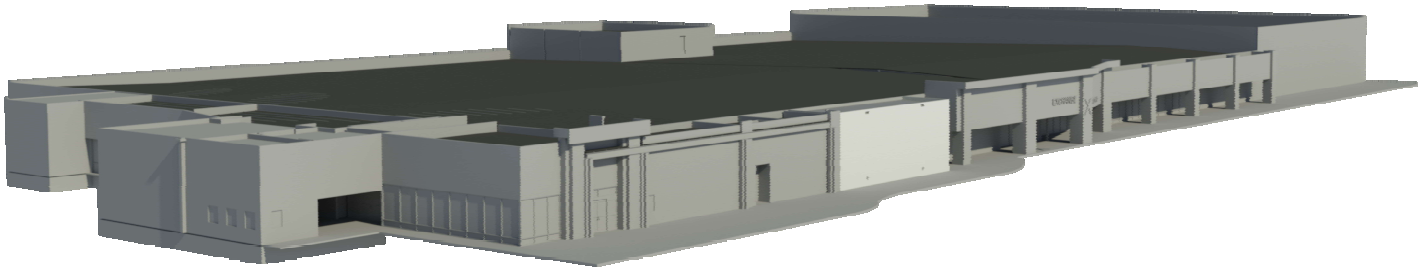
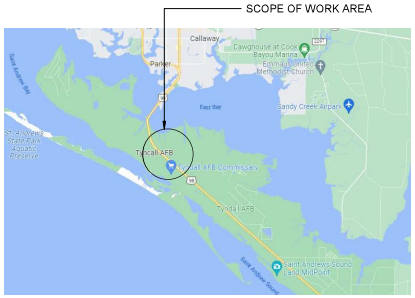
Pond - CDM Smith JV LP
3500 Parkway Lane Suite 500
Peachtree Corners, Georgia 30092

Remove and Install New B950 BX and Mall HVAC System, MCC Controls and MCC Power Board for HVAC Equipment

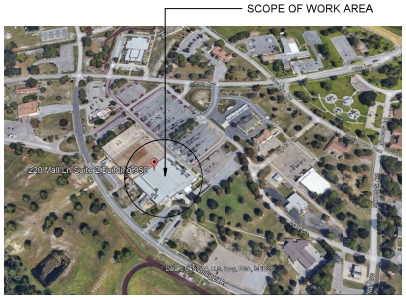
Client Project Number: XLWU21-1013D
Bldg 950



SOLICITATION NO.: FA481922R0041
CONTRACT NO.: FA890321D0012
ISSUE DATE: 09/13/2024
VOLUME: 01 of 01



VICINITY MAP N



LOCATION MAP N

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: M.HANSON
CHECKED BY: K.HOTELCOB
QUALITY CONTROL BY: S.FLANNIGER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA481922R0041
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND CDM Smith
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B950 BX and Mall HVAC System, MCC Controls and MCC Power Board for HVAC Equipment
Client Project Number: XLWU21-1013D

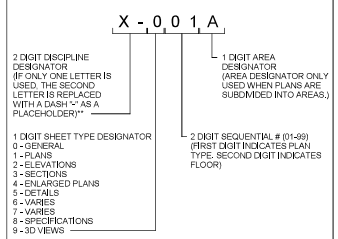
COVER SHEET

POND # 1220954

SHEET ID
G-001

File Path: I:\...
Plot Date: 9/13/2024 1:27:01 PM

SHEET NAMING CONVENTION



BUILDING CODE SUMMARY

PROJECT INFORMATION

PROJECT NAME: REMOVE AND INSTALL NEW B950 BX AND MALL HVAC SYSTEM, MCC CONTROLS AND MCC POWER BOARD FOR HVAC EQUIPMENT.

PROJECT LOCATION: 220 MALL LANE, SUITE E, BUILDING 950, TYNDALL AFG, FL 32403

PROJECT SCOPE: THE SCOPE OF THIS PROJECT INVOLVES A LEVEL 2 ALTERATION IN ACCORDANCE WITH SECTION 603 OF THE IEBC WITHIN THE BX. THIS WORK INCLUDES THE REMOVAL AND REPLACEMENT OF THE EXISTING HVAC EQUIPMENT SERVING THE BASE EXCHANGE (NOT COMMISSARY) AND TO UPDATE THE BX ARE BUILDING MANAGEMENT SYSTEM (BMS) SO THAT IT CAN BE MONITORED INDEPENDENTLY AND OFFSITE BY BASE COMM. A NEW MECHANICAL ROOM ADDITION WILL BE ADDED TO ACCOMODATE NEW MECHANICAL EQUIPMENT AT THE FRONT OF THE BUILDING. THE WORK ALSO INCLUDES MINOR REMOVAL, PATCHING, AND REINSTALLATION OF EXISTING CEILING AND WALL SYSTEMS IN KIND TO ACCOMODATE THE INSTALLATION OF THE NEW MECHANICAL EQUIPMENT AND DUCTWORK THROUGHOUT THE BUILDING. EXISTING LIGHTING, CCTV, SPRINKLER, AND OTHER CEILING MOUNTED DEVICES ARE TO BE REUSED IN THIER PRESENT LOCATIONS.

ADDITIONALLY A NEW MECHANICAL ROOM WILL BE ADDED TO THE FRONT OF THE BUILDING. THIS ROOM WILL ONLY BE ACCESSIBLE FROM THE EXTERIOR. MINOR MODIFICATIONS TO THE EXISTING ROOF DRAINAGE AND NEW SUBSURFACE DRAINAGE IS TO BE PROVIDED FOR THE NEW ADDITION.

LIST OF APPLICABLE CODES

INTERNATIONAL BUILDING CODE (IBC), 2021
INTERNATIONAL EXISTING BUILDING CODE (IEBC), 2021
INTERNATIONAL FIRE CODE (IFC), 2021
INTERNATIONAL PLUMBING CODE (IPC), 2021
INTERNATIONAL MECHANICAL CODE (IMC), 2021
NATIONAL ELECTRICAL CODE (NEC), 2017
NFPA 70
INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2009
ANSI A117.1, 2017
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101: LIFE SAFETY CODE (LSC), 2021
NFPA 1, 2021
UFC 1-200-01, DOD BUILDING CODE, 01 SEPT. 2022 W CHANGE 1, 24 FEB. 2023
UFC 3-410-01 HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS WITH CHANGE 8, 07-21-2021

SHEET NUMBER	SHEET NAME
GENERAL	
G-001	COVER SHEET
G-002	SHEET INDEX & CODE SUMMARY
CIVIL	
C-001	CIVIL GENERAL NOTES, LEGEND AND ABBREVIATIONS
C-002	LOCATION MAP, HAUL ROUTE AND LAYDOWN AREAS
C-003	CODE COMPLIANCE PLAN
V-101	TOPOGRAPHIC SURVEY
CD101	CIVIL DEMOLITION PLAN
CS101	CIVIL SITE PLAN
CG101	CIVIL GRADING PLAN
CU101	CIVIL UTILITY PLAN
C-501	CIVIL CONSTRUCTION DETAILS
C-502	CIVIL CONSTRUCTION DETAILS
C-503	CIVIL CONSTRUCTION DETAILS
CE101	EROSION AND SEDIMENT CONTROL PLAN
CE501	EROSION AND SEDIMENT CONTROL DETAILS
CE502	CIVIL CONSTRUCTION DETAILS
CE503	EROSION AND SEDIMENT CONTROL DETAILS
STRUCTURAL	
S-001	STRUCTURAL NOTES
S-002	BUILDING FOUNDATION AND ROOF PLAN
S-003	BUILDING SECTIONS AND DETAILS
S-004	COOLING TOWER SUPPORT STRUCTURE - PLAN, SECTION AND DETAIL
S-500	STANDARD CONCRETE DETAILS
S-501	STANDARD MASONRY DETAILS
S-502	STANDARD ROOF JOIST DETAILS
ARCHITECTURAL	
A-001	GENERAL NOTES, ABBREVIATIONS & SYMBOLS
A-010	EXISTING FLOOR PLAN & PHOTO KEY PLAN
A-011	MECH.ROOM-MEZZANINE- AREA E -FLOOR PLAN
A-012	EXISTING CONDITIONS PHOTOS
A-013	EXISTING CONDITIONS PHOTOS
A-014	EXTERIOR ELEVATIONS
A-015	BUILDING SECTIONS
A-016	EXISTING REFLECTED CEILING PLAN
A-017	EXISTING REFLECTED CEILING - ENLARGED PLAN - AREA D,A & GARDENING AREA
A-018	EXISTING REFLECTED CEILING PLAN - ENLARGED PLAN - AREA B
AD101	OVERALL DEMOLITION PLAN
AD151	DEMOLITION ROOF PLAN
A-101	OVERALL FLOOR PLAN
A-151	OVERALL ROOF PLAN
A-152	NEW MECH.ROOM ENLARGED FLOOR PLANS
A-202	NEW MECH. ROOM - EXTERIOR ELEVATIONS & BUILDING SECTION
A-301	MISCELLANEOUS DETAILS
A-302	MISCELLANEOUS DETAILS
A-351	WALL SECTIONS
FIRE PROTECTION	
FA101	FIRE ALARM FLOOR PLAN
FX101	FIRE SUPPRESSION FLOOR PLAN
MECHANICAL	
M-001	MECHANICAL GENERAL NOTES AND DESIGN CRITERIA
M-002	MECHANICAL ABBREVIATIONS AND LEGENDS
MD101	DEMO MECHANICAL GROUND FLOOR PLAN - OVERALL
MD101A	DEMO MECHANICAL GROUND FLOOR PLAN - AREA A
MD101B	DEMO MECHANICAL GROUND FLOOR PLAN - AREA B
MD101C	DEMO MECHANICAL GROUND FLOOR PLAN - AREA C
MD101D	DEMO MECHANICAL GROUND FLOOR PLAN - AREA D
MD101E	DEMO MECHANICAL GROUND FLOOR PLAN - AREA E
MD102	DEMO UPPER MECHANICAL ROOM & MEZZANINES FLOOR PLAN
MD103	DEMO MECHANICAL ROOF PLAN - OVERALL
M-101	MECHANICAL GROUND FLOOR PLAN - OVERALL
M-101A	MECHANICAL GROUND FLOOR PLAN - AREA A
M-101B	MECHANICAL GROUND FLOOR PLAN - AREA B
M-101C	MECHANICAL GROUND FLOOR PLAN - AREA C
M-101D	MECHANICAL GROUND FLOOR PLAN - AREA D
M-101E	MECHANICAL GROUND FLOOR PLAN - AREA E
M-102	UPPER MECHANICAL ROOM & MEZZANINE FLOOR PLAN
M-103	ENLARGED MECHANICAL FLOOR PLAN - AREA A CALLOUT
M-104	MECHANICAL ROOF PLAN - OVERALL
MP101	MECHANICAL PIPING GROUND FLOOR PLAN - OVERALL
MP101A	MECHANICAL PIPING GROUND FLOOR PLAN - AREA A
MP101B	MECHANICAL PIPING GROUND FLOOR PLAN - AREA B
MP101C	MECHANICAL PIPING GROUND FLOOR PLAN - AREA C
MP101D	MECHANICAL PIPING GROUND FLOOR PLAN - AREA D
MP101E	MECHANICAL PIPING GROUND FLOOR PLAN - AREA E
MP102	UPPER MECHANICAL ROOM & MEZZANINE PIPING PLAN
M-501	MECHANICAL DETAILS

MECHANICAL	
M-502	MECHANICAL DETAILS
M-503	MECHANICAL DETAILS
M-504	MECHANICAL DETAILS
M-505	MECHANICAL DETAILS
M-601	MECHANICAL SCHEDULES
M-602	MECHANICAL SCHEDULES
M-603	MECHANICAL SCHEDULES
M-701	MECHANICAL CONTROLS
M-702	MECHANICAL CONTROLS
M-703	MECHANICAL CONTROLS
M-704	MECHANICAL CONTROLS
M-705	MECHANICAL CONTROLS
M-706	MECHANICAL CONTROLS
M-707	MECHANICAL CONTROLS
M-708	MECHANICAL CONTROLS
M-709	MECHANICAL CONTROLS
M-710	MECHANICAL CONTROLS
M-711	MECHANICAL CONTROLS
M-712	MECHANICAL CONTROLS
M-713	MECHANICAL CONTROLS
M-714	MECHANICAL CONTROLS
M-715	MECHANICAL CONTROLS
M-716	MECHANICAL CONTROLS
M-717	MECHANICAL CONTROLS
M-718	MECHANICAL CONTROLS
M-719	MECHANICAL CONTROLS
M-801	MECHANICAL FLOW SCHEMATICS
M-802	MECHANICAL FLOW SCHEMATICS
ELECTRICAL	
E-001	ELECTRICAL LEGEND I
E-002	ELECTRICAL LEGEND II
E-003	ELECTRICAL NOTES
E-501	ELECTRICAL DETAILS I
E-502	ELECTRICAL DETAILS II
E-503	ELECTRICAL DETAILS III
ED-601	EXISTING/DEMOLITION SWITCHBOARD ONE LINE POWER DIAGRAM
ED-602	EXISTING/DEMOLITION MCCA ONE LINE POWER DIAGRAM
E-601	SWITCHBOARD MODIFICATIONS ONE LINE POWER DIAGRAM
E-602	NEW MCCA ONE LINE POWER DIAGRAM
E-603	PANELBOARD SCHEDULES I
E-604	PANELBOARD SCHEDULES II
ES-101	OVERALL ELECTRICAL SITE PLAN
ED-101	ELECTRICAL DEMOLITION PLAN - AREA A
ED-102	ELECTRICAL DEMOLITION PLAN - AREA B
ED-103	ELECTRICAL DEMOLITION PLAN - AREA C
ED-104	ELECTRICAL DEMOLITION PLAN - AREA D
ED-105	ELECTRICAL DEMOLITION PLAN - AREA E
ED-106	OVERALL MECHANICAL ROOF ELECTRICAL DEMOLITION PLAN
ED-401	UPPER MECHANICAL ROOM & MEZZANINES ELECTRICAL DEMOLITION ENLARGED PLANS
EP-101	ELECTRICAL PLAN - AREA A
EP-102	ELECTRICAL PLAN - AREA B
EP-103	ELECTRICAL PLAN - AREA C
EP-104	ELECTRICAL PLAN - AREA D
EP-105	ELECTRICAL PLAN - AREA E
EP-106	OVERALL MECHANICAL ROOF ELECTRICAL PLAN
EP-401	UPPER MECHANICAL ROOM & MEZZANINES ELECTRICAL ENLARGED PLANS
TELECOMMUNICATIONS	
T-001	TELECOMMUNICATIONS LEGEND
T-101	OVERALL TELECOMMUNICATION KEY PLAN
T-102	TELECOMMUNICATION PLAN - AREA A
T-103	TELECOMMUNICATION PLAN - AREA B
T-104	TELECOMMUNICATION PLAN - AREA C
T-105	TELECOMMUNICATION PLAN - AREA D AND AREA E
T-106	OVERALL TELECOMMUNICATION ROOF PLAN
T-201	TELECOMMUNICATIONS OVERALL RISERS
T-202	TELECOMMUNICATIONS AREA A RISERS
T-203	TELECOMMUNICATIONS AREA B AND C RISERS
T-204	TELECOMMUNICATIONS OVERALL RISERS

STATE OF FLORIDA
REGISTERED ARCHITECT
RICHARD L. ELLIOTT
No. 0015372
AR 0015372
10-17-2024

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOTT
DRAWN BY: J.MCCORMICK
CHECKED BY: K.HOTELLOS
QUALITY CONTROL BY: S.FLUHRER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4611-24-R-0001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

Robert Gault & Smith

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B950 BX and Mall HVAC System, MCC Controls and MCC Power Board for HVAC Equipment
Client Project Number: AJW21-1013D

SHEET INDEX & CODE SUMMARY

POND # 1220854

SHEET ID
G-002

ISSUED FOR CONSTRUCTION

File Path: I:\...\Tyndall AFB\Design\100%_Tyndall AFB_Plan_G-001.rvt
Plot Date: 9/13/2024 1:27:05 PM

NOTE:
1. NOT ALL ABBREVIATIONS SHOWN WILL BE USED ON THIS PROJECT.

SHEET NAMING CONVENTION

C-001

- 2 DIGIT DESCIPLINE DESIGNATOR (IF ONLY ONE LETTER IS USED, THE SECOND LETTER IS REPLACED WITH A DASH "-" AS A PLACEHOLDER)*
- 1 DIGIT SHEET TYPE DESIGNATOR
  0 - GENERAL
  1 - PLANS
  2 - PROFILES
  3 - SECTIONS
  4 - ENLARGED PLANS
  5 - DETAILS
  6 - SCHEDULES AND DIAGRAMS
  7 - USER DERIVED
  8 - USER DERIVED
  9 - 3D VIEWS (ISO, PERSPECTIVES, PHOTOS)
- 2 DIGIT SEQUENTIAL # (01-99)
  (FIRST DIGIT INDICATES PLAN TYPE, SECOND DIGIT INDICATES FLOOR)

PROJECT CONTACTS

CIVIL ENGINEER:
POND & COMPANY
3500 PARKWAY LANE, SUITE 500
PEACHTREE CORNERS, GA 30092
TEL: 678-336-7740
CONTACT: EFRAIM MANGIWA, PE
EFRAIM.MANGIWA@PONDCO.COM

OWNER/DEVELOPER:
325TH CIVIL ENGINEER SQUADRON
101 MISSISSIPPI ROAD BUILDING 36233
TYNDALL AFB, FL 32403

SURVEYOR:
SOUTHERN SURVEYING AND MAPPING

24-HOUR PROJECT:
CONTACT: TBD (PRIMARY)
E-MAIL: TBD
TEL: TBD

CONTACT: TBD (ALTERNATE)
E-MAIL: TBD
TEL: TBD

CIVIL GENERAL NOTES:

1. COMPLY WITH CITY, COUNTY, STATE, AND FEDERAL REGULATIONS APPLICABLE TO CONSTRUCTION OF THIS SITE.
2. LABOR, MATERIALS, AND METHODS OF CONSTRUCTION MUST BE IN ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY THE U.S. ARMY CORPS OF ENGINEERS (USACE). WHERE CONFLICTS OR OMISSIONS EXIST, THE USACE STANDARDS WILL DICTATE. SUBSTITUTIONS AND DEVIATION FROM PLANS AND SPECIFICATIONS WILL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR).
3. DIMENSIONS ARE TAKEN FROM/TO FENCE LINES, CENTERLINE OF UTILITY, CENTER OF MANHOLE OR CATCH BASIN, CENTERLINE OF ROAD, FACE OF BUILDING, FACE OF CURB, FACE OF WALL, OR CENTERLINE OF STRIPING UNLESS OTHERWISE NOTED.
4. EXISTING CONDITIONS SHOWN HEREON ARE BASED ON A TOPOGRAPHIC SURVEY BY SOUTHEASTERN SURVEYING AND MAPPING CORPORATION PROVIDED JANUARY 10, 2024 AND GIS INFORMATION PROVIDED BY TYNDALL AIR FORCE BASE . EXISTING UTILITY INFORMATION MUST BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OR ORDERING MATERIALS.
5. PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES REQUIRED BY LOCAL, STATE, AND FEDERAL REQUIREMENTS.
6. MOVE CONSTRUCTION DEBRIS OFF THE TYNDALL AIR FORCE BASE PROPERTY AND DISPOSE OF AT A LEGAL, PERMITTED LANDFILL CONSISTENT WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
7. NO BURNING IS ALLOWED ON TYNDALL AIR FORCE BASE PROPERTY.
8. CONSTRUCT PAVEMENT FLUSH WITH EXISTING, WITH NO PONDING OF STORMWATER, UNLESS NOTED OTHERWISE.
9. VERIFY ALL EXISTING CONDITIONS, COORDINATES, AND DIMENSIONAL INFORMATION PRIOR TO CONSTRUCTION. BRING ALL DISCREPANCIES TO THE ATTENTION OF THE COR PRIOR TO STARTING CONSTRUCTION.
10. COORDINATE INSTALLATION OF NEW UTILITIES WITH THOSE THAT ARE EXISTING. IF EXISTING UTILITIES ARE IN CONFLICT WITH NEW UTILITIES, NOTIFY THE COR BEFORE PROCEEDING WITH CONSTRUCTION.
11. THE LOCATION OF EXISTING UTILITIES AND STORM DRAINAGE SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR INACCURACY. PRIOR TO THE START OF CONSTRUCTION ACTIVITY, NOTIFY THE UTILITY PROVIDER(S) AND COR. COORDINATE RELOCATION OF UTILITIES WITH THE COR OF THE UTILITY PROVIDER. EXERCISE CAUTION WHEN CROSSING UNDERGROUND UTILITIES, WHETHER SHOWN ON THE PLAN OR LOCATED BY THE UTILITY COMPANY. UTILITIES THAT INTERFERE WITH THE PROPOSED CONSTRUCTION WILL BE BROUGHT TO THE ATTENTION OF COR. FEES ASSOCIATED WITH UTILITY RELOCATIONS WILL BE BORNE BY THE CONTRACTOR IN ACCORDANCE WITH RESPECTIVE UTILITY COMPANY STANDARDS. COORDINATE DISCONNECTION OF EXISTING UTILITIES WITH THE APPROPRIATE UTILITY PROVIDER.
12. CONSTRUCT UTILITIES IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE SPECIFICATIONS. GRADING MUST BE AS INDICATED, AND MUST PRODUCE A FINISHED SURFACE WITH NO PONDING OF WATER, READY TO RECEIVE PLANTING MATERIALS OR GRASSING.
13. ENSURE THAT REQUIRED PERMITS ARE OBTAINED AND IN HAND BEFORE BEGINNING CONSTRUCTION. NO CONSTRUCTION OR FABRICATION WILL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED PLANS AND OTHER DOCUMENTATION FROM THE PERMITTING AND OTHER REGULATORY AUTHORITIES. PENALTIES, STOP WORK ORDERS, OR ADDITIONAL WORK RESULTING FROM THE CONTRACTOR BEING IN VIOLATION OF THE ABOVE REQUIREMENTS, WILL BE FULLY BORNE BY THE CONTRACTOR.
14. CONTRACTORS/SUBCONTRACTORS THAT WILL BE ENGAGED IN LAND DISTURBING ACTIVITIES MUST COMPLY WITH EROSION AND SEDIMENT CONTROL AND STORMWATER POLLUTION PREVENTION REQUIREMENTS CONTAINED THROUGHOUT THE DRAWINGS, SPECIFICATIONS, AND PERMITS.
15. RESTORE AREAS DISTURBED BY THE CONTRACTOR, WHICH ARE NOT PART OF THIS PROJECT, TO ORIGINAL OR BETTER CONDITION PRIOR TO THE COMPLETION OF THE PROJECT AS DETERMINED BY THE COR.
16. MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES IN PERFORMING THE WORK IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. COMPLYING WITH ALL HEALTH AND SAFETY PRECAUTIONS AS REQUIRED BY THE APPLICABLE REGULATORY AGENCY.
17. THE DESIGN ADEQUACY AND SAFETY OF ALL BRACING, SHORING AND TEMPORARY SUPPORTS, ETC. ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. PROTECT EXISTING FEATURES AND EXISTING LANDSCAPING THAT WILL REMAIN. ITEMS DAMAGED DURING THE PERFORMANCE OF THE WORK WILL BE RESTORED TO ORIGINAL CONDITION, OR REPLACED WITH NEW AT THE CONTRACTOR'S EXPENSE. TAKE PRECAUTIONS TO AVOID OVERLOADING PAVEMENTS WHICH WILL REMAIN.
19. EACH SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
20. SHEET KEYNOTES ON THE PLANS ARE SPECIFIC TO THAT SHEET ONLY. MISSING SEQUENTIAL NUMBERS DO NOT APPLY TO THAT SHEET.
21. DISPOSAL AREAS FOR RUBLE, UNSUITABLE EXCESS SOIL MATERIALS, OR OTHER CONSTRUCTION DEBRIS ARE NOT AVAILABLE ON THE BASE FOR THE CONTRACTOR'S USE. DISPOSAL IS THE RESPONSIBILITY OF THE CONTRACTOR AT SITES OFF GOVERNMENT-CONTROLLED LANDS.
22. BORROW SITES ARE NOT AVAILABLE FOR USE BY THE CONTRACTOR ON THE BASE. ALL BORROW MATERIALS, TOPSOIL, OR OTHER SOIL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR FROM COMMERCIAL SOURCES FROM OFF-SITE LOCATIONS.
23. CONTRACTOR STAGING AREAS SHALL BE RETURNED TO ORIGINAL CONDITIONS AS APPROVED BY THE COR AT THE COMPLETION OF CONSTRUCTION.

CIVIL DEMOLITION NOTES

1. "DEMOLISH" MEANS TO REMOVE AN OBJECT IN ITS ENTIRETY. RESTORE GRADES AND SURFACE IMPROVEMENTS TO MATCH EXISTING CONDITIONS OR PER REQUIREMENTS OF WORK, WHICHEVER IS APPLICABLE.
2. PROVIDE EROSION AND SEDIMENT CONTROL MEASURES AND TEMPORARY CONSTRUCTION FENCING PRIOR TO COMMENCEMENT OF DEMOLITION WORK.
3. ESTABLISH SURVEY CONTROL NETWORK OUTSIDE LIMITS OF DEMOLITION PRIOR TO COMMENCEMENT OF WORK. THIS WORK MUST BE PERFORMED BY LICENSED & REGISTERED FLORIDA LAND SURVEYOR.
4. COORDINATE DEMOLITION WORK WITH CONTRACTOR'S SCHEDULE, LOGISTICS PLAN (APPROVED BY COR), AND EROSION AND SEDIMENT PLAN PRIOR TO WORK.

CIVIL SITE NOTES

1. PROVIDE AND MAINTAIN BARRICADES AROUND THE WORK AND PROVIDE PROTECTION AGAINST WATER DAMAGE AND SOIL EROSION.
2. VERIFY AND COORDINATE BUILDING DIMENSIONS WITH THE ARCHITECTURAL PLANS.
3. PROVIDE PAVEMENT MARKINGS, INCLUDING ANY STANDARD HANDICAP SYMBOLS, PARKING STRIPING AND TRAFFIC ARROWS, AT LOCATIONS SHOWN.
4. SIGNAGE MUST CONFORM TO UFGS SECTION 32 17 23 PAVEMENT MARKINGS AND MUTCD.

GRADING AND DRAINAGE NOTES

1. MAINTAIN POSITIVE DRAINAGE TO PREVENT SATURATION OF EXPOSED SOILS IN CASE OF SUDDEN RAINS, AND FOR FINISHED GRADING. LOCATE EXISTING UTILITIES PRIOR TO EXCAVATION. GRADE DISTURBED AREAS TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TO DRAINAGE STRUCTURES OR DITCHES. NATURAL FLOW OF SURROUNDING WATERS MUST NOT BE DISTURBED DURING CONSTRUCTION, UNLESS SHOWN OTHERWISE.
2. PROVIDE PERIMETER EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE CLEARING OR EXCAVATION. INSPECT SEDIMENT AND EROSION CONTROL MEASURES DAILY AND DURING PROLONGED PERIODS OF CONTINUOUS RAINFALL EVENTS TO ENSURE THAT CONTROLS ARE FUNCTIONING PROPERLY. REPLACE DAMAGED CONTROLS BY THE END OF THE WORKDAY.
3. BACKFILL AND FILL MATERIAL MUST BE FREE OF ORGANIC MATTER AND WASTE.
4. REMOVE EROSION CONTROL FENCING FROM THE SITE PRIOR TO FINAL PROJECT ACCEPTANCE. RESTORE THE GROUND SURFACE WHERE THE FENCE WAS REMOVED THEN MULCH OR SEED & STRAW (SEASON APPROPRIATE GRASS) THE RESTORED SURFACE AS SUNLIGHT CONDITIONS WARRANT.
5. MARK, PRESERVE, AND PROTECT ALL SURVEY BENCHMARKS. IF BENCHMARK MUST BE DEMOLISHED FOR CONSTRUCTION, RELOCATE BENCHMARK AND PROVIDE NEW DATA ON AS-BUILTS.
6. SPOT ELEVATIONS ARE FINISH GRADE, UNLESS OTHERWISE NOTED.

CIVIL ABBREVIATIONS

@	AT
&	AND
Ø	DIAMETER
AFB	AIR FORCE BASE
APPR	APPROVED
APPROX	APPROXIMATELY
ARV	AIR RELEASE VALVE
BLDG	BUILDING
BM	BENCHMARK
BOT	BOTTOM
℄	CENTERLINE
CO	CONTRACTING OFFICER
CF	CUBIC FEET
CONC	CONCRETE
COR	CONTRACTING OFFICER'S REPRESENTATIVE
DO	DATE OF AWARD
DI	DROP INLET
DIA	DIAMETER
DB	DUCTBANK
DIP	DUCTILE IRON PIPE
DS	DOWNSPOUT
E	EASTING
EG	EXISTING GRADE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EQ	EQUAL
ESMT	EASEMENT
EX	EXISTING
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FM	FORCE MAIN
FT	FEET
GAB	GRADED AGGREGATE BASE
GIS	GEOGRAPHIC INFORMATION SYSTEM
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HORZ	HORIZONTAL
HT	HEIGHT
HW	HEADWALL
IBW	INSIDE BOTTOM OF WALL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
INC	INCORPORATED
INV	INVERT
IPF	IRON PIN FOUND
IPS	IRON PIN SET
JB	JUNCTION BOX
LF	LINEAR FEET
LOD	LIMITS OF DISTURBANCE
LP	LIGHT POLE
MAX	MAXIMUM
M.E.	MATCH ELEVATION
MECH	MECHANICAL
MES	MITERED END SECTION
MIN	MINIMUM
MUTCD	MANUAL UNIFORM TRAFFIC CONTROL DEVICE
MON	MONUMENT
N	NORTHING
N/F	NOW OR FORMERLY
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OWS	OIL/WATER SEPARATOR
PIV	POST INDICTOR VALVE
POL	PETROLEUMS, OILS, AND LUBRICANTS
PROP	PROPOSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
QC	QUALITY CONTROL
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
SD	STORM DRAIN
SF	SQUARE FEET
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
STD	STANDARD
TBM	TEMPORARY BENCHMARK
TLP	TRAFFIC LIGHT POLE
TYP	TYPICAL
UP	UTILITY POLE
VERT	VERTICAL
WM	WATER METER
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
W/	WITH
W/C	WATER TO CEMENT
YR	YEAR

EFRAIM MANGIWA — No. 86266 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — 09-13-2024

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
SUPERVISED BY: S. CUNNINGHAM
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8903-24-B0001
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

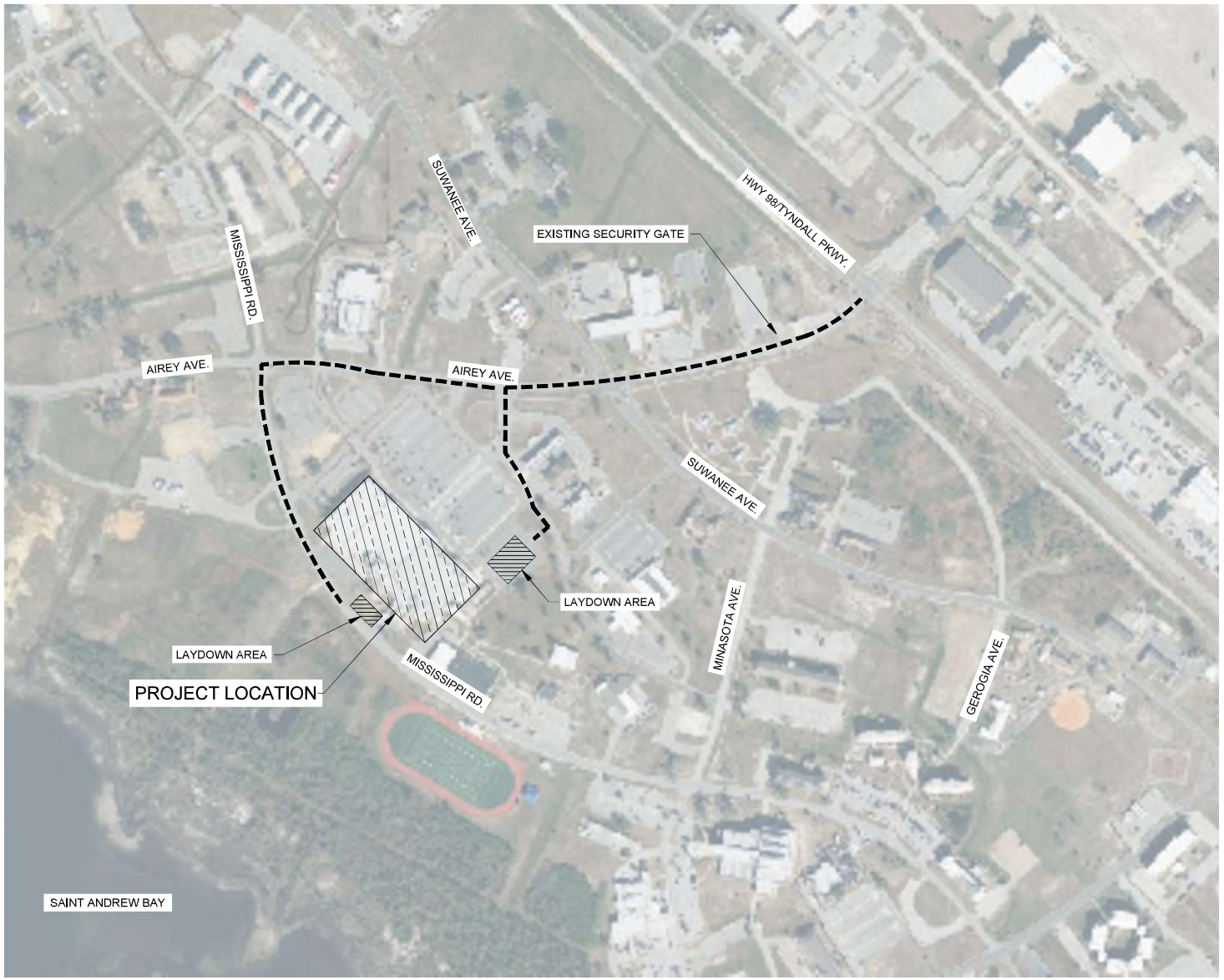
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction Activity Code: 611410 Equipment
Client Project Number: FLMX25-0133D

CIVIL GENERAL NOTES AND ABBREVIATIONS

POND # 1220054

SHEET ID
C-001

ISSUED FOR CONSTRUCTION



GENERAL SHEET NOTES

1. REFER TO SHEET C-001 FOR GENERAL CIVIL NOTES, ABBREVIATIONS AND LEGEND.
2. ALL UTILITIES LOCATED WITHIN THE LAYDOWN AREA MUST BE PROTECTED DURING ALL PHASES OF CONSTRUCTION. UTILITIES LOCATED WITHIN THESE AREAS INCLUDE BUT ARE NOT LIMITED TO UNDERGROUND COMMUNICATION LINES AND MONITORING WELLS. ANY UTILITY DAMAGED DUE TO CONSTRUCTION ACTIVITIES MUST BE REPAIRED OR REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
3. LAYDOWN AREAS ARE REQUIRED TO BE RETURNED TO EXISTING CONDITIONS AFTER CONSTRUCTION IS COMPLETE. THIS INCLUDES, BUT NOT LIMITED TO, REPAIRING ANY DAMAGED OR ALTERED STRUCTURES AND UTILITIES, REPLACING DAMAGED PAVEMENTS, RETURNING AREAS TO ORIGINAL GRADE, AND REPLACING TURF.
4. ALL CONTRACTORS TO COORDINATE UTILITY WORK WITH THE CONTRACTING OFFICER. COORDINATE TO ALLOW ACCESS AROUND OR WITHIN WORK LIMITS FOR THE GOVERNMENT TO OTHER EXISTING FACILITIES.
5. BORROW SITES ARE NOT AVAILABLE FOR USE BY THE CONTRACTOR ON THE INSTALLATION. ALL BORROW/FILL MATERIALS SHALL BE OBTAINED OFF-SITE BY THE CONTRACTOR FROM COMMERCIAL SOURCES

SHEET LEGEND

HAUL ROUTE

PROJECT LOCATION

LAYDOWN AREA

A1 LOCATION MAP, HAUL ROUTE, AND LAYDOWN AREAS
SCALE: 1" = 200'

NORTH

0 100' 200' 400' 600'

09-13-2024

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGRIVA
SUPERVISED BY: S. BELLINGER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8451-24-B-0004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 Bx and Mall HVAC System, MCC
Construct New MCC Pad, Install HVAC Equipment
Client Project Number: AXM25-0103D
LOCATION MAP, HAUL ROUTE, AND LAYDOWN AREAS
POND # 1220054

SHEET ID
C-002

ISSUED FOR CONSTRUCTION

SHEET NOTES

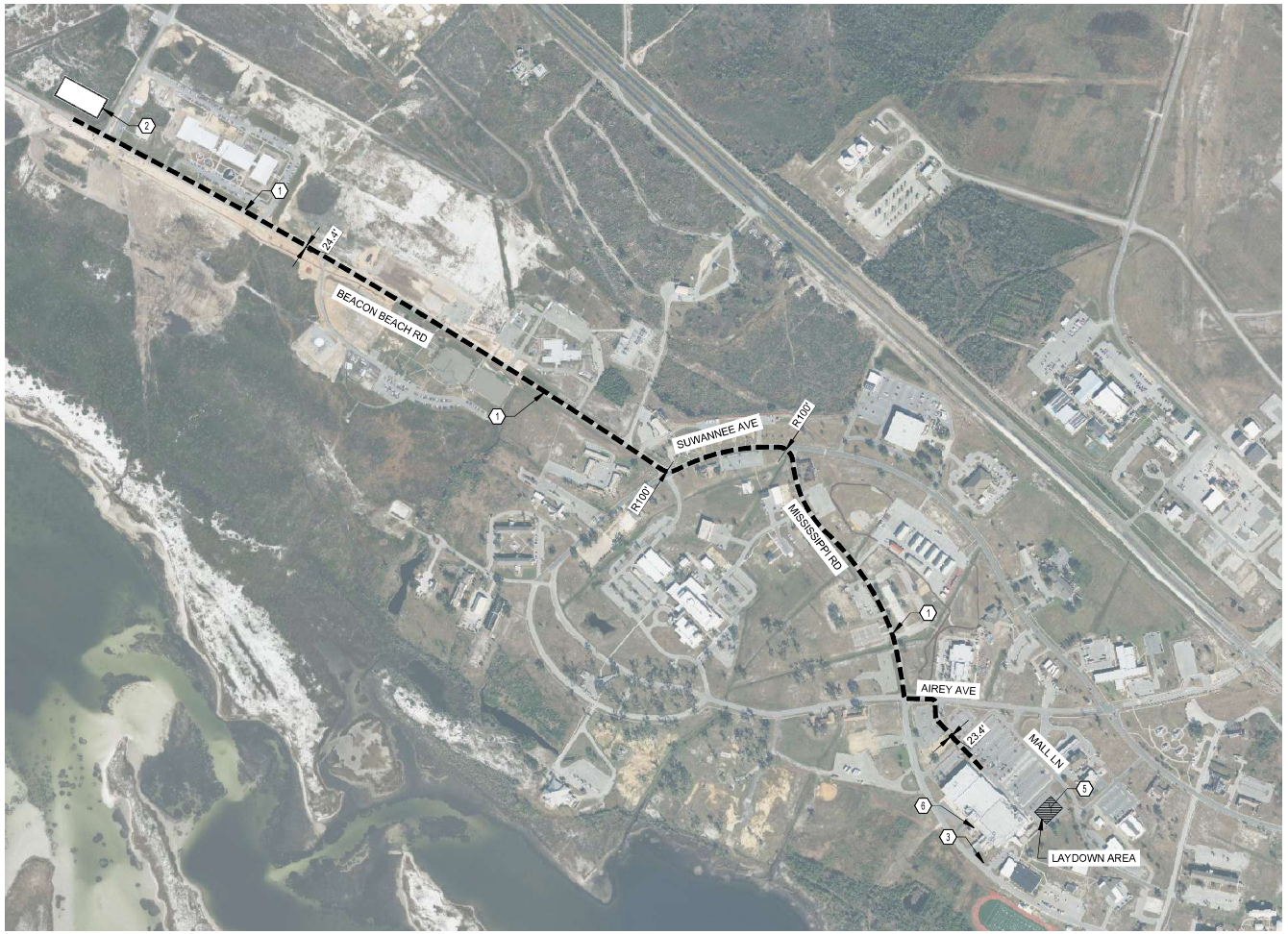
1. REFER TO SHEET C-002 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.
2. THIS SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
3. THIS PLAN HAS BEEN CREATED TO SHOW COMPLIANCE WITH UFC 3-600-01 "FIRE PROTECTION ENGINEERING FOR FACILITIES" SECTION 1-7.2.4.2.
4. THE FOLLOWING ITEMS AS INDICATED IN UFC 3-600-01 SECTION 1-7.2.4.2 CODE COMPLIANCE SITE PLAN ARE NOT APPLICABLE TO THIS PROJECT:
   - A. LINE OF ENCROACHMENT IDENTIFYING ASSUMED PROPERTY LINES AND MINIMUM SEPARATION DISTANCES FROM ADJACENT BUILDINGS.
     A.A. THE FACILITY IS LOCATED WITHIN TYNDALL AFB
   - B. BUILDING PERIMETER USED FOR FRONTAGE INCREASES.
     B.A. THE FACILITY IS WITHIN THE ALLOWABLE AREA WITHOUT A FRONTAGE INCREASE
   - C. TYPE AND QUANTITY OF ANTITERRORISM SECURE ACCESS.
     C.A. THE FACILITY IS LOCATED WITHIN THE TYNDALL AFB PERIMETER
   - D. FIRE PUMP ROOM.
     D.A. NO FIRE PUMPS ARE PRESENT AT THIS FACILITY
   - E. WATER STORAGE TANKS.
     E.A. NO WATER STORAGE TANKS ARE PRESENT AT THE FACILITY
   - F. BACKFLOW PREVENTION ASSEMBLY OR ASSEMBLIES SERVING WATER-BASED FIRE PROTECTION SYSTEMS (IF LOCATED OUTSIDE OF BUILDING).
     F.A. BACKFLOW PREVENTION ASSEMBLIES ARE LOCATED INSIDE OF BUILDING

KEYNOTES

1. FIRE DEPARTMENT ACCESS ROUTE
2. TYNDALL FIRE STATION #2
3. FIRE HYDRANT
4. FIRE DEPARTMENT CONNECTION
5. ANY FUEL SPILLS MUST BE IN CONTAINMENT. SEE DETAIL A1/CE502.
6. FDC. LOCATION IS APPROXIMATE.

SHEET LEGEND

FIRE DEPT. ACCESS ROUTE



A1 CODE COMPLIANCE PLAN
SCALE: 1" = 400'

NORTH

0 200' 400' 800' 1200'

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: J. JORDAN
DRAWN BY: L. ANDERSON
CHECKED BY: E. MANSIWA
SUBMITTED BY: STEVE KEELEY
PROJECT ENGINEER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8903-24-R-A001
CONTRACT NO.
SIZE: ANSI D

MARK	DESCRIPTION	DATE

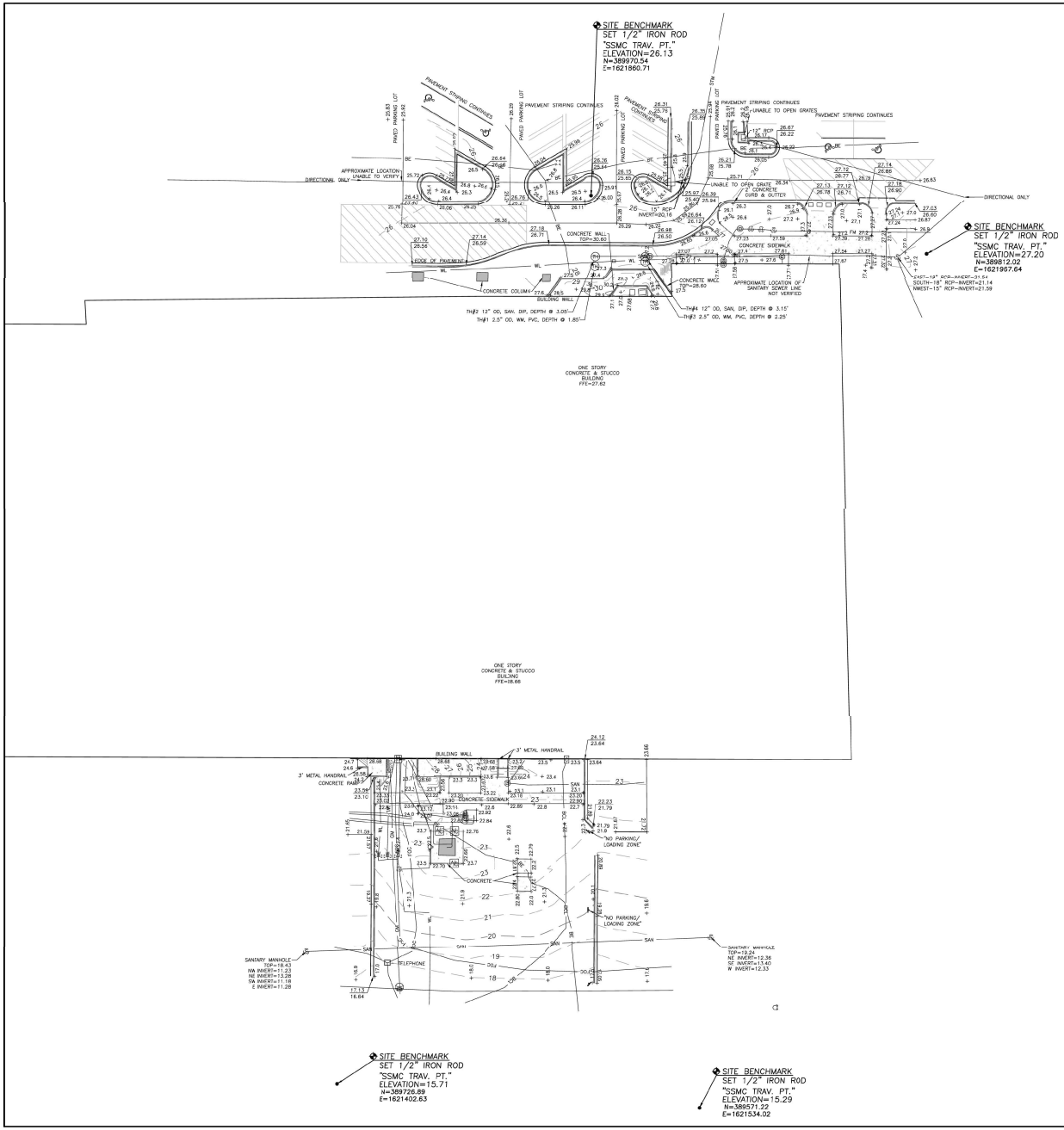
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construct and Install New Fire Alarm Equipment
Client Project Number: ALM12-0153D

CODE COMPLIANCE PLAN

POND # 1220564

SHEET ID
C-003

ISSUED FOR CONSTRUCTION



LEGEND & ABBREVIATIONS:

–BCL–	= BURIED CABLE LINE
–BE–	= BURIED ELECTRIC LINE
–FOC–	= BURIED FIBER OPTIC LINE
–OHW–	= OHG WIRES
–WL–	= WATER LINE
–FM–	= FORCE MAIN
–SAN–	= SANITARY SEWER
●	= SET 1/2" IRON ROD & CAP "SSMC TRAV. PT." UNLESS OTHERWISE NOTED
AC	= AIR CONDITIONING UNIT
C	= BURIED CABLE TV PEDESTAL
T	= BURIED TELEPHONE PEDESTAL
CO	= CLEAN OUT
E	= ELECTRIC FIXTURE
	= FLAT GRATE INLET
	= FIRE HYDRANT
GM	= GAS METER
	= WATER SPIGOT
	= LIGHT POLE
S	= SANITARY MANHOLE
	= TRAFFIC SIGN
	= UNKNOWN MANHOLE
VCG	= VALVE COVER GAS
	= WATER METER
	= WIRING PULL BOX
WV	= WATER VALVE

1" = 30'
GRAPHIC SCALE
0 15' 30' 60'

SURVEYOR'S REPORT:

1. UTILITY LOCATIONS IF SHOWN HEREON ARE BASED ON FIELD LOCATION OF MARKINGS BY UTILITY COMPANY REPRESENTATIVES, SURFACE FEATURES AND CONSTRUCTION PLANS FURNISHED TO THE SURVEYOR. ADDITIONAL SUB-SURFACE UTILITIES MAY EXIST THAT HAVE NOT BEEN FIELD LOCATED.
2. EASEMENTS OR RIGHTS OF WAY THAT APPEAR ON RECORDED PLANS OR THAT HAVE BEEN FURNISHED TO THE SURVEYOR BY OTHERS HAVE BEEN INCORPORATED INTO THIS DRAWING WITH APPROPRIATE NOTATION. OTHER EASEMENTS MAY BE DISCOVERED BY A SEARCH OF THE PUBLIC RECORDS.
3. MINIMUM HORIZONTAL ACCURACY FOR THIS SURVEY IS IN ACCORDANCE WITH THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17 REQUIREMENTS OF FLORIDA ADMINISTRATION CODE. THE MAP AND MEASUREMENT METHODS USED FOR THIS SURVEY MEET OR EXCEED THIS REQUIREMENT. THE DIMENSIONS SHOWN HEREON ARE IN UNITED STATES STANDARD SURVEY FEET AND DECIMALS THEREOF.
4. THIS SURVEY DOES NOT DETERMINE OWNERSHIP OF THE LANDS SHOWN HEREON.
5. UNDERGROUND FOUNDATIONS HAVE NOT BEEN LOCATED.
6. SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OR THE ELECTRONIC SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER, AND IF SHOWN HEREON IS IN COMPLIANCE WITH FLORIDA ADMINISTRATIVE CODE 5J-17.062 AND FLORIDA STATUTE 472.025.
7. FEATURES SHOWN BY SYMBOL AS INDICATED IN THE LEGEND ARE NOT TO SCALE.
8. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
9. VERTICAL INFORMATION SHOWN HEREON REFERS TO "FLORIDA PERMANENT REFERENCE NETWORK" CONTROL STATION "PNMA", HAVING AN ELEVATION OF 71.92', NAVD88, THE CONTOUR INTERVAL IS ONE FOOT.
10. THE HORIZONTAL POSITIONS FOR ALL FEATURES SHOWN ON THE MAP ARE RELATIVE TO NORTH AMERICAN DATUM, (NAD83), 2011 ADJUSTMENT, STATE PLANE COORDINATE SYSTEM, FLORIDA NORTH ZONE AND ARE BASED ON FLORIDA DEPARTMENT OF TRANSPORTATION'S "FLORIDA PERMANENT REFERENCE NETWORK" GPS CONTINUOUSLY OPERATING REFERENCE STATIONS "PNMA" & "DSTN". DISTANCES SHOWN ARE GRID DISTANCES.
11. THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF AN ABSTRACT, TITLE SEARCH, TITLE OPINION OR TITLE COMMITMENT. A TITLE SEARCH MAY REVEAL ADDITIONAL INFORMATION AFFECTING THE PARCEL AS SHOWN.
12. IMPROVEMENTS & TOPOGRAPHIC FEATURES SHOWN HEREON ARE LIMITED TO AREAS PER SPECIFIC INSTRUCTIONS OF THE CLIENT.

NOTICE OF LIABILITY:

THIS SURVEY IS CERTIFIED TO THOSE INDIVIDUALS SHOWN ON THE FACE THEREOF. ANY OTHER USE, BENEFIT OR RELIANCE BY ANY OTHER PARTY IS STRICTLY PROHIBITED AND RESTRICTED. SURVEYOR IS RESPONSIBLE ONLY TO THOSE CERTIFIED AND HEREBY DISCLAIMS ANY OTHER LIABILITY AND HEREBY RESTRICTS THE RIGHTS OF ANY OTHER INDIVIDUAL OR FIRM TO USE THIS SURVEY, WITHOUT EXPRESS WRITTEN CONSENT OF THE SURVEYOR.

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
SSMC SUE • SURVEY • GIS
1100 Highway 301
Tampa, Florida 33619
(850) 638-0790
Certification Number LB6108
THOMAS R. MOSS, PSM
Florida Registration
Number 6964

REVISION	BY
REVISION DATE	

SHEET NUMBER 1 OF 1
NOT VALID WITHOUT SHEETS 1 THROUGH 1

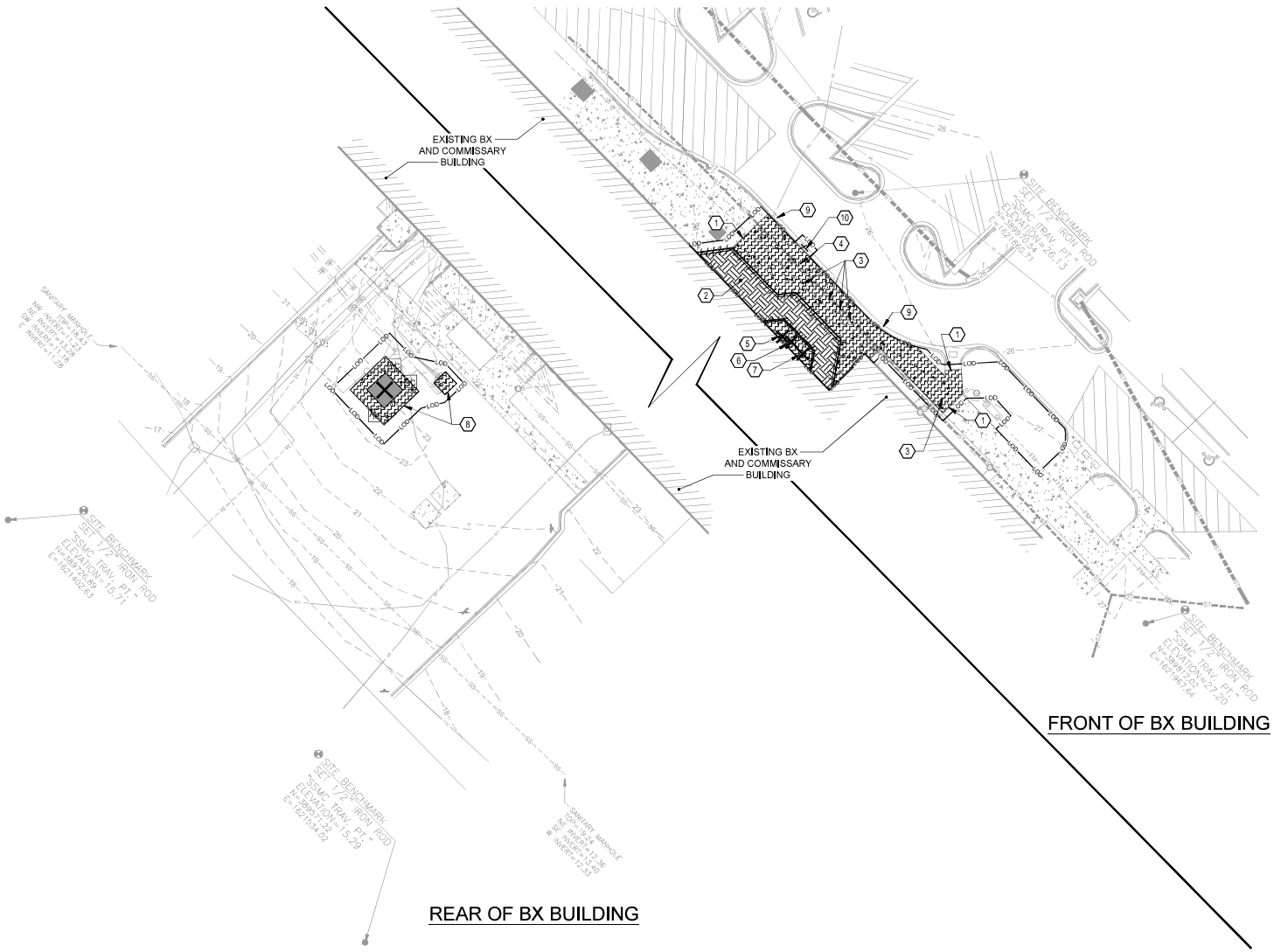
TOPOGRAPHIC SURVEY

Project:
TYNDALL AFB
BX HVAC DESIGN

Field Date: 01-10-2024
Drawn By: KMA
Scale: 1" = 30'
AS SHOWN

Certified for:
POND & COMPANY
TOPOGRAPHIC SURVEY

DRAWING NUMBER
70342001
SHEET NUMBER
V-101



GENERAL SHEET NOTES

1. REFER TO SHEET C-001 FOR CIVIL NOTES, LEGEND AND ABBREVIATIONS.
2. THIS SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
3. PROTECT EXISTING UTILITIES, SIGNS, AND CURB & GUTTER TO REMAIN. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES PRIOR TO ANY WORK. CONTRACTOR MUST NOTIFY COR IF EXISTING CONDITIONS VARY FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS.

SHEET KEYNOTES

1. SAWCUT AND DEMOLISH CONCRETE PAVEMENT TO NEAREST JOINT.
2. DEMOLISH LANDSCAPING BED AND RETAINING WALLS.
3. PROTECT EXISTING UNDERGROUND UTILITIES BETWEEN THE CURB AND THE BUILDING.
4. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF STORM SEWER (SOURCE OF LOCATION: BASE GIS) PROTECT EXISTING STORM SEWER LINES.
5. DEMOLISH WIRING PULL BOX.
6. DEMOLISH EXISTING CONCRETE SLAB/HVAC PEDESTAL.
7. DEMOLISH FLAT GRATE INLET.
8. DEMOLISH EXISTING COOLING TOWER CONCRETE FOUNDATION. PEDESTALS AND ASSOCIATED APPURTENANCES. ITEMS NOT ASSOCIATED WITH COOLING TOWER SHALL BE PROTECTED. NOTIFY COR PRIOR TO DEMOLITION.
9. PROTECT EXISTING CURB AND GUTTER.
10. DEMOLISH CURB AND GUTTER. SEE CURB CUT ON DETAIL A1/C-501.

LEGEND:

- DEMOLISH EXISTING CONCRETE PAVEMENT
- DEMOLISH EXISTING LANDSCAPING BED
- DEMOLISH LINEAR SITE FEATURE
- DEMOLISH SITE FEATURE

A1 CIVIL DEMOLITION PLAN
SCALE: 1" = 20'

NORTH

0 10' 20' 40' 60'

09-13-2024

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
QUALITY CONTROL BY: S. BELLAMINGER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA4626-24-R-A001
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

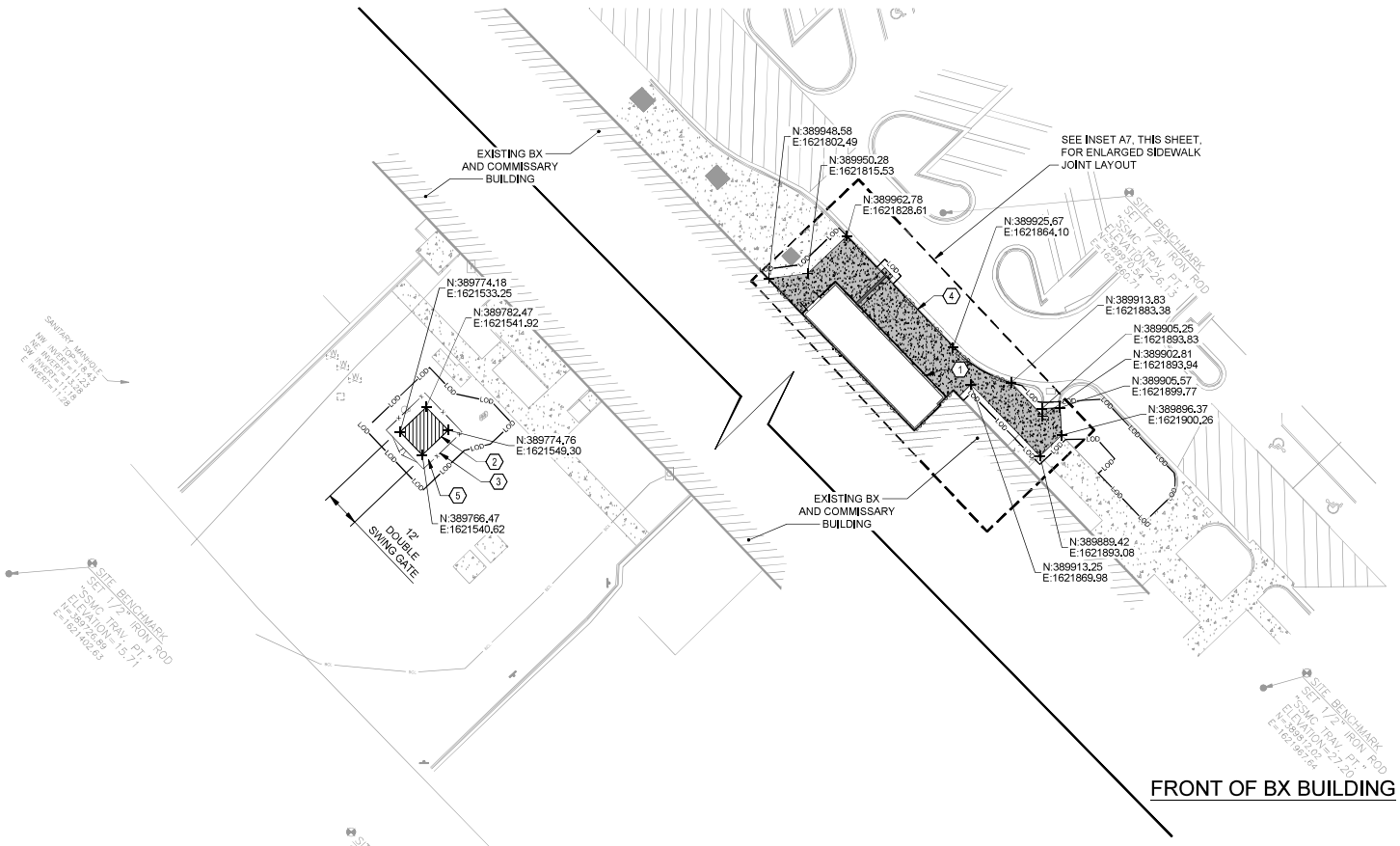
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC Construction and HVAC Replacement
Client Project Number: FLM125-1013D

CIVIL DEMOLITION PLAN

POND # 1220054

SHEET ID
CD101

ISSUED FOR CONSTRUCTION



GENERAL SHEET NOTES

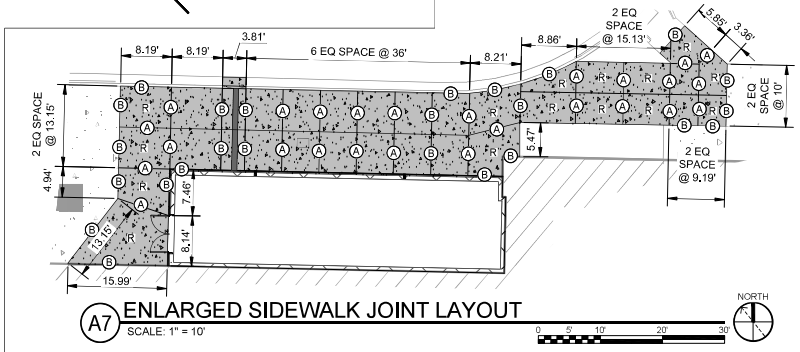
1. REFER TO SHEET C-001 FOR CIVIL NOTES, LEGEND AND ABBREVIATIONS.
2. THIS SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
3. PROTECT EXISTING UTILITIES, SIGNS, AND CURB & GUTTER TO REMAIN. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES PRIOR TO ANY WORK. CONTRACTOR MUST NOTIFY COR IF EXISTING CONDITIONS VARY FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS.

SHEET KEYNOTES

1. 810 SF MECHANICAL ROOM. REFER TO ARCHITECTURAL SHEETS FOR DETAILS.
2. ELEVATED CONCRETE CHILLER SUPPORT STRUCTURE. REFER TO STRUCTURAL SHEET S-004 FOR DETAILS.
3. 75 LF COOLING TOWER FENCE (TYPE FE6 - TR - 84 WITH BARBED-WIRE ON SINGLE OUTRIGGER, TOP RAIL AND 72 INCH FABRIC WIDTH). SEE SHEETS C-502 & C-503 FOR CHAIN LINK SECURITY FENCE AND DOUBLE SWING GATE DETAILS.
4. CONCRETE SIDEWALK, DETAIL F4/C-501.
5. PLACE #57 STONE GRAVEL TO 3 IN DEPTH INSIDE FENCED AREA.

LEGEND

- LIMITS OF DISTURBANCE
- FENCE (DETAIL A1/C-502)
- CONCRETE SIDEWALK / PAD (DETAIL F4/C-501)
- CONCRETE CHILLER SUPPORT STRUCTURE
- (A) SIDEWALK CONTRACTION JOINT. SEE DETAIL F4/C-501.
- (B) SIDEWALK EXPANSION JOINT. SEE DETAIL F4/C-501.
- R REINFORCED SIDEWALK PAVEMENT. SEE DETAIL F4/C-501.



A7 ENLARGED SIDEWALK JOINT LAYOUT
SCALE: 1" = 10'

A1 CIVIL SITE PLAN
SCALE: 1" = 20'

NORTH

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
QUALITY CONTROL BY: S. BELLAMINGER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8903-24-R-A001
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON TYNDALL AFB, FLORIDA

POND CDM Smith

3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

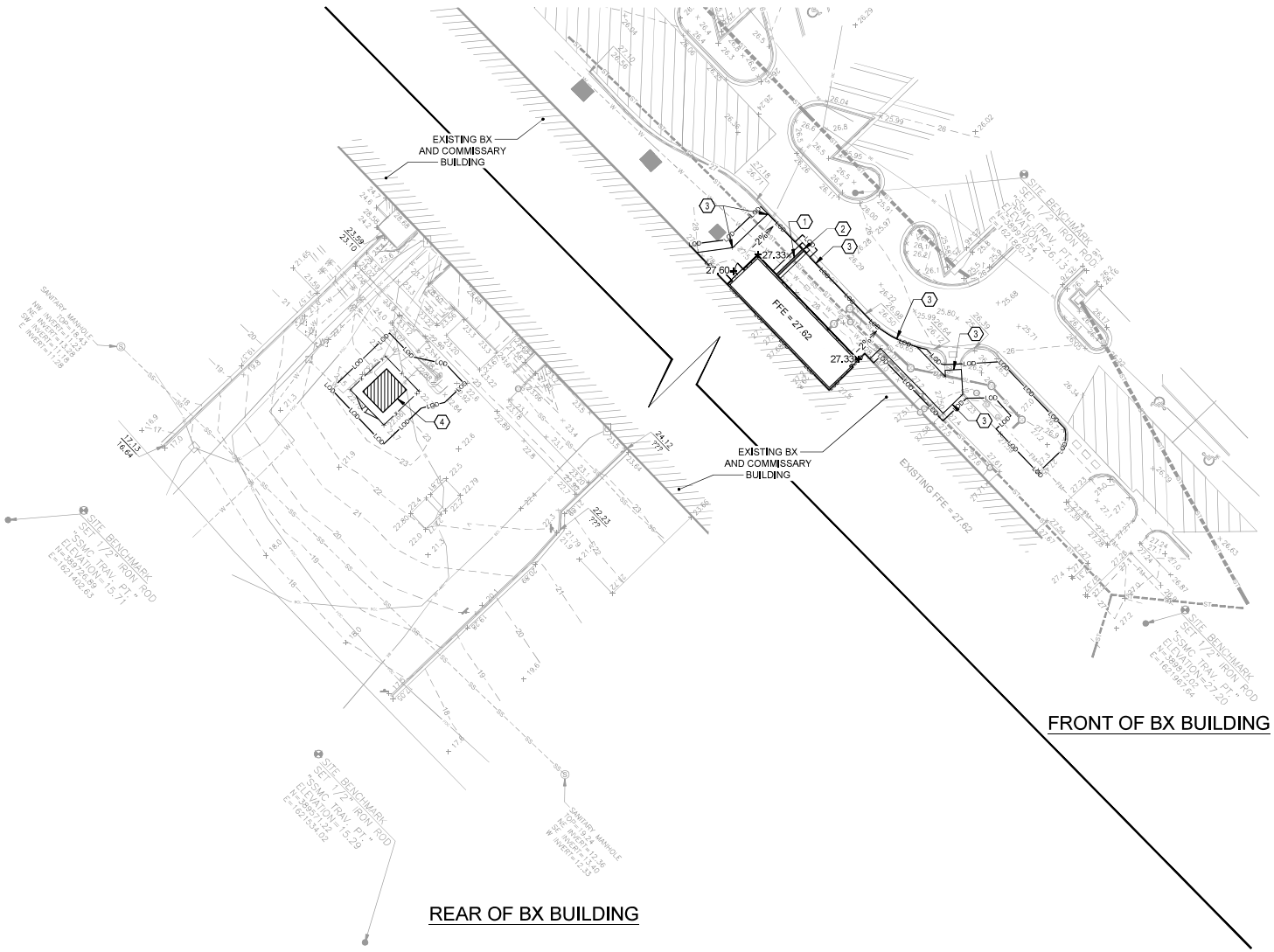
220 Mall Lane, Suite 2, Building 950 Tyndall AFB, FL 32403, United States

Remove and Install New B950 BX and Wall HVAC System, MCC Construction and HVAC Equipment Client Project Number: ALM21-10132

CIVIL SITE PLAN

POND # 1220054

SHEET ID
CS101



GENERAL SHEET NOTES

1. REFER TO SHEET C-001 FOR CIVIL NOTES, LEGEND AND ABBREVIATIONS.
2. THIS SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
3. PROTECT EXISTING UTILITIES, SIGNS, AND CURB & GUTTER TO REMAIN. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES PRIOR TO ANY WORK. CONTRACTOR MUST NOTIFY COR IF EXISTING CONDITIONS VARY FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS.
4. CONTOUR LINES SHOWN HEREON ARE BASED ON A TOPOGRAPHIC SURVEY BY SOUTHEASTERN SURVEYING AND MAPPING CORPORATION PROVIDED JANUARY 10, 2024.

SHEET KEYNOTES

1. GRATED TRENCH DRAIN, SEE DETAIL A1/C-501.
2. TRENCH DRAIN OUTLET ELEVATION MUST BE A MINIMUM OF 1/2-INCH ABOVE ADJACENT ASPHALT FOR POSITIVE DRAINAGE OUT AND AWAY FROM TRENCH DRAIN.
3. NEW SIDEWALK TO MATCH EXISTING GRADE.
4. SET TOP OF SLAB AT ELEVATION: 23.5'.

LEGEND

- LOD — LIMITS OF DISTURBANCE
- F — FENCE
- ST — STORM SEWER PIPE
- 27.60+ — SPOT ELEVATION
- 2% — PROPOSED SLOPE

A1 CIVIL GRADING PLAN
SCALE: 1" = 20'

NORTH

0 10' 20' 40' 60'

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
QUALITY CONTROL BY: S. BELLMANGER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA4626-24-R-B001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON TYNDALL AFB, FLORIDA

POND CDM Smith
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

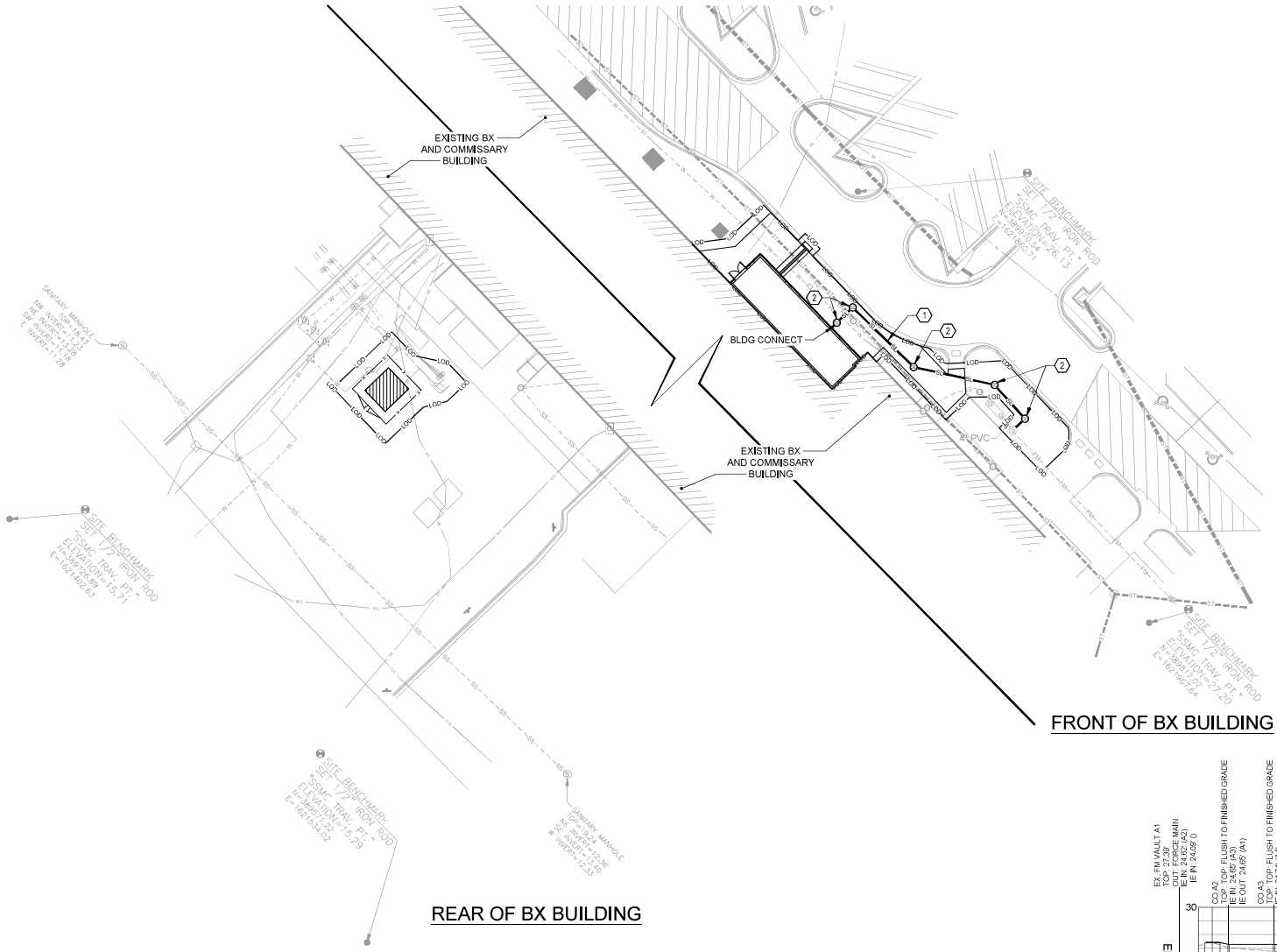
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC Construction and Mall HVAC Equipment
Client Project Number: FLM125-1013D

CIVIL GRADING PLAN

POND # 1220054

SHEET ID
CG101

ISSUED FOR CONSTRUCTION



A1 CIVIL UTILITY PLAN
SCALE: 1" = 20'

GENERAL SHEET NOTES

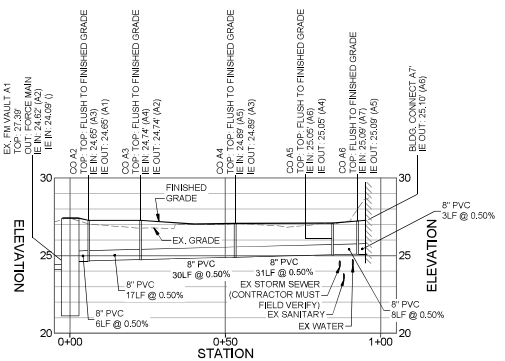
1. REFER TO SHEET C-001 FOR CIVIL NOTES, LEGEND AND ABBREVIATIONS.
2. THIS SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
3. PROTECT EXISTING UTILITIES, SIGNS, AND CURB & GUTTER TO REMAIN. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES PRIOR TO ANY WORK. CONTRACTOR MUST NOTIFY COR IF EXISTING CONDITIONS VARY FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS.
4. ALL EXISTING UTILITY CROSSING ARE APPROXIMATE. CONTRACTOR MUST VERIFY AND NOTIFY COR IF THERE IS ANY CONFLICT.

SHEET KEYNOTES

1. 95 LF OF PROPOSED 6" PVC SANITARY SEWER LINE. SEE PROFILE, THIS SHEET.
2. CLEANOUT (TYP). SEE DETAIL F1/C-501.

LEGEND

- LOD LOD — LIMITS OF DISTURBANCE
- F F — FENCE
- SL SL — SANITARY SEWER LATERAL



A8 SANITARY SEWER PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'
0 10' 20' 40' 60'
0 2' 4' 8' 12'

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA
POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY:	ISSUE DATE:
J. JORDAN	9/13/2024
DRAWN BY:	SOLICITATION NO.:
J. JORDAN	FA4626-24-B-A044
CHECKED BY:	CONTRACT NO.:
E. MANGINA	
QUALITY ASSURANCE BY:	
S. BELLINGER	
SIZE:	
ANSI D	

MARK	DESCRIPTION	DATE

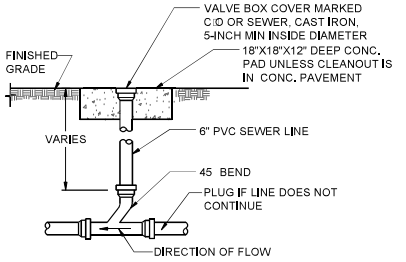
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Control Panel, and Associated Equipment
Client Project Number: ALM125-1013D

CIVIL UTILITY PLAN

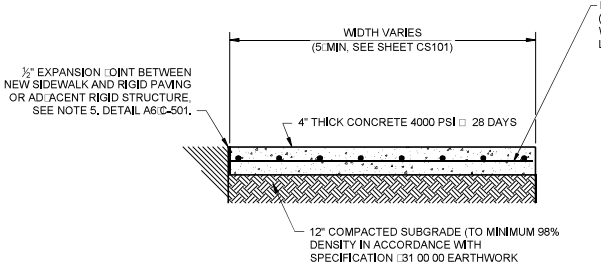
POND # 1220054

SHEET ID
CU101

ISSUED FOR CONSTRUCTION



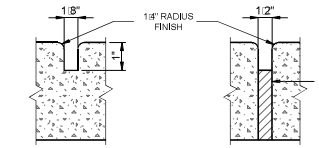
F1 CLEANOUT
NO SCALE



□4S □ 12 O.C. EACH WAY (PROVIDE REINFORCEMENT WHERE INDICATED BY THE LETTER "R". SEE SHEET CS101.

NOTES:
1. FOR CONTRACTION AND EXPANSION □OINTS SEE THIS DETAIL. PROVIDE TRANSVERSE CONTRACTION □OINTS AT INTERVALS NOT EXCEEDING 6-0" ON CENTER. PROVIDE CENTERLINE CONTRACTION □OINTS IN SIDEWALKS WIDER THAN 8-0". PROVIDE EXPANSION □OINTS AT INTERVALS NOT EXCEEDING 50-0" ON CENTER WHERE WALK DOES NOT ABUT CURB.
2. CROSS SLOPE 2% (MAX).
2. FOR UTILITY TRENCHES UNDERNEATH EXISTING SIDEWALK, SEE DETAIL A6/C-501.

F4 CONCRETE SIDEWALK
NO SCALE

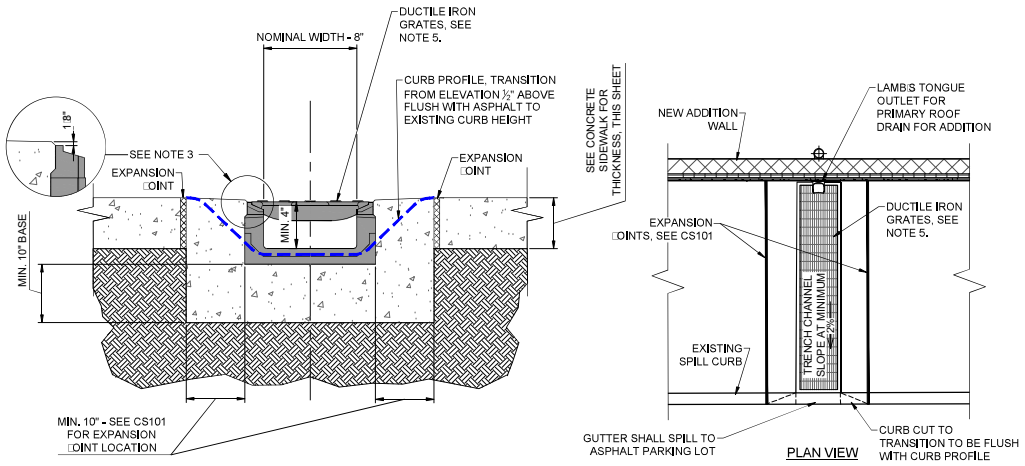


NOTE:
CONTRACTION □OINT SHALL DIVIDE SIDEWALK INTO S□UARE PANELS. SPACING OF CONTRACTION □OINTS SHALL E□UAL THE WIDTH OF THE SIDEWALK. SIDEWALK CAN BE POURED MONOLITHICALLY WITH LESNI PAD.

CONTRACTION □OINT (A)

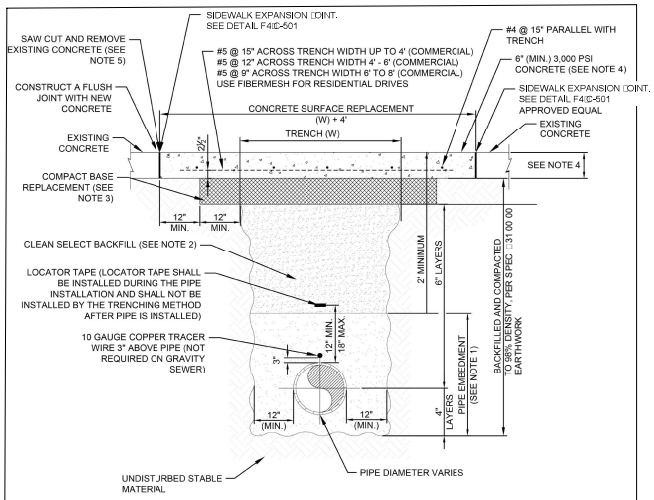
NOTE:
EXPANSION □OINTS □ 50□MAX. SPACING AND AT □UNCTIONS WITH OTHER STRUCTURES (I.E. CURBS, FOUNDATIONS, BUILDINGS, ETC.) AND RIGID PAVING.

EXPANSION □OINT (B)



NOTES:
1. MINIMUM CONCRETE STRENGTH OF 4,000 PSI. CONTRACTOR MUST VIBRATE CONCRETE TO ELIMINATE AIR POCKETS.
2. EXPANSION AND CONTRACTION CONTROL □OINTS AND REINFORCEMENT MUST BE PLACED ACCORDING TOT EH EMNLARGED PLAN ON CS101
3. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" ABOVE THE TOP OF THE CHANNEL EDGE.
4. TRENCH DRAIN CHANNEL MUST BE MADE OF A POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN DUCTILE IRON EDGE RAIL.
5. TRENCH MUST UTILI□ED CLASS-E DUCTILE IRON GRATES THAT ARE ABA COMPLIANT WITH HIGH-HEEL RESISTANT SI□ED OPENINGS.
6. MINIMUM PROPERTIES OF THE POLYMER CONCRETE MUST BE AS FOLLOWS:
   - •-COMPRESSIVE STRENGTH: 14,000 PSI
   - •-FLEXURAL STRENGTH: 4,000 PSI
   - •-TENSILE STRENGTH: 1,500 PSI
   - •-WATER ABSORPTION: 0.0□%
   - •-FROST PROOF YES
   - •-DILUTE ACID AND ALKALI RESISTANT YES
   - •-811□SALT SPRAY TEST COMPLIANT YES
6. ALL CHANNELS MUST BE INTERLOCKING WITH A MALE/FEMALE □OINTS.
□. CHANNEL INVERT SHALL TERMINIATE AND SPILL AT A MINUMUM OF ½" ABOVE ASPHALT PARKING LOT TO ENSURE POSTIVE DRAINAGE.

A1 SHALLOW TRENCH DRAIN
NO SCALE



NOTES:
1. PRESSURE PIPE EMBEDMENT SHALL BE ASTM CLASS II MATERIAL (MINIMUM). GRAVITY PIPE EMBEDMENT SHALL BE ASTM CLASS I MATERIAL, OR PIPE EMBEDMENT MATERIAL AS SPECIFIED BY ENGINEER. PRESSURE PIPE SHALL BE BEDDED AND COMPACTED IN ACCORDANCE WITH AWWA C605-TYPE 2 BEDDING RE□UIREMENTS FOR PVC PIPE AND AWWA C600-TYPE 2 BEDDING RE□UIREMENTS FOR DUCTILE IRON PIPE. GRAVITY PIPES SHALL BE BEDDED AND COMPACTED IN ACCORDANCE WITH ASTM D2321.
2. CLEAN SELECT BACKFILL MUST FOLLOW SPECIFICATION □31 00 00 EARTHWORK.
3. COMPACT BASE MATERIAL MUST FOLLOW SPECIFICATION □31 00 00 EARTHWORK.
4. CONCRETE THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
5. IF ANY PART OF SAW CUT REMOVAL COMES WITHIN 5 FT. OF EXISTING □OINT ON EITHER SIDE OF TRENCH, REMOVE AND REPLACE TO EXISTING □OINT. CONCRETE FINISH TO MATCH EXISTING.
6. NO TRASH, RUBBISH, ROCKS OR DEBRIS WILL BE ALLOWED IN TRENCHES.
□. ALL PIPE SHALL BE INSTALLED IN DRY TRENCHES.
8. CONTRACTOR MAY BE RE□UIRED BY THE ENGINEER TO DE-WATER PIPE TRENCH, IF NECESSARY.
9. BACK FILL FOR PIPE IN WET TRENCHES SHALL BE CLASS I MATERIAL (□8□ CRUSHED OR GRATED LIMEROCK) AND COMPACTED IN THE TRENCH TO A LEVEL ABOVE THE GROUND WATER.
10. AT THE ENGINEER'S DISCRETION, THE CONTRACTOR SHALL SUBSTITUTE SELECT BACKFILL IN LIEU OF NATIVE SOILS FOR A UNIT PRICE SPECIFIED IN THE CONTRACTOR'S BID FORM.
11. THE CONTRACTOR WILL BE COMPENSATED FOR SELECT BACKFILL ONLY IF DIRECTED BY THE ENGINEER IN WRITING, THE ENGINEER MAY ISSUE A FIELD ORDER WITH WRITTEN CONFIRMATION WITHIN 24 HOURS.
12. TEMPORARY PATCHES SHALL BE INSTALLED AND MAINTAINED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

A6 REMOVAL AND REPLACE PAVEMENT CONCRETE
NO SCALE

MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
F.A.C./CITATION NO.:
PROJECT NO.:
CONTRACT NO.:

DESIGNED BY: □. JORDAN
DRAWN BY: D. CRAWFORD
CHECKED BY: E. MANGWA
QUALITY CONTROL BY: S. FLUHINGER
SI□E: ANSI D

325□ CIVIL ENGINEER S□UADRON TYNDALL AFB, FLORIDA

POND CDM Smith
3500 Parkway La□e Suite 500 Nor□ross, Geor□ia 30092

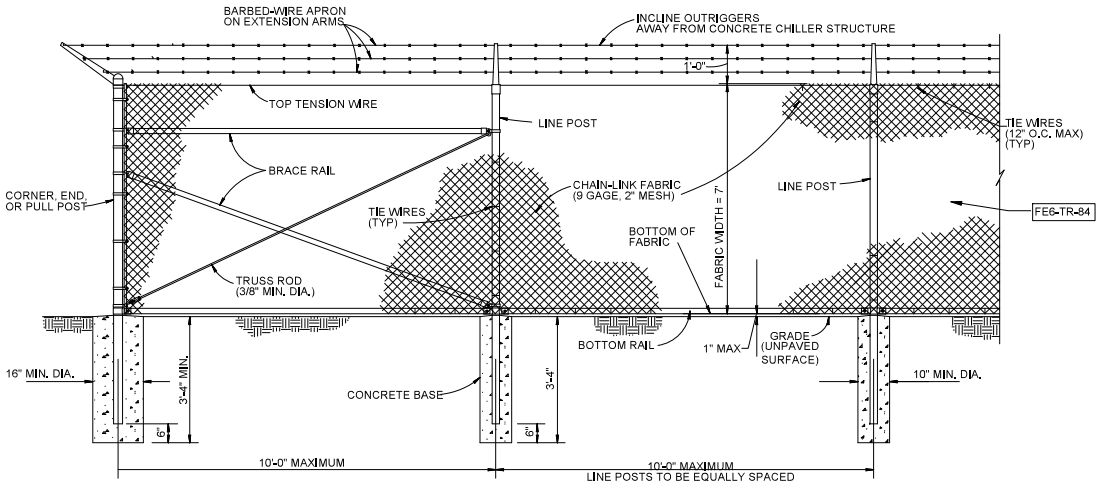
220 Mat La□e Suite 2, Build□□ 950 Ty□dall AFB, Fl. 32403, U□ited States
Re□o□e and Install New B080 BX and Mat HVAC Syste□, MCC Co□tro□ and Asso□iated Work
Ga□e 1 Pro□□□□□ Nu□□er: FLW121-1013D

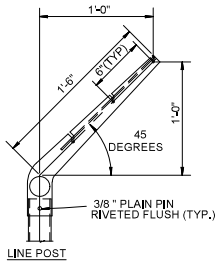
CIVIL CONSTRUCTION DETAILS

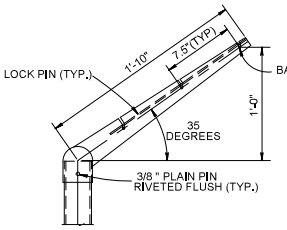
POND □ 1230564

SHEET ID
C-501

ISSUED FOR CONSTRUCTION

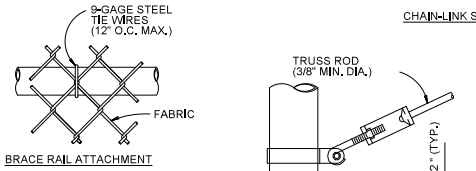






EXTENSION ARM DETAILS

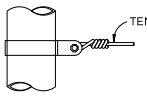
STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS			
TUBULAR - ROUND	2.375" O.D.	2.875" O.D.	4.00" O.D.
LINE POSTS			
TUBULAR - ROUND	1.90" O.D.	2.375" O.D.	2.875" O.D.
BOTTOM & BRACE RAILS			
TUBULAR - ROUND	1.66" O.D.		
TUBULAR - SQUARE	1.50" SQ.		
H-SECTION	1.625" X 1.50"		
C-SECTION (ROLL-FORMED)	1.625" X 1.25"		



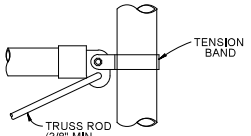
BRACE RAIL ATTACHMENT

TRUSS ROD AND BAND

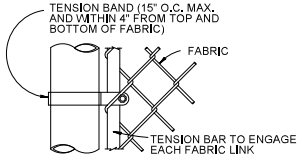
CHAIN-LINK SECURITY FENCE DETAIL



TENSION BAND DETAIL



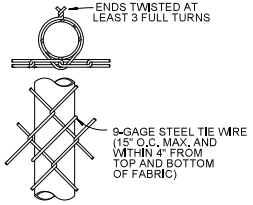
BRACE RAIL CLAMP DETAIL



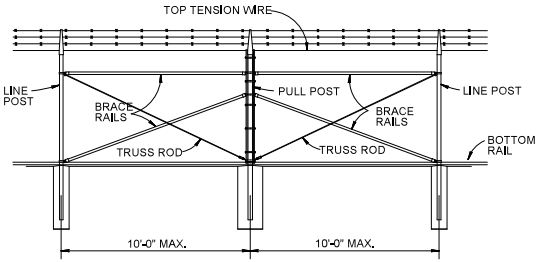


END OR GATE POST DETAIL

FASTENING DETAILS

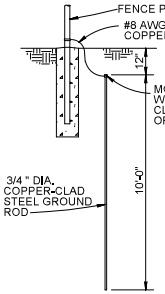


LINE POST ATTACHMENTS

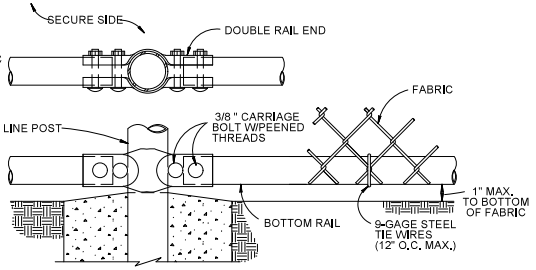


BRACE PANEL DETAIL

NOTE:
PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.



GROUNDING DETAIL
NO SCALE



BOTTOM RAIL DETAILS

NOTES:
1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
2. ONLY 9-GAGE GALVANIZED STEEL TIE WIRES SHALL BE USED FOR FASTENING THE FENCE FABRIC TO FENCE POSTS AND RAILS. 16-GAGE, STAINLESS STEEL TIE WIRES SHALL BE USED FOR FASTENING FENCE FABRIC TO TENSION WIRES. HOG RINGS SHALL NOT BE ALLOWED ON SENSORED FENCES.
3. BOTTOM RAIL SHALL BE ATTACHED TO DOUBLE RAIL ENDS USING 3/8 " CARRIAGE BOLTS AS SHOWN. ADDITIONAL HOLES SHALL BE DRILLED THROUGH THE BOTTOM RAIL ENDS TO INSURE THAT CARRIAGE BOLTS PASS THROUGH THE BOTTOM RAIL AS SHOWN.

FENCE LEGEND:

TYPE FE5 - CHAIN-LINK FENCE WITHOUT BARBED-WIRE APRON

TR - FENCE WITH TOP RAIL AND TENSION WIRE AT BOTTOM
FINAL NUMBER IS FABRIC WIDTH IN INCHES.

EXAMPLES:

FE6-TR-72 - CHAIN-LINK SECURITY FENCE WITH BARBED-WIRE ON SINGLE OUTRIGGER, TOP RAIL, AND 72 INCH FABRIC WIDTH.

FE5-TWB-84 - CHAIN-LINK SECURITY FENCE WITH NO APRON, TOP AND BOTTOM TENSION WIRE, AND 84 INCH FABRIC WIDTH.

A1 CHAIN LINK SECURITY FENCE
NO SCALE

EBRAIM MANGINA
FLORIDA
No 86266
09-13-2024
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGINA
QUALITY CONTROL BY: S. BELLINGER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8903-24-R-0004
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

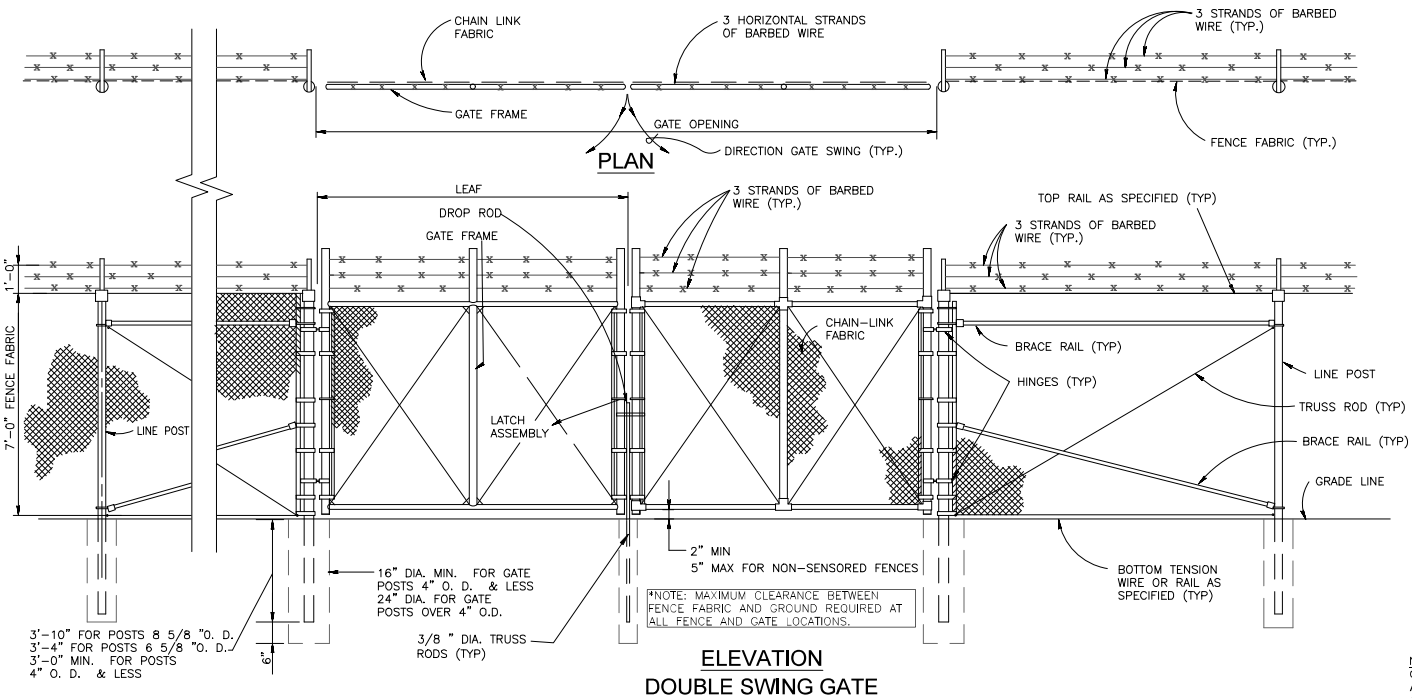
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MOC
Construction Activity #4 and #5 Replacement
Client Project Number: ALMJ25-10132

CIVIL CONSTRUCTION DETAILS

POND # 1220054

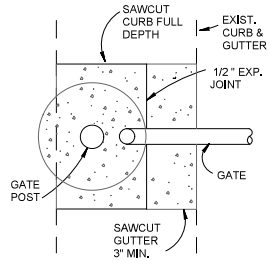
SHEET ID
C-502

ISSUED FOR CONSTRUCTION



PLAN

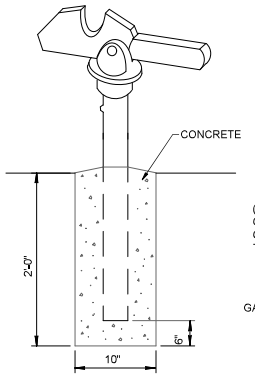
ELEVATION
DOUBLE SWING GATE
SCALE: N.T.S.



PLAN

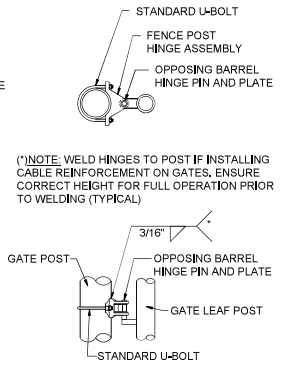
SINGLE LEAF GATES POST DATA		
OPENING	GATE POSTS	HINGE SPACE (S)
FACE TO FACE	ROUND SIZES	POST TO UPRIGHT
3'-0" - 6'-0"	2.875" OD	ROUND GATE POSTS: 2 1/4"
12'-0" - 19'-0"	6.625" OD	ROUND GATE POSTS: 2 1/4"
19'-0" - 23'-0"	8.625" OD	ROUND GATE POSTS: 2 1/4"
GATE POSTS & FOUNDATIONS: GATE POST SIZE AND ASSOCIATED FOOTING DIAMETER TO BE DETERMINED BY MANUFACTURER, BASED ON LEAF WEIGHT & DIMENSION, BUT NOT LESS THAN DIAMETER SHOWN ON THESE DRAWINGS. MINIMUM FOOTING DIAMETERS (TO BE FILLED W/4000 PSI CONC): 40" DIA. FOR 8" POST; 36" DIA. FOR 6" POST; 24" DIA. FOR 4" POST; OTHER SIZES TO BE DESIGNED BY MFR OR CONTRACTOR. NO FOOTING WIDTH SHALL BE LESS THAN 4(X) THE POST WIDTH.		
NOTE: IF GATE HINGES ARE NOT OPPOSING (AS SHOWN ABOVE) OR LEAF IS NOT LOCKED MECHANICALLY TO THE HINGES, WELD AN ANGLE. PLATE, OR BLOCK ABOVE HINGE TO RESTRICT LEAF FROM BEING REMOVED OR LIFTED OFF. RESTRICTION SHALL NOT HINDER OPERATION OF GATE.		

NOTE: PROVIDE ONE DROP BAR FOR EACH LEAF (TYP). ASSOCIATED GALV SLEEVES TO BE INSTALLED FLUSH WILL GRADE AT FULLY OPEN AND CLOSED POSITIONS. CONTRACTOR SHALL PROVIDE 6" LAYER OF #10 STONE BELOW BOTTOM OF SLEEVE TO ALLOW FOR DRAINAGE.

