GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INTEND TO INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING WHERE INDICATED IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL BENDS, OFFSETS, DROPS, AND RISERS OF RUNS. THE CONTRACTOR MUST ALLOW IN THEIR BID FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS.
2. COORDINATE WORK WITH OTHER TRADES.
3. THE EXACT LOCATION OF DEVICES ARE SUBJECT TO THE APPROVAL OF THE CONTRACTING OFFICER WHO RESERVES THE RIGHT TO MAKE REASONABLE CHANGES IN LOCATION WITHOUT EXTRA COST.
4. PROVIDE 3/4"C MINIMUM SIZE CONDUIT.
5. PROVIDE PULL BOXES WHERE INDICATED, REQUIRED BY CODE, AND WHERE NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULL BOX LOCATIONS WITH OTHER TRADES AND EXISTING CONDITIONS. PROVIDE PULL BOXES ACCESSIBLE AND NOT EXPOSED IN FINISHED SPACES.
6. THE HANGAR BAYS (OPEN HANGAR OH–A, OH–B, AND OH–C) ARE CLASSIFIED AS CLASS 1, DIV 2 HAZARDOUS LOCATIONS FROM THE FLOOR LEVEL TO 18" AFF. THE SPACE BELOW THE FINISHED FLOOR LEVEL (TRENCHES, PITS, DEPRESSIONS) IS CLASSIFIED AS CLASS1, DIV 1. COMPLY WITH NFPA 409 AND NFPA 70, ARTICLE 513.
7. "PROVIDE" MEANS CONTRACTOR MUST FURNISH NEW AND INSTALL COMPLETE AND READY FOR USE.
8. "REMOVE" MEANS CONTRACTOR MUST DISCONNECT, REMOVE FROM SITE (ONLY IF APPROVED BY THE CONTRACTING OFFICER) AND LEGALLY DISPOSE OF.
9. PROVIDE NEMA 4 RATED ENCLOSURES IN OPEN HANGAR BAY OH–A, OH–B AND OH–C.
10. PROVIDE ELECTRICAL WORK ASSOCIATED WITH THE AIR HANDLING UNITS AND LOW LEAKAGE AIR DAMPERS AS A BID OPTION.
11. PROVIDE ELECTRICAL WORK ASSOCIATED WITH THE REPLACEMENT OF SWITCHBOARD SA CIRCUIT BREAKERS AS A BID OPTION.

GENERAL DEMOLITION NOTES

1. UNLESS OTHERWISE NOTED, DISCONNECT POWER TO MECHANICAL EQUIPMENT NOTED ON DRAWINGS. REMOVE CONTROLS AND ASSOCIATED RACEWAY AND CONDUCTORS BACK TO SOURCE.
2. TRACE AND FIELD VERIFY EXISTING CIRCUITRY PATH AND CONNECTIONS FOR REMOVAL WORK PRIOR TO COMMENCEMENT OF WORK.
3. PERFORM DEMOLITION AND REMOVAL WORK IN A NEAT AND WORKMAN LIKE MANNER. PATCH, REPAIR AND RESTORE DAMAGE TO INTERIOR AND EXTERIOR SURFACE TO ITS ORIGINAL CONDITIONS. REPAIRS MUST BE OF THE SAME MATERIALS, WORKMANSHIP AND FINISH OF THE SURROUNDING CONDITIONS.
4. EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION REMOVED UNDER THIS CONTRACT MUST REMAIN THE PROPERTY OF THE CONTRACTING OFFICER OR DISPOSED OF IN A LEGAL MANNER BY THE CONTRACTOR AS DIRECTED BY THE CONTRACTING OFFICER. REMOVE SALVAGED ITEMS CAREFULLY AND STORE AT LOCATION DIRECTED BY THE CONTRACTING OFFICER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ITEMS WHICH ARE NOT SALVAGED.
5. MODIFY EXISTING PANEL DIRECTORIES AFFECTED BY THE WORK UNDER THIS CONTRACT TO REFLECT CIRCUITRY REVISIONS.
6. MAINTAIN CONTINUITY OF CIRCUITRY TO DEVICES/EQUIPMENT THAT REMAIN AND ARE ON A COMMON CIRCUIT WITH REMOVED DEVICES/EQUIPMENT.

ELECTRICAL SYMBOL LIST

SYMBOLS	DESCRIPTION
	GROUND ROD
	AIRCRAFT STATIC GROUND RECEPTACLE
	HANGAR BAY DOOR ELECTRICAL SAFETY EDGE
F1	LOCATION OF ONE OR MORE MOTOR OR EQUIPMENT CONTROL DEVICES AS SCHEDULED ON ELECTRIC EQUIPMENT AND CONTROL SCHEDULE. DESIGNATION REFERS TO EQUIPMENT CONTROLLED
M F1	MOTOR CONNECTION, WITH DESIGNATION FROM ELECTRIC EQUIPMENT AND CONTROL SCHEDULE
E CU	EQUIPMENT CONNECTION, WITH DESIGNATION FROM ELECTRIC EQUIPMENT AND CONTROL SCHEDULE
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	NEW WORK
1	REFERENCE TO DRAWING NOTE
2	POWER FEEDER CIRCUIT DESIGNATION, SOME NOT SHOWN. REFER TO 700 SERIES DRAWINGS FOR DIAGRAMS AND FEEDER SCHEDULES.
3 LLPB	BRANCH CIRCUIT TO PANELBOARD, WHEN SHOWN, LETTERING INDICATES PANELBOARD DESIGNATIONS. PROTECT EACH BRANCH CIRCUIT WITH A 20 AMPERE, 1–POLE OVERCURRENT DEVICE UNLESS OTHER SIZE INDICATED. TYPICAL DESIGNATION, (2#12, #12G, 1/2"C, 20A–1P)
	BRANCH CIRCUIT OR FEEDER TO BE REMOVED. REMOVE RACEWAY SYSTEM AND CONDUCTORS BACK TO SOURCE, UNLESS NOTED OTHERWISE.
G	GROUNDING ELECTRODE CONDUCTOR.
	480Y/277V BRANCH CIRCUIT PANELBOARD, UNLESS NOTED OTHERWISE. REFER TO PANEL BOARD SCHEDULE.
	DUPLEX RECEPTACLE
a	SPECIAL PURPOSE RECEPTACLE SUBSCRIPT INDICATES TYPE
X	LIGHTNING PROTECTION SYSTEM AIR TERMINAL, X= TERMINAL TYPE AS SHOWN ON E–501
T	TRANSFORMER, REFER TO ONE LINE DIAGRAM AND TRANSFORMER SCHEDULE
	DISCONNECT SWITCH, VOLTAGE AND AMPERE RATING TO MATCH EQUIPMENT SERVED, OR AS INDICATED
VFD-AHU-1	VARIABLE FREQUENCY DRIVE. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE.
	CIRCUIT BREAKER, RATINGS AS INDICATED
L, S, I, G	INDICATES DRAWOUT CIRCUIT BREAKER. L = LONG TIME, S = SHORT TIME, I = INSTANTANEOUS, G = GROUND FAULT PROTECTION
Y Δ 225 KVA	TRANSFORMER, REFER TO TRANSFORMER SCHEDULE; NUMERAL DESIGNATES KVA RATING, Δ = DELTA, Y = WYE
RCP	FIRE ALARM SYSTEM RELEASE CONTROL PANEL (FOR REFERENCE ONLY)
NAP	FIRE ALARM SYSTEM NOTIFICATION APPLIANCE BOOSTER PANEL (FOR REFERENCE ONLY)
FMCP	FIRE ALARM/MASS NOTIFICATION SYSTEM CONTROL PANEL (FOR REFERENCE ONLY)
MONACO	FIRE ALARM AND MASS NOTIFICATION SYSTEM REPORTING PANEL (FOR REFERENCE ONLY)
AMP	FIRE ALARM AND MASS NOTIFICATION SYSTEM AMPLIFIER (FOR REFERENCE ONLY)
WAVE	FIRE ALARM SYSTEM WAVES PANEL (FOR REFERENCE ONLY)
FACP	FIRE ALARM SYSTEM CONTROL PANEL (FOR REFERENCE ONLY)

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
1P	SINGLE POLE
2P	TWO POLE
3P	THREE POLE
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFFF	AQUEOUS FILM FORMING FOAM
AHJ	AUTHORITY HAVING JURISDICTION
AT	AMPERE TRIP
C	CONDUIT
CU	COPPER
DISC	DISCONNECT
E	EXISTING TO REMAIN
ECB	ENCLOSED CIRCUIT BREAKER
GFCI	GROUNDING FAULT INTERRUPTER
HP	HORSE POWER
HZ	HERTZ
JB	JUNCTION BOX
KW	KILOWATT
MLO	MAIN LUGS ONLY
TYP	TYPICAL
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
Y	WYE
Δ	DELTA

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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A/E INFO

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ACTIVITY

SATISFACTORY TO

DES KSD DRW ASC CHK RPP

PM/DM KPL/IAS

BRANCH MANAGER RKB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
HAMPTON ROADS IPT
NAS OCEANA ~ VIRGINIA BEACH, VIRGINIA
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

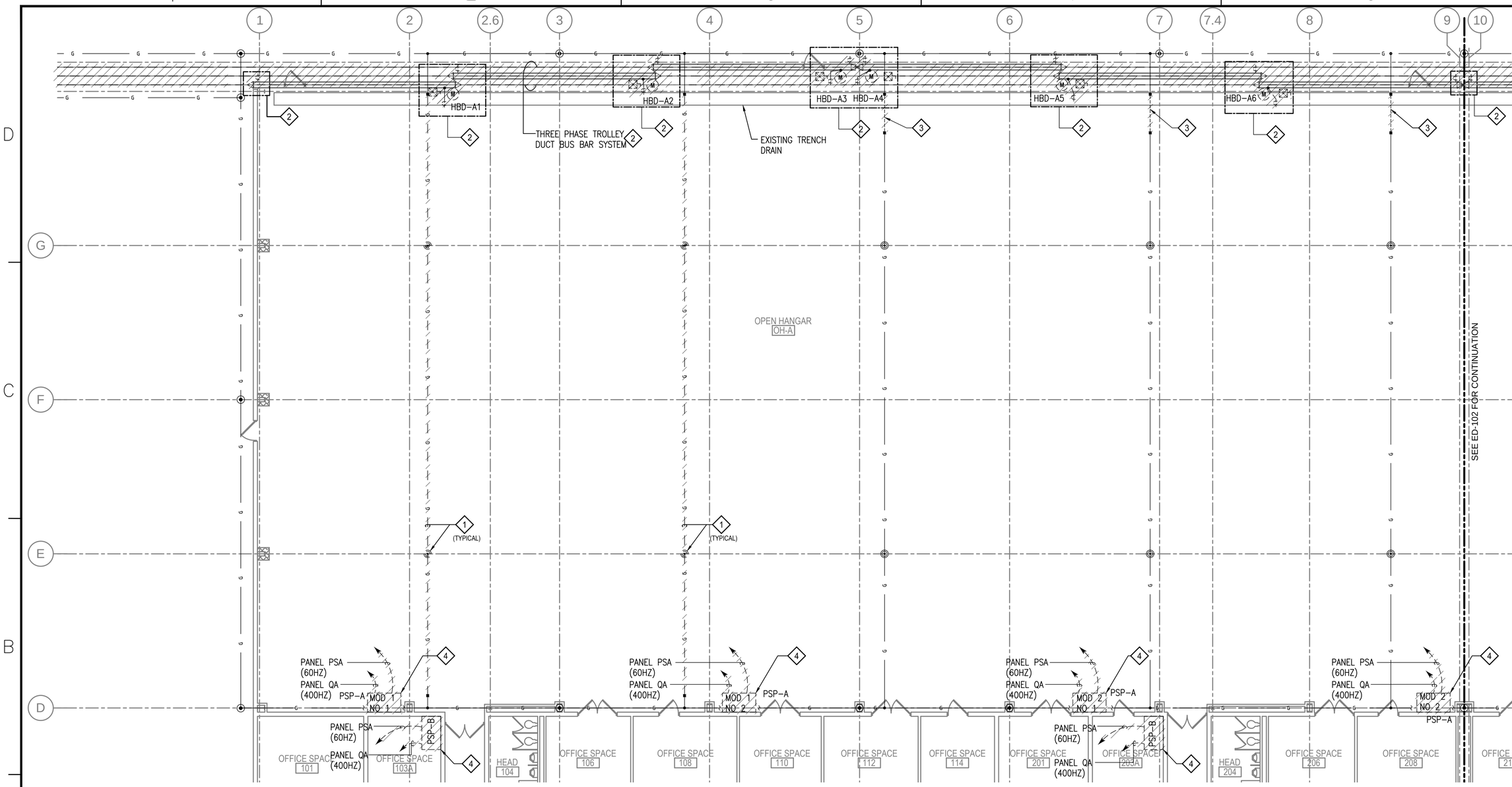
REFERENCE SHEET - ELECTRICAL

SCALE: AS SHOWN
EPROJECT NO.: 1372146
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12716374
SHEET 152 OF 170

E-001

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E001.dwg LAYOUT NAME: Layout1 PLOTTED: Thursday, April 21, 2016 - 7:34pm USER: idberry



A1 FIRST FLOOR DEMOLITION PLAN - AREA A

SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEY NOTES

1. REMOVE AIRCRAFT STATIC GROUNDING SYSTEM (STATIC GROUND POINT, GROUND ROD, CONDUCTORS) TO ALLOW SPACE FOR FIRE PROTECTION AFFF TRENCH SYSTEM. RETAIN PORTION OF EXISTING GROUNDING CONDUCTOR TO ALLOW BONDING THE GROUNDING CONDUCTOR TO NEW GROUNDING CONDUCTOR BY MOLDED FUSION WELD AS CALLED FOR ON DRAWING E-101. COORDINATE EXTENT OF REQUIRED REMOVAL WORK WITH OTHER DISCIPLINES. REFER TO AFFF, STRUCTURAL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR EXTENT OF DISTURBANCE.

2. HANGAR BAY DOOR SCOPE:
   - REMOVE THREE PHASE TROLLEY DUCT BUS SYSTEM, SAFETY EDGES, CONTROLS, BRAKING SYSTEM, PUSHBUTTON STATIONS, MOTOR/GEAR BOXES, CONTROL PANEL ENCLOSURES, MOTOR/GEAR BOX ENCLOSURES.
   - REMOVE RACEWAYS AND WIRING (LINE VOLTAGE AND CONTROL) BACK TO SOURCE.

3. THE MAIN EAST-WEST TRENCH DRAIN THAT RUNS ACROSS THE ENTIRE HANGAR (OPEN HANGAR OH-A, OH-B, OH-C) IS BEING ENLARGED. REMOVE PORTION OF GROUNDING CONDUCTOR TO FACILITATE TRENCH WORK. COORDINATE EXTENT OF REQUIRED REMOVAL WORK WITH OTHER DISCIPLINES. REFER TO AFFF, STRUCTURAL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR EXTENT OF DISTURBANCE. WORK MUST NOT DISTURB AREA BELOW THE DOOR TRACKS.

