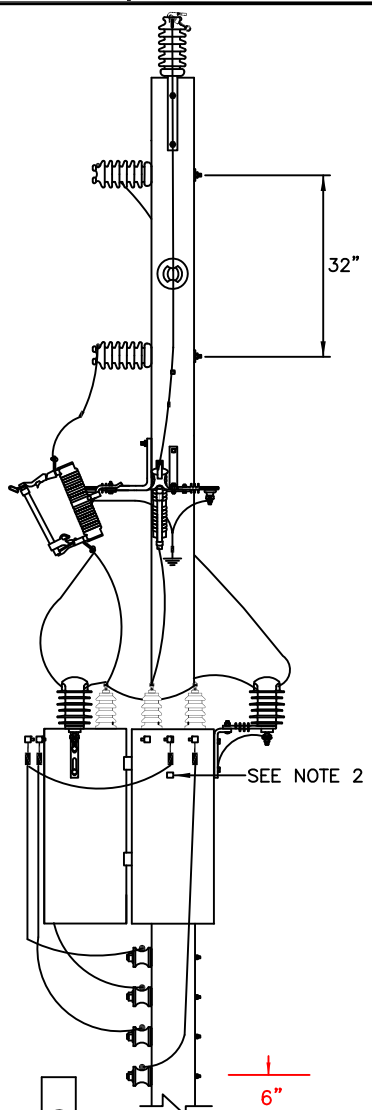
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	6/8/16	UPDATE DRAWING	DGY	ELS	RDH
2	7/05/01	CHANGED MIN. DIMENSIONS IF POLE RE-FRAMED	GJP	JES	IA
1	9/30/94	REVISED NEUT, SEC, & SPOOLS. CHGD TO POLYMER ARRESTERS	ARR	EF	RJS

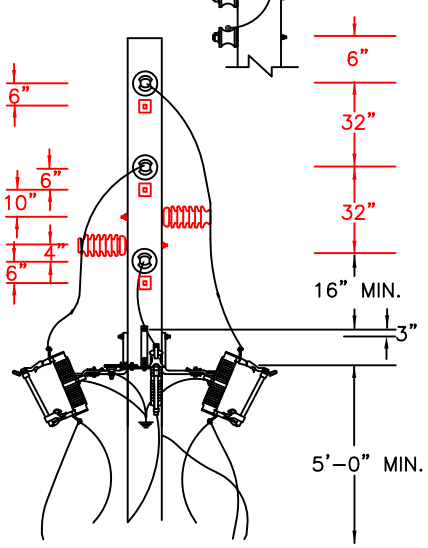
ORIGINATOR: ARR
DRAWN BY: EF
DATE: 1/29/92
APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

WYE-WYE BANK
13 & 23KV
MODIFIED VERTICAL CONSTRUCTION

I-52.0.2







SYMBOL ⏚ MEANS TO POLE GROUND

NOTES:

1. DOUBLE PRIMARY BUSHING TRANSFORMERS ILLUSTRATED, FOR DETAILS OF SINGLE OR DOUBLE BUSHING GROUNDING. SEE SHEET I-5.0.0.
2. THE STRAP CONNECTING THE LOW VOLTAGE NEUTRAL TERMINAL TO THE TANK MUST BE REMOVED ON ALL THREE TRANSFORMERS.
3. SEE SHEET I-3.2.0 FOR POLE CLASS REQUIRED.
4. SEE SHEET I-53.1.1 FOR SCHEMATIC DIAGRAM ON TRANSFORMER CONNECTIONS.
5. SEE PAGE I-3 FOR DETAILS OF CLUSTER BRACKET INSTALLATION.
6. SEE SECTION "G" FOR GROUNDING DETAILS.
7. IN SALT SPRAY CONTAMINATED AREAS BOND ALL BOLTS AND METAL MOUNTING BRACKETS.
8. ALL NEW CONSTRUCTION OR REPLACEMENT TRANSFORMER POLES WITH 3-100 KVA OR LARGER TRANSFORMERS TO BE TYPE III-H OR 4.7 SPUN CONCRETE POLES AND ACCESSIBLE BY AERIAL EQUIPMENT. FOR INACCESSIBLE REPLACEMENT POLE USE A CLASS 2 WOOD POLE OR STRONGER.

FIG. 2

SFHHA 009913
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
9	3/29/16	UPDATE DRAWING	DGY	ELS	RDH
8	1/6/16	UPDATE DRAWING	DGY	ELS	RDH
7	12/1/15	UPDATE DRAWING	DGY	ELS	RDH
6	11/12/15	UPDATE DRAWING	DGY	ELS	RDH
5	6/9/09	REVISE INSULATOR SPACING	JNM	ELS	JRD
4	3/19/08	INSERTED NOTE 8	RR	ELS	JRD

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR

DRAWN BY: MRB

DATE: 9/30/94

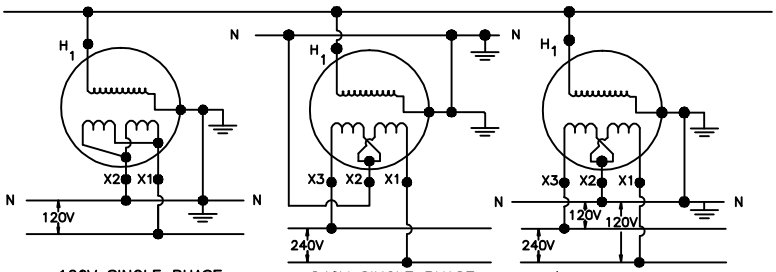
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

DISTRIBUTION TRANSFORMER-CONNECTION
WYE PRIMARY SYSTEM
SINGLE BUSHING TRANSFORMERS

I-53.0.0

PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL TO SOURCE

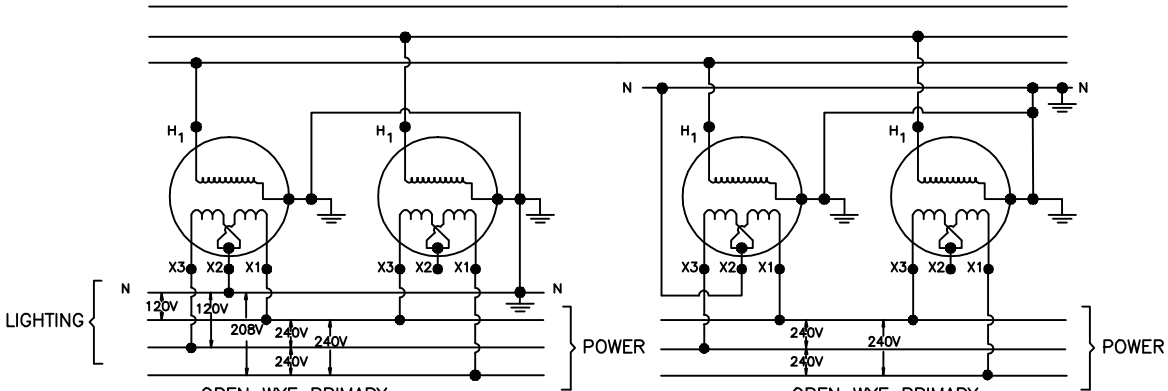


120V SINGLE PHASE
2 WIRE SECONDARY

240V SINGLE PHASE
2 WIRE SECONDARY
(REFERENCE ONLY)

120/240V SINGLE PHASE
3 WIRE SECONDARY

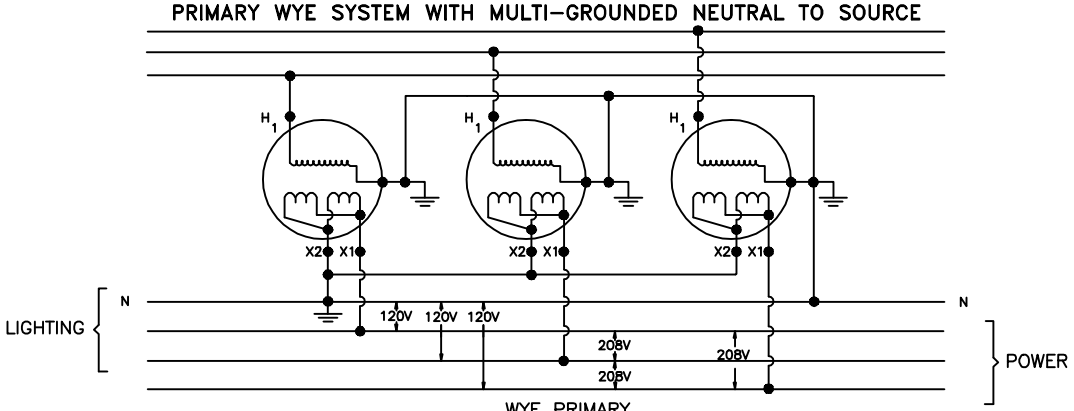
PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL TO SOURCE



OPEN WYE PRIMARY
120/240V THREE PHASE 4 WIRE
OPEN DELTA SECONDARY

OPEN WYE PRIMARY
240V THREE PHASE 3 WIRE
OPEN DELTA SECONDARY
(REFERENCE ONLY)

PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL TO SOURCE



WYE PRIMARY
120/208V THREE PHASE 4 WIRE
WYE SECONDARY

NOTES:

1. FOR TRANSFORMER BANK LOAD CAPABILITIES, SEE DERM SECTION 2.1.8.
2. DIAGRAMS FOR TRANSFORMERS IN A 3 PHASE BANK SHOW TRANSFORMERS OF THE SAME POLARITY. TRANSFORMERS WITH DIFERENT POLARITIES MAY BE USED IF CONNECTED PROPERLY. SEE I-54.1
3. FOR DETAILS OF GROUNDING, SEE SECTION G.
4. WHEN REPLACING STRAIGHT VOLTAGE UNITS IN A BANK WITH DUAL VOLTAGE UNITS PLEASE SEE POLARITY NOTE ON DCS I-4.1.0.

SFHHA 009914
FPL RC-16

SUPERSEDES I-53 LAST REV. ON 6-14-85

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	10/17/05	ADD NOTE # 4	IA	ELS	JRD
1	7/05/01	CORRECTED VOLTAGE LABEL	GJP	JES	IA
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV

DRAWN BY: JRF

DATE: 1/1/90

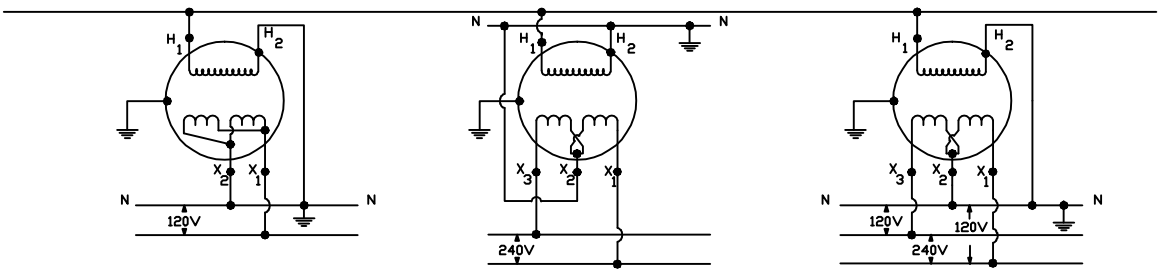
APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT
SUPPORT SERVICES

NO SCALE

DISTRIBUTION TRANSFORMER-CONNECTION
WYE PRIMARY SYSTEM
TWO BUSHING TRANSFORMERS

I-53.1.1

PRIMARY WYE SYSTEM WITH MULTI - GROUNDED NEUTRAL TO SOURCE

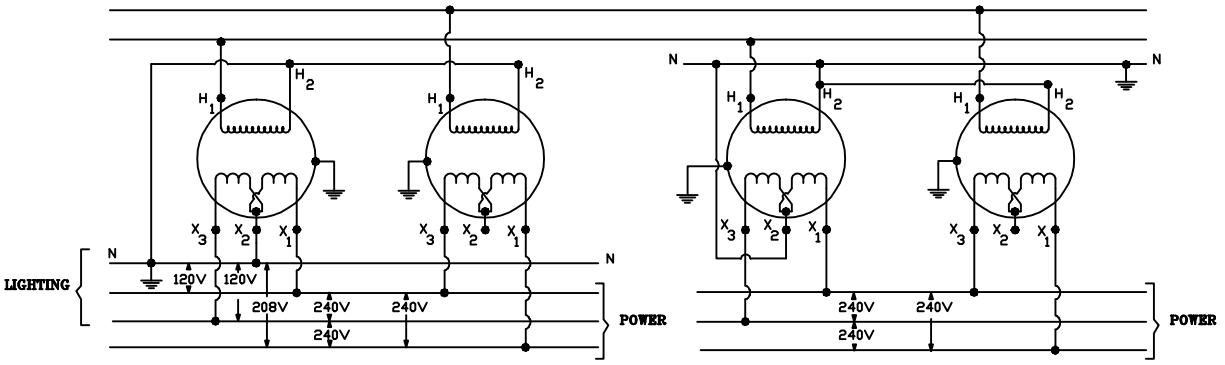


120V SINGLE PHASE
2 WIRE SECONDARY

240V SINGLE PHASE
2 WIRE SECONDARY
(REFERENCE ONLY)

120/240V SINGLE PHASE
3 WIRE SECONDARY

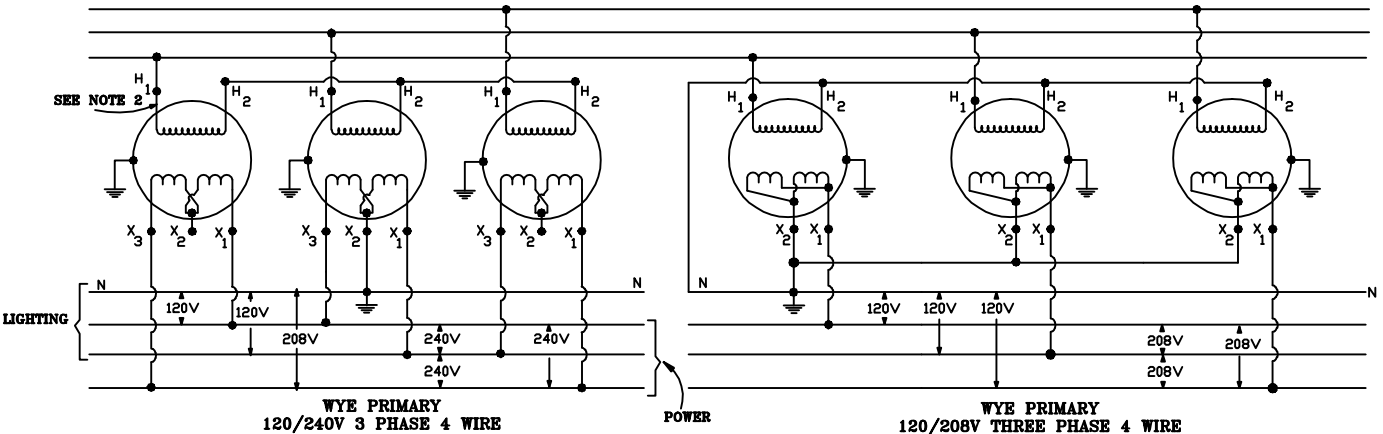
PRIMARY WYE SYSTEM WITH MULTI - GROUNDED NEUTRAL TO SOURCE



OPEN WYE PRIMARY
120/240V THREE PHASE 4 WIRE
OPEN DELTA SECONDARY

OPEN WYE PRIMARY
240V THREE PHASE 3 WIRE
OPEN DELTA SECONDARY
(REFERENCE ONLY)

PRIMARY WYE SYSTEM WITH MULTI - GROUNDED NEUTRAL TO SOURCE



WYE PRIMARY
120/240V 3 PHASE 4 WIRE
CLOSED DELTA SECONDARY
(210 ANGULAR DISPLACEMENT)

WYE PRIMARY
120/208V THREE PHASE 4 WIRE
WYE SECONDARY

NOTES:

1. FOR TRANSFORMER BANK LOAD CAPABILITIES, SEE DERM SECTION 2.1.8.
2. DO NOT GROUND WYE POINT ON PRIMARY SIDE OF WYE-CLOSED DELTA BANKS.
3. DIAGRAMS FOR TRANSFORMERS IN A 3 PHASE BANK SHOW TRANSFORMERS OF THE SAME POLARITY. TRANSFORMERS WITH DIFFERENT POLARITIES MAY BE USED IF CONNECTED PROPERLY. SEE I-54.1..
4. FOR DETAILS OF GROUNDING, SEE SECTION G.

SUPERSEDES I-53A LAST REVISED ON 6-14-85

SFHHA 009915

FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	7/05/01	CORRECTED NEUTRAL LABEL	GJP	JES	IA
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV

DRAWN BY: JRF

DATE: 1/1/90

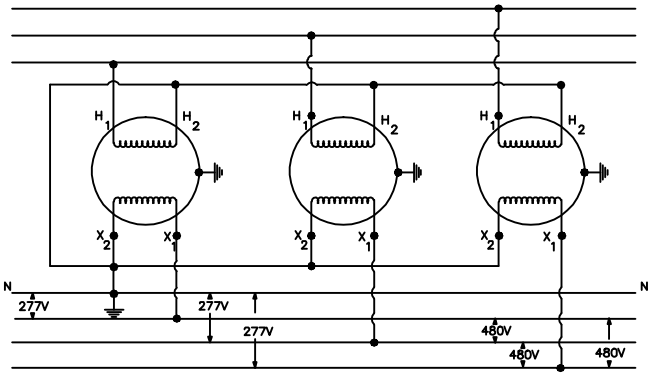
APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT
SUPPORT SERVICES

NO SCALE

DISTRIBUTION TRANSFORMER-CONNECTION WYE PRIMARY SYSTEM TWO BUSHING TRANSFORMERS

I-53.1.2

WYE-WYE

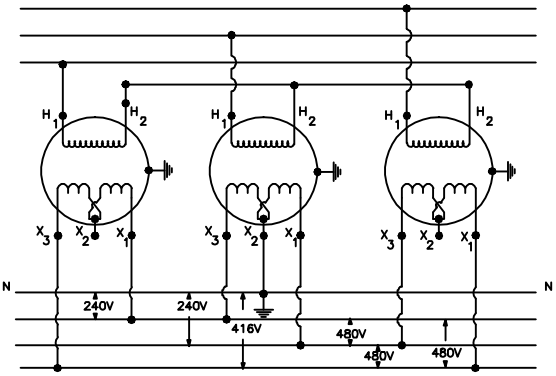


WYE-WYE TRANSFORMER BANK TO GIVE
3 PHASE, 4 WIRE, 277/480 VOLT WYE SERVICE
FROM A WYE PRIMARY SYSTEM.

TRANSFORMER RATINGS:
2400/4160 V. WYE - 277/480 V. WYE
7620/13200 V. WYE - 277/480 V. WYE
13200/22860 V. WYE - 277/480 V. WYE

FIGURE 1

WYE-DELTA



WYE-DELTA TRANSFORMER BANK TO GIVE
3 PHASE, 4 WIRE, 480 VOLT DELTA SERVICE
FROM A WYE PRIMARY SYSTEM.
(210° ANGULAR DISPLACEMENT)

TRANSFORMER RATINGS:
2400/4100 V. WYE - 240/480 V. WYE
7620/13200 V. WYE - 240/480 V. WYE
13200/22860 V. WYE - 240/480 V. WYE

FIGURE 2

NOTES:

1. A 480 VOLT SERVICE SHOULD INCLUDE A GROUNDED CONDUCTOR OF ADEQUATE SIZE TO CARRY ANY ANTICIPATED FAULT CURRENTS.
2. SECONDARY, CASE, SURGE ARRESTER AND COMMON NEUTRAL SHALL BE GROUNDED THROUGH A COMMON POLE GROUND, SEE SECTION G.
3. DIAGRAMS FOR TRANSFORMERS IN A 3 PHASE BANK SHOW TRANSFORMERS OF SAME POLARITY. TRANSFORMERS WITH DIFFERENT POLARITIES MAY BE USED IF CONNECTED PROPERLY. SEE I-54.1.
4. WHEN REPLACING STRAIGHT VOLTAGE UNITS IN A BANK WITH DUAL VOLTAGE UNITS PLEASE SEE POLARITY NOTE ON DCS I-4.1.0.

SUPERSEDES I-53A SHEET 2 LAST REVISED ON 6-14-85

SFHHA 009916
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

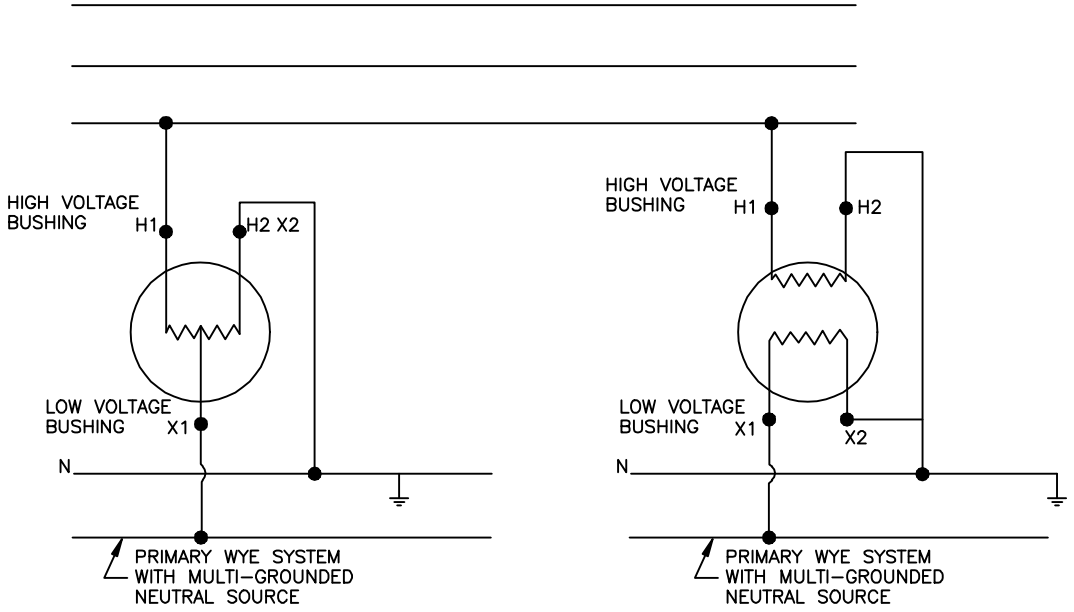
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	10/17/05	ADD NOTE # 4	IA	ELS	JRD
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV
DRAWN BY: JRF
DATE: 1/1/90
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

SINGLE ø AUTOTRANSFORMER AND STEPDOWN TX CONNECTIONS

I-53.1.3

PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL SOURCE



1ø AUTOTRANSFORMER

TRANSFORMER VOLTAGE RATINGS:
13200/22860Y-7620/13200Y

1ø STEPDOWN TRANSFORMER

TRANSFORMER VOLTAGE RATINGS:
7620/13200Y-2400/4160Y
13200/22860Y-2400/4160Y
13200/22860Y-7620/13200Y
7620/13200Y x 13200/22860Y-2400/4160Y

NOTES:

1. DIAGRAM FOR STEPDOWN TRANSFORMER SHOWS A SUBTRACTIVE POLARITY TRANSFORMER. THE LOCATION OF X1 AND X2 IS REVERSED FOR ADDITIVE POLARITY.
2. ON STEPDOWN TRANSFORMER TIE H2 AND X2 TOGETHER AND GROUND.

SFHHA 009917
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

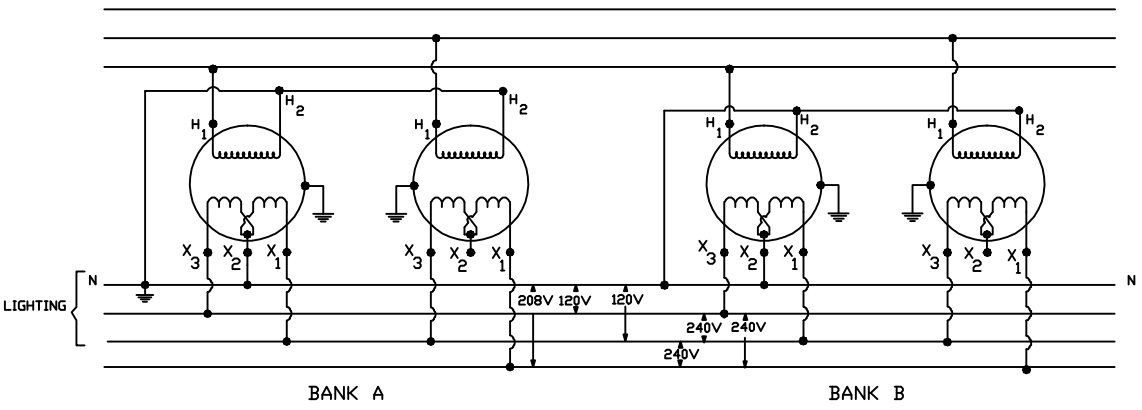
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	9/30/94	CONVERTED TO CAD	RJS	J.H.	RJS
0	1/29/92	ORIGINAL DRAWING	MV	DJB	RJS

ORIGINATOR: MV
DRAWN BY: DJB
DATE: 1/29/92
APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING AND OPERATIONS SERVICES
NO SCALE

DISTIRBUTION TRANSFORMER CONNECTIONS
PARALLELING
THREE PHASE TRANSFORMER BANK

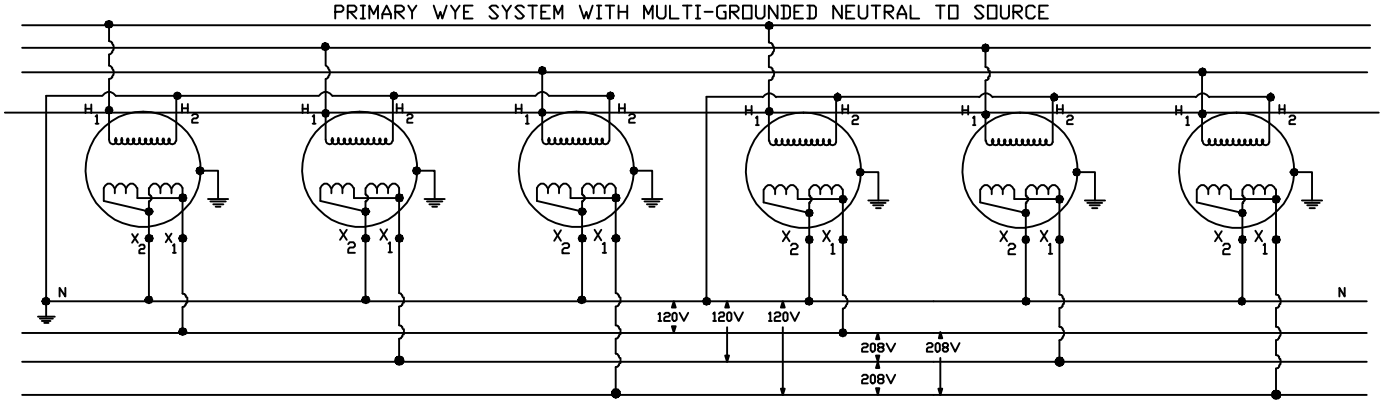
I-54.0.0

PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL TO SOURCE



OPEN WYE PRIMARY
120/240, 3 PHASE, 4 WIRE
OPEN DELTA SECONDARY
PARALLEL OPERATION

PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL TO SOURCE



WYE PRIMARY
120/208, 3 PHASE, 4 WIRE
WYE SECONDARY
PARALLEL OPERATION

NOTES:

1. TO PARALLEL 3 PHASE BANKS, THE THREE CONDITIONS LISTED UNDER 1 PHASE PARALLELING I-54 MUST BE MET. IN ADDITION, THE ANGULAR DISPLACEMENT OF THE BANKS MUST BE THE SAME. A DELTA-DELTA BANK CANNOT BE PARALLELED WITH A WYE-DELTA BANK.

2. ALL CORRESPONDING MARKED TERMINALS OF ONE BANK SHOULD BE CONNECTED IDENTICAL TO THE OTHER BANK.

SFHHA 009918
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

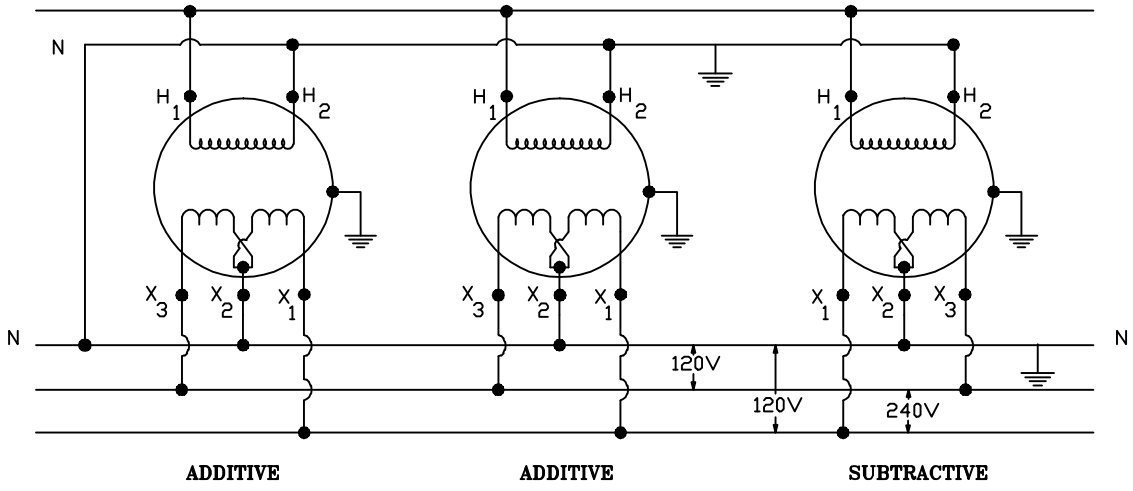
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV
DRAWN BY: JRF
DATE: 1/1/90
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

DISTRIBUTION TRANSFORMER CONNECTIONS PARALLELING SINGLE PHASE TRANSFORMER BANK

I-54.1.0

PRIMARY WYE SYSTEM WITH MULTI-GROUNDED NEUTRAL TO SOURCE



ADDITIVE **ADDITIVE** **SUBTRACTIVE**

ONE OR MORE SINGLE PHASE TRANSFORMERS OF EITHER ADDITIVE OR SUBTRACTIVE POLARITY, OF THE SAME OR DIFFERENT KVA RATINGS MAY BE PARALLELED SUCCESSFULLY IF CONNECTED AS SHOWN ABOVE AND IF THE FOLLOWING CONDITIONS ARE MET:

1) VOLTAGE RATINGS ARE IDENTICAL (PRIMARY & SECONDARY)
2) PERCENT IMPEDANCE OF EACH IS WITHIN 7.5% OF THE OTHERS
3) TAP SETTINGS ARE IDENTICAL

IMPEDANCE EXAMPLE:

If one of the transformers has an impedance of 3%, the other two must have impedance between 3.22% and 2.77% (3% ± 7-1/2%).

NOTES:

1. PARALLELED TRANSFORMERS MUST BE CONNECTED TO THE SAME PRIMARY PHASE. IF ON SAME POLE, ONE PRIMARY FUSE SHOULD BE USED WITH AMPERE RATING DETERMINED BY THE TOTAL KVA RATING OF ALL THE TRANSFORMERS.

2. CONNECT AND ENERGIZE THE FIRST TRANSFORMER. CONNECT AND ENERGIZE THE SECOND TRANSFORMER EXCEPT FOR THE HOT LEGS. TEST THE VOLTAGE BETWEEN THE SECONDARY AND THE LEADS OF THE SECOND TRANSFORMER BEFORE MAKING PERMANENT CONNECTIONS. (ANY SIGNIFICANT VOLTAGE EXCEEDING APPROXIMATELY 10 VOLTS INDICATES A WRONG CONNECTION.)

SFHHA 009919
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	3/15/91	CHG PER IMP FROM 75% TO 7.5%	JV	HD	RKC
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

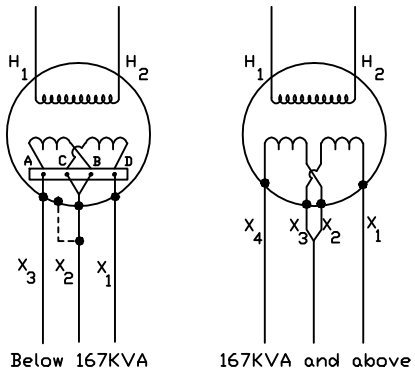
ORIGINATOR: JV DRAWN BY: JRF

DATE: 1/1/90 APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

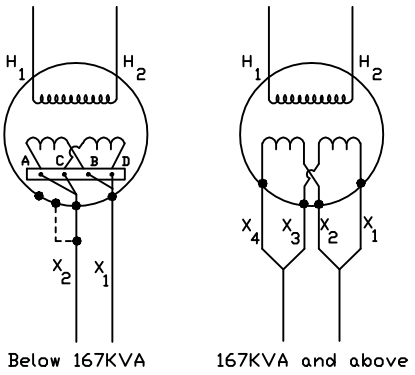
POLARITY AND TERMINAL MARKINGS STANDARD
SINGLE & TWO BUSHING TRANSFORMERS

I-55.0.0



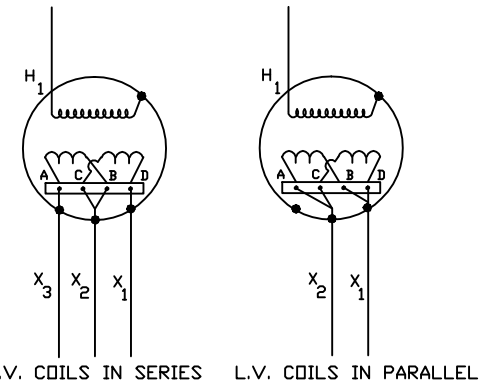
EQUIVALENT DIAGRAMS
LOW VOLTAGE COILS IN SERIES

FIG. 1



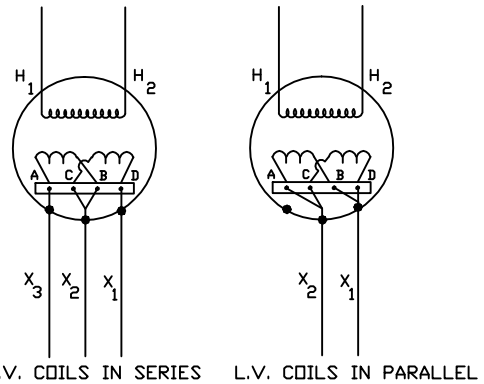
EQUIVALENT DIAGRAMS
LOW VOLTAGE COILS IN PARALLEL

FIG. 2



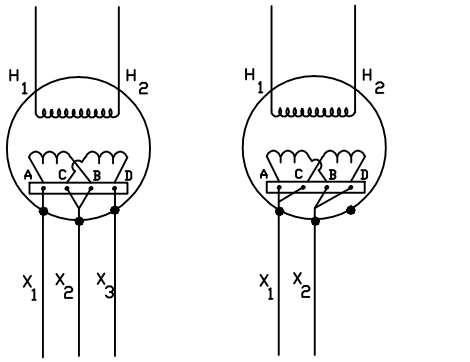
SINGLE BUSHING 7620V TRANSFORMERS
ADDITIVE POLARITY

FIG. 3



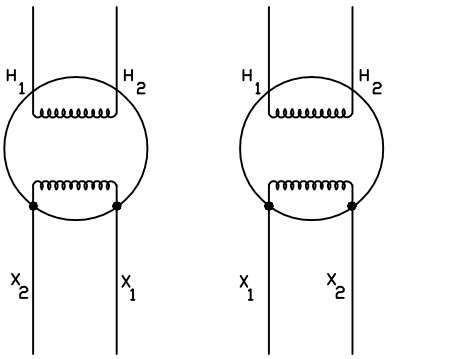
TWO BUSHING 2400 OR 7620V TRANSFORMERS
ADDITIVE POLARITY

FIG. 4



TWO BUSHING 13,200V TRANSFORMERS
SUBTRACTIVE POLARITY

FIG. 5



TRANSFORMERS WITH SINGLE LOW
VOLTAGE RATING

FIG. 6

SFHHA 009920
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV
DRAWN BY: JRF
DATE: 1/1/90
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

WYE-WYE TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-56.0.1

SINGLE PHASE KVA	TRANSFORMER BANK KVA	SECONDARY VOLTAGE	FULL LOAD AMPS	NUMBER AND SIZE OF CABLES ON EACH TRANSFORMER SECONDARY TERMINAL (SEE NOTE 1 THROUGH 4)		WIRING DIAGRAM TRANSFORMER FIGURE NUMBER		TYPE OF SECONDARY BUSHING (Aerial Transformer)
				COPPER	ALUMINUM	7620V	7620 x 13200V AND 13200V	
25	75	120/208 277/480	208 90	4/0 #2	350 350	3 6	4 5	CLAMP
37-1/2	112 - 1/2	120/208 277/480	313 135	500 #2	350 350	3 6	4 5	CLAMP
50	150	120/208 277/480	417 180	500 4/0	2-350 350	3 6	4 5	CLAMP
75	225	120/208 277/480	625 271	2-500 4/0	2-350 350	3 6	4 5	CLAMP
100	300	120/208 277/480	833 361	2-500 500	2-750 750	3 6	4 5	CLAMP
167	500	120/208 277/480	1389 601	3-500 2-500	3-750 2-750	2 6	1 5	SPADE
250	750	120/208 277/480	2083 902	4-500 2-500	4-750 2-750	1 5	1 5	SPADE
333	1000	120/208 277/480	2778 1203	4-750 2-750	5-1000 3-750	1 5	1 5	SPADE
500	1500	277/480	1804	3-750	3-1000	5	5	SPADE
667	2000	277/480	2408	4-750	4-1000	5	5	SPADE
833	2500	277/480	3010	4-750	5-1000	5	5	SPADE

NOTES:

1. FOR SECONDARY CONNECTION OF SINGLE PHASE AERIAL TYPE TRANSFORMERS INSTALLED IN VAULTS OR MATS, REFER TO I-4.5.
2. IF IT IS ADVANTAGEOUS TO UTILIZE EXISTING 1500 kcmil OR 750 kcmil COPPER SECONDARY CABLES, THE AMPACITY OF 750 kcmil IS 1.3 X THE AMPACITY OF 500 kcmil AND THE AMPACITY OF 1500 kcmil IS 2 X THE AMPACITY OF 500 kcmil.
3. THE CABLE AMPACITY IS SIZED FOR 130% OF RATED FULL LOAD AMPS. THIS WILL ALLOW FOR 100% LOADING OF THE NEXT SIZE TRANSFORMER.
4. INSULATE LIVE SECONDARY BUSHINGS WHEN REQUIRED. REFER TO I-66.0.0 AND UN-23.0.0.

