

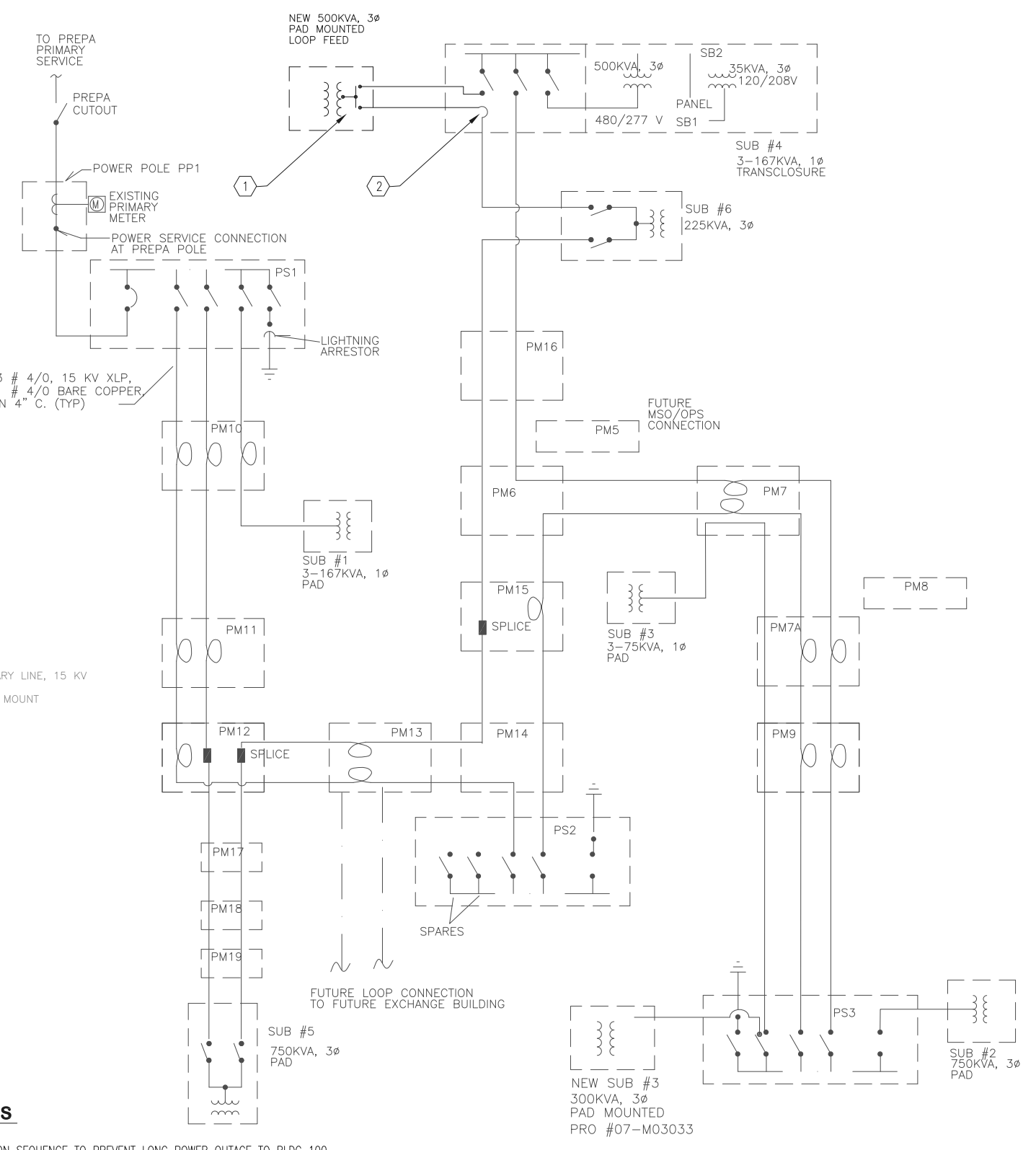
**PARTIAL ELECTRICAL SITE PLAN**  
SCALE: N.T.S