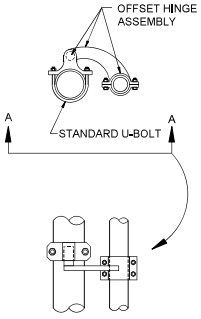


GATE KEEPER
(TO HOLD GATE OPEN)

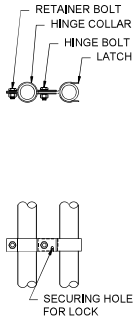
SWING GATE DETAILS



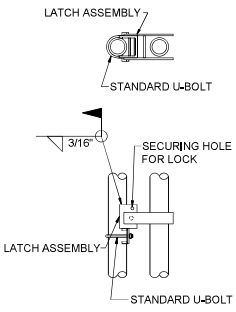
GATE HINGE DETAIL



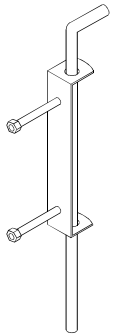
OFFSET HINGE DETAIL



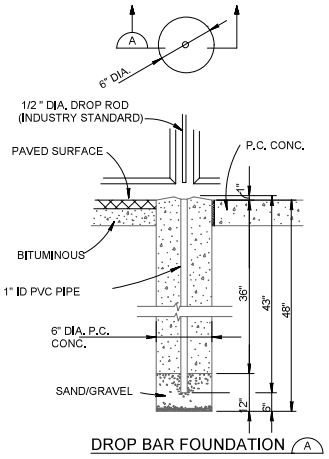
GATE LATCH DETAIL



FULCRUM LATCH ASSEMBLY



DROP BAR



DROP BAR FOUNDATION (A)

A1 DOUBLE SWING GATE
NO SCALE

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction and Associated Work
Client Project Number: ALW.125-10130

CIVIL CONSTRUCTION DETAILS

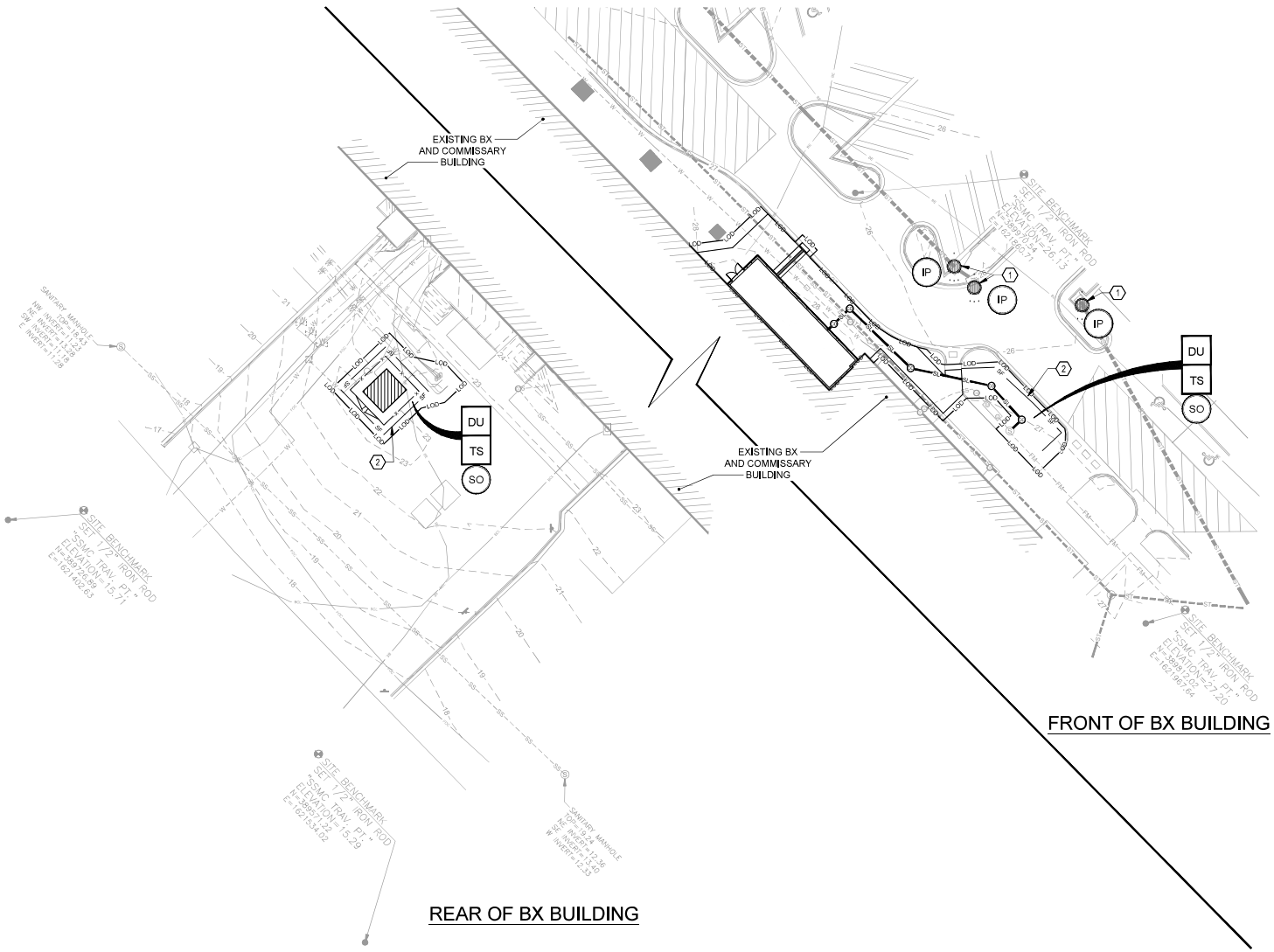
POND # 1220054

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
SUPERVISED BY: S. BELLINGER
ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:
SIZE: ANSI D

MARK	DESCRIPTION	DATE

SHEET ID
C-503

ISSUED FOR CONSTRUCTION



GENERAL SHEET NOTES

1. REFER TO SHEET C-001 FOR CIVIL NOTES, LEGEND AND ABBREVIATIONS.
2. THIS SHEET IS PART OF A MULTI-SHEET SET OF CONSTRUCTION PLANS AND SHALL BE READ WITH THE FULL SET TO BEST ENSURE PROPER INTERPRETATION.
3. PROTECT EXISTING UTILITIES, SIGNS, AND FENCE TO REMAIN. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES PRIOR TO ANY WORK. CONTRACTOR TO NOTIFY COR IF EXISTING CONDITIONS VARY FROM THAT SHOWN ON THE CONSTRUCTION DRAWINGS.
4. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.
5. EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
6. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
7. ANY DISTURBED AREA LEFT IDLE FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH PERMANENT SEEDING.
8. CONTOUR LINES SHOWN ON THIS SHEET ARE BASED ON THE BASE PROVIDED GIS DATA AND MAY NOT BE ACCURATE (TO BE UPDATED UPON RECEIPT OF THE SURVEY DATA).

SHEET KEYNOTES

1. INLET PROTECTION. DETAIL D1/CE501.
2. SILT FENCE. DETAIL D7/CE501.

SHEET LEGEND

SF	SILT FENCE
LOD LOD	LIMITS OF DISTURBANCE
TS	TEMPORARY SEEDING (DETAIL A1/CE501
DU	DUST CONTROL (DETAIL A1/CE501
SO	PERMANENT SODDING (DETAIL A1/CE503
IP	INLET PROTECTION (DETAIL D1/CE501

SUMMARY OF AREA/LENGTH

DISTURBED AREA: 0.10 ACRES
SILT FENCE: 150 LF

A1 EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1" = 20'

NORTH

0 10' 20' 40' 60'

09-13-2024

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGRIVA
QUALITY CONTROL BY: S. BELLAMINGER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8903-24-R-A001
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

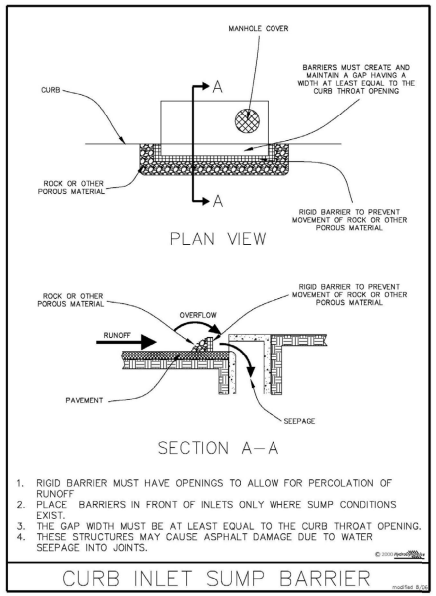
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construct and Install New Mall HVAC Equipment
Client Project Number: ALM24-1013D

EROSION AND SEDIMENT CONTROL PLAN

POND # 1220054

SHEET ID
CE101

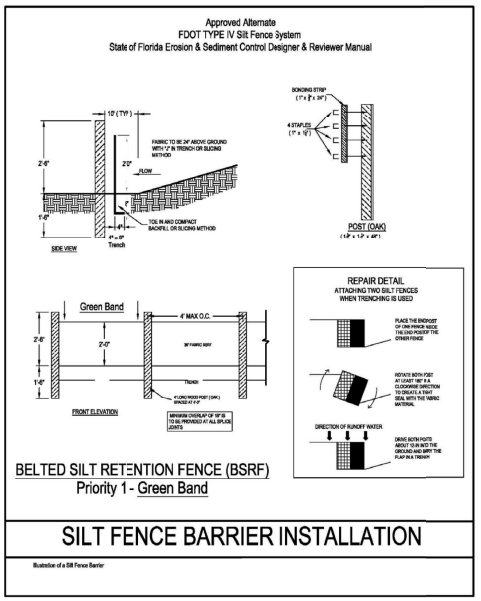
ISSUED FOR CONSTRUCTION



D1 INLET PROTECTION DETAIL

NO SCALE

IP



D7 SILT FENCE DETAIL

NO SCALE

Permanent Vegetation

Designers may find that it is more economical and practical to establish vegetation by planting seed rather than using sod. Permanent vegetation usually requires a perennial grass or legume to be used. Whenever possible, Designers should specify plant species that are native to the local area. Permanent vegetation is recommended for:

1. Final graded or cleared areas where permanent vegetative cover is needed to stabilize the soil.
2. Slopes designated to be treated with erosion control blankets.
3. Drainage channels or waterways designed to be protected with channel liners.

Temporary Vegetation

Rapidly growing annuals and legumes are examples of temporary vegetation recommended for disturbed lands that:

1. Will not be brought to final grade within seven (7) days or are likely to be re-disturbed.
2. Require seeding of cut and fill slopes under construction.
3. Require stabilization of soil storage areas and stockpiles.
4. Require stabilization of temporary dikes, dams, and sediment containment systems (SCSs).
5. Require development of cover or nursery crops to assist with establishment of perennial grasses.

Examples of temporary vegetation include wheat, oats, barley, millet, and Sudan grass.

Mulches

Mulches are applied over the soil surface to reduce erosion from rainfall and wind. They are also used to aid the establishment of vegetation. Some typical uses for mulches include:

- Reduce soil erosion by wind and raindrop impact through temporary soil stabilization
- Providing cover until vegetation can be established
- Adding soil amendments such as organic matter and fertilizers
- Improving soil structures
- Decrease the velocity of runoff over exposed soil areas, which increase the infiltration of water

Mulches can be used alone (usually temporarily) as a protective blanket on the soil. However, it is best to plant seed prior to any application of mulch. In this manner, vegetation will become available for erosion protection. Additional information on using mulches within coastal areas appears in Appendix I.

All mulches have limitations. For example, they are not suitable for areas with high tidal fluctuations, heavy wave action or where concentrated flows exist. In addition, some materials are susceptible to removal or disturbance by wind in exposed areas.

Successful use of dry or hydraulic mulches is dependent upon a rapid establishment of vegetation. Once vegetation becomes well established, and minimal amounts of weeds are present, erosion protection is provided by the vegetation root system and canopy cover.

Dry Mulches

Mulches can be classified as "dry" or "wet" products. Dry mulches usually consist of organic or inorganic materials, whereas wet mulches are applied with hydraulic equipment and also consist of organic materials.

Dry mulches can consist of:

- Certified noxious weed free straw or hay
- Compost materials, including wood or bark chips
- Rolled Erosion Control Products (RECPs)
- Rock

The standard application rate of straw/hay mulch is about 2.0 tons/acre with 80% to 100% ground coverage of material having minimum fiber lengths of 6.0- to 8.0-inches. Dry mulches must be held in place, usually by crimping, which forces, or punches, fibers into the ground by use of a weighted disk.

When straw/hay mulch fibers are short, anchoring material by crimping usually will not occur and removal by wind happens. A tackifier can overcome some wind removal problems by "gluing" the fibers together. However, strong winds could still remove sections of tackified dry mulches.

Soil Binders

When dry mulch cannot be crimped, other methods to control erosion or hold fibers in place must be used. Soil binders and tackifiers have been developed to accomplish this task with examples including:

- Tackifying straw or hay mulches
- A component of hydraulic mulches and matrices
- Dust-control products

An excellent use of soil binders is to temporarily stabilize cut and fill areas. These low-cost erosion control products provide an effective, temporary method to reduce sediment leaving construction sites. However, soil binders should not be depended upon for more than three to six months as an erosion control practice. Also, they do not replace the need for permanent vegetation establishment by planting seed and mulching.

Establishing Permanent, Salt-Tolerant Vegetation

-- Establishing permanent vegetation through seeding, sodding, or transfer of adult plants that are tolerant to low-nutrient mineral soils and saline moisture. Common seed types used in Florida are bahia, bermuda, bahia/bermuda mix, and annual type ryegrass. Additional seed types that are being tested by the Natural Resource Conservation Service for temporary or permanent stabilization of soil in construction areas and soon may be available for use are eastern gamagrass, lopsided indiangrass, chalky bluestem, hairawn muhly, switchgrass, and wiregrass (NRCS, 2006). Common sod types used in (but not native to) Florida are centipede, bahia, and bermuda sod. --

Table 2. Salt-Tolerant Native Plant Species in Florida (Source: David Chiappini, 2006)

Common name	Scientific name	Area of Florida	Relative salt tolerance
Youpon Holly	Ilex vomitoria	n, c, s	good
Southern Red Cedar	Juniperus silicicola	n, c, s	good
Wax Myrtle	Myrica cerifera	n, c, s	good
Sand Pine	Pinus clausa	n, c	good
Live Oak	Quercus virginiana	n, c, s	good
Sand Live Oak	Quercus gemmata	n, c, s	good
Dahoon Holly	Ilex cassine	n, c, s	moderate
Southern Magnolia	Magnolia grandiflora	n, c, s	moderate
Florida Red Bay	Persea borbonia	n, c	moderate
Slash Pine	Pinus elliottii	n, c, s	moderate
Sycamore	Platanus occidentalis	n, c	moderate
Chickasaw Plum	Prunus angustifolia	n, c	moderate
Cherry Laurel	Prunus carliniana	n, c	moderate
Laurel Oak	Quercus laurifolia	n, c, s	moderate
Water Oak	Quercus nigra	n, c	moderate
Bald Cypress	Taxodium distichum	n, c, s	moderate
Christmas Berry	Lycium carolinianum	n, c, s	good
Cabbage Palm	Sabal palmetto	n, c, s	good
Saw Palmetto	Serenoa repens	n, c, s	good
Spanish Bayonet	Yucca aloifolia	n, c, s	good
Adams Needle	Yucca filamentosa	n, c, s	good
Gallberry	Ilex glabra	n, c, s	moderate
Paurotis Palm	Acoelorrhaphe wrightii	c, s	moderate
Groundseltree	Baccharis halimifolia	c, s	good
Devil's Backbone	Pedilanthus tithymaloides	c, s	moderate
Dune Sunflower	Helianthus debilis	n, c, s	good
Beach Morning Glory	Ipomoea pes-caprae	n, c, s	good
Virginia Creeper	Parthenocissus quinquefolia	n, c, s	good
Purslane	Portulaca sp	n., c, s	good
Sea Oats	Uniola paniculata	n, c, s	good
Coontie	Zamia pumila	n, c, s	good
Seaside Paspalum	Paspalum vaginatum	n, c, s	good
Blanket Flower	Gaillardia pulchella	n, c	moderate
Mahogany	Swietenia mahogani	s	good
Pigeon Plum	Coccoloba diversifolia	s	good
Satin Leaf	Chrysophyllum oliviforme	s	good
Silver Buttonwood	Conocarpus erectus	s	good
Inkberry	Scaevola plumieri	s	good
Marlberry	Ardisia escalloniodes	s	good
Sea Grape	Coccoloba uvifera	s	good
Saltmeadow Cordgrass	Spartina patens	n, c, s	good
Upland River Oats	Chasmanthium latifolium	n. c	good
Black Mangrove	Avicennia germinans	n	good
Red Mangrove	Rhizophora mangle	n, c, s	good
White Mangrove	Laguncularia racemosa	c. s	good
White Stopper	Eugenia axillaris	c, s	good
Spanish Stopper	Eugenia foetida	c, s	good
Leather Fern	Acrostichum danaeifolium	s	good
Smooth Cordgrass	Spartina alterniflora	n, c	good
Sand Cordgrass	Spartina bakeri	n, c, s	moderate
Virginia Dropseed	Sporobolus virginicus	n, c, s	good
False Rosemary	Conradina canescens	n, c	moderate
Rusty Lyonia	Lyonia ferruginea	n, c	moderate
Muhly Grass	Muhlenbergia capillaries	n, c	moderate
Myrtle Oak	Quercus myrtifolia	n, c	moderate
Tough Bumelia	Sideroxylon tenax	n, c	moderate
Devilwood	Osmanthus americanus	n, c	moderate
Beautyberry	Callicarpa americana	n, c, s	moderate
Hercules Club	Zanthoxylum clava-herculis	n, c	moderate
Sparkleberry	Vaccinium arboreum	n, c	moderate
Railroad Vine	Ipomoea pes-caprae	n, c, s	good
Longleaf Pine	Pinus palustris	n, c	moderate
Sweetgum	Liquidambar styraciflua	n, c, s	moderate
Jamaica Dogwood	Piscidia piscipula	s	good
Blackbead	Pithecellobium keyense	s	good
Sea Lavender	Argusia gnaphalodes	s	good
Bay Cedar	Suriana maritima	s	good
Florida Privet	Forestiera segregata	n, c, s	moderate
White Indigoberry	Randia aculeata	c, s	moderate
Joewood	Jacquinia keyensis	s	moderate

A1 PERMENANT & TEMPORARY VEGETATION, AND DUST CONTROL NOTES

NO SCALE

TS | DU

POND CDM Smith
3596 CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
SUPERINTENDENT: S. CUMMINGS
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA8903-24-R-A001
CONTRACT NO.:

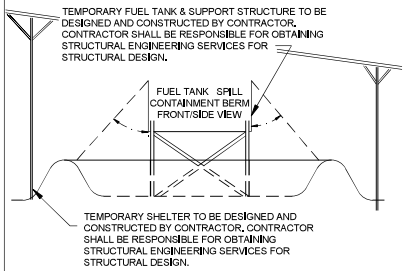
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 DX and Wall HVAC System, MCC Control Panel, and Associated Equipment
Client Project Number: FLM3125-1013D

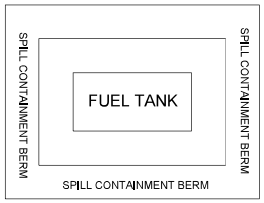
EROSION AND SEDIMENT CONTROL DETAILS

POND # 1220054

SHEET ID
CE501

ISSUED FOR CONSTRUCTION





PLAN VIEW

POLLUTION CONTROL BMP SPECIFICATIONS

ABOVE GROUND FUEL TANK NOTES:
- VOLUME OF BERM CONTAINMENT SHALL BE 110% OF THE LARGEST CONTAINER
- LINE THE STORAGE AREA WITH A DOUBLE LAYER OF PLASTIC SHEETING OR SIMILAR MATERIAL
- CLEARLY LABEL ALL PRODUCTS
- KEEP TANKS OFF GROUND
- PROVIDE SHELTER OVER THE AREA
- PROVIDE FIRE EXTINGUISHER BETWEEN 40 FT. TO 50 FT. FROM TANK AND CLEARLY LABELED.
- PROPERLY AND SAFELY CLEAN UP AND DISPOSE OF FLAMMABLE OR COMBUSTIBLE LIQUIDS THAT HAVE BEEN LEAKED OR SPILLED IN ACCORDANCE WITH THE SPILL RESPONSE PLAN.
- FUEL TANKS MUST BE GREATER THAN 50 FEET AWAY FROM STORM DRAINS AND SURFACE WATER BODIES; 75 FEET FROM PRIVATE WELLS; AND, OUTSIDE SANITARY RADIUS OF PUBLIC WELLS (150 TO 400 FEET).
- SPILL RESPONSE INFORMATION POSTERS MUST BE POSTED IN CLEARLY VISIBLE LOCATIONS AT ALL OUTDOOR STORAGE AREAS.

CONTRACTOR SHALL UTILIZE THE FOLLOWING BEST MANAGEMENT PRACTICES:
- KEEP FLAMMABLE LIQUIDS IN CLOSED CONTAINERS WHEN NOT IN USE.
- ALL CONTAINERS IN OUTDOOR STORAGE AREAS MUST CLEARLY LABELED WITH THEIR CONTENTS. ALL CONTAINERS MUST BE KEPT OFF THE GROUND AND HAVE SECURELY FASTENED LIDS. DRIP PLAN MUST BE PLACED UNDER ALL SPIGOTS, VALVES, FILTERS AND PUMPS TO CATCH LEAKS.
- ALL LIQUID PETROLEUM PRODUCTS CONTAINERS THAT ARE 5 GALLONS OR LARGER IN CAPACITY MUST BE STORED INSIDE A BUILDING OR WITHIN A PROPER OUTDOOR STORAGE AREA.
- MINIMIZE THE USE OF ALL PETROLEUM PRODUCTS.
- WHENEVER POSSIBLE, KEEP SEPARATE AND RECYCLE DISCARDED OILS, DEGREASERS, SOLVENTS, ANTIFREEZE, AND BRAKE FLUIDS. MANY COMMUNITIES HAVE OIL RECYCLING CENTERS.
- USE PROPER RECEPTACLES TO DISPOSE OF CONTAMINATED WASTES THAT CANNOT BE RECYCLED IN CONFORMANCE WITH FEDERAL, STATE, AND/OR LOCAL REGULATIONS
- DO NOT DUMP PETROLEUM PRODUCT WASTE, PESTICIDES, FERTILIZERS, OR OTHER CHEMICALS INTO SEWERS, STORM DRAINS, OR OTHER DRAINAGE CHANNELS. THIS IS ILLEGAL AND COULD RESULT IN FINES OR JOB SHUTDOWN.
- PREVENT SPILLS OF PETROLEUM PRODUCTS FROM OCCURRING BY TAKING SPECIAL CARE WHEN HANDLING THESE PRODUCTS, KEEPING FACILITIES AND EQUIPMENT WELL MAINTAINED.
- SPILL PROOF CONTAINERS AND FUNNELS MUST BE USED WHEN MANUALLY TRANSFERRING FLUIDS FROM ONE CONTAINER TO ANOTHER.
- DEVELOP A SPILL RESPONSE PLAN IN CONFORMANCE WITH FEDERAL, STATE, AND/OR LOCAL REGULATIONS
- MAKE SURE THAT SOMEONE TRAINED IN SPILL RESPONSE IS PRESENT ON SITE ON CALL AT ALL TIMES.
- KEEP MATERIALS FOR CLEANING UP SPILLS ON SITE EASILY AVAILABLE.
- PERFORM MAINTENANCE OF VEHICLES OFFSITE WHENEVER POSSIBLE.
- LOCATE ON-SITE FUEL AND VEHICLE MAINTENANCE STAGING AREAS AWAY FROM ALL DRAINAGE COURSES.
- KEEP EQUIPMENT PROPERLY MAINTAINED TO PREVENT LEAKS.
- EDUCATE CONSTRUCTION WORKERS ABOUT PROPER MATERIALS HANDLING AND SPILL RESPONSE PROCEDURES. DISTRIBUTE OR POST INFORMATIONAL MATERIALS REGARDING CHEMICAL CONTROL.
- TO THE EXTENT THAT IT DOESN'T COMPROMISE CLEAN UP ACTIVITIES, SPILLS SHALL BE COVERED AND PROTECTED FROM STORM WATER RUN OFF DURING RAINFALL.
- SPILLS SHALL NOT BE BURIED OR WASHED WITH WATER.
- USED CLEAN UP MATERIALS, CONTAMINATED MATERIALS, AND RECOVERED SPILL MATERIALS THAT IS NO LONGER SUITABLE FOR INTENDED PURPOSES SHALL BE STORED AND DISPOSED OF IN CONFORMANCE WITH FEDERAL, STATE AND/OR LOCAL REGULATIONS.
- WATER USED FOR CLEANING AND DECONTAMINATION SHALL NOT BE ALLOWED TO ENTER STORM DRAINS OR WATERCOURSES AND SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND/OR LOCAL REGULATIONS.
- WHERE USED FOR CLEANING AND DECONTAMINATION, WATER OVERFLOW OR MINOR WATER SPILLAGE SHALL BE CONTAINED AND SHALL NOT BE ALLOWED TO DISCHARGE INTO DRAINAGE FACILITIES OR WATER COURSES.

ABOVE GROUND FUEL TANK STORAGE AREA
N.T.S.

A1 ABOVE GROUND FUEL TANK STORAGE AREA
NO SCALE

MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.:
PAMS/PROJECT NO.:
CONTRACT NO.:

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGIWA
QUALITY CONTROL BY: S. BEAUMANGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construct an MCC Pad, Install HVAC Equipment
Client Project Number: FLMX25-1013D

EROSION AND SEDIMENT CONTROL DETAILS

POND # 1220054

SHEET ID
CE502

ISSUED FOR CONSTRUCTION

6.67 SODDING
(ES BMP 1.67)

Definition

Stabilizing fine-graded disturbed areas by establishing permanent grass stands with sod.

Purposes

1. To establish permanent turf immediately.
2. To prevent erosion and damage from sediment and runoff by stabilizing the soil surface.
3. To reduce the production of dust and mud associated with bare soil surfaces.
4. To stabilize drainageways where concentrated overland flow will occur.

Conditions Where Practice Applies

1. Disturbed areas which require immediate vegetative covers, or where sodding is preferred to other means of grass establishment.
2. Locations particularly suited to stabilization with sod are:
   a. slopes and buffer strips.
   b. waterways and swales, especially around drop inlets.
   c. residential or commercial lawns where quick use or aesthetics are factors.

Specifications

Soil Preparation

1. Prior to soil preparation, areas to be sodded shall be brought to final grade in accordance with the approval plan. These operations should leave as much topsoil as possible or replace the topsoil to a depth of four inches (10 cm).
2. Soil tests should be made to determine the exact requirements for lime and fertilizer. Soil tests may be conducted by the State Laboratory at the University of Florida or a reputable commercial laboratory. Information on state soil tests is available from county agricultural extension agents.

   When a soil test is not made the following soil amendments should be made:

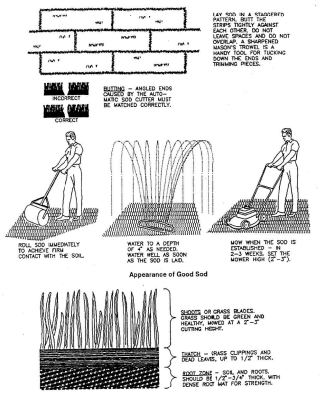


Plate 6.67a Sodding
Source: Virginia DSWC

3. On slopes 3:1 or greater, or wherever erosion may be a problem, sod shall be laid with staggered joints and secured by pegging or other approved methods. Sod shall be installed with the length perpendicular to the slope (on the contour). Begin laying sod at the bottom of the slope and work uphill. On very steep slopes, the use of ladders will facilitate the work and prevent damage to the sod.
4. Surface water cannot always be diverted from flowing over the face of the slope, but a capping strip of heavy jute or erosion netting, properly secured, along the crown of the slope will provide extra protection against lifting and undercutting of sod. This same technique can be used to fortify sod in water-carrying channels and other critical areas. Use wire staples to anchor heavy jute or erosion netting in channels.
5. As sodding of clearly defined areas is completed, sod shall be rolled or tamped to provide firm contact between roots and soil.
6. After rolling, sod shall be irrigated to a depth sufficient that the underside of the sod pad and the soil 4 inches (10 cm) below the sod is thoroughly wet.
7. During the first week, in the absence of adequate rainfall, watering shall be performed as often as necessary to maintain moist soil to a depth of at least 4 inches (10 cm).
8. The first mowing shall not be attempted until the sod is firmly rooted, usually after 2 - 3 weeks. Not more than 1/3 of the grass leaf should be removed at any one cutting.

B. Spot Sodding

1. Spot sodding is the planting of plugs or blocks, a minimum of 4 inches (10 cm) in diameter or square, of sod at measured intervals. The plugs or blocks should be placed one foot (30 cm) apart.
2. Sod spots within a row should be placed alternately and not directly opposite sod spots in adjacent rows.
3. Fit the plugs or blocks tightly into prepared holes and tamp them firmly into place.
4. Irrigate to a depth sufficient that the underside of the sod spot and the soil 4 inches (10 cm) below the sod is thoroughly wet.

C. Strip Sodding

1. Areas to be strip sodded should be fertilized, lined, prepared and smoothed as in solid sodding.
2. Lay the strips end to end in rows that are from 1 to 1-1/2 feet (30 to 45 cm) apart with the strips a minimum of 2 to 4 inches (5 to 10 cm) wide.

A1 PERMANENT SODDING
NO SCALE

3. Roll or tamp the strips thoroughly to provide firm contact between roots and soil.
4. Irrigate to a depth sufficient that the underside of the strips and the soil 4 inches (10 cm) below the strips are wet.

D. Sodded Swales and Waterways (Plate 6.67b)

1. Care should be taken to prepare the soil adequately in accordance with this specification. The sod type shall consist of plant materials able to withstand the designed velocity. (See STORMWATER CONVEYANCE CHANNELS - Section 6.35 (ES BMP 1.35).
2. Sod strips in swales and waterways shall be laid perpendicular to the direction of flow. Care should be taken to butt ends of strips tightly.
3. After rolling or tamping, sod shall be pegged or stapled to resist washout during the establishment period. Chicken wire, jute or other netting may be pegged over the sod for extra protection in critical areas.
4. All other specifications for this practice shall be adhered to when sodding a swale or waterway.

Maintenance of Established Sod

1. After the first week, sod shall be watered as necessary to maintain adequate moisture in the root zone and prevent dormancy.
2. Apply lime and fertilizer under a regular program based on soil tests and on the use and general appearance of the vegetative cover. In the absence of a soil test apply 1 - 2 tons/acre (45 - 90 lbs./1000 ft^2)(2.24 to 4.48 t/ha) of finely ground agricultural limestone every three years. Apply 400 - 500 lbs./acre (9 - 18 lbs./1000 ft^2)(450 - 560 kg/ha) of 10-10-10 fertilizer. To obtain better vegetative cover, topdress with 150 - 300 lbs./acre (6 - 12 lbs./1000 ft^2)(170 - 340 kg/ha) of 16-4-4 fertilizer during the growing season, but at least six weeks before the end of the growing season. If Centipede or St. Augustine grass is used, do not apply more than 1 pound of actual nitrogen per 1000 ft^2 (20 - 40 lbs./acre)(22 - 44 kg/ha).
3. Mow to control weeds, improve the appearance of the vegetative cover, and to reduce fire hazard, as necessary. In general, the coarser the leaf texture of the grass, the higher it should be cut. Continuous close mowing will result in loss of vigor and reduced stand. No more than 1/3 of the grass leaf should be removed in any mowing.

Pulverized agricultural limestone at 100 lbs./1000 ft^2 (2 tons/acre)(4.48 t/ha)

Fertilizer at 25 lbs./1000 ft^2 (1000 lbs./acre)(1.12 t/ha) of 10-10-10 in fall or 25lbs./1000 ft^2 of 5-10-10 in spring. NOTE: Equivalent nutrients may be applied with other fertilizer formulations.

These amendments shall be spread evenly over the area to be sodded, and incorporated into the top 3 - 6 inches (8 - 15 cm) of the soil by discing, harrowing or other acceptable means.

3. Prior to laying sod, the soil surface shall be clear of trash, debris, roots, branches, stones and clods in excess of 2 inches (5 cm) in length or diameter. Sod shall not be applied to gravel or other non-soil surfaces.
4. Any irregularities in the soil surface resulting from topsoil or other operations shall be filled or leveled in order to prevent the formation of depressions or water pockets.
5. Areas to be topsoiled and topsoil used shall fulfill the requirements of TOPSOILING - Section 6.61 (ES BMP 1.61). No sod shall be spread on soil which has been treated with soil sterilants until enough time has elapsed to permit dissipation of toxic materials.

Sod Quality

1. Sod should be free of weeds and undesirable coarse weedy grasses. If possible, Certified or Approved turfgrass sod should be used.
2. Sod shall be machine cut at a uniform soil thickness of 3/4 inch (20 mm), plus or minus 1/4 inch (6 mm), at the time of cutting. This thickness shall exclude shoot growth and thatch.
3. Pieces of sod shall be cut to the supplier's standard width and length, with a maximum allowable deviation in any dimension of 5%. Torn or uneven pads will not be acceptable.
4. Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended from a firm grasp on one end of the section.
5. Sod shall be not cut or laid in excessively wet or dry weather.
6. Sod shall be harvested, delivered, and installed within a period of 36 hours

Sod Installation

A. Solid Sodding (Plate 6.67a)
1. Irrigate areas to be sodded with a minimum of 1/2-inch (13 mm) of water unless

recent rains have provided equivalent moisture.

2. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and butting tightly against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Care shall be exercised to insure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause drying of the roots.

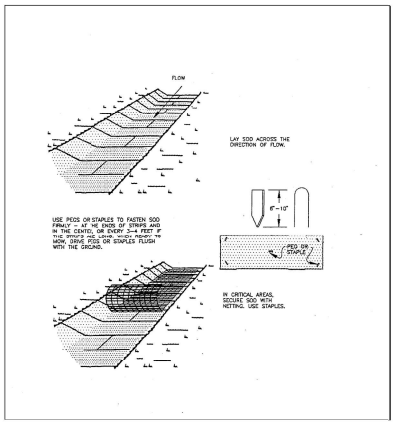


Plate 6.67b Sodding Swales and Waterways
Source: Virginia DSWC

SO

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY TERRAIN MANGINA ON THE DATE ADJACENT TO THE SEAL.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TERRAIN MANGINA — No. 59266 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — 09-13-2024

MARK	DESCRIPTION	DATE

DESIGNED BY: J. JORDAN
DRAWN BY: J. JORDAN
CHECKED BY: E. MANGINA
QA/QC BY: S. GRUNINGER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: FA4613-24-R-A004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC Construction and AC Equipment
Client Project Number: FLMX25-1013D

EROSION AND SEDIMENT CONTROL DETAILS

POND # 1220054

SHEET ID
CE503

ISSUED FOR CONSTRUCTION

GENERAL NOTES

DESIGN CRITERIA:

CODES:

- UFC 1-200-01 UNIFIED FACILITIES CRITERIA, "DOD BUILDING CODE (GENERAL BUILDING REQUIREMENTS)," 01 SEPTEMBER 2022, CHANGE 2, 12 JUNE 2023
- UFC 3-301-01 UNIFIED FACILITIES CRITERIA, "STRUCTURAL ENGINEERING", 11 APRIL 2023
- AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, 2016 EDITION
- ASCE 7-16 AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- INTERNATIONAL BUILDING CODE, 2021 EDITION
- INTERNATIONAL EXISTING BUILDING CODE, 2021 EDITION
- TMS 402-16 BUILDING CODE FOR MASONRY STRUCTURES
- ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"

DESIGN LOADS:

LIVE LOADS:

- NEW MECHANICAL ROOM:	250 PSF
- EXISTING STORAGE, WAREHOUSE AND MECHANICAL ROOM:	360 PSF
- EXISTING MEZZANINE FLOORS:	150 PSF
- EXISTING ALL OTHER:	100 PSF

SUPERIMPOSED DEADLOADS:

- ROOFS	AS NOTED
- FLOORS	PER EQUIPMENT MANUFACTURER

ROOF SNOW LOADS:

- GROUND SNOW LOAD, P_g	0 PSF
- FLAT SNOW LOAD, P_f	0 PSF
- SNOW EXPOSURE FACTOR, C_e	1.0
- SNOW LOAD IMPORTANCE FACTOR, I_s	1.1
- THERMAL FACTOR, C_t	1.0

WIND DESIGN DATA: ASCE 7-16

- ULTIMATE DESIGN WIND SPEED, V_{ULT} (3 SECOND GUST)	135 MPH
- NOMINAL DESIGN WIND SPEED, V_{nod}	105 MPH
- RISK CATEGORY	II
- WIND EXPOSURE CATEGORY	C
- ENCLOSURE CLASSIFICATION	PARTIALLY ENCLOSED
- INTERNAL PRESSURE COEFFICIENT	± 0.55

EARTHQUAKE:

- RISK CATEGORY	II
- SITE CLASS	D
- SEISMIC DESIGN CATEGORY	B
- SEISMIC IMPORTANCE FACTOR, I_e	1.0
- MAPPED SPECTRAL RESPONSE ACC, S_S	0.065
- MAPPED SPECTRAL RESPONSE ACC, S_1	0.048
- SPECTRAL RESPONSE COEFFICIENT, S_{DS}	0.07
- SPECTRAL RESPONSE COEFFICIENT, S_{D1}	0.078
- SEISMIC-FORCE-RESISTING SYSTEM	INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
- DESIGN BASE SHEAR	C_s*W
- SEISMIC RESPONSE COEFFICIENT, C_S	0.02
- RESPONSE MODIFICATION FACTOR, R	3.5
- ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE PROCEDURE

CONCRETE 28-DAY STRENGTH:

- HOUSEKEEPING/EQUIPMENT PADS/SLABS	4000 PSI
- MASONRY FILLED CELL GROUT	2000 PSI

FOUNDATIONS:

- ALLOWABLE BEARING PRESSURE FOR MAT FOUNDATIONS OVER SUBSURFACE PREPARED AS PER SPECIFICATIONS AND PER GEOTECHNICAL REPORT: 2500 PSF

GENERAL CONDITIONS:

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, ELECTRICAL AND SHOP DRAWINGS AND SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.

FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, HEATING AND VENTILATION DRAWINGS FOR TYPE, SIZE, LOCATION AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION AND OTHERS.

SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS..

ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSE-WHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

ALL PIPES UNDER SOIL SUPPORTED STRUCTURE SLABS AND FOOTINGS SHALL BE ENCASED IN CONCRETE AS SHOWN ON THE STRUCTURAL DRAWINGS. PIPES SHALL BE PRESSURE TESTED BEFORE ENCASING.

CONCRETE:

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.

ALL CONCRETE SHALL BE AIR-ENTRAINED.

WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWING.

REINFORCING STEEL:

REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS.

ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS, REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

- CONCRETE CAST AGAINST EARTH	3"
- FORMED SURFACES IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER	2"
- FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL:	
SLABS, WALLS AND JOISTS	3/4"
BEAMS AND COLUMNS	1-1/2"

LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

CONCRETE MASONRY:

DESIGN CRITERIA:

- DESIGN COMPRESSIVE STRENGTH OF MASONRY AT 28 DAY f'm = 2000 PSI
- ALLOWABLE STEEL STRESS fs = 32,000 PSI

CONTINUOUS INSPECTION IS REQUIRED FOR ALL MASONRY WORK.

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS AND:

- THE NATIONAL CONCRETE MASONRY ASSOCIATION "SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF LOAD BEARING STRUCTURES."
- ACI 530 "BUILDING CODE REQUIREMENTS FOR REINFORCED MASONRY STRUCTURES."
- TMS 402 "BUILDING CODE REQUIREMENTS FOR REINFORCED MASONRY STRUCTURES."

MATERIALS:

- BLOCK: CONFORM TO ASTM C90 - LOAD BEARING, NORMAL WEIGHT TWO CELL, 8"x8"x16" AND 12"x8"x16" (COMPRESSIVE STRENGTH, NET AREA 2000 PSI)
- MORTAR: CONFORM TO ASTM C270, TYPE S. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 2000 PSI. UTILIZE TYPE II CEMENT AND TYPE S LIME.
- STEEL: DUR-O-WALL OR EQUAL LADDER TYPE JOINT REINFORCEMENT AT EVERY SECOND COURSE (16" OC). BOND BEAM AND FILLED CELL REINFORCEMENT AS PER DRAWINGS. (ASTM A615, GRADE 60).

CONSTRUCTION:

- ALL FILLED CELLS AND COLUMNS SHALL BE POURED AT LEAST (2) HOURS PRIOR TO POURING LINTEL BLOCK OR TIE BEAMS.
- MAXIMUM CONSTRUCTION HEIGHT OF MASONRY WALLS WITHOUT FILLED CELL OR COLUMN POURS IS TO BE 8-0". THE CONCRETE FOR FILLED CELLS SHALL BE RODDED OR PUDDLED DURING PLACEMENT TO ENSURE COMPLETE FILLING TO THE BLOCK CORE.
- SEE STANDARD DETAILS AND ARCHITECTURAL DRAWINGS FOR LINTEL REQUIREMENTS OVER OPENINGS.
- PROVIDE CLEAN OUT AND INSPECTION BLOCK OUTS IN CELLS CONTAINING REINFORCEMENT.

STRUCTURAL STEEL:

DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND DESIGN DRAWINGS.

ALL STRUCTURAL STEEL:

- W SHAPES -	ASTM A992
- M, S AND HP SHAPES -	ASTM A36
- CHANNELS AND ANGLES -	ASTM A36
- HSS (SQUARE, RECTANGULAR AND ROUND) -	ASTM A500
- PLATES -	ASTM A36
- HIGH-STRENGTH BOLTS -	ASTM F3125
- TENSION CONTROL BOLTS -	ASTM F1852
- NUTS -	ASTM A563
- HARDENED STEEL WASHER -	ASTM F436
- ANCHOR RODS -	ASTM F1554
- THREADED RODS -	ASTM A36

ALL PIPE: ASTM A53, GRADE B.

THE FABRICATOR SHALL DESIGN AND DETAIL ALL PARTS OF CONNECTIONS NOT FULLY DETAILED ON THE DESIGN DRAWINGS. THE NUMBER OF BOLTS AND OTHER SIMILAR ELEMENTS SHOWN ON THE DRAWING ARE PICTORIAL ONLY.

SHOP AND ERECTION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE REQUIREMENTS. ELECTRODES SHALL BE E-70XX.

GEOTECHNICAL REPORT:

GEOTECHNICAL ENGINEERING REPORT ENTITLED, "TAFB BASE EXCHANGE ADDITION," BY TERRACON, DATED NOVEMBER 3, 2023.

ABBREVIATIONS

#	NUMBER	INT	INTERIOR
&	AND	INV	INVERT
@	AT	JT	JOINT
AB	ANCHOR BOLT	KO	KNOCKOUT
ABV	ABOVE	LG	LENGTH
ACC	ACCELERATION	LLH	LONG LEG HORIZONTAL
ADDL	ADDITIONAL	LLV	LONG LEG VERTICAL
ALUM/AL	ALUMINUM	LNTL	LINTEL
ALT	ALTERNATE (ING)	LOC(S)	LOCATION(S)/LOCATED
APPROX	APPROXIMATELY	LONG.	LONGITUDINAL
B TO B	BACK TO BACK	LP	LOW POINT
BEV	BEVEL (ED)	LT	LEFT
BLK	BLOCKING	LW	LIGHTWEIGHT
BOT	BOTTOM	MAS	MASONRY
BRG	BEARING	MAX	MAXIMUM
BW	BETWEEN	MB	MACHINE BOLTS
CIRC	CIRCUMFERENTIAL	MCJ	MASONRY CONTROL JOINT
CJ	CONSTRUCTION JOINT	MFR	MANUFACTURER
CL	CENTERLINE	MIN	MINIMUM
CLJ	CONTROL JOINT	MO	MASONRY OPENING
CLR	CLEAR	NF	NEAR FACE
CMU	CONCRETE MASONRY UNITS	NS	NON-SHRINK
COL	COLUMN	NTS	NOT TO SCALE
CONC	CONCRETE	OC	ON CENTER
CONN	CONNECTION	OD	OUTSIDE DIAMETER
CONT	CONTINUOUS	OF	OUTSIDE FACE
CPLG	COUPLING	OPNG	OPENING
CRS	COURSE (S)	OPP	OPPOSITE
CSK	COUNTERSINK	OPT	OPTIONAL
CTR	CENTER(ED)	PCJ	PARTIAL CONTRACTION JOINT
d	PENNY	PJF	PREMOLDED JOINT FILLER
DET	DETAIL	PLYWD	PLYWOOD
DIA	DIAMETER	PREFAB	PREFABRICATED
DIAG	DIAGONAL	PROJ	PROJECTION
DIR	DIRECTION	PVMT	PAVEMENT
DL	DEAD LOAD	R	RISER(S)
DO.	DITTO	RAD	RADIUS
DWG	DRAWING	RC	REINFORCED CONCRETE
DWL	DOWEL	REF	REFERENCE/REFER
EA	EACH	REINF	REINFORCE (D, ING)
EB	EXPANSION BOLT	REQD	REQUIRED
EF	EACH FACE	REV	REVISION
EL	ELEVATION	RLG	RAILING
EMBED	EMBEDMENT	RO	ROUGH OPENING
EQ	EQUAL (LY)	RT	RIGHT
EQUIP	EQUIPMENT	SCJ	SLAB CONTROL JOINT
ES	EACH SIDE	SECT	SECTION
EW	EACH WAY	SIM	SIMILAR
EXST	EXISTING	SP	SPACE (S, ED)
EXP JT	EXPANSION JOINT	SQ	SQUARE
EXT	EXTERIOR	SS	STAINLESS STEEL
f'c	CONCRETE COMPRESSION STRESS	STD	STANDARD
f'm	MASONRY PRISM STRESS	STIF	STIFFENER
FAB	FABRICATE (OR, ED)	STIR	STIRRUP (S)
FDN	FOUNDATION	STL	STEEL
FF	FAR FACE	SYM	SYMMETRICAL
FHMS	FLATHEAD MACHINE SCREW	T	TREAD(S)
FHWS	FLATHEAD WOOD SCREW	T/	TOP OF
FL	FLOOR	T&B	TOP AND BOTTOM
FRP	FIBERGLASS REINFORCED PLASTIC	TF	TOP FACE
FTG	FOOTING	THD	THREADED
GALV	GALVANIZED	TOC	TOP OF CONCRETE
GBT	GRAVITY BELT THICKENER	TRNSV	TRANSVERSE
GLB	GLASS BLOCK	TYP	TYPICAL
GR	GRADE	UNO	UNLESS NOTED OTHERWISE
GRTG	GRATING	VB	VAPOR BARRIER
H	HIGH	VIF	VERIFY IN FIELD
HAS	HEADED ANCHOR STUD	W	WIDE
HDR	HEADER	W/	WITH
HOR	HORIZONTAL	WO	WITHOUT
HP	HIGH POINT	WD	DRIFT WIDTH
ID	INSIDE	WP	WORKING POINT
IE	INVERT ELEVATION	WSTP	WATERSTOP
IF	INSIDE FACE	WWF	WELDED WIRE FABRIC

ABBREVIATION NOTES:

1. ABBREVIATIONS AND DESIGNATIONS FOR STEEL MEMBERS MAY BE FOUND IN THE CURRENT MANUAL OF STEEL CONSTRUCTION BY AISC.
2. ABBREVIATIONS OF TECHNICAL SOCIETIES AND TRADE ASSOCIATIONS MAY BE FOUND IN THE SPECIFICATIONS.
3. WELDING SYMBOLS AND ABBREVIATIONS MAY BE FOUND IN AWS 2.4.

MODIFICATION AND REPAIR TO EXISTING CONCRETE NOTES:

AT LIMITS OF CONCRETE REMOVAL WHERE SURFACE WILL REMAIN EXPOSED MAKE SURFACE SMOOTH BY SAW CUTTING OR GRINDING. COAT ENTIRE SURFACE WITH COATING TO PROTECT EXPOSED REBAR.

IF CONCRETE IS REMOVED BEYOND LIMITS, REBUILD TO DESIRED LIMITS WITH REPAIR MORTAR AND FINISH SMOOTH. COAT SURFACE WITH PROTECTIVE COATING WHERE THERE IS LESS THAN 2" OF COVER OVER REBAR.

CONNECTION METHODS ARE DEFINED:

- METHOD A - CEMENT SLURRY BOND
- METHOD B - ADHESIVE BOND
- METHOD C - EMBEDDED DOWELS (EMBED REBAR 10 DIAMETERS AND SMOOTH REBAR 1 DIAMETER)
- METHOD D - COMBINATION OF METHODS B AND C

DELEGATED SUBMITTALS:

1. THE FOLLOWING PORTIONS OF THE PROJECT ARE DELEGATED SUBMITTAL ITEMS AND HAVE NOT BEEN DESIGNED BY THE ENGINEER OF RECORD:

   a. EQUIPMENT ANCHORAGE

2. DELEGATED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW DURING THE CONSTRUCTION PHASE OF THE PROJECT.
3. DELEGATED SUBMITTAL ITEMS SHALL BE SIGNED AND SEALED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
4. DELEGATED SUBMITTAL ITEMS SHALL NOT BE ERECTED OR INSTALLED UNTIL THE ENGINEER OF RECORD HAS REVIEWED THE SUBMITTAL DOCUMENTS AND INDICATED THEY HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE STRUCTURE.

TESTING AND INSPECTIONS:

1. REFER TO SPECIFICATIONS SECTION 01 45 35 FOR SPECIAL INSPECTIONS, SPECIAL INSPECTIONS TO BE PER IBC 2021 CHAPTER 17 AND AS MODIFIED BY UFC 1-20C-01, UFC 3-301-01 AND UFC 3-600-01. CONTRACTORS SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM SPECIAL INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER IBC SECTION 1705. REQUIRED SPECIAL INSPECTIONS AND TESTS.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY POOJA HARISH KALARIA ON THE DATE ADJACENT TO THE SEAL.

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. TRAPP
DRAWN BY: D. LAMBERT
CHECKED BY: J. BRIGGS
QUALITY CONTROL BY: P. KALARIA

ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:
SIZE: ANSI D

35th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GBA Gresham Smith
3500 Parkway Lane
Suite 500
Norcross, Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 85/0 BX and Wall HVAC System, MCC
Construct Equipment Pad, and Install Equipment
Client Project Number: XUWJ21-0130

STRUCTURAL NOTES

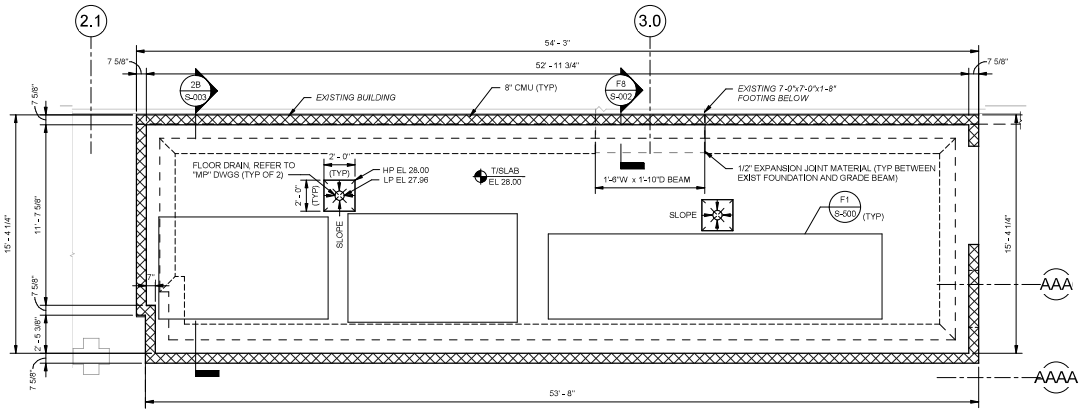
POND # 122654

SHEET ID
S-001

ISSUED FOR CONSTRUCTION

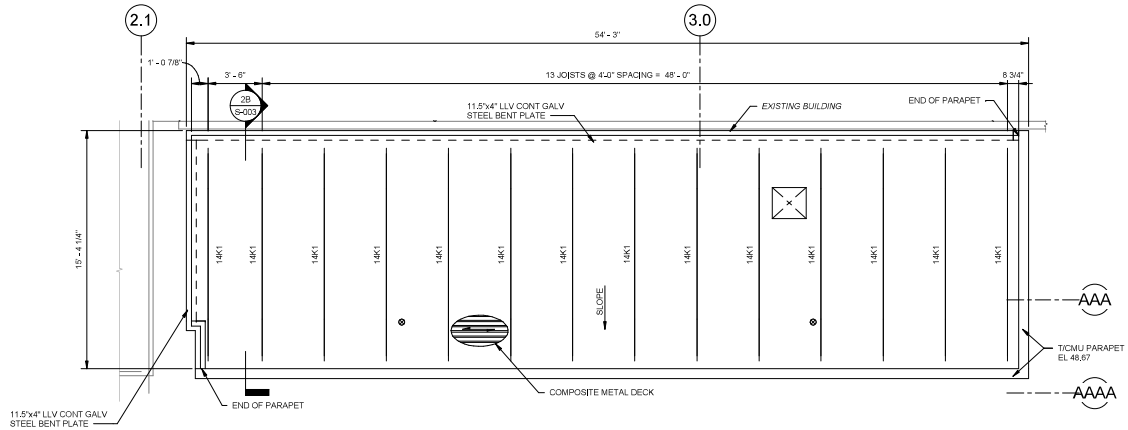
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Plot Date: 9/6/2024 10:50:57 AM



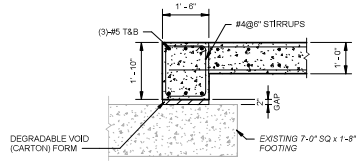
E2 FOUNDATION PLAN

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



B2 ROOF PLAN

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



F8 SECTION

SCALE: 1/2" = 1'-0"

JOIST AND DECK NOTES:

1 - ROOF JOIST SUPERIMPOSED LOADS:

LIVE LOAD	= 20 PSF
SUPERIMPOSED DEAD LOAD	= 10 PSF
SELF-WEIGHT (DECK + INSULATION)	= 44.1 PSF
EQUIPMENT	= PER EQUIPMENT MFR.
UNBALANCED SNOW	= 0 PSF
RAIN PONDING	= 0.2 PSF
NET WIND UPLIFT	= 39.6 PSF

2 - MAXIMUM JOIST SPACING SHALL BE 4'-0" ON CENTER.

3 - FRAME ALL OPENINGS PER DETAIL C8 ON S-502.

4 - HORIZONTAL, DIAGONAL AND UPLIFT BRIDGING NOT SHOWN. PROVIDE BRIDGING AS REQUIRED BY JOIST MANUFACTURER PER DETAILS C1 AND C3 ON S-502 AND SJI SPECIFICATIONS. BRIDGING SHALL BE POSITIONED SO NOT TO INTERFERE WITH ROOF OPENINGS.

5 - ROOF DECK DIAPHRAGM:

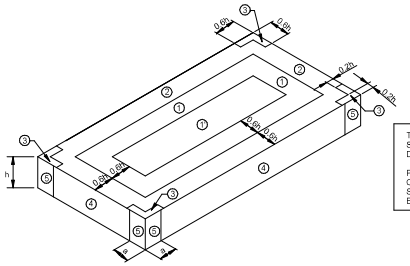
A. 4" COMPOSITE DECK: 1.5VL20 WITH 4000 PSI CONCRETE AND WWF 6x6-W1.4. SEE SPECIFICATION 053000 FOR APPROVED DECK MANUFACTURER.

B. SUPPORT FASTENERS:
HILTI X-HSN 24 36/5 PATTERN OR APPROVED EQUAL.

C. SIDELAP FASTENERS:
4 HILTI S-SLC01M HWH SIDELAP CONNECTORS PER SPAN OR APPROVED EQUAL.

** COORDINATE FASTENER MODEL WITH JOIST CHORD THICKNESS.

6 - PROVIDE SLOPED JOIST BEARING SEAT



B8 WIND ZONE DIAGRAM

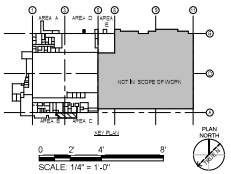
N.T.S

WIND PRESSURE (PSF) FOR COMPONENT AND CLADDING (Vult)

EFFECTIVE WIND AREA (SQ. FT.)	PRESSURE (+) / SUCTION (-)												
	ROOF (PSF)								WALL (PSF)				
	ZONE 1'		ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5		PARAPET
< 10.00	29,7	-50,7	29,7	-78,7	29,7	-99,6	29,7	-131	50,7	-53,8	50,7	-63,3	77,8
10 TO 20	29,7	-50,7	29,7	-78,7	29,7	-99,6	29,7	-131	50,7	-53,8	50,7	-63,3	77,8
20 TO 50	28,7	-50,7	28,7	-74,3	28,7	-94,1	28,7	-120	49,0	-52,2	49,0	-59,9	77,8
50 TO 100	27,3	-50,7	27,3	-68,6	27,3	-86,7	27,3	-105	46,8	-50,0	46,8	-55,5	77,8
>= 100	26,2	-50,7	26,2	-64,3	26,2	-81,1	26,2	-94,1	45,1	-48,3	45,1	-52,2	77,8

NOTES:

1. FOR NOMINAL ASD WIND PRESSURES, APPLY A FACTOR OF 0.6 TO THE LISTED PRESSURES CORRESPONDING TO V_{ULT}.
2. DIMENSION a = 3'-0".
3. DIMENSION h = 18'-0", 0.6 h = 10'-0" AND 0.2 h = 3'-8".



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MARK	DESCRIPTION	DATE

File Path: ...

Plot Date: 9/6/2024 10:52:05 AM

DESIGNED BY: M. TRAPP
DRAWN BY: D. PHAM-HO
CHECKED BY: J. BRIDGES
APPROVED BY: P. KALARIA
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:

35SW CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gbi Gresham Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction and Replacement Mechanical Equipment
Client Project Number: XLWJ21-0153D

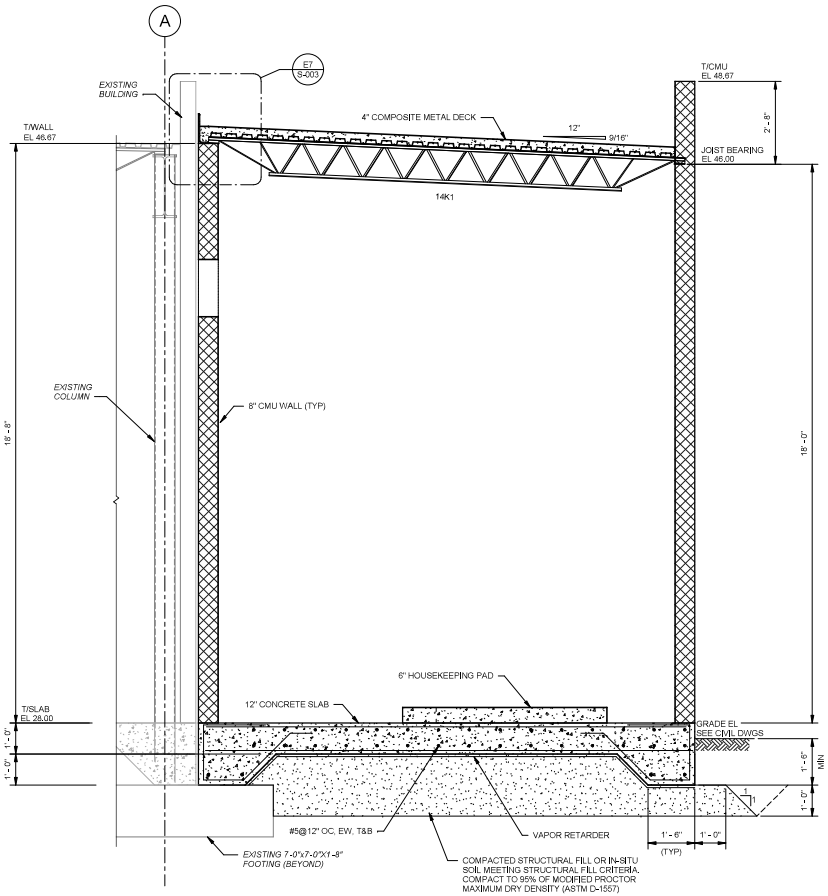
BUILDING FOUNDATION AND ROOF PLANS

POND # 122654

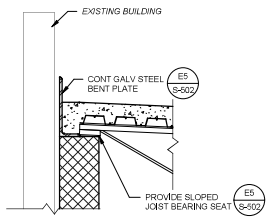
SHEET ID

S-002

ISSUED FOR CONSTRUCTION



2B SECTION
SCALE: 1/2" = 1'-0"



E7 SECTION
SCALE: 1" = 1'-0"

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0 6" 1'-0" 2'-0"
SCALE: 1" = 1'-0"

0 1' 2' 4'
SCALE: 1/2" = 1'-0"

MARK	DESCRIPTION	DATE

File Path: R:\...\Tyndall AFB\...\Design\...\S-003.dwg

Plot Date: 9/6/2024 10:52:08 AM

DESIGNED BY: M. TRAPP	ISSUE DATE: 9/13/2024
DRAWN BY: D.PALACIO	SOLICITATION NO.:
CHECKED BY: J. BRIDGES	CONTRACT NO.:
APPROVED BY: P. KALARIA	
SIZE: ANSI D	

35th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construct and MCC Shed and Mall HVAC Equipment
Client Project Number: XLWJ21-0130

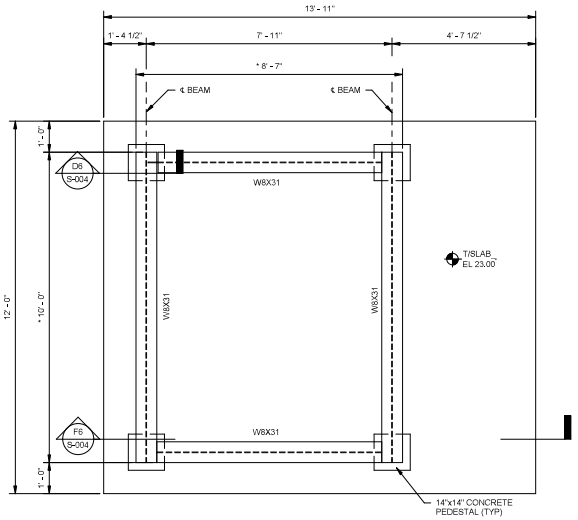
BUILDING SECTIONS AND DETAILS

POND # 122654

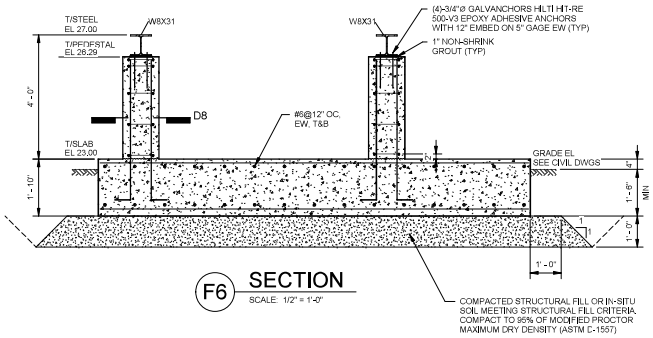
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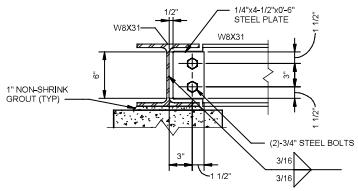
ISSUED FOR CONSTRUCTION



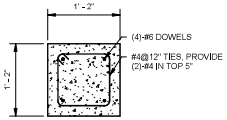
D2 PLAN
SCALE: 1/2" = 1'-0"



F6 SECTION
SCALE: 1/2" = 1'-0"



D6 SECTION
SCALE: 1 1/2" = 1'-0"



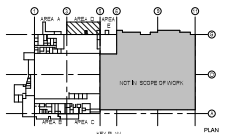
D8 SECTION
N.T.S

NOTES:

1. * COORDINATE DIMENSIONS WITH COOLING TOWER MOUNTING REQUIREMENTS.
2. FOUNDATION AND FRAMING SHOWN IS DESIGNED FOR BASIS-OF-DESIGN EQUIPMENT, SUBJECT TO REDESIGN DURING CONSTRUCTION FOR ACTUAL EQUIPMENT AT NOADDITIONAL COST TO OWNER.
3. ALL STEEL FRAMING TO BE HOT-DIP GALVANIZED AS SPECIFIED.
4. BOLTS SHALL HAVE MECHANICALLY DEPOSITED ZINC COATING.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY POOJA HARISH KALARIA ON THE DATE ADJACENT TO THE SEAL.

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0 6" 1'-0" 1'-6"
SCALE: 1 1/2" = 1'-0"

0 1' 2' 4'
SCALE: 1/2" = 1'-0"

MARK	DESCRIPTION	DATE

DESIGNED BY: M. TRAPP
DRAWN BY: D. CHAMBERS
CHECKED BY: J. BRIDGES
APPROVED BY: P. KALARIA
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GDN Gannett Fleming
Gannett Fleming Corners
3500 Parkway Lane
Suite 500
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 850lb BX and Wall HVAC System, MCC
Construction and Commissioning of New HVAC Equipment
Client Project Number: XLWJ21-0153

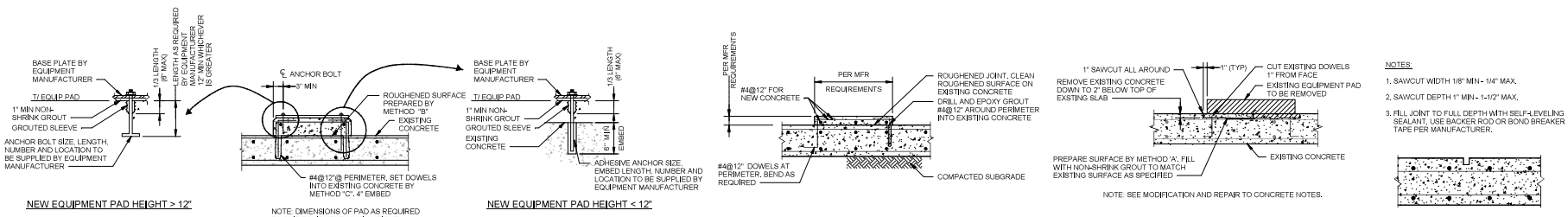
COOLING TOWER SUPPORT STRUCTURE - PLAN, SECTION AND DETAIL

POND # 122654

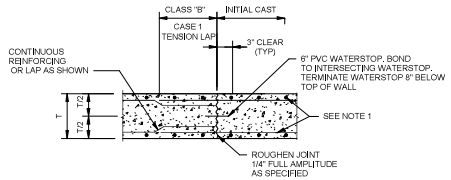
SHEET ID
S-004

ISSUED FOR CONSTRUCTION

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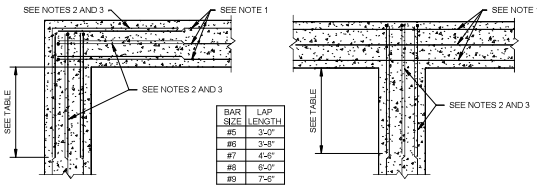


F1 NEW EQUIPMENT PAD ON EXISTING SLAB
N.T.S



NOTE: SECOND POUR SHALL BE 24 HOURS MINIMUM AFTER INITIAL POUR.

F5 HOUSEKEEPING PADING SLAB
N.T.S



BAR SIZE	LAP LENGTH
#5	3'-0"
#6	3'-8"
#7	4'-6"
#8	6'-0"
#9	7'-6"

CORNER REINFORCING

INTERSECTION REINFORCING

F7 EXISTING EQUIPMENT
N.T.S

2" & 3" COVER
6" OR GREATER SPACING
F'c=4,500 PSI
Fy=60,000 PSI

BAR SIZE	ALL (INCHES)					
	CLASS B TENSION LAP SPLICE		STRAIGHT DEVELOPMENT		STANDARD HOOK DEVELOPMENT	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	ldh	A
3	14	12	12	12	7	6
4	19	14	14	12	9	8
5	23	18	18	14	12	10
6	28	21	21	17	14	12
7	40	31	31	24	16	14
8	46	35	35	27	18	16
9	56	44	44	34	21	20
10	68	52	52	40	23	22
11	80	62	62	48	26	24

1-1/2" COVER
6" OR GREATER SPACING
F'c=4,500 PSI
Fy=60,000 PSI

BAR SIZE	ALL (INCHES)					
	CLASS B TENSION LAP SPLICE		STRAIGHT DEVELOPMENT		STANDARD HOOK DEVELOPMENT	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	ldh	A
3	14	12	12	12	7	6
4	19	14	14	12	9	8
5	23	18	18	14	12	10
6	28	21	21	17	14	12
7	45	35	35	27	16	14
8	57	44	44	34	18	16
9	70	54	54	42	21	20
10	84	65	65	50	23	22
11	98	76	76	58	26	24

NOTES

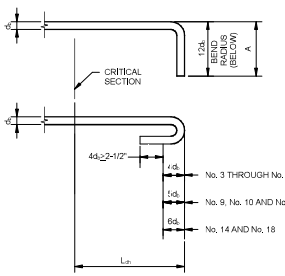
1. TABLE IS VALID FOR DESIGN BASED ON ACI 318-14 AND 350-06.
2. A TOP BAR IS A HORIZONTAL BAR WHERE MORE THAN 12" OF FRESH CONCRETE IS CAST DIRECTLY BELOW THE BAR. WHERE HORIZONTAL WALL REINFORCEMENT IS UNIFORMLY SPACED IN A VERTICAL PLANE AT 12" MAXIMUM SPACING, LENGTHS MAY BE AS FOR "OTHER BARS."
3. TABLE IS BASED ON f'c = 4500 psi. LAP SPLICE AND DEVELOPMENT LENGTHS SHALL BE ADJUSTED FOR OTHER CONCRETE COMPRESSIVE STRENGTHS AS FOLLOWS:

f'c	MULTIPLIER
3000 PSI	1.23
3500 PSI	1.14
4000 PSI	1.06

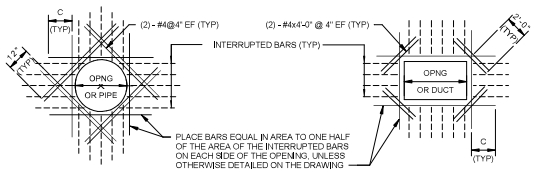
4. FOR COVER AND SPACING GEOMETERY NOT SHOWN ALL HOOKS, SPLICES AND DEVELOPMENT LENGTHS SHALL BE APPROVED IN WRITING BY THE ENGINEER OF RECORD.
5. LAPPED SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS UNLESS NOTED OTHERWISE, INDICATED ON THE DRAWING OR DETERMINED BY ENGINEER.
6. UNLESS NOTED OTHERWISE ON DRAWINGS, THE BARS AT A LAP SPLICE SHALL BE IN CONTACT WITH EACH OTHER.
7. LENGTHS FOR BEAMS AND COLUMNS SHALL BE AS SHOWN ON THE DRAWINGS.

LAP SPLICE, DEVELOPMENT LENGTHS AND STANDARD HOOKS
(FOR UNCOATED BARS)

F9 CONTROL JOINT
N.T.S



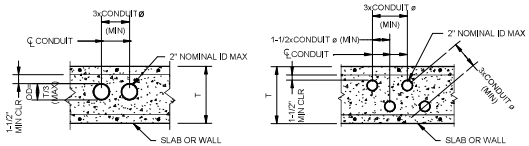
D1 CONSTRUCTION JOINT
N.T.S



NOTES:

1. DETAIL IS TYPICAL FOR ALL OPENINGS 12" AND GREATER IN CONCRETE WALLS AND SLABS UNLESS OTHERWISE NOTED. SPREAD REINFORCING AT SMALLER OPENINGS.
2. BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.
3. C = CLASS "B" TENSION LAP.
4. REINFORCING STEEL IS TO BE CARRIED ACROSS ALL CONSTRUCTION JOINTS.
5. WHERE OPENING IS WITHIN 4'-0" OF BASE SLAB, OR WHERE DOWWEL BARS ARE INTERRUPTED, PROVIDE MATCHING DOWELS FOR ADDITIONAL BARS.

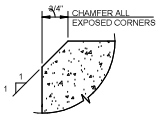
D4 BEAM/GRADE BEAM REINFORCING
N.T.S



CONDUIT NOTES

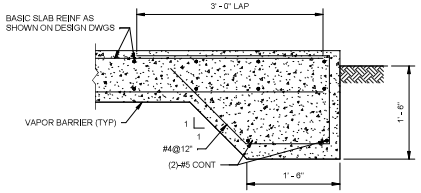
1. NO CONDUIT SHALL BE EMBEDDED IN STRUCTURAL BEAMS, COLUMNS, WALLS OR SLABS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWING.
2. CONDUIT SHALL BE PLACED 6" BELOW SLAB.
3. WHERE CONDUIT MUST PASS THROUGH A SLAB OR WALL, MINIMUM SIZE AND SPACING REQUIREMENT PER ACI 318 CHAPTERS 20 AND 26 AND THIS DETAIL.
4. ALUMINUM SHALL NOT BE EMBEDDED IN CONCRETE UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION.

B1 REINFORCING AT OPENINGS
N.T.S



A1 CHAMFER
N.T.S

B4 EMBEDDED CONDUIT SPACING
N.T.S



A4 THICKENED EDGE SLAB
N.T.S

STANDARD DETAIL NOTES:

1. BASIC SLAB/WALL/BEAM REINFORCEMENT AS SHOWN ON DESIGN DRAWINGS.
2. SIZE AND SPACING OF BAR TO MATCH WALL/BEAM REINFORCEMENT AS SHOWN ON DESIGN DRAWINGS.
3. FOR ADDITIONAL BARS AT CORNERS AND INTERSECTIONS, SEE DESIGN DRAWINGS.
4. FOR DOWEL SIZE AND SPACING, SEE DESIGN DRAWINGS.
5. FOR WALLS, TERMINATE WATERSTOP AND KEYWAY 8" BELOW TOP OF WALL.
6. FOR SLABS-ON-GRADE, OMIT SEALANT ON BOTTOM OF SLAB AND EXTEND PRE-MOLDED JOINT MATERIAL TO BOTTOM.

B7 LAP SPLICE
N.T.S

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MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:
DESIGNED BY: M. TRAPP
DRAWN BY: D. PHILLIPS
CHECKED BY: J. BRIDGES
APPROVED BY: P. KALARIA
SIZE: ANSI D

35th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New Boiler, BX and Wall HVAC System, MCC
Construction and Modification of Equipment
Client Project Number: XLWJ21-0130

STANDARD CONCRETE DETAILS

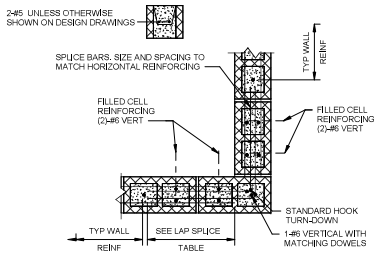
POND # 1220564

SHEET ID
S-500

ISSUED FOR CONSTRUCTION

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Plot Date: 9/6/2024 10:54:27 AM



F1 8" CMU WALL CORNER AND END WALL
N.T.S

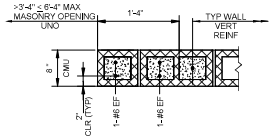
BAR SIZE	CMU LAP SPLICE LENGTH (INCHES) PER TMS 402	
	8" BLOCK	
	CENTER	EF
4	12	22
5	18	35
6	34	64
7	46	87
8	67	131

NOTES:

1. SEE DRAWINGS OR CONTACT ENGINEER FOR LAP SPLICE LENGTHS NOT SHOWN.

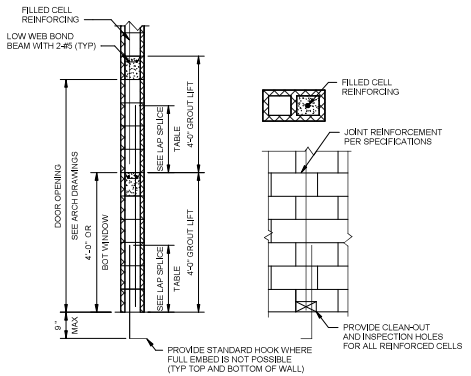
MASONRY LAP SPLICE SCHEDULE TMS 402

F4 N.T.S



8" CMU WALL OPENING/JAMB DETAIL

F6 N.T.S

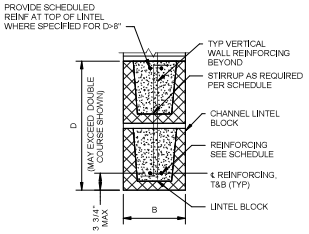


NOTES:

1. FILLED CELL REINFORCEMENT: 1-#6 @ 2'-0" FOR 8" CMU WALL UNLESS OTHERWISE NOTED ON DESIGN DRAWINGS.
2. BOND BEAM REINFORCEMENT: 2-#5 @ 4'-0" OC MAX UNLESS OTHERWISE NOTED ON DESIGN DRAWINGS.

FILLED CELL

D8 N.T.S



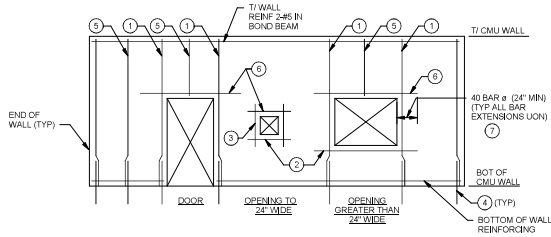
LINTEL TYPE	WALL TYPE	LOCATION / CLEAR SPAN	B	D	REINF	STIRRUPS
L1	-	TO 6'-4"	8"	8"	2-#5*	-

* PROVIDE 180° HOOK AT ENDS OF BARS

CMU LINTEL NOTES:

1. PROVIDE 8" MINIMUM BEARING AT EACH SIDE OF CLEAR SPAN UNLESS OTHERWISE SHOWN ON DESIGN DRAWINGS. PROVIDE 40 BAR ø (24" MIN) BAR EXTENSION PAST EACH SIDE OF OPENING.
2. PROVIDE REINFORCING AS INDICATED AT ALL OPENINGS, BOTH INTERIOR AND EXTERIOR WALLS.
3. REINFORCING TYPICAL UNLESS OTHERWISE NOTED.
4. LOCATIONS ARE FOR EXTERIOR LINTELS UNO.

C1 CMU LINTEL REINFORCING SCHEDULE
N.T.S



LEGEND

1. SEE TYPICAL CMU WALL OPENING/JAMB DETAILS ON THIS SHEET
2. SILL BARS, 2-#5 IN BOND BEAM
3. 1-#5 EACH SIDE
4. SEE TYPICAL CMU WALL AND CMU WALL CORNER REINFORCING DETAIL ON THIS SHEET
5. BETWEEN BARS SHOWN, PROVIDE TYPICAL WALL REINFORCING PER FILLED CELL REINFORCING DETAIL ON THIS SHEET
6. SEE TYPICAL CMU LINTEL REINFORCING SCHEDULE ON THIS SHEET
7. IF FULL LENGTH IS NOT AVAILABLE, EXTEND AS FAR AS POSSIBLE. HOOK 90 DEGREE, THEN EXTEND BEYOND BEND REMAINDER OF LENGTH REQUIRED (BUT NOT LESS THAN 12")

A1 TYPICAL CMU WALL ELEVATION
N.T.S

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MARK	DESCRIPTION	DATE

File Path: ...

Plot Date: 9/6/2024 10:54:27 AM

DESIGNED BY: M. TRAPP
DRAWN BY: D.PATHAK
CHECKED BY: J. BRIDGES
SUBMITTED BY: P. KALARIA
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:

35th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDH Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

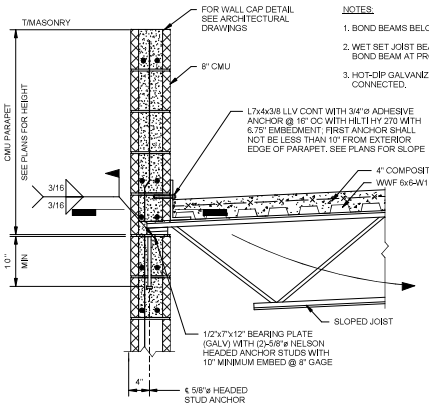
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New Boiler and Wall HVAC System, MCC
Construction and Electrical Equipment
Client Project Number: XLWJ21-0130

STANDARD MASONRY DETAILS

POND # 1220554

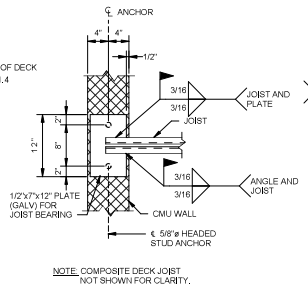
SHEET ID
S-501

ISSUED FOR CONSTRUCTION



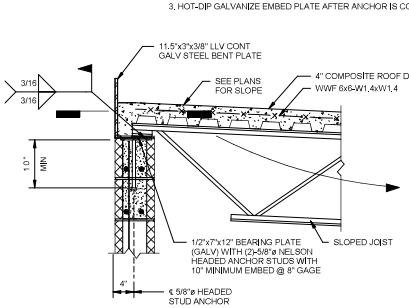
NOTES:

1. BOND BEAMS BELOW STEEL JOIST SHALL BE CONTINUOUS.
2. WET SET JOIST BEARING PLATE WITH ANCHOR IN 2-COURSE BOND BEAM AT PROPER JOIST ALIGNMENT AND ELEVATION.
3. HOT-DIP GALVANIZE EMBED PLATE AFTER ANCHOR IS CONNECTED.



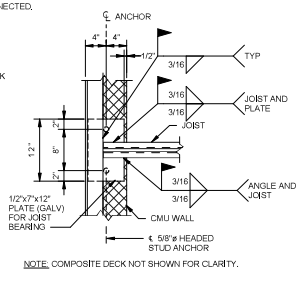
NOTE: COMPOSITE DECK JOIST NOT SHOWN FOR CLARITY.

E1 JOIST/DECK TO CMU
N.T.S



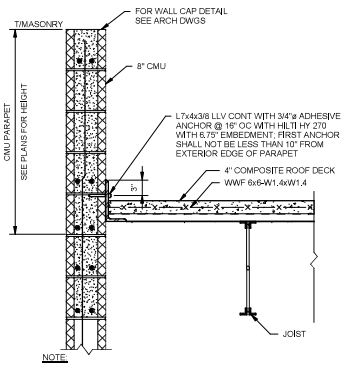
NOTES:

1. BOND BEAMS BELOW STEEL JOIST SHALL BE CONTINUOUS.
2. WET SET JOIST BEARING PLATE WITH ANCHOR IN 2-COURSE BOND BEAM AT PROPER JOIST ALIGNMENT AND ELEVATION.
3. HOT-DIP GALVANIZE EMBED PLATE AFTER ANCHOR IS CONNECTED.



NOTE: COMPOSITE DECK NOT SHOWN FOR CLARITY.

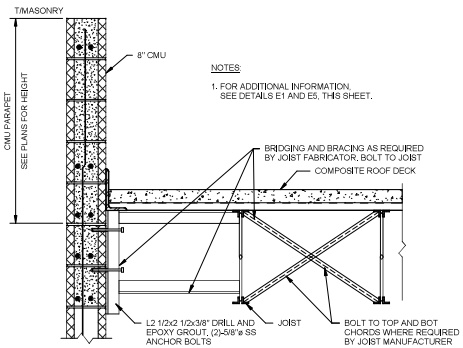
E5 JOIST/DECK TO CMU - NO PARAPET
N.T.S



NOTE:

1. PROVIDE GROUTED BOND BEAMS AS SHOWN HORIZONTAL ABOVE AND BELOW ANCHORS TO PROVIDE A MINIMUM OF 12" FROM CENTERLINE OF BOLT. BEAM SHALL BE CONTINUOUS OVER LENGTH OF WALL.

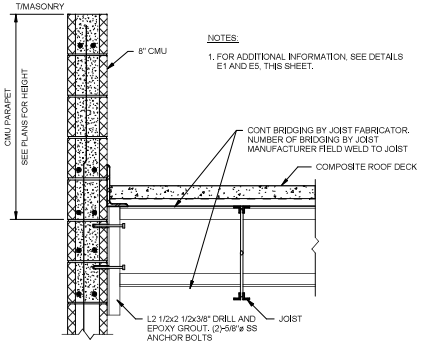
E9 COMPOSITE DECK TO MASONRY CONSTRUCTION
N.T.S



NOTES:

1. FOR ADDITIONAL INFORMATION. SEE DETAILS E1 AND E5, THIS SHEET.

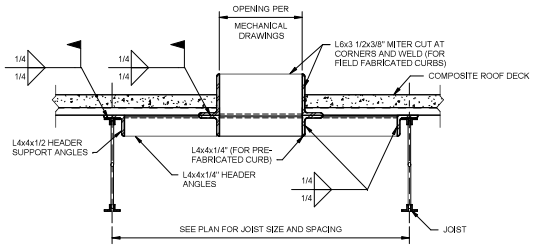
C1 BOLTED DIAGONAL BRACING
N.T.S



NOTES:

1. FOR ADDITIONAL INFORMATION. SEE DETAILS E1 AND E5, THIS SHEET.

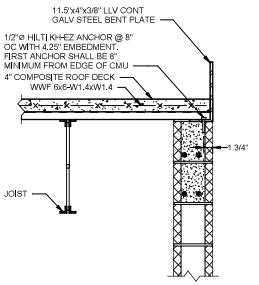
C3 HORIZONTAL BRIDGING
N.T.S



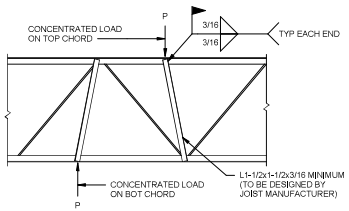
NOTES:

1. FOR BLOCKING AND FLASHING REQUIREMENTS, SEE ARCHITECTURAL DRAWINGS.
2. FOR FIELD FABRICATED CURBS, TRIM LONG LEG OF L6x3-1/2 AS REQUIRED BY EQUIPMENT MANUFACTURER.

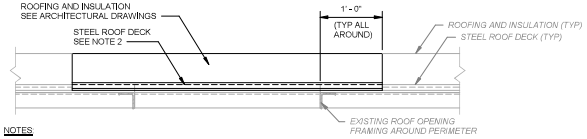
C6 ROOF OPENING FRAMING
N.T.S



C9 END WALL CONNECTION
N.T.S



A1 CONCENTRATED LOAD REINFORCEMENT
N.T.S



NOTES:

1. SEE HVAC ROOF PLAN DEMOLITION FOR SIZES AND LOCATIONS OF EXISTING OPENINGS TO BE CLOSED.
2. PROVIDE PIECE OF 1 1/2" - 18 GAGE GALVANIZED STEEL ROOF DECK TO MATCH EXISTING (CONTRACTOR CONFIRM DEPTH AND TYPE IN THE FIELD). CENTER PIECE OF NEW DECK ON OPENING AND FASTEN TO EXISTING STEEL ROOF DECK.

A4 EXISTING ROOF OPENING CLOSURE
N.T.S

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY POOJA HARISH KALARIA ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

MARK	DESCRIPTION	DATE

DESIGNED BY: M. TRAPP
DRAWN BY: D. BRIGGS
CHECKED BY: J. BRIGGS
APPROVED BY: P. KALARIA
ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:
SIZE: ANSI D

325th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GDU
Gresham Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New Boiler, BX and Wall HVAC System, MCC
Construction and Installation Equipment
Client Project Number: XLWJ21-0130

STANDARD ROOF JOIST DETAILS

POND # 1220554

SHEET ID
S-502

ISSUED FOR CONSTRUCTION

File Path: R:\2022\1220554.1 Tyndall AFB ESI Design\1220554_Tyndall AFB_ESI_Design_Central_Detail.rvt

Plot Date: 9/6/2024 10:54:29 AM

MATERIALS

- COMPACTED EARTH
- ROCK
- ROCKFILL
- SAND / MORTAR
- CONCRETE
- CONCRETE BLOCK(CMU)
- EXTERIOR INSULATION FINISH SYSTEM
- BRICK
- METAL-LARGE SCALE
- METAL-SMALL SCALE
- WOOD-FRAMING (CONTINUOUS)
- WOOD-BLOCKING (DISCONTINUOUS)
- WOOD-FINISH
- ACOUSTICAL TILE
- INSULATION BATT
- INSULATION RIGID
- GYPSUM BOARD
- CERAMIC TILE
- GLASS
- PLYWOOD
- PLASTER/ROCK LATH

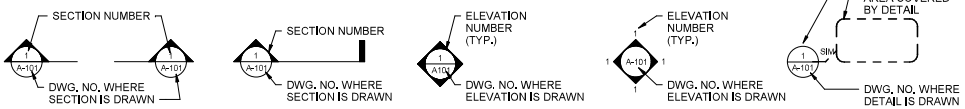
ARCHITECTURAL GENERAL NOTES:

1. THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE DRAWINGS ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. THE ENUMERATION OF PARTICULAR ITEMS OF WORK IN ONE PORTION OF THE CONTRACT DOCUMENTS SHALL NOT BE CONSTRUED TO EXCLUDE OTHER ITEMS NECESSARY OR IMPLIED THEREFROM.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE WORK SO THAT NO WORK SHALL BE LEFT IN AN UNFINISHED OR INCOMPLETE CONDITION.
4. WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS FOR QUALITY OF MATERIALS AND WORKMANSHIP AS WELL AS REQUIREMENTS IN THE CONSTRUCTION DOCUMENTS. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE CONTRACTING OFFICER'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
5. THE CONTRACTOR SHALL PROTECT EXISTING, IN-PLACE, AND NEW WORK.
6. WORK NOTED "N.I.C." IS NOT MEANT TO BE PART OF THE CONSTRUCTION SCOPE OF WORK AGREEMENT.
7. THE CONTRACTOR SHALL PAY FOR AND COORDINATE THE REMOVAL AND LEGAL DISPOSAL OF MATERIALS AND RUBBISH.
8. ONCE ON SITE, THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS THAT CORRESPOND TO THOSE SHOWN ON THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER'S IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK.
9. DO NOT SCALE DRAWINGS; DIMENSIONS GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER'S IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK.
10. DIMENSIONS NOTED AS 'HOLD' SHALL NOT VARY BY MORE THAN 1/8" FROM SIDE TO SIDE OR FROM FRONT TO BACK, FINISHED SURFACE TO FINISHED SURFACE.
11. WALL AND/OR CEILING ASSEMBLIES THAT ARE IDENTIFIED WITH A FIRE RESISTIVE RATING SHALL BE CONSTRUCTED AS DETAILED HEREIN.
12. DIMENSIONS SHOWN ARE TO FACE OF STUD OR CMU (U.N.O.).
13. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES AND SHALL OBTAIN NECESSARY BUILDING AND FIRE PERMITS FROM AUTHORITIES HAVING JURISDICTION.
14. INTERIOR FINISH MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES.
15. DISSIMILAR METALS SHALL BE ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
16. NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON INDIVIDUAL SHEETS SHALL BE APPLIED TO RELATED DRAWINGS AND DETAILS.
17. A FINISH INDICATION ON A WALL SHALL MEAN THE ENTIRE LENGTH AND HEIGHT OF WALL IS TO BE FINISHED OR FIRE-RATED AS INDICATED.
18. WHEN NON-DIMENSIONED PARTITIONS APPEAR IN CONJUNCTION WITH DOOR OPENINGS, THE DOOR WIDTH AND THE DOOR FRAME DETAILS DETERMINE THE LOCATION OF ADJACENT WALLS AND FRAMES.
19. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE CONTRACTING OFFICER'SBEFORE PROCEEDING WITH THE WORK.
20. THE CONTRACTOR SHALL COORDINATE MECHANICAL AND ELECTRICAL FLOOR AND WALL SLEEVES INCLUDING CONDUITS WITH MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, STRUCTURAL AND ARCHITECTURAL DRAWINGS.
21. PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR MECHANICAL EQUIPMENT AND PLUMBING WORK. ACCESS PANELS SHALL BE CONCEALED AND LOCATIONS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO PROCEEDING.
22. PIPE DUCTS AND BUS DUCTS THAT PENETRATE FLOOR SLABS OR WALL PARTITIONS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE MOISTURE RESISTIVENESS, FIRE RATING, AND STRUCTURAL INTEGRITY OF THE BUILDING.
23. DO NOT CUT INTO, REMOVE OR ALTER ANY STRUCTURAL MEMBER OR PORTION OF THE FLOOR SYSTEM UNLESS IT IS SPECIFICALLY NOTED OR SHOWN ON THE STRUCTURAL DRAWINGS.
24. PROVIDE EXPANSION AND CONTROL JOINTS IN WORK AS PER PRODUCT MANUFACTURER'S STANDARDS.
25. INTERIOR PARTITION MOVEMENT CONTROL:
    A. VERTICAL CONTROL JOINTS FOR ANY WALL LENGTH ARE TO OCCUR AT NOT MORE THAN 30'-0" O.C. IN THE HORIZONTAL DIRECTION, UNLESS NOTED OTHERWISE.
    B. PROVISIONS SHALL BE MADE IN THE DESIGN, FABRICATION, AND INSTALLATION OF INTERIOR PARTITIONS FOR TYPICAL FLOOR DEFLECTIONS OF THE STRUCTURE UNDER SUPERIMPOSED LOADS AS FOLLOWS:
        a. TYPICAL ROOF/FLOOR MEMBERS: SPAN/360 BUT NOT LESS THAN 1/2".
26. THE CONTRACTOR SHALL PLAN HIS/HER WORK TO PROVIDE ADEQUATE PROTECTION FOR PERSONS AND PROPERTY AT ALL TIMES, AND EXECUTE THE WORK IN SUCH A MANNER TO AVOID ANY HAZARD TO PERSONS AND PROPERTY AS NECESSARY.
27. THE CONTRACTOR SHALL COORDINATE THE PHASING OF THE WORK TO BE PERFORMED IN OR ABOUT EXISTING FACILITIES, IF APPLICABLE, WITH THE OWNER'S REPRESENTATIVE PRIOR TO START OF SUCH WORK.

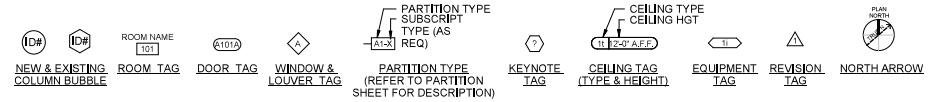
ARCHITECTURAL ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR
ADAAG	AMERICAN W/ DISABILITIES ACCESSIBILITY GUIDELINES
ADJ	ADJUST/ ADJUSTABLE
ACT	ACOUSTICAL CEILING TILE
ANOD	ANODIZED
AL / ALUM.	ALUMINUM
APPROX	APPROXIMATE
AR/ARCH	ARCHITECTURAL
AT / FP	ANTI TERRORISM / FORCE PROTECTION
AVG	AVERAGE
A / V	AUDIO/VISUAL
BLKG	BLOCKING
BD	BOARD
BTM	BOTTOM
B / O	BOTTOM OF
BLDG	BUILDING
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFMF	COLD FORMED METAL FRAMING
CPT	CARPET
CLG	CEILING
CLG HT	CEILING HEIGHT
CTR	CENTER
℄	CENTER LINE
CT	CERAMIC TILE
CLR	CLEAR
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CORR	CORRIDOR
CMU	CONCRETE MASONRY UNIT
CONF	CONFERENCE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CJ	CONTROL JOINT
CY	CUBIC YARD
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN
DS	DOWNSPOUT
DESC	DESCRIPTION
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL OR ELECTRIC
EL	ELEVATION
EWC	ELECTRIC WATER COOLER
EP	EPOXY PAINT
ENGR	ENGINEER
EOS	EDGE OF SLAB
EQUIP	EQUIPMENT
EQ	EQUAL
EXIST	EXISTING
EXP	EXPOSED
EJ	EXPANSION JOINT
EXP ST	EXPOSED TO STRUCTURE
EXT	EXTERIOR
FDC	FIRE DEPARTMENT CONNECTION
FT	FEET
FV	FIELD VERIFY
FIN	FINISH
FF	FINISHED FLOOR
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FP	FIRE PROTECTION
FLR	FLOOR
FD	FLOOR DRAIN
F / O	FACE OF
FTG	FOOTING
FDN	FOUNDATION
GA	GAGE / GAUGE
GALV	GALVANIZED
GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED GOVERNMENT INSTALLED
GL	GLASS / GLAZING
GOVT	GOVERNMENT
GYP	GYPSUM
GWB	GYPSUM WALL BOARD
HDW	HARDWARE
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HB	HOSE BIBB
HVAC	HEATING VENTILATION & AIR CONDITIONING
IMP	INSULATED METAL PANEL
IN	INCH
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
JC	JANITOR'S CLOSET
JT	JOINT
KP	KICK PLATE
LAM	LAMINATE
LDG	LANDING
LAV	LAVATORY
LH	LEFT HAND
LHR	LEFT HAND REVERSE
LGT	LENGTH
LT	LIGHT
LTG	LIGHTING
LONG	LONGITUDINAL
LVR	LOUVER
L / V	LOW VOLTAGE
MAS	MASONRY
MO	MASONRY OPENING
MGR	MANAGER
MANUF	MANUFACTURER
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
MWP	METAL WALL PANEL
MB	MINI BLIND
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
N.I.C.	NOT IN CONTRACT
NO. (#)	NUMBER
NTS	NOT TO SCALE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
O.C.	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFGI	OWNER FURNISHED GOVERNMENT INSTALLED
O.H.	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
O.D.	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ACT
OVHD / OH	OVERHEAD
O / D	OVERFLOW DRAIN
PT / PNT	PAINT
PR	PAIR
PNL	PANEL
PART	PARTITION
PLAS	PLASTIC
PLAM	PLASTIC LAMINATE
PL	PLATE
PLMB	PLUMBING
PLYWD.	PLYWOOD
PT	PORCELAIN TILE
LBS. OR #	POUNDS
PSF	POUNDS / SQUARE FOOT
PSI	POUNDS / SQUARE INCH
PEMB	PRE-ENGINEERED METAL BUILDING
PRE-FAB	PREFABRICATED
Q.T.	QUARRY TILE
RAF	RAISED ACCESS FLOOR
RCPT	RECEPTIONIST / RECEPTION
REF	REFERENCE
REINF	REINFORCEMENT / REINFORCED
REQ'D	REQUIRED
REV	REVISIONS / REVISED
R / D	ROOF DRAIN
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RM	ROOM
RO	ROUGH OPENING
RB	RUBBER BASE
SG	SAFETY GLASS / GLAZING
SC	SEALED CONCRETE
SCHED	SCHEDULE
SECT	SECTION
SSK	SERVICE SINK
SIM	SIMILAR
STC	SOUND TRANSMISSION CLASS
SPEC(S)	SPECIFICATION
SFRM	SPRAYED FIRE RESISTIVE MATERIAL
SQ	SQUARE
ST	STAIN
S.S.	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL
SUSP	SUSPENDED
TELECOMM	TELECOMMUNICATIONS
TEL	TELEPHONE
THK	THICK / THICKNESS
TLT	TOILET
T / O	TOP OF
TYP	TYPICAL
U.L.	UNDERWRITERS LABORATORIES
UNFIN	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VEST	VESTIBULE
VCT	VINYL COMPOSITION TILE
VCB	VINYL COVE BASE
WDT	WIDTH
W /	WITH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
W / O	WITHOUT
WRGB	WATER RESISTANT GYPSUM BOARD
YD	YARD

SYMBOLS:



PLAN SYMBOLS:



VIEW TITLES:



FLOOR PLANS, ELEVATIONS, SECTIONS AND DETAIL VIEWS TITLE

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: U.ALLEN
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLUHRER
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8451-24-B-0001
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install Navy B600 BX and Wall HVAC System, MCC
Construction Standard Wall HVAC Equipment
Client Project Number: AJW24-10130

GENERAL NOTES, ABBREVIATIONS & SYMBOLS

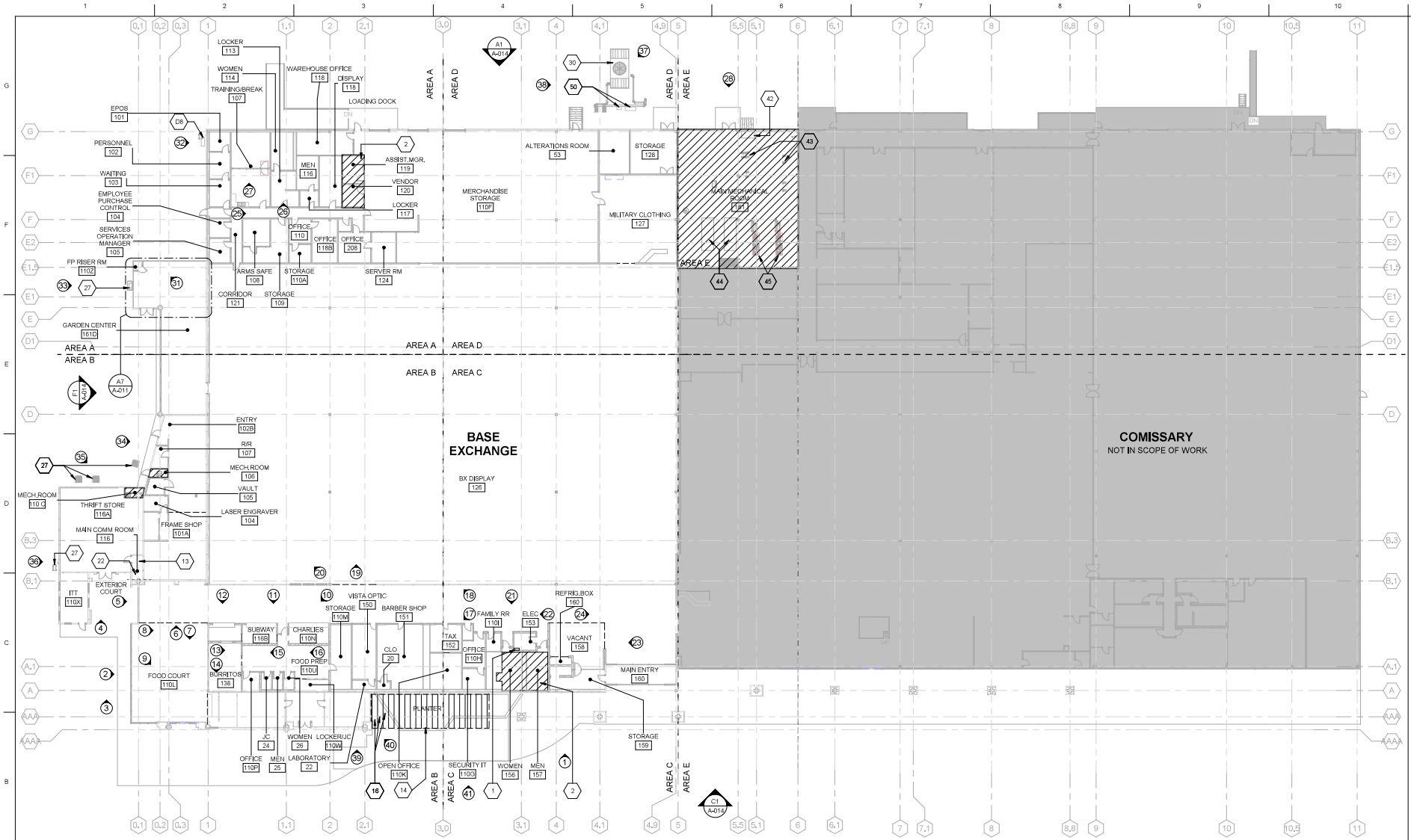
POND # 1220854

SHEET ID
A-001

ISSUED FOR CONSTRUCTION

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EXISTING OVERALL FLOOR PLAN & PHOTO KEY

A1

SCALE: 3/64" = 1'-0"

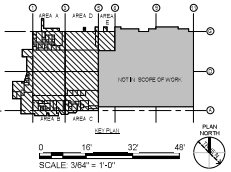
SHEET LEGEND

- EXISTING MECHANICAL ROOM/MEZZANINE ABOVE. SEE MEP DWGS FOR SCOPE REQUIREMENTS
- NOT IN SCOPE OF WORK
- LOCATION OF PROPOSED NEW MECHANICAL ROOM
- EXISTING 1-HR RATED WALL
- DIRECTION PHOTO WAS TAKEN
- DENOTES PHOTO LOCATION
- PHOTO NUMBER DESIGNATION

(SEE SHEET A-012,A013 FOR EXISTING CONDITIONS PHOTOS REFERENCE)

KEYNOTES

1 ACCESS LADDER
2 EXISTING MECHANICAL MEZZANINE ABOVE REF MECH DRAWINGS
13 REFER TO MECHANICAL AND TELECOMMUNICATION DRAWINGS FOR SCOPE.
14 LOCATION OF PROPOSED NEW MECHANICAL ROOM - SEE CIVIL DRAWINGS FOR DEMOLITION.
16 EXISTING BOLLARDS TO BE REMOVED.
22 SEE ELECTRICAL DRAWINGS FOR NEW ELECTRICAL FIXTURES.
27 EXISTING MECHANICAL UNIT TO BE DEMOLISHED.SEE MECHANICAL DRAWINGS FOR DETAILS.
30 EXISTING ELEVATED COOLING TOWER TO BE REPLACED. SEE MECHANICAL & STRUCTURAL DRAWINGS.
42 AIR COMPRESSOR,EQUIPMENT NOT IN SCOPE AND IS EXISTING TO REMAING - SEE MECHANICAL DRAWINGS
43 EXISTING PRV AND MAKE - UP WATER FILL LINES FOR HYDRONIC SYSTEMS TO REMAIN - SEE MECHANICAL DRAWINGS
44 EQUIPMENT NOT IN SCOPE AND IS EXISTING TO REMAIN - SEE MECHANICAL DRAWINGS
45 EXISTING CHILLER - SEE MECHANICAL DRAWINGS
50 EXISTING GENERATOR AND DIESEL TANK TO REMAIN- SEE SHEET A-013, PHOTO 37
D8 DEMOLISH EXISTING DUCTLESS SPLIT CONDENSING UNIT AND ASSOCIATED UNITS, ACCESSORIES & APPURTANCES. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.



MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4861-24-R-A004
CONTRACT NO.:
DESIGNED BY: R.ELLIOT
DRAWN BY: M.HOWARD
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLANINGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

Remove and Install New B600 BX and Wall HVAC System, MCC Control Panel and Roof Mounted HVAC Equipment
Client Project Number: AUW24-10130

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States

EXISTING FLOOR PLAN & PHOTO KEY PLAN

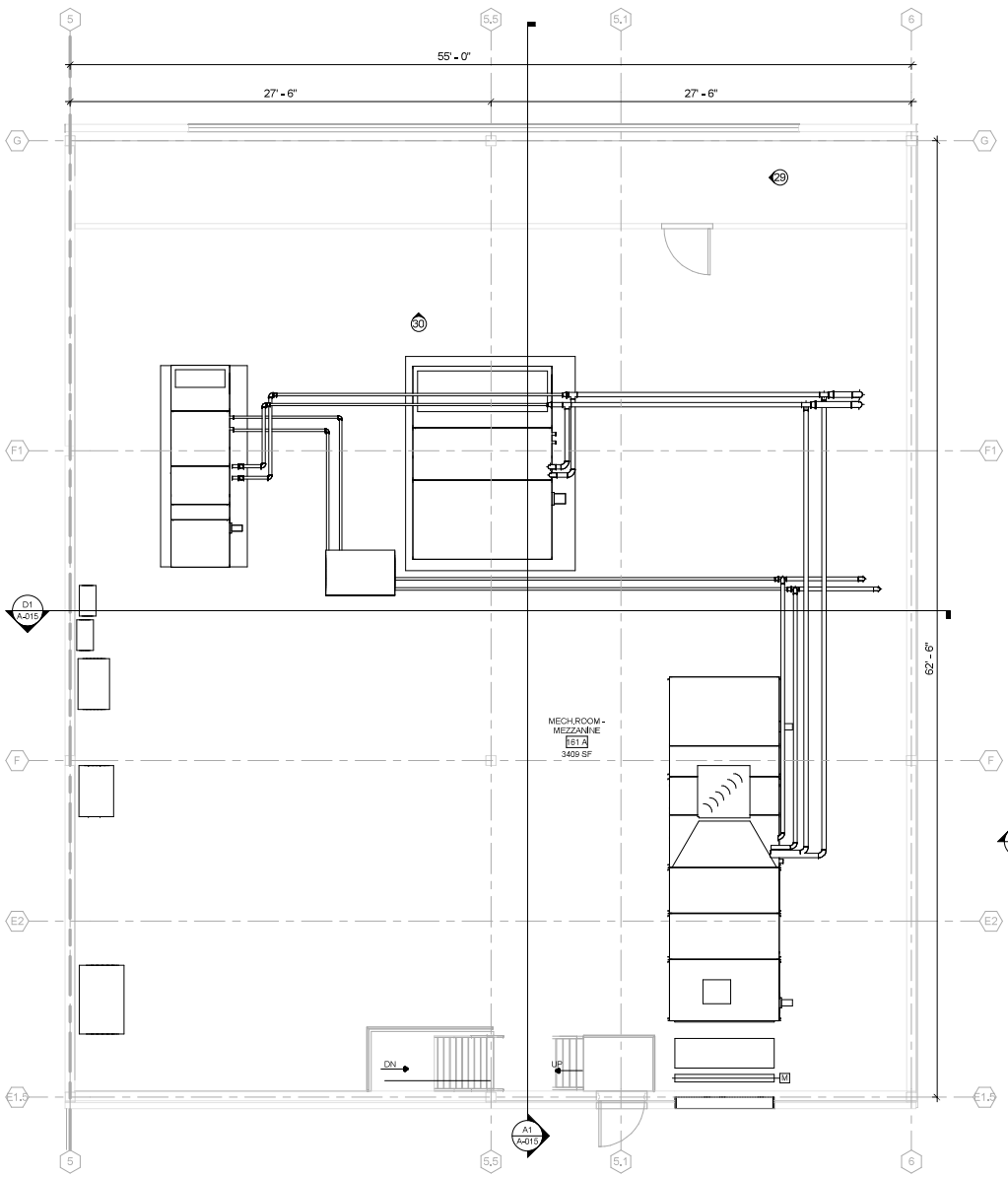
POND # 1220854

SHEET ID
A-010

ISSUED FOR CONSTRUCTION

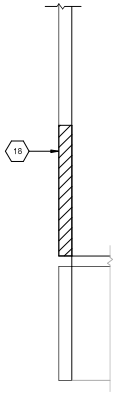
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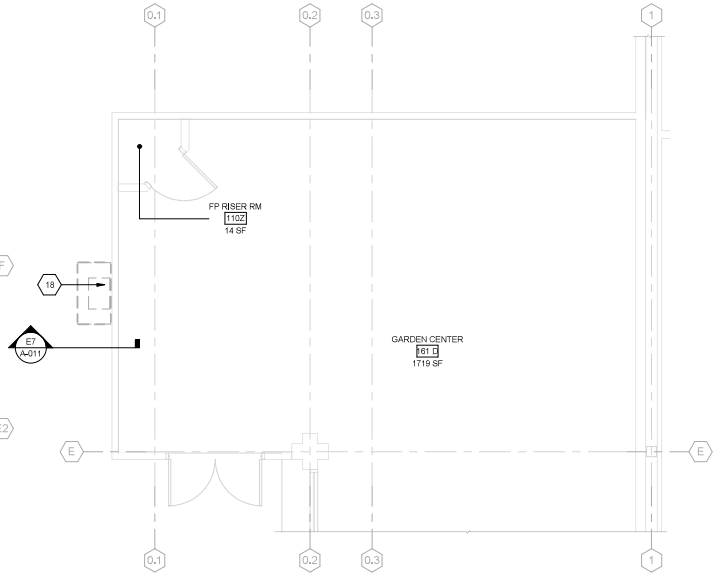
A1 MECH.ROOM - MEZZANINE - AREA E

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



E7 GARDEN CENTER - DETAIL

SCALE: 1/2" = 1'-0"



A7 FP RISER ROOM-ENLARGED FLOOR PLAN

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

KEYNOTES

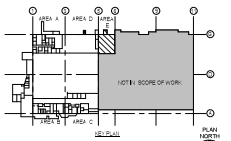
18 WALL UNIT TO BE DEMOLISHED (SEE MECHANICAL DRAWINGS),OPENING TO BE INFILLED WITH CMU AND CLAD WITH STUCCO,CONSTRUCTION TO MATCH ADJACENT FINISHES.

SHEET LEGEND

DIRECTION PHOTO WAS TAKEN
DENOTES PHOTO LOCATION
PHOTO NUMBER DESIGNATION

(SEE SHEET A-012,A013 FOR EXISTING CONDITIONS PHOTOS REFERENCE)

SEE SHEET A-010 AS FOR REFERENCE



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

SCALE: 1/2" = 1'-0"

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: U.LANGLEY
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLAUNIGER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8903-24-R-B002
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Project Number: XLWJ24-10130
Client Project Number: XLWJ24-10130

MECH.ROOM-MEZZANINE- AREA E -FLOOR PLAN

POND # 1220564

SHEET ID

A-011

ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 1:26:17 PM

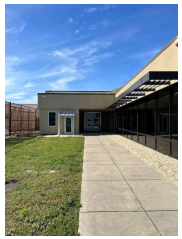
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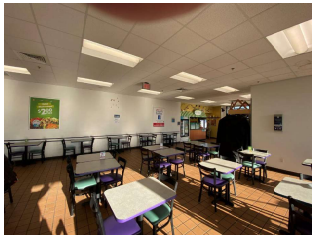
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7



8



9



10



11



12



13



14



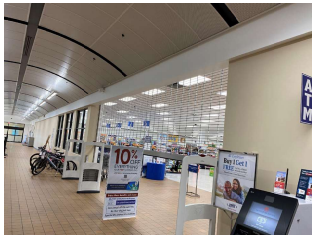
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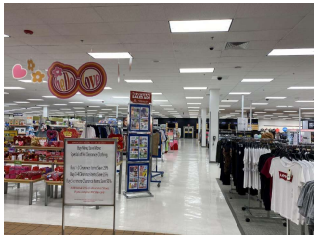
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17



18



19

PHOTO KEY LEGEND

DIRECTION PHOTO WAS TAKEN
DENOTES PHOTO LOCATION
PHOTO NUMBER DESIGNATION

REFERENCE SHEET A-010 FOR LOCATION

STATE OF FLORIDA
REGISTERED ARCHITECT
10-17-2024
AR 0015372

MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4613-24-R-0001
CONTRACT NO.:

DESIGNED BY: R.ELLIOT
DRAWN BY: U.ALVAREZ
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLANINGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Equipment Replacement
Client Project Number: AUM21-1013D

EXISTING CONDITIONS PHOTOS

POND # 1220564

SHEET ID
A-012

ISSUED FOR CONSTRUCTION

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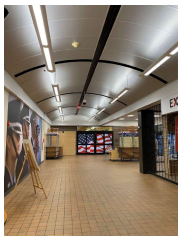
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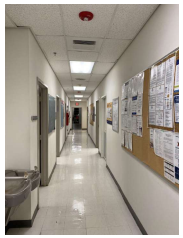
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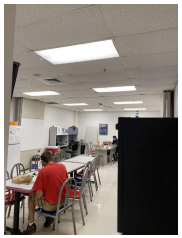
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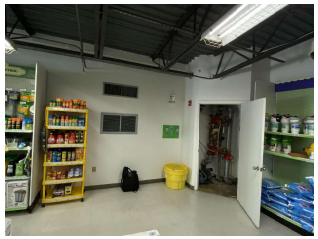
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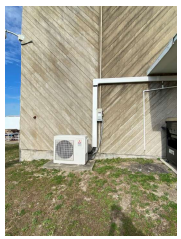
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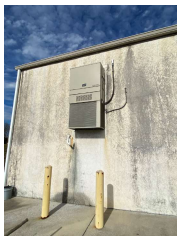
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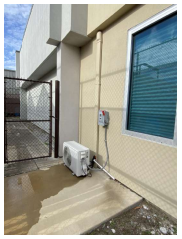
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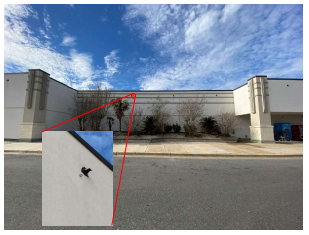
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PHOTO KEY LEGEND

DIRECTION PHOTO WAS TAKEN

DENOTES PHOTO LOCATION

PHOTO NUMBER DESIGNATION

REFERENCE SHEET A-010 FOR LOCATION

ISSUED FOR CONSTRUCTION

SHEET ID

A-013

EXISTING CONDITIONS PHOTOS

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Miscellaneous Equipment
Client Project Number: AUM24-1013D

POND # 1220854

MARK	DESCRIPTION	DATE

DESIGNED BY:	R.ELLIOT
DRAWN BY:	U.HANSEN
CHECKED BY:	K.HOTELCOB
QUALITY CONTROL BY:	S.FLUHRER
SIZE	ANSI D
ISSUE DATE:	09/13/2024
SOLICITATION NO.:	FA4613-24-R-0001
CONTRACT NO.:	

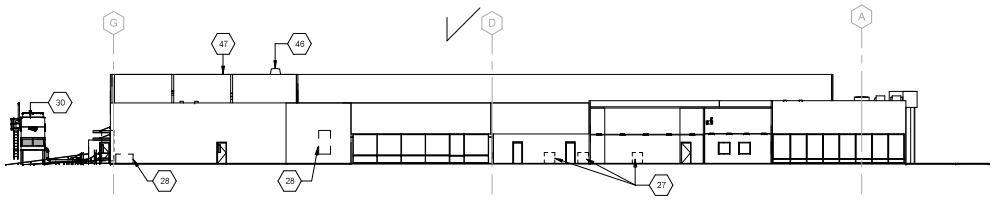
POND
Gail Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

32th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

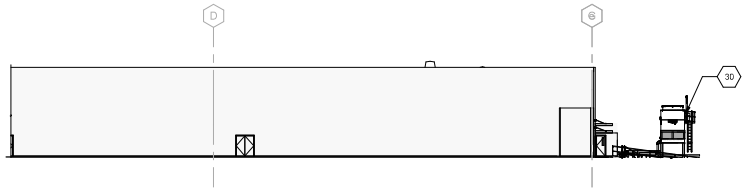
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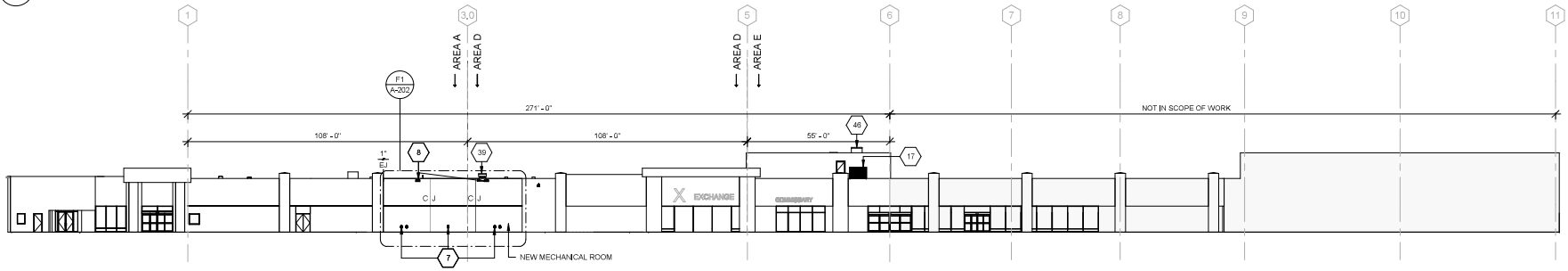
F1 WEST ELEVATION

SCALE: 3/64" = 1'-0"



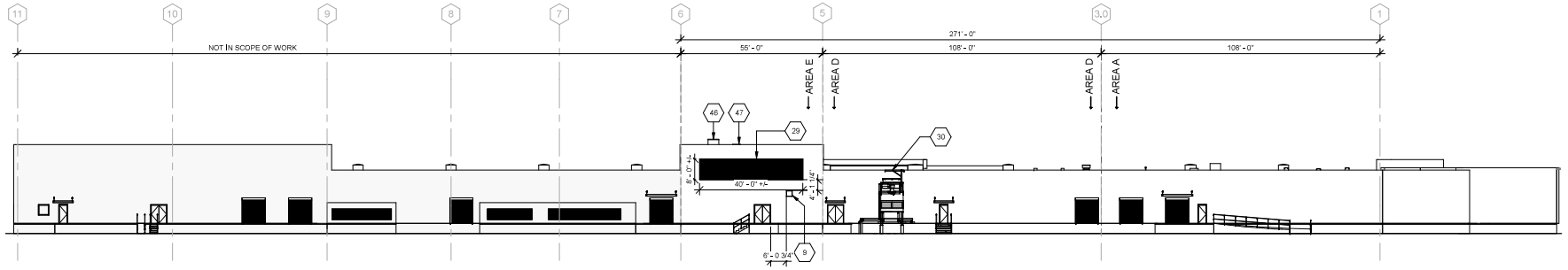
D1 EAST ELEVATION

SCALE: 3/64" = 1'-0"



C1 SOUTH ELEVATION

SCALE: 3/64" = 1'-0"



A1 NORTH ELEVATION

SCALE: 3/64" = 1'-0"

0 16' 32' 48'

SCALE: 3/64" = 1'-0"

SHEET NOTES

1. SEE SHEET A-001 FOR GENERAL NOTES
2. SEE CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.

KEYNOTES

7 LAMBS TONGUE OVERFLOW SCUPPER OUTLET ROUTED FROM NEW OVERFLOW DRAIN -TYP

8 16" X 8" OVERFLOW SCUPPER- SET 2" ABOVE ROOF DRAIN - S.S. TYP.

9 NEW LOUVER (L-3) (SEE MECH.DRAWINGS)

17 INSTALL NEW LOUVER SEAL AND MAKE WATERTIGHT (SEE MECH.DRAWINGS)

27 EXISTING MECHANICAL UNIT TO BE DEMOLISHED.SEE MECHANICAL DRAWINGS FOR DETAILS.

28 LOCATION OF EXISTING THROUGHWALL MECH UNIT TO BE DEMOLISHED - SEE MECHANICAL DRAWINGS

29 EXISTING MECHANICAL LOUVER. CONTRACTOR TO CAREFULLY REMOVE SECTIONS AS REQUIRED TO PROVIDE ACCESS FOR REMOVAL AND INSTALLATION OF NEW MECHANICAL EQUIPMENT.CONTRACTOR IS TO REINSTALL LOUVER UPON COMPLETION OF WORK.REINSTALL FLASHING AND RESEAL PERIMETER TO WATER TIGHT INSTALLATION,REPLACE ANY DAMAGED MATERIALS IN KIND AND REPAINT TO LIKE NEW CONDITION.

30 EXISTING ELEVATED COOLING TOWER TO BE REPLACED. SEE MECHANICAL & STRUCTURAL DRAWINGS.

39 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-1).SEE MECHANICAL DRAWINGS FOR DETAILS.

46 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-2)- SEE MECHANICAL DRAWINGS

47 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-3)- SEE MECHANICAL DRAWINGS

STATE OF FLORIDA
REGISTERED ARCHITECT
RICHARD L. ELLIOT
No. 15,372
19.13.2024
AR 0015372

MARK	DESCRIPTION	DATE

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Plot Date: 9/13/2024 1:26:31 PM

DESIGNED BY: R.ELLIOT
DRAWN BY: U.ALVAREZ
CHECKED BY: K.HOTELLOB
QA/QC BY: S.FLUHLINGER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4613-24-R-0001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbl smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mattl Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Matt HVAC System, MCC
Controls and Power Feed to HVAC Equipment
Client Project Number: AJW24-1013D

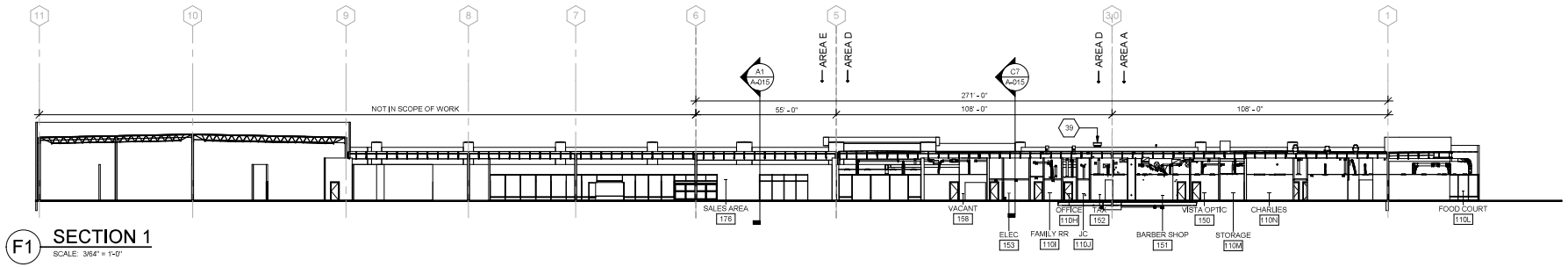
EXTERIOR ELEVATIONS

PONG # 1220564

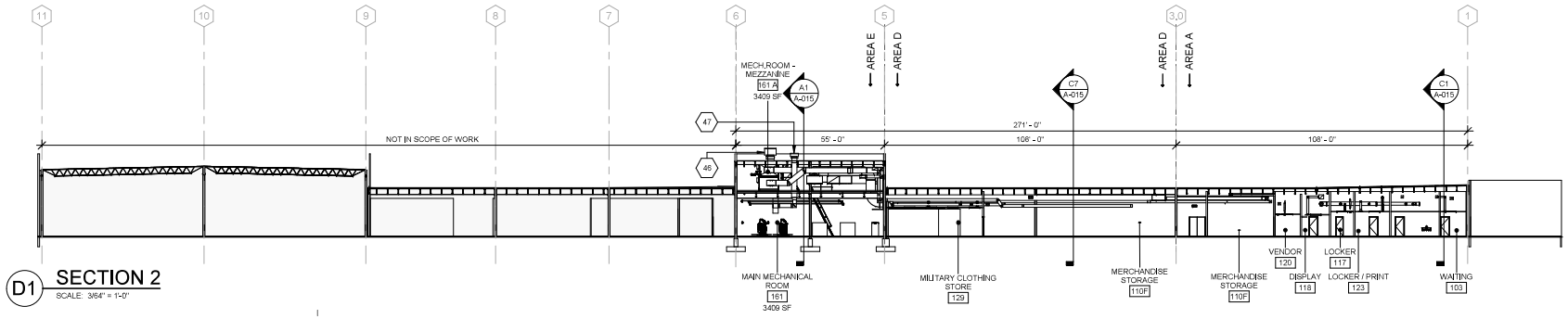
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A-014

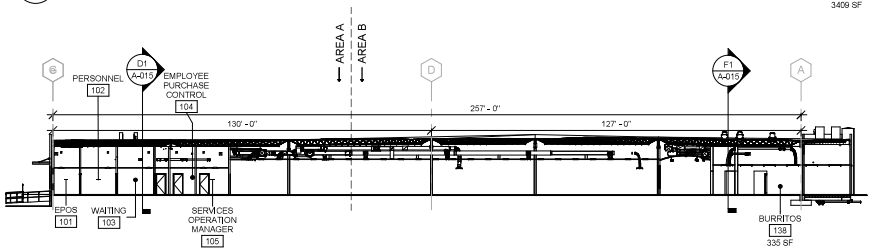
ISSUED FOR CONSTRUCTION



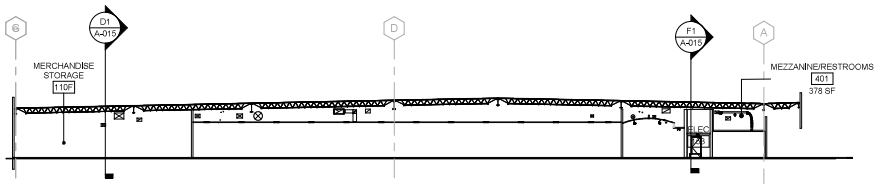
F1 SECTION 1
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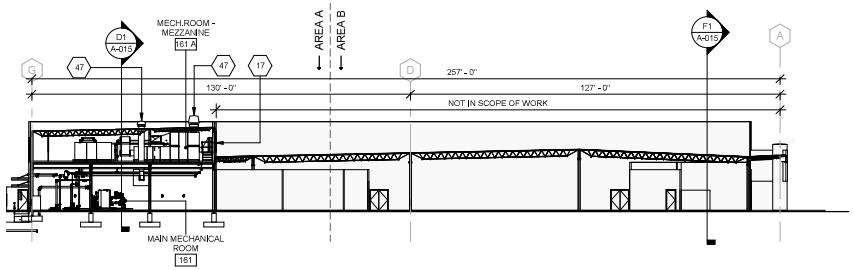
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SCALE: 3/64" = 1'-0"



C1 SECTION 3
SCALE: 3/64" = 1'-0"



C7 SECTION 5
SCALE: 3/64" = 1'-0"



A1 SECTION 4
SCALE: 3/64" = 1'-0"

0 16' 32' 48'
SCALE: 3/64" = 1'-0"

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: M.MANNING
CHECKED BY: K.HOTELCOS
APPROVED BY: S.FLANNIGER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8201-24-R-0001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

Gault Smith

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install Navy B600 BX and Wall HVAC System, MCC
Construction Project Number: XLWJ24-10130
Client Project Number: XLWJ24-10130

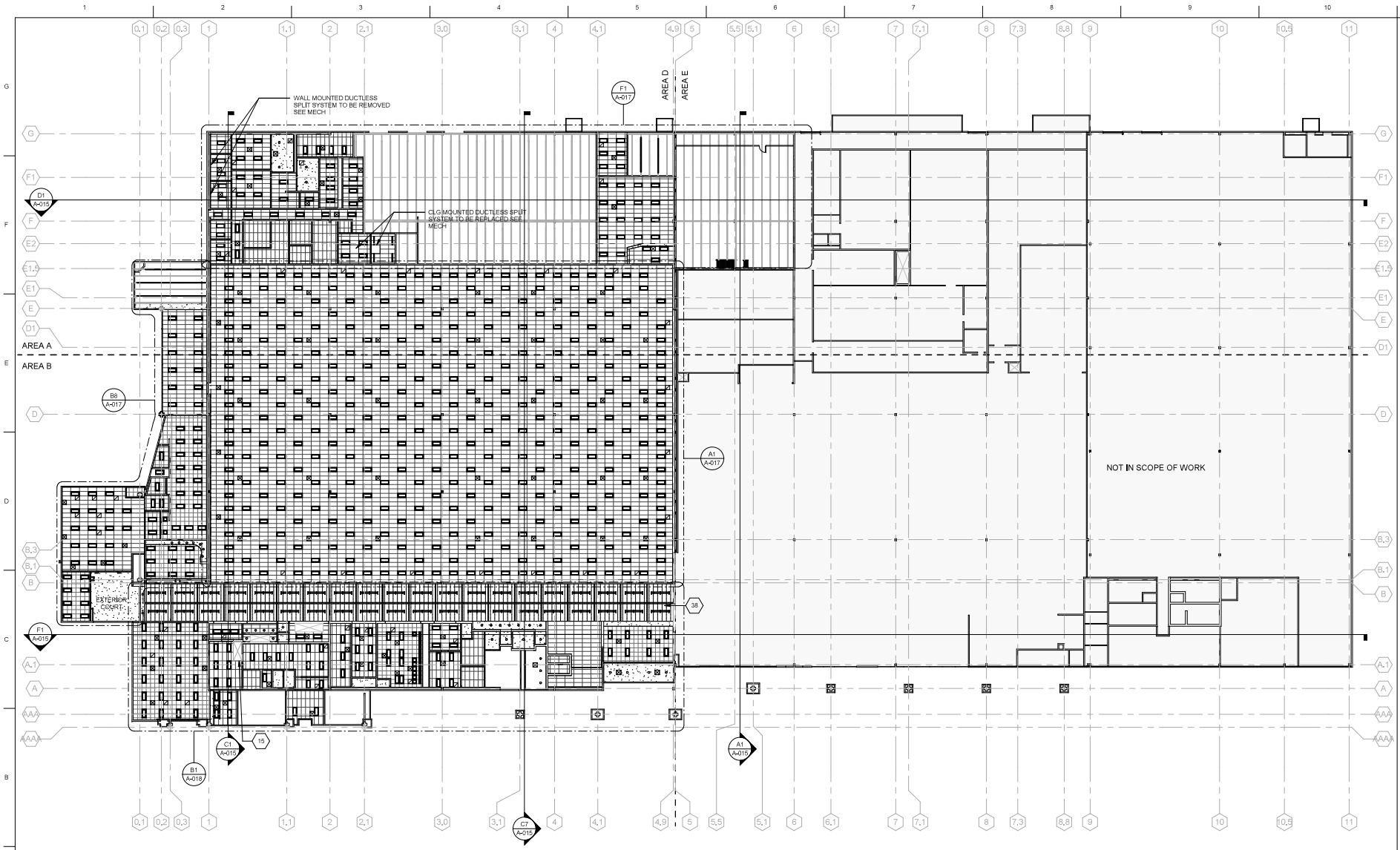
BUILDING SECTIONS

POND # 1220854

SHEET ID
A-015

ISSUED FOR CONSTRUCTION

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SHEET NOTES

1. CEILINGS TYPES AND HEIGHTS SHOWN ARE BASED UPON LIMITED AS-BUILT INFORMATION. CONTRACTORS SHALL VERIFY EXISTING CONDITIONS PRIOR TO BID.
2. CONTRACTOR IS TO CAREFULLY REMOVE AND REPLACE CEILING SYSTEMS AS REQUIRED FOR HVAC INSTALLATION. CEILINGS MAY BE REPLACED IN KIND AT CONTRACTORS OPTION.

SHEET LEGEND

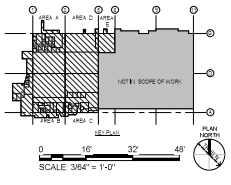
- 2" x 4"LAY-IN ACOUSTICAL PANELS
- SUSPENDED STUCCO
- GYPSUM WALLBOARD OR EXPOSED CONST.
- USG CURVATURA CEILING

** CEILINGS TYPES AND HEIGHTS SHOWN ARE BASED UPON LIMITED AS-BUILT INFORMATION. CONTRACTORS SHALL VERIFY EXISTING CONDITIONS PRIOR TO BID.

KEYNOTES

15 EXISTING 9'-0" X 4'-0" HOOD. SEE IMAGE 13,14 ON SHEET A-012 FOR REFERENCE

38 EXISTING USG CURVATURA CEILING - REMOVE AND REINSTALL AS REQUIRED FOR DEMOLITION OF EXISTING & INSTALLATION OF NEW DUCTWORK.



A1 EXISTING REFLECTING CEILING PLAN

SCALE: 3/64" = 1'-0"

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: U.KHAN
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLUHRER
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8451-24-R-0004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND GOULD Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Installation of HVAC Equipment
Client Project Number: AJW24-1013D

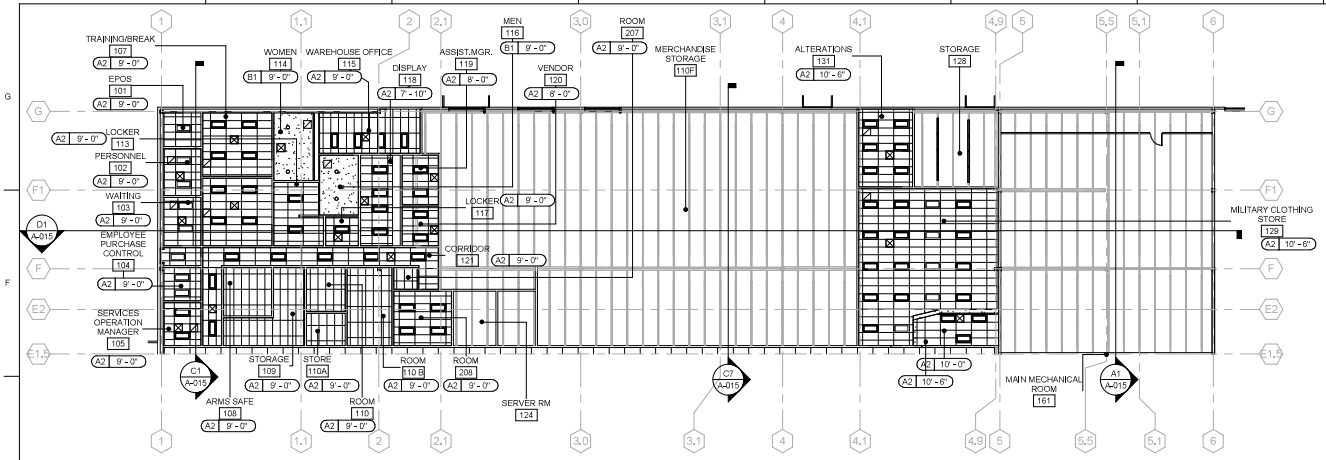
EXISTING REFLECTED CEILING PLAN

SHEET ID
A-016

POND # 1220854

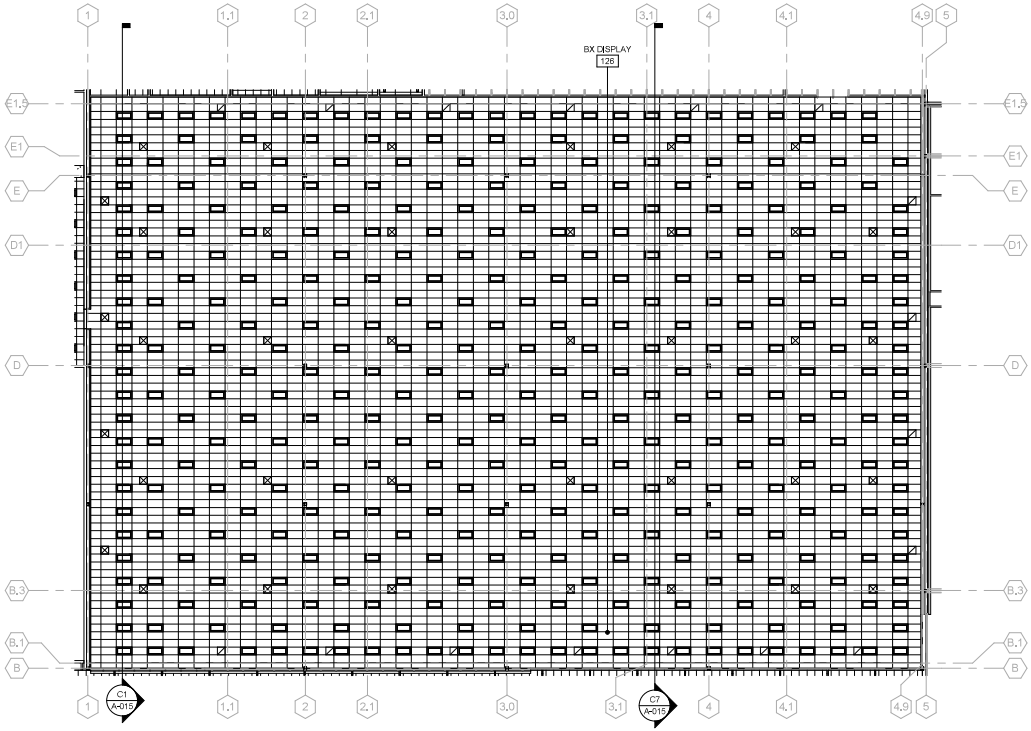
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F1 EXISTING REFLECTING CEILING PLAN - AREA D - ENLARGED PLAN

SCALE: 1/16" = 1'-0"

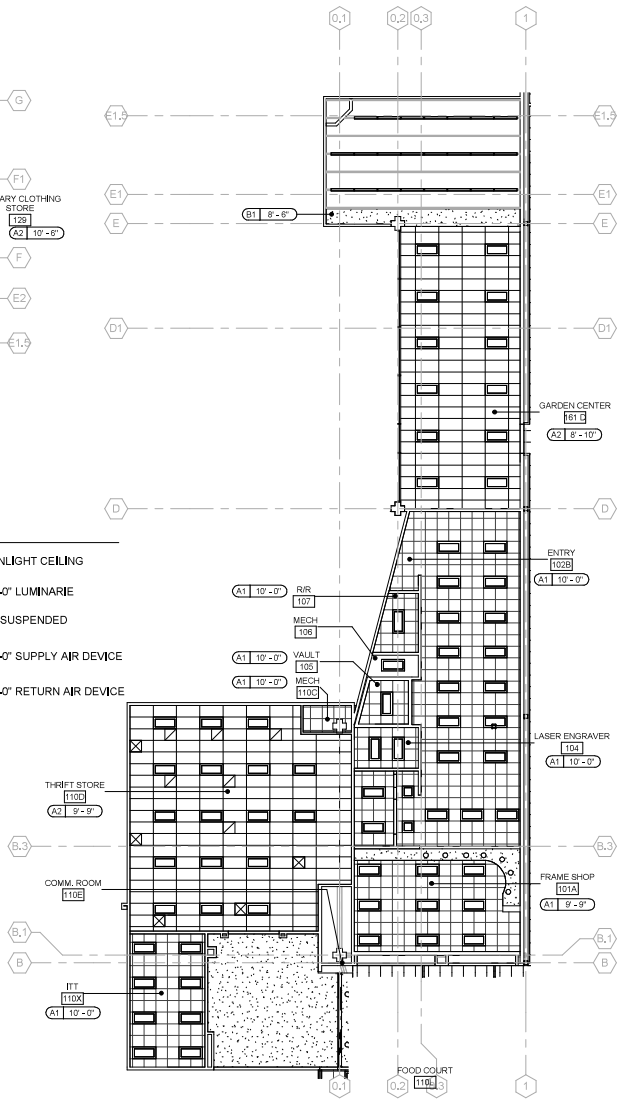


A1 EXISTING REFLECTING CEILING PLAN - AREA A - ENLARGED PLAN

SCALE: 1/16" = 1'-0"

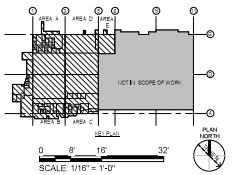
SHEET LEGEND

- EXISTING 6" DOWNLIGHT CEILING LUMINAIRE
- EXISTING 2'-0" x 4'-0" LUMINARIE
- EXISTING LINEAR SUSPENDED LUMINARIE
- EXISTING 2'-0" x 2'-0" SUPPLY AIR DEVICE
- EXISTING 2'-0" x 2'-0" RETURN AIR DEVICE



B8 EXISTING RCP - GARDENING AREA - ENLARGED PLAN

SCALE: 3/32" = 1'-0"



STATE OF FLORIDA — DONALD L. ELLIOT — 19.17.2024 — AR 0015372 — REGISTERED ARCHITECT

MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: F5AJ1224B002
CONTRACT NO.:

DESIGNED BY: R.ELLIOT
DRAWN BY: L.HOLLEY
CHECKED BY: K.HOTELCOB
QUALITY CONTROL BY: S.FLUMINGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gail Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Renovation Bldg 950
Client Project Number: AUW24-10130

EXISTING REFLECTED CEILING - ENLARGED PLAN - AREA D,A & GARDENING AREA

POND ID # 1220804

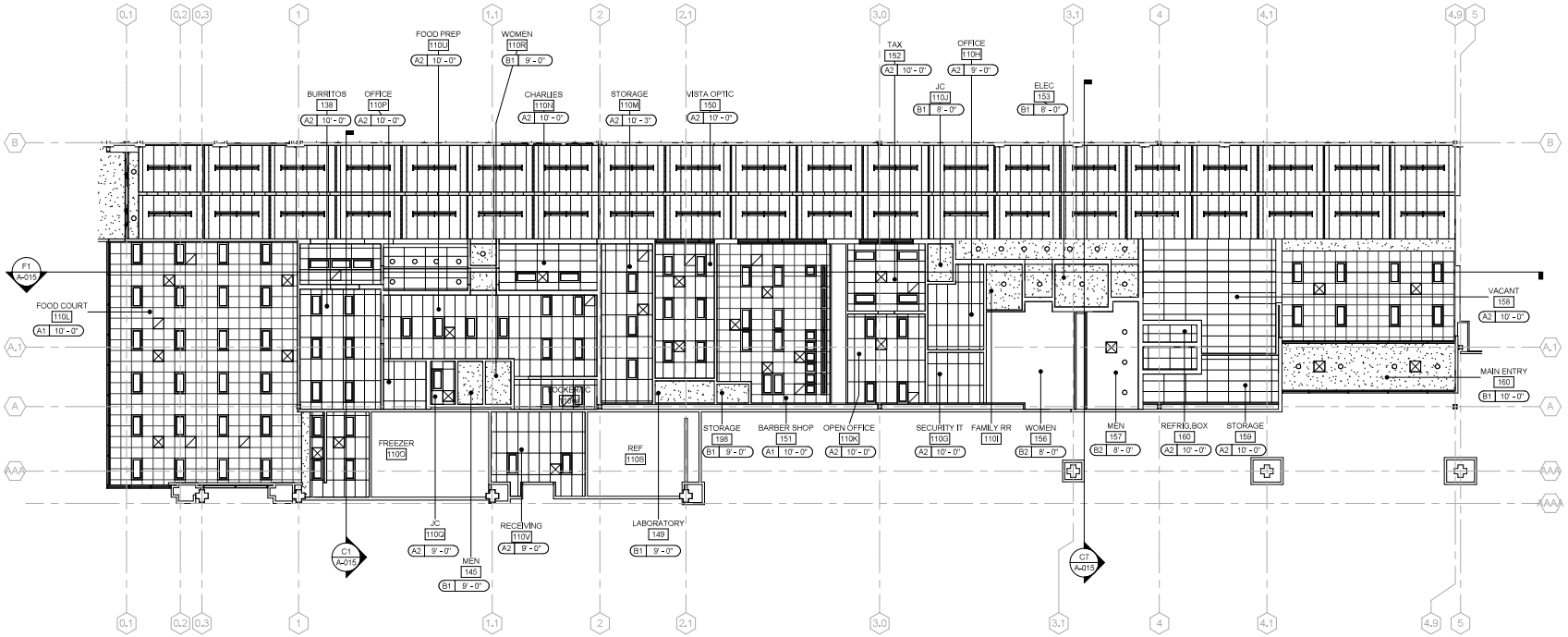
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ISSUED FOR CONSTRUCTION

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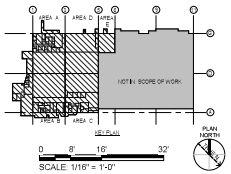
SHEET LEGEND

- EXISTING 6" DOWNLIGHT CEILING LUMINAIRE
- EXISTING 2'-0" x 4'-0" LUMINARIE
- EXISTING LINEAR SUSPENDED LUMINARIE
- EXISTING 2'-0" x 2'-0" SUPPLY AIR DEVICE
- EXISTING 2'-0" x 2'-0" RETURN AIR DEVICE



B1 EXISTING REFLECTING CEILING PLAN - AREA B - ENLARGED PLAN

SCALE: 3/32" = 1'-0"



MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4861-24-R-0004
CONTRACT NO.:

DESIGNED BY: Designer
DRAWN BY: Drafter
CHECKED BY: Checker
APPROVED BY: Approver
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND gbl Smith
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC Construction and Renovation, Base HVAC Equipment
Client Project Number: AUW24-1013D

EXISTING REFLECTED CEILING PLAN - ENLARGED PLAN - AREA B

POND # 1220504

SHEET ID
A-018

ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 1:26:49 PM
File Path: ...

KEYNOTES

D8 DEMOLISH EXISTING DUCTLESS SPLIT CONDENSING UNIT AND ASSOCIATED UNITS, ACCESSORIES & APPURTANCES. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

D11 DEMOLISH EXISTING CONCRETE CURB,& PLANTER SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

D12 DEMOLISH EXISTING CONCRETE WALKWAY/ROAD - REFER TO CIVIL DRAWINGS FOR LIMITS OF CONSTRUCTION.

D13 REMOVE EXISTING MECHANICAL EQUIPMENT AND PREPARE OPENING FOR INFILL MATCHING EXISTING WALL,SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION

D14 REMOVE EXISTING MECHANICAL EQUIPMENT,SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION

SHEET NOTES

1. SEE SHEET A-001 FOR GENERAL NOTES.
2. SEE ENGINEERING DRAWINGS FOR LOCATION OF HVAC, DUCTWORK, ELECTRICAL, FIRE PROTECTION AND TELECOM EQUIPMENT REPLACEMENT EXTENTS.
3. EXISTING CONDITIONS INDICATED ON THE DRAWINGS SHALL BE FIELD-VERIFIED BY THE CONTRACTOR. ANY DIFFERING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER PRIOR TO PROCEEDING.
4. DO NOT CUT INTO, REMOVE OR ALTAR ANY STRUCTURAL MEMBER UNLESS IT IS SPECIFICALLY NOTED OR SHOWN ON THE STRUCTURAL DRAWINGS.
5. WHILE WORK UNDER THIS CONTRACT IS IN PROGRESS, PROTECT EXISTING BUILDING, GROUNDS AND CONTENTS INCLUDING ADJACENT AREAS FROM DAMAGE OR HARM.
6. COORDINATE DEMOLITION WORK WITH OTHER ELEMENTS OF THE WORK TO ENSURE THAT THE BUILDING ENVELOPE REMAINS WATER TIGHT.
7. DEMOLITION MATERIAL, EQUIPMENT AND DEBRIS SHALL BE REMOVED AT THE END OF EACH WORK DAY FROM THE SITE TO AN AREA DESIGNATED BY THE GOVERMENT.
8. THE DEMOLITION CONTRACTOR SHALL REVIEW INSTALLATION DRAWINGS FOR NEW MATERIALS AND BE FAMILIAR WITH LIMITS OF DEMOLITION. THE CONTRACTOR SHALL KNOW AND UNDERSTAND NEW MATERIAL INSTALLATION IN AREAS WHERE EXISTING MATERIALS ARE REMOVED.
9. PROVIDE TEMPORARY SHELTER OR PORTALS AT ENTRANCES AND EXIT DOORS AS MAY BE REQUIRED FOR PROTECTION FROM FALLING DEBRIS OR OPEN TRENCHES. TEMPORARY PORTALS AND WALKWAYS ARE TO MEET CODE REQUIREMENTS FOR WIDTH AND WALKING SURFACE CONTINUITY. ALL EXITS ARE TO REMAIN IN OPERATION.
10. NOTIFY CONTRACTING OFFICER IMMEDIATELY IF ANY SUSPECTED HAZARDOUS MATERIAL IS FOUND.
11. INCIDENTAL PATCHING, PAINTING, FACE-PLATE REPLACEMENT AND OTHER SUCH REPAIRS MAY BE REQUIRED FOR INSTALLATION OF UTILITIES THROUGH NON-SCOPE AREAS. CONTRACTOR IS RESPONSIBLE FOR RESTORING SUCH AREAS TO THE SAME CONDITION AS PRIOR CONSTRUCTION.
12. CONTRACTOR TO DEVELOPE PHASING PLAN IN CONJUNCTION WITH GOVT TO MAINTAIN FACILITY OPERATIONS DURING CONSTRUCTION.
13. DEMOLISH ALL DUCTWORK, DIFFUSERS, ASSOCIATED PIPING AND HVAC EQUIPMENT. REFER TO MEP AND FP FOR ADDITIONAL INFORMATION.
14. CAREFULLY REMOVE ACOUSTICAL CEILING TILES, GRIDS, GWB CEILINGS, CEILING SUPPORT SYSTEMS, AS REQUIRED FOR NEW WORK. STORE CEILING TILES FOR REINSTALLATION. SUSPEND EXISTING LIGHT FIXTURES, AND CEILING DEVICES IN AFFECTED AREAS TO BE RESET WITHIN CEILING SYSTEMS UPON COMPLETION OF THE WORK.
15. CONTRACTOR SHALL ASSUME REPLACEMENT OF 20% OF THE EXISTING CEILING TILE SYSTEM FOR BIDDING PURPOSES.

SHEET LEGEND

NOT IN SCOPE OF WORK

EXISTING MECHANICAL ROOM/MEZZANINE WHERE EQUIPMENT IS TO BE REPLACED. SEE MEP DWGS

EXISTING CMU AND / OR STUD WALLS / PARTITIONS TO REMAIN

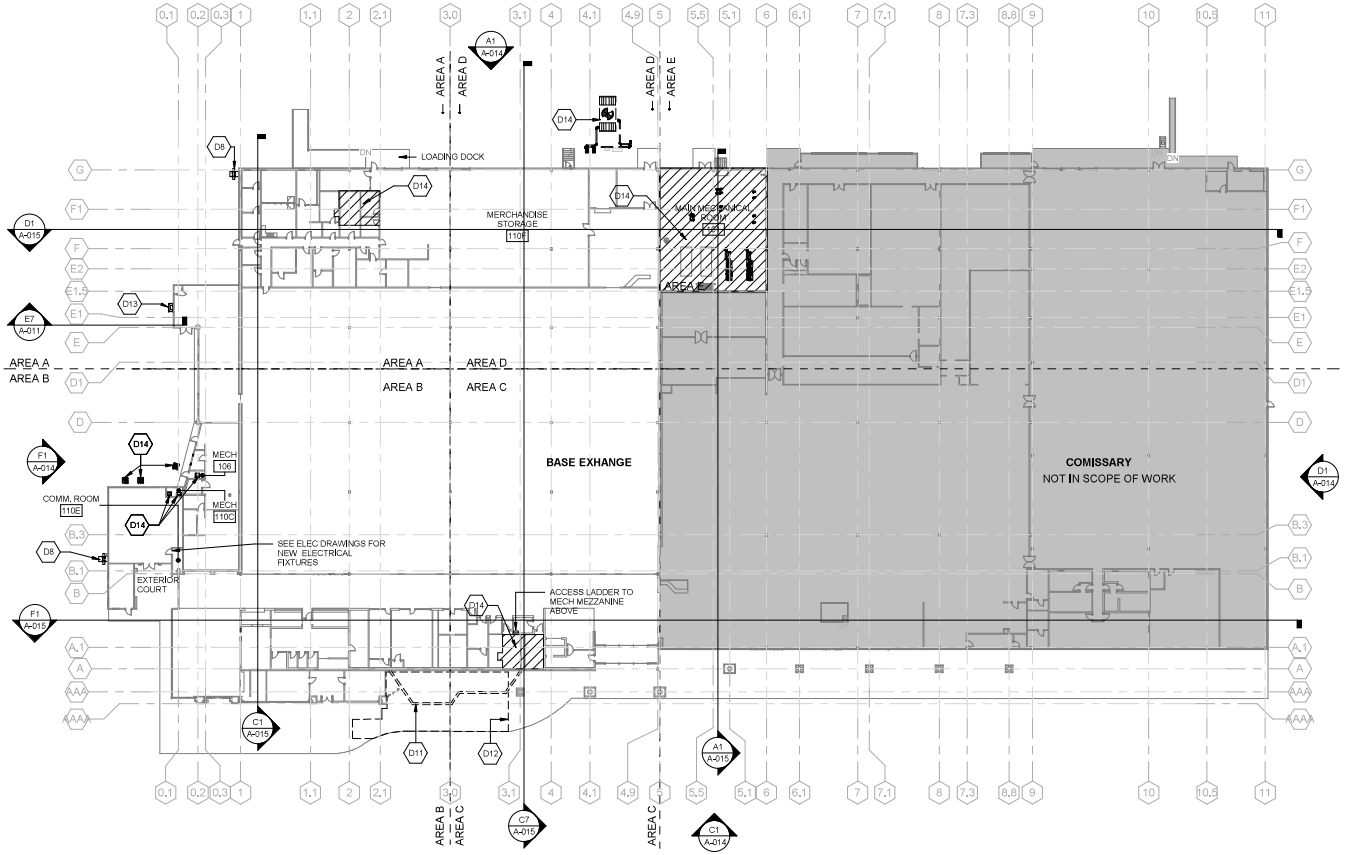
EXISTING CONSTRUCTION TO BE DEMOLISHED

EXISTING DOOR, FRAME AND ACCESSORIES TO REMAIN

EXISTING DOOR, FRAME AND ACCESSORIES TO BE DEMOLISHED

EXISTING WINDOW SYSTEM AND ACCESSORIES TO REMAIN

EXISTING DOOR, FRAME AND ACCESSORIES TO BE DEMOLISHED



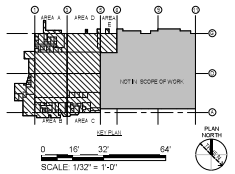
A1 OVERALL DEMOLITION PLAN

SCALE: 1/32" = 1'-0"

SHEET LEGEND

INDICATES MEZZANINE ABOVE

NOT IN SCOPE OF WORK



MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: U.ALLEN
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLAUNGER
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4613-24-R-A001
CONTRACT NO.:

35th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbl smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Project Number: AUW24-1013D
Client Project Number: AUW24-1013D

OVERALL DEMOLITION PLAN

POND # 1220854

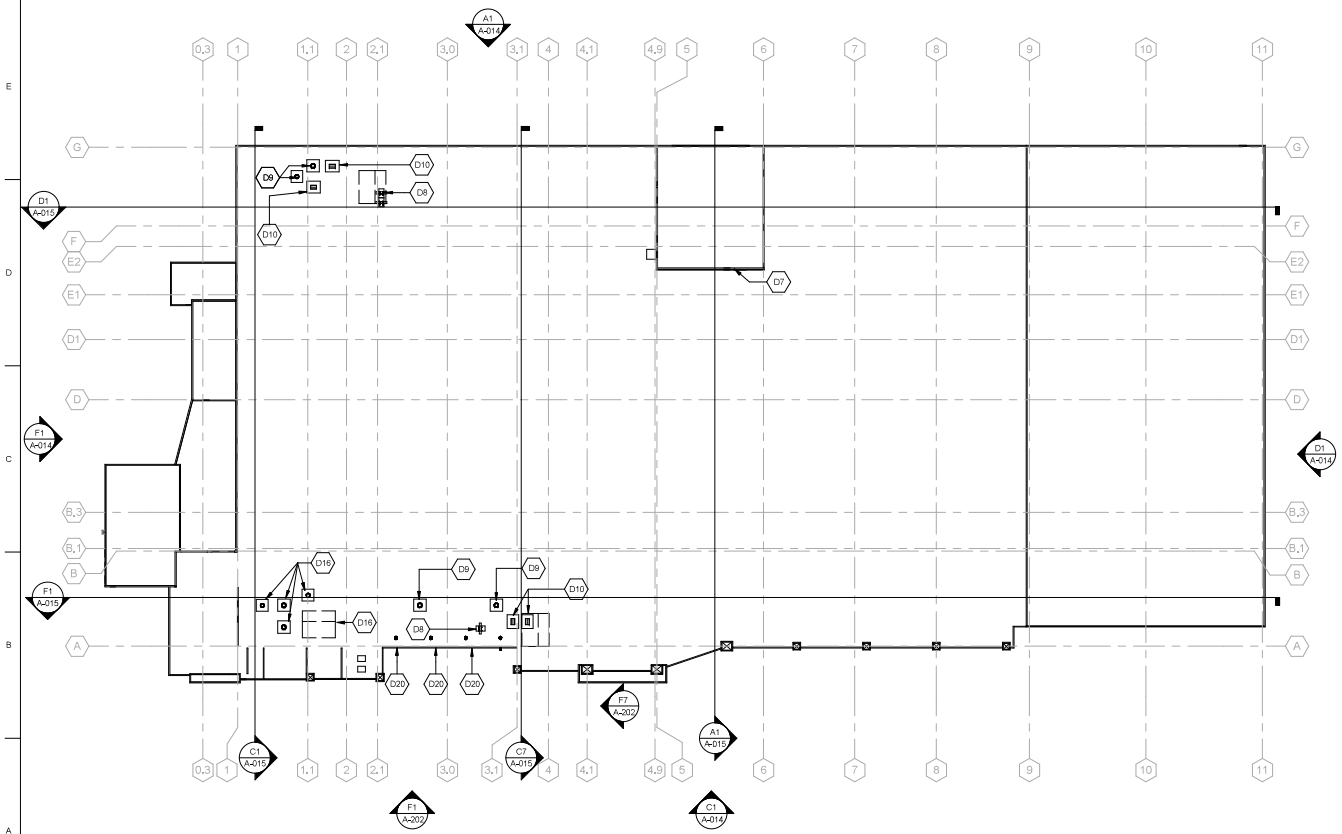
SHEET ID

AD101

ISSUED FOR CONSTRUCTION

File Path: I:\...\Tyndall AFB EA Design\220854_Tyndall AFB_AUW24-1013D\...

Plot Date: 9/13/2024 1:27:01 PM



A1 DEMOLITION ROOF PLAN
SCALE: 1/32" = 1'-0"

SHEET NOTES

1. ROOF MATERIALS & INSTALLATION SHALL COMPLY WITH APPLICABLE CODES & STANDARDS AS SET FORTH BY THE LOCAL AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR SHALL REPAIR ANY AND ALL DAMAGES TO THE ROOF DURING DEMOLITION WORK AND RESTORE IT TO ORIGINAL CONDITION.
3. COORDINATE ROOF CURB OPENING SIZE AND LOCATION WITH MECHANICAL AND STRUCTURAL DWGS.
4. ALL ROOF PENETRATIONS SHALL BE FLASHED IN ACCORDANCE WITH ROOF MANUFACTURER'S RECOMMENDATIONS AND/OR STANDARD DETAILS.
5. PROVIDE CRICKETS TO DIVERT WATER AROUND EQUIPMENT CURBS AND OTHER OBSTRUCTIONS. MINIMUM SLOPE AT VALLEYS TO BE 1/4" PER FOOT.
6. ALL EXISTING RTUs AND EXHAUST FANS SHOWN THROUGHOUT THE DWGS TO BE DEMOLISHED ARE TO REMOVED AND ROOF OPENINGS CAPPED WITH INSULATED CONSTRUCTION MATCHING EXISTING ROOF SYSTEM.
7. PRIOR TO CAPPING ROOF OPENINGS AT LOCATIONS OF REMOVED EQUIPMENT - CONTRACTOR IS TO UTILIZE ROOF OPENINGS AS NEEDED TO REMOVE DEMOLISHED EQUIPMENT FROM BUILDING.

(#) KEYNOTES

D7 DEMOLISH EXTERIOR WALL AS REQUIRED FOR INSTALLATION OF NEW LOUVER, SEE MECHANICAL DRAWINGS FOR LOCATION AND DETAILS.

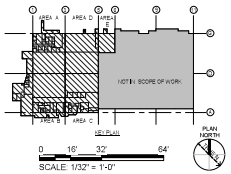
D8 DEMOLISH EXISTING DUCTLESS SPLIT CONDENSING UNIT AND ASSOCIATED UNITS, ACCESSORIES & APPURTANCES. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

D9 DEMOLISH EXISTING EXHAUST FANS, ROOF CURB,ACCESORIES & APPURTENANCES PREPARE OPENING TO RECIEVE INFILL ROOF STRUCTURE, ROOFING, & INSULATION IN KIND, SEE STRUCTURAL & MECHANICAL FOR ADDITIONAL INFORMATION.

D10 DEMOLISH ROOF HOOD, CURB, DUCTWORK,ACCESORIES & APPURTANCES, PREPARE OPENINGS TO RECEIVE NEW INFILL TO MATCH ADJACENT CONSTRUCTION AND FINISHES, OPENING MAY BE UTILIZED FOR ADDITIONAL REMOVAL OF ADDITIONAL EQUIPMENT DEMOLITION. SEE STRUCTURAL AND MECHANICAL.

D16 DEMOLISH EXISTING RTU, CURB, PIPING, ACCESSORIES AND ASSOCIATED DUCTWORK, PATCH, SEAL AND INSULATE ROOF TO MATCH EXISTING, SEE MECHANICAL DRAWINGS.

D20 EXISTING OVERFLOW SCUPPER INLET TO BE REMOVED AND PIPING CAPPED OR REMOVED - SAVE LAMBS TONGUE SCUPPER COVER TO BE REUSED AT RELOCATED OVERFLOW SCUPPER OUTLET AT NEW MECHANICAL ROOM ADDITION



STATE OF FLORIDA
REGISTERED ARCHITECT
DAVID L. ELLIOTT
No. 0015372
AR 0015372
10.17.2024

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: U.LANGA
CHECKED BY: K.KOTELOS
APPROVED BY: S.FLUHRER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8903-24-R-0001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GDU Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Power Panel and Associated Equipment
Client Project Number: XLWJ24-10130

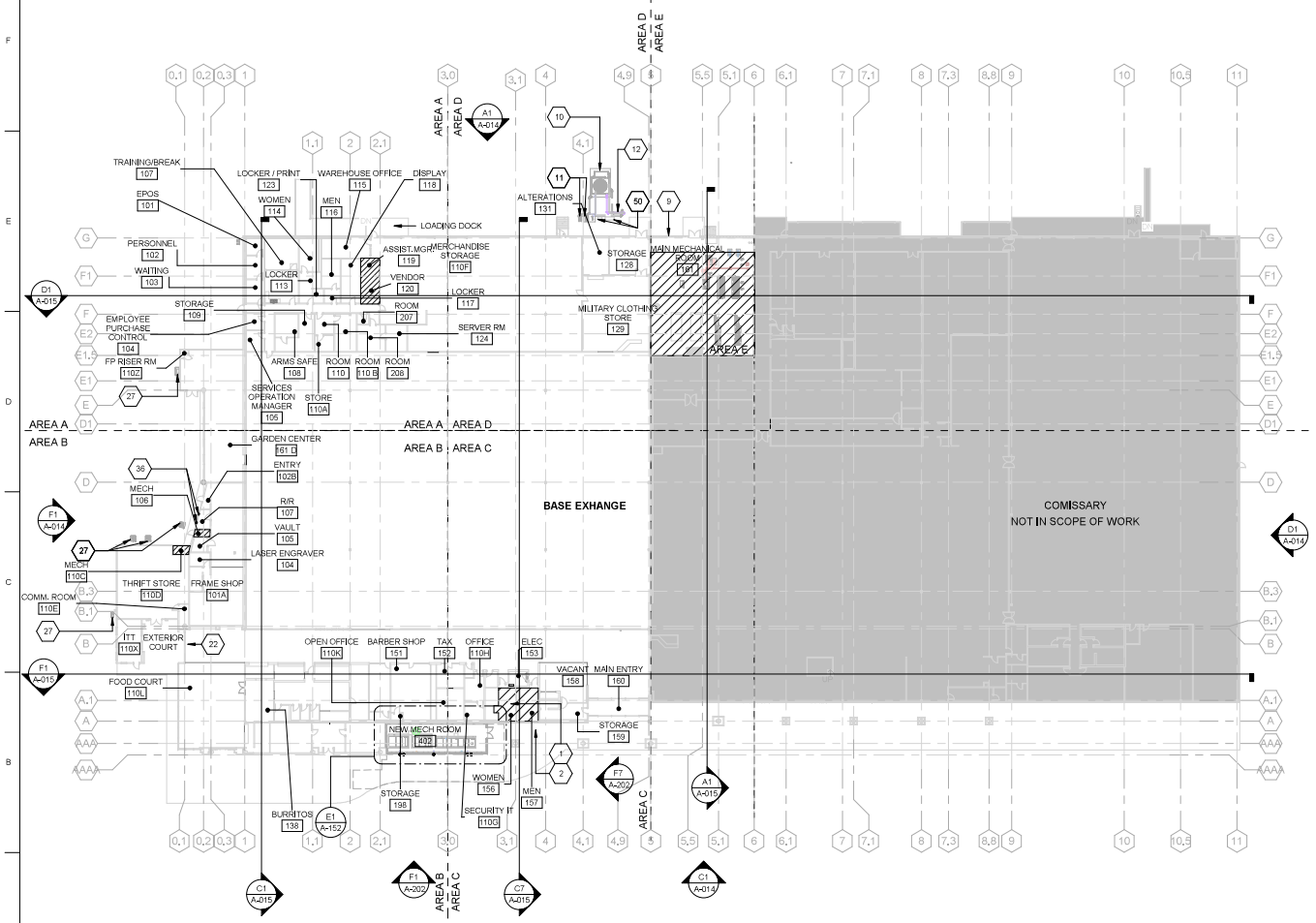
DEMOLITION ROOF PLAN

POND # 1220854

SHEET ID
AD151

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Plot Date: 9/13/2024 1:27:01 PM

ISSUED FOR CONSTRUCTION



A1 OVERALL FLOOR PLAN

SCALE: 1/32" = 1'-0"

SHEET NOTES

1. SEE SHEET A-001 FOR GENERAL NOTES.
2. SEE SHEET A-002 FOR SYMBOLS AND MATERIALS.
3. DIMENSIONS OF EXTERIOR WALLS ARE TO INSIDE FACE OF CMU OR EXTERIOR FINISH FACE U.N.O.
4. DIMENSIONS OF INTERIOR WALLS AND PARTITIONS ARE TO FACE OF STUD, FACE OF CMU OR FACE OF IMP. U.N.O.
5. DOOR OPENINGS SHALL BE LOCATED @ 8" FROM FACE OF ADJACENT PARTITION IN CMU PARTITIONS OR 5" FROM FACE OF PARTITION IN STUD AND PANEL PARTITIONS, U.N.O.

KEYNOTES

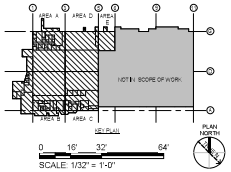
1 ACCESS LADDER
2 EXISTING MECHANICAL MEZZANINE ABOVE REF MECH DRAWINGS
9 NEW LOUVER (L-3) (SEE MECH.DRAWINGS)
10 EXISTING COOLING TOWER TO BE REPLACED - SEE MECH.DRAWINGS.
11 EXISTING COOLING TOWER PUMPS, ASSOCIATED UNDERGROUND EXISTING PIPING TO REMAIN. - SEE MECH.DRAWINGS
12 EXISTING UNDERGROUND PIPE TO BE REMAIN AND BE REUSED, PROTECT DURING CONSTRUCTION - SEE MECH.DRAWINGS
22 SEE ELECTRICAL DRAWINGS FOR NEW ELECTRICAL FIXTURES.
27 EXISTING MECHANICAL UNIT TO BE DEMOLISHED.SEE MECHANICAL DRAWINGS FOR DETAILS.
36 NEW LOVERS AT EXTERIOR WALL PENETRATIONS. SEE MECHANICAL DRAWINGS FOR DETAILS.
50 EXISTING GENERATOR AND DIESEL TANK TO REMAIN- SEE SHEET A-013, PHOTO 37

SHEET LEGEND

NOT IN SCOPE OF WORK

EXISTING MECHANICAL ROOM/MEZZANINE WHERE EQUIPMENT IS TO BE REPLACED. SEE MEP DWGS

EXISTING 1-HR RATED WALL



MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: U.ANDERSON
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLANINGER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.:
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbu Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Phase Base Wide HVAC Replacement
Client Project Number: XLWJ24-1013D

OVERALL FLOOR PLAN

POND # 1220854

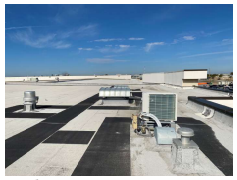
SHEET ID
A-101

ISSUED FOR CONSTRUCTION

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42



43



44



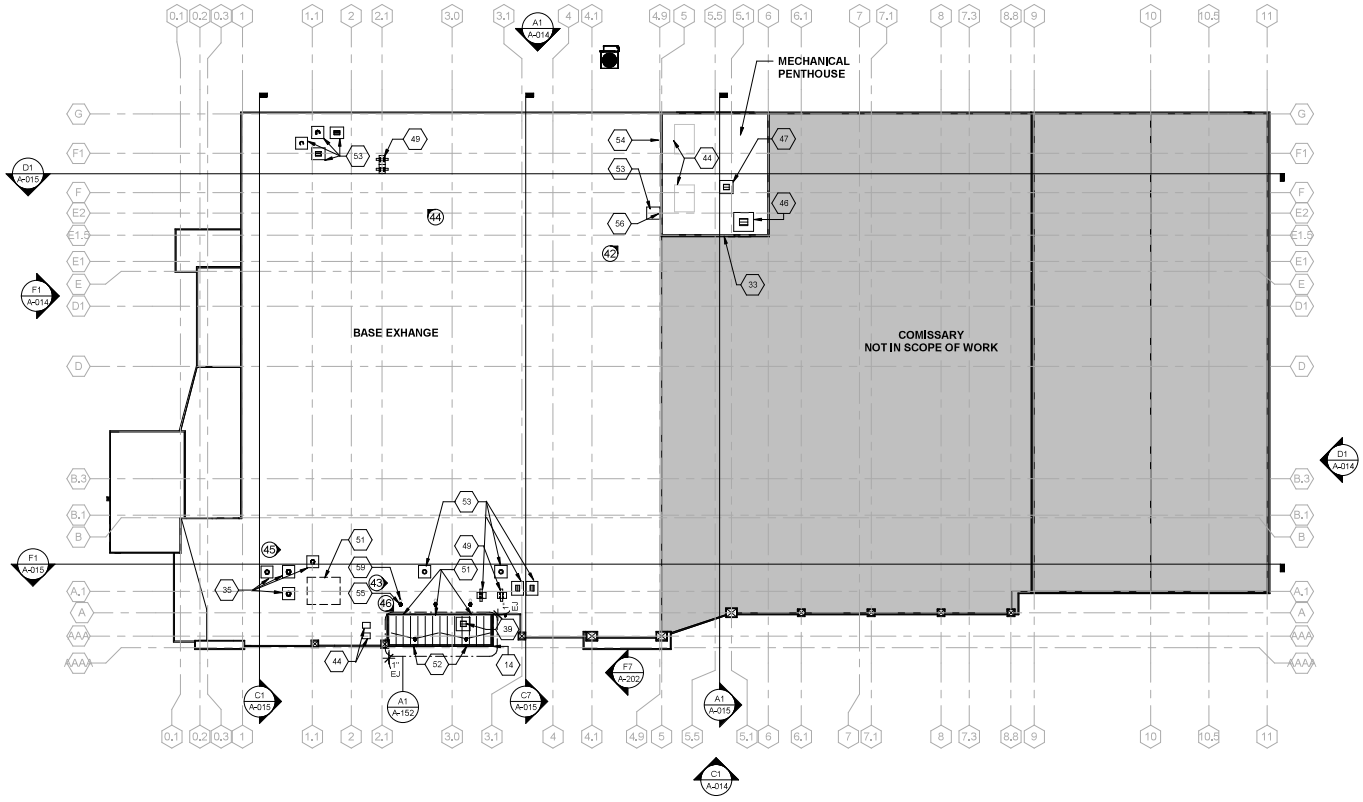
45



46

F1 EXISTING CONDITIONS PHOTOS - ROOF

SCALE: 12" = 1'-0"



A1 OVERALL ROOF PLAN

SCALE: 1/32" = 1'-0"

SHEET NOTES

1. ROOF MATERIALS & INSTALLATION SHALL COMPLY WITH APPLICABLE CODES & STANDARDS AS SET FORTH BY THE LOCAL AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR SHALL REPAIR ANY AND ALL DAMAGES TO THE ROOF DURING DEMOLITION WORK AND RESTORE IT TO ORIGINAL CONDITION.
3. COORDINATE ROOF CURB OPENING SIZE AND LOCATION WITH MECHANICAL AND STRUCTURAL DWGS.
4. ALL ROOF PENETRATIONS SHALL BE FLASHED IN ACCORDANCE WITH ROOF MANUFACTURER'S RECOMMENDATIONS AND/OR STANDARD DETAILS.
5. PROVIDE CRICKETS TO DIVERT WATER AROUND EQUIPMENT CURBS AND OTHER OBSTRUCTIONS, MINIMUM SLOPE AT VALLEYS TO BE 1/4" PER FOOT.
6. ALL EXISTING RTUs AND EXHAUST FANS SHOWN THROUGHOUT THE DWGS TO BE DEMOLISHED ARE TO REMOVED AND ROOF OPENINGS CAPPED WITH INSULATED CONSTRUCTION MATCHING EXISTING ROOF SYSTEM.
7. PRIOR TO CAPPING ROOF OPENINGS AT LOCATIONS OF REMOVED EQUIPMENT - CONTRACTOR IS TO UTILIZE ROOF OPENINGS AS NEEDED TO REMOVE DEMOLISHED EQUIPMENT FROM BUILDING.

KEYNOTES

14 LOCATION OF PROPOSED NEW MECHANICAL ROOM - SEE CIVIL DRAWINGS FOR DEMOLITION.

33 NEW HVHZ RATED DRAINABLE STORM BLADE ALUMINUM MECHANICAL LOUVER WITH BIRD AND INSECT SCREEN FLASH/SEAL AND MAKE WATERTIGHT.

35 EXISTING EXHAUST FANS TO REMAIN. SEE MECHANICAL.

39 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-1),SEE MECHANICAL DRAWINGS FOR DETAILS.

44 EQUIPMENT NOT IN SCOPE AND IS EXISTING TO REMAIN - SEE MECHANICAL DRAWINGS

46 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-2)- SEE MECHANICAL DRAWINGS

47 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-3)- SEE MECHANICAL DRAWINGS

49 NEW DUCTLESS SPLIT SYSTEM CONDENSING UNIT AND ACCESSORIES, SEE MECHANICAL 00 ARCH

51 PATCH ROOF AND PARAPET WHERE EXISTING OVERFLOW SCUPPER WAS REMOVED. REWORK SLOPE TO PROVIDE POSITIVE DRAINAGE TO DRAIN.

52 NEW EMERGENCY OVERFLOW SCUPPER OUTLET AT NEW MECHANICAL ROOM ROOF.

53 LOCATION OF REMOVED MECHANICAL UNIT & AND OR DUCTWORK. INFILL ROOF PENETRATION WITH NEW STEEL DECK AND PATCH ROOFING SYSTEM IN KIND MATCHING ADJACENT SLOPE-SEE STRUCTURAL

54 LOCATION OF REMOVED MECHANICAL LOUVER INFILL WALL OPENING WITH CMU, LIQUID WATERPROOFING, AND STUCCO SYSTEM. PAINT TO MATCH ADJACENT CONCRETE FINISH-SEE STRUCTURAL

55 NEW OVERFLOW ROOF DRAIN, SET 2 INCHES ABOVE EXISTING ROOF DRAIN INLET - TYPICAL. FIELD LOCATE ROUTING OF NEW OVERFLOW PIPING THROUGH NEW MECHANICAL ROOM COORDINATE WITH MECHANICAL AND STRUCTURAL REINFORCING.

56 LOCATION OF REMOVED MECHANICAL DUCT WORK, INFILL WALL OPENING WITH CMU, LIQUID WATERPROOFING AND STUCCO SYSTEM. PAINT TO MATCH ADJACENT CONCRETE FINISH.

59 EXISTING ROOF DRAIN - TYPICAL

SHEET LEGEND

NOT IN SCOPE OF WORK

LOCATION OF PROPOSED NEW MECHANICAL ROOM

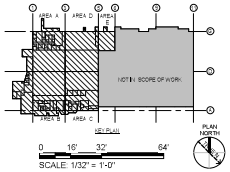
PHOTO KEY LEGEND

DIRECTION PHOTO WAS TAKEN

DENOTES PHOTO LOCATION

PHOTO NUMBER DESIGNATION

REFERENCE SHEET A-010 FOR LOCATION



STATE OF FLORIDA — REGISTERED ARCHITECT — 19.17.2024 AR 0015373

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: M.ANDERSON
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLAUNIGER
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4613-24-R-0001
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND gault Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 8600 BX and Wall HVAC System, MCC
Construction Activity Related Equipment
Client Project Number: AUW24-10130

OVERALL ROOF PLAN

POND # 1220854

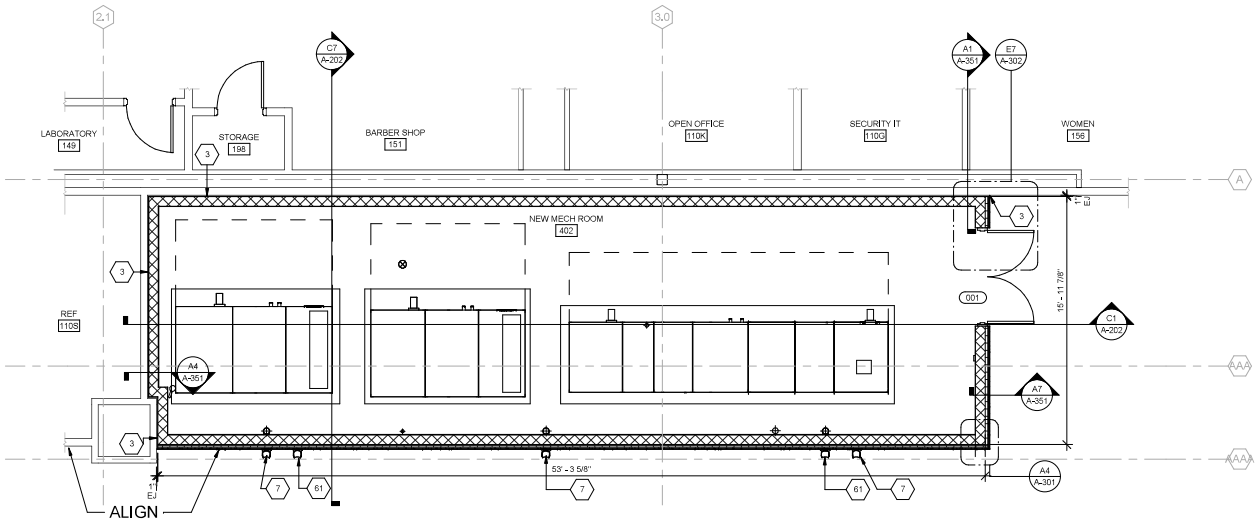
SHEET ID

A-151

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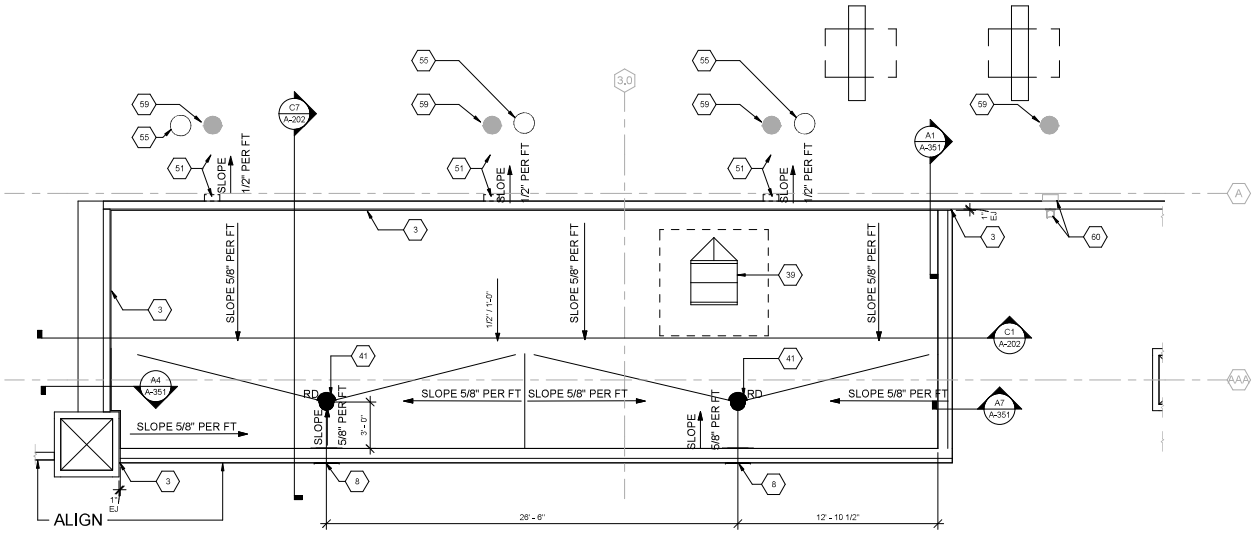
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Plot Date: 9/13/2024 1:26:54 PM



E1 NEW MECHANICAL ROOM-ENLARGED PLAN

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



A1 NEW MECH. ROOM ROOF PLAN

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

SHEET NOTES

1. SEE SHEET A-001 FOR GENERAL NOTES.
2. SEE SHEET A-002 FOR SYMBOLS AND MATERIALS.
3. DIMENSIONS OF EXTERIOR WALLS ARE TO INSIDE FACE OF CMU OR EXTERIOR FINISH FACE U.N.O.
4. DIMENSIONS OF INTERIOR WALLS AND PARTITIONS ARE TO FACE OF STUD, FACE OF CMU OR FACE OF IMP U.N.O.
5. DOOR OPENINGS SHALL BE LOCATED @ 8" FROM FACE OF ADJACENT PARTITION IN CMU PARTITIONS OR 5" FROM FACE OF PARTITION IN STUD AND PANEL PARTITIONS, U.N.O.

KEYNOTES

3 1" EXPANSION JOINT
7 LAMBS TONGUE OVERFLOW SCUPPER OUTLET ROUTED FROM NEW OVERFLOW DRAIN -TYP
8 16" X 8" OVERFLOW SCUPPER- SET 2" ABOVE ROOF DRAIN - S.S. TYP.
39 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-1).SEE MECHANICAL DRAWINGS FOR DETAILS.
41 ROOF DRAIN TO BE ROUTED TO LAMBS TONGUE SCUPPER - SEE MECH AND CIVIL.
51 PATCH ROOF AND PARAPET WHERE EXISTING OVERFLOW SCUPPER WAS REMOVED. REWORK SLOPE TO PROVIDE POSITIVE DRAINAGE TO DRAIN.
55 NEW OVERFLOW ROOF DRAIN, SET 2 INCHES ABOVE EXISTING ROOF DRAIN INLET - TYPICAL. FIELD LOCATE ROUTING OF NEW OVERFLOW PIPING THROUGH NEW MECHANICAL ROOM COORDINATE WITH MECHANICAL AND STRUCTURAL REINFORCING.
59 EXISTING ROOF DRAIN - TYPICAL
60 EXISTING OVERFLOW SCUPPER AND LAMBS TONGUE - TYPICAL
61 NEW LAMBS TONGUE SCUPPER FROM ADDITION PRIMARY ROOF DRAINS - TYPICAL

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

PLAN NORTH

MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4861-24-R-B001
CONTRACT NO.:

DESIGNED BY: R.ELLIOT
DRAWN BY: U.LANGE
CHECKED BY: K.HOTELCOB
QUALITY CONTROL BY: S.FLANNIGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction and Commissioning of HVAC Equipment
Client Project Number: AUM24-10130

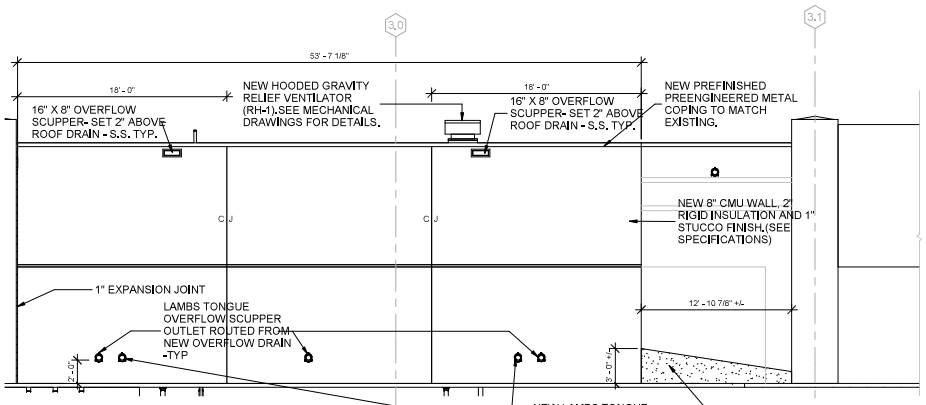
NEW MECH.ROOM ENLARGED FLOOR PLANS

POND # 1220854

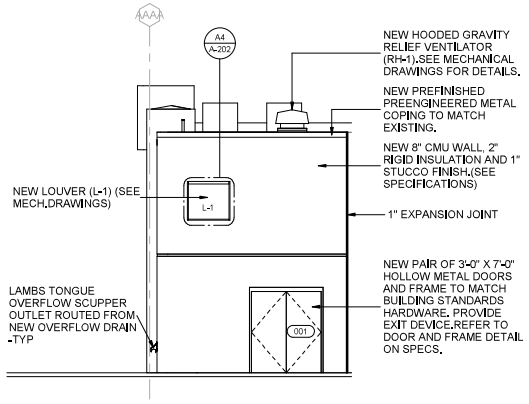
SHEET ID
A-152

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 1:26:55 PM



F1 MECH. ROOM - SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



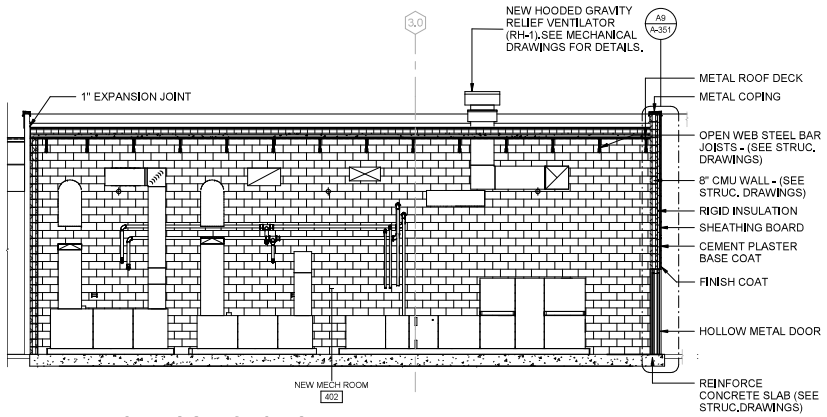
F7 NEW MECH.ROOM - EAST ELEVATION
SCALE: 3/16" = 1'-0"

SHEET NOTES

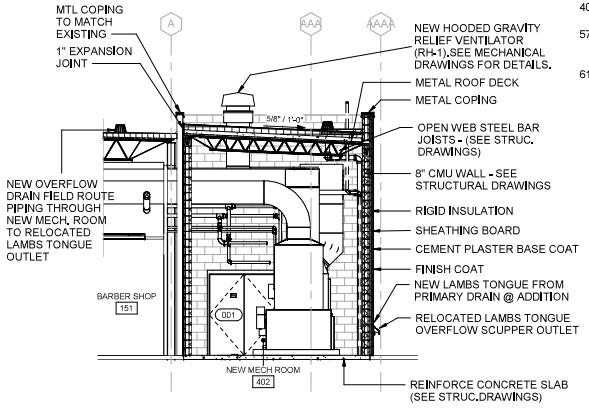
1. SEE SHEET A-001 FOR GENERAL NOTES
2. SEE CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.

KEYNOTES

3 1" EXPANSION JOINT
4 NEW LOUVER (L-1) (SEE MECH.DRAWINGS)
5 NEW 8" CMU WALL, 2" RIGID INSULATION AND 1" STUCCO FINISH.(SEE SPECIFICATIONS)
7 LAMBS TONGUE OVERFLOW SCUPPER OUTLET ROUTED FROM NEW OVERFLOW DRAIN -TYP
8 16" X 8" OVERFLOW SCUPPER- SET 2" ABOVE ROOF DRAIN - S.S. TYP.
21 NEW PAIR OF 3'-0" X 7'-0" HOLLOW METAL DOORS AND FRAME TO MATCH BUILDING STANDARDS HARDWARE. PROVIDE EXIT DEVICE.REFER TO DOOR AND FRAME DETAIL ON SPECS.
39 NEW HOODED GRAVITY RELIEF VENTILATOR (RH-1).SEE MECHANICAL DRAWINGS FOR DETAILS.
40 NEW PREFINISHED PREENGINEERED METAL COPING TO MATCH EXISTING.
57 AREA OF EXISTING STUCCO / EIFS SYSTEM TO BE REPAIRED MATCH ADJACENT FINISH IN TEXTURE AND COLOR.
61 NEW LAMBS TONGUE SCUPPER FROM ADDITION PRIMARY ROOF DRAINS - TYPICAL



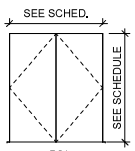
C1 NEW MECH.ROOM-SECTION
SCALE: 3/16" = 1'-0"



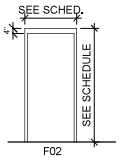
C7 NEW MECH.ROOM - SECTION
SCALE: 3/16" = 1'-0"

DOOR SCHEDULE

MARK	PANEL TYPE	WIDTH	HEIGHT	THK.	MATL.	FIN.	GLAZING	FRAME TYPE	MATL.	FIN.	DETAILS SILL	JAMB	HEAD	FIRE RATING	STC RATING	HARDWARE	REMARKS
001	(PR) D01	3' - 0"	7' - 0"	1 3/4"	H.M.	PT	N/A	F02	H.M.	PT	A8/302	B8/A302	E8/A302	-	N/A	1.0	STOREROOM LOCK - COORDINATE WITH BASE KEYING SYSTEM



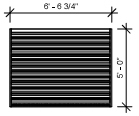
A1 DOOR TYPE
SCALE: 1/4" = 1'-0"



A2 DOOR FRAME
SCALE: 1/4" = 1'-0"



A4 LOUVER (L-1)
SCALE: 1/4" = 1'-0"



A5 LOUVER (L-2)
SCALE: 1/4" = 1'-0"



A6 LOUVER (L-3)
SCALE: 1/4" = 1'-0"

SCALE: 3/16" = 1'-0"
SCALE: 1/4" = 1'-0"

PLAN NORTH

MARK	DESCRIPTION	DATE

DESIGNED BY: R.ELLIOT
DRAWN BY: M.MCGREGOR
CHECKED BY: K.HOTELCOB
APPROVED BY: S.FLANNIGER
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8903-24-R-B001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
Smith Group

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construct and MCC Shed and Relocate HVAC Equipment
Client Project Number: AUW24-1013D

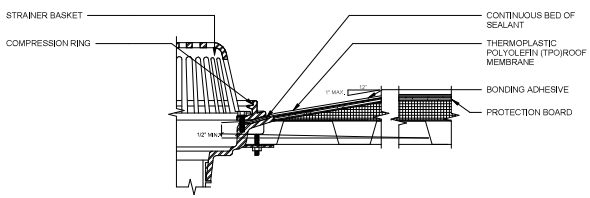
NEW MECH. ROOM - EXTERIOR ELEVATIONS & BUILDING SECTION

POND # 1220804

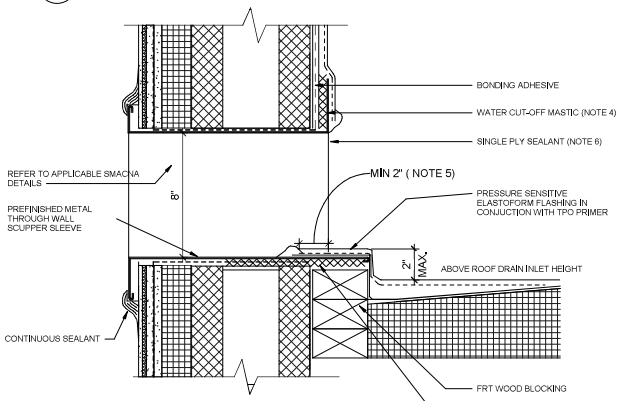
SHEET ID
A-202

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 1:26:57 PM



F5 **ROOF DRAIN**
SCALE: 3" = 1'-0"



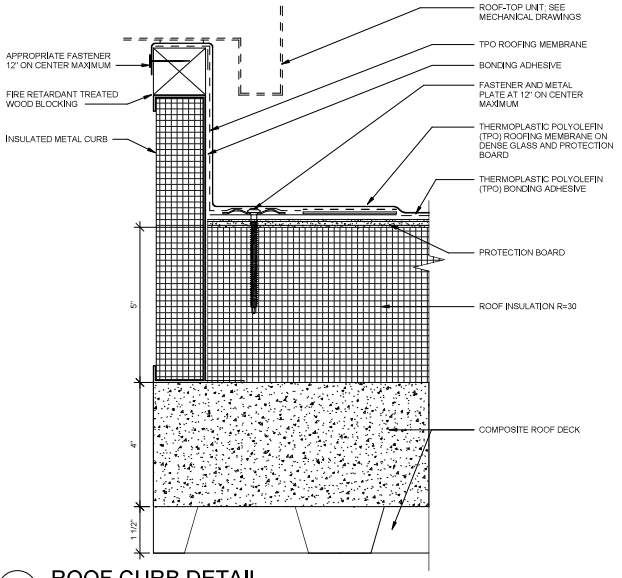
NOTES:

1. FIRE RATED WOOD BLOCKING ARE INSTALLED AT SCUPPERS TO SECURE METAL SLEEVE AND MUST EXTEND PAST THE WIDTH OF METAL SLEEVE FLANGE.
2. INSTALL WALL FLASHING PRIOR TO SCUPPER INSTALLATION.
3. METAL SCUPPER BOX MUST HAVE CONTINUOUS FLANGES WITH ROUNDED CORNERS. SOLDER ALL SCUPPER SEAMS WATER-TIGHT.
4. WATER CUT-OFF MASTIC UNDER SCUPPER FLANGE MUST BE UNDER CONSTANT COMPRESSION.
5. SCUPPER FLANGES MUST BE TOTALLY COVERED BY PRESSURE SENSITIVE ELASTOFORM FLASHING WITH MINIMUM 2" COVERAGE PAST NAIL HEAD.
6. UNIVERSAL SINGLE-PLY SEALANT IS REQUIRED AT FLASHING EDGES ON SCUPPER EDGE. TPO PRIMER MUST BE USED TO PREPARE SURFACES PRIOR TO THE APPLICATION OF SEALANT.

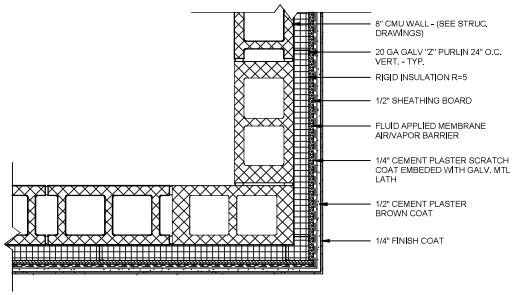
C5 **SCUPPER DETAIL**
SCALE: 3" = 1'-0"

SHEET NOTES

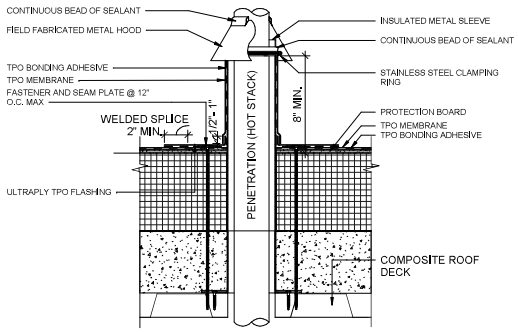
1. SEE SHEET A-001 FOR GENERAL NOTES
2. SEE SHEET A-202 FOR DOOR SCHEDULE AND TYPES
3. SEE SHEET A-202 FOR LOUVER TYPE.
4. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE LOCATION OF ALL MEP WORK, INCLUDING BUT NOT LIMITED TO LIGHTS, DIFFUSERS, PIPES AND DUCTWORK.
5. ELEVATIONS GIVEN ARE RELATIVE TO GROUND LEVEL T.O. SLAB (0'-0"). SEE CIVIL FOR HEIGHT ABOVE SEA LEVEL.



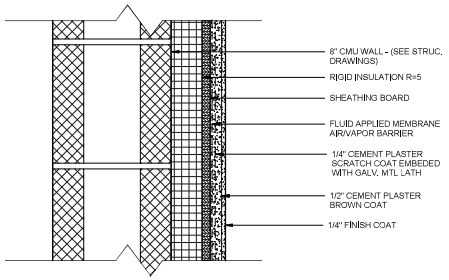
C8 **ROOF CURB DETAIL**
SCALE: 6" = 1'-0"



A4 **CMU AT OUTSIDE CORNER**
SCALE: 1 1/2" = 1'-0"



A5 **ROOF PENETRATION DETAIL**
SCALE: 3" = 1'-0"



A8 **EXTERIOR WALL-DETAIL**
SCALE: 3" = 1'-0"

0 3" 6" 9"
SCALE: 3" = 1'-0"

0 6" 1'-0" 1'-6"
SCALE: 1 1/2" = 1'-0"

0 1" 2" 4"
SCALE: 6" = 1'-0"

MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4613-24-R-0001
CONTRACT NO.:

DESIGNED BY: R.ELLIOT
DRAWN BY: U.ALVAREZ
CHECKED BY: K.KOTELCOS
APPROVED BY: S.FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construct and Install New Electrical Equipment
Client Project Number: ALMA24-1013D

MISCELLANEOUS DETAILS

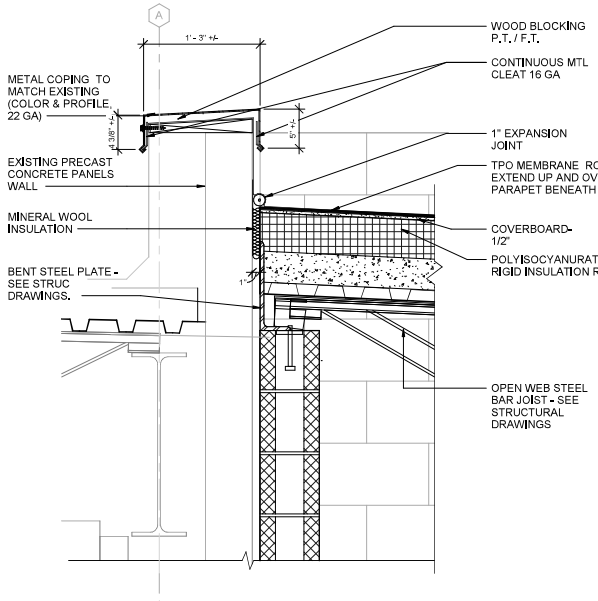
POND # 1220854

SHEET ID
A-301

ISSUED FOR CONSTRUCTION

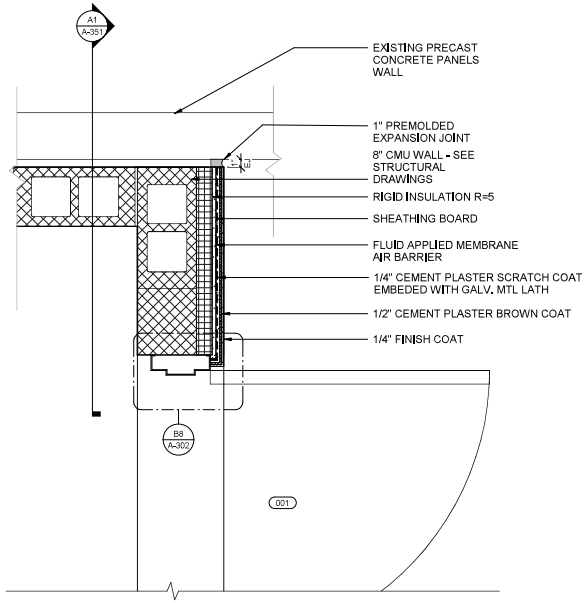
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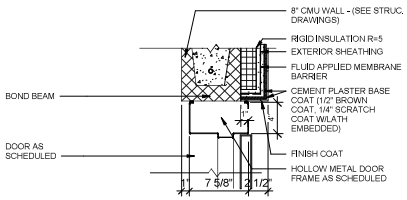
E1 EXPANSION JOINT -DETAIL

SCALE: 1 1/2" = 1'-0"



E7 EXPANSION JOINT -DETAIL

SCALE: 1 1/2" = 1'-0"



E8 HEAD AT CMU DOOR - EXTERIOR

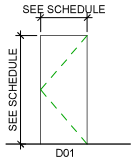
SCALE: 1 1/2" = 1'-0"

SHEET NOTES

1. SEE SHEET A-001 FOR GENERAL NOTES
2. SEE SHEET A-202 FOR DOOR SCHEDULE AND TYPES
3. SEE SHEET A-202 FOR LOUVER TYPE.
4. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE LOCATION OF ALL MEP WORK, INCLUDING BUT NOT LIMITED TO LIGHTS, DIFFUSERS, PIPES AND DUCTWORK.
5. ELEVATIONS GIVEN ARE RELATIVE TO GROUND LEVEL T.O. SLAB (0'-0"). SEE CIVIL FOR HEIGHT ABOVE SEA LEVEL.

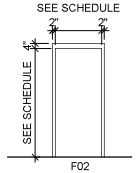
DOOR SCHEDULE

MARK	PANEL							FRAME			DETAILS			FIRE RATING	STC RATING	HARDWARE	REMARKS
	TYPE	WIDTH	HEIGHT	THK.	MATL.	FIN.	GLAZING	TYPE	MATL.	FIN.	SILL	JAMB	HEAD				
001	(PR) D01	3' - 0"	7' - 0"	1 3/4"	H.M.	PT	N/A	F02	H.M.	PT	A8/302	B8/A302	E8/A302	-	N/A	1.0	STOREROOM LOCK - COORDINATE WITH BASE KEYING SYSTEM



B1 DOOR TYPES

N.T.S



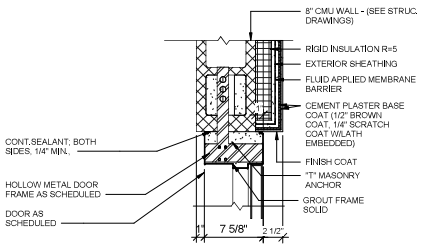
B3 FRAME TYPES

N.T.S

SET: 1.0
DOORS: 001

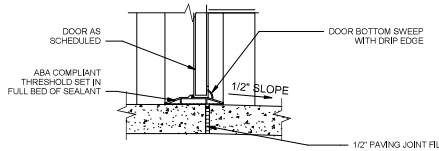
2 CONTINUOUS HINGE (A31031G) CFM (HEIGHT) HD1 PE
2 FLUSH BOLT (L04251/L04261)* 555/557 (TO SUIT) US26D RO
1 STOREROOM LOCK (F07)* 72.BAA.8204.LNL US26D SA
1 INTERCHANGEABLE CORE (E09241)* 33600006N 26 MC
1 SURF OVERHEAD STOP (CO2541)* S-X36 630 RF
1 SURFACE CLOSER (C02021-PT4G)* CPS8501 M 689 NO
2 KICK PLATE (J102) K1050 10" CSK US32D RO
1 THRESHOLD (J36100) 2009APK PE
1 GASKETING (R0Y264) 379CS PE
1 RAIN GUARD (R0Y976) 346C PE
2 SWEEP (R3D534) 345AV PE
1 ASTRAGAL (R0Y634)* 357SP PE

Notes:
Refer to Section 08 71 00 HARDWARE FOR ADDITIONAL INFORMATION.
*WAIVER MAY BE REQUIRED TO COMPLY WITH BUY AMERICAN ACT. COMPLIANCY OF THIS PRODUCT TO CURRENT BUY AMERICAN-TYPE REGULATIONS MUST BE VALIDATED WITH THE MANUFACTURER.