SFHHA 009921
FPL RC-16

SUPERSEDES 1-56 1 OF 2 LAST REVISED ON 7-1-88

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	8/4/03	UPDATE CHART AND NOTES	RCB	ELS	IA
2	7/05/01	COR. # CU-CBLS FOR 250 KVA TX	GJP	JES	IA
1	9/30/94	UPDATED REVISION	RAS	JRG	RKC
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: IA DRAWN BY: JRF

DATE: 1/1/90 APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

WYE-WYE TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-56.0.2

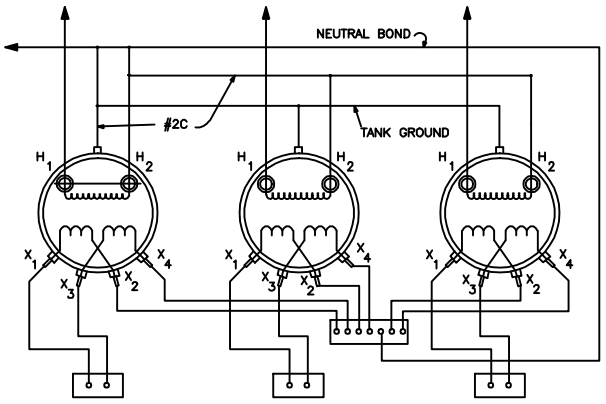


FIGURE 1 (SUBTRACTIVE)

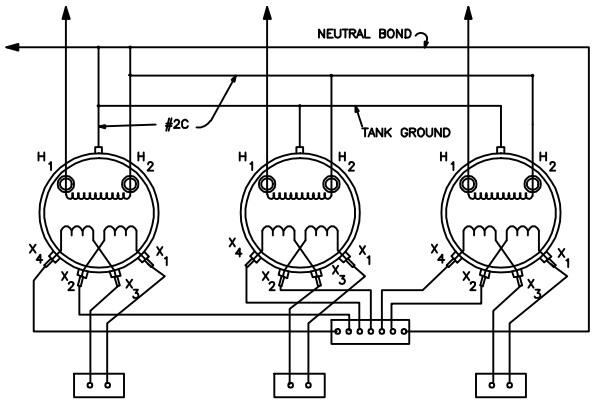


FIGURE 2 (ADDITIVE)

FOUR SECONDARY BUSHING TRANSFORMERS

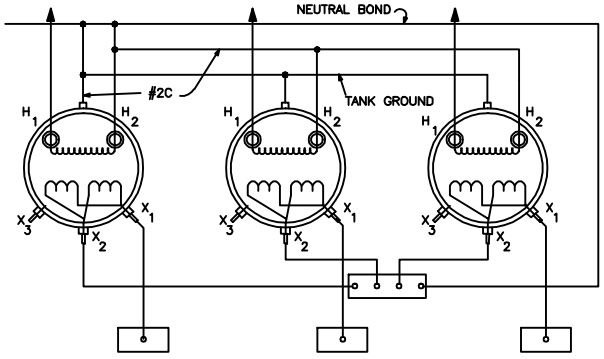


FIGURE 3 (ADDITIVE)

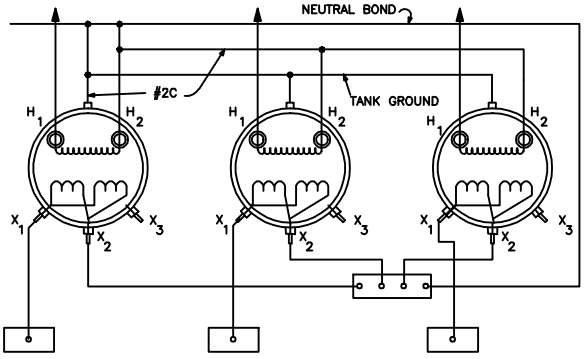


FIGURE 4 (SUBTRACTIVE)

THREE SECONDARY BUSHING TRANSFORMERS

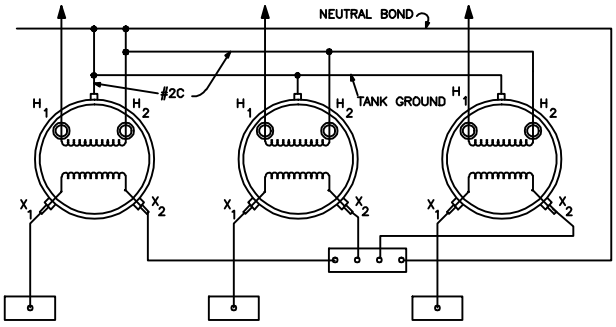


FIGURE 5 (SUBTRACTIVE)

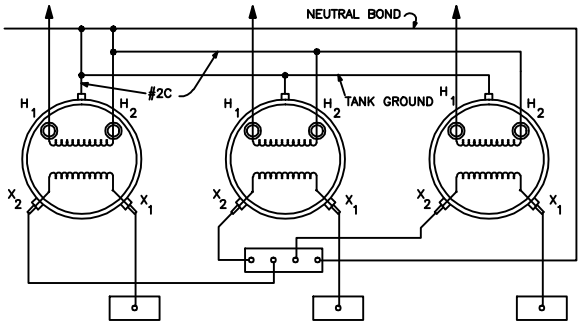


FIGURE 6 (ADDITIVE)

TWO SECONDARY BUSHING TRANSFORMERS

SFHHA 009922
FPL RC-16

SUPERSEDES I-56.0.2 LAST REVISED ON 1-1-90

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	9/30/94	CHANGED FORMAT	RAS	RAS	RJS
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV DRAWN BY: JRF

DATE: 1/1/90 APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

WYE-DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-57.0.1

INSTRUCTIONS

1. USE DERM SECTION 2.1.8 TO SELECT TRANSFORMER SIZE.
2. OBTAIN TRANSFORMER POLARITY FROM TABLE 1 (KVA VERSUS PRIMARY VOLTAGE).
3. OBTAIN NUMBER OF SECONDARY BUSHINGS FROM TABLE 1.
4. AFTER POLARITY AND NUMBER OF SECONDARY BUSHING IS KNOWN, SELECT THE CORRESPONDING WIRING DIAGRAM.
5. SELECT THE NUMBER AND SIZE OF CONDUCTORS FOR EACH SECONDARY TERMINAL FROM TABLE 1.
6. IF PHASE RELATIONS ARE NEEDED, REFER TO TABLE 2.

TABLE I

SINGLE PHASE KVA OF EACH TRANSFORMER	SECONDARY VOLTAGE	FULL LOAD AMPERES	NUMBER AND SIZE OF CABLE ON EACH SECONDARY TERMINAL AWG OR kcmil				POLARITY		NUMBER OF SECONDARY BUSHINGS	TYPE OF SECONDARY BUSHINGS
			COPPER		ALUMINUM		7620V TRANSFORMER	DUAL VOLTAGE 7620 X 13200V AND 13200V TRANSFORMERS		
			NEW	MIN	NEW	MIN				
25	120/240	104	#2	#2	350	#4	ADDITIVE	SUBTRACTIVE	3	CLAMP
37.5	120/240	156	#4/0	#2	350	#1/0	ADDITIVE	SUBTRACTIVE	3	CLAMP
50	120/240	208	#4/0	#4/0	350	350	ADDITIVE	SUBTRACTIVE	3	CLAMP
75	120/240	312	500	#4/0	350	350	ADDITIVE	SUBTRACTIVE	3	CLAMP
100	120/240	416	500	500	750	350	ADDITIVE	SUBTRACTIVE	3	CLAMP
167	120/240	696	2-500	500	2-750	750	ADDITIVE	SUBTRACTIVE	4	SPADE
250	120/240	1042	2-500	2-500	2-750	2-750	SUBTRACTIVE	SUBTRACTIVE	4	SPADE
333	120/240	1388	3-500	2-500	3-750	2-750	SUBTRACTIVE	SUBTRACTIVE	4	SPADE
500	120/240	2083	4-500	3-500	3-1000	3-750	SUBTRACTIVE	SUBTRACTIVE	4	SPADE

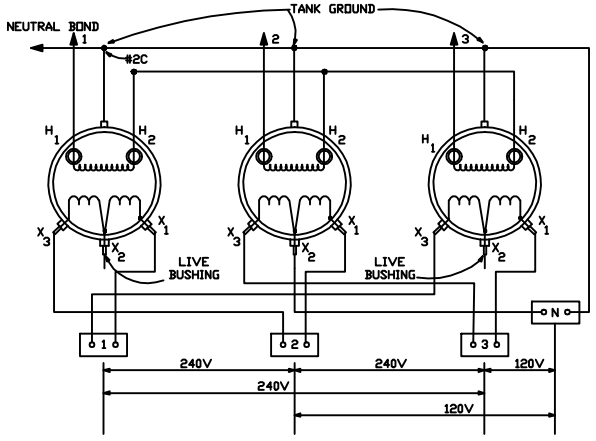


FIGURE 1 (ADDITIVE)

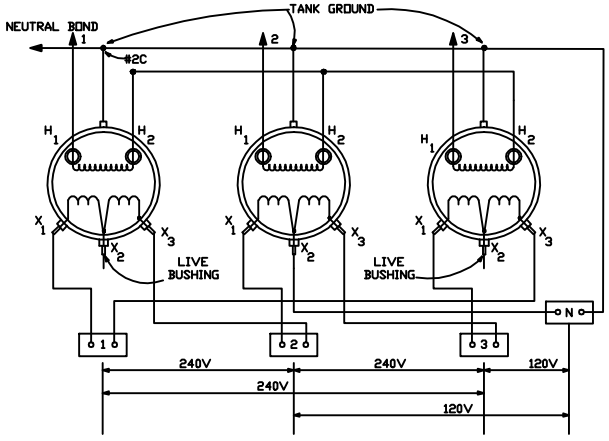


FIGURE 2 (SUBTRACTIVE)

TRANSFORMERS WITH 3 SECONDARY BUSHINGS

NOTES:

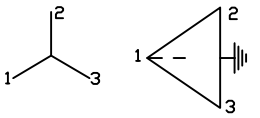
1. FOR SECONDARY CONNECTIONS OF SINGLE PHASE AERIAL TYPE TRANSFORMERS INSTALLED IN VAULTS OR MATS, REFER TO I-4.5.
2. IF IT IS ADVANTAGEOUS TO UTILIZE EXISTING 1500 kcmil OR 750 kcmil COPPER SECONDARY CABLE, THE AMPACITY OF 750 kcmil IS 1.3X THE AMPACITY OF 500 kcmil AND THE AMPACITY OF 1500 kcmil IS 2X THE AMPACITY OF 500 kcmil.
3. "NEW" COLUMN SHOWS SECONDARY CABLES TO BE USED FOR NEW INSTALLATIONS.
4. "MIN" COLUMN MAY BE USED WHEN INCREASING TRANSFORMER SIZE IN EXISTING INSTALLATIONS.
5. INSULATE LIVE SECONDARY BUSHINGS WHEN REQUIRED, REFER TO I-66 AND UN-23.
6. THIS CLOSED DELTA CONNECTION SHOULD BE USED ONLY WHEN IT IS NOT POSSIBLE TO SERVE THE CUSTOMER WITH A WYE-WYE OR OPEN DELTA CONNECTION. AT 23 KV, THE USE OF THE CLOSED DELTA CONNECTION MUST BE SEVERELY RESTRICTED DUE TO FERRORESONANCE PROBLEMS. SEE DERM SECTION 2.9.2.
7. DO NOT GROUND WYE POINT ON PRIMARY SIDE OF WYE-CLOSED DELTA BANK.
8. EXAMPLE FOR A-B-C PRIMARY PHASE SEQUENCE WITH 30° ANGULAR DISPLACEMENT.

TABLE II
SEE NOTE 8

PRIMARY			SECONDARY			
POWER TRANS 1	LIGHTING TRANS 2	POWER TRANS 3	1	2	3	N
A	B	C	a	b	c	N
B	C	A	b	c	a	N
C	A	B	c	a	b	N

WHERE A LEADS a BY 30°
B LEADS b BY 30°
C LEADS c BY 30°

(NEMA STANDARD CONNECTION)



SUPERSEDES I-57 SHEET 1 LAST REVISED ON 7-1-88

SFHHA 009923
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV
DRAWN BY: JRF
DATE: 1/1/90
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

WYE-DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-57.0.2

TRANSFORMERS WITH 4 SECONDARY BUSHINGS

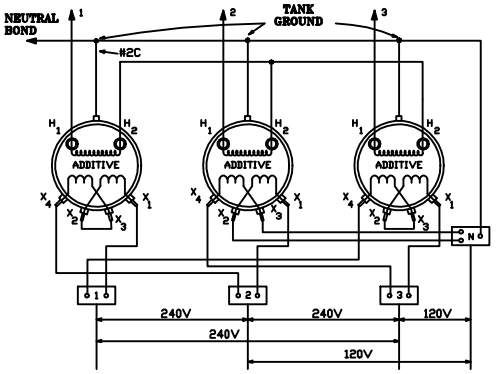


FIGURE 3

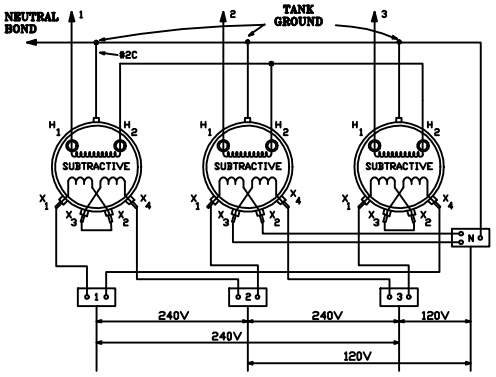


FIGURE 4

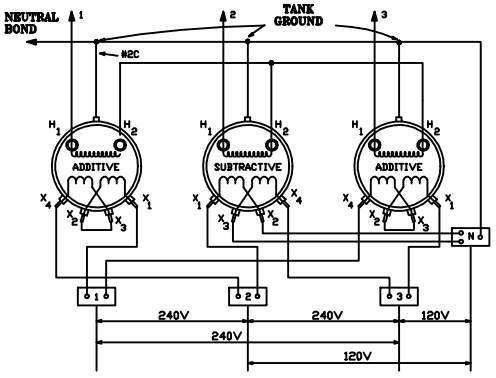


FIGURE 5

TRANSFORMERS-ONE WITH 4 AND TWO WITH 3 SECONDARY BUSHINGS

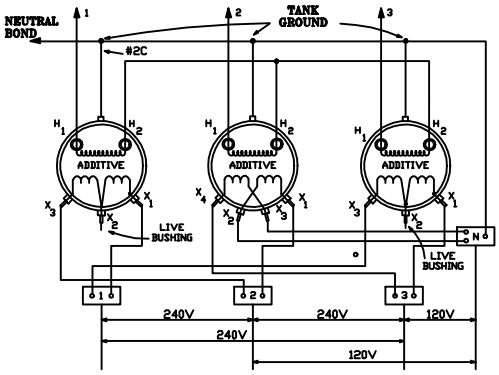


FIGURE 6

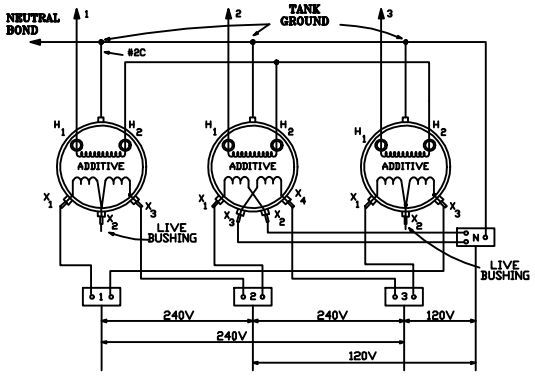


FIGURE 7

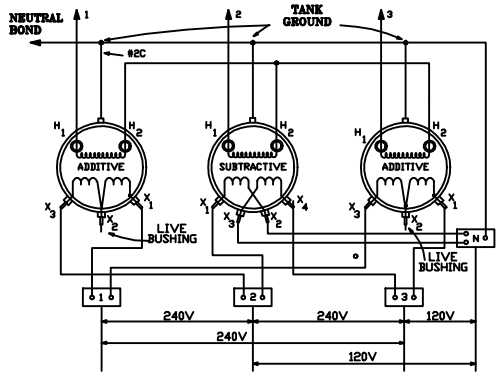


FIGURE 8

SUPERSEDES I-57 SHEET 2 LAST REVISED ON 7-1-88

SFHHA 009924
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV

DRAWN BY: JRF

DATE: 1/1/90

APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-58.0.1

INSTRUCTIONS

1. USE DERM SECTION 2.1.8 TO SELECT TRANSFORMER SIZE.
2. OBTAIN TRANSFORMER POLARITY FROM TABLE 1 (KVA VERSUS PRIMARY VOLTAGE).
3. OBTAIN NUMBER OF SECONDARY BUSHINGS FROM TABLE 1.
4. AFTER POLARITY AND NUMBER OF SECONDARY BUSHING IS KNOWN, SELECT THE CORRESPONDING WIRING DIAGRAM.
5. SELECT THE NUMBER AND SIZE OF CONDUCTORS FOR EACH SECONDARY TERMINAL FROM TABLE 1.
6. IF PHASE RELATIONS ARE NEEDED, REFER TO TABLE 2.

TABLE I

SINGLE PHASE KVA OF EACH TRANSFORMER	SECONDARY VOLTAGE	FULL LOAD AMPERES	NUMBER AND SIZE OF CABLE ON EACH SECONDARY TERMINAL AWG OR kcmil				POLARITY		NUMBER OF SECONDARY BUSHINGS	TYPE OF SECONDARY BUSHINGS
			COPPER		ALUMINUM		7620V TRANSFORMER	DUAL VOLTAGE 7620 X 13200V AND 13200V TRANSFORMERS		
			NEW	MIN	NEW	MIN				
25	120/240	104	#2	#2	350	#4	ADDITIVE	SUBTRACTIVE	3	CLAMP
37.5	120/240	156	#4/0	#2	350	#1/0	ADDITIVE	SUBTRACTIVE	3	CLAMP
50	120/240	208	#4/0	#4/0	350	350	ADDITIVE	SUBTRACTIVE	3	CLAMP
75	120/240	312	500	#4/0	350	350	ADDITIVE	SUBTRACTIVE	3	CLAMP
100	120/240	416	500	500	750	350	ADDITIVE	SUBTRACTIVE	3	CLAMP
167	120/240	696	2-500	500	2-750	750	ADDITIVE	SUBTRACTIVE	4	SPADE
250	120/240	1042	2-500	2-500	2-750	2-750	SUBTRACTIVE	SUBTRACTIVE	4	SPADE
333	120/240	1388	3-500	2-500	3-750	2-750	SUBTRACTIVE	SUBTRACTIVE	4	SPADE
500	120/240	2083	4-500	3-500	3-1000	3-750	SUBTRACTIVE	SUBTRACTIVE	4	SPADE

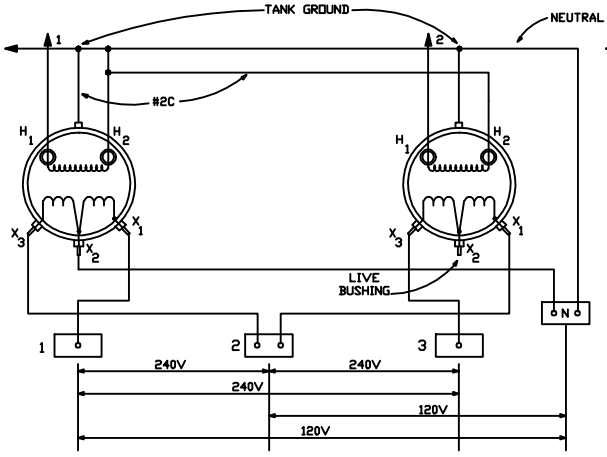


FIGURE 1 (ADDITIVE)

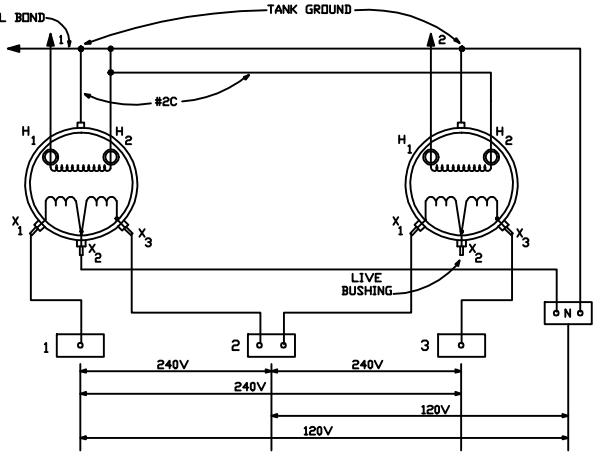


FIGURE 2 (SUBTRACTIVE)

NOTES:

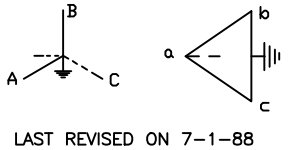
1. FOR SECONDARY CONNECTIONS OF SINGLE PHASE AERIAL TYPE TRANSFORMERS INSTALLED IN VAULTS OR MATS, REFER TO I-4.5.
2. IF IT IS ADVANTAGEOUS TO UTILIZE EXISTING 1500 kcmil OR 750 kcmil COPPER SECONDARY CABLE, THE AMPACITY OF 750 kcmil IS 1.3X THE AMPACITY OF 500 kcmil AND THE AMPACITY OF 1500 kcmil IS 2X THE AMPACITY OF 500 kcmil.
3. "NEW" COLUMN SHOWS SECONDARY CABLES TO BE USED FOR NEW INSTALLATIONS.
4. "MIN" COLUMN MAY BE USED WHEN INCREASING TRANSFORMER SIZE IN EXISTING INSTALLATIONS.
5. INSULATE LIVE SECONDARY BUSHINGS WHEN REQUIRED, REFER TO I-66 AND UN-23.
6. EXAMPLE FOR A-B-C SEQUENCE.
7. WHEN REPLACING STRAIGHT VOLTAGE UNITS IN A BANK WITH DUAL VOLTAGE UNITS PLEASE SEE POLARITY NOTE ON DCS I-4.1.0.

TABLE II
SEE NOTE 6

PRIMARY		SECONDARY			
LIGHTING TRANS 1	POWER TRANS 2	1	2	3	N
A	B	a	b	c	N
B	C	b	c	a	N
C	A	c	a	b	N

WHERE A LEADS a BY 30°
B LEADS b BY 30°
C LEADS c BY 30°

(NEMA STANDARD CONNECTION)



SUPERSEDES I-58 SHEET 1 LAST REVISED ON 7-1-88

SFHHA 009925
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	10/17/05	ADD NOTE # 7	IA	ELS	JRD
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV
DRAWN BY: JRF
DATE: 1/1/90
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING
NO SCALE

OPEN WYE OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE AERIAL TRANSFORMERS VAULT INSTALLATIONS

I-58.0.2

TRANSFORMERS WITH 4 SECONDARY BUSHINGS

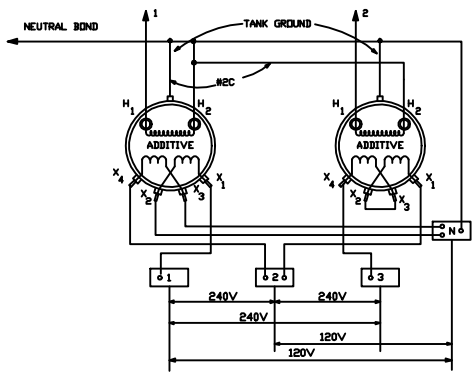


FIGURE 3

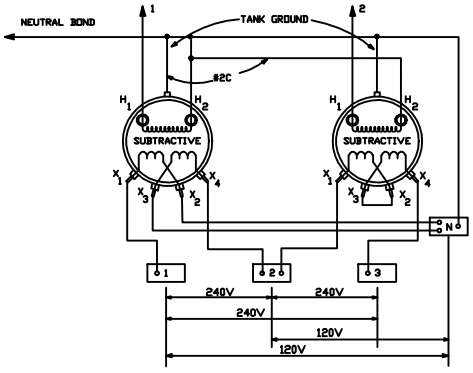


FIGURE 4

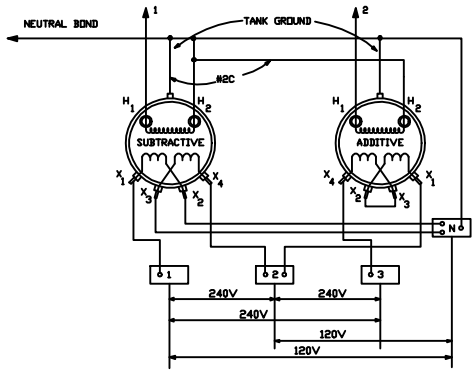


FIGURE 5

TRANSFORMERS-ONE WITH 3 AND ONE WITH 4 SECONDARY BUSHINGS

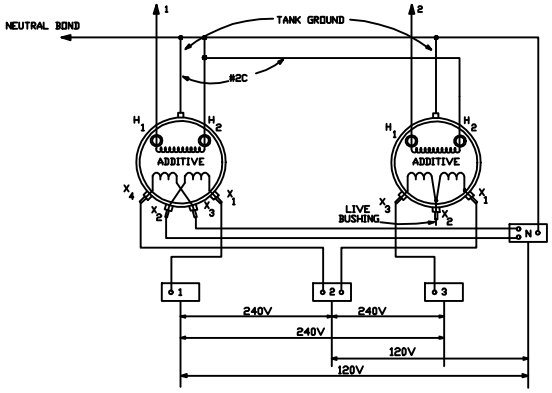


FIGURE 6

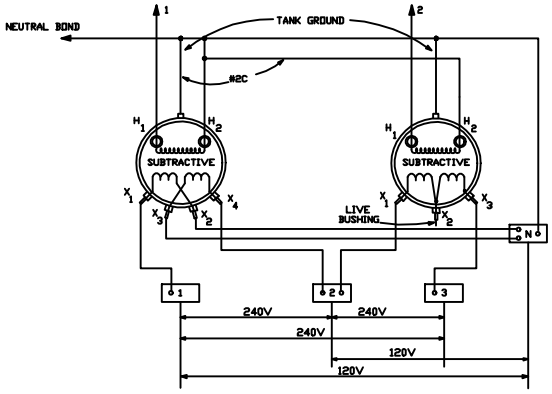


FIGURE 7

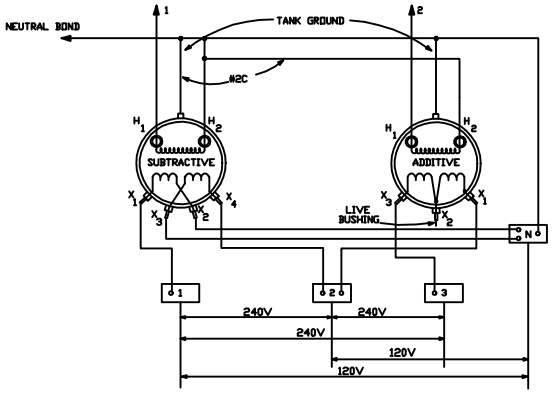


FIGURE 8

NOTE:
WHEN REPLACING STRAIGHT VOLTAGE UNITS IN A BANK WITH DUAL VOLTAGE UNITS PLEASE SEE POLARITY NOTE ON DCS I-4.1.0.

SUPERSEDES I-58 SHEET 2 LAST REVISED ON 7-1-88

SFHHA 009926
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	10/17/05	ADD NOTE	IA	ELS	JJM
1	5/13/04	UPDATE DRAWING	IA	ELS	JJM
0	1/1/90	ORIGINAL DRAWING	JV	JRF	RKC

ORIGINATOR: JV

DRAWN BY: JRF

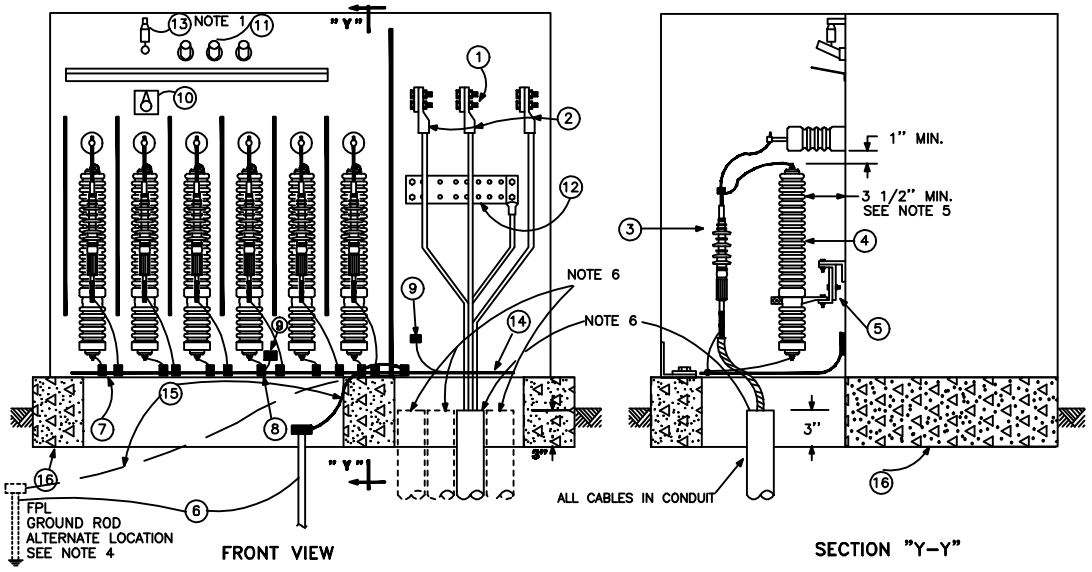
DATE: 1/1/90

APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

CONNECTIONS FOR 3ø LIVE FRONT PADMOUNT TRANSFORMER WITH SECTIONALIZING SWITCH (FOR MAINTENANCE ONLY)

I-59.0.0

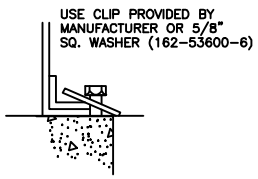


FRONT VIEW

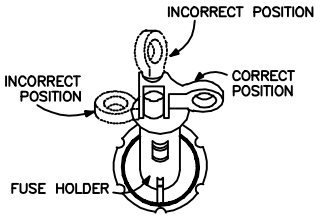
SECTION "Y-Y"

ITEM	QUANTITY	DESCRIPTION	M&S NO.
1	–	TERMINAL LUG, NUMBER, SIZE & METAL AS REQ.	VARIOUS
2	–	SERVICE CABLES	VARIOUS
3	6	COLD SHRINK TERMINATOR – SEE UH-34.0.2	163-51000-4
4	–	ARRESTER 18KV (USED AT LOOP OPEN POINT ONLY)	334-21500-4
5		ARRESTER MOUNTING DETAIL (NOTE 3)	
	2	ANGLE SLOTTED, ADJUSTABLE (PER LA)	161-41400-8
	1	BOLT, 1/2" x 1-1/2", w/nut (PER LA)	140-56100-1
	2	BOLT, 1/2" x 1", w/nut (PER LA)	161-48100-7
			161-45200-7
	3	WASHER, ROUND LOCK & CONNECTIONS AS REQUIRED	145-38100-1
	3	PER STANDARD G-2	145-36100-1
6	AS REQ.	COPPER CLAD GROUND ROD & CONNECTIONS AS REQ. PER STANDARDS G-2	130-61300-9
7	7 WITH LA'S	CONNECTOR, COMPRESSION #4 TO #6 KEARNEY	120-11100-1
		BURNDY	120-13200-8
8	12	CONNECTOR, COMPRESSION #4 TO #4 KEARNEY	120-11200-7
		BURNDY	120-13300-4
9	2	TRANSFORMER TANK GROUND STUD	120-33800-5
10	1*	LOADBREAK LOOP SWITCH (INTEGRAL PART OF TRANSFORMER)	–
11	3*	BAY-O-NET FUSE	–
12	1	SECONDARY NEUTRAL BUS BAR (WHEN SPECIFIED BY JOB)	121-30100-8
13	1*	PRESSURE RELIEF DEVICE	470-80200-1
14	10 FT	WIRE #4C. BARE	112-30900-0
15	2 FT	WIRE #6C. BARE	112-30800-3
16	1	PAD, TRANSFORMER, 3 PHASE, UX-114	162-24680-0

* FURNISHED WITH TRANSFORMER



HOLD DOWN DETAIL "A"



END VIEW OF FUSE HOLDER DETAIL "B"

NOTES:

1. VENT PRESSURE RELIEF DEVICE TO EQUALIZE PRESSURE INSIDE TANK BEFORE REMOVING FUSE (REFER TO UJ-10). BE SURE THAT FUSE IS FULLY INSERTED WITH HOOK STICK RING LATCHED AND POINTED TO THE RIGHT. SEE DETAIL "B".
2. FOR FUSE REPLACEMENT SEE UJ-10.
3. 18KV ARRESTERS ARE USED WITH DUAL VOLTAGE OR 23 KV TRANSFORMERS. OLD STYLE LIVE FRONT 7620/13200 VOLT TRANSFORMERS SHALL USE 10KV ARRESTERS.
4. MAKE CERTAIN OF CABLE LOCATION BEFORE INSTALLING GROUND RODS TO AVOID DRIVING THE ROD THROUGH ANY EXISTING CABLES.
5. METAL FRAMING BRACKETS NOT REQUIRED IF TRANSFORMER BRACKET IS LOCATED TO PROVIDE 3-1/2" MINIMUM CLEARANCE FROM ENERGIZED PART OF THE ARRESTERS TO GROUND AND 1" MINIMUM CLEARANCE FROM TRANSFORMER BUSHING.
6. SEAL OR PLUG ALL DUCTS REFER TO UN-29.0.0.
7. SEE UV-12.0.0 FOR MARKING UNDERGROUND CABLES.