**KEYED NOTES**

- 1 INSTALL NEW 3 PHASE, 13.2 KV- 480 VOLT, 500 KVA, DELTA-DELTA, LOOP FEED, PAD MOUNTED TRANSFORMER, NEMA 4X ENCLOSURE.
- 2 REMOVE EXISTING CONDUCTORS TO SWITCH, SPLICE INSIDE ENCLOSURE. MODIFY TO FEED TRANSFORMER FROM EXISTING LOOP FEED SYSTEM. PRIMARY CONDUCTOR SHALL BE 3#1/0, 15 KV, IN 3" C SEE RISER DIAGRAMS FOR DETAILS.

**GENERAL NOTES**

- 1. SEE CONSTRUCTION SEQUENCE TO PREVENT LONG POWER OUTAGE TO BLDG 100 AND TO THE BASE. ANY CHANGES SHALL BE APPROVED BY CONTRACTING OFFICER IN ADVANCE.
- 2. NEW WORK ARE INDICATED BY KEYED NOTES ONLY.
- 3. VERIFY RISER DIAGRAM, OPEN AND CLOSE HIGH VOLTAGE SWITCHES AS REQUIRED TO ISOLATE PORTION OF HIGH VOLTAGE CABLES TO WORK UNDER THIS PROJECT. WHEN PROJECT IS COMPLETED, CONTRACTOR SHALL SET ALL SWITCHES TO ORIGINAL SETTING.
- 4. EXISTING SUB #4 FEEDS SHORE TIE RECEPTACLES AND BUILDING 100. INSTALL NEW DELTA/UNGROUNDING DELTA PAD MOUNTED TRANSFORMER TO FEED SHORE TIE RECEPTACLES. REWIRE EXISTING TRANSFORMER TO FEED BUILDING 100 ONLY.
- 5. CONTRACTOR SHALL LOCATE ALL EXISTING UNDER GROUND UTILITIES PRIOR TO DIGGING.



**13.2 KV SINGLE LINE DIAGRAM**

SCALE: N.T.S

CONSULTANTS

**U. S. COAST GUARD  
CIVIL ENGINEERING UNIT  
MIAMI**



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15608 SW 117TH AVE  
MIAMI, FL 33177

