

- 1 INSTALL ALSF-1 5 LIGHT MG-20 L.I.R. TOWER WITH SEQUENTIAL FLASHER.
- 2 INSTALL ALSF-1 5 LIGHT CONDUIT MOUNT CENTERLINE BARRETT WITH SEQUENTIAL FLASHER.

1. AIMING ANGLES FOR LIGHTS HAVE BEEN ADJUSTED TO COMPENSATE FOR FIXTURES POSITIONED ABOVE THE APPROACH LIGHT PLANE. SEE TABLE BELOW PROFILE.

GRAPHIC SCALE

1" = 50'

HORIZONTAL SCALE

1" = 1'

VERTICAL SCALE



APPROVED

FOR COMMANDER NAVFAC

JAMES FLETCHER PER CHECK

DES	PCH	DEW	PCH	CHK
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DES	RCH	DRW	RCH	CHK
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PM/DM	RH
BRANCH MANAGER	

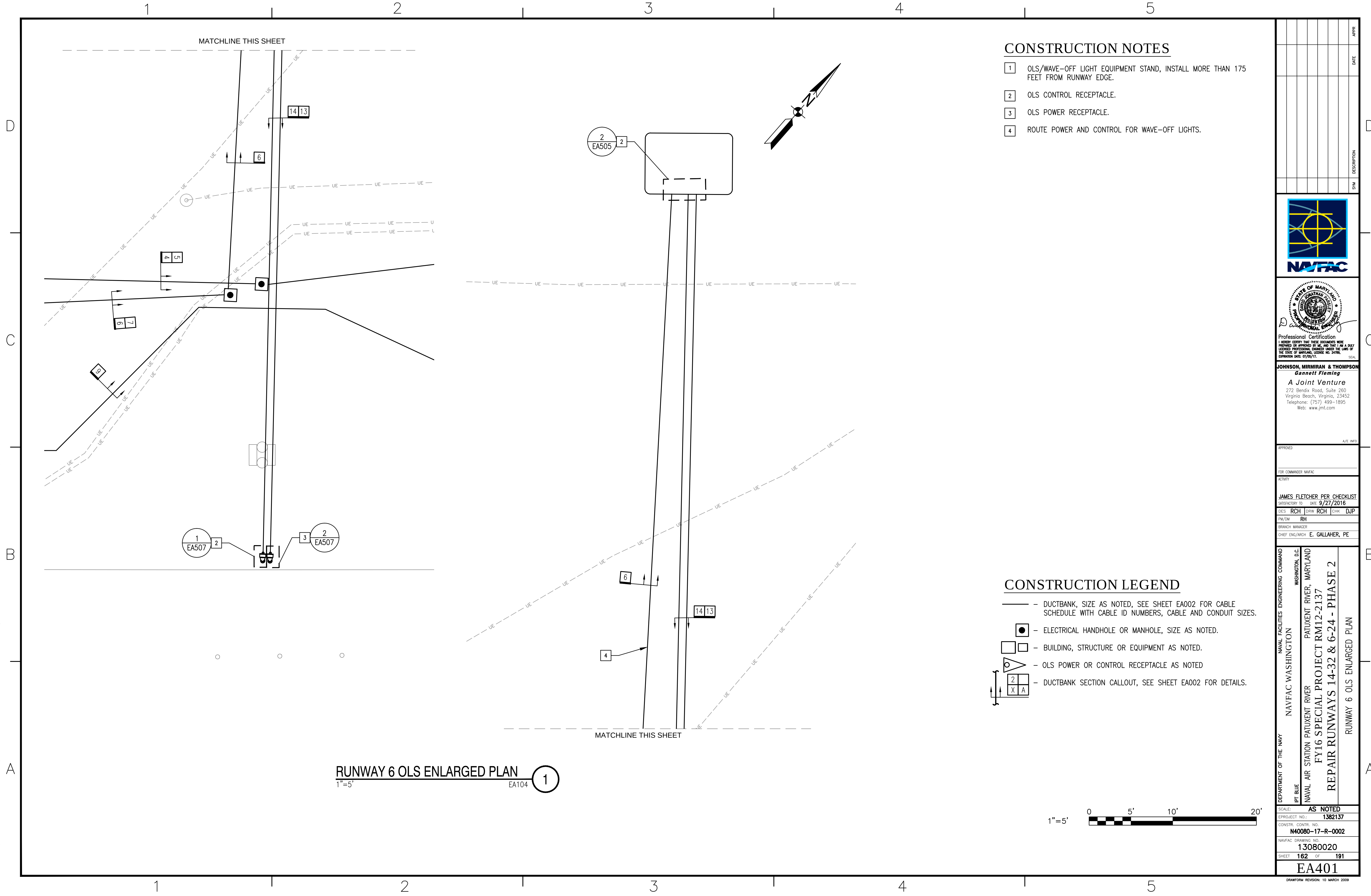
CHIEF ENG/ARCH **E. GALLAHER, P**

NAVY FACILITIES ENGINEERING COMMAND
WASHINGTON, D.C.

PATUXENT RIVER, MARYLAND
CONTACT RM12-2137
& 6-24 - PHASE 2

DEPARTMENT OF THE NAVY
NAVY
NAVFAC
IPT BLUE
NAVAL AIR STATION PATUXENT RIVER
FY16 SPECIAL PROGRAM
REPAIR RUNWAYS 1

SCALE:	AS NOTED	
EPROJECT NO.:	1382137	
CONSTR. CONTR. NO.	N40080-17-R-0002	
NAVFAC DRAWING NO.	13080017	
SHEET	159	OF 191
EA201		



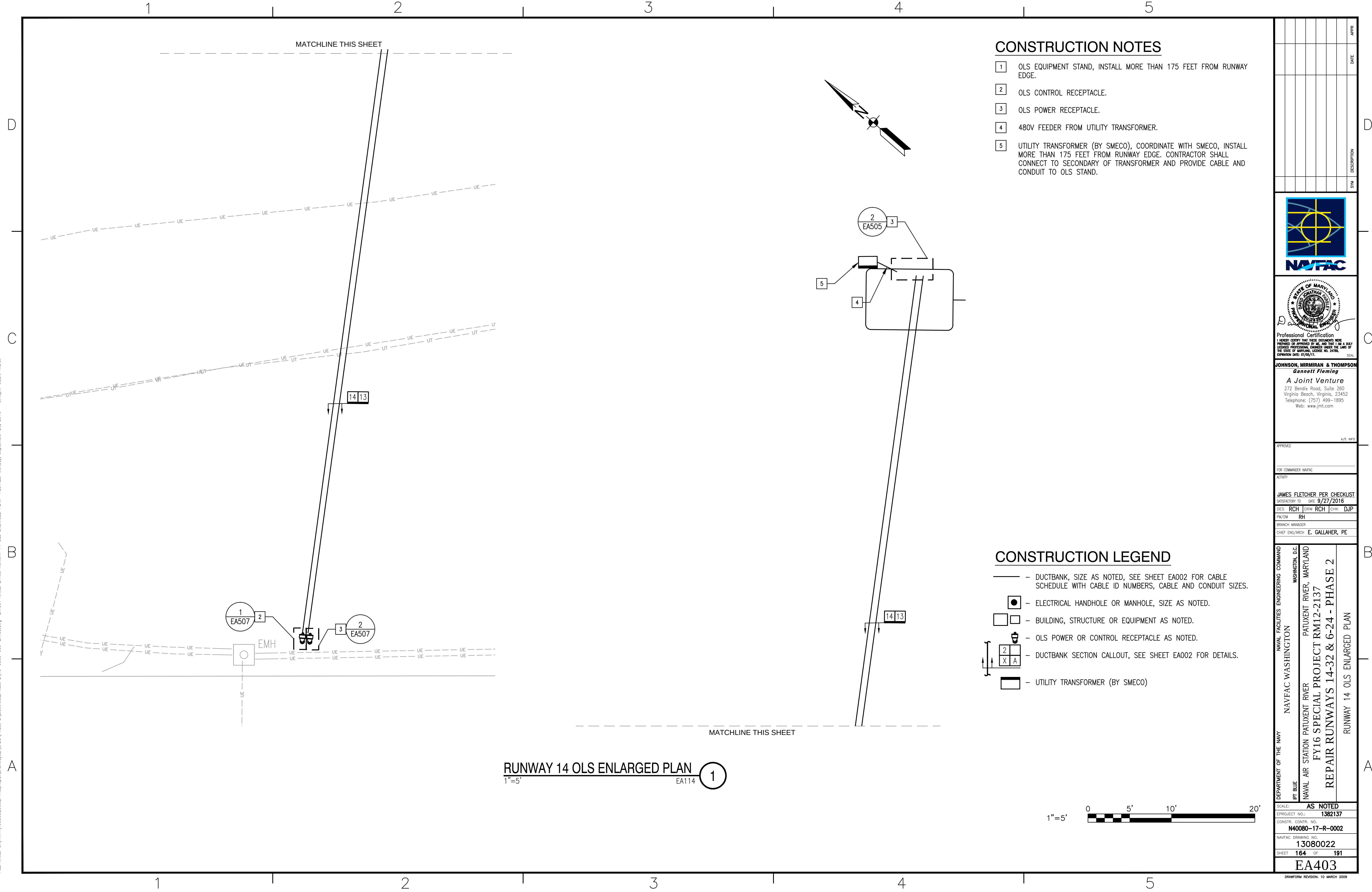
CONSTRUCTION NOTES

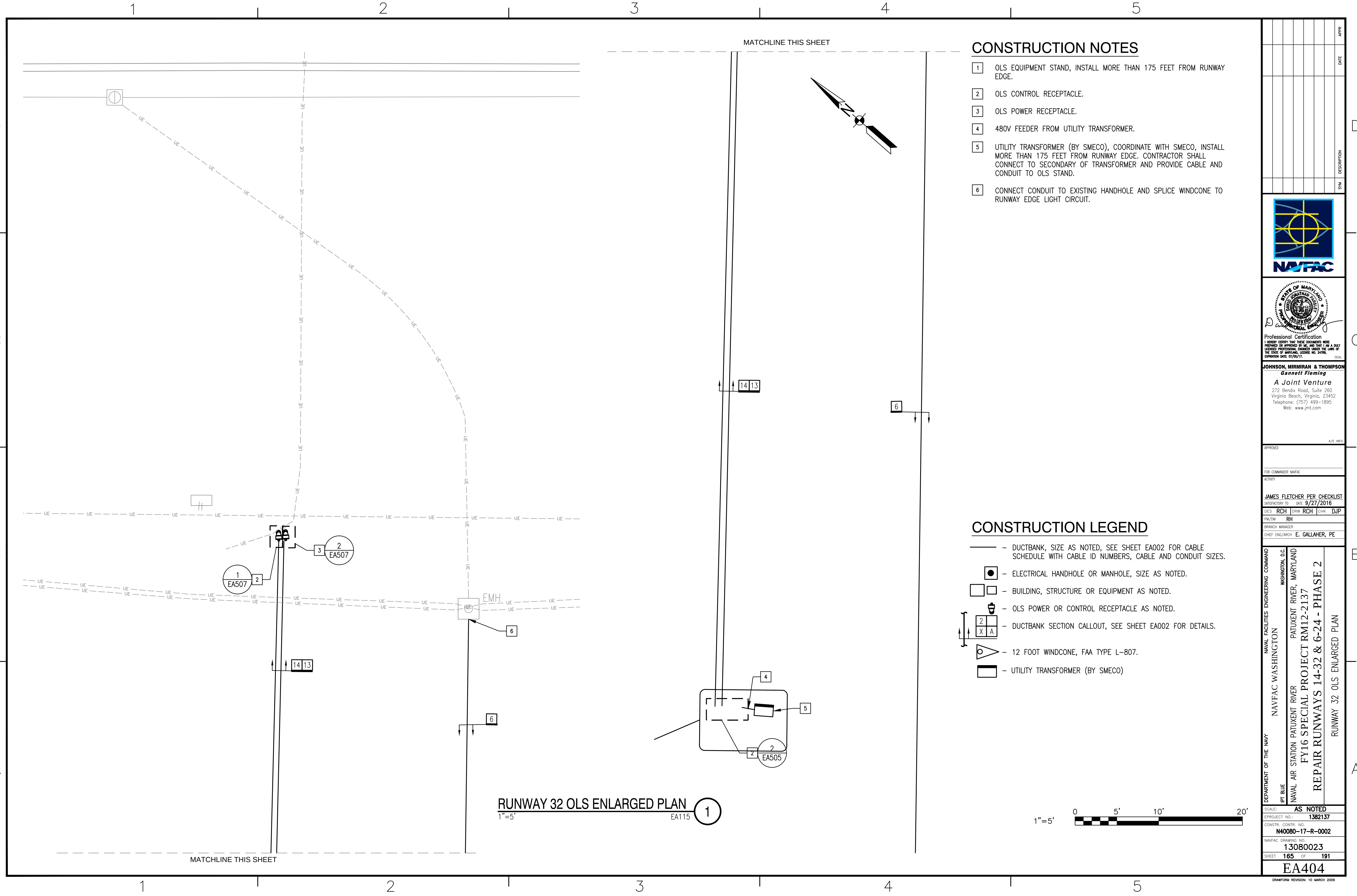
- 1 OLS/WAVE-OFF LIGHT EQUIPMENT STAND, INSTALL MORE THAN 175 FEET FROM RUNWAY EDGE.
- 2 OLS CONTROL RECEPTACLE.
- 3 OLS POWER RECEPTACLE.
- 4 ROUTE POWER AND CONTROL FOR WAVE-OFF LIGHTS.

CONSTRUCTION LEGEND

-  - DUCTBANK, SIZE AS NOTED, SEE SHEET EA002 FOR CABLE SCHEDULE WITH CABLE ID NUMBERS, CABLE AND CONDUIT SIZES.
-  - ELECTRICAL HANDHOLE OR MANHOLE, SIZE AS NOTED.
-  - BUILDING, STRUCTURE OR EQUIPMENT AS NOTED.
-  - OLS POWER OR CONTROL RECEPTACLE AS NOTED
-  - DUCTBANK SECTION CALLOUT, SEE SHEET EA002 FOR DETAILS.









- B

A

①

NOTES

- NTS

4



ALTERNATE METHOD

TYPICAL CABLE RACK



2

INSTALLATION ABOVE CONDUIT OR DUCT BANK

NTS

5



- 124 S C 3

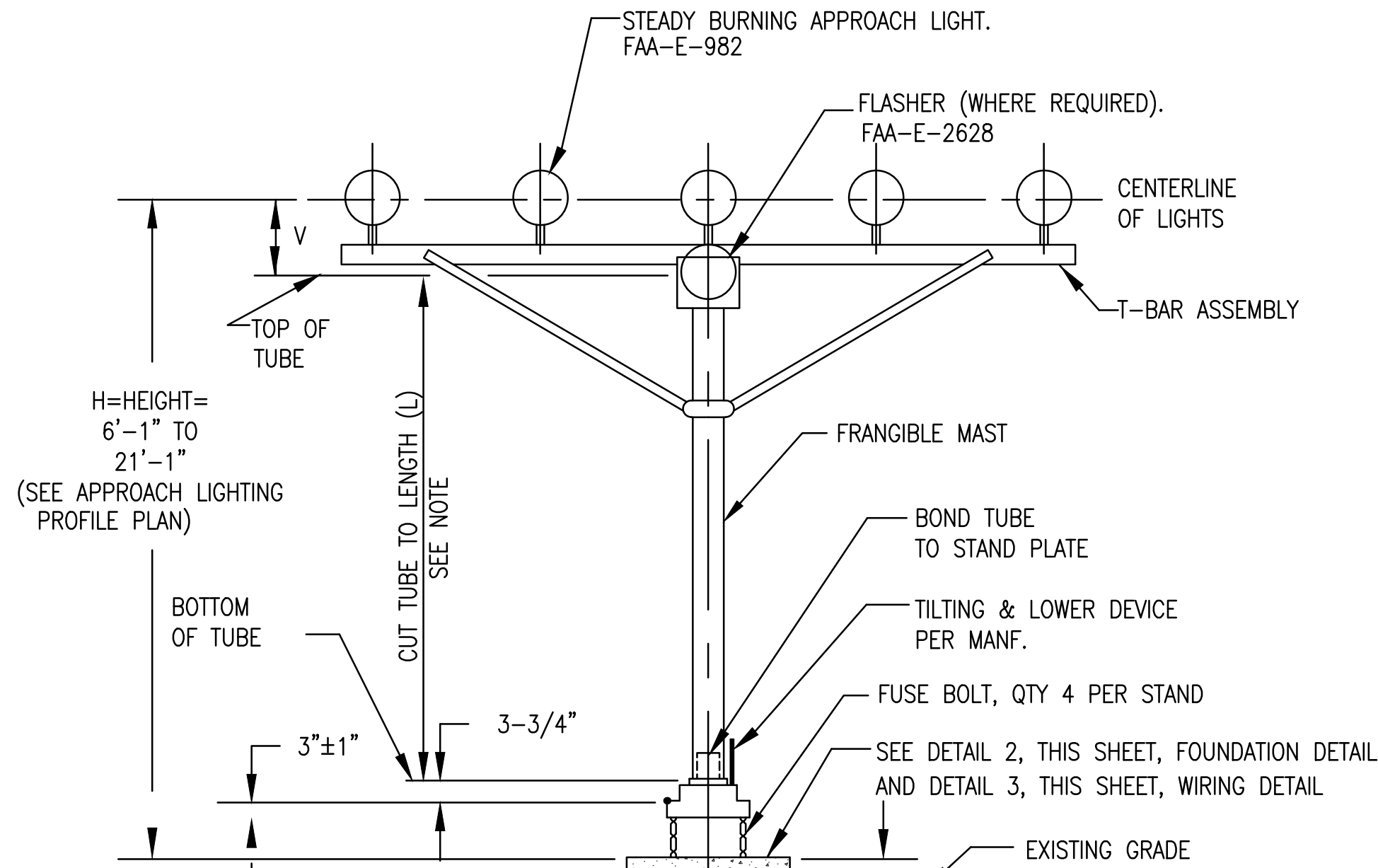
NOTES:

- NTS

6

DRAWFORM REVISION: 10 MARCH 2006

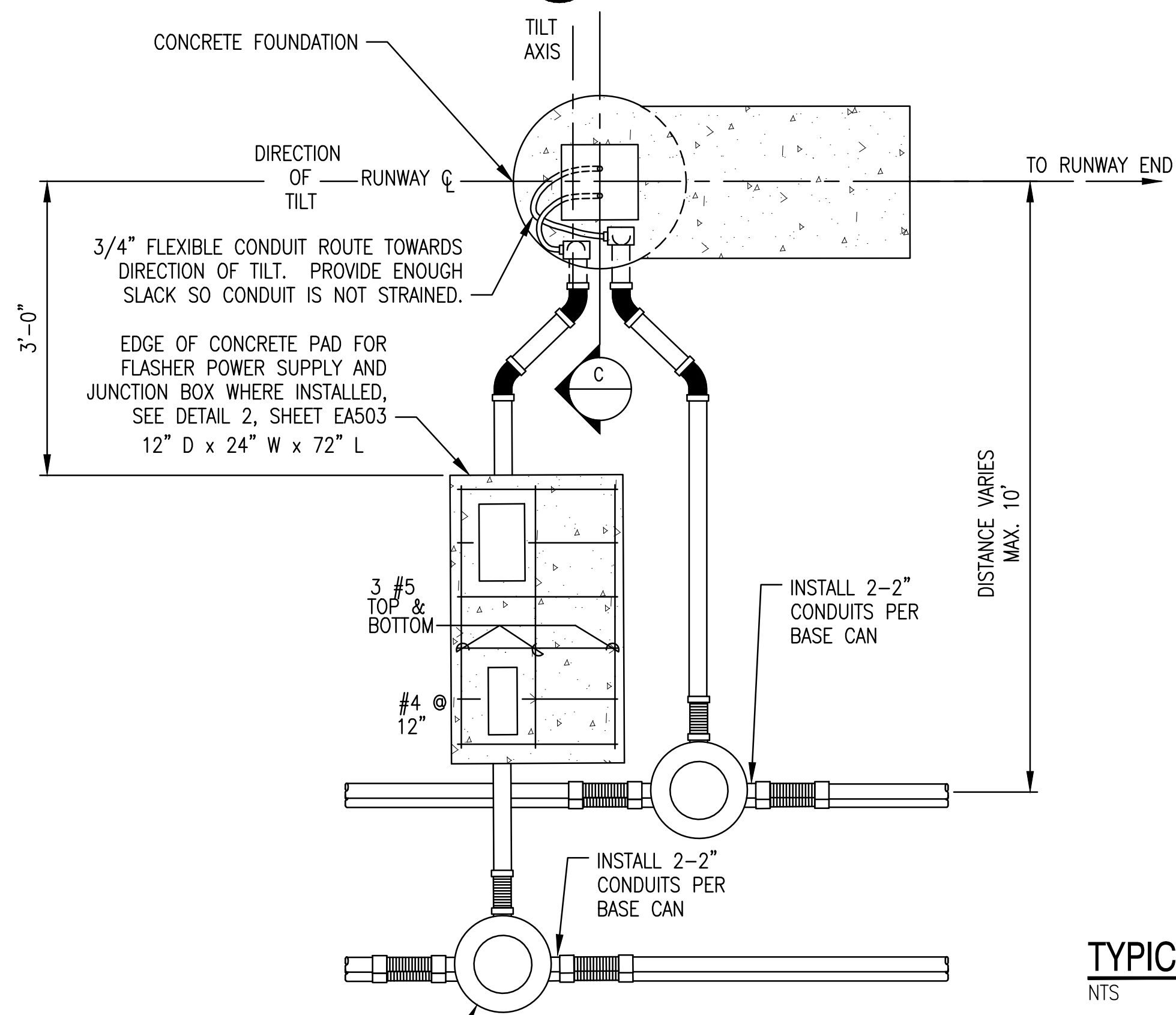
FILE NAME: C:\VHPA\130803_003_FY16_Repair_Runways_2\Electrical_Phase 2\Electrical_Phase 2\10-0865-009-E502.dwg LAYOUT NAME: E502 ELECTRICAL DETAILS PLOTTED: Tuesday, September 27, 2016 - 9:17am USER: rurst



TYPICAL MG-20 L.I.R. STRUCTURE

NTS EA101, EA201

1



PLAN

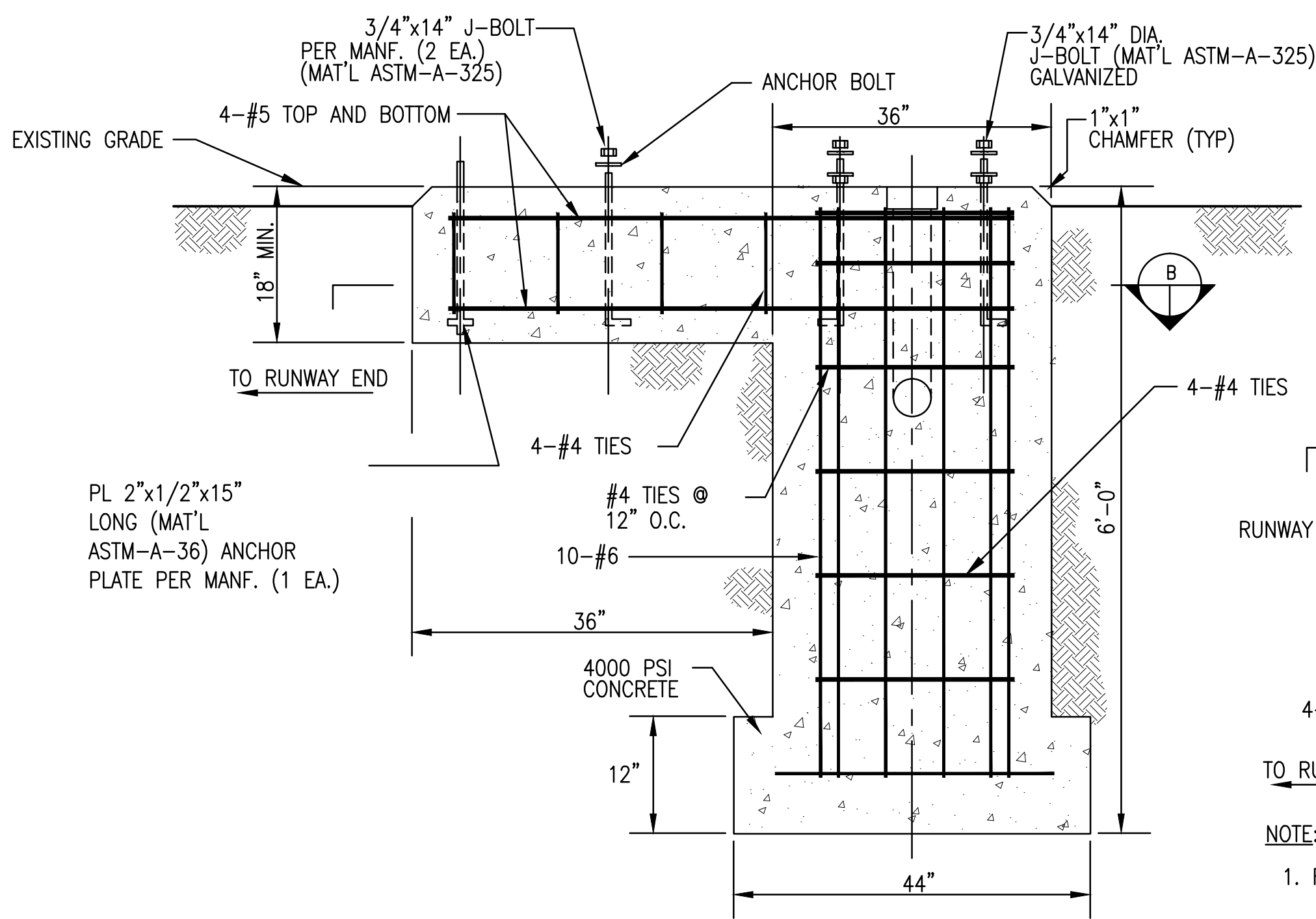
NOTE:

NUMBER OF CONDUCTORS WILL VARY DEPENDING ON NUMBER OF ISOLATION TRANSFORMERS USED, REQUIREMENTS OF SEQUENCED FLASHERS, ETC. VERIFY REQUIREMENTS WITH SYSTEM WIRING DIAGRAMS AND PROVIDE (FURNISH AND INSTALL) NECESSARY CONDUCTORS.