SUPERSEDES I-59.0.0 LAST REVISED ON 4-16-91

SFHHA 009927
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	7/28/01	UPDATED NOTES	GJP	JES	IA
1	9/30/94	ADDED NEW BORDER AND REF TO "FOR MAINTENANCE ONLY"	RJO	RAS	RJS
0	9/30/94	ORIGINAL DRAWING	RJO	RAS	RJS

ORIGINATOR: RJO DRAWN BY: RAS

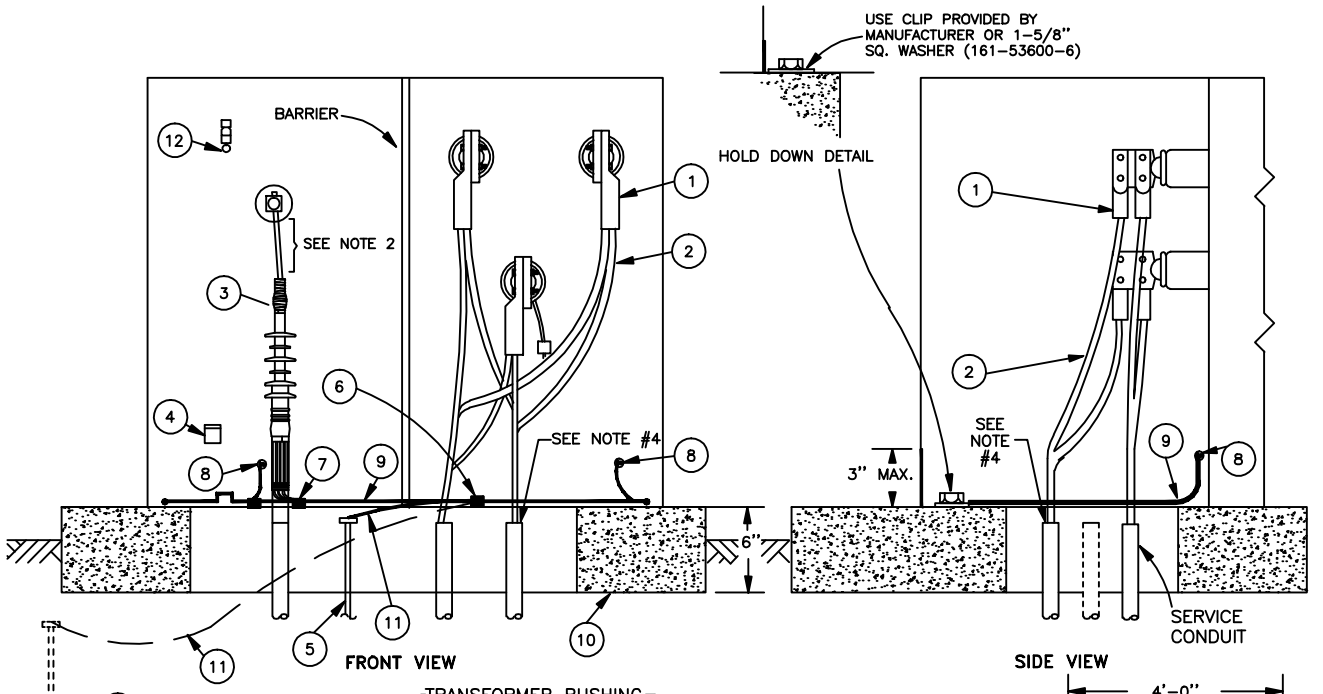
DATE: 9/30/94 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

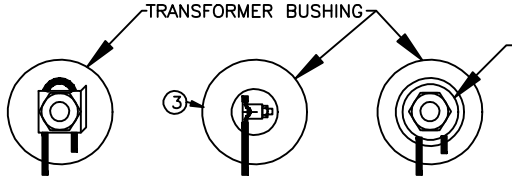
NO SCALE

I-60.0.0 TYPICAL CONNECTIONS SINGLE ø, LIVE FRONT PADMOUNT TRANSFORMER WITHOUT* SECTIONALIZING SWITCH (MAINTENANCE ONLY)

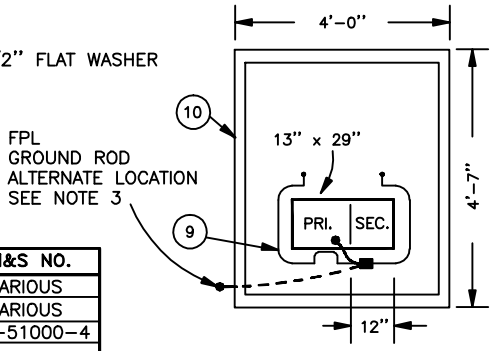
I-60.0.0

(DEADFRONT INSTALLATION PREFERRED, SEE I-62.0.0)





PRIMARY CONNECTIONS DETAIL



25 THROUGH 167 KVA CONCRETE PAD PLAN VIEW

ITEM	QUANTITY	DESCRIPTION		M&S NO.
1	–	TERMINAL LUG, NUMBER, SIZE & METAL AS REQ.		VARIOUS
2	–	SERVICE CABLES		VARIOUS
3	2	COLD SHRINK TERMINATOR – SEE UH 34		163-51000-4
4	–	ARRESTER MOUNTING FACILITY		–
5	AS REQ.	COPPER CLAD GROUND ROD & CONNECTIONS AS REQ. PER STANDARD G-2		130-61300-9
6	1	CONNECTOR, COMPRESSION #4 TO #6	KEARNEY	120-11100-1
			BURNDY	120-13200-8
7	1	CONNECTOR, COMPRESSION #4 TO #4	KEARNEY	120-11200-7
			BURNDY	120-13300-4
8	2	TRANSFORMER TANK GROUND STUD		120-33800-5
9	7 FT	WIRE #4C. BARE		112-30900-0
10	1	PAD, TRANSFORMER, SINGLE PHASE, UX-117		162-24800-4
11	2 FT	WIRE #6C. BARE		112-30800-3
12	1 – NOTE 1	PRESSURE RELIEF VALVE		470-80200-1

* SEE DWG. C-11.0.0 FOR S&C SECTIONALIZING SWITCH OR C-12.0.0 FOR MCGRAW EDISON SECTIONALIZING SWITCH IN PAD-MOUNTED TRANSFORMER.

NOTES:

1. PRESURE RELIEF VALVE FURNISHED WITH TRANSFORMER.
2. LEAVE SPACE FOR GROUNDING.
3. MAKE CERTAIN OF CABLE LOCATION BEFORE INSTALLING GROUND RODS TO AVOID DRIVING THE GROUND ROD THROUGH ANY EXISTING CABLES.
4. SEAL OR PLUG ALL DUCTS REFER TO UN-29.0.0.
5. SEE UV-12.0.0 FOR MARKING UNDERGROUND CABLES.

SFHHA 009928
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	7/31/01	CHANGED DRAWING TITLE	GJP	JES	IA
1	9/30/94	REV TERMINATORS TO COLD SHRINK TYPE.	RJO	JED	RJS
0	9/30/94	ORIGINAL DRAWING	JC	JRF	RJS

ORIGINATOR: JC

DRAWN BY: JRF/HO

DATE: 9/30/94

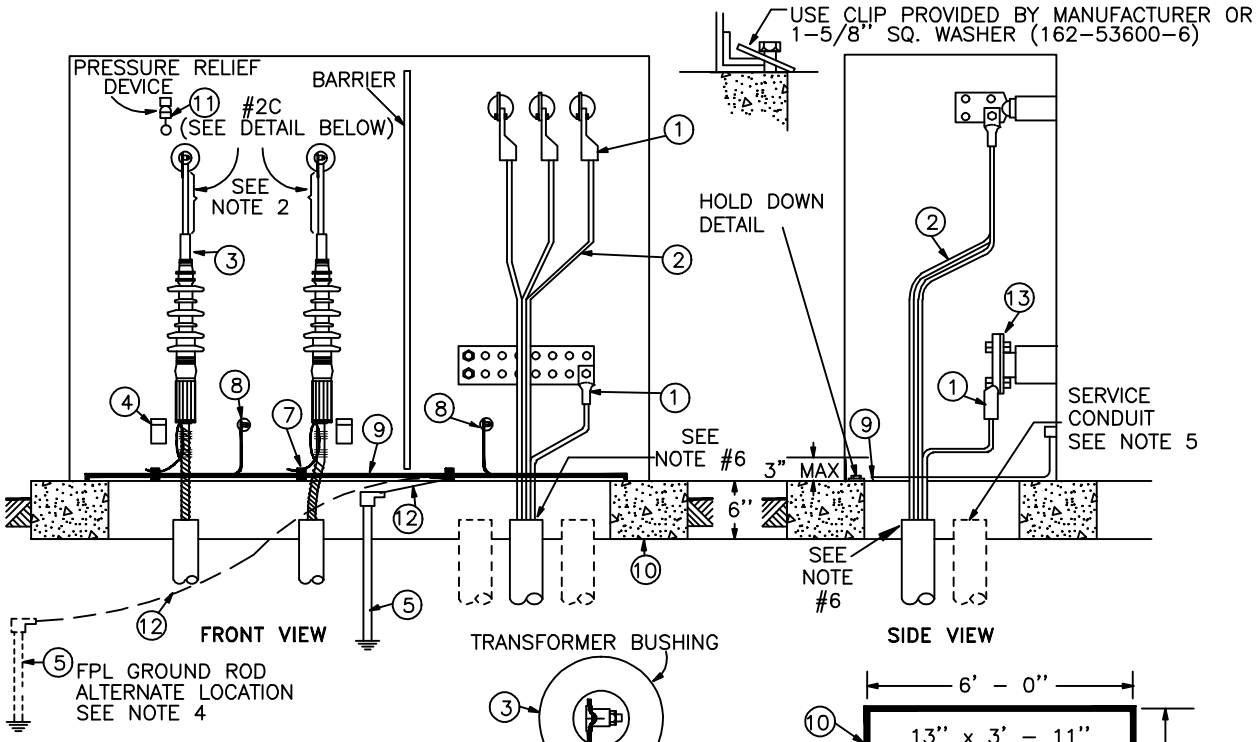
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

TYPICAL CONNECTIONS, LIVE FRONT DUPLEX PADMOUNT TX WITHOUT* SECTIONALIZING SWITCH (MAINTENANCE ONLY)

I-61.0.0

(DEAD FRONT INSTALLATION PREFERRED I-68.0.2)



NOTES:

1. NORMALLY FURNISHED WITH TRANSFORMER.
2. LEAVE SPACE FOR GROUNDING.
3. ITEM 13 IS REQUIRED WHEN CONNECTING MORE THAN 4 NEUTRAL CONDUCTORS.
4. BEFORE INSTALLING GROUND ROD IN ALTERNATE LOCATION MAKE CERTAIN THAT THE AREA IS FREE OF ANY CABLES. DO NOT DRIVE GROUND RODS INTO ANY CABLES.
5. INSTALL ALL PRIMARY, SECONDARY/SERVICE CABLE IN CONDUIT.
6. SEAL OR PLUG ALL DUCTS REFER TO UN-29.0.0
7. SEE UV-12.0.0 FOR MARKING UNDERGROUND CABLES.

ITEM	QUANTITY	DESCRIPTION	M&S NO.
1	-	TERMINAL LUG, NUMBER, SIZE & METAL AS REQ.	-
2	-	SERVICE CABLES	-
3	2	COLD SHRINK TERMINATOR - SEE UH-34.0.2	163-51000-4
4	-	ARRESTER MOUNTING FACILITY	-
5	AS REQ.	COPPER CLAD GROUND ROD & CONNECTION AS REQ. PER STANDARD G-2	130-61300-9
6	1	CONNECTOR, COMPRESSION #4 TO #6 KEARNEY / BURNDY	120-11100-1 / 120-13200-8
7	2	CONNECTOR, COMPRESSION #4 TO #4 KEARNEY / BURNDY	120-11200-7 / 120-13300-4
8	2	TRANSFORMER TANK GROUND STUD	120-33800-5
9	9 FT.	WIRE #4C. BARE	112-30900-0
10	1	PAD, TRANSFORMER, 3 PHASE, UX-116.1.4	162-24700-8
11	1 - NOTE 1	PRESSURE RELIEF VALVE	470-80200-1
12	1 FT	WIRE #6C. BARE	112-30800-3
13	1 Ea. NOTE 3	SECONDARY NEUTRAL BUS BAR	121-30100-8

* SEE DWG. C-11.0.0 FOR S&C SECTIONALIZING SWITCH OR C-12.0.0 FOR McGRAW EDISON SECTIONALIZING SWITCH IN PAD-MOUNTED TRANSFORMER.

SFHHA 009929
FPL RC-16

SUPERSEDES I-61.0.0 LAST REVISED ON 3-15-91

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	8/01/01	CHANGE (TITLE, NOTES, & CHART)	GJP	JES	IA
1	9/30/94	REVISED TERMINATORS TO COLD SHRINK TYPE	RJO	RQF	RJS
0	9/30/94	ORIGINAL DRAWING	RJO	RQF	RJS

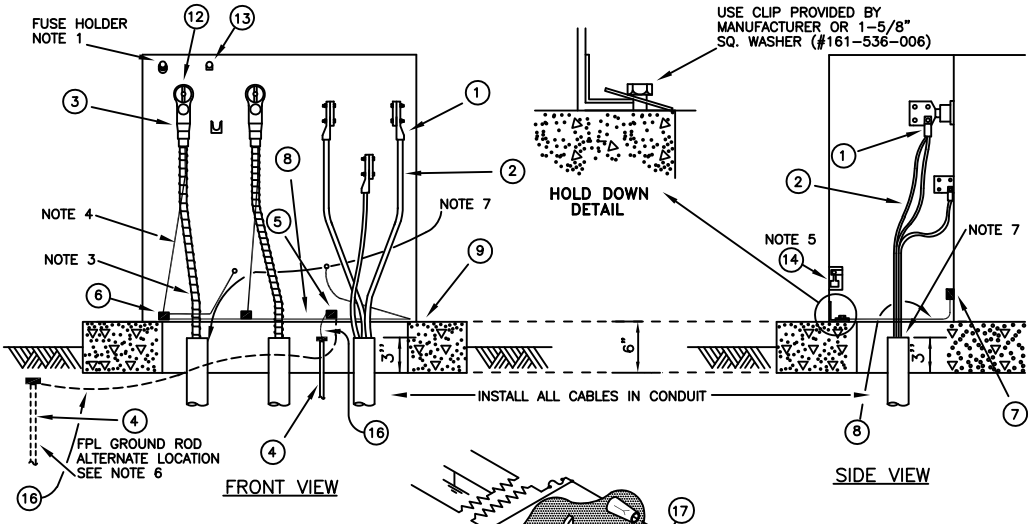
ORIGINATOR: RJO DRAWN BY: RQF

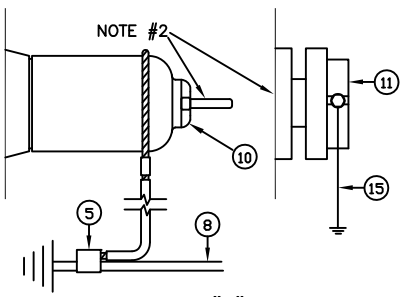
DATE: 9/30/94 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

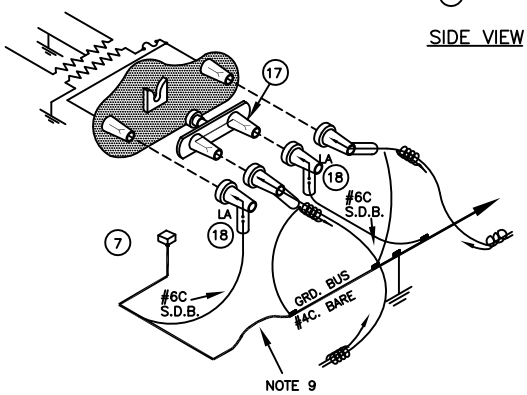
NO SCALE

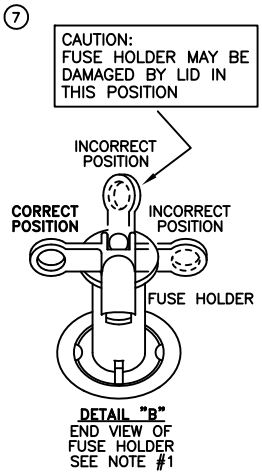
TYPICAL CONNECTIONS FOR SINGLE PHASE DEAD FRONT, 36" REGULAR STYLE PAD MOUNT TRANSFORMERS 7620/13200, 13200/22860Y VOLT, AND DUAL VOLT, 50KVA-167KVA

I-62.0.0









ITEM	QUANTITY	DESCRIPTION		M&S #
1	--	TERMINAL LUG, NUMBER, SIZE AND METAL AS REQUIRED.		VARIOUS
2	--	SERVICE CABLES		VARIOUS
3	2	ELBOW TERMINATORS	15 KV 25 KV	163-587-007 163-502-001
4	AS REQUIRED	COOPERWELD GROUND ROD AND CONNECTION AS REQUIRED PER STANDARD G-2.0.2		130-613-009
5	1	CONNECTOR COMPRESSION, #4 TO #6	KEARNEY BURNDY	120-111-001 120-132-008
6	2	CONNECTOR COMPRESSION, #4 TO #4	KEARNEY BURNDY	120-112-007 120-133-004
7	2	TRANSFORMER TANK GROUND CONNECTOR		120-338-005
8	9 FEET	WIRE #4C, BARE		112-309-000
9	1	PAD, TRANSFORMER, SINGLE PHASE, UX-117		162-248-004
10	1 (NOTE 2)	INSULATED CAP ASSEMBLY (DETAIL "A")	15 KV 25 KV	163-018-002 163-022-000
11	1 (NOTE 2)	DEADEND PLUG (DETAIL "A")		163-101-007
12	2	BUSHING INSERT	15 KV 25 KV	163-861-001 163-864-001
13	1	PRESSURE RELIEF VALVE (SUPPLIED WITH TRANSFORMER)		470-802-001
14	1	STANDARD PADLOCK, SMALL		546-246-003
15	3 FT (NOTE 2)	#12 TW COPPER, WHITE		115-093-008
16	2 FEET	WIRE #6C, BARE		112-308-003
17	1	25 KV FEED THRU DEVICE		160-001-052
18	2	18 KV ELBOW ARRESTER		334-015-005

NOTES:

1. VENT PRESSURE RELIEF DEVICE TO EQUALIZE PRESSURE INSIDE TANK BEFORE REMOVING FUSE (REFER TO UJ-10.0.0). BE SURE THAT FUSE IS FULLY INSERTED WITH HOOK STICK RING LATCHED AND POINTED TO THE LEFT. SEE DETAIL "B".
2. USE DEAD END PLUG WHEN THE PRIMARY CIRCUIT ENDS AT THE TRANSFORMER. IF THE CIRCUIT IS A TEMPORARY CABLE END USE AN INSULATED CAP. CAPS AND PLUGS WILL FIT ON ANY MANUFACTURE'S BUSHING. DEAD END PLUG AND INSULATED CAP MUST BE BONDED TO SYSTEM NEUTRAL. (SEE DETAIL "A").
3. PRIMARY CABLE SHOULD HAVE A SLIGHT "BOW" IN FINAL ASSEMBLED POSITION.
4. ALLOW SUFFICIENT LENGTH OF NEUTRAL TO PERMIT FREE MOVEMENT TO ELBOWS.
5. TIGHTEN SECURITY BOLT AND MAKE SURE PADLOCK IS LOCKED.
6. IN ORDER TO AVOID DRIVING THE GROUND ROD THROUGH EXISTING CABLES, A 5/8' X 8FT. GROUND ROD MUST BE INSTALLED WITH THE BACKBONE CONDUIT. A MINIMUM OF 6 INCHES ON ROD SHOULD REMAIN ABOVE GROUND.
7. SEAL OR PLUG ALL DUCTS, REFER TO UN-29.0.0.
8. FOR DUAL VOLTAGE OR 23KV NORMALLY OPEN POINTS USE 15KV RATED ELBOWS ARRESTERS. (RATING IS FOR THREE PHASE TO GROUND VOLTAGE).
9. BEND SLIGHT LOOP IN GROUND WIRE TO FORM ATTACHMENT POINT FOR TEMPORARY GROUND CLAMPS.
10. SEE UV-12.0.0 FOR MARKING UNDERGROUND CABLES.
11. FOR MAXIMUM NUMBER AND SIZE OF CABLES PLEASE SEE ELECTRIC SERVICE STANDARDS, SECTION 5, PAGE 1.

SFHHA 009930
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	4/14/16	UPDATED TITLE AND ADD NOTE #11	ARR	ELS	RDH
3	6/24/08	UPDATED NOTE # 6	LFV	ELS	JJM
2	8/01/01	UPDATED NOTES TO CAD #'S	GJP	JES	IA
1	9/30/94	CHANGED FORMAT	RAS	RAS	RJS
0	9/30/94	ORIGINAL DRAWING	JV	HEL	RKC

ORIGINATOR: JV

DRAWN BY: HEL/HO

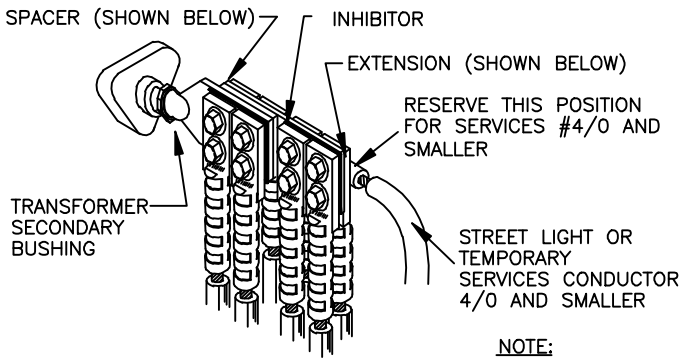
DATE: 9/30/94

APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

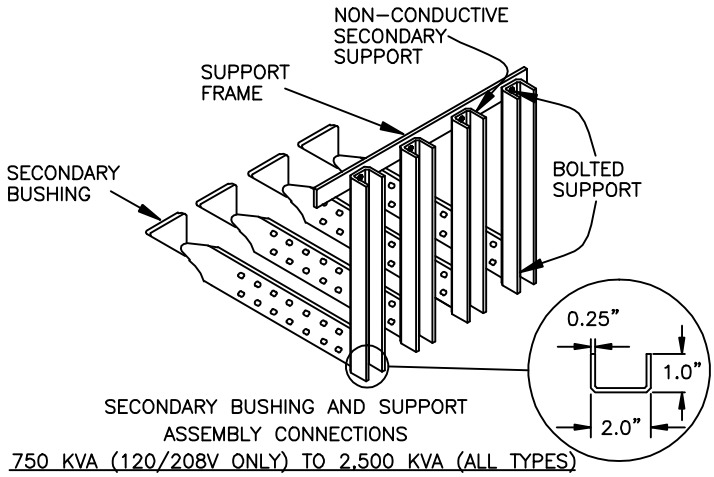
SECONDARY BUS BAR INSTALLATION AND THREE PHASE PAD MOUNTED TRANSFORMER CONNECTION

I-63.0.0



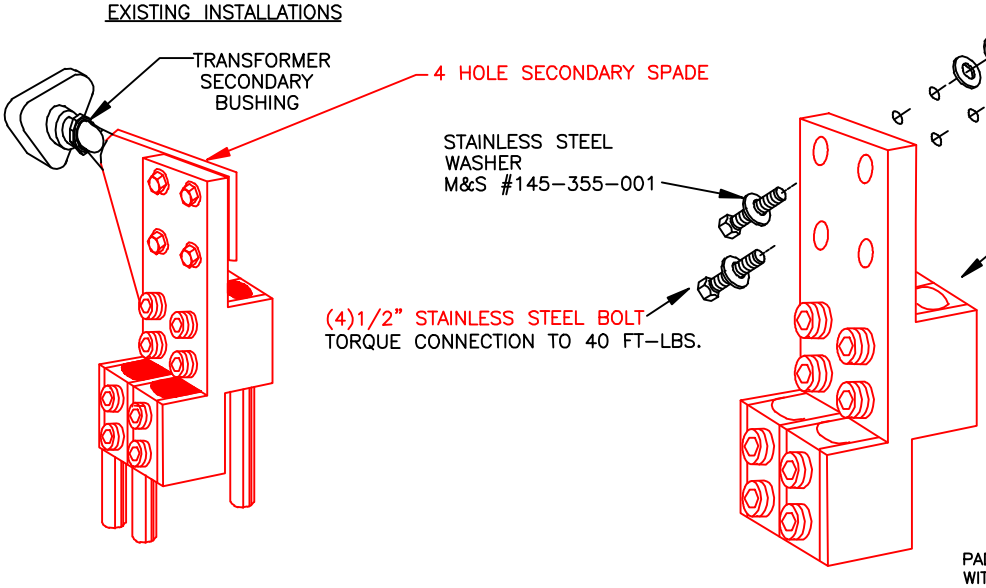
PADMOUNTED TRANSFORMER SECONDARY CONNECTIONS
150KVA TO 750KVA
(277/480V ONLY)

NOTE:
SEE SHEET I-4.4 FOR CONNECTION ATTACHMENT DETAIL

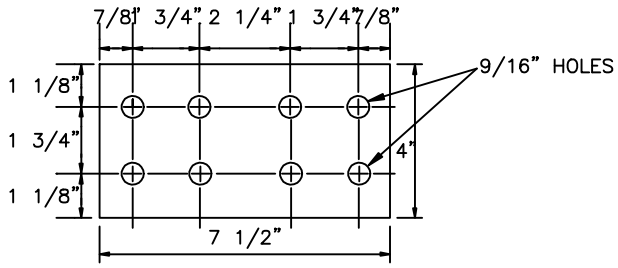


SECONDARY BUSHING AND SUPPORT ASSEMBLY CONNECTIONS
750 KVA (120/208V ONLY) TO 2,500 KVA (ALL TYPES)

EXISTING INSTALLATIONS

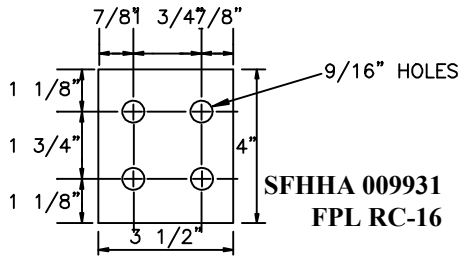


NOTE:
- ADD INHIBITOR BETWEEN SECONDARY SPADE AND CONNECTOR
- INSTALL A BOLT ON EACH HOLE OF THE MULITITAP CONNECTOR



BAR 4" X 1/4" X 7 1/2"
- COPPER BUS BAR EXTENSION -
(M & S #121-300-001)

PADMOUNTED TRANSFORMER WITH 4 AND 8 HOLE SPADES
SECONDARY CONNECTIONS



SFHHA 009931
FPL RC-16

BAR 4" X 1/4" X 3 1/2"
- COPPER BUS BAR SPACER -
(TO BE USED ONLY WHEN NECESSARY)
(M & S #120-305-003)

SUPERSEDES I-63.0.0 LAST REVISED ON 1-29-92

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
6	4/9/09	UPDATE DRAWING	ARR	ELS	AEL
5	6/27/08	UPDATED M&S NUMBER	GAP	ELS	JJM
4	7/12/07	UPDATED DRAWINGS	ARR	ELS	JRD
3	5/23/07	UPDATED DRAWINGS (CONNECTORS)	ARR	ELS	JRD
2	7/21/01	UPDATED DRAWING (TEXT)	RAP	JES	JJM
1	7/23/99	CHANGED 3ø PAD MT TX'S CONNECTION AS PER SPEC.# 7-23 PAG. 21	WPC	JES	JJM
0	9-30-94	REDRAWN, ADDED SPADE DETAILS AND NOTES	RJO	EF	RJS

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RJO

DRAWN BY: EF

DATE: 9/30/94

APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

I–63.0.1 MULTITAP CONNECTOR INSTALLATION FOR 3ø TRANSFORMERS 750 KVA AND LARGER I–63.0.1

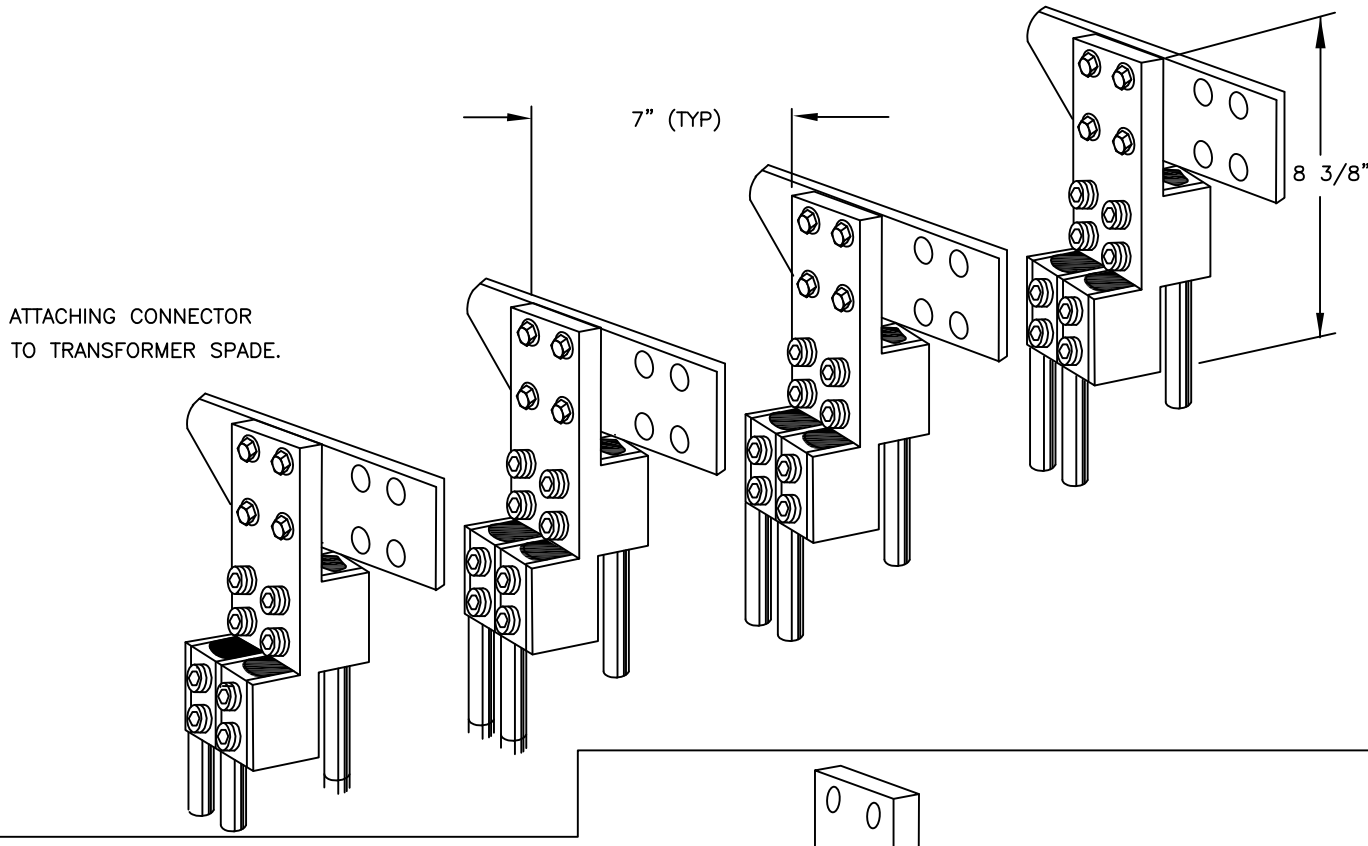
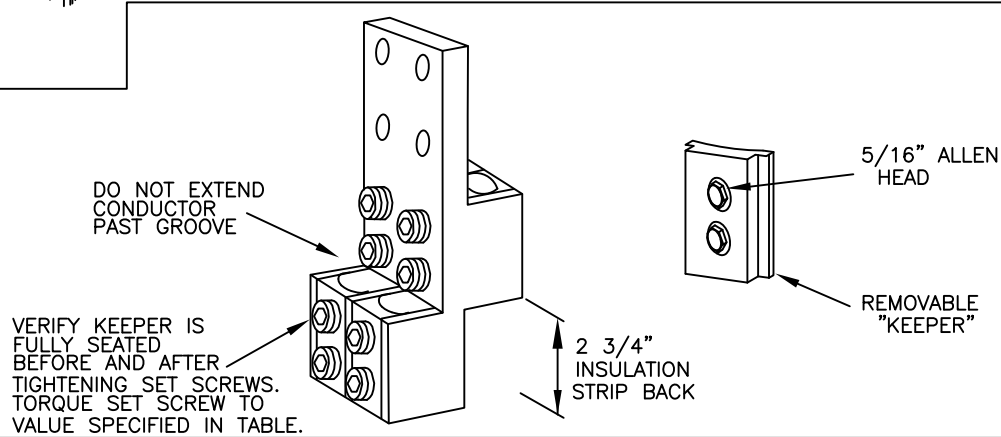


TABLE I

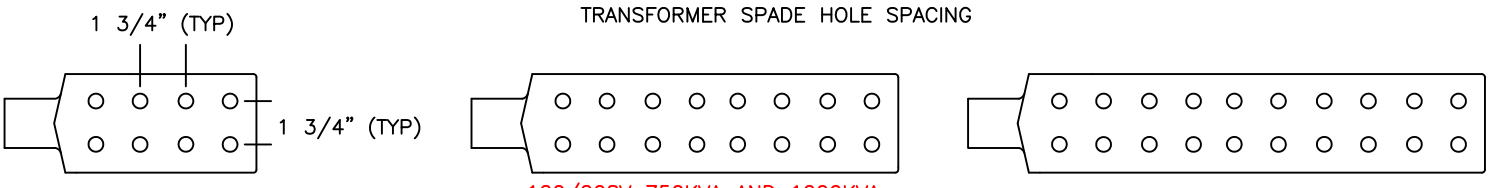
CONNECTOR STYLE		M&S NUMBER
PORTS	HEIGHT	
4	8–3/8"	103–806–500

TABLE II

SET SCREW TORQUE VALUES		
WIRE SIZE	IN LBS	FT LBS
#1/0 TO #750	360	30



TRANSFORMER SPADE HOLE SPACING



277/480V 750KVA
(8 HOLES)

120/208V 750KVA AND 1000KVA
277/480V 1000KVA TO 2000KVA
(16 HOLES)

2500KVA
(20 HOLES)

GENERAL NOTES:

1. REFER TO SECONDARY CONNECTIONS HARDWARE DRAWING ON I–63.0.0 FOR ASSEMBLY OF MULTITAP CONNECTOR TO TRANSFORMER SPADE. APPLY INHIBITOR BETWEEN SECONDARY SPADE AND MULTITAP CONNECTOR.
2. CONNECTORS ACCEPT CABLE SIZES #1/0 THROUGH #750 KCMIL AL OR CU.
3. REFER TO UX–116.1.1 FOR MAXIMUM SIZE AND NUMBER OF CABLE SETS ALLOWED IN TRANSFORMER.