4. REMOVE POWER SUPPLY POINT AND ASSOCIATED TRANSFER SWITCH, TRANSFORMERS, DISCONNECT SWITCHES, OUTLETS, ENCLOSURES, RACEWAYS 60HZ AND 400HZ FEEDERS BACK TO SOURCE PANELS.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

⅛" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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PM/DM KPL/IAS

BRANCH MANAGER RKB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

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HAMPTON ROADS PT

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NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

1st FLOOR DEMOLITION PLAN - ELECTRICAL - AREA A

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

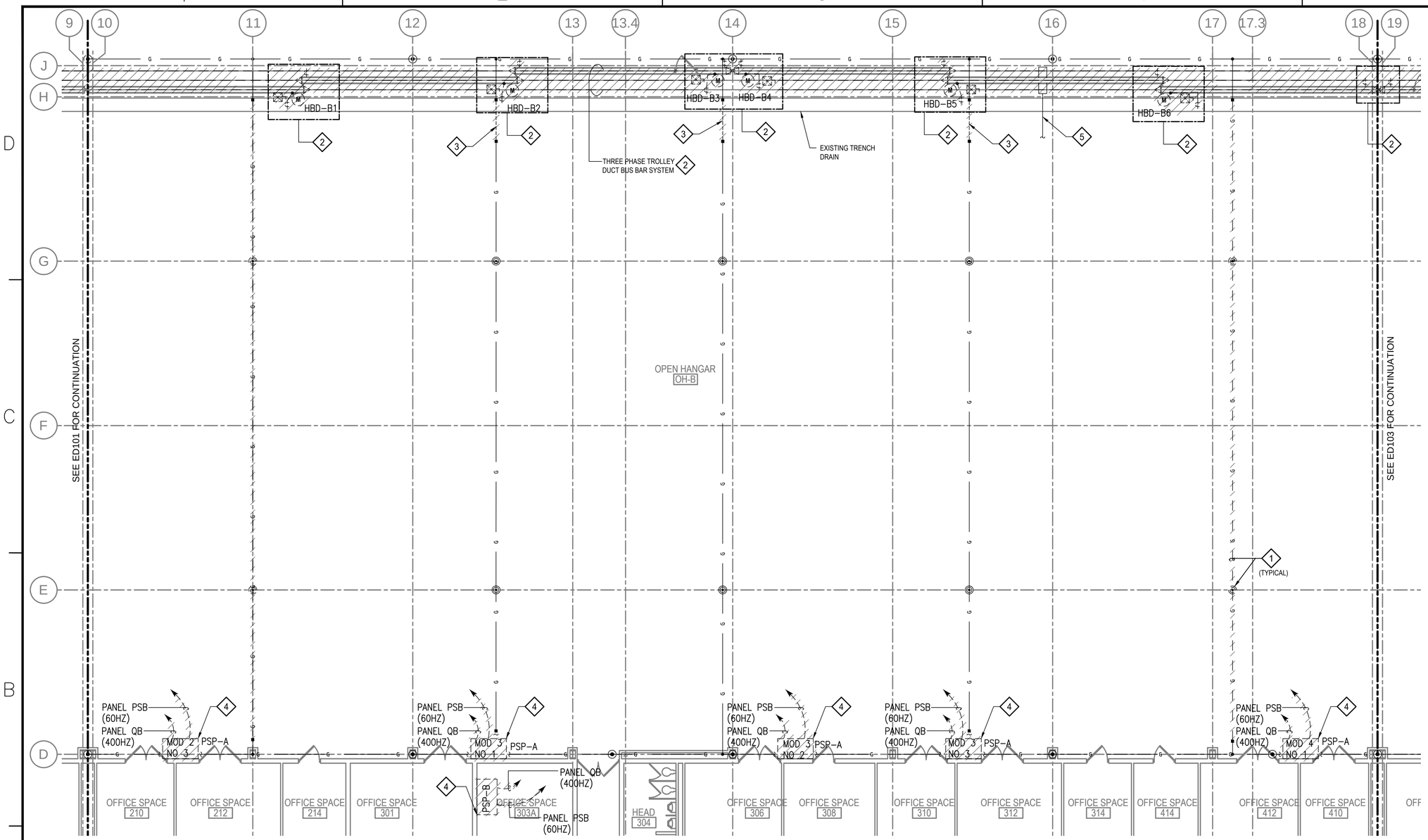
NAVFAC DRAWING NO. 12716375

SHEET 153 OF 170

ED101

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_ED101.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:26pm USER: tdberry



A1 FIRST FLOOR DEMOLITION PLAN - AREA B

SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEY NOTES

1. REMOVE AIRCRAFT STATIC GROUNDING SYSTEM (STATIC GROUND POINT, GROUND ROD, CONDUCTORS) TO ALLOW SPACE FOR FIRE PROTECTION AFFF TRENCH SYSTEM. RETAIN PORTION OF EXISTING GROUNDING CONDUCTOR TO ALLOW BONDING THE GROUNDING CONDUCTOR TO NEW GROUNDING CONDUCTOR. BY MOLDED FUSION WELD AS CALLED FOR ON DRAWING E-102 COORDINATE EXTENT OF REQUIRED REMOVAL WORK WITH OTHER DISCIPLINES. REFER TO AFFF, STRUCTURAL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR EXTENT OF DISTURBANCE.

2. HANGAR BAY DOOR SCOPE:
   - REMOVE THREE PHASE TROLLEY DUCT BUS SYSTEM, SAFETY EDGES, CONTROLS, BRAKING SYSTEM, PUSHBUTTON STATIONS, MOTOR/GEAR BOXES, CONTROL PANEL ENCLOSURES, MOTOR/GEAR BOX ENCLOSURES.
   - REMOVE RACEWAYS AND WIRING (LINE VOLTAGE AND CONTROL) BACK TO SOURCE

3. THE MAIN EAST-WEST TRENCH DRAIN THAT RUNS ACROSS THE ENTIRE HANGAR (OPEN HANGAR OH-A, OH-B, OH-C) IS BEING ENLARGED. REMOVE PORTION OF GROUNDING CONDUCTOR TO FACILITATE TRENCH WORK. COORDINATE EXTENT OF REQUIRED REMOVAL WORK WITH OTHER DISCIPLINES. REFER TO AFFF, STRUCTURAL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR EXTENT OF DISTURBANCE. WORK MUST NOT DISTURB AREA BELOW THE DOOR TRACKS.

4. REMOVE POWER SUPPLY POINT AND ASSOCIATED TRANSFER SWITCH, TRANSFORMERS, DISCONNECT SWITCHES, OUTLETS, ENCLOSURES, RACEWAYS 60HZ AND 400HZ FEEDERS BACK TO SOURCE PANELS.

5. DISCONNECT POWER FROM EXISTING HANGAR BAY DOOR FEEDER AT TROLLEY DUCT BUS BARS. REMOVE FEEDER BACK TO A POINT WHERE IT IS EXTENDED AND CONNECTED TO TROLLEY DUCT BUS BARS CALLED FOR ON DRAWING E-102.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

1/8" = 1'-0

KEY PLAN

A	B	C
D	E	F

STM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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PM/DM KPL/IAS

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CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

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HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

1st FLOOR DEMOLITION PLAN - ELECTRICAL - AREA B

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

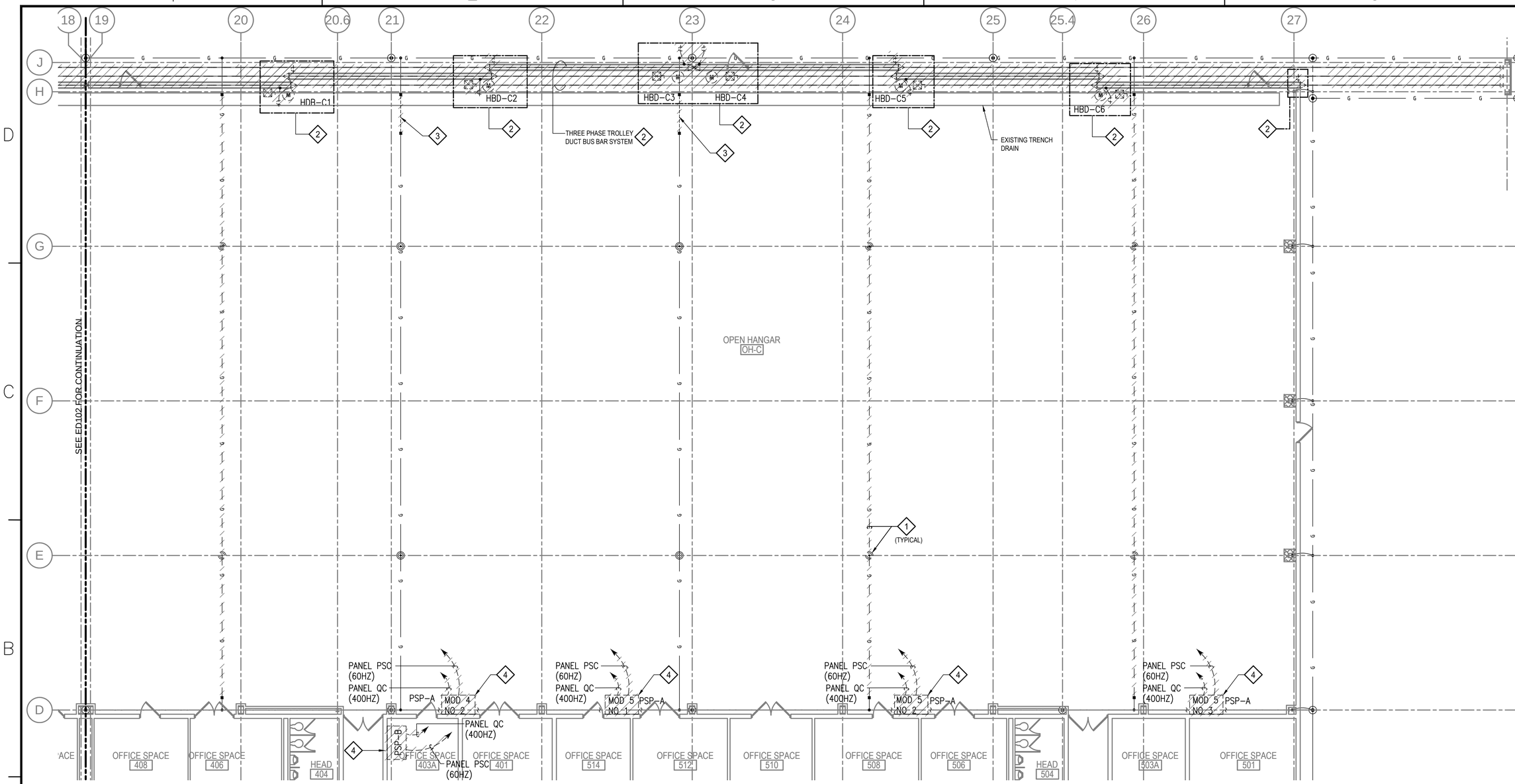
NAVFAC DRAWING NO. 12716376

SHEET 154 OF 170

ED102

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_ED102.dwg LAYOUT NAME: Area B PLOTTED: Thursday, April 21, 2016 - 7:26pm USER: idherry



A1 FIRST FLOOR DEMOLITION PLAN - AREA A

SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEY NOTES

1. REMOVE AIRCRAFT STATIC GROUNDING SYSTEM (STATIC GROUND POINT, GROUND ROD, CONDUCTORS) TO ALLOW SPACE FOR FIRE PROTECTION AFFF TRENCH SYSTEM. RETAIN PORTIONS OF EXISTING TO NEW GROUNDING CONDUCTOR. GROUNDING CONDUCTOR TO ALLOW BONDING THE GROUNDING CONDUCTOR BY MOLDED FUSION WELD AS CALLED FOR ON E-103. COORDINATE EXTENT OF REQUIRED REMOVAL WORK WITH OTHER DISCIPLINES. REFER TO AFFF, STRUCTURAL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR EXTENT OF DISTURBANCE.

2. HANGAR BAY DOOR SCOPE:
   - REMOVE THREE PHASE TROLLEY DUCT BUS SYSTEM, SAFETY EDGES, CONTROLS, BRAKING SYSTEM, PUSHBUTTON STATIONS, MOTOR/GEAR BOXES, CONTROL PANEL ENCLOSURES, MOTOR/GEAR BOX ENCLOSURES.
   - REMOVE RACEWAYS AND WIRING (LINE VOLTAGE AND CONTROL) BACK TO SOURCE.

3. THE MAIN EAST-WEST TRENCH DRAIN THAT RUNS ACROSS THE ENTIRE HANGAR (OPEN HANGAR OH-A, OH-B, OH-C) IS BEING ENLARGED. REMOVE PORTION OF GROUNDING CONDUCTOR TO FACILITATE TRENCH WORK. COORDINATE EXTENT OF REQUIRED REMOVAL WORK WITH OTHER DISCIPLINES. REFER TO AFFF, STRUCTURAL, ARCHITECTURAL AND PLUMBING DRAWINGS FOR EXTENT OF DISTURBANCE. WORK MUST NOT DISTURB AREA BELOW THE DOOR TRACKS.

4. REMOVE POWER SUPPLY POINT AND ASSOCIATED TRANSFER SWITCH, TRANSFORMERS, DISCONNECT SWITCHES, OUTLETS, ENCLOSURES, RACEWAYS 60HZ AND 400HZ FEEDERS BACK TO SOURCE PANELS.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

⅛" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

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HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

1st FLOOR DEMOLITION PLAN - ELECTRICAL - AREA C

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

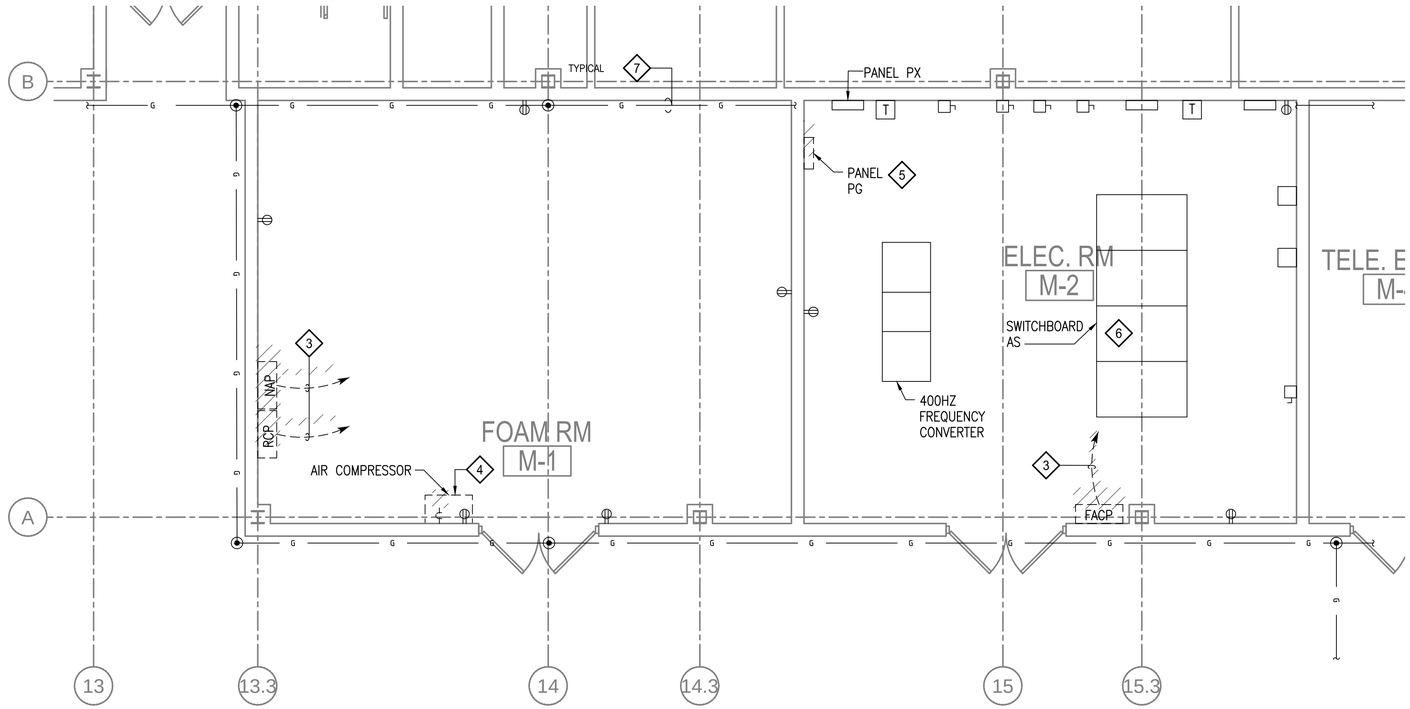
NAVFAC DRAWING NO. 12716377

SHEET 155 OF 170

ED103

DRAWFORM REVISION: 10 MAY 2014

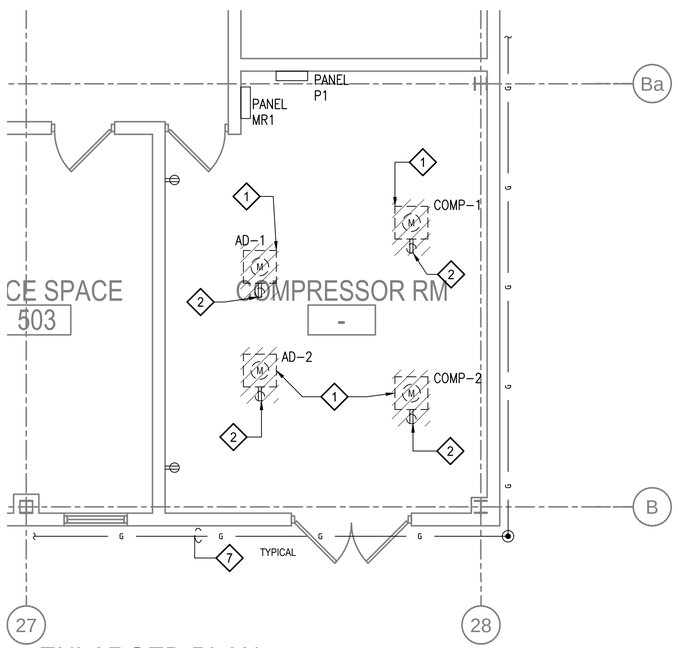
FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_ED103.dwg LAYOUT NAME: Area C PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: idberry