B8 JAMB AT CMU DOOR - EXTERIOR

SCALE: 1 1/2" = 1'-0"



A8 TYPICAL SILL DETAIL - EXTERIOR

SCALE: 1 1/2" = 1'-0"

0 6" 1'-0" 1'-6"

SCALE: 1 1/2" = 1'-0"

MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.: F4J4J24178A001
CONTRACT NO.:

DESIGNED BY: R.ELLIOT
DRAWN BY: M.LANGLEY
CHECKED BY: K.HOTELCOB
QUALITY CONTROL BY: S.FLANNIGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction and Installation Equipment
Client Project Number: AUW24-1013D

MISCELLANEOUS DETAILS

POND # 1220854

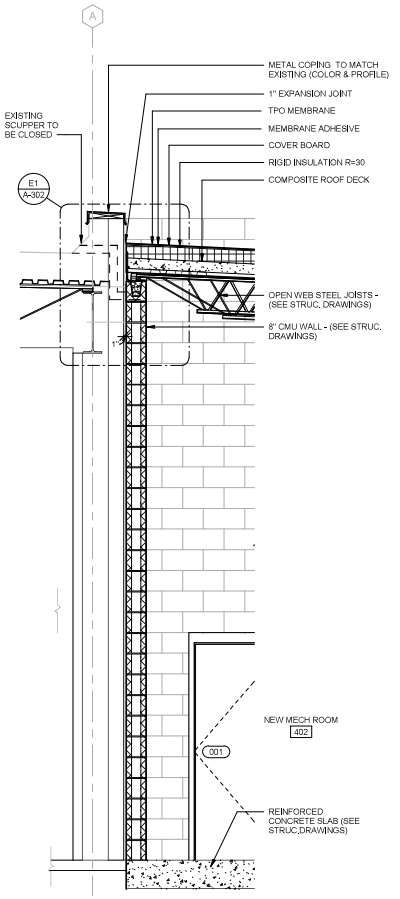
SHEET ID

A-302

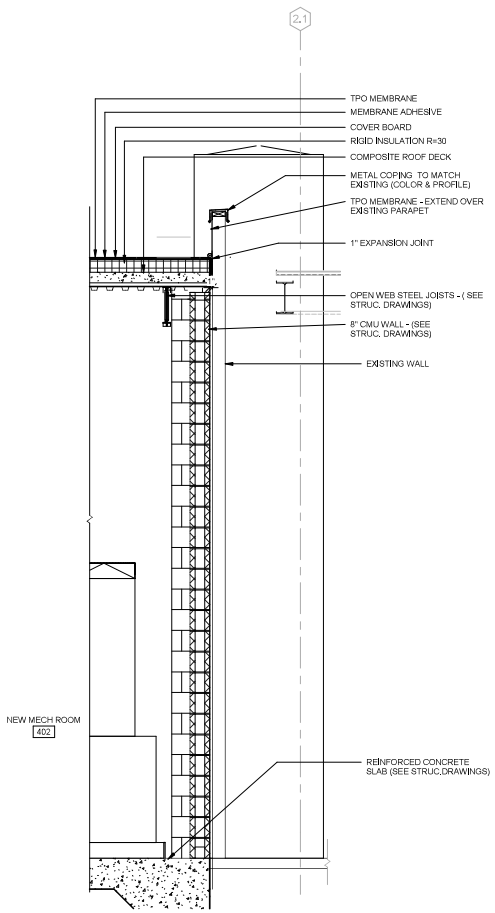
ISSUED FOR CONSTRUCTION

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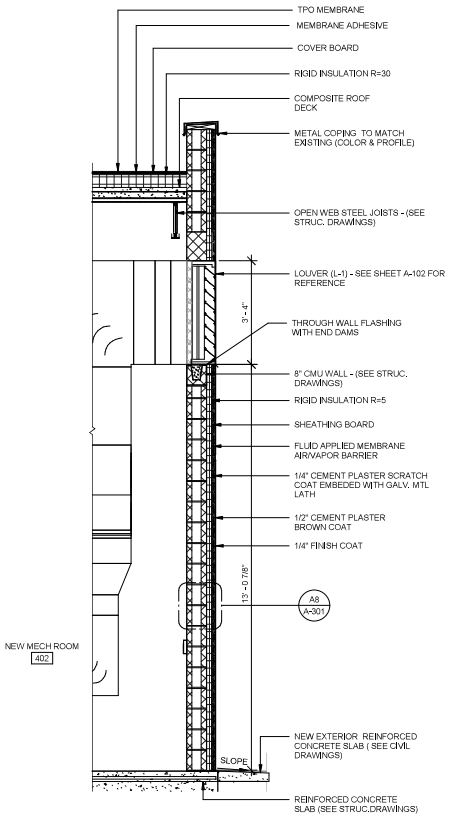
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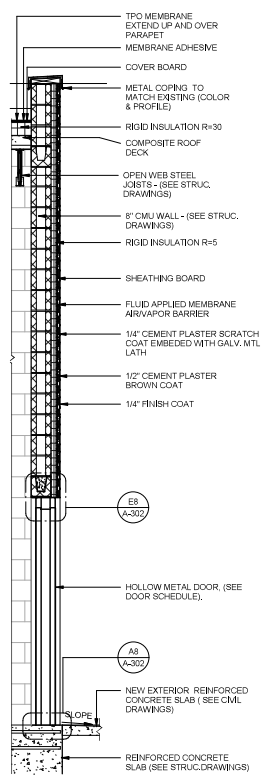
A1 WALL SECTION
SCALE: 1/2" = 1'-0"



A4 WALL SECTION
SCALE: 1/2" = 1'-0"



A7 WALL SECTION
SCALE: 1/2" = 1'-0"



A9 WALL SECTION
SCALE: 1/2" = 1'-0"

0 1' 2' 4'
SCALE: 1/2" = 1'-0"

STATE OF FLORIDA
REGISTERED ARCHITECT
DONALD L. ELLIOT
19,17,2024
AR 0015372

MARK	DESCRIPTION	DATE

ISSUE DATE: 09/13/2024
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: R.ELLIOT
DRAWN BY: M.LANGLEY
CHECKED BY: K.HOTELCOB
QUALITY CONTROL BY: S.FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbi smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construct Mechanical Room and HVAC Equipment
Client Project Number: AJW24-10130

WALL SECTIONS

POND # 1220854

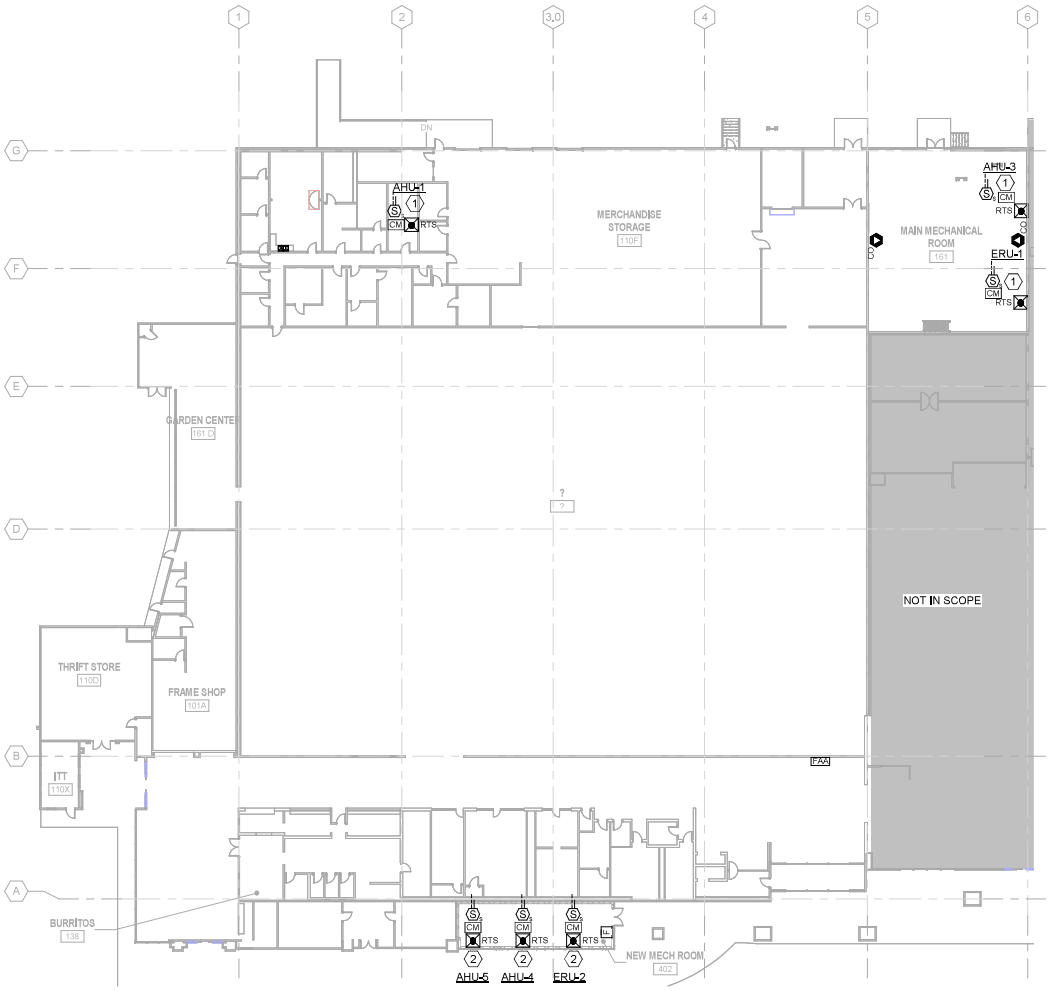
SHEET ID
A-351

ISSUED FOR CONSTRUCTION

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LEGEND

- DUCT SMOKE DETECTOR - PHOTOELECTRIC S = SUPPLY
- RTS REMOTE ALARM INDICATING AND TEST SWITCH
- CM CONTROL MODULE
- CO CARBON MONOXIDE DETECTOR
- F MANUAL FIRE ALRM PULL STATION
- FAA EXISTING SIEMENS DESIGO FT2014 FIRE ALARM REMOTE ANNUNCIATOR
- SS SURGE PROTECTIVE DEVICE

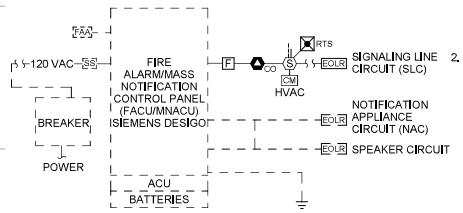


A1 FIRE ALARM/MASS NOTIFICATION GROUND FLOOR PLAN

SCALE: 3/64" = 1'-0"

FIRE ALARM/MASS NOTIFICATION NOTES

1. DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH UFC 1-200-01, "DOD BUILDING CODE" 2022 EDITION; UFC 3-600-01, "FIRE PROTECTION ENGINEERING FOR FACILITIES" CHANGE 6, 2021 EDITION; UFC 4-021-01, "DESIGN AND O&M: MASS NOTIFICATION SYSTEMS " CHANGE 1, 2010 EDITION; INTERNATIONAL BUILDING CODE (IBC) 2021 EDITION; NFPA 70, "NATIONAL ELECTRICAL CODE" 2023 EDITION; NFPA 72, "NATIONAL FIRE ALARM AND SIGNALING CODE" 2022 EDITION; NFPA 241, "STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS" 2022 EDITION; NFPA 90A, "STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS" 2021 EDITION; NFPA 101, "LIFE SAFETY CODE" 2021 EDITION. UFC SHALL TAKE PRECEDENCE OVER NFPA AND IBC REQUIREMENTS.
2. CEILING MOUNTED FIRE ALARM/MASS NOTIFICATION SYSTEM DEVICES SHALL BE PRESERVED DURING CONSTRUCTION TO THE FURTHEST EXTENT POSSIBLE IN AREAS WITH CEILING RENOVATIONS.
3. FIRE ALARM FLOOR PLANS AND RISER DIAGRAM ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW EACH AND EVERY COMPONENT, DEVICE, APPLIANCE, ETC. CONDUIT PATHWAYS AND INTERCONNECTIONS SHALL BE DETERMINED BY THE BUILDING FEATURES, NFPA 70, NFPA 72, SYSTEM MANUFACTURER REQUIREMENTS AND RECOMMENDATIONS.
4. CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BID WITH THE PROJECT DOCUMENTS AND SPECIFICATIONS TO BECOME FAMILIAR WITH THE SITE AND SCOPE OF WORK. NOTIFY ENGINEER OF RECORD WITH ANY DISCREPANCIES OUTSIDE THIS DESIGN INTENT. ANY CHANGE ORDER REQUEST AS A RESULT OF COORDINATION BETWEEN TRADES SHALL BE DENIED.
5. ADHERE TO AND OBTAIN ALL PERMITS, LICENSES, AND ALL FEDERAL GOVERNMENT REQUIREMENTS.
6. DO NOT SCALE PLANS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS. FIELD DIMENSIONS GOVERN.
7. FIRE STOP ALL PENETRATIONS OF SMOKE/FIRE PARTITIONS. FIRE STOPPING SHALL BE OF UL LISTED ASSEMBLY.
8. IF ASBESTOS IS FOUND, SUB-CONTRACTOR IMMEDIATELY STOP WORK AND NOTIFY OWNER AND GENERAL CONTRACTOR. CONTRACTING OFFICER IS RESPONSIBLE FOR ABATEMENT OF ASBESTOS.
9. CONTRACTOR SHALL SUBMIT COMPLETE BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, MATERIAL DATA SHEETS, AND SHOP DRAWINGS TO CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE FOR REVIEW PRIOR TO COMMENCING ORDERING/PURCHASING. FAILURE TO COMPLY IS AT THE RISK OF THE CONTRACTOR.
10. FIRE ALARM SIGNALS AND EMERGENCY COMMUNICATIONS SHALL TAKE PRECEDENCE OVER ALL OTHER SIGNALS, SUCH AS BUT NOT LIMITED TO PUBLIC ADDRESS SYSTEMS.
11. ALL NOTIFICATION APPLIANCES CIRCUITS (NAC), SIGNALING LINE CIRCUITS (SLC), AND INDICATING DEVICE CIRCUITS (IDC) SHALL PERFORM TO CLASS "B".
12. THE INSTALLATION OF WIRING BETWEEN THE FMCU AND RELAY MODULES OR APPLIANCES SHALL PERFORM TO CLASS "B".
13. CONDUCTORS FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70. THE CONDUCTORS SHALL NOT BE INSTALLED WITH CONDUCTORS OF LIGHTING OR POWER SYSTEMS. THE SUM OF THE CROSS-AREA OF INDIVIDUAL CONDUCTORS SHALL NOT EXCEED 40% OF THE INTERIOR CROSS SECTION OF THE CONDUIT. ALL FIRE ALARM SYSTEM CONDUIT SHALL NOT BE LESS THAN 3/4".
14. FIRE ALARM CONTRACTOR SHALL COORDINATE WITH FIRE ALARM VENDOR FOR SYSTEM OPERATING INSTRUCTIONS AND WIRING DIAGRAMS.
15. ALL DUCT DETECTORS SHALL BE PROVIDED WITH REMOTE STATUS INDICATION. PROVIDE INDICATING LAMP FOR ALL CONCEALED DETECTORS.
16. DUCT SMOKE SENSORS SHALL BE IN ACCORDANCE WITH NFPA 72, 90A, AND AS INDICATED ON THE CONTRACT DOCUMENTS. MECHANICAL CONTRACTOR SHALL INSTALL DUCT DETECTORS AND FIRE ALARM CONTRACTOR SHALL WIRE TO FIRE ALARM SYSTEM.
17. DUCT DETECTORS SHALL BE PROVIDED IN SUPPLY AIR SYSTEMS WITH A DESIGN CAPACITY GREATER THAN 2,000-CFM. ACCESS TO DETECTORS SHALL BE PROVIDED FOR INSPECTION AND MAINTENANCE PURPOSES. ACTUATION OF THE DUCT DETECTOR SYSTEM SHALL SHUT DOWN ALL OPERATIONAL CAPABILITIES OF THE AFFECTED UNIT.
18. ANY NEW FIRE ALARM EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH NFPA 70 ARTICLE 250 AND 800 WITH A MAXIMUM OF 25 OHMS RESISTANCE.
19. REFER TO FIRE ALARM SYSTEM SPECIFICATION 28 31 76 FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
20. CONTRACTOR SHALL PROVIDE NEW PATHWAYS WITH A PATHWAY SURVIVABILITY OF LEVEL 1 IN ACCORDANCE WITH NFPA 72.
21. CONTRACTOR SHALL COORDINATE ALL NEW FIRE ALARM WORK WITH OTHER TRADES.
22. EXISTING FIRE ALARM DEVICES IN AREAS NOT REQUIRING FIRE ALARM SYSTEM ALTERATIONS ARE TO REMAIN IN OPERATION AT ALL TIMES TO THE FULLEST EXTENT POSSIBLE.
23. ALL NEW FIRE ALARM DEVICES AND ASSOCIATED APPURTENANCES SHALL BE COMPATIBLE WITH EXISTING FMCU. EXISTING FMCU IS A SIEMENS DESIGO SERIES PANEL.



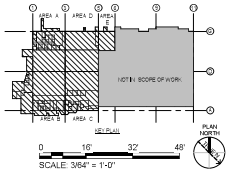
NOTE 1: DASHED LINES INDICATE EXISTING EQUIPMENT TO REMAIN.
NOTE 2: MAINTAIN EXISTING SYSTEM SEQUENCE OF OPERATIONS.

A6 FIRE ALARM/MNS RISER DIAGRAM

N.T.S

KEYNOTES

1. REMOVE EXISTING DUCT DETECTORS ASSOCIATED WITH EXISTING UNITS BEING REPLACED. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT AND CONTROL MODULE FOR SHUTDOWN OF AFFECTED HVAC UNIT. UNITS LOCATED AT MEZZANINE LEVEL OR ABOVE CEILING. MOUNT AHU-1 RTS AT CEILING BELOW UNIT.
2. REMOVE EXISTING DUCT DETECTORS ASSOCIATED WITH EXISTING UNITS BEING REPLACED. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT AND CONTROL MODULE FOR SHUTDOWN OF AFFECTED HVAC UNIT.



SCALE: 3/64" = 1'-0"

"This document originally issued and sealed by Brandon T. Hollstead, PE GA PE037581 on 09/04/2024 Pond & Company PET000802 using a digital signature and date. Printed copies of this document are not considered signed and sealed and signature must be verified on any electronic copies."

MARK	DESCRIPTION	DATE

DESIGNED BY: B. PARSON
DRAWN BY: B. PARSON
CHECKED BY: B. HOPSTEAD
QUALITY ASSURANCE BY: S. FULLINGER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON TYNDALL AFB, FLORIDA

POND gault Smith

3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950 Tyndall AFB, FL 32405, United States

Remove and Install New B600 BX and Wall HVAC System, MCC Control Panel, Thermostat, and Associated Equipment

Client Project Number: AJW24-1-1013

FIRE ALARM FLOOR PLAN

POND # 1220654

SHEET ID

FA101

ISSUED FOR CONSTRUCTION

File Path: I:\...\Fire Alarm Floor Plan.rvt

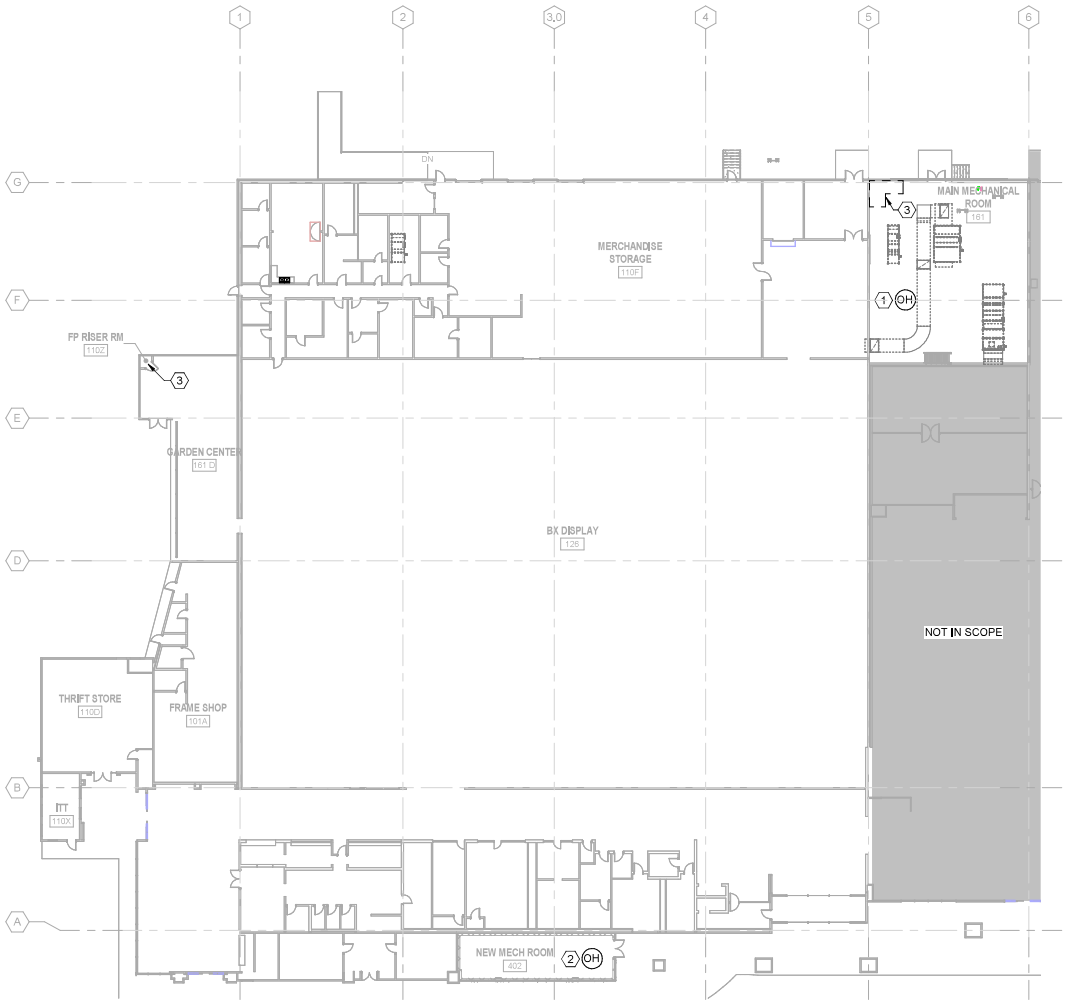
Plot Date: 9/3/2024 4:14:46 PM

LEGEND

(OH) DESIGN CRITERIA: ORDINARY HAZARD
DENSITY: 0.2 GPM/FT²
HYDRAULIC REMOTE AREA: 2,500 FT²
MAXIMUM PER SPRINKLER COVERAGE: 130 FT²
K-FACTOR: 8.0
HOSE STREAM ALLOWANCE: 250 GPM

FIRE SUPPRESSION NOTES

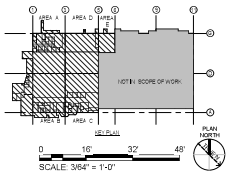
1. DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH UFC 1-200-01, "DOD BUILDING CODE" 2022 EDITION; UFC 3-600-01, "FIRE PROTECTION ENGINEERING FOR FACILITIES" CHANGE 6, 2021 EDITION; INTERNATIONAL BUILDING CODE (IBC) 2021 EDITION; NFPA 13, "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS" 2022 EDITION; NFPA 101, "LIFE SAFETY CODE" 2021 EDITION; NFPA 241, "STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS" 2022 EDITION. UFC SHALL TAKE PRECEDENCE OVER NFPA AND IBC REQUIREMENTS.
2. FIRE SUPPRESSION SYSTEM SHALL BE PRESERVED DURING CONSTRUCTION TO THE FURTHEST EXTENT POSSIBLE IN AREAS WITH CEILING RENOVATIONS. DESIGN INTENT IS FOR CONTRACTOR TO CAREFULLY REMOVE AND REPLACE CEILING SYSTEMS AS REQUIRED FOR HVAC INSTALLATION. SPRINKLER SYSTEM IN THE CEILING IS NOT ANTICIPATED TO BE IMPACTED. CONTRACTOR TO IDENTIFY OTHERWISE.
3. THE INTENT AND EXTENT OF THE FIRE SUPPRESSION SYSTEM DESIGN IS A DELEGATED DESIGN AND IS DIAGRAMMATIC ONLY. IT IS NOT INTENDED TO SHOW EVERY PIPE, FITTING, DEVICE, APPLIANCE, COMPONENT, ETC.
4. CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BID WITH THE PROJECT DOCUMENTS AND SPECIFICATIONS TO BECOME FAMILIAR WITH THE SITE AND SCOPE OF WORK. NOTIFY ENGINEER OF RECORD WITH ANY DISCREPANCIES OUTSIDE THIS DESIGN INTENT. ANY CHANGE ORDER REQUEST AS A RESULT OF COORDINATION BETWEEN TRADES SHALL BE DENIED.
5. ADHERE TO AND OBTAIN ALL PERMITS, LICENSES, AND ALL FEDERAL GOVERNMENT REQUIREMENTS.
6. DO NOT SCALE PLANS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS. FIELD DIMENSIONS GOVERN.
7. FIRE STOP ALL PENETRATIONS OF SMOKE/FIRE PARTITIONS. FIRE STOPPING SHALL BE OF UL LISTED ASSEMBLY.
8. IF ASBESTOS IS FOUND, SUB-CONTRACTOR SHALL IMMEDIATELY STOP WORK AND NOTIFY OWNER AND GENERAL CONTRACTOR. CONTRACTING OFFICER IS RESPONSIBLE FOR ABATEMENT OF ASBESTOS.
9. FIRE SPRINKLER CONTRACTOR SHALL INSTALL SYSTEM PIPING AND COMPONENTS IN A WORKMANSHIP LIKE MANNER. CHANGES IN INSTALLATION AS A RESULT OF POOR CRAFTSMANSHIP SHALL BE AS DIRECTED BY CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE AND SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
10. ANY ADDITIONAL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION, COORDINATION WITH OTHER TRADES, AND/OR TO MAINTAIN PROPER CLEARANCES SHALL BE PROVIDED FOR A COMPLETE AND WORKING SYSTEM.
11. NOT ALL PIPING, VALVES, AND APPURTENANCES ARE SHOWN ON THE PLANS. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
12. REFER TO WET-PIPE SPRINKLER SYSTEM SPECIFICATION 21 13 13 FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
13. HANGER MATERIAL, SPACING, AND METHOD OF ATTACHMENT SHALL BE IN ACCORDANCE WITH NFPA 13 AND MANUFACTURER'S REQUIREMENTS.
14. ONLY LISTED OR APPROVED DEVICES AND MATERIALS AS SPECIFIED IN NFPA 13 SHALL BE INSTALLED THROUGHOUT THE SYSTEM.
15. ALL SPRINKLERS SHALL BE INSTALLED ACCORDING TO THEIR LISTED SPACING AND OBSTRUCTION REQUIREMENTS.
16. CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL FIRE PROTECTION DEVICES WITH ALL OTHER TRADES.
17. PIPE, FITTING, SPRINKLERS, HANGERS, AND COMPONENTS INSTALLED IN CORROSIVE ATMOSPHERES (I.E COMPARTMENTS CONTAINING CORROSIVE MATERIALS AND/OR FUMES, OR EXTERIOR WEATHER CONDITIONS, ETC.) SUCH AS DRAIN PIPES, HANGER ALL-THREAD ROD, ETC., SHALL BE AN APPROVED CORROSION RESISTANT MATERIAL.
18. QUICK RESPONSE SPRINKLER REDUCTIONS ARE NOT PERMITTED.
19. ALL NEW STEEL SPRINKLER PIPING 2.5" AND GREATER SHALL BE A MINIMUM OF SCH. 10. ALL NEW STEEL SPRINKLER PIPING 2" OR LESS SHALL BE A MINIMUM OF SCH. 40.
20. SEISMIC BRACING OF THE SPRINKLER SYSTEM IS NOT REQUIRED AS THE SITE IS CLASSIFIED AS A SEISMIC CLASS B.
21. SPRINKLER PROTECTION IS NOT REQUIRED IN THE NONCOMBUSTIBLE CONCEALED SPACE ABOVE THE CEILING PER NFPA 13.
22. FITTING AND COUPLING HOUSINGS SHALL BE MALLEABLE IRON CONFORMING TO ASTM A47/A47M.
23. CONTRACTOR SHALL COORDINATE ALL NEW SPRINKLER WORK WITH OTHER TRADES.



A1 FIRE SUPPRESSION GROUND FLOOR PLAN
SCALE: 3/64" = 1'-0"

KEYNOTES

1. PROVIDE SPRINKLER PROTECTION BENEATH NEW DUCTWORK GREATER THAN 48-INCHES. TAP OFF NEAREST OVERHEAD MAIN WITHIN THE MECHANICAL ROOM. REFER TO SHEET M-102 FOR LAYOUT IN AREAS WITHOUT LAY IN CEILINGS.
2. PROVIDE SPRINKLER PROTECTION IN NEW MECHANICAL ROOM EXTENDED OFF NEAREST FACILITY SPRINKLER SYSTEM WATER MAIN.
3. EXISTING FIRE SPRINKLER RISER(S).



SCALE: 3/64" = 1'-0"

"I hereby certify that this document originally issued and sealed by Brandon T. Hollstead, PE, GA PE037581 on 09/04/2024 Pond & Company PET000802 using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and signature must be verified on any electronic copies."

MARK	DESCRIPTION	DATE

DESIGNED BY:	B. PARSON
DRAWN BY:	B. PARSON
CHECKED BY:	B. HOPSTEAD
S. PLUMMER	
ISSUE DATE:	9/13/2024
SOLICITATION NO.:	[SOLICITATION NO.]
CONTRACT NO.:	[CONTRACT #]
SIZE:	ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

Gault Smith

220 Mattl Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Mat'l HVAC System, MCC
Construct Addition, Renovate Existing Facility
Client Project Number: AJW24-10130

FIRE SUPPRESSION FLOOR PLAN

POND # 1220854

SHEET ID
FX101

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NOTES:

1. EXISTING EQUIPMENT IS SHOWN WITH THIN LINEWORK.
2. DEMOLISHED EQUIPMENT IS SHOWN WITH BOLD LINEWORK, DASHED, AND HATCHED.
3. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH BOLD LINEWORK.
4. BELOW IS AN EXAMPLE OF EACH:

EXISTING EQUIPMENT OR EQUIPMENT BY OTHERS

EQUIPMENT TO BE DEMOLISHED

NEW OR RELOCATED EQUIPMENT

CODE REFERENCES

CODE REFERENCE	EDITION
INTERNATIONAL BUILDING CODE	2021
INTERNATIONAL ENERGY CONSERVATION CODE	2021
INTERNATIONAL FIRE CODE	2021
INTERNATIONAL FUEL GAS CODE	2021
INTERNATIONAL MECHANICAL CODE	2021
INTERNATIONAL PLUMBING CODE	2021

HVAC DESIGN CRITERIA

CATEGORY	DATA VALUE
CLIMATIC DESIGN LOCATION:	TYNDALL AFB, FL, USA
LATITUDE:	30.067 N
LONGITUDE:	85.583 W
ELEVATION:	17 FT.
STANDARD DESIGN CONDITIONS	
WINTER DESIGN DRY BULB (99,0%):	35,4 °F
SUMMER DESIGN DRY BULB (1,0%):	90,2 °F
SUMMER DESIGN WET BULB (1,0%):	81,2 °F
DEHUMIDIFICATION DESIGN CONDITIONS	
DEWPOINT (1,0%):	79,5 °F
HUMIDITY RATIO (1,0%):	153,1
MEAN COINCIDENT DRY BULB (1,0%):	84,6 °F

INDOOR DESIGN CONDITIONS

	COOLING			HEATING	
SPACE CATEGORY	OCC. DRY BULB (°F)	UNOCC. DRY BULB (°F)	OCC. DEWP (°F)	OCC. DRY BULB (°F)	UNOCC. DRY BULB (°F)
ADMINISTRATION SPACES	78	85	57,9	68	55
COMM ROOMS	75	75	62,5	40	40
SALES SPACES	78	85	57,9	68	55
STORAGE	78	85	57,9	68	55

MECHANICAL GENERAL NOTES:

1. INSTALLATION OF HVAC WORK MUST BE COORDINATED WITH OTHER TRADES BEFORE ANY INSTALLATION IS MADE. PLANS ARE DIAGRAMMATIC IN NATURE. PROVIDE ALL TRANSITIONS, ELBOWS, ETC. REQUIRED TO AVOID CONFLICTS WITH OTHER TRADES AND BUILDING ELEMENTS. EQUIPMENT, PIPING, OR DUCTWORK INTERFERING WITH OTHER TRADES MUST BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER. DO NOT SCALE THE DRAWINGS.
2. THE MECHANICAL EQUIPMENT AND INSTALLATION MUST CONFORM TO THE CODE REFERENCES TABLE SHOWN HEREIN.
3. AT THE START OF CONSTRUCTION, PREPARE TYPED LISTS OF EQUIPMENT THAT ARE SUPPLIED REQUIRING ELECTRICAL WORK, AND SEND LISTS TO THE ELECTRICAL CONTRACTOR FOR REVIEW AND COORDINATION.
4. WRITTEN DIMENSIONS ON DRAWINGS HAVE PRECEDENCE OVER SCALED DIMENSIONS.
5. "PROVIDE" IS AN INCLUSIVE TERM USED TO DESCRIBE ASPECTS OF THE WORK THAT MUST BE ACCOMPLISHED AND IS HEREBY DEFINED TO REQUIRE TO STORE, FURNISH, INSTALL, MOUNT, CONNECT, CONTROL AND POWER EQUIPMENT INDICATED, AS WELL AS ALL APPURTENANCES REQUIRED TO MAKE SYSTEMS OPERATE AS INDICATED WITHIN THESE DRAWINGS AND SPECIFICATIONS AND TO FULFILL THE SCOPE OF WORK.
6. COORDINATE MECHANICAL AND ELECTRICAL WORK SUCH THAT MECHANICAL PIPING, DUCTWORK AND EQUIPMENT IS NOT LOCATED OVER OR ABOVE ANY ELECTRICAL, COMMUNICATIONS, OR DATA EQUIPMENT.
7. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S APPROVED PUBLISHED LITERATURE (INCLUDING SERVICE CLEARANCE), UNIFIED FACILITIES CRITERIA, AND INTERNATIONAL BUILDING CODE / INTERNATIONAL MECHANICAL CODE, WHICHEVER IS MORE STRINGENT.
8. INSTALLATION OF EQUIPMENT MUST PERMIT ACCESSIBILITY FOR SERVICE AND/OR REPLACEMENT WITHOUT NECESSITATING REMOVAL OR MODIFICATION TO OTHER PIPING, WIRING, OR EQUIPMENT.
9. CEILING-MOUNTED EQUIPMENT MUST BE INSTALLED IN SUCH A MANNER THAT LIGHTS, PIPING, DUCTWORK, ETC., DO NOT BLOCK ACCESS TO EQUIPMENT AND RELATED ACCESSORIES.
10. COORDINATE WALL, FLOOR, AND ROOF PENETRATIONS WITH THE GENERAL CONTRACTOR.
11. CAULK WITH SILICONE ALL UNUSED PENETRATION GAPS BETWEEN WALL, CEILING AND FLOOR OPENINGS, AND HVAC EQUIPMENT PENETRATIONS MUST MATCH EXISTING OR AS SHOWN ON MECHANICAL DETAILS. PATCH LARGE GAPS BEFORE CAULKING IS APPLIED. REFER TO SPECIFICATION SECTION 23 30 00 - HVAC AIR DISTRIBUTION, SUBSECTION 3.6 - PENETRATIONS.
12. SUPPLEMENTAL STEEL MEMBERS REQUIRED TO SUPPORT HVAC EQUIPMENT FROM MAIN STRUCTURE MUST BE PROVIDED BY THE HVAC CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION TYPES. PROCURE AND INSTALL UPON APPROVAL FROM CONTRACTING OFFICER. PROVIDE STRUCTURAL STEEL SUPPORT SUBMITTAL TO ENGINEER OF RECORD FOR REVIEW.
13. DUCTWORK AIR DISTRIBUTION SYSTEMS MUST BE INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND THE PRESSURE CLASSIFICATION OF EACH INDIVIDUAL DUCTWORK SYSTEM.
14. VOLUME DAMPERS MUST BE PROVIDED AT EACH NEW MAIN BRANCH TAKE-OFF AND IN SUCH OTHER LOCATIONS WHERE REQUIRED TO PROPERLY BALANCE THE SYSTEM. ALL REQUIRED VOLUME DAMPERS MAY NOT BE SHOWN ON THE PLANS, BUT MUST BE PROVIDED AT NO ADDITIONAL COST TO THE PROJECT.
15. INSTRUMENT TEST HOLES MUST BE PROVIDED IN AIR DISTRIBUTION SYSTEMS WHEREVER VOLUME DAMPERS ARE INSTALLED. HOLES MUST BE SEAL WITH RUBBER OR PLASTIC TEST HOLE PLUGS.
16. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
17. SQUARE ELBOWS SHALL ONLY BE USED WHERE SPACE LIMITATIONS PREVENT USE OF 1.5 RADIUS ELBOW AND ONLY UPON APPROVAL OF CONTRACTING OFFICER. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS 45 DEGREES OR GREATER. TURNING VANES MUST BE SINGLE THICKNESS TYPE WITHOUT TRAILING EDGE. TURNING VANES LONGER THAN 36 INCHES MUST BE DOUBLE THICKNESS TYPE.
18. DUCTWORK RUNOUTS TO AIR DISTRIBUTION DEVICES MUST BE THE SAME DIAMETER AS THE AIR DISTRIBUTION DEVICE INLET CONNECTION UNLESS OTHERWISE NOTED ON THE DRAWINGS. DIMENSIONS SHOWN FOR DIFFUSERS AND GRILLES ARE NECK DIMENSIONS.
19. FLEXIBLE DUCTWORK RUNOUTS FROM BRANCH DUCTS TO AIR DISTRIBUTION DEVICES MUST NOT EXCEED 5 FEET IN LENGTH. BENDS IN FLEXIBLE DUCTWORK MUST NOT EXCEED A MAXIMUM OF 45 DEGREE CHANGE OF DIRECTION AND BE SUPPORTED SUCH THAT THE BEND RADIUS IS NOT RESTRICTIVE TO AIR FLOW THROUGH THE DUCT. FLEXIBLE DUCTWORK MUST NOT BE CRUSHED OR DISTORTED IN ITS FINAL CONFIGURATION.
20. ROUND DUCTWORK CONNECTIONS BETWEEN MAIN DUCT AND TERMINAL UNITS MUST BE RIGID DUCT OF THE SAME DIAMETER AS TERMINAL UNIT INLET CONNECTION UNLESS OTHERWISE NOTED ON THE DRAWINGS.
21. PROVIDE SHEETMETAL TRANSITIONS AT AIR HANDLING UNITS, HEAT PUMP UNITS, FANS, AND OTHER SIMILAR HVAC EQUIPMENT. TRANSITION TO FULL SIZE OF CONNECTION ON UNIT. FLEXIBLE DUCT CONNECTORS MUST BE USED ON FINAL CONNECTION TO AIR HANDLING EQUIPMENT, UNLESS NOTED OTHERWISE.
22. OPEN-ENDED AIR TRANSFER DUCTS AND OPEN-ENDED RETURN AIR DUCTS IN THE CEILING PLENUM MUST BE UNOBSTRUCTED FOR A MINIMUM DISTANCE OF 24 INCHES FROM THE OPENING TO ALLOW FOR FREE AIRFLOW. OPEN-ENDED AIR TRANSFER DUCTS AND OPEN-ENDED RETURN AIR DUCTS IN THE CEILING PLENUM MUST HAVE A 90 DEGREE ELBOW FOR SOUND ATTENUATION AND MUST HAVE WIRE MESH SCREEN COVERS. WIRE MESH SCREENS MUST BE ALUMINUM WITH 1/2" SQUARE HOLES. SIZE FOR MAXIMUM VELOCITY OF 400 FPM.
23. LOUVERED SUPPLY AIR DIFFUSERS MUST BE 4-WAY FLOW UNLESS OTHERWISE SHOWN BY FLOW ARROWS ON THE DRAWINGS. LINEAR DIFFUSERS MUST BE ADJUSTABLE 2-WAY FLOW. PROVIDE BATT INSULATION ON DIFFUSER AND GRILLES THAT ARE EXPOSED TO CEILING PLENUM.
24. EXACT LOCATION OF CEILING AIR DEVICES MUST BE DETERMINED BY ARCHITECTURAL REFLECTED CEILING PLAN.
25. BLANK OFF AND INSULATE INACTIVE PORTIONS OF LOUVERS. ENTIRE LOUVERS NOT UTILIZED MUST BE BLANKED OFF AND INSULATED BY THE LOUVER MANUFACTURER. REFER TO ARCHITECTURAL DRAWINGS FOR LOUVER LOCATIONS AND HVAC DRAWINGS FOR HVAC EQUIPMENT CONNECTIONS.
26. LOUVER PLENUMS MUST BE PITCHED DOWN TOWARD THE BOTTOM OF THE LOUVER. WHERE THIS IS NOT POSSIBLE, PROVIDE 3/4" DRAIN PIPING WITH P-TRAP FROM BOTTOM OF LOUVER TO NO MORE THAN 6" ABOVE NEAREST SANITARY DRAIN. DRAIN LINE MUST SLOPE DOWN TOWARDS DISCHARGE LOCATION AT A MINIMUM OF 1/8" PER LINEAR FOOT.
27. EXACT LOCATIONS OF THERMOSTATS, SENSORS, AND HVAC CONTROL APPURTENANCES MUST BE COORDINATED WITH FINAL LOCATIONS OF WALL-MOUNTED ARCHITECTURAL, FIRE PROTECTION, AND ELECTRICAL EQUIPMENT. MOUNT THERMOSTATS AND SENSORS MINIMUM 4'-0" ABOVE FINISHED FLOOR.
28. PROVIDE ACCESS PANELS TO ACCESS DAMPERS, EQUIPMENT, AND VALVES LOCATED ABOVE HARD CEILINGS OR IN WALLS. ACTUAL ACCESS PANEL LOCATIONS MUST BE FIELD DETERMINED.
29. UNLESS NOTED OTHERWISE, ACCESS MUST BE PROVIDED AT EACH INSTANCE OF THE FOLLOWING: MOTOR OPERATED DAMPERS, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS. DUCT ACCESS DOORS MUST BE LOCATED CLOSE TO EACH COMPONENT LISTED ABOVE TO ALLOW FOR INSPECTION. IF FEASIBLE, LOCATE DUCT ACCESS DOOR ON THE UNDERSIDE OF THE DUCT RATHER THAN THE SIDE. MINIMUM DUCT ACCESS DOOR SIZE MUST BE BASED ON DUCT SIZE AS FOLLOWS:

DUCT SIZE	ACCESS DOOR SIZE
12" AND SMALLER	12" LONG FLANGED & GASKETED REMOVABLE DUCT SECTION
13" TO 17"	12" X 12"
18" TO 24"	16" X 18"
25" AND LARGER	24" X 16"

30. EXPOSED DUCTWORK, WITH THE EXCEPTION OF DUCTWORK IN MECHANICAL ROOMS, MUST BE DOUBLE-WALL, SPIRAL DUCTWORK WITH PAINT GRIP COATING. PAINT SPIRAL DUCTWORK TO MATCH ADJACENT EXPOSED SURFACE.
31. AIR HANDLING UNITS SERVING OCCUPIED AREAS MUST HAVE MINIMUM MERV 8 FILTERS. UNITS NOT SERVING OCCUPIED ZONES MUST HAVE MINIMUM MERV 8 FILTER. FILTERS MUST BE INDUSTRY STANDARD SIZE. FILTERS MUST NOT CREATE PRESSURE DROP EXCEEDING 10% OF EXTERNAL STATIC PRESSURE (ESP) CAPACITY LISTED IN EQUIPMENT SCHEDULE.
32. SUPPLY, RETURN, AND OUTDOOR AIR DUCTWORK MUST BE INSULATED TO MEET OR EXCEED ASHRAE 90.1-2016. EXTERIOR SUPPLY AND RETURN AIR DUCTWORK MUST BE PROVIDED WITH WEATHER-PROOF COVER.
33. PIPING INSULATION MUST BE PROVIDED ON ALL PIPING SYSTEMS INCLUDING (BUT NOT LIMITED TO) CHILLED WATER, HEATING HOT WATER, CONDENSER WATER, REFRIGERANT, AND CONDENSATE DRAIN IN ACCORDANCE WITH ASHRAE 90.1-2016.
34. SIZE REFRIGERANT LINES PER MANUFACTURER'S INSTRUCTIONS BASED ON ACTUAL LINE LENGTHS AND EQUIPMENT ELEVATIONS INSTALLED. USE OF HCFC AND CFC REFRIGERANTS IS PROHIBITED. INSULATION ON REFRIGERANT LINES EXPOSED TO WEATHER MUST HAVE ALUMINUM JACKETING.
35. PIPING CONTAINING WATER THAT IS EXPOSED TO FREEZING TEMPERATURES MUST BE INSULATED AND HEAT-TRACED.
36. COORDINATE LOCATIONS OF CONDENSATE DRAIN PIPING. PROVIDE CONDENSATE PUMPS WHERE SUFFICIENT SLOPE IS NOT AVAILABLE FOR STANDARD GRAVITY DRAIN. PROVIDE WITH OVERFLOW SWITCH TO POWER DOWN THE ASSOCIATED AIR HANDLING EQUIPMENT IN CASE OF CONDENSATE PUMP FAILURE. CONDENSATE DRAIN LINE MUST SLOPE DOWN TOWARDS DISCHARGE LOCATION AT A MINIMUM OF 1/8" PER LINEAR FOOT. INSULATE INDOOR CONDENSATE PIPING WITH 3/4" CLOSED CELL FOAM INSULATION.
37. PROVIDE SHUT-OFF VALVES AND FLEXIBLE CONNECTIONS AT PIPE CONNECTIONS TO HVAC EQUIPMENT.
38. PROVIDE SUPPORTS FOR PIPING AND DUCTWORK IN ACCORDANCE WITH SPECIFICATIONS.
39. WHERE A DUCT OR PIPING SYSTEM CROSSES A BUILDING EXPANSION JOINT, PROVIDE A MANUFACTURED EXPANSION DEVICE, FABRICATED EXPANSION LOOP (PIPING SYSTEM ONLY), OR (WHERE INDICATED ON THE DRAWINGS) AN ENLARGED THROUGH-WALL SLEEVE THAT ALLOWS FOR BUILDING MOVEMENT. WHERE AN ENLARGED THROUGH-WALL SLEEVE IS PERMITTED, FILL SLEEVE OPENING AROUND THE DUCT OR PIPE WITH FLEXIBLE CAULK THAT WILL NOT IMPEDE DUCT OR PIPE MOVEMENT.
40. PROVIDE EXPANSION LOOPS OR APPROVED FLEXIBLE PIPE EXPANSION DEVICES FOR PIPING SYSTEMS WITH OPERATING TEMPERATURES ABOVE 70°F OR BELOW 50°F. PIPE SUPPORTS FOR PIPING SYSTEMS WITH EXPANSION DEVICES OR EXPANSION LOOPS MUST HAVE ROLLER SUPPORTS.
41. PROVIDE AUTOMATIC AIR VENTS AT HIGH POINTS OF HYDRONIC PIPING SYSTEMS. PROVIDE DRAIN VALVES AT THE LOW POINTS IN HYDRONIC PIPING SYSTEMS FOR DRAINAGE. BRANCH VALVES AND DRAINS MUST BE PROVIDED TO ENABLE ISOLATING A PIPE SECTION FOR MAINTENANCE WITHOUT SHUTTING DOWN ENTIRE SYSTEM.
42. PROVIDE HOUSEKEEPING PADS FOR MECHANICAL EQUIPMENT. COORDINATE WITH STRUCTURAL.
43. CONTROL WIRING (I.E. 120 VOLT AND BELOW) INCLUDING 120 VOLT CONTROL POWER TO MOTOR OPERATED DAMPERS, VALVES, AND VARIABLE VOLUME BOXES MUST BE PROVIDED UNDER THIS DIVISION UNLESS SHOWN ON THE ELECTRICAL DRAWINGS. POWER WIRING (120V) TO CONTROL PANELS MUST BE PROVIDED BY ELECTRICAL. POWER (120V) AND CONTROL (24V) WIRING TO APPLICATION-SPECIFIC CONTROLLERS AND OTHER CONTROL SYSTEM COMPONENTS MUST ORIGINATE AT CONTROL PANELS AND BE PROVIDED UNDER THIS DIVISION.
44. INSTALL EXPOSED CONTROL WIRING IN CONDUIT. SEE DIVISION 26 SPECIFICATIONS FOR REQUIREMENTS.
45. VARIABLE FREQUENCY DRIVES FOR 3 PHASE MOTORS MUST BE 3 POLE TYPE.
46. ALL EQUIPMENT WITH NATURAL GAS COMBUSTION MUST BE VENTED PER THE APPLICABLE CODES.
47. MANUFACTURER NAME AND MODEL NUMBERS ARE BASIS OF DESIGN AND ARE SHOWN FOR INFORMATION ONLY. REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.
48. EQUIPMENT LAYOUT IS BASED ON ONE MANUFACTURER'S PRODUCT. WHERE EQUIPMENT SELECTED BY THE CONTRACTOR FOR USE ON THE JOB DIFFERS FROM LAYOUT, THE CONTRACTOR MUST BE RESPONSIBLE FOR COORDINATING SPACE REQUIREMENTS AND EQUIPMENT CONNECTION ARRANGEMENTS.
49. SPECIFICATIONS TAKE PRECEDENCE OVER DRAWINGS. HOWEVER, ITEMS SHOWN ON DRAWING BUT NOT IN THE SPECIFICATIONS ARE REQUIRED WITHIN THE PROJECT SCOPE. IN ADDITION, SPECIFIC ITEMS SHOWN ON THE DRAWINGS TAKE PRECEDENCE OVER SPECIFICATIONS IN CASES WHERE THE SPECIFICATION HAS OPTIONS.
50. FACTORY PAINTED EQUIPMENT THAT HAS BEEN SCRATCHED OR MARRED MUST REPAINTED TO MATCH ORIGINAL COLOR, STEEL EQUIPMENT HANGERS, THREADED RODS, BOLTS, NUTS, SUPPORTS, AND UNINSULATED BLACK STEEL PIPE EXPOSED TO SIGHT INSIDE OR OUTSIDE THE BUILDING WHICH ARE NOT PROVIDED WITH A FACTORY APPLIED PRIME COAT MUST BE CLEANED OF RUST, GREASE, AND SCALE. AFTER CLEANING THE HANGERS, SUPPORTS AND PIPE, A FIELD APPLIED PRIME COAT MUST BE PROVIDED. IN ADDITION, SUCH ITEMS IN FINISHED SPACES MUST ALSO BE PROVIDED WITH TWO COATS OF FINISH PAINT IN A COLOR TO MATCH ADJACENT SURFACES OR AS NOTED; SUCH ITEMS OUTSIDE THE BUILDING MUST ALSO BE PROVIDED WITH TWO COATS OF BITUMINOUS ALUMINUM PAINT. INSULATED PIPES OUTSIDE THE BUILDING MUST BE CLEANED OF RUST, GREASE AND SCALE, AND PROVIDED WITH A FIELD APPLIED PRIME COAT BEFORE INSTALLING INSULATION.
51. WHERE EXISTING EQUIPMENT IS SHOWN OR CALLED OUT TO BE RELOCATED, THE CONTRACTOR AND CONTRACTING OFFICER'S REPRESENTATIVE MUST INSPECT AND TEST ALL EQUIPMENT THAT IS TO BE RELOCATED FOR OPERATION AND CONDITION PRIOR TO RELOCATION. THE RESULTS OF THIS INSPECTION AND TEST MUST BE TYPEWRITTEN AND SIGNED BY THE CONTRACTOR AND CONTRACTING OFFICER'S REPRESENTATIVE. AFTER RELOCATION, ANY CONDITION DETRIMENTAL TO THE OPERATION THAT WAS NOT NOTED ON THIS LIST MUST BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. THE CONTRACTOR MUST SUBMIT THE LIST OF RELOCATED EQUIPMENT AND TESTING REPORT FOR THE RECORD.
52. THE CONTRACTOR AND CONTRACTING OFFICER'S REPRESENTATIVE MUST INSPECT AND TEST ALL EXISTING WATER SYSTEMS TO BE EXTENDED OR ALTERED. THE RESULTS OF THIS INSPECTION AND TEST MUST BE TYPEWRITTEN AND SIGNED BY THE CONTRACTOR AND CONTRACTING OFFICER'S REPRESENTATIVE. AFTER THE CHANGES HAVE BEEN MADE TO THE EXISTING WATER SYSTEM, ANY CONDITION DETRIMENTAL TO THE OPERATION OF THE SYSTEM NOT NOTED ON THIS REPORT MUST BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. THE CONTRACTOR MUST SUBMIT THE LIST OF AFFECTED SYSTEMS AND TESTING REPORT FOR THE RECORD.
53. IF ASBESTOS IS FOUND, STOP WORK IMMEDIATELY AND NOTIFY OWNER AND GENERAL CONTRACTOR AND CONTRACTING OFFICER. COORDINATE WITH CONTRACTING OFFICER'S REPRESENTATIVE FOR ABATEMENT OF ASBESTOS.
54. NOT ALL MECHANICAL ABBREVIATIONS SHOWN WILL BE USED FOR THIS PROJECT.

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:
-CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New 8650 BX and Wall HVAC System, MCC
Construct Mini Split Heat Pump Equipment
Client Project Number: AUM25-1013D

MECHANICAL GENERAL NOTES AND DESIGN CRITERIA

POND # 1220594

SHEET ID
M-001

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MECHANICAL ABBREVIATIONS:

@	AT
&	AND
AFF	ABOVE FINISHED FLOOR
ASC	ABOVE CEILING
ACU	AIR CONDITIONER UNIT
ADJ	ADJUSTABLE
AFMS	AIRFLOW MEASUREMENT STATION
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AHRI	AIR CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE
AHU	AIR HANDLING UNIT
AMB	AMBIENT
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION
ARCH	ARCHITECT, ARCHITECTURAL
ASPR	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUX	AUXILIARY
AWS	AMERICAN WELDING SOCIETY
AWG	AMERICAN WIRE GAUGE
BLR	BOILER
BKDFD	BACKDRAFT DAMPER
BLD	BALANCING DAMPER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
B/F	BELOW FLOOR
B/S	BELOW SLAB
BUFRTNK	BUFFER TANK
BTU, BTUH	BRITISH THERMAL UNITS, BTUs PER HOUR
CA	COMBUSTION AIR
CAV	CONSTANT AIR VOLUME
CDD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CHLR	CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	COOLING
CMPRA	AIR COMPRESSOR
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CO2	CARBON DIOXIDE
CONC	CONCRETE
CONN	CONNECT, CONNECTING, CONNECTION
CONT	CONTINUED
COP	COEFFICIENT OF PERFORMANCE
COR	CONTRACTING OFFICER'S (OWNER'S) REPRESENTATIVE
CTWR	COOLING TOWER
CNDRSU	CONDENSING UNIT
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DEPTH
DB, db	DRY BULB (TEMPERATURE)
dBA	DECIBELS
DDC	DIRECT DIGITAL CONTROLS
DEG. F, (°F)	DEGREES FAHRENHEIT
DIA, Ø	DIAMETER
DIV	DIVISION
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EHD	EXHAUST HOOD
EFFC	EFFICIENCY
ELEC	ELECTRICAL
ERU	ENERGY RECOVERY UNIT
ERV	ENERGY RECOVERY VENTILATOR
EXPT	EXPANSION TANK
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
EXT	EXTERIOR
EXTR	EXTERNAL
EXH	EXHAUST
EXIST, (E)	EXISTING
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FFE	FINISHED FLOOR ELEVATION
FLA	FULL LOAD AMPS
FLRD	FLOOR DRAIN
FLUEV	FLUE VENT
FPM	FEET PER MINUTE
FSDM	FIRE SMOKE DAMPER
FT	FOOT, FEET
FT WG	FEET WATER GAUGE
FV	FACE VELOCITY
GA	GAGE
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GRIL	RETURN GRILLE
H	HEIGHT
HGRH	HOT GAS REHEAT
HP	HORSEPOWER, HEAT PUMP
HR	HOUR
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HTG	HEATING
HUH	HYDRONIC UNIT HEATER
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HX	HEAT EXCHANGER
HZ	HERTZ
IDU	DUCTLESS SPLIT SYSTEM (INDOOR UNIT)
IMC	INTERNATIONAL MECHANICAL CODE
IN	INCH, INCHES
IN WC	INCHES WATER COLUMN
IN WG	INCHES WATER GAUGE
IPLV	INTEGRATED PART LOAD VALUE
IRH	INFRARED HEATER
KW	KILOWATTS
L	LENGTH
LBS	POUNDS
LVR	LOUVER (WALL)
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MECH	MECHANICAL
MFR, MFG	MANUFACTURER, MANUFACTURING
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MSS	MANUFACTURER'S STANDARDIZATION SOCIETY
MTD	MOUNTED
MUW	MAKE-UP WATER (POTABLE/ DOMESTIC)
MVD	MANUAL VOLUME DAMPER
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NO	NUMBER
N.O.	NORMALLY OPEN
NPLV	NET PART LOAD VALUE
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
ODU	DUCTLESS SPLIT CONDENSING UNIT/HEAT PUMP
PD	PRESSURE DROP
PH	PHASE
PLBG	PLUMBING
PPM	PARTS PER MILLION
PRV	PRESSURE RELIEF VALVE
PSI(G)	POUNDS-FORCE PER SQUARE INCH (GAUGE)
QTY	QUANTITY
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
REFRU	REFRIGERATION RACK
RFD	ROOF DRAIN
RH	RELATIVE HUMIDITY
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RLA	RELIEF AIR
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RWT	RETURN WATER TEMPERATURE
S	SANITARY
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SUPPLY FAN
SD	SMOKE DETECTOR
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SST	STAINLESS STEEL
SWT	SUPPLY WATER TEMPERATURE
T	TERMINAL BOX
TA	TRANSFER AIR
TAG	TRANSFER AIR GRILLE
TEMP	TEMPERATURE
TP	TEMPERATURE/ PRESSURE TEST PORT
TSTAT	THERMOSTAT
TYP	TYPICAL
UHTR	UNIT HEATER
UL	UNDERWRITER'S LABORATORY
UMCS	UTILITY MONITORING AND CONTROL SYSTEM
V	VOLTAGE, VOLTS, VENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
VTR	VENT TO ROOF
W	WATT(S), WIDTH
W/	WITH
W/O	WITHOUT
WB, wb	WET BULB (TEMPERATURE)
WD	WIDE
WHTR	WATER HEATER

DUCTWORK LEGEND:

24"Ø	ROUND DUCT. DIAMETER INDICATED IN INCHES.
30"/14"	FLAT OVAL DUCT. SIZE INDICATED IN INCHES, FIRST NUMBER IS SIDE SHOWN
30"x14"	RECTANGULAR DUCT. SIZE INDICATED IN INCHES, FIRST NUMBER IS SIDE SHOWN. DASHED LINES INDICATE ACOUSTICAL LINER
	90 DEGREE DUCT ELBOW WITH TURNING VANES
	RADIUS DUCT ELBOW - ROUND OR RECTANGULAR (MIN. 1,5 RADIUS UNLESS OTHERWISE NOTED)
	RECTANGULAR DUCT BRANCH TAKE-OFF WITH 45 DEGREE BRANCH INLET
	SQUARE TO ROUND DUCT BRANCH TAKE-OFF WITH 45 DEGREE BRANCH INLET
	FLARED SPIN-IN WITH DAMPER AND FLEX DUCT (DIFFUSER CONNECTION)
	ROUND DUCT BRANCH TAKE-OFF FROM RECTANGULAR MAIN WITH CONICAL TAP
	DUCT SIZE TRANSITION
	DUCT SIZE TRANSITION RECTANGULAR TO ROUND
	FLEXIBLE DUCT CONNECTION
	SUPPLY OR OUTSIDE AIR DUCT UP
	SUPPLY OR OUTSIDE AIR DUCT DOWN
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP
	EXHAUST AIR DUCT DOWN
	IN-LINE 90 DEGREE RISE/DROP IN SUPPLY DUCT (RIGHT SIDE IS HIGHER)
	IN-LINE 90 DEGREE RISE/DROP IN SUPPLY DUCT (LEFT SIDE IS HIGHER)
	IN-LINE 90 DEGREE RISE/DROP IN RETURN DUCT (RIGHT SIDE IS HIGHER)
	IN-LINE 90 DEGREE RISE/DROP IN RETURN DUCT (LEFT SIDE IS HIGHER)
	IN-LINE 90 DEGREE RISE/DROP IN EXHAUST DUCT (RIGHT SIDE IS HIGHER)
	IN-LINE 90 DEGREE RISE/DROP IN EXHAUST DUCT (LEFT SIDE IS HIGHER)
H	DUCT MOUNTED HUMIDIFIER
SD	DUCT MOUNTED SMOKE DETECTOR
BLD	BALANCING/VOLUME DAMPER (LABEL MAY BE OMITTED)
BD	BACKDRAFT DAMPER (COUNTER-BALANCED UNLESS OTHERWISE NOTED)
M	DAMPER TYPE: M - MOTORIZED DAMPER (ELECTRIC) P - PNEUMATIC-ACTUACTED DAMPER
FD	FIRE DAMPER
SD	SMOKE DAMPER
FSDM	COMBINATION FIRE/SMOKE DAMPER

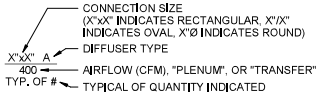
PIPING LEGEND:

CD	CONDENSATE DRAIN
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
	ELBOW UP
	ELBOW DOWN
	RISE OR DROP
	BRANCH BOTTOM CONNECTION
	BRANCH TOP CONNECTION
	TEE OUTLET UP
	TEE OUTLET DOWN
	PIPE CAP
	PIPE CONTINUATION
	PIPE BELOW SLAB OR BELOW GRADE
	DIRECTION OF FLOW
	DIRECTION OF SLOPE DOWN
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	PIPE FLANGE
X	PIPE ANCHOR (PA)
	PIPE GUIDE (PG)
	EXPANSION JOINT
	STRAINER WITH BLOWDOWN VALVE, CAP, AND CHAIN
	GATE VALVE
	BALL VALVE
	FLOW MEASURING/BALANCING/SHUT-OFF VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	PRESSURE REDUCING VALVE
	PRESSURE/TEMPERATURE TAP WITH BALL VALVE
FS	FLOW SWITCH
PS	PRESSURE SWITCH
	PLUG VALVE
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	T&P RELIEF VALVE
	PRESSURE GAUGE WITH GAUGE COCK
	THERMOMETER
	CLEANOUT
M	WATER METER
	FLEXIBLE PIPE CONNECTION

MISCELLANEOUS LEGEND:

	SUPPLY AIR DEVICE
	RETURN AIR DEVICE
	EXHAUST AIR DEVICE
	LINEAR SLOT AIR DEVICE
RC	REMOTE CONTROLLER (VRF SYSTEM)
T	THERMOSTAT
H	HUMIDISTAT
TH	THERMOSTAT / HUMIDISTAT
$	START / STOP SWITCH
F	FIRESTAT
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
SP	STATIC PRESSURE SENSOR
DP	DIFFERENTIAL PRESSURE SENSOR
CO	CARBON MONOXIDE SENSOR
C	CARBON DIOXIDE SENSOR
AQ	AIR QUALITY SENSOR
VFD	VARIABLE FREQUENCY DRIVE
Ø	ROUND
	OVAL OR FLAT OVAL
R	REFRIGERANT
	SERVICE CLEARANCE
X	DUCT PRESSURE CLASS (IN WG)
B	BOILER SHUT OFF BUTTON

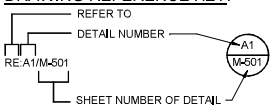
AIR DISTRIBUTION DEVICE TAGS:



ALL SUPPLY DIFFUSERS MUST BE 4-WAY FLOW PATTERN, UNLESS NOTED OTHERWISE BY FILLED REGION.



DRAWING REFERENCE KEY:



DEMOLITION KEY:

DEMOLISHED EQUIPMENT, DUCTWORK, APPURTENANCES

AREA NOT IN SCOPE

DEMOLISHED PIPING

CONNECT TO EXISTING

DISCONNECT FROM EXISTING

NORTH ARROW:



MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction and Demolition Drawings
Client Project Number: XLWJ24-10130

MECHANICAL ABBREVIATIONS AND LEGENDS

POND # 1220654

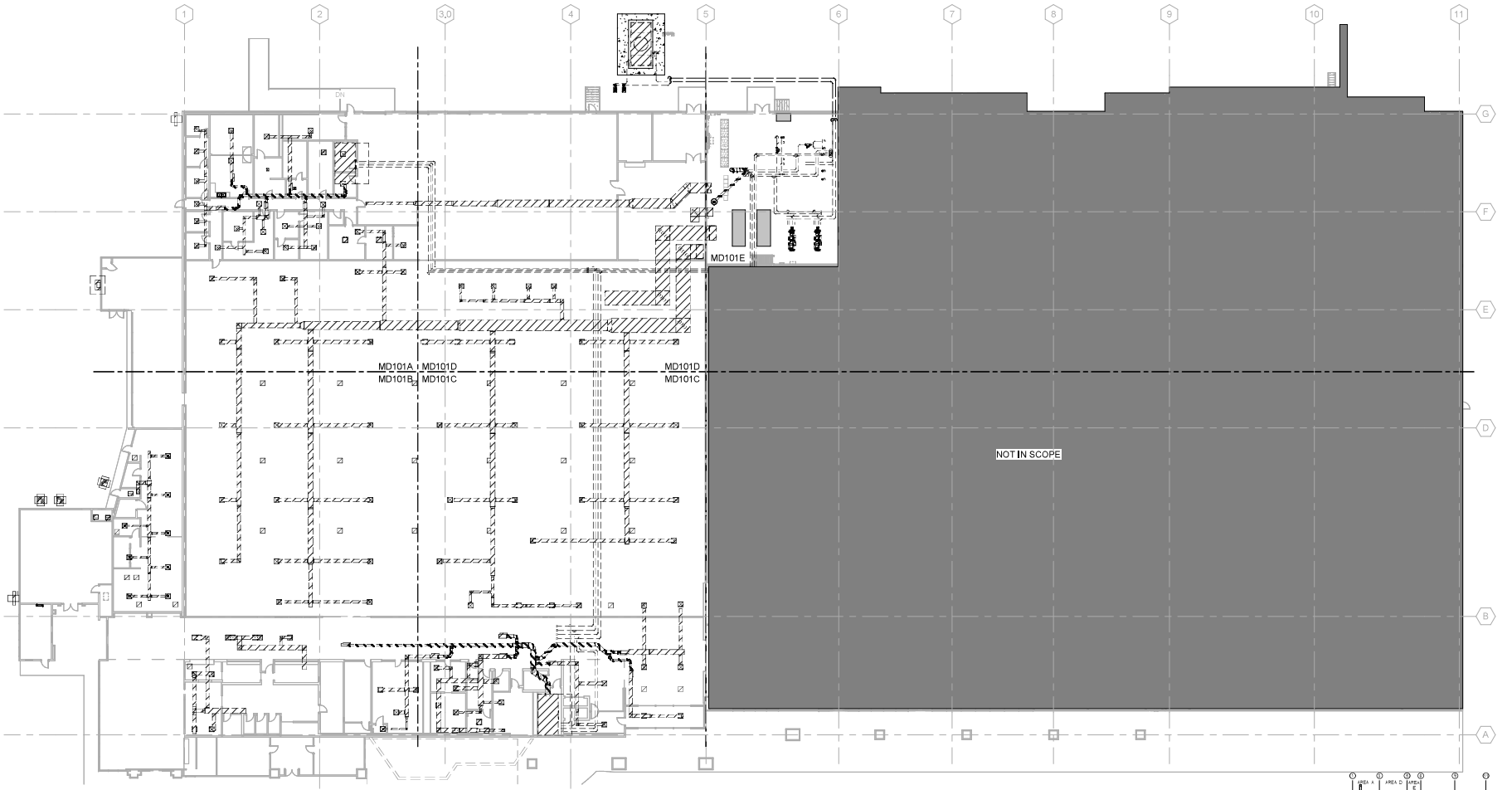
SHEET ID
M-002

ISSUED FOR CONSTRUCTION

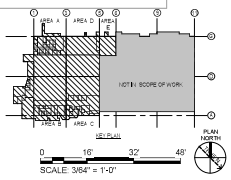
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SHEET NOTES

1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.



A1 DEMO MECHANICAL GROUND FLOOR PLAN - OVERALL
SCALE: 3/64" = 1'-0"



MARK	DESCRIPTION	DATE

File Path: R:\...\Install AFB Bld 2\Design\325th_Install AFB_ME_21.rvt

Plot Date: 9/13/2024 10:51:15 AM

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Condenser and Evaporator Equipment
Client Project Number: AJAX24-1013D

DEMO MECHANICAL GROUND FLOOR PLAN - OVERALL

POND # 1220594

SHEET ID
MD101

ISSUED FOR CONSTRUCTION

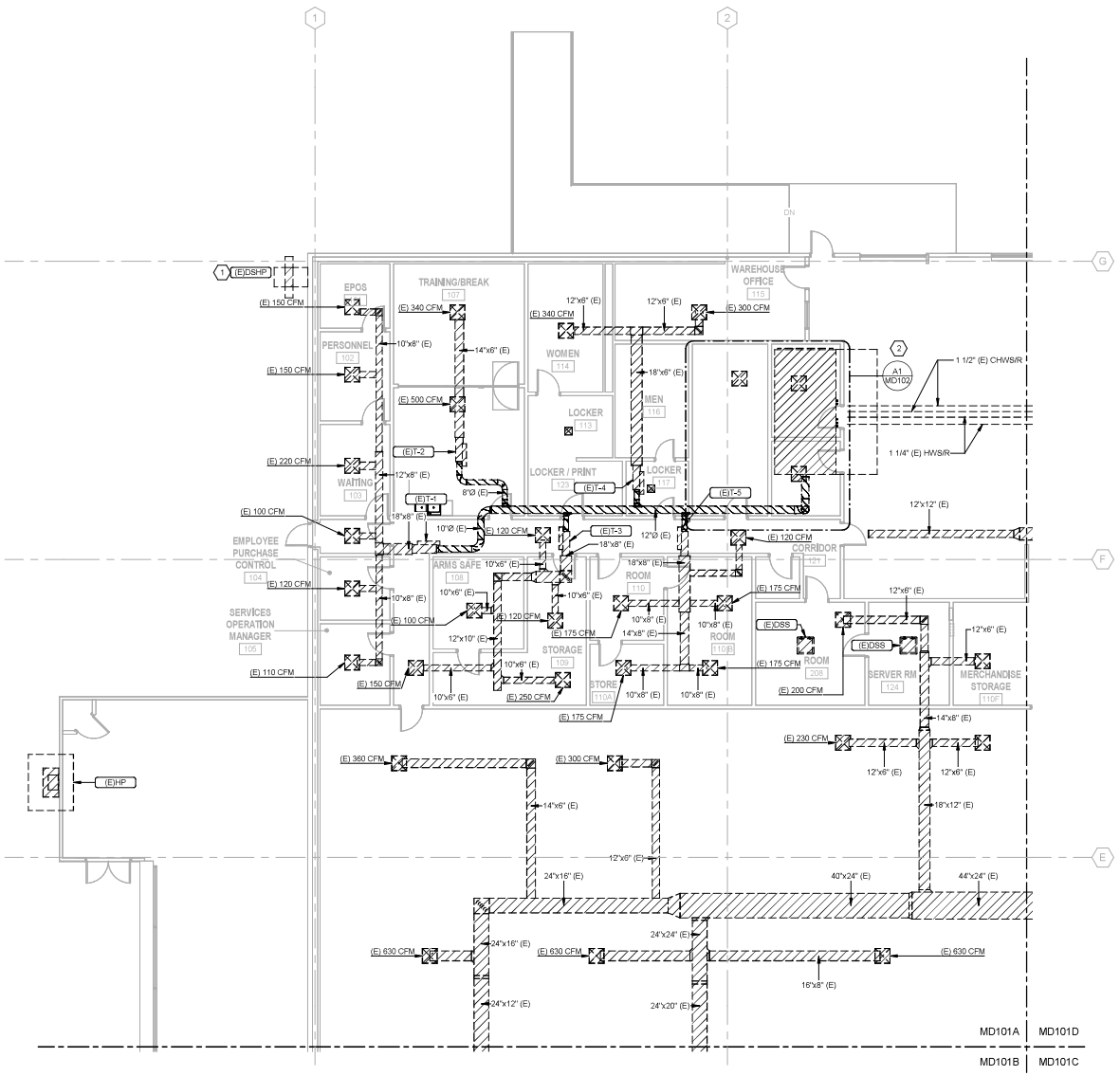
SHEET NOTES

1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.

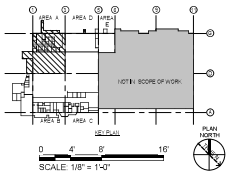
(#) KEYNOTES

1 DEMOLISH EXISTING DUCTLESS SPLIT OUTDOOR UNIT, ASSOCIATED INDOOR UNIT, ACCESSORIES, AND APPURTENANCES.

2 SEE MD102 FOR DEMOLITION OF THIS WAREHOUSE MEZZANINE LEVEL EQUIPMENT.



A1 DEMO MECHANICAL GROUND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"



MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construct New Mezzanine and Relocate HVAC Equipment
Client Project Number: AJW24-1013D

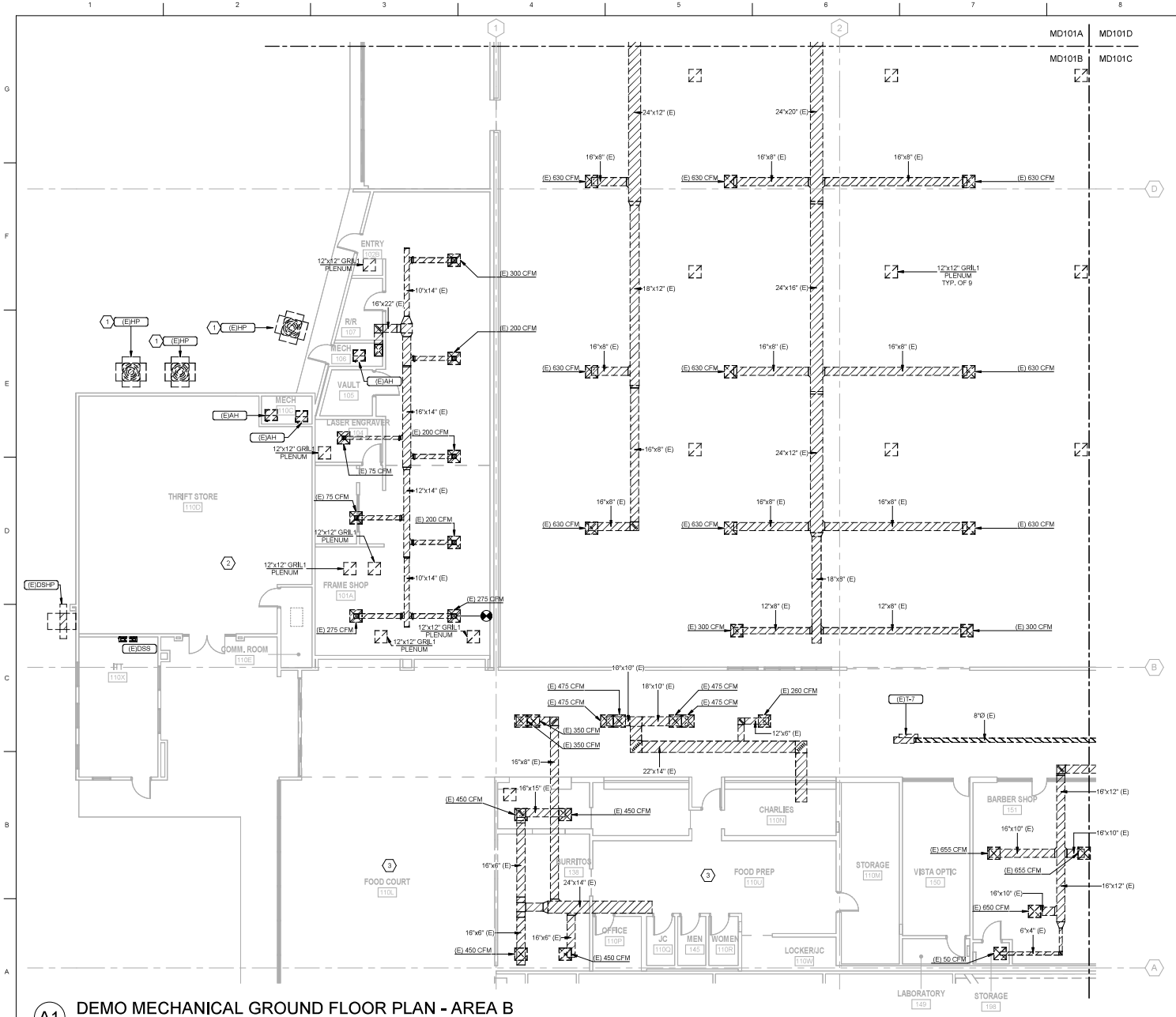
DEMO MECHANICAL GROUND FLOOR PLAN - AREA A

POND # 1220934

SHEET ID
MD101A

ISSUED FOR CONSTRUCTION

File Path: I:\...
Plot Date: 9/13/2024 10:51:18 AM



SHEET NOTES

1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.

(#) KEYNOTES

1 DEMOLISH HEAT PUMP, ASSOCIATED INDOOR UNIT, DUCTWORK, AND ALL ACCESSORIES.

2 EXISTING DUCTWORK AND CONDITIONS ARE UNKNOWN. ALL EXISTING DUCTWORK, TO BE DEMOLISHED.

3 RTU5 AND ASSOCIATED DUCTWORK, ACCESSORIES, AND APPURTENCES TO BE DEMOLISHED, EXISTING KITCHEN EQUIPMENT INCLUDING EXHAUST HOODS, FANS, AND DUCTWORK TO REMAIN, CONTRACTOR TO COORDINATE LOCATION OF REMAINING EQUIPMENT PRIOR TO CONSTRUCTION.

A1 DEMO MECHANICAL GROUND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION NO.-
CONTRACT NO.: -CONTRACT #-

325th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbl Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Power Installation and Equipment
Client Project Number: AUW24-1013D

DEMO MECHANICAL GROUND FLOOR PLAN - AREA B

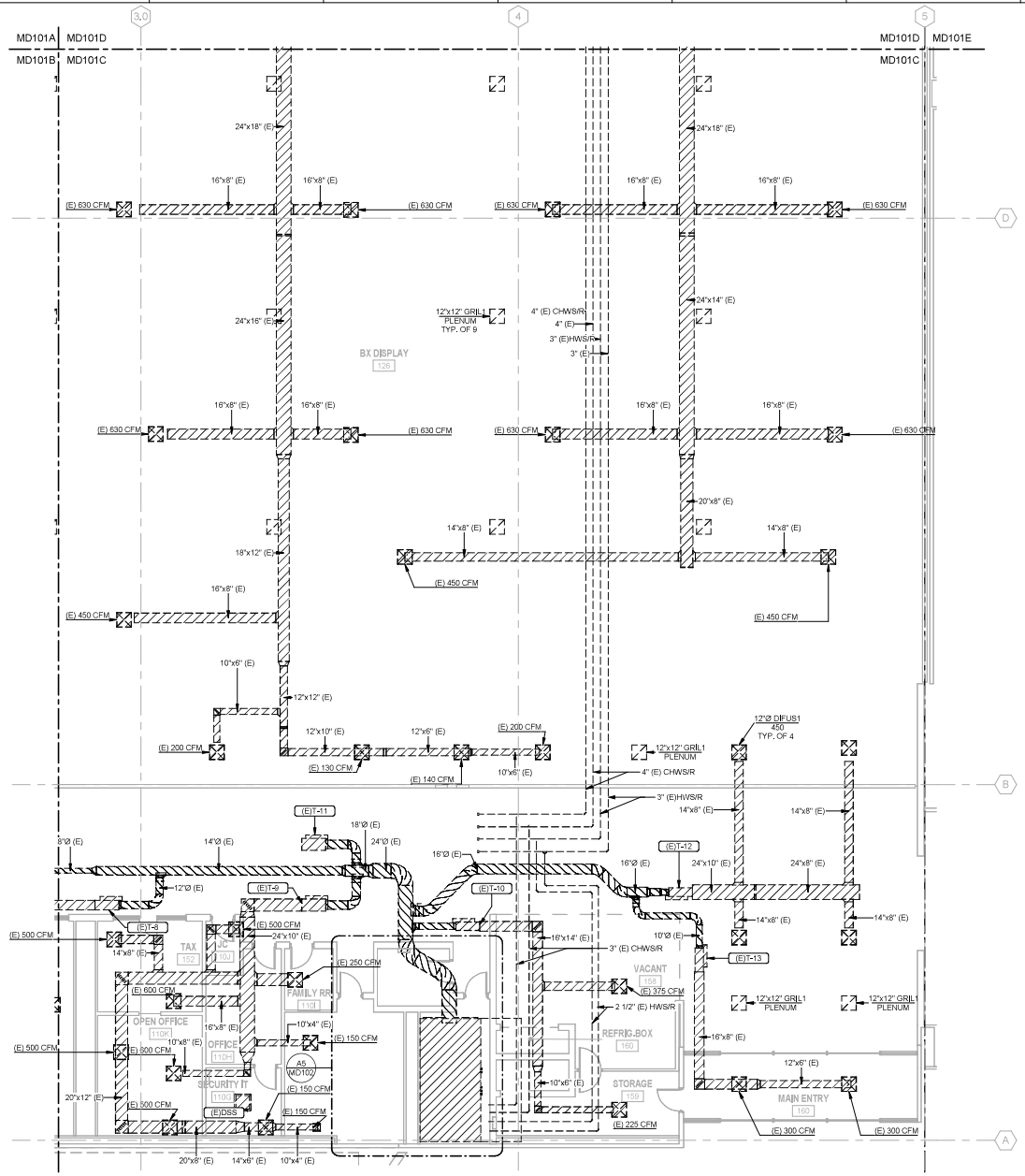
POND # 1220594

SHEET ID
MD101B

ISSUED FOR CONSTRUCTION

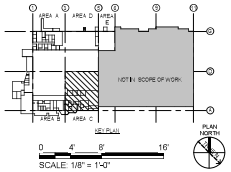
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File Path: I:\...\MD101B.rvt



SHEET NOTES

1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.



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

A1 DEMO MECHANICAL GROUND FLOOR PLAN - AREA C

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

MARK	DESCRIPTION	DATE

File Path: I:\...\Install AFB Ext Design\325th_Tyndall AFB_ATFP_21.rvt

DESIGNED BY:	ISSUE DATE:
N. HENDERSON	9/13/2024
DRAWN BY:	SOLICITATION NO.:
N. HENDERSON	-SOLICITATION#
CHECKED BY:	CONTRACT NO.:
R. CARTER	-CONTRACT #-
QUALITY CONTROL BY:	
S. FLUHRER	
SIZE:	
ANSI D	

Plot Date: 9/13/2024 10:51:24 AM

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND / Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Controls and Associated Electrical Equipment
Client Project Number: AUW24-1013D

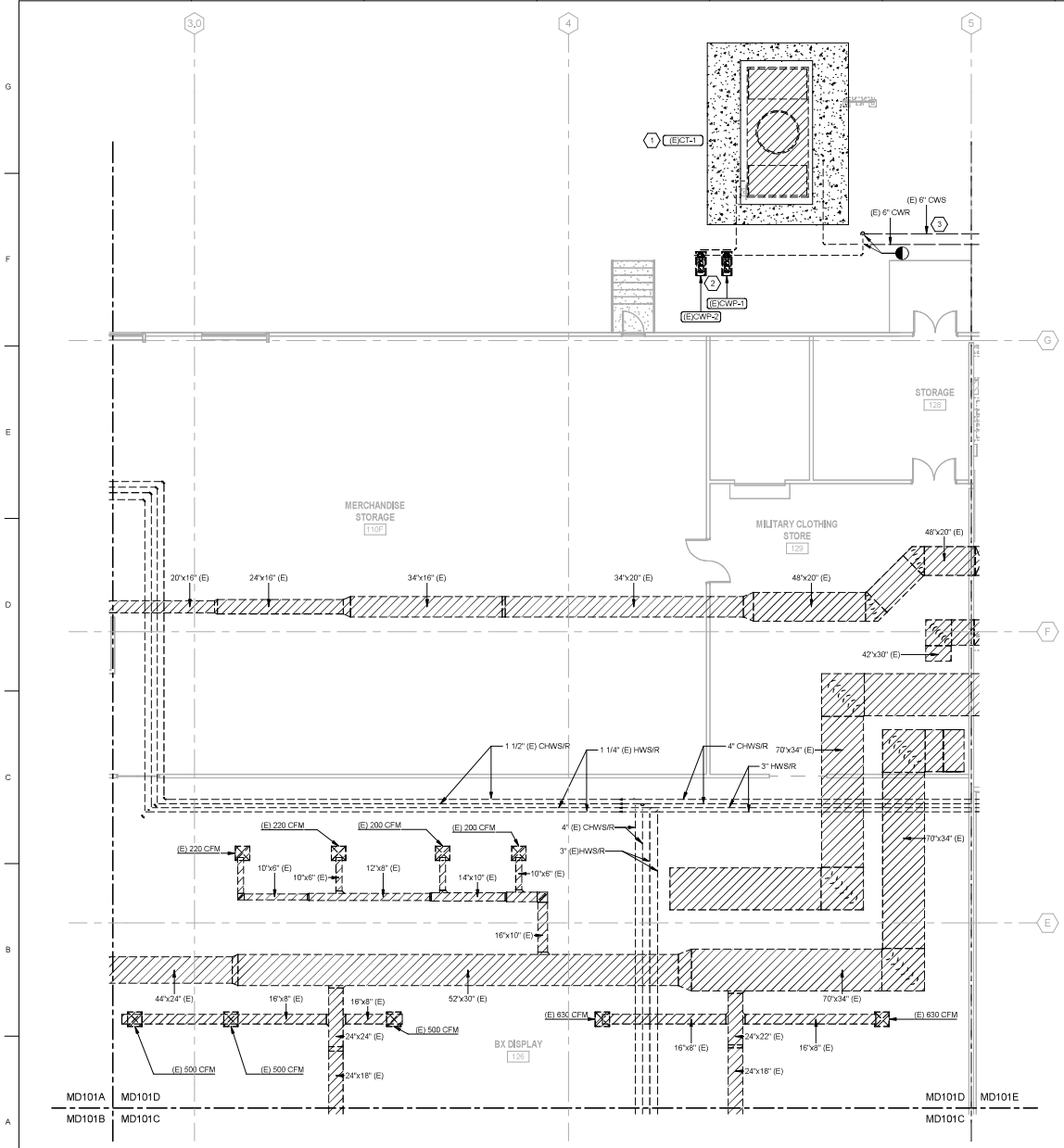
DEMO MECHANICAL GROUND FLOOR PLAN - AREA C

POND # 1220594

SHEET ID

MD101C

ISSUED FOR CONSTRUCTION



A1 DEMO MECHANICAL GROUND FLOOR PLAN - AREA D

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

SHEET NOTES

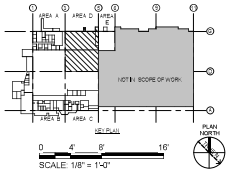
1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.

KEYNOTES

1 EXISTING COOLING TOWER AND ASSOCIATED PIPING TO BE DEMOLISHED.

2 DEMOLISH COOLING TOWER PUMPS. ASSOCIATED UNDERGROUND PIPING EXISTING TO REMAIN.

3 UNDERGROUND PIPE EXISTING TO REMAIN AND BE REUSED. PROTECT DURING CONSTRUCTION.



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction Phase Base Wide HVAC Equipment
Client Project Number: AUW24-1013D

DEMO MECHANICAL GROUND FLOOR PLAN - AREA D

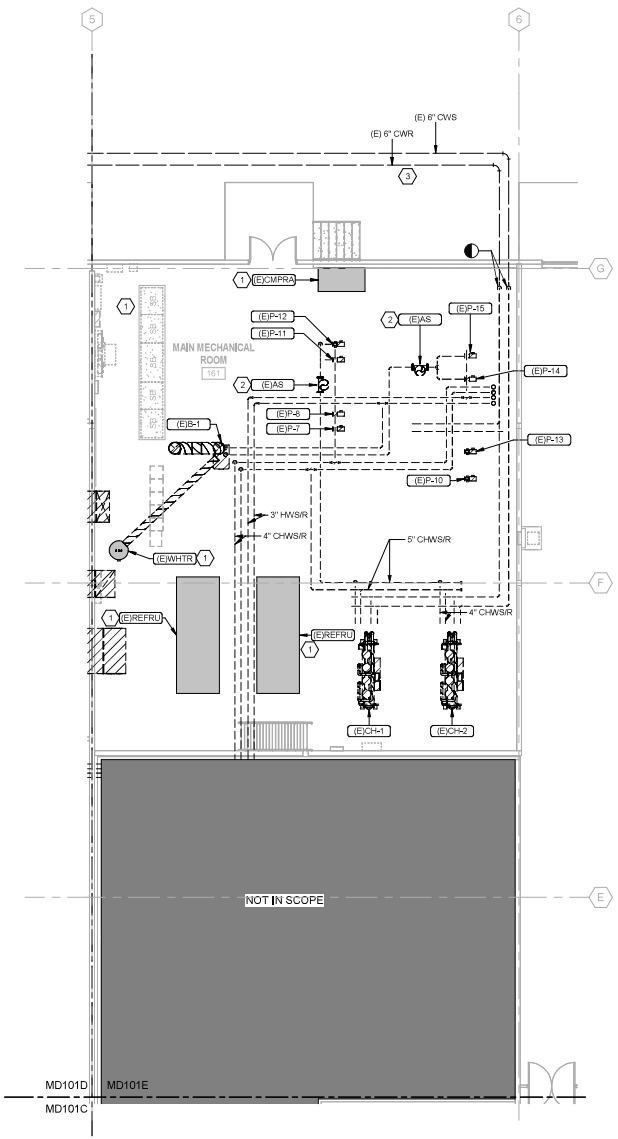
POND # 1220934

SHEET ID
MD101D

ISSUED FOR CONSTRUCTION

File Path: I:\...\MD101D.rvt

Plot Date: 9/13/2024 10:51:27 AM



A1 DEMO MECHANICAL GROUND FLOOR PLAN - AREA E

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

SHEET NOTES

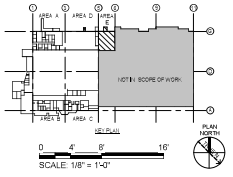
1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.

KEYNOTES

1 EQUIPMENT NOT IN SCOPE AND IS EXISTING TO REMAIN.

2 EXISTING PRV AND MAKE-UP WATER FILL LINES FOR HYDRONIC SYSTEMS TO REMAIN.

3 UNDERGROUND PIPE EXISTING TO REMAIN AND BE REUSED. PROTECT DURING CONSTRUCTION.



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Controls and Associated Mechanical Equipment
Client Project Number: AUW24-1013D

DEMO MECHANICAL GROUND FLOOR PLAN - AREA E

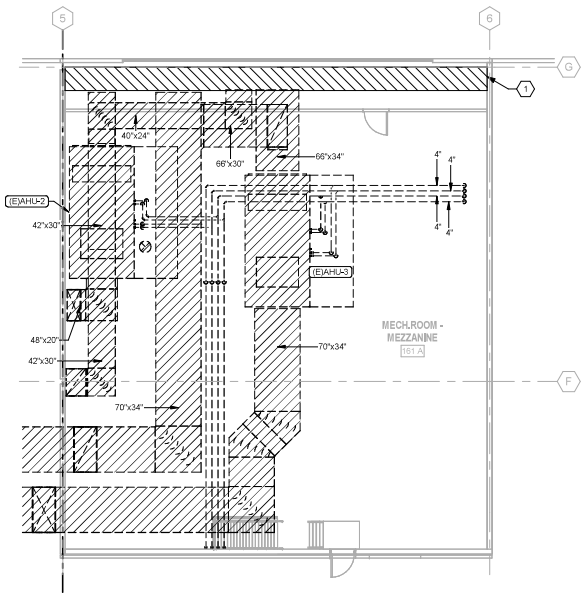
POND # 1220594

SHEET ID
MD101E

ISSUED FOR CONSTRUCTION

File Path: I:\...\MD101E_Tyndall AFB_Area E_21x41

Plot Date: 9/13/2024 10:51:30 AM



D1 PENTHOUSE LEVEL/UPPER MECHANICAL ROOM DEMOLITION PLAN

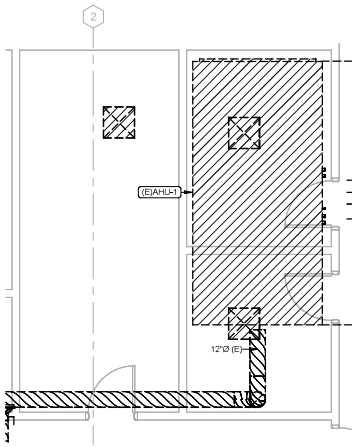
SCALE: 1/8" = 1'-0"

SHEET NOTES

1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.

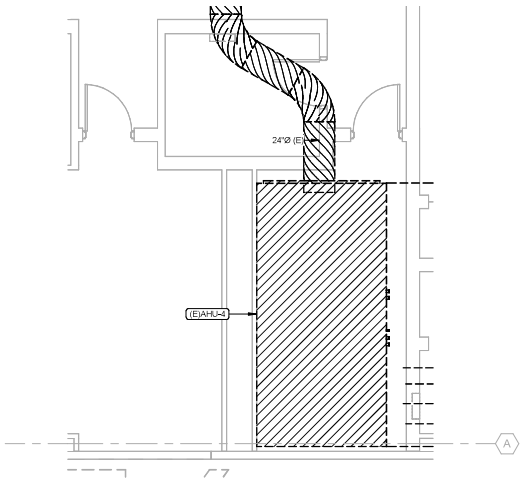
(#) KEYNOTES

1 EXISTING SIDEWALL PLENUM TO REMAIN.



A1 MECHANICAL MEZZANINE AREA 'F' ENLARGED DEMOLITION PLAN

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



A5 MECHANICAL MEZZANINE AREA 'C' ENLARGED DEMOLITION PLAN

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

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

PLAN NORTH

MARK	DESCRIPTION	DATE

File Path: R:\...\Tyndall AFB\...\MD102_DEMO_UPPER_MECH_MEZZ_FLOOR.rvt

Plot Date: 9/13/2024 10:51:34 AM

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gray Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construct and Connect New Exhaust Fan Equipment
Client Project Number: XLWJ24-1013D

DEMO UPPER MECHANICAL ROOM & MEZZANINES FLOOR PLAN

POND # 1220654

SHEET ID
MD102

ISSUED FOR CONSTRUCTION



SHEET NOTES

1. ALL HVAC SYSTEMS, ACCESSORIES, AND APPURTENCES WITHIN THE SCOPE OF WORK ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED. WHERE EXISTING CONDITIONS ARE NOT SHOWN, CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL HVAC SYSTEMS AND ASSOCIATED ACCESSORIES.
2. LOCATION OF EXISTING EQUIPMENT SHOWN IS APPROXIMATE. VERIFY ALL EQUIPMENT LOCATIONS AND COORDINATE WITH OTHER TRADES PRIOR TO DEMOLITION.
3. ROOF DRAINS, STORM WATER, AND PLUMBING SYSTEMS NOT IN SCOPE AND EXSITING TO REMAIN.

KEYNOTES

1 EXISTING RTU, ACCESSORIES, AND ASSOCIATED DUCTWORK TO BE DEMOLISHED. PATCH, SEAL, AND INSULATE ROOF TO MATCH EXISTING.

2 REFER TO D1/MD102 FOR PENTHOUSE LEVEL DEMOLITION PLAN.

3 DEMOLISH DUCTLESS SPLIT CONDENSING UNIT, ASSOCIATED INDOOR UNIT, ACCESSORIES, AND APPURTENANCES. ROOF CURB TO BE REUSED.

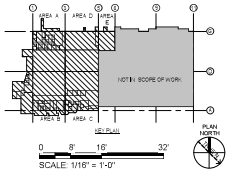
4 EXISTING EXHAUST FANS, ACCESSORIES, AND ASSOCIATED DUCTWORK TO REMAIN.

5 DEMOLISH EXHAUST FAN, ROOF CURB, DUCTWORK, ACCESSORIES, AND APPURTENANCES. PATCH, SEAL, AND INSULATE ROOF TO MATCH EXISTING.

6 DEMOLISH ROOF HOOD, ROOF CURB, DUCTWORK, ACCESSORIES, AND APPURTENANCES. PATCH, SEAL, AND INSULATE ROOF TO MATCH EXISTING.

7 FREEZER REFRIGERATION UNITS NOT IN SCOPE.

8 EXISTING DUCTWORK FROM MECHANICAL PENTHOUSE DOWN THROUGH ROOF TO BE DEMOLISHED. PATCH, SEAL, AND INSULATE ROOF AND PENTHOUSE WALL TO MATCH EXISTING.



A1 DEMO MECHANICAL ROOF PLAN - OVERALL
SCALE: 1/16" = 1'-0"

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Condenser and Fan Powered Wall HVAC Equipment
Client Project Number: AUM24-1-1013D

DEMO MECHANICAL ROOF PLAN - OVERALL

POND # 1220594

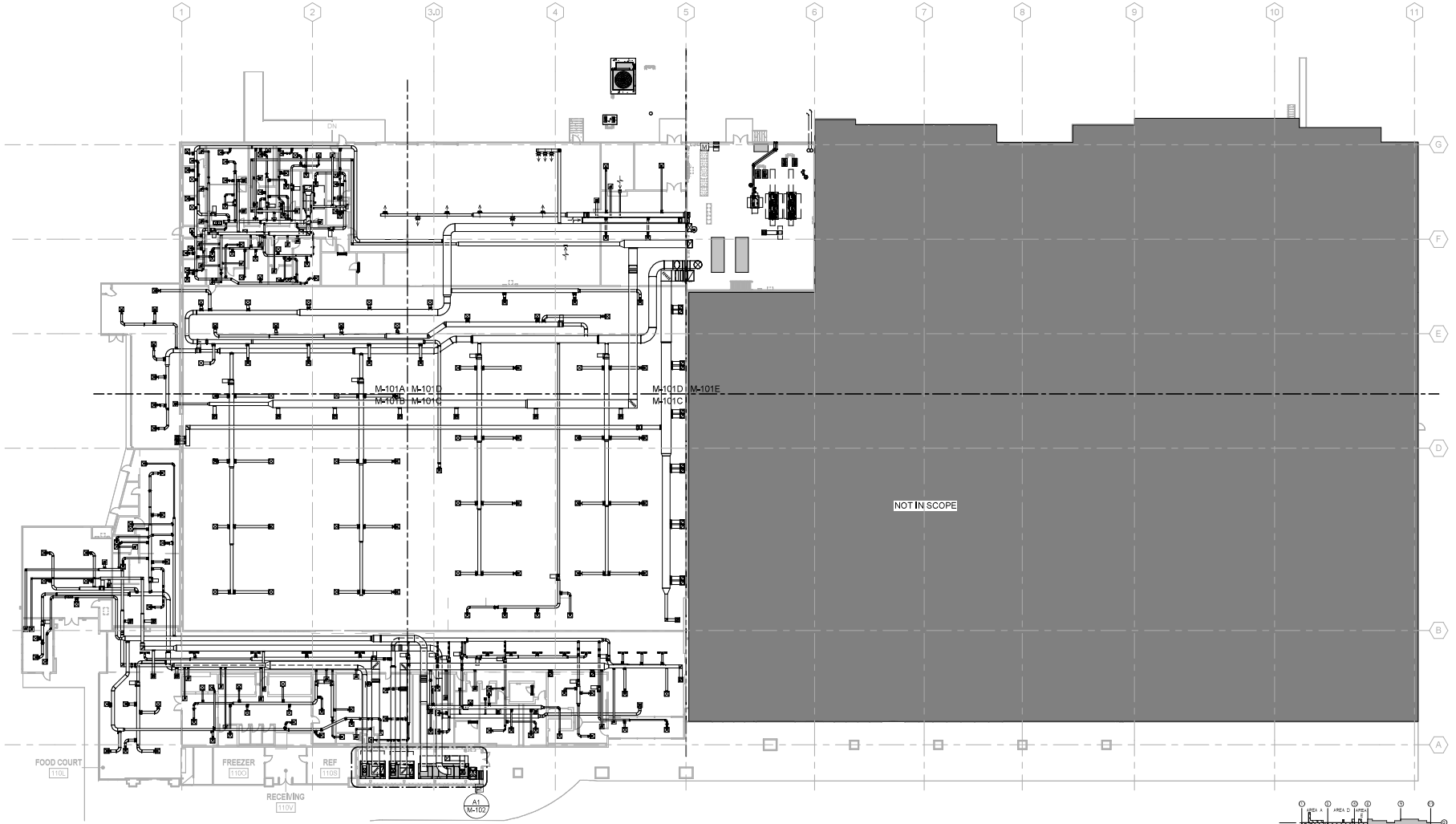
SHEET ID
MD103

ISSUED FOR CONSTRUCTION

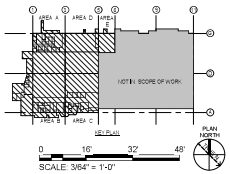
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File Path: I:\...

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.



A1 MECHANICAL GROUND FLOOR PLAN - OVERALL
SCALE: 3/64" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction Phase Mechanical Equipment
Client Project Number: AUW24-1013D

MECHANICAL GROUND FLOOR PLAN - OVERALL

POND # 1220564

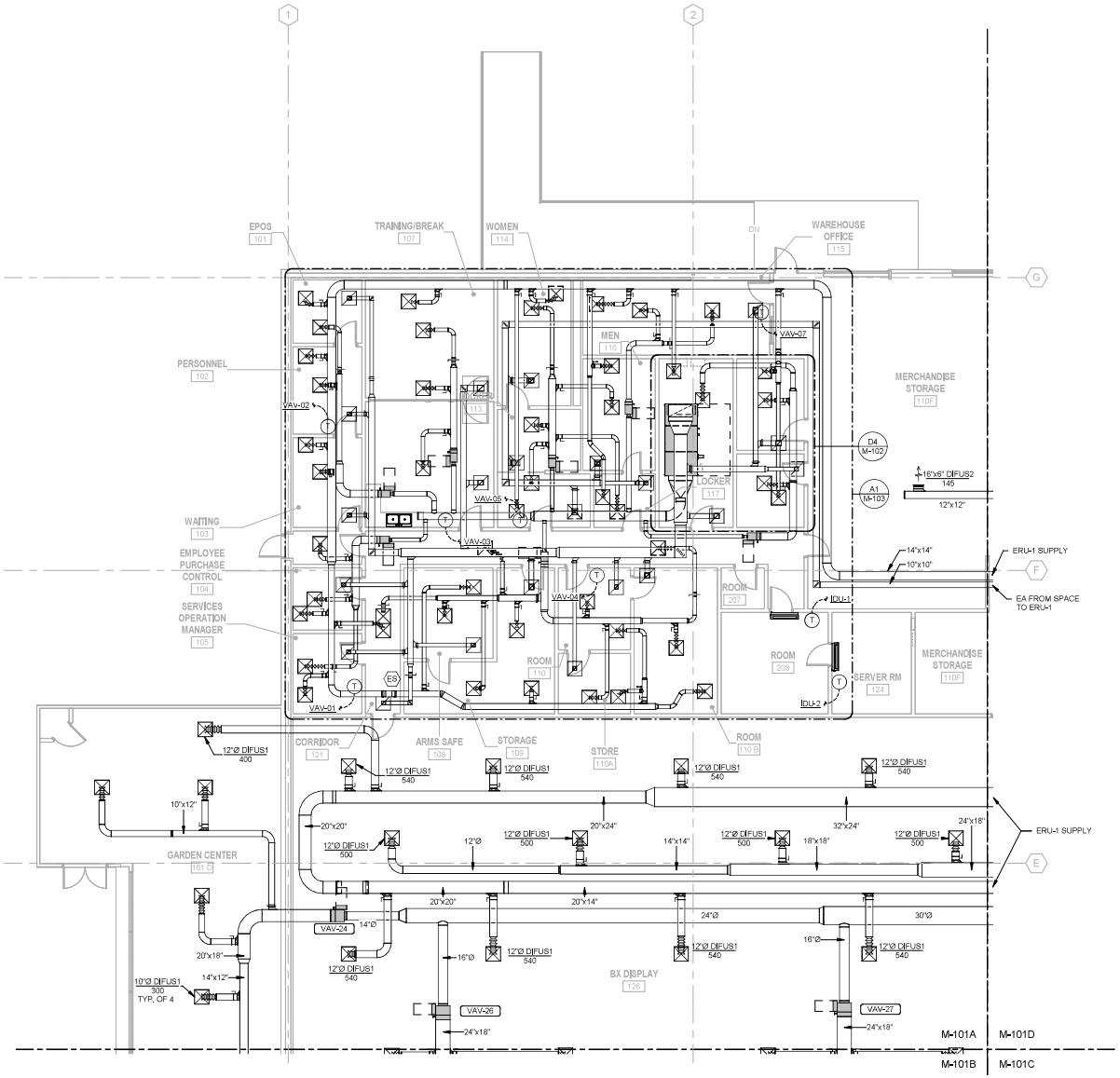
SHEET ID
M-101

ISSUED FOR CONSTRUCTION

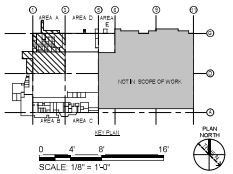
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Plot Date: 9/13/2024 10:49:52 AM

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.