ISSUE		
DT	DATE	DESCRIPTION
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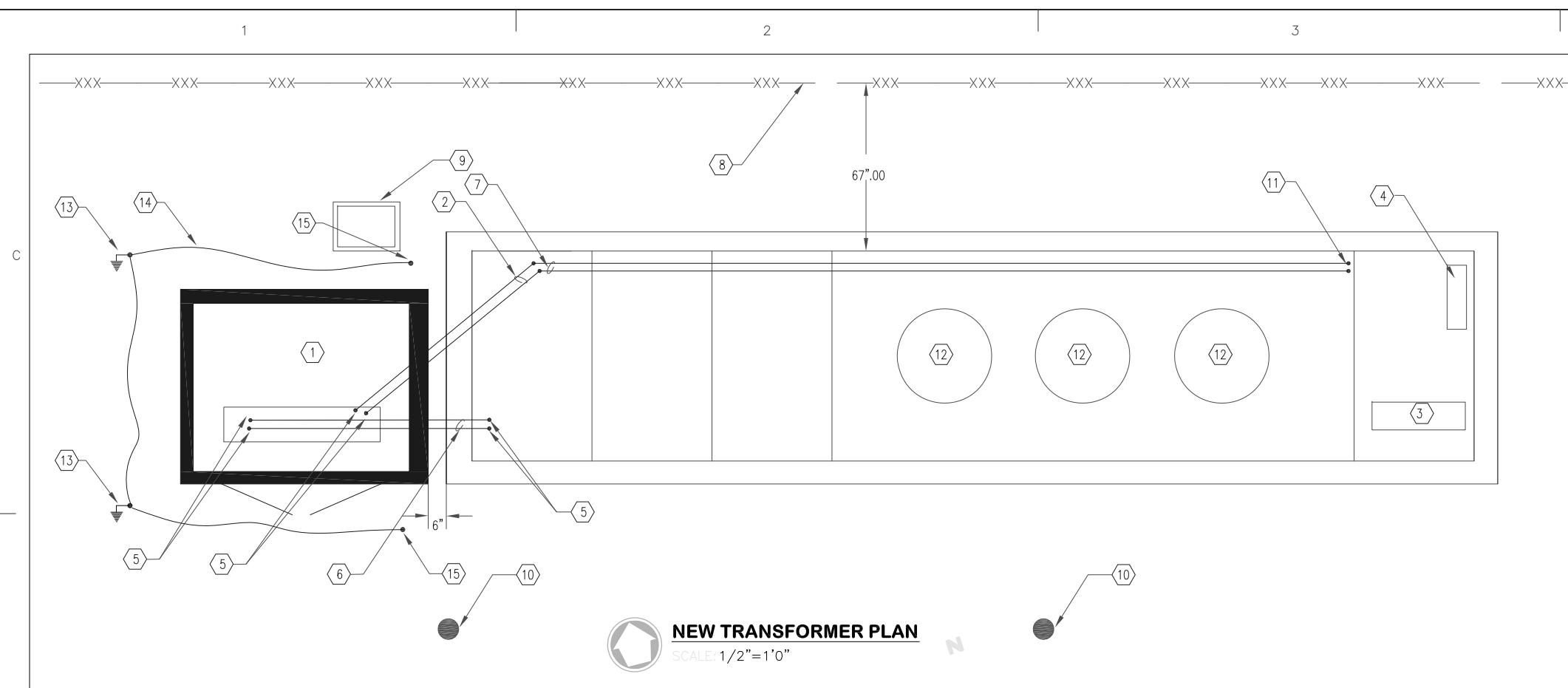
A/E PROJECT NO:	
CAD FILE NAME: M1174E01.DWG	
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SCALE: AS SHOWN PLOT SCALE: 1:1

**SHEET TITLE**  
**DEDICATED TRANSFORMER  
U.S.C.G. BASE SAN JUAN  
SAN JUAN PUERTO RICO  
SHORTIES POWER TRANSFORMER  
ELECTRICAL  
ELECT. DIST. SITE PLAN**