TYPICAL MG-20 L.I.R. STRUCTURE TOWER WIRING DETAIL

NTS EA101-EA102, EA125, EA201-EA203

3

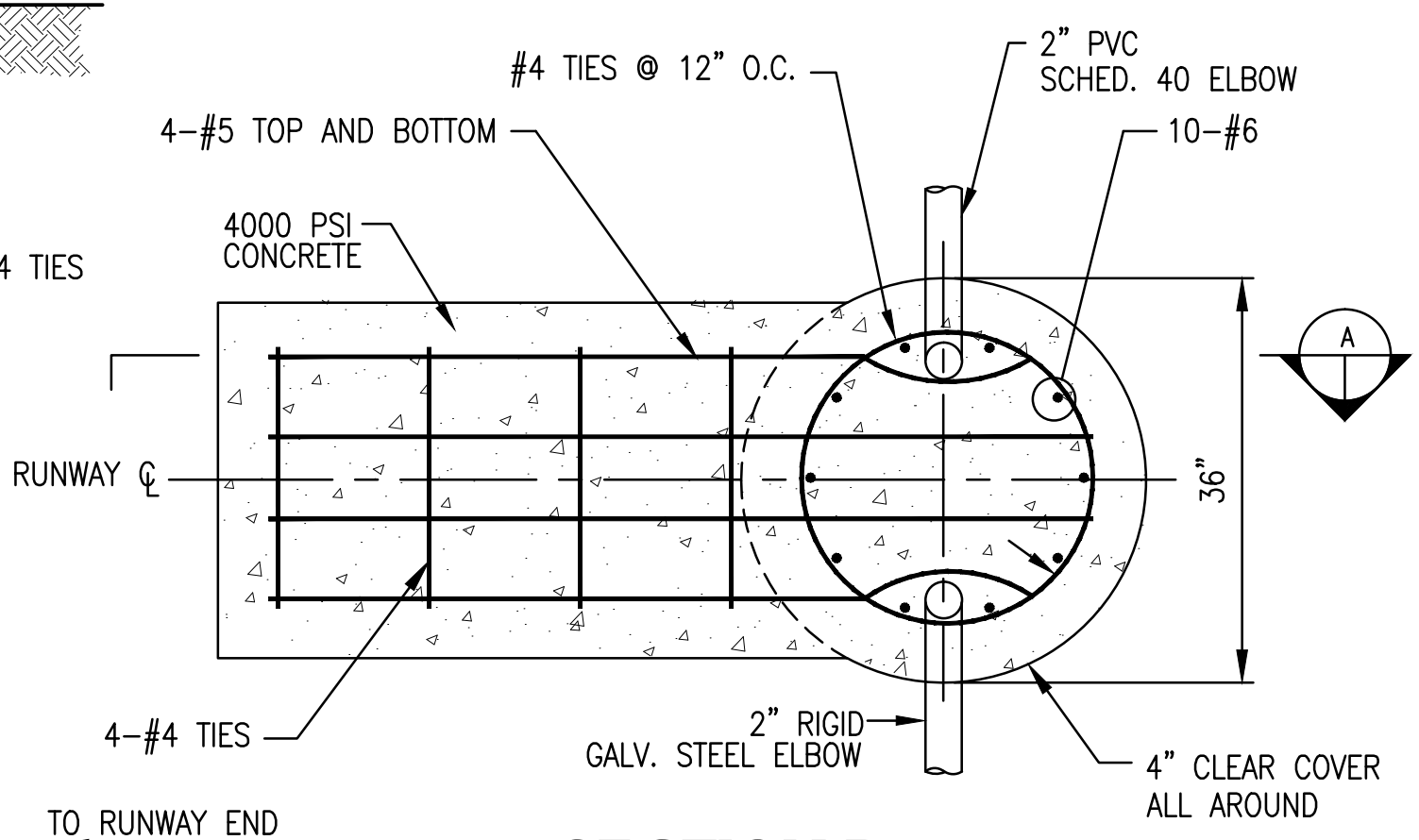


SECTION A

FOUNDATION FOR L.I.R. STRUCTURE
MG-20 SECTIONS A & B

NTS EA101, EA201

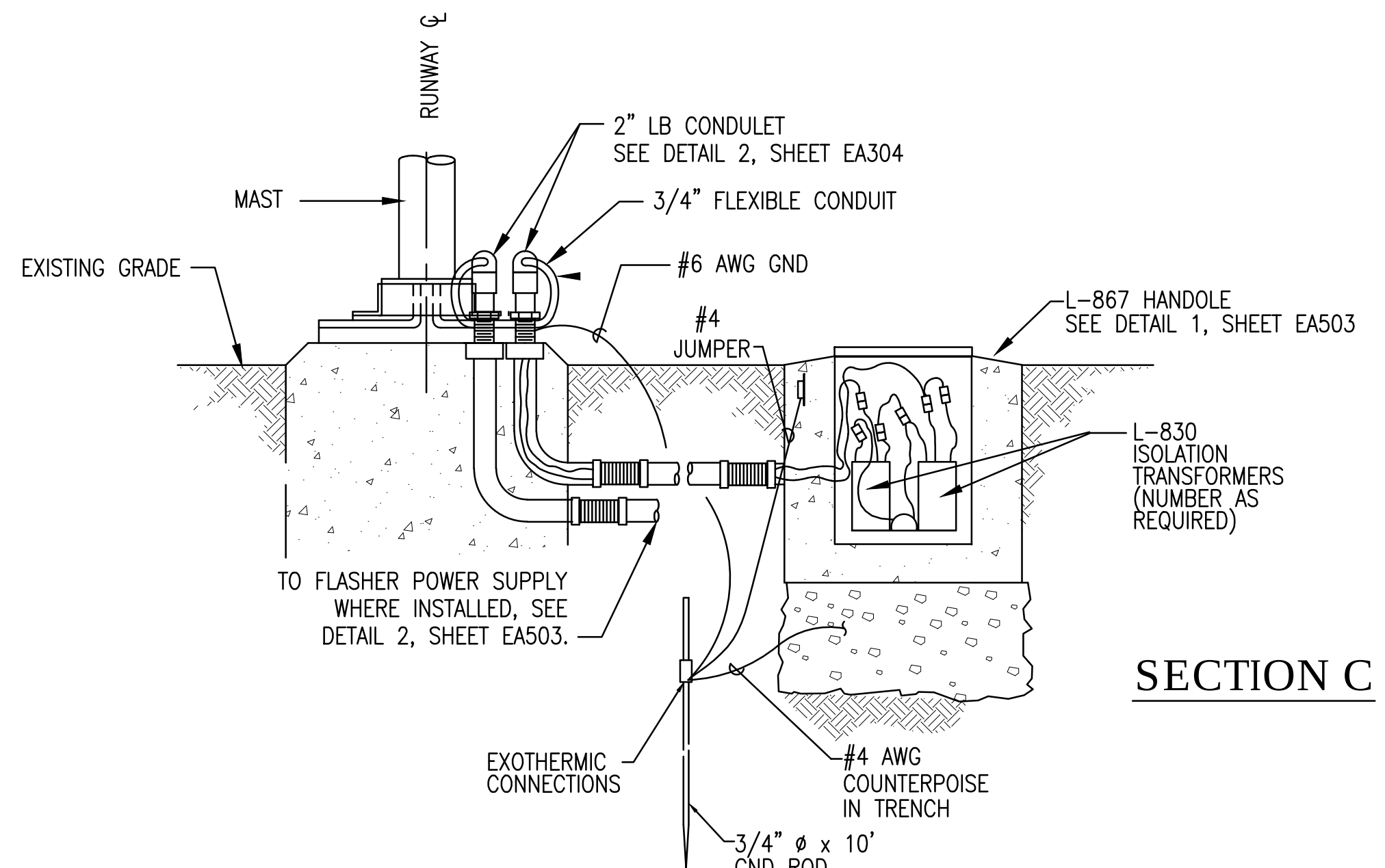
2



SECTION B

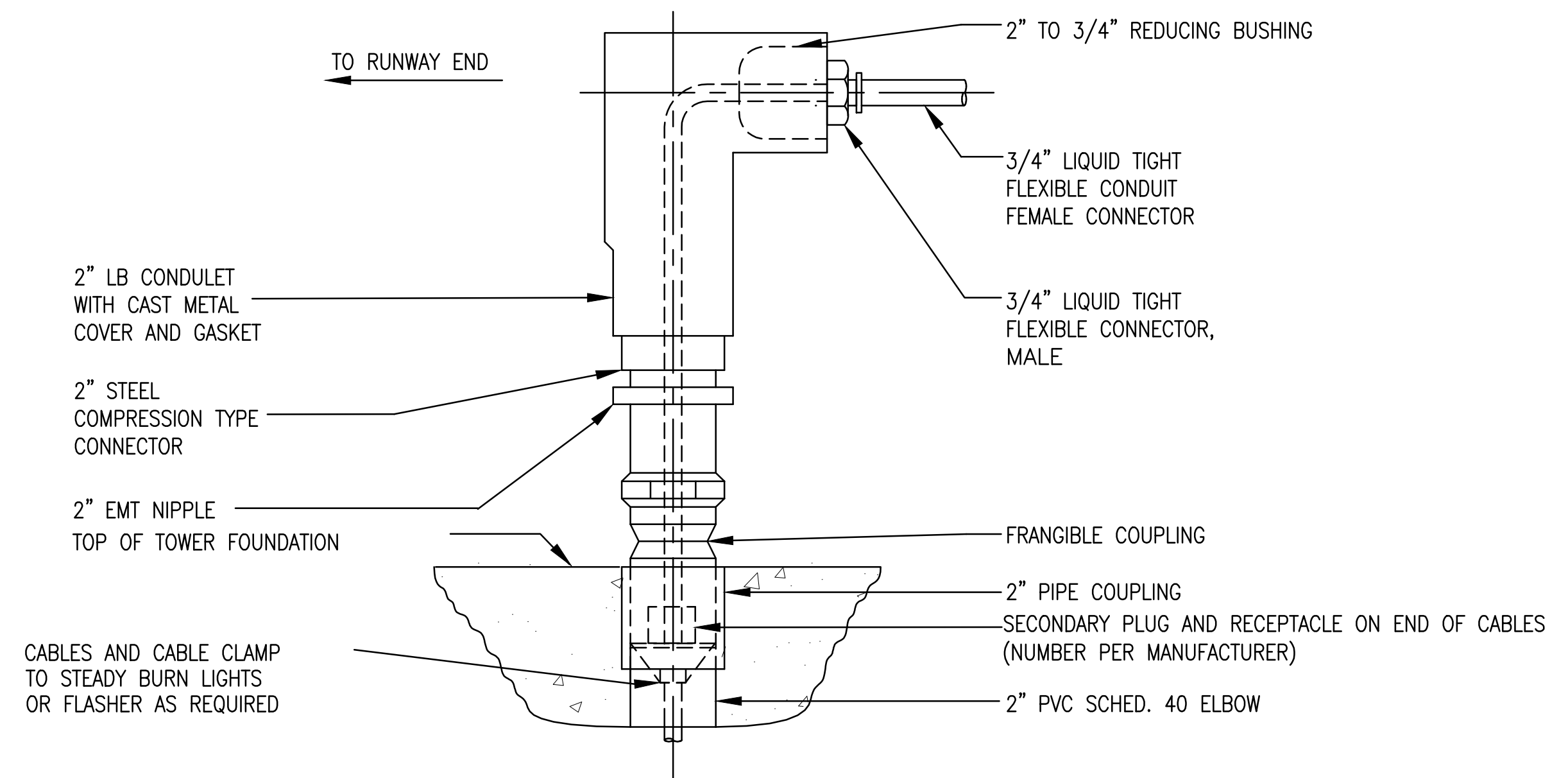
NOTE:

1. REINFORCING AND J-BOLT LAYOUT SHALL BE PER THE MANUFACTURER'S WRITTEN REQUIREMENTS.



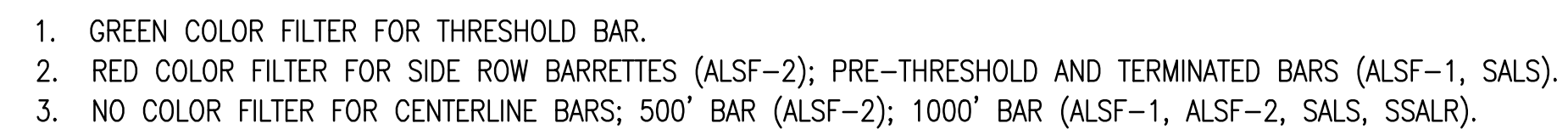
SECTION C

APPROVED	DATE	APPR
FOR COMMANDER NAVFAC		
ACTIVITY		
JAMES FLETCHER PER CHECKLIST		
SATISFACTORY TO	DATE 9/27/2016	
DES RCH	DRW RCH	CHK DJP
PM/SM RH		
BRANCH MANAGER		
CHEF ENG/ARCH E. GALLAHER, PE		
DEPARTMENT OF THE NAVY	NAVFAC WASHINGTON	NAVAL FACILITIES ENGINEERING COMMAND
LPT BLUE	PATUXENT RIVER	WASHINGTON, D.C.
NAVAL AIR STATION	PATUXENT RIVER	PATUXENT RIVER, MARYLAND
FY16 SPECIAL PROJECT RM12-2137		
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2		
ELECTRICAL DETAILS		
SCALE:	AS NOTED	
PROJECT NO.:	1382137	
CONSTR. CONTR. NO.	N40080-17-R-0002	
NAVFAC DRAWING NO.	13080025	
SHEET 167	OF 191	
EA502		
DRAWING REVISION: 10 MARCH 2009		



1. PROVIDE NUMBER OF CABLES AS REQUIRED. REFER TO SYSTEM WIRING DIAGRAMS.
2. FACE CONDULET AWAY FROM RUNWAY END AND TOWARD APPROACH.

NTS	EA101-EA102, EA125
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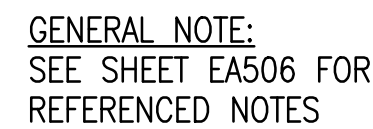


NTS EA101-EA102, EA125

1. MAXIMUM MOUNTING HEIGHT OF CONFIGURATION SHOWN IS 5'-11" FOR MOUNTING INSTALLATION OF MORE THAN 6'-0" SEE TOWER INSTALLATION DETAILS.
2. ALL CONDUITS SHALL BE TERMINATED WITH A STANDARD GROUND BUSHING.
3. CONNECTION MUST BE CLEAN AND DRY WITH A LIGHT COATING OF SILICONE GREASE ONLY.
4. ALL CONDUITS SHALL BE DUCT SEALED.
5. CONTINUITY OF POWER CABLES SHALL BE MAINTAINED BETWEEN FLASHER STATIONS. WHERE SPLICES ARE REQUIRED, THEY SHALL BE EPOXY RESIN TYPE WITH PLASTIC SHELL. THE CONDUCTORS SHALL BE EQUIPPED WITH MECHANICAL WIRE CLAMPS.
6. GROUND CLEARANCE OF ELECTRICAL BOXES SHALL BE DETERMINED IN FIELD, AND SHALL BE 8" MINIMUM.
7. FLASHER POWER SUPPLY/JUNCTION BOX UNIT SHALL BE LOCATED 35' FROM EXTENDED CENTERLINE OF RUNWAY.
8. LAMP RETURN WIRE SHALL BE INSERTED INTO CABLE CLAMP PRIOR TO FINAL ASSEMBLY/TIGHTENING.

NTS
EA101-EA102

1



WAVE-OFF LIGHT LAYOUT
NOT TO SCALE EA104,EA105

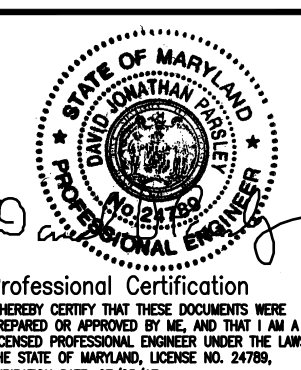
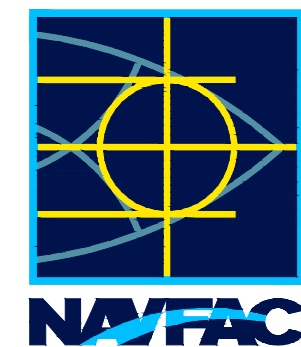


1. RACK MUST BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND TOUCH UP WITH COLD GALVANIZING SPRAY AFTER INSTALLATION. ALL HARDWARE USE TO SECURE ENCLOSURE TO RACK SHALL BE STAINLESS STEEL.
2. POWER TO BE SUPPLIED BY UTILITY TRANSFORMER AND SHALL BE 480 VAC, COORDINATE WITH SMECO.

NOT TO SCALE EA104,EA113,EA114,EA115,EA401,EA402,EA403,EA404



NOT TO SCALE EA104,EA105,EA111,EA112,EA113

[illegible]

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APPROVED				
FOR COMMANDER NAVFAC				
ACTIVITY				
JAMES FLETCHER PER CHECKLIST				
SATISFACTORY TO DATE 9/27/2016				
DES	RCH	DRW	RCH	CHK DJP
PM/DM	RH			
BRANCH MANAGER				
CHIEF ENG/ARCH	E. GALLAHER, PE			