SFHHA 009932
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RCB

DRAWN BY: J. SHOUP

DATE: 2/16/05 APPROVED: JOSE R. DIAZ
SUPERVISOR, OH / UG PRODUCT
SUPPORT SERVICES

NO SCALE

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	12/14/15	UPDATE DRAWING	ARR	ELS	RDH
4	6/19/09	UPDATE DRAWING	ARR	ELS	JRD
3	4/9/09	UPDATE DRAWING	ARR	ELS	AEL
2	3/10/08	UPDATE TABLES	ARR	ELS	JRD
1	5/23/07	UPDATE TITLE AND TABLES	ARR	ELS	JRD
0	02/16/05	ORIGINAL DRAWING	RCB	JES	JRD

NUMBER OF HOLES on SECONDARY SPADES ON 3 PHASE PADS AND VAULT TXS

I-63.0.2

3 PHASE PAD TXS		
KVA	SECONDARY VOLTAGE	NUMBER OF HOLES IN SECONDARY SPADES
150	120/208	SEE NOTE 4* 4
150	277/480	4
300	120/208	SEE NOTE 4* 4
300	277/480	4
500	120/208	6
500	277/480	SEE NOTE 4* 4
750	120/208	16
750	277/480	8
1000	120/208	16
1000	277/480	16
1500	277/480	16
2000	277/480	16
2500	277/480	20

3 PHASE VAULT TXS		
KVA	SECONDARY VOLTAGE	NUMBER OF HOLES IN SECONDARY SPADES
300	120/208	4
500	120/208	4
500	277/480	4
750	120/208	4
750	277/480	4
1000	120/208	6
1000	277/480	4
1500	277/480	4
2000	277/480	6

NOTES:

1. USE COMPRESSION OR SHEAR BOLT LUGS (NOT MULTITAPS) ON VAULT INSTALLATIONS
2. USE MULTITAP CONNECTORS ON 3 PHASE TRANSFORMER PAD. REFER TO I-63.0.0 AND I-63.0.1 FOR SECONDARY BUS BAR DETAILS AND INSTALLATION.
3. BASED ON IEEE TX INDUSTRY STANDARDS C57.12 26 AND C57.12 24.
4. AN 8 HOLE SPADE IS AVAILABLE FOR CONNECTING MORE THAN 4 SVC CONDUCTORS PER PHASE.
   150KVA 120/208V – M&S #104-122-011
   300KVA 120/208V – M&S #104-122-012
   500KVA 277/480V – M&S #104-122-012

SFHHA 009933
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: ARR/IA DRAWN BY: E. SCHILLING

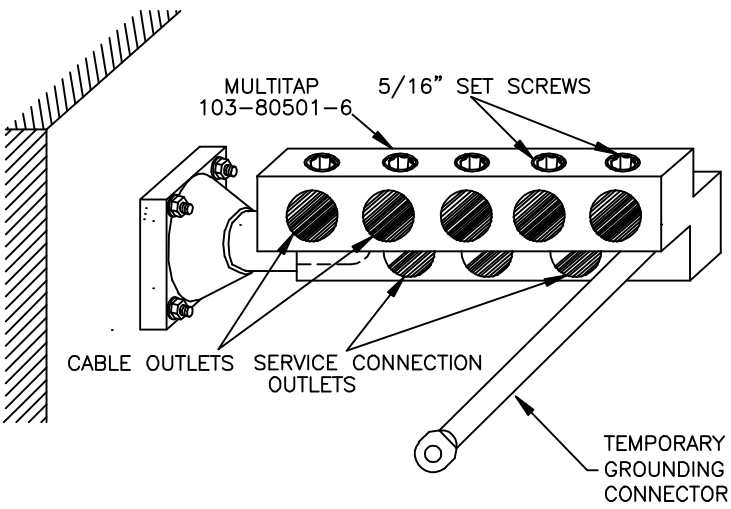
DATE: 1/12/15 APPROVED: RICK D. HUFF
MANAGER OF ELECTRICAL STANDARDS

NO SCALE

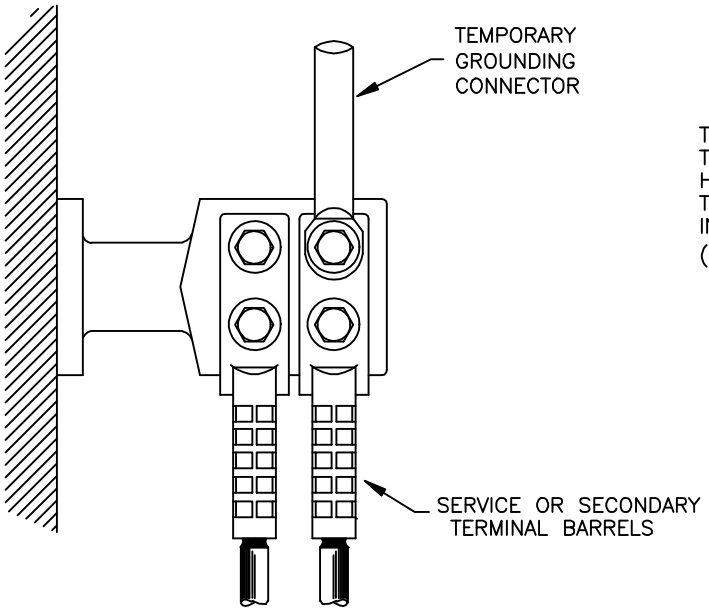
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	12/14/15	UPDATE DRAWING AND NOTES	ARR	ELS	RDH

TEMPORARY SECONDARY GROUND FOR PAD MOUNTED TRANSFORMER

I–64.0.0



TO TEMPORARILY GROUND HOT LEG WITH MULTITAP CONNECTOR, USE AN EMPTY SERVICE PORT TO INSTALL A TEMPORARY GROUNDING CONNECTOR (M&S #595–80500–0) AND ATTACH GROUND CLUSTER.



TO TEMPORARILY GROUND HOT LEG WITH SPADE TYPE TERMINAL, INSTALL MECHANICAL JUMPER HEAD ON ONE OF THE SERVICE OR SECONDARY TERMINAL BARRELS. IF TOO CROWDED FOR THIS, INSTALL A TEMPORARY GROUNDING CONNECTOR (M & S #595–80500–0) AS SHOWN.

SFHHA 009934
FPL RC-16

SUPERSEDES I–64 LAST REVISED ON 4–10–85

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	7/3/03	UPDATE NOTES WITH M&S NUMBERS	RJO	ELS	JJM
2	11/20/02	UPDATED DRAWING (NOTES AND ADDED TEMPORARY GROUNDING CONNECTOR)	RJO	JES	JJM
1	6/30/93	REDRAWN–REVISED MULTITAP	RJO	CB	RJS
0	6/30/93	ORIGINAL DRAWING	RJO	CB	RJS

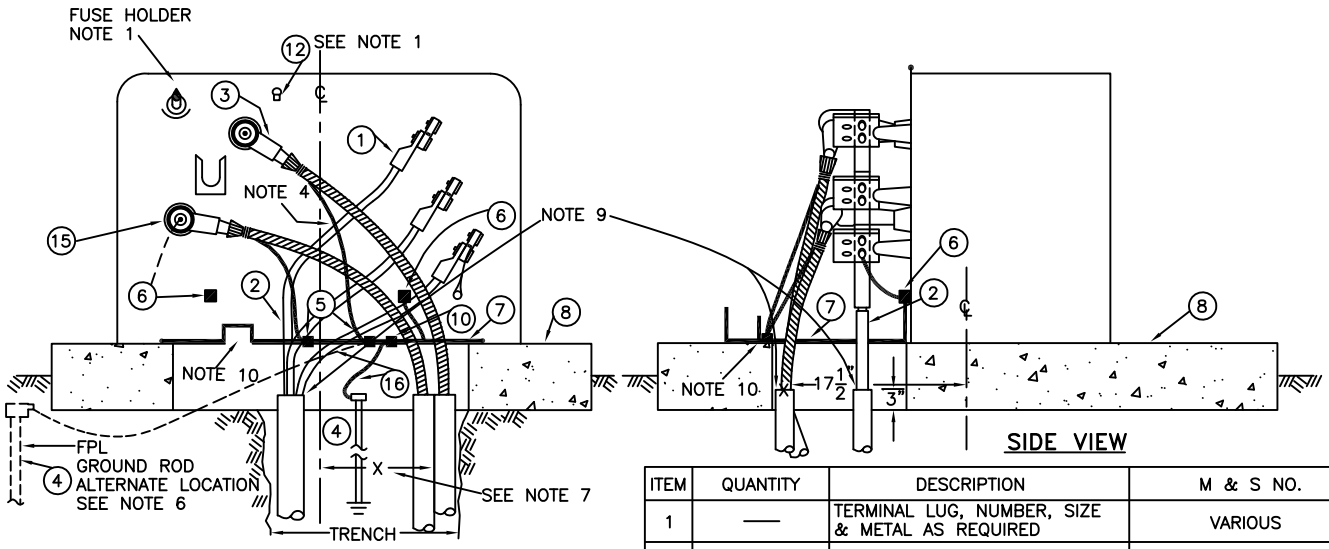
ORIGINATOR: RJO
DRAWN BY: CB
DATE: 6/30/93
APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING AND OPERATIONS SERVICES
NO SCALE

I-65.0.1

TYPICAL CONNECTIONS FOR 100 KVA 1ø LOW STYLE PADMOUNT TX. 7620/13200Y OR 13200/22860Y VOLT

I-65.0.1

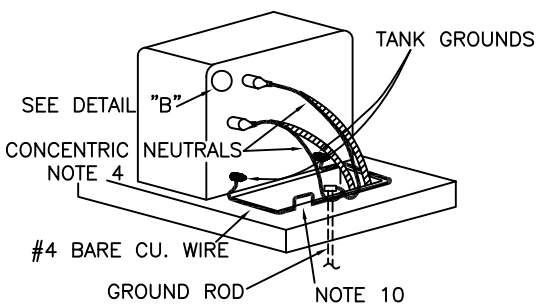
SEE I-65.1.1 FOR 25-75 KVA



FRONT VIEW

SIDE VIEW

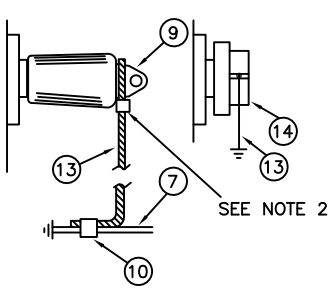
ITEM	QUANTITY	DESCRIPTION	M & S NO.
1	——	TERMINAL LUG, NUMBER, SIZE & METAL AS REQUIRED	VARIOUS
2	——	SERVICE CABLES	VARIOUS
3	2	15 KV ELBOW TERMINATOR 25 KV ELBOW TERMINATOR	163-587-007 163-502-001
4	AS REQ'D	COPPERWELD GROUND ROD AND CONNECTION-AS REQ'D PER STANDARDS G-2	130-617-004 OR 130-616-008
5	2	CONNECTOR, COMPRESSION #4 TO #4	KEARNEY 120-112-007 BURNDY 120-133-004
6	2	CONNECTOR, TRANSFORMER TANK GROUND	120-338-005
7	9 FT.	WIRE, #4C, BARE	112-309-000
8	1	PAD, TRANSFORMER, SINGLE PHASE, UX-117	162-248-004
9	1(NOTE 2)	INSULATED CAP ASSEMBLY (DETAIL-A)	(15KV) 163-018-002 (25KV) 163-022-000
10	1	CONNECTOR, COMPRESSION #4 TO #6	KEARNEY 120-111-001 BURNDY 120-132-008
12	1*	PRESSURE RELIEF VALVE	470-802-001
13	3 FT.(NOTE 2)	#12 TW COPPER WIRE, WHITE	115-093-008
14	1(NOTE 2)	DEAD END PLUG (DETAIL A)	163-101-007
15	2	BUSHING INSERT	163-861-001
16	2 FT.	WIRE #6C BARE 15KV 25KV	163-864-001 112-308-003



PRIMARY AND TANK GROUNDING DETAIL

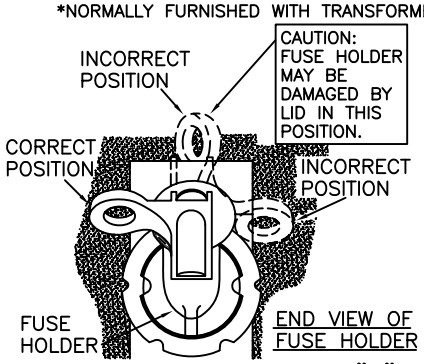
NOTES:

1. VENT PRESSURE RELIEF DEVICE TO EQUALIZE PRESSURE INSIDE TANK BEFORE REMOVING FUSE (REFER TO UJ-10.0.0) BE SURE THAT FUSE IS FULLY INSERTED WITH HOOK STICK RING LATCHED AND POINTED TO THE LEFT. SEE DETAIL "B".
2. USE DEAD END PLUG WHEN THE PRIMARY CIRCUIT ENDS AT THE TRANSFORMER. IF THE CIRCUIT IS A TEMPORARY CABLE END USE AN INSULATED CAP. CAPS AND PLUGS WILL FIT ON ANY MANUFACTURES BUSHING. END PLUG AND INSULATED CAP MUST BE BONDED TO SYSTEM NEUTRAL. (SEE DETAIL "A").
3. PRIMARY CABLE SHOULD HAVE A SLIGHT "BOW" IN FINAL ASSEMBLED POSITION.
4. ALLOW SUFFICIENT LENGTH OF NEUTRAL TO PERMIT FREE MOVEMENT TO ELBOWS.
5. TIGHTEN SECURITY BOLT AND MAKE SURE PADLOCK IS LOCKED.
6. IN ORDER TO AVOID DRIVING THE GROUND ROD THROUGH EXISTING CABLES, A GROUND ROD SLEEVE MUST BE INSTALLED WITH THE BACKBONE CONDUIT. THIS SLEEVE (MINIMUM 4 FT SECTION OF 2" CONDUIT) SHOULD BE INSTALLED IN THE LEFT FRONT OF THE PRIMARY ENTRANCE OPENING, AND EXTEND BELOW ALL OTHER CONDUIT. A MINIMUM OF 6 INCHES ON SLEEVE SHOULD REMAIN ABOVE GROUND.
7. SEAL OR PLUG ALL DUCTS REFER TO UN-29.0.0.
8. FOR LOCATION OF FACILITIES WITHIN EASEMENTS REFER TO L-17.0.4 & L-17.0.5.
9. BEND LOOP WITH GROUND WIRE TO FORM ATTACHMENT POINT FOR TEMPORARY GROUNDING CLAMPS.
10. FOR CONDUIT LOCATION DETAILS SEE UX-117.0.1 AND FOR PAD DETAILS SEE UX-117.0.0.



DETAIL "A"

*NORMALLY FURNISHED WITH TRANSFORMER



DETAIL "B"

SUPERSEDES I-65 SH.1 LAST REVISED 7/2/84

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
6	5/12/16	ADD NOTE #10	ARR	ELS	RDH
5	6/24/08	UPDATE NOTE 6	LFV	ELS	JJM
4	8/01/01	UPDATED DRAWING (TITLE & NOTES)	GJP	JES	IA
3	7/23/99	REMOVE DOOR	WPC	JES	JJM
2	3/01/89	ADDED GROUNDING LOOPS, SEE NOTE 10	CVB	LL	CVB
1	1/04/88	LOCATION OF GROUND ROD	CVB	CVB	RKE

SFHHA 009935
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: PXW

DRAWN BY: B

DATE: 1/2/87

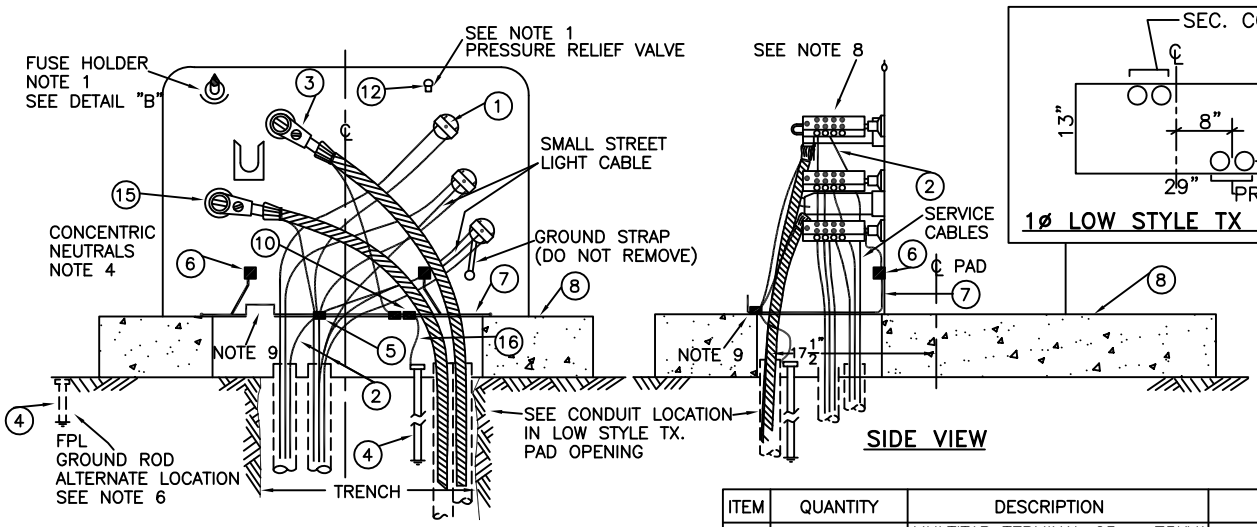
APPROVED: RK CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

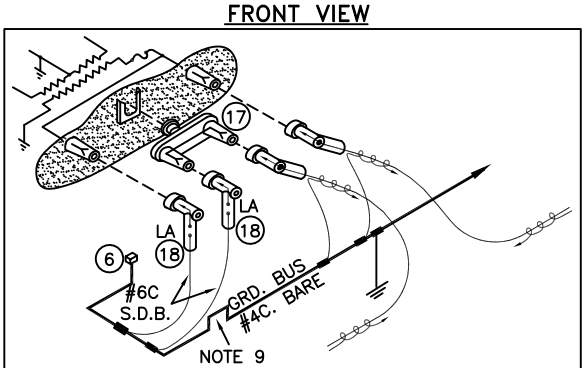
NO SCALE

I-65.1.1

TYPICAL CONNECTIONS FOR 25-100KVA LOW STYLE, SINGLE PHASE DEAD FRONT PADMOUNTED TX'S, 7620/13200Y OR 13200/22860Y VOLT

I-65.1.1





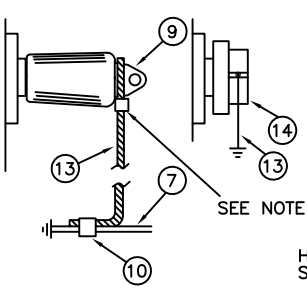
DUAL VOLTAGE OR 23KV NORMAL OPEN POINT
LOW STYLE TRANSFORMER
WITH ELBOW ARRESTERS

ITEM	QUANTITY	DESCRIPTION	M & S NO.
1	3	MULTITAP TERMINAL 25 – 75KVA 100 KVA	103-805-016 103-805-030
2	——	SERVICE CABLES	VARIOUS
3	2	15 KV ELBOW TERMINATOR 25 KV ELBOW TERMINATOR	163-587-007 163-502-001
4	AS REQ'D	COPPERWELD GROUND ROD AND CONNECTION-AS REQ'D PER STANDARDS G-2	130-617-004 OR 130-616-008
5	2	CONNECTOR, COMPRESSION #4 TO #4	KEARNEY 120-112-007 BURNDY 120-133-004
6	2*	CONNECTOR, TRANSFORMER TANK GROUND	120-338-005
7	9 FT.	WIRE, #4C, BARE	112-309-000
8	1	PAD, TRANSFORMER, SINGLE PHASE, UX-117	162-248-004
9	1(NOTE 2)	INSULATED CAP ASSEMBLY (DETAIL-A)	(15KV) 163-018-002 (25KV) 163-022-000
10	1	CONNECTOR, COMPRESSION #4 TO #6	KEARNEY 120-111-001 BURNDY 120-132-008
12	1*	PRESSURE RELIEF VALVE	470-802-001
13	3 FT.(NOTE 2)	#12 TW COPPER WIRE, WHITE	115-093-008
14	1(NOTE 2)	DEAD END PLUG (DETAIL A)	163-101-007
15	2	BUSHING INSERT 15KV 25KV	163-861-001 163-864-001
16	2 FT.	WIRE #6C BARE	112-308-003
17	1	25KV FEED THRU DEVICE	160-001-052
18	2	18KV ELBOW ARRESTER	334-015-005

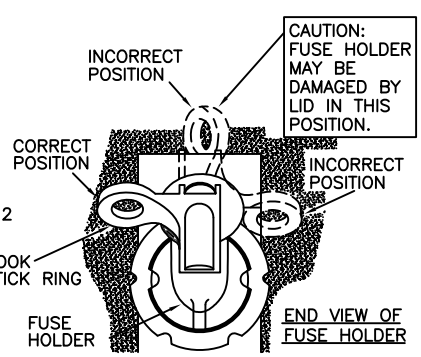
*NORMALLY FURNISHED WITH TRANSFORMER

NOTES:

1. VENT PRESSURE RELIEF DEVICE TO EQUALIZE PRESSURE INSIDE TANK BEFORE REMOVING FUSE. REFER TO UJ-10.0.0. BE SURE THAT FUSE IS FULLY INSERTED WITH HOOK STICK RING LATCHED AND POINTED TO THE LEFT. SEE DETAIL "B".
2. USE DEAD END PLUG WHEN THE PRIMARY CIRCUIT ENDS AT THE TRANSFORMER. IF THE CIRCUIT IS A TEMPORARY CABLE END USE AN INSULATED CAP. CAPS AND PLUGS WILL FIT ON ANY MANUFACTORS BUSHING. DEAD END PLUG AND INSULATED CAP MUST BE BONDED TO SYSTEM NEUTRAL. (SEE DETAIL "A").
3. PRIMARY CABLE SHOULD HAVE A SLIGHT "BOW" IN FINAL ASSEMBLED POSITION.
4. ALLOW SUFFICIENT LENGTH OF NEUTRAL TO PERMIT FREE MOVEMENT TO ELBOWS AND ELBOW ARRESTERS. TEST WITH HOT STICK BEFORE ENERGIZING.
5. TIGHTEN SECURITY BOLT AND MAKE SURE PADLOCK IS LOCKED.
6. IN ORDER TO AVOID DRIVING THE GROUND ROD THROUGH EXISTING CABLES, A GROUND ROD SLEEVE MUST BE INSTALLED WITH THE BACKBONE CONDUIT. THIS SLEEVE (MINIMUM 4 FT SECTION OF 2" CONDUIT) SHOULD BE INSTALLED IN THE LEFT FRONT OF THE PRIMARY ENTRANCE OPENING, AND EXTEND BELOW ALL OTHER CONDUIT. A MINIMUM OF 6 INCHES ON SLEEVE SHOULD REMAIN ABOVE GROUND.
7. FOR DUAL VOLTAGE OR 23KV NORMALLY OPEN POINTS USE 18KV RATED ELBOW ARRESTERS. (RATING IS FOR PHASE TO GROUND VOLTAGE).
8. NOT MORE THAN 8 SECONDARY / SERVICE CONDUCTORS PLUS 1 STREET LIGHT OR TEMPORARY SERVICE CONDUCTOR ARE TO BE CONNECTED. PLEASE SEE ELECTRIC SERVICE STANDARDS, SECTION 5, PAGE 1.
9. BEND LOOP IN GROUND WIRE TO FORM ATTACHMENT POINT FOR TEMPORARY GROUND CLAMPS.



DETAIL "A"



DETAIL "B"

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
10	4/14/16	UPDATE TITLE AND NOTE #8	ARR	ELS	RDH
9	3/21/16	UPDATE TITLE AND DWG	ARR	ELS	RDH
8	8/27/08	REVISE M&S FOR MULTITAP TERMINAL	JNM	ELS	JJM
7	6/24/08	UPDATE NOTE 6	JFV	ELS	JJM

F P L

SFHHA 009936
FPL RC-16

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: PG

DRAWN BY: JH

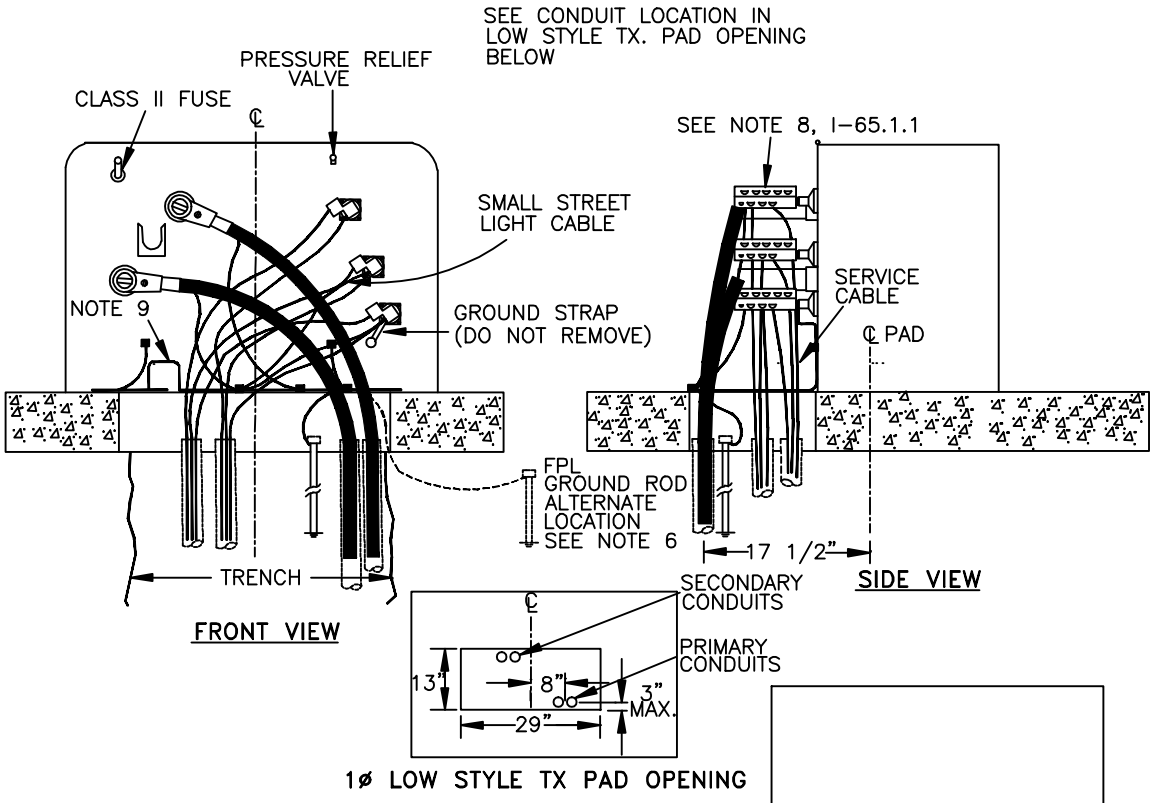
DATE: 1/2/87

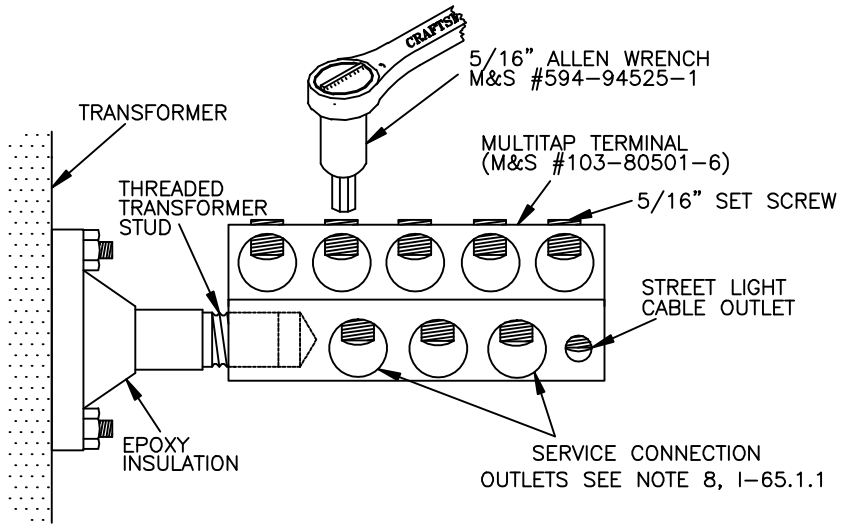
APPROVED: JOSE R. DIAZ
SUPERVISOR, OH/UG PRODUCT
SUPPORT SERVICES

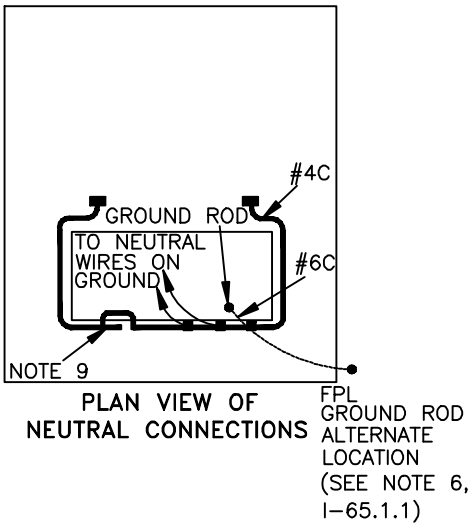
NO SCALE

CONNECTION OF MULTIPLE SECONDARY CABLES TO SINGLE PHASE LOW STYLE PAD MOUNTED TRANSFORMERS

I-65.1.2







SFHHA 009937
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

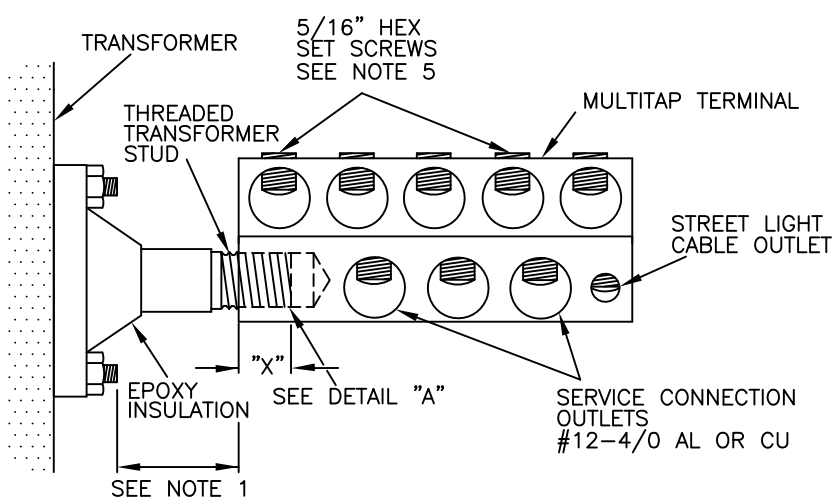
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	8/01/01	CHANGED TITLE AND MINOR UPDATES	GJP	JES	IA
1	7/26/99	REMOVE DOOR	WPC	JES	JM
0	6/30/93	ORIGINAL DRAWING	RJO	CB	RJS

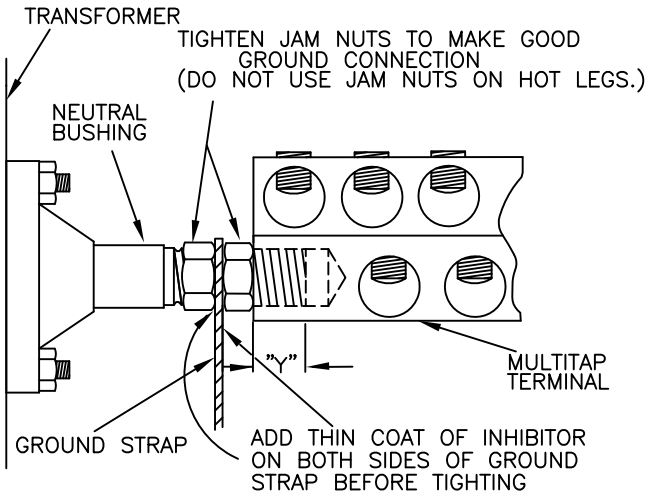
ORIGINATOR: RJO
DRAWN BY: CB
DATE: 6/30/93
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

I-65.1.3

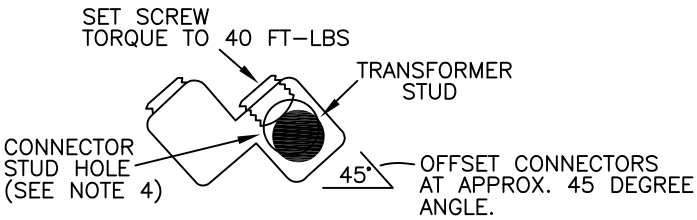
MAKEUP OF MULTI TAP & SPADE CONNECTORS IN SINGLE PHASE PADS (LOW AND REGULAR STYLES)

I-65.1.3



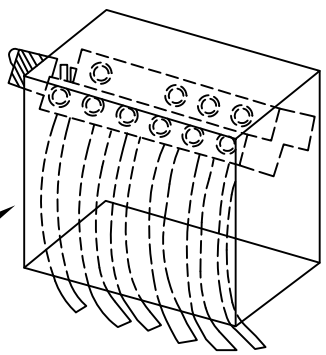


GROUND STRAP CONNECTION DETAIL



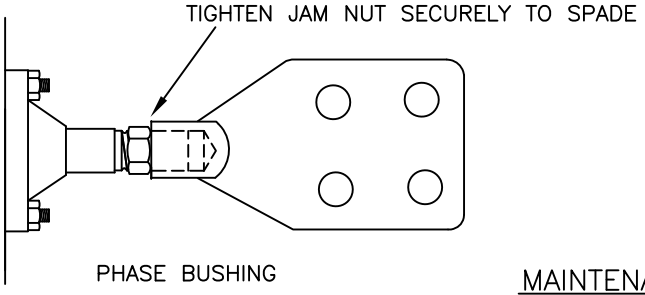
DETAIL "A"
END VIEW OF MULTITAP CONNECTOR

SET SCREW TORQUE VALUES		
WIRE SIZE	IN LBS	FT LBS
#12 TO #3	120	10
#2 TO 350	240	20
TRANSFORMER STUD	480	40

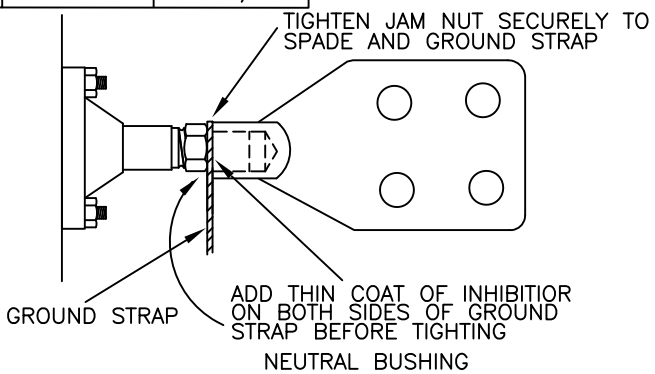


INSTALL PLASTIC COVER PROVIDED WITH CONNECTOR ON BOTH HOT LEGS AND NEUTRAL.