A1 MECHANICAL GROUND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GBA Gail Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Mall HVAC System, MCC
Construction Phase and Mall HVAC Equipment
Client Project Number: AUW24-1013D

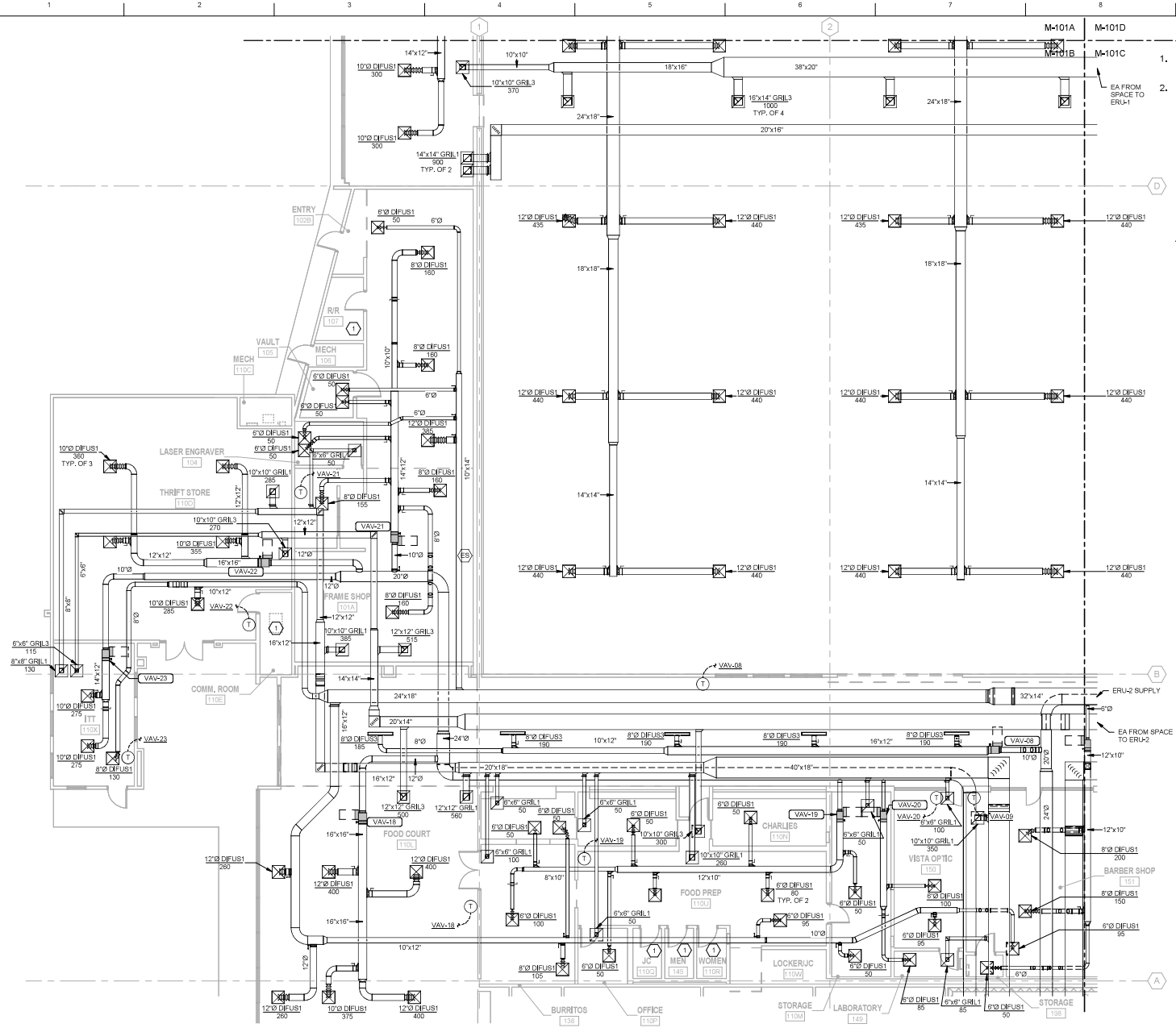
MECHANICAL GROUND FLOOR PLAN - AREA A

POND # 1220504

SHEET ID
M-101A

ISSUED FOR CONSTRUCTION

File Path: I:\...\Tyndall AFB BX Design\220504_Tyndall AFB_M-101A.rvt
Plot Date: 9/13/2024 10:49:56 AM



SHEET NOTES

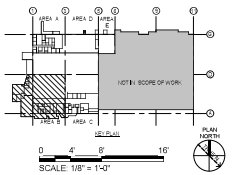
1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

KEYNOTES

1 EXISTING SYSTEMS TO REMAIN. NO NEW WORK.

A1 MECHANICAL GROUND FLOOR PLAN - AREA B

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



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION NO.-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbl Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction Power Requirements and Miscellaneous Equipment
Client Project Number: AUW24-1013D

MECHANICAL GROUND FLOOR PLAN - AREA B

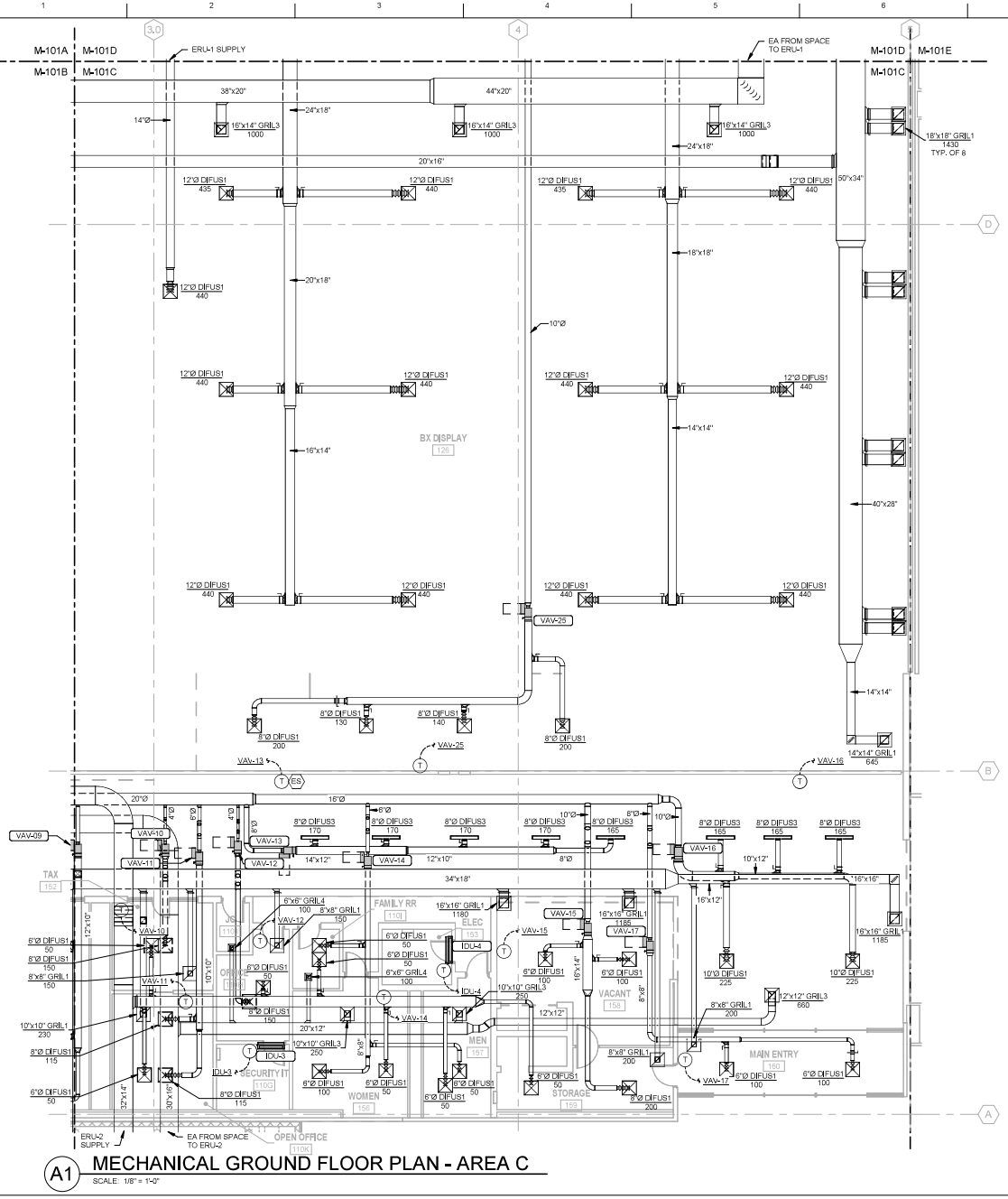
POND # 1220564

SHEET ID
M-101B

ISSUED FOR CONSTRUCTION

File Path: R:\...\M-101B.rvt

Plot Date: 9/13/2024 10:50:00 AM

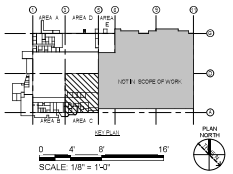


A1 MECHANICAL GROUND FLOOR PLAN - AREA C

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

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Condition and Replace Existing HVAC Equipment
Client Project Number: ALMA21-1013D

MECHANICAL GROUND FLOOR PLAN - AREA C

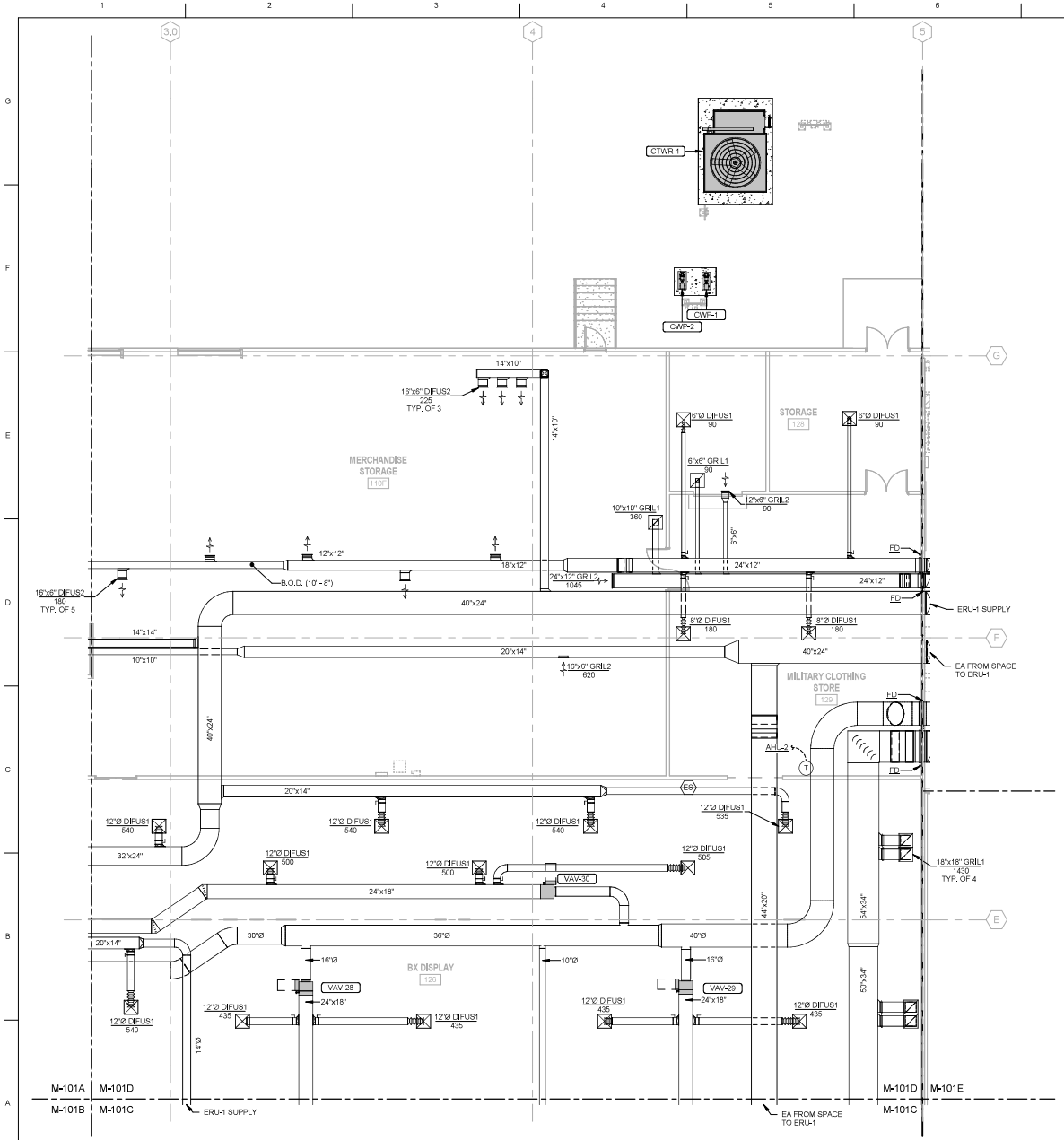
SHEET ID
M-101C

POND # 12208564

Plot Date: 9/13/2024 10:50:04 AM

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ISSUED FOR CONSTRUCTION

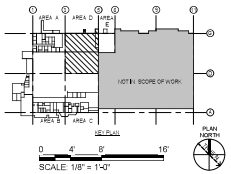


SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

A1 MECHANICAL GROUND FLOOR PLAN - AREA D

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



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Maitl Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Maitl HVAC System, MCC
Construction Phase Base Maintenance Equipment
Client Project Number: AUW24-1013D

MECHANICAL GROUND FLOOR PLAN - AREA D

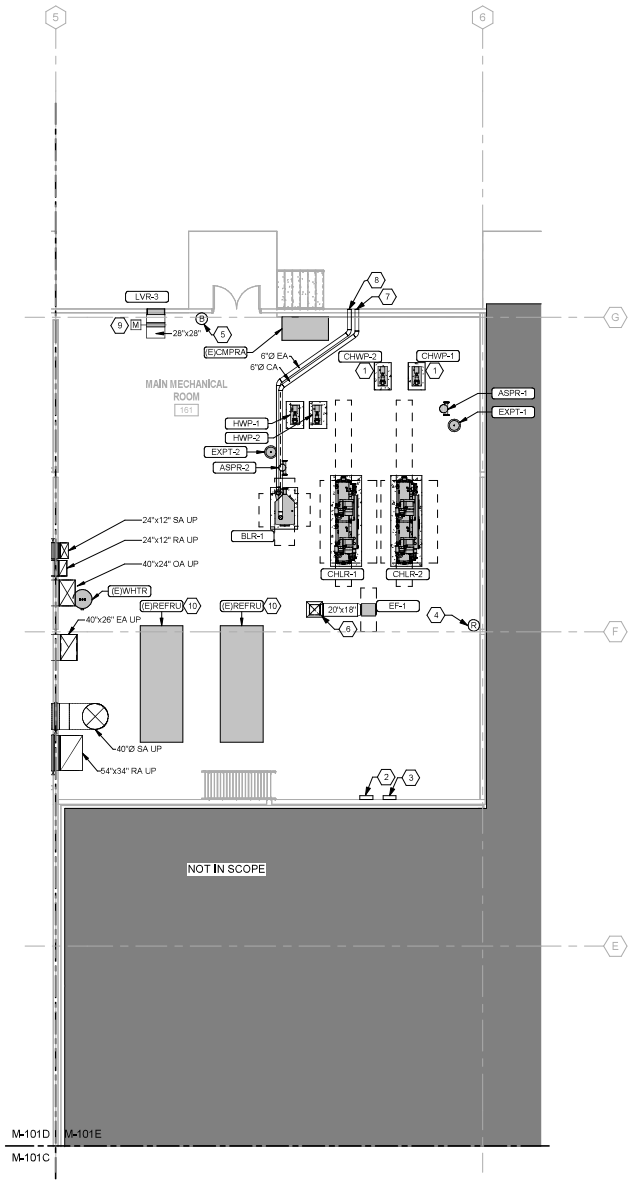
POND # 1220854

SHEET ID
M-101D

ISSUED FOR CONSTRUCTION

File Path: I:\...\M-101D Design\220854_Tyndall AFB_M-101D.rvt

Plot Date: 9/13/2024 10:50:06 AM



A1 MECHANICAL GROUND FLOOR PLAN - AREA E

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

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

KEYNOTES

1 REFER TO STRUCTURAL DRAWINGS FOR EQUIPMENT PAD DETAIL.

2 LOCATE DDC CONTROL PANEL. INSTALL SUCH THAT CLEAR ACCESS IS MAINTAINED.

3 LOCATE BOILER CONTROL PANEL. INSTALL SUCH THAT CLEAR ACCESS IS MAINTAINED.

4 PROVIDE REFRIGERANT LEAK DETECTOR. IF THE DETECTED REFRIGERANT CONCENTRATION EXCEEDS THE MINIMUM SETPOINT, VISUAL AND AUDIBLE ALARMS MUST BE ACTIVATED IN THE MAIN MECHANICAL ROOM AND OUTSIDE OF THE ROOM ENTRANCE. THE BOILER MUST AUTOMATICALLY SHUT DOWN, AND THE EMERGENCY EXHAUST FAN MUST BE ACTIVATED. THE ALARMS MUST BE MANUAL RESET TYPE WITH THE RESET LOCATED WITHIN THE MAIN MECHANICAL ROOM. THE MINIMUM SETPOINT MUST BE NO GREATER THAN 1000 PPM IN ACCORDANCE WITH ASHRAE STANDARD 34. PROVIDE SIGNAGE AT EACH ALARM TO CLEARLY INDICATE MEANING.

5 PROVIDE BOILER EMERGENCY STOP BUTTON. PROVIDE SIGNAGE TO CLEARLY INDICATE PURPOSE.

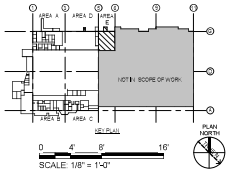
6 REUSE EXISTING EXHAUST SHAFT. PROVIDE EXHAUST FAN FOR EMERGENCY VENTILATION IN THE EVENT OF A REFRIGERANT LEAK.

7 PROVIDE MANUFACTURER'S COMBUSTION AIR INTAKE TERMINATION KIT.

8 PROVIDE MANUFACTURER'S EXHAUST TERMINATION KIT.

9 INTERLOCK MOTOR OPERATED DAMPER WITH EF-1.

10 EXISTING REFRIGERATION RACK NOT IN SCOPE AND TO REMAIN.



MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FEUNINGER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construct Mechanical Room and HVAC Equipment
Client Project Number: AUW24-1013D

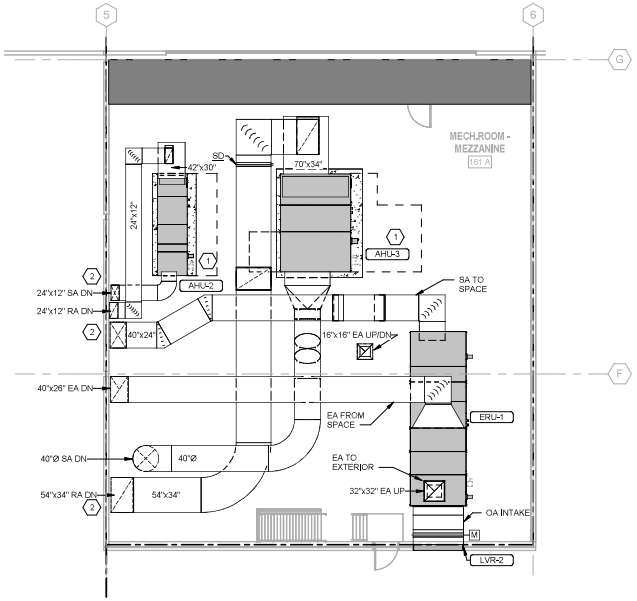
MECHANICAL GROUND FLOOR PLAN - AREA E

POND # 1220854

SHEET ID
M-101E

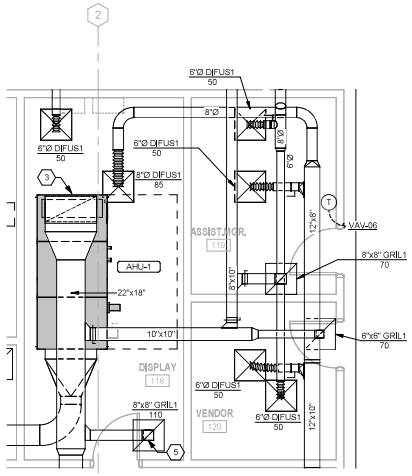
ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 10:50:12 AM



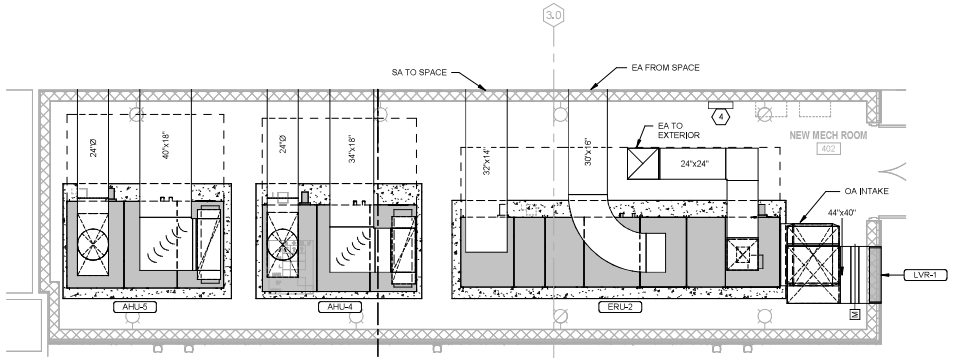
D1 MEZZANINE MECHANICAL ROOM FLOOR PLAN

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



D4 MECHANICAL MEZZANINE AREA 'A' ENLARGED PLAN

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



A1 MECHANICAL GROUND FLOOR PLAN

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

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

KEYNOTES

1 REFER TO STRUCTURAL DRAWINGS FOR EQUIPMENT PAD DETAIL.

2 DUCTWORK TO UTILIZE EXISTING FLOOR PENETRATIONS.

3 UNIT LOCATED ON MEZZANINE ABOVE OFFICE. OFFICES BELOW SHOWN FOR CLARITY.

4 LOCATE DDC CONTROL PANEL. INSTALL SUCH THAT CLEAR ACCESS IS MAINTAINED.

5 DUCT DOWN THROUGH MEZZANINE TO CONNECT TO AIR TERMINAL.

SCALE: 1/4" = 1'-0" (0, 2', 4', 8')

SCALE: 1/8" = 1'-0" (0, 4', 8', 16')

PLAN NORTH

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gbl Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construct and Install New HVAC Equipment
Client Project Number: AUM24-1013D

UPPER MECHANICAL ROOM & MEZZANINE FLOOR PLAN

POND # 1220854

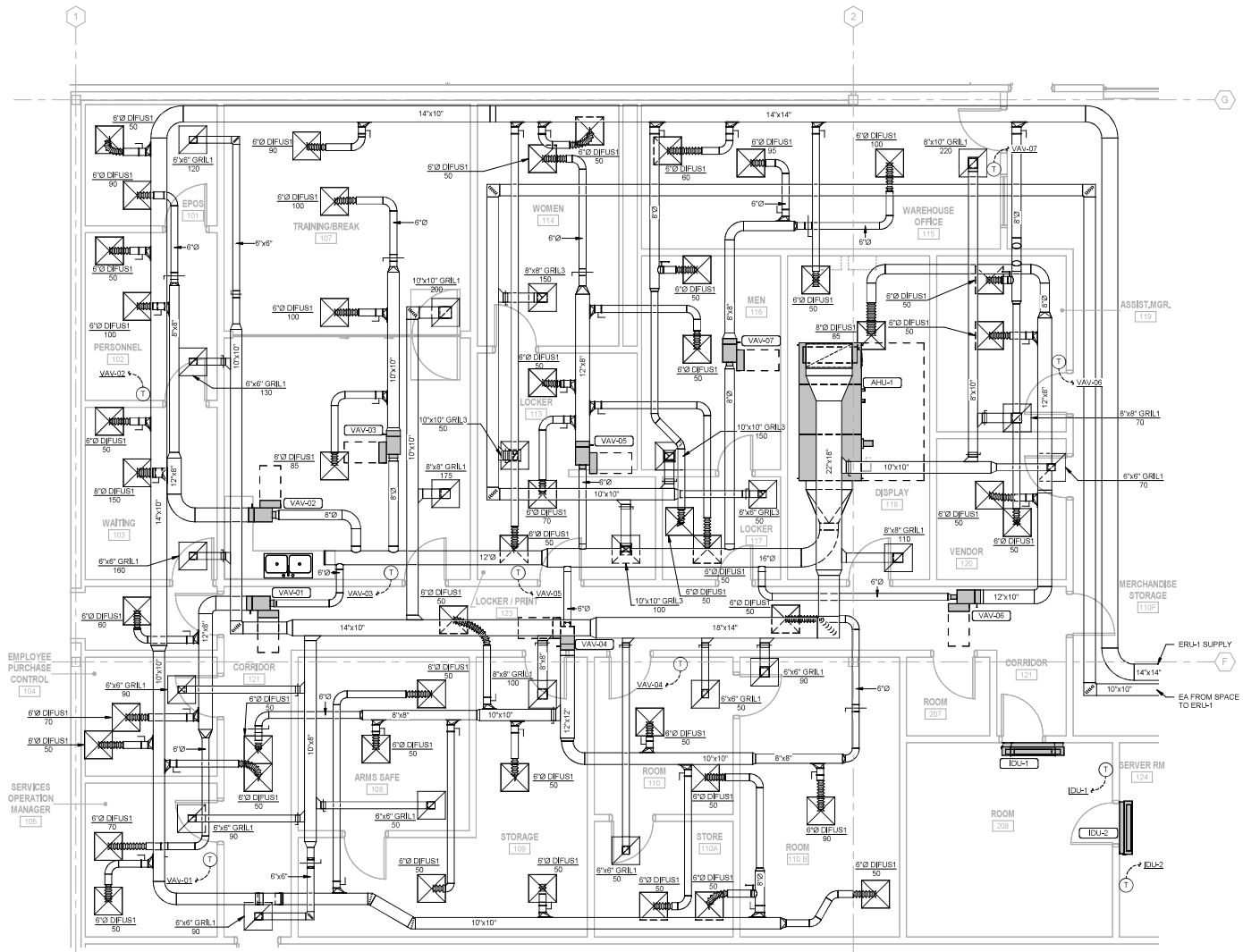
SHEET ID
M-102

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 10:50:16 AM

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.



A1 MECHANICAL GROUND FLOOR PLAN - AREA A ENLARGED

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

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

PLAN NORTH

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

Plot Date: 9/13/2024 10:50:19 AM

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325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mattl Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Mattl HVAC System, MCC
Construction and Commissioning of HVAC Equipment
Client Project Number: AUW24-1013D

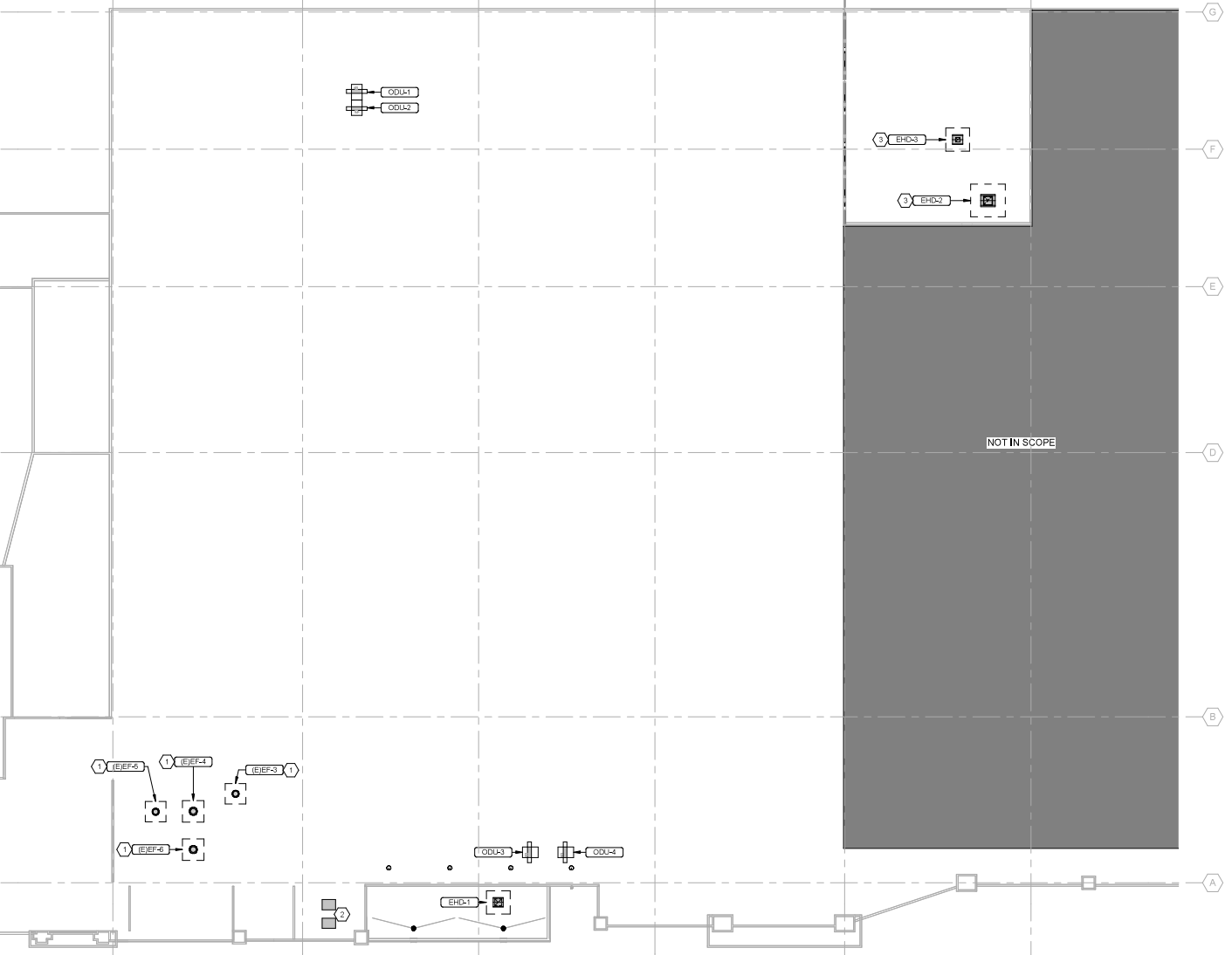
ENLARGED MECHANICAL FLOOR PLAN - AREA A
CALLOUT

POND # 1220594

SHEET ID

M-103

ISSUED FOR CONSTRUCTION



A1 MECHANICAL ROOF PLAN - OVERALL
SCALE: 1/16" = 1'-0"

SHEET NOTES

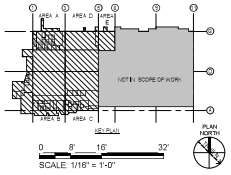
1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

KEYNOTES

1 EXISTING EXHAUST FANS, ACCESSORIES, AND ASSOCIATED DUCTWORK TO REMAIN.

2 FREEZER REFRIGERATION UNITS NOT IN SCOPE.

3 EXHAUST HOOD LOCATED ON ROOF OF MECHANICAL PENTHOUSE.



MARK	DESCRIPTION	DATE

File Path: I:\...\M-104.rvt

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

Plot Date: 9/13/2024 10:50:22 AM

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gbl Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Power and Relocate HVAC Equipment
Client Project Number: XLWJ24-10130

MECHANICAL ROOF PLAN - OVERALL

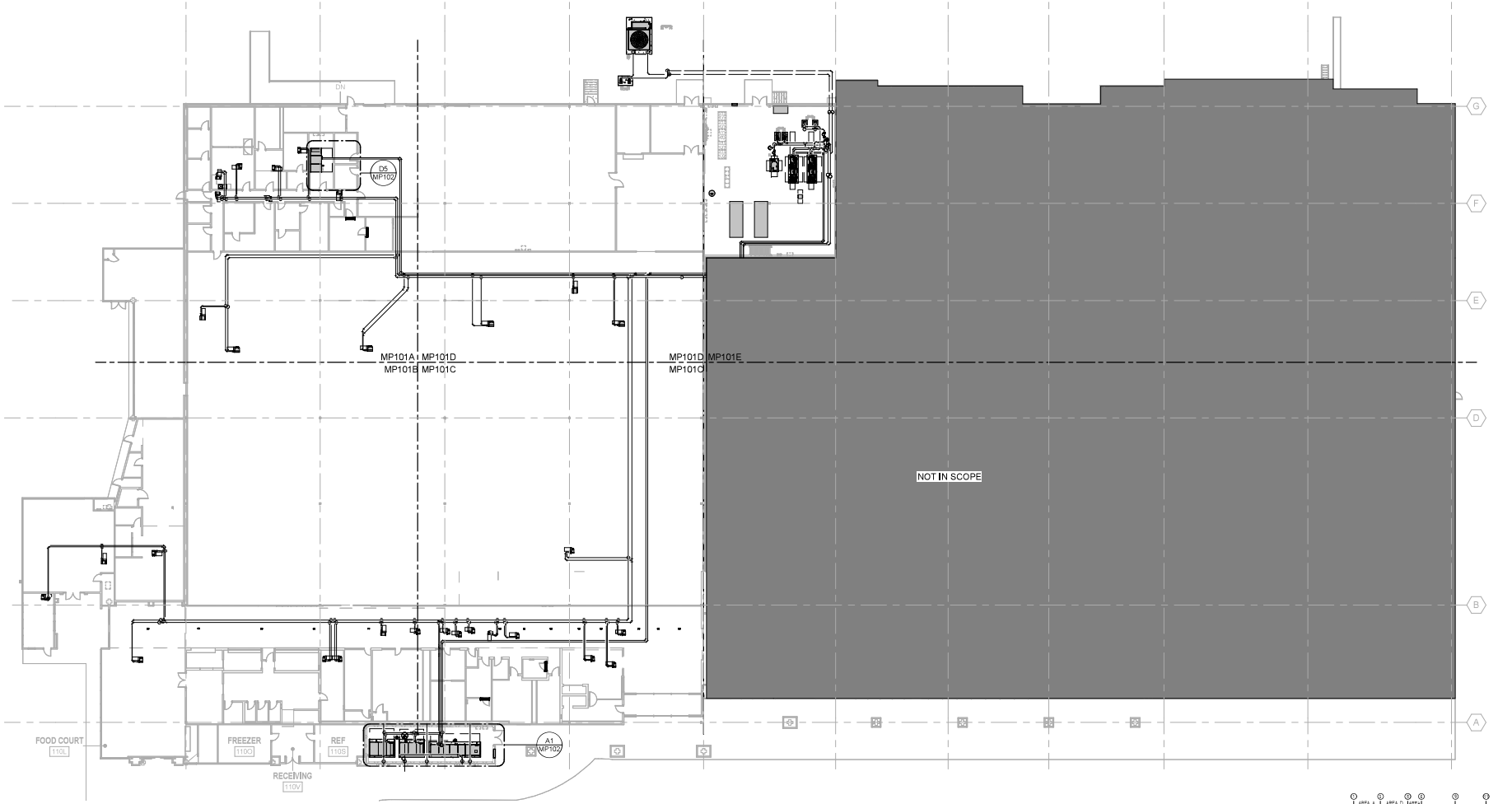
POND # 1220654

SHEET ID
M-104

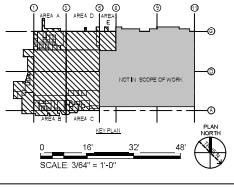
ISSUED FOR CONSTRUCTION

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.



A1 MECHANICAL PIPING GROUND FLOOR PLAN - OVERALL
SCALE: 3/64" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

Plot Date: 9/13/2024 10:51:44 AM
File Path: I:\...\MP101_ISSUED FOR CONSTRUCTION.rvt

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction Phase Services and Commissioning
Client Project Number: AJW25-1013D

MECHANICAL PIPING GROUND FLOOR PLAN - OVERALL

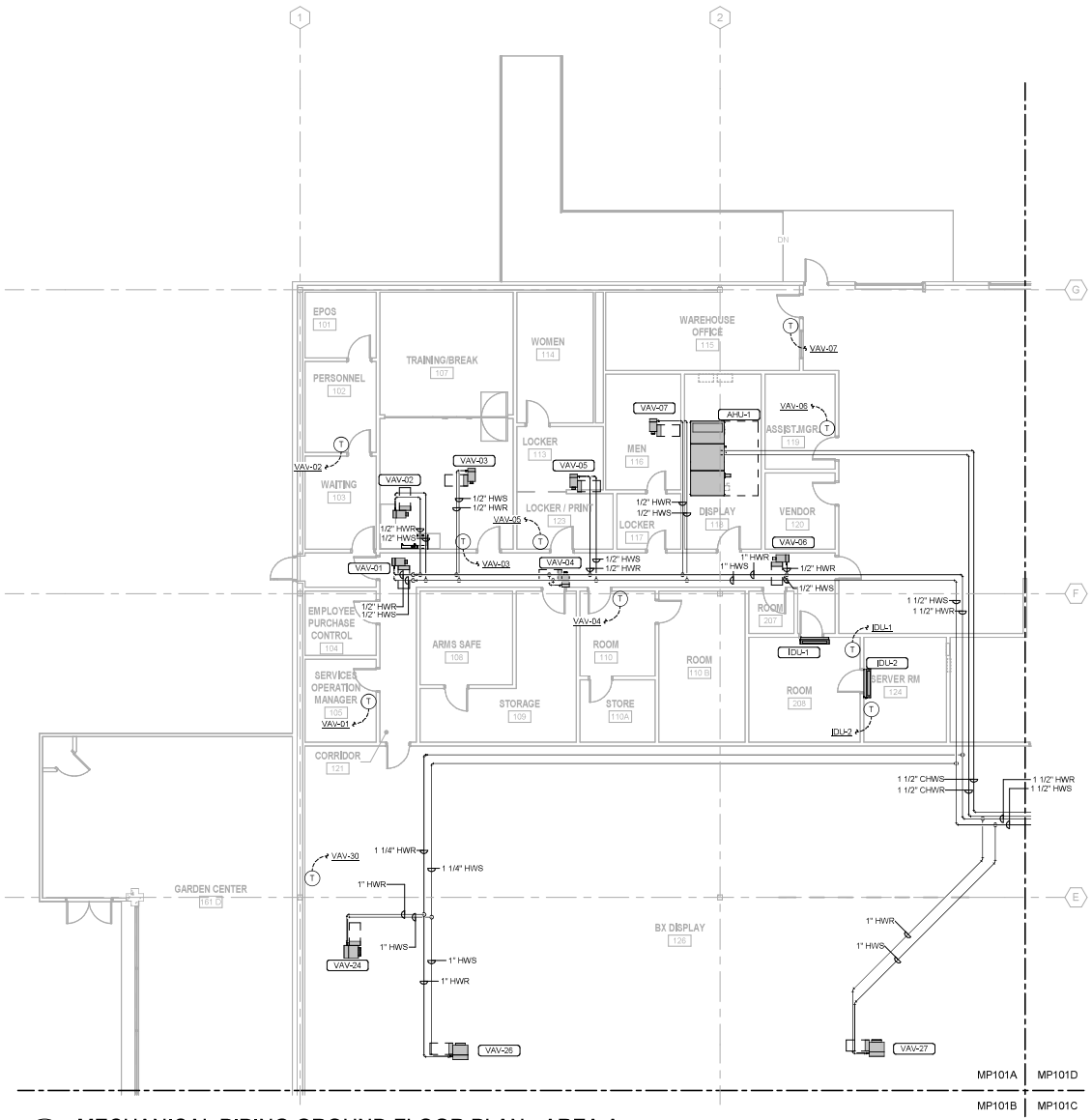
POND # 1220854

SHEET ID
MP101

ISSUED FOR CONSTRUCTION

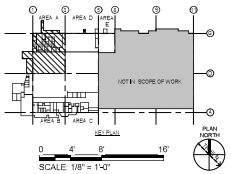
SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.



A1 MECHANICAL PIPING GROUND FLOOR PLAN - AREA A

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



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION NO.-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
GBA
Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Mall HVAC System, MCC
Construction Phase Replacement HVAC Equipment
Client Project Number: AJW24-1013D

MECHANICAL PIPING GROUND FLOOR PLAN - AREA A

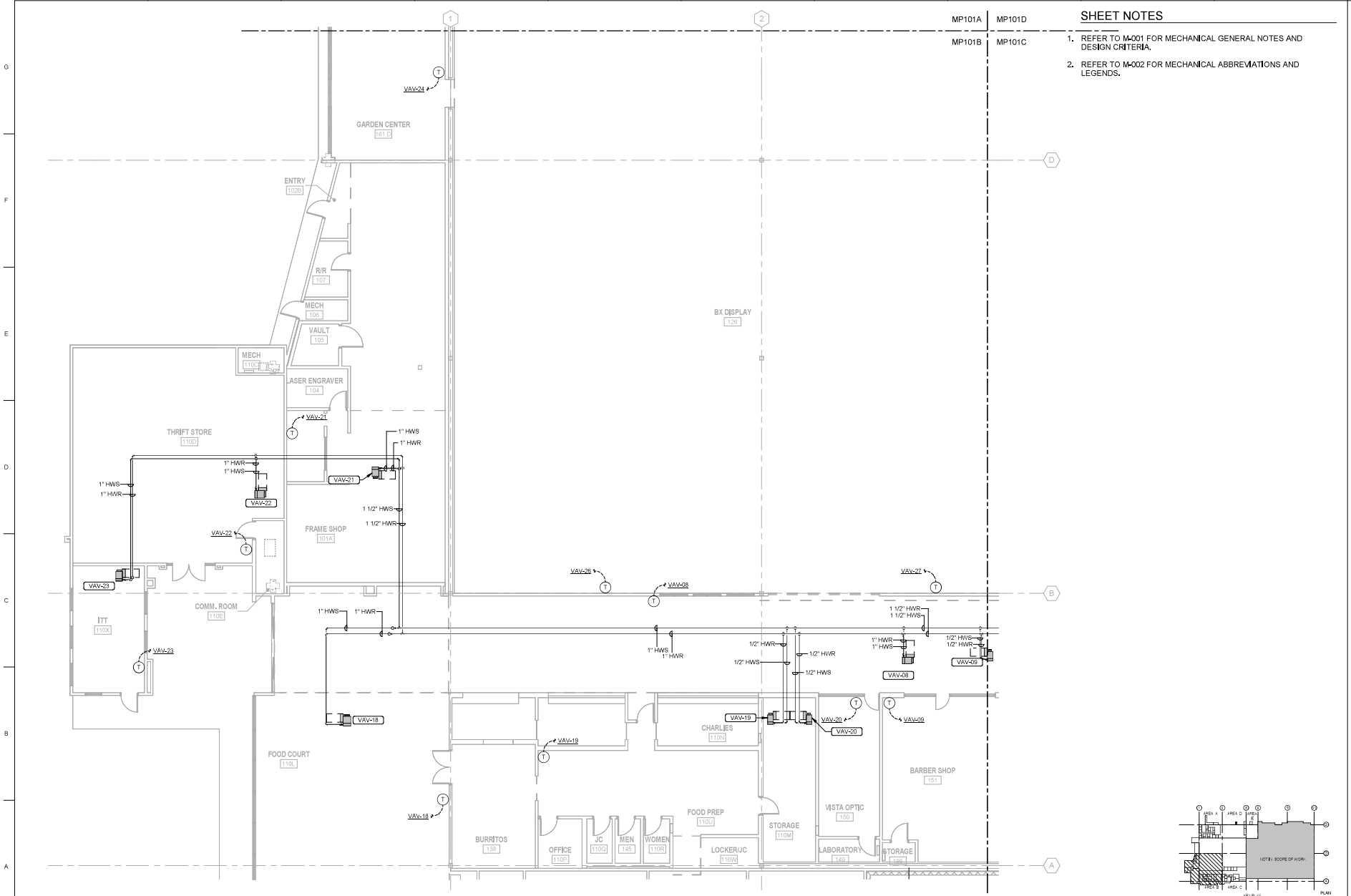
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SHEET ID
MP101A

ISSUED FOR CONSTRUCTION

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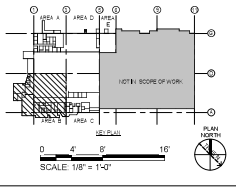
Plot Date: 9/13/2024 10:51:50 AM



SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

A1 MECHANICAL PIPING GROUND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: L. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION NO.-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Mall HVAC System, MCC
Construction Power Relocation and HVAC Equipment
Client Project Number: AJW24-1013D

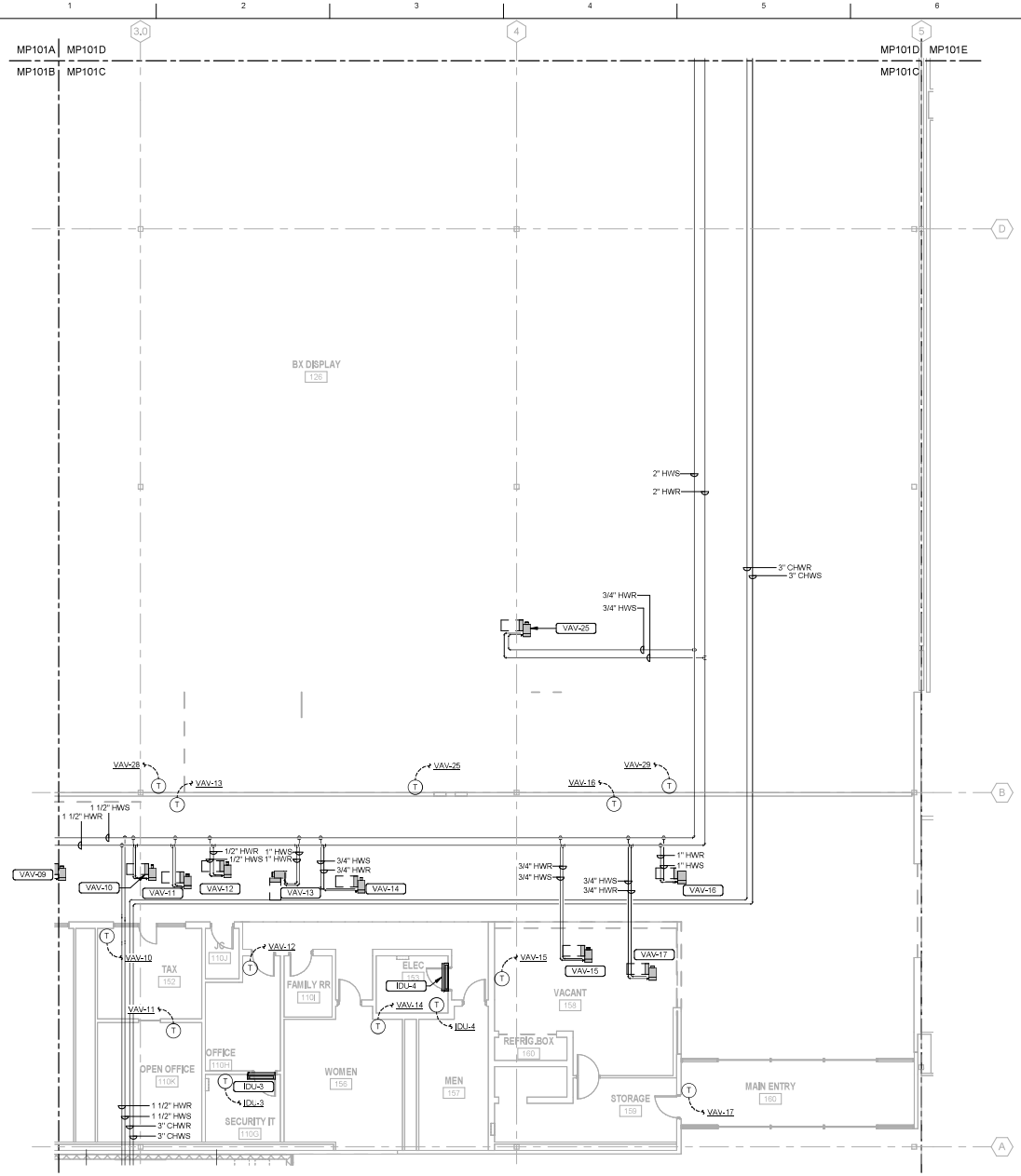
MECHANICAL PIPING GROUND FLOOR PLAN - AREA B

POND # 1220934

SHEET ID
MP101B

ISSUED FOR CONSTRUCTION

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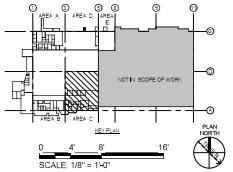


SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

A1 MECHANICAL PIPING GROUND FLOOR PLAN - AREA C

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



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Mall HVAC System, MCC
Construct Add'l Chilled Water Piping and HVAC Equipment
Client Project Number: AJW24-1013D

MECHANICAL PIPING GROUND FLOOR PLAN - AREA C

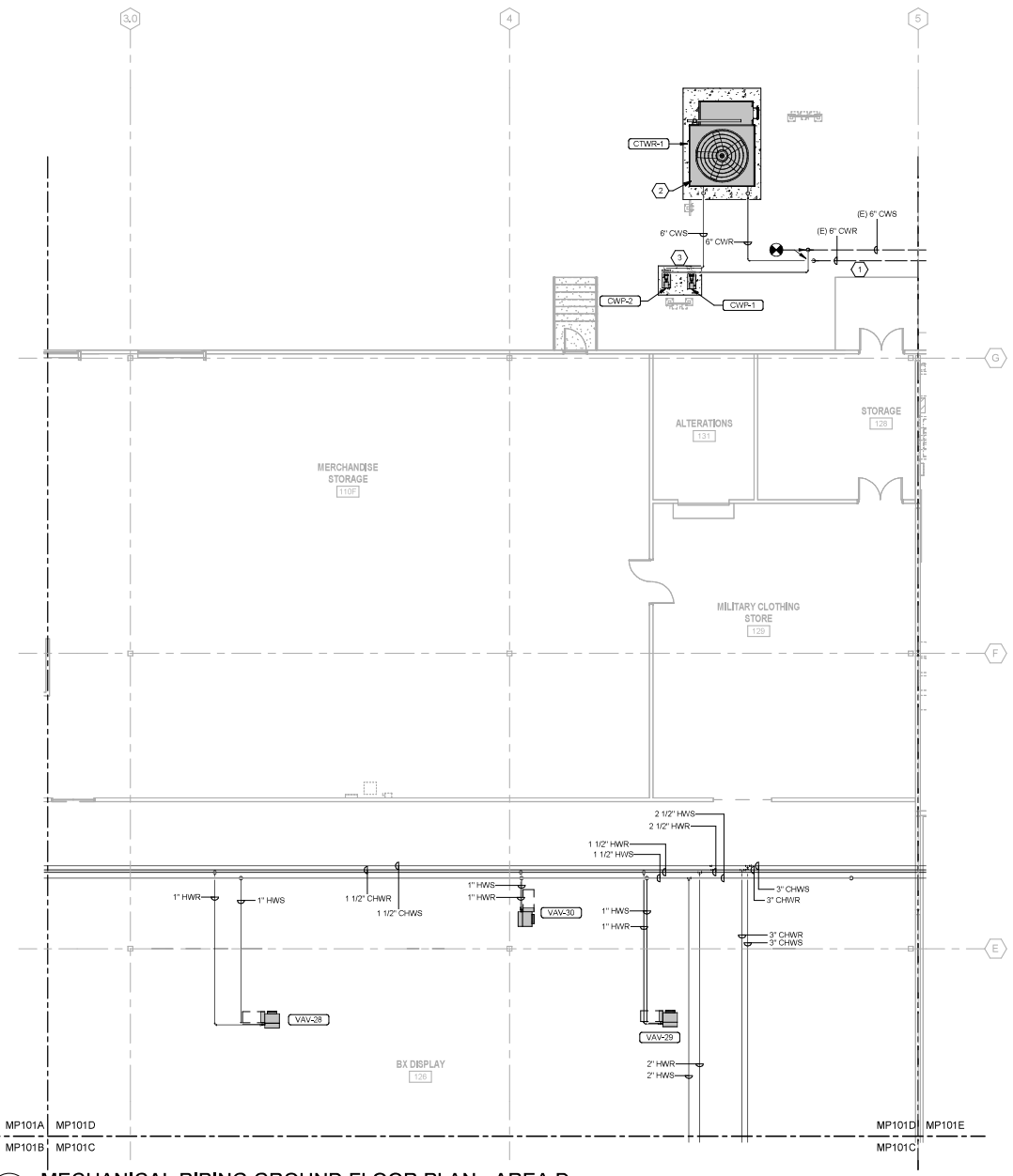
POND # 1220594

SHEET ID
MP101C

ISSUED FOR CONSTRUCTION

File Path: I:\...\M-101C Design\220594_Tyndall AFB BX Design\220594_Tyndall AFB_M_101C.rvt

Plot Date: 9/13/2024 10:51:57 AM



A1 MECHANICAL PIPING GROUND FLOOR PLAN - AREA D

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

SHEET NOTES

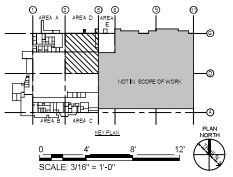
1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

KEYNOTES

1 UNDERGROUND PIPE EXISTING TO REMAIN AND BE REUSED. PROTECT DURING CONSTRUCTION.

2 CONNECT NEW COOLING TOWER TO EXISTING MAKEUP WATER LINE.

3 INSTALL NEW PUMPS ON EXISTING CONCRETE PADS.



SCALE: 3/16" = 1'-0"

325th CNL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION NO.-
CONTRACT NO.: -CONTRACT #-

MARK	DESCRIPTION	DATE

File Path: R:\...\Tyndall AFB Projects\220941_Tyndall AFB_Bld 950\...

Plot Date: 9/13/2024 10:52:02 AM

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Mall HVAC System, MCC
Construct New Chilled Water HVAC Equipment
Client Project Number: AJW24-1013D

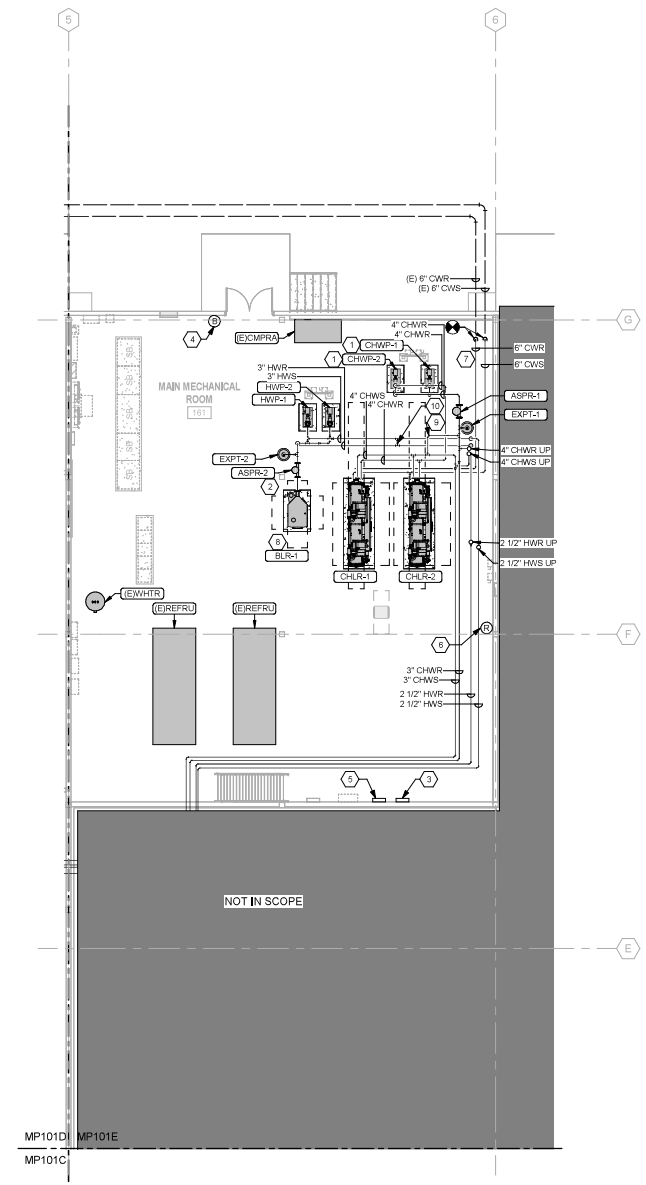
MECHANICAL PIPING GROUND FLOOR PLAN - AREA D

POND # 1220934

SHEET ID

MP101D

ISSUED FOR CONSTRUCTION



A1 MECHANICAL PIPING GROUND FLOOR PLAN - AREA E

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

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

KEYNOTES

1 REFER TO STRUCTURAL DRAWINGS FOR EQUIPMENT PAD DETAIL.

2 RECONNECT EXISTING MAKE-UP WATER FILL LINE TO NEW HYDRONIC SYSTEM.

3 LOCATE BOILER CONTROL PANEL. INSTALL SUCH THAT CLEAR ACCESS IS MAINTAINED.

4 PROVIDE BOILER EMERGENCY STOP BUTTON. PROVIDE SIGNAGE TO CLEARLY INDICATE PURPOSE.

5 LOCATE DDC CONTROL PANEL. INSTALL SUCH THAT CLEAR ACCESS IS MAINTAINED.

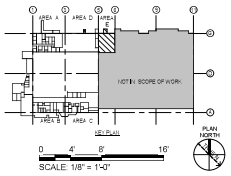
6 PROVIDE REFRIGERANT LEAK DETECTOR. IF THE DETECTED REFRIGERANT CONCENTRATION EXCEEDS THE MINIMUM SETPOINT, VISUAL AND AUDIBLE ALARMS MUST BE ACTIVATED IN THE MAIN MECHANICAL ROOM AND OUTSIDE OF THE ROOM ENTRANCE. THE BOILER MUST AUTOMATICALLY SHUT DOWN, AND THE EMERGENCY EXHAUST FAN MUST BE ACTIVATED. THE ALARMS MUST BE MANUAL RESET TYPE WITH THE RESET LOCATED WITHIN THE MAIN MECHANICAL ROOM. THE MINIMUM SETPOINT MUST BE NO GREATER THAN 1000 PPM IN ACCORDANCE WITH ASHRAE STANDARD 34. PROVIDE SIGNAGE AT EACH ALARM TO CLEARLY INDICATE MEANING.

7 PROVIDE BASKET STRAINER AND CHEMICAL TREATMENT SYSTEM FOR CONDENSER WATER LOOP.

8 EXTEND EXISTING GAS PIPING AND CONNECT 2" GAS LINE TO NEW BOILER.

9 4" CHILLED WATER BYPASS PIPE AND VALVE. REFER TO SHEETS M-702 AND M-801.

10 2 1/2" HOT WATER BYPASS PIPE AND VALVE. REFER TO SHEETS M-709 AND M-802.



MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
CHECKED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construct Add-on Shower Building and HVAC Equipment
Client Project Number: ALW24-1013D

MECHANICAL PIPING GROUND FLOOR PLAN - AREA E

POND # 1220594

SHEET ID
MP101E

ISSUED FOR CONSTRUCTION

File Path: I:\...\MP101E.rvt

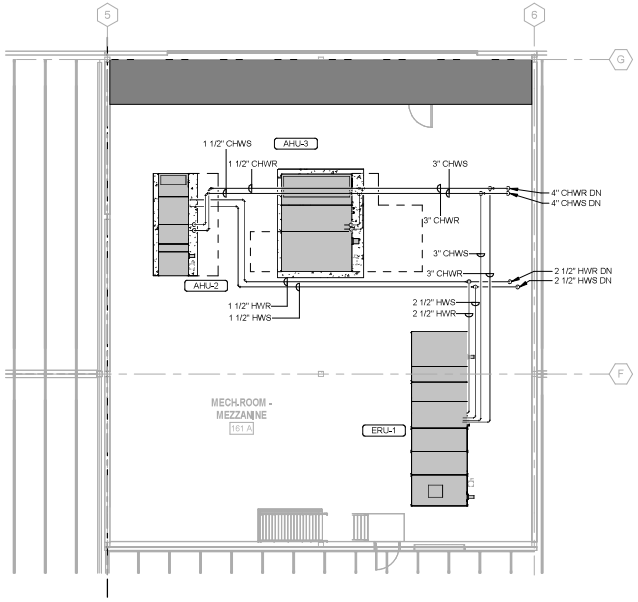
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SHEET NOTES

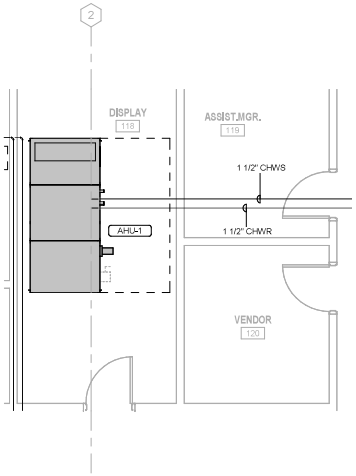
1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.

(#) KEYNOTES

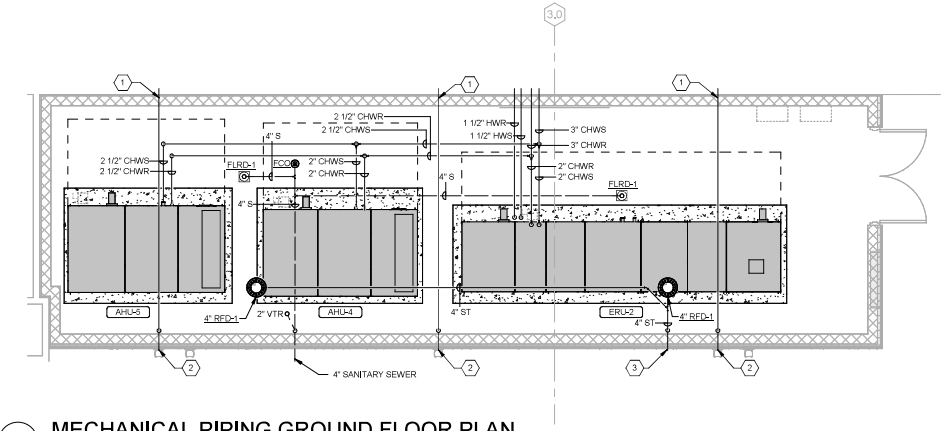
1. OVERFLOW ROOF DRAIN PIPING OVERHEAD FROM EXISTING BUILDING. PROVIDE NEW OVERFLOW ROOF DRAIN AT EXISTING ROOF. BASIS OF DESIGN: ZURN #Z100-W2 WITH 2" WATER DAM. FIELD VERIFY SIZE OF EXISTING PRIMARY ROOF DRAIN PIPING AND MATCH SIZE FOR OVERFLOW PIPING. SEE ARCHITECTURAL DWGS FOR LOCATION AND DETAILS OF EXISTING AND NEW DRAINS.
2. OVERFLOW ROOF DRAIN PIPING DOWN TO DOWNSPOUT NOZZLE. DOWNSPOUT NOZZLES ARE EXISTING TO BE RELOCATED. SEE ARCHITECTURAL DWGS FOR DETAILS.
3. PRIMARY ROOF DRAIN PIPING DOWN TO DOWNSPOUT NOZZLE. REFER TO ARCHITECTURAL PLANS FOR DETAILS.



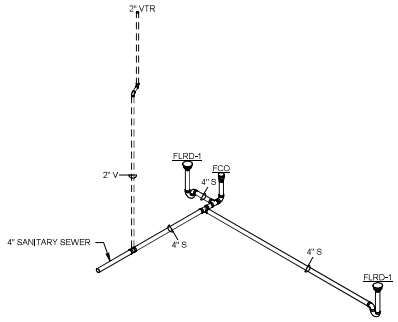
D1 MEZZANINE MECHANICAL ROOM PIPING PLAN
SCALE: 1/8" = 1'-0"



D5 MECHANICAL MEZZANINE AREA 'A' ENLARGED PIPING PLAN
SCALE: 1/4" = 1'-0"



A1 MECHANICAL PIPING GROUND FLOOR PLAN
SCALE: 1/4" = 1'-0"



A7 SANITARY RISER DIAGRAM
N.T.S

SCALE: 1/8" = 1'-0"
SCALE: 1/4" = 1'-0"
PLAN NORTH

MARK	DESCRIPTION	DATE

File Path: I:\...\Revit\...
Plot Date: 9/13/2024 10:52:09 AM

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

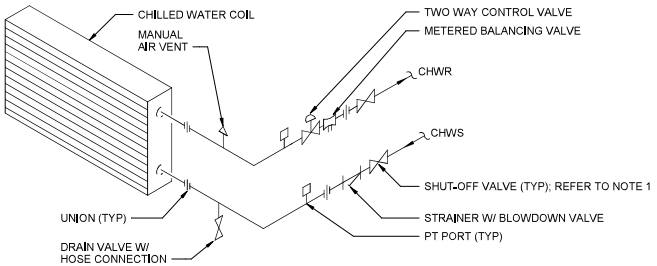
POND
Gall Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Commissioning Management
Client Project Number: AJW24-10130

UPPER MECHANICAL ROOM & MEZZANINE PIPING PLAN
POND # 1220854

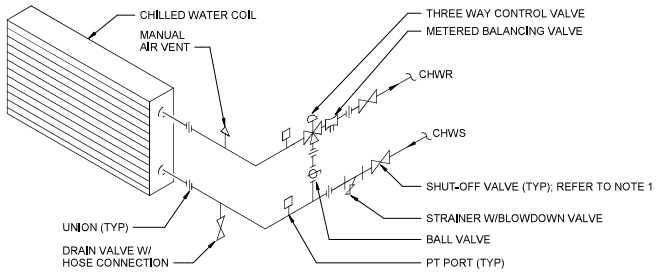
SHEET ID
MP102

ISSUED FOR CONSTRUCTION



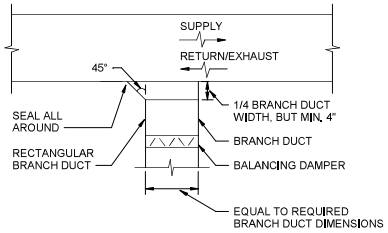
NOTE:
1. FOR PIPE SIZES 2" AND BELOW, USE BALL VALVE. FOR PIPE SIZES GREATER THAN 2", USE BUTTERFLY VALVE.

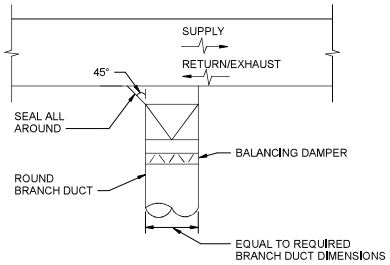
F1 CHILLED WATER COIL PIPING (2-WAY VALVE) DETAIL
N.T.S



NOTE:
1. FOR PIPE SIZES 2" AND BELOW, USE BALL VALVE. FOR PIPE SIZES GREATER THAN 2", USE BUTTERFLY VALVE.

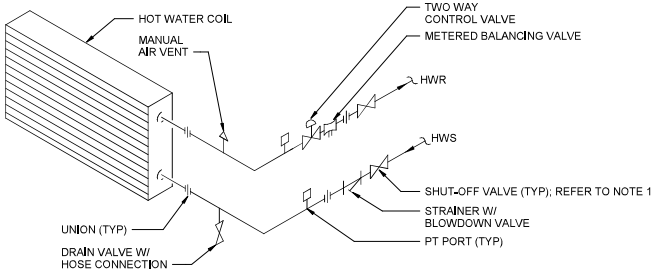
F4 CHILLED WATER COIL PIPING (3-WAY VALVE) DETAIL
N.T.S





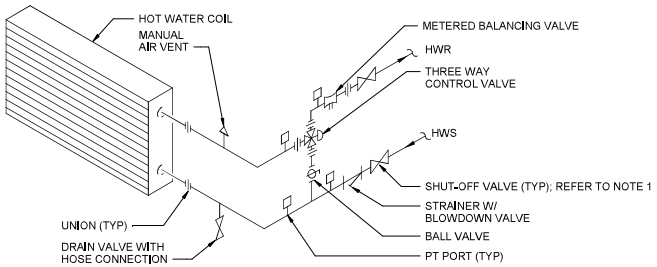
NOTE:
1. STANDARD BELLMOUTH FITTINGS (WITH RADIUS = DIAMETER / 5) MAY BE SUBSTITUTED FOR BRANCH FITTINGS.

D8 BRANCH DUCT CONNECTION DETAIL
N.T.S



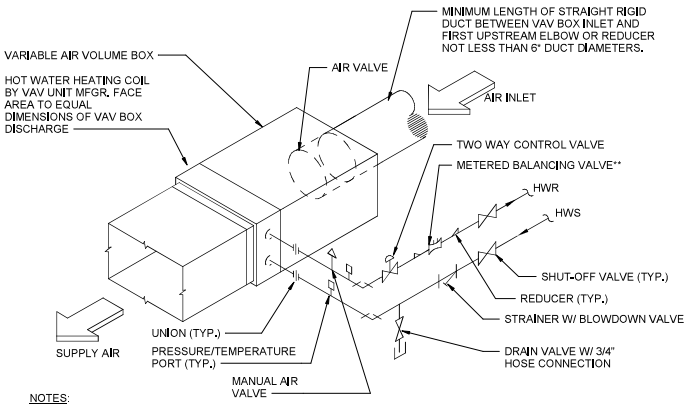
NOTE:
1. FOR PIPE SIZES 2" AND BELOW, USE BALL VALVE. FOR PIPE SIZES GREATER THAN 2", USE BUTTERFLY VALVE.

D1 HOT WATER COIL PIPING (2-WAY VALVE) DETAIL
N.T.S



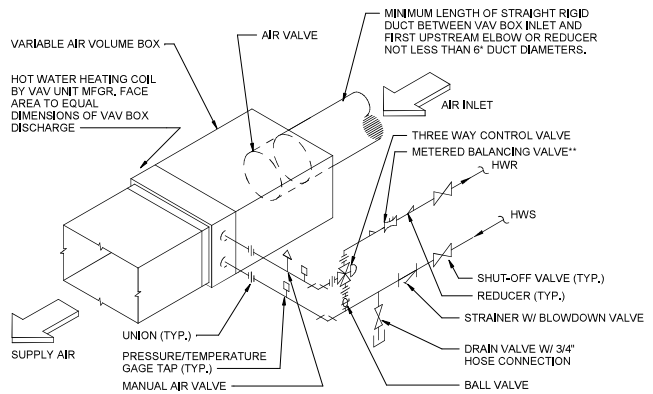
NOTE:
1. FOR PIPE SIZES 2" AND BELOW, USE BALL VALVE. FOR PIPE SIZES GREATER THAN 2", USE BUTTERFLY VALVE.

D4 HOT WATER COIL PIPING (3-WAY VALVE) DETAIL
N.T.S



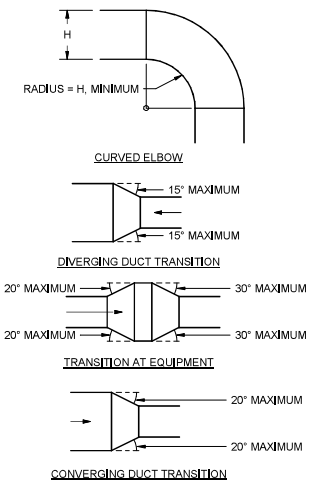
NOTES:
1. *PER UFC 3-410-01, SECTION 3-7.10 OR REFER TO MANUFACTURER'S RECOMMENDATIONS FOR MINIMUM STRAIGHT RIGID INLET LENGTH, WHICHEVER IS MORE STRINGENT.
2. **STRAIGHT LENGTHS OF UNOBSTRUCTED PIPE WITHOUT INLINE APPURTENANCES MUST BE INSTALLED UP/DOWNSTREAM OF METERED BALANCING VALVE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

A1 VAV WITH HOT WATER REHEAT COIL (2-WAY VALVE) DETAIL
N.T.S



NOTES:
1. *PER UFC 3-410-01, SECTION 3-7.10 OR REFER TO MANUFACTURER'S RECOMMENDATIONS FOR MINIMUM STRAIGHT RIGID INLET LENGTH, WHICHEVER IS MORE STRINGENT.
2. **STRAIGHT LENGTHS OF UNOBSTRUCTED PIPE WITHOUT INLINE APPURTENANCES MUST BE INSTALLED UP/DOWNSTREAM OF METERED BALANCING VALVE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

A4 VAV WITH HOT WATER REHEAT COIL (3-WAY VALVE) DETAIL
N.T.S



NOTE:
UNLESS NOTED OTHERWISE ON PLANS, ANGLES SHOWN TO APPLY.

A8 TYPICAL DUCT TRANSITION DETAIL
N.T.S

325th CNL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gault Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Activities, and Associated Equipment
Client Project Number: AJW24-1013D

MECHANICAL DETAILS

POND # 1220854

MARK	DESCRIPTION	DATE

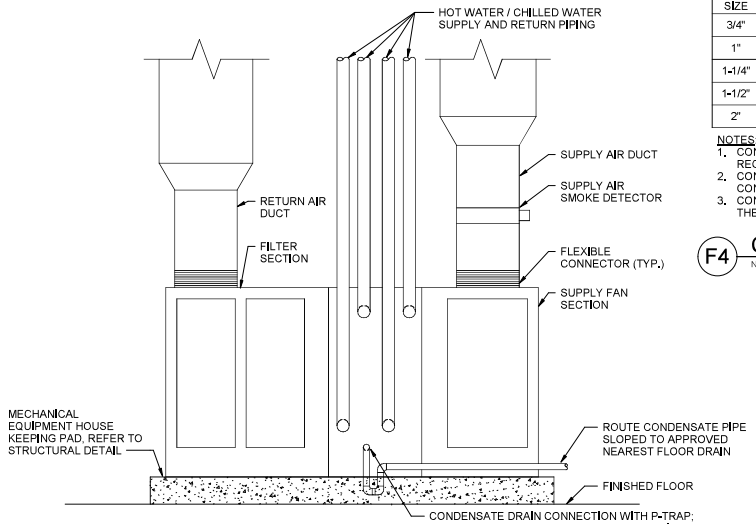
DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

File Path: I:\...
Plot Date: 9/13/2024 10:50:23 AM

SHEET ID
M-501

ISSUED FOR CONSTRUCTION



NOTES:

1. COORDINATE AHU PLACEMENT TO ALLOW CLEARANCE FOR COIL PULL.
2. MAINTAIN MINIMUM SERVICE CLEARANCES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

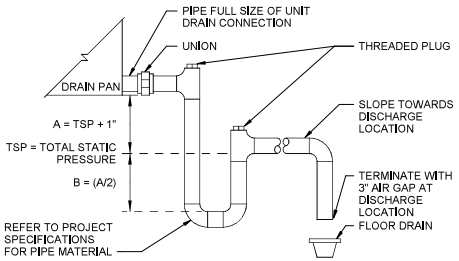
D1 4-PIPE AIR HANDLER DETAIL
N.T.S

TABLE: CONDENSATE DRAIN SIZING					
PIPE SIZE	UP TO 20 TONS	>=20 TO 40 TONS	>=40 TO 90 TONS	>=90 TO 125 TONS	>=125 TO 250 TONS
3/4"	X				
1"		X			
1-1/4"			X		
1-1/2"				X	
2"					X

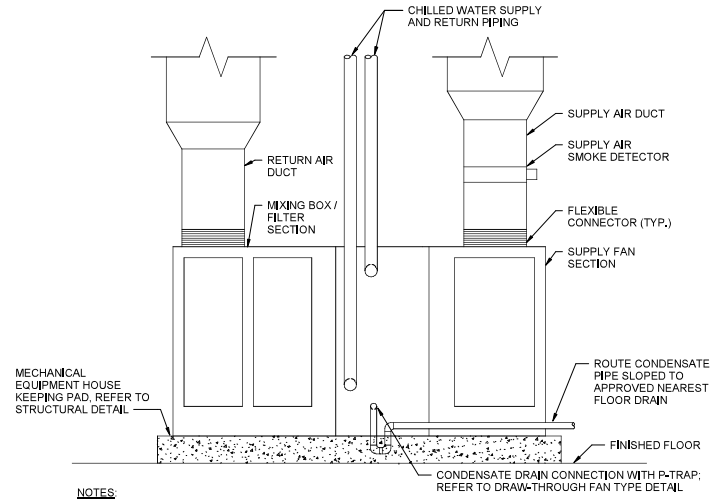
NOTES:

1. CONDENSATE DRAIN LINES MUST BE A MINIMUM OF 3/4" UNLESS MANUFACTURER'S RECOMMENDATION CALLS FOR LARGER PIPE.
2. CONDENSATE DRAIN LINES MUST BE MINIMUM SIZE OF ASSOCIATED EQUIPMENT CONNECTIONS.
3. CONDENSATE PIPING MUST BE INSULATED. REFER TO SPECIFICATIONS FOR THERMAL INSULATION REQUIREMENTS.

F4 CONDENSATE DRAIN SIZING DETAIL
N.T.S



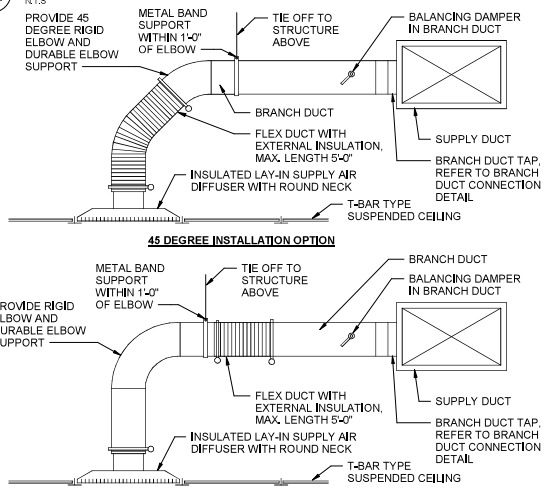
D4 CONDENSATE DRAIN (DRAW-THROUGH FAN) DETAIL
N.T.S



NOTES:

1. COORDINATE AHU PLACEMENT TO ALLOW CLEARANCE FOR COIL PULL.
2. MAINTAIN MINIMUM SERVICE CLEARANCES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

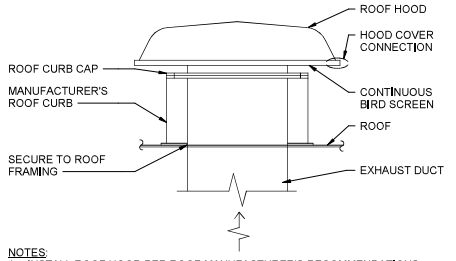
A1 CHILLED WATER AIR HANDLER DETAIL
N.T.S



NOTES:

1. NECK SIZE OF DIFFUSER TO MATCH FLEX DUCT SIZE UNLESS NOTED OTHERWISE ON PLANS.
2. COORDINATE DIFFUSER FRAME TYPE WITH CEILING.
3. FLEXIBLE RUN-OUT DUCT TO NOT EXCEED 5'-0" IN LENGTH AND ANGLE OF OFFSET TO NOT EXCEED 45 DEGREES.

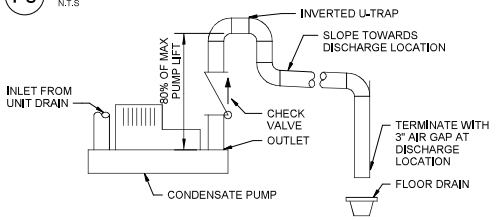
A4 FLEX DUCT CONNECTOR DETAIL
N.T.S



NOTES:

1. INSTALL ROOF HOOD PER ROOF MANUFACTURER'S RECOMMENDATIONS.

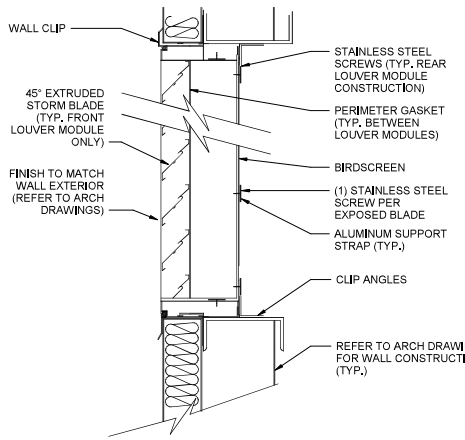
F8 EXHAUST ROOF HOOD - FLAT ROOF DETAIL
N.T.S



NOTE:

1. CONNECT UNIT DRAIN OUTLET TO CONDENSATE PUMP PER MANUFACTURER'S RECOMMENDATIONS. PIPE FULL SIZE OF UNIT CONNECTION.
2. PROVIDE CONDENSATE PUMP OUTLET DRAIN MATERIAL AND SIZE PER MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE INLINE CHECK VALVE AS SHOWN.

D8 CONDENSATE DRAIN (PUMPED) DETAIL
N.T.S



NOTES:

1. LOUVER ASSEMBLIES SHALL BE ASSEMBLED AT LOUVER MANUFACTURER FACTORY.
2. CLIP ANGLES AND EXTENDED SILL SHALL BE PROVIDED BY LOUVER MANUFACTURER.
3. INSTALLATION OF LOUVER SHALL BE IN ACCORDANCE WITH LOUVER MANUFACTURER'S RECOMMENDATIONS.

A8 LOUVER - HURRICANE-RATED DETAIL
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION NO.-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA
POND
gbi smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B&G BX and Wall HVAC System, MCC Construction and Replace Associated HVAC Equipment
Client Project Number: AJW24-10130

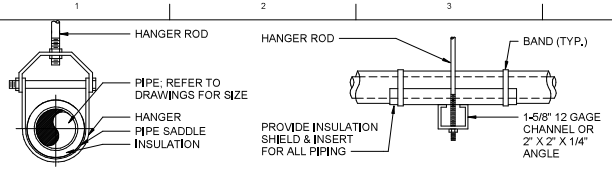
MECHANICAL DETAILS

POND # 1220564

SHEET ID
M-502

ISSUED FOR CONSTRUCTION

File Path: I:\...\Design\CDRL_Tyndall AFB_Plot Date: 9/13/2024 10:50:25 AM



MAXIMUM PIPE/TUBING SUPPORT SPACING (FEET)

NOMINAL SIZE (IN.)	UP TO 3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
STEEL PIPE	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
COPPER TUBING	5	6	7	8	8	9	10	12	13	14	16	18	19	-	-	-	-	-
HANGER ROD	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"	3/4"	3/4"	3/4"	7/8"	1"	1"	1"	1"	1-1/4"	1-1/4"

NOTE: FOR TRAPEZE HANGER, USE SPACING OF SMALLEST PIPE ON TRAPEZE.

F1 TYPICAL PIPE SUPPORT DETAIL
N.T.S

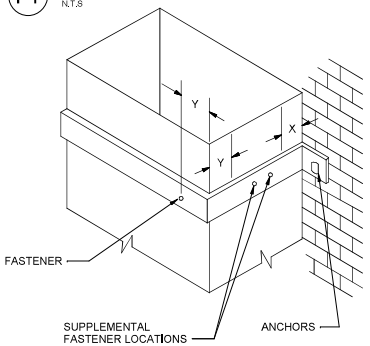


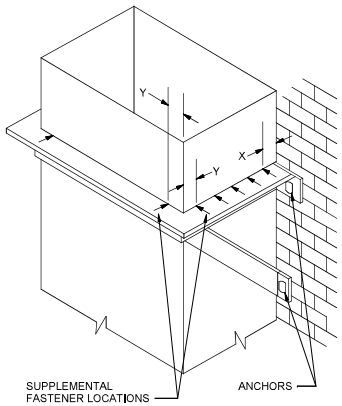
FIG. A - SUGGESTED SIZING

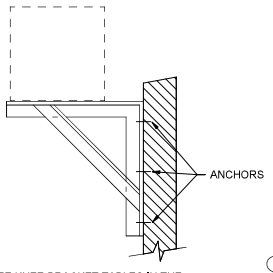
DUCT SIZE	BAND
18" x 12"	1 -1/2" x 16" GA
24" x 20"	1" x 1/8"

DUCT GAGE	ALLOWABLE LOAD PER FASTENER*
28, 26	25 LB
24, 22, 20	35 LB
18, 16	50 LB

* WELD, BOLT, OR NO. 8 SCREW (MIN.) DEVIATION PERMITTED BY OTHER ANALYSIS. X=1", Y=2"; ADD OTHER TO ACCOMMODATE LOAD. MINIMUM OF 3 ON 24" WIDTH AND UP. ADD ALONG SIDES NEAREST ANCHORS.

FIGURE A





SEE KNEE BRACKET TABLES IN THE SMACNA ROUND INDUSTRIAL STANDARDS.

FIG. B - SUGGESTED SIZING

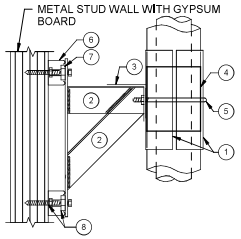
DUCT SIZE	ANGLE
30" x 12"	1" x 1" x 1/8"
36" x 18"	1" x 1" x 1/8"
42" x 24"	1-1/4" x 1-1/4" x 1/8"
48" x 30"	1-1/4" x 1-1/4" x 1/8"

FIGURE B

NOTES:
1. BRACKETS ARE SIZED FOR 12 FEET OF DUCT MAXIMUM.
2. LOCATE DUCTS AGAINST WALL OR MAXIMUM OF 2" AWAY FROM WALL.
3. EACH WALL ANCHOR TO SATISFY THE FOLLOWING CRITERIA UNLESS OTHER ANALYSIS IS MADE:
   A. TENSILE LOAD = 3/8 x DUCT WEIGHT; SAFETY FACTOR 4.
   B. SHEAR LOAD x 1/2 x DUCT WEIGHT; SAFETY FACTOR 4.

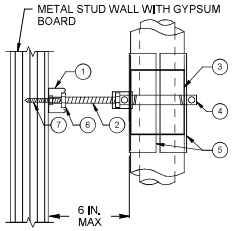
(DETAIL FROM SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, 3RD EDITION)

A1 RECTANGULAR DUCT SUPPORT FROM WALL DETAIL
N.T.S



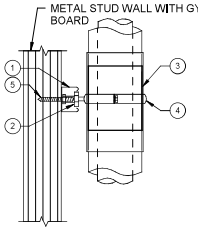
KEYNOTES:
1. PROVIDE TWO MSS-SP-69 TYPE 40 PROTECTIVE SHIELDS IN ACCORDANCE WITH MSS SP-58
2. 9" X 9" X 2" MIN. WELDED BRACKET IN COMPLIANCE WITH MSS-SP-69 TYPE 32
3. 1" X 1" (MIN.) ANGLE IRON, WELDED TO BRACKET
4. INSULATION INSERT BETWEEN SHIELD AND PIPE MUST BE MSS-SP-69 TYPE 39 FILLED WITH INSULATION; AT CONTRACTOR'S OPTION, PROVIDE EITHER CELLULAR GLASS OR CALCIUM SILICATE INSULATION THAT COVERS 360 DEGREE ARC OF PIPE IN LIEU OF TYPE 39 INSERT. INSERT OR INSULATION INSERT MUST BE THE SAME THICKNESS AS THE PIPE INSULATION
5. MSS-SP-69 TYPE 24 U-BOLT; SECURE TO ANGLE IRON
6. 1-1/4" UNISTRUT FRAME, LENGTH TO EXTEND TO TWO METAL STUDS, 14 GAUGE STAINLESS STEEL (TYP.)
7. CHANNEL NUTS (WITH SPRING, TYP.)
8. ATTACH UNISTRUT TO METAL STUDS WITH METAL STUD SCREWS PER MANUFACTURER'S RECOMMENDATIONS. ATTACH WELDED BRACKET TO UNISTRUT WITH BOLTS AND CHANNEL NUTS (TYP.)

FOR PIPES GREATER THAN OR EQUAL TO 4 IN. Ø NOMINAL



KEYNOTES:
1. 1-1/4" UNISTRUT FRAME, LENGTH TO EXTEND TO TWO METAL STUDS, 14 GAUGE STEEL (TYP.)
2. 3/8" THREADED ROD WITH 3/8" THREADED ROD EYE COUPLING SECURED TO NUT PLATE AND PIPE CLAMP
3. INSULATION INSERT BETWEEN SHIELD AND PIPE MUST BE MSS-SP-69 TYPE 39 FILLED WITH INSULATION; AT CONTRACTOR'S OPTION, PROVIDE EITHER CELLULAR GLASS OR CALCIUM SILICATE INSULATION THAT COVERS 360 DEGREE ARC OF PIPE IN LIEU OF TYPE 39 INSERT. INSERT OR INSULATION INSERT MUST BE THE SAME THICKNESS AS THE PIPE INSULATION
4. MSS-SP-69 TYPE 8 PIPE CLAMP; SECURE PER MANUFACTURER'S RECOMMENDATIONS
5. PROVIDE TWO MSS-SP-69 TYPE 40 PROTECTIVE SHIELDS IN ACCORDANCE WITH MSS SP-58
6. CHANNEL NUTS (WITH SPRING)
7. SECURE UNISTRUT TO METAL STUDS WITH SCREW

FOR PIPES LESS THAN 4 IN. Ø NOMINAL WITH REQUIRED OFFSET FROM WALL

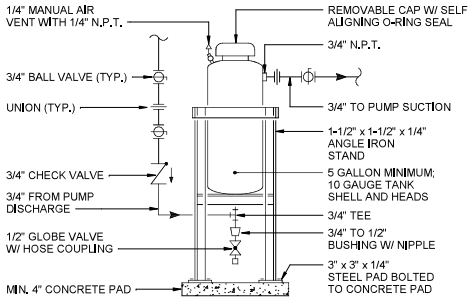


KEYNOTES:
1. 1-1/4" UNISTRUT FRAME, LENGTH TO EXTEND TO TWO METAL STUDS, 14 GAUGE STAINLESS STEEL
2. CHANNEL NUTS (WITH SPRING)
3. INSULATION INSERT BETWEEN SHIELD AND PIPE MUST BE MSS-SP-69 TYPE 39 FILLED WITH INSULATION; AT CONTRACTOR'S OPTION, PROVIDE EITHER CELLULAR GLASS OR CALCIUM SILICATE INSULATION THAT COVERS 360 DEGREE ARC OF PIPE IN LIEU OF TYPE 39 INSERT. INSERT OR INSULATION INSERT MUST BE THE SAME THICKNESS AS THE PIPE INSULATION
4. OFFSET PIPE CLAMP; SECURE TO UNISTRUT WITH CHANNEL NUTS
5. SECURE UNISTRUT TO METAL STUDS WITH SCREW

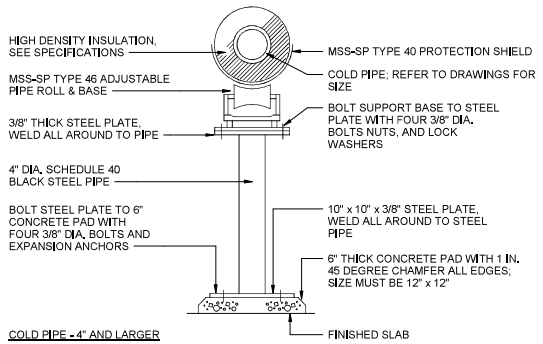
FOR PIPES LESS THAN 4 IN. Ø NOMINAL, WITH NO REQUIRED OFFSET FROM WALL

NOTES:
1. THIS DETAIL WITH PIPE INSULATION AND PROTECTIVE JACKET TO ALSO APPLY TO NON-INSULATED PIPES. FOR NON-INSULATED PIPES, PROVIDE PIPE SHIELDS BETWEEN PIPE AND U-BOLT / PIPE CLAMP.
2. UTILIZE ALL ATTACHMENT LOCATIONS.
3. FOR INSTALLATIONS WITH MULTIPLE VERTICAL PIPES SECURED TO A SINGLE PIECE OF UNISTRUT, UNISTRUT LENGTH MUST BE EXTENDED APPROPRIATELY. SECURE UNISTRUT AT EACH METAL STUD (MINIMUM TWO METAL STUDS).

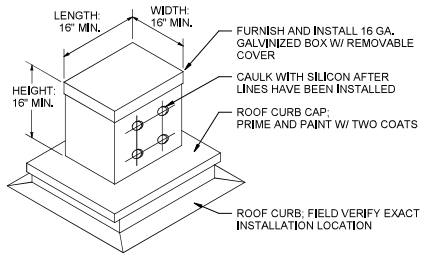
A4 VERTICAL PIPE SUPPORT DETAIL
N.T.S



E8 SHOT FEEDER DETAIL
N.T.S



C8 ABOVE GROUND CHILLED WATER PIPING DETAIL
N.T.S



NOTE:
1. FIELD VERIFY NUMBER OF REFRIGERANT LINE OPENINGS.
2. EXTEND BOX LENGTH AND WIDTH DIMENSIONS IN INCREMENTS OF 2" AS REQUIRED TO ACCOMMODATE THE NUMBER OF REFRIGERANT LINE OPENINGS.

A8 REFRIGERANT PIPING CURB DETAIL
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B650 BX and Wall HVAC System, MCC Construction and Associated Equipment
Client Project Number: AJW24-10130

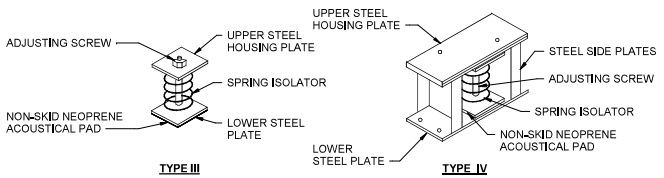
MECHANICAL DETAILS

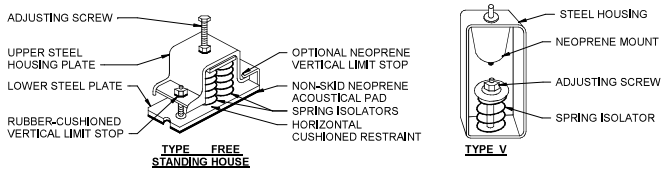
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SHEET ID
M-503

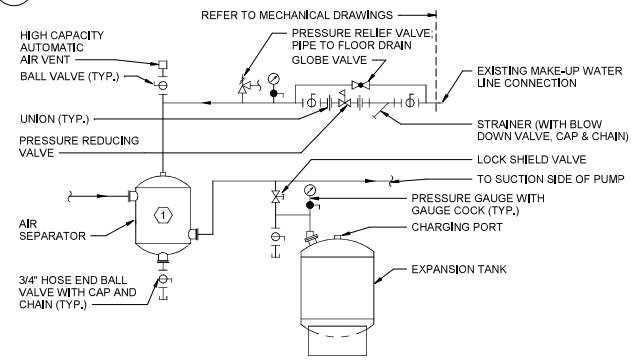
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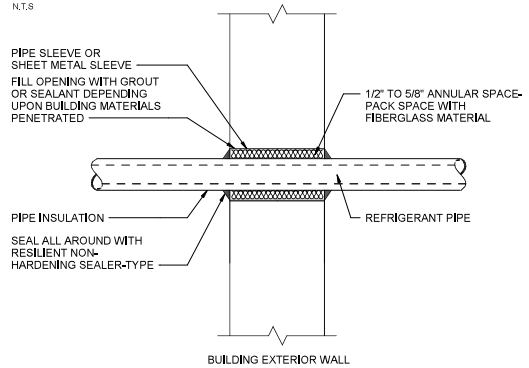


E1 SPRING TYPE ISOLATORS DETAIL
N.T.S

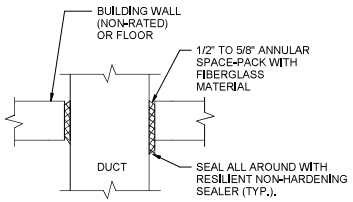


NOTES:
1. DO NOT PROVIDE INTERNAL STRAINER FOR AIR SEPARATOR.

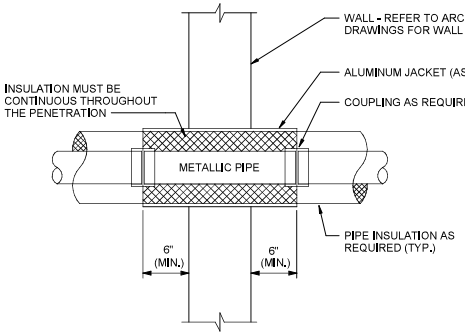
C1 AIR SEPARATOR AND EXPANSION TANK ASSEMBLY DETAIL
N.T.S



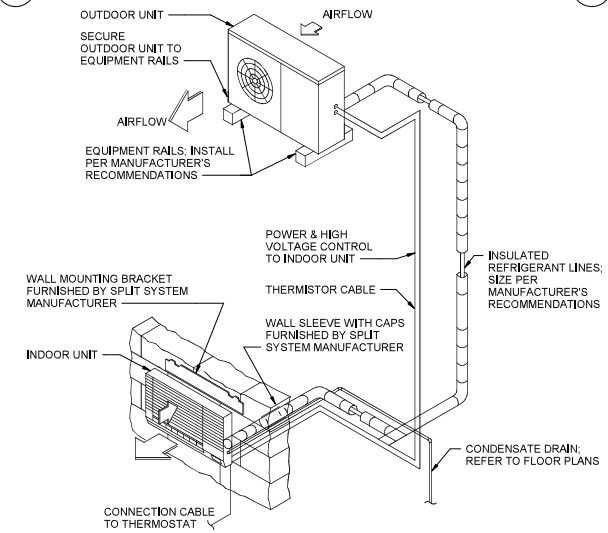
A1 REFRIGERANT PIPE EXTERIOR WALL PENETRATION DETAIL
N.T.S



F4 DUCT PENETRATION DETAIL
N.T.S

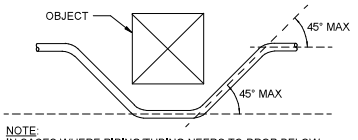


D4 TYPICAL PIPE PENETRATION DETAIL
N.T.S



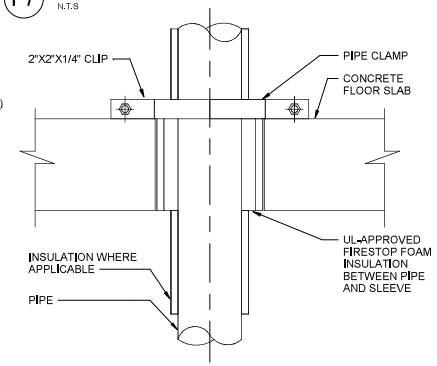
NOTE:
1. MOUNT UNIT CENTERED ABOVE DOOR AS SHOWN ON THE FLOOR PLANS. MAINTAIN MINIMUM CLEARANCES TO ADJACENT OBJECTS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

A4 DUCTLESS SPLIT SYSTEM DETAIL
N.T.S

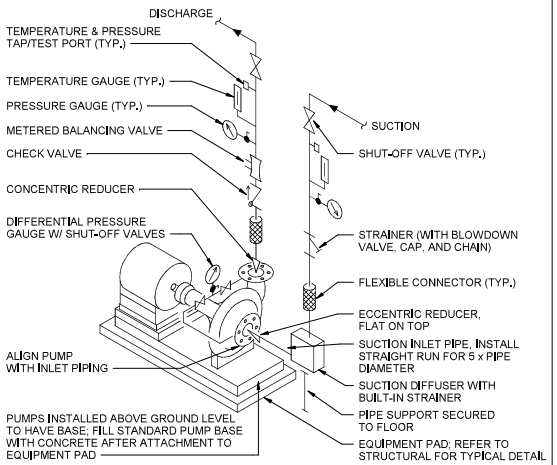


NOTE:
IN CASES WHERE PIPING/TUBING NEEDS TO DROP BELOW OBJECTS, (BEAMS, DUCTS, CONDUITS, PIPES ETC.) PIPING IS TO HAVE LARGE RADIUS TURNS (NO MORE THAN 45 DEGREES PER FITTING) TO PREVENT TRAPPING OF LIQUID. THIS CASE MUST NOT BE USED FOR DRAINAGE SYSTEMS INCLUDING (BUT NOT LIMITED TO) CONDENSATE PIPING.