C1 ENLARGED PLAN - FIRST FLOOR FOAM ROOM AND ELECTRIC ROOM DEMOLITION PLAN

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

PROJECT NORTH



A1 ENLARGED PLAN - COMPRESSOR ROOM DEMOLITION PLAN

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

PROJECT NORTH

KEY NOTES

1. DISCONNECT COMPRESSOR AND AIR DRYER CIRCUITS. REMOVE CONDUIT AND WIRING BACK TO SOURCE PANEL (P1).
2. DISCONNECT AND REMOVE DUPLEX RECEPTACLE CIRCUIT BACK TO NEAREST ACTIVE JUNCTION BOX TO REMAIN. MAINTAIN CONTINUITY OF REMAINING RECEPTACLE CIRCUIT.
3. DISCONNECT AND REMOVE 120 VAC CIRCUIT BACK TO SOURCE.
4. DISCONNECT AND REMOVE AIR COMPRESSOR CONDUIT, CONDUCTORS, AND SWITCH BACK TO RECEPTACLE JUNCTION BOX. RECEPTACLE MUST REMAIN.
5. REFER TO POWER ONE-LINE DIAGRAM-DEMOLITION FOR PANELBOARD PG REMOVAL WORK. PANEL PG IS A 480V, 400HZ PANELBOARD.
6. REFER TO DRAWINGS ED701 FOR SWITCHBOARD SA REMOVAL WORK.
7. GROUNDING SHOWN FOR REFERENCE ONLY.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 2' 4' 6' 8'

¼" = 1'-0

KEY PLAN

A	B	C
D	E	F

STM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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BRANCH MANAGER RCB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
HAMPTON ROADS IPT

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NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

ENLARGED DEMO PLAN - 1st FL - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

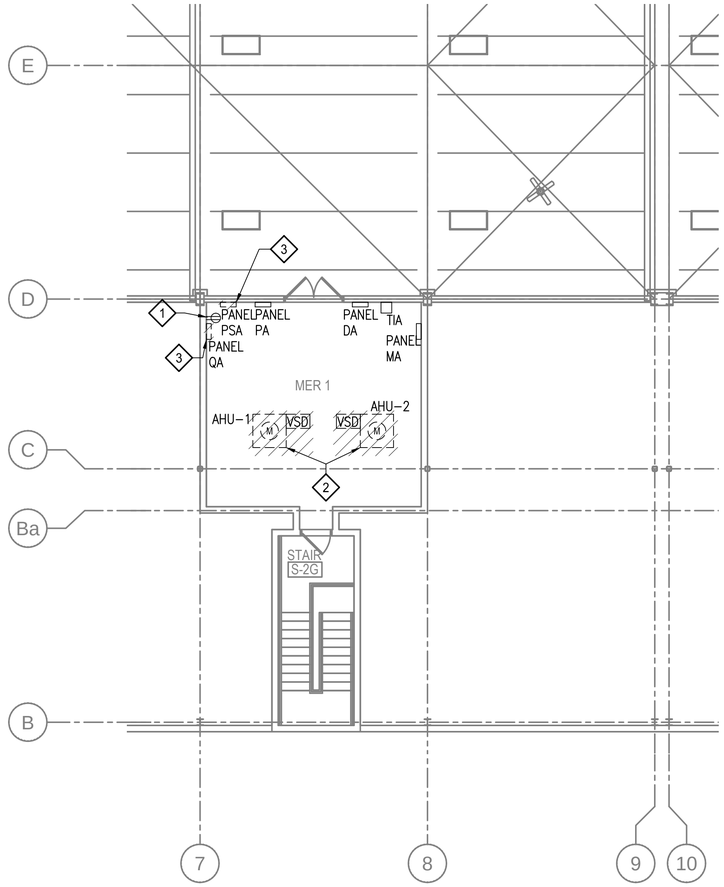
NAVFAC DRAWING NO. 12716378

SHEET 156 OF 170

ED401

DRAWFORM REVISION: 10 MAY 2014

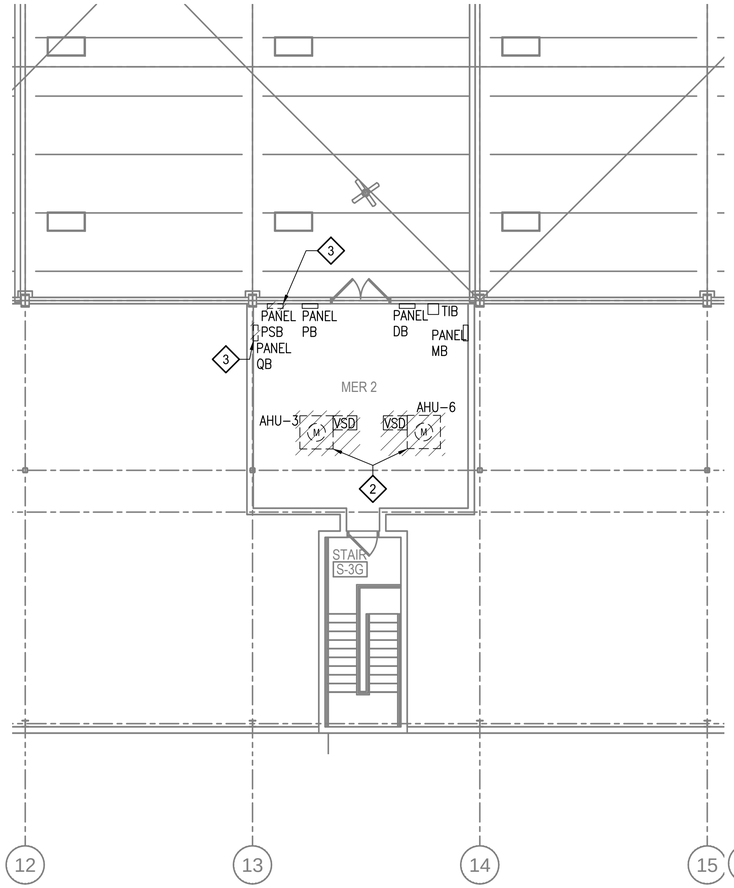
FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_ED401.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: idberry



B1 ENLARGED PLAN - THIRD FLOOR MER 1 ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

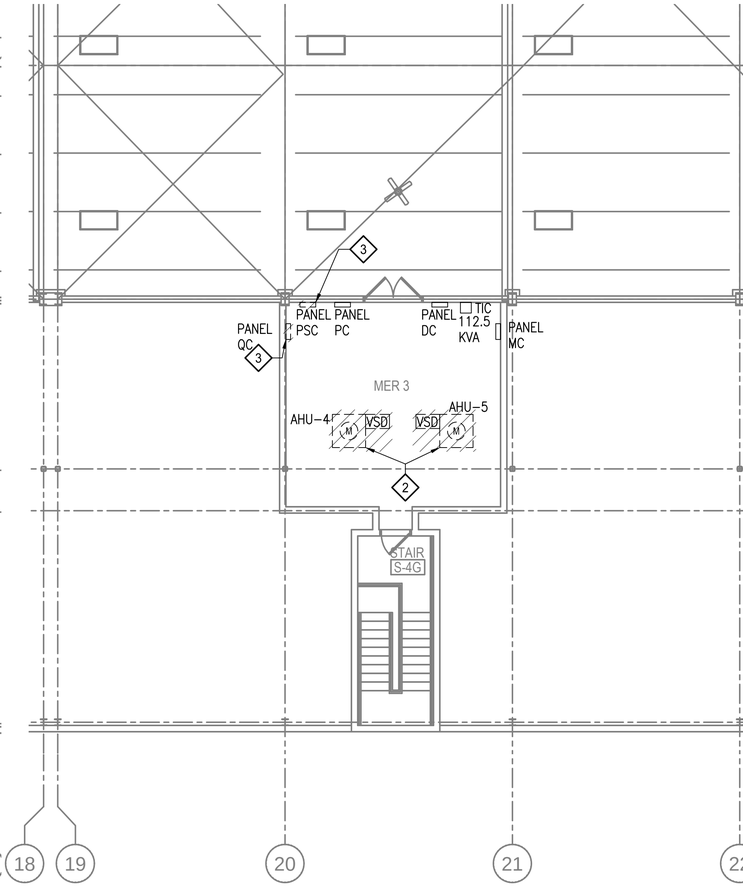
PROJECT NORTH



B2 ENLARGED PLAN - THIRD FLOOR MER 2 ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

PROJECT NORTH



B4 ENLARGED PLAN - THIRD FLOOR MER 3 ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEYNOTES

1. REROUTE 120V DUPLEX RECEPTACLE CIRCUIT TO ALLOW FREE SPACE ON WALL NORTH OF PANEL QA FOR FIRE ALARM EQUIPMENT CABINETS. REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
2. DISCONNECT AND REMOVE CIRCUIT TO AIR HANDLING UNIT. REMOVE CONDUIT AND CONDUCTORS BACK TO SOURCE PANEL (PA, PB, OR PC). REMOVE VARIABLE SPEED DRIVE.
3. REFER TO POWER ONE-LINE DIAGRAM-DEMOLITION FOR PANELBOARD REMOVAL WORK. PANELS QA, QB AND QC ARE 480V, 400HZ PANELBOARDS. PANELS PSA, PSB, AND PSC ARE 480Y/277V 60HZ PANELS.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

⅛" = 1'-0

KEY PLAN

A B C D E F

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

NAVFAC

STATE OF NEW YORK ROBERT P. POMPEO LICENSED PROFESSIONAL ENGINEER NO. 083027

the PROTECTION ENGINEERING GROUP
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ACTIVITY

SATISFACTORY TO

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PM/DM KPL/IAS

BRANCH MANAGER RCB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
NAVAL FACILITIES ENGINEERING COMMAND
NAS OCEANA - VIRGINIA BEACH, VIRGINIA
HAMPTON ROADS IPT
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

ENLARGED DEMO PLAN - 3rd FL - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

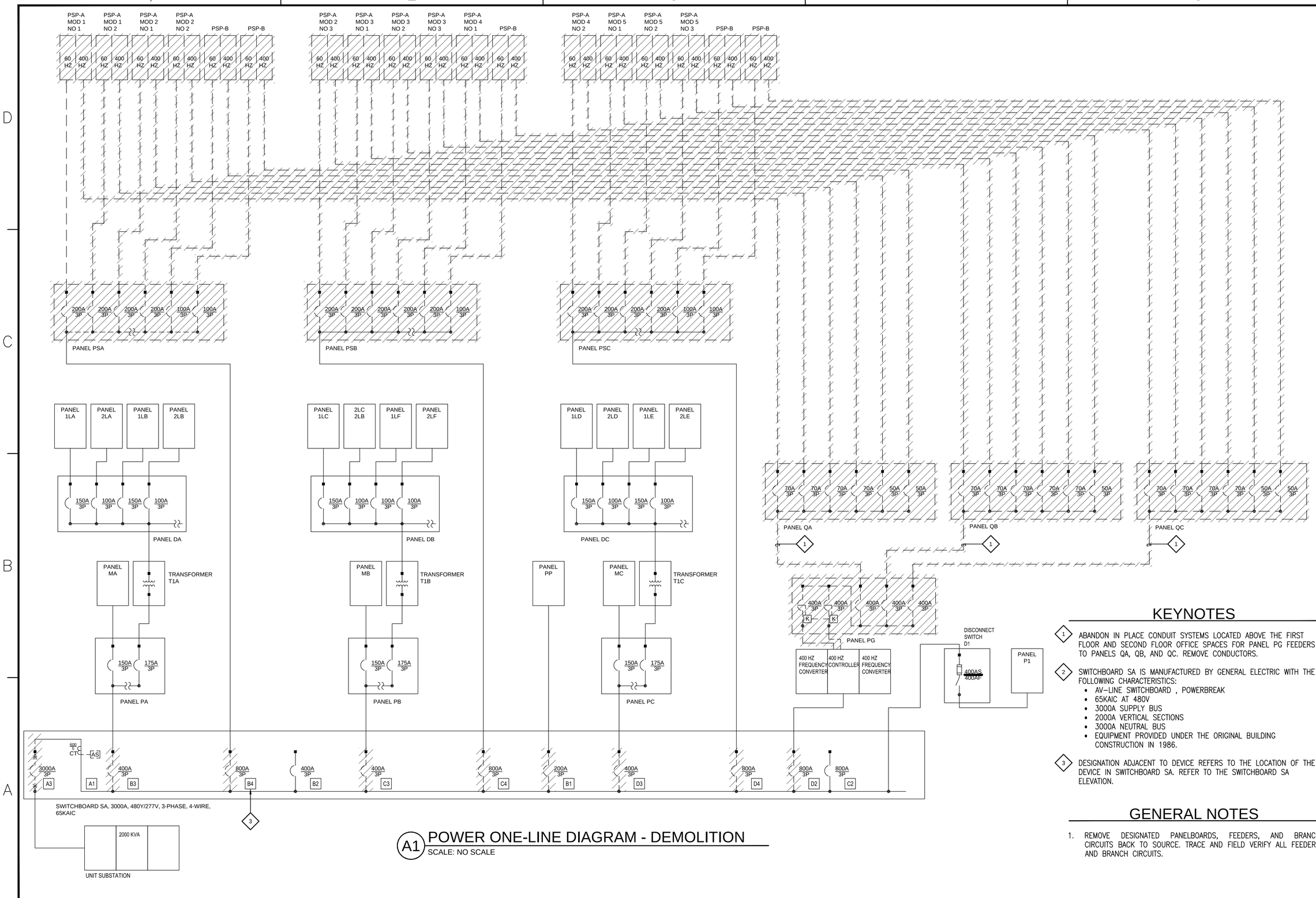
NAVFAC DRAWING NO. 12716379

SHEET 157 OF 170

ED402

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_ED402.dwg LAYOUT NAME: Area C PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: idberry



A1 POWER ONE-LINE DIAGRAM - DEMOLITION

SCALE: NO SCALE

KEYNOTES

1. ABANDON IN PLACE CONDUIT SYSTEMS LOCATED ABOVE THE FIRST FLOOR AND SECOND FLOOR OFFICE SPACES FOR PANEL PG FEEDERS TO PANELS QA, QB, AND QC. REMOVE CONDUCTORS.
2. SWITCHBOARD SA IS MANUFACTURED BY GENERAL ELECTRIC WITH THE FOLLOWING CHARACTERISTICS:
   - AV–LINE SWITCHBOARD , POWERBREAK
   - 65KAIC AT 480V
   - 3000A SUPPLY BUS
   - 2000A VERTICAL SECTIONS
   - 3000A NEUTRAL BUS
   - EQUIPMENT PROVIDED UNDER THE ORIGINAL BUILDING CONSTRUCTION IN 1986.
3. DESIGNATION ADJACENT TO DEVICE REFERS TO THE LOCATION OF THE DEVICE IN SWITCHBOARD SA. REFER TO THE SWITCHBOARD SA ELEVATION.

GENERAL NOTES

1. REMOVE DESIGNATED PANELBOARDS, FEEDERS, AND BRANCH CIRCUITS BACK TO SOURCE. TRACE AND FIELD VERIFY ALL FEEDERS AND BRANCH CIRCUITS.