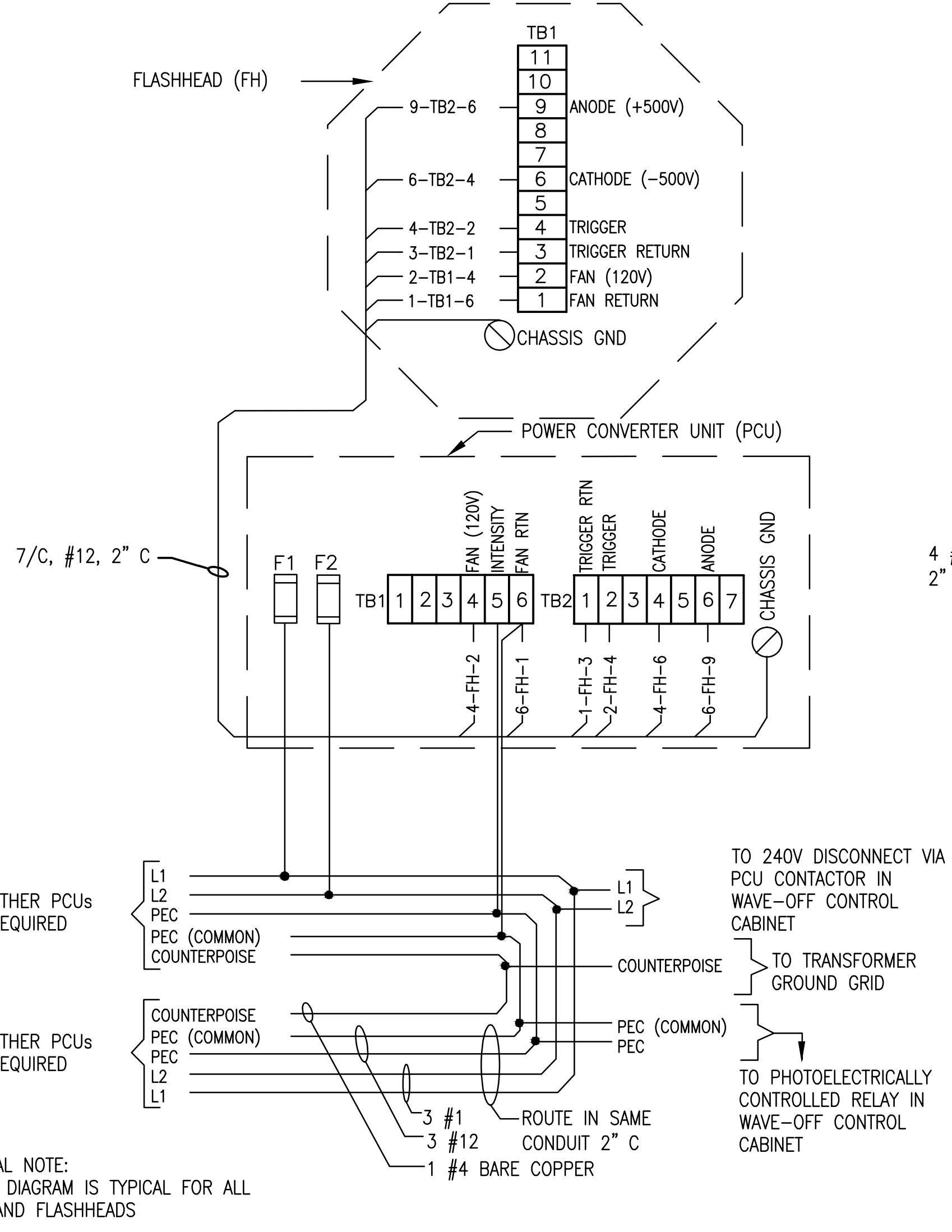
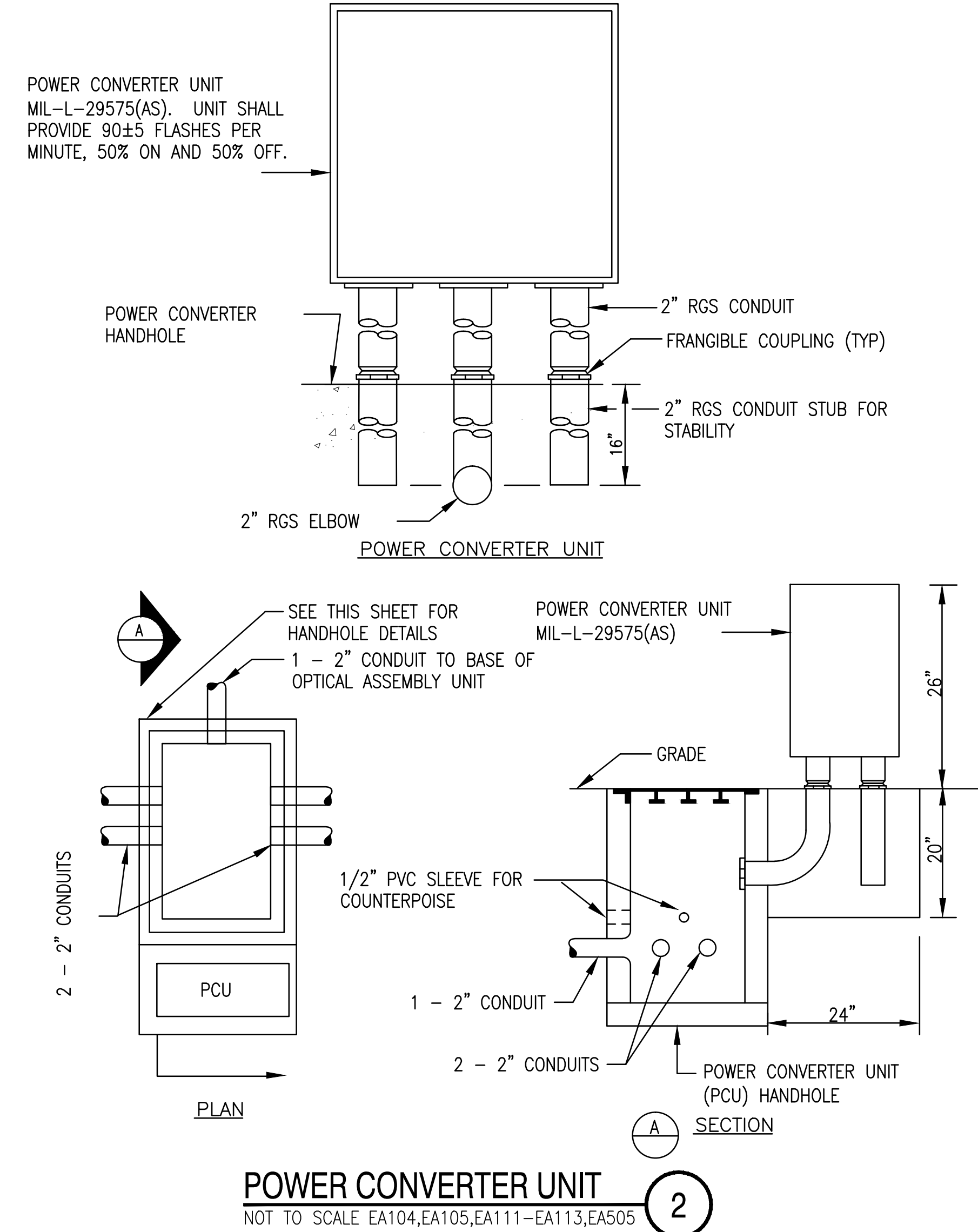
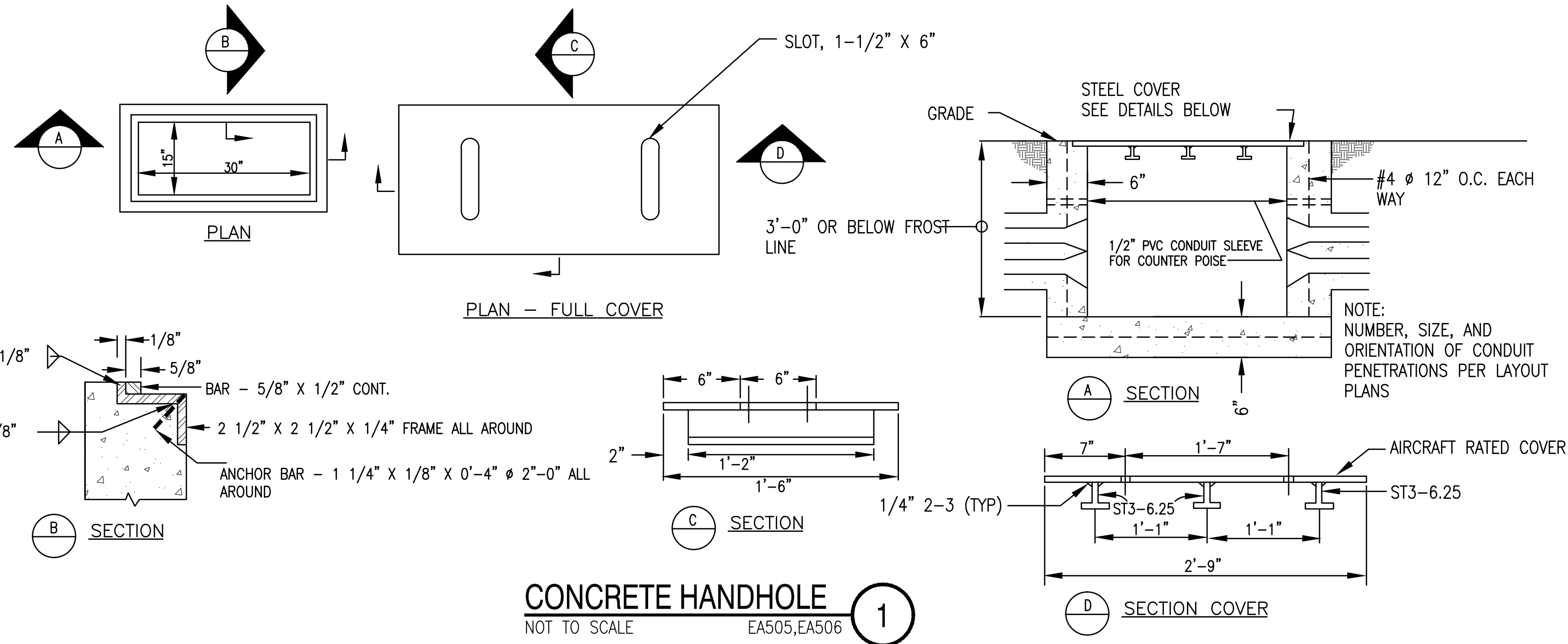
DEPARTMENT OF THE NAVY	NAV/FAC WASHINGTON	NAV FACILITIES ENGINEERING COMMAND WASHINGTON, D.C.
PT BLUE	NAVAL AIR STATION PATUXENT RIVER	PATUXENT RIVER, MARYLAND
	FY16 SPECIAL PROJECT RM12-2137	
	REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2	
	ELECTRICAL DETAILS	

SCALE:	AS NOTED	
EPROJECT NO.:	1382137	
CONSTR. CONTR. NO.	N40080-17-R-0002	
NAVFAC DRAWING NO.	13080028	
SHEET	170	OF 191

EA505

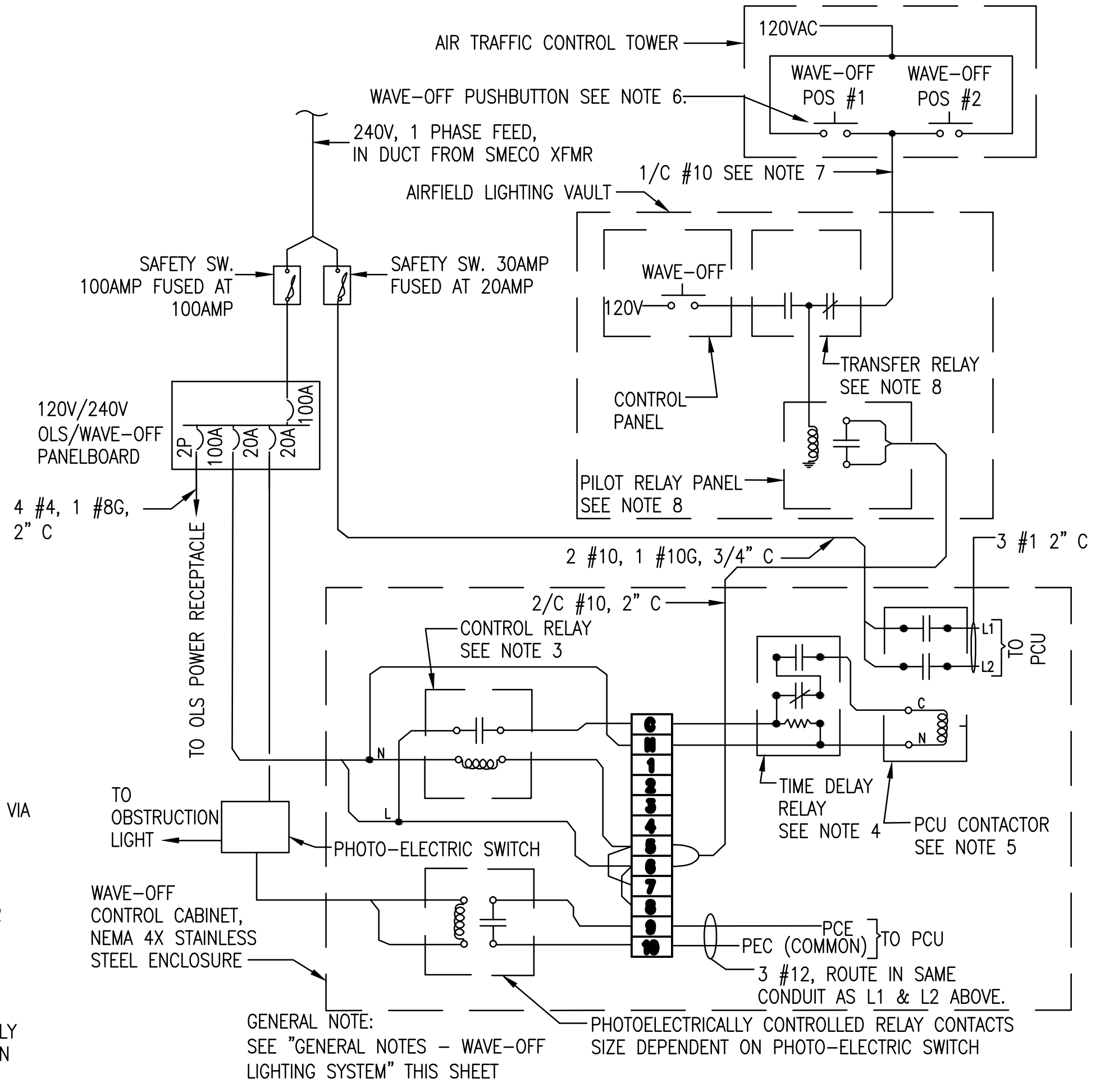
DRAWFORM REVISION: 10 MARCH 200

FILE NAME: C:\VHFA\120803_003_FY16_Repair_Runways_2\Electrical_Phase 2\Electrical_Details_LAYOUT NAME: EA506 ELECTRICAL DETAILS PLOTTED: Monday, September 26, 2016 - 3:45pm USER: hrust



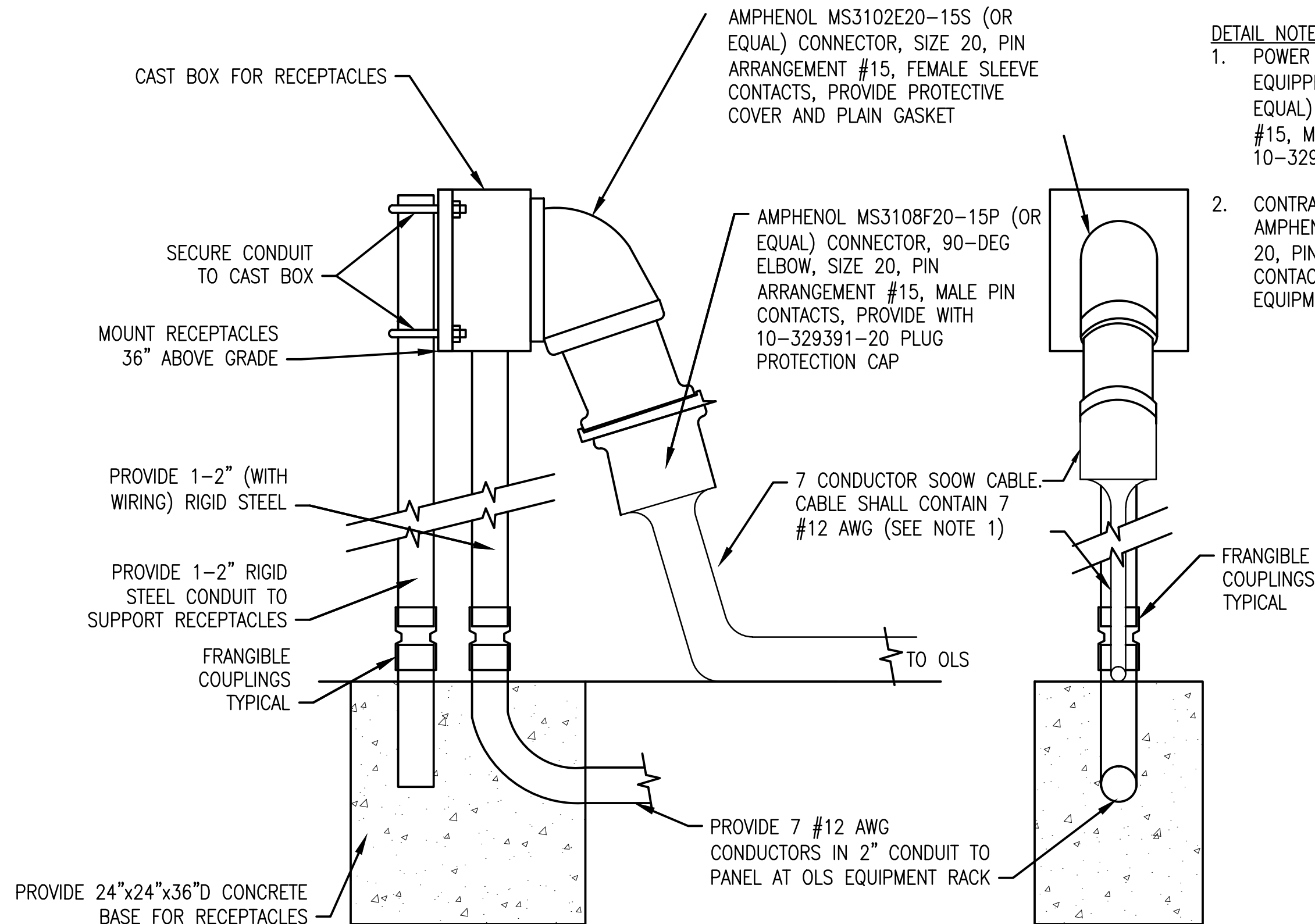
GENERAL NOTES - WAVE-OFF LIGHTING SYSTEM

1. ALL EQUIPMENT IN THE UNDERGROUND MANHOLE/Vault SHALL EITHER BE SUBMERSIBLE OR INSTALLED WITHIN A SUBMERSIBLE ENCLOSURE, NEMA 6P ENCL. EQUIPMENT ENCLOSURES LOCATED ABOVE GROUND SHALL BE NEMA 4X.
2. CONTROL RELAY SHALL BE GENERAL PURPOSE, HERMETICALLY SEALED, 4PDT, 3 AMP CONTACTS WITH 120VAC, 60Hz COIL.
3. TIME DELAY RELAY SHALL HAVE 10 AMP, 120VAC CONTACTS WITH 120VAC 60Hz COIL RELAY SHALL HAVE ONE NORMALLY OPEN (N.O) INSTANTANEOUS CONTACTS AND ONE NORMALLY CLOSED (N.C.) TIME DELAY OPENING CONTACT ADJUSTABLE FROM 5 TO 60 SECOND DELAY ON ENERGIZING BUT INITIALLY SET FOR 15 SECONDS DELAY.
4. CONTACTOR SHALL HAVE TWO N.O., 30 AMP, 480VAC CONTACTS WITH 120VAC, 60Hz COIL.
5. WAVE-OFF PUSHBUTTONS SHALL BE N.O. MOMENTARY CONTACTS. LOCATE PUSHBUTTONS WITHIN CONTROL TOWER AS DIRECTED BY THE CONTRACT OFFICER.
6. ROUTE 12/C #10 AWG FOR SPARE CONDUCTORS.
7. PILOT CONTROL BY OTHERS, COORDINATE WITH CONTRACTING OFFICER.
8. PROVIDE 2 - 2" CONDUITS (1 - SPARE) BETWEEN POWER CONVERTER UNITS (PCU). ALSO PROVIDE 2 - 2" CONDUITS (1 - SPARE) BETWEEN PCU AND THRESHOLD.
9. PROVIDE 1 - 2" CONDUIT BETWEEN PCUs AND OPTICAL ASSEMBLY UNITS.



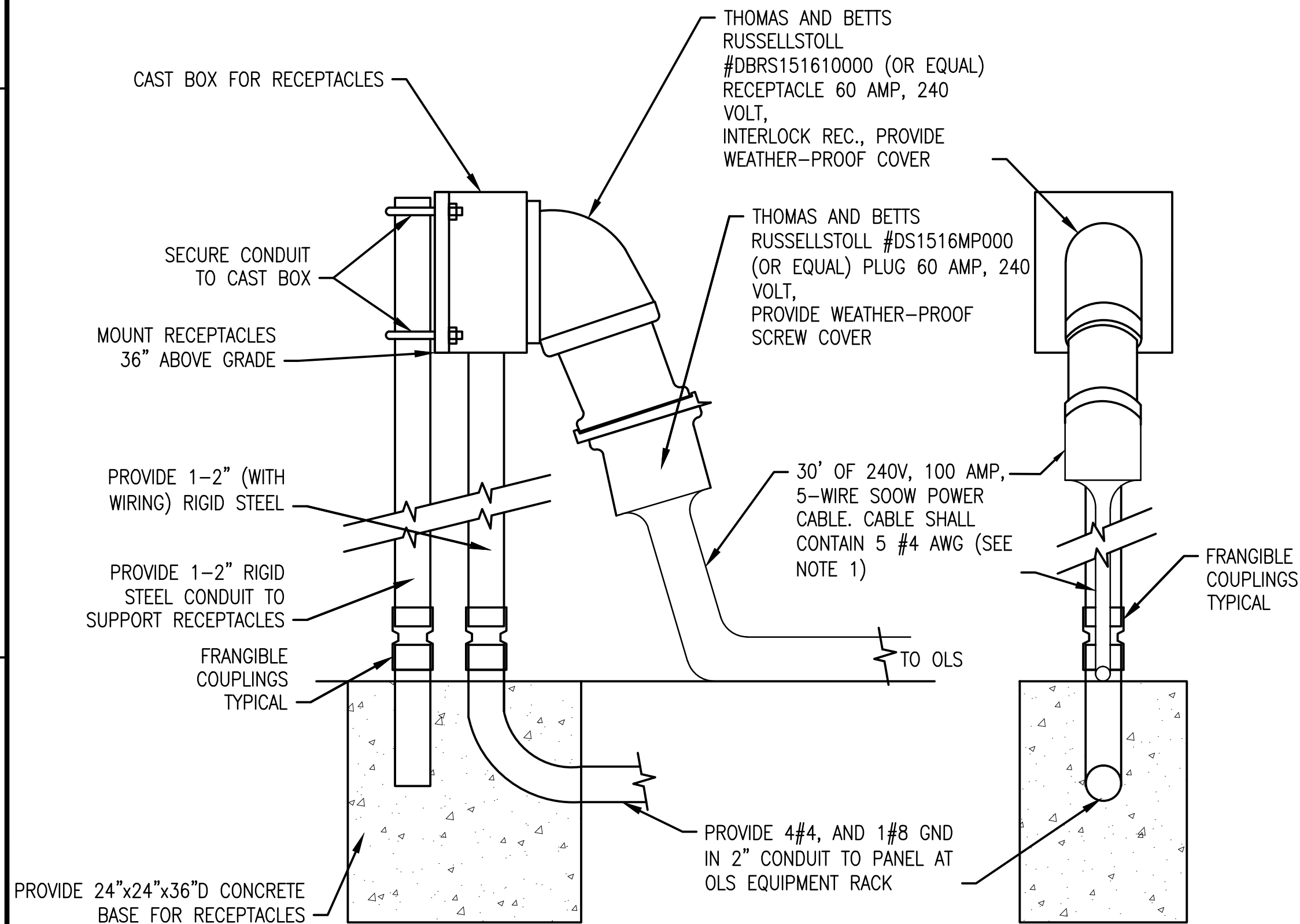
APPROVED	DATE	APPR
FOR COMMANDER NAVFAC		
ACTIVITY		
JAMES FLETCHER PER CHECKLIST SATISFACTORY TO DATE 9/27/2016		
DES	RCH	DRW RCH
CHK	DJP	
PM/SN	RH	
BRANCH MANAGER		
CHEF ENG/ARCH	E. GALLAHER, PE	
DEPARTMENT OF THE NAVY NAVFAC WASHINGTON WASHINGTON, D.C. NAVAL AIR STATION PATUXENT RIVER PATUXENT RIVER, MARYLAND FY16 SPECIAL PROJECT RM12-2137 REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2 ELECTRICAL DETAILS		
SCALE: AS NOTED PROJECT NO.: 1382137 CONSTR. CONTR. NO.: N40080-17-R-0002 NAVFAC DRAWING NO.: 13080029 SHEET 171 OF 191 EA506 DRAWING REVISION: 10 MARCH 2009		

FILE NAME: C:\VHPA\120863_003_FY16_Repair_Runways_2\Electrical_Phase 2\10-0863-003-4507.dwg LAYOUT NAME: EA507 ELECTRICAL DETAILS PLOTTED: Monday, September 26, 2016 - 3:45pm USER: rhurst



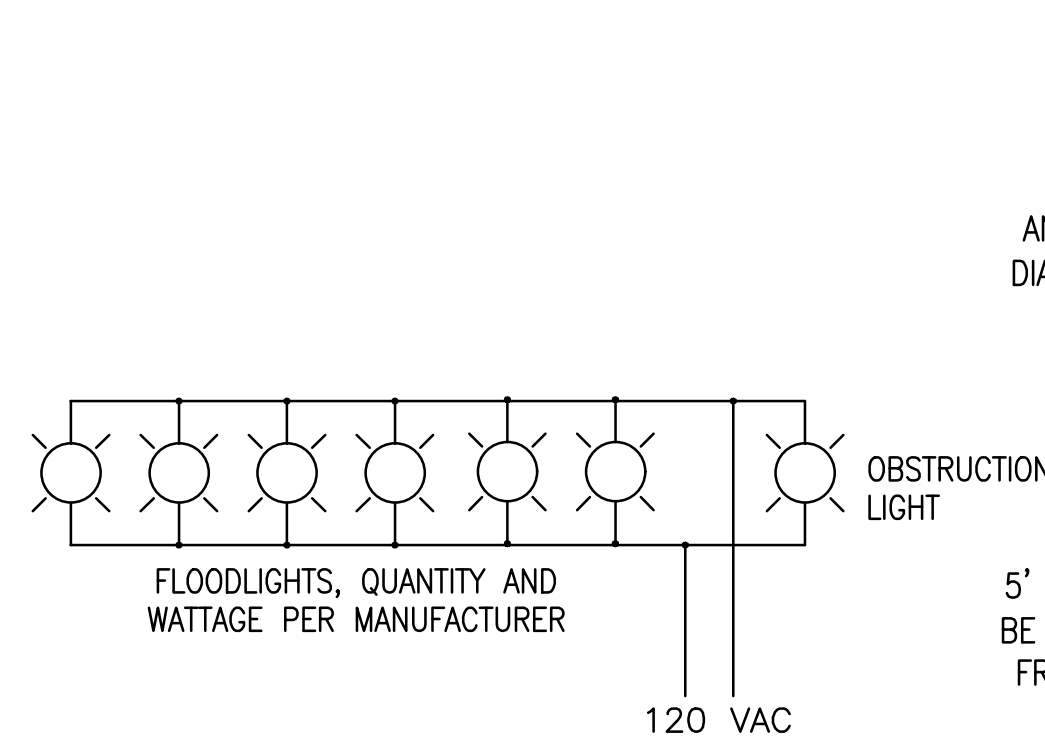
OLS CONTROL RECEPTACLE DETAIL
NOT TO SCALE
EA114,EA115,EA401-EA404

- DETAIL NOTES:**
- POWER CABLE AT OLS CONNECTION POINT SHALL BE EQUIPPED WITH AMPHENOL MS3108F20-15P (OR EQUAL) CONNECTOR, SIZE 20, PIN ARRANGEMENT #15, MALE PIN CONTACTS, PROVIDE WITH 10-329391-20 PLUG PROTECTION CAP.
 - CONTRACTOR SHALL SUPPLY NAVFAC WITH AMPHENOL MS3102E20-15S CONNECTOR, SIZE 20, PIN ARRANGEMENT #15, FEMALE SLEEVE CONTACTS. NAVFAC WILL INSTALL THIS ON THE OLS EQUIPMENT.