F7 PIPING OFFSET BELOW OBJECT DETAIL
N.T.S



D7 PIPE FLOOR PENETRATION DETAIL
N.T.S



A7 END SUCTION PUMP DETAIL
N.T.S

MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbl Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Commissioning Equipment
Client Project Number: AUW24-1013B

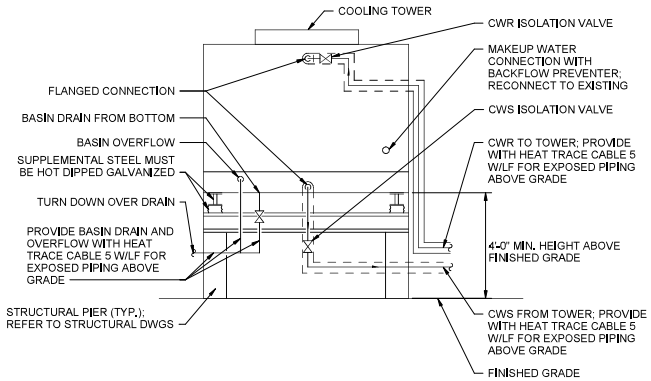
MECHANICAL DETAILS

POND # 1220584

SHEET ID
M-504

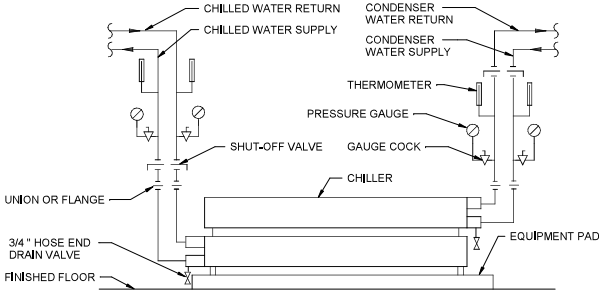
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ISSUED FOR CONSTRUCTION

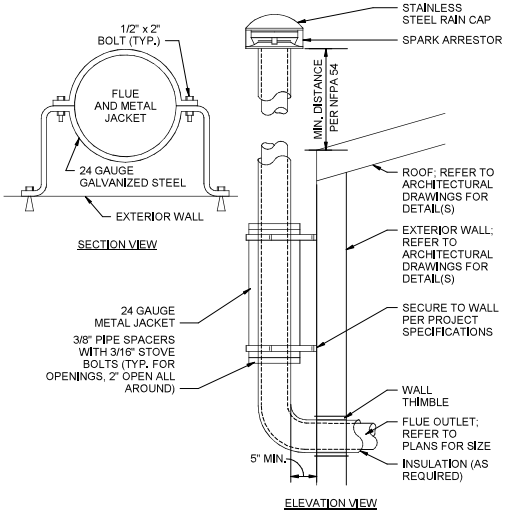


NOTE:
1. COORDINATE LOCATION OF COOLING TOWER SUPPORT PIERS WITH ACTUAL TOWER INSTALLED. PROVIDE ALL SUPPLEMENTAL STEEL REQUIRED TO ADAPT STRUCTURALLY TO TOWER SUPPORT SYSTEM.

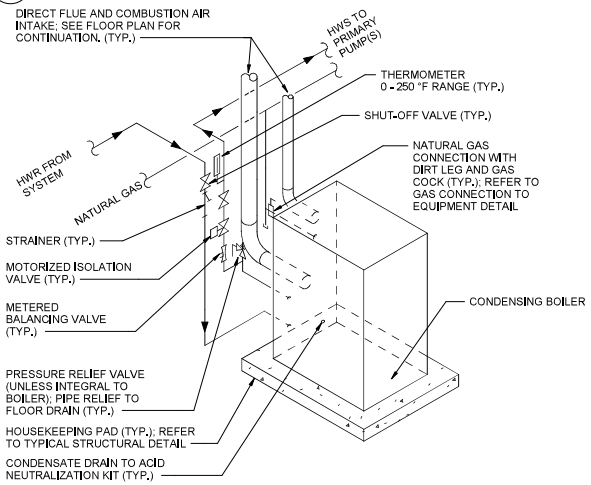
E1 COOLING TOWER DETAIL
N.T.S



E4 WATER-COOLED CHILLER DETAIL
N.T.S

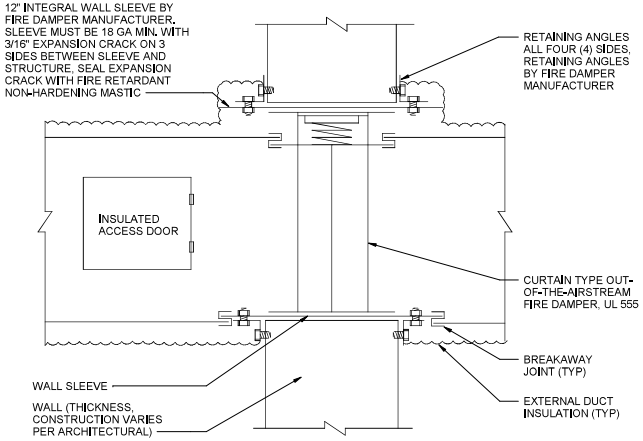


E8 FLUE STACK TERMINATION DETAIL
N.T.S



NOTES:
1. ARRANGE SHELL DRAIN VALVE AND CONDENSATE HOSE TO PERMIT THE FLUIDS TO DRAIN FREELY BY GRAVITY TO A FLOOR DRAIN. PIPE RELIEF VALVE DISCHARGE TO THE NEAREST FLOOR DRAIN.
2. THIS IS A TYPICAL INSTALLATION DRAWING. CONSULT LOCAL CODES AND AUTHORITIES PRIOR TO INSTALLATION. CONFIRM PIPE CONNECTION LOCATIONS WITH EQUIPMENT PROVIDED.
3. LOCATE WATER INLET AND OUTLET FITTINGS (I.E. UNIONS, ELBOWS, ETC.) A MINIMUM OF 0'-6" FROM HEATER FITTINGS TO PREVENT INTERFERENCE WITH REMOVAL OF BOILER PANELS AND COVERS. PIPING AND ELECTRICAL CONNECTIONS (SERVICE SWITCHES, CONDUIT BOXES) MUST LIKEWISE BE 0'-6" AWAY FROM SIDE PANELS.
4. WHEN AVAILABLE GAS PRESSURE IS GREATER THAN 14" W.C. INSTALL A LOCK-UP STYLE REGULATOR DOWNSTREAM OF THE MANUAL SHUTOFF VALVE TO BRING THE GAS PRESSURE DOWN TO 14" W.C. OR LESS.
5. FOR PROPER CONDENSATE DRAINAGE TO THE ACID NEUTRALIZER TANK, ELEVATE THE BOILER AND CONDENSATE TRAP HIGHER THAN 0'-4" ABOVE THE FLOOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE COMBUSTION INLET AND EXHAUST OUTLET PER MANUFACTURER'S RECOMMENDATIONS.

A1 CONDENSING BOILER DETAIL
N.T.S



NOTE:
1. VERIFY FIRE PROTECTION RATING OF WALL IN WHICH FIRE DAMPER IS TO BE INSTALLED. COMPLY WITH FIRE PROTECTION RATING OF FIRE DAMPER AS LISTED IN NFPA 90A 5.4.1.

A4 FIRE DAMPER DETAIL
N.T.S

TABLE 1
STRAP HANGERS (PAIR) SPACED

W+D MAX.	10'-0" MAX.	8'-0" MAX.	5'-0" OR LESS
72"	1"x22 GA	1"x22 GA	1"x22 GA
96"		1"x20 GA	1"x22 GA
120"		1"x18 GA	1"x22 GA
168"			1"x18 GA
192"			1"x16 GA
192+"	SPECIAL ANALYSIS REQUIRED		

TABLE 2
ALLOWABLE HANGER LOAD MAX.

STRAPS	LBS.	RODS	LBS.
2-1"X22 GA	520	2-1/4" DIA.	540
2-1"X20 GA	640	2-3/8" DIA.	1360
2-1"X18 GA	840	2-1/2" DIA.	2500
2-1"X16 GA	1400	2-5/8" DIA.	4000
		2-3/4" DIA.	6000

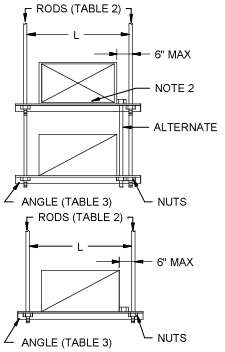


TABLE 3
TRAPEZE ANGLE LOAD MAX.

L	2"x2"x1/4"	2-1/2"x2-1/2"x1/4"
36"	1200 LBS	1940 LBS
48"	1160 LBS	1900 LBS
60"	1060 LBS	1800 LBS
72"	900 LBS	1640 LBS
84"	660 LBS	1400 LBS
96"	320 LBS	1060 LBS

NOTES:
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION BUT NO EXTERNAL LOAD.
2. PROVIDE HIGH DENSITY INSERT AT TRAPEZE FOR INSULATED DUCTS.

A8 RECTANGULAR DUCT HANGER DETAIL
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Control Modifications and Electrical Equipment
Client Project Number: AJW21-1013D

MECHANICAL DETAILS

POND # 1220854

SHEET ID
M-505

ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 10:50:29 AM
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AIR HANDLING UNIT CHILLED WATER SCHEDULE

ID	NAME	NO	MANUFACTURER	MODEL NO	SUPPLY AIR: MAX AIRFLOW (CFM)	SUPPLY AIR: # OF FANS	SUPPLY AIR: EXTERNAL SP (IN. WG.)	SUPPLY AIR: POWER EACH (HP)	OUTSIDE AIR: DESIGN AIRFLOW (CFM)	CHILLED WATER COOLING COIL DATA: CAPACITY: TOTAL (BTUH)	CAPACITY: SENSIBLE (BTUH)	AIRSIDE: EAT (db °F)	AIRSIDE: EAT (wb °F)	AIRSIDE: LAT (db °F)	AIRSIDE: LAT (wb °F)	AIRSIDE: FACE VELOCITY (FPM)	WATERSIDE: FLOW (GPM)	WATERSIDE: EWT (°F)	WATERSIDE: LWT (°F)	WATERSIDE: PD (FT. H20)	FILTER: EFFC (MERV)	UNIT WEIGHT (LBS)	ELECTRICAL DATA: VOLTAGE	ELECTRICAL DATA: NO. OF POLES	REMARKS
AHU-1	WAREHOUSE MEZZ.	-	CARRIER	39MN08	1865	1	1.25	1.5	0	70555	50880	80.0	67.0	54.3	54.2	244	9.4	42	57	0.4	8	1388	460	3	ALL
AHU-3	MECH MEZZ.	161A	CARRIER	39MN40	19605	1	3.30	25	0	796990	554510	80.0	67.0	52.8	52.8	490	106.0	42	57	12.5	8	4928	460	3	ALL
AHU-4	MECH ROOM	402	CARRIER	39MN10	4375	1	1.50	5	0	165340	118610	80.0	67.0	54.4	54.2	441	22.0	42	57	2.7	8	1640	460	3	ALL
AHU-5	MECH ROOM	402	CARRIER	39MN12	5550	1	1.60	5	0	210110	150620	80.0	67.0	54.4	54.2	439	27.9	42	57	2.0	8	1835	460	3	ALL

REMARKS:
1. FAN MOTOR VFD TO BE PROVIDED BY MANUFACTURER. (1) VFD PER FAN MOTOR.
2. MANUFACTURER PROVIDED DISCONNECT.
3. PROVIDE NEMA PREMIUM EFFICIENCY MOTORS.
4. PROVIDE BUILDING AUTOMATION SYSTEM (BAS) INTERFACE: MONITORING AND CONTROLS.
5. UNIT CASING SHALL BE DOUBLE WALL WITH INTERNAL INSULATION AND SOLID INNER WALL.
6. EXTERNAL STATIC PRESSURE DOES NOT INTERNAL LOSSES INCLUDING COIL, CASING, OR FILTER LOSSES.
7. DUCT SMOKE DETECTORS PROVIDED BY FIRE ALARM CONTRACTOR. INSTALLED BY MECHANICAL, AND WIRED BY ELECTRICAL.
8. REFER TO PLAN DRAWINGS FOR DUCT CONNECTION CONFIGURATIONS.
9. SINGLE POINT POWER.

AIR HANDLING UNIT 4-PIPE SCHEDULE

ID	NAME	NO	MANUFACTURER	MODEL NO	SUPPLY AIR: MAX. AIRFLOW (CFM)	SUPPLY AIR: # OF FANS	SUPPLY AIR: EXTERNAL SP (IN. WG.)	SUPPLY AIR: POWER EACH (HP)	OUTSIDE AIR: DESIGN AIRFLOW (CFM)	CHILLED WATER COOLING COIL DATA: CAPACITY: TOTAL (BTUH)	CAPACITY: SENSIBLE (BTUH)	AIRSIDE: EAT (db °F)	AIRSIDE: EAT (wb °F)	AIRSIDE: LAT (db °F)	AIRSIDE: LAT (wb °F)	AIRSIDE: FACE VELOCITY (FPM)	WATERSIDE: FLOW (GPM)	WATERSIDE: EWT (°F)	WATERSIDE: LWT (°F)	WATERSIDE: PD (FT. H20)	HOT WATER HEATING COIL DATA: CAPACITY: TOTAL (BTUH)	AIRSIDE: DESIGN AIRFLOW (CFM)	AIRSIDE: EAT (db °F)	AIRSIDE: LAT (db °F)	WATERSIDE: FLOW (GPM)	WATERSIDE: EWT (°F)	WATERSIDE: LWT (°F)	WATERSIDE: PD (FT. H20)	FILTER: EFFC (MERV)	UNIT WEIGHT (LBS)	ELECTRICAL DATA: VOLTAGE	ELECTRICAL DATA: NO. OF POLES	REMARKS
AHU-2	MECH MEZZ.	161A	CARRIER	39MN06	1585	1	1.00	1	0	57340	42280	80.0	67.0	54.8	54.8	269	7.6	42	57	0.3	27040	860	66.0	94.5	2.7	130	110	0.0	8	1465	460	3	ALL

REMARKS:
1. FAN MOTOR VFD TO BE PROVIDED BY MANUFACTURER. (1) VFD PER FAN MOTOR.
2. MANUFACTURER PROVIDED DISCONNECT.
3. PROVIDE NEMA PREMIUM EFFICIENCY MOTORS.
4. PROVIDE BUILDING AUTOMATION SYSTEM (BAS) INTERFACE: MONITORING AND CONTROLS.
5. UNIT CASING SHALL BE DOUBLE WALL WITH INTERNAL INSULATION AND SOLID INNER WALL.
6. EXTERNAL STATIC PRESSURE DOES NOT INTERNAL LOSSES INCLUDING COIL, CASING, OR FILTER LOSSES.
7. DUCT SMOKE DETECTORS PROVIDED BY FIRE ALARM CONTRACTOR, INSTALLED BY MECHANICAL, AND WIRED BY ELECTRICAL.
8. REFER TO PLAN DRAWINGS FOR DUCT CONNECTION CONFIGURATIONS.
9. SINGLE POINT POWER.
10. UNIT SHALL BE DE-ENERGIZED UPON SIGNAL FROM HVAC "EMERGENCY SHUTDOWN SWITCH".

WATER COOLED CHILLER SCHEDULE

ID	NAME	NO	MANUFACTURER	MODEL NO	EVAPORATOR DATA: COOLING CAPACITY (TONS)	EVAPORATOR DATA: DESIGN FLOW (GPM)	EVAPORATOR DATA: MIN FLOW (GPM)	EVAPORATOR DATA: EWT (°F)	EVAPORATOR DATA: LWT (°F)	EVAPORATOR DATA: PD (FT. H2O)	CONDENSER DATA: DESIGN FLOW (GPM)	CONDENSER DATA: EWT (°F)	CONDENSER DATA: LWT (°F)	CONDENSER DATA: PD (FT. H2O)	COMPRESSOR DATA: TYPE	COMPRESSOR DATA: QTY	NPLV (kW/TON)	MAX SOUND LEVEL (dBA)	UNIT WEIGHT (LBS)	ELECTRICAL DATA: VOLTAGE	ELECTRICAL DATA: NO. OF POLES	REMARKS
CHLR-1	MECH ROOM	161	CARRIER	30HXC186	168.4	270.1	188.0	56.7	42.0	6.4	517.7	86.5	95.9	20.8	SCREW	2	0.6102	81	7854	460	3	ALL
CHLR-2	MECH ROOM	161	CARRIER	30HXC186	168.4	270.1	188.0	56.7	42.0	6.4	517.7	86.5	95.9	20.8	SCREW	2	0.6102	81	7854	460	3	ALL

REMARKS:
1. PROVIDE MANUFACTURER'S MOTOR CONTROLLER.
2. DISCONNECT PROVIDED BY ELECTRICAL.
3. SINGLE POINT POWER.
4. PROVIDE MANUFACTURER'S MICROPROCESSOR-BASED CONTROL PANEL WITH CLEAR LANGUAGE DISPLAY. REFER TO ELECTRICAL FOR DEDICATED 120 V / 1 PH CONTROL PANEL POWER.
5. PROVIDE EQUIPMENT REQUIRED TO INTERFACE WITH THE DDC SYSTEM. REFER TO SPECIFICATIONS FOR CONTROLS SYSTEM TYPE.
6. PROVIDE MANUFACTURER'S COMPREHENSIVE ACOUSTIC PACKAGE FOR COMPRESSOR.
7. PROVIDE MANUFACTURER'S ELASTOMERIC ISOLATORS FOR VIBRATION ISOLATION.
8. PROVIDE MANUFACTURER'S FACTORY-APPLIED INSULATION FOR ALL LOW TEMPERATURE SURFACES.
9. PROVIDE MANUFACTURER'S CHILLED AND CONDENSER WATER FLOW SWITCHES.
10. SOUND PRESSURE MEASURED AT 1 METER IN A FREE FIELD.
11. PROVIDE REFRIGERANT LEAK DETECTION MONITOR. SEE FLOOR PLANS FOR ADDITIONAL INFORMATION.

COOLING TOWER SCHEDULE

ID	NAME	NO	MANUFACTURER	MODEL NO	NO. OF CELLS	CONDENSER WATER DATA: FLOW (GPM)	CONDENSER WATER DATA: EWT (°F)	CONDENSER WATER DATA: LWT (°F)	CONDENSER WATER DATA: PD (FT. H2O)	FAN DATA: QTY	FAN DATA: POWER EACH (HP)	BASIN HEATER: QTY	BASIN HEATER: POWER (KW)	SUMMER AMBIENT WB TEMP (°F)	MAX SOUND LEVEL (dBA)	UNIT WEIGHT (LBS)	ELECTRICAL DATA: VOLTAGE	ELECTRICAL DATA: NO. OF POLES	REMARKS
CTWR-1	MECH YARD	-	EVAPCO	AT 19-3J9	1	517.7	95.9	86.5	5.5	1	15	1	7.0	82.5	84	7360	460	3	ALL

REMARKS:
1. FAN MOTOR VFD TO BE PROVIDED BY MANUFACTURER. (1) VFD PER FAN MOTOR.
2. PROVIDE NEMA PREMIUM EFFICIENCY MOTORS.
3. PROVIDE MAKE-UP WATER ELECTRONIC 5-PROBE SENSOR (OPEN, CLOSED, LOW, HIGH, STANDARD).
4. PROVIDE VIBRATION SWITCH.
5. PROVIDE STAINLESS STEEL BASIN HEATER. DISCONNECT PROVIDED BY ELECTRICAL.
6. PROVIDE BASIN SWEEPER WITH NOZZLES.
7. PROVIDE 316 STAINLESS STEEL BASIN MATERIAL.
8. PROVIDE 316 STAINLESS STEEL UPPER TOWER MATERIAL.
9. PROVIDE MANUFACTURER'S STANDARD FILL MATERIAL.
10. PROVIDE SERVICE PLATFORM WITH LADDER EXTENSION.
11. PROVIDE MOTOR DAVIT.
12. PROVIDE LOW SOUND FAN.
13. PROVIDE MOTOR SHAFT GROUNDING RINGS.

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. PLUMMER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Norcross, Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New 8600 BX and Wall HVAC System, MCC
Control Panel and Associated Equipment
Client Project Number: AJW24-1013D

MECHANICAL SCHEDULES

POND # 1220654

SHEET ID
M-601

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 10:50:32 AM

ENERGY RECOVERY UNIT 4-PIPE SCHEDULE

	LOCATION		BASIS OF DESIGN		OUTSIDE AIR				EXHAUST AIR				SUMMER DESIGN ENERGY RECOVERY						WINTER DESIGN ENERGY RECOVERY					
													OUTSIDE AIR (°F)				EXHAUST (°F)		OUTSIDE AIR (°F)				EXHAUST (°F)	
ID	NAME	NO	MFR	MODEL NO	AIRFLOW (CFM)	# OF FANS	EXT SP (IN. WG.)	POWER EACH (HP)	AIRFLOW (CFM)	# OF FANS	EXT SP (IN. WG.)	POWER EACH (HP)	EAT (db)	EAT (wb)	LAT (db)	LAT (wb)	EAT (db)	EAT (wb)	EAT (db)	EAT (wb)	LAT (db)	LAT (wb)	EAT (db)	EAT (wb)
ERU-1	MECH	161A	CARRIER	39MN25	9430	1	2,00	10,00	8490	1	2,00	10,00	90,2	78,5	83,6	71,7	80,0	67,0	35,4	28,1	54,5	44,2	66,0	52,7
ERU-2	MECH	402	CARRIER	39MN08	3400	1	2,00	5,00	3060	1	2,00	7,50	90,2	78,5	83,8	71,9	80,0	67,0	35,4	28,1	54,1	43,9	66,0	52,7

	CHILLED WATER COOLING COIL DATA											HOT WATER HEATING COIL DATA								TOTAL EFFECTIVENESS				ELECTRICAL DATA		
	CAPACITY		AIRSIDE						WATERSIDE					AIRSIDE		WATERSIDE									
ID	TOTAL (BTUH)	SENSIBLE (BTUH)	EAT (db °F)	EAT (wb °F)	LAT (db °F)	LAT (wb °F)	FACE VELOCITY (FPM)	FLOW (GPM)	EWT (°F)	LWT (°F)	PD (FT. H2O)	CAPACITY (BTUH)		EAT (db °F)	LAT (db °F)	FLOW (GPM)	EWT (°F)	LWT (°F)	PD (FT. H2O)	SUMMER (%)	WINTER (%)	UNIT WEIGHT (LBS)	VOLTAGE	NO. OF POLES	REMARKS
ERU-1	540300	299700	83,6	71,7	54,2	54,0	408	72,0	42	57	4,3	209870		52,4	72,5	21,2	130	110	1,3	69,8	69,6	7598	460	3	ALL
ERU-2	189100	106000	83,8	71,9	54,9	54,9	453	25,2	42	57	1,6	69100		52,4	70,7	7,0	130	110	0,4	68,7	68,5	4062	460	3	ALL

REMARKS:
1. PROVIDE SUPPLY FAN AND EXHAUST FAN VFD FACTORY-MOUNTED TO UNIT.
2. PROVIDE MANUFACTURER'S MOTOR MOTOR CONTROLLER FOR ENERGY WHEEL. ENERGY WHEEL DISCONNECT PROVIDED BY ELECTRICAL.
3. PROVIDE NEMA PREMIUM EFFICIENCY MOTORS.
4. PROVIDE VIBRATION ISOLATION FOR FAN SECTIONS.
5. PROVIDE INTEGRAL BASE RAIL FRAME. MINIMUM 6 INCH HEIGHT.
6. PROVIDE STAINLESS STEEL COIL DRAIN PAN IN COMPLIANCE WITH ASHRAE 62.1.
7. PROVIDE DUCT CONNECTIONS, COIL CONNECTIONS, AND SERVICE ACCESS AS SHOWN ON THE FLOOR PLANS.
8. UNIT CASING MUST BE DOUBLE WALL WITH INTERNAL INSULATION AND SOLID INNER WALL.
9. PROVIDE EQUIPMENT REQUIRED TO INTERFACE WITH THE DDC SYSTEM. REFER TO SPECIFICATIONS FOR CONTROLS SYSTEM TYPE.
10. PROVIDE FACTORY-APPLIED ANTI-CORROSION COATING ON CONDENSER COILS FOR SEACOAST ENVIRONMENT.
11. PROVIDE SUPPLY DUCT SMOKE DETECTOR.
12. PROVIDE MERV 13 FILTERS FOR SUPPLY AIR AND MERV 8 FILTERS FOR EXHAUST AIR.

DUCTWORK CONSTRUCTION AND LEAKAGE TESTING TABLE

	DUCT PRESSURE CLASS (IN. W.C.)				DUCT SHAPE					
					ROUND / OVAL		RECTANGULAR			
SYSTEM	SUPPLY	RETURN	EXHAUST	OUTSIDE AIR	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT TEST PRESSURE (IN. W.C.)	REMARKS
AHU - VAV OUTSIDE AIR	-	-	-	1	-	-	A	6	1	1
AHU - VAV RETURN	-	-2	-	-	-	-	A	6	2	1
AHU - VAV SUPPLY	4	-	-	-	A	3	A	6	4	1
EXHAUST DUCT	-	-	-1	-	-	-	A	6	1	1
VAV BOX SUPPLY	2	-	-	-	A	3	A	6	2	1

REMARKS:
1. TEST IN ACCORDANCE WITH SPECIFICATION 23 05 93: TESTING, ADJUSTING, AND BALANCING FOR HVAC AND THE PROCEDURES IN SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL.

VARIABLE AIR VOLUME UNIT HOT WATER HEATING SCHEDULE

	BASIS OF DESIGN			PRIMARY AIRFLOW		HOT WATER HEATING COIL												
							AIRSIDE				WATERSIDE							
ID	MANUFACTURER	MODEL NO	NECK SIZE	MAX (CFM)	MIN (CFM)	CAPACITY (BTUH)	AIRFLOW (CFM)	EAT (db °F)	LAT (db °F)	PD (IN. WG.)	FLOW (GPM)	EWT (°F)	LWT (°F)	PD (FT. H2O)	MAX DISCHARGE SOUND (NC)	ASSOCIATED AHU ID	REMARKS
VAV-01	TITUS	DESV	6"	200	150	5600	150	55,0	89,0	0,06	0,9	130	118	0,2	22	AHU-1	1-11
VAV-02	TITUS	DESV	6"	340	150	5600	150	55,0	88,0	0,06	0,9	130	118	0,2	24	AHU-1	1-11
VAV-03	TITUS	DESV	6"	285	90	3400	90	55,0	90,0	0,02	0,9	130	123	0,1	25	AHU-1	1-11
VAV-04	TITUS	DESV	6"	390	300	10800	300	55,0	88,0	0,06	1,4	130	114	0,2	23	AHU-1	1-11
VAV-05	TITUS	DESV	6"	270	250	9800	250	55,0	91,0	0,04	1,4	130	116	0,2	25	AHU-1	1-11
VAV-06	TITUS	DESV	4"	185	60	2200	60	55,0	88,0	0,03	0,7	130	123	0,3	33	AHU-1	1-11
VAV-07	TITUS	DESV	6"	195	150	5600	150	55,0	89,0	0,06	0,9	130	118	0,2	20	AHU-1	1-11
VAV-08	TITUS	DESV	10"	945	285	10500	285	55,0	89,0	0,27	1,4	130	115	0,2	27	AHU-4	1-11
VAV-09	TITUS	DESV	6"	435	135	4900	135	55,0	88,0	0,04	2,7	130	126	0,7	27	AHU-4	1-11
VAV-10	TITUS	DESV	4"	65	50	1800	50	55,0	88,0	0,01	0,5	130	122	0,2	22	AHU-4	1-11
VAV-11	TITUS	DESV	6"	280	85	4000	85	55,0	88,0	0,15	0,5	130	121	0,2	24	AHU-4	1-11
VAV-12	TITUS	DESV	4"	50	50	1800	50	55,0	88,0	0,00	0,5	130	122	0,2	19	AHU-4	1-11
VAV-13	TITUS	DESV	10"	845	255	9900	255	55,0	91,0	0,22	1,4	130	115	0,2	25	AHU-4	1-11
VAV-14	TITUS	DESV	6"	190	150	5600	150	55,0	89,0	0,06	0,9	130	118	0,2	20	AHU-4	1-11
VAV-15	TITUS	DESV	6"	340	155	5700	155	55,0	89,0	0,15	0,9	130	117	0,2	23	AHU-4	1-11
VAV-16	TITUS	DESV	10"	945	285	10500	285	55,0	89,0	0,27	1,4	130	115	0,2	27	AHU-4	1-11
VAV-17	TITUS	DESV	6"	280	85	4000	85	55,0	88,0	0,16	0,9	130	121	0,2	24	AHU-4	1-11
VAV-18	TITUS	DESV	14"	1575	475	18300	475	55,0	90,0	0,20	1,8	130	110	0,2	19	AHU-5	1-11
VAV-19	TITUS	DESV	8"	460	165	6600	165	55,0	91,0	0,15	0,9	130	116	0,2	25	AHU-5	1-11
VAV-20	TITUS	DESV	6"	185	60	2200	60	55,0	88,0	0,03	0,7	130	123	0,3	20	AHU-5	1-11
VAV-21	TITUS	DESV	10"	895	270	10200	270	55,0	90,0	0,22	1,4	130	115	0,2	25	AHU-5	1-11
VAV-22	TITUS	DESV	12"	1435	540	19500	540	55,0	88,0	0,17	1,8	130	108	0,2	27	AHU-5	1-11
VAV-23	TITUS	DESV	10"	1000	300	10800	300	55,0	88,0	0,29	1,4	130	114	0,2	27	AHU-5	1-11
VAV-24	TITUS	DESV	14"	1800	540	19500	540	55,0	88,0	0,25	1,8	130	108	0,2	20	AHU-3	1-11
VAV-25	TITUS	DESV	6"	280	200	7200	200	55,0	88,0	0,11	1,3	130	119	0,3	24	AHU-3	1-11
VAV-26	TITUS	DESV	16"	3505	1055	38100	1055	55,0	88,0	0,26	3,2	130	106	0,3	27	AHU-3	1-11
VAV-27	TITUS	DESV	16"	3505	1055	38100	1055	55,0	88,0	0,26	3,2	130	106	0,3	27	AHU-3	1-11
VAV-28	TITUS	DESV	16"	3505	1055	38100	1055	55,0	88,0	0,26	3,2	130	106	0,3	27	AHU-3	1-11
VAV-29	TITUS	DESV	16"	3505	1055	38100	1055	55,0	88,0	0,26	3,2	130	106	0,3	27	AHU-3	1-11
VAV-30	TITUS	DESV	16"	3505	1055	38100	1055	55,0	88,0	0,26	3,2	130	106	0,3	27	AHU-3	1-11

REMARKS:
1. INSIDE OF UNIT SHALL HAVE 1" DOUBLE WALL INSULATION CONSTRUCTION.
2. PROVIDE CONTROL PANEL.
3. PROVIDE CONTROL POWER TRANSFORMER.
4. MAX NC LEVEL SHALL NOT EXCEED 25.
5. NC LEVEL MUST BE AS DETERMINED BY AHRI 885
6. DISCONNECT PROVIDED AND INSTALLED BY ELECTRICAL.
7. SINGLE POINT POWER CONNECTION.
8. PRESSURE INDEPENDENT CONTROLS.
9. PROVIDE WITH DDC CONTROL PROCESSOR, NOT LIMITED TO ELECTRIC VALVE ACTUATOR, RELAYS, AND TRANSFORMERS.
10. PROVIDE WITH PIPING PACKAGE
11. PROVIDE BUILDING AUTOMATION SYSTEM (BAS) INTERFACE: MONITORING AND CONTROLS

PLUMBING FIXTURE SCHEDULE

		COLD WATER PIPE SIZE	HOT WATER PIPE SIZE	WASTE PIPE SIZE	VENT PIPE SIZE	FLOW RESTRICTION	BASIS OF DESIGN		
ID	FIXTURE TYPE						MANUFACTURER	MODEL	DESCRIPTION
FCO	FLOOR CLEANOUT	---	---	4"	---	---	ZURN	Z1400	HEAVY DUTY CAST IRON COVER IN MECH ROOMS.
FLRD-1	FLOOR DRAIN	---	---	4"	2"	---	ZURN	Z508-Y	CAST IRON FLOOR DRAIN WITH HEAVY DUTY 9" CAST IRON GRATE, CAST IRON SEDIMENT BUCKET, MEMBRANE CLAMP AND BARRIER TYPE TRAP SEAL DEVICE CONFORMING TO ASSE 1072.
RFD-1	ROOF DRAIN	---	---	4"	---	---	ZURN	Z100	CAST IRON BODY WITH 15" DIAMETER ANCHOR FLANGE, CAST IRON MEMBRANE CLAMP RING WITH INTEGRAL GRAVEL STOP AND DOME STRAINER WITH A MINIMUM FREE AREA OF 103 SQUARE INCHES.

AIR TERMINALS SCHEDULE

	BASIS OF DESIGN									
TAG	MANUFACTURER	MODEL	SYSTEM	DESCRIPTION	MOUNTING	FACE SIZE	MATERIAL	BORDER TYPE	FINISH COLOR	DESIGN NC	REMARKS
DIFUS1	TITUS	TMS-AA	SUPPLY	THREE CONE DIFFUSER	CEILING	VARIES	ALUMINUM	LAY-IN	WHITE	25	1-3
DIFUS2	TITUS	301FL	SUPPLY	SIDEWALL DIFFUSER	DUCT	16" X 6"	ALUMINUM	SURFACE	WHITE	25	1-3
DIFUS3	TITUS	FL-10	SUPPLY	LINEAR SLOT DIFFUSER	SURFACE	SEE NOTES	ALUMINUM	SURFACE	WHITE	25	1-4
GRIL1	TITUS	50F	RETURN	EGGCRATE GRILLE	CEILING	24" X 24"	ALUMINUM	LAY-IN	WHITE	25	1-3
GRIL2	TITUS	350FL	RETURN	SIDEWALL GRILLE	SURFACE	VARIES	ALUMINUM	SURFACE	WHITE	25	1-3
GRIL3	TITUS	50F	EXHAUST	EGGCRATE GRILLE	CEILING	24" X 24"	ALUMINUM	SURFACE	WHITE	25	1-3
GRIL4	TITUS	50F	EXHAUST	EGGCRATE GRILLE	CEILING	12" X 12"	ALUMINUM	SURFACE	WHITE	25	1-3

REMARKS:
1. PROVIDE OPPOSED BLADE DAMPER FOR DIFFUSERS AND GRILLES WHERE BRANCH TAKE-OFFS ARE LOCATED ABOVE INACCESSIBLE CEILINGS AND A BRANCH DAMPER IS NOT CALLED FOR.
2. PROVIDE MOUNTING HARDWARE/FRAME FOR DIFFUSERS AND GRILLES TO MATCH CEILING TYPE.
3. WHERE COLOR LISTED IN AIR TERMINAL SCHEDULE CONFLICTS WITH COLOR LISTED IN INTERIOR DESIGN OR ARCHITECTURAL SHEETS, SPECIFICATION FROM INTERIOR DESIGNER OR ARCHITECT SHALL TAKE PRECEDENCE.
4. PROVIDE WITH INSULATED PLENUM BOX. DIFFUSERS TO BE 48" IN LENGTH, 1-SLOT TYPE WITH 1" SLOT WIDTH.

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbl Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 8650 BX and Wall HVAC System, MCC
Construction of Mechanical Equipment
Client Project Number: ALM24-1013D

MECHANICAL SCHEDULES

POND # 1220854

SHEET ID
M-602

ISSUED FOR CONSTRUCTION

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AIR SEPARATOR SCHEDULE

ID	LOCATION NAME	LOCATION NO	SERVES	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	FLOW CAPACITY (GPM)	FLANGED CONNECTION SIZE (IN.)	REMARKS
ASPR-1	MAIN MECH	161	CHILLED WATER	TACO	AC04-125	416	4.0	ALL
ASPR-2	MAIN MECH	161	HOT WATER	TACO	AC03-125	230	3.0	ALL

REMARKS:
1. STEEL TANK, FABRICATED, DESIGNED, AND CONSTRUCTED PER ASME BOILER AND PRESSURE VESSEL CODE; ASME 125 PSIG RATED.
2. TANGENTIAL TYPE.
3. INLINE TYPE. PROVIDE WITH BASE RING.
4. PROVIDE NPT VENT CONNECTION AND AUTOMATIC AIR VENT PIPED TO NEAREST FLOOR DRAIN.
5. PROVIDE WITH BLOW DOWN VALVE.
6. PROVIDE WITH REMOVABLE INTERNAL STAINLESS STEEL STRAINER.

GAS-FIRED BOILER SCHEDULE

ID	LOCATION NAME	LOCATION NO	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	FUEL TYPE	CAPACITY INPUT (BTUH)	CAPACITY OUTPUT (BTUH)	THERMAL EFFICIENCY (%)	FLOW DESIGN (GPM)	FLOW MIN (GPM)	EWT (°F)	LWT (°F)	PD (FT. H2O)	RELIEF VALVE PSI	UNIT WEIGHT (LBS)	ELECTRICAL DATA VOLTAGE	ELECTRICAL DATA NO. OF POLES	REMARKS
BLR-1	MECH ROOM	161	LAARS	CFH1000	NATURAL GAS	999900	950000	95.8	76.2	27.0	110.0	130.0	1.9	75	1934	120	1	ALL

REMARKS:
1. DISCONNECT PROVIDED BY ELECTRICAL.
2. CERTIFIED INDOOR INSTALLATION.
3. MODULATING BURNER WITH 15:1 TURNDOWN.
4. ASME "H" RATED FOR 160 PSI WORKING PRESSURE.
5. PROVIDE WITH RELIEF VALVE AT 75 PSI.
6. PROVIDE ALARM SIGNAL UPON ANY FAILURE.
7. PROVIDE MANUFACTURER'S STAINLESS STEEL SEALED COMBUSTION CHAMBER WITH CONDENSATE DRAIN, BUILT-IN P-TRAP, AND CONDENSATE NEUTRALIZATION KIT.
8. PROVIDE 24 VOLT PRE-WIRED CONTROL PANEL WITH POINTS FOR MONITORING BY THE BUILDING AUTOMATION SYSTEM.
9. PROVIDE BUILDING AUTOMATION SYSTEM GATEWAY TO BACNET.
10. PROVIDE VERTICAL INTAKE AND VENT THROUGH ROOF TERMINATION KIT.
11. PROVIDE WITH OUTDOOR RESET CONTROL AND APPURTENANCES.
12. PROVIDE LOW WATER CUT-OFF SWITCH WITH MANUAL RESET.
13. PROVIDE ADJUSTABLE GAS PRESSURE HIGH AND LOW LIMIT SWITCHES WITH MANUAL RESET.
14. BOILER TO BE DESIGNED FOR VARIABLE FLOW.

EXPANSION TANK SCHEDULE

ID	LOCATION NAME	LOCATION NO	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	MIN. TANK VOLUME (GAL)	MIN. ACCEPTANCE (GAL)	MIN. OPERATING PRESSURE (PSIG)	MAX. OPERATING PRESSURE (PSIG)	UNIT WEIGHT (LBS)	REMARKS
EXPT-1	MAIN MECH	161	TACO	CBX15-125	4.0	2.5	14.0	125	66	ALL
EXPT-2	MAIN MECH	161	TACO	CBX30-125	8.0	5.0	14.0	125	132	ALL

REMARKS:
1. STEEL TANK, FABRICATED, DESIGNED, AND CONSTRUCTED PER ASME BOILER AND PRESSURE VESSEL CODE; ASME 125 PSIG RATE.
2. VERTICAL FLOOR MOUNTED TYPE.

HYDRONIC PUMP SCHEDULE

ID	LOCATION NAME	LOCATION NO	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	TYPE	PUMP FLOW DESIGN (GPM)	PUMP FLOW MAX (GPM)	PUMP FLOW MIN (GPM)	DESIGN HEAD (FT)	DUTY POINT EFFICIENCY (%)	MOTOR DATA POWER (HP)	MOTOR DATA RPM	ELECTRICAL DATA VOLTAGE	ELECTRICAL DATA NO. OF POLES	REMARKS
CHWP-1	MECH ROOM	161	TACO	SFI3011D	END SUCTION	270.1	660.0	188.0	81.0	73.0	15	1760	460	3	1-4
CHWP-2	MECH ROOM	161	TACO	SFI3011D	END SUCTION	270.1	660.0	188.0	81.0	73.0	15	1760	460	3	1-4
CWP-1	MECH YARD	-	TACO	SFI3009D	END SUCTION	517.7	546.4	330.0	47.0	76.0	10	1760	460	3	1-5
CWP-2	MECH YARD	-	TACO	SFI3009D	END SUCTION	517.7	546.4	330.0	47.0	76.0	10	1760	460	3	1-5
HWP-1	MECH ROOM	161	TACO	SFI2009D	END SUCTION	76.2	95.0	27.0	49.0	62.0	3	1760	460	3	1-4
HWP-2	MECH ROOM	161	TACO	SFI2009D	END SUCTION	76.2	95.0	27.0	49.0	62.0	3	1760	460	3	1-4

REMARKS:
1. MOTOR VFD TO BE PROVIDED BY MANUFACTURER.
2. DISCONNECT PROVIDED AND INSTALLED BY ELECTRICAL.
3. PROVIDE NEMA PREMIUM EFFICIENCY MOTORS.
4. BUILDING AUTOMATED SYSTEM (BAS) INTERFACE: MONITORING AND CONTROLS.
5. PUMP AND VFD RATED FOR OUTDOOR INSTALLATION.

ROOF HOOD SCHEDULE

ID	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	TYPE	AIRFLOW (CFM)	THROAT VELOCITY (FPM)	THROAT AREA (SQ FT)	MAX PD (IN. WG.)	DAMPER TYPE	DIMENSIONS THROAT LENGTH	DIMENSIONS THROAT WIDTH	DIMENSIONS CURB LENGTH	DIMENSIONS CURB WIDTH	UNIT WEIGHT (LBS)	REMARKS
EHD-1	GREENHECK	FGR-24X24	GRAVITY	3060	765	4.0	0.10	MOTOR	2' - 0"	2' - 0"	2' - 6"	2' - 6"	69	ALL
EHD-2	GREENHECK	FGR-30X30	GRAVITY	8490	1358	6.0	0.31	MOTOR	2' - 6"	2' - 6"	3' - 0"	3' - 0"	88	ALL
EHD-3	GREENHECK	FGR-16X16	GRAVITY	1300	731	2.0	0.09	MOTOR	1' - 4"	1' - 4"	1' - 10"	1' - 10"	52	ALL

REMARKS:
1. PROVIDE ROOF CURB.
2. PROVIDE BIRD SCREEN.
3. PROVIDE INTEGRAL MOTORIZED DAMPER.
4. MIAMI-DADE APPROVED HIGH-WIND RATED ASSEMBLY.

LOUVER SCHEDULE

ID	LOCATION NAME	LOCATION NO	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	SERVES	SYSTEM	MATERIAL	DESIGN AIRFLOW (CFM)	FREE AREA (SF)	FREE AREA VELOCITY (FPM)	MAX PRESSURE DROP (IN. WG.)	DIMENSIONS WIDTH	DIMENSIONS HEIGHT	UNIT WEIGHT (LBS)	REMARKS
LVR-1	MECH ROOM	402	GREENHECK	EHV-901	ERU-2	OUTSIDE AIR	ALUMINUM	3400	6.3	540	0.10	3' - 8"	3' - 4"	106	ALL
LVR-2	MECH MEZZ.	161A	GREENHECK	EHV-901	ERU-1	OUTSIDE AIR	ALUMINUM	9430	17.2	550	0.10	6' - 6"	5' - 0"	286	ALL
LVR-3	MAIN MECH	161	GREENHECK	EHV-901	EF-1	OUTSIDE AIR	ALUMINUM	1300	2.4	534	0.10	2' - 4"	2' - 4"	46	ALL

REMARKS:
1. HURRICANE-RATED TYPE.
2. AMCA 500-L LICENSED FOR AIR PERFORMANCE, WATER PENETRATION, AND WIND DRIVEN RAIN.
3. AMCA 540 LICENSED FOR WIND-BORNE DEBRIS IMPACT RESISTANCE.
4. AMCA 550 LICENSED FOR HIGH-VELOCITY WIND-DRIVEN RAIN RESISTANCE.
5. FINISH TO BE SELECTED BY ARCHITECTURAL. PROVIDE MANUFACTURER'S COLOR WHEEL WITH SUBMITTAL PACKAGE.
6. PROVIDE BIRDSCREEN. SCREEN MUST BE CONTAINED WITHIN A REMOVABLE FRAME.

EXHAUST FAN SCHEDULE

ID	LOCATION NAME	LOCATION NO	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO	TYPE	FAN DATA AIRFLOW (CFM)	FAN DATA ESP (IN. WG.)	FAN DATA DRIVE TYPE	FAN DATA MOTOR POWER (HP)	FAN DATA MOTOR RPM	UNIT WEIGHT (LBS)	ELECTRICAL DATA VOLTAGE	ELECTRICAL DATA NO. OF POLES	REMARKS
EF-1	MAIN MECH	161	GREENHECK	SQ-120-VG	INLINE	1300	0.75	DIRECT	0.5	1541	55	115	1	ALL

REMARKS:
1. PROVIDE MANUFACTURER'S MOTOR CONTROLLER.
2. DISCONNECT PROVIDED BY ELECTRICAL.
3. PROVIDE ELECTRONICALLY-COMMUTATED (EC) MOTOR WITH SPEED CONTROLLER.
4. PROVIDE NEMA PREMIUM EFFICIENCY MOTORS.
5. PROVIDE VIBRATION ISOLATION.
6. PROVIDE EQUIPMENT REQUIRED TO INTERFACE WITH THE DDC SYSTEM. REFER TO SPECIFICATIONS FOR CONTROLS SYSTEM TYPE.
7. PROVIDE INTEGRAL BACKDRAFT DAMPER.

DUCTLESS SPLIT SYSTEM SCHEDULE

ID	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO (INDOOR / OUTDOOR)	INDOOR UNIT DATA MOUNTING TYPE	INDOOR UNIT DATA MAX CFM	OUTDOOR UNIT DATA ID	OUTDOOR UNIT DATA CAPACITY NOMINAL (BTUH)	OUTDOOR UNIT DATA CAPACITY MINUMUM (BTUH)	OUTDOOR UNIT DATA CONDENSER CONDITIONS EAT (db °F)	OUTDOOR UNIT DATA CONDENSER CONDITIONS EAT (wb °F)	OUTDOOR UNIT DATA UNIT WEIGHT (LBS)	SEER (@AHRI)	ELECTRICAL DATA VOLTAGE	ELECTRICAL DATA NO. OF POLES	REMARKS
IDU-1	MITSUBISHI	PKA-A24KA / PUY-A24	WALL	775	ODU-1	24000	10000	95.0	75.0	176	21.4	208	2	ALL
IDU-2	MITSUBISHI	PKA-A24KA / PUY-A24	WALL	775	ODU-2	24000	10000	95.0	75.0	176	21.4	208	2	ALL
IDU-3	MITSUBISHI	PKA-A24KA / PUY-A24	WALL	775	ODU-3	24000	10000	95.0	75.0	176	21.4	208	2	ALL
IDU-4	MITSUBISHI	PKA-A24KA / PUY-A24	WALL	775	ODU-4	24000	10000	95.0	75.0	176	21.4	208	2	ALL

REMARKS:
1. PROVIDE MANUFACTURER'S STARTER.
2. DISCONNECT FOR OUTDOOR UNIT PROVIDED AND INSTALLED BY ELECTRICAL.
3. PROVIDE WALL-MOUNTED KIT FOR INDOOR UNIT.
4. INDOOR FAN COIL UNIT AND OUTDOOR CONDENSING UNIT SHALL BE INTERLOCKED.
5. PROVIDE SEPARATE CONDENSATE PUMP WITH RECEPTACLE.
6. PROVIDE 7-DAY PROGRAMMABLE WALL-MOUNTED THERMOSTAT WITH DIGITAL DISPLAY.
7. PROVIDE LOW AMBIENT CONTROLS DOWN TO 15°F.
8. REFRIGERANT PIPING SHALL BE DESIGNED AND SIZED PER THE MANUFACTURER'S RECOMMENDATION. PROVIDE ALL FITTINGS AND ACCESSORIES RECOMMENDED BY THE MANUFACTURER FOR PROPER OPERATION.
9. PROVIDE WITH FACTORY APPLIED SEACOAST CORROSION PROTECTION PACKAGE.

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

Gail Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

MARK	DESCRIPTION	DATE

File Path: I:\...
Plot Date: 9/13/2024 10:50:42 AM

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New 8600 BX and Wall HVAC System, MCC
Controls and Miscellaneous Mechanical Equipment
Client Project Number: ALMA21-1013D

MECHANICAL SCHEDULES

POND # 1220854

SHEET ID

M-603

ISSUED FOR CONSTRUCTION

CONTROLS GENERAL NOTES:

1. CONFIRM COMPATIBILITY OF NEW CONTROLS SYSTEM WITH ANY EXISTING BASEWIDE SYSTEM PRIOR TO INSTALLATION.
2. FIELD VERIFY ALL PIPE DIMENSIONS AND VALVE SIZES.
3. SUPPLY ALL CONTROL POWER TO CONTROL EQUIPMENT INCLUDING (BUT NOT LIMITED TO) 24V AND 120V.
4. CONTROL SEQUENCES MUST BE ACCOMPLISHED THROUGH MANUFACTURER'S INTEGRAL EQUIPMENT CONTROLS AND INPUTS / OUTPUTS OF THE BUILDING CONTROL SYSTEM (BCS) SYSTEM TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
5. CONTROL POINTS MUST BE IMPLEMENTED AS INDICATED UTILIZING STANDARD OBJECT TYPES AND MUST NOT BE IMPLEMENTED USING PROPRIETARY METHODS.
6. PROPORTION (P), INTEGRAL (I), AND DERIVATIVE (D) CONTROL LOOPS AND THEIR COMBINATIONS MUST BE USED TO MAINTAIN SETPOINTS.
7. PROVIDE PASSWORD-PROTECTED ACCESS TO ADJUSTABLE (ADJ.) SYSTEM PARAMETERS.
8. CONTROL SETPOINTS: OPERATOR MUST HAVE THE ABILITY TO CHANGE ALL WRITEABLE CONTROL SETPOINTS FROM THE OPERATOR WORKSTATION (OWS).
9. ALARMS: INFORMATION THAT CAN PROVIDE AN ALERT TO THE OPERATOR ABOUT THE CONTROLLED AND MONITORED EQUIPMENT MUST BE PROGRAMMED INTO AN EFFECTIVE ALARM HANDLING SYSTEM. ALL SETPOINTS MUST BE ADJUSTABLE ON THE ALARM REPORT SCREEN BY USING PASSWORD-PROTECTED ACCESS. ALARMS MUST BE PRIORITIZED SUCH THAT HIGHER LEVEL ALARMS, SUCH AS LOSS OF UTILITY POWER, MUST SUPPRESS LOWER LEVEL ALARMS. SUCH AS FILTER CHANGE REQUIRED.
10. ALARM CONDITIONS MARKED WITH AN ASTERISK (*) MUST BE ACTIVE ONLY WHEN THE SYSTEM HAS BEEN IN OCCUPIED MODE FOR MORE THAN THE FOLLOWING DURATIONS:
    A. * = 5 MINUTES (ADJ)
    B. ** = 30 MINUTES (ADJ)
11. DDC CONTROL WIRING AND NETWORK WIRING MUST BE ROUTED IN CONDUIT.
12. DDC CONTROL WIRING AND EQUIPMENT POWER WIRING MUST NOT BE INSTALLED WITHIN THE SAME CONDUIT.
13. CONTROLS MUST BE INSTALLED IN ACCORDANCE WITH SPECIFICATIONS AND MANUFACTURER'S APPROVED PUBLISHED LITERATURE.
14. EQUIPMENT MANUFACTURER'S PROOFS AND SAFETIES (LADDER DIAGRAMS) MUST BE PROVIDED AS SEPARATE LINE ITEMS IN THE POINTS SCHEDULES.
15. COMPLETE POINTS SCHEDULE MUST BE PROVIDED IN ACCORDANCE WITH THE POINTS SCHEDULE INSTRUCTIONS SHOWN BELOW. IN ACCORDANCE WITH UFC 3-410-02, SECTION 5-4.2, THE BUILDING CONTROLS CONTRACTOR MUST BE RESPONSIBLE FOR THE BULK OF THE ENTRIES AND MUST SUBMIT THE POINTS SCHEDULE AS A DESIGN DRAWING FOR GOVERNMENT APPROVAL AND THEN MUST FINALIZE IT AS AN AS-BUILT SUBMITTAL. THE AS-BUILT MUST THEN BE USED AS A CONTRACT DRAWING BY THE UMCS CONTRACTOR. FINALLY, THE COMPLETED POINT SCHEDULE MUST BE SUBMITTED BY THE UMCS INTEGRATION CONTRACTOR AS AN AS-BUILT SUBMITTAL.

MECHANICAL CONTROLS SHEET INDEX

SHEET NUMBER	CONTROLS ITEM(S)
M-701	MECHANICAL CONTROLS GENERAL NOTES, LEGEND, AND SHEET INDEX
M-702	COOLING PLANT SYSTEM CONTROLS SCHEMATIC
M-703	COOLING PLANT SYSTEM CONTROLS SEQUENCE
M-704	COOLING PLANT SYSTEM ALARMS AND SHUTDOWNS
M-705	COOLING PLANT SYSTEM CONTROL POINTS (1)
M-706	COOLING PLANT SYSTEM CONTROL POINTS (2)
M-707	COOLING PLANT SYSTEM CONTROL POINTS (3)
M-708	COOLING PLANT SYSTEM CONTROL POINTS (4)
M-709	HOT WATER SYSTEM CONTROLS SEQUENCE
M-710	HOT WATER SYSTEM CONTROL POINTS
M-711	AIR HANDLING UNIT (AHU) VAV SINGLE ZONE CONTROLS SEQUENCE
M-712	AIR HANDLING UNIT (AHU) VAV SINGLE ZONE CONTROL POINTS
M-713	AIR HANDLING UNIT (AHU) CONTROLS SEQUENCE
M-714	AIR HANDLING UNIT (AHU) CONTROL POINTS
M-715	VARIABLE AIR VOLUME (VAV) UNIT CONTROLS SEQUENCE
M-716	VARIABLE AIR VOLUME (VAV) UNIT CONTROL POINTS
M-717	ENERGY RECOVERY UNIT (ERU) CONTROLS SEQUENCE
M-718	ENERGY RECOVERY UNIT (ERU) CONTROL POINTS
M-719	DUCTLESS SPLIT SYSTEM CONTROLS SEQUENCE AND POINTS, HVAC EMERGENCY SHUTDOWN CONTROLS SEQUENCE AND POINTS

CONTROLS LEGEND:

- DDC ↑ — SIGNAL TO DDC SYSTEM
- DDC ↓ — SIGNAL FROM DDC SYSTEM
- ### — CONTROL POINT
- CONTROL CONNECTION
- DIRECTION OF AIRFLOW (BREAKLINE MAY BE OMITTED)
- DIRECTION OF FLUID FLOW
- VFD — VARIABLE FREQUENCY DRIVE
- STR — MOTOR STARTER
- H-O-A — HAND-OFF-AUTO SWITCH
- M — MOTOR
- CT — CURRENT TRANSDUCER
- T — TEMPERATURE SENSOR
- H — HUMIDITY SENSOR
- h — ENTHALPY SENSOR
- H DP L — DIFFERENTIAL PRESSURE SENSOR
- SP — STATIC PRESSURE SENSOR
- FM — FLOW METER
- FS — FLOW SWITCH
- # # — TYP. WALL-MOUNTED SENSOR*
  - T TEMPERATURE
  - H HUMIDITY
  - DP DIFFERENTIAL PRESSURE
  - CO CARBON MONOXIDE
  - C CARBON DIOXIDE
  - AQ AIR QUALITY
  - *SECOND SENSOR MAY BE OMITTED.
- # # — TYP. WALL-MOUNTED CONTROL DEVICE*
  - T TEMPERATURE
  - H HUMIDITY
  - $ START / STOP SWITCH
  - ES EMERGENCY SHUTDOWN SWITCH
  - *SECOND CONTROL DEVICE MAY BE OMITTED.
- FAN
- PUMP
- ENERGY WHEEL
- COIL - ELECTRIC
- COIL - HYDRONIC
- COIL - NATURAL GAS

- M — MOTORIZED DAMPER (M ELECTRICAL ACTUATION, P PNEUMATIC ACTUATION)
- BD — BACKDRAFT DAMPER
- VD — MANUAL VOLUME DAMPER
- FILTER
- WALL LOUVER
- AFMS — AIRFLOW MEASURING STATION
- DIFFERENTIAL PRESSURE SWITCH
- SD — DUCT-MOUNTED SMOKE DETECTOR
- CO2 — DUCT-MOUNTED CARBON DIOXIDE SENSOR
- H — DUCT-MOUNTED HUMIDIFIER
- PS — DUCT-MOUNTED PRESSURE SWITCH
- FS — DUCT-MOUNTED FLOW SWITCH
- F — DUCT-MOUNTED FLOW SENSOR
- FS — DUCT-MOUNTED FREEZESTAT
- FS — DUCT-MOUNTED FIRESTAT
- M — 3-WAY CONTROL VALVE (M ELECTRICAL ACTUATION, P PNEUMATIC ACTUATION)
- M — 2-WAY CONTROL VALVE (M ELECTRICAL ACTUATION, P PNEUMATIC ACTUATION)
- PRESSURE GAUGE WITH SHUT-OFF COCK
- T — PIPE-MOUNTED TEMPERATURE SENSOR

POINTS SCHEDULE INSTRUCTIONS FOR BUILDING CONTROLS

WHAT FOLLOWS ARE INSTRUCTIONS TO THE CONTRACTOR FOR ITEMS THAT MUST BE INCLUDED IN THE BUILDING CONTROLS SHOP DRAWING SUBMITTAL. THESE ITEMS ARE IN ADDITION TO THE ITEMS INCLUDED WITHIN THE POINTS LIST PROVIDED WITHIN THESE DOCUMENTS.

A. WHEN AN ENTRY APPEARS INSIDE OF BRACKETS, IT MUST BE VERIFIED OR CHANGED BY THE APPROPRIATE PARTY:
   1. ENTRIES SHOWN WITH ANGLED BRACKETS (<___>) ARE REQUIRED ENTRIES. SOME ENTRIES WITHOUT BRACKETS MAY BE REQUIRED IN SOME INSTANCES AS DESCRIBED IN THESE INSTRUCTIONS.
   2. ENTRIES SHOWN WITH A TILDE (~) ARE ITEMS WHERE NO ENTRY IS ORDINARILY REQUIRED.
   3. ENTRIES SHOWN WITH NOT APPLICABLE (N / A) ARE ITEMS WHERE THERE IS NO POSSIBILITY OF A VALID ENTRY.
   4. ENTRIES SHOWN WITH SQUARE BRACKETS ([___]) INDICATE THAT THIS INFORMATION MUST BE PROVIDED AS PART OF UMCS INTEGRATION.

B. ADDITIONAL COLUMNS (NOT SHOWN WITHIN THESE DOCUMENTS) TO BE PROVIDED BY THE CONTRACTOR:
   1. DDC HARDWARE IDENTIFIER: SHOW THE IDENTIFIER FOR EACH PIECE OF DDC HARDWARE. MAINTAIN CONSISTENCY AND UNIQUENESS OF DDC HARDWARE IDENTIFIERS BETWEEN ALL DRAWINGS.
   2. DDC HARDWARE LOCATION: SHOW THE PHYSICAL LOCATION OF THE DEVICE. LOCATION MUST INCLUDE THE BUILDING AND ROOM NUMBER AND MAY ALSO INCLUDE FURTHER INFORMATION SUCH AS ENCLOSURE / PANEL IDENTIFICATION.

C. GENERAL POINTS LIST COLUMNS:
   1. FUNCTION: INDICATES THE FUNCTIONALITY OF THAT GROUP OF POINTS.
   2. POINT NAME: PROVIDE POINT NAMES AS NEEDED AND AS INDICATED. THE POINT NAME USED BY THE CONTRACTOR MUST INCLUDE THE PARTIAL NAME PROVIDED WITHIN THESE DOCUMENTS. THE FULL AND COMPLETE POINT NAME MUST BE IN COMPLIANCE WITH UFC 3-410-02, APPENDIX E.
   3. DESCRIPTION: INDICATES THE FUNCTIONAL DESCRIPTION OF THE POINT.
   4. SETTING (WITH UNITS): CONFIGURE DEVICES TO USE THE SETPOINTS AND SETTINGS SHOWN. WHEN A SETPOINT OR SETTING IS NOT SHOWN, USE VALUES IN ACCORDANCE WITH THE SPECIFICATION AND PROVIDE THE SETPOINT OR SETTING USED, INCLUDE THE APPROPRIATE ENGINEERING UNITS FOR ENTRIES IN THIS COLUMN.
   5. RANGE (WITH UNITS): CONFIGURE DEVICES TO USE THE RANGES SHOWN. WHEN A RANGE IS NOT SHOWN, USE VALUES IN ACCORDANCE WITH THE SPECIFICATIONS AND PROVIDE THE RANGE USED. FOR SENSORS, PROVIDE THE ACTUAL SENSOR RANGE. FOR VALVE AND DAMPER ACTUATORS, PROVIDE THE ACTUAL RANGE OVER WHICH THE VALVE OR DAMPER IS ACTUATED. INCLUDE THE APPROPRIATE ENGINEERING UNITS FOR ENTRIES IN THIS COLUMN.
   6. IO TYPE: PROVIDE THE I/O TYPE FOR EACH POINT AS ONE (OR MORE) OF THE FOLLOWING:
      A. "AI" FOR ANALOG INPUTS
      B. "AO" FOR ANALOG OUTPUTS
      C. "BI" FOR BINARY INPUTS
      D. "BO" FOR BINARY OUTPUTS
   7. HOA REQ'D: FOR EACH OUTPUT WITH A "Y" IN THIS COLUMN, PROVIDE A HARDWARE MANUAL OVERRIDE FOR THAT OUTPUT:
      A. THE MANUAL OVERRIDE SWITCH FOR BINARY OUTPUTS MUST PROVIDE FOR OVERRIDING THE OUTPUT OPEN OR CLOSED.
      B. THE MANUAL OVERRIDE SWITCH FOR ANALOG OUTPUTS MUST EITHER:
         1. PROVIDE FOR OVERRIDING THE OUTPUT TO 0% OR 100%
         2. PROVIDE FOR OVERRIDING THROUGH THE RANGE OF 0% TO 100%
      C. THE MANUAL OVERRIDE MUST BE INTEGRATED WITH THE CONTROLLER HARDWARE OR AN EXTERNAL OVERRIDE CO-LOCATED WITH (IN THE SAME ENCLOSURE AS) THE CONTROLLER.
   8. CONFIG. TYPE: FOR POINTS REQUIRING CONFIGURATION, PROVIDE THE FOLLOWING TO INDICATE THE TYPE OF CONFIGURATION REQUIRED FOR THE POINT:
      A. "HDWR" FOR HARDWARE (VIA SWITCHES OR ADJUSTMENTS DIRECTLY ON THE DEVICE)
      B. "CONF" FOR CONFIGURABLE
      C. "OC" FOR OPERATOR CONFIGURABLE

D. M&C AND LDP VIEW AND OVERRIDE COLUMNS:
   1. M&C VIEW AND OVRD: PROVIDE A M&C DISPLAY AND CONFIGURE THE BUILDING CONTROL NETWORK AND THE M&C DISPLAY POINTS AS INDICATED:
      A. "VIEW" FOR VIEW ONLY ON SYSTEM GRAPHICS
      B. "VOVRD" FOR VIEW AND OVERRIDE ON SYSTEM GRAPHICS
   2. LDP VIEW AND OVRD: PROVIDE AN LDP AND CONFIGURE THE BUILDING CONTROL NETWORK AND THE LDP DISPLAY POINTS AS INDICATED:
      A. "VIEW" FOR VIEW ONLY ON SYSTEM GRAPHICS
      B. "VOVRD" FOR VIEW AND OVERRIDE ON SYSTEM GRAPHICS

E. ALARMING COLUMNS:
   1. ALARM CONDITION: FOR EACH POINT WITH AN ENTRY IN THIS COLUMN, PROVIDE AN ALARM AS INDICATED INCLUDING ANY APPLICABLE TIME DELAYS.

F. OTHER:
   1. SYSTEM RESET BUTTON (RSTBUT): IF THE I/O TYPE COLUMN CONTAINS "BI", THE SYSTEM MUST BE CAPABLE OF BEING RESET VIA A LOCAL HARDWARE PUSH BUTTON.
   2. SYSTEM OCCUPANCY: INDICATE OCCUPIED (OCC), UNOCCUPIED (UNOCC), AND/OR WARM-UP/COOL-DOWN (WUCD) IN THE RANGE COLUMN BASED ON THE SYSTEM-SPECIFIC SEQUENCE OF OPERATIONS AND OCCUPANCY SCHEDULE.
   3. FILTERS: WHEN FILTER PRESSURES ARE SHOWN, INSTALL FILTER PRESSURE SWITCHED. PROVIDE LOADED FILTER (HL) SETPOINT FOR EACH FILTER.

POINTS SCHEDULE INSTRUCTIONS FOR UFGS 25 10 10

A. WHEN AN ENTRY APPEARS INSIDE OF BRACKETS, IT MUST BE VERIFIED OR CHANGED BY THE APPROPRIATE PARTY:
   1. ENTRIES SHOWN WITH ANGLED BRACKETS (<___>) ARE REQUIRED ENTRIES. SOME ENTRIES WITHOUT BRACKETS MAY BE REQUIRED IN SOME INSTANCES AS DESCRIBED IN THESE INSTRUCTIONS.
   2. ENTRIES SHOWN WITH A TILDE (~) ARE ITEMS WHERE NO ENTRY IS ORDINARILY REQUIRED.
   3. ENTRIES SHOWN WITH NOT APPLICABLE (N / A) ARE ITEMS WHERE THERE IS NO POSSIBILITY OF A VALID ENTRY.
   4. ENTRIES SHOWN WITH SQUARE BRACKETS ([___]) INDICATE THAT THIS INFORMATION SHALL BE PROVIDED AS PART OF UMCS INTEGRATION.

B. POINTS LIST COLUMNS:
   1. POINT NAME: SHOW POINT NAMES AS NEEDED AND AS INDICATED. THE POINT NAME USED BY THE CONTRACTOR MUST INCLUDE THE PARTIAL NAME PROVIDED WITHIN THESE DOCUMENTS. THE FULL AND COMPLETE POINT NAME MUST BE IN COMPLIANCE WITH UFC 3-410-02, APPENDIX E.
   2. M&C VIEW AND OVRD: PROVIDE A M&C DISPLAY AND CONFIGURE THE BUILDING CONTROL NETWORK AND THE M&C DISPLAY POINTS AS INDICATED:
      A. "VIEW" FOR VIEW ONLY ON SYSTEM GRAPHICS
      B. "VOVRD" FOR VIEW AND OVERRIDE ON SYSTEM GRAPHICS
   3. TREND REQ'D: FOR ALL POINTS WITH A "Y" IN THIS COLUMN, SET UP A TREND AT THE M&C SOFTWARE IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   4. ALARM CONDITION: FOR EACH POINT WITH AN ENTRY IN THIS COLUMN, PROVIDE AN ALARM AS INDICATED INCLUDING ANY APPLICABLE TIME DELAYS.
   5. ALARM PRIORITY: FOR EACH ENTRY IN THIS COLUMN, INDICATE WHETHER ALARM IS INFORMATIONAL OR CRITICAL:
      A. "INFO" FOR ITEMS IN ALARM UNTIL ACKNOWLEDGED OR THE CONDITION CLEARS ITSELF
      B. "CRIT" FOR ITEMS IN ALARM UNTIL ACKNOWLEDGED AND THE CONDITION CLEARS ITSELF
   6. M&C ROUTING: PROVIDE THE NAME OF THE ALARM ROUTING GROUP FOR EACH ALARM. THE ROUTING GROUP DEFINES THE DESTINATION FOR THE ALARM MESSAGE AND EACH GROUP REQUIRES SOME COMBINATION OF A POP-UP MESSAGE FOR A USER SESSION, AN EMAIL TO ONE OR MORE INDIVIDUALS, AN EMAIL TO SMS FOR ONE OR MORE INDIVIDUALS, OR PRINTING TO ONE OR MORE PRINTERS.

C. OTHER:
   1. SYSTEM RESET BUTTON (RSTBUT): IF THE I/O TYPE COLUMN CONTAINS "BI", THE SYSTEM MUST BE CAPABLE OF BEING RESET VIA A LOCAL HARDWARE PUSH BUTTON.

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & COMPANY
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

Smith Seckman Reid, Inc.

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 8600 BX and Wall HVAC System, MCC
Construction and Associated Mechanical Equipment
Client Project Number: AUW24-10130

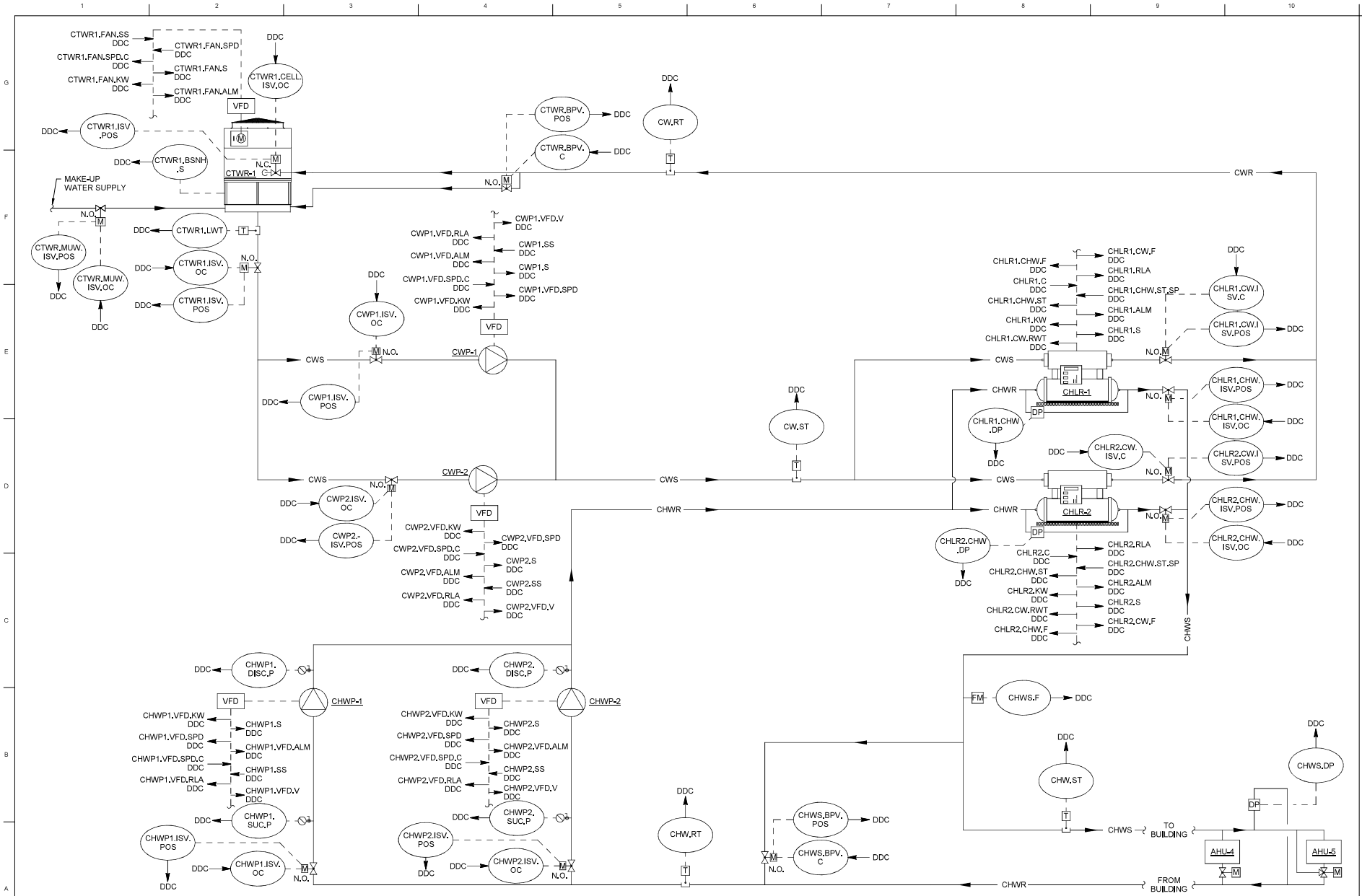
MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-701

ISSUED FOR CONSTRUCTION

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A1 COOLING PLANT SYSTEM CONTROLS SCHEMATIC

N.T.S

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Controls and Associated Electrical Equipment
Client Project Number: AUW24-1013D

MECHANICAL CONTROLS

POND # 1220854

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FEUNINGER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

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SHEET ID
M-702

ISSUED FOR CONSTRUCTION

SEQUENCE OF OPERATION - COOLING PLANT SYSTEM

EQUIPMENT

THE COOLING PLANT SYSTEM, AS IT APPLIES TO THE BUILDING AUTOMATION SYSTEM (BAS), CONSISTS OF THE FOLLOWING EQUIPMENT:

CHILLED WATER SYSTEM:
WATER-COOLED CHILLERS: CHLR-1 AND CHLR-2
CHILLED WATER PUMPS: CHWP-1, CHWP-2
CONDENSER WATER SYSTEM:
COOLING TOWERS: CTWR-1
CONDENSER WATER PUMPS: CWP-1, CWP-2
REFRIGERANT LEAK REMOVAL SYSTEM:
EXHAUST FAN: EF-1

SYSTEM GENERAL DESCRIPTION

THE COOLING PLANT CONTROL SYSTEM MUST MONITOR AND CONTROL THE SYSTEM'S CHILLERS, PUMPS, COOLING TOWERS, AND APPURTENANCES AS SHOWN ON THE CHILLED WATER SYSTEM SCHEMATIC, ON THE CHILLED WATER SYSTEM POINTS LISTS, AND AS DETAILED IN THE SPECIFICATIONS AND SEQUENCE OF OPERATION PROVIDED.

THE COOLING PLANT SYSTEM INCLUDES WATER-COOLED CHILLERS AND COOLING TOWERS WITH ITS PIPING CONFIGURATION ARRANGED AS A VARIABLE PRIMARY LOOP SUPPLYING CHILLED WATER TO THE FACILITY. THE CHILLED WATER PUMPS AND CONDENSER WATER PUMPS ARE CONFIGURED AS LEAD / STANDBY WHERE ANY PUMP CAN OPERATE WITH EITHER CHILLER. THE CHILLED WATER PUMPS MUST OPERATE WITH VARIABLE FLOW. THE CONDENSER WATER PUMPS MUST OPERATE WITH VARIABLE FLOW.

CHILLED WATER SYSTEM ENABLE / DISABLE:
THE CHILLED WATER SYSTEM MUST BE ENABLED AND DISABLED BY THE COOLING PLANT CONTROL SYSTEM AS REQUESTED BY THE SYSTEM HUMAN-INTERFACE PANEL OR THE BAS TIME OF DAY SCHEDULE. THE COOLING PLANT CONTROL SYSTEM MUST ENABLE / DISABLE THE CHILLERS AND START / STOP THE CHILLED WATER PUMPS BASED ON PLANT COOLING LOAD.

WHEN THE CHILLED WATER SYSTEM IS ENABLED, THE COOLING PLANT CONTROL SYSTEM MUST OPEN THE LEAD CHILLER AND LEAD CHILLED WATER PUMP ISOLATION VALVES (CHLRn,CHW,ISV, CHWPn,ISV), ENABLE THE LEAD CHILLER, AND START THE LEAD CHILLED WATER PUMP, AFTER THERE IS PROOF OF MINIMUM FLOW RATE FOR THE CHILLER, THEN THE CHILLER SHALL BE ENABLED. IF MINIMUM FLOW IS NOT REACHED WITHIN A USER DEFINABLE AMOUNT OF TIME, THE CHILLER CONTROLLER SHALL PROVIDE AN ALARM ON THE LEAD CHILLED WATER PUMP. THE LEAD CHILLED WATER PUMP SHALL BE CONSIDERED "FAILED" AND REMOVED FROM ROTATION. IF THE CHILLER DOES NOT PROVE STARTED WITHIN 5 SECONDS (ADJ) OF LEAD CHILLED WATER PUMP ACTIVATION, THE BCS SHALL CONSIDER THE CHILLER "FAILED" AND GENERATE AN ALARM.

THE CHILLED WATER SYSTEM IS DISABLED WHEN ALL CHILLERS ARE DISABLED AND THERE IS NOT AN ACTIVE CHILLED WATER PUMP REQUEST, WHEN THE CHILLED WATER SYSTEM IS DISABLED, THE CHILLERS MUST BE DISABLED, THE CHILLED WATER PUMPS MUST STOP, AND THE CHILLER AND CHILLED WATER PUMP ISOLATION VALVES (CHLRn,CHW,ISV, CHWPn,ISV) MUST BE FULLY CLOSED.

WATER-COOLED CHILLER OPERATION

CHILLER CONTROL:
THE CHILLERS MUST OPERATE IN A LEAD / STANDBY SEQUENCE TO MAINTAIN THE CHILLED WATER SUPPLY TEMPERATURE (CHW,ST), ONCE THE CHILLED WATER SYSTEM HAS BEEN ENABLED, THE LEAD CHILLER MUST BE ENABLED AND MUST OPERATE TO MAINTAIN THE CHILLED WATER SUPPLY TEMPERATURE (CHW,ST) TO ITS SETPOINT OF 42°F (ADJ).

WHEN THE CHILLER IS AUTOMATICALLY OR MANUALLY CALLED FOR SHUTDOWN, THE CHILLER MUST FOLLOW THE SEQUENCE FOR THE SHUTDOWN BASED UPON CHILLER MANUFACTURER CONTROL REQUIREMENTS. UPON CHILLER SHUTDOWN, THE CHILLER ISOLATION VALVES (CHLRn,CHW,ISV, CHLRn,CW,ISV) MUST CLOSE.

THE CHILLER SEQUENCE ORDER CAN BE ROTATED ON A SCHEDULE. CHILLER ROTATIONS MUST BE PROGRAMMED TO OCCUR AT ONE OF THE FOLLOWING OPERATOR-DEFINED INTERVALS; DEFAULT CHILLER ROTATION SEQUENCE MUST BE BASED ON "DAY OF WEEK" INTERVAL:

- NEVER: CHILLERS MUST ALWAYS HAVE THE SAME SEQUENCE NUMBER.
- DAY OF WEEK: CHILLERS MUST ROTATE ON A USER-SPECIFIED DAY AND TIME ONCE PER WEEK.
- FIXED NUMBER OF DAYS: CHILLERS MUST ROTATE AFTER THE NUMBER OF DAYS SPECIFIED HAS ELAPSED.
- RUN HOURS: CHILLERS ROTATE TO EVEN OUT THE AMOUNT OF TIME EACH CHILLER RUNS. WHEN ANY CHILLER REACHES THE USER-DEFINED RUN HOURS SETPOINT (WHICH IS MEASURED ONLY FROM THE LAST ROTATION), THE COOLING PLANT CONTROL SYSTEM CAN RE-SEQUENCE THE CHILLERS, IF NECESSARY, TO PUT THE CHILLER WITH THE LEAST TOTAL RUN HOURS INTO A HIGHER-USE POSITION IN THE SEQUENCE.
- ROTATIONAL INPUT: CHILLERS MUST ROTATE WHEN THE SPECIFIED REFERENCE COMMANDS THEM TO ROTATE.

FROM THE SYSTEM HUMAN-INTERFACE PANEL OR A BAS OPERATOR INTERFACE, AN OPERATOR MUST BE ABLE TO MANUALLY CHANGE THE LEAD / STANDBY SEQUENCE OR REQUEST ANY CHILLER TO BE UNAVAILABLE WHICH WOULD REMOVE IT FROM THE ROTATION SEQUENCE.

CHILLER FAILURE:
A CHILLER MUST BE CONSIDERED FAILED IF ANY ONE OF THE FOLLOWING CONDITIONS OCCURS:
- THE CHILLER STATUS IS NOT PROVEN TO THE BAS WITHIN 15 SECONDS (ADJ) OF ENABLE / DISABLE COMMAND
- THE CHILLER STATUS IS ON AND THE CHILLED WATER FLOW SWITCH IS DISABLED
- THE CHILLER STATUS IS ON AND THE CONDENSER WATER FLOW SWITCH IS DISABLED
- THE CHILLER REFRIGERANT LEAK DETECTION IS ACTIVATED

WHEN A CHILLER FAILURE EXISTS, A CHILLER FAILURE ALARM MUST ANNUNCIATE TO THE BAS OPERATOR INTERFACE. THE COOLING PLANT CONTROL SYSTEM MUST START THE STANDBY CHILLER AND DISABLE ROTATION SEQUENCE. ONCE THE FAILED CHILLER PROBLEM HAS BEEN DIAGNOSED AND CORRECTED, THE OPERATOR MUST BE ABLE TO CLEAR THE ALARM FAILURE FROM THE FROM THE BAS OPERATOR INTERFACE OR BY MANUALLY OVERRIDING THE CHILLER ON. THIS ACTION MUST RE-ENABLE THE LEAD / STANBY SEQUENCE.

CHILLER ISOLATION VALVES:
CHILLER ISOLATION VALVES MUST PREVENT THE FLOW OF FLUID THROUGH NON-OPERATING CHILLERS. WHEN THE COOLING PLANT CONTROL SYSTEM RECEIVES A CHILLED WATER AND CONDENSER WATER PUMP REQUEST, THE ASSOCIATED CHILLER CHILLED WATER AND CONDENSER WATER ISOLATION VALVE(S) (CHLRn,CHW,ISV, CHLRn,CW,ISV) MUST FULLY OPEN. CHILLER ISOLATION VALVE STROKE TIME MUST BE 60-120 SECONDS (ADJ) TO REDUCE OPERATING CHILLER FLOW TRANSIENTS. WHEN THE CHILLER CHILLED WATER AND CONDENSER WATER ISOLATION VALVE POSITIONS ARE PROVEN FULLY OPEN TO THE BAS, THE COOLING PLANT CONTROL SYSTEM MUST START THE ASSOCIATED CHILLED WATER AND / OR CONDENSER WATER PUMP(S). IF A CHILLER'S ISOLATION VALVE IS NOT PROVEN FULLY OPEN TO THE BAS AFTER VALVE STROKE TIME PLUS 60 SECONDS (ADJ), THE SYSTEM MUST ANNUNCIATE A CHILLER ISOLATION VALVE FAILURE ALARM TO THE BAS.

CHILLER HEAD PRESSURE CONTROL:
TO ENSURE A CHILLER OPERATES AT OR ABOVE ITS MINIMUM REQUIRED REFRIGERANT DIFFERENTIAL PRESSURE, THE CHILLER'S CONDENSER WATER FLOW MUST BE CONTROLLED TO ENSURE COMPLIANCE WITH THE CHILLER MANUFACTURER'S GUIDELINES FOR THE CHILLER'S OPERATING LIMITS AND TIMING. THE CHILLER'S REFRIGERANT DIFFERENTIAL PRESSURE MEASUREMENT (HEAD PRESSURE AND SUCTION PRESSURE) MUST BE MONITORED AND TRENDED TO ASSIST WITH THE TUNING OF THIS CONTROL.

WHEN A CHILLER IS ENABLED, THE CHILLER MUST MODULATE ITS CONDENSER WATER ISOLATION VALVE (CHLRn,CW,ISV) TO MAINTAIN A CONDENSER WATER DIFFERENTIAL PRESSURE NO LESS THAN THE CHILLER MANUFACTURER'S MINIMUM ALLOWABLE DIFFERENTIAL PRESSURE PLUS 10% (ADJ).

CHILLED WATER PUMP OPERATION

CHILLED WATER PUMP COMMANDS:
THE MANIFOLD CHILLED WATER PUMPS MUST OPERATE IN A LEAD / STANDBY SEQUENCE THAT MUST BE ROTATED ON A WEEKLY SCHEDULE. THE ROTATION SEQUENCE MUST BE BASED ON CALCULATED RUN TIME WITH THE PUMP HAVING THE LEAST RUN TIME DESIGNATED AS LEAD. FROM THE SYSTEM HUMAN-INTERFACE PANEL OR A BAS OPERATOR INTERFACE, AN OPERATOR MUST BE ABLE TO MANUALLY CHANGE THE LEAD / STANDBY SEQUENCE OR REQUEST ANY PUMP TO BE UNAVAILABLE WHICH WOULD REMOVE IT FROM THE ROTATION SEQUENCE.

WHEN THE CHILLED WATER SYSTEM IS ENABLED AND THE LEAD CHILLED WATER PUMP ISOLATION VALVE (CHWPn,ISV) IS PROVEN FULLY OPEN TO THE BAS, THE COOLING PLANT CONTROL SYSTEM MUST START THE LEAD CHILLED WATER PUMP. IF THE STATUS OF THE LEAD CHILLED WATER PUMP IS NOT PROVEN TO THE BAS WITHIN 30 SECONDS (ADJ), THAT CHILLED WATER PUMP MUST BE CONSIDERED FAILED, AN ALARM MUST ANNUNCIATE TO THE BAS, AND THE NEXT CHILLED WATER PUMP IN THE ROTATION SEQUENCE MUST START.

TO STOP A CHILLED WATER PUMP, THE COOLING PLANT CONTROL SYSTEM MUST SLOWLY DECREASE THE CHILLED WATER PUMP SPEED COMMAND AND THEN DISABLE THE CHILLED WATER PUMP WHEN IT REACHES ITS MINIMUM SPEED.

CHILLED WATER PUMP SPEED:
CHILLED WATER PUMP SPEED MUST BE CONTROLLED BASED ON CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE (CHWS,DP). WHEN A CHILLED WATER PUMP STARTS, THE COOLING PLANT CONTROL SYSTEM MUST START THE PUMP TO ITS MINIMUM SPEED AND THEN MODULATE THE PUMP SPEED TO MAINTAIN THE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE TO ITS INITIAL SETPOINT OF 15 PSIG (ADJ). THE FINAL CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST BE DETERMINED DURING TEST AND BALANCE BASED ON INSTALLED CONDITIONS.

THE MINIMUM CHILLED WATER PUMP SPEED MUST BE DETERMINED DURING TEST AND BALANCE; IT MUST BE THE SPEED REQUIRED TO MAINTAIN MINIMUM FLOW THROUGH THE CHILLER.

CHILLED WATER PUMP FAILURE:
IF THE CHILLED WATER PUMP STATUS IS NOT PROVEN TO THE BAS WITHIN 30 SECONDS (ADJ) OF INITIATING THE CHILLED WATER PUMP START / STOP COMMAND, A FAILED PUMP ALARM MUST ANNUNCIATE TO THE BAS OPERATOR INTERFACE AND THE NEXT PUMP IN THE SEQUENCE MUST START. ONCE THE FAILED PUMP PROBLEM HAS BEEN DIAGNOSED AND CORRECTED, THE OPERATOR MUST BE ABLE TO CLEAR THE FAILED PUMP ALARM FROM THE BAS OPERATOR INTERFACE OR BY MANUALLY OVERRIDING THE PUMP ON. THIS MUST RE-ENABLE THE LEAD / STANDBY CHILLED WATER PUMP SEQUENCE AND ROTATION.

OPTIMIZED DISTRIBUTION PUMP DIFFERENTIAL PRESSURE CONTROL:
THE COOLING PLANT CONTROL SYSTEM MUST MONITOR THE POSITION OF ALL CHILLED WATER CONTROL VALVES SERVED BY THE COOLING PLANT. AT COOLING PLANT SYSTEM STARTUP, THE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST BE SET TO THE FINAL CHILLED WATER SYSTEM DIFFERENTIAL SETPOINT. IN ALL CONDITIONS, THE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST BE BOUND BETWEEN A MINIMUM OF 12 PSI (ADJ) AND A MAXIMUM OF THE FINAL CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT.

WHEN ALL CHILLED WATER VALVES IN THE SYSTEM ARE LESS THAN 85% OPEN, THE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST BE LOWERED BY 0.1 PSIG (ADJ) OF THE CURRENT CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT. THIS MUST OCCUR EVERY 5 MINUTES (ADJ) UNTIL AT LEAST ONE OF THE FOLLOWING CONDITIONS OCCURS:
- (1) CHILLED WATER VALVE IN THE SYSTEM IS MORE THAN 85% OPEN
- THE CHILLED WATER PUMP REACHES ITS MINIMUM SPEED

WHEN ANY CHILLED WATER VALVE IN THE SYSTEM IS MORE THAN 95% OPEN, THE CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST INCREASE BY 0.1 PSIG (ADJ) OF THE CURRENT CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT. THIS MUST OCCUR EVERY 5 MINUTES (ADJ) UNTIL AT LEAST ONE OF THE FOLLOWING CONDITIONS OCCURS:
- NO CHILLED WATER VALVE IN THE SYSTEM IS MORE THAN 95% OPEN
- THE CHILLED WATER PUMP REACHES ITS MAXIMUM SPEED

CHILLED WATER MINIMUM FLOW BYPASS VALVE

THE COOLING PLANT CONTROL SYSTEM MUST MONITOR THE CHILLER EVAPORATOR DIFFERENTIAL PRESSURE (CHLRn,CHW,DP). WHEN THE EVAPORATOR DIFFERENTIAL PRESSURE OF THE OPERATING CHILLER INDICATES LOW PRESSURE (FLOW), THE COOLING PLANT CONTROL SYSTEM MUST MODULATE THE CHILLED WATER SYSTEM BYPASS VALVE (CHWS,BPV) OPEN TO MAINTAIN THE MINIMUM PRESSURE (FLOW) FOR ALL OPERATING CHILLERS.

CONDENSER WATER SYSTEM OPERATION

CONDENSER WATER SYSTEM ENABLE / DISABLE:
THE CONDENSER WATER SYSTEM MUST BE ENABLED FROM THE COOLING PLANT CONTROL SYSTEM OR FROM THE BAS BASED ON COOLING PLANT SYSTEM STATUS.

WHEN THE CONDENSER WATER SYSTEM IS ENABLED, THE COOLING PLANT CONTROL SYSTEM MUST CONTROL THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) TO ITS SETPOINT (ADJ) BY OPERATING THE CONDENSER WATER PUMP(S), OPENING / CLOSING THE TOWER BYPASS (CTWR,BPV) AND ISOLATION VALVES (CTWR,ISV, CTWR1,BD,ISV), AND MODULATING THE TOWER FAN(S) SPEED.

WHEN THE CONDENSER WATER SYSTEM IS DISABLED, THE CONDENSER WATER PUMPS AND COOLING TOWER FANS MUST STOP. WHEN ALL CONDENSER WATER PUMP STATUSES ARE PROVEN OFF TO THE BAS, THE TOWER BYPASS VALVE (CTWR,BPV) MUST FULLY OPEN, AND THE TOWER ISOLATION VALVES (CTWR1,ISV, CTWR1,BD,ISV) MUST FULLY CLOSE.

CONDENSER WATER PUMP COMMANDS:
THE MANIFOLD CONDENSER WATER PUMPS MUST OPERATE IN A LEAD / STANDBY SEQUENCE THAT MUST BE ROTATED ON A WEEKLY SCHEDULE. THE ROTATION SEQUENCE MUST BE BASED ON CALCULATED RUN TIME WITH THE PUMP HAVING THE LEAST RUN TIME DESIGNATED AS LEAD. FROM THE SYSTEM HUMAN-INTERFACE PANEL OR A BAS OPERATOR INTERFACE, AN OPERATOR MUST BE ABLE TO MANUALLY CHANGE THE LEAD / STANDBY SEQUENCE OR REQUEST ANY PUMP TO BE UNAVAILABLE WHICH WOULD REMOVE IT FROM THE ROTATION SEQUENCE.

WHEN THE CONDENSER WATER SYSTEM IS ENABLED AND THE LEAD CONDENSER WATER PUMP ISOLATION VALVE (CWPn,ISV) IS PROVEN FULLY OPEN TO THE BAS, THE COOLING PLANT CONTROL SYSTEM MUST START THE LEAD CONDENSER WATER PUMP. IF THE STATUS OF THE LEAD CONDENSER WATER PUMP IS NOT PROVEN TO THE BAS WITHIN 30 SECONDS (ADJ), THAT CONDENSER WATER PUMP MUST BE CONSIDERED FAILED, AN ALARM MUST ANNUNCIATE TO THE BAS, AND THE NEXT CONDENSER WATER PUMP IN THE ROTATION SEQUENCE MUST START.

TO STOP A CONDENSER WATER PUMP, THE COOLING PLANT CONTROL SYSTEM MUST SLOWLY DECREASE THE CONDENSER WATER PUMP SPEED COMMAND AND THEN STOP THE CONDENSER WATER PUMP WHEN IT REACHES ITS MINIMUM SPEED.

CONDENSER WATER PUMP SPEED:
CONDENSER WATER PUMPS MUST OPERATE AT VARIABLE VOLUME. WHEN A CONDENSER WATER PUMP STARTS, THE COOLING PLANT CONTROL SYSTEM MUST START THE PUMP AT ITS MINIMUM SPEED AND THEN MODULATE THE PUMP SPEED TO ACHIEVE THE DESIGN CONDENSER WATER FLOW RATE. MINIMUM CONDENSER WATER PUMP SPEED MUST BE DETERMINED DURING TEST AND BALANCE; IT MUST BE THE MAXIMUM VALUE OF THE FOLLOWING CONDITIONS:
- PUMP SPEED TO MAINTAIN MINIMUM FLOW THROUGH THE COOLING TOWERS AS DETERMINED BY THE COOLING TOWER MANUFACTURER
- PUMP SPEED TO MAINTAIN MINIMUM CONDENSER WATER FLOW THROUGH THE CHILLER AS DETERMINED BY THE CHILLER MANUFACTURER
- PUMP SPEED TO MAINTAIN MINIMUM COOLING TOWER STATIC LIFT

CONDENSER WATER PUMP FAILURE:
IF THE CONDENSER WATER PUMP STATUS IS NOT PROVEN TO THE BAS WITHIN 30 SECONDS (ADJ) OF INITIATING THE CONDENSER WATER PUMP START / STOP COMMAND, A FAILED PUMP ALARM MUST ANNUNCIATE TO THE BAS OPERATOR INTERFACE AND THE NEXT PUMP IN THE SEQUENCE MUST START. ONCE THE FAILED PUMP PROBLEM HAS BEEN DIAGNOSED AND CORRECTED, THE OPERATOR MUST BE ABLE TO CLEAR THE FAILED PUMP ALARM FROM THE BAS OPERATOR INTERFACE OR BY MANUALLY OVERRIDING THE PUMP ON. THIS MUST RE-ENABLE THE LEAD / STANDBY CONDENSER WATER PUMP SEQUENCE AND ROTATION.

COOLING TOWER OPERATION

COOLING TOWER CONTROL:
WHEN THE CONDENSER WATER SYSTEM IS ENABLED, THE COOLING TOWER MUST OPERATE BASED ON THE FOLLOWING CONDITIONS:
- IF THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) IS LESS THAN OR EQUAL TO ITS SETPOINT, THEN THE COOLING TOWERS MUST REMAIN OFF. THE COOLING TOWER ISOLATION VALVES (CTWR1,ISV) MUST REMAIN CLOSED, THE COOLING TOWER BASIN DRAIN ISOLATION VALVES (CTWR1,BD,ISV) MUST FULLY OPEN, AND THE COOLING TOWER BYPASS VALVE (CTWR,BPV) MUST BE IN FULL BYPASS POSITION (I.E. NO FLOW THROUGH THE TOWERS).
- IF THE CONDENSER WATER SUPPLY TEMPERATURE (CWS,T) IS GREATER THAN ITS SETPOINT, THEN THE LEAD COOLING TOWER ISOLATION VALVE (CTWR1,ISV) MUST FULLY OPEN AND THE COOLING TOWER BYPASS VALVE (CTWR,BPV) MUST FULLY CLOSE (I.E. FLOW ONLY THROUGH THE LEAD TOWER).
- IF THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) REMAINS GREATER THAN ITS SETPOINT FOR MORE THAN 15 MINUTES (ADJ), THEN THE LEAD COOLING TOWER FAN MUST START AND MUST MODULATE TO MAINTAIN THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) TO ITS SETPOINT.

THE REVERSE SEQUENCE MUST OCCUR TO DISABLE THE COOLING TOWER AS PLANT COOLING LOAD DECREASES. COOLING TOWER FANS MUST HAVE MINIMUM 3 MINUTE (ADJ) START / STOP AND SPEED CHANGE DELAY.

COOLING TOWER BYPASS CONTROL:
WHEN THE CONDENSER WATER SYSTEM IS ENABLED, THE COOLING PLANT CONTROL SYSTEM MUST MAINTAIN THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) BY FIRST CONTROLLING THE COOLING TOWER BYPASS VALVE (CTWR,BPV). DURING NORMAL OPERATION, IF THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) IS LESS THAN OR EQUAL TO ITS MINIMUM SETPOINT OF 55°F (ADJ), THE COOLING TOWER BYPASS VALVE (CTWR,BPV) MUST BE IN FULL BYPASS POSITION (I.E. NO FLOW THROUGH THE TOWERS). IF THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) RISES AT LEAST 10°F (ADJ) ABOVE ITS MINIMUM SETPOINT, THEN THE COOLING TOWER BYPASS VALVE (CTWR,BPV) MUST FULLY CLOSE, SENDING WATER TO THE COOLING TOWERS ONLY.

WHEN THE CONDENSER WATER SYSTEM IS DISABLED OR THE CONDENSER WATER SUPPLY TEMPERATURE (CW,ST) REACHES ITS MINIMUM SETPOINT FOR A MINIMUM OF 15 MINUTES (ADJ), THE COOLING TOWER BYPASS VALVE (CTWR,BPV) MUST RETURN TO FULL BYPASS POSITION (I.E. NO FLOW THROUGH THE TOWERS).

COOLING TOWER FAILURE:
A COOLING TOWER MUST BE CONSIDERED FAILED IF ANY ONE OF THE FOLLOWING CONDITIONS OCCURS:
- THE TOWER FAN STATUS IS NOT PROVEN TO THE BAS WITHIN 15 SECONDS (ADJ) OF START / STOP COMMAND
- THE TOWER VIBRATION SWITCH IS ACTIVATED
- THE TOWER BASIN HIGH WATER LIMIT SWITCH IS ACTIVATED
- THE TOWER BASIN LOW WATER LIMIT SWITCH IS ACTIVATED

WHEN A TOWER FAILURE EXISTS, A TOWER FAILURE ALARM MUST ANNUNCIATE TO THE BAS OPERATOR INTERFACE. THE COOLING PLANT SYSTEM MUST DISABLE THE TOWER. ONCE THE FAILED TOWER PROBLEM HAS BEEN DIAGNOSED AND CORRECTED, THE OPERATOR MUST BE ABLE TO CLEAR THE TOWER FAILURE ALARM FROM THE FROM THE BAS OPERATOR INTERFACE OR BY MANUALLY OVERRIDING THE TOWER ON.

COOLING TOWER BASIN HEATER CONTROL:
THE COOLING TOWER BASIN HEATERS MUST ONLY BE ENABLED WHEN THE CONDENSER WATER SYSTEM IS DISABLED AND THE OUTDOOR TEMPERATURE IS BELOW 38°F (ADJ). WHEN ENABLED, THE COOLING TOWER MUST CONTROL THE COOLING TOWER BASIN HEATERS TO MAINTAIN A BASIN WATER TEMPERATURE OF 40°F (ADJ).

COOLING TOWER MAKE-UP WATER VALVE CONTROL:
THE COOLING TOWER MUST OPEN OR CLOSE THE COOLING TOWER MAKE-UP WATER ISOLATION VALVE (CTWR,MUW,ISV) TO MAINTAIN THE COOLING TOWER BASIN WATER LEVELS BETWEEN THE MANUFACTURER'S RECOMMENDED MINIMUM AND MAXIMUM LIMITS. IF THE COOLING TOWER MAKE-UP WATER ISOLATION VALVE (CTWR,MUW,ISV) POSITION DOES NOT EQUAL ITS COMMAND, A FAILED VALVE ALARM MUST ANNUNCIATE TO THE BAS OPERATOR INTERFACE.

A1 COOLING PLANT SYSTEM CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.:
CONTRACT NO.:
CONTRACT #:

POND
Gault Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New 8600 BX and Wall HVAC System, MCC Control and Add Chilled Water Valve Equipment
Client Project Number: AUM24-10130

MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-703

ISSUED FOR CONSTRUCTION

File Path: I:\...\M-703.rvt
Plot Date: 9/13/2024 10:50:45 AM

ALARMS AND SHUTDOWNS

EMERGENCY SHUTDOWN: THE CHILLER SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN EMERGENCY SHUTDOWN SIGNAL.

OUTSIDE AIR TEMPERATURE SENSOR FAILURE: UPON LOSS OF SIGNAL, AN ALARM SHALL ANNUNCIATE TO THE BAS.

OUTSIDE AIR RELATIVE HUMIDITY SENSOR FAILURE: UPON LOSS OF SIGNAL, AN ALARM SHALL ANNUNCIATE TO THE BAS.

REFRIGERANT LEAK DETECTION: CHILLER SHALL SHUT DOWN AND GENERATE AN ALARM TO THE BAS.

LOSS OF CHILLED WATER FLOW: UPON TRIP OF CHILLED WATER FLOW SWITCH, CHILLER SHALL SHUTDOWN AND GENERATE AN ALARM TO THE BAS.

LOSS OF CONDENSER WATER FLOW: UPON TRIP OF CONDENSER WATER FLOW SWITCH, CHILLER SHALL SHUTDOWN AND GENERATE AN ALARM TO THE BAS.

CHILLER FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

CHILLER RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

CHILLER RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

CHILLER ISOLATION VALVE FAILURE: COMMANDED OPEN, BUT THE POSITION IS CLOSED.

CHILLER ISOLATION VALVE IN HAND: COMMANDED CLOSED, BUT THE POSITION IS OPEN.

HIGH CHILLED WATER SUPPLY TEMP: IF THE CHILLED WATER SUPPLY TEMPERATURE IS 5° F (ADJ) GREATER THAN SETPOINT.

LOW CHILLED WATER SUPPLY TEMP: IF THE CHILLED WATER SUPPLY TEMPERATURE IS 5° F (ADJ) LESS THAN SETPOINT.

CHILLED WATER PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

CHILLED WATER PUMP RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

CHILLED WATER PUMP RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

CHILLED WATER PUMP VFD FAULT: THE PUMP SHALL SHUT DOWN UPON SIGNAL THAT VFD IS IN ALARM.

CHILLED WATER PUMP ISOLATION VALVE FAILURE: COMMANDED OPEN, BUT THE POSITION IS CLOSED.

CHILLED WATER PUMP ISOLATION VALVE IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

HIGH CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE: IF THE CHILLED WATER DIFFERENTIAL PRESSURE IS 25% (ADJ) GREATER THAN SETPOINT.

LOW CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE: IF THE CHILLED WATER DIFFERENTIAL PRESSURE IS 25% (ADJ) LESS THAN SETPOINT.

HIGH CHILLER CHILLED WATER DIFFERENTIAL PRESSURE: IF THE CHILLED WATER DIFFERENTIAL PRESSURE ACROSS THE CHILLER IS 25% (ADJ) GREATER THAN SETPOINT.

LOW CHILLER CHILLED WATER DIFFERENTIAL PRESSURE: IF THE CHILLED WATER DIFFERENTIAL PRESSURE ACROSS THE CHILLER IS 25% (ADJ) LESS THAN SETPOINT.

HIGH CHILLED WATER FLOW: IF THE CHILLED WATER FLOW IS 25% (ADJ) GREATER THAN SETPOINT.

LOW CHILLED WATER FLOW: IF THE CHILLED WATER FLOW IS 25% (ADJ) LESS THAN SETPOINT.

CHILLED WATER SYSTEM BYPASS VALVE FAILURE: POSITION DOES NOT EQUAL COMMAND.

CHILLED WATER CHILLER BYPASS VALVE FAILURE: POSITION DOES NOT EQUAL COMMAND.

HIGH CONDENSER WATER SUPPLY TEMP: IF THE CONDENSER WATER SUPPLY TEMPERATURE IS 5° F (ADJ) GREATER THAN SETPOINT.

LOW CONDENSER WATER SUPPLY TEMP: IF THE CONDENSER WATER SUPPLY TEMPERATURE IS 5° F (ADJ) LESS THAN SETPOINT.