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
APPROVING OFFICER	DATE	

PROJECT NUMBER	DRAWING NUMBER
<b>07-M04159</b>	<b>M1174-D</b>
DISCIPLINE/SHT NO	SHEET 1 OF 3
<b>E-01</b>	



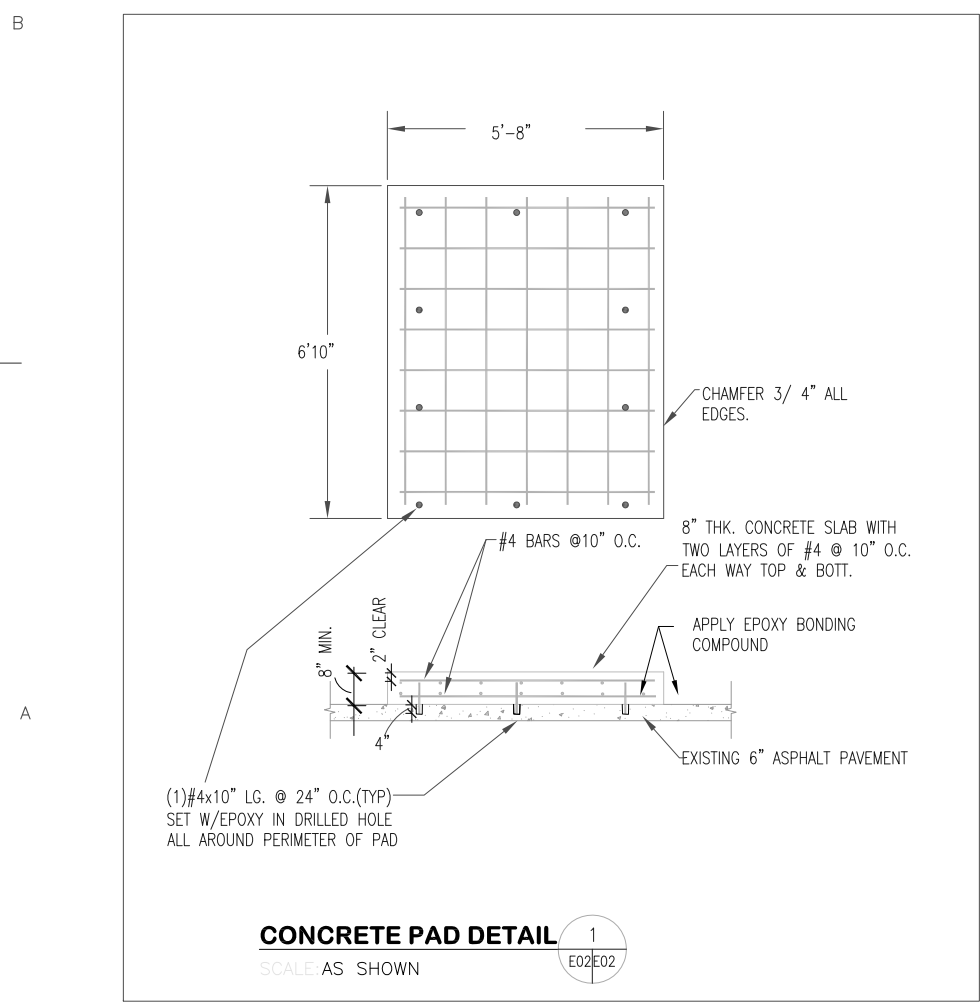
**NEW TRANSFORMER PLAN**  
SCALE: 1/2" = 1'0"