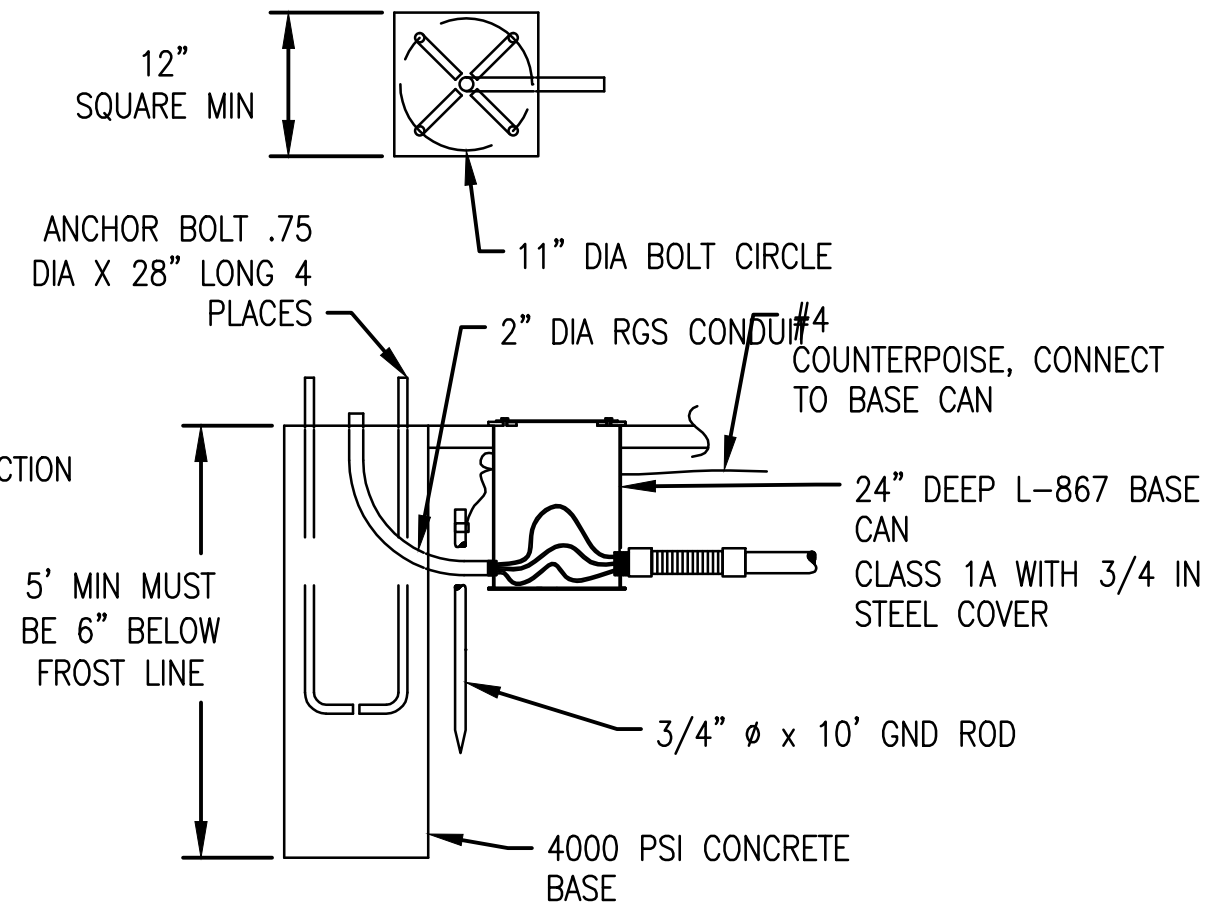


OLS POWER RECEPTACLE DETAIL
NOT TO SCALE
EA113-EA115,EA401-EA404

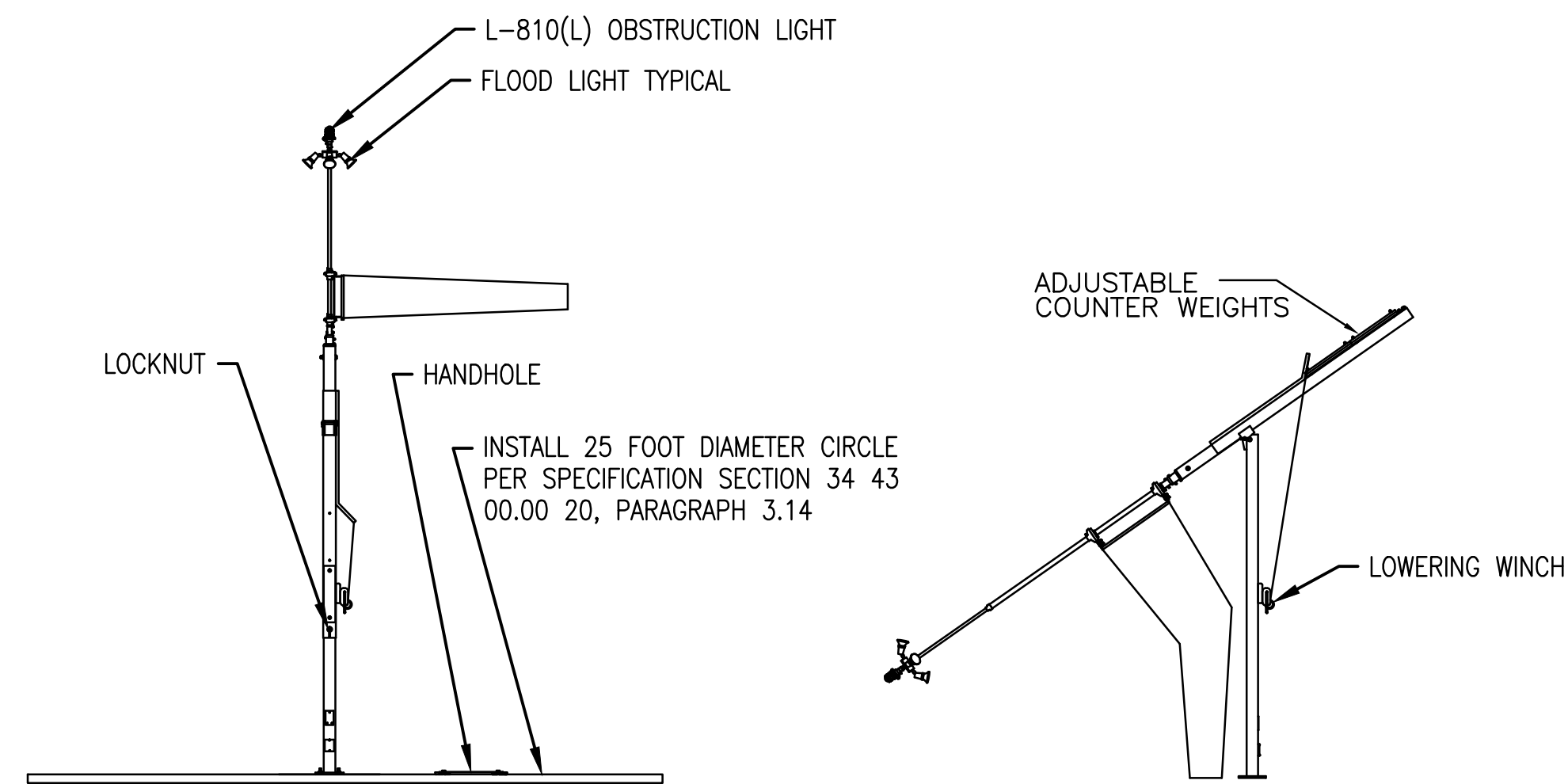
- NOTES:**
- POWER CABLE AT OLS CONNECTION POINT SHALL BE EQUIPPED WITH THOMAS & BETTS RUSSELLSTOLL #DS1516FP000 (OR EQUAL) PLUG 60 AMP, 240 VOLT, PROVIDE WEATHER-PROOF SCREW COVER
 - CONTRACTOR SHALL SUPPLY NAVFAC WITH THOMAS AND BETTS RUSSELLSTOLL #DBRS151610000 (OR EQUAL) RECEPTACLE 100 AMP, 240 VOLT, INTERLOCK REC., PROVIDE WEATHER-PROOF COVER. NAVFAC WILL INSTALL THIS ON THE OLS EQUIPMENT.



WIRING DIAGRAM



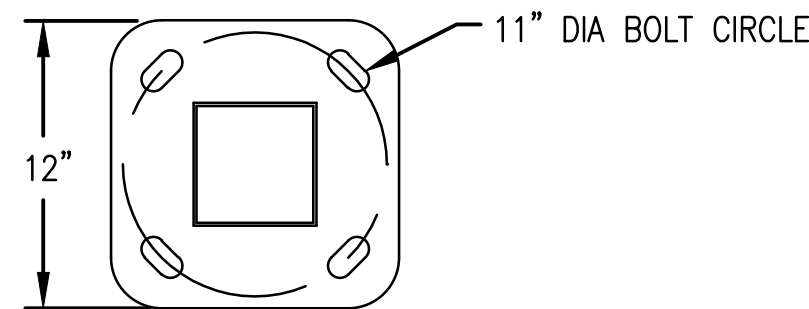
FOUNDATION DETAILS



STANDARD ILLUMINATION WIND CONE POLE ASSEMBLY

POSITION OF POLE LOWERED FOR SERVICING

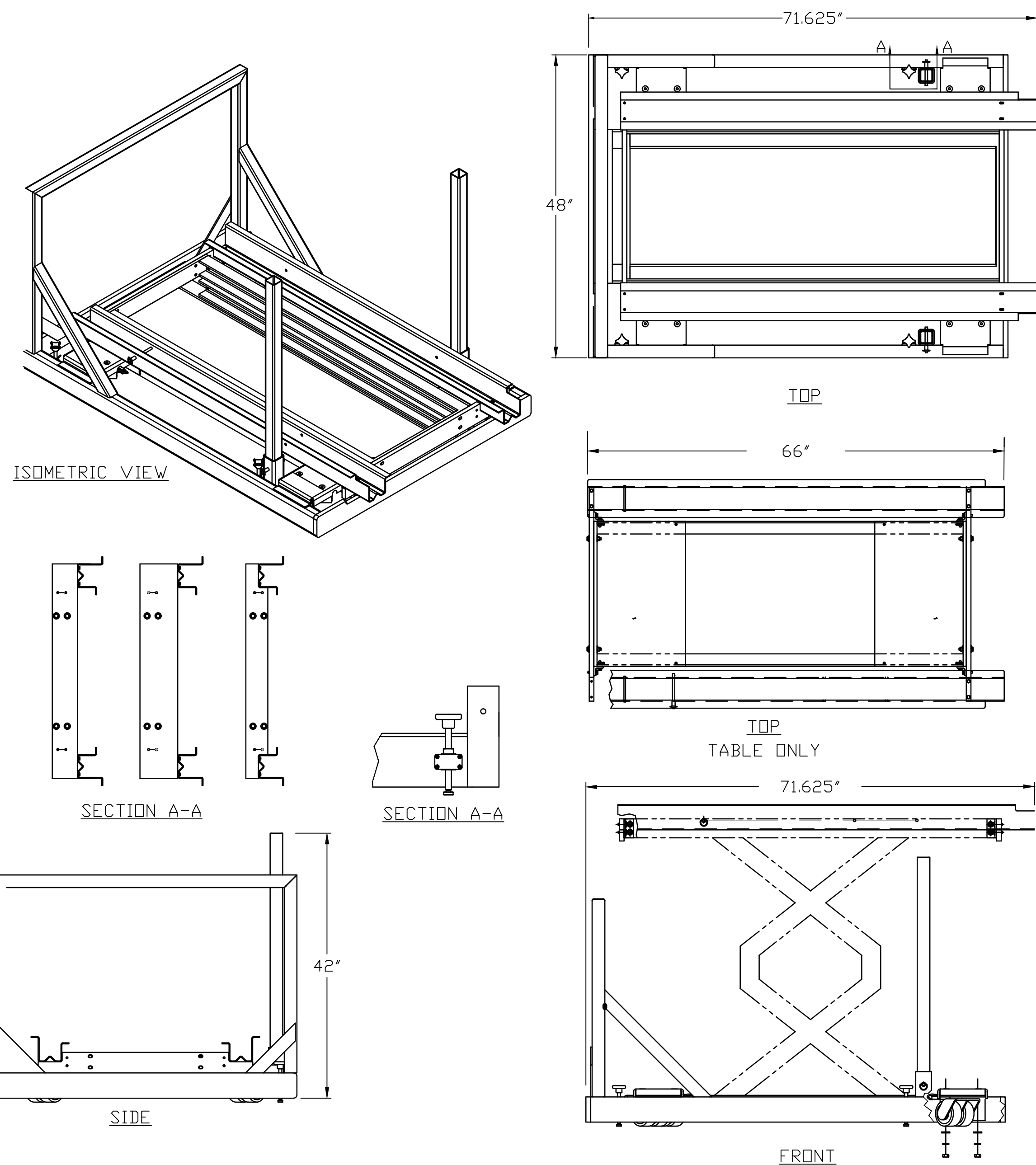
- NOTES:**
- HINGE POINT MAY BE IN MIDDLE, AS SHOWN, OR AT BASE.
 - PROVIDE FAA L-807 PER SPECIFICATION SECTION 34 43 00.00 20, PARAGRAPH 2.6



BASE DIMENSIONS

FAA SPECIFICATION L-807 RIGID 12' WINDCONE
NOT TO SCALE
EA104,EA113-EA116,EA123,EA125,EA126

APPROVED	DATE	APPROVED
FOR COMMANDER NAVFAC	ACTIVITY	DESCRIPTION
JAMES FLETCHER PER CHECKLIST	SATISFACTORY TO DATE 9/27/2016	SYN
DES RCH	DRW RCH	CHK DJP
PM/SM RH	BRANCH MANAGER	SYN
CHEF ENG/ARCH E. GALLAHER, PE		SYN
DEPARTMENT OF THE NAVY	NAVFAC WASHINGTON	SYN
NAVAL FACILITIES ENGINEERING COMMAND	WASHINGTON, D.C.	SYN
NAVAL AIR STATION PATUXENT RIVER	PATUXENT RIVER, MARYLAND	SYN
FY16 SPECIAL PROJECT RM12-2137		SYN
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2		SYN
ELECTRICAL DETAILS		SYN
SCALE: AS NOTED	PROJECT NO.: 1382137	SYN
CONSTR. CONTR. NO. N40080-17-R-0002		SYN
NAVFAC DRAWING NO. 13080030		SYN
SHEET 172 OF 191		SYN
EA507		SYN



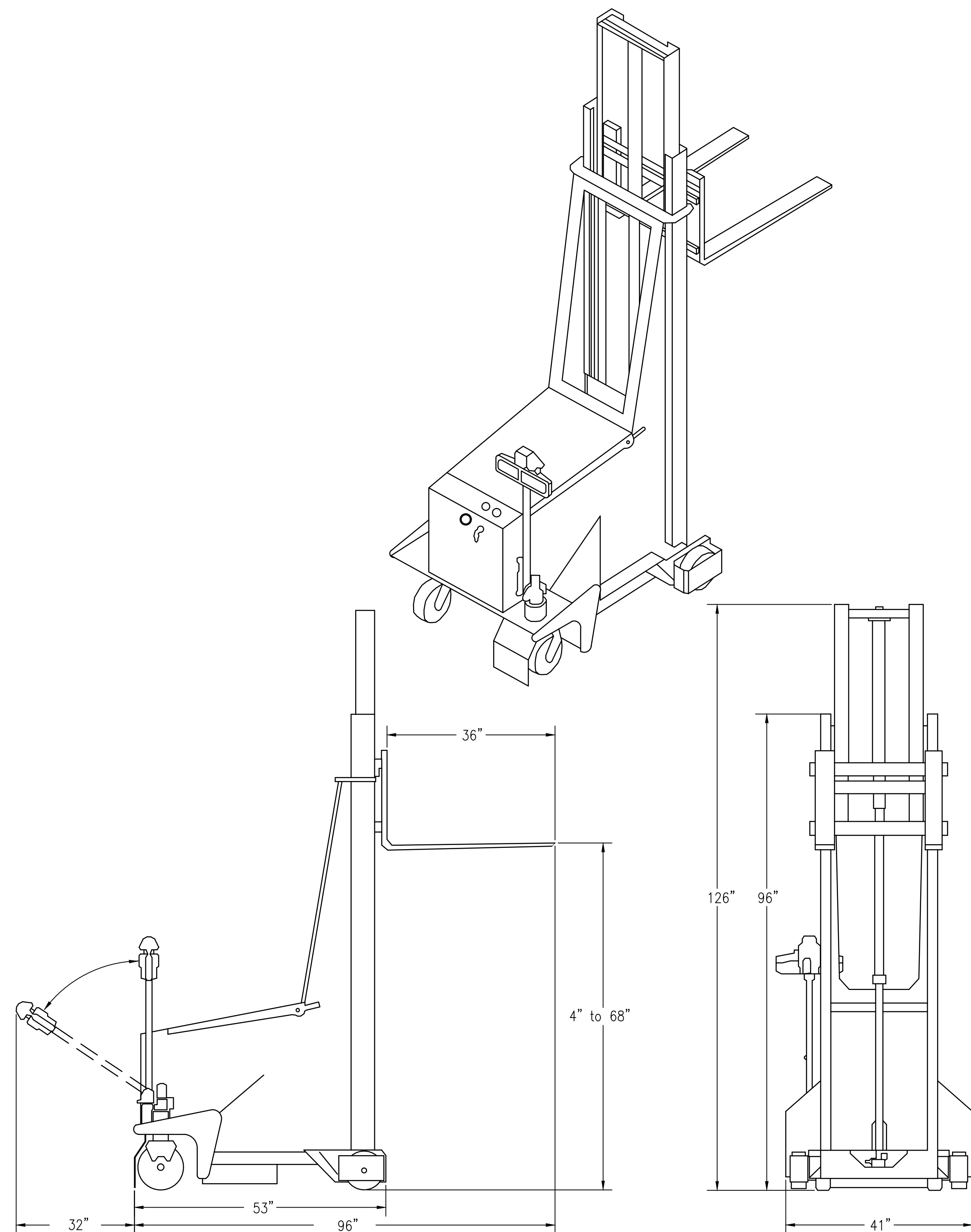
VAULT E-155 CCR SWITCHGEAR SYSTEM SMALL SIZE LIFT

NOT TO SCALE

EA509

CCR SWITCHGEAR SYSTEM SMALL SIZE LIFT GENERAL NOTES:

1. THE SWITCHGEAR SYSTEM FULL SIZE LIFT WILL BE CAPABLE OF INSTALLING, REMOVING FOR BOTH LOWER AND UPPER SWITCHGEAR LEVELS AND TRANSPORTING CCR SWITCHGEAR SYSTEM CCR'S.
2. THE FULL SIZE LIFT WILL BE MOTORIZED AND INCLUDE A RECHARGABLE BATTERY, BATTERY CHARGER AND 20' OF POWER CORD TO PLUG INTO A STANDARD 120VAC RECEPTACLE.
3. THE SIZE OF THE FULL SIZE LIFT SHALL NOT EXCEED THE DIMENSIONS SHOWN IN DETAIL 1 ON THIS SHEET.