ALARMS AND SHUTDOWNS (CONTINUED)

COOLING TOWER FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

COOLING TOWER RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

COOLING TOWER RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

COOLING TOWER ISOLATION VALVE FAILURE: COMMANDED OPEN, BUT THE POSITION IS CLOSED.

COOLING TOWER ISOLATION VALVE IN HAND: COMMANDED CLOSED, BUT THE POSITION IS OPEN.

COOLING TOWER VIBRATION LIMIT: COOLING TOWER SHALL SHUTDOWN AND AN ALARM SHALL ANNUNCIATE AT THE BAS.

COOLING TOWER BASIN HIGH WATER LIMIT: COOLING TOWER SHALL SHUTDOWN AND AN ALARM SHALL ANNUNCIATE AT THE BAS.

COOLING TOWER BASIN LOW WATER LIMIT: COOLING TOWER SHALL SHUTDOWN AND AN ALARM SHALL ANNUNCIATE AT THE BAS.

COOLING TOWER BASIN HEATER FAILURE: BASIN HEATER STATUS DOES NOT EQUAL COMMAND.

COOLING TOWER BYPASS VALVE FAILURE: COMMANDED OPEN, BUT THE POSITION IS CLOSED.

COOLING TOWER BYPASS VALVE IN HAND: COMMANDED CLOSED, BUT THE POSITION IS OPEN.

MAKE-UP WATER ISOLATION VALVE FAILURE: COMMANDED OPEN, BUT THE POSITION IS CLOSED.

MAKE-UP WATER ISOLATION VALVE IN HAND: COMMANDED CLOSED, BUT THE POSITION IS OPEN.

CONDENSER WATER PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

CONDENSER WATER PUMP RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

CONDENSER WATER PUMP RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

CONDENSER WATER PUMP VFD FAULT: THE PUMP SHALL SHUT DOWN UPON SIGNAL THAT VFD IS IN ALARM.

CONDENSER WATER PUMP ISOLATION VALVE FAILURE: COMMANDED OPEN, BUT THE POSITION IS CLOSED.

CONDENSER WATER PUMP ISOLATION VALVE IN HAND: COMMANDED CLOSED, BUT THE POSITION IS OPEN.

REFRIGERANT LEAK DETECTED: REFRIGERANT CONCENTRATION EXCEEEDS MINIMUM SETPOINT.

A1 COOLING PLANT SYSTEM ALARMS AND SHUTDOWNS
N.T.S

MARK	DESCRIPTION	DATE

File Path: I:\fs\20220504 Tyndall AFB Design\100%_Tyndall AFB_ePIC_v1.rvt

DESIGNED BY: N. HENDERSON
DRAWN BY: U. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: W9126A-24-R-0004
CONTRACT NO.: <CONTRACT #>

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

Gall Zeiler Smith

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install Navy B600 BX and Wall HVAC System, MCC
Construct and Add Chilled Water HVAC Equipment
Client Project Number: AJW24-1013D

MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-704

Plot Date: 9/13/2024 10:50:46 AM

ISSUED FOR CONSTRUCTION

COOLING PLANT SYSTEM CONTROL POINTS (1)

			GENERAL								ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	CHLR1.S	CHILLER 1 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	CHILLER STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CHLR2.S	CHILLER 2 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	CHILLER STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CHLR1.ALM	CHILLER 1 GENERAL ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM	CRIT	[ ]
	CHLR2.ALM	CHILLER 2 GENERAL ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM	CRIT	[ ]
	CHLR1.CHW.FS	CHILLER 1 CHILLED WATER FLOW SWITCH	~	ON/OFF	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CHLR2.CHW.FS	CHILLER 2 CHILLED WATER FLOW SWITCH	~	ON/OFF	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CHLR1.CW.FS	CHILLER 1 CONDENSER WATER FLOW SWITCH	~	ON/OFF	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CHLR.2.CW.FS	CHILLER 2 CONDENSER WATER FLOW SWITCH	~	ON/OFF	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CHLR1.CW.DP	CHILLER 1 CONDENSER WATER DIFFERENTIAL PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	CHLR1.CW.DP IS 25% GREATER THAN OR LESS THAN SETPOINT	CRIT	[ ]
	CHLR2.CW.DP	CHILLER 2 CONDENSER WATER DIFFERENTIAL PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	CHLR2.CW.DP IS 25% GREATER THAN OR LESS THAN SETPOINT	CRIT	[ ]
	CHLR1.CHW.ISV.POS	CHILLER 1 CHILLED WATER ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CHLR1.CHW.ISV.POS DOES NOT EQUAL CHLR1.CHW.ISV.2P	CRIT	[ ]
	CHLR2.CHW.ISV.POS	CHILLER 2 CHILLED WATER ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CHLR2.CHW.ISV.POS DOES NOT EQUAL CHLR2.CHW.ISV.2P	CRIT	[ ]
	CHLR1.CW.ISV.POS	CHILLER 1 CONDENSER WATER ISOLATION VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHLR1.CW.ISV.POS DOES NOT EQUAL CHLR1.CW.ISV.C	CRIT	[ ]
	CHLR2.CW.ISV.POS	CHILLER 2 CONDENSER WATER ISOLATION VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHLR2.CW.ISV.POS DOES NOT EQUAL CHLR2.CW.ISV.C	CRIT	[ ]
	CHWS.BPV.POS	CHILLED WATER SYSTEM BYPASS VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHWS.BPV.POS DOES NOT EQUAL CHWS.BPV.C	CRIT	[ ]
	CHW.CHLR.BPV.POS	CHILLED WATER CHILLER BYPASS VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHW.CHLR.BPV.POS DOES NOT EQUAL CHW.CHLR.BPV.C	CRIT	[ ]
	CHWP1.S	CHILLED WATER PUMP 1 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	PUMP STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CHWP1.S	CHILLED WATER PUMP 2 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	PUMP STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CHWP1.VFD.ALM	CHILLED WATER PUMP 1 VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	VFD FAULT	CRIT	[ ]
	CHWP1.VFD.ALM	CHILLED WATER PUMP 2 VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	VFD FAULT	CRIT	[ ]
	CHWP1.ISV.POS	CHILLED WATER PUMP 1 ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CHWP1.ISV.POS DOES NOT EQUAL CHWP1.ISV.2P	CRIT	[ ]
	CHWP2.ISV.POS	CHILLED WATER PUMP 2 ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CHWP2.ISV.POS DOES NOT EQUAL CHWP2.ISV.2P	CRIT	[ ]
START/STOP	CHLR1.C	CHILLER 1 ENABLE / DISABLE COMMAND	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CHLR2.C	CHILLER 2 ENABLE / DISABLE COMMAND	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CHWP1.SS	CHILLED WATER PUMP 1 START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CHWP2.SS	CHILLED WATER PUMP 2 START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
PUMP CONTROL	CHWP1.VFD.SPD	CHILLED WATER PUMP 1 VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	VFD SPEED DOES NOT EQUAL COMMAND	INFO	[ ]
	CHWP2.VFD.SPD	CHILLED WATER PUMP 2 VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	VFD SPEED DOES NOT EQUAL COMMAND	INFO	[ ]
	CHWP1.VFD.SPD.C	CHILLED WATER PUMP 1 VFD SPEED COMMAND	AS DETERMINED DURING T&B	<0-100%>	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	CHWP2.VFD.SPD.C	CHILLED WATER PUMP 2 VFD SPEED COMMAND	AS DETERMINED DURING T&B	<0-100%>	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	CHWS.DP.SP	CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT	AS DETERMINED DURING T&B	<___> PSIG	~	~	OC	VOVRD	VIEW	Y	~	~	[ ]
	CHWS.DP	CHILLED WATER SYSTEM DIFFERENTIAL PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	CHWS.DP IS 25% GREATER THAN OR LESS THAN CHWS.DP.SP	CRIT	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>

A1 COOLING PLANT SYSTEM CONTROL POINTS (1 OF 4)
N.T.S

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION#-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Mall HVAC System, MCC
Construction Phase Mechanical Equipment
Client Project Number: ALMA21-1013D

MECHANICAL CONTROLS

POND # 1220854

MARK	DESCRIPTION	DATE

File Path: R:\2022\1220854 - Tyndall AFB BX Design\2024\02_Tyndall AFB_MPC_1.rvt

Plot Date: 9/13/2024 10:50:48 AM

SHEET ID
M-705

ISSUED FOR CONSTRUCTION

COOLING PLANT SYSTEM CONTROL POINTS (2)

		GENERAL									ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
VALVE CONTROL	CHWS.F	CHILLED WATER SYSTEM FLOW	~	<___> GPM	~	~	~	VIEW	VIEW	Y	LOW: SYS.F IS 25% LESS THAN MIN.SYS.F.SP FOR A MINIMUM OF 2 MINUTES (ADJ)	CRIT	☐
	CHWS.BPV.C	CHILLED WATER SYSTEM BYPASS VALVE COMMAND	0% OPEN	0-100%	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHW.CHLR.BPV.C	CHILLED WATER CHILLER BYPASS VALVE COMMAND	0% OPEN	0-100%	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHLR1.CHW.ISV.2P	CHILLER 1 CHILLED WATER ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHLR2.CHW.ISV.2P	CHILLER 2 CHILLED WATER ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHLR1.CW.ISV.2P	CHILLER 1 CONDENSER WATER ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHLR2.CW.ISV.2P	CHILLER 2 CONDENSER WATER ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHWP1.ISV.2P	CHILLED WATER PUMP 1 ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	☐
	CHWP2.ISV.2P	CHILLED WATER PUMP 2 ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	☐
WATER TEMPERATURE CONTROL	CHW.ST.SP	CHILLED WATER SUPPLY TEMPERATURE SETPOINT	PER CHILLER CONTROLS SEQUENCE	30-70°F	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	CHW.ST	CHILLED WATER SUPPLY TEMPERATURE	~	40-90°F	~	~	~	VIEW	VIEW	Y	CHW.ST IS GREATER THAN OR LESS THAN CHW.ST.SP BY 3°F (ADJ) FOR A MINIMUM OF 5 MINUTES (ADJ)	INFO	☐
	CHLR1.CHW.ST.SP	CHILLER 1 CHILLED WATER SUPPLY TEMPERATURE SETPOINT	PER CHILLER CONTROLS SEQUENCE	30-70°F	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	CHLR2.CHW.ST.SP	CHILLER 2 CHILLED WATER SUPPLY TEMPERATURE SETPOINT	PER CHILLER CONTROLS SEQUENCE	30-70°F	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	CHLR1.CHW.ST	CHILLER 1 CHILLED WATER SUPPLY TEMPERATURE	~	30-70°F	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHLR2.CHW.ST	CHILLER 2 CHILLED WATER SUPPLY TEMPERATURE	~	30-70°F	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHLR1.CW.RWT	CHILLER 1 CONDENSER WATER RETURN WATER TEMPERATURE	~	40-100°F	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHLR2.CW.RWT	CHILLER 2 CONDENSER WATER RETURN WATER TEMPERATURE	~	40-100°F	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHW.RT	CHILLED WATER RETURN TEMPERATURE	~	40-90°F	~	~	~	VIEW	VIEW	Y	~	~	☐
OTHER POINTS	CHLR1.KW	CHILLER 1 ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHLR2.KW	CHILLER 2 ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHLR1.RLA	CHILLER 1 RUN LOAD AMPS	~	<___> AMPS	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHLR2.RLA	CHILLER 2 RUN LOAD AMPS	~	<___> AMPS	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP1.VFD.KW	CHILLED WATER PUMP 1 VFD ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP.2.VFD.KW	CHILLED WATER PUMP 2 VFD ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP1.SUC.P	CHILLED WATER PUMP 1 SUCTION PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP2.SUC.P	CHILLED WATER PUMP 2 SUCTION PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP1.DISC.P	CHILLED WATER PUMP 1 DISCHARGE PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP2.DISC.P	CHILLED WATER PUMP 2 DISCHARGE PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP1.VFD.RLA	CHILLED WATER PUMP 1 VFD RUN LOAD AMPS	~	<___> AMPS	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP2.VFD.RLA	CHILLED WATER PUMP 2 VFD RUN LOAD AMPS	~	<___> AMPS	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP1.VFD.V	CHILLED WATER PUMP 1 VFD VOLTAGE	~	<___> VOLTS	~	~	~	VIEW	VIEW	Y	~	~	☐
	CHWP2.VFD.V	CHILLED WATER PUMP 2 VFD VOLTAGE	~	<___> VOLTS	~	~	~	VIEW	VIEW	Y	~	~	☐

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>

A1 COOLING PLANT SYSTEM CONTROL POINTS (2 OF 4)
N.T.S

MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Commissioning of HVAC Equipment
Client Project Number: AUW24-1013D

MECHANICAL CONTROLS

POND # 1220564

SHEET ID
M-706

ISSUED FOR CONSTRUCTION

File Path: I:\...
Plot Date: 9/13/2024 10:50:51 AM

COOLING PLANT SYSTEM CONTROL POINTS (3)

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	CTWR1.FAN.S	COOLING TOWER 1 FAN STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	COOLING TOWER STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CTWR1.FAN.ALM	COOLING TOWER 1 FAN ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM	CRIT	[ ]
	CTWR1.BSNH.S	COOLING TOWER 1 BASIN HEATER STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	BASIN HEATER STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CTWR1.YS	COOLING TOWER 1 VIBRATION SWITCH	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CTWR1.BSN.HWL.SW	COOLING TOWER 1 BASIN HIGH WATER LEVEL SWITCH	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CTWR1.BSN.LWL.SW	COOLING TOWER 1 BASIN LOW WATER LEVEL SWITCH	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CTWR1.BSN.LVL.MU.SW	COOLING TOWER 1 BASIN LOW WATER LEVEL MAKE-UP SWITCH	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM & UNIT SHUTDOWN	CRIT	[ ]
	CTWR1.ISV.POS	COOLING TOWER 1 ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CTWR1.CELL.ISV.POS DOES NOT EQUAL CTWR1.CELL.ISV.2P	CRIT	[ ]
	CTWR1.BD.ISV.POS	COOLING TOWER 1 BASIN DRAIN ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CWTR1.BD.ISV.POS DOES NOT EQUAL CTWR1.BD.ISV.2P	CRIT	[ ]
	CTWR.MUW.ISV.POS	COOLING TOWER MAKE-UP WATER ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CTWR.MUW.ISV.POS DOES NOT EQUAL CTWR.MUW.ISV.2P	CRIT	[ ]
	CTWR.BPV.POS	COOLING TOWER BYPASS VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CTWR.BPV.POS DOES NOT EQUAL CTWR.BPV.C	CRIT	[ ]
	CWP1.S	CONDENSER WATER PUMP 1 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	PUMP STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CWP2.S	CONDENSER WATER PUMP 2 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	PUMP STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CWP1.VFD.ALM	CONDENSER WATER PUMP 1 VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	VFD FAULT	CRIT	[ ]
	CWP2.VFD.ALM	CONDENSER WATER PUMP 2 VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	VFD FAULT	CRIT	[ ]
	CWP1.ISV.POS	CONDENSER WATER PUMP 1 ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CWP1.ISV.POS DOES NOT EQUAL CWP1.ISV.2P	CRIT	[ ]
	CWP2.ISV.POS	CONDENSER WATER PUMP 2 ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	CWP2.ISV.POS DOES NOT EQUAL CWP2.ISV.2P	CRIT	[ ]
START/STOP	CTWR1.FAN.SS	COOLING TOWER 1 FAN START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CWP1.SS	CONDENSER WATER PUMP 1 START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CWP2.SS	CONDENSER WATER PUMP 2 START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]

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A1 COOLING PLANT SYSTEM CONTROL POINTS (3 OF 4)
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

Gay Smith

220 Maill Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Construction and Controls Modifications Equipment
Client Project Number: ALW21-1013D

MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-707

ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 10:50:53 AM
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COOLING PLANT SYSTEM CONTROL POINTS (4)

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
FAN CONTROL	CTWR1.FAN.SPD	COOLING TOWER 1 FAN SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	FAN SPEED DOES NOT EQUAL COMMAND	INFO	[ ]
	CTWR1.FAN.SPD.C	COOLING TOWER 1 FAN SPEED COMMAND	AS DETERMINED DURING T&B	<0-100%>	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
PUMP CONTROL	CWP1.VFD.SPD	CONDENSER WATER PUMP 1 VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	VFD SPEED DOES NOT EQUAL COMMAND	INFO	[ ]
	CWP2.VFD.SPD	CONDENSER WATER PUMP 2 VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	VFD SPEED DOES NOT EQUAL COMMAND	INFO	[ ]
	CWP1.VFD.SPD.C	CONDENSER WATER PUMP 1 VFD SPEED COMMAND	AS DETERMINED DURING T&B	<0-100%>	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	CWP2.VFD.SPD.C	CONDENSER WATER PUMP 2 VFD SPEED COMMAND	AS DETERMINED DURING T&B	<0-100%>	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
VALVE CONTROL	CTWR.MUW.ISV.C	COOLING TOWER MAKE-UP WATER ISOLATION VALVE COMMAND	0% OPEN	0-100%	~	~	~	VOVRD	VIEW	Y	~	~	[ ]
	CTWR.BPV.C	COOLING TOWER BYPASS VALVE COMMAND	100% OPEN	0-100%	~	~	~	VOVRD	VIEW	Y	~	~	[ ]
	CTWR1.CELL.ISV.2P	COOLING TOWER 1 CELL ISOLATION VALVE OPEN / CLOSE	CLOSED	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	[ ]
	CTWR1.BD.ISV.2P	COOLING TOWER 1 BASIN DRAIN ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	[ ]
	CWP1.ISV.2P	CONDENSER WATER PUMP 1 ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	[ ]
	CWP2.ISV.2P	CONDENSER WATER PUMP 2 ISOLATION VALVE OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VIEW	Y	~	~	[ ]
WATER TEMPERATURE CONTROL	CW.ST.SP	CONDENSER WATER SUPPLY TEMPERATURE SETPOINT	PER COOLING TOWER CONTROLS SEQUENCE	<40-100°F>	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	CW.ST	CONDENSER WATER SUPPLY TEMPERATURE	~	<40-100°F>	~	~	~	VIEW	VIEW	Y	CW.ST IS GREATER THAN OR LESS THAN CW.ST.SP BY 3°F (ADJ) FOR A MINIMUM OF 5 MINUTES (ADJ)	INFO	[ ]
	CTWR1.LWT	COOLING TOWER 1 LEAVING WATER TEMPERATURE	~	<40-100°F>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CW.RT	CONDENSER WATER RETURN TEMPERATURE	~	<40-110°F>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
OTHER POINTS	CTWR1.FAN.KW	COOLING TOWER 1 FAN ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CWP1.VFD.KW	CONDENSER WATER PUMP 1 VFD ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CWP2.VFD.KW	CONDENSER WATER PUMP 2 VFD ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CWP1.VFD.RLA	CONDENSER WATER PUMP 1 VFD RUN LOAD AMPS	~	<___> AMPS	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CWP2.VFD.RLA	CONDENSER WATER PUMP 2 VFD RUN LOAD AMPS	~	<___> AMPS	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CWP1.VFD.V	CONDENSER WATER PUMP 1 VFD VOLTAGE	~	<___> VOLTS	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CWP2.VFD.V	CONDENSER WATER PUMP 2 VFD VOLTAGE	~	<___> VOLTS	~	~	~	VIEW	VIEW	Y	~	~	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
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A1 COOLING PLANT SYSTEM CONTROL POINTS (4 OF 4)
N.T.S

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DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
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TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction Project Number: ALW24-1013D
Client Project Number: ALW24-1013D

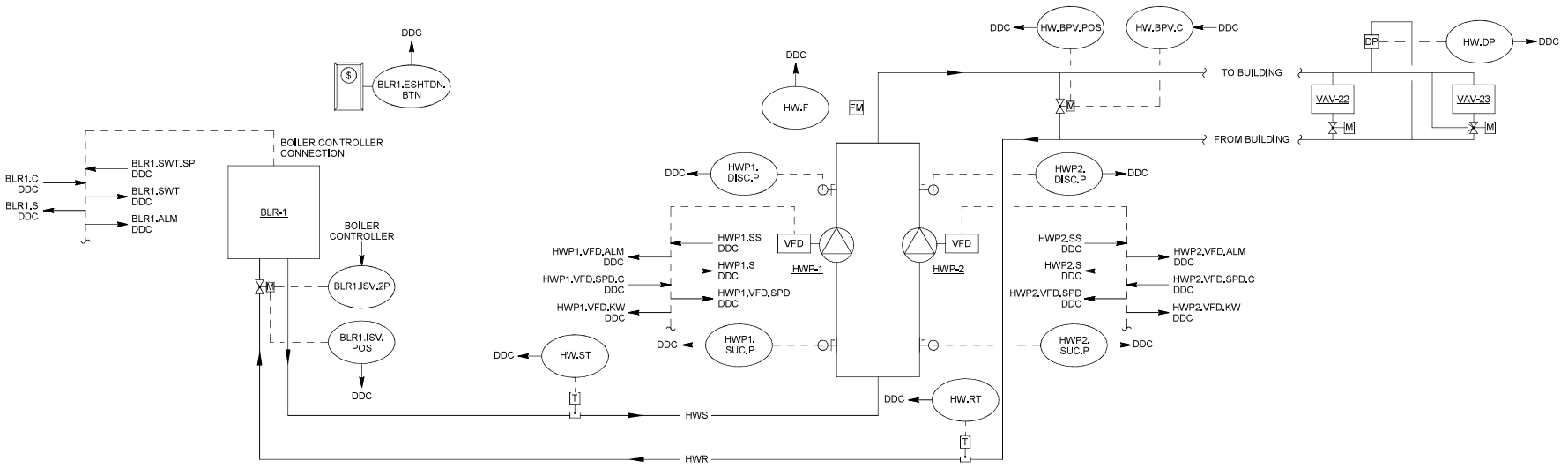
MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-708

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 10:50:56 AM



SEQUENCE OF OPERATION - BOILER HOT WATER SYSTEM

EQUIPMENT

THE BOILER HOT WATER SYSTEM, AS IT APPLIES TO THE BUILDING CONTROL SYSTEM (BCS), CONSISTS OF THE FOLLOWING EQUIPMENT:

BOILER, BLR-1

HOT WATER PUMPS, HWP-1 AND HWP-2

BOILER HOT WATER SYSTEM START/STOP SEQUENCE

STARTING HEATING HOT WATER PUMPS:
THE BCS MUST START THE LEAD HOT WATER PUMP ACCORDING TO THE HOT WATER PUMP SEQUENCE WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:
- THE OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (DB) (ADJ.)
- AT LEAST ONE SPACE TEMPERATURE HAS BEEN LESS THAN SETPOINT FOR A MINIMUM OF 600 SECONDS (ADJ.)
- THERE IS A CALL FOR HEATING FROM ANY HVAC UNIT ASSOCIATED WITH THE BOILER HOT WATER SYSTEM

STARTING BOILERS:
AS BUILDING HEATING LOAD INCREASES AND HEATING CAPACITY IS REQUIRED, THE BOILER CONTROLLER (PROVIDED BY THE BOILER MANUFACTURER) MUST START THE BOILER BY FOLLOWING THE BOILER MANUFACTURER START-UP SEQUENCE PROGRAMMED INTO THE MANUFACTURER PROVIDED BOILER CONTROLLER.

THE BCS MUST INCLUDE AN ENABLE/DISABLE OVERRIDE FOR THE BOILER TO ALLOW FOR THE BOILER TO BE REMOVED FOR MAINTENANCE. WHEN THE DISABLE COMMAND HAS BEEN GIVEN FOR THE BOILER, THE BOILER CONTROLLER MUST REMOVE THAT BOILER FROM THE ROTATION.

STOPPING BOILERS:
WHEN THE BOILER IS AUTOMATICALLY OR MANUALLY CALLED FOR SHUTDOWN, THE BOILER CONTROLLER MUST FOLLOW THE SEQUENCE FOR THE SHUTDOWN OF THE BOILER BASED UPON BOILER MANUFACTURER CONTROL REQUIREMENTS (AS PROGRAMMED BY MANUFACTURER). UPON BOILER SHUTDOWN, IF THE BOILER ISOLATION VALVE DOES NOT PROVE FULLY CLOSED TO THE BCS, THE BOILER CONTROLLER MUST SIGNAL AN ALARM TO THE BCS.

MONITORING AT BOILERS:
THE BCS MUST MONITOR ALL POINTS INDICATED FOR BOILER VIA THE NETWORK INTERFACE WHERE POSSIBLE AND VIA HARD-WIRED CONNECTIONS WHERE NECESSARY. FOR DIGITAL INPUT SIGNALS FROM THE BOILER CONTROLLER, THE BCS MUST ALARM ON CONTACT CLOSING. FOR ANALOG INPUT SIGNAL, THE BCS MUST ALARM WHEN VALUE REACHES ALARM LEVEL INDICATED. (NOTE: ALARM LEVELS MUST BE ADJUSTABLE.)

HOT WATER TEMPERATURE SETPOINT:
THE BOILER CONTROLLER AND THE BCS MUST MONITOR THE HOT WATER SUPPLY TEMPERATURE AT ALL TIMES. THE BOILER CONTROLLER MUST ESTABLISH THE HEATING HOT WATER TEMPERATURE SETPOINT BASED ON AN OUTSIDE AIR RESET SCHEDULE, AS FOLLOWS:
- AT AN OUTSIDE AIR TEMPERATURE OF 35°F (DB) AND BELOW, HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT IS 140°F.
- AT AN OUTSIDE AIR TEMPERATURE OF 65°F (DB) AND ABOVE, HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT IS 120°F.
- THE HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT MUST BE RESET LINEARLY BETWEEN THE ABOVE OUTSIDE AIR TEMPERATURES.

THE BCS MUST HAVE THE ABILITY TO OVERRIDE THE HEATING HOT WATER SETPOINT.

HOT WATER PUMP CONTROL SEQUENCE

THE HOT WATER PUMPS MUST OPERATE AS LEAD / STANDBY WITH ONLY THE LEAD PUMP OPERATING. HOT WATER PUMP MOTORS HAVE VFDS. WHEN ANY HOT WATER PUMP MOTOR IS STARTED, THE BCS MUST START THE PUMP AT MINIMUM SPEED. THE MINIMUM HOT WATER PUMP SPEED MUST BE DETERMINED BY THE PUMP MANUFACTURER OR THE MINIMUM SPEED REQUIRED TO MAINTAIN MINIMUM FLOW THROUGH THE BOILER AS DETERMINED BY THE BOILER MANUFACTURER. THE GREATER OF THESE MINIMUM SPEED VALUES MUST BE THE MINIMUM HOT WATER PUMP SPEED AND MUST BE SET ACCORDINGLY DURING TEST AND BALANCE.

WHEN THE STATUS OF THE PUMP MOTOR IS PROVEN TO THE BCS, THE BCS MUST GRADUALLY INCREASE ITS SPEED BASED UPON DIFFERENTIAL PRESSURE CONTROL CRITERIA. IF THE HOT WATER PUMP MOTOR DOES NOT PROVE STARTED WITHIN 5 SECONDS (ADJ), THE BCS MUST CONSIDER THAT PUMP MOTOR "FAILED", GENERATE AN ALARM, AND REMOVE IT FROM ROTATION.

TO STOP A HOT WATER PUMP MOTOR, THE BCS MUST SLOWLY DECREASE THE SPEED OF THE PUMP MOTOR. THE BCS MUST STOP THE DESIRED HOT WATER PUMP WHEN IT REACHES MINIMUM SPEED.

THE BCS MUST MONITOR THE RUNTIME OF EACH HOT WATER PUMP MOTOR AND DESIGNATE EACH PUMP SYSTEM AS LEAD AND STANDBY BASED UPON THE NEED TO EQUALIZE RUNTIME FOR EACH PUMP MOTOR.

WHEN A HOT WATER PUMP IS DOWN FOR MAINTENANCE, THE BCS MUST ALLOW THE OPERATOR TO SELECT "MAINTENANCE" AND THE BCS MUST TAKE THIS PIECE OF EQUIPMENT OFF THE ROTATION.

HOT WATER DIFFERENTIAL PRESSURE CONTROL:
THE BCS MUST MEASURE THE HOT WATER SYSTEM DIFFERENTIAL PRESSURE AND MODULATE THE HOT WATER PUMP VFD TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT OF 12 PSIG (ADJ). THE FINAL DIFFERENTIAL PRESSURE SETPOINT MUST BE DETERMINED DURING TEST AND BALANCE TO MEET THE REQUIREMENTS OF ACTUAL FIELD CONDITIONS.

HOT WATER DIFFERENTIAL PRESSURE OPTIMIZATION:
THE BCS MUST CONTINUALLY MONITOR THE POSITION OF ALL HOT WATER CONTROL VALVES IN THE HOT WATER SYSTEM. AT HOT WATER SYSTEM STARTUP, THE HOT WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST BE 100% OF THE FINAL DIFFERENTIAL PRESSURE SETPOINT AS DETERMINED DURING TEST AND BALANCE.

WHEN ALL HOT WATER VALVES ARE LESS THAN 85% OPEN, THE HOT WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT MUST BE LOWERED BY 0.1 PSIG (ADJ) OF THE CURRENT HOT WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT. THIS OCCURS EVERY 5 MINUTES (ADJ) UNTIL AT LEAST ONE OF THE FOLLOWING OCCURS:
- (1) HOT WATER VALVE IS MORE THAN 85% OPEN
- THE HOT WATER PUMP VFD REACHES ITS MINIMUM SPEED AS DETERMINED DURING TEST AND BALANCE

WHEN ANY HOT WATER VALVE IS MORE THAN 95% OPEN, THE HOT WATER SYSTEM PRESSURE SETPOINT MUST INCREASE BY 0.1 PSIG (ADJ) OF THE CURRENT HOT WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT. THIS OCCURS EVERY 5 MINUTES (ADJ) UNTIL AT LEAST ONE OF THE FOLLOWING CONDITIONS OCCURS:
- NO HOT WATER VALVE IS MORE THAN 95% OPEN
- THE HOT WATER PUMP VFD REACHES ITS MAXIMUM SPEED

HOT WATER BYPASS VALVE - MINIMUM FLOW CONTROL

THE BCS MUST MEASURE THE HOT WATER FLOW THROUGH THE SYSTEM. THE HOT WATER BYPASS VALVE MUST REMAIN CLOSED DURING NORMAL OPERATION. IF THE HOT WATER PUMP REACHES ITS MINIMUM SPEED, THE BCS MUST MODULATE THE BYPASS VALVE OPEN TO MAINTAIN THE HOT WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT.

ALARMS AND SHUTDOWNS

BOILER EMERGENCY SHUTDOWN: UPON ACTIVATION OF THE BOILER EMERGENCY SHUTDOWN SWITCH, THE BOILER MUST SHUTDOWN AND SEND AN ALARM TO THE BCS.

BOILER FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

BOILER RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

BOILER RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

HIGH HOT WATER SUPPLY TEMP: IF THE HOT WATER SUPPLY TEMPERATURE IS 5° F (ADJ) GREATER THAN SETPOINT.

LOW HOT WATER SUPPLY TEMP: IF THE HOT WATER SUPPLY TEMPERATURE IS 5° F (ADJ) LESS THAN SETPOINT.

HOT WATER PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

HOT WATER PUMP RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

HOT WATER PUMP RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

HOT WATER PUMP VFD FAULT: THE PUMP MUST SHUT DOWN UPON SIGNAL THAT VFD IS IN ALARM.

HIGH HOT WATER SYSTEM DIFFERENTIAL PRESSURE: IF THE HOT WATER SYSTEM DIFFERENTIAL PRESSURE IS 25% (ADJ) GREATER THAN SETPOINT.

LOW HOT WATER SYSTEM DIFFERENTIAL PRESSURE: IF THE HOT WATER SYSTEM DIFFERENTIAL PRESSURE IS 25% (ADJ) LESS THAN SETPOINT.

LOW HOT WATER SYSTEM FLOW: IF THE HOT WATER SYSTEM FLOW IS 25% (ADJ) LESS THAN SETPOINT.

A1 HOT WATER SYSTEM CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA
POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Controls and AHU Controls Upgrade Project
Client Project Number: AJW21-10130
MECHANICAL CONTROLS
POND # 1220854

SHEET ID
M-709

ISSUED FOR CONSTRUCTION

File Path: I:\...\M-709.dwg
Plot Date: 9/13/2024 10:50:56 AM

HOT WATER SYSTEM CONTROL POINTS

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	BLR1.S	BOILER 1 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	BLR1.S DOES NOT EQUAL COMMAND	CRIT	☐
	BLR1.ALM	BOILER 1 GENERAL ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM	CRIT	☐
	HWP1.S	HOT WATER PUMP 1 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	HWP1.S DOES NOT EQUAL COMMAND	CRIT	☐
	HWP1.VFD.ALM	HOT WATER PUMP 1 VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	VFD FAULT	CRIT	☐
	HWP2.S	HOT WATER PUMP 2 STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	HWP2.S DOES NOT EQUAL COMMAND	CRIT	☐
	HWP2.VFD.ALM	HOT WATER PUMP 2 VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	VFD FAULT	CRIT	☐
	BLR1.ISV.POS	BOILER 1 ISOLATION VALVE POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	BLR1.ISV.POS DOES NOT EQUAL COMMAND FROM BOILER CONTROLLER	CRIT	☐
	HW.BPV.POS	HOT WATER BYPASS VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	BPV.POS DOES NOT EQUAL BPV.C	CRIT	☐
	BLR1.ESHTDN.BTN	BOILER EMERGENCY SHUTDOWN BUTTON	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN	CRIT	☐
START/STOP	BLR1.C	BOILER 1 ENABLE / DISABLE COMMAND	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	☐
	HWP1.SS	HOT WATER PUMP 1 START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	☐
	HWP2.SS	HOT WATER PUMP 2 START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	☐
PUMP CONTROL	HWP1.VFD.SPD.C	HOT WATER PUMP 1 VFD SPEED COMMAND	AS DETERMINED DURING T&B	0-100%	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	HWP1.VFD.SPD	HOT WATER PUMP 1 VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	~	~	☐
	HWP2.VFD.SPD.C	HOT WATER PUMP 2 VFD SPEED COMMAND	AS DETERMINED DURING T&B	0-100%	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	HWP2.VFD.SPD	HOT WATER PUMP 2 VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	~	~	☐
	HW.DP.SP	HOT WATER SYSTEM DIFFERENTIAL PRESSURE SETPOINT	AS DETERMINED DURING T&B	<___> PSIG	~	~	OC	VOVRD	VIEW	Y	~	~	☐
	HW.DP	HOT WATER SYSTEM DIFFERENTIAL PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	SYS.DP IS 25% GREATER THAN OR LESS THAN SYS.DP.SP	CRIT	☐
VALVE CONTROL	HW.BPV.C	HOT WATER BYPASS VALVE COMMAND	0% OPEN	0-100%	~	~	~	VOVRD	VIEW	Y	~	~	☐
	HW.F	HOT WATER SYSTEM FLOW	~	<___> GPM	~	~	~	VIEW	VIEW	Y	LOW: SYS.F IS 25% LESS THAN MIN.SYS.F.SP FOR A MINIMUM OF 2 MINUTES (ADJ)	CRIT	☐
	MIN.HW.F.SP	MINIMUM SYSTEM FLOW SETPOINT	PER HYDRONIC PUMP SCHEDULE	<___> GPM	~	~	C	VOVRD	VOVRD	Y	~	~	☐
WATER TEMPERATURE CONTROL	BLR1.SWT	BOILER 1 SUPPLY WATER TEMPERATURE	~	100-250°F	~	~	~	VIEW	VIEW	Y	BLR1.LWT IS GREATER THAN OR LESS THAN BLR.1.LWT.SP BY 5°F (ADJ) FOR A MINIMUM OF 5 MINUTES (ADJ)	INFO	☐
	BLR1.SWT.SP	BOILER 1 SUPPLY WATER TEMPERATURE SETPOINT	140°F (ADJ)	100-250°F	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	HW.ST	HOT WATER SUPPLY TEMPERATURE	~	100-250°F	~	~	~	VIEW	VIEW	Y	HW.ST IS GREATER THAN OR LESS THAN HW.ST.SP BY 5°F (ADJ) FOR A MINIMUM OF 5 MINUTES (ADJ)	CRIT	☐
	HW.ST.SP	HOT WATER SUPPLY TEMPERATURE SETPOINT	140°F (ADJ)	100-250°F	~	~	OC	VOVRD	VOVRD	Y	~	~	☐
	HW.RT	HOT WATER RETURN TEMPERATURE	~	100-250°F	~	~	~	VIEW	VIEW	Y	~	~	☐
OTHER POINTS	HWP1.VFD.KW	HOT WATER PUMP 1 VFD ELECTRICAL DEMAND (KW)	~	<___> KW	~	~	~	VIEW	VIEW	Y	~	~	☐
	HWP1.DISC.P	HOT WATER PUMP 1 DISCHARGE PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	HWP1.SUC.P	HOT WATER PUMP 1 SUCTION PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	HWP2.VFD.KW	HOT WATER PUMP 2 VFD ELECTRICAL DEMAND (KW)	~	<___> KW	~	~	~	VIEW	VIEW	Y	~	~	☐
	HWP2.DISC.P	HOT WATER PUMP 2 DISCHARGE PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐
	HWP2.SUC.P	HOT WATER PUMP 2 SUCTION PRESSURE	~	<___> PSIG	~	~	~	VIEW	VIEW	Y	~	~	☐

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>

A1 HOT WATER SYSTEM CONTROL POINTS
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC
Controls and Associated Miscellaneous Equipment
Client Project Number: AUW24-1013D

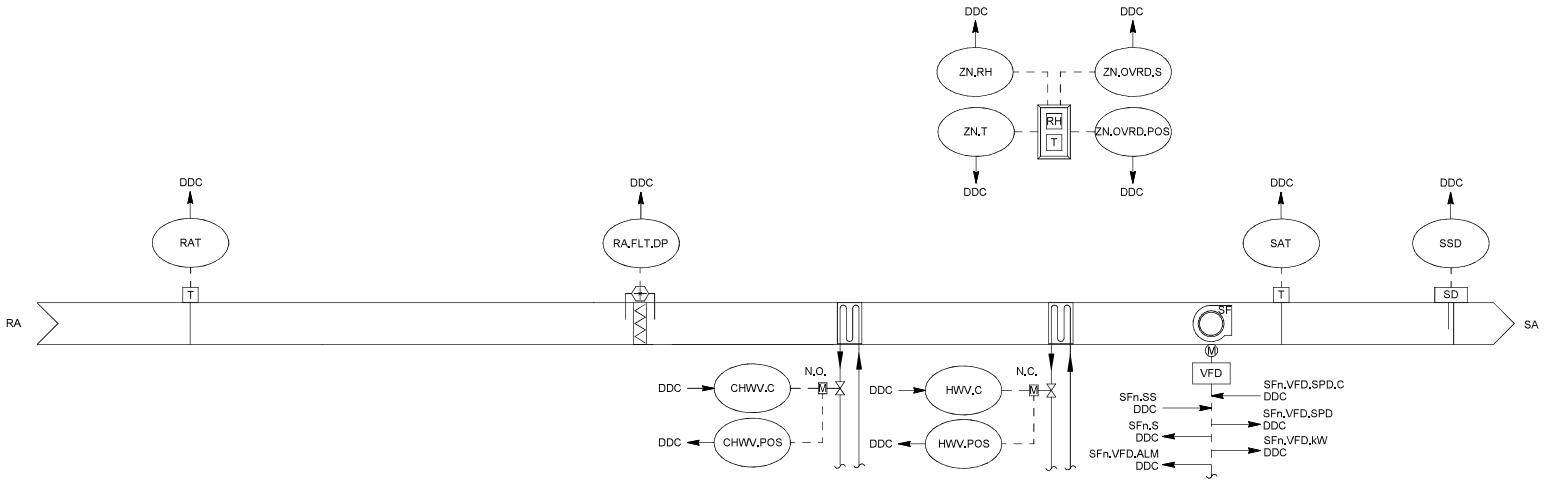
MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-710

Plot Date: 9/13/2024 10:50:58 AM
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ISSUED FOR CONSTRUCTION



SEQUENCE OF OPERATION - AIR HANDLING UNIT (AHU) VAV SINGLE ZONE

EQUIPMENT

THE AIRSIDE SYSTEMS, AS IT APPLIES TO THE BUILDING CONTROL SYSTEM (BCS), CONSIST OF THE FOLLOWING EQUIPMENT:

AIR HANDLING UNIT. AHU-2

RUN CONDITIONS
SCHEDULED:
THE UNIT MUST RUN BASED UPON AN OPERATOR ADJUSTABLE SCHEDULE.

SHUTDOWN:
UPON SHUTDOWN (EITHER MANUALLY, AUTOMATICALLY IN UNOCCUPIED, OR FROM SAFETY FUNCTIONS), THE SUPPLY FAN MUST BE DE-ENERGIZED, THE CHILLED WATER CONTROL VALVE MUST FULLY CLOSE, AND THE HOT WATER CONTROL VALVE MUST FULLY CLOSE.

AHU OPTIMAL START:
THE UNIT MUST START PRIOR TO SCHEDULED OCCUPANCY BASED ON THE TIME NECESSARY FOR THE ZONES TO REACH THEIR OCCUPIED SETPOINTS. THE START TIME MUST AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

SUPPLY FAN
OCCUPIED:
THE SUPPLY FAN MUST RUN CONTINUOUSLY DURING OCCUPIED TIMES, UNLESS SHUTDOWN ON SAFETIES, TO PREVENT SHORT CYCLING, THE FAN MUST HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

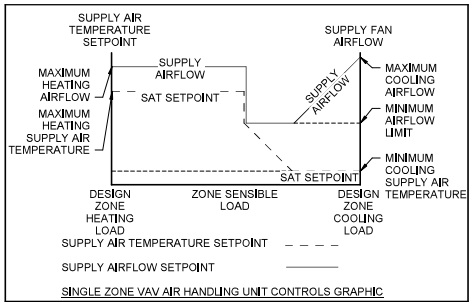
UNOCCUPIED:
THE SUPPLY AND EXHAUST FANS MUST BE OFF UNLESS INDEXED TO RUN TO MAINTAIN MINIMUM / MAXIMUM SPACE TEMPERATURE SETPOINTS.

SUPPLY FAN VFD SPEEDS:
SUPPLY AND EXHAUST FAN VFD SPEEDS MUST BE DETERMINED DURING TEST AND BALANCE TO ACHIEVE THE FOLLOWING:
- SUPPLY FAN MINIMUM SPEED: SCHEDULED MINIMUM SUPPLY AIRFLOW
- SUPPLY FAN MAXIMUM SPEED: SCHEDULED MAXIMUM SUPPLY AIRFLOW
- SUPPLY FAN HEATING SPEED: SCHEDULED HEATING AIRFLOW

REFER TO SINGLE ZONE VAV AIR HANDLING UNIT CONTROLS GRAPHIC ON THIS SHEET FOR SUPPLY FAN AIRFLOW CURVE:
- THE SUPPLY FAN VFD MUST MAINTAIN SUPPLY FAN MINIMUM SPEED DURING PERIODS WHERE THE ZONE CONDITIONS ARE SATISFIED.
- THE SUPPLY FAN VFD SPEED MUST MODULATE UP LINEARLY FROM SUPPLY FAN MINIMUM SPEED TO SUPPLY FAN MAXIMUM SPEED DURING COOLING MODE AS A FURTHER CALL FOR COOLING EXISTS.
- THE SUPPLY FAN VFD SPEED MUST MODULATE UP DIRECTLY FROM SUPPLY FAN MINIMUM SPEED TO HEATING SUPPLY FAN SPEED DURING HEATING MODE AS A FURTHER CALL FOR HEATING EXISTS.

SUPPLY AIR TEMPERATURE
THE SUPPLY AIR TEMPERATURE MUST BE LINEARLY RESET BETWEEN COOLING AND HEATING MODES IN ACCORDANCE WITH THE FOLLOWING SETPOINTS:
- COOLING: 55°F (ADJ)
- HEATING: +15°F ABOVE ZONE HEATING SETPOINT (ADJ)

REFER TO SINGLE ZONE VAV AIR HANDLING UNIT CONTROLS GRAPHIC ON THIS SHEET FOR SUPPLY AIR TEMPERATURE SETPOINT CURVE.



SINGLE ZONE VAV AIR HANDLING UNIT CONTROLS GRAPHIC

MODE CONTROL
COOLING:
COOLING MUST BE ENABLED WHENEVER ALL OF THE FOLLOWING CONDITIONS ARE TRUE:
- A CALL FOR COOLING EXISTS
- THE SUPPLY FAN STATUS IS ON

DURING COOLING MODE, THE BCS MUST MONITOR THE SUPPLY AIR TEMPERATURE AND MODULATE THE CHILLED WATER CONTROL VALVE TO MAINTAIN ZONE TEMPERATURE SETPOINT.

HEATING:
HEATING MUST BE ENABLED WHENEVER ALL OF THE FOLLOWING CONDITIONS ARE TRUE:
- A CALL FOR HEATING EXISTS
- THE COOLING SYSTEM IS NOT ACTIVE
- THE SUPPLY FAN STATUS IS ON

DURING HEATING MODE, THE BCS MUST MONITOR THE SUPPLY AIR TEMPERATURE AND MODULATE THE HOT WATER CONTROL VALVE TO MAINTAIN ZONE TEMPERATURE SETPOINT.

DEHUMIDIFICATION:
THE BCS MUST MONITOR THE ZONE RELATIVE HUMIDITY. UPON A RISE IN ZONE RELATIVE HUMIDITY ABOVE SETPOINT (ADJ) PLUS A 2% (ADJ) ALLOWABLE DRIFT, THE SUPPLY FAN MUST OPERATE AT MAXIMUM SPEED, CHILLED WATER CONTROL VALVE MUST FULLY OPEN, AND THE HOT WATER CONTROL VALVE MUST MODULATE TO MAINTAIN ZONE SETPOINT. UPON A DROP IN ZONE RELATIVE HUMIDITY BELOW SETPOINT MINUS A 2% (ADJ) ALLOWABLE DRIFT, THE UNIT MUST RETURN TO COOLING MODE.

ZONE SETPOINT CONTROL
OCCUPIED ZONE CONDITIONS:
THE UNIT MUST RUN TO MAINTAIN THE FOLLOWING CONDITIONS:
- 78°F (ADJ) COOLING SETPOINT
- 68°F (ADJ) HEATING SETPOINT
- 50% RH (ADJ) HUMIDITY SETPOINT

UNOCCUPIED ZONE CONDITIONS:
THE UNIT MUST RUN TO MAINTAIN THE FOLLOWING CONDITIONS:
- 85°F (ADJ) COOLING SETPOINT
- 55°F (ADJ) HEATING SETPOINT
- 60% RH (ADJ) HUMIDITY SETPOINT

SPACE CONDITION CONTROL:
THE AIR HANDLING UNIT MUST MAINTAIN ZONE CONDITION SETPOINTS BY CONTROLLING THE SUPPLY FAN AND CHILLED WATER / HOT WATER CONTROL VALVES VIA THE FOLLOWING:

OCCUPIED:
WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE UNIT MUST CALL FOR COOLING.

WHEN THE ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE UNIT MUST CALL FOR HEATING.

WHEN THE ZONE HUMIDITY IS GREATER THAN ITS RELATIVE HUMIDITY SETPOINT, THE UNIT MUST ENABLE DEHUMIDIFICATION MODE.

UNOCCUPIED:
APPLY ± 3°F (ADJ) ALLOWABLE DRIFT FROM UNOCCUPIED HEATING AND COOLING SETPOINTS AS DESCRIBED BELOW:

WHEN ZONE TEMPERATURE HAS RISEN ABOVE ITS UNOCCUPIED SPACE TEMPERATURE COOLING SETPOINT, THE AHU MUST BEGIN. THE SUPPLY FAN MUST RUN AT SUPPLY FAN MAXIMUM SPEED AND THE CHILLED WATER CONTROL VALVE MUST FULLY OPEN. THIS MUST CONTINUE UNTIL ZONE TEMPERATURE IS AT UNOCCUPIED SETPOINT MINUS THE ALLOWABLE DRIFT. THE BCS MUST THEN SHUT THE UNIT DOWN.

WHEN ZONE TEMPERATURE HAS FALLEN BELOW ITS UNOCCUPIED SPACE TEMPERATURE HEATING SETPOINT, THE AHU MUST BEGIN STARTUP. THE SUPPLY FAN MUST RUN AT SUPPLY FAN HEATING SPEED AND HOT WATER CONTROL VALVE MUST FULLY OPEN. THIS MUST CONTINUE UNTIL ZONE TEMPERATURE IS AT UNOCCUPIED SETPOINT PLUS THE ALLOWABLE DRIFT. THE BCS MUST THEN SHUT THE UNIT DOWN.

ALARMS AND SHUTDOWNS
HIGH STATIC SHUTDOWN: THE UNIT MUST SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A HIGH STATIC PRESSURE SHUTDOWN SIGNAL. MANUAL RESTART MUST BE REQUIRED. INITIAL SETPOINT MUST BE 150% OF SCHEDULED EXTERNAL STATIC PRESSURE OR 4 IN. WG., WHICHEVER VALUE IS LARGER.

SUPPLY AIR SMOKE DETECTION: UPON DETECTION OF SMOKE, THE UNIT MUST SHUT DOWN AND THE SMOKE DETECTOR MUST PROVIDE SIGNAL TO THE BAS FOR ALARM AND PROVIDE SIGNAL TO THE FIRE ALARM PANEL.

SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

HIGH SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) GREATER THAN SETPOINT.

LOW SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.

FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS 0.25 IN. WG. (ADJ.).

HIGH RETURN AIR TEMPERATURE: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.) FOR 30 MINS AFTER SYSTEM STARTUP.

LOW RETURN AIR TEMPERATURE: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.) FOR 30 MINS AFTER SYSTEM STARTUP.

A1 AIR HANDLING UNIT (AHU) VAV SINGLE ZONE CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SEQUENCE NO.:
CONTRACT NO.:
CONTRACT #:
DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
S. FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gdl smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction and Commissioning Management
Client Project Number: ALW.24-10130

MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-711

ISSUED FOR CONSTRUCTION

File Path: I:\...\M-711 Sequence.dwg
Plot Date: 9/13/2024 10:50:59 AM

AIR HANDLING UNIT (AHU) VAV SINGLE ZONE CONTROL POINTS

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	SFn.S	SUPPLY FAN STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	FAN STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	HWV.POS	HOT WATER VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	HWV.POS DOES NOT EQUAL HWV.C	CRIT	[ ]
	CHWV.POS	CHILLED WATER VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHWV.POS DOES NOT EQUAL CHWV.C	CRIT	[ ]
	SSD	SUPPLY AIR SMOKE DETECTOR	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN	CRIT	[ ]
	SFn.VFD.ALM	SUPPLY FAN VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	VFD FAULT	CRIT	[ ]
SCHEDULING	SYS.OCC.SCHED	SYSTEM OCCUPANCY SCHEDULE	~	OCC/UNOCC	~	~	OC	VOVRD	VIEW	Y	~	~	[ ]
	ZN.OVRD.S	ZONE OVERRIDE STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.OVRD.POS	ZONE OVERRIDE POSITION	~	ON/OFF	~	~	~	VIEW	VIEW	~	~	~	[ ]
START/STOP	SFn.SS	SUPPLY FAN START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
FAN CONTROL	SFn.VFD.SPD.C	SUPPLY FAN VFD SPEED COMMAND	AS DETERMINED DURING T&B	0-100%	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	SFn.VFD.SPD	SUPPLY FAN VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
VALVE CONTROL	HWV.C	HOT WATER VALVE COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CHWV.C	CHILLED WATER VALVE COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
AIR TEMPERATURE CONTROL	SAT.SP	SUPPLY AIR TEMPERATURE SETPOINT	PER AHU CONTROLS SEQUENCE	40°F-120°F	~	~	OC	VOVRD	VIEW	Y	~	~	[ ]
	SAT	SUPPLY AIR TEMPERATURE	~	40°F-120°F	~	~	~	VIEW	VIEW	Y	SAT IS GREATER THAN OR LESS THAN SAT.SP BY 5°F (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ)	CRIT	[ ]
	RAT	RETURN AIR TEMPERATURE	~	40°F-120°F	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.T	ZONE TEMPERATURE	~	30°F-130°F	~	~	~	VIEW	VIEW	Y	**ZN.T IS GREATER THAN OR LESS THAN ZN.T.SP BY 5°F (ADJ) FOR A MINIMUM OF 30 MINUTES (ADJ)	INFO	[ ]
	ZN.T.SP	ZONE TEMPERATURE SETPOINT	PER AHU CONTROLS SEQUENCE	40°F-120°F	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
OTHER POINTS	RA.FLT.DP	RETURN AIR FILTER DIFFERENTIAL PRESSURE SWITCH	SEE NOTE (4)	<___>" W.G.	~	~	~	VIEW	VIEW	~	DIRTY FILTER	INFO	[ ]
	SFn.VFD.KW	SUPPLY FAN VFD ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.RH	ZONE RELATIVE HUMIDITY	~	0-100%	~	~	~	VIEW	VIEW	Y	HIGH: ZN.RH IS GREATER THAN 65% (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ)	INFO	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>
3. NOT USED.
4. +0.4" W.G. ABOVE CLEAN FILTER PRESSURE DROP.
5. ALARM CONDITIONS MARKED WITH AN ASTERISK (*) MUST BE ACTIVE ONLY WHEN THE SYSTEM HAS BEEN IN OCCUPIED MODE FOR MORE THAN THE FOLLOWING DURATIONS:
   A. * = 5 MINUTES (ADJ)
   B. ** = 30 MINUTES (ADJ)

A1 AIR HANDLING UNIT (AHU) VAV SINGLE ZONE CONTROL POINTS
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: <SOLICITATION #>
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325th CIVIL ENGINEER SQUADRON
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220 Mall Lane, Suite 2, Building 950
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Remove and Install Navy B600 BX and Wall HVAC System, MCC
Construction and Electrical Equipment
Client Project Number: AJW21-1013D

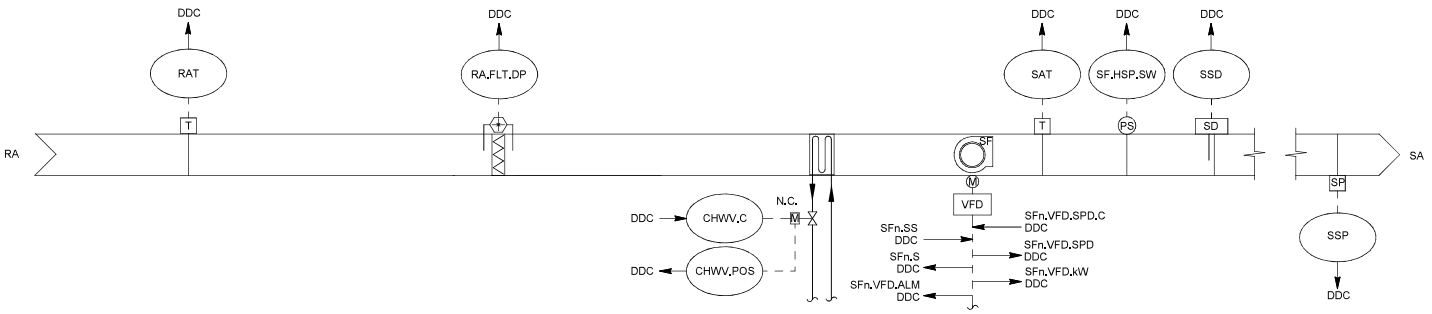
MECHANICAL CONTROLS

POND # 1220654

SHEET ID
M-712

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SEQUENCE OF OPERATION - AIR HANDLING UNIT (AHU) VARIABLE AIR VOLUME

EQUIPMENT

THE AIRSIDE SYSTEMS, AS IT APPLIES TO THE BUILDING CONTROL SYSTEM (BCS), CONSIST OF THE FOLLOWING EQUIPMENT:

AIR HANDLING UNITS, AHU-1,3,4, & 5

RUN CONDITIONS
SCHEDULED:
THE UNIT MUST RUN BASED UPON AN OPERATOR ADJUSTABLE SCHEDULE. EACH UNIT TO BE SCHEDULED INDEPENDENTLY.

SHUTDOWN:
UPON SHUTDOWN (EITHER MANUALLY, AUTOMATICALLY IN UNOCCUPIED, OR FROM SAFETY FUNCTIONS), THE SUPPLY FAN MUST BE DE-ENERGIZED, THE AHU RETURN AIR DAMPER MUST FULLY OPEN, AND THE CHILLED WATER CONTROL VALVE MUST FULLY CLOSE.

AHU OPTIMAL START:
THE UNIT MUST START PRIOR TO SCHEDULED OCCUPANCY BASED ON THE TIME NECESSARY FOR THE ZONES TO REACH THEIR OCCUPIED SETPOINTS. THE START TIME MUST AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

SUPPLY FAN
OCCUPIED:
THE SUPPLY FAN MUST RUN CONTINUOUSLY DURING OCCUPIED TIMES, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, EACH FAN MUST HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

UNOCCUPIED:
THE SUPPLY FAN MUST BE OFF UNLESS INDEXED TO RUN TO MAINTAIN MINIMUM / MAXIMUM SPACE TEMPERATURE SETPOINTS.

SUPPLY FAN VFD SPEEDS:
SUPPLY FAN VFD SPEEDS MUST BE DETERMINED DURING TEST AND BALANCE TO ACHIEVE THE FOLLOWING:
- SUPPLY FAN MINIMUM SPEED: SCHEDULED MINIMUM SUPPLY AIRFLOW
- SUPPLY FAN MAXIMUM SPEED: SCHEDULED MAXIMUM SUPPLY AIRFLOW
- SUPPLY FAN HEATING SPEED: SCHEDULED HEATING AIRFLOW

SUPPLY AIR DUCT STATIC PRESSURE CONTROL
THIS IS A VARIABLE AIR VOLUME (VAV) SYSTEM. THE INTENT IS TO PROVIDE VARIABLE AIR FLOW TO EACH OCCUPIED ZONE THROUGH THE USE OF VAV TERMINAL UNITS. THE BCS MUST MEASURE DUCT STATIC PRESSURE AT A POINT LOCATED APPROXIMATELY 2/3 THE LENGTH OF THE DUCT SYSTEM. THE BCS MUST MODULATE THE SUPPLY FAN VFD SPEED TO MAINTAIN THE FOLLOWING CONDITIONS:

DUCT STATIC PRESSURE SETPOINT:
THE DUCT STATIC PRESSURE SETPOINT MUST INITIALLY BE SET AT 1.0 IN. WG. (ADJ). FINAL DUCT STATIC PRESSURE SETPOINT MUST BE OPTIMIZED IN THE FIELD DURING SYSTEM TEST AND BALANCE.

STATIC PRESSURE RESET:
STATIC PRESSURE RESET MUST UTILIZE THE TRIM AND RESPOND LOGIC PER ASHRAE GUIDELINE 36:
AT A FREQUENCY OF ONCE EVERY 2 MINUTES (ADJ), THE SYSTEM CONTROLLER MUST MONITOR THE DAMPER POSITION AND AIRFLOW OF ALL ASSOCIATED VAV TERMINAL UNITS. THE SYSTEM CONTROLLER MUST CALCULATE A NEW DUCT STATIC PRESSURE SETPOINT BASED ON THE CRITERIA SHOWN BELOW AND SEND THIS NEWLY-CALCULATED SETPOINT TO THE AHU CONTROLLER.

ALL VALUES BELOW ARE ADJUSTABLE:
1. IF THE MEASURED AIRFLOW IS LESS THAN 50% OF SETPOINT WHILE SETPOINT IS GREATER THAN ZERO AND THE DAMPER POSITION IS GREATER THAN 95% OPEN FOR 1 MINUTE, SEND 3 REQUESTS.
2. ELSE IF THE MEASURED AIRFLOW IS LESS THAN 70% OF SETPOINT WHILE SETPOINT IS GREATER THAN ZERO AND THE DAMPER POSITION IS GREATER THAN 95% OPEN FOR 1 MINUTE, SEND 2 REQUESTS.
3. ELSE IF THE DAMPER POSITION IS GREATER THAN 95% OPEN, SEND 1 REQUEST UNTIL THE DAMPER POSITION IS LESS THAN 85% OPEN.
4. ELSE IF THE DAMPER POSITION IS LESS THAN 95%, SEND 0 REQUESTS.

EACH VAV BOX MUST HAVE AN IMPORTANCE MULTIPLIER (DEFAULT=1) THAT CAN BE ADJUSTED BY THE OPERATOR AT ANY TIME. WHEN SENDING REQUESTS, THE NUMBER OF REQUEST SENT MUST BE MULTIPLIED BY THE IMPORTANCE FACTOR. AN IMPORTANCE FACTOR OF 0 (ZERO) MUST BE ACCEPTABLE.

- SYSTEM MUST DEFAULT TO IGNORING THE FIRST 2 REQUESTS (ADJ).
- WHEN REQUESTS > IGNORES, THE SYSTEM MUST RESPOND BY ADJUSTING SETPOINT UPWARD BY (REQUESTS – IGNORES) * 0.06 IN. WC. (ADJ), BUT NO LARGER THAN A 0.13 IN. WC. (ADJ) INCREMENT.
- WHEN REQUESTS <= IGNORES, THE SETPOINT MUST BE RESET DOWNWARD BY -0.05 IN. WC. (ADJ).
- SETPOINT MUST BE BOUND BY A MINIMUM AND MAXIMUM VALUE WHICH CAN BE SET PER AIR HANDLER. INITIAL MINIMUM AND MAXIMUM VALUES MUST BE 1 IN. WC. AND 4 IN. WC.

STATIC PRESSURE RESET MUST BE DISABLED IF ANY VAV ZONE HUMIDITY SETPOINT IS IN ALARM PER THE VAV UNIT CONTROLS SEQUENCE.

MODE CONTROL
COOLING:
COOLING MUST BE ENABLED WHENEVER ALL OF THE FOLLOWING CONDITIONS ARE TRUE:
- A CALL FOR COOLING EXISTS
- THE SUPPLY FAN STATUS IS ON

DURING COOLING MODE, THE BCS MUST MONITOR THE SUPPLY AIR TEMPERATURE AND MODULATE THE CHILLED WATER CONTROL VALVE TO MAINTAIN LEAVING AIR TEMPERATURE SETPOINT.

THE BCS MUST MONITOR THE SUPPLY AIR TEMPERATURE AND MUST MAINTAIN FIXED SUPPLY AIR TEMPERATURE SETPOINTS AS FOLLOWS:
- SUPPLY LEAVING AIR TEMPERATURE OF 55°F (ADJ.)

SUPPLY AIR TEMPERATURE RESET:
THE BCS MUST MONITOR THE AHU SUPPLY AIR TEMPERATURE AND MUST MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON OUTSIDE AIR TEMPERATURE.

THE SUPPLY AIR TEMPERATURE SETPOINT MUST RESET FOR COOLING AS FOLLOWS: AS OUTSIDE AIR TEMPERATURE RISES FROM 50°F (ADJ) TO 85°F (ADJ), THE SUPPLY AIR TEMPERATURE SETPOINT MUST BE LINEARLY RESET DOWNWARDS FROM 60°F (ADJ) TO 55°F (ADJ).

IF THE RETURN AIR TEMPERATURE DROPS BELOW 66°F (ADJ), THEN THE SUPPLY AIR TEMPERATURE SETPOINT MUST BE RESET FOR HEATING AS FOLLOWS: AS OUTSIDE AIR TEMPERATURE DROPS FROM 50°F (ADJ) TO 20°F (ADJ), THE SUPPLY AIR TEMPERATURE SETPOINT MUST BE LINEARLY RESET UPWARDS FROM 60°F (ADJ) TO 65°F (ADJ).

SUPPLY AIR TEMPERATURE RESET MUST BE DISABLED IF ANY OF THE FOLLOWING CONDITIONS ARE TRUE:
- ANY VAV ZONE HUMIDITY SETPOINT IS IN ALARM PER THE VAV UNIT CONTROLS SEQUENCE
- ANY VAV ZONE DAMPER IS FULLY OPEN AND ITS ASSOCIATED ZONE TEMPERATURE IS MORE THAN 5°F (ADJ) ABOVE SETPOINT FOR MORE THAN 600 SECONDS (ADJ)

UNOCCUPIED:
IF ANY OF THE ASSOCIATED VAV UNITS CALL FOR AHU STARTUP IN UNOCCUPIED MODE: THE SUPPLY FAN MUST ENERGIZE AND THE COOLING SYSTEM MUST OPERATE TO MAINTAIN OCCUPIED LEAVING AIR TEMPERATURE SETPOINT. THE SUPPLY FAN VFD MUST OPERATE TO MAINTAIN THE FINAL DUCT STATIC PRESSURE SETPOINT. WHEN 100% OF ZONES ARE SATISFIED, THE SUPPLY FAN MUST SHUT DOWN AND THE CHILLED WATER CONTROL VALVES MUST CLOSE.

ALARMS AND SHUTDOWNS

HIGH STATIC SHUTDOWN: THE UNIT MUST SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A HIGH STATIC PRESSURE SHUTDOWN SIGNAL. MANUAL RESTART MUST BE REQUIRED. INITIAL SETPOINT MUST BE 150% OF SCHEDULED EXTERNAL STATIC PRESSURE OR 4 IN. WG., WHICHEVER VALUE IS LARGER.

SUPPLY AIR SMOKE DETECTION: UPON DETECTION OF SMOKE, THE UNIT MUST SHUT DOWN AND THE SMOKE DETECTOR MUST PROVIDE SIGNAL TO THE BCS FOR ALARM AND PROVIDE SIGNAL TO THE FIRE ALARM PANEL.

SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

HIGH SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN SETPOINT BY 5°F (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ).

LOW SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN SETPOINT BY 5°F (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ).

FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ).

HIGH RETURN AIR TEMPERATURE: IF THE RETURN AIR TEMPERATURE IS GREATER THAN
90°F (ADJ) FOR 30 MINS AFTER SYSTEM STARTUP.

LOW RETURN AIR TEMPERATURE: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ) FOR 30 MINS AFTER SYSTEM STARTUP.

A1 AIR HANDLING UNIT (AHU) CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

File Path: I:\Projects\2024\Tyndall AFB\04 Design\100%_Tyndall AFB_Mx_v1.rvt

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D

ISSUE DATE: 9/13/2024
SOLICITATION NO.: N/A - AFCEC DESIGN
CONTRACT NO.: -CONTRACT #-

Plot Date: 9/13/2024 10:51:02 AM

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
gbi smith

3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install Navy 8600 BX and Niall HVAC System, MCC
Controls and Air Distribution Equipment
Client Project Number: AJW24-1013D

MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-713

ISSUED FOR CONSTRUCTION

AIR HANDLING UNIT (AHU) CONTROL POINTS

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	SFn.S	SUPPLY FAN STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	FAN STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	CHWV.POS	CHILLED WATER VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHWV.POS DOES NOT EQUAL CHWV.C	CRIT	[ ]
	SSD	SUPPLY AIR SMOKE DETECTOR	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN	CRIT	[ ]
	SF.HSP.SW	SUPPLY FAN HIGH STATIC PRESSURE SWITCH	SEE NOTE (3)	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN; MANUAL RESTART MUST BE REQUIRED	CRIT	[ ]
	SFn.VFD.ALM	SUPPLY FAN VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	VFD FAULT	CRIT	[ ]
SCHEDULING	SYS.OCC.SCHD	SYSTEM OCCUPANCY	~	OCC/UNOCC	~	~	OC	VOVRD	VIEW	Y	~	~	[ ]
START/STOP	SFn.SS	SUPPLY FAN START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
FAN CONTROL	SFn.VFD.SPD.C	SUPPLY FAN VFD SPEED COMMAND	AS DETERMINED DURING T&B	0-100%	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	SSP.SP	SUPPLY AIR STATIC PRESSURE SETPOINT	AS DETERMINED DURING T&B	<0-4" W.G.>	~	~	C	VOVRD	VIEW	Y	~	~	[ ]
	SSP	SUPPLY AIR STATIC PRESSURE	~	<___>" W.G.	~	~	~	VIEW	VIEW	Y	SSP IS 25% GREATER THAN OR LESS THAN SSP.SP	CRIT	[ ]
VALVE CONTROL	CHWV.C	CHILLED WATER VALVE COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
AIR TEMPERATURE CONTROL	SAT.SP	SUPPLY AIR TEMPERATURE SETPOINT	PER AHU CONTROLS SEQUENCE	40°F-120°F	~	~	OC	VOVRD	VIEW	Y	~	~	[ ]
	SAT	SUPPLY AIR TEMPERATURE	~	40°F-120°F	~	~	~	VIEW	VIEW	Y	SAT IS GREATER THAN OR LESS THAN SAT.SP BY 5°F (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ)	CRIT	[ ]
	RAT	RETURN AIR TEMPERATURE	~	40°F-120°F	~	~	~	VIEW	VIEW	Y	~	~	[ ]
OTHER POINTS	RA.FLT.DP	FILTER DIFFERENTIAL PRESSURE SWITCH	SEE NOTE (4)	<___>" W.G.	~	~	~	VIEW	VIEW	~	DIRTY FILTER	INFO	[ ]
	SFn.VFD.KW	SUPPLY FAN VFD ELECTRICAL DEMAND (KW)	~	<___> kW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.SP.DMD	ZONE STATIC PRESSURE DEMAND	SEE NOTE (5)	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.SP.SCHD	ZONE STATIC PRESSURE SCHEDULE	INTEGER = 0 OR GREATER; DEFAULT = 2	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.SA.DMD	ZONE SUPPLY AIR DEMAND	SEE NOTE (6)	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>
3. 150% OF EXTERNAL STATIC PRESSURE PER THE AHU EQUIPMENT SCHEDULE OR 4" W.G., WHICHEVER IS LARGER.
4. +0.4" W.G. ABOVE CLEAN FILTER PRESSURE DROP.
5. INSTANTANEOUS TOTAL OF ALL VAV BOXES ASSOCIATED WITH THE AIR HANDLING UNIT; ZNSP.RQST = Σ (ZN.IF * ZNSP.RQST)
6. INSTANTANEOUS TOTAL OF ALL VAV BOXES ASSOCIATED WITH THE AIR HANDLING UNIT; ZN.SA.RQST = Σ (ZN.IF * ZN.SA.RQST)

A1 AIR HANDLING UNIT (AHU) CONTROL POINTS
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
SUBMITTED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION#-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construction and Commissioning of HVAC Equipment
Client Project Number: ALMA24-1013D

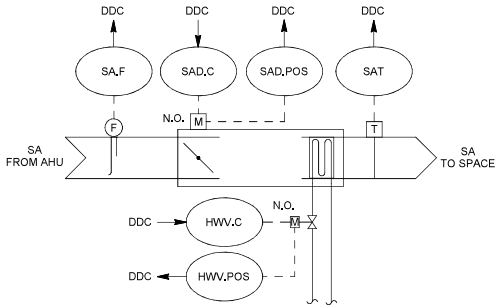
MECHANICAL CONTROLS

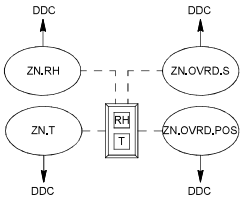
POND # 1220854

SHEET ID
M-714

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SEQUENCE OF OPERATION - VARIABLE AIR VOLUME (VAV) UNIT

EQUIPMENT

THE AIRSIDE SYSTEMS, AS IT APPLIES TO THE BUILDING CONTROL SYSTEM (BCS), CONSISTS OF THE FOLLOWING EQUIPMENT:

VARIABLE AIR VOLUME (VAV) UNITS, VAV-01 THROUGH VAV-30

GENERAL

VARIABLE AIR VOLUME (VAV) UNITS MUST BE PRESSURE INDEPENDENT UNITS, WITH HOT WATER REHEAT COILS. EACH VAV UNIT MUST BE SUPPLIED WITH PROGRAMMABLE APPLICATION SPECIFIC CONTROLLERS. THE BCS MUST PERFORM THE FOLLOWING VAV UNIT CONTROL STRATEGIES AND PROVIDE THE POINTS AS REQUIRED FOR THE SPECIFIED MONITORING AND DIAGNOSTICS:

SETPOINT CONTROL: THE BCS MUST CONTROL THE OPERATING MODE, AIRFLOW SETPOINTS, DAMPER POSITIONS, AND ZONE TEMPERATURE SETPOINT OF EACH VAV UNIT. ALL SETPOINTS MUST BE OPERATOR ADJUSTABLE, INDIVIDUAL ZONE SETPOINT AND CONTROL LOGIC MUST RESIDE AT THE ZONE LEVEL AND MUST NOT BE DEPENDENT UPON THE BCS FOR CONTROL. UPON LOSS OF COMMUNICATION, THE VAV UNIT MUST CONTINUE TO CONTROL TO THE LAST RECEIVED SETPOINTS.

RUN CONDITIONS

VAV UNIT / AHU INTERFACE:
AT MINIMUM, ALL VAV UNITS SERVED BY AN AIR HANDLING UNIT (AHU) MUST BE LINKED WITH THE RESPECTIVE AHU CONTROLLER TO PERFORM THE FOLLOWING FUNCTIONS:

ZONE OCCUPANCY SCHEDULE: THE SCHEDULE MUST AUTOMATICALLY SELECT THE OCCUPIED OR UNOCCUPIED OPERATING MODE OF THE AHU. ACTIVATION OF TIMED OVERRIDE SWITCH ON ZONE TEMPERATURE SENSORS MUST RESET ZONE HEATING AND COOLING SETPOINTS TO "OCCUPIED" MODE. THE ASSOCIATED AHU MUST ENTER OCCUPIED MODE. THE TIMED OVERRIDE MUST BE 3 HOURS (ADJ).

DUCT STATIC PRESSURE RESET ALGORITHM: EACH VAV UNIT MUST SEND STATIC PRESSURE REQUESTS BASED ON THE MEASURED AIRFLOW AND ZONE DAMPER POSITION. SEE AIR HANDLING UNIT (AHU) VARIABLE AIR VOLUME CONTROLS SEQUENCE.

SUPPLY AIR TEMPERATURE RESET ALGORITHM: EACH VAV UNIT MUST SEND TEMPERATURE REQUESTS BASED ON THE ZONE TEMPERATURE AND ZONE DAMPER POSITION. SEE AIR HANDLING UNIT (AHU) VARIABLE AIR VOLUME CONTROLS SEQUENCE.

ZONE OPTIMAL START:
THE UNITS MUST USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM MUST MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF THE SCHEDULED OCCUPIED PERIOD. THE LEARNING ADAPTIVE ALGORITHM MUST COMPARE THE ZONE TEMPERATURE TO ITS SETPOINT AT THE BEGINNING OF SCHEDULED OCCUPIED PERIOD AND MUST AUTOMATICALLY ADAPT THE HEATING OR COOLING RESPONSE TIME FOR THE NEXT UNOCCUPIED PERIOD. THE INITIAL DEFAULT STARTING TIME PRIOR TO OCCUPANCY MUST BE 60 MINS (ADJ).

ZONE TEMPERATURE AND AIRFLOW CONTROL

OCCUPIED ZONE TEMPERATURE:
VAV UNITS MUST OPERATE TO MAINTAIN THE FOLLOWING TEMPERATURES:
- 78 °F (ADJ) COOLING SETPOINT
- 68 °F (ADJ) HEATING SETPOINT

UNOCCUPIED ZONE TEMPERATURE:
VAV UNITS MUST OPERATE TO MAINTAIN THE FOLLOWING TEMPERATURES:
- 85 °F (ADJ) COOLING SETPOINT
- 55 °F (ADJ) HEATING SETPOINT

AIRFLOW SETPOINTS:
PROVIDE OPERATOR DEFINABLE, INDEPENDENT COOLING, HEATING, AND MINIMUM AIRFLOW SETPOINTS AS INDICATED ON THE VAV UNIT SCHEDULE.

SPACE CONDITION CONTROL
THE VAV UNIT MUST MAINTAIN ZONE TEMPERATURE AND AIRFLOW SETPOINTS BY CONTROLLING THE VAV UNIT AIR DAMPER AND ZONE HOT WATER HEATING COIL VIA THE FOLLOWING:

OCCUPIED:
WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER MUST MODULATE BETWEEN THE SCHEDULED MINIMUM AIRFLOW (ADJ) AND SCHEDULED COOLING AIRFLOW (ADJ) UNTIL ZONE TEMPERATURE IS SATISFIED. HEATING COIL VALVE MUST REMAIN CLOSED.

WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER MUST MODULATE TO ITS SCHEDULED MINIMUM AIRFLOW (ADJ). HEATING COIL VALVE MUST REMAIN CLOSED.

WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE CONTROLLER MUST ENABLE THE HEATING COIL AND MODULATE THE HEATING COIL VALVE TO MAINTAIN THE ZONE TEMPERATURE SETPOINT. THE ZONE DAMPER MUST MODULATE TO MAINTAIN THE SCHEDULED HEATING AIRFLOW (ADJ) UNTIL ZONE TEMPERATURE IS SATISFIED.

UNOCCUPIED:
THE VAV UNITS MUST MODULATE THE ZONE DAMPER TO MINIMUM AIRFLOW SETPOINTS.

UNOCCUPIED SYSTEM RESET:
APPLY ± 3 °F (ADJ) ALLOWABLE DRIFT FROM UNOCCUPIED HEATING AND COOLING SETPOINTS AND ENABLE THE ASSOCIATED AIR HANDLING UNIT AS DESCRIBED BELOW:

COOLING: WHEN ANY ZONE TEMPERATURE HAS RISEN ABOVE ITS UNOCCUPIED SPACE TEMPERATURE COOLING SETPOINT, THE AHU MUST BEGIN STARTUP IN UNOCCUPIED MODE. THE ASSOCIATED VAV ZONE DAMPER MUST OPEN TO ITS RESPECTIVE MAXIMUM AIRFLOW SETPOINT AND REMAIN IN THIS POSITION UNTIL THE ZONE TEMPERATURE IS AT ITS UNOCCUPIED SETPOINT MINUS THE ALLOWABLE DRIFT. THE ZONE CONTROLLER MUST THEN MODULATE THE ZONE DAMPER TO THE MINIMUM AIRFLOW SETPOINT.

HEATING: WHEN ANY ZONE TEMPERATURE HAS FALLEN BELOW ITS UNOCCUPIED SPACE TEMPERATURE HEATING SETPOINT, THE AHU MUST BEGIN STARTUP IN UNOCCUPIED MODE. THE VAV UNIT CONTROLLER MUST MODULATE THE ZONE DAMPER TO HEATING AIRFLOW SETPOINT AND MUST MODULATE THE HEATING COIL VALVE TO 100% OPEN. THIS MUST CONTINUE UNTIL ZONE TEMPERATURE IS AT SETPOINT PLUS THE ALLOWABLE DRIFT. THE ZONE CONTROLLER MUST THEN CLOSE THE HEATING COIL VALVE AND MUST MODULATE THE ZONE DAMPER TO THE MINIMUM AIRFLOW SETPOINT.

SYSTEM VARIABLES RESET
THE VAV "REQUEST HOURS ACCUMULATOR" AND "SYSTEM RUN HOURS" VARIABLES MUST BE RESET TO 0 BY ANY OF THE FOLLOWING CONDITIONS:
- WHEN SYSTEM RUN HOURS EXCEEDS 400 (ADJ)
- BCS OVERRIDE

ALARMS AND SHUTDOWNS

*HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 5°F (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

*LOW ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY 5°F (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

HIGH RELATIVE HUMIDITY: IF THE ZONE RELATIVE HUMIDITY IS GREATER THAN 65% (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

HIGH DISCHARGE AIR TEMPERATURE: IF THE VAV UNIT DISCHARGE AIR TEMPERATURE IS GREATER THAN 100°F (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

HIGH AIRFLOW: IF THE ZONE AIRFLOW IS GREATER THAN THE SETPOINT BY 25% (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

LOW AIRFLOW: IF THE ZONE AIRFLOW IS LESS THAN THE SETPOINT BY 25% (ADJ) FOR A MINIMUM OF 30 MINS (ADJ).

ROGUE ZONE ALARM: THE BCS MUST AUTOMATICALLY DETECT ZONES THAT MAY BE EXCESSIVELY DRIVING THE RESET LOGIC AND GENERATE AN ALARM TO THE SYSTEM OPERATOR. IF THE VAV ZONE IMPORTANCE FACTOR IS GREATER THAN 0, THE VAV PERCENT REQUEST HOURS IS GREATER THAN 70% (ADJ), AND THE VAV SYSTEM RUN HOURS IS GREATER THAN 40 (ADJ), THE VAV CONTROLLER MUST SIGNAL AN ALARM TO THE BCS AND SET THE VAV ZONE IMPORTANCE FACTOR TO 0. THE VAV ZONE IMPORTANCE FACTOR MAY BE MANUALLY RESET.

A1 VARIABLE AIR VOLUME (VAV) UNIT CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install Navy 8600 BX and Niall HVAC System, MCC
Control Valves and Equipment
Client Project Number: AUW24-10130

MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-715

ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 10:51:04 AM
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VARIABLE AIR VOLUME (VAV) UNIT CONTROL POINTS

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	HWV.POS	HOT WATER VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	HWV.POS DOES NOT EQUAL HWV.C	CRIT	[ ]
	SAD.POS	DAMPER POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	D.POS DOES NOT EQUAL D.C	CRIT	[ ]
	SP.ZN.RST.ALM	STATIC PRESSURE RESET ZONE ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM; SEE NOTE (4)	INFO	[ ]
	SA.ZN.RST.ALM	SUPPLY AIR RESET ZONE ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	Y	ALM; SEE NOTE (4)	INFO	[ ]
SCHEDULING	SYS.OCC.SCHED	SYSTEM OCCUPANCY SCHEDULE	~	OCC/UNOCC	~	~	OC	VOVRD	VIEW	Y	~	~	[ ]
	ZN.OVRD.S	ZONE OVERRIDE STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.OVRD.POS	ZONE OVERRIDE DIAL POSITION	~	ON/OFF	~	~	~	VIEW	VIEW	~	~	~	[ ]
VALVE CONTROL	HWV.C	HOT WATER VALVE COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
DAMPER CONTROL	SAD.C	SUPPLY AIR DAMPER COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
AIRFLOW CONTROL	SA.F	SUPPLY AIR FLOW	PER VAV EQUIPMENT SCHEDULE	<___> CFM	~	~	~	VIEW	VIEW	Y	SA.F IS GREATER THAN OR LESS THAN SETPOINT BY 25% FOR A MINIMUM OF 30 MINUTES (ADJ)	INFO	[ ]
AIR TEMPERATURE CONTROL	ZN.T	ZONE TEMPERATURE	~	30°F-130°F	~	~	~	VIEW	VIEW	Y	**ZN.T IS GREATER THAN OR LESS THAN ZN.T.SP BY 5°F (ADJ) FOR A MINIMUM OF 30 MINUTES (ADJ)	INFO	[ ]
	ZN.T.SP	ZONE TEMPERATURE SETPOINT	PER VAV CONTROLS SEQUENCE	40°F-120°F	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	SAT	SUPPLY AIR TEMPERATURE	~	40°F-120°F	~	~	~	VIEW	VIEW	Y	SAT IS GREATER THAN 100°F (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ)	~	[ ]
OTHER POINTS	ZN.RH	ZONE RELATIVE HUMIDITY	~	0-100%	~	~	~	VIEW	VIEW	Y	HIGH: ZN.RH IS GREATER THAN 65% (ADJ) FOR A MINIMUM OF 15 MINUTES (ADJ)	INFO	[ ]
	ZN.IF	ZONE IMPORTANCE FACTOR	INTEGER = 0 OR GREATER; DEFAULT = 1	0 - ∞	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	ZN.SP.DMD	ZONE STATIC PRESSURE DEMAND	INTEGER = 0 - 3 PER AHU SP RESET	0 - 3	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.SP.RUNT	ZONE STATIC PRESSURE HOURS ACCUMULATOR	(5 / 60) * ZNSP.RQST	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.SP.SYS.RUN-HR	ZONE STATIC PRESSURE SYSTEM RUN HOURS	~	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	ZN.SP.DMD.HR	ZONE STATIC PRESSURE PERCENT REQUEST HOURS	ZNSP.RHA / ZNSP.SYSRH	0-100%	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	SA.ZN.DMD	ZONE SUPPLY AIR DEMAND	INTEGER = 0 - 3 PER AHU SA RESET	0 - 3	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	SA.ZN.DMD.RUNT	ZONE SUPPLY AIR HOURS ACCUMULATOR	(5 / 60) * ZN.SA.RQST	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	SA.ZN.SYS.RUN-HR	ZONE SUPPLY AIR SYSTEM RUN HOURS	~	0 - ∞	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	SA.ZN.DMD.RUN-HR	ZONE SUPPLY AIR PERCENT HOURS	ZN.SA.RHA / ZN.SA.SYSRH	0-100%	~	~	~	VIEW	VIEW	Y	~	~	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>
3. ALARM CONDITIONS MARKED WITH AN ASTERISK (*) MUST BE ACTIVE ONLY WHEN THE SYSTEM HAS BEEN IN OCCUPIED MODE FOR MORE THAN THE FOLLOWING DURATIONS:
   A. * = 5 MINUTES (ADJ)
   B. ** = 30 MINUTES (ADJ)
4. THE BCS MUST AUTOMATICALLY DETECT ZONES THAT MAY BE EXCESSIVELY DRIVING THE RESET LOGIC AND GENERATE AN ALARM TO THE SYSTEM OPERATOR. IF THE VAV ZONE IMPORTANCE FACTOR IS GREATER THAN 0, THE VAV PERCENT REQUEST HOURS IS GREATER THAN 70% (ADJ), AND THE VAV SYSTEM RUN HOURS IS GREATER THAN 40 (ADJ), THE VAV CONTROLLER MUST SIGNAL AN ALARM TO THE BCS AND SET THE VAV ZONE IMPORTANCE FACTOR TO 0. THE VAV ZONE IMPORTANCE FACTOR MAY BE MANUALLY RESET.

A1 VARIABLE AIR VOLUME (VAV) UNIT CONTROL POINTS
N.T.S

MARK | DESCRIPTION | DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
S. FLUHRER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION#-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction and Commissioning of HVAC Equipment
Client Project Number: ALW.UI.21-1013D

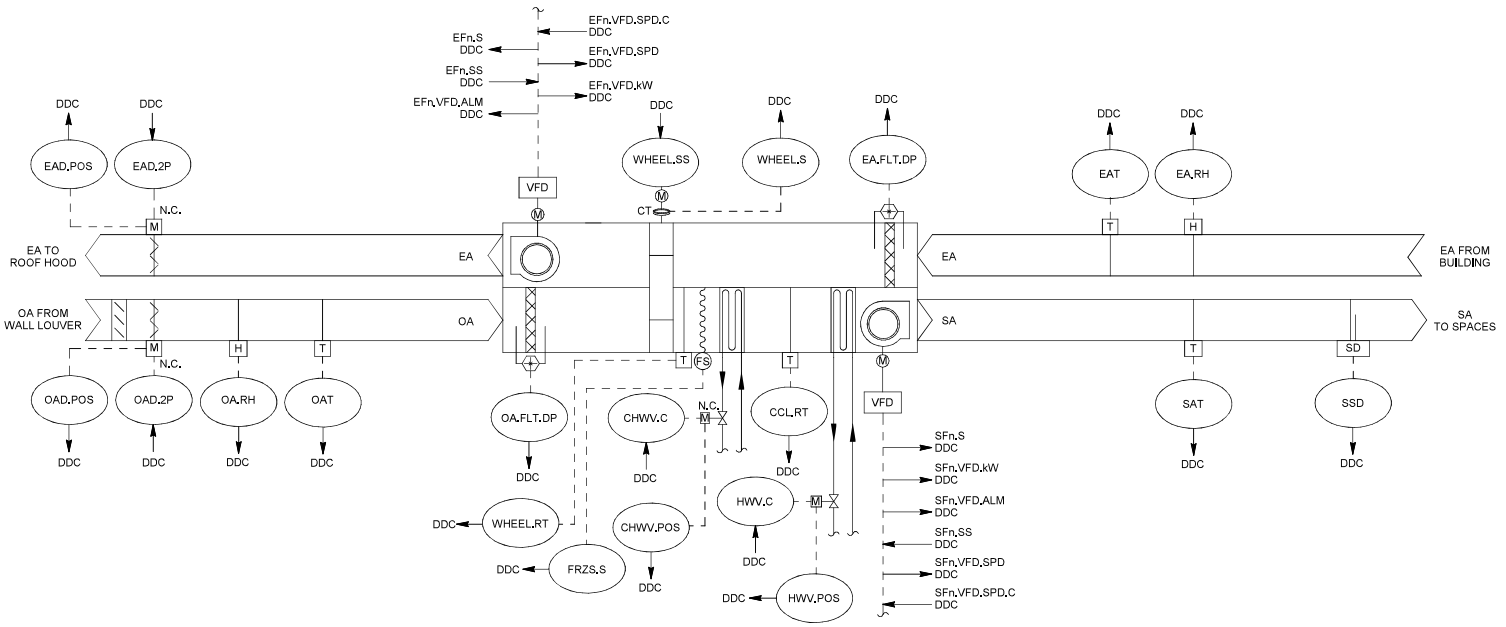
MECHANICAL CONTROLS

POND # 1220854

SHEET ID
M-716

ISSUED FOR CONSTRUCTION

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SEQUENCE OF OPERATION - ENERGY RECOVERY UNIT (ERU)

EQUIPMENT

THE AIRSIDE SYSTEMS, AS IT APPLIES TO THE BUILDING CONTROL SYSTEM (BCS), CONSISTS OF THE FOLLOWING EQUIPMENT:

ENERGY RECOVERY UNIT(S): ERU-1 & 2

RUN CONDITIONS

SCHEDULED:
THE UNIT MUST RUN BASED UPON AN OPERATOR ADJUSTABLE SCHEDULE.

OCCUPIED:
DURING OCCUPIED MODE, THE UNIT MUST RUN WHEN ITS RESPECTIVE AIR HANDLING UNIT RUNS, UNLESS SHUTDOWN ON SAFETIES. THE OUTSIDE AIR FAN, EXHAUST AIR FAN, AND ENERGY RECOVERY WHEEL MUST RUN CONTINUOUSLY. THE ERU'S MUST BE INTERLOCKED AS FOLLOWS:

ERU-1: INTERLOCKED WITH AHU-1, AHU-2, AHU-3
ERU-2: INTERLOCKED WITH AHU-4, AHU-5

UNOCCUPIED:
THE UNIT MUST SHUT DOWN WHEN INTERLOCKED AIR HANDLING UNIT IS SHUT DOWN.

SHUTDOWN:
UPON SHUTDOWN (EITHER MANUALLY, AUTOMATICALLY IN UNOCCUPIED, OR FROM SAFETY FUNCTIONS), THE OUTSIDE AIR AND EXHAUST AIR FANS MUST BE DE-ENERGIZED, THE ENERGY WHEEL MUST DE-ENERGIZE. THE OUTSIDE AIR AND EXHAUST AIR DAMPERS MUST FULLY CLOSE, AND THE CHILLED WATER AND HOT WATER CONTROL VALVES MUST FULLY CLOSE.

HVAC EMERGENCY SHUTDOWN:
UPON RECEIVING HVAC EMERGENCY SHUTDOWN SIGNAL, THE UNIT MUST SHUTDOWN AND THE ASSOCIATED OUTSIDE AIR AND EXHAUST AIR DAMPERS MUST CLOSE..

OUTSIDE AIR AND EXHAUST AIR FANS

THE OUTSIDE AIR AND EXHAUST AIR FANS MUST RUN ANYTIME THE UNIT IS COMMANDED TO RUN UNLESS SHUTDOWN ON SAFETIES. THE OUTSIDE AIR AND EXHAUST AIR FAN SPEED MUST BE CONTROLLED BY A VFD AND MUST OPERATE TO MAINTAIN THE SCHEDULED AIRFLOW RATES. THE OUTSIDE AIR AND EXHAUST AIR FAN VFD SPEEDS MUST BE DETERMINED DURING TEST AND BALANCE TO ACHIEVE THE SCHEDULED OUTSIDE AIR AND EXHAUST AIR FLOW RATES.

OUTSIDE AIR AND EXHAUST AIR DAMPERS

THE OUTSIDE AIR AND EXHAUST AIR DAMPERS MUST OPEN ANYTIME THE UNIT RUNS AND MUST CLOSE ANYTIME THE UNIT STOPS. THE OUTSIDE AIR AND EXHAUST AIR FANS MUST START ONLY AFTER THE DAMPER STATUS HAS PROVEN EACH DAMPER IS OPEN.

CHILLED WATER COOLING COIL

THE CHILLED WATER COOLING COIL CONTROL VALVE MUST MODULATE TO MAINTAIN A CONTINUOUS COOLING COIL LEAVING AIR TEMPERATURE OF 55°F (ADJ) ANYTIME THE UNIT IS IN OCCUPIED MODE.

HOT WATER HEATING COIL

THE HOT WATER HEATING COIL CONTROL VALVE MUST MODULATE TO MAINTAIN A CONTINUOUS UNIT SUPPLY AIR DISCHARGE TEMPERATURE AS FOLLOWS:
- 70°F (ADJ) WHEN OUTSIDE AIR TEMPERATURE <= 55°F
- 75°F (ADJ) WHEN OUTSIDE AIR TEMPERATURE >= 65°F

WHEN OUTSIDE AIR TEMPERATURE IS BETWEEN 55°F AND 65°F, THE UNIT MUST OPERATE TO MATCH THE LAST RECEIVED COMMAND.

FILTER DIFFERENTIAL PRESSURE MONITOR

A DIFFERENTIAL PRESSURE SWITCH MUST MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE OUTSIDE AIR AND EXHAUST AIR FILTERS. AN ALARM MUST BE SENT TO THE BCS WHEN DIFFERENTIAL PRESSURE ACROSS EITHER FILTER EXCEEDS A USER DEFINABLE LEVEL (ADJ).

ENERGY WHEEL FROST CONTROL

THE ENERGY WHEEL MUST MODULATE TO MAINTAIN A LEAVING WHEEL TEMPERATURE OF 55°F (ADJ). CONTROLS FOR MODULATING THE ENERGY WHEEL MUST BE INTERNAL TO THE UNIT.

ALARMS AND SHUTDOWNS

HVAC EMERGENCY SHUTDOWN: THE UNIT MUST SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN HVAC EMERGENCY SHUTDOWN SIGNAL.

HIGH STATIC SHUTDOWN: THE UNIT MUST SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A HIGH STATIC PRESSURE SHUTDOWN SIGNAL. MANUAL RESTART MUST BE REQUIRED. INITIAL SETPOINT MUST BE 150% OF SCHEDULED EXTERNAL STATIC PRESSURE OR 4 IN. WG., WHICHEVER VALUE IS LARGER.

SUPPLY AIR SMOKE DETECTION: UPON DETECTION OF SMOKE, THE UNIT MUST SHUT DOWN AND THE SMOKE DETECTOR MUST PROVIDE SIGNAL TO THE BCS FOR ALARM AND PROVIDE SIGNAL TO THE FIRE ALARM PANEL.

OUTSIDE AIR FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

OUTSIDE AIR FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

EXHAUST AIR FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

EXHAUST AIR FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.

OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

EXHAUST AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.

EXHAUST AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.

HIGH COOLING COIL LEAVING AIR TEMPERATURE: IF THE COOLING COIL LEAVING AIR TEMPERATURE IS ABOVE 60°F (ADJ).

LOW SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN THE DISCHARGE AIR TEMPERATURE SETPOINT.

FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ).

FREEZESTAT: THE UNIT MUST SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS. MANUAL RESET MUST BE REQUIRED.

ENERGY WHEEL FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.

ENERGY WHEEL IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

OUTSIDE AIR FAN SPEED COMMAND: IF OUTSIDE AIR FAN SPEED COMMAND IS ADJUSTED AFTER COMPLETED TEST AND BALANCE, PROVIDE ALARM TO THE BCS.

EXHAUST AIR FAN SPEED COMMAND: IF EXHAUST AIR FAN SPEED COMMAND IS ADJUSTED AFTER COMPLETED TEST AND BALANCE, PROVIDE ALARM TO THE BCS.

A1 ENERGY RECOVERY UNIT (ERU) CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
APPROVED BY: S. FLUHRER
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-
SIZE: ANSI D

Plot Date: 9/13/2024 10:51:06 AM
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325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & company
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mattl Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Mattl HVAC System, MCC
Construct Mechanical Room Addition and Equipment
Client Project Number: AUM21-1013D

MECHANICAL CONTROLS

POND # 1220584

SHEET ID
M-717

ISSUED FOR CONSTRUCTION

ENERGY RECOVERY UNIT (ERU) CONTROL POINTS

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	SFn.S	OUTSIDE AIR FAN STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	FAN STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	EFn.S	EXHAUST AIR FAN STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	FAN STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	WHEEL.S	WHEEL STATUS	~	ON/OFF	~	~	~	VIEW	VIEW	Y	WHEEL STATUS DOES NOT EQUAL COMMAND	CRIT	[ ]
	HWV.POS	HOT WATER VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	HWV.POS DOES NOT EQUAL HWV.C	CRIT	[ ]
	CHWV.POS	CHILLED WATER VALVE POSITION	~	0-100%	~	~	~	VIEW	VIEW	Y	CHWV.POS DOES NOT EQUAL CHWV.C	CRIT	[ ]
	FRZS.S	FREEZESTAT STATUS	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN	CRIT	[ ]
	OAD.POS	OUTSIDE AIR DAMPER POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	OAD.POS DOES NOT EQUAL OAD.2P	CRIT	[ ]
	EAD.POS	EXHAUST AIR DAMPER POSITION	~	OPEN/CLOSE	~	~	~	VIEW	VIEW	Y	EAD.POS DOES NOT EQUAL OAD.2P	CRIT	[ ]
	SFn.VFD.ALM	OUTSIDE AIR FAN VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	VFD FAULT	CRIT	[ ]
	EFn.VFD.ALM	EXHAUST AIR FAN VFD ALARM	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	VFD FAULT	CRIT	[ ]
	SSD	SUPPLY AIR SMOKE DETECTOR	~	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN	CRIT	[ ]
	SA.HSP.SW	SUPPLY AIR HIGH STATIC PRESSURE SWITCH	SEE NOTE (5)	ALM/NORMAL	~	~	~	VIEW	VIEW	~	ALM & UNIT SHUTDOWN; MANUAL RESTART SHALL BE REQUIRED	CRIT	[ ]
SCHEDULING	SYS.OCC.SCHED	SYSTEM OCCUPANCY SCHEDULE	~	OCC/UNOCC	~	~	OC	VIEW	VIEW	Y	~	~	[ ]
START/STOP	SFn.SS	OUTSIDE AIR FAN START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	EFn.SS	EXHAUST AIR FAN START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	WHEEL.SS	WHEEL START / STOP	~	ON/OFF	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
FAN CONTROL	SFn.VFD.SPD.C	OUTSIDE AIR FAN VFD SPEED COMMAND	AS DETERMINED DURING T&B	0-100%	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	SFn.VFD.SPD	OUTSIDE AIR FAN VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	EFn.VFD.SPD.C	EXHAUST AIR FAN VFD SPEED COMMAND	AS DETERMINED DURING T&B	0-100%	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]
	EFn.VFD.SPD	EXHAUST AIR FAN VFD SPEED	~	<0-100%>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
VALVE CONTROL	HWV.C	HOT WATER VALVE COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	CHWV.C	CHILLED WATER VALVE COMMAND	~	0-100%	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
DAMPER CONTROL	OAD.2P	OUTSIDE AIR DAMPER OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
	EAD.2P	EXHAUST AIR DAMPER OPEN / CLOSE	OPEN	OPEN/CLOSE	~	~	~	VOVRD	VOVRD	Y	~	~	[ ]
AIR TEMPERATURE CONTROL	SAT.SP	SUPPLY AIR TEMPERATURE SETPOINT	PER DOAS CONTROLS SEQUENCE	<40°F-120°F>	~	~	C	VOVRD	VOVRD	Y	~	~	[ ]
	SAT	SUPPLY AIR TEMPERATURE	~	<40°F-120°F>	~	~	~	VIEW	VIEW	Y	*SAT IS GREATER THAN OR LESS THAN SAT.SP BY 5°F (ADJ) FOR A MINIMUM OF 5 MINUTES (ADJ)	CRIT	[ ]
OTHER POINTS	OA.FLT.DP	OUTSIDE AIR FILTER DIFFERENTIAL PRESSURE SWITCH	SEE NOTE (4)	<___>" W.G.	~	~	~	VIEW	VIEW	~	DIRTY FILTER	INFO	[ ]
	EA.FLT.DP	EXHAUST AIR FILTER DIFFERENTIAL PRESSURE SWITCH	SEE NOTE (4)	<___>" W.G.	~	~	~	VIEW	VIEW	~	DIRTY FILTER	INFO	[ ]
	SFn.VFD.KW	OUTSIDE AIR FAN VFD ELECTRICAL DEMAND (KW)	~	<___> KW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	EFn.VFD.KW	EXHAUST AIR FAN VFD ELECTRICAL DEMAND (KW)	~	<___> KW	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	OAT	OUTSIDE AIR TEMPERATURE	~	<-20°F-120°F>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	OA.RH	OUTSIDE AIR RELATIVE HUMIDITY	~	0-100%	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	EAT	EXHAUST AIR TEMPERATURE	~	<40°F-100°F>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	EA.RH	EXHAUST AIR RELATIVE HUMIDITY	~	0-100%	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	CCL.RT	COOLING COIL LEAVING AIR TEMPERATURE	~	<35-70°F>	~	~	~	VIEW	VIEW	Y	~	~	[ ]
	WHEEL.RT	ENERGY WHEEL LEAVING AIR TEMPERATURE	~	<0°F-100°F>	~	~	~	VIEW	VIEW	Y	~	~	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>
3. ALARM CONDITIONS MARKED WITH AN ASTERISK (*) SHALL BE ACTIVE ONLY WHEN THE SYSTEM HAS BEEN IN OCCUPIED MODE FOR MORE THAN THE FOLLOWING DURATIONS:
   A. * = 5 MINUTES (ADJ)
   B. ** = 30 MINUTES (ADJ)
4. +0.4" W.G. ABOVE CLEAN FILTER PRESSURE DROP.
5. 150% OF EXTERNAL STATIC PRESSURE PER THE ERU EQUIPMENT SCHEDULE OR 4" W.G., WHICHEVER IS LARGER.