SYM	DESCRIPTION	DATE	APPR
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HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

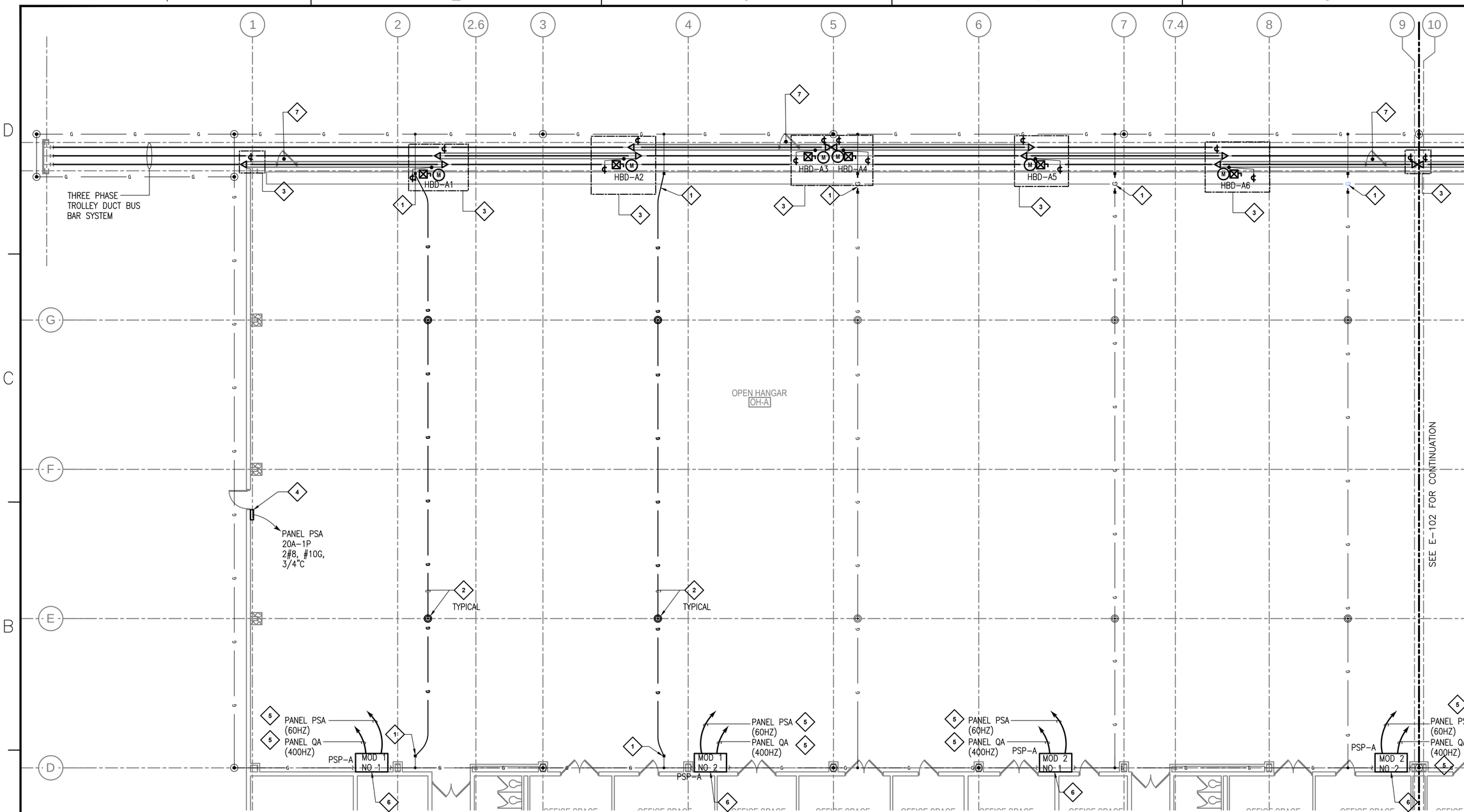
RISER DIAGRAMS - ELECTRICAL

SCALE: AS SHOWN
EPROJECT NO.: 1372146
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12716380
SHEET 158 OF 170

ED701

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_ED701.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: idberry



A1 FIRST FLOOR NEW WORK PLAN - AREA A

SCALE: 1/8" = 1'-0"

KEY NOTES

1. PROVIDE MOLDED FUSION WELD CONNECTION FROM GROUNDING CONDUCTORS TO EXISTING SYSTEM CONDUCTOR.
2. PROVIDE #2 AWG BARE COPPER GROUNDING CONDUCTORS AND AIRCRAFT STATIC GROUNDING POINTS BEYOND THE LIMITS OF THE FIRE PROTECTION AFFF TRENCH SYSTEM. REFER TO AFFF AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. WORK MUST NOT DISTURB AREA BELOW THE DOOR TRACKS.
3. HANGAR BAY DOOR AND PERSONNEL DOOR INTERLOCK SCOPE:
   - PROVIDE TROLLEY DUCT BUS BAR SYSTEMS, SAFETY EDGES, CONTROLS, BRAKING SYSTEM, PUSHBUTTON STATIONS, MOTOR/GEAR BOXES, AUDIBLE DEVICES, CONTROL PANEL ENCLOSURE, MOTOR/GEAR BOX ENCLOSURES, AND PERSONNEL DOOR INTERLOCK.
   - PROVIDE WIRING FROM BUS BARS TO DEVICES.
   - PROVIDE DEVICES, CONTROLS, AND CIRCUITRY FOR A COMPLETE SYSTEM.
   - PROVIDE RIGID THERMAL INSULATION BETWEEN THE EXTERIOR DOOR SKIN AND BACK OF CONTROL PANEL ENCLOSURE. REFER TO KEY NOTES ON DRAWINGS A-111, A-112, AND A-113 FOR ADDITIONAL INFORMATION.
   - PROVIDE CIRCUITRY AND ADJUST EXISTING PLUNGER TYPE LIMIT SWITCHES PER MANUFACTURERS SPECIFICATIONS.
4. PROVIDE POWER CONNECTION TO DIVERTER/CONTAINMENT TANK VALVE SYSTEM CONTROL PANEL. PROVIDE 20A-1P CIRCUIT BREAKER IN DESIGNATED PANEL. MATCH EXISTING PANEL BOARD CHARACTERISTICS. PROVIDE 1-1/2"C FROM CONTROL PANEL TO DIVERTER VALVE LOCATED SOUTH OF THE FOAM ROOM. REFER TO E-401 FOR CONDUIT STUB-OUT FROM BUILDING AND CS101 FOR DIVERTER VALVE LOCATION.
5. REFER TO THE POWER ONE-LINE DIAGRAM FOR FEEDER REQUIREMENTS.
6. REFER TO HANGAR BAY POWER SERVICE POINT TYPE "A" DIAGRAM FOR LAYOUT OF EQUIPMENT.
7. PROVIDE ELECTRICAL INTERLOCK SWITCH FOR EXISTING PERSONNEL DOOR TO PREVENT MOTOR OPERATION OF THE LEAF WHEN THE PERSONNEL DOOR IS OPEN.

PROJECT NORTH

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

½" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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BRANCH MANAGER RCB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

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VIRGINIA BEACH, VIRGINIA
NAVAL AIR STATION OCEANA
HAMPTON ROADS IPT

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

1st FLOOR NEW WORK PLAN - ELECTRICAL - AREA A

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

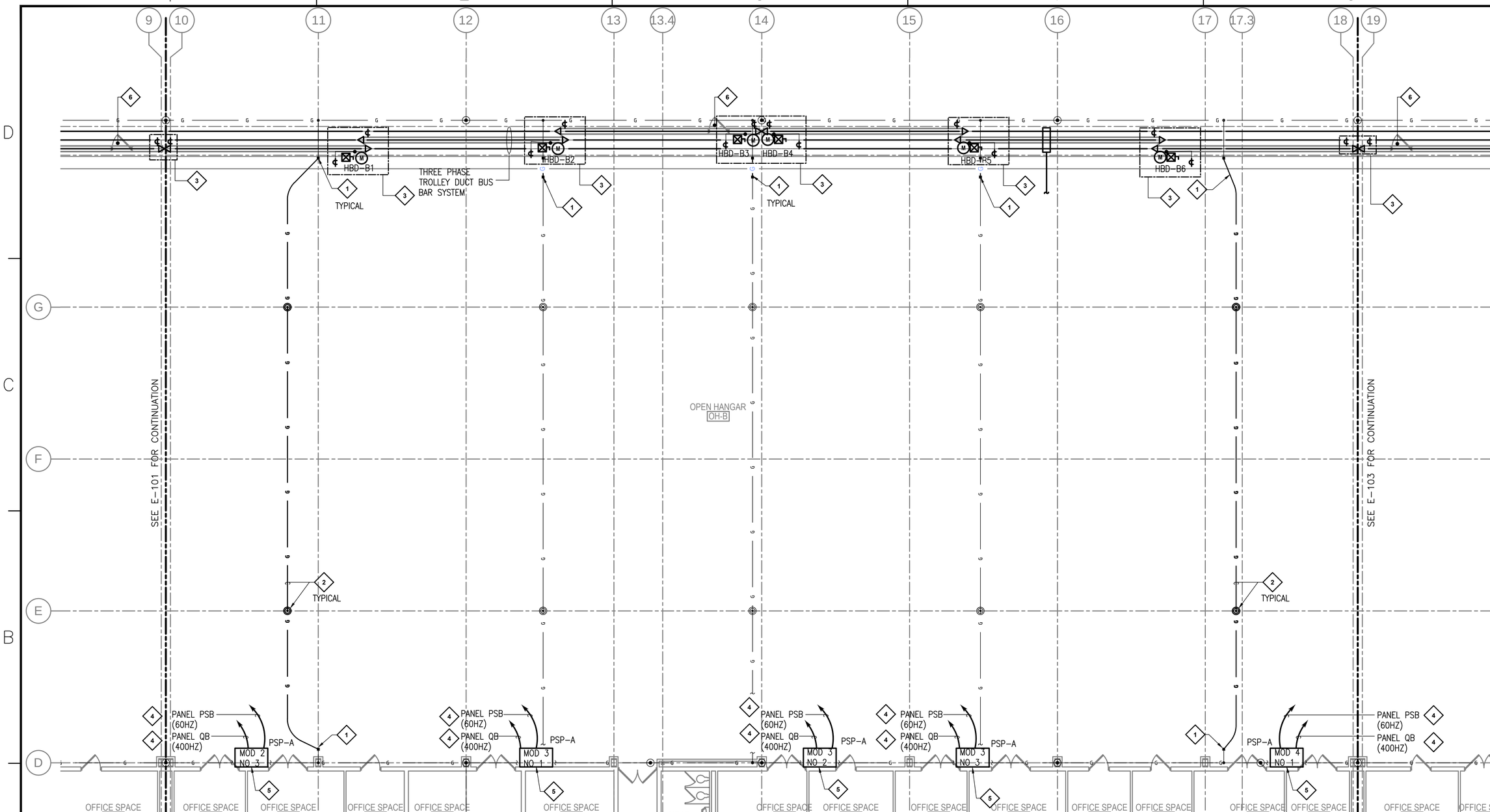
NAVFAC DRAWING NO. 12716381

SHEET 159 OF 170

E-101

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E101.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: tdberry



A1 FIRST FLOOR NEW WORK PLAN - AREA B

SCALE: 1/8" = 1'-0"

PROJECT NORTH

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

⅛" = 1'-0

KEYNOTES

1. PROVIDE MOLDED FUSION WELD CONNECTION FROM GROUNDING CONDUCTORS TO EXISTING SYSTEM CONDUCTOR.
2. PROVIDE #2 AWG BARE COPPER GROUNDING CONDUCTORS AND AIRCRAFT STATIC GROUNDING POINTS BEYOND THE LIMITS OF THE FIRE PROTECTION AFFF TRENCH SYSTEM. REFER TO AFFF AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. WORK MUST NOT DISTURB AREA BELOW THE DOOR TRACKS.
3. HANGAR BAY DOOR AND PERSONNEL DOOR INTERLOCK SCOPE:
   - PROVIDE TROLLEY DUCT BUS BAR SYSTEMS, SAFETY EDGES, CONTROLS, BRAKING SYSTEM, PUSHBUTTON STATIONS, MOTOR/GEAR BOXES, AUDIBLE DEVICES, CONTROL PANEL ENCLOSURE, MOTOR/GEAR BOX ENCLOSURES, AND PERSONNEL DOOR INTERLOCK.
   - PROVIDE WIRING FROM BUS BARS TO DEVICES.
   - PROVIDE RIGID THERMAL INSULATION BETWEEN THE EXTERIOR DOOR SKIN AND BACK OF CONTROL PANEL ENCLOSURE. REFER TO KEY NOTES ON DRAWINGS A-111, A-112, AND A-113 FOR ADDITIONAL INFORMATION.
   - PROVIDE DEVICES, CONTROLS, AND CIRCUITRY FOR A COMPLETE SYSTEM.
   - PROVIDE CIRCUITRY AND ADJUST EXISTING PLUNGER TYPE LIMIT SWITCHES PER MANUFACTURERS SPECIFICATIONS.
4. REFER TO THE POWER ONE-LINE DIAGRAM FOR FEEDER REQUIREMENTS.
5. REFER TO HANGAR BAY POWER SERVICE POINT TYPE "A" DIAGRAM FOR LAYOUT OF EQUIPMENT.
6. PROVIDE ELECTRICAL INTERLOCK SWITCH FOR EXISTING PERSONNEL DOOR TO PREVENT MOTOR OPERATION OF THE LEAF WHEN THE PERSONNEL DOOR IS OPEN.

KEY PLAN

A	B	C
D	E	F

STM	DESCRIPTION	DATE	APPR
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PM/DM KPL/IAS

BRANCH MANAGER RCB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

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HAMPTON ROADS PT
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

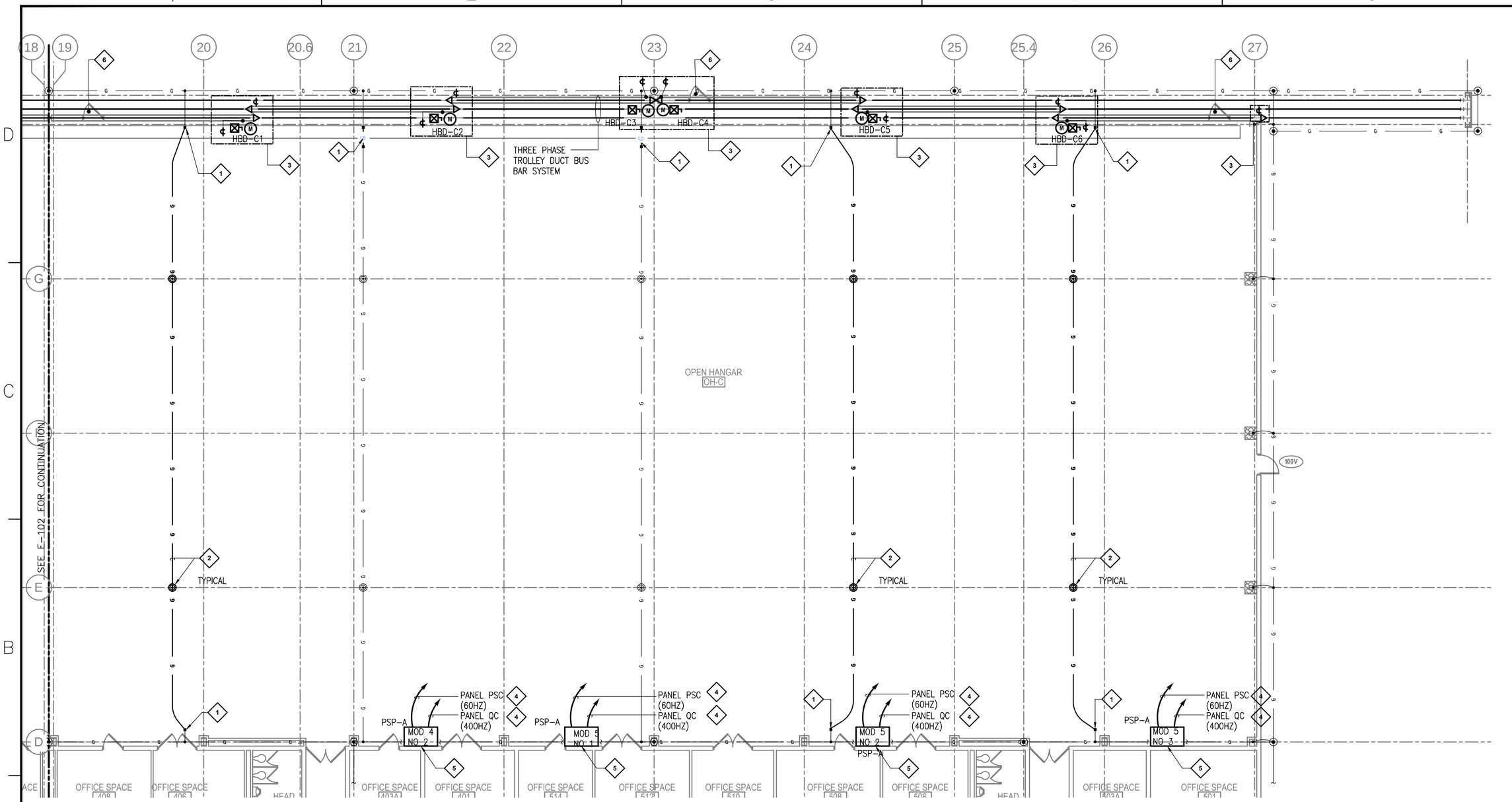
1st FLOOR NEW WORK PLAN - ELECTRICAL - AREA B

SCALE: AS SHOWN
EPROJECT NO.: 1372146
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12716382
SHEET 160 OF 170

E-102

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E102.dwg LAYOUT NAME: Area B PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: idberry



A1 FIRST FLOOR NEW WORK PLAN - AREA C

SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEY NOTES

1. PROVIDE MOLDED FUSION WELD CONNECTION FROM GROUNDING CONDUCTORS TO EXISTING SYSTEM CONDUCTOR.
2. PROVIDE #2 AWG BARE COPPER GROUNDING CONDUCTORS AND AIRCRAFT STATIC GROUNDING POINTS BEYOND THE LIMITS OF THE FIRE PROTECTION AFFF TRENCH SYSTEM. REFER TO AFFF AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. WORK MUST NOT DISTURB AREA BELOW THE DOOR TRACKS.
3. HANGAR BAY DOOR AND PERSONNEL DOOR INTERLOCK SCOPE:
   - PROVIDE TROLLEY DUCT BUS BAR SYSTEMS, SAFETY EDGES, CONTROLS, BRAKING SYSTEM, PUSHBUTTON STATIONS, MOTOR/GEAR BOXES, AUDIBLE DEVICES, CONTROL PANEL ENCLOSURE, MOTOR/GEAR BOX ENCLOSURES, AND PERSONNEL DOOR INTERLOCK.
   - PROVIDE WIRING FROM BUS BARS TO DEVICES.
   - PROVIDE RIGID THERMAL INSULATION BETWEEN THE EXTERIOR DOOR SKIN AND BACK OF CONTROL PANEL ENCLOSURE. REFER TO KEY NOTES ON DRAWINGS A-111, A-112, AND A-113 FOR ADDITIONAL INFORMATION.
   - PROVIDE DEVICES, CONTROLS, AND CIRCUITRY FOR A COMPLETE SYSTEM.
   - PROVIDE CIRCUITRY AND ADJUST EXISTING PLUNGER TYPE LIMIT SWITCHES PER MANUFACTURERS SPECIFICATIONS.
4. REFER TO THE POWER ONE-LINE DIAGRAM FOR FEEDER REQUIREMENTS.
5. REFER TO HANGAR BAY POWER SERVICE POINT TYPE "A" DIAGRAM FOR LAYOUT OF EQUIPMENT.
6. PROVIDE ELECTRICAL INTERLOCK SWITCH FOR EXISTING PERSONNEL DOOR TO PREVENT MOTOR OPERATION OF THE LEAF WHEN THE PERSONNEL DOOR IS OPEN.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

½" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
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BRANCH MANAGER RKB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

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HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

1st FLOOR NEW WORK PLAN - ELECTRICAL - AREA C

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

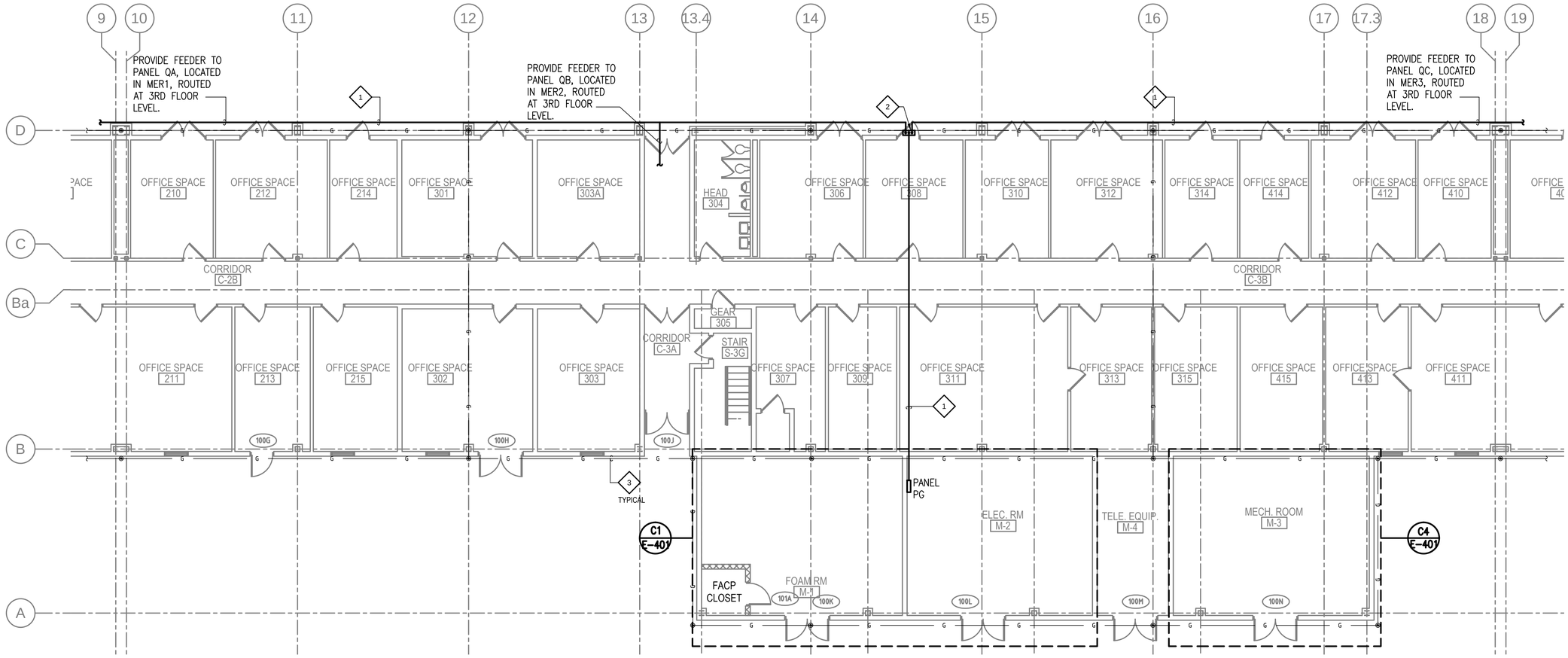
NAVFAC DRAWING NO. 12716383

SHEET 161 OF 170

E-103

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\861\187931\02 BIM-CADD\2.1 Cadd Files\1372146_E103.dwg LAYOUT NAME: Area C PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: tdberry



B1 FIRST FLOOR NEW WORK PLAN - AREA E

SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEYNOTES

1. PROVIDE FEEDERS SERVING PANELS QA, QB, AND QC ABOVE FIRST FLOOR CEILING INTO HANGAR BAY SPACE. ONCE FEEDERS PENETRATE THE HANGAR BAY, ROUTE FEEDERS UP TO MER LEVEL AND OVER TO MER LOCATIONS.
2. PROVIDE PULL BOX IN HANGAR BAY TO CHANGE FROM HORIZONTAL TO VERTICAL FEEDER CONDUIT RUN.
3. GROUNDING SHOWN FOR REFERENCE ONLY.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

⅛" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
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VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

1st FLOOR NEW WORK PLAN - ELECTRICAL - AREA E

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

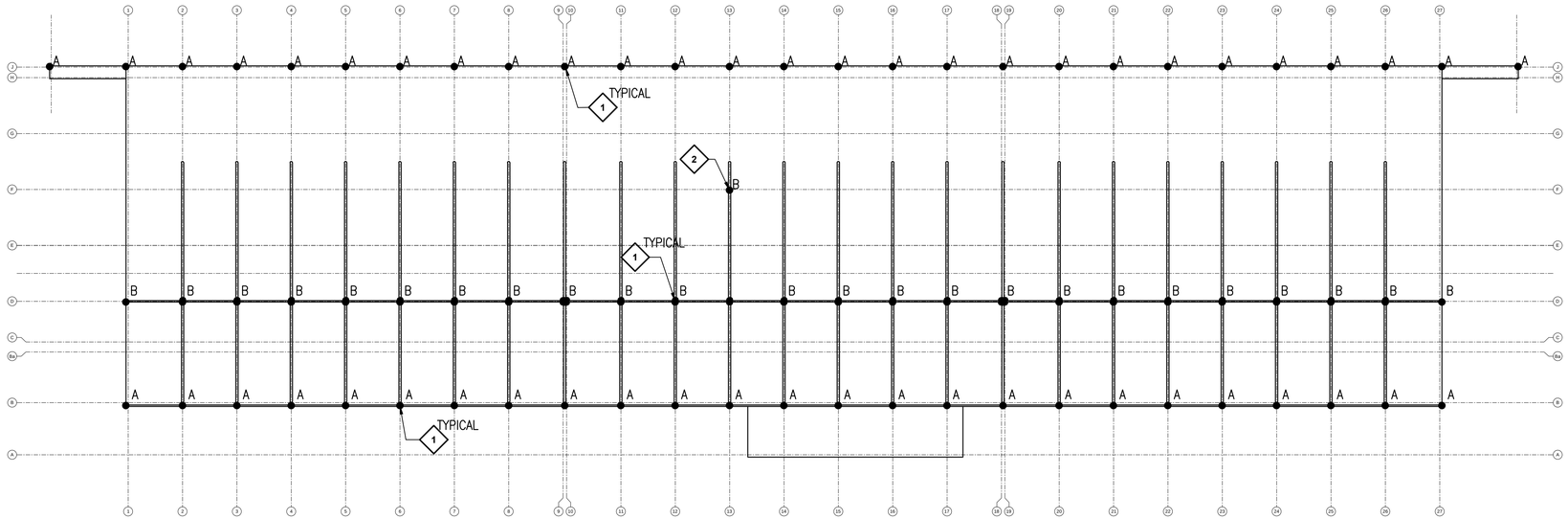
NAVFAC DRAWING NO. 12716384

SHEET 162 OF 170

E-104

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: C:\CAD\Temp\Ac-Publish_1096\1372146_E104.dwg LAYOUT NAME: Area E PLOTTED: Friday, April 22, 2016 - 11:41am USER: acjones



B1 ROOF PLAN
SCALE: 1/32" = 1'-0"

PROJECT NORTH

SHEET NOTES

1. REFER TO EXTERIOR TRUSS FRAMING PLAN IN SF-SERIES DRAWINGS FOR EXISTING TRUSS FRAMING PLAN AND TRUSS CROSS SECTION.
2. EACH EXISTING AIR TERMINAL IS BONDED TO BUILDING STEEL. THE LIGHTNING PROTECTION SYSTEM ASSUMES ELECTRICALLY CONTINUOUS STEEL STRUCTURES AND UTILIZES THE STEEL STRUCTURE AS A DOWN CONDUCTOR.
3. LIGHTING PROTECTION SYSTEM SCOPE:
   - REMOVE AND STORE AIR TERMINAL TO ALLOW FOR REPAIRS AND PAINTING OF ROOF TRUSS SYSTEM.
   - REINSTALL AIR TERMINALS PER MOUNTING DETAILS ON DRAWING E-501 AFTER REPAIRS TO TRUSS SYSTEM ARE COMPLETED.

KEYNOTES

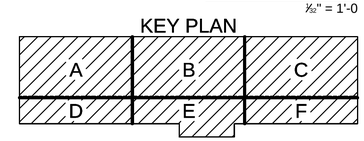
1. LOCATION OF EXISTING LIGHTNING PROTECTION SYSTEM AIR TERMINAL, TYPICAL. AIR TERMINALS ARE 1/2" DIAMETER X 24" TALL. THE LETTER INDICATES THE AIR TERMINAL MOUNTING ARRANGEMENT. REFER TO E-501.
2. RELOCATE AIR TERMINAL FROM LOWER TRUSS MEMBER TO TOP OF TRUSS TO MATCH OTHER TYPE B AIR TERMINALS. FIELD VERIFY THE LOCATION OF THIS AIR TERMINAL.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 16' 32' 48' 64'

1/32" = 1'-0

KEY PLAN



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FIRE PROTECTION DPS

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VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

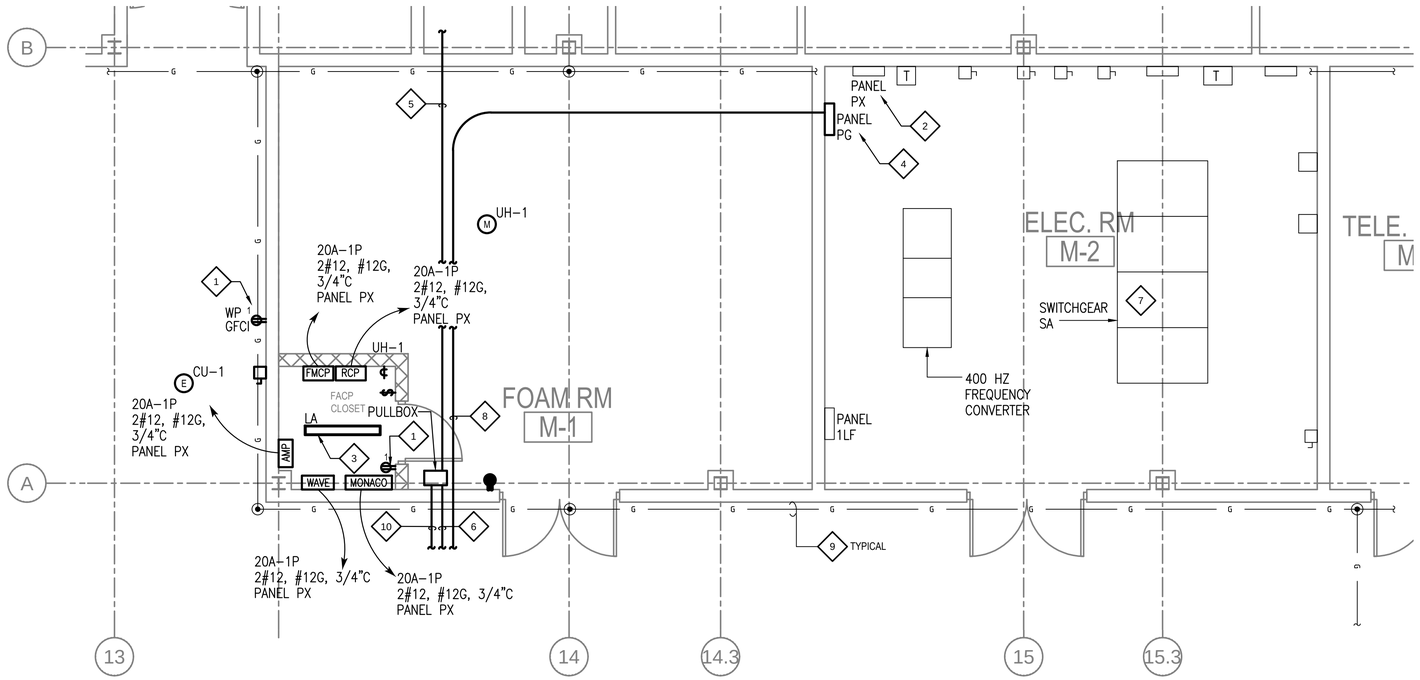
ROOF PLAN - ELECTRICAL

SCALE: AS SHOWN
EPROJECT NO.: 1372146
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12716385
SHEET 163 OF 170

E-105

DRAWFORM REVISION: 10 MAY 2014

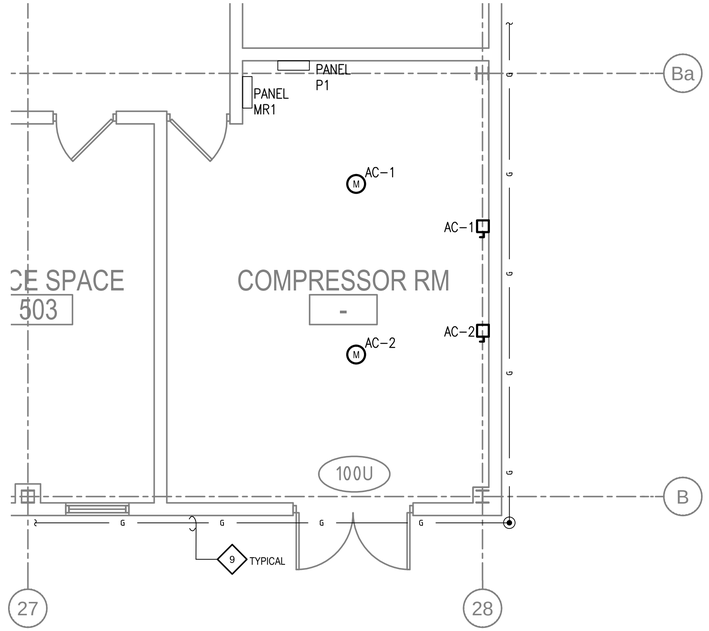
FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E105.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:27pm USER: ldberry



C1 ENLARGED PLAN - FIRST FLOOR FOAM ROOM NEW WORK PLAN

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

PROJECT NORTH



A1 ENLARGED PLAN - COMPRESSOR ROOM NEW WORK

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

PROJECT NORTH

KEY NOTES

1. PROVIDE RECEPTACLES AND CIRCUIT TOGETHER FROM A 20A-1P CIRCUIT BREAKER IN PANEL PX WITH 2#12, #12G, 3/4"C. PROVIDE CIRCUIT BREAKER TO MATCH PANELBOARD CHARACTERISTICS. CIRCUIT NUMBER INDICATES ITEMS CIRCUITED TOGETHER ON THE SAME CIRCUIT AND DOES NOT REPRESENT THE POLE POSITION IN THE PANEL.
2. PROVIDE CIRCUIT BREAKERS IN PANEL PX TO MATCH THE PANELBOARD CHARACTERISTICS.
3. PROVIDE LIGHT FIXTURE TYPE LA AND CIRCUIT TO FOAM ROOM LIGHTING CIRCUIT AHEAD OF CONTROLS. PROVIDE LIGHT FIXTURE TYPE LA AS FOLLOWS:
   * METALUX INDUSTRIAL ILED SERIES OR EQUAL.
   * NOMINAL DIMENSION OF 11"W X 46"L
   * 11,000 LUMENS
   * WIDE DISTRIBUTION
   * FROSTED ACRYLIC LENS
   * UNIVERSAL VOLTAGE
   * 4000 DEG K
   * PROVIDE AT 9' AFF
4. PROVIDE PANEL PG. REFER TO PANEL SCHEDULE AND POWER ONE-LINE DIAGRAM.
5. PROVIDE 1" C FROM THE DIVERTER VALVE CONTROL PANEL (SEE E-101) TO THE DIVERTER VALVE.
6. PROVIDE 1"C FROM INTERIOR PULLBOX TO EXTERIOR DIVERTER VALVE. REFER TO CS SERIES PLANS FOR CONTINUATION OF CONDUIT SYSTEM TO DIVERTER VALVE.
7. PROVIDE CIRCUIT BREAKERS PER DRAWING E-602. REFER TO DRAWINGS ED701, E602, AND E-701 FOR SWITCHBOARD SA WORK.
8. PROVIDE 2#12, #12G, 1"C FROM A 20A-1P CIRCUIT BREAKER IN PANEL PX TO THE SUBMERSIBLE SUMP PUMP LOCATED SOUTH OF ELECTRICAL ROOM M-2. ROUTE BRANCH CIRCUIT TO FOAM ROOM M-1 AND FOLLOW THE DIVERTER VALUE CONDUIT PATH OUT OF THE BUILDING. REFER TO CS SERIES PLANS FOR CONTINUATION OF CONDUIT DUCTBANK SYSTEM TO THE SUBMERSIBLE SUMP PUMP LOCATION. PROVIDE 20A-1P CIRCUIT BREAKER IN PANEL PX.
9. GROUNDING SHOWN FOR REFERENCE ONLY.
10. PROVIDE 1"C FROM INTERIOR PULLBOX TO EXTERIOR DIVERTER VALVE CONTAINMENT TANK. REFER TO CS SERIES PLANS FOR CONTINUATION OF CONDUIT SYSTEM TO CONTAINMENT TANK.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 2' 4' 6' 8'

½" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

NAVFAC

STATE OF NEW YORK ROBERT P. POMPO LICENSED PROFESSIONAL ENGINEER NO. 083027

the PROTECTION ENGINEERING GROUP
14585 Avion Parkway, Suite 150 Chantilly, Virginia 20151 703-488-9980 fax: 703-488-9994 www.PEGroup-Inc.com

GHD

A/E INFO

APPROVED

FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO

DES	KSO	DRW	ASC	CHK	RPP

PM/DM KPL/IAS

BRANCH MANAGER RCB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
HAMPTON ROADS IPT
NAS OCEANA ~ VIRGINIA BEACH, VIRGINIA
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

ENLARGED PLAN - 1st FLOOR ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

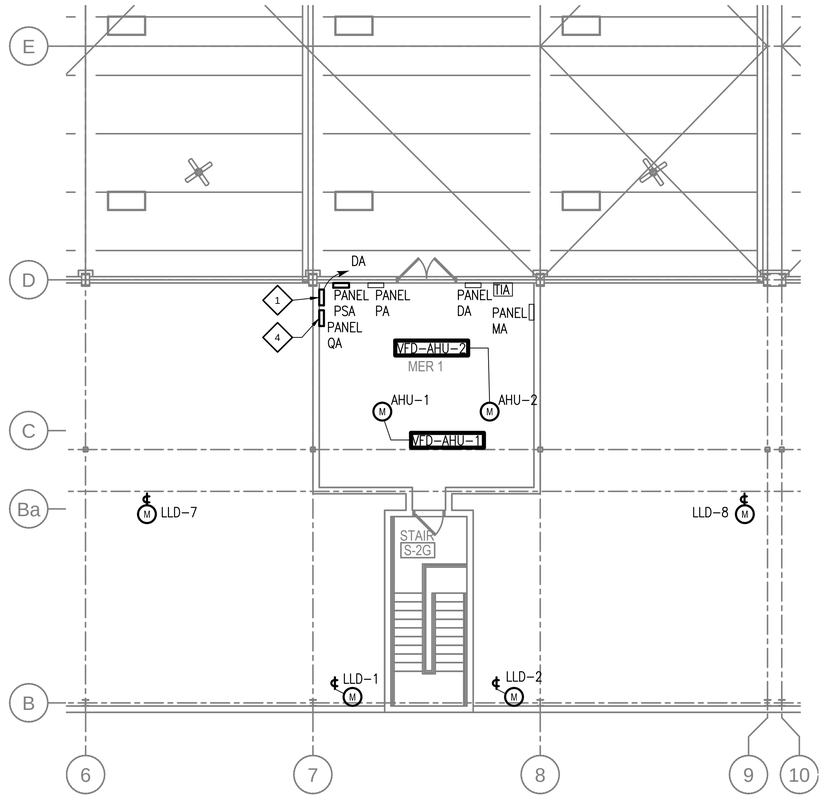
NAVFAC DRAWING NO. 12716386

SHEET 164 OF 170

E-401

DRAWFORM REVISION: 10 MAY 2014

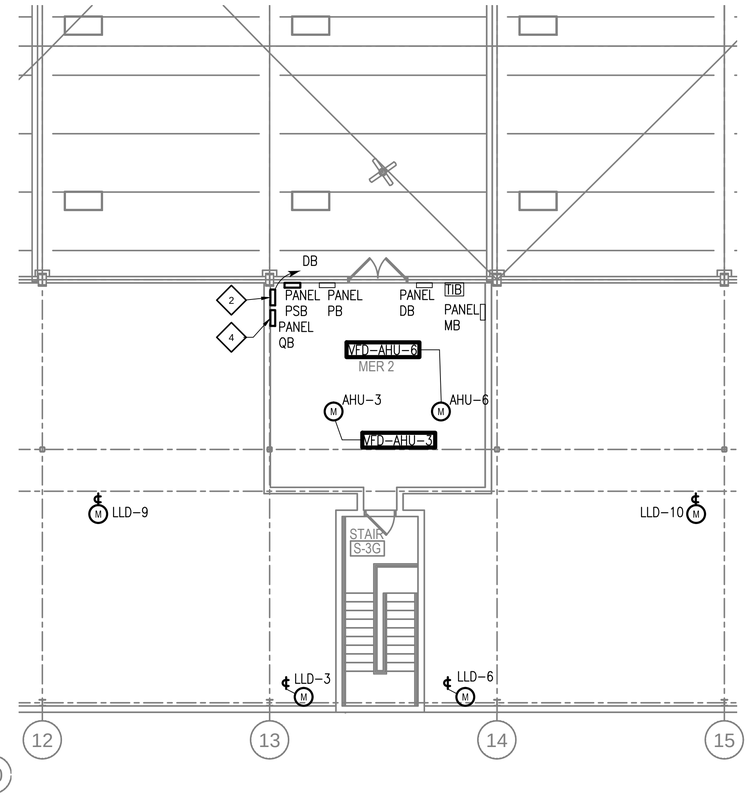
FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E401.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:28pm USER: idberry



ENLARGED PLAN - MER 1 NEW ELECTRICAL WORK

B1 SCALE: 1/8" = 1'-0"

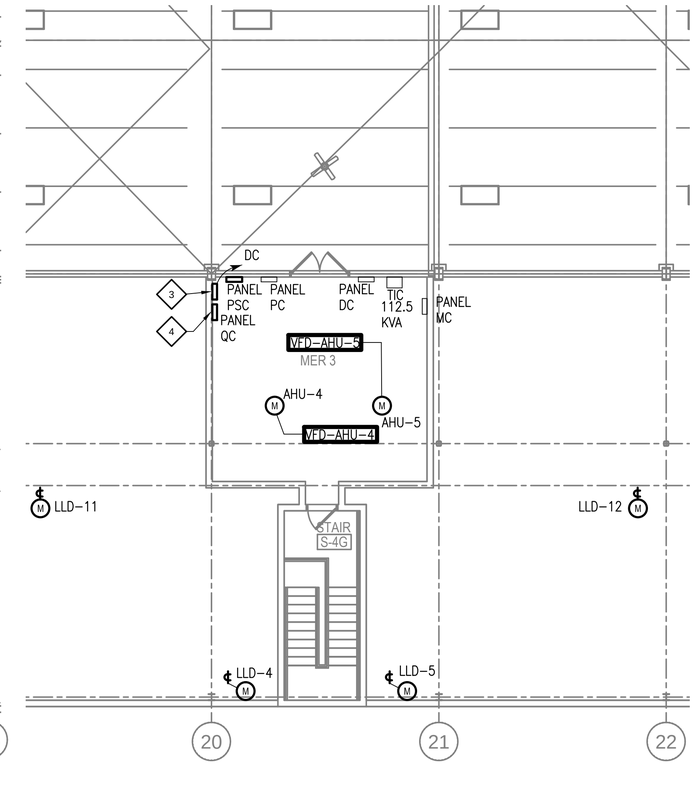
PROJECT NORTH



ENLARGED PLAN - MER 2 NEW ELECTRICAL WORK

B2 SCALE: 1/8" = 1'-0"

PROJECT NORTH



ENLARGED PLAN - MER 3 NEW ELECTRICAL WORK

B4 SCALE: 1/8" = 1'-0"

PROJECT NORTH

KEYNOTES

1. PROVIDE ONE DEDICATED 20A CIRCUIT FROM PANEL DA TO FIRE ALARM SYSTEM NOTIFICATION APPLIANCE BOOSTER PANELS (1–120V CIRCUIT FOR 4 TOTAL BOOSTER PANELS). PROVIDE 20A–1P CIRCUIT BREAKER IN PANEL DA TO MATCH PANEL CHARACTERISTICS (GE. TYPE Q 120/208V, 3–PH, 4–W). PROVIDE TERMINATIONS AT BOOSTER PANEL. REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
2. PROVIDE ONE DEDICATED 20A CIRCUIT FROM PANEL DB TO FIRE ALARM SYSTEM NOTIFICATION APPLIANCE BOOSTER PANELS (1–120V CIRCUIT FOR 4 TOTAL BOOSTER PANELS). PROVIDE 20A–1P CIRCUIT BREAKER IN PANEL DB TO MATCH PANEL CHARACTERISTICS (GE. TYPE Q 120/208V, 3–PH, 4–W). PROVIDE TERMINATIONS AT BOOSTER PANEL. REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
3. PROVIDE ONE DEDICATED 20A CIRCUIT FROM PANEL DC TO FIRE ALARM SYSTEM NOTIFICATION APPLIANCE BOOSTER PANELS (1–120V CIRCUIT FOR 4 TOTAL BOOSTER PANELS). PROVIDE 20A–1P CIRCUIT BREAKER IN PANEL DC TO MATCH PANEL CHARACTERISTICS (GE. TYPE Q 120/208V, 3–PH, 4–W). PROVIDE TERMINATIONS AT BOOSTER PANEL. REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
4. DO NOT ROUTE Q PANEL SOURCE FEEDER OR BRANCH CIRCUIT CONDUITS OUT OF PLAN NORTH SIDE (TO RIGHT OF Q PANEL). THIS SPACE IS RESERVED FOR FIRE ALARM SYSTEM BOOSTER PANELS. REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.

CAUTION: IF THIS PLAN IS A REDUCTION, GRAPHIC SCALE MUST BE USED

0 4' 8' 12' 16'

⅛" = 1'-0

KEY PLAN

A	B	C
D	E	F

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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BRANCH MANAGER RKB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
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NAVAL FACILITIES ENGINEERING COMMAND
NAS OCEANA – VIRGINIA BEACH, VIRGINIA
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

ENLARGED PLAN - ELECTRICAL RM - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

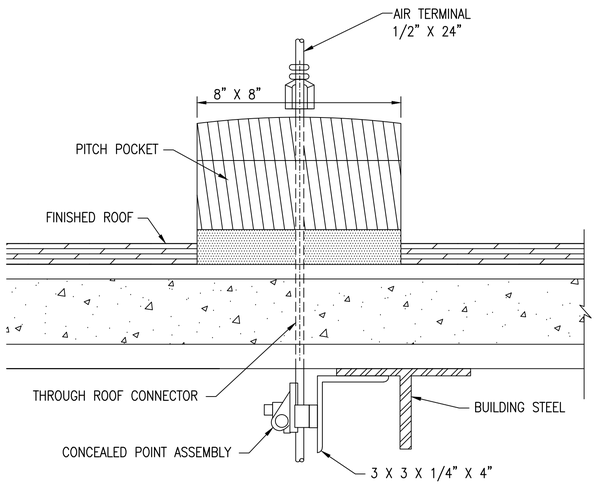
NAVFAC DRAWING NO. 12716387

SHEET 165 OF 170

E-402

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\187931\02 BIM-CADD\2.1 Cadd Files\1372146_E402.dwg LAYOUT NAME: Area C PLOTTED: Thursday, April 21, 2016 - 7:28pm USER: idberry



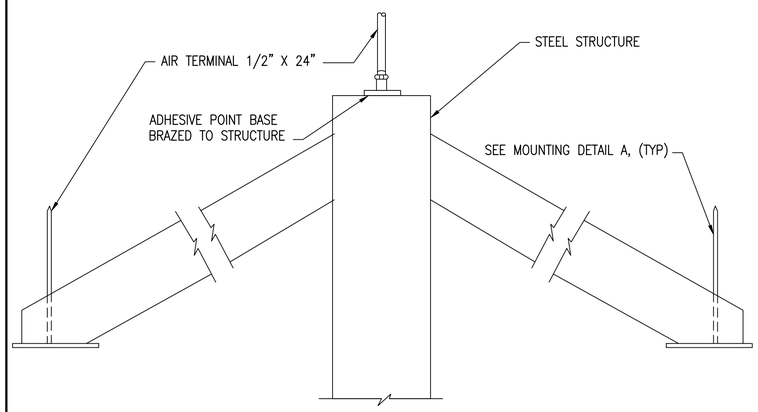
C1 AIR TERMINAL MOUNTING DETAIL A

SCALE: NO SCALE

SHEET NOTES

NOTE:

1. THIS DETAIL REPRESENTS THE MOUNTING ARRANGEMENT PER THE ORIGINAL 1986 DESIGN DOCUMENTS.



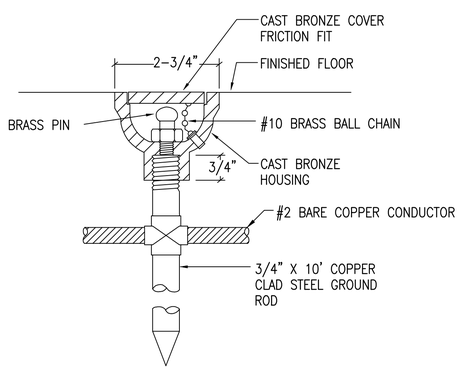
C2 AIR TERMINAL MOUNTING DETAIL B

SCALE: NO SCALE

SHEET NOTES

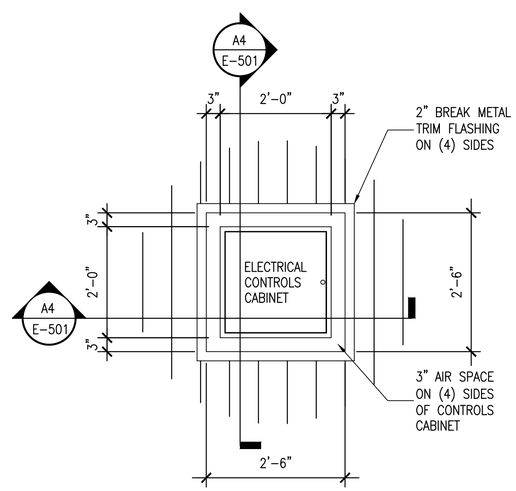
NOTE:

1. THIS DETAIL REPRESENTS THE MOUNTING ARRANGEMENT PER THE ORIGINAL 1986 DESIGN DOCUMENTS.



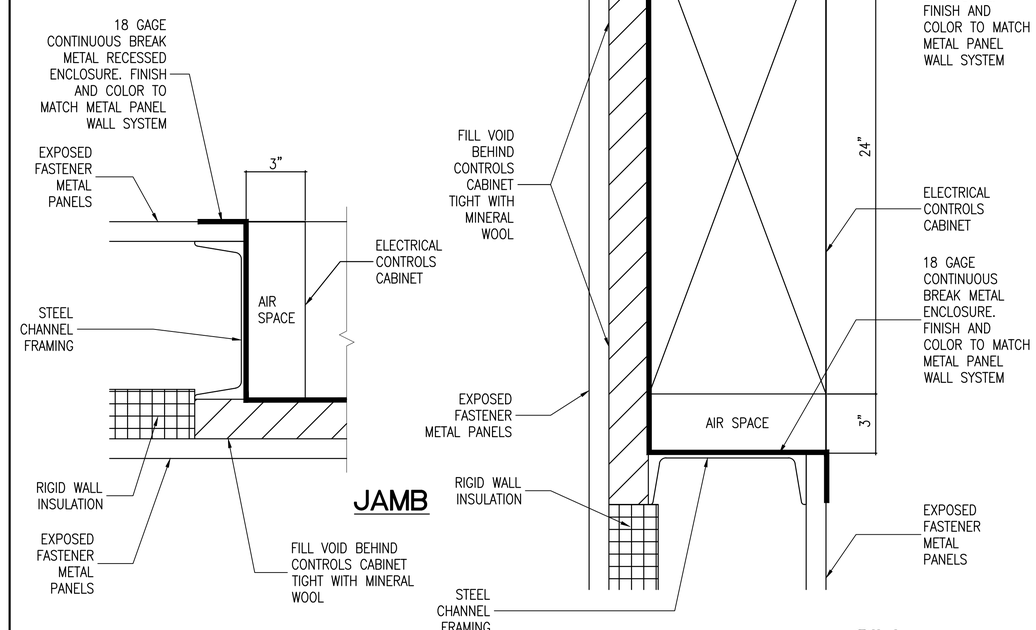
A1 STATIC GROUND RECEPTACLE DETAIL

SCALE: NO SCALE



A2 CONTROLS CABINET ENCLOSURE ELEVATION

SCALE: 3/4" = 1'-0"