VAULT E-1710 CCR SWITCHGEAR SYSTEM FULL SIZE LIFT

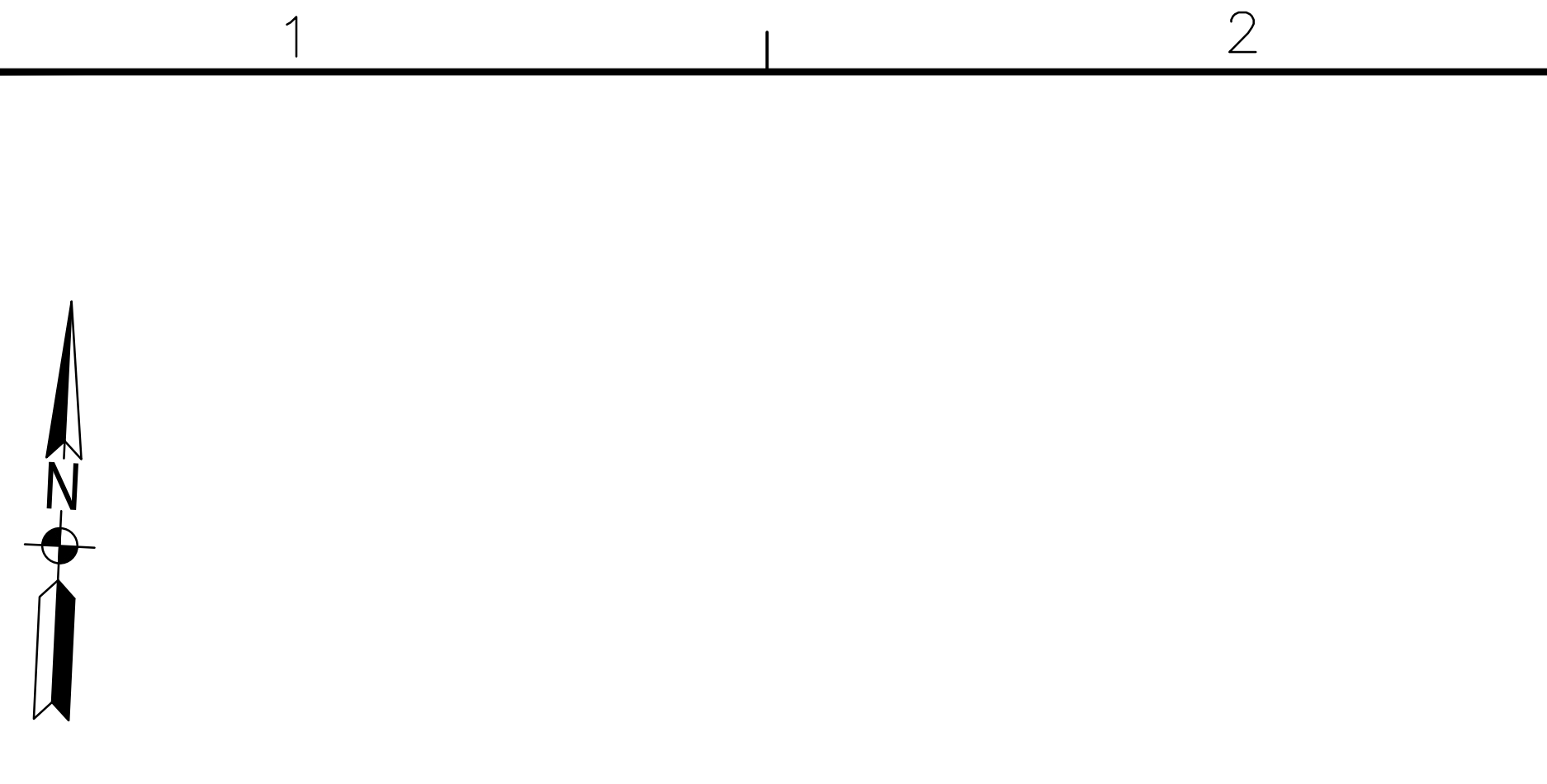
NOT TO SCALE

EA509

CCR SWITCHGEAR SYSTEM FULL SIZE LIFT GENERAL NOTES:

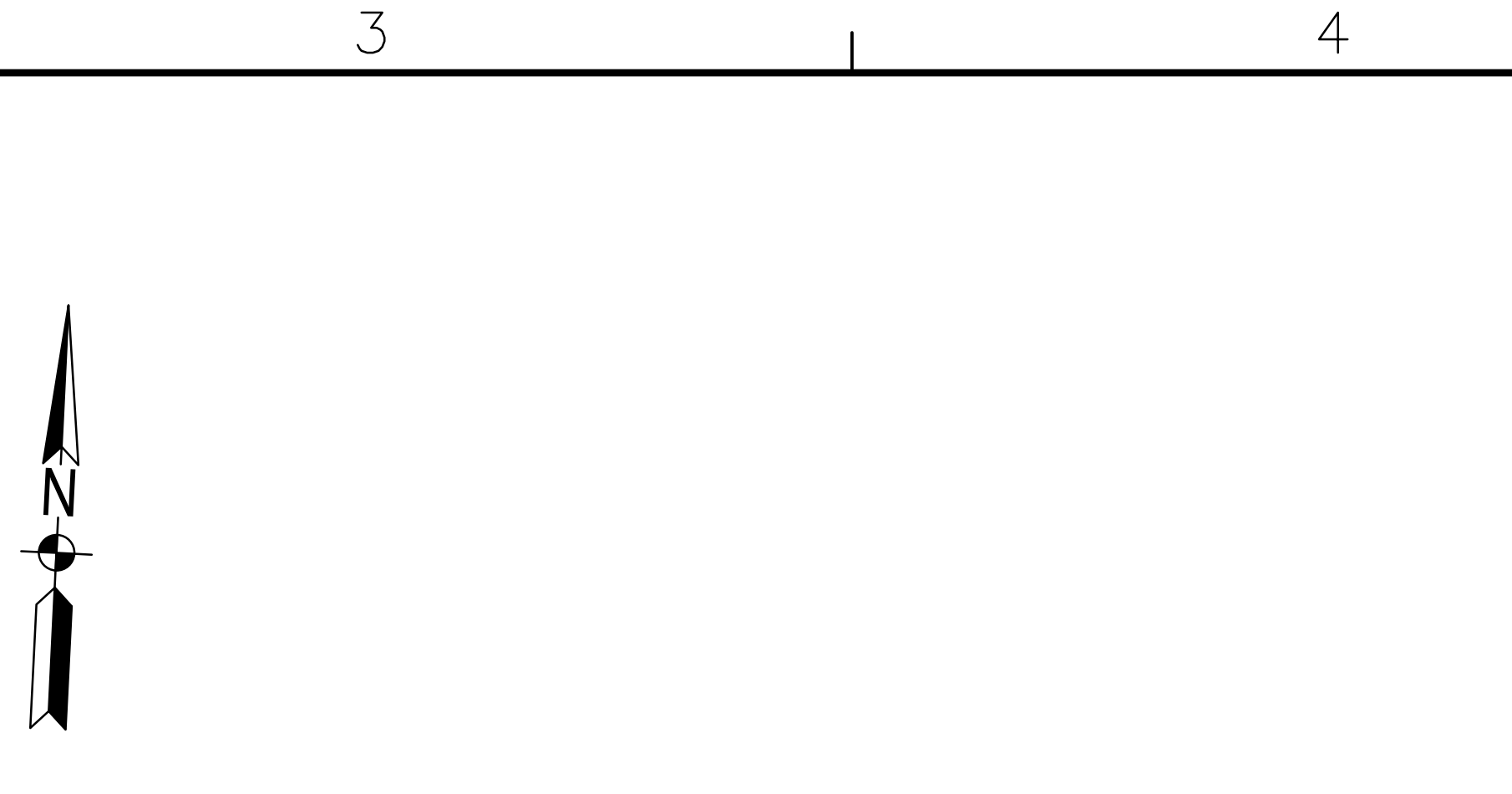
1. THE SWITCHGEAR SYSTEM SMALL SIZE LIFT WILL BE CAPABLE OF INSTALLING, REMOVING FOR BOTH LOWER AND UPPER SWITCHGEAR LEVELS AND TRANSPORTING CCR SWITCHGEAR SYSTEM CCR'S.
2. THE SMALL SIZE LIFT WILL BE MOTORIZED AND INCLUDE A RECHARGABLE BATTERY, BATTERY CHARGER AND 20' OF POWER CORD TO PLUG INTO A STANDARD 120VAC RECEPTACLE.
3. THE SIZE OF THE SMALL LIFT SHALL NOT EXCEED THE DIMENSIONS SHOWN IN DETAIL 2 ON THIS SHEET.
4. CLEARANCES FOR THE SMALL SIZE LIFT WITH HANDLE IN THE DOWN POSITION IS APPROX 10FT 8IN (WITHOUT PERSON DRIVING).

[illegible]


$$1'' = 10'$$

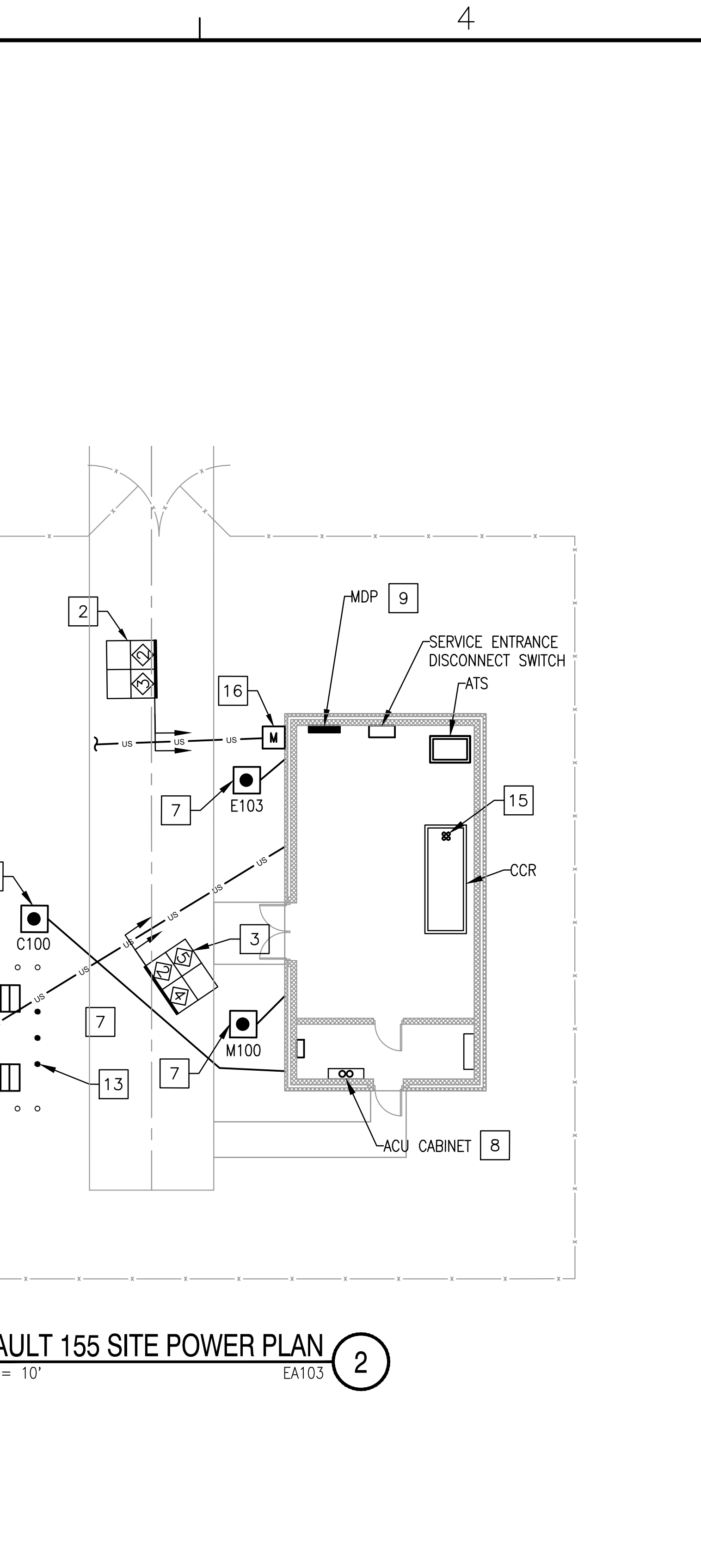
EA103

1


$$1'' = 10$$

EA103

2



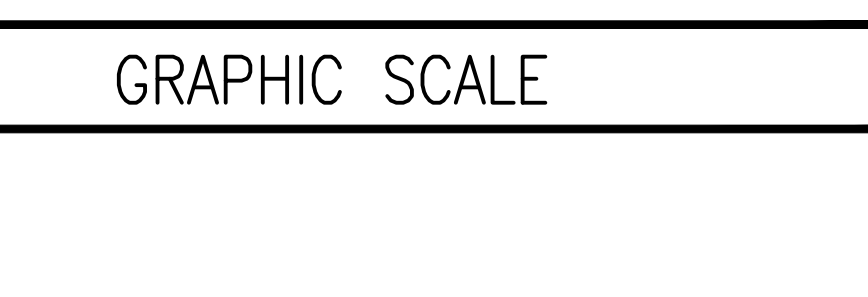
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- ## GENERAL SHEET NOTES:
1. REFER TO DRAWINGS EA001 THRU EA003 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES
 2. REFER TO DRAWINGS E-402, E-403, AND E-601 FOR ADDITIONAL INFORMATION.
 3. REPAIR AND PATCH ANY DISTURBED AREAS TO MATCH EXISTING CONDITIONS.

4. REFER TO DRAWING E-501 FOR GROUNDING
5. REFER TO DRAWING E-503 FOR FEEDER S

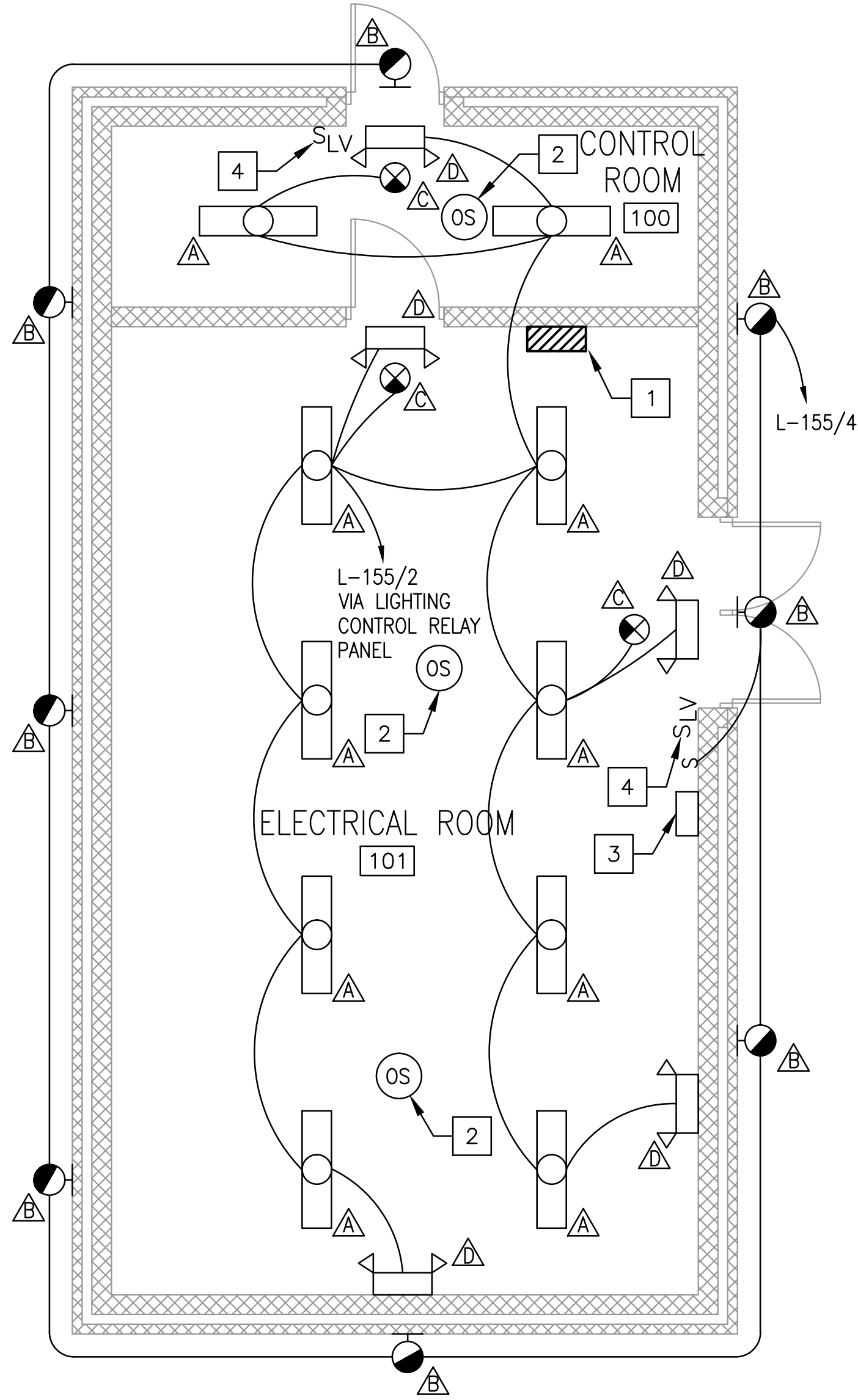
- ## CONSTRUCTION KEYNOTES:
- 1 CONNECT VAULT GROUNDING GRID TO FENCE GROUNDING LOOP. TYPICAL OF (2) LOCATIONS.
 - 2 4-WAY 4" SCHEDULE 40 PVC CONCRETE ENCASED CONDUIT FROM UTILITY TRANSFORMER TO SERVICE ENTRANCE DISCONNECT. COORDINATE INSTALLATION WITH SMECO.
 - 3 4-WAY 4" SCHEDULE 40 PVC CONCRETE ENCASED CONDUIT FROM THE GENERATOR TO ATS.
 - 4 250KW, 480Y/277V, 3 PHASE, 4 WIRE, DIESEL STANDBY GENERATOR, IN WEATHERPROOF ENCLOSURE, WITH MINIMUM 660 GALLONS DOUBLE-WALL SUB-BASE FUEL TANK WITH LEAK DETECTION, ON CONCRETE PAD. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE PAD DETAILS.
 - 5 PROVIDE FENCE GROUNDING TO NEW FENCE. REFER TO DETAIL 3 ON DRAWING E-502 FOR MORE INFORMATION.
 - 6 #4/0 AWG BARE COPPER FROM THE TEST WELL TO THE MAIN ELECTRICAL ROOM GROUNDING PLATE.
 - 7 REFER TO DRAWING EA103 FOR DUCTBANK CONTINUATION FROM MANHOLE.
 - 8 STUB UP (2) 4"C FOR FIBER TO ACU CABINET (BY SPAWAR) FROM COMMUNICATIONS MANHOLE C100. REFER TO DRAWING EA103 FOR ADDITIONAL INFORMATION..
 - 9 STUB UP (2) 5"C TO MAIN DISTRIBUTION PANEL FROM AIRFIELD MANHOLE E103. REFER TO DRAWING EA103 FOR ADDITIONAL INFORMATION.
 - 10 #4/0 AWG BARE COPPER FROM THE GROUNDING ROD TO THE GENERATOR, GENERATOR ENCLOSURE, GENERATOR CONCRETE PAD, AND CATWALK. TYPICAL FOR THREE LOCATIONS.
 - 11 PROVIDE MULTI-POINT SYSTEM GROUNDING PLATE ALONG THE PERIMETER OF THE INTERIOR WALL OF THE VAULT. REFER TO DRAWING E-501 FOR ADDITIONAL INFORMATION.
 - 12 PROVIDE CATWALK FOR GENERATOR. REFER TO SPECIFICATION SECTION 26 32 13.00 20.
 - 13 PROVIDE REMOVABLE BOLLARD. REFER TO DETAILS ON DRAWING EA508 FOR MORE INFORMATION. (TYP.)
 - 14 PROVIDE BOLLARD. REFER TO DETAILS ON DRAWING EA508 FOR MORE INFORMATION. (TYP.)
 - 15 STUB UP (4) 2"C TO CCR FROM AIRFIELD MANHOLE M100. COORDINATE CONDUIT STUB UP LOCATION WITH CCR MANUFACTURER PRIOR TO INSTALLATION. REFER TO DRAWING EA103 FOR ADDITIONAL INFORMATION.
 - 16 PROVIDE ELECTRIC SERVICE METER.

GRAPHIC SCALE

$$1'' = 10'$$


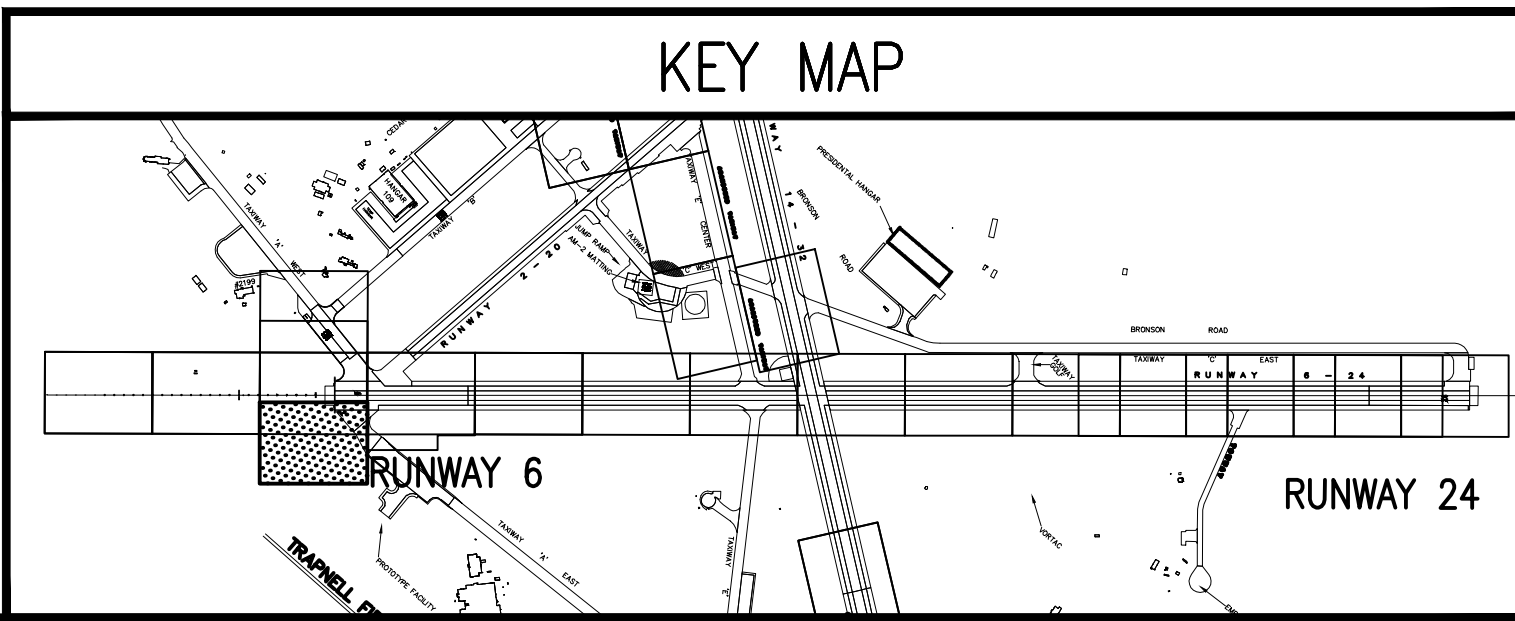
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FILE NAME: H:\59487 Fox River\Electrical\Panel\10-0863-003-E-403.dwg LAYOUT NAME: E-403 PLOTTED: Tuesday, September 27, 2016 - 10:40am USER: jrtre



VAULT 155 LIGHTING PLAN
SCALE: 1/4" = 1'-0"
E-403

1

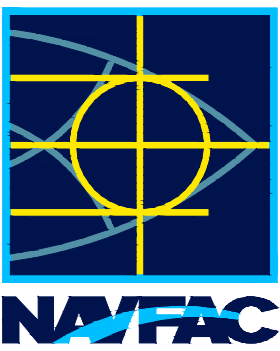


GENERAL SHEET NOTES:

1. REFER TO DRAWINGS EA001 THRU EA003 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. REFER TO DRAWINGS E-401, E-402, AND E-601 FOR ADDITIONAL INFORMATION.
3. UNLESS OTHERWISE NOTED, ALL ELECTRICAL WORK AND MATERIALS ARE NEW AND MUST PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. REFER TO DRAWING E-604 FOR PANEL SCHEDULES.
5. REFER TO DRAWING E-603 FOR LIGHTING FIXTURE SCHEDULE AND DETAILS.
6. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF EXTERIOR WALL MOUNTED LIGHT FIXTURES.
7. EXIT AND EGRESS LIGHTING SHALL BE CONNECTED ON THE UN-SWITCHED PORTION OF THE CIRCUIT.