TRANSFORMER		MULTI-TAP	4 HOLE SPADE	STUD INSERT DEPTH (MIN)	
SIZE	THREADED STUD SIZE	CONNECTOR M&S	M&S	"X"	"Y"
25 - 75 kVA	5/8"	103-805-016	104-122-010	1 1/2"	1"
100 -167 kVA	1"	103-805-030	104-122-028	2"	1 1/2'



MAINTENANCE ONLY



NOTES:

1. A ONE INCH (1") MINIMUM CLEARANCE MUST BE MAINTAINED BETWEEN LIVE PARTS AND GROUND.
2. MAXIMUM CABLE SIZE FOR SINGLE PHASE PADMOUNT TRANSFORMER IS #4/0 FOR LOW STYLE PADS AND 500 KCMIL FOR REGULAR STYLE PADS. PLEASE SEE ELECTRIC SERVICE STANDARDS, SECTION 5 PAGE 1 FOR TABLE OF SIZE AND NUMBER OF CONDUCTORS.
3. MAINTENANCE ONLY WHEN REPLACING AN EXISTING TRANSFORMER HAVING SPADES, RELOCATE THE SPADES AS SHOWN IN ABOVE DIAGRAM. FOR TRANSFORMERS WITH NON REMOVABLE SPADES, USE REPLACEMENT SPADES SHOWN IN ABOVE TABLE.
4. MULITITAP CONNECTORS COME WITH AN ENLARGED TRANSFORMER STUD HOLE TO ALLOW THE CONNECTOR TO BE REMOVED WITHOUT REMOVING THE CABLES DURING TRANSFORMER CHANGEOUT. WHEN INSTALLING, ALIGN THREADS OF TRANSFORMER STUD WITH GROOVES IN CONNECTOR AND TORQUE SET SCREW TO 40 FT-LBS.
5. AFTER INSTALLING CABLES, TIGHTEN SET SCREWS TO VALUES SPECIFIED IN ABOVE TABLE.

SFHHA 009938
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
9	4/14/16	UPDATE NOTES	ARR	ELS	RDH
8	3/21/16	UPDATE TITLE BLOCK AND DWG	ARR	ELS	RDH
7	9/29/09	UPDATE TITLE BLOCK FOR LOW STYLE TX	ARR	ELS	JRD
6	11/6/08	UPDATE NOTE 4	GAP	ELS	JRD
5	7/12/07	CORRECT SET SCREW TORQUE VALUE	GAP	ELS	JRD
4	3/8/07	CORRECT SET SCREW VALUE	ARR	ELS	JRD

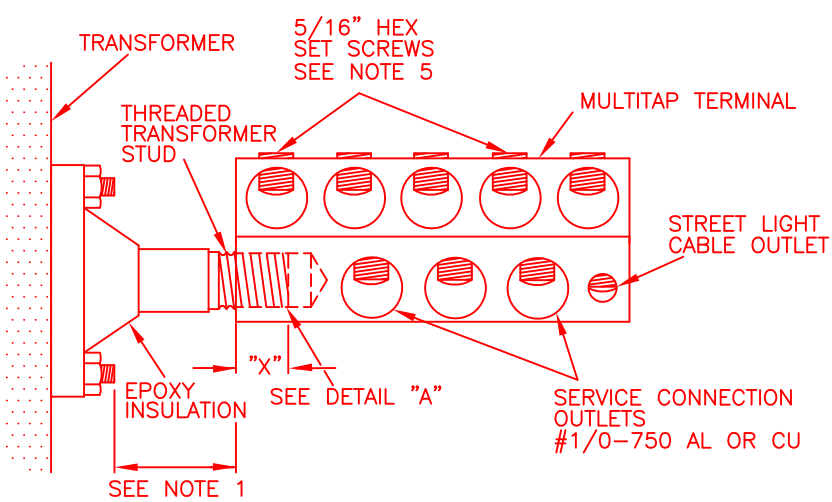
F P L

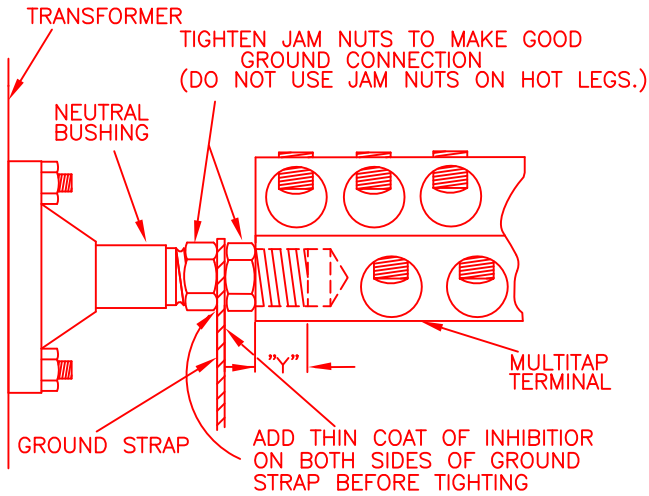
OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RJO
DRAWN BY: CB
DATE: 6/30/93
APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

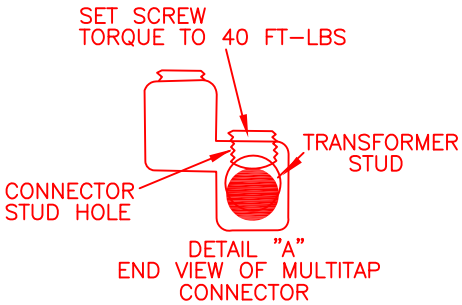
MAKEUP OF MULTI TAP CONNECTORS IN SINGLE PHASE PADS (REGULAR STYLES)

I-65.1.4

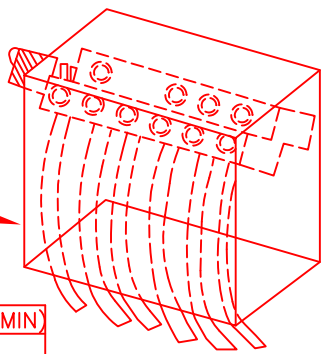




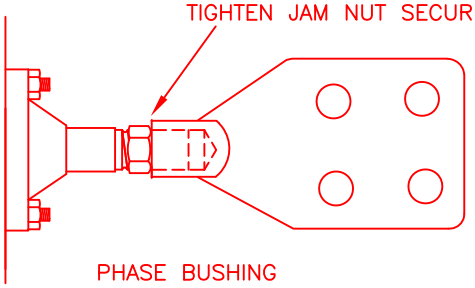
GROUND STRAP CONNECTION DETAIL



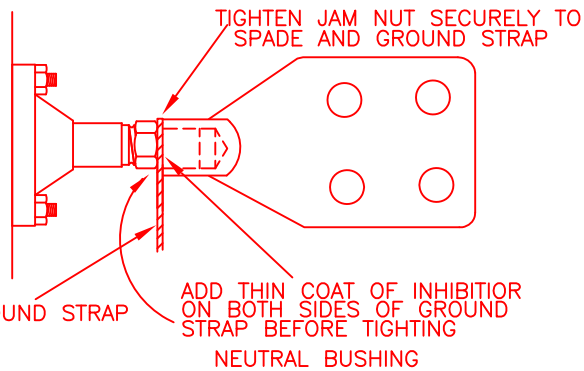
SET SCREW TORQUE VALUES		
WIRE SIZE	IN LBS	FT LBS
1/0-350	300	25
500-750	450	38
TX-STUD	480	40



TRANSFORMER		MULTI-TAP	PLASTIC COVER	4 HOLE SPADE	STUD INSERT DEPTH (MIN)	
SIZE	THREADED STUD SIZE	CONNECTOR M&S	M&S		"X"	"Y"
50 kVA	1"	103-805-040	103-805-045	NOTE 3	2"	1 1/2'
100 kVA	1"	103-805-040	103-805-045	104-122-028	2"	1 1/2'
167 kVA	1"	103-805-040	103-805-045	104-122-028	2"	1 1/2'



MAINTENANCE ONLY
SEE NOTE 3



NOTES:

1. A ONE INCH (1") MINIMUM CLEARANCE MUST BE MAINTAINED BETWEEN LIVE PARTS AND GROUND.
2. MAXIMUM CABLE SIZE FOR REGULAR STYLE TRANSFORMER IS #750.
3. MAINTENANCE ONLY WHEN REPLACING AN EXISTING TRANSFORMER HAVING NON REMOVABLE SPADES, USE REPLACEMENT SPADES SHOWN IN ABOVE TABLE. FOR 50KVA TRANSFORMERS USE 104-122-010 IF TRANSFORMER HAS A 5/8" STUD.
4. WHEN INSTALLING MULTITAP CONNECTORS, ALIGN THREADS OF TRANSFORMER STUD WITH GROOVES IN CONNECTOR AND TORQUE SET SCREW TO 40 FT-LBS.
5. AFTER INSTALLING CABLES, TIGHTEN SET SCREWS TO VALUES SPECIFIED IN ABOVE TABLE.

SFHHA 009939
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

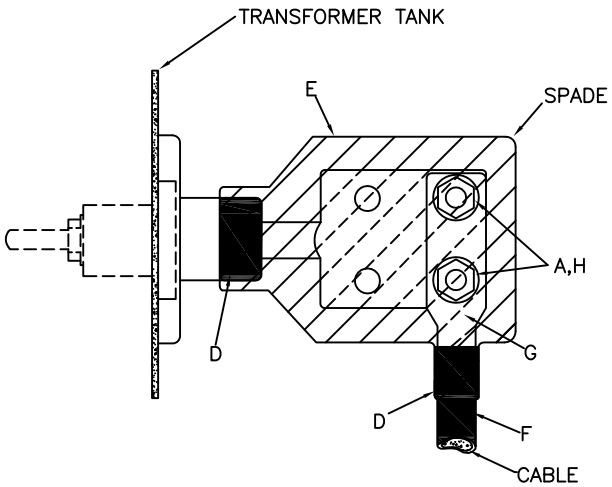
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.

ORIGINATOR: AR
DRAWN BY: ELS
DATE: 9/29/09
APPROVED: J.R. DIAZ
LEAD SUPERVISOR, UG PRODUCTS
NO SCALE

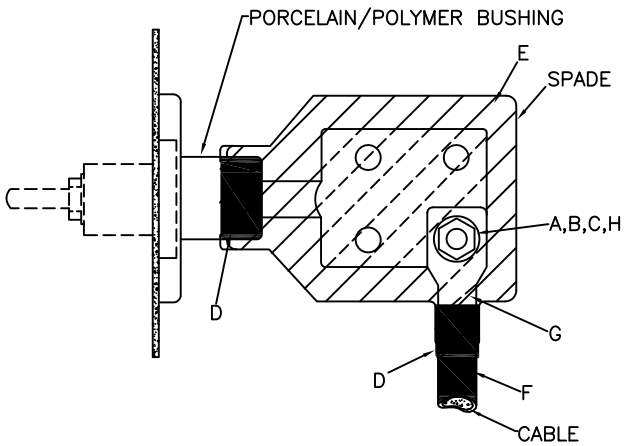
INSULATED SECONDARY BUSHING ON TRANSFORMERS

I-66.0.0

FOR USE ON ALL SUBWAY INSTALLATIONS AND ON ABOVE GRADE SECONDARY BUSHINGS



ALUMINUM SECONDARY CABLE



COPPER SECONDARY CABLE

KEY	M&S NO.	DESCRIPTION	UNIT OF ISSUE	QUANTITY PER BUSHING CABLE TYPE Cu	Al
A	140-519-005	BOLT STAINLESS STEEL 1/2" x 2-1/2"	EA	–	1-4*
	122-032-001	BOLT – BRONZE 1/2" x 1-1/2"	EA	1-4*	–
B	145-293-100	WASHER – BELLEVILLE, STAINLESS STEEL	EA	–	1-4*
	122-954-005	WASHER – SPLIT SPRING LOCK – BRONZE	EA	1-4*	–
C	145-355-001	WASHER – ROUND FLAT – STAINLESS STEEL	EA	–	2-8*
	122-934-004	WASHER – ROUND FLAT – BRONZE	EA	2-8*	–
D	163-300-001	RED/BLACK MASTIC	EA	5	5
E	549-443-001	HEAT SHRINK TAPE -1"	EA	3	3
	549-443-002	HEAT SHRINK TAPE -2"	EA	2	2
F	VARIOUS	HEAT SHRINK TUBING	EA	4	4
G	VARIOUS	CONNECTORS, COMPRESSION	EA	–	–
H	142-703-008	NUT, STAINLESS STEEL, 1/2"	EA	–	1-4*
	122-575-004	NUT, BRONZE, 1/2"	EA	1-4*	–

*DEPENDENT UPON NUMBER OF HOLES IN CONNECTORS.

NOTES:

1. WRAP A 1" WIDE STRIP OF RED/BLACK MASTIC AROUND TRANSFORMER BUSHING.
2. INSTALL HEAT SHRINK TUBES OVER THE CABLE LEGS AND COMPRESSION CONNECTORS AND WRAP A 1" WIDE STRIP OF RED/BLACK MASTIC OVER THE HEAT SHRINK TUBE. IF MULTITAP CONNECTORS (M&S #103-806-500) ARE USED INSTALLED THE HEAT SHRINK TUBE AND RED/BLACK MASTIC OVER EACH CABLE LEG.
3. STARTING AT THE BUSHING, WRAP 1" OR 2" HEAT SHRINK TAPE OVER ALL COMPONENTS, OVERLAPPING BY A MINIMUM OF 1/2". WHEN APPLYING TAPE, APPLY TENSION WITHOUT STRETCHING THE TAPE, THIS PREVENTS BUILDUP. APPLY HEAT EVERY TWO WRAPS AS THE TAPE IS BEING APPLIED.
4. SHRINKING OF THE TAPE IS COMPLETE WHEN A UNIFORM BEAD OF ADHESIVE IS VISIBLE BETWEEN WRAPS, AND ALL COMPONENTS ARE SEALED.
5. FOR ADDITIONAL INFORMATION, FOLLOW THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

SFHHA 009940
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
6	8/4/14	UPDATE DRAWING AND NOTES	ARR	ELS	RDH
5	6/26/14	UPDATE DRAWING,TABLE AND NOTES	ARR	ELS	RDH
4	6/27/08	UPDATE M&S NUMBER	GAP	ELS	JJM
3	9/16/99	CONVERTED TO CAD	WC	DLW	JJM
2	1-1-84	FORMERLY DRAWING NO. UL-9	JW	COT	RKC
1	1-14-83	COMPLETE REVISION OF TABLE	JW	COT	RKC
0	12/28/78	ORIGINAL DRAWING	JW	COT	RKC

ORIGINATOR: JW

DRAWN BY: COT

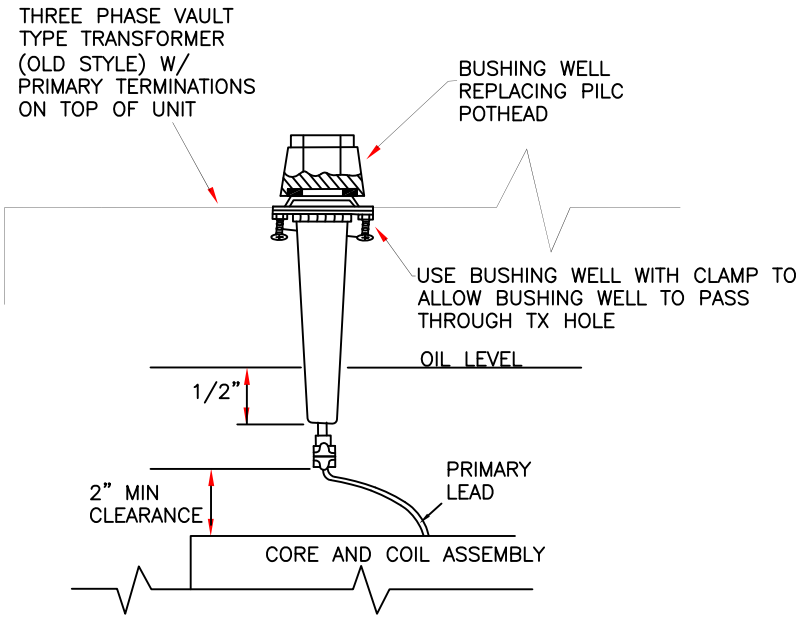
DATE: 12/28/71

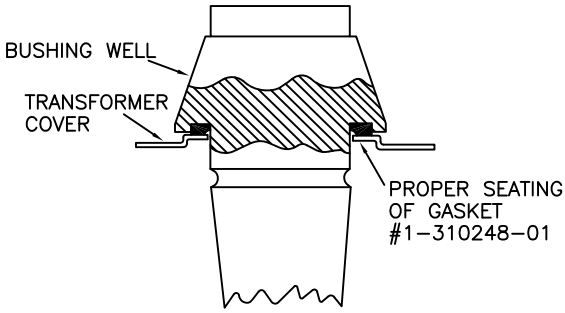
APPROVED: G.W. WILLIAMS FOR STREET
CHIEF ENGINEER

NO SCALE

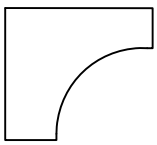
I-67.0.0 INSTALLATION OF BUSHING WELL TO REPLACE FAILED POTHEAD PILC CABLE TERMINATION IN THREE PHASE VAULT TRANSFORMERS

I-67.0.0

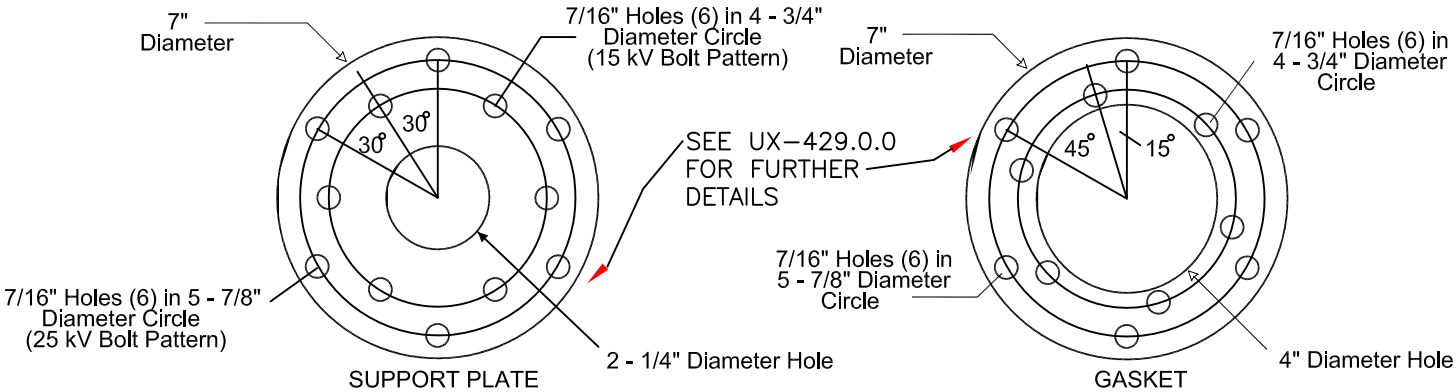




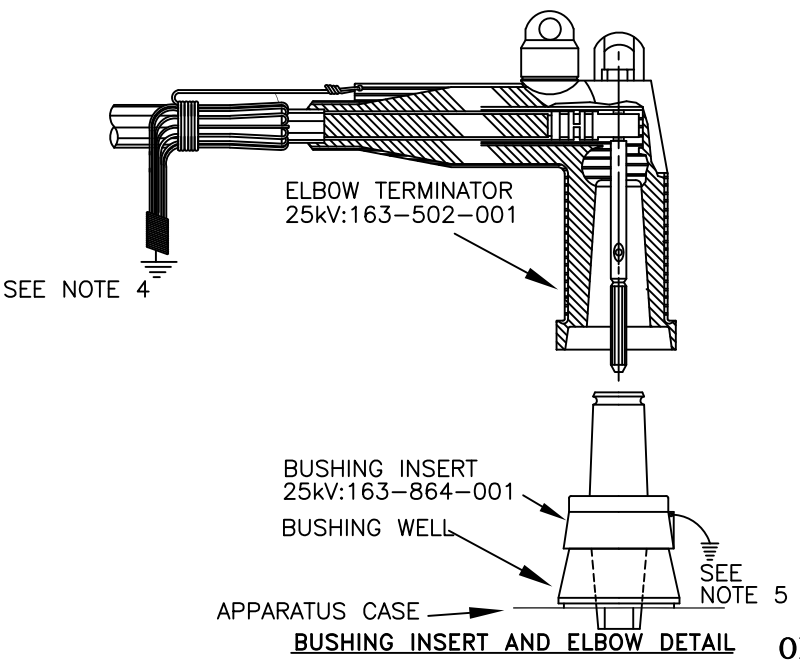
GASKET DETAIL FOR BUSHING WELL



CROSS SECTION OF GASKET



SUPPORT PLATE AND GASKET DETAIL M&S 161-004-000



BUSHING INSERT AND ELBOW DETAIL

NOTES:

1. USE 15/25KV BUSHING WELL M&S 163-026-005.
2. ENSURE USE OF BUSHING WELL CLAMP TO ALLOW LEAD TO BE ATTACHED TO THE BUSHING WELL AND BUSHING WELL TO PASS THROUGH THE TRANSFORMER TANK HOLE FOR MOUNTING AND SECURING.
3. CONNECT AN STRAND OF THE PHASE PRIMARY CONDUCTOR TO THE BUSHING WELL FOR BLEED-OFF OF BUILD-UP POTENTIAL.
4. GROUNDING: ATTACH 1/0 PRIMARY CABLE CONCENTRIC NEUTRAL, AERIAL BUSHING AND TRANSFORMER TANK GROUND TO SYSTEM NEUTRAL USING #2C WIRE.
5. BLEED OFF BUSHING INSERT TO TRANSFORMER CASE GROUND.
6. IF BUSHING WELL INSTALLATION IS DONE AT A MAT, NEED TO USE TWO SUPPORT PLATES AND GASKETS TO ELIMINATE ANY WATER INTRUSION.

SFHHA 009941
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	6/2/15	ADD NOTE 6	ARR	ELS	RDH

ORIGINATOR: E.INFANTE / A. RODRIGUEZ DRAWN BY: E. SCHILLING

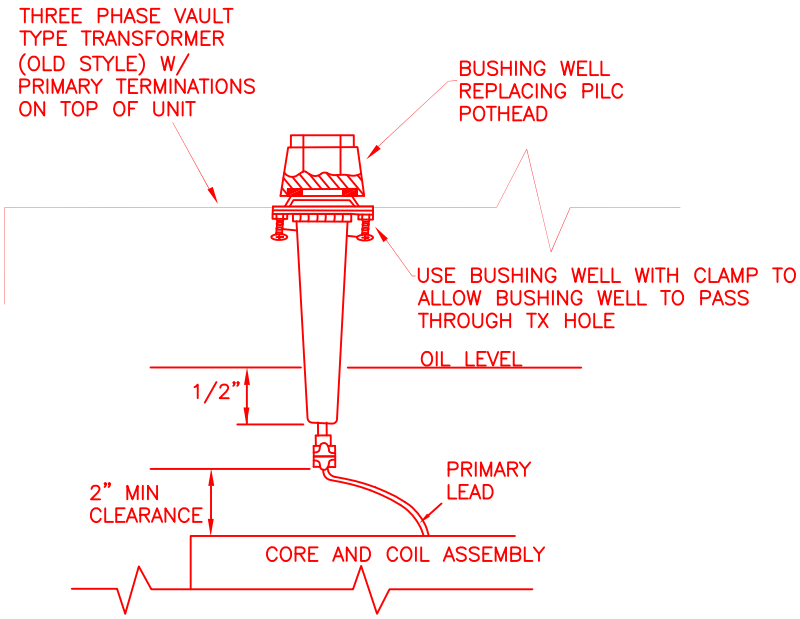
DATE: 8/9/2012 APPROVED: WILLIAM MORZON

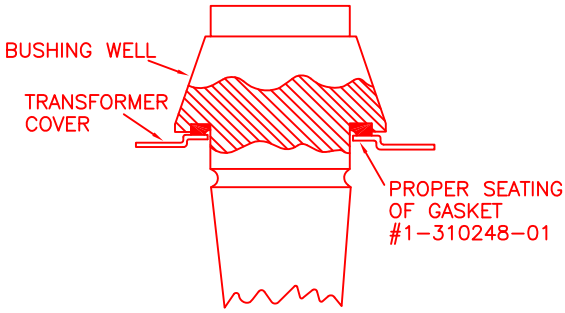
ENGINEERING LEAD – DELIVERY ASSURANCE

NO SCALE

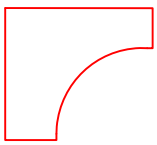
INSTALLATION OF BUSHING WELL TO REPLACE FAILED POTHEAD PILC CABLE TERMINATION IN THREE PHASE VAULT TRANSFORMERS

I-67.0.0

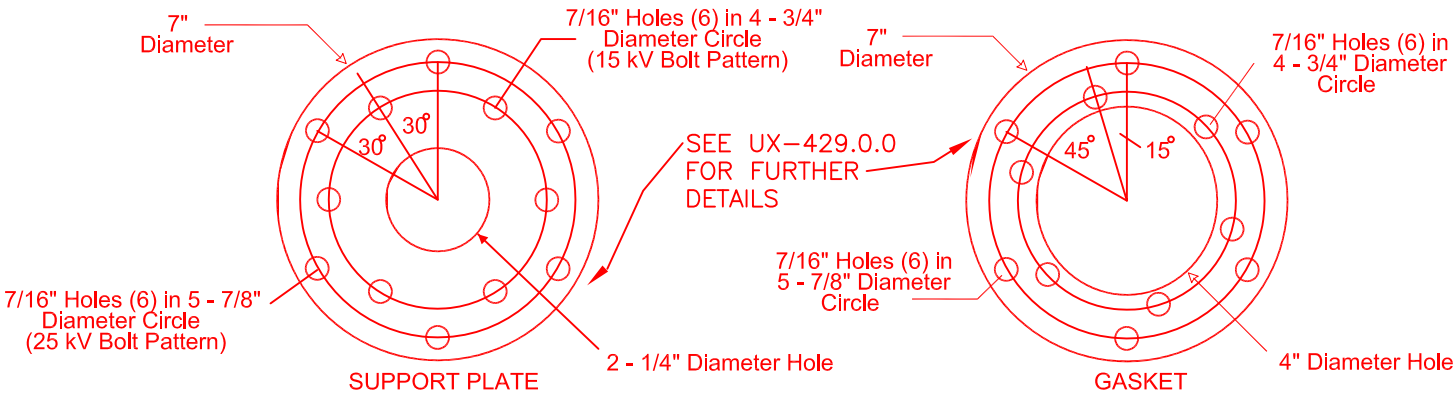




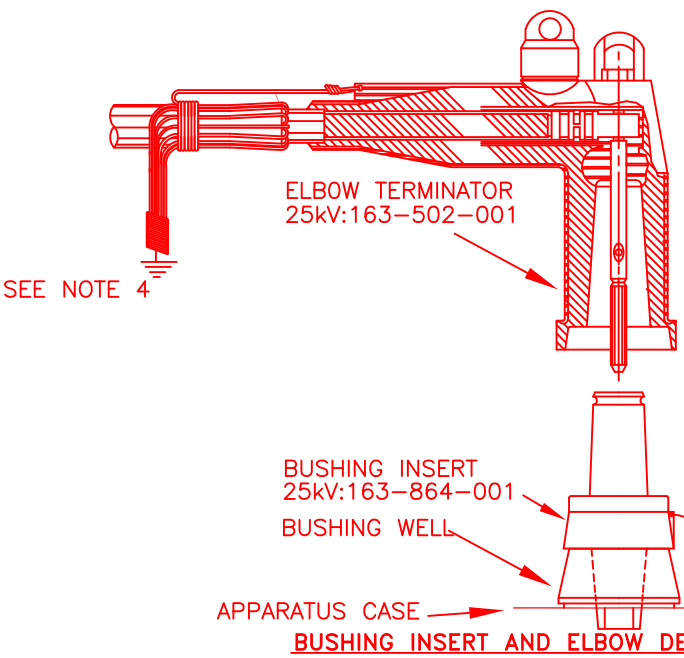
GASKET DETAIL FOR BUSHING WELL



CROSS SECTION OF GASKET



SUPPORT PLATE AND GASKET DETAIL M&S 161-004-000



BUSHING INSERT AND ELBOW DETAIL

NOTES:

1. USE 15/25KV BUSHING WELL M&S 163-026-005.
2. ENSURE USE OF BUSHING WELL CLAMP TO ALLOW LEAD TO BE ATTACHED TO THE BUSHING WELL AND BUSHING WELL TO PASS THROUGH THE TRANSFORMER TANK HOLE FOR MOUNTING AND SECURING.
3. CONNECT AN STRAND OF THE PHASE PRIMARY CONDUCTOR TO THE BUSHING WELL FOR BLEED-OFF OF BUILD-UP POTENTIAL.
4. GROUNDING: ATTACH 1/0 PRIMARY CABLE CONCENTRIC NEUTRAL, AERIAL BUSHING AND TRANSFORMER TANK GROUND TO SYSTEM NEUTRAL USING #2C WIRE.
5. BLEED OFF BUSHING INSERT TO TRANSFORMER CASE GROUND.

SFHHA 009942
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: E.INFANTE / A. RODRIGUEZ DRAWN BY: E. SCHILLING

DATE: 8/9/2012 APPROVED: WILLIAM MORZON
ENGINEERING LEAD – DELIVERY ASSURANCE

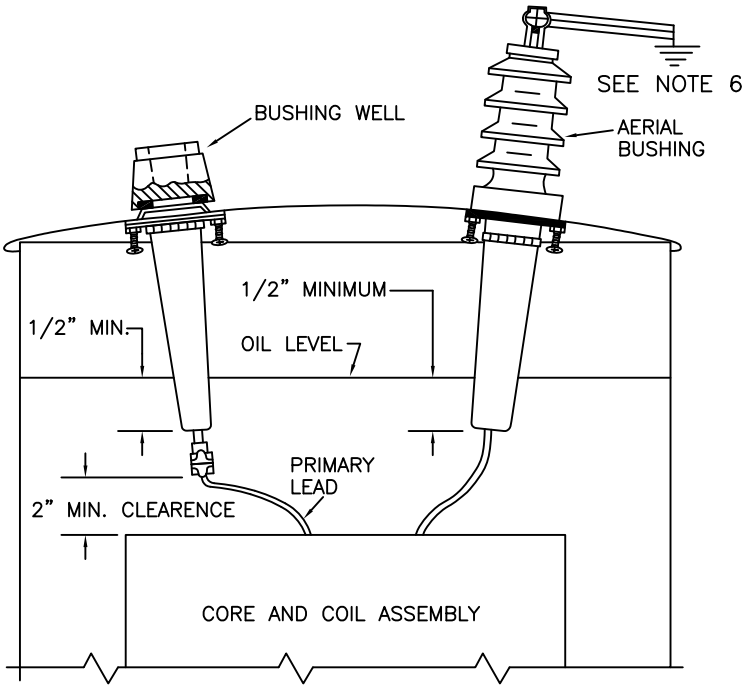
NO SCALE

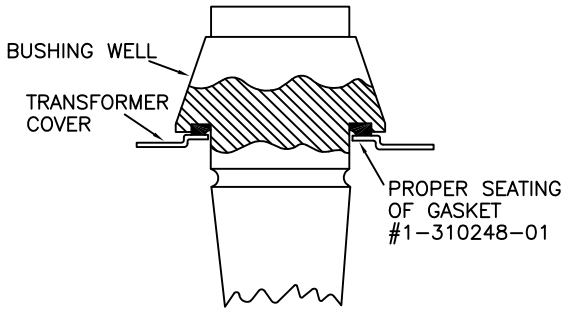
NO.	DATE	REVISION	ORIG.	DRAWN	APPR.

I-67.0.1

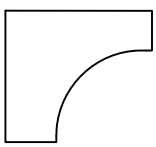
INSTALLATION OF BUSHING WELL (15 OR 25KV) OR INTERNALLY CLAMPED POTHEAD (15KV) IN SINGLE PHASE AERIAL TRANSFORMERS

I-67.0.1



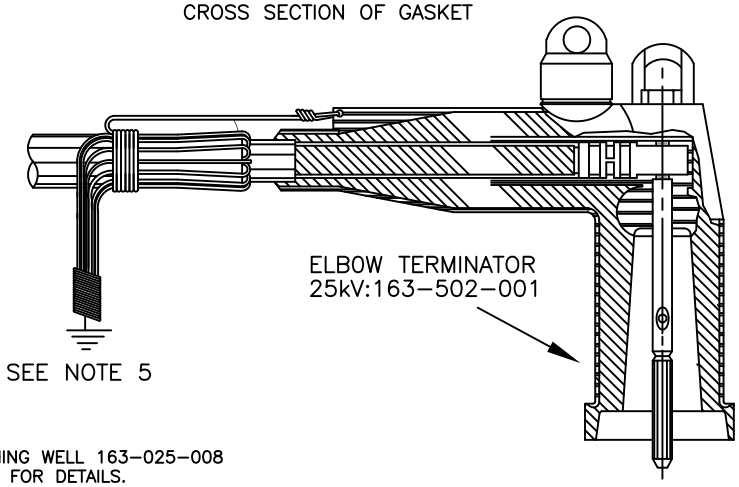


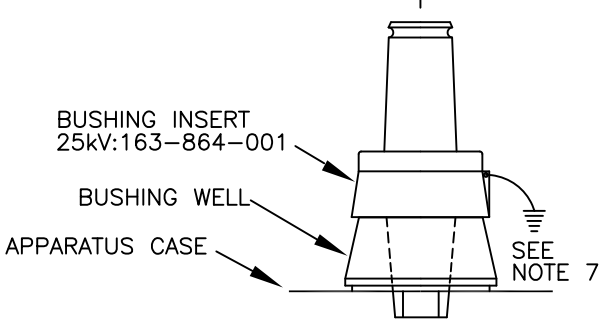
GASKET DETAIL FOR BUSHING WELL



CROSS SECTION OF GASKET

TRANSFORMER SIZE	BUSHING WELL M&S
15 KVA	163-025-008
25 -50 KVA	163-025-009
75 KVA AND LARGER	163-026-005





BUSHING INSERT AND ELBOW DETAIL

NOTES:

1. FOR 15KVA SINGLE PHASE TRANSFORMER ON 13KV AREAS USE BUSHING WELL 163-025-008 WITH ADAPTER KIT 163-005-000. SEE UX-429.1.0 AND UX-429.1.1 FOR DETAILS.
2. INSTALLATION CAN BE MADE ONLY ON 25 KVA AND LARGER SINGLE PHASE AERIAL TRANSFORMERS THAT WILL ACCEPT INTERNALLY CLAMPED BUSHING WELL.
3. SELECT CORRECT BUSHING WELL FROM TABLE TO ENSURE THAT PROPER CLEARANCES ARE MAINTAINED.
4. REFER TO I-63.0.2 FOR INSTRUCTIONS ON INSTALLING BUSHING WELL.
5. BUSHING WELLS ACCEPT BOTH 15 AND 25 KV LOADBREAK INSERTS AND ELBOWS. HOWEVER, 15 KV INSERTS AND ELBOWS ARE MAINTENANCE ONLY. REFER TO THE INSTRUCTIONS PROVIDED WITH THESE PRODUCTS.
6. GROUNDING: ATTACH 1/0 PRIMARY CABLE CONCENTRIC NEUTRAL, AERIAL BUSHING AND TRANSFORMER TANK GROUND TO SYSTEM NEUTRAL USING #2C WIRE.
7. BLEED OFF BUSHING INSERT TO TRANSFORMER CASE GROUND.