A1 ENERGY RECOVERY UNIT (ERU) CONTROL POINTS
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
SUBMITTED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Wall HVAC System, MCC
Construct and Connect New HVAC Equipment
Client Project Number: ALW.21-1013D

MECHANICAL CONTROLS

POND # 1220564

SHEET ID
M-718

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 10:51:06 AM

DUCTLESS SPLIT SYSTEM ZONE TEMPERATURE CONTROL POINTS

GENERAL											ALARMING		
FUNCTION			SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D		ALARM PRIORITY	M&C ROUTING
AIR TEMPERATURE CONTROL	ZN.T	ZONE TEMPERATURE	~	30°F-130°F	~	~	~	VIEW	VIEW	Y	**ZN.T IS GREATER THAN OR LESS THAN ZN.T.SP BY 5°F (ADJ) FOR A MINIMUM OF 30 MINUTES (ADJ)	INFO	[ ]
	ZN.T.SP	ZONE TEMPERATURE SETPOINT	PER CONTROLS SEQUENCE	40°F-120°F	~	~	OC	VOVRD	VOVRD	Y	~	~	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>

SEQUENCE OF OPERATION - DUCTLESS SPLIT SYSTEM ZONE TEMPERATURE

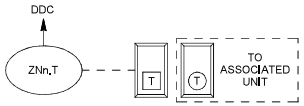
EQUIPMENT:

IDU-1 THROUGH 4, INTERLOCKED ODU-1 THROUGH 4

GENERAL:

THE BCS MUST MONITOR THE ZONE TEMPERATURE OF THE ZONE AND A SPLIT SYSTEM AND LOCAL THERMOSTAT INDEPENDENT OF THE BCS MUST MAINTAIN THE FOLLOWING TEMPERATURE SETPOINT:

- 72 °F (ADJ) COOLING SETPOINT



ALARMS:

HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN 80 °F (ADJ.).

D1 DUCTLESS SPLIT SYSTEM CONTROLS SEQUENCE
N.T.S

HVAC EMERGENCY SHUTDOWN CONTROL POINTS

GENERAL											ALARMING		
FUNCTION	POINT NAME	DESCRIPTION	SETTING (WITH UNITS)	RANGE (WITH UNITS)	IO TYPE	HOA REQ'D	CONFIG. TYPE	M&C VIEW AND OVRD	LDP VIEW AND OVRD	TREND REQ'D	ALARM CONDITION (SEE NOTES)	ALARM PRIORITY	M&C ROUTING
PROOFS & SAFETIES	ESHTDN.BTN	EMERGENCY SHUTDOWN BUTTON	~	ALM/NORMAL	~	~	~	VIEW	~	~	ALM	CRIT	[ ]
	ESHTDN.RST	EMERGENCY SHUTDOWN RESET	~	~	~	~	OC	VOVRD	~	~	~	~	[ ]

POINTS SCHEDULE NOTES:
1. DDC HARDWARE ID FOR DEVICE CONTAINING TREND OBJECT FOR REMOTE TRENDING FOR THIS SYSTEM: <___>
2. DDC HARDWARE ID FOR DEVICE CONTAINING EVENT ENROLLMENT OBJECT FOR REMOTE ALARMING FOR THIS SYSTEM: <___>

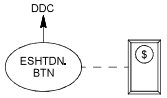
SEQUENCE OF OPERATION - HVAC EMERGENCY SHUTDOWN

GENERAL:
THE HVAC EMERGENCY SHUTDOWN SWITCH MUST SIGNAL TO THE BUILDING CONTROL SYSTEM (BCS) UPON ACTIVATION. THE BCS MUST CLOSE DAMPERS LEADING TO THE OUTSIDE REGARDLESS OF HAND/OFF/AUTO POSITION WITHIN 30 SECONDS OF SWITCH ACTIVATION.

RESET:
THE HVAC EMERGENCY SHUTDOWN MUST BE RESETTABLE VIA THE FOLLOWING:
- BCS OPERATOR OVERRIDE
- MANUAL KEY RESET AT THE HVAC EMERGENCY SWITCH THAT WAS ACTIVATED

UPON RESET OF THE HVAC EMERGENCY SHUTDOWN, THE AFFECTED HVAC SYSTEMS MUST RETURN TO THE PREVIOUSLY ACTIVE STATE OF OPERATION.

ALARMS:
HVAC EMERGENCY SHUTDOWN: THE BCS MUST ALARM UPON RECEIVING SIGNAL FROM ANY HVAC EMERGENCY SHUTDOWN SWITCH. THE BCS MUST LOG WHICH HVAC EMERGENCY SHUTDOWN SWITCH WAS ACTIVATED.



A1 HVAC EMERGENCY SHUTDOWN CONTROLS SEQUENCE
N.T.S

MARK	DESCRIPTION	DATE

ISSUE DATE: 9/13/2024
SOLICITATION NO.: SOLICITATION #
CONTRACT NO.: CONTRACT #

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mattl Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B600 BX and Mattl HVAC System, MCC
Construct and Connect Roof-Mounted HVAC Equipment
Client Project Number: ALW.24-1013D

MECHANICAL CONTROLS

POND # 1220564

SHEET ID
M-719

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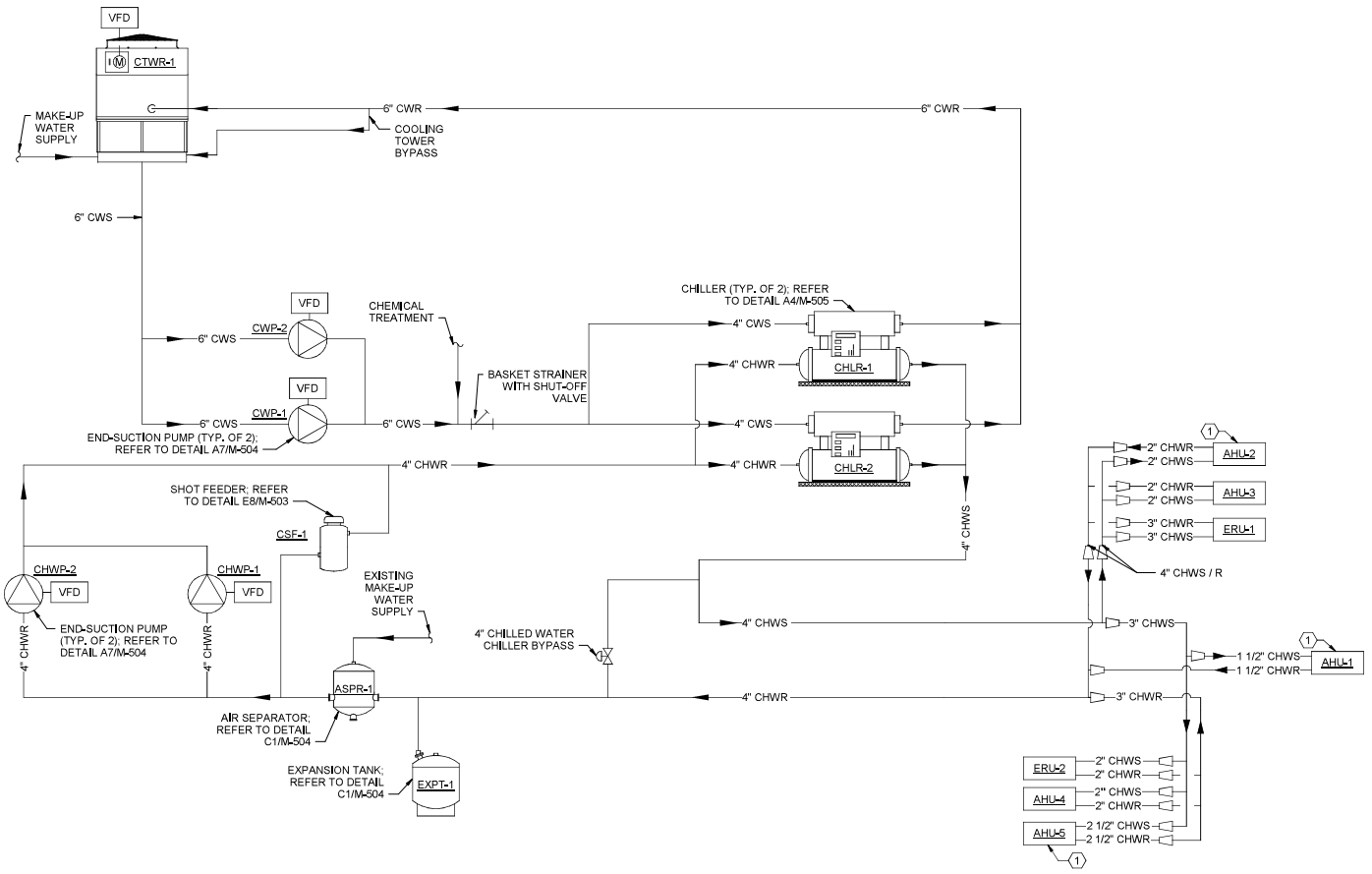
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SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.
3. UNLESS OTHERWISE NOTED, PROVIDE TWO-WAY CONTROL VALVES FOR ALL HVAC UNIT COIL CONNECTIONS. REFER TO F1/M-501 FOR TWO-WAY VALVE CONNECTION DETAIL.
4. FOR COIL CONNECTIONS LESS THAN OR EQUAL TO 2", PROVIDE BALL TYPE SHUT-OFF VALVES.
5. FOR COIL CONNECTIONS GREATER THAN 2", PROVIDE BUTTERFLY TYPE SHUT-OFF VALVES.
6. BRANCH PIPING TO COIL CONNECTIONS MUST BE 3/4" UNLESS OTHERWISE NOTED.

(#) KEYNOTES

1. PROVIDE THREE-WAY CONTROL VALVES FOR HVAC UNIT COIL CONNECTION. REFER TO F4/M-501 FOR THREE-WAY VALVE CONNECTION DETAIL.



A1 COOLING PLANT SYSTEM PIPING SCHEMATIC
N.T.S

MARK	DESCRIPTION	DATE

File Path: R:\...\Design\CDRL_Tyndall AFB_M-001.rvt

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
QUALITY CONTROL BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

Plot Date: 9/13/2024 10:51:09 AM

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
Gall Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Mall HVAC System, MCC
Construction and MCC Shared Switchgear HVAC Equipment
Client Project Number: AJMJ25-10130

MECHANICAL FLOW SCHEMATICS

POND # 1220854

SHEET ID
M-801

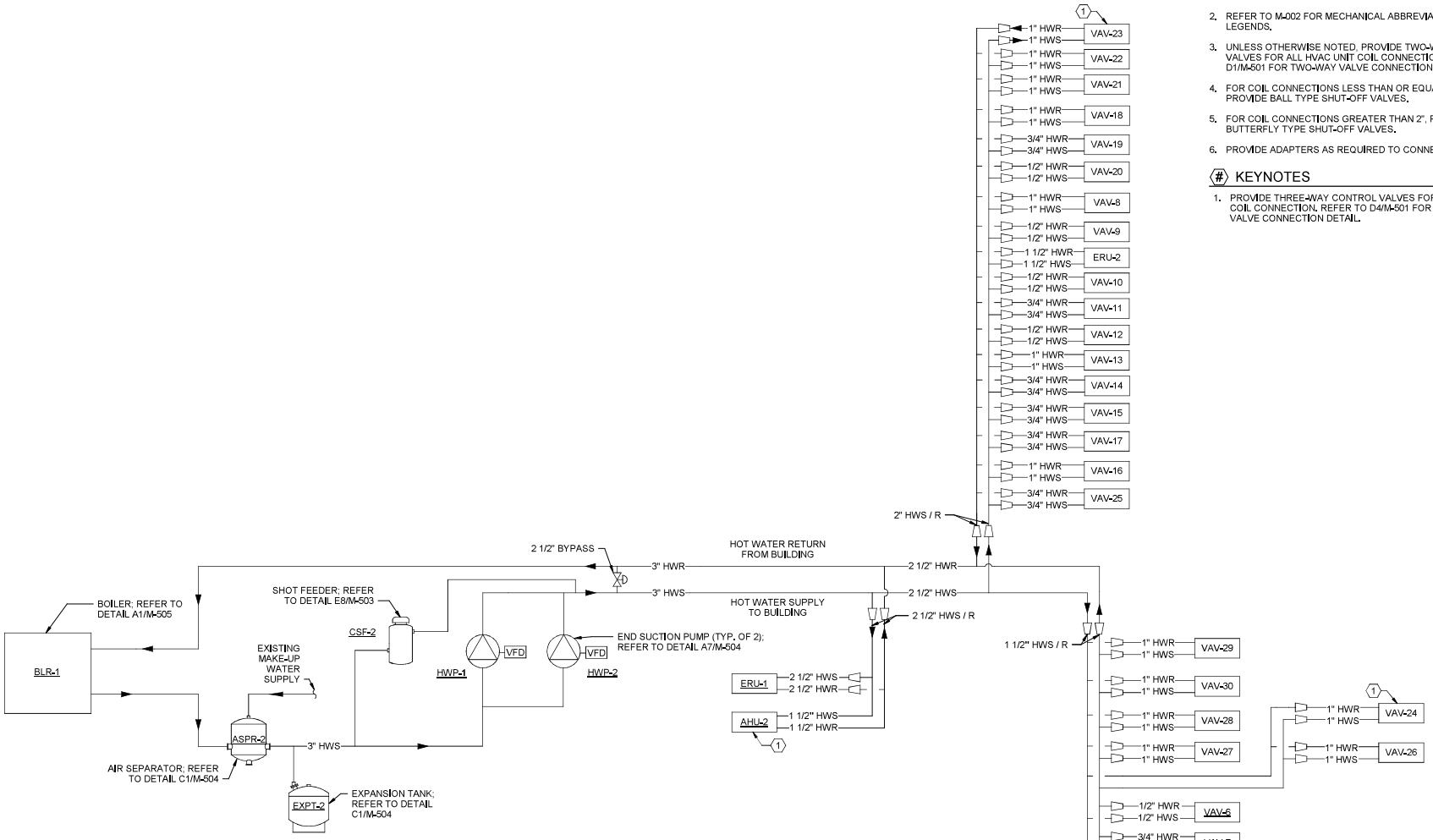
ISSUED FOR CONSTRUCTION

SHEET NOTES

1. REFER TO M-001 FOR MECHANICAL GENERAL NOTES AND DESIGN CRITERIA.
2. REFER TO M-002 FOR MECHANICAL ABBREVIATIONS AND LEGENDS.
3. UNLESS OTHERWISE NOTED, PROVIDE TWO-WAY CONTROL VALVES FOR ALL HVAC UNIT COIL CONNECTIONS. REFER TO D1/M-501 FOR TWO-WAY VALVE CONNECTION DETAIL.
4. FOR COIL CONNECTIONS LESS THAN OR EQUAL TO 2", PROVIDE BALL TYPE SHUT-OFF VALVES.
5. FOR COIL CONNECTIONS GREATER THAN 2", PROVIDE BUTTERFLY TYPE SHUT-OFF VALVES.
6. PROVIDE ADAPTERS AS REQUIRED TO CONNECT TO COILS.

(#) KEYNOTES

1. PROVIDE THREE-WAY CONTROL VALVES FOR HVAC UNIT COIL CONNECTION. REFER TO D4/M-501 FOR THREE-WAY VALVE CONNECTION DETAIL.



A1 HOT WATER SYSTEM PIPING SCHEMATIC
N.T.S

MARK	DESCRIPTION	DATE

DESIGNED BY: N. HENDERSON
DRAWN BY: N. HENDERSON
CHECKED BY: R. CARTER
SUBMITTED BY: S. FLUHRER
SIZE: ANSI D
ISSUE DATE: 9/13/2024
SOLICITATION NO.: -SOLICITATION #-
CONTRACT NO.: -CONTRACT #-

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND & Company
3500 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32405, United States
Remove and Install New B650 BX and Wall HVAC System, MCC Controls and AHU Control Panel with Associated Equipment
Client Project Number: AUW25-1013D

MECHANICAL FLOW SCHEMATICS

POND # 1220854

SHEET ID
M-802

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 10:51:10 AM

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
52 CS	—	MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER CS CONTROL SWITCH
FRAME TRIP	CB	LOW VOLTAGE AIR OR MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED.
SI E AMPS TYPE		COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED: ✱VR - FULL VOLTAGE REVERSING RVNR - REDUCED VOLTAGE NON-REVERSING RVAT - REDUCED VOLTAGE AUTOTRANSFORMER RVSS - REDUCED VOLTAGE SOLID STATE 2S1W - TWO SPEED, ONE WINDING 2S2W - TWO SPEED, TWO WINDING (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
		NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE ✱AMPERE RATING NOTED IF OTHER THAN 30A (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
✱	F	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, ✱AMPERE RATING AND FUSE SI E AS NOTED ✱AMPERE RATING NOTED IF OTHER THAN 30A FUSE RATING (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	P 2	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER, 1 POLE UNLESS OTHERWISE NOTED "P" INDICATES WITH PILOT LIGHT "2" INDICATES TWO POLE (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	—	DRAWOUT TYPE E UIPMENT OR DEVICE
	—	MEDIUM VOLTAGE CABLE TERMINATION
	—	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH
✱	—	MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH ✱FUSE RATING
	—	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER
XFMR NO. 1 480V KVA 120 208V 3P, 4W	T	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE SINGLE LINE DIAGRAMS, ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 4. ISOLATION TRANSFORMERS SHALL HAVE A K-20 RATING
A TO 5	—	CURRENT TRANSFORMER ✱ UANTITY A PRIMARY AMPERES
V TO 120	—	POTENTIAL TRANSFORMER ✱ UANTITY V PRIMARY VOLTAGE
	G	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
ATS N S 100A	—	AUTOMATIC OR MANUAL TRANSFER SWITCH NO.1 (ATS-1), (MTS-1) "N" INDICATES NORMAL OR PREFERRED SOURCE "S" INDICATES STANDBY OR ALTERNATE SOURCE 100A INDICATES CONTINUOUS CURRENT RATING
✱	✱	VARIABLE SPEED DRIVE CONTROLLER ✱.C. D.C. DRIVE CONTROLLER SCR SILICON CONTROLLED RECTIFIER VFD VARIABLE FRE UENCY DRIVE
KW	E	UNIT HEATER - ELECTRIC HEATING COIL AND FAN - RATING
—	U	UNIT HEATER - GAS FIRED, STEAM OR WATER HEATING COIL AND FAN
5	M	MOTOR, NUMERAL INDICATES HORSEPOWER
VS VM ✱	—	VOLTMETER WITH SWITCH, 3 PHASE
AS AM ✱	—	AMMETER WITH SWITCH, 3 PHASE

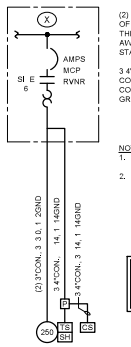
ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
✱	—	METER ✱WH - WATTMETER WHM - WATTHOUR METER WHDM - WATTHOUR DEMAND METER WHDR - WATTHOUR DEMAND RECORDER PF - POWER FACTOR METER DMU- DIGITAL METERING UNIT TRANSDUCER AX - CURRENT TRANSDUCER WX - WATT TRANSDUCER WHX - WATTHOUR TRANSDUCER
✱	✱	RELAY, NO. AS INDICATED 25 - SYNCHRONISM CHECK RELAY 2 - UNDERVOLTAGE RELAY 32 - DIRECTIONAL POWER RELAY 38 - BEARING PROTECTIVE DEVICE 40 - LOSS OF EXCITATION RELAY 42 - RUNNING CONTACTOR PILOT RELAY 46 - REVERSE PHASE PHASE BALANCE CURRENT RELAY 4 - PHASE SE UENCE VOLTAGE RELAY 49 - MACHINE OR TRANSFORMER THERMAL RELAY 50 51 - INSTANTANEOUS TIME OVERCURRENT RELAY 50G - INSTANTANEOUS GROUND 51 - TIME OVERCURRENT RELAY 51G - TIME OVERCURRENT RELAY, GROUNDING RESISTOR TYPE 51N - TIME OVERCURRENT RELAY, RESIDUAL TYPE 51V - TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 86 - LOCKING-OUT RELAY 8 - DIFFERENTIAL PROTECTIVE RELAY B - SUFFIX INDICATES "BUS" G - SUFFIX INDICATES "GENERATOR" GF - GROUND FAULT ST - SHUNT TRIP
✱	—	SPECIAL CAPACITOR ✱SC - SURGE CAPACITOR PF - POWER FACTOR CORRECTION CAPACITOR
✱	—	TUNED POWER FACTOR CORRECTION CAPACITOR
	—	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
	—	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN
	ES	EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
STOP START	PBL	START-STOP PUSHBUTTON CONTROL STATION (MOMENTARY CONTACT) WITH LOCKOUT DEVICE ON STOP
	PBM	START-STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP
OFF ON	S S	OFF ON SELECTOR SWITCH
L R (XO) (OX)	LR	LOCAL REMOTE SELECTOR SWITCH
A B C ✱ (XOO) (OXO) (OOX)	✱	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O-OPEN X-CLOSED POSITION | TOP CONTACT | MIDDLE CONTACT | BOTTOM CONTACT A | X | O | O B | O | X | O C | O | O | X NAMEPLATE (A B C) HOA- HAND OFF AUTO HOR- HAND OFF REMOTE LOR- LOCAL OFF REMOTE RSL - RAISE STOP LOWER TOA - TEST OFF AUTO
GD VF	GD VF	GAS DETECTOR VENTILATION FAILURE ALARM INDICATES TYPE OF UNIT 1 MASTER, 2 REMOTE
42	—	MOTOR STARTER COIL, NUMBER AS INDICATED TO DENOTE INTERLOCKING ONLY
CR	—	CONTROL RELAY COIL, NUMBER AS INDICATED

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
✱	—	PILOT LIGHT, COLOR AS NOTED ✱R - RED G - GREEN B - BLUE W - WHITE A - AMBER
✱	—	PILOT LIGHT, PUSH-TO-TEST TYPE, COLOR AS NOTED ABOVE.
✱ RANGE SETPOINT NOTC NCTO NOTO NCTC		TIME DELAY RELAY RANGE AS NOTED SETPOINT AS NOTED NUMBER AS INDICATED ✱TDE - TIME DELAY AFTER ENERGI ATION ON DELAY TDD - TIME DELAY AFTER DE-ENERGI ATION OFF DELAY NOTC- NORMALLY OPEN, TIMED CLOSING WHEN ENERGI ED NCTO- NORMALLY CLOSED, TIMED OPENING WHEN ENERGI ED NOTO- NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGI ED NCTC - NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGI ED
—	✱-	FIELD INSTRUMENT, TAG NO. AS INDICATED ✱ INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS OR P ID INDICATES LOOP NO.
	LS OR ■	LI UID LEVEL (FLOAT) SWITCH NORMALLY OPEN, CLOSES ON RISING LEVEL NORMALLY CLOSED, OPENS ON RISING LEVEL
	PS OR ■	PRESSURE OR VACUUM SWITCH NORMALLY OPEN, CLOSES ON RISING PRESSURE NORMALLY OPEN, CLOSES ON DROPPING PRESSURE NORMALLY CLOSED, OPENS ON RISING PRESSURE NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
	TS OR T OR ■	TEMPERATURE SWITCH OR THERMOSTAT NORMALLY OPEN, CLOSES ON RISING TEMPERATURE NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE NORMALLY CLOSED, OPENS ON RISING TEMPERATURE NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE
	FS OR ■	FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSES ON INCREASED FLOW NORMALLY CLOSED, OPENS ON INCREASED FLOW
	S OR ■	POSITION (LIMIT) SWITCH NORMALLY OPEN NORMALLY OPEN - HELD CLOSED NORMALLY CLOSED NORMALLY CLOSED - HELD OPEN
	WS OR ■	TOR UE SWITCH NORMALLY OPEN, CLOSES ON HIGH TOR UE NORMALLY CLOSED, OPENS ON HIGH TOR UE
□	—	UTILI ED IN CON UNCTION WITH OTHER CONTROL SCHEMATIC SYMBOLS TO DEPICT THE PHYSICAL LOCATION OF THE DEVICE REPRESENTS LOCATION SEE LOCATION LEGEND ON DRAWING
	—	CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED
	—	CONDUCTORS ELECTRICALLY CONNECTED
	S	SOLENOID VALVE

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
LA	—	LIGHTNING ARRESTER
		GROUND OR GROUND ROD
30A	—	FUSE, AMPERE RATING AS NOTED
	HTR	STRIP HEATER OR HEATING ELEMENT
	—	INDUCTOR
TG	TG	TACHOMETER GENERATOR
	—	CONTACT, NORMALLY OPEN (NO)
	—	CONTACT, NORMALLY CLOSED (NC)
	—	OVERLOAD RELAY HEATER
	—	K KEY INTERLOCK E ELECTRICAL INTERLOCK
TB	—	TERMINAL OR TEST BLOCK
RTD	—	RESISTANCE TEMPERATURE DETECTOR
VE OR VE	—	VIBRATION DETECTOR
DM	DM	DAMPER MOTOR
ETM	—	ELAPSED TIME METER
M	M	MOTOR OPERATED VALVE OR GATE
	—	INDICATES LIMITS OF ELECTRICAL E UIPMENT OR WIRING ENCLOSURE

EXISTING WORK | NEW WORK | FUTURE EXPANSION

EXISTING, NEW OR FUTURE CONDITION DESIGNATION



(2) 3"CON., 3 3 0, 1 2GND DENOTES A UANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3 0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR, FROM NEMA SI E 6 STARTER IN MCC-1 TO 250HP MOTOR LOAD.

3 4"CON., 14, 1 14GND DENOTES ONE 3 4-INCH CONDUIT CONTAINING SEVEN NO. 14 AWG CONTROL CONDUCTORS AND 1 NO. 14 AWG GROUND CONDUCTOR.

NOTES:
1. PROTECTIVE CONTROL DEVICE AS SHOWN.
2. CONTROL AUXILIARY DEVICES AT OR NEAR E UIPMENT. E UIPMENT SHALL BE INSTALLED AND WIRED AS RE UIRED BY E UIPMENT FURNISHED AND OR CONTROL DIAGRAM.

GENERAL NOTE
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

TYPICAL ONE LINE DIAGRAM SHOWING POWER AND CONTROL TO E UIPMENT

NOTES:

1. IN GENERAL CONDUIT ROUTING FOR E UIPMENT AND DEVICES IS NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS WHICH SHALL INCLUDE CONDUITS SHOWN ON ONE-LINE AND RISER DIAGRAMS AND HOME-RUNS SHOWN ON PLAN DRAWINGS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION RE UIREMENTS.
2. THE WIRING DIAGRAMS. UANTITY AND SI E OF WIRES AND CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL E UIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE E UIPMENT ACTUALLY PURCHASED, THE BASIC SE UENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND OR SPECIFICATIONS.
3. SWITCHGEAR AND MOTOR CONTROL CENTER COMPARTMENT DESIGNATIONS AS INDICATED BELOW:
   - BLANK: NOT INTENDED FOR USE. PLATE ONLY
   - SPACE: E UIPPED WITH RE UIRED BUS AND HARDWARE FOR THE FUTURE ADDITION OF BREAKERS AND OR STARTERS WITHIN THE SI E AND RANGE SHOWN
   - SPARE: CONTAINS A COMPLETELY INSTALLED BREAKER AND OR STARTER OF SI E AND TYPE INDICATED FOR FUTURE USE.
4. INTERPRETATION OF ELECTRICAL DRAWINGS: CIRCUIT IDENTIFICATION, ROUTING, AND SI ES OF CONDUITS AND WIRES ARE SHOWN ON THE FOLLOWING DRAWINGS:

A. ONE LINE POWER DIAGRAMS: POWER, CONTROL AND SIGNAL WIRING RE UIREMENTS FOR ELECTRICAL DISTRIBUTION E UIPMENT AND UTILI ATION E UIPMENT POWERED FROM SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND MA OR POWER DISTRIBUTION PANELBOARDS ARE TYPICALLY SHOWN ON THE ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SI E, WIRE SI E AND UANTITY FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL PROTECTION OF THE POWERED E UIPMENT, AND SI E OF THE GROUNDING ELECTRODE CONDUCTORS.

B. INSTRUMENTATION AND CONTROL RISER DIAGRAMS: POWER, CONTROL, SIGNAL AND DATA HIGHWAY WIRING RE UIREMENTS FOR INSTRUMENTS AND CONTROL DEVICES CONTROLLED MONITORED FROM INSTRUMENTATION AND CONTROL PANELS SUCH AS RTUS, PLCS, TERMINAL CABINETS, AND REMOTE I O PANELS ARE TYPICALLY SHOWN ON THE INSTRUMENTATION AND CONTROL ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SI E, WIRE SI E, UANTITY AND TYPE FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL PROTECTION OF THE POWERED E UIPMENT.

C. FLOOR PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS LOCATED WITHIN STRUCTURES, FLOOR PLANS SHOW THE LOCATION OF ELECTRICAL DISTRIBUTION E UIPMENT, CONTROL PANELS, UTILI ATION E UIPMENT, INSTRUMENTS, ANCILLARY E UIPMENT AND DEVICES AND THE ANTICIPATED PENETRATION LOCATIONS WHERE CONDUITS EXIT ENTER THE STRUCTURE. HOMERUNS MAY ALSO BE SHOWN FROM MISCELLANEOUS E UIPMENT NOT SHOWN ON A ONE LINE OR RISER DIAGRAM.

D. SITE PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS EXTERIOR TO STRUCTURES AND TO IDENTIFY THE SPECIFIC RE UIREMENTS OF THE UNDERGROUND CONDUITS OR DUCT BANKS, SITE PLANS SHOW THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS WITH SECTIONS INDICATING THE CONDUIT SI E, ARRANGEMENT AND CIRCUIT ROUTING.

E. NOTE THAT CONDUIT SI E WITHIN THE STRUCTURE IS INDICATED ON ONE-LINE DIAGRAM AND UNDERGROUND SI E IS INDICATED ON DUCT BANK SECTIONS.

329 CIVIL ENGINEERS S. UADRON
TYNDALL AFB, FLORIDA

POND

220 Wall La e Suite 2 Build 950
Ty sall AFB, FL 32403, U ited States
Re o e d i stall New B650 BX a d Wall HVAC Syste , MCC
Co tract Nu ber FA4417-14-D-A001, Task O de 1 Pro ect Nu ber: ALM024-1015D

CDM Smith
3500 Parkway La e
Suite 500
Norcross, Georgia 30092

ELECTRICAL LEGEND I

POND 1220854

SHEET ID
E-001

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: R. HARTLEY
CHECKED BY: W. M. GUGAN
SUPERVISED BY: S. BRETT
ANSI D

ISSUE DATE: 09 13 2024
SOLICITATION NO.: FA4417-14-D-A001
CONTRACT NO.: -

File Pat :
Plot Date:

ISSUED FOR CONSTRUCTION

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SYMBOL	DESCRIPTION
A 3	LIGHTING FIXTURE "A" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) " " - CONTROLLED BY SWITCH " " "3" - CIRCUIT NUMBER
A 3	LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3	WALL MOUNTED TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3 OR A 3	CROSS HATCH INDICATES LIGHTING FIXTURE THAT IS UNSWITCHED AND SHALL REMAIN ON AT ALL TIMES. NOTATIONS SAME AS ABOVE.
A 3 OR A 3	SHADED AREA INDICATES LIGHTING FIXTURE THAT IS E UIPPED WITH EMERGENCY BACKUP POWER SOURCE. NOTATIONS SAME AS ABOVE.
A 3	POLE MOUNTED AREA TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3	POLE MOUNTED ROADWAY TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
EM 3 ( )	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS "EM" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "3" - SUPERVISORY CIRCUIT - FIXTURE TAG
R-2 BU-1( )	REMOTE EMERGENCY AD USTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS "R-2" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) - HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3 4" AND CONTAIN (2) NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND (1) NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED.
A 3	COMBINATION BATTERY UNIT AND EXIT SIGN, FILLED UADRANT REPRESENTS FACE SIDE OF SIGN.
A 3	CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED UADRANT REPRESENTS FACE SIDE OF SIGN. (DOUBLE FACE DOUBLE CHEVRONS SHOWN)
A 3	WALL MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS, FILLED UADRANT REPRESENTS FACE SIDE OF SIGN.
RH-3 E 3 BU-1( )	REMOTE EMERGENCY CEILING LIGHTING FIXTURE. "RH-3" - FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "3" - SUPERVISORY CIRCUIT - HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3 4" AND CONTAIN 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED.
	HOME RUN TO DESIGNATED E UIPMENT. BRANCH CIRCUIT CONDUIT WITH 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE NOTED. NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS. FOR MINIMUM SI E CONDUIT PERMITTED REFER TO THE SPECIFICATIONS.
	CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING.
	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
	CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
	X INDICATES EXPLOSION PROOF CONDUIT SEAL FITTING.
	CONCRETE ENCASED DUCTBANK. WIDTH VARIES. SEE DUCTBANK SECTION DETAILS FOR RE UIREMENTS AND WIDTH
	CONDUIT STUBBED OUT AND CAPPED
(2) 3"C., 3 3 0, 1 2G	DENOTES A UANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3 0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR.
2-2 C 16 SH	DENOTES A UANTITY OF TWO INSTRUMENT CABLES. EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE ACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
2-3 C 16 SH	SAME AS ABOVE EXCEPT CABLE TO CONSIST OF THREE NO. 16 AWG CONDUCTORS TWISTED, SHIELDED AND COVERED WITH AN OVERALL PROTECTIVE ACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
(3) 4"C.	THREE 4-INCH CONDUITS
	FLEXIBLE METAL CONDUIT "WHP" (3 4"CON., 2 12, 1 12GND UNLESS OTHERWISE NOTED) FOR LI UID TIGHT MOTOR CONNECTIONS
	X INDICATES CONDUIT SEAL FITTING IN OTHER THAN CODE RE UIRED LOCATIONS.
	INDICATES MOTOR STARTER AND OR MOTOR CONTROL E UIPMENT WITHIN THE ENCLOSURE.

SYMBOL	DESCRIPTION
$a	SINGLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED.
$2a	DOUBLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED.
$3	THREE WAY SWITCH " " INDICATES FIXTURES CONTROLLED.
$4a	FOUR WAY SWITCH "a" INDICATES FIXTURES CONTROLLED.
$Da	DIMMER SWITCH "a" INDICATES FIXTURES CONTROLLED
$OS	SINGLE POLE SWITCH "OS" INDICATES A PASSIVE INFRARED OCCUPANCY SENSOR
$2OS	DOUBLE POLE SWITCH "OS" INDICATES PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF INBOARD OUTBOARD SWITCHING
$DT	SINGLE POLE SWITCH "DT" INDICATES DUAL TECHNOLOGY PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF SENSING MOTION AND SOUND
C 3	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED
TM	TIME SWITCH
	PUSH BUTTON STATION
TYPE A	INDICATES ALL LIGHTING FIXTURES WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE TYPE "A" UNLESS OTHERWISE NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
	LIGHTING PANELBOARD (LP-) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	POWER PANELBOARD (PP-) OR DISTRIBUTION PANELBOARD (DP-) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	LIGHTING CONTACTOR PANELBOARD (LCP-) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
4	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W GFCI - GROUND FAULT CIRCUIT INTERRUPTER TYPE WP - WEATHERPROOF XP - EXPLOSION PROOF T - TRANSIENT VOLTAGE SURGE SUPPRESSOR 4 - CIRCUIT NUMBER
4	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W MOUNTED ABOVE COUNTER-TOP OR 42" AFF NOTATIONS SAME AS ABOVE
60 3 4W	SPECIAL PURPOSE RECEPTACLE - VOLT RATING "3" - NUMBER OF POLES "60" - AMPERE RATING "4W" - 4 WIRES IN ADDITION TO GROUND
	MULTI-OUTLET ASSEMBLY. SYMBOL DENOTES RECEPTACLE TYPE
	FLUSH FLOOR OUTLET BOX WITH TYPE OUTLET INDICATED
	UNDER FLOOR DUCT SYSTEM WITH TYPE OUTLETS INDICATED
	THREE CELL UNDER FLOOR DUCT SYSTEM UNCTION BOX
OR	UNCTION BOX
P	PULL BOX
TC	TERMINAL CABINET
OS	OCCUPANCY SENSOR
PC	PHOTOCELL
ESA	EMERGENCY EYEWASH SHOWER ALARM STATION WITH FLOW SWITCH(ES)
	INDICATED E UIPMENT AND MATERIALS TO BE DEMOLISHED
DUST	INDICATES THAT ALL ELECTRICAL E UIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
DAMP OR WET	INDICATES THAT ALL ELECTRICAL E UIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR CORROSION RESISTANT CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
CORROSIVE	INDICATES THAT ALL ELECTRICAL E UIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR CORROSION RESISTANT CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED.
CLASS I, DIV. 1 GROUP D	INDICATES THAT ALL ELECTRICAL E UIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C. RE UIREMENTS FOR THE HA ARDOUS AREA CLASSIFICATION SHOWN.

SYMBOL	DESCRIPTION
	GROUND SYSTEM GRID OR LOOP, 36" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
	EXOTHERMIC WELD CONNECTION
	3 4" 10-0" GROUND ROD. UNLESS SPECIFIED OTHERWISE.
	GROUND ROD TEST WELL STATION (SEE DETAIL SHEET FOR RE UIREMENTS)
	COMMUNICATION SYSTEMS
K	TELEPHONE OUTLET FOR DESK TYPE HANDSET K KEY SYSTEM
K	TELEPHONE OUTLET FOR WALL TYPE HANDSET (MOUNT UP 4-6") K KEY SYSTEM
	PAGE PARTY TELEPHONE OUTLET FOR DESK TYPE HANDSET
	PAGE PARTY TELEPHONE OUTLET FOR WALL TYPE HANDSET, MOUNT UP 4-6"
H W	PAGING SPEAKER, WALL MOUNTED H HORN TYPE W WIDE ANGLE TYPE
W	PAGING SPEAKER, WALL MOUNTED, BI-DIRECTIONAL, HORN TYPE W WIDE ANGLE TYPE
	PAGING SPEAKER, FLUSH MOUNTED CEILING TYPE
S	PAGING SPEAKER, SURFACE MOUNTED CEILING TYPE
VC	REMOTE WALL MOUNTED VOLUME CONTROL FOR CEILING SPEAKER, MOUNT UP 5-0"
A	PAGING SPEAKER AMPLIFIER ASSEMBLY
TM	TELEPHONE CABINET OR BACKBOARD AS NOTED
P OR C	"C" - DATA INPUT OUTPUT CABLE OUTLET "P" - PROCESS COMPUTER SYSTEM (CAT6 R -45 ACK)
GD VP	GAS DETECTOR VENTILATION FAILURE ALARM. INDICATES TYPE OF UNIT. 1 MASTER, 2 REMOTE
BB	GAS DETECTION VENTILATION FAILURE WEATHERPROOF DUAL-LITE BEACON MOUNT TOP OF DEVICE UP 6-8" A.F.F.
S	GAS DETECTION VENTILATION FAILURE HORN STROBE MOUNT TOP OF DEVICE UP 6-8" A.F.F.
S	GAS DETECTION VENTILATION FAILURE HORN. MOUNT TOP OF DEVICE UP 6-8" A.F.F.
G	GAS DETECTION VENTILATION FAILURE STROBE. MOUNT TOP OF DEVICE UP 6-8" A.F.F.
	SECURITY SYSTEMS
SACP	SECURITY ALARM CONTROL PANEL
DS	SECURITY ALARM DOOR SWITCH
K	SECURITY ALARM KEY PAD
R	SECURITY SYSTEM CARD ACCESS READER
WS	SECURITY ALARM WINDOW SWITCH
	SECURITY ALARM MOTION DETECTOR
CCTV	CLOSED CIRCUIT TV CAMERA
PT	PAN, TILT, OOM CAMERA LENS CONTROLS
GB	GLASS BREAK DETECTOR
	FIRE ALARM SYSTEMS
H 200 R	FIRE ALARM HEAT DETECTOR 135 FIXED TEMPERATURE UNLESS OTHERWISE NOTED. "200" - 200 FIXED TEMPERATURE "R" - FIXED TEMPERATURE RATE-OF-RISE TYPE
I	FIRE ALARM SMOKE DETECTOR PHOTOELECTRIC TYPE UNLESS OTHERWISE NOTED. "I" - IONI ATION TYPE.
D	FIRE ALARM DUCT SMOKE DETECTOR
FACP	FIRE ALARM CONTROL PANEL
FV	FIRE ALARM VENTILATION PANEL WITH GRAPHIC PANEL
FA	REMOTE FIRE ALARM ANNUNCIATOR PANEL

SYMBOL	DESCRIPTION
	FIRE ALARM MASTER BOX
	FIRE ALARM HORN, MOUNT UP -6"
15 F	FIRE ALARM STROBE, MOUNT UP 6-8" 15 CANDELA RATING
15 F	FIRE ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT UP 6-8" 15 CANDELA RATING
F	FIRE ALARM MANUAL PULL STATION, MOUNT UP 4-0"
VSS	SPRINKLER VALVE SUPERVISORY SWITCH
SFS	SPRINKLER FLOW ALARM SWITCH
F	FIRE ALARM BELL
FB	WEATHERPROOF HI-INTENSITY FIRE ALARM STROBE LIGHT WITH HORN
PIR	PASSIVE INFRARED DETECTOR
R	SMOKE BEAM DETECTOR (RECEIVER)
T	SMOKE BEAM DETECTOR (TRANSMITTER)
	FIRE ALARM SMOKE DETECTOR REMOTE INDICATOR AND TEST SWITCH

ABBREVIATIONS	
A	AMPS
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
AIC	AMPERE INTERRUPTING CAPACITY
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BUILDING
CON	CONDUIT
CKT BRKR	CIRCUIT BREAKER
GASD	COMBUSTIBLE GAS DETECTOR
CKT	CIRCUIT
CLB	CURRENT LIMITING BREAKER
CLF	CURRENT LIMITING FUSE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
RLY-CNTL	CONTROL RELAY
CSW	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
CONWS	CONDUIT WALL SEAL
DC	DIRECT CURRENT
DIA	DIAMETER
DMU	DIGITAL METERING UNIT
DN	DOWN
EC	EMPTY CONDUIT
ELEC	ELECTRICAL
EVLT	ELEVATION
EMRG	EMERGENCY
ENCL	ENCLOSURE OR ENCLOSED
E UIP	E UIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXST	EXISTING
FOPT	FIBER OPTIC
FU	FUSE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANI ED RIGID STEEL
HVACR	HEATING AIR CONDITIONING RATED
HH	HANDHOLE
HT	HEIGHT
HIDISC	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
H	HERT
ID	IDENTIFICATION
INSTR	INSTRUMENT
K	KILO (PREFIX)
k	1000 CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LGTNGAR	LIGHTNING ARRESTER
LGTG	LIGHTING
LPNL	LIGHTING PANEL
LV	LOW VOLTAGE

ABBREVIATIONS (CONTINUED)	
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
OVLD	OVERLOAD
PB	PULL BOX
PCPNL	PUMP CONTROL PANEL
PH	PHASE
PMH	POWER MANHOLE
PNL	PANEL OR PANELBOARD
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RECPT	RECEPTACLE
RE D TY	RE UIRED UANTITY
SRGA	SURGE ARRESTER
SEC	SECONDS OR SECONDARY
SHLD	SHIELDED OR SPACE HEATER
SPD	SURGE PROTECTIVE DEVICE
SST	STAINLESS STEEL
SOV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TTC	TIME TO CLOSE
TC	TRAY CABLE
TEL	TELEPHONE
TTO	TIME TO OPEN
TSI	TWISTED SHIELDED OR THERMAL SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPS
VFD	VARIABLE FRE UENCY DRIVE
W	WATTS, WIDTH, WITH, WIRE
WPRF	WEATHERPROOF
EPRF	EXPLOSION PROOF
XFMR	TRANSFORMER
CSTA	CONTROL STATION

GENERAL NOTE
THIS IS A STANDARD SYMBOL SHEET. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.



329 CIVIL ENGINEER S UADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway La e
Suite 500
Norcross, Georgia 30092

DESIGNED BY:	D. FALCONER
DRAWN BY:	
REVIEWED BY:	
CHECKED BY:	W. M. DUGAN
SUBMITTED BY:	
SURVEY:	
ANSI D	

ISSUE DATE: 09 13 2024
SOLICITATION NO.:
CONTRACT NO.:

MARK	DESCRIPTION	DATE

220 Mall Ma e Suite 2 Bu ding 950
Ty sall AFB, FL 32403, U ited States
Re o e d sall New B650 BX a d Mall HVAC Sy ste , MCC
Co tract Nu be : FA4626-24-R-B001
Task Ode 1 Pace 1 Nu be : KLM021-0152

ELECTRICAL
LEGEND II

POND 1220854

SHEET ID
E-002

ISSUED FOR CONSTRUCTION

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SCOPE OF WORK:

1. PRO ECT PROVIDES REPLACEMENT OF MOTOR CONTROL CENTER AND HVAC E UIPMENT AT TYNDALL AFB BX, MA OR IMPROVEMENTS INCLUDE, BUT NOT LIMITED TO, NEW MOTOR CONTROL CENTER, NEW HVAC AND CHILLER E UIPMENT, NEW PANELBOARDS, AND NEW TRANSFORMERS.
2. PROVIDE POWER SYSTEM STUDIES IN ACCORDANCE WITH SECTION 26 28 01.00 10.

GENERAL NOTES:

1. ELECTRICAL DRAWINGS ARE INTENDED TO SHOW THE GENERAL LAYOUT OF WORK TO BE INSTALLED UNDER THIS CONTRACT WITHOUT ATTEMPTING TO SHOW ALL DETAILS. FURNISH LABOR, MATERIALS, E UIPMENT AND INCIDENTALS RE UIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE CONTRACT DOCUMENTS.
2. COORDINATE WORK WITH OTHER TRADES AND THE OWNER.
3. MAINTAIN EXISTING PROCESS OPERATIONS. POWER INTERRUPTIONS TO ELECTRICAL E UIPMENT SHALL BE AT OWNER'S CONVENIENCE WITH 2 HOURS MINIMUM NOTICE. EACH INTERRUPTION SHALL HAVE PRIOR WRITTEN APPROVAL.
4. FIELD VERIFY EXISTING UNDERGROUND ELECTRICAL CONDUIT, CONCRETE DUCT BANKS, MANHOLES, PULL BOXES, ETC. AND MECHANICAL PIPING. CONTRACTOR SHALL INCLUDE IN BID COSTS ASSOCIATED WITH RELOCATION OR REMOVAL OF UNDERGROUND E UIPMENT AS RE UIRED BY THIS CONTRACT, USE DUE CARE IN CONGESTED AREAS TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES.
5. CONTRACTOR'S WORK SHALL INCLUDE COMPLETE TESTING OF E UIPMENT AND WIRING INCLUDING MAKING MINOR CORRECTIONS, CHANGES, OR AD USTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND E UIPMENT. WORKMANSHIP SHALL BE OF THE HIGHEST UALITY SUBSTANDARD WORK WILL BE RE ECTED.
6. DO NOT SCALE ELECTRICAL DRAWINGS, REFER TO MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR EXACT LOCATION OF E UIPMENT, EXCEPT WHERE DIMENSIONS ARE SHOWN, LOCATIONS OF E UIPMENT, FIXTURES, OUTLETS, AND SIMILAR DEVICES ARE APPROXIMATE.
7. WORK SHALL COMPLY WITH NEC AND LOCAL CODES.
8. DO NOT SPLICE CONDUCTORS EXCEPT AS NOTED.
9. POWER AND CONTROL CONDUITS SHALL HAVE AN E UIPMENT GROUNDING CONDUCTOR WIRE SI ED PER TABLE 250.122 OF THE NEC (UON).
10. COORDINATE SE UENCE OF CONSTRUCTION WITH CIVIL, MECHANICAL, AND STRUCTURAL DISCIPLINES. PROVIDE TEMPORARY POWER AND CONTROL CIRCUITS AS RE UIRED TO MAINTAIN FACILITY OPERATION. VERIFY EXISTING UTILITIES IN AREA OF CONSTRUCTION. REFER TO CIVIL DRAWINGS FOR ADDITIONAL UNDERGROUND INFORMATION.
11. REPAIR, IN ACCORDANCE WITH SPECIFICATIONS, SIDEWALKS, WALLS, ROADWAYS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES WHETHER OR NOT SHOWN FOR REPAIR REPAVING ON CIVIL DRAWINGS.
12. CONCEAL CONDUITS TO GREATEST EXTENT PRACTICABLE. CONDUITS RUN AT EXISTING STRUCTURES SHALL BE RUN EXPOSED.
13. WHERE LOCAL DISCONNECTS AND CONTROL PANELS ARE SHOWN ON PLAN VIEWS, LOCATIONS ARE APPROXIMATE. AD UST LOCATION AS RE UIRED TO COMPLY WITH NEC ARTICLE 110 FOR WORKING CLEARANCES.
14. DO NOT INSTALL MA OR CONDUIT RUNS THROUGH AREAS DESIGNATED FOR FUTURE STRUCTURES.
15. WHERE FEASIBLE, REUSE EXISTING CONDUIT.
16. EXISTING LIGHT FIXTURES ARE TO REMAIN. EXISTING LIGHT FIXTURES ARE TO BE REMOVED AND RETAINED DURING DEMOLITION AS NEEDED. LIGHT FIXTURES ARE TO BE RE-INSTALLED AND RECONNECTED TO EXISTING LIGHTING CIRCUITS DURING RENOVATION. CONTRACTOR SHALL REPLACE LIGHT FIXTURES DAMAGED IN KIND. REFER TO SHEET A-001 FOR REFLECTED CEILING PLANS AND MORE INFORMATION.

SEISMIC RESTRAINTS:

1. PROVIDE SEISMIC RESTRAINTS FOR ELECTRICAL E UIPMENT AND SYSTEMS AS RE UIRED BY SECTION 01 82 16.

SUBMITTALS:

1. SUBMIT SHOP DRAWINGS FOR E UIPMENT, MATERIALS AND OTHER ITEMS FURNISHED UNDER DIVISION 26.
2. SUBMIT CONDUIT SHOP DRAWINGS FOR YARD ELECTRICAL, WITHIN AND UNDER ROADS, BUILDINGS AND STRUCTURES PRIOR TO COMMENCING WORK. DO NOT POUR CONCRETE UNTIL ENGINEER HAS APPROVED THE ASSOCIATED SHOP DRAWING.
3. SUBMIT POWER SYSTEM STUDY IN ACCORDANCE WITH SECTION 26 28 01.00 10.
4. SUBMIT OPERATION AND MAINTENANCE MANUALS FOR E UIPMENT FURNISHED UNDER DIVISION 26.
5. SUBMIT STARTUP COMMISSIONING PLANS FOR E UIPMENT FURNISHED UNDER DIVISION 26.
6. SUBMIT TESTING AND SERVICE REPORTS FOR E UIPMENT AND MATERIALS FURNISHED UNDER DIVISION 26.
7. SUBMIT TRAINING PLANS FOR E UIPMENT FURNISHED UNDER DIVISION 26.
8. SUBMIT RECORD DOCUMENTATION TO ACCURATELY SHOW COMPLETED INSTALLATION. INCLUDE MODIFICATIONS TO CONTRACT DOCUMENTS (ONE LINE POWER DIAGRAMS, E UIPMENT ELEVATIONS, PANEL SCHEDULES, ELEMENTARY CONTROL DIAGRAMS, RISER DIAGRAMS, PLANS, CONDUIT AND DUCTBANK ROUTING, ETC) ALONG WITH ADDITIONAL DRAWINGS OR SKETCHES CREATED TO CONVEY COMPLETED INSTALLATION.

INTERPRETATION OF CONTRACT DOCUMENTS:

1. IF DURING PERFORMANCE OF WORK, THERE IS A CONFLICT, ERROR, OR DISCREPANCY BETWEEN OR AMONG CONTRACT DOCUMENTS AND LAWS AND REGULATIONS, PROVIDE THE HIGHER PERFORMANCE STANDARD UNLESS OTHERWISE DIRECTED BY ENGINEER.
2. PRIORITY OF DOCUMENTS: FIGURED DIMENSIONS GOVERN OVER SCALED DIMENSIONS, DETAILED DRAWINGS GOVERN OVER GENERAL DRAWINGS, LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS, CHANGE ORDER DRAWINGS SUPERCEDE ORIGINAL CONTRACT DRAWINGS, AND CONTRACT DRAWINGS GOVERN SHOP DRAWINGS.
3. IN GENERAL, DRAWINGS DO NOT SHOW CONDUIT ROUTING. PLAN AND ROUTE CONDUITS IN COMPLIANCE WITH SPECIFICATIONS AND DRAWING DETAILS. COORDINATE INSTALLATION WITH OTHER TRADES AND ACTUAL SUPPLIED E UIPMENT.
4. DUCTBANK ROUTING SHOWN ON ELECTRICAL SITE PLANS IS DIAGRAMMATIC IN NATURE AND MAY NOT INCLUDE INTERFERENCES THAT MAY BE PRESENT.

ENCLOSURE TYPES:

PROVIDE THE FOLLOWING NEMA TYPE ELECTRICAL ENCLOSURES, UNLESS OTHERWISE NOTED:

1. NEMA 1 IN DRY, NON-PROCESS INDOOR LOCATIONS.
2. NEMA 12 IN "DUST" LOCATIONS SHOWN ON THE DRAWINGS.
3. NEMA 4X IN OUTDOOR LOCATIONS, ROOMS BELOW GRADE INCLUDING BASEMENTS AND BURIED VAULTS AND "DAMP" OR "WET" LOCATIONS SHOWN ON THE DRAWINGS.
4. NEMA 4X IN "CORROSIVE" LOCATIONS SHOWN ON THE DRAWINGS.
5. NEMA AND LISTED FOR THE SPECIFIC NEC HA ARDOUS AREA CLASSIFICATION AS SHOWN ON THE DRAWINGS.

MATERIALS AND E UIPMENT:

1. PROVIDE NEW MATERIALS AND E UIPMENT UNLESS SPECIFICALLY NOTED OTHERWISE.
2. ELECTRICAL E UIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC., AND SHALL BEAR APPROPRIATE UL LISTING MARK OR CLASSIFICATION MARKING. E UIPMENT, MATERIALS, ETC. UTILI ED NOT BEARING A UL CERTIFICATION SHALL BE FIELD OR FACTORY UL CERTIFIED PRIOR TO E UIPMENT ACCEPTANCE AND USE.
3. PROVIDE MA OR ELECTRICAL E UIPMENT BY A SINGLE MANUFACTURER. I.E. UNIT SUBSTATIONS, SWITCHGEAR, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, PANELBOARDS, ETC.

E UIPMENT SI E, HANDLING AND STORAGE:

1. COORDINATE WITH E UIPMENT MANUFACTURER SHIPPING SPLITS TO PERMIT SAFE HANDLING AND PASSAGE OF E UIPMENT TO FINAL INSTALLATION LOCATION.
2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS FOR UPRIGHT E UIPMENT ORIENTATION DURING TRANSPORTATION.
3. PROTECT E UIPMENT FROM MECHANICAL IN URY, OR EXPOSURE TO MOISTURE, CHEMICALS, OR CORROSIVE GASES. DO NOT STORE ELECTRICAL E UIPMENT OUTDOORS.
4. PROVIDE AND ENERGI E TEMPORARY SPACE HEATERS IF RE UIRED TO CONTROL MOISTURE DURING STORAGE.

CUTTING AND PATCHING:

1. CUT AND PATCH IN A WORKMANLIKE MANNER AS RE UIRED TO INSTALL ELECTRICAL WORK.
2. CUTTING OF STRUCTURAL MEMBERS SUCH AS OISTS, BEAMS, GIRDERS OR COLUMNS IS PROHIBITED.
3. PATCH SURFACES TO RESTORE TO ORIGINAL INTEGRITY (WATERPROOF OR FIREPROOF AS RE UIRED) AND APPEARANCE.
4. CORE DRILL HOLES IN CONCRETE FLOORS AND WALLS AS RE UIRED. PRIOR TO CORING CONCRETE, SCAN SLAB OR WALL USING RADAR TO LOCATE AND IDENTIFY REBAR AND OR CONDUIT AND WIRING. LOCATE CORES AS TO AVOID CUTTING OR DRILLING THROUGH REBAR AND OR CONDUITS. SPACE CONDUITS SO AS NOT TO ALTER THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE BEING CORE DRILLED. NOTIFY ENGINEER IMMEDIATELY IF ANY REBARS ARE CUT OR UPON BECOMING AWARE OF DISCREPANCIES WITHIN AREA OF WORK.

SERVICE AND METERING:

1. ELECTRIC POWER SERVING THIS PRO ECT IS OVERSEEN BY TYNDALL AIR FORCE BASE. COMPLY WITH BASE STANDARDS.
2. COORDINATE DE-ENERGI ING OF MOTOR CONTROL CENTER WITH TYNDALL AIR FORCE BASE UTILITY.

DEMOLITION AND DISPOSITION OF E UIPMENT:

1. DRAWING PLANS SHOWING REMOVAL OF MA OR MECHANICAL AND ELECTRICAL E UIPMENT IS NOT INTENDED TO SHOW ALL COMPONENTS TO BE DEMOLISHED. NOT ALL PIPING, CONDUITS, DUCTS, E UIPMENT, ANCILLARY DEVICES, ETC. ARE SHOWN. THE CONTRACTOR IS TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.
2. UNLESS OTHERWISE SPECIFICALLY NOTED, REMOVE UNUSED EXPOSED CONDUIT AND SUPPORT SYSTEMS BACK TO SOURCE AND OR POINT OF CONCEALMENT INCLUDING ABOVE ACCESSIBLE CEILING FINISHES. WIRING SHALL BE REMOVED.
3. CUT FLUSH WITH SLAB, CEILING, OR WALL ABANDONED CONCEALED CONDUIT, SUITABLY PLUG CONDUITS.
4. REPAIR AND RESTORE AD ACENT CONSTRUCTION AND FINISHES AFTER DEMOLITION IS COMPLETE.
5. MATERIAL AND E UIPMENT INDICATED FOR REMOVAL OR DEMOLITION IS TO BECOME CONTRACTOR'S PROPERTY UPON REMOVAL, UNLESS NOTED OTHERWISE. REMOVED MATERIAL TO BE PROPERLY HANDLED AND DISPOSED.

CLEANING:

1. REMOVE ALL RUBBISH AND DEBRIS FROM INSIDE AND AROUND ELECTRICAL E UIPMENT AND ENCLOSURES.
2. REMOVE DIRT, DUST OR CONCRETE SPATTER FROM INTERIOR AND EXTERIOR OF E UIPMENT USING BRUSHES. VACUUM CLEANER OR CLEAN LINT-FREE RAGS. DO NOT USE COMPRESSED AIR.

DELEGATED DESIGN PROFESSIONAL ENGINEERING SERVICES:

1. WHEN ENGINEERING SERVICES ARE SPECIFIED TO BE PROVIDED BY CONTRACTOR, CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO PERFORM THE SERVICES. ENGINEER SHALL BE LICENSED AT THE TIME SERVICES ARE PERFORMED AND LICENSED IN THE STATE IN WHICH PRO ECT IS LOCATED. IF THE STATE ISSUES DISCIPLINE SPECIFIC LICENSES, ENGINEER SHALL BE LICENSED IN THE APPLICABLE DISCIPLINE. ENGINEER SHALL BE EXPERIENCED IN THE TYPE OF WORK BEING PERFORMED.
2. ENGINEERING WORK SHALL BE DONE ACCORDING TO THE APPLICABLE REGULATIONS FOR PROFESSIONAL ENGINEERS TO INCLUDE SIGNING, SEALING AND DATING DOCUMENTS.

MA OR ELECTRICAL SE UENCE OF CONSTRUCTION:

THE FOLLOWING SE UENCE IS RECOMMENDED TO MAINTAIN THE PLANT IN OPERATION. ADDITIONAL INFORMATION CAN BE FOUND IN SECTION 01 00 10.

1. INSTALL NEW MCC AD ACENT TO EXISTING MCC
2. RUN NEW CABLE AND CONDUIT TO NEW E UIPMENT
3. SHUTDOWN EXISTING MCC, CONNECT NEW MCC TO SWITCHBOARD, EXTEND CABLE AND CONDUIT OF E UIPMENT ON EXISTING MCC TO NEW MCC.

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: R. HAMMONDS
CHECKED BY: W. M. GUGAN
SUBMITTED BY: S. BRIGHT
ANSI D

ISSUE DATE: 09.13.2024
SOLICITATION NO.: FA8903-24-R-A001
CONTRACT NO.: -

329 CIVIL ENGINEER S. UADRON
TYNDALL AFB, FLORIDA

POND

cpm Smith
3500 Parkway La e
Suite 500
Norcross, Geor ia 30092

220 Mall La e, Suite 2, Build 950
Ty sall AFB, FL 32403, U ited States
Re o e a d i sall New B650 BX a d Mall HVAC Syste , MCC
Co tract a d Power Sour e HVAC E ui
Ta k 1 Pro e t Nu er: FA8903-24-R-A001/ E ui

ELECTRICAL NOTES

POND 1220854

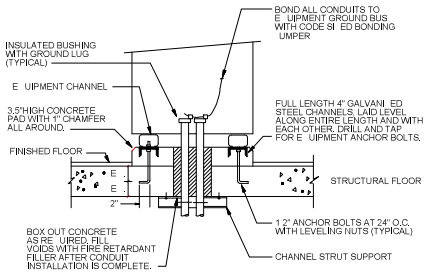
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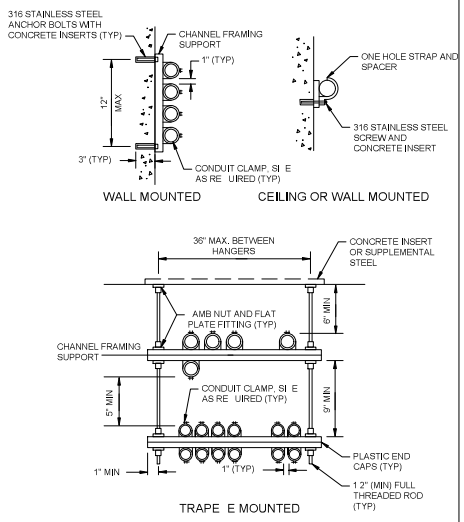
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MCC E UIPMENT PAD

DETAIL A

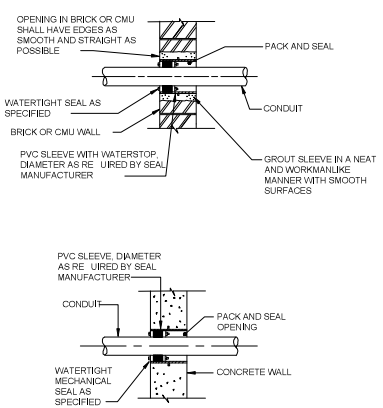
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CONDUIT MOUNTING

DETAIL B

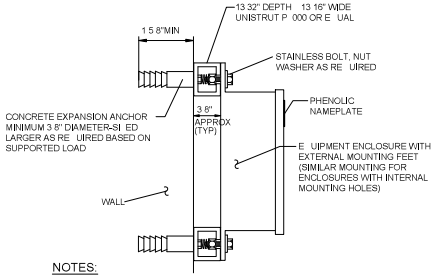
NTS



WATER TIGHT PENETRATION

DETAIL C

NTS



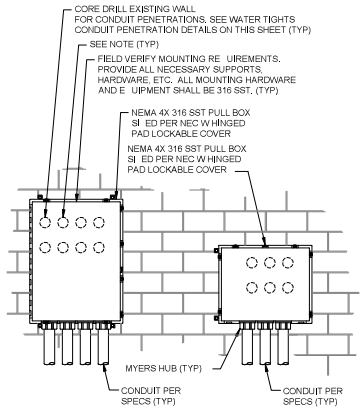
NOTES:

1. APPLICABLE FOR ALL NON CAST-IRON ENCLOSURES OR BOXES.
2. INSTALL STRUT IN VERTICAL ORIENTATION TO FINISHED FLOOR FOR E UIPMENT WITH EXCESSIVE WEIGHTS.
3. PROVIDE ALL MATERIAL, LABOR, AND INCIDENTALS RE UIRED FOR MOUNTING ENCLOSURE TO WALLS OTHER THAN CONCRETE.

E UIPMENT ENCLOSURE MOUNTING

DETAIL D

NTS



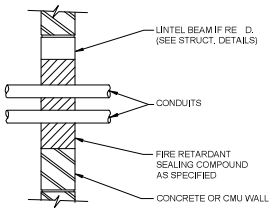
NOTES:

1. SPARE CONDUIT TO BE STUBBED 24" INSIDE BUILDING WALL AND CAPPED.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.

ABOVE GRADE CONDUIT PENETRATIONS THROUGH BUILDING

DETAIL E

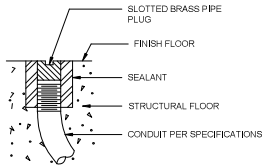
NTS



TYPICAL ABOVE GRADE WALL NO WATERTIGHT CONDUIT PENETRATION

DETAIL F

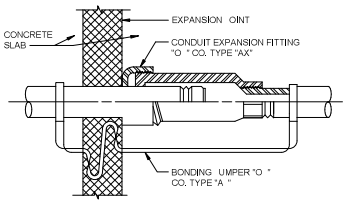
NTS



FUTURE CONDUIT TERMINATION IN FLOOR

DETAIL G

NTS



EXPANSION FITTING

DETAIL H

NTS

329 CIVIL ENGINEER S. UADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith

3500 Parkway La e
Suite 500
Chantilly, Virginia
20151-2010

DESIGNED BY:	ISSUE DATE:
D. FALCONER	09.13.2024
DRAWN BY:	SOLICITATION NO.:
E. MARTINEZ	MAFB24R0004
CHECKED BY:	CONTRACT NO.:
W. M. GUGAN	-
SUPERVISED BY:	
S. BERRY	
ANSI D	

MARK	DESCRIPTION	DATE

220 Wall La e, Suite 2, Build 950
Ty sall AFB, FL 32403, U ited States

Re o e a d I sall New B650 BX a d Wall HVAC Syste , MCC
Co tracts, Ty sall AFB, Flo ida, FAC1 U d e t
Orde 1 Pico 1 Nu be , ACC-OKLAHOMA-CITY, OK, ULM20-10152D

ELECTRICAL DETAILS I

POND 1220854

SHEET ID

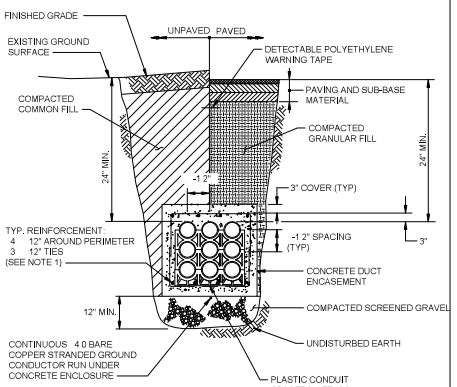
E-501

ISSUED FOR CONSTRUCTION

File Pat :

Plot Date:

XREFs: 2019 ANSI D 22.34 Border USACE I a es
Last sa ed by FALCONERD Ti e: 9 13 2024 10:08:49 AM
w: d s k\4-02\ w\ e \My\ o : w\ 1\ 2864\6 2 816 04 Deni Ser : I es NM 5% 09 Ele tri al\10 BIM CAD\ XXXX E602.dw

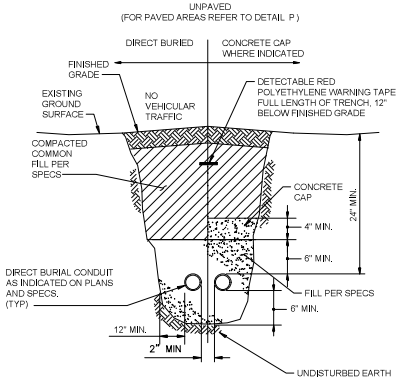


NOTES:

1. REINFORCING RE UIRED WHEN DUCT BANK IS SUB ECT TO INCREASED STRESS SUCH AS SUB ECT TO VEHICULAR TRAFFIC (UNDER ROADWAYS OR DRIVEWAYS), UNDER STRUCTURES, OR OTHERWISE INDICATED. EXTEND REINFORCING FIVE (5) FEET BEYOND AREA NEEDING PROTECTION.

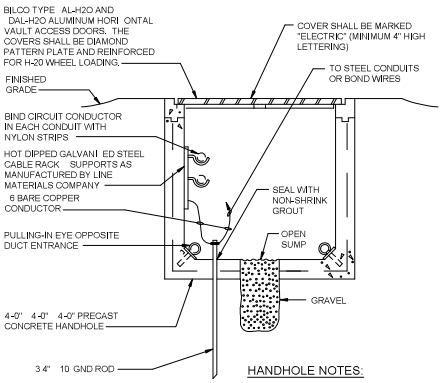
CONCRETE ENCASED ELECTRICAL DUCTBANK

DETAIL - NTS



DIRECT BURIED CONCRETE CAP CONDUIT INSTALLATION

DETAIL - K NTS

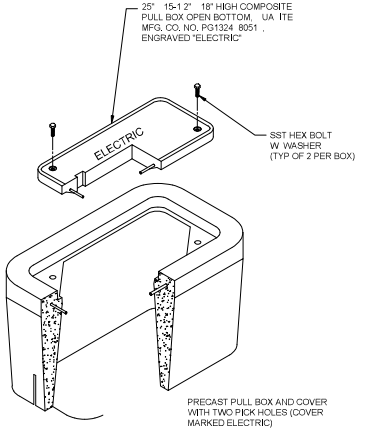


HANDHOLE NOTES:

1. DO NOT SPLICE CABLES IN HANDHOLES UNLESS OTHERWISE NOTED.
2. ALL MOUNTING HARDWARE SHALL BE 316 SST.
3. HANDHOLE TO BE PLACED ON 6" BASE OF GRAVEL.

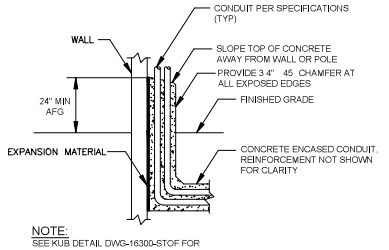
TYPICAL ELECTRIC INSTRUMENTATION HANDHOLE

DETAIL - L NTS



UNDERGROUND PULL BOX

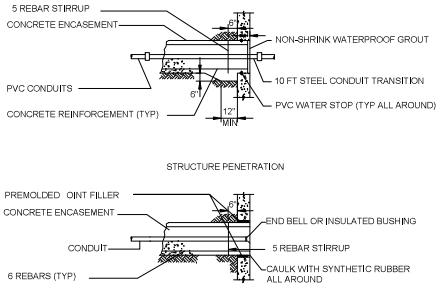
DETAIL - M NTS



NOTE:
SEE KUB DETAIL DWG-16300-STOF FOR POLE RISERS.

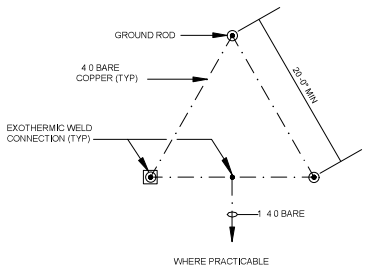
DUCTBANK RISER (WALL)

DETAIL - N N.T.S.



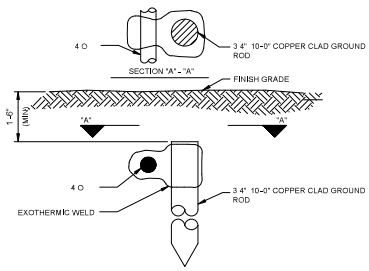
CONCRETE ENCASED CONDUIT PENETRATION AT MANHOLE OR STRUCTURE

DETAIL - P NTS



GROUNDING TRIAD

DETAIL - R NTS



GROUNDING ROD

DETAIL - T NTS

329 CIVIL ENGINEER S. UADRON
TYNDALL AFB, FLORIDA
POND
CDM Smith
3500 Parkway La e
Suite 500
Chantilly, Virginia
Geor ia 30092

DESIGNED BY:	ISSUE DATE:
D. FALCONER	09.13.2024
DRAWN BY:	SOLICITATION NO.:
E. KAMPEN	HAMERWERKS
CHECKED BY:	CONTRACT NO.
W. M. DUGAN	-
SUPERVISED BY:	
S. PERRY	
ANSI D	

MARK	DESCRIPTION	DATE

220 Mall La e, Suite 2, Build 950
Ty sall AFB, FL 32403, U ited States
Re o e a d i sall New B650 BX a d Mall HVAC Syste , MCC
Co tract Nu be New Boile Plant a d Ass ciated U ilities
Orde 1 Pe i d Nu be FA4626-24-MA21-10153D

ELECTRICAL DETAILS II

POND 1220854

SHEET ID

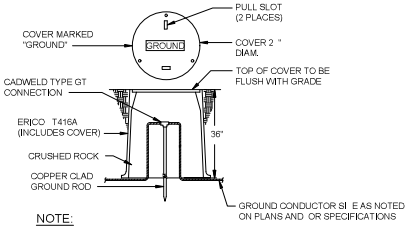
E-502

ISSUED FOR CONSTRUCTION

File Pat :

Plot Date:

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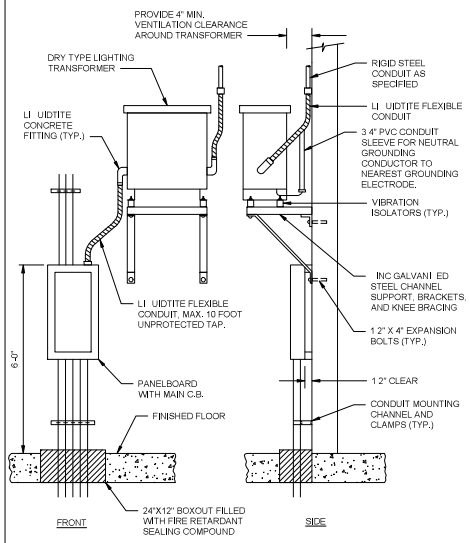


NOTE:

1. TO IMPROVE SYSTEM RESISTANCE, ERICO GEM MAY BE USED AS A BACKFILL MATERIAL IN AN AUGERED HOLE.

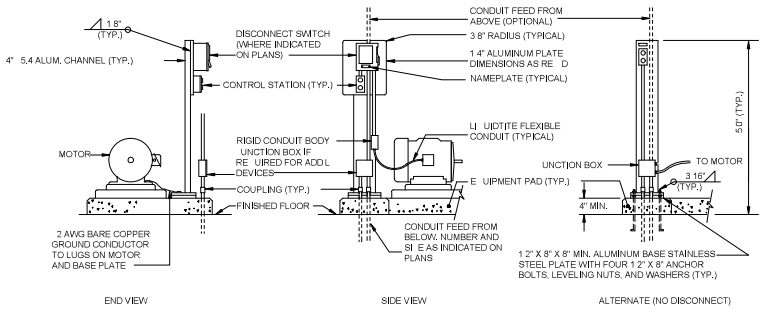
GROUND ROD TEST WELL STATION

DETAIL U
N.T.S. -



LIGHTING PANEL AND TRANSFORMER INSTALLATION

DETAIL V
NTS -



TYPICAL MOTOR INSTALLATION

DETAIL X
N.T.S. -

MARK	DESCRIPTION	DATE

ISSUE DATE: 09 13 2024
SOLICITATION NO.: MARKETING
CONTRACT NO.: -

DESIGNED BY: D. FALCONER
DRAWN BY: E. KAHLER
CHECKED BY: W. M. GUGAN
SUPERVISED BY: S. PERRY
SI E: ANSI D

329 CIVIL ENGINEER S. UADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway La e
Suite 500
Fort Myers, FL
Geor ia 33902

220 Mall La e Suite 2, Bldg 950
Ty ndall AFB, FL 32403, U ited States
Re o e a d l stall New B650 BX a d Mall HVAC Sy ste , MCC
Co tract Nu ber: FA4452-24-C-A001, Ta k O de 1 Pro e t Nu e : KLMX25-10153D

ELECTRICAL
DETAILS III

POND 1220854

SHEET ID
E-503

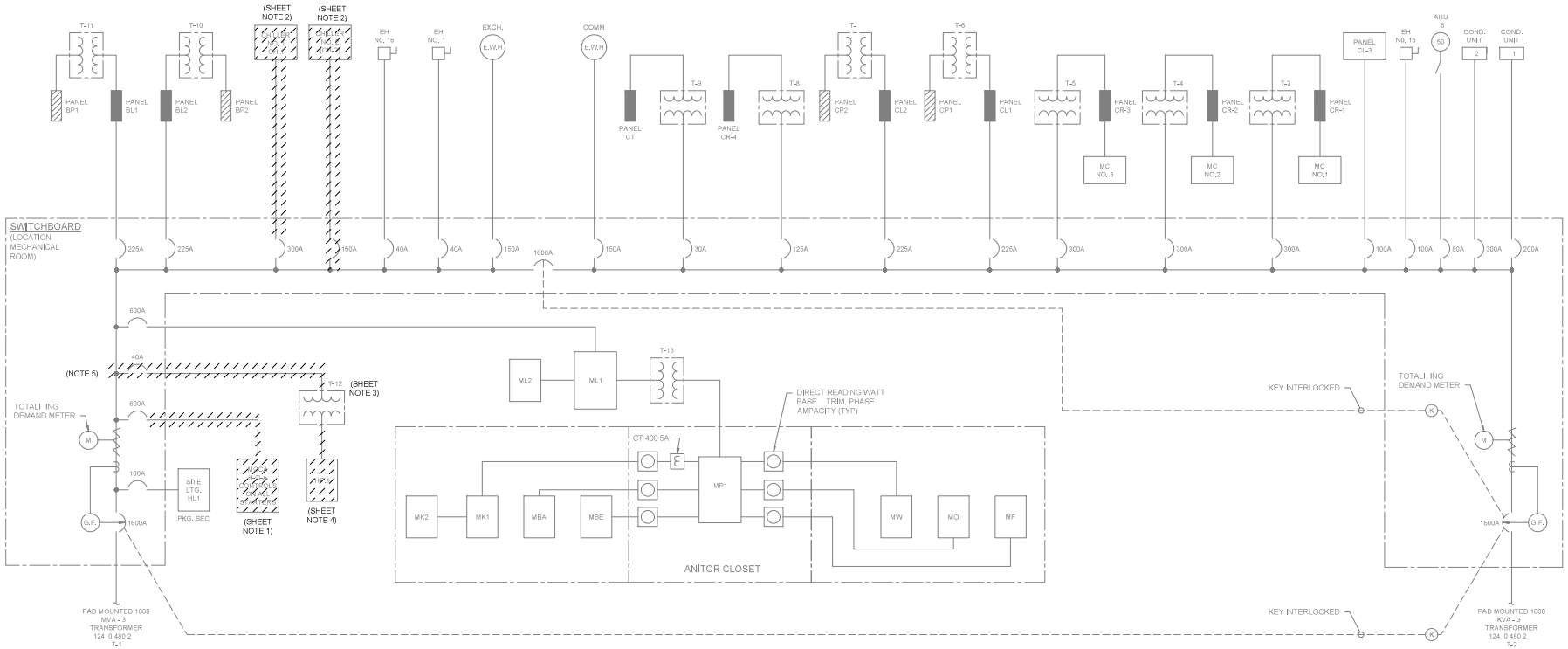
ISSUED FOR CONSTRUCTION

File Pat :
Plot Date:

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SHEET NOTES:

1. EXISTING MCCA TO BE REMOVED, NEW MCCA TO BE INSTALLED AND CONNECTED TO EXISTING FEEDER. SEE ONE LINE DIAGRAMS ON SHEETS ED-602, E-601, AND E-602 FOR MORE INFORMATION.
2. EXISTING CHILLER INCLUDING CONDUIT, WIREWAYS, WIRING, CONTROLS, BOXES, ETC. ASSOCIATED TO BE REMOVED COMPLETE BACK TO SOURCE.
3. EXISTING 45KVA TRANSFORMER TO REMAIN. PLEASE SEE SWITCHBOARD MODIFICATIONS ONE LINE POWER DIAGRAM ON SHEET E-601 FOR MORE INFORMATION.
4. EXISTING PANELBOARD, PANEL FEEDER, AND PANEL CONDUIT TO BE REMOVED. ALL EXISTING PANELBOARD CIRCUITS TO REMAIN AND BE RECONNECTED DURING RENOVATION. PLEASE SEE SWITCHBOARD MODIFICATIONS ONE LINE POWER DIAGRAM ON SHEET E-601 AND PANEL HP1 SCHEDULE ON SHEET E-604 FOR MORE INFORMATION.
5. EXISTING BREAKER, FEEDER, AND CONDUIT TO BE REMOVED. EXISTING 45KVA TRANSFORMER TO REMAIN. PLEASE SEE SWITCHBOARD MODIFICATIONS ONE LINE POWER DIAGRAM ON SHEET E-601 FOR MORE INFORMATION.



EXISTING DEMOLITION SWITCHBOARD
ONE LINE POWER DIAGRAM

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: R. MARTINEZ
CHECKED BY: W. M. DUGAN
SUPERVISED BY: S. HERBERT
ISSUE DATE: 09.13.2024
SOLICITATION NO.: -
CONTRACT NO.: -
SIZE: ANSI D

329 CIVIL ENGINEER S. UADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway La e
Suite 500
Boulder, Colorado 80301

220 Mall La e, Suite 2, Build- 950
Ty sall AFB, FL 32403, U ited States
Re o e a d I sall New B650 BX a d Mall HVAC Syste , MCC
Co tract Nu be : FA4467-19-D-A001, Ta k O de 1 Pro ect Title: SLM22-101SD

EXISTING DEMOLITION SWITCHBOARD
ONE LINE POWER DIAGRAM

POND 122054

SHEET ID
ED-601

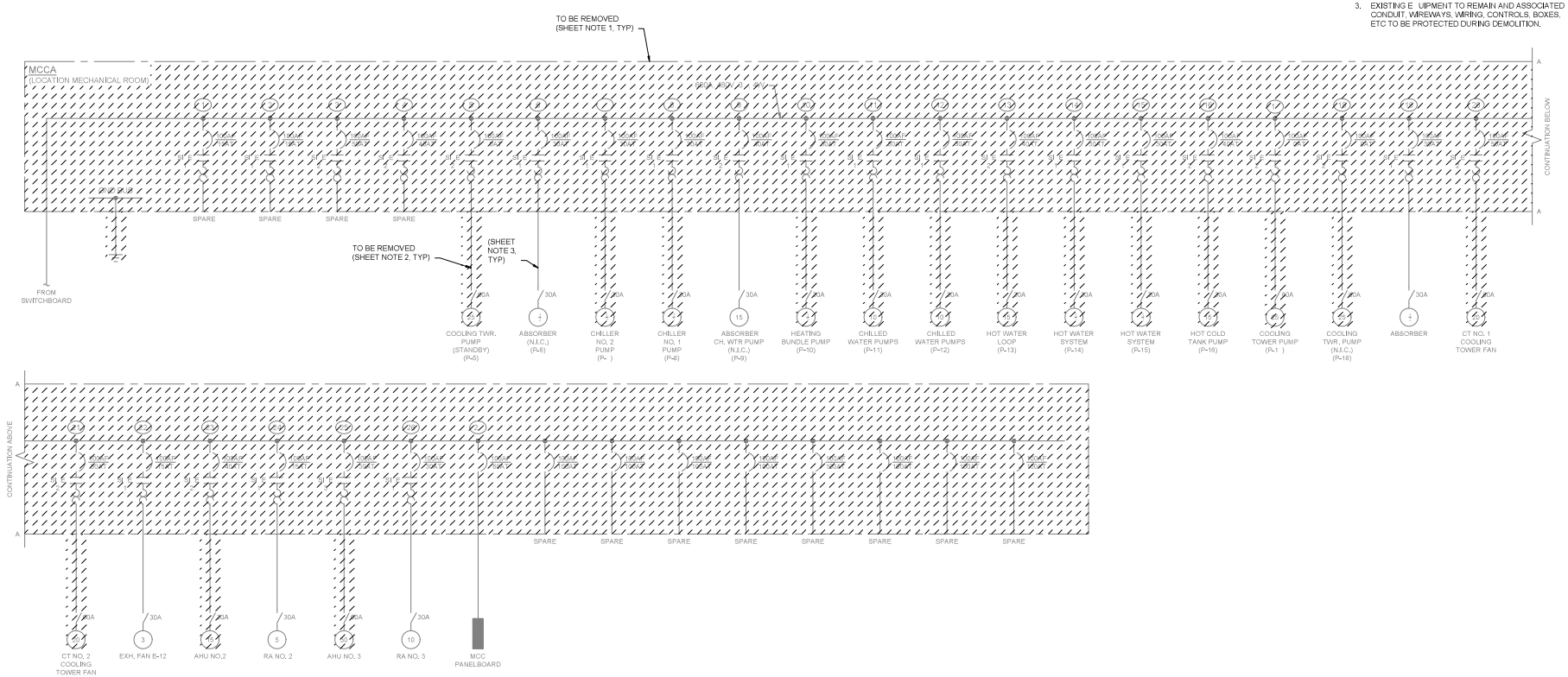
ISSUED FOR CONSTRUCTION

File Path:

Plot Date:

SHEET NOTES:

1. EXISTING MCCA TO BE REMOVED, NEW MCCA TO BE INSTALLED. EXISTING E UIPMENT TO REMAIN AND TO BE RECONNECTED TO NEW MCCA UNLESS OTHERWISE NOTED. SEE ONE LINE DIAGRAM FOR MORE INFORMATION.
2. EXISTING E UIPMENT INCLUDING CONDUIT, WIREWAYS, WIRING, CONTROLS, BOXES, ETC ASSOCIATED TO BE REMOVED COMPLETE BACK TO SOURCE.
3. EXISTING E UIPMENT TO REMAIN AND ASSOCIATED CONDUIT, WIREWAYS, WIRING, CONTROLS, BOXES, ETC TO BE PROTECTED DURING DEMOLITION.



EXISTING DEMOLITION MCCA
ONE LINE POWER DIAGRAM

329 CIVIL ENGINEER S UADRON TYNDALL AFB, FLORIDA	DESIGNED BY: D. FALCONER DRAWN BY: R. MACK CHECKED BY: W. M. GUGAN SUPERVISED BY: S. HERR ANSI D
POND CDM Smith 3500 Parkway La e Suite 500 Norcross, Geor ia 30092	ISSUE DATE: 09 13 2024 SOLICITATION NO.: FA4626-24-R-A005 CONTRACT NO. - SHEET SI E

220 Mall La e Suite 2, Build 950
Ty sall AFB, FL 32403, U ited States
Re o e a d l sall New B650 BX a d Mall HVAC Syste , MCC
Co tacts a d MCC Pow e Boa d, AHU's, U a d 1
Site 1 Pkg s 1 Plac s, & XLM20-1015D

EXISTING DEMOLITION MCCA
ONE LINE POWER DIAGRAM

POND 1220854

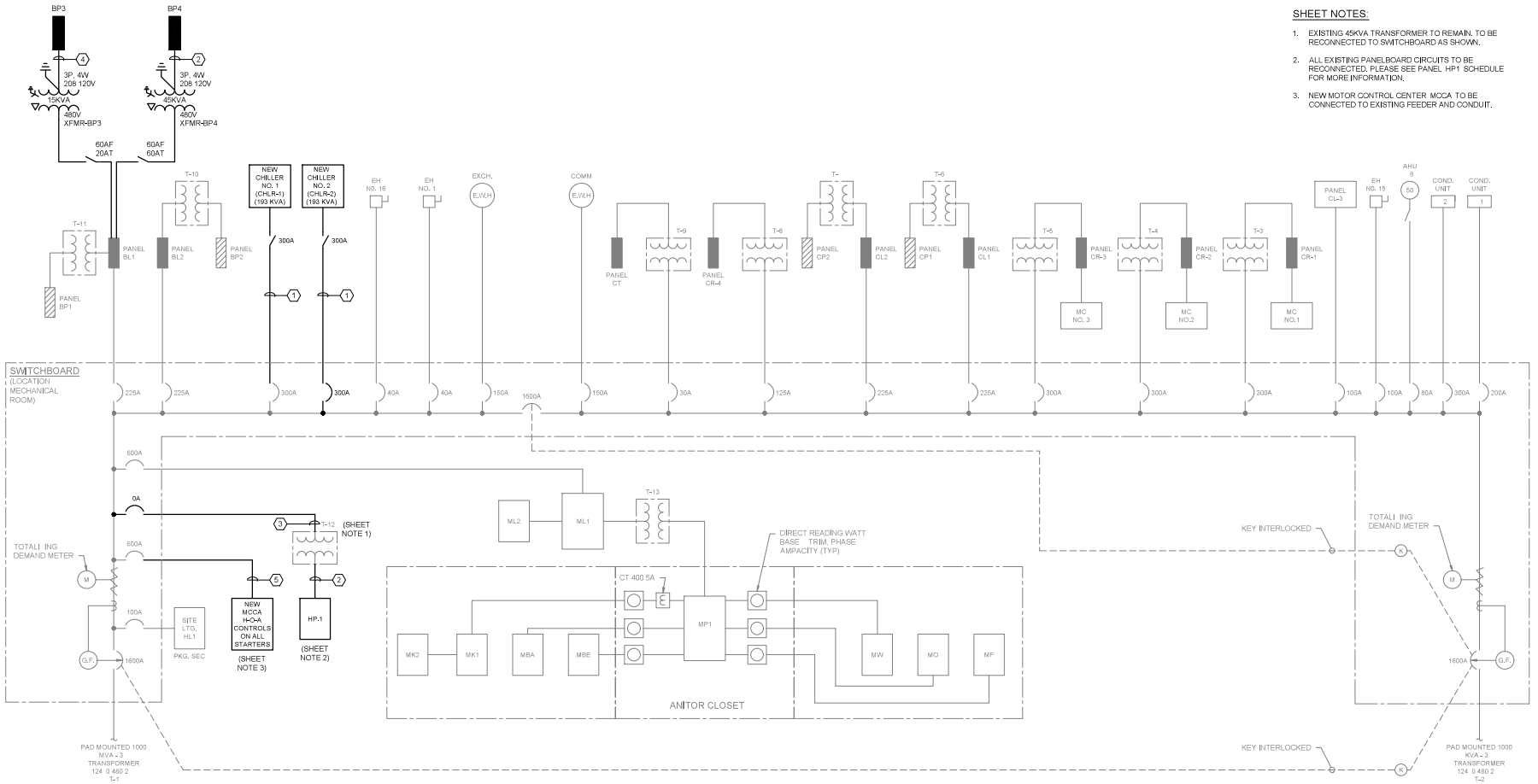
SHEET ID
ED-602

MARK	DESCRIPTION	DATE

File Pat :

Plot Date:

ISSUED FOR CONSTRUCTION



SWITCHBOARD MODIFICATIONS
ONE LINE POWER DIAGRAM

SHEET NOTES:

1. EXISTING 45KVA TRANSFORMER TO REMAIN. TO BE RECONNECTED TO SWITCHBOARD AS SHOWN.
2. ALL EXISTING PANELBOARD CIRCUITS TO BE RECONNECTED. PLEASE SEE PANEL HP1 SCHEDULE FOR MORE INFORMATION.
3. NEW MOTOR CONTROL CENTER MCCA TO BE CONNECTED TO EXISTING FEEDER AND CONDUIT.

CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
1	3-1 2"CON., 4- 350k II, 1 4GND
2	2"CON., 4- 1 0 AWG, 1 6GND
3	1-1 4"CON., 4- 4AWG, 1 8GND
4	1"CON., 4- 8 AWG, 1 10GND
5	TWO 3-1 2 INCH CONDUITS, EACH CONTAINING FOUR 350k II AND ONE 1 GND.

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: R. MACK
CHECKED BY: W. M. GUGAN
SUPERVISED BY: S. HERRITT
ISSUE DATE: 09.13.2024
SOLICITATION NO.: MA0424-A
CONTRACT NO.: -
SI E
ANSI D

329 CIVIL ENGINEER S. UADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway La e
Suite 500
Fo t Myers, F or da
33916

220 Mall La e Suite 2, Build 950
Ty ndall AFB, FL 32403, U ited States
Re o e a d I ssall New B650 Bl k a d Mall HVAC Sy ste , MCC
Co tract a d Mec Power Boa d Ma ke s U
Ge e a l Pla s F lo , E ectr ca , & M0424-1015D

SWITCHBOARD MODIFICATIONS
ONE LINE POWER DIAGRAM

POND 1220854

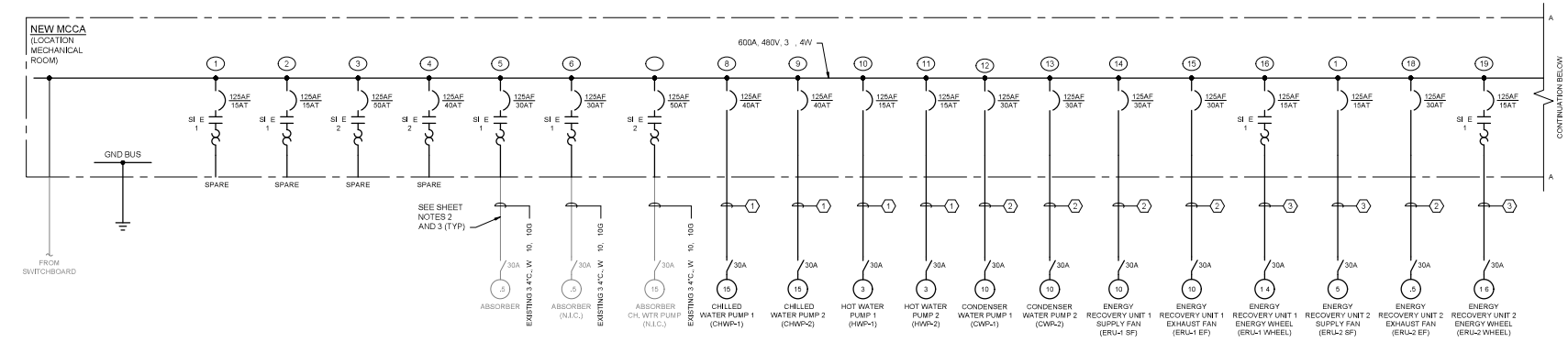
SHEET ID
E-601

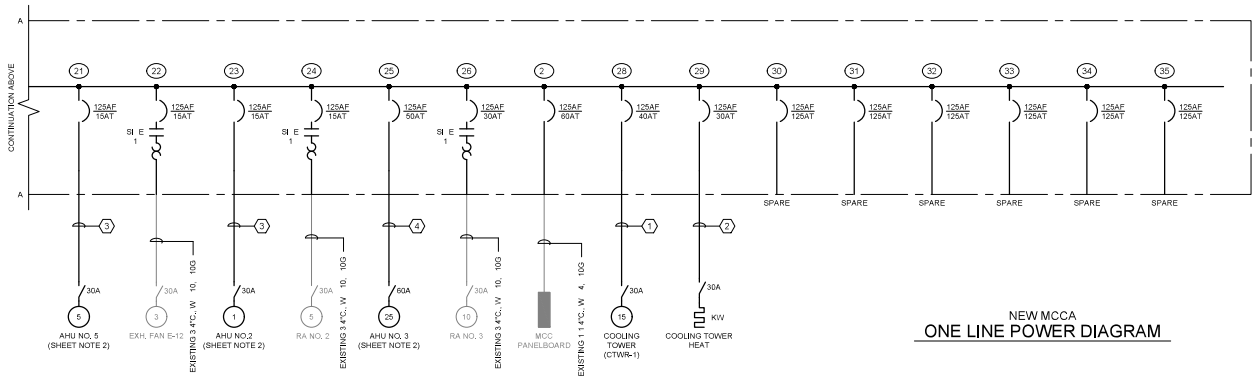
ISSUED FOR CONSTRUCTION

File Path:
Plot Date:

SHEET NOTES:

1. EXISTING E UIPMENT TO BE REINSTALLED AND CONNECTED TO NEW MCCA AS SHOWN.
2. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT ABOVE EXISTING MCC AND EXTEND TO NEW MCC.
3. PROVIDE CONDUIT COUPLINGS AND PULLBOXES AS RE UIRED FOR COMPLETE RACEWAY. PROVIDE NEW CONDUCTORS.
4. E UIPMENT DISCONNECT TO BE PROVIDED BY MANUFACTURER.
5. REFER TO HVAC DRAWINGS FOR DUCT SMOKE DETECTOR LOCATIONS AND UANTITIES.





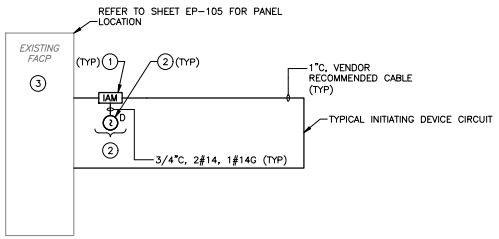
CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY.)

NO.	DESCRIPTION
1	1"CON., 3 8, 1 10GND
2	3 4"CON., 3 10, 1 10GND
3	3 4"CON., 3 12, 1 12GND
4	1"CON., 3 6, 1 8GND

NEW MCCA
ONE LINE POWER DIAGRAM

KEY NOTE:

1. SMOKE DETECTOR MODULES SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM.
2. REFER TO HVAC DRAWINGS FOR SMOKE DETECTOR LOCATIONS AND QUANTITIES.
3. PROVIDE AND INSTALL NEW INPUT CARDS AND PROGRAMMING AS NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEM.



EXISTING FACP
RISER DIAGRAM
N.T.S.

ISSUED FOR CONSTRUCTION

SHEET ID
E-602

EXISTING: ML2

Location: ELEC 153 | **Supply From:** | **Mounting:** Surface | **Enclosure:** Type 1 | **Volts:** 480/277 Wye | **Phases:** 3 | **Wires:** 4 | **A.I.C. Rating:** 22KA | **Mains Type:** | **Mains Rating:** 225 A | **MCB Rating:** 225 A

CKT	Load Name	Notes	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Notes	Load Name	CKT
1					1.6 kVA			3.3 kVA							2
3	EH-8	1	20 A	3		1.6 kVA			3.3 kVA		3	20 A	1	EH-16	4
5							1.6 kVA			3.3 kVA					6
7					3.3 kVA			1.0 kVA							8
9	AHU-5	1	30 A	3		3.3 kVA			1.0 kVA		3	15 A	1	RA-5	10
11							3.3 kVA			1.0 kVA					12
13					0.0 kVA			6.6 kVA							14
15	SPARE	-	40 A	3		0.0 kVA			6.6 kVA		3	15 A	1	RA-4	16
17							0.0 kVA			6.6 kVA					18
19					4.3 kVA			0.5 kVA							20
21	EH-20	1	20 A	3		4.3 kVA			0.5 kVA		3	15 A	1	SF-1	22
23							4.3 kVA			0.5 kVA					24
25					0.3 kVA			1.5 kVA							26
27	EXH. FAN E-3	1	15 A	3		0.3 kVA			1.5 kVA		3	10 A	2	AHU-4	28
29							0.3 kVA			1.5 kVA					30
31					0.0 kVA			0.0 kVA							32
33	Spare	—	20 A	3		0.0 kVA			0.0 kVA		3	20 A	—	Spare	34
35							0.0 kVA			0.0 kVA					36
37	Space	—	—	1	—			—			1	—	—	Space	38
39	Space	—	—	1		—			—		1	—	—	Space	40
			Total Load:		22.4 kVA			22.4 kVA							
			Total...		80.7 A			80.7 A							

Panel Totals	
Total Connected Load:	67.1 kVA
Total Estimated Demand:	67.1 kVA
Total Connected Current:	80.6 A
Total Estimated Demand...	80.8 A

NOTES:
1. EXISTING CIRCUIT TO REMAIN
3.
5.
7.

NOTES CONTINUED:
2. BRANCH CIRCUIT WIRING: 3/4"CON., 4#12 & 1#12GND
4.
6.
8.

EXISTING: BL1

Location: WAREHOUSE STORAGE 110F | **Supply From:** | **Mounting:** Recessed | **Enclosure:** NEMA 1 | **Volts:** 480/277 Wye | **Phases:** 3 | **Wires:** 4 | **A.I.C. Rating:** 22KA | **Mains Type:** | **Mains Rating:** 225 A | **MCB Rating:** 225 A

CKT	Load Name	Notes	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Notes	Load Name	CKT
1	LIGHTING	1	20 A	1	2.4 kVA			1.5 kVA			1	20 A	1	LIGHTING	2
3	LIGHTING	1	20 A	1		2.0 kVA			2.1 kVA		1	20 A	1	LIGHTING	4
5	LIGHTING	1	20 A	1			2.4 kVA			2.8 kVA	1	20 A	1	LIGHTING	6
7	LIGHTING	1	20 A	1	2.7 kVA			3.7 kVA			1	20 A	1	LIGHTING	8
9	LIGHTING	1	20 A	1		2.7 kVA			1.0 kVA		1	20 A	1	LIGHTING	10
11	BATTERY UNIT & EXIT LTS	1	20 A	1			1.4 kVA			1.4 kVA	1	20 A	1	LIGHTING	12
13					1.2 kVA					14.1...					14
15	15KVA XFMR FOR BP3	3	20 A	3		1.2 kVA			9.5 kVA		3	60 A	2	45KVA XFMR FOR BP4	16
17							1.2 kVA			9.1 kVA					18
19	EH-1	1	20 A	1	1.6 kVA			3.0 kVA			1	20 A	1	EH-3, EH-8	20
21	Spare	—	20 A	1		0.0 kVA			3.0 kVA		1	20 A	1	EH-4	22
23	Spare	—	20 A	1			0.0 kVA			0.6 kVA	1	20 A	—	SPARE	24
25	EH-2	5	20 A	1	3.0 kVA			0.7 kVA							26
27	EH-5	5	20 A	1		4.0 kVA			0.7 kVA		3	10 A	4	AHU-1	28
29	Spare	—	20 A	1			0.6 kVA			0.7 kVA					30
31					0.5 kVA			2.9 kVA							32
33	RA-1	1	15 A	3		0.5 kVA			2.9 kVA		3	30 A	1	CONVEYOR	34
35							0.5 kVA			2.9 kVA					36
37					12.6			2.7 kVA							38
39	TRANSFOMER FOR BP1	1	60 A	3		12.6...			2.7 kVA		3	30 A	1	BAILER	40
41							12.6...			2.7 kVA					42
			Total Load:		52.6 kVA			46.5 kVA		40.5 kVA					
			Total...		193.1 A			171.2 A		146.4 A					

Panel Totals	
Total Connected Load:	139.6 kVA
Total Estimated Demand:	139.6 kVA
Total Connected Current:	167.9 A
Total Estimated Demand...	167.9 A

NOTES:
1. EXISTING CIRCUIT TO REMAIN
3. BRANCH CIRCUIT WIRING: 3/4"CON., 4#10 & 1#10GND
5.
7.

NOTES CONTINUED:
2. BRANCH CIRCUIT WIRING: 1"CON., 4#6 & 1#10GND
4. BRANCH CIRCUIT WIRING: 3/4"CON., 4#12 & 1#12GND
6.
8.

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUGAN
APPROVED BY: S. PERRY
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.:
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Pathway Lane
Suite 500
Norcross, Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction and MCC Sheet Metal HVAC Equipment
Client Project Number: XLWJ21-0130

PANELBOARD SCHEDULES I

POND # 122054

SHEET ID
E-603

ISSUED FOR CONSTRUCTION

File Path: I:\2021\122054\Tyndall AFB EIS Design\122054_Tyndall AFB_EIS_Design_v21.rvt

Plot Date: 9/13/2024 9:51:45 AM

BRANCH: BP3

Location: MECH 110C
Supply From: 15KVA BP3
Mounting: Surface
Enclosure: NEMA 1

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10KA
Mains Type:
Mains Rating: 60 A
MCB Rating: 40 A

CKT	Load Name	Notes	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Notes	Load Name	CKT
1	VAV-23	1	20 A	1	0,6 kVA			0,0 kVA			1	20 A		Spare	2
3	VAV-20	