CONSTRUCTION KEYNOTES:

- 1 PANEL L-155.
- 2 OCCUPANCY/VACANCY SENSOR SWITCH. REFER TO DETAIL 2 ON DRAWING E-502 FOR ADDITIONAL INFORMATION.
- 3 LIGHTING CONTROL RELAY PANEL. REFER TO DETAIL 2 ON DRAWING E-502 FOR WIRING DIAGRAM AND SEQUENCE OF OPERATION.
- 4 LOW-VOLTAGE SWITCH. REFER TO DETAIL 2 ON DRAWING E-502 FOR ADDITIONAL INFORMATION.



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APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

JAMES FLETCHER PER CHECKLIST

SATISFACTORY TO DATE 9/27/2016

DES JER DRW JER CHK MG

PM/DM RH

BRANCH MANAGER

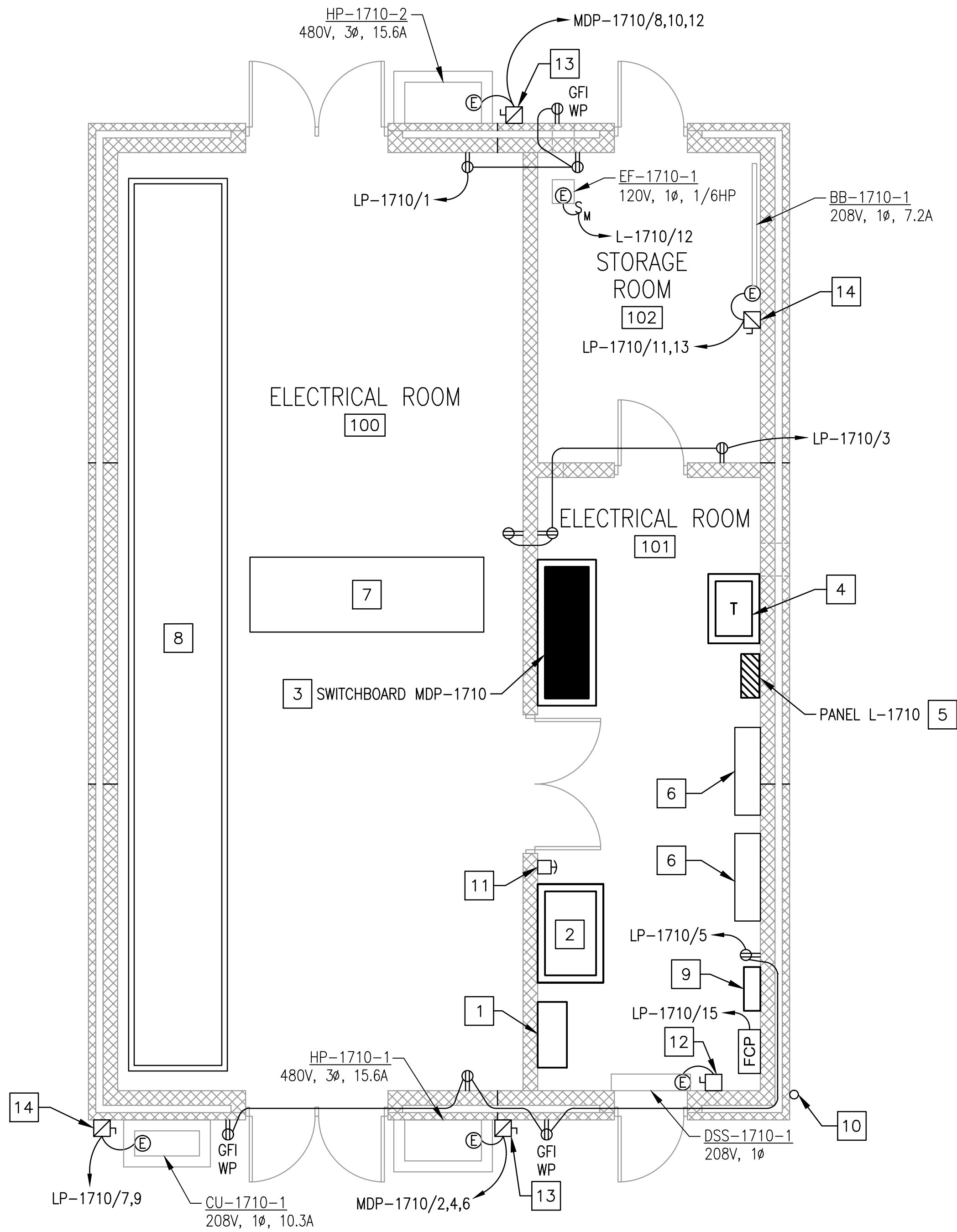
CHIEF ENG/ARCH E. GALLAHER, PE

DEPARTMENT OF THE NAVY
NAVFAC WASHINGTON
NAVAL AIR STATION PATUXENT RIVER
PATUXENT RIVER, MARYLAND
FY16 SPECIAL PROJECT RM12-2137
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2
VAULT 155 - LIGHTING PLAN

SCALE: 1/4" = 1'-0"
PROJECT NO.: 1382137
CONSTR. CONTR. NO.: N40080-17-R-0002
NAVFAC DRAWING NO.: 13080037
SHEET 179 OF 191
E-403

DRAWFORM REVISION: 10 MARCH 2009

FILE NAME: H:\59487 Fox River\Electrical\Power\10-3863-003-E-405.dwg LAYOUT NAME: E-404 PLOTTED: Tuesday, September 27, 2016 - 10:41am USER: jrothe



VAULT 1710 POWER PLAN

SCALE: 1/4" = 1'-0"

1

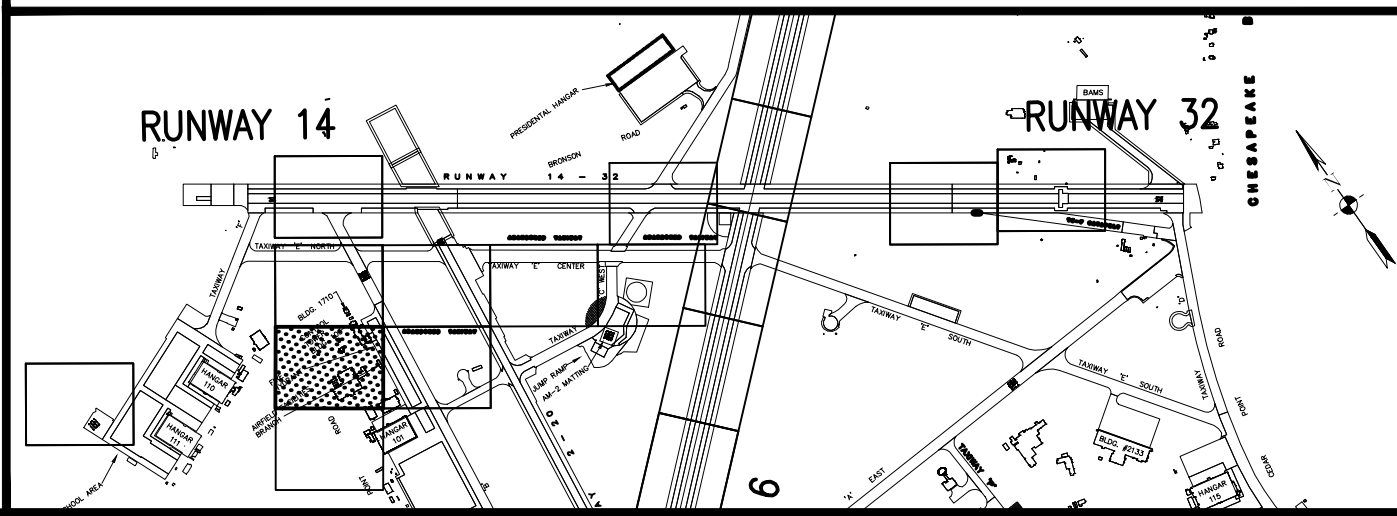
GENERAL SHEET NOTES:

1. REFER TO DRAWINGS EA001 THRU EA003 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. REFER TO DRAWINGS E-404, E-406, AND E-602 FOR ADDITIONAL INFORMATION.
3. REFER TO DRAWING E-604 FOR PANEL SCHEDULES.
4. UNLESS OTHERWISE NOTED, ALL ELECTRICAL WORK AND MATERIALS ARE NEW AND MUST PROVIDED BY THE ELECTRICAL CONTRACTOR.
5. PROVIDE CONCRETE HOUSEKEEPING PAD FOR EACH FLOOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO DETAIL 2 ON DRAWING S-503.
6. ELECTRICAL EQUIPMENT INSTALLED OUTDOOR MUST BE IN NEMA 4X STAINLESS STEEL ENCLOSURE UON. ELECTRICAL EQUIPMENT INSTALLED INDOOR MUST BE IN NEMA 12 ENCLOSURE UON.
7. ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, SWITCHBOARDS, PANEL BOARDS, MOTOR STARTERS, ENCLOSED CIRCUIT BREAKERS, DISCONNECT SWITCHES, TRANSFORMERS, ENCLOSURES, AND WIRING DEVICES MUST BE UL LISTED FOR ITS INTENDED USE.
8. RECEPTACLE OUTLETS INSTALLED OUTDOORS AND/OR IN WET LOCATIONS MUST BE LISTED WEATHER-RESISTANT TYPE WITH A WEATHERPROOF WHILE-IN-USE COVER THAT IS LISTED AND IDENTIFIED AS "EXTRA-DUTY".

CONSTRUCTION KEYNOTES:

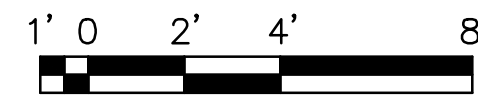
1. 1600A, 3 POLE, 480Y/277V SERVICE ENTRANCE RATED DISCONNECT SAFETY SWITCH, FUSED AT 1000A.
2. 1000A, 4 POLE, 65KA WITHSTAND CURRENT RATING, DELAYED OPEN TRANSITION AUTOMATIC TRANSFER SWITCH WITH ISOLATION BYPASS IMOUNTED ON CONCRETE PAD.
3. 1600A, 480Y/277V MAIN DISTRIBUTION SWITCHBOARD WITH 1000A MAIN CIRCUIT BREAKER WITH ELECTRONIC TRIP UNIT WITH LSI BREAKER MOUNTED ON CONCRETE PAD.
4. 75KVA, 480V-208Y/120V CONCRETE PAD MOUNTED DRY TYPE TRANSFORMER.
5. 250A, 208Y/120V PANEL WITH 225A MAIN CIRCUIT BREAKER.
6. ACU CABINET PROVIDED BY SPAWAR. CABINET DIMENSIONS AND CLEARANCES ARE SHOWN FOR COORDINATION ONLY AND SHALL BE FIELD VERIFIED WITH INSTALLER. ALL ACU CABINET POWER AND COMMUNICATIONS REQUIREMENTS INCLUDING BUT NOT LIMITED TO CIRCUIT BREAKER, CONDUIT AND WIRING ARE TO BE PROVIDED BY OTHERS.
7. PORTABLE FORKLIFT. REFER TO DETAIL 2 ON DRAWING EA509 FOR ADDITIONAL INFORMATION.
8. SWITCHGEAR REGULATOR CONSISTING OF THE FOLLOWING EQUIPMENT: INCOMING BAY, (11) CCR BAYS AND (1) S-1 CUTOFF BAY MOUNTED ON CONCRETE PAD.
9. GENERATOR ANNUNCIATOR PANEL. PROVIDE WIRING AND CONDUIT FROM THE PANEL TO THE GENERATOR AS REQUIRED BY THE GENERATOR MANUFACTURER.
10. PROVIDE NEW ANTENNA. COORDINATE WIRE AND CONDUIT REQUIREMENTS WITH THE CLIENT AND ANTENNA MANUFACTURER. COORDINATE ANTENNA MOUNTING WITH GUTTER AND PIPING INSTALLATION.
11. EMERGENCY SHUT-OFF SWITCH FOR GENERATOR. PROVIDE WIRING AND CONDUIT FROM THE SWITCH TO THE GENERATOR AS REQUIRED BY THE GENERATOR MANUFACTURER.
12. INSTALL WIRING TO OUTDOOR SPLIT SYSTEM UNIT PER MANUFACTURER REQUIREMENTS VIA A 30A NON-FUSED DISCONNECT SWITCH. COORDINATE WITH MECHANICAL CONTRACTOR.
13. PROVIDE 480V, 3 POLE, 30A DISCONNECT SWITCH IN NEMA 4X STAINLESS STEEL ENCLOSURE WITH 20A FUSES.
14. PROVIDE 208V, 2 POLE, 30A DISCONNECT SWITCH IN NEMA 4X STAINLESS STEEL ENCLOSURE WITH 20A FUSES.

KEY MAP



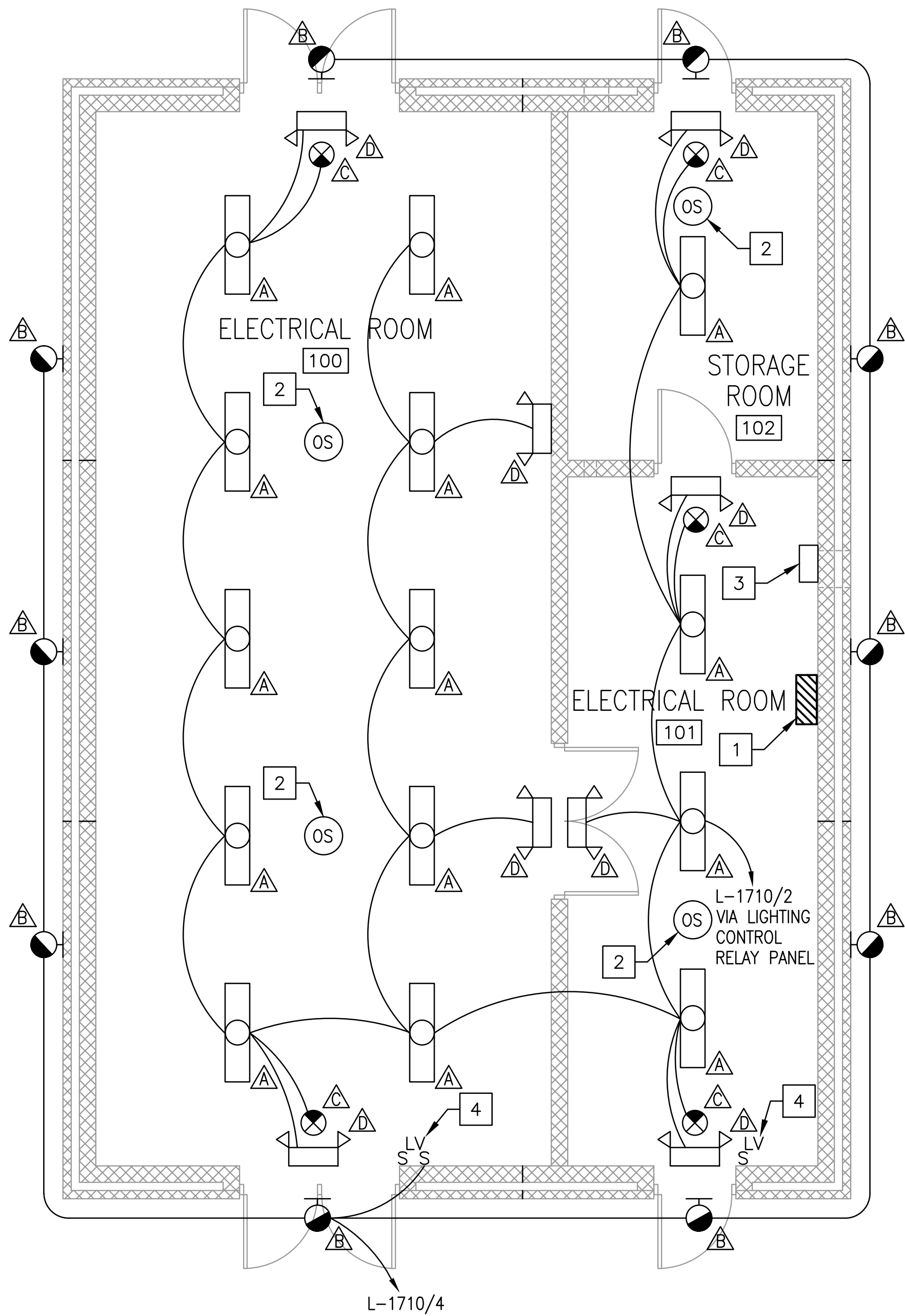
GRAPHIC SCALE

1/4"=1'-0"

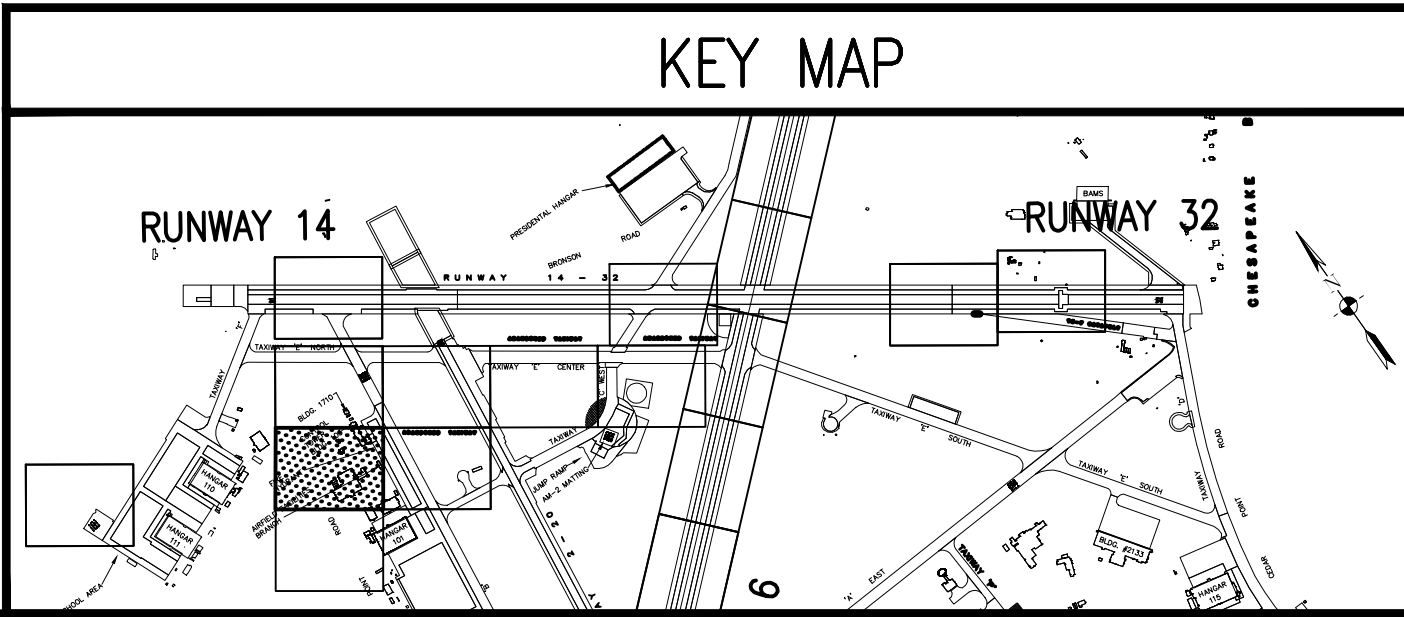


APPROVED	DATE	APPR
FOR COMMANDER NAVFAC		
ACTIVITY		
JAMES FLETCHER PER CHECKLIST		
SATISFACTORY TO	DATE	
DES	JER	DRW
PM/DM	RH	CHK
BRANCH MANAGER		
CHIEF ENG/ARCH	E. GALLAHER, PE	
NAVFAC WASHINGTON		
NAVAL FACILITIES ENGINEERING COMMAND		
WASHINGTON, D.C.		
NAVY		
NAVY AIR STATION PATUXENT RIVER		
NAVY AIR STATION PATUXENT RIVER		
FY16 SPECIAL PROJECT RM12-2137		
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2		
VAULT 1710 - POWER PLAN		
SCALE: 1/4" = 1'-0"		
PROJECT NO.: 1382137		
CONSTR. CONTR. NO. N40080-17-R-0002		
NAVFAC DRAWING NO. 13080039		
SHEET 181 OF 191		
E-405		
DRAWFORM REVISION: 10 MARCH 2009		

FILE NAME: H:\59487 Fox River\Electrical\Panel\10-0863-003-E-406.dwg LAYOUT NAME: E-406 PLOTTED: Tuesday, September 27, 2016 - 10:41am USER: jfrothe



VAULT 1710 LIGHTING PLAN
SCALE: 1/4" = 1'-0"

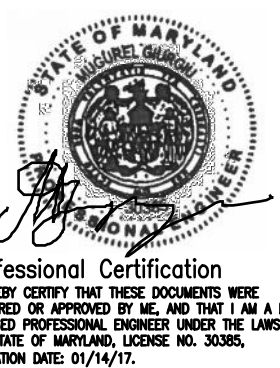
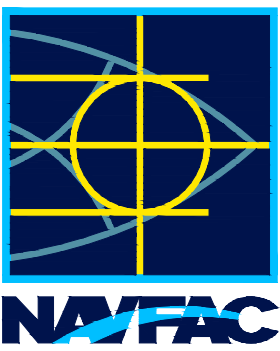


GENERAL SHEET NOTES:

1. REFER TO DRAWINGS EA001 THRU EA003 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. REFER TO DRAWINGS E-404, E-405, AND E-602 FOR ADDITIONAL INFORMATION.
3. UNLESS OTHERWISE NOTED, ALL ELECTRICAL WORK AND MATERIALS ARE NEW AND MUST PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. REFER TO DRAWING E-604 FOR PANEL SCHEDULES.
5. REFER TO DRAWING E-603 FOR LIGHTING FIXTURE SCHEDULE AND DETAILS.
6. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF EXTERIOR WALL MOUNTED LIGHT FIXTURES.
7. EXIT AND EGRESS LIGHTING SHALL BE CONNECTED ON THE UN-SWITCHED PORTION OF THE CIRCUIT.

CONSTRUCTION KEYNOTES:

- 1 PANEL L-1710.
- 2 OCCUPANCY/VACANCY SENSOR SWITCH. REFER TO DETAIL 2 ON DRAWING E-502 FOR ADDITIONAL INFORMATION.
- 3 LIGHTING CONTROL RELAY PANEL. REFER TO DETAIL 2 ON DRAWING E-502 FOR WIRING DIAGRAM AND SEQUENCE OF OPERATION.
- 4 LOW-VOLTAGE SWITCH. REFER TO DETAIL 2 ON DRAWING E-502 FOR ADDITIONAL INFORMATION.