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
8	11/2/15	UPDATE NOTE 1	ARR	ELS	RDH
7	10/19/15	UPDATE TABLE, ADD NEW NOTE 1	ARR	ELS	RDH
6	9/19/08	ADD NOTE 6	ARR	ELS	JRD
5	3/23/05	UPDATE DRAWING AND NOTES	RCB	ELS	JRD
4	9/16/99	CONVERTED TO CAD	WC	DLW	JJM
3	7-2-84	FORMERLY DRAWING NO. UL-10	RS	JRG	RKS
2	1-1-83	REVISED NOTE 3 & 4	DKE	KB	RKC
1	7-2-76	ADDED SHEET 2 & REV. GASKET DETAIL	DKE	KB	RKC
0	10/3/72	ORIGINAL DRAWING	DKE	KB	RKC

SFHHA 009943
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: DKE
DRAWN BY: KB
DATE: 10/3/72
APPROVED: G.W. WILLIAMS FOR STREET
CHIEF ENGINEER
NO SCALE

I-67.0.2 INSTALLATION OF BUSHING WELL (15/25KV) OR INTERNALLY CLAMPED POTHEAD (15KV) IN SINGLE PHASE AERIAL TRANSFORMERS

I-67.0.2

LID REMOVAL:

1. TO RELIEVE ANY INTERNAL PRESSURE IN THE TANK, OPERATE THE PRESSURE RELIEF DEVICE ON THE TRANSFOMER. ON OLD TRANSFORMERS WITHOUT THIS DEVICE, SECURE THE LID WITH A CHAIN BEFORE LOOSENING THE COVER BAND CLAMP BOLT. (SEE FIGURE "A")
2. UNSCREW THE AERIAL LUG CONNECTORS FROM THE TOP OF THE PRIMARY BUSHINGS. DISCONNECT THE EXTERNAL COVER GROUND STRAP IF THE TRANSFORMER IS SO EQUIPPED.
3. LOOSEN AND REMOVE THE COVER BAND CLAMP BOLT. THE COVER BAND SHOULD EXPAND AND DROP DOWN WITHOUT ASSISTANCE. IF NOT, LOOSEN THE COVER BAND BY TAPPING WITH A RUBBER MALLET.
4. LIFT LID ENOUGH TO REACH IN AND DISCONNECT THE LID GROUND WIRE. UNBOLT THE WIRE AT THE LID. (NEWER CENTRAL MALONEY TRANSFORMERS HAVE AN EXTERNAL LID GROUND, SO THIS STEP DOES NOT APPLY.)
5. REMOVE THE LID AND MOVE IT AWAY FROM OPEN TRANSFORMER TANK TO AVOID DROPPING HARDWARE INTO TANK. REPLACE BUSHING, FOLLOWING INSTRUCTIONS BELOW.

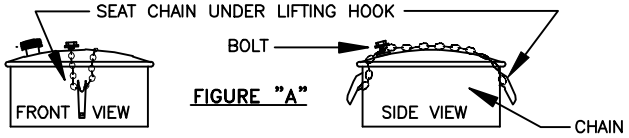


FIGURE "A"

INSTALLATION OF BUSHING WELL :

1. REMOVE AERIAL BUSHING FROM LID OF TRANSFORMER, SAVING INTERNAL CLAMPING RING AND SPRING FOR USE ON THE BUSHING WELL.
2. INSERT BUSHING WELL IN LID OF TRANSFORMER.
3. LOOSEN SET SCREWS IN INTERNAL CLAMPING RING UNTIL THEY ARE FLUSH WITH EDGE OF CLAMP. PUSH CLAMP UP OVER BUSHING WELL INTO POSITION AGAINST LID.
4. ROLL SPRING INTO GROOVE. TIGHTEN SET SCREWS EVENLY UNTIL INTERNAL CLAMP IS TIGHT AGAINST SPRING. TIGHTEN LOCK NUTS.
5. USE GASKET SUPPLIED WITH BUSHING WELL.
6. INSPECT THE GASKET VISUALLY TO BE CERTAIN THAT IT FITS AND SEATS PROPERLY. CHECK THE OIL LEVEL TO BE SURE PRIMARY LEAD CONNECTION IS UNDER OIL.
7. SEE STANDARD DRAWING UH-30.0.2 FOR STANDARD ELBOW AND BUSHING TERMINATION DETAILS.

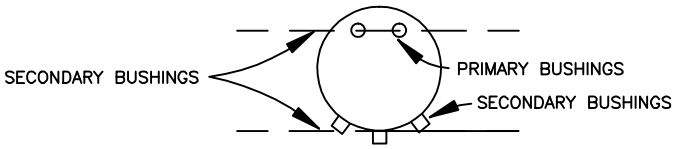


FIGURE "B"

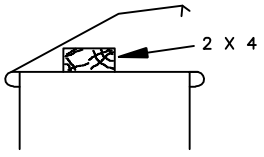


FIGURE "C"

LID REPLACEMENT:

1. PLACE LID ON TANK AND ALIGN PROPERLY (SEE SKETCH). MAKE SURE THE COVER GASKET HAS NOT SLIPPED. ALIGN EXTERNAL LID GROUND TO POINT OF CONNECTION ON TANK OF TRANSFORMERS SO EQUIPPED.
2. IF DESIRED, SUPPORT THE LID WITH A PIECE OF WOOD WHILE RECONNECTING THE PRIMARY LEADS AND INTERNAL COVER GROUNDS. CUT THE PRIMARY LEAD TO THE BUSHING WELL TO THE PROPER LENGTH. INSTALL PRIMARY LEAD IN EYEBOLT CONNECTOR ON BUSHING WELL. CHECK TO SEE THAT THERE IS A 2" MINIMUM CLEARANCE BETWEEN LIVE PARTS AND GROUND UNDER OIL OR 6" MINIMUM IN AIR.
3. POSITION THE COVER BAND AND REPLACE THE CLAMP BOLT. TIGHTEN NUT FIRMLY. TAP BAND ALL AROUND WITH A RUBBER MALLET TO HELP SEAT COVER BAND. RE-TIGHTEN NUT. REPEAT TAPPING AND RE-TIGHTENING UNTIL COVER BAND IS SNUGLY SEATED AND BOLT IS NO LONGER LOOSENED BY TAPPING (TWO OR THREE TIMES SHOULD BE SUFFICIENT). ON NEWER CENTRAL MALONEY TRANSFORMERS WITH EXTERNAL LID GROUNDS, TAPING IS NOT REQUIRED. REPLACE COVER BAND AND TIGHTEN CLAMP BOLT SNUGLY.

SUPERSEDES I-67 LAST REVISED ON 7-2-84

SFHHA 009944
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	3/22/05	UPDATE NOTES	RCB	ELS	JRD
0	6/30/93	ORIGINAL DRAWING	RJO	EF	RKC

ORIGINATOR: RJO DRAWN BY: EF

DATE: 6/30/93 APPROVED: R.J. SALESKY
DIRECTOR, DISTRIBUTION ENGINEERING AND OPERATIONS SERVICES

NO SCALE

OPEN WYE-OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PADMOUNT TRANSFORMERS

I-68.0.1

NOTES:

1. POWER TRANSFORMER MUST HAVE AN INSULATED NEUTRAL BUSHING. THE EXTERNAL GROUND STRAP TO THE CASE MUST BE REMOVED AND THE BUSHING SHALL BE INSULATED WITH SELF BONDING TAPE & ONE HALF LAPPED LAYER OF VINYL TO CONFINE BONDING TAPE.
2. BOND TRANSFORMER CASES TOGETHER WITH #4 BARE COPPER WIRE DIRECT BURIED.
3. SERVICE CABLES FURNISHED AND INSTALLED BY CUSTOMER TO BE IN DUCT.
4. A DECAL WITH THE FOLLOWING NOTE SHALL BE LOCATED IN A CONSPICUOUS PLACE INSIDE BOTH TRANSFORMERS. CAUTION: OPEN WYE-OPEN DELTA TRANSFORMER CONNECTION; THIS TRANSFORMER CAN BE ENERGIZED FROM ADJACENT TRANSFORMER (M&S #548-548-007). REFER TO Z-35.0.0 FOR LOCATION.
5. SEE UV-12.0.0 FOR MARKING UNDERGROUND CABLES.
6. THIS STANDARD IS FOR TRANSFORMERS 167 KVA AND SMALLER.
7. LOOP SYSTEM SHOWN. RADIAL SYSTEM MAY BE USED.
8. DEAD END PLUG (M&S #163-101-007) IS REQUIRED WHEN INSTALLATION IS PERMANENTLY RADIALLY FED. INSULATED CAP ASSEMBLY (M&S #163-018-002, OR M&S #163-022-000) REQUIRED AT LOOP OPEN POINT (13kV AREAS) OR WHEN LOOP WILL BE EXTENDED IN FUTURE.
9. LIGHTING TRANSFORMER SHALL BE DEAD FRONT (36" HIGH) OR LOW STYLE (24" HIGH) WITH HORIZONTAL TYPE SECONDARY SPADES. MAXIMUM SECONDARY CABLE SIZE FOR LOW STYLE TRANSFORMER IS #4/0.
10. REFER TO I-60, C-12, I-62 AND I-65 FOR MATERIAL DESCRIPTIONS.
11. ALL SINGLE PHASE 7620 VOLT TRANSFORMERS 167 KVA AND SMALLER ARE ADDITIVE POLARITY. ALL 23 KV AND DUAL VOLTAGE TRANSFORMERS ARE SUBTRACTIVE POLARITY. CONNECTIONS MUST BE MADE AS SHOWN IN DIAGRAM.
12. IF C.T. METERING AT TRANSFORMER IS REQUIRED, REFER TO K-26.0.2 LEAVE PULL STRING IN METERING CONDUIT.
13. IN ORDER TO AVOID DRIVING THE GROUND ROD THROUGH EXISTING CABLES, A GROUND ROD SLEEVE MUST BE INSTALLED WITH THE BACKBONE CONDUIT. THIS SLEEVE (MINIMUM 4 FT SECTION OF 2" CONDUIT) SHOULD BE INSTALLED IN THE LEFT FRONT OF THE PRIMARY ENTRANCE OPENING, AND EXTEND BELOW ALL OTHER CONDUIT. A MINIMUM OF 6 INCHES ON SLEEVE SHOULD REMAIN ABOVE GROUND.
14. FOR DUAL VOLTAGE OR 23kV NORMALLY OPEN POINTS USE 18kV RATED ELBOW ARRESTERS. (RATING IS FOR PHASE TO GROUND VOLTAGE). REFER TO I-62.0.0 AND I-65.1.1.
15. WHEN CONNECTING MORE THAN ONE CUSTOMER CABLE TO POWER LEG USE HANDHOLE MULTITAP (M&S #163-066-007).
16. THE NESC REQUIRES A MINIMUM OF 6 FEET SPACING BETWEEN RODS. IF ADDITIONAL RODS ARE REQUIRED, REFER TO G-2.0.2.

SFHHA 009945
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
5	6/24/08	UPDATE NOTE 13	JFV	ELS	JJM
4	8/01/01	UPDATED DRAWING (REFERENCES)	GJP	JES	IA
3	9/4/99	UPDATED DRAWING (TEXT)	WC	DLW	JJM
2	9/25/90	REVISED NOTE #14 AND ADDED NOTE #16	JV	HO	RKC
1		ADDED NOTE #15	JV	HO	GWH

ORIGINATOR: J.V.

DRAWN BY: J.R.F.

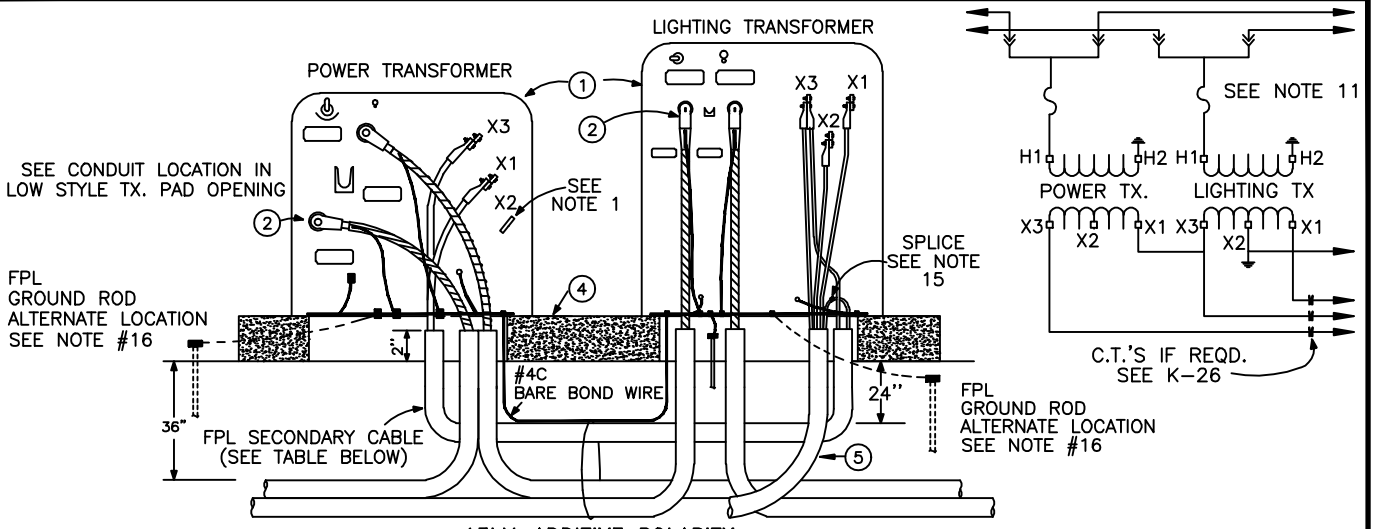
DATE: 1/1/90

APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

OPEN WYE-OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PADMOUNT TRANSFORMERS

I-68.0.2

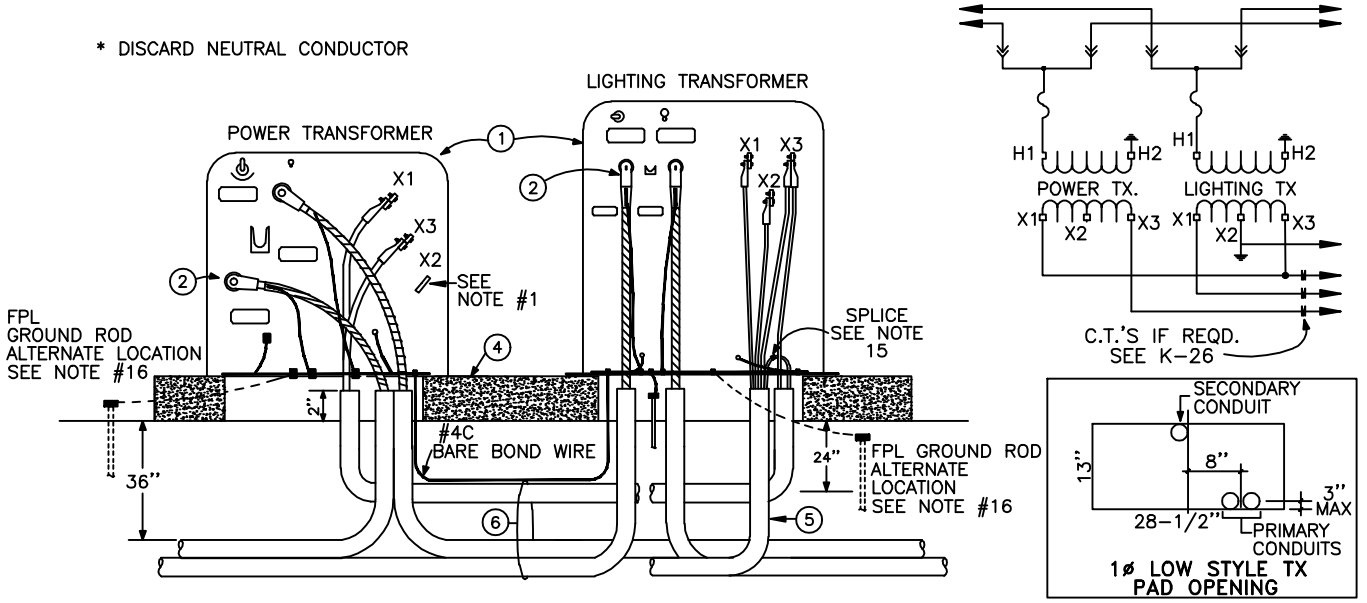


13kV-ADDITIVE POLARITY

SECONDARY CABLE SIZE GOVERNED BY KVA OF POWER TRANSFORMER	
POWER TRANSFORMER KVA	ALUMINUM CABLE SECONDARY SIZE
25	1/0 TPX *
37-1/2 & 50	4/0 TPX *
75	350 kcmil
100	2-350 kcmil

ITEM	QUANTITY	DESCRIPTION (SEE NOTE 10)		M&S NUMBER
1	2	PAD MOUNTED TX.		SEE NOTE 9
2	VARIES	ELBOW TERMINATOR:	15kV ELBOW	163-58700-7
			25kV ELBOW	163-50200-1
3	VARIES	COLD SHRINK TERMINATOR-SEE UH-34		163-51000-4
4	1	PAD TX, (SEE UX-115)		162-24600-1
5	VARIES	CONDUIT (FURNISHED & INSTALLED BY CUSTOMER)		VARIES

* DISCARD NEUTRAL CONDUCTOR



23kV OR DUAL VOLTAGE SUBTRACTIVE POLARITY

SUPERSEDES I-68.0.2 LAST REVISED ON 9-25-90

NOTES: SEE I-68.0.1

SFHHA 009946

FPL

FPL RC-16

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	8/01/01	REMOVE REFERENCES TO DELETED SHEET	GJP	JES	IA
1	9/30/94	REVISED CHART FOR ITEM #3 TO COLD-SHRINK TERMINATOR	RJO	JED	RJS
0	9/25/90	ORIGINAL DRAWING	RJO	JED	RJS

ORIGINATOR: RJO

DRAWN BY: JED

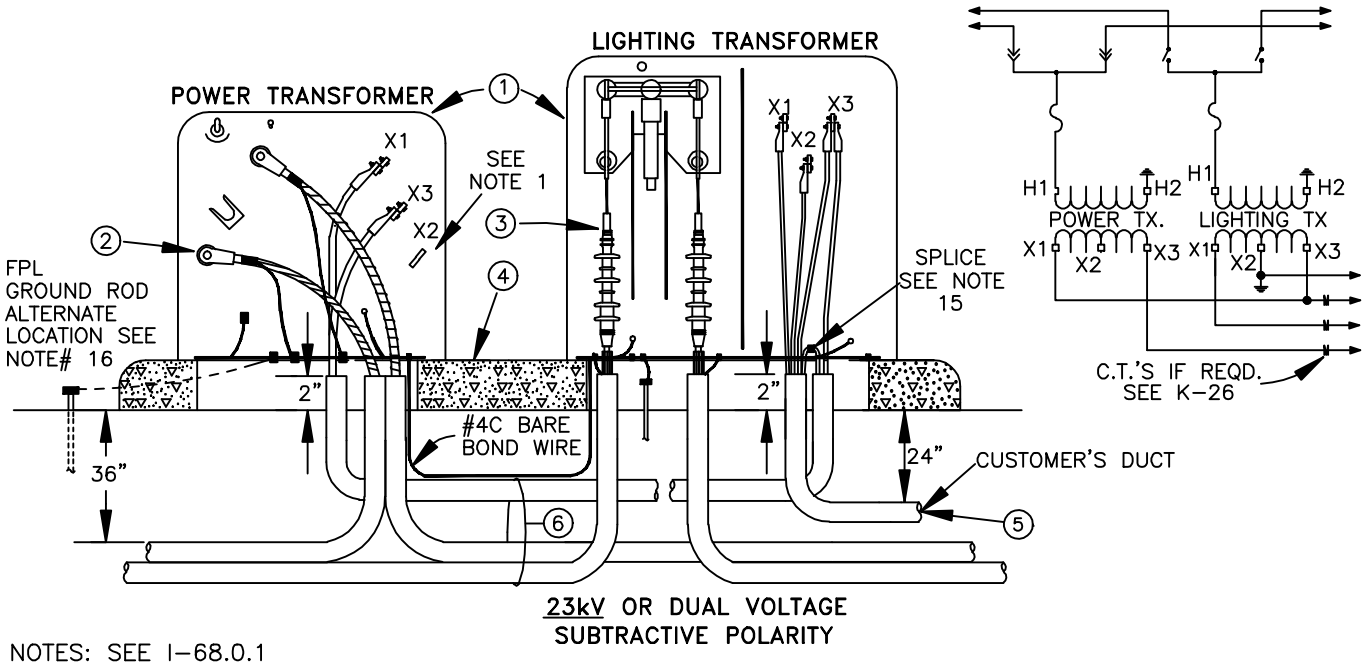
DATE: 9/30/94

APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

OPEN WYE-OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PADMOUNTED TRANSFORMERS (FOR MAINTENANCE ONLY)

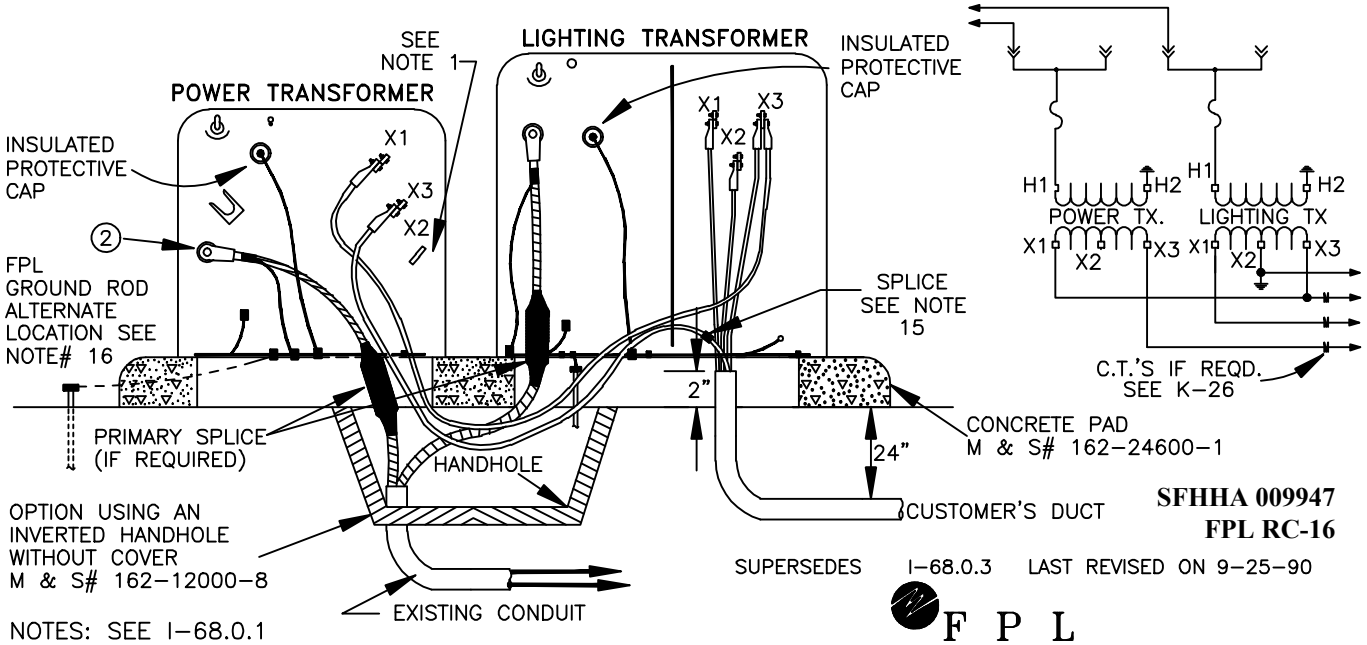
I-68.0.3



23kV OR DUAL VOLTAGE
SUBTRACTIVE POLARITY

NOTES: SEE I-68.0.1

CONVERSION OF RADIALLY FED DUPLEX TRANSFORMER TO OPEN WYE-OPEN DELTA TRANSFORMER BANK USING SINGLE PHASE PADMOUNT TRANSFORMERS (FOR MAINTENANCE ONLY)



NOTES: SEE I-68.0.1

SFHHA 009947
FPL RC-16

SUPERSEDES I-68.0.3 LAST REVISED ON 9-25-90

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	8/08/01	UPDATE DRAWING (TITLE AND TEXT)	GJP	JES	IA
3	9/30/94	REV. TERMINATORS TO COLD-SHRINK TYPE	RJO	JED	RJS
2	9/30/94	CORRECTED SECONDARY WIRING AND LOWER HALF OF DRAWING	AFA	JED	RJS
1	6/30/93	REDRAWN-ADDED NEW FRAME	MV	EF	RJS

ORIGINATOR: RJO DRAWN BY: JED

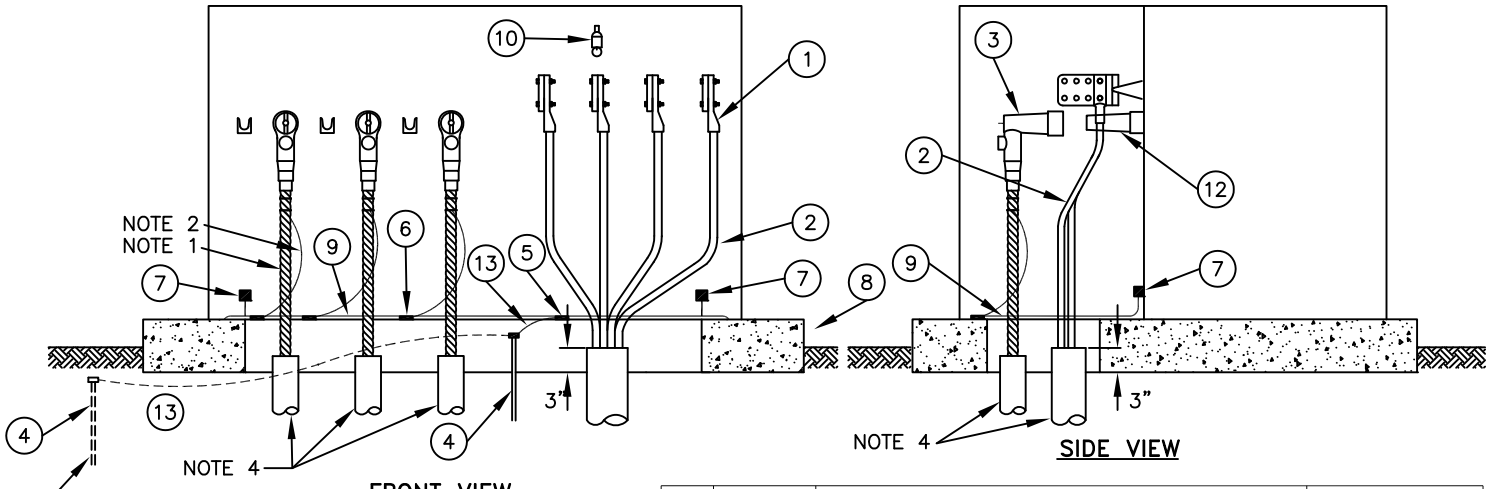
DATE: 6/30/93 APPROVED: R.J. SALESKY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

I-69.0.0

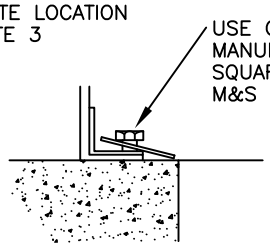
TYPICAL CONNECTIONS THREE PHASE RADIAL DEAD FRONT PADMOUNT TRANSFORMERS 7620/13200Y, 13200/22860Y VOLT AND DUAL VOLTAGE

I-69.0.0

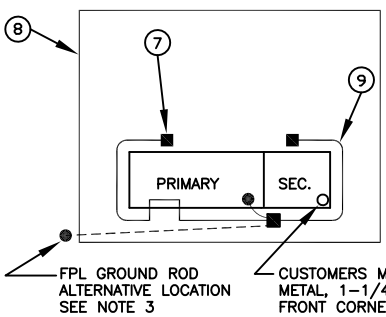


FRONT VIEW

SIDE VIEW



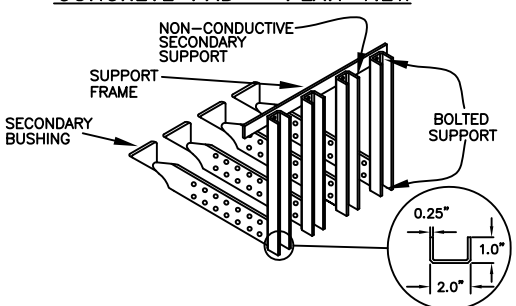
HOLD DOWN DETAIL



CONCRETE PAD - PLAN VIEW

ITEM	QUANTITY	DESCRIPTION	M&S NO.
1	-	TERMINAL LUG, NUMBER, SIZE AND METAL AS REQUIRED	VARIOUS
2	-	SERVICE CABLES	VARIOUS
3	3	ELBOW TERMINATOR 15kV / 25kV	163-587-007 / 163-502-001
4	AS REQ.	COPPERWELD GROUND ROD AND CONNECTOR AS REQUIRED PER STD G-2	130-616-008 OR 130-617-004
5	1	CONNECTOR COMPRESSION, #4 TO #6 KEARNEY / BURNDY	120-111-001 / 120-132-008
6	3	CONNECTOR COMPRESSION, #4 TO #4 KEARNEY / BURNDY	120-112-007 / 120-133-004
7	2	TRANSFORMER TANK GROUND CONNECTOR UX-116.1.4	120-338-005
8	1	PAD, TRANSFORMER - UP TO 500 KVA	162-246-800
		PAD, TRANSFORMER - 750KVA 277/480V	162-750-277
		PAD, TRANSFORMER - 750KVA 120/208V	162-750-120
		PAD, TRANSFORMER - 1000KVA	162-100-000
		PAD, TRANSFORMER - 1500KVA - 2000 277/480V	162-150-200
		PAD, TRANSFORMER - 2500KVA	162-250-025
9	12 FT.	WIRE #4C, BARE	112-309-000
10	1 *	PRESSURE RELIEF VALVE	470-802-001
12	3	BUSHING INSERT (15kV) (25kV)	163-861-001 / 163-864-001
13	2 FT.	WIRE #6C, BARE	112-308-003

* NORMALLY FURNISHED WITH TRANSFORMER



THREE PHASE PADMOUNTED TRANSFORMER
SECONDARY CONNECTIONS
FOR 750 KVA 120/208V & 1000 KVA TO 2,500 KVA

NOTES:
1. PRIMARY CABLE SHOULD HAVE A SLIGHT "BOW" IN FINAL ASSEMBLED POSITION.
2. ALLOW SUFFICIENT LENGTH OF NEUTRAL TO PERMIT FREE MOVEMENT TO ELBOWS.
3. IN ORDER TO AVOID DRIVING THE GROUND ROD THROUGH EXISTING CABLES, A GROUND ROD SLEEVE (MINIMUM 4 FT. SECTION OF 2" CONDUIT) SHOULD BE INSTALLED IN THE LEFT FRONT OF THE PRIMARY ENTRANCE OPENINGS, AND EXTEND BELOW ALL OTHER CONDUIT. A MINIMUM OF 6 INCHES ON SLEEVE SHOULD REMAIN ABOVE GROUND.
4. SEAL ALL CONDUITS WITH DUCT SEAL. PER UN-29.0.0.