A4 HANGAR DOOR CONTROLS CABINET ENCLOSURE DETAILS

SCALE: 3" = 1'-0"

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
NAS OCEANA ~ VIRGINIA BEACH, VIRGINIA

NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

DETAILS - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

NAVFAC DRAWING NO. 12716388

SHEET 166 OF 170

E-501

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E501.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:28pm USER: idberry

ELECTRIC EQUIPMENT AND CONTROL SCHEDULE

EQUIPMENT							ITEMS FURNISHED AND INSTALLED BY ELECTRICAL DIVISION															ITEMS FURNISHED AND INSTALLED BY ELECTRICAL DIVISION
EQUIP.DESIGN	NAME	ROOM LOCATION	HP	KW	V	PH	PANEL OR CONTROL CENTER	CIRCUIT BREAKER	POWER WIRING FROM PANEL TO CONTROL UNIT	POWER WIRING FROM CONTROL UNIT TO EQUIPMENT	GND WIRE	REF. NOTES	FUSED DISC. SWITCH	NON FUSED DISC. SWITCH	FIRE ALARM FAN SHUTDOWN	MANUALMOTOR STARTER	COMB. MAGNETIC STARTER	2-SPEED COMB. MAGNETIC STARTER	VARIABLE FREQUENCY DRIVES	ISOLATION TRANS. (IT) OR LINE REACTOR (LR)	SINGLE POINT CONNECT	PKG. CTRL UNIT
AC-1	AIR COMPRESSOR 1	COMPRESSOR ROOM			460	3	P1	150A-3P	3#1, 1 1/2 " C	3#1, 1 1/2 " C	#6	2	COMP RM									AU
AC-2	AIR COMPRESSOR 2	COMPRESSOR ROOM			460	3	P1	150A-3P	3#1, 1 1/2 " C	3#1, 1 1/2 " C	#6	2	COMP RM									AU
AHU-1	AIR HANDLEING UNIT 1	MER 1	7 1/2		460	3	PA	25A-3P	3#10, 1"C	3#10, 1"C	#10	1							VFD-AHU-1			
AHU-2	AIR HANDLEING UNIT 2	MER 1	7 1/2		460	3	PA	25A-3P	3#10, 1"C	3#10, 1"C	#10	1							VFD-AHU-2			
AHU-3	AIR HANDLEING UNIT 3	MER 2	7 1/2		460	3	PB	25A-3P	3#10, 1"C	3#10, 1"C	#10	1							VFD-AHU-3			
AHU-4	AIR HANDLEING UNIT 4	MER 3	7 1/2		460	3	PC	25A-3P	3#10, 1"C	3#10, 1"C	#10	1							VFD-AHU-4			
AHU-5	AIR HANDLEING UNIT 5	MER 3	7 1/2		460	3	PC	25A-3P	3#10, 1"C	3#10, 1"C	#10	1							VFD-AHU-5			
AHU-6	AIR HANDLEING UNIT 6	MER 2	7 1/2		460	3	PB	25A-3P	3#10, 1"C	3#10, 1"C	#10	1							VFD-AHU-6			
CU-1	CONDENSING UNIT 1	OUTSIDE		2	208	1	PX	15A-2P	2#12, 3/4"C	2#12, 3/4"C	#12	7	OUTSIDE									
HBD-A1	HANGAR BAY DOOR A1	HANGAR	1		460	1						3										
HBD-A2	HANGAR BAY DOOR A2	HANGAR	1		460	1						3										
HBD-A3	HANGAR BAY DOOR A3	HANGAR	1		460	1						3										
HBD-A4	HANGAR BAY DOOR A4	HANGAR	1		460	1						3										
HBD-A5	HANGAR BAY DOOR A5	HANGAR	1		460	1						3										
HBD-A6	HANGAR BAY DOOR A6	HANGAR	1		460	1						3										
HBD-B1	HANGAR BAY DOOR B1	HANGAR	1		460	1						3										
HBD-B2	HANGAR BAY DOOR B2	HANGAR	1		460	1						3										
HBD-B3	HANGAR BAY DOOR B3	HANGAR	1		460	1						3										
HBD-B4	HANGAR BAY DOOR B4	HANGAR	1		460	1						3										
HBD-B5	HANGAR BAY DOOR B5	HANGAR	1		460	1						3										
HBD-B6	HANGAR BAY DOOR B6	HANGAR	1		460	1						3										
HBD-C1	HANGAR BAY DOOR C1	HANGAR	1		460	1						3										
HBD-C2	HANGAR BAY DOOR C2	HANGAR	1		460	1						3										
HBD-C3	HANGAR BAY DOOR C3	HANGAR	1		460	1						3										
HBD-C4	HANGAR BAY DOOR C4	HANGAR	1		460	1						3										
HBD-C5	HANGAR BAY DOOR C5	HANGAR	1		460	1						3										
HBD-C6	HANGAR BAY DOOR C6	HANGAR	1		460	1						3										
LLD-1	LOW LEAKAGE AIR DAMPER 1	ABOVE 2ND FLOOR (MER 1)		0.04	115	1	DA	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	4		AU								
LLD-2	LOW LEAKAGE AIR DAMPER 2	ABOVE 2ND FLOOR (MER 1)		0.04	115	1	DA	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	4		AU								
LLD-3	LOW LEAKAGE AIR DAMPER 3	ABOVE 2ND FLOOR (MER 2)		0.04	115	1	DB	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	5		AU								
LLD-4	LOW LEAKAGE AIR DAMPER 4	ABOVE 2ND FLOOR (MER 3)		0.04	115	1	DB	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	6		AU								
LLD-5	LOW LEAKAGE AIR DAMPER 5	ABOVE 2ND FLOOR (MER 3)		0.04	115	1	DC	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	6		AU								
LLD-6	LOW LEAKAGE AIR DAMPER 6	ABOVE 2ND FLOOR (MER 2)		0.04	115	1	DC	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	5		AU								
LLD-7	LOW LEAKAGE AIR DAMPER 7	ABOVE 2ND FLOOR (MER 1)		0.04	115	1	DA	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	4		AU								
LLD-8	LOW LEAKAGE AIR DAMPER 8	ABOVE 2ND FLOOR (MER 1)		0.04	115	1	DA	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	4		AU								
LLD-9	LOW LEAKAGE AIR DAMPER 9	ABOVE 2ND FLOOR (MER 2)		0.04	115	1	DB	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	5		AU								
LLD-10	LOW LEAKAGE AIR DAMPER 10	ABOVE 2ND FLOOR (MER 2)		0.04	115	1	DB	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	5		AU								
LLD-11	LOW LEAKAGE AIR DAMPER 11	ABOVE 2ND FLOOR (MER 3)		0.04	115	1	DC	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	6		AU								
LLD-12	LOW LEAKAGE AIR DAMPER 12	ABOVE 2ND FLOOR (MER 3)		0.04	115	1	DC	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12	6		AU								
UH-1	GAS FIRED UNIT HEATER	FOAM ROOM	1/20		115	1	PX	15A-1P	2#12, 3/4"C	2#12, 3/4"C	#12			AU								

NOTES:

1. UTILIZE THE EXISTING 25A-3P CIRCUIT BREAKER IN DESIGNATED PANEL. PROVIDE POWER WIRING AS SCHEDULED.
2. PROVIDE FUSE TYPE AND SIZE PER MANUFACTURERS RECOMMENDATION. REMOVE THE EXISTING CIRCUIT BREAKER (GE SPECTRA RMS H1 BREAKER WITH SRPF250A PLUG) 125A PLUG AND REPLACE WITH A 150A PLUG.
3. PROVIDE POWER TO HANGAR BAY DOORS THROUGH THE THREE PHASE TROLLEY DUCT BUS SYSTEM. THE TROLLEY DUCT IS POWERED FROM THE EXISTING HANGAR DOOR FEEDER PER NOTES ON DRAWINGS ED-102 AND E-102.
4. PROVIDE DRIVE MOTOR ASSEMBLY, CONTROL PANEL, SAFETY SWITCH, CONTROL PUSH BUTTONS, AND CIRCUITRY WITHIN DOOR SYSTEM. UTILIZE THE EXISTING POWER FEED FROM THE DOOR CONTROL PANEL TO THE TROLLEY DUCT POWER BUSSING ABOVE THE DOOR.
5. CIRCUIT LLD-1, LLD-2, LLD-7, AND LLD-8 TOGETHER FROM THE SAME CIRCUIT BREAKER.
6. CIRCUIT LLD-3, LLD-6, LLD-9, AND LLD-10 TOGETHER FROM THE SAME CIRCUIT BREAKER.
7. CIRCUIT LLD-4, LLD-5, LLD-11, AND LLD-12 TOGETHER FROM THE SAME CIRCUIT BREAKER.

TRANSFORMER SCHEDULE

ELECTRICAL CHARACTERISTICS								
XFMR. NUMBER	KVA	MTG	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PHASE	CONNECTION TYPE	GROUND	REMARK
T1	75	WALL	480	200Y/115	3	DELTA/WYE	YES	1
T2	3	WALL	480	120	1		YES	

REMARK

1. PROVIDE 400 HZ TRANSFORMER WITH HARMONIC FILTERING AND TWO TAPS ABOVE NORMAL FULL CAPACITY.

VARIABLE FREQUENCY DRIVE SCHEDULE

UNIT NO.	LOCATION	SERVICE		FAN / PUMP		MOTOR				TYPE	DESIGN PRODUCT	OUTPUT	REMARKS
			MAX.	MAX.	TOTAL	HP	VOLTS	PHASE	RPM			AMPS	
			RPM	CFM / GPM	S.P.								
VFD-AHU-1	MER 1	AHU-1	3457	43.6 GPM	4.38	7-1/2	460	3	1750	VFD	ABB: ACH550-UH	9.7	
VFD-AHU-2	MER 1	AHU-2	3457	43.6 GPM	4.38	7-1/2	460	3	1750	VFD	ABB: ACH550-UH	9.7	
VFD-AHU-3	MER 2	AHU-3	3457	43.6 GPM	4.38	7-1/2	460	3	1750	VFD	ABB: ACH550-UH	9.7	
VFD-AHU-4	MER 3	AHU-4	3457	43.6 GPM	4.38	7-1/2	460	3	1750	VFD	ABB: ACH550-UH	9.7	
VFD-AHU-5	MER 3	AHU-5	3457	43.6 GPM	4.38	7-1/2	460	3	1750	VFD	ABB: ACH550-UH	9.7	
VFD-AHU-6	MER 2	AHU-6	4335	27.8 GPM	4.31	7-1/2	460	3	1750	VFD	ABB: ACH550-UH	9.7	

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NAS OCEANA – VIRGINIA BEACH, VIRGINIA

NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

SCHEDULES - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

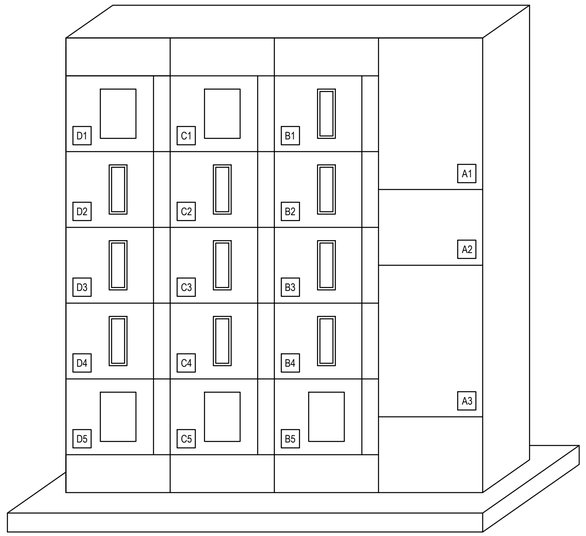
NAVFAC DRAWING NO. 12716389

SHEET 167 OF 170

E-601

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E601.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:28pm USER: idberry



SWITCHBOARD SA ELEVATION

SCALE: NO SCALE

NOTES:

1. THE SWITCH BOARD IS A GENERAL ELECTRIC AV–LINE SWITCH BOARD. PROVIDE BREAKERS THAT ARE COMPATIBLE AND LISTED FOR USE WITH THE EXISTING SWITCH BOARD. IF UL LISTED BREAKERS ARE NO LONGER AVAILABLE AT THE TIME OF CONSTRUCTION, PROVIDE THIRD PARTY BREAKERS.
2. COORDINATE POWER SHUT–DOWN WITH THE CONTRACTING OFFICER PER SPECIFICATIONS.

SWITCH BOARD SA SCHEDULE

A1	EXISTING METER TO REMAIN
A2	EXISTING SPACE AND BUS TO REMAIN
A3	REMOVE 3000A MAIN CIRCUIT BREAKER AND PROVIDE 3000A MAIN CIRCUIT BREAKER WITH LONG TIME, SHORT TIME, INSTANTANEOUS ,AND GROUND FAULT PROTECTION RATED AT 65KAIC.
B1	REMOVE 200A CIRCUIT BREAKER SERVING PANEL PP AND PROVIDE 200A CIRCUIT BREAKER RATED AT 65KAIC
B2	EXISTING 400A CIRCUIT BREAKER LABELED "CHILLER". CIRCUIT BREAKER TO REMAIN AND RELABEL AS "SPARE".
B3	REMOVE 400A CIRCUIT BREAKER SERVING PANEL PA AND PROVIDE 400A CIRCUIT BREAKER RATED AT 65KAIC
B4	REMOVE 800A CIRCUIT BREAKER SERVING PANEL PSA AND PROVIDE 800A CIRCUIT BREAKER RATED AT 65KAIC
B5	EXISTING SPACE AND BUS TO REMAIN
C1	EXISTING SPACE AND BUS TO REMAIN
C2	EXISTING 800A CIRCUIT BREAKER LABELED "MG CONTROLLER". CIRCUIT BREAKER TO REMAIN AND RELABEL AS "SPARE".
C3	REMOVE 400A CIRCUIT BREAKER SERVING PANEL PB AND PROVIDE 400A CIRCUIT BREAKER RATED AT 65KAIC
C4	REMOVE 800A CIRCUIT BREAKER SERVING PANEL PSB AND PROVIDE 800A CIRCUIT BREAKER RATED AT 65KAIC
C5	EXISTING SPACE AND BUS TO REMAIN
D1	EXISTING SPACE AND BUS TO REMAIN
D2	REMOVE 800A CIRCUIT BREAKER LABELED "MG CONTROLLER A" AND PROVIDE 800A CIRCUIT BREAKER RATED AT 65KAIC. RELABEL AS "UNITRON FREQUENCY CONVERTER".
D3	REMOVE 400A CIRCUIT BREAKER SERVING PANEL PC AND PROVIDE 400A CIRCUIT BREAKER RATED AT 65KAIC.
D4	REMOVE 800A CIRCUIT BREAKER SERVING PANEL PSC AND PROVIDE 800A CIRCUIT BREAKER RATED AT 65KAIC
D5	EXISTING SPACE AND BUS TO REMAIN

PANELBOARD SCHEDULE QA

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: | MLO: | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: | LOCATION: MER1 | SOURCE: PANEL PG | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PSP-A, MOD 1, NO. 1	125	3	10960	10960		3	125	PSP-A, MOD 2, NO.1		2
3						10960	10960					4
5							10960					6
7		PSP-A, MOD 1, NO. 2	125	3	10960	10960		3	125	PSP-A, MOD 2, NO.2		8
9						10960	10960					10
11							10960					12
13												14
15												16
17												18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					43840	43840	43840	NOTE: PANEL QA IS A 400 HZ SYSTEM PANEL				
TOTAL CONNECTED KVA:					138.4							

PANELBOARD SCHEDULE PSA

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: | MLO: 400 A | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: | LOCATION: MER1 | SOURCE: SWITCHGEAR SA | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PSPS-A, MOD 1, NO. 1	225	3	56200	56200		225	3	PSP-A, MOD 2, NO.1		2
3						56200	56200					4
5							56200					6
7		PSP-A, MOD 1, NO2	225	3	56200	56200		225	3	PSP-A, MOD 2, NO. 2		8
9						56200	56200					10
11							56200					12
13												14
15												16
17												18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					224800	224800	224800	NOTE:				
TOTAL CONNECTED KVA:					709.9							