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FOR COMMANDER NAVFAC

ACTIVITY

JAMES FLETCHER PER CHECKLIST

SATISFACTORY TO DATE 9/27/2016

DES JER DRW JER CHK MG

PM/TM RH

BRANCH MANAGER

CHIEF ENG/ARCH E. GALLAHER, PE

DEPARTMENT OF THE NAVY
NAVFAC WASHINGTON
NAVAL AIR STATION PATUXENT RIVER
PATUXENT RIVER, MARYLAND
FY16 SPECIAL PROJECT RM12-2137
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2
VAULT 1710 - LIGHTING PLAN

SCALE: 1/4" = 1'-0"

PROJECT NO.: 1382137

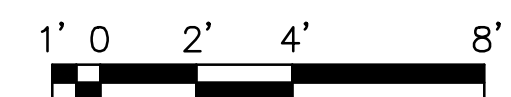
CONSTR. CONTR. NO. N40080-17-R-0002

NAVFAC DRAWING NO. 13080040

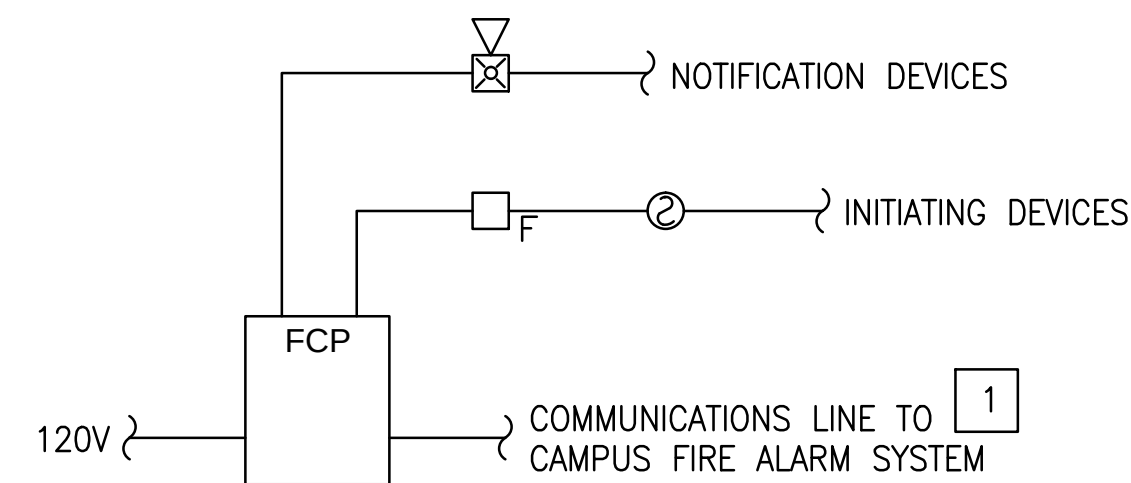
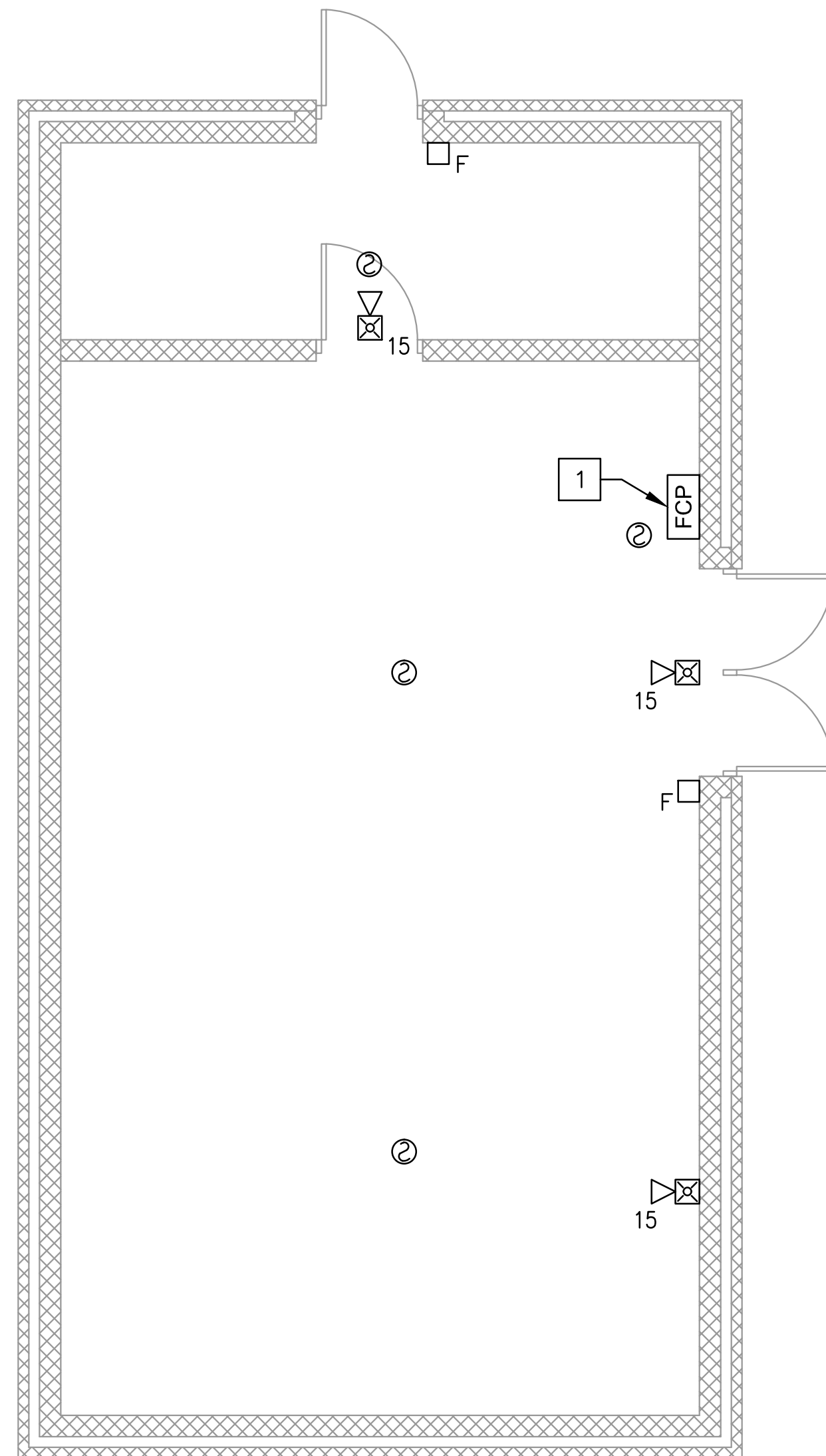
SHEET 182 OF 191

E-406

DRAWING REVISION: 10 MARCH 2009

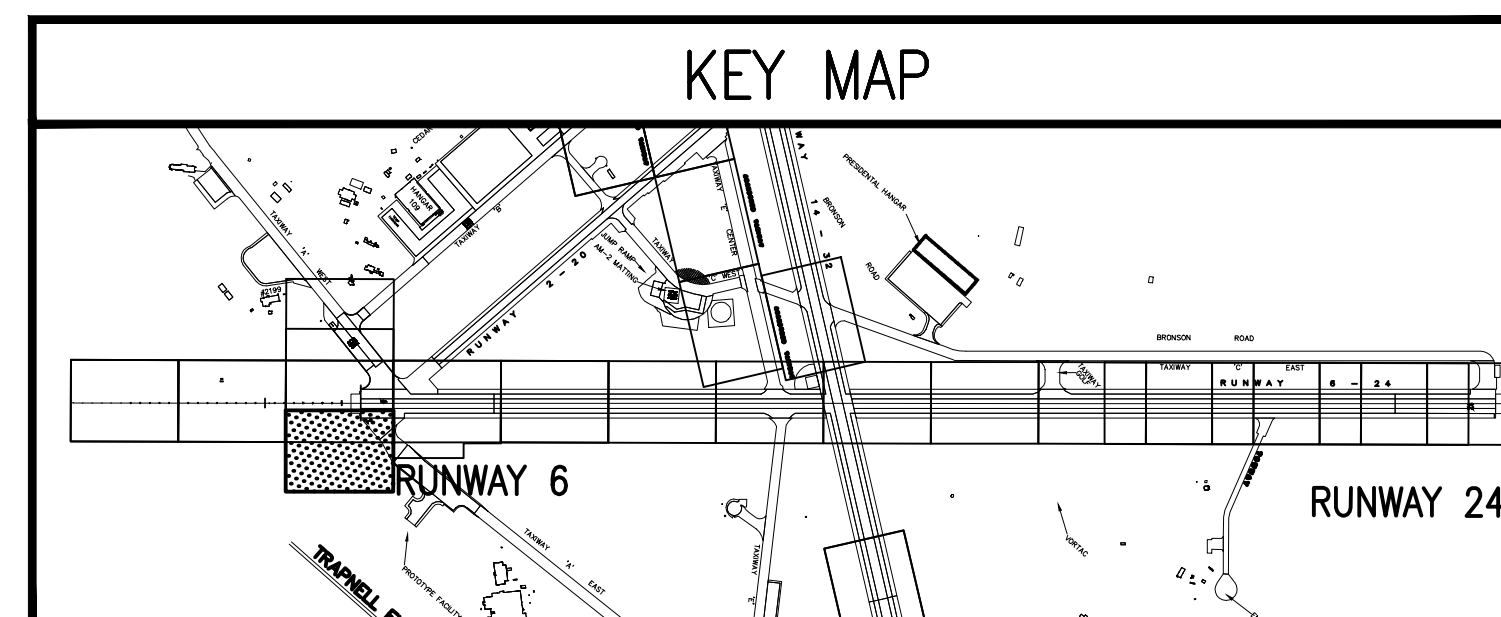


SCALE:	1/4" = 1'-0"	
PROJECT NO.:	1382137	
CONSTR. CONTR. NO.	N40080-17-R-0002	
AVFAC DRAWING NO.	13080041	
SHEET	183	OF 191
E-407		



FIRE ALARM RISER DETAIL

SCALE: NTS



GENERAL SHEET NOTES:

1. REFER TO DRAWINGS EA001 THRU EA003 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. UNLESS OTHERWISE NOTED, ALL ELECTRICAL WORK AND MATERIALS ARE NEW AND MUST BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
3. REFER TO DRAWING E-604 FOR PANEL SCHEDULES.

CONSTRUCTION KEYNOTES:

- 1 PROVIDE CONNECTION FOR COMMUNICATIONS FROM VAULT FIRE ALARM CONTROL PANEL TO CAMPUS FIRE ALARM SYSTEM. COORDINATE WITH NAVFAC, BTO, TYCO, AND LOCAL FIRE INSPECTOR FOR EQUIPMENT INSTALLATION REQUIREMENTS AND FOR CONNECTIONS TO EXISTING COMMUNICATIONS LINE PRIOR TO ORDERING EQUIPMENT. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING WIRING, CONDUIT, AND ALL OTHER APPURTENANCES FOR A FULLY FUNCTIONAL AND INTEGRATED SYSTEM IN ACCORDANCE WITH UFC 3-600-01, APPLICABLE CODES, AND ALL OTHER OWNER REQUIREMENTS.

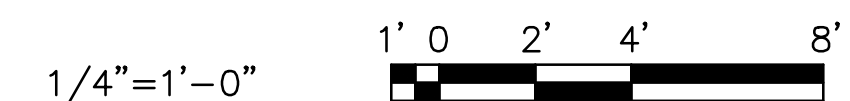
FIRE ALARM LEGEND:

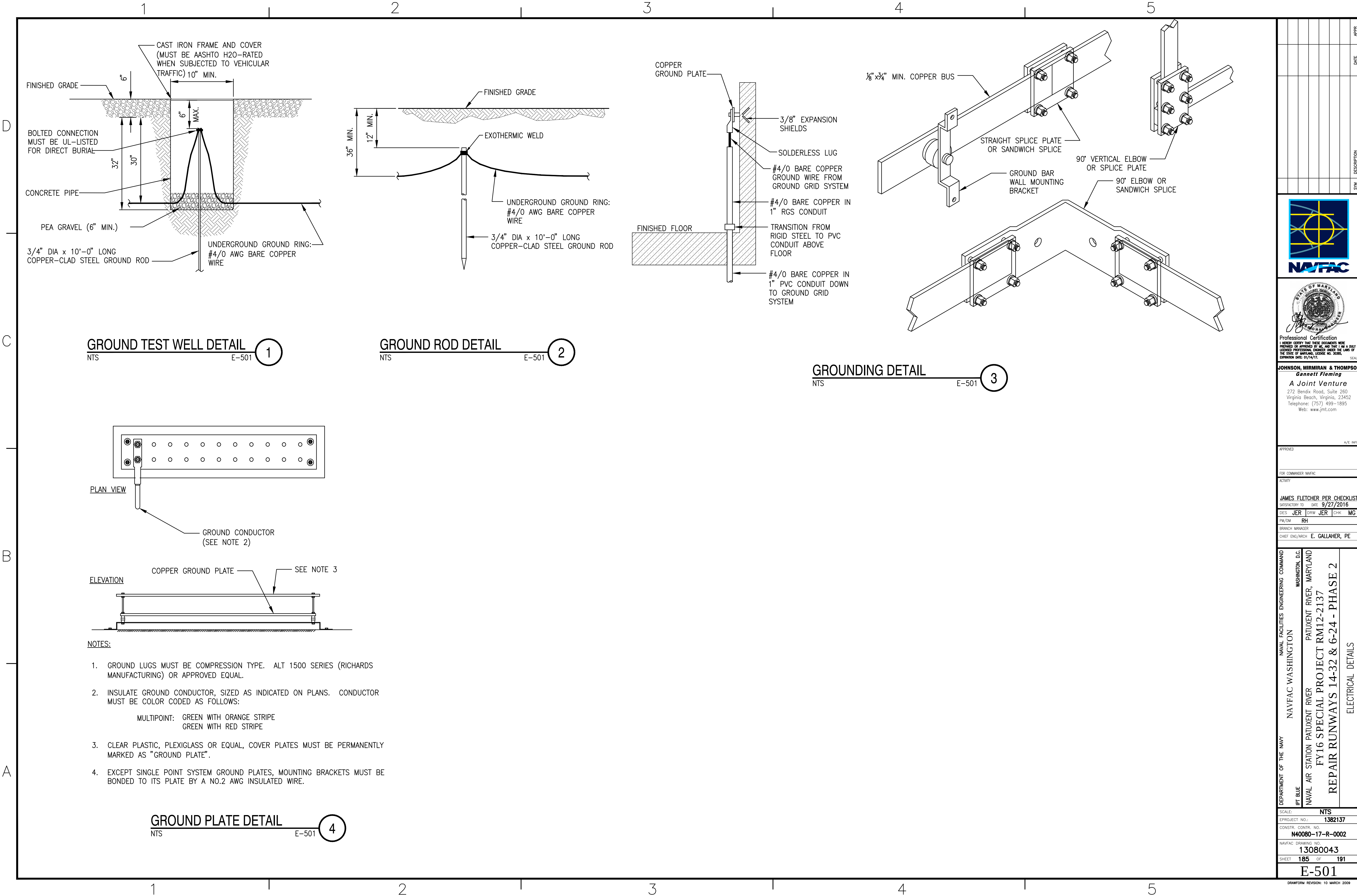
- | | |
|---|--|
|  | SMOKE DETECTOR |
|  | FIRE ALARM MANUAL PULL STATION. MOUNTED 60"
AFF TO TOP. |
|  | FIRE ALARM COMBINATION SPEAKER/STROBE, WALL
MOUNTED. "XX" INDICATES CANDELA RATING.
MOUNTED 8'-0" AFF. |
|  | FIRE ALARM CONTROL PANEL |

VAULT 155 FIRE ALARM PLAN
SCALE: 1/4" = 1'-0"

KEY MAP

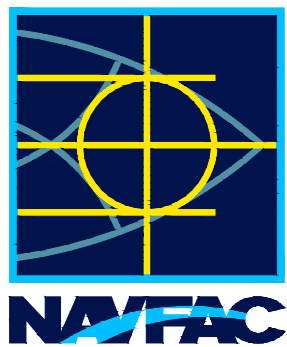
GRAPHIC SCALE





FILE NAME: HA59487 For Rivet Electrical\Ploneta\10-0863-003-E-501.dwg LAYOUT NAME: Layout1 PLOTTED: Tuesday, September 27, 2016 - 10:42am USER: jgathe

DATE	APPR
SYN	DESCRIPTION



Professional Certification
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I AM A DULY
LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF
THE STATE OF MARYLAND, LICENSE NO. 30085,
EXPIRATION DATE: 01/14/17.

SEAL

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A/E INFO

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ACTIVITY

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DES JER DRW JER CHK MG

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DEPARTMENT OF THE NAVY
NAVFAC WASHINGTON
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FY16 SPECIAL PROJECT RM12-2137
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2
ELECTRICAL DETAILS

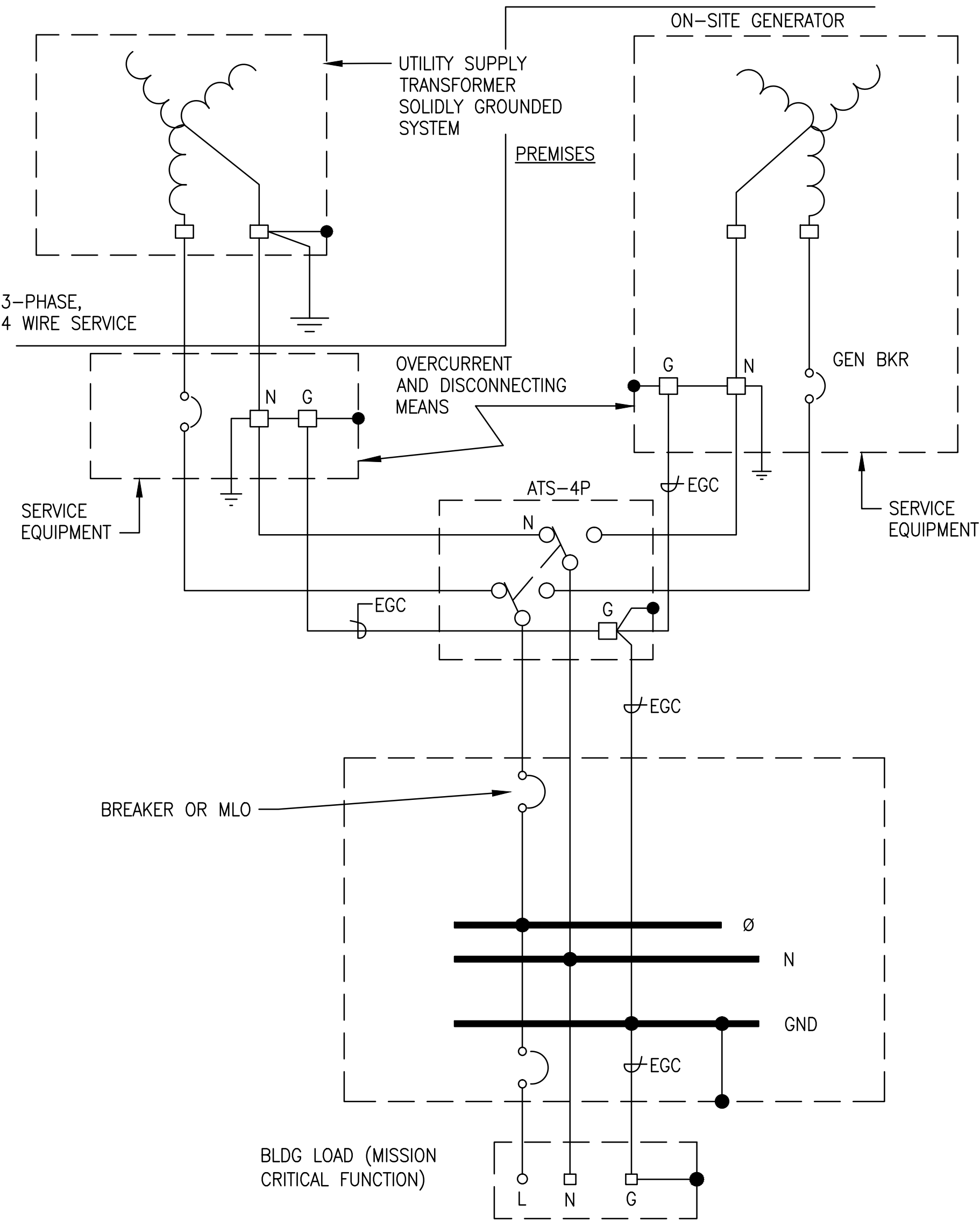
SCALE: NTS
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CONSTR. CONTR. NO. N40080-17-R-0002
NAVFAC DRAWING NO. 13080043
SHEET 185 OF 191
E-501
DRAWFORM REVISION: 10 MARCH 2009

D

C

B

A



NOTES:

1. TYPICAL GROUNDING DIAGRAM FOR VAULTS 155 AND 1710. REFER TO ONE LINE DIAGRAMS ON DRAWINGS E-601 AND E-602 FOR CONDUIT AND WIRE SIZES.
2. ALL SERVICE GROUNDING WIRES SHALL BE #4/0 AWG UNLESS OTHERWISE NOTED. REFER TO DRAWINGS E-401 AND E-404 FOR ADDITIONAL INFORMATION.