SFHHA 009948
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
7	5/4/15	UPDATE TABLE	ARR	ELS	RDH
6	9/29/09	UPDATE DRAWING AND TABLE	GAP	ELS	AEL
5	**6/24/08**	UPDATED NOTE 3	JFV	ELS	JJM
4	9/23/05	UPDATE DRAWING & ADDED M&S NUMBER FOR LARGE PRECAST TX PAD	RJO	ELS	JJM

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

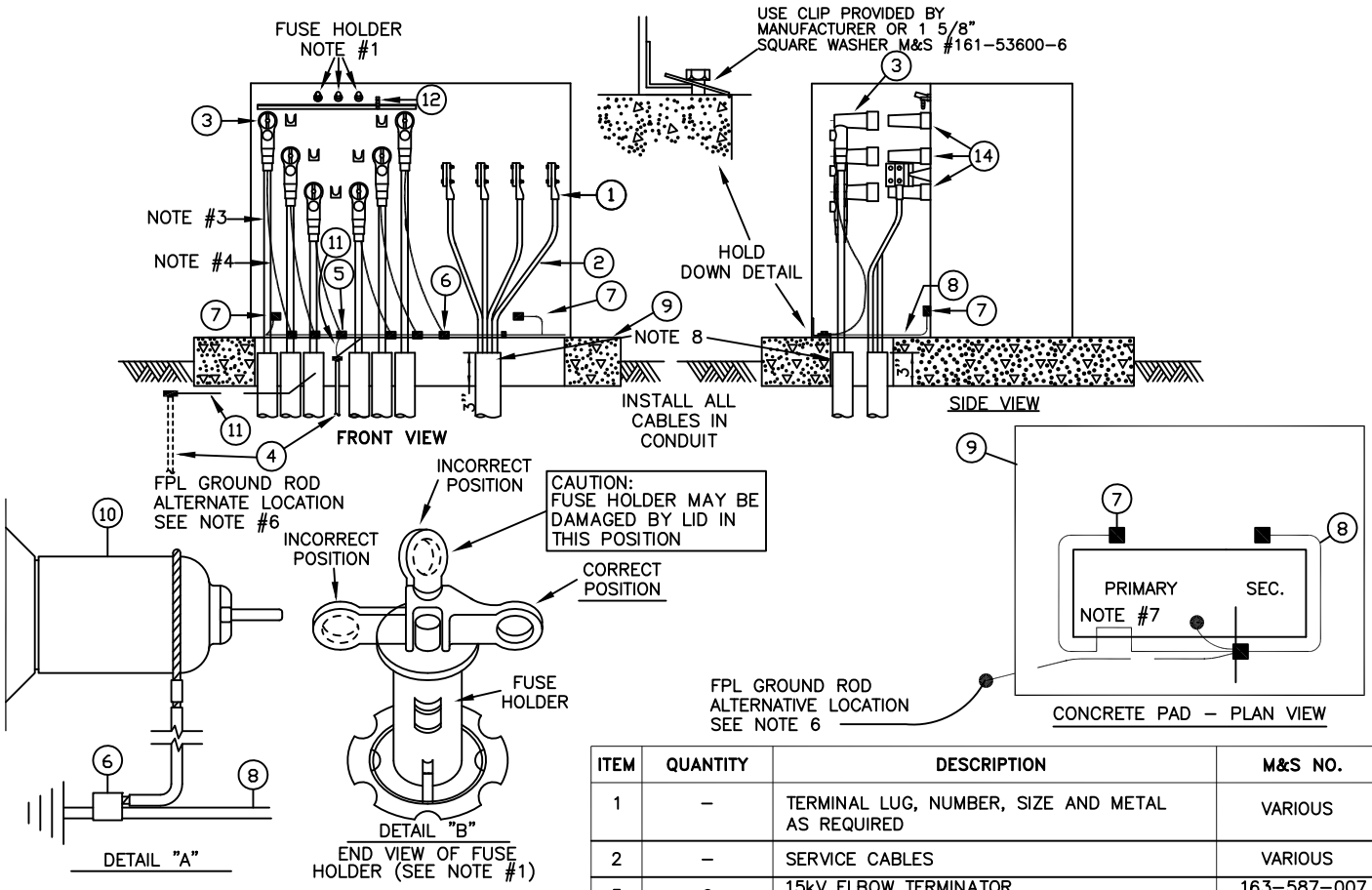
ORIGINATOR: MV DRAWN BY: RAS

DATE: 8/9/96 APPROVED: J.J McEVOY NO SCALE

SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

I-70.0.1 TYPICAL CONNECTIONS 3 PHASE DEAD FRONT SECTIONALIZING PADMOUNT TRANSFORMER 7620/13200Y, 13200/22860Y AND DUAL VOLTAGE

I-70.0.1



ITEM	QUANTITY	DESCRIPTION	M&S NO.
1	–	TERMINAL LUG, NUMBER, SIZE AND METAL AS REQUIRED	VARIOUS
2	–	SERVICE CABLES	VARIOUS
3	6	15kV ELBOW TERMINATOR 25kV ELBOW TERMINATOR	163-587-007 163-502-001
4	AS REQ.	COPPERWELD GROUND ROD AND CONNECTOR AS REQUIRED PER STD G-2	130-613-009
5	1	CONNECTOR COMPRESSION, #4 TO #6 KEARNEY / BURNDY	120-111-001 120-132-008
6	6	CONNECTOR COMPRESSION, #4 TO #4 KEARNEY / BURNDY	120-112-007 120-133-004
7	2	TRANSFORMER TANK GROUND CONNECTOR	120-338-005
8	12 FT.	WIRE #4C, BARE	112-309-000
9	1	PAD, TRANSFORMER – UP TO 500KVA	162-246-800
		PAD, TRANSFORMER – 750KVA 277/480V	162-750-277
		PAD, TRANSFORMER – 750KVA 120/208V	162-750-120
		PAD, TRANSFORMER – 1000KVA	162-100-000
		PAD, TRANSFORMER – 2500KVA	162-250-025
10	3 (NOTE 2)	INSULATED CAP ASSEMBLY (DETAIL A) (15kV) (25kV)	163-018-002 163-022-000
11	2 FT.	WIRE #6C, BARE	112-308-003
12	1 *	PRESSURE RELIEF DEVICES	470-802-001
13	3	18 KV PARKING STAND ARRESTER	334-016-001
14	6	BUSHING INSERT (15kV) (25kV)	163-861-001 163-864-001
15	3	25kV FEED THROUGH DEVICE	160-001-052
16	6	18kV ELBOW ARRESTER	334-015-005

* FURNISHED WITH TRANSFORMER.

FOR TYPICAL CONNECTIONS NOTES SEE I-71.0.0

NOTE:
ON 3Ø LOOP INSTALLATIONS USE 4" PVC CONDUIT WITH 1/0 PRIMARY TPX CABLE.

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
6	9/29/09	UPDATE DRAWING & TABLE	GAP	ELS	AEL
5	9/23/05	UPDATED DRAWING & ADDED M&S NUMBER FOR TX PRECAST CONCRETE PADS	RJO	ELS	JJM
4	3/22/04	UPDATE DRAWING (TEXT)	LFV	ELS	JJM
3	7/21/01	UPDATE DRAWING (TEXT)	RAP	JES	JJM
2	10/25/99	CHANGED AS PER SPEC. 7-23 PG. 18	WPC	DLW	JJM
1	9/30/94	REVISED DIMENSION TO SIDE VIEW	MV	RAS	JJM
0	1/29/92	ORIGINAL DRAWING	MV	RAS	JJM

SFHHA 009949
FPL RC-16

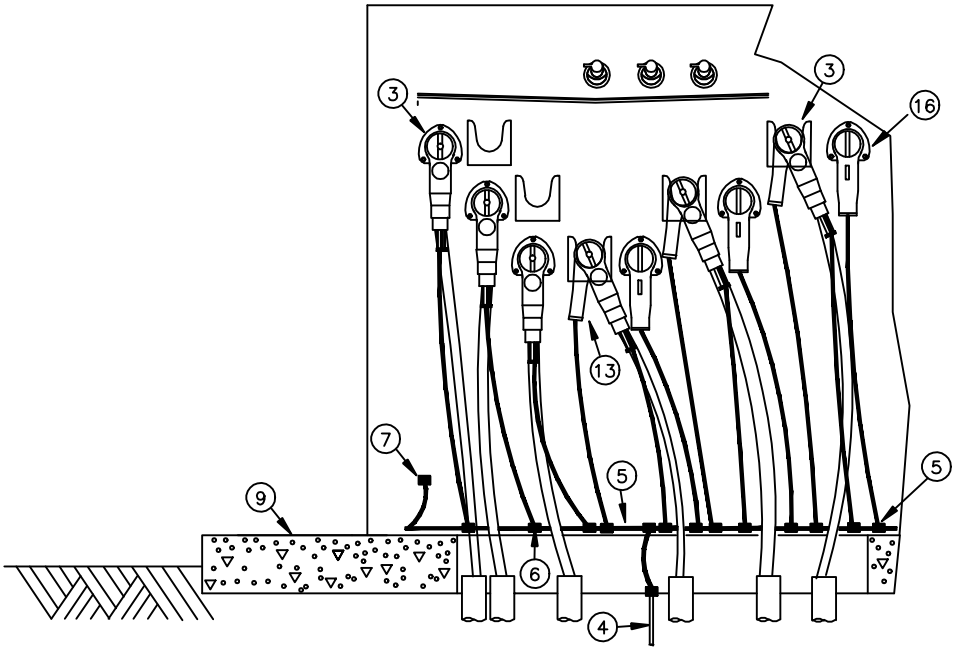
FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: MV
DRAWN BY: RAS
DATE: 8/9/96
APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

I-70.0.2

TYPICAL CONNECTIONS FOR 3 PHASE, 13.2/22.8 Kv, DEAD-FRONT, SECTIONALIZING PAD-MOUNT TRANSFORMER, AT NORMAL OPEN POINTS, USING PARKING STAND ARRESTERS.

I-70.0.2



ELBOW TERMINATOR STACKS ON TOP OF PARKING STAND ARRESTER

FRONT VIEW
23kV NORMAL OPEN POINTS
DEAD FRONT TRANSFORMER WITH ELBOW ARRESTERS

NOTES:

1. VENT PRESSURE RELIEF DEVICE TO EQUALIZE PRESSURE INSIDE TANK BEFORE REMOVING FUSE (REFER TO UJ-10). BE SURE THAT FUSE IS FULLY INSERTED WITH HOOK STICK, RING LATCHED AND POINTED TO THE RIGHT. SEE DETAIL "B".
2. INSULATED CAP ASSEMBLY REQUIRED WHEN THE CIRCUIT IS A TEMPORARY CABLE END. CAP MAY BE USED ON ANY MANUFACTURER'S BUSHING. INSULATED CAP MUST BE BONDED TO SYSTEM NEUTRAL. SEE DETAIL "A".
3. VERIFY THERE IS ENOUGH SLACK IN THE CABLE AND NEUTRAL WIRE SO THAT THE ELBOW CAN BE MOVED FROM THE BUSHING TO THE PARKING STAND/FEED THROUGH DEVICE WITH EASE.
4. UNITS PURCHASED AFTER 1976 DO NOT HAVE PRIMARY LOOP SWITCH.
5. IN ORDER TO AVOID DRIVING THE GROUND ROD THROUGH EXISTING CABLES, A GROUND ROD SLEEVE MUST BE INSTALLED WITH THE BACKBONE CONDUIT. THIS SLEEVE (MINIMUM 4 FT SECTION OF 2" CONDUIT) SHOULD BE INSTALLED IN THE LEFT FRONT OF THE PRIMARY ENTRANCE OPENING, AND EXTEND BELOW ALL OTHER CONDUIT. A MINIMUM OF 6 INCHES ON SLEEVE SHOULD REMAIN ABOVE GROUND.
6. BEND LOOP IN GROUND WIRE TO FORM ATTACHMENT POINT FOR TEMPORARY CLAMPS.
7. SEAL ALL CONDUITS WITH DUCT SEAL.
8. SEE UV-12 FOR MARKING UNDERGROUND CABLES AND Z-35 FOR DECALS..
9. FOR 23kV NORMALLY OPEN POINTS USE 15kV RATED ELBOW ARRESTERS. (RATING IS FOR PHASE TO GROUND VOLTAGE).
10. FOR SECONDARY CONNECTIONS ON 750 KVA AND ABOVE SEE I-69.

NOTE: REFER TO I-70.0.1 FOR NUMBERED ITEM DESCRIPTIONS.

SFHHA 009950
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
4	6/24/08	UPDATE NOTE 5	LFV	ELS	JJM
3	4/5/05	UPDATE DRAWING (TEXT)	LFV	ELS	JJM
2	3/22/04	UPDATE DRAWING (TEXT)	LFV	ELS	JJM
1	1/29/92	REVISE NOTES	MV	JRG	JRG
0	4/16/91	ORIGINAL DRAWING	JV	HO	RKC

ORIGINATOR: JV

DRAWN BY: HO

DATE: 4/16/91

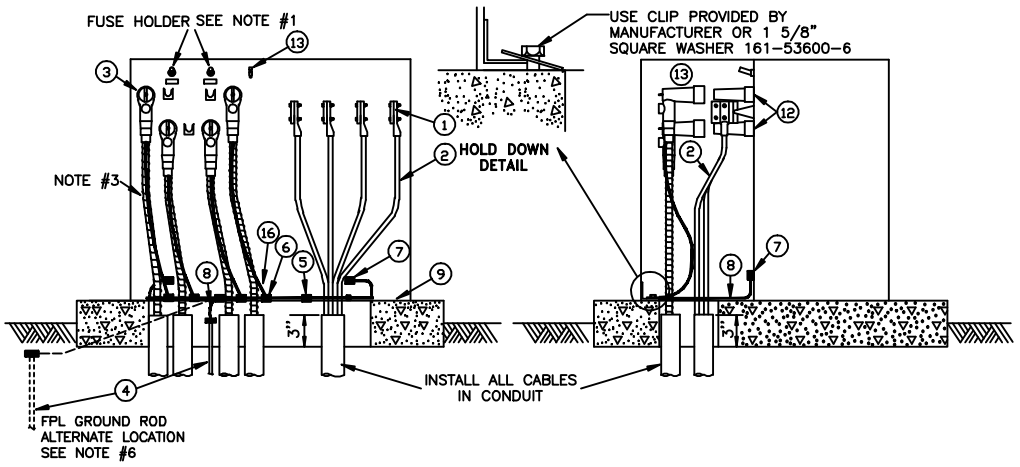
APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

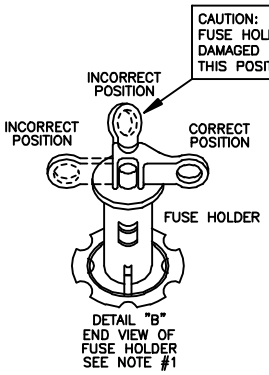
NO SCALE

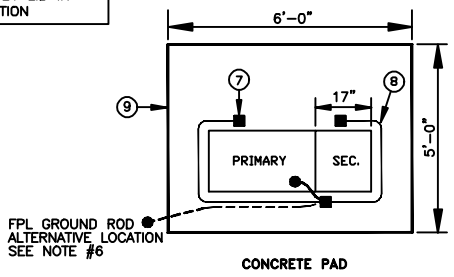
TYPICAL CONNECTIONS DEAD FRONT DUPLEX PADMOUNTED TRANSFORMER, 7620/13200V (FOR MAINTENANCE ONLY)

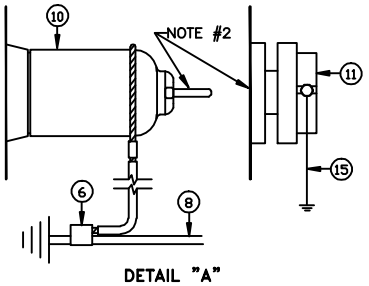
I-71.0.0

REFER TO I-68.0.1 FOR CURRENT STANDARD









ITEM	QUANTITY	DESCRIPTION	M&S NUMBER
①	--	TERMINAL LUG, NUMBER, SIZE & METAL AS REQUIRED.	VARIOUS
②	--	SERVICE CABLES	VARIOUS
③	4	ELBOW TERMINATOR	163-58700-7
④	AS REQUIRED	COOPERWELD GROUND ROD & CONNECTION AS REQUIRED PER STANDARDS G-2.	130-61300-9
⑤	1	CONNECTOR COMPRESSION, #4 TO #6. KEARNEY / BURNDY	120-11100-1 / 120-13200-8
⑥	4	CONNECTOR COMPRESSION, #4 TO #4. KEARNEY / BURNDY	120-11200-7 / 120-13300-4
⑦	2	TRANSFORMER TANK GROUND CONNECTOR	120-33800-5
⑧	9 FT.	WIRE #4C, BARE	112-30800-3
⑨	1	PAD, TRANSFORMER, 3Ø, UX-116.1.4	162-24700-8
⑩	2 (NOTE #2)	INSULATED CAP ASSEMBLY (DETAIL "A")	163-01800-2
⑪	2 (NOTE #2)	DEAD END PLUG (DETAIL "A")	163-10100-7
⑫	4	BUSHING INSERT, 15kV	163-86100-1
⑬	1*	PRESSURE RELIEF VALVE	470-80200-1
⑮	3 FT. (NOTE #2)	#12 TW COPPER, WHITE	115-09300-8
⑯	2 FT.	WIRE #6C, BARE	112-30800-3

* FURNISHED WITH TRANSFORMER

NOTES:
1. VENT PRESSURE RELIEF DEVICE TO EQUALIZE PRESSURE INSIDE TANK BEFORE REMOVING FUSE (REFER TO UJ-10). BE SURE THAT FUSE IS FULLY INSERTED WITH HOOK STICK RING LATCHED AND POINTED TO THE RIGHT. SEE DETAIL "B".
2. USE DEAD END PLUG WHEN THE PRIMARY CIRCUIT ENDS AT THE TRANSFORMER. IF THE CIRCUIT IS A TEMPORARY CABLE END USE AN INSULATED CAP. CAPS AND PLUGS WILL FIT ON ANY MANUFACTURE'S BUSHING. DEAD END PLUG AND INSULATED CAP MUST BE BONDED TO SYSTEM NEUTRAL (SEE DETAIL "A").
3. PRIMARY CABLE SHOULD HAVE A SLIGHT "BOW" IN FINAL ASSEMBLED POSITION.
4. ALLOW SUFFICIENT LENGTH OF NEUTRAL TO PERMIT FREE MOVEMENT TO ELBOWS.
5. TIGHTEN SECURITY BOLT AND MAKE SURE PADLOCK IS LOCKED.
6. MAKE CERTAIN OF CABLE LOCATION BEFORE INSTALLING GROUND RODS TO AVOID DRIVING THE GROUND ROD THROUGH ANY EXISTING CABLES.
7. DUPLEX TRANSFORMERS NO LONGER PURCHASED. SEE I-68 FOR INSTALLATION OF TWO SINGLE PHASE TRANSFORMERS.
8. SEE UV-12 FOR MARKING UNDERGROUND CABLES.

SFHHA 009951
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	8/08/01	UPDATED DRAWING (TITLE, CHART, & TEXT)	GJP	JES	IA
2	9/15/99	CHANGED AS PER SPEC.7-23 PG.17	WPC	DLW	JJM
1	1/29/92	CHANGED POSITION OF FUSE HOLDER	RWS	JRG	RKC
0	3/15/91	ORIGINAL DRAWING	JV	HO	RKC

ORIGINATOR: JV DRAWN BY: HO

DATE: 3/15/91 APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

TYPICAL HIGH RISE STACKED VAULT

I-73.0.1

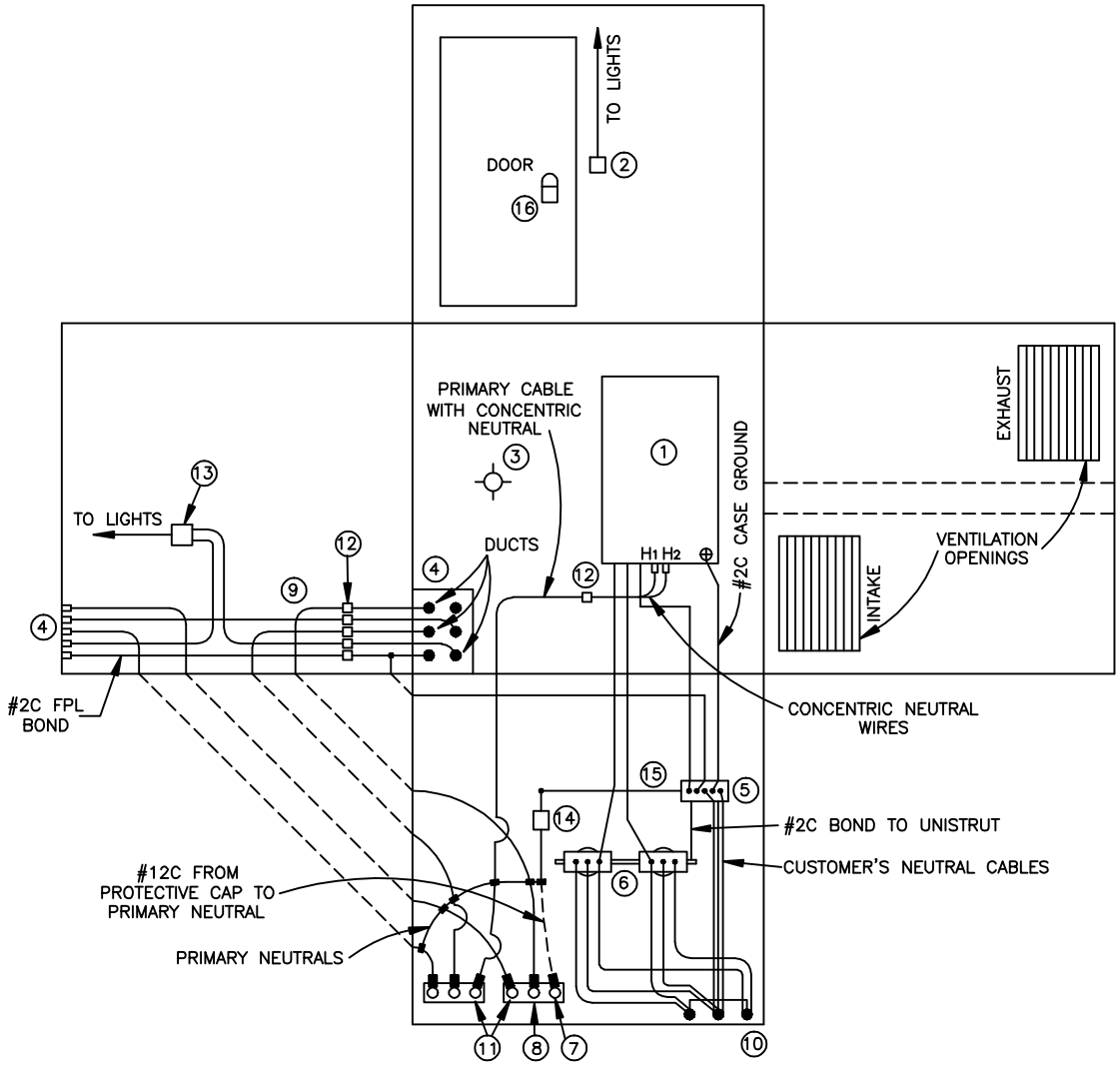


FIG. 3 – TYPICAL HIGH-RISE VAULT

	MATERIAL
1	SINGLE PHASE DRY TYPE TRANSFORMER
2	LIGHT SWITCH
3	LIGHT
4	DUCTS TO NEXT VAULT
5	SECONDARY NEUTRAL COLLECTOR BUS
6	SERVICE COLLECTOR BUS
7	15 OR 25 KV GROUNDED PROTECTIVE CAP
8	15 OR 25 KV LOADBREAK ELBOW
9	CABLE 15 OR 25 KV 1/0A XPE INSULATED CABLE JACKETED
10	DUCTS FOR CUSTOMER'S CABLE
11	15 OR 25 KV 3 PORT JUNCTION
12	CABLE SPOOLS SUPPORT
13	30 AMP FUSE SWITCH
14	SECONDARY SURGE ARRESTER
15	#2 CU INSULATED WIRE
16	MORTISE LOCK, ONE PER VAULT (M&S #546-12345-9)

NOTES:

1. SEE 1-73.0.4 FOR PRIMARY ARRESTER INSTALLATION IN TOP STACKED VAULT FOR EACH PHASE.
2. A SECONDARY ARRESTER, INSTALLED BETWEEN THE PRIMARY NEUTRAL AND SECONDARY NEUTRAL, IS REQUIRED IN ALL STACKED VAULTS. THIS CONNECTION PREVENTS AN INDUCED RISE ON THE PRIMARY NEUTRAL FROM AFFECTING THE SECONDARY CIRCUITS AND CUSTOMER WATER LINES.
3. FOR CIRCUIT DIAGRAM SEE I-73.0.2.
4. DO NOT INSTALL NEUTRAL BUS BONDING SCREW.

SFHHA 009952
FPL RC-16

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	3/21/08	UPDATE NOTE # 2	LFV	ELS	JJM
2	9/19/05	UPDATE NOTE # 1	LFV	ELS	JJM
1	8/9/96	ADDED MORTISE FOR VAULT DOOR	BLM	RAS	JJM
0	6/30/93	ORIGINAL DRAWING	BLM	RAS	JJM

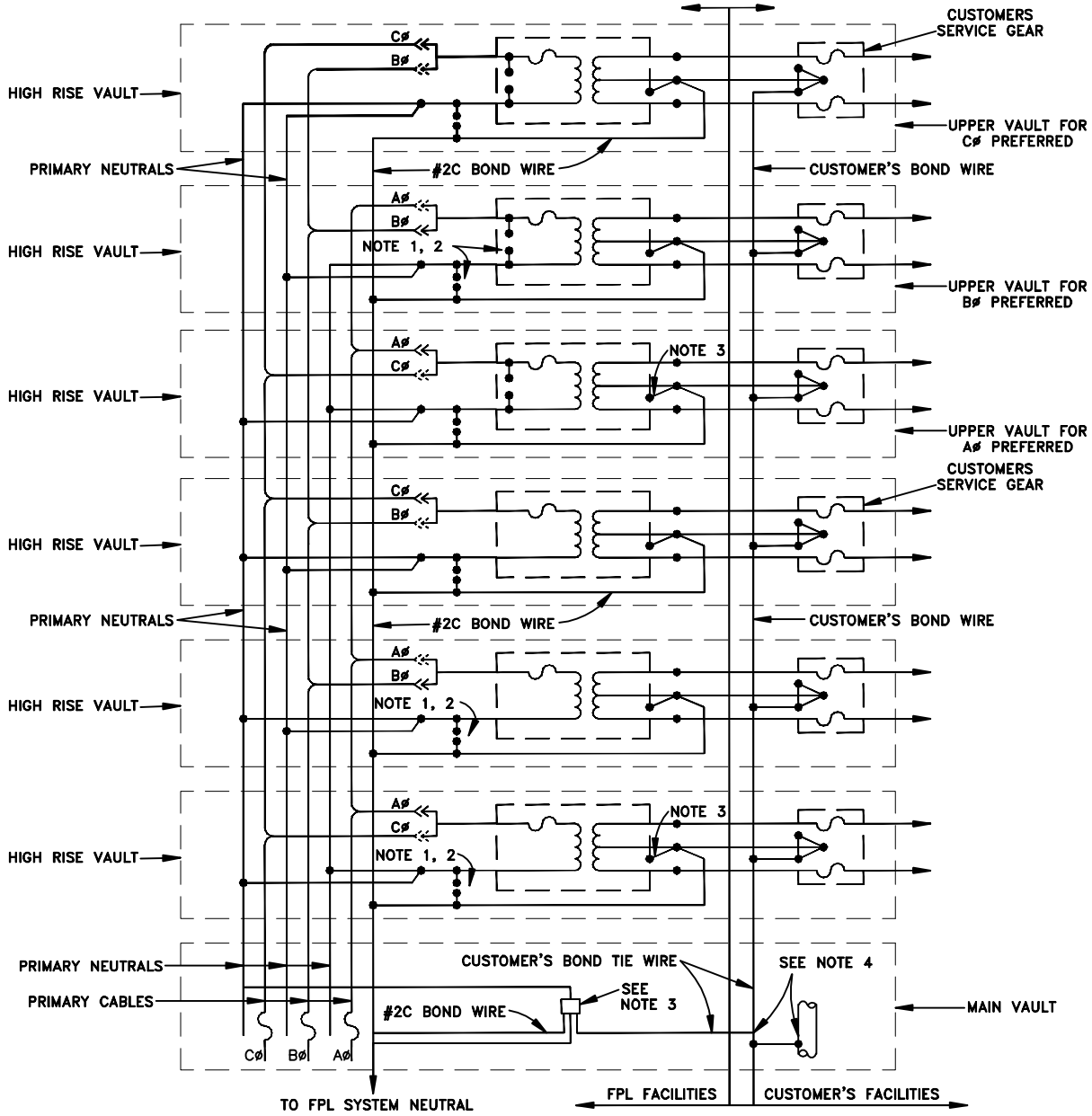
ORIGINATOR: BLM DRAWN BY: RAS

DATE: 8/9/96 APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

GUIDE FOR THE INSTALLATION OF DISTRIBUTION SYSTEMS IN RESIDENTIAL HIGH RISE BUILDINGS

I-73.0.2



SYSTEM FOR HIGH RISE BUILDINGS

NOTES:

1. ONLY THREE HIGH RISE UPPER VAULTS AND THREE SUBSEQUENT VAULTS ARE SHOWN FOR SIMPLICITY. PRIMARY AND SECONDARY ARRESTERS ARE DESCRIBED IN D.C.S. I-73.0.4 AND IN DERM 5.5.2, PAGE 1 OF 6.
2. CONNECT ALL BONDS AND NEUTRALS TOGETHER IN MAIN VAULT. IN ALL HIGH RISE "STACKED" VAULTS FPL NEUTRAL AND CUSTOMER NEUTRALS SHALL BE SEPARATED BY SECONDARY ARRESTER, M&S #334-08000-1
3. INTERNAL CONNECTIONS PROVIDED BY TRANSFORMER MANUFACTURER.
4. THE CUSTOMER'S BOND SHALL BE CONNECTED TO HIS WATER PIPE GROUND IN ACCORDANCE WITH LOCAL CODE AND TO FPL'S SYSTEM NEUTRAL IN THE MAIN VAULT.

SUPERSEDES I-73.0.2 LAST REVISED ON 1-29-92

SFHHA 009953

FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	9/19/05	UPDATE NOTE 2	LFV	ELS	JJM
1	8/9/96	CHANGED NOTE 2 AND REFERENCE TO NOTE 2	BLM	RAS	JJM
0	6/30/92	ORIGINAL DRAWING	BLM	RAS	JJM

ORIGINATOR: BLM DRAWN BY: RAS

DATE: 8/9/96 APPROVED: J.J. MCEVOY

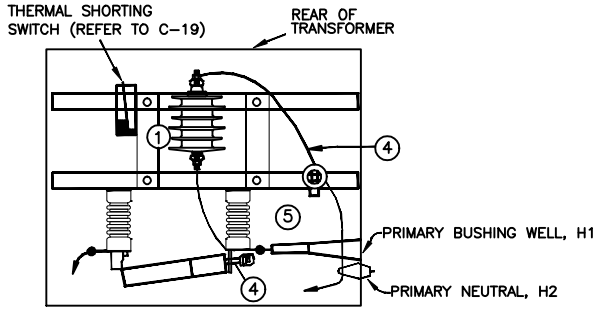
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

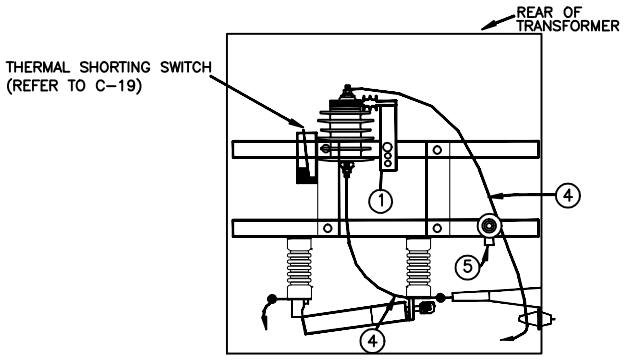
INSTALLATION OF SURGE ARRESTER IN 1ø DRY TYPE TRANSFORMER

I-73.0.3

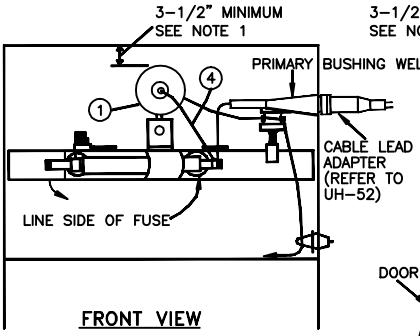
(MAINTENANCE ONLY)



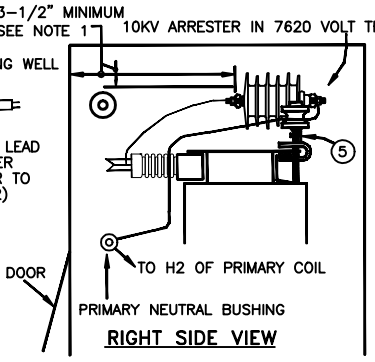
TOP VIEW



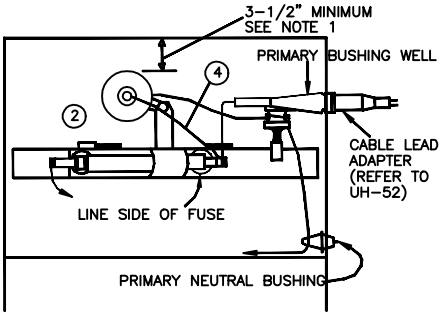
TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW



FRONT VIEW

13200/22860 VOLT OR DUAL VOLTAGE TRANSFORMER

ITEM	M&S NO.	DESCRIPTION	TRANSFORMER REQUIRED		
			7620/13200Y	7620/13200Y 13200/22860 Y	13200/22860 Y
			QUANTITY REQUIRED		
1	334-17500-2	10KV LIGHTNING ARRESTER	1	--	--
2	334-21500-4	18KV LIGHTNING ARRESTER	--	1	1
3	141-20400-8	L BRACKET	--	1	1
4	112-30800-3	WIRE, #6 C BARE	8	8	8
5	141-28800-7	TRANSFORMER SECONDARY RISER BRACKET	1	1	1

NOTES:

1- PRIMARY ARRESTERS-
IN VAULTS SERVED AT 7620/13200V, A DISTRIBUTION CLASS SURGE ARRESTER SHALL BE CONNECTED FROM EACH PHASE, IN THE TRANSFORMER ON THE UPPER FLOOR VAULT FOR THAT PHASE, TO THE PRIMARY NEUTRAL. AN ARRESTER WILL NOT BE INSTALLED IN THE TOP VAULT FOR THE ALTERNATE PHASE. THIS PHASE WILL BE PROTECTED BY THE ARRESTER INSTALLED IN THE UPPER VAULT FOR WHICH THAT PHASE IS THE PREFERRED SOURCE. FOR DUAL VOLTAGE AND 23 KV DRY-TYPE TRANSFORMERS, PRIMARY SURGE ARRESTERS SHOULD BE INSTALLED IN ALL VAULTS.

2- SECONDARY ARRESTERS-
A 650 VOLT SILICON CARBIDE SURGE ARRESTER (M&S NO. 334-08000-1) SHALL BE INSTALLED IN ALL VAULTS. IT IS CONNECTED FROM THE PRIMARY NEUTRAL TO THE SECONDARY NEUTRAL WITH INSULATED #2C WIRE. THIS IS A THREE PHASE ARRESTER, AND HAS THREE PHASE WIRES (BLACK) AND ONE NEUTRAL WIRE (WHITE). ONLY ONE PHASE WIRE SHALL BE USED. CONNECT THE WHITE NEUTRAL WIRE AND ONE BLACK WIRE OF ARRESTER, POLARITY NOT IMPORTANT. REMOVE THE REMAINING TWO BLACK ARRESTER WIRES, SINCE THEY ARE NOT NEEDED. THE SECONDARY ARRESTER IS TO ISOLATE FPL NEUTRAL FROM CUSTOMER NEUTRAL, PROTECTING THE CUSTOMER FROM FPL NEUTRAL CURRENTS. THE ARRESTER WILL SHORT WHEN CURRENT SURGES SUCH AS LIGHTNING OR SWITCHING SURGES OCCUR.

3- ADJUST ARRESTER BRACKET AT AN ANGLE, IF NECESSARY TO PROVIDE 3-1/2" MINIMUM CLEARANCE FROM ENERGIZED PARTS OF ARRESTERS TO GROUND.

4- USE #6 COPPER TERMINAL LUG FOR CONNECTION TO GROUND BUSHING AND LINE SIDE OF FUSE HOLDER.