**KEYED NOTES**

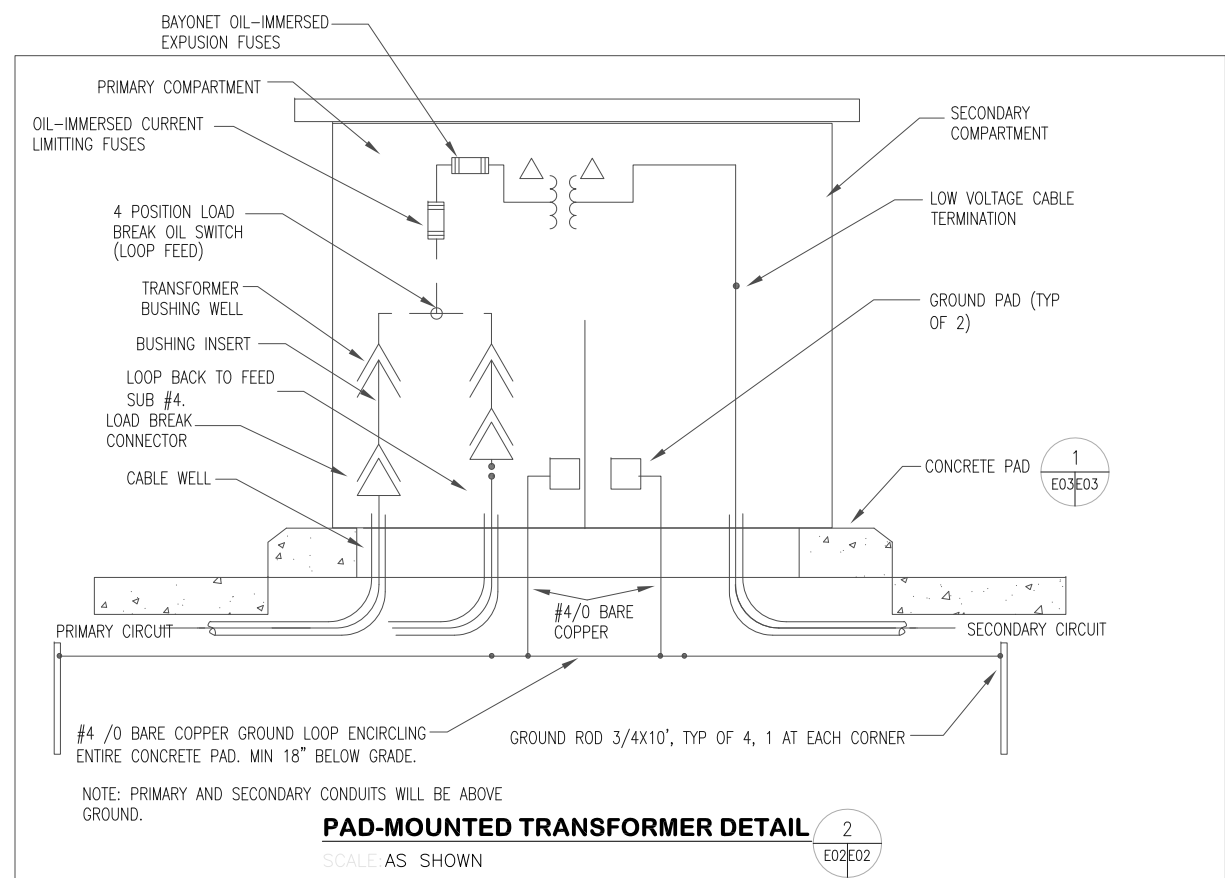
- 1 NEW 3 PHASE, 13.2 KV- 480VOLT, 500 KVA, DELTA-DELTA, PAD MOUNTED TRANSFORMER, NEMA 4X STAINLESS STEEL ENCLOSURE. ON 8" PAD WITH 6" CLEARANCE ALL AROUND. SEE DETAIL #1 FOR CONCRETE PAD.
- 2 NEW SECONDARY CONDUITS. TWO SET OF #350MCM IN 3"C AT 18" BELOW GRADE WITH SWEEP ELBOW..
- 3 EXISTING SP1, 480/ 277V PANEL. REWIRE TO BE FED FROM NEW 480V DELTA TRANSFORMER. SEE RISER DIAGRAM ON E-03.
- 4 EXISTING SP2, 120/ 208V PANEL.
- 5 CONDUIT RISER, TERMINATE 12" ABOVE GROUND WITH BUSHING.
- 6 NEW PRIMARY 3" CONDUIT AT 18" BELOW GRADE.
- 7 NEW ABOVE GROUND SECONDARY CONDUIT.
- 8 EXISTING FENCE.
- 9 EXISTING COMMUNICATION HAND HOLE.
- 10 EXISTING BOLLARD.
- 11 PROVIDE ELBOWS AND RISE CONDUITS 60" ABOVE GROUND. TERMINATE WITH BUSHINGS. STRAP CONDUITS TO EXISTING FRAME.
- 12 EXISTING POLE MOUNTED TRANSFORMER ON PAD, 167 KVA. DELTA-WYE CONNECTION. REWIRE TO FEED BLDG 100 ONLY. SEE RISER DIAGRAM ON E-03.
- 13 3 /4" X 10' GROUND ROD AT 12" BELOW GRADE.
- 14 #4 /0 BARE COPPER.
- 15 BONDED TO EXISTING GROUND LOOP OF SUB #4.

**GENERAL NOTES**

- 1.) CONCRETE MIX SHALL BE 3,500 PSI FULL STRENGTH AT 28 DAYS.
- 2.) REINFORCING STEEL SHALL BE ASTM A615-84A (Grade 60).
- 3.) CONCRETE PAD DIMENSION SHOWN IS MIN. CONTRACTOR COORDINATE WITH TRANSFORMER MANUFACTURE FOR EXACT TRANSFORMER DIMENSION AND CONSTRUCT PAD TO HAVE MIN 6" CLEARANCE ON ALL SIDE.