TYPICAL GROUNDING DIAGRAM

NTS

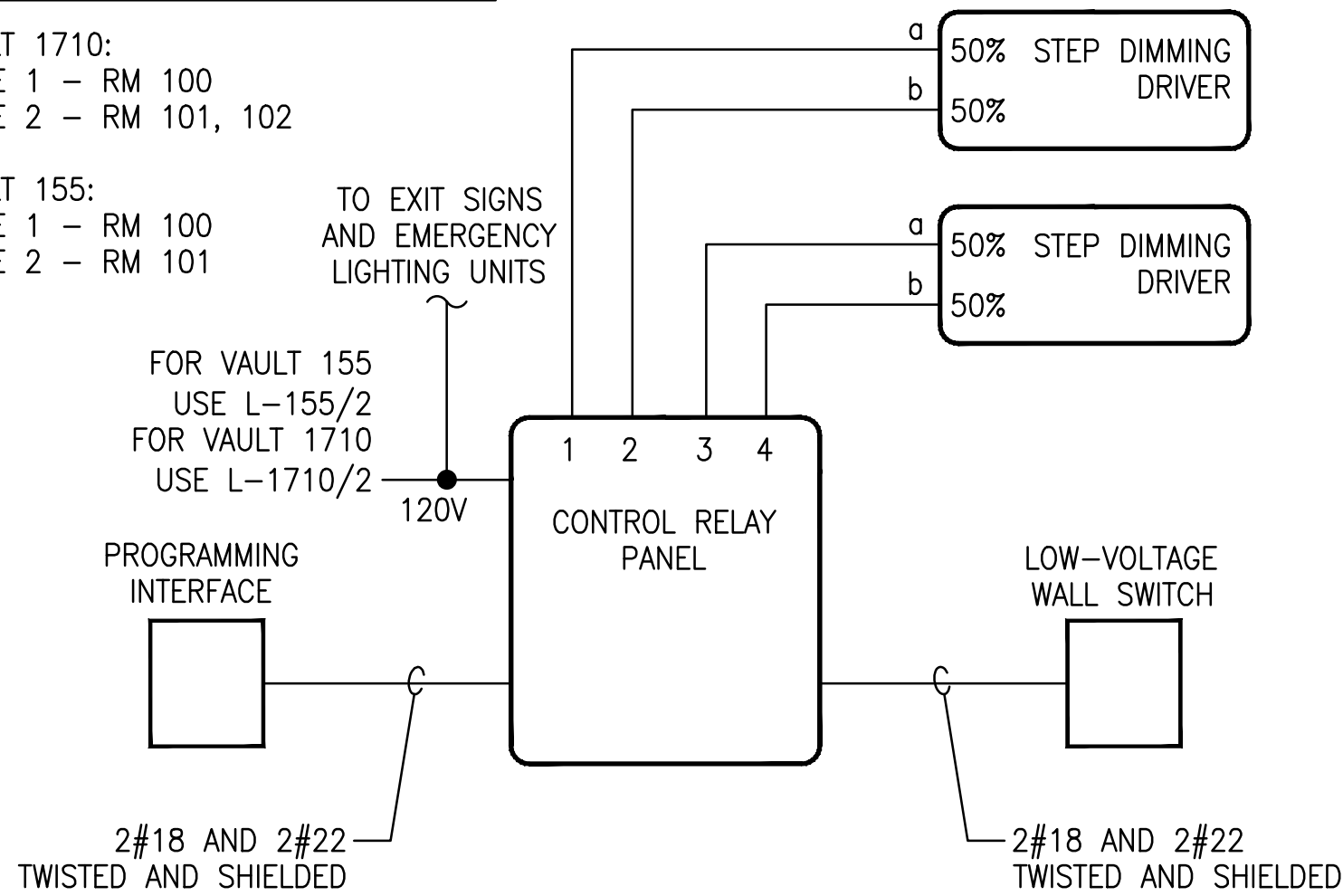
E-502

1

TYPICAL ZONE FOR TYPE "A"
LIGHT FIXTURE PER ROOM:

VAULT 1710:
ZONE 1 - RM 100
ZONE 2 - RM 101, 102

VAULT 155:
ZONE 1 - RM 100
ZONE 2 - RM 101

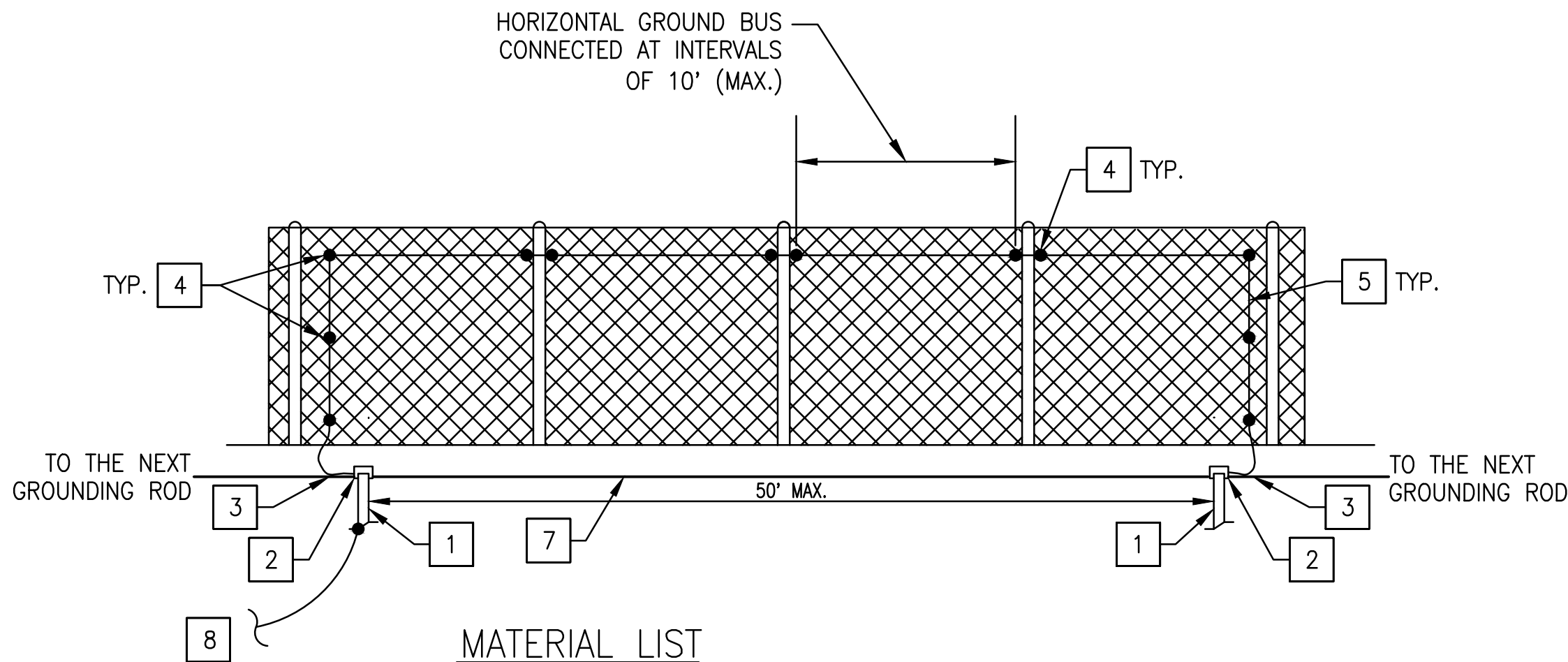


TYPICAL LIGHTING CONTROL DIAGRAM

NTS

E-403,E-406

2



MATERIAL LIST

- 1 GROUND ROD, COPPERWELD TYPE 3/4" DIA. X 10 FT. LONG.
- 2 CONNECTOR FOR CONNECTING SIZE #1/0 AWG CABLE TO 3/4" DIA. GROUND ROD.CADWELD TYPE GR CAT. NO. GRC-182C OR EQUAL.
- 3 CONNECTOR, FOR CONNECTING #1/0 GROUND BUS TO #4 AWG TAP AT RIGHT ANGLES, CADWELD TYPE TA CAT. NO. TAC-2C1L OR EQUAL.
- 4 CONNECTOR, FOR CABLE TO CABLE. BURNDY SERVIT TYPE KS OR EQUAL. SIZE AS REQUIRED.
- 5 CONDUCTOR, BARE COPPER, STRANDED, SIZE #4 AWG.
- 6 BRAID, FLEXIBLE, 15/16" WIDE BARE COPPER. (#4 AWG EQUIVALENT).
- 7 CONDUCTOR, BARE COPPER STRANDED, SIZE #1/0 AWG.
- 8 CONNECT TO VAULT GROUNDING GRID. TYPICAL OF (2) LOCATIONS.

TYPICAL FENCE SECTION GROUNDING

NTS

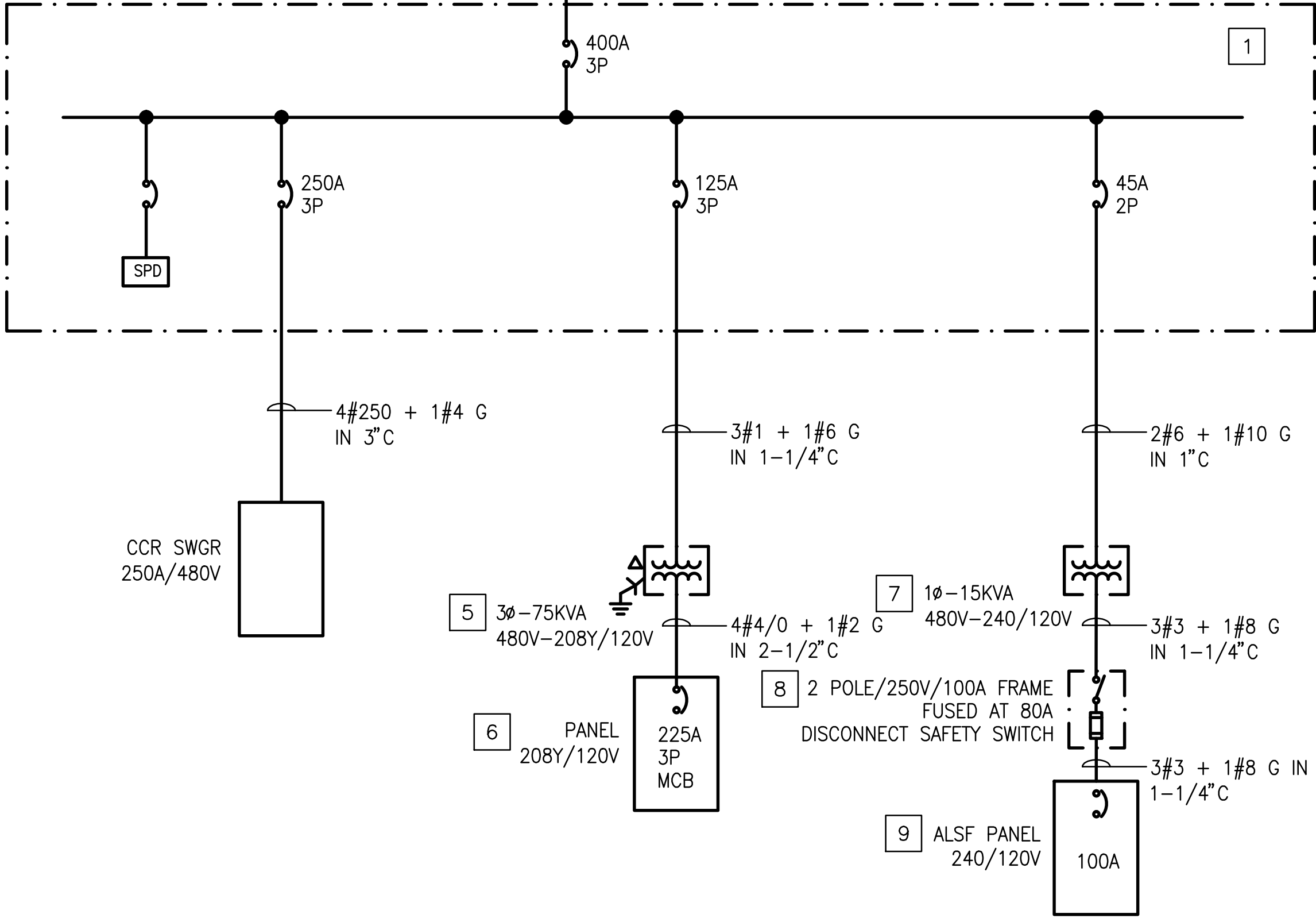
E-401,E-404

3

SEQUENCE OF OPERATION:

1. RELAY #1 AND RELAY #3 FROM THE CONTROL RELAY PANEL WILL PROVIDE POWER TO THE "a" TERMINALS FOR EACH DRIVE TO MAINTAIN CONTINUOUS LIGHTING IN THE EQUIPMENT ROOMS AT 50% LIGHTING LEVEL.
2. LOW-VOLTAGE WALL SWITCH SHALL CONTROL RELAY #1 AND RELAY #3 AS A MANUAL OVERRIDE TO TURN OFF LIGHTS WHEN 50% LIGHTING LEVEL IS NOT REQUIRED.
3. RELAY #2 AND RELAY #4 FROM THE CONTROL RELAY PANEL WILL PROVIDE POWER TO THE "b" TERMINALS FOR EACH DRIVE. RELAY #2 AND RELAY #4 ARE CONTROLLED BY CEILING MOUNTED OCCUPANCY SENSORS WHICH WILL OPERATE AS FOLLOWS:
 - IF THE OCCUPANCY SENSOR DETECTS PRESENCE IN THE SPACE, THE LIGHT FIXTURES WILL TURN ON AT 100% LIGHTING LEVEL.
 - IF THE OCCUPANCY SENSOR DOES NOT DETECT PRESENCE IN THE SPACE AFTER A PROGRAMMED TIME VALUE, THE LIGHT FIXTURES WILL DIM TO 50% LIGHTING LEVEL.
4. BASIS OF DESIGN:
 - CONTROL RELAY PANEL: LUTRON ENERGI SAVR NODE
 - OCCUPANCY SENSOR: LUTRON LOS-CDT SERIES
 - LOW-VOLTAGE SWITCH: LUTRON QSW2

APPROVED	DATE	APPR
FOR COMMANDER NAVFAC		
ACTIVITY		
JAMES FLETCHER PER CHECKLIST		
SATISFACTORY TO	DATE	
DES JER	DRW JER	CHK MG
PM/DM	RH	
BRANCH MANAGER		
CHIEF ENG/ARCH	E. GALLAHER, PE	
DEPARTMENT OF THE NAVY	NAVFAC WASHINGTON	WASHINGTON, D.C.
NAVAL AIR STATION PATUXENT RIVER	PATUXENT RIVER, MARYLAND	
NAVY SPECIAL PROJECT RM12-2137		
REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2		
ELECTRICAL DETAILS		
SCALE:	NTS	
PROJECT NO.:	1382137	
CONSTR. CONTR. NO.	N40080-17-R-0002	
NAVFAC DRAWING NO.	13080044	
SHEET	186	OF 191
E-502		
DRAWN/REVISED: 10 MARCH 2009		



1

1. REFER TO DRAWINGS EA001 THRU EA003 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. REFER TO DRAWINGS E-401, E-402 AND E-403 FOR ADDITIONAL INFORMATION.
3. REPAIR AND PATCH ANY DISTURBED AREAS TO MATCH EXISTING CONDITIONS.
4. UNLESS OTHERWISE NOTED, ELECTRICAL WORK AND MATERIALS ARE NEW AND MUST BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

- 1 400A, 480Y/277V, 35KAIC MAIN DISTRIBUTION PANEL
MDP-155 WITH 400A MAIN CIRCUIT BREAKER.
- 2 400A, 3 POLE, 480Y/277V, 35KAIC SERVICE
ENTRANCE RATED DISCONNECT SAFETY SWITCH, FUSED
AT 400A.
- 3 400A, 4 POLE, 480Y/277V, 35KAIC DELAYED OPEN
TRANSITION, AUTOMATIC TRANSFER SWITCH WITH
ISOLATION BYPASS.
- 4 250KW, 3 PHASE, 4 WIRE, 480Y/277V, DIESEL
STANDBY GENERATOR, IN WEATHERPROOF ENCLOSURE,
WITH MINIMUM 660 GALLONS SUB-BASE FUEL TANK.
- 5 75KVA, 480V-208Y/120V, PAD MOUNTED DRY TYPE
TRANSFORMER.
- 6 250A, 208Y/120V PANEL L-155 WITH 225A MAIN
CIRCUIT BREAKER.
- 7 15KVA, 480V-240/120V, SINGLE PHASE PAD MOUNTED
DRY TYPE TRANSFORMER.
- 8 100A, 2 POLE, 250V, 10KAIC, DISCONNECT SAFETY
SWITCH FUSED AT 80A.
- 9 ALSF PANEL.

[illegible]

A/E INFO				
APPROVED				
FOR COMMANDER NAVFAC				
ACTIVITY				
JAMES FLETCHER PER CHECKLIST				
SATISFACTORY TO DATE 9/27/2016				
DIES	JER	DRW	JER	CHK MG
PW/DM		RH		
BRANCH MANAGER				
CHIEF ENG/ARCH		E. GALLAHER, PE		

DEPARTMENT OF THE NAVY	NAVAFAC WASHINGTON	NAVAFAC WASHINGTON	WASHINGTON, D.C.
PT BLUE	NAVAL AIR STATION PATUXENT RIVER	PATUXENT RIVER, MARYLAND	
	FY16 SPECIAL PROJECT RM12-2137		
	REPAIR RUNWAYS 14-32 & 6-24 - PHASE 2		
		VAULT 155 ONE-LINE DIAGRAM	

SCALE:	NTS
PROJECT NO.:	1382137
CONSTR. CONTR. NO.	N40080-17-R-0002
NAVFAC DRAWING NO.	13080046
SHEET	188 OF 191
E-601	
DRAWFORM REVISION: 10 MARCH 2009	

DRAWFORM REVISION: 10 MARCH 2001

D

C

B

A

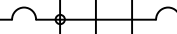
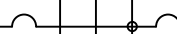
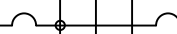
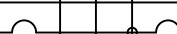
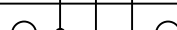
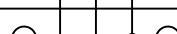
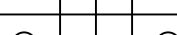
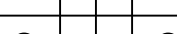
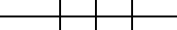
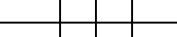
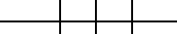
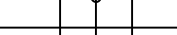
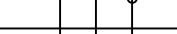
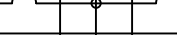
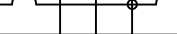
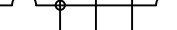
PANELBOARD MDP-155 SCHEDULE																
400 A. MAINS W/400A MCB*, 480Y/277 V., 3 PHASE, 4 WIRE, 35 KAIC MINIMUM, SURFACE MOUNT																
LOAD SERVED	LOAD (KVA)			BKR. TRIP	WIRE SIZE	CKT. NO.	PHASE A B C			CKT. NO.	WIRE SIZE	BKR. TRIP	LOAD (KVA)			LOAD SERVED
	A	B	C				A	B	C				A	B	C	
CCR SWGR	44			250*	250	1	~	~	~	2	12	15	2.00			HP-155-1
		44				3	~	~	~	4				2.00		
			44			5	~	~	~	6					2.00	
PANEL L-155	5.57			125	1	7	~	~	~	8	12	15	2.00			HP-155-2
		3.80				9	~	~	~	10				2.00		
			2.63			11	~	~	~	12					2.00	
ALSF PANEL	5			40	**	13	~	~	~	14		30				SPARE
		5				15	~	~	~	16						
SPARE				20		17	~	~	~	18						SPARE
SPARE				20		19	~	~	~	20		30				
SPACE				20		21	~	~	~	22						
SPACE				20		23	~	~	~	24						SPACE
SPACE						25	~	~	~	26						
SPACE						27	~	~	~	28						SPACE
SPACE						29	~	~	~	30						SPACE
SPACE						31	~	~	~	32						SPACE
SPACE						33	~	~	~	34						SPACE
SPACE						35	~	~	~	36						SPACE
SPACE						37	~	~	~	38						SPACE
SPACE						39	~	~	~	40						SPACE
SPACE						41	~	~	~	42						SPACE
TOTAL	54.57	52.80	46.63										4.00	4.00	4.00	TOTAL
TOTAL CONNECTED KVA A: 58.07 B: 56.80 C: 50.63																

* DENOTES 100% RATED CIRCUIT BREAKER WITH ELECTRONIC TRIP WITH LSI SETTINGS.
** REFER TO EA SERIES DRAWINGS FOR CONDUCTOR SIZE TO ALSF PANEL.

PANELBOARD MDP-1710 SCHEDULE																
1600 A. MAINS W/1000A MCB*, 480Y/277 V., 3 PHASE, 4 WIRE, 65 KAIC MINIMUM, SURFACE MOUNT																
LOAD SERVED	LOAD (KVA)			BKR. TRIP	WIRE SIZE	CKT. NO.	PHASE A B C			CKT. NO.	WIRE SIZE	BKR. TRIP	LOAD (KVA)			LOAD SERVED
	A	B	C				A	B	C				A	B	C	
CCR SWGR	147			800*	500	1	~	~	~	2	12	20	4.32			HP-1710-1
		147				3	~	~	~	4				4.32		
			147			5	~	~	~	6					4.32	
PANEL L-1710	6.11			125	1	7	~	~	~	8	12	20	4.32			HP-1710-2
		4.18				9	~	~	~	10				4.32		
			3.20			11	~	~	~	12					4.32	
SPARE				20		13	~	~	~	14		30				SPARE
SPARE				20		15	~	~	~	16						
SPARE				20		17	~	~	~	18						
SPARE				20		19	~	~	~	20		30				SPARE
SPACE						21	~	~	~	22						
SPACE						23	~	~	~	24						
SPACE						25	~	~	~	26						SPACE
SPACE						27	~	~	~	28						SPACE
SPACE						29	~	~	~	30						SPACE
SPACE						31	~	~	~	32						SPACE
SPACE						33	~	~	~	34						SPACE
SPACE						35	~	~	~	36						SPACE
SPACE						37	~	~	~	38						SPACE
SPACE						39	~	~	~	40						SPACE
SPACE						41	~	~	~	42						SPACE
TOTAL	153.1	151.2	150.2										8.64	8.64	8.64	TOTAL
TOTAL CONNECTED KVA A: 161.75 B: 159.34 C: 158.84																

* DENOTES 100% RATED CIRCUIT BREAKER WITH ELECTRONIC TRIP WITH LSI SETTINGS.

PANELBOARD L-155 SCHEDULE																
250 A. MAINS W/225A MCB, 208Y/120 V., 3 PHASE, 4 WIRE, 10 KAIC MINIMUM, SURFACE MOUNT																
LOAD SERVED	LOAD (KVA)			BKR. TRIP	WIRE SIZE	CKT. NO.	PHASE A B C			CKT. NO.	WIRE SIZE	BKR. TRIP	LOAD (KVA)			LOAD SERVED
	A	B	C				A	B	C				A	B	C	
RECEPTACLES	0.54			20	12	1	~	~	~	2	12	20	0.7			LIGHTING - INTERIOR
RECEPTACLES		0.72		20	12	3	~	~	~	4	12	20		0.45		LIGHTING - EXTERIOR
RECEPTACLES			0.72	20	12	5	~	~	~	6	12	20			1.2	GEN. BATTERY CHARGER
CU-155-1	1.07			20	12	7	~	~	~	8	10	30	1.56			GEN JACKET COOLANT HEAT
		1.07				9	~	~	~	10				1.56		
CONTROL - LIGHTING			0.18	20		11	~	~	~	12	12	15			0.53	EF-155-1
FIRE ALARM CONTROL PANEL	0.5			20	12	13	~	~	~	14	10	30	1.2			ALCMS CABINET
SPARE				20		15	~	~	~	16		20				SPARE
SPARE				20		17	~	~	~	18		20				SPARE
SPARE				20		19	~	~	~	20		20				SPARE
SPARE				20		21	~	~	~	22		20				SPARE
SPARE				20		23	~	~	~	24		20				SPARE
SPARE				20		25	~	~	~	26		20				SPARE
SPARE				20		27	~	~	~	28		20				SPARE
SPACE						29	~	~	~	30						SPACE
SPACE						31	~	~	~	32						SPACE
SPACE						33	~	~	~	34						SPACE
SPACE						35	~	~	~	36						SPACE
SPACE						37	~	~	~	38						SPACE
SPACE						39	~	~	~	40						SPACE
SPACE						41	~	~	~	42						SPACE
TOTAL	2.11	1.79	0.90										3.46	2.01	1.73	TOTAL
TOTAL CONNECTED KVA A: 5.57 B: 3.80 C: 2.63																

PANELBOARD L-1710 SCHEDULE																
250 A. MAINS W/225A MCB, 208Y/120 V., 3 PHASE, 4 WIRE, 10 KAIC MINIMUM, SURFACE MOUNT																
LOAD SERVED	LOAD (KVA)			BKR. TRIP	WIRE SIZE	CKT. NO.	PHASE			CKT. NO.	WIRE SIZE	BKR. TRIP	LOAD (KVA)			LOAD SERVED
	A	B	C				A	B	C				A	B	C	
RECEPTACLES	0.54			20	12	1				2	12	20	0.99			LIGHTING – INTERIOR
RECEPTACLES		0.54		20	12	3				4	12	20		0.51		LIGHTING – EXTERIOR
RECEPTACLES			0.72	20	12	5				6	12	20			1.2	GEN. BATTERY CHARGER
CU–1710–1	1.07			20	12	7				8	10	30	1.56			GEN JACKET COOLANT HEAT
		1.07				9				10				1.56		
BB–1710–1			0.75	20	12	11				12	12	15			0.53	EF–1710–1
	0.75					13				14	10	30	1.2			ALCMS CABINET
FIRE ALARM CONTROL PANEL		0.5		20	12	15				16		20				SPARE
SPARE				20		17				18		20				SPARE
SPARE				20		19				20		20				SPARE
SPARE				20		21				22		20				SPARE
SPARE				20		23				24		20				SPARE
SPARE				20		25				26		20				SPARE
SPARE				20		27				28		20				SPARE
SPACE						29				30						SPACE
SPACE						31				32						SPACE
SPACE						33				34						SPACE
SPACE						35				36						SPACE
SPACE						37				38						SPACE
SPACE						39				40						SPACE
SPACE						41				42						SPACE
TOTAL	2.36	2.11	1.47										3.75	2.07	1.73	TOTAL
TOTAL CONNECTED KVA				A:		6.11		B:		4.18		C:		3.20		