PANELBOARD SCHEDULE QB

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: | MLO: | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: | LOCATION: MER2 | SOURCE: PANEL PG | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PSP-A, MOD 2, NO. 3	125	3	10960	10960		3	125	PSP-A, MOD 3, NO. 1		2
3						10960	10960					4
5							10960					6
7		PSP-A, MOD 4, NO. 1	125	3	10960	10960		3	125	PSP-A, MOD 3, NO. 2		8
9						10960	10960					10
11							10960					12
13					10960			3	125	PSP-A, MOD 3, NO. 3		14
15						10960						16
17							10960					18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					54800	54800	54800	NOTE: PANEL QB IS A 400 HZ SYSTEM PANEL				
TOTAL CONNECTED KVA:					173.1							

PANELBOARD SCHEDULE PSB

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: | MLO: 400 A | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: | LOCATION: MER2 | SOURCE: SWITCHGEAR SA | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PSP-A, MOD 2, NO. 3	225	3	56200	56200		3	225	PSP-A, MOD 3, NO.1		2
3						56200	56200					4
5							56200					6
7		PSP-A, MOD 4, NO. 1	225	3	56200	56200		3	225	PSP-A, MOD 3, NO. 2		8
9						56200	56200					10
11							56200					12
13					56200			3	225	PSPSA, MOD 3, NO 3		14
15						56200						16
17							56200					18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					281000	281000	281000	NOTE:				
TOTAL CONNECTED KVA:					887.4							

PANELBOARD SCHEDULE QC

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: | MLO: | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: | LOCATION: MER3 | SOURCE: PANEL PG | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PSP-A, MOD 4, NO. 2	125	3	10960	10960		3	125	PSP-A, MOD 5, NO. 2		2
3						10960	10960					4
5							10960					6
7		PSP-A, MOD 5, NO. 1	125	3	10960	10960		3	125	PSP-A, MOD5, NO. 3		8
9						10960	10960					10
11							10960					12
13												14
15												16
17												18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					43840	43840	43840	NOTE:PANEL QC IS A 400 HZ SYSEM PANEL				
TOTAL CONNECTED KVA:					138.4							

PANELBOARD SCHEDULE PSC

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: | MLO: | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: | LOCATION: MER3 | SOURCE: SWITCHGEAR SA | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PSP-A, MOD 4, NO. 2	225	3	56200	56200		3	225	PSP-A, MOD 5, NO. 2		2
3						56200	56200					4
5							56200					6
7		PSP-A, MOD 5, NO. 1	225	3	56200	56200		3	225	PSP-A, MOD 5, NO. 3		8
9						56200	56200					10
11							56200					12
13												14
15												16
17												18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					224800	224800	224800	NOTE:				
TOTAL CONNECTED KVA:					709.9							

GENERAL NOTES:

A. THE PANELBOARD SCHEDULES ON THIS DRAWING ARE FOR NEW PANELBOARDS. THE NEW PANELBOARD DESIGNATIONS MATCH THE REMOVED PANELBOARDS.

PANELBOARD SCHEDULE PG

VOLTS: 480/277 | PHASE: 3 | WIRE: 3 | MAINS: | MCB: 1200 | MLO: | A.I.C. RATING: | BRKR SPACE: | MTG./NEMA #: 1 | LOCATION: MAIN ELECTRIC ROOM | SOURCE: 400 HZ FREQUENCY CONVERTER | FEEDER: REFER TO ONE-LINE DIAGRAM

#	LOAD TYPE	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLE	CONNECTED LOAD (WATTS) PH. A	PH. B	PH. C	BREAKER POLE	BREAKER AMP	LOAD DESCRIPTION	LOAD TYPE	#
1		PANEL PSA	400	3	224800							2
3						224800						4
5							224800					6
7		PANEL PSB	400	3	281000							8
9						281000						10
11							281000					12
13		PANEL PSC	400	3	224800							14
15						224800						16
17							224800					18
19												20
21												22
23												24
25												26
27												28
29												30
TOTAL CONNECTED LOAD:					730600	730600	730600	NOTE:PANEL PG IS A 400 HZ SYSTEM PANEL				
TOTAL CONNECTED KVA:					2307.2							

STM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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STATE OF NEW YORK ROBERT P. POMPEO LICENSED PROFESSIONAL ENGINEER NO. 083027

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A/E INFO

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FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO

DES KSO DRW ASC CHK RPP

PM/DM KPL/IAS

BRANCH MANAGER RPB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
NAS OCEANA ~ VIRGINIA BEACH, VIRGINIA
HAMPTON ROADS PT
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

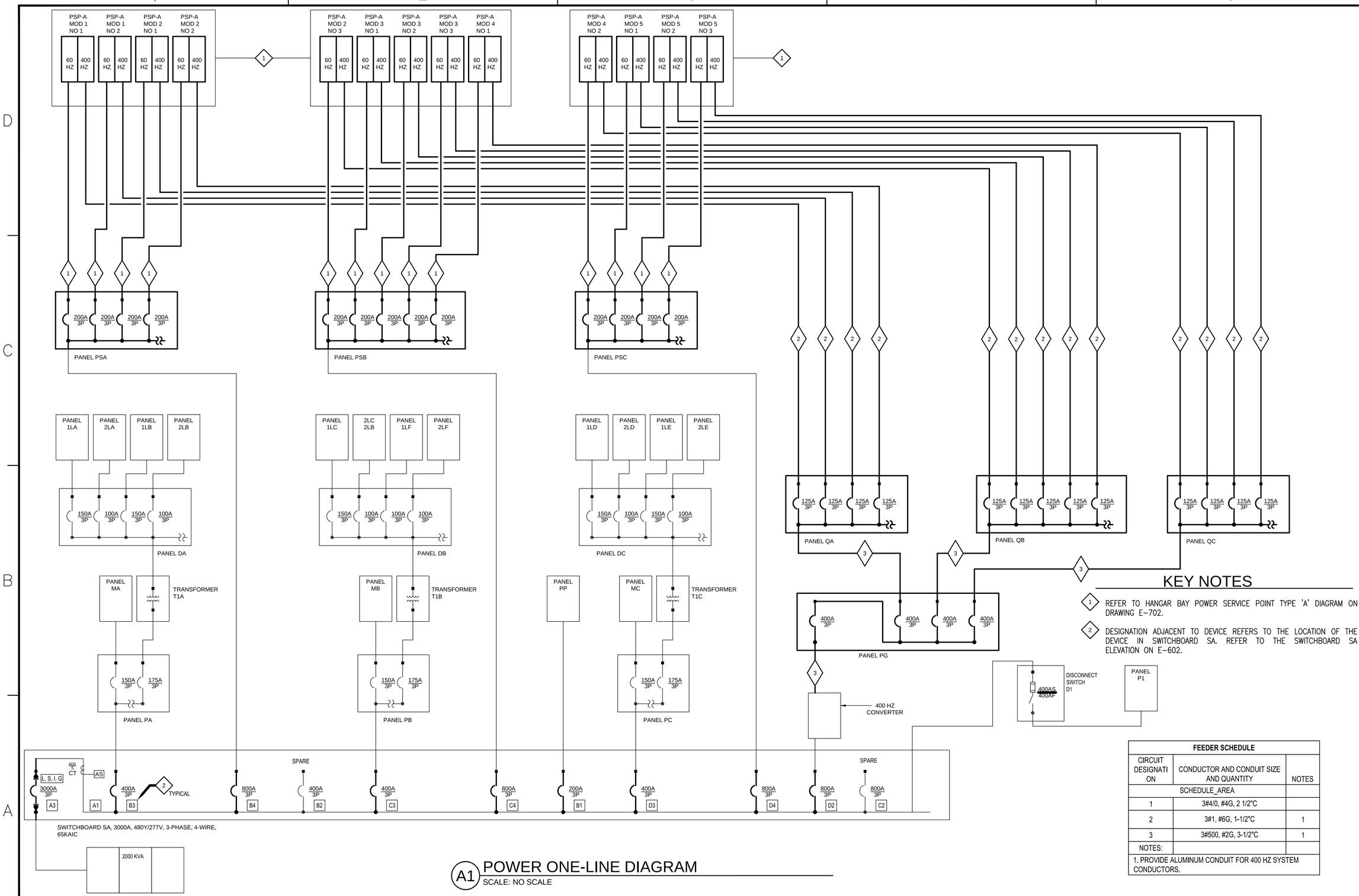
SCHEDULES - ELECTRICAL

SCALE: AS SHOWN
EPROJECT NO.: 1372146
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 12716390
SHEET 168 OF 170

E-602

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E602.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:28pm USER: idberry



KEY NOTES

1. REFER TO HANGAR BAY POWER SERVICE POINT TYPE 'A' DIAGRAM ON DRAWING E-702.
2. DESIGNATION ADJACENT TO DEVICE REFERS TO THE LOCATION OF THE DEVICE IN SWITCHBOARD SA. REFER TO THE SWITCHBOARD SA ELEVATION ON E-602.

FEEDER SCHEDULE

CIRCUIT DESIGNATION	CONDUCTOR AND CONDUIT SIZE AND QUANTITY	NOTES
SCHEDULE_AREA		
1	3#4/0, #4G, 2 1/2"C	
2	3#1, #6G, 1-1/2"C	1
3	3#500, #2G, 3-1/2"C	1
NOTES:		
1. PROVIDE ALUMINUM CONDUIT FOR 400 HZ SYSTEM CONDUCTORS.		

A1 POWER ONE-LINE DIAGRAM

SCALE: NO SCALE

SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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SATISFACTORY TO

DES KSO DRW ASC CHK RPP

PM/DM KPL/IAS

BRANCH MANAGER RCB

CHIEF ENG/ARCH Mark J. Airaghi, PE

FIRE PROTECTION DPS

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND ~ MID-ATLANTIC
HAMPTON ROADS IPT
NAVAL FACILITIES ENGINEERING COMMAND
NAS OCEANA - VIRGINIA BEACH, VIRGINIA
NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

RISER DIAGRAMS - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

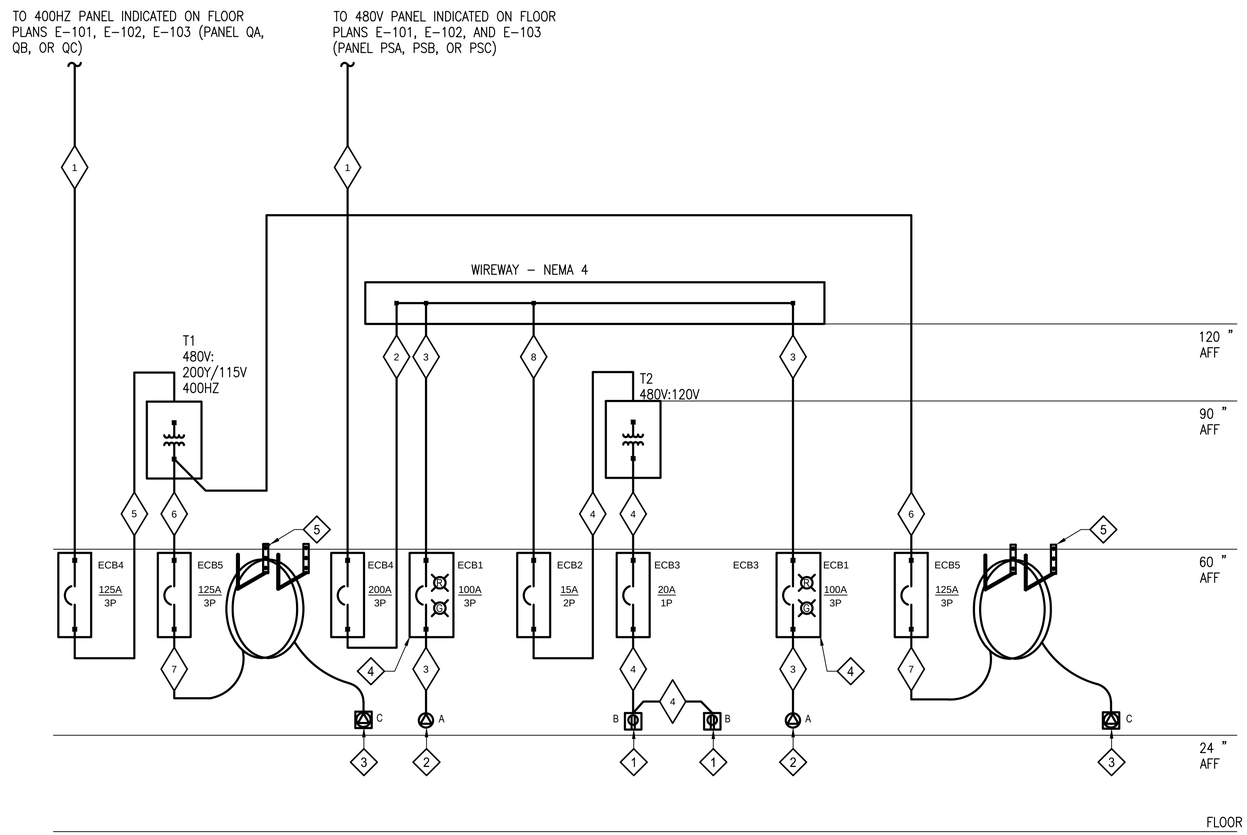
NAVFAC DRAWING NO. 12716391

SHEET 169 OF 170

E-701

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: G:\86\18793\02 BIM-CADD\2.1 Cadd Files\1372146_E701.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 - 7:28pm USER: idberry



A1 HANGAR BAY POWER SERVICE POINT TYPE 'A' DIAGRAM

SCALE: NO SCALE

SHEET NOTES

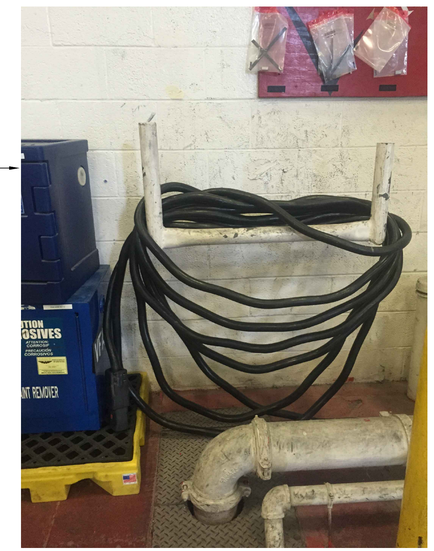
1. PROVIDE NEMA 4 ENCLOSURES IN THE HANGAR BAY UNLESS NOTED OTHERWISE.
2. PROVIDE ALL POWER SERVICE POINT DEVICES, EQUIPMENT, AND RACEWAYS A MINIMUM OF 24" AFF.
3. HANGAR BAY POWER SERVICE POINT TYPE 'A' DIAGRAM IS TYPICAL FOR 13 POWER SERVICE POINTS. REFER TO DRAWINGS E-101, E-102, AND E-103 FOR LOCATIONS.

KEY NOTES

1. PROVIDE WEATHER PROOF GFCI DUPLEX RECEPTACLE (NEMA 5-20R)
2. PROVIDE 100A-3P, 480V, CLASS L RECEPTACLE.
3. PROVIDE 400HZ AIRCRAFT PLUG IN ACCORDANCE WITH MS 25486-17.
4. PROVIDE ECB1 WITH RED AND GREEN INDICATING LIGHTS. ILLUMINATE RED FOR POWER "ON" POSITION AND GREEN FOR POWER "OFF" POSITION.
5. PROVIDE CABLE HOOK SIMILAR TO OTHER CABLE HOOKS ON BASE. REFER TO STRUCTURAL DETAIL 5 ON DRAWING S-503 FOR ADDITIONAL INFORMATION.

FEEDER SCHEDULE

CIRCUIT DESIGNATION	CONDUCTOR AND CONDUIT SIZE AND QUANTITY	NOTES
SCHEDULE_AREA		
1	REFER TO ONE-LINE DIAGRAM ON DRAWING, E-701	
2	3#4/0, #4G, 2-1/2"C	
3	3#2, #8G, 1-1/2"C	
4	2#12, #12G, 3/4"C	
5	3#1, #6G, 1-1/2"C	
6	4#2/0, #6G, 2"C	
7	AIRCRAFT SERVICE CABLE, REFER TO SPECIFICATION SECTION 26, 35, 43 400HZ SOLID STATE FREQUECNY CONVERTER	
8	2#6, #8G, 3/4"C	



SYM	DESCRIPTION	DATE	APPR
1	FINAL SUBMISSION	5/2/2016	

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PM/DM KPL/IAS

BRANCH MANAGER

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FIRE PROTECTION DPS

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NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA

HANGAR 111 FIRE PROTECTION AND STRUCTURAL REPAIRS

RISER DIAGRAMS - ELECTRICAL

SCALE: AS SHOWN

EPROJECT NO.: 1372146

CONSTR. CONTR. NO.

NAVFAC DRAWING NO. 12716392

SHEET 170 OF 170

E-702

DRAWFORM REVISION: 10 MAY 2014

FILE NAME: C:\86\187931\02 BIM-CADD\2.1 Cadd Files\1372146_E702.dwg LAYOUT NAME: Area A PLOTTED: Thursday, April 21, 2016 – 7:28pm USER: idberry