**CONCRETE PAD DETAIL**  
SCALE: AS SHOWN



**PAD-MOUNTED TRANSFORMER DETAIL**  
SCALE: AS SHOWN

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SHEET TITLE

**DEDICATED TRANSFORMER**  
U.S.C.G. BASE SAN JUAN  
SAN JUAN PUERTO RICO  
SHORTIES POWER TRANSFORMER  
ELECTRICAL  
DETAILS

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
APPROVING OFFICER	DATE	

PROJECT NUMBER	DRAWING NUMBER
07-M04159	M1174-D
DISCIPLINE/SHT NO	SHEET 2 OF 3
E-02	

DEMOLITION KEYED NOTES

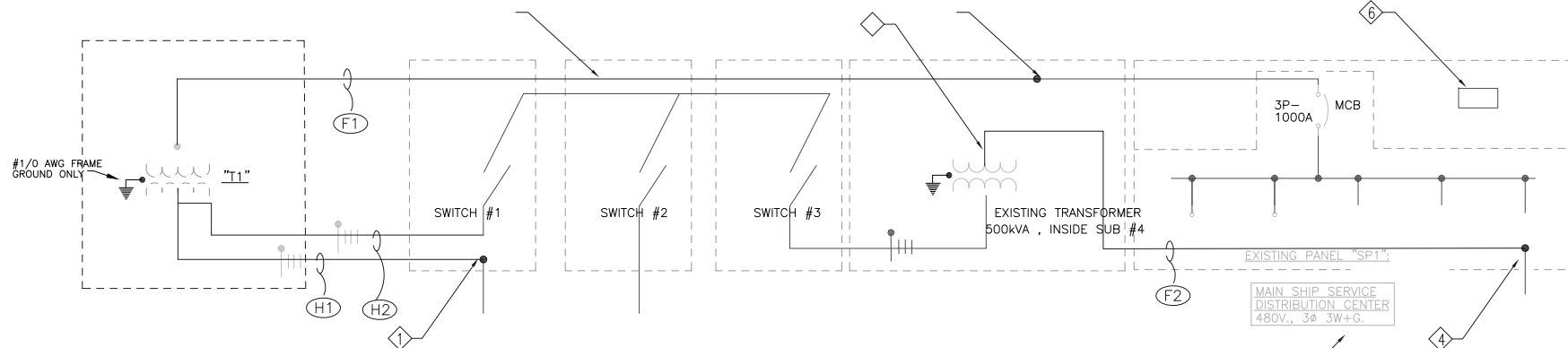
- ① REMOVE EXISTING LOOP FEED CIRCUIT FROM SWITCH #1 AND RE-ROUTE TO NEW TRANSFORMER.
- ② REMOVE EXISTING FEEDER 2-350 MCM CONDUCTOR TO BLDG 100 FROM 600 AMP BREAKER AND REFEED FROM SECONDARY TERMINALS OF EXISTING TRANSFORMER. SPLICE INSIDE ENCLOSURE.
- ③ REMOVE EXISTING FEEDER FROM TRANSFORMER TO OVERHEAD SECONDARY BUS BARS. OVERHEAD BUS BARS ARE LOCATED INSIDE TRANSFORMER ENCLOSURE AND EXTEND TO PANEL SP1 COMPARTMENT.
- ④ CUT AND MODIFY OVERHEAD BUS BAR FOR NEW CONNECTION TO NEW TRANSFORMER. REMOVE NEUTRAL BUS BAR BACK TO PANEL AND GROUNDED NEUTRAL BUS BAR.