SFHHA 009954
FPL RC-16

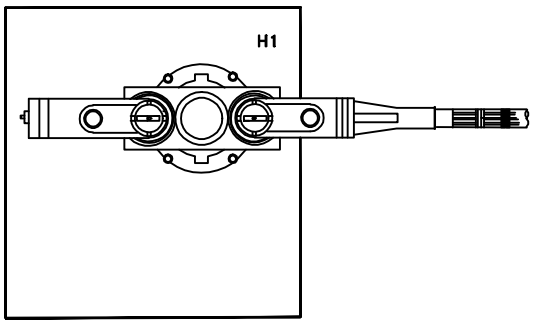
FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	9/19/05	ADD MAINTENANCE ONLY NOTE	LFV	ELS	JJM
2	9/15/99	CONVERTED TO CAD	WPC	DLW	JJM
1	1/29/92	REVISE DRAWING	JM	CJJ	RKC
0	7/1/87	ORIGINAL DRAWING	JM	CJJ	RKC

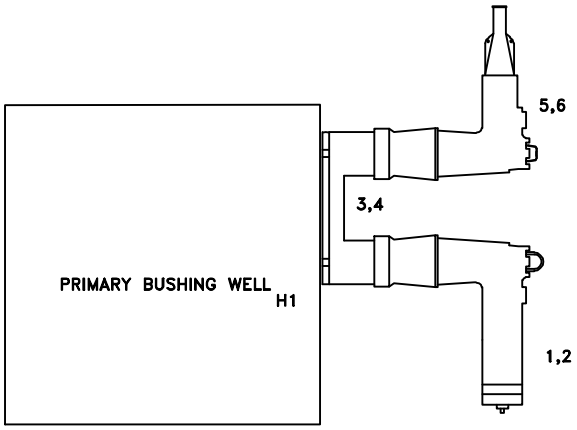
ORIGINATOR: JM
DRAWN BY: CJJ
DATE: 1/29/92
APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES
NO SCALE

INSTALLATION OF ELBOW ARRESTER ON DRY TYPE TRANSFORMER IN TOP STACKED VAULT FOR EACH PHASE

I-73.0.4



RIGHT SIDE VIEW



TOP VIEW

ITEM	M&S NO.	DESCRIPTION	7620/13200Y	DUAL VOLTAGE	13200/22860 Y
1	334-010-000	10KV ELBOW ARRESTER	1		
2	334-015-005	18KV ELBOW ARRESTER		1	1
3	163-150-016	15KV FEEDTHRU	1		
4	163-250-002	25KV FEEDTHRU		1	1
5	163-587-007	15KV ELBOW TERMINATOR	1		
5	163-502-001	25KV ELBOW TERMINATOR		1	1

REFER TO CU: TM-D-OX-LA

NOTES:

1- PRIMARY ARRESTERS-
IN VAULTS SERVED AT 7620/13200V, A DISTRIBUTION CLASS SURGE ARRESTER SHALL BE CONNECTED FROM EACH PHASE, IN THE TRANSFORMER ON THE UPPER FLOOR VAULT FOR THAT PHASE, TO THE PRIMARY NEUTRAL. AN ARRESTER WILL NOT BE INSTALLED IN THE TOP VAULT FOR THE ALTERNATE PHASE. THIS PHASE WILL BE PROTECTED BY THE ARRESTER INSTALLED IN THE UPPER VAULT FOR WHICH THAT PHASE IS THE PREFERRED SOURCE. FOR DUAL VOLTAGE AND 23 KV DRY-TYPE TRANSFORMERS, PRIMARY SURGE ARRESTERS SHOULD BE INSTALLED IN ALL VAULTS.

2- SECONDARY ARRESTERS-
A 650 VOLT SILICON CARBIDE SURGE ARRESTER (M&S NO. 334-08000-1) SHALL BE INSTALLED IN ALL VAULTS. IT IS CONNECTED FROM THE PRIMARY NEUTRAL TO THE SECONDARY NEUTRAL WITH INSULATED #2C WIRE. THIS IS A THREE PHASE ARRESTER, AND HAS THREE PHASE WIRES (BLACK) AND ONE NEUTRAL WIRE (WHITE). ONLY ONE PHASE WIRE SHALL BE USED. CONNECT THE WHITE NEUTRAL WIRE AND ONE BLACK WIRE OF ARRESTER, POLARITY NOT IMPORTANT. REMOVE THE REMAINING TWO BLACK ARRESTER WIRES, SINCE THEY ARE NOT NEEDED. THE SECONDARY ARRESTER IS TO ISOLATE FPL NEUTRAL FROM CUSTOMER NEUTRAL, PROTECTING THE CUSTOMER FROM FPL NEUTRAL CURRENTS. THE ARRESTER WILL SHORT WHEN CURRENT SURGES SUCH AS LIGHTNING OR SWITCHING SURGES OCCUR.

SFHHA 009955
FPL RC-16

F P L
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
1	3/20/08	CORRECT M&S FOR ITEM 4	LFV	ELS	JJM
0	9/19/05	ORIGINAL DRAWING	LFV	ELS	JJM

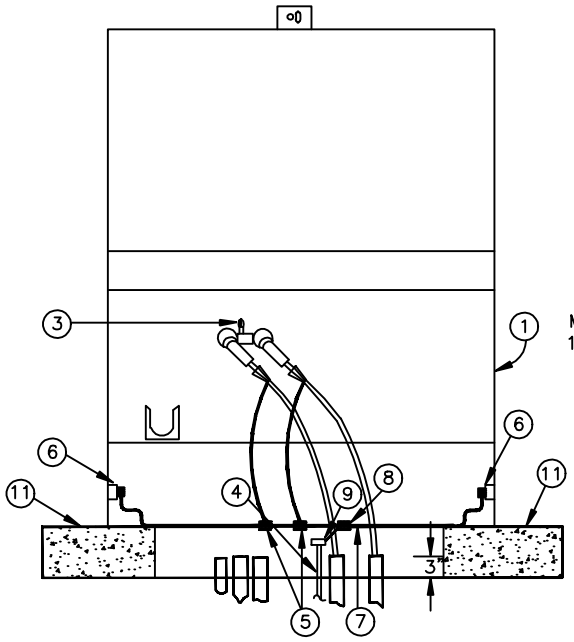
ORIGINATOR: LFV DRAWN BY: ELS

DATE: 9/19/05 APPROVED: J.J. MCEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

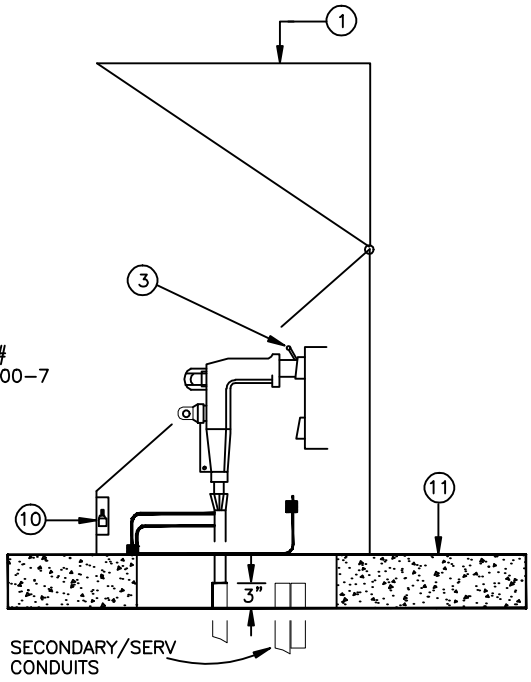
REPLACEMENT CABINET INSTALLATION FOR PADMOUNT TRANSFORMER

I-74.0.1



M & S #
161-40000-7

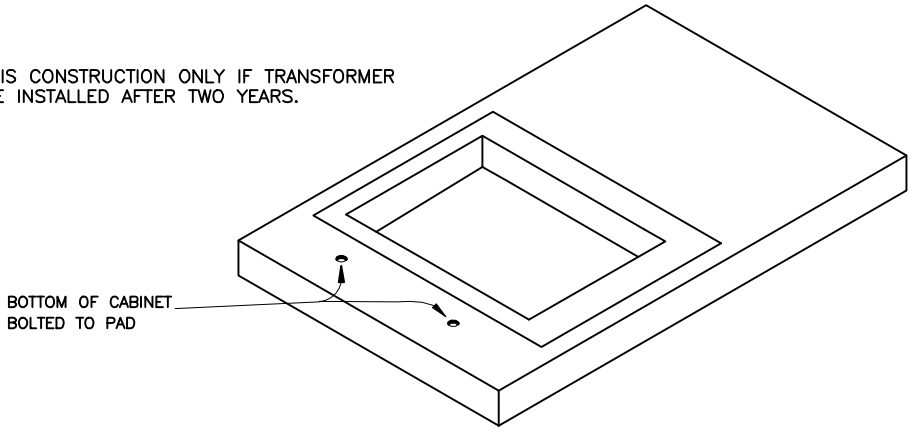
FRONT VIEW WITH COVER OPEN



SIDE VIEW CROSS-SECTION

NOTE:

USE THIS CONSTRUCTION ONLY IF TRANSFORMER WILL BE INSTALLED AFTER TWO YEARS.



DETAIL OF MOUNTING BRACKETS

SFHHA 009956
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	9/11/99	UPDATE DRAWING AND TEXT	RAP	JES	JJM
1	1/04/88	LOCATION OF GROUND ROD	JSR	G.O.	JRD
0	6/14/85	ORIGINAL DRAWING	JSR	J.E.	RKC

ORIGINATOR: DRAWN BY: G.O.

DATE: 6/14/85 APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

NO SCALE

PADMOUNT TRANSFORMER REPLACEMENT CABINET INSTALLATION

I-74.0.2

INSTALLATION STEPS

1. PLACE CABINETS (1) OVER HOLE IN CONCRETE PAD. THE HOLE IN THE CABINET BOTTOM SHOULD BE ALIGNED WITH THE HOLE IN CONCRETE PAD.
2. SECURE THE CABINET TO THE PAD USING TWO 1/2"-13 X 1" BOLTS (2) (M&S # 161-48100-7) AND TWO 1-5/8" SQUARE WASHERS (M&S # 161-53600-6).
3. INSTALL CABINET GROUNDING LUGS (6) IN SIDE OF CABINET.
4. INSTALL GROUNDING SYSTEM. THE GROUNDING IS THE SAME AS SHOWN ON I-65A SHEET 1. WHEN USING THE CABINET TO REPLACE A 0% LOADED TRANSFORMER, ALL THE GROUNDING EQUIPMENT (EXCEPT THE GROUNDING LUGS (6)) HAS ALREADY BEEN PREVIOUSLY INSTALLED AND NEW GROUNDING EQUIPMENT WILL NOT BE NECESSARY.
5. INSTALL FEED THRU DEVICE (3) ON UPPER PARKING STAND BRACKET AND PARK ELBOWS.
6. INSTALL TLM NUMBER PER Z-29.
7. INSTALL LOOP OR SWITCH NUMBERS (13) PER Z-35.
8. INSTALL FPL DECAL (12) "ELECTRIC EQUIPMENT-KEEP OUT" PER Z-35.
9. INSTALL ELBOWS INTO FEED THRU DEVICE FOLLOWING STANDARD FPL SWITCHING PROCEDURE.
10. INSTALL PAD LOCK (10) M&S# 546-24600-3.

BILL OF MATERIAL

ITEM	QUANTITY	DESCRIPTION	M&S NUMBER
(1)	1	TRANSFORMER REPLACEMENT CABINET	161-40000-7
(2)	2	1/2-13 X 1" MOUNTING BOLTS	161-48100-7
(3A)	1	FEED THRU DEVICE, 15kV	160-00100-1
(3B)	1	FEED THRU DEVICE, 25kV	160-00105-2
(4)	AS REQ'D	COPPER GROUND ROD & CONNECTION AS REQUIRED PER STANDARDS G-2	130-617004 OR 130-61600-8
(5)	2	CONNECTOR, COMPRESSION #2 TO #4	120-11200-7
(6)	2	CONNECTOR, TRANSFORMER TANK GROUND	120-33800-5
(7)	9FT	WIRE #4C BARE CONNECTOR	112-30900-0
(8)	1	CONNECTOR, COMPRESSION #4 TO #6 KEARNEY BURNDY	120-11100-1 120-13200-8
(9)	2FT	WIRE #6C BARE	112-30800-3
(10)	1	LOCK STANDARD SMALL PADLOCK	546-24600-3
(11)	1	CONCRETE PAD FOR 1Ø LOW STYLE TX. (PER UX-117)	162-24800-4
(12)	1	DECAL-ELECTRICAL EQUIPMENT-KEEP OUT	548-56010-4
(13)		LOOP OR SWITCH NUMBER	548-68000-2 THRU 548-68800-3

NOTES:

1. CABINET MAY BE USED IN 15kV SYSTEMS TO REPLACE THE LOW STYLE SINGLE PHASE TX. THE CABINET WAS DESIGNED TO FIT ON CONCRETE PAD M&S# 162-24800-4 AS SPECIFIED IN UX-117.
2. THE CABINET SHOULD NOT BE USED AT AN OPEN POINT.
3. IF SECONDARY IS ALREADY INSTALLED, THE SECONDARY CABLE SHOULD BE IDENTIFIED AND BOUND TOGETHER.
4. SEE STANDARD UH-25 FOR PRIMARY CABLE LOCATION.

SFHHA 009957
FPL RC-16

SUPERSEDES I-74 LAST REVISED ON 1-4-88

FPL
OH & UG DISTRIBUTION SYSTEM STANDARDS

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
2	9/11/99	UPDATE NOTES AND CHART	RAP	JES	JJM
1	1/22/92	REVISED DECAL M & S #.	RJO	HOH	JJM
0	1/04/88	ORIGINAL DRAWING	RJO	HOH	RKC

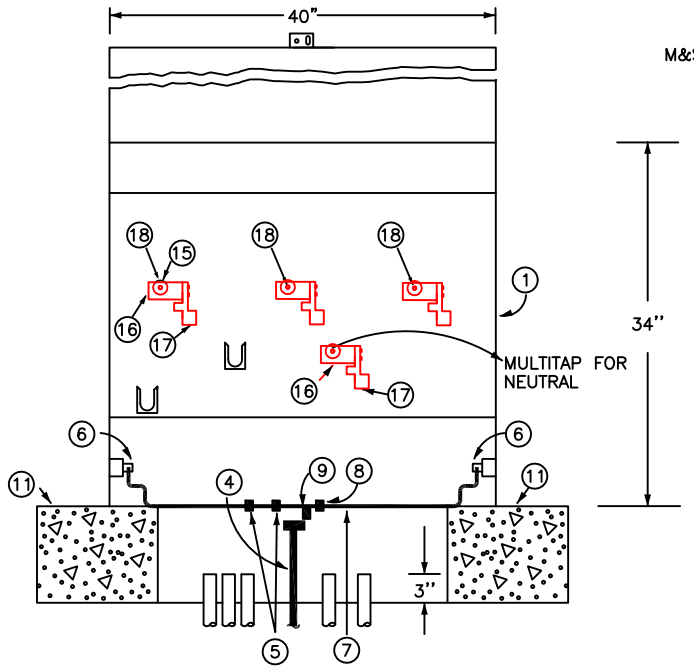
ORIGINATOR: RJO DRAWN BY: H. OHARRIZ

DATE: 1/04/88 APPROVED: R.K. CIELO
DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

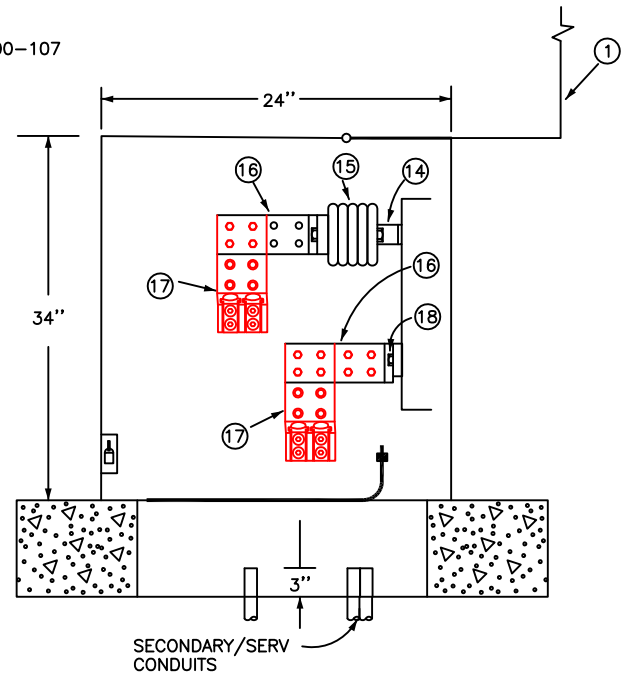
NO SCALE

REPLACEMENT CABINET INSTALLATION SECONDARY JUNCTION BOX

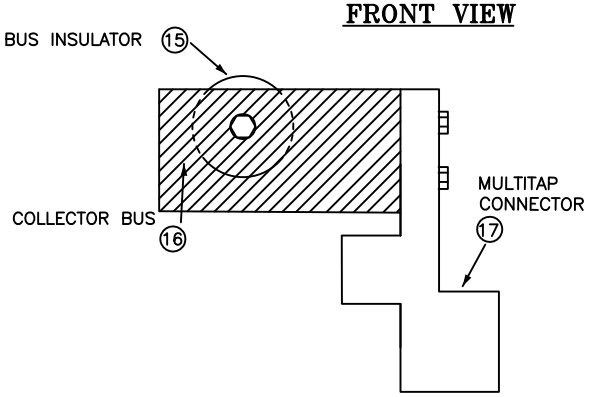
I-74.1.1

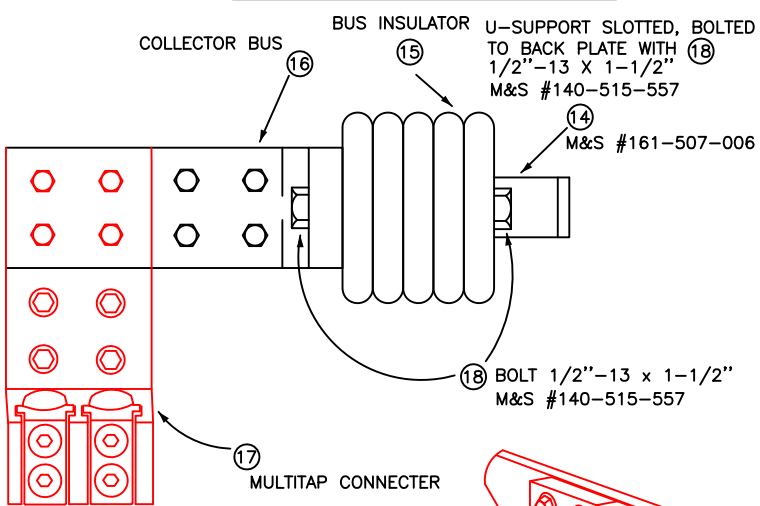


FRONT VIEW



SIDE VIEW CROSS-SECTION





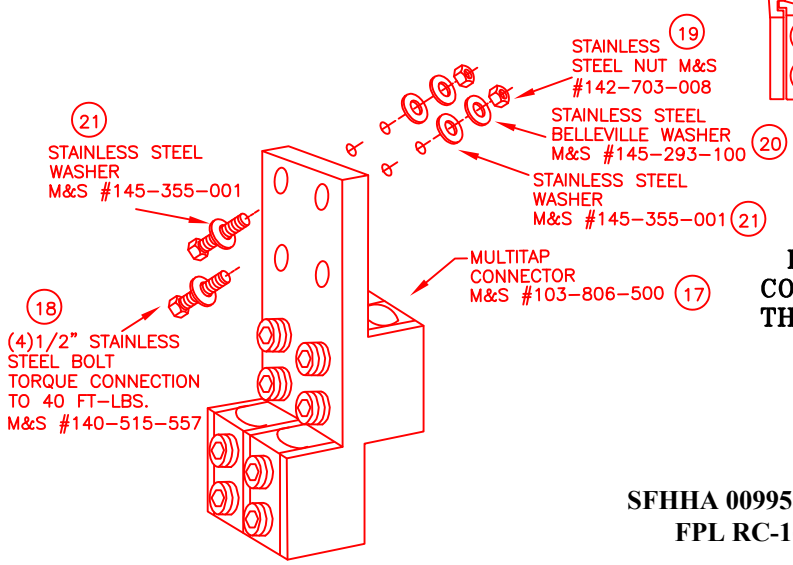


FIGURE 1

DETAIL OF MULTITAP CONNECTOR WHEN MORE THAN SIX SERVICES ARE REQUIRED

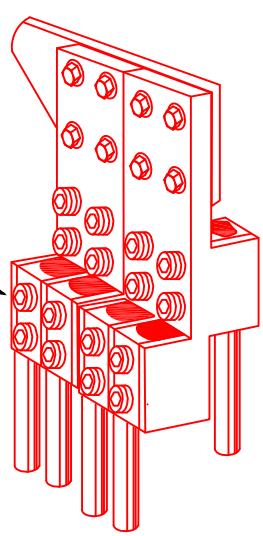


FIGURE 2

SFHHA 009958
FPL RC-16

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
3	9/29/09	ADDED NEW 4 PORT MULTITAP CONNECTOR AND M&S #'S	ARR	ELS	JRD
2	7/1/08	UPDATE DRAWING AND M&S NUMBERS	GAP	ELS	JJM
1	9/18/99	UPDATE DRAWING AND TEXT	RAP	JES	JJM

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RJO DRAWN BY: JRF

DATE: 1/01/90 APPROVED: R.K. CIELO NO SCALE

DIRECTOR, DISTRIBUTION ENGINEERING AND SERVICE PLANNING

SECONDARY JUNCTION BOX REPLACEMENT CABINET INSTALLATION

I-74.1.2

INSTALLATION STEPS

1. PLACE CABINET (1) OVER WINDOW IN CONCRETE PAD. THE OPENING IN THE CABINET BOTTOM SHOULD BE ALIGNED WITH THE WINDOW IN THE CONCRETE PAD.
2. SECURE THE CABINET TO THE PAD USING TWO 1/2"-13 X 1" BOLTS (M&S #161-48-007) AND TWO 1-5/8" SQUARE WASHERS (M&S 161-536-006). IF EXISTING INSERTS CANNOT BE UTILIZED, SECURE CABINET BY DRILLING INTO THE PAD USING 1/4" X 1-3/4" MASONRY SCREW (500-100-006).
3. INSTALL CABINET GROUNDING LUGS (6) INSIDE OF CABINET.
4. INSTALL GROUNDING SYSTEM. THE GROUNDING IS THE SAME AS SHOWN ON I-65A SHEET 1.
5. BOLT SLOTTED U-SUPPORTS (14) TO BACKPLATE OF CABINET USING 1/2" - 13 x 1-1/2" STAINLESS STEEL BOLTS (18)(19). THE SLOTTED U-SUPPORT ARE USED ONLY ON THE SERVICE/HOT LEGS MULTITAPS, NOT THE NEUTRAL. BACKPLATE HEIGHT CAN BE ADJUSTED TO MATCH HEIGHT OF CONDUCTORS.
6. BOLT THE BUS INSULATOR (15) TO THE SLOTTED U-SUPPORTS (14) USING 1/2" - 13 x 1-1/2" STAINLESS STEEL BOLTS (18). 1/2" HOLES MAY NEED TO BE DRILLED INTO THE FIBERGLASS CABINET BACKPLATE.
7. BOLT THE COLLECTOR BUS BAR (16) TO THE BUS INSULATOR (15) USING 1/2" - 13 x 1-1/2" STAINLESS STEEL BOLTS (18).
8. AFTER WIRE BRUSHING THE COLLECTOR BUS BAR (16) WITH INHIBITOR, BOLT ON THE "Z-BAR" MULTITAP CONNECTOR (17) USING 1/2" - 13 x 1-1/2" STAINLESS STEEL BOLTS & WASHERS (18) (19) (20) (21) AS SHOWN IN STANDARD I-74.1.1 FIGURE 1. A BOLT IS REQUIRED AT EACH HOLE IN THE "Z-BAR" MULTITAP CONNECTOR.
9. WIRE BRUSH THE CONDUCTOR BEFORE INSTALLING IT INTO THE MULTITAP CONNECTOR PORT.
10. TIGHTEN SET SCREWS ON THE Z-BAR MULTITAP CONNECTOR (17) TO 30FT-LBS.
11. IF MORE THAN 4 SERVICES ARE REQUIRED, THEN AN ADDITIONAL "Z-BAR" MULTITAP CONNECTOR CAN BE ADDED AS SHOWN ON I-74.1.1 FIGURE 2.
12. INSTALL FPL "WARNING" & "DANGER" DECALS (12) PER STANDARD Z-35.0.0.
13. INSTALL PAD LOCK (10).

BILL OF MATERIAL (FOR UP TO 4 SERVICES)

ITEM	QUANTITY	DESCRIPTION	M&S No.
1	1	ALUMINUM REPLACEMENT CABINET	161-400-107
2	2	BOLT 1/2"-13 X 2" STAINLESS STEEL	140-515-000
4	AS REQ'D.	COPPER GROUND ROD & CONNECTION AS REQ'D. PER STANDARDS G-2	130-613-009
4A	1	CONNECTOR, GROUND FOR 5/8" RODS	120-036-106
4B	7	THREADLESS COUPLING FOR 5/8" RODS	130-405-104
5	2	CONNECTOR, COMPRESSION #2 TO #4	120-112-007
6	2	CONNECTOR, TRANSFORMER TANK GROUND	120-338-005
7	9 FT.	WIRE #4C BARE CONNECTOR	112-309-000
8	1	CONNECTOR, COMPRESSION KEARNEY	120-111-001
		#4 TO #6 BURNDY	120-132-008
9	2 FT.	WIRE #6C BARE	112-308-003
10	1	LOCK, STANDARD SMALL PADLOCK	546-246-011
11	1	CONCRETE PAD FOR 1Ø LOW STYLE TX. (PER UX-117)	162-248-004
12	1	"WARNING-ELECTRICAL EQUIPMENT" DECAL	548-560-104
	1	"DANGER-HIGH VOLTAGE" DECAL	548-507-009
14	3	U-SUPPORT, SLOTTED	161-507-006
15	3	BUS INSULATOR	201-103-004
16	4	COLLECTOR BUS, ALUMINUM, L-SHAPED	104-141-006
17	4	MULTITAP CONNECTOR	103-806-500
18	16	BOLT 1/2"-13X1-1/2" STAINLESS STEEL	140-515-557
19	16	NUT 1/2" - 13 THREADED	142-703-008
20	16	S.S. BELLEVILLE WASHER	145-293-100
21	32	S.S. WASHER	145-355-001

NOTES:

1. THIS CABINET IS USED IN SPECIAL APPLICATIONS WHEN REPLACING EXISTING SECONDARY CABINETS THAT ARE AGING IN THE FIELD.
2. CABINET BASE WINDOW OPENING IS 29" X 13".

NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
7	1/28/10	UPDATE NOTES	GAP	ELS	JRD
6	6/15/09	UPDATE NOTES & REVISE CHART	ARR	ELS	JRD
5	7/1/08	UPDATE NOTES & REVISE CHART	GAP	ELS	JJM
4	7/23/01	UPDATED DRAWING (INSTALLATION STEPS)	RAP	JES	JJM
3	9/18/99	UPDATE NOTES AND CHART	RAP	JES	JJM
2	1/29/92	REVISIED DECAL M & S #	RJO	HO	RKC
1	3/15/91	REVISIED CHART	RJO	HO	RKC

SFHHA 009959
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RJO

DRAWN BY: RJF

DATE: 1/01/90

APPROVED: R.K. CIELO
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE

CABINET M&S 161-401-003

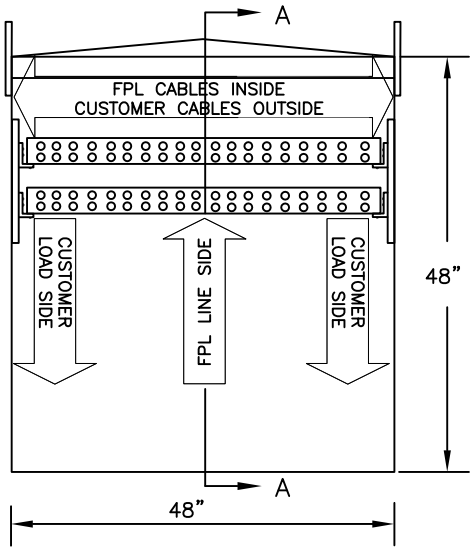
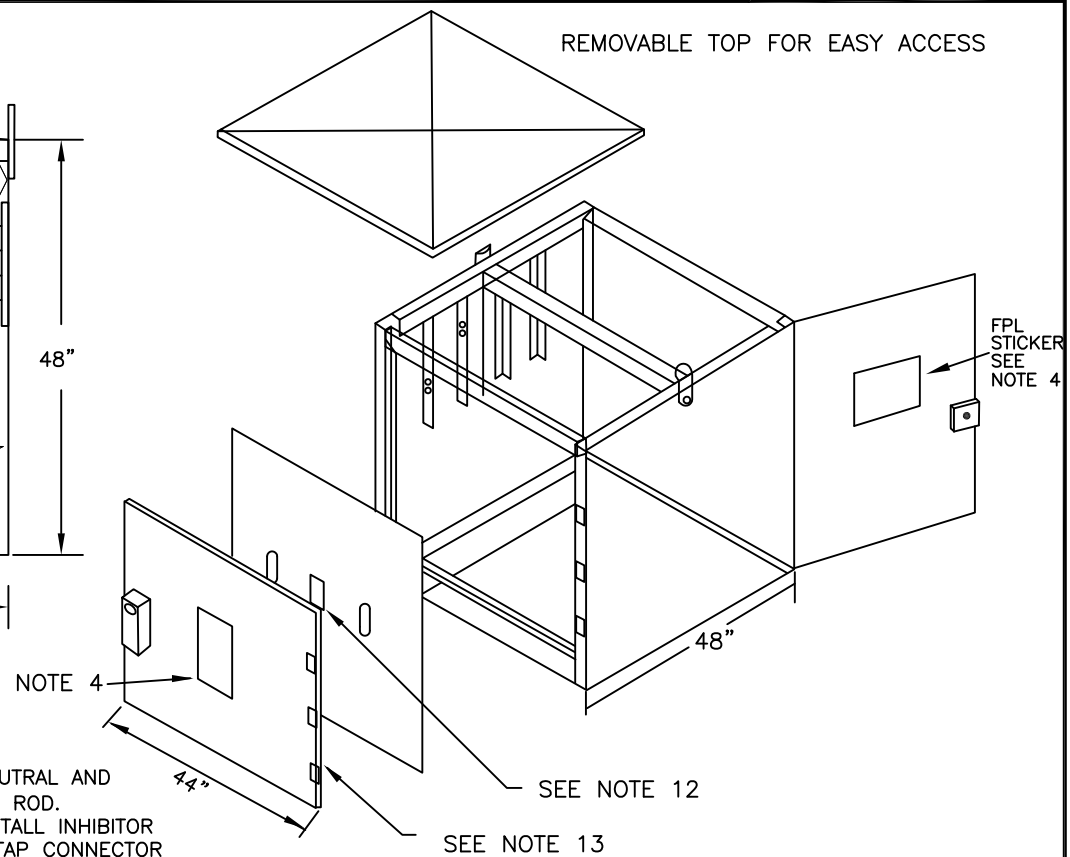


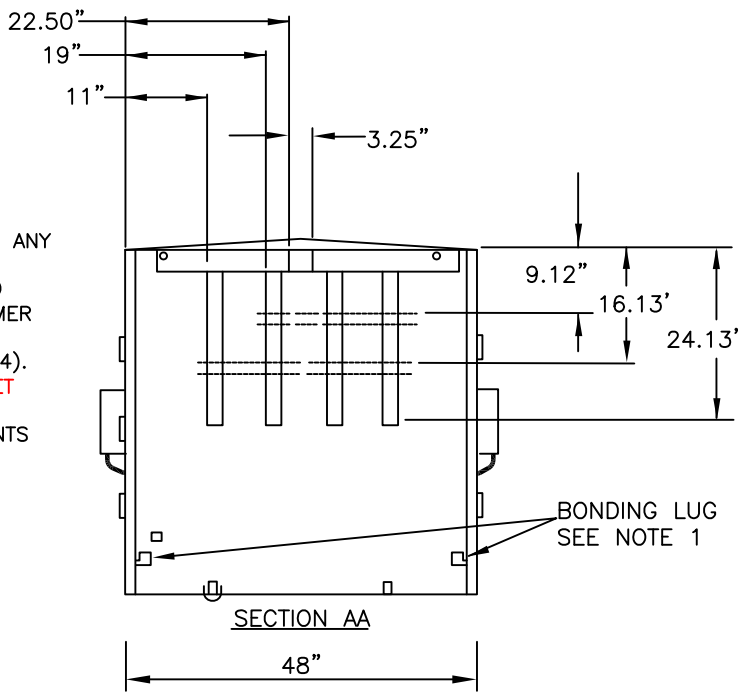
FIGURE 1: FRONT VIEW

REMOVABLE TOP FOR EASY ACCESS



NOTES:

1. INSTALL GROUNDING SYSTEM. BOND NEUTRAL AND CABINET WITH #4C TO DRIVEN GROUND ROD.
2. WIRE BRUSH THE CONDUCTOR AND INSTALL INHIBITOR BEFORE INSTALLING IT INTO THE MULTITAP CONNECTOR BUS.
3. TORQUE SET SCREWS ON MULTITAP CONNECTOR BUS TO 40 FT-LBS.
4. INSTALL 2 FPL DECALS, ONE ON EACH DOOR."ELECTRIC EQUIPMENT-KEEP OUT" (548-560-104)
5. INSTALL 2 FPL LOCKS, ONE ON EACH DOOR.
6. INSTALL CABINET AS CLOSE TO TRANSFORMER AS POSSIBLE, WITH 30 FEET BEING THE MAXIMUM SEPARATION DISTANCE.
7. CONDUCTOR RANGE: #2-1000 KCMIL
8. 22 CONDUCTORS PER PHASE MAXIMUM.
9. RATING FOR MULTI-TAP BUS BARS IS 4235 AMPS. FPL SECONDARY CABLES CONNECT IN THE MIDDLE OF EACH BUS BAR. DO NOT LEAVE ANY UNUSED PORTS BETWEEN THE FPL SECONDARY CABLES AND THE CUSTOMER'S SERVICE CABLES. CLEARLY IDENTIFY THE LINE AND LOAD SIDE CABLES WITH TAGS (SEE UV-12.0.0). FOR CURRENT TRANSFORMER CONNECTIONS TO BUS BAR, SEE K-10.0.0.
10. SEE UX-125.0.0 FOR PAD SPECIFICATIONS (PAD M&S #162-260-004). MAINTAIN 6' CLEARANCE FROM THE FRONT AND BACK OF THE CABINET AND 3' CLEARANCE ON THE SIDES.
11. FIBERGLASS BRACKETS CAN BE ADJUSTED UP OR DOWN IN INCREMENTS OF 1.5" FROM 24" TO 46" ABOVE BASE.
12. LOOSE JOINT PIN HINGES ALLOW DOORS TO BE REMOVED IN OPEN POSITION. DOOR STAYS HOLD DOORS IN 90°, 110°, OR 140° OPEN POSITION.
13. AFTER THE CABINET IS INSTALLED THE LIFTING BRACKETS MUST BE REMOVED AND HUNG FROM THE GROUNDING BRACKET INSIDE THE CABINET.



NO.	DATE	REVISION	ORIG.	DRAWN	APPR.
6	2/18/16	UPDATE NOTES	ARR	ELS	RDH
5	1/28/16	UPDATE NOTES	ARR	ELS	RDH
4	8/6/10	UPDATE DRAWING AND NOTES	GAP	ELS	AEL
3	7/12/07	ADD NOTE 14	GAP	ELS	JJM
2	12/7/06	UPDATE DRAWING (NOTES AND TEXT)	GAP	ELS	JJM
1	7/21/01	UPDATE DRAWING (NOTES AND TEXT)	RAP	JES	JJM

SFHHA 009960
FPL RC-16

F P L

OH & UG DISTRIBUTION SYSTEM STANDARDS

ORIGINATOR: RAP

DRAWN BY: J.SHOUP

DATE: 9/27/99

APPROVED: J.J McEVOY
SUPERVISOR, OH/UG PRODUCT SUPPORT SERVICES

NO SCALE