NEW WORK KEYED NOTES

- ① SPLICE NEW CONDUCTORS TO EXISTING INSIDE SWITCH ENCLOSURE AND FEED NEW TRANSFORMER. LOOP BACK CIRCUIT TO FEED SWITCH #1.
- ② NEW SECONDARY FEEDER TO EXISTING SUB #4 TO FEED EXISTING PANEL SP1.
- ③ CONNECT NEW FEEDER TO EXISTING OVERHEAD SECONDARY BUS BAR. KEEP MIN 18" CLEARANCE FROM OTHER POWER SOURCE INSIDE ENCLOSURE.
- ④ SPLICE EXISTING FEEDER CABLES TO BLDG 100 INSIDE SUB #4 ENCLOSURE AND EXTEND TO EXISTING TRANSFORMER.
- ⑤ FEEDER TO BLDG 100 IS FED DIRECTLY FROM TRANSFORMER SECONDARY LUGS.
- ⑥ NEW GROUND FAULT MONITOR SYSTEM. SYSTEM SHALL BE "BENDER #R470LY" OR APPROVED EQUAL. SYSTEM SHALL INCLUDE A STROBE LIGHT TO BE MOUNTED ON TOP OF SUB #4 TO INDICATE TROUBLE AND A BY-PASS SWITCH LOCATED INSIDE ENCLOSURE. PROVIDE LIGHTS INDICATOR TO INDICATE SYSTEM IS ON/OFF. SUBMIT INSTALLATION DRAWING FOR APPROVAL.

CONSTRUCTION SEQUENCE

- 1. LOCATE UNDERGROUND UTILITIES IN THE DIGGING AREA. INSTALL NEW TRANSFORMER PAD.
- 2. INSTALL NEW TRANSFORMER. INSTALL NEW PRIMARY AND SECONDARY CONDUITS FROM NEW TRANSFORMER TO SUB #4.
- 3. COORDINATE POWER SHUT DOWN WITH CONTRACTING OFFICER TWO WEEKS IN ADVANCE. POWER SHUT DOWN SHALL TAKE PLACE DURING WEEKEND AND SHALL BE LIMIT FROM 0800 SAT TO 2400 SUNDAY.
- 4. REMOVE EXISTING 15 KV FEEDER FROM SW #1 TO FEED NEW TRANSFORMER AND LOOP BACK TO SW#1.
- 5. REWORK SECONDARY CONDUCTORS AND OVERHEAD BUS BARS. RELOCATE AND EXTEND SECONDARY FEEDER OF BUILDING 100 FROM PANEL SP1 TO EXISTING TRANSFORMER INSIDE SUB #4.
- 6. INSTALL NEW SECONDARY FEEDER FROM NEW TRANSFORMER TO PANEL SP1. INSTALL NEW GROUND FAULT MONITOR SYSTEM.
- 7. TEST CABLES AND ENERGIZE TRANSFORMERS.



SUB #4-NEW RISER DIAGRAM SCALE:N.T.S

NEW NAME PLATE 2" LETTER MICARTA ENGRAVED NAME PLATE BLACK LETTERS ON WHITE BACK GROUND MECHANICALLY AFFIXED.

EXISTING PANELBOARD SP1 SCHEDULE

700 A. MAIN, 480 Y/277 V., 3 PHASE, 4 WIRE, 35 KAIC MINIMUM, INSIDE SUB #4 ENCLOSURE

LOAD SERVED	LOAD (AMPS)			BKR. TRIP	WIRE SIZE	CKT. NO.	PHASE			CKT. NO.	WIRE SIZE	BKR. TRIP	LOAD (AMPS)			LOAD SERVED
	A	B	C				A	B	C				A	B	C	
SHORE TIE RECEPTACLE ALPHA NORTH	*	*	*	200	3/0	1				2	3/0	*	*	*	SHORE TIE RECEPTACLE ALPHA SOUTH	
SHORE TIE RECEPTACLE CHARLIE NORTH	*	*	*	200	3/0	3				4	3/0	200	*	*	SHORE TIE RECEPTACLE CHARLIE SOUTH	
				3/0	5				6	3/0						
SHORE TIE RECEPTACLE DELTA NORTH	*	*	*	200	3/0	7				8	3/0	200	*	*	SHORE TIE RECEPTACLE DELTA SOUTH	
				3/0	9				10	3/0						
SPARE	*	*	*	20	12	11				12	3/0		*	*	SPARE	
				3/0	13				14	3/0						
SPARE	*	*	*	20	12	15				16	3/0	200	*	*	SPARE	
				3/0	17				18	3/0						
SPARE	*	*	*	20	12	19				20	12		*	*	SPARE	
				20	12	21			22	10	100					
SHORE TIE RECEPTACLE BRAVO	*	*	*	150	1/0	23				24	12	20	*	*	BLANK	
				25					26	12	20	*	*			
SPARE	*	*	*	29		27				28	12	20	*	*	BLANK	
				31					30	12	20	*	*			
TRANSFORMER 120/208	*	*	*	60	6	29				32	12	20	*	*	AIR COMPRESSOR SHACK	
				350	35				34	12	20	*	*			
BUILDING 100 DOUBLE FEEDER	*	*	*	600	350	31				36	12	20	*	*	BLANK	
				350	37				38	12	20	*	*			
BLANK	*	*	*	20	12	33				40	12	20	*	*	BLANK	
				350	39				42	12	20	*	*			
TOTAL	*	*	*			41				42	12	20	*	*	TOTAL	

TOTAL CONNECTED AMPS A: B: C:

&& CIRCUIT TO BE REMOVED AND EXTEND FEEDER CONDUCTORS TO EXISTING TRANSFORMER SECONDARY LUGS. ## NEUTRAL BUS SHALL BE BONDED TO GROUND. NEW SYSTEM IS DELTA

NEW FEEDER SCHEDULE			
TYPE	DESCRIPTION	WIRE	CONDUIT
F1	500kVA TRANSF. 480V., 3φ UNGROUNDED DELTA SECONDARY FEEDER TO EXISTING PANEL "SP1".	TWO SET OF 3-350MCM & 1/0 G THWN IN EA. TO TWO 3" GRS CONDUITS	TWO 3" PVC SCHEDULE 80 CONDUITS
F2	NEW CABLES TO EXISTING FEEDER OF BUILDING 100.	TWO SET OF 4-350MCM THWN IN EA. TO TWO 3" GRS CONDUITS	TWO 3" PVC SCHEDULE 80 CONDUITS
H1	SPLICE EXISTING TO NEW 15 KV LOOP FEED CABLES TO FEED NEW TRANSFORMER.	3 #1/0, SHIELDED 15 KV, #2 600V G.	3" PVC SCHEDULE 80 CONDUIT
H2	LOOP FEED 15 KV FROM NEW TRANSFORMER TO EXISTING HV SWITCH #1.	3 #1/0, SHIELDED 15 KV, #2 600V G.	3" PVC SCHEDULE 80 CONDUIT

TRANSFORMER SCHEDULE

TYPE	DESCRIPTION
T1	500kVA, 3φ, 13.2KV DELTA -480 VOLT UNGROUNDED DELTA. PAD MOUNTED, OIL FILL, NEMA 4X STAINLESS STEEL ENCLOSURE. LOOP FEED SWITCH. SET VOLTAGE TAPS TO PRODUCE 460 VOLT AT SECONDARY TERMINALS.

CONSULTANTS

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SHEET TITLE

**DEDICATED TRANSFORMER U.S.C.G. BASE SAN JUAN SAN JUAN PUERTO RICO MAIN TRANSFORMER ELECTRICAL RISER DIAGRAM/SCHEDULE**

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
PROJECT ENG.	BRANCH CHIEF	TECH. DIRECTOR
APPROVING OFFICER	DATE	

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DISCIPLINE/SHT NO	SHEET 3 OF 3
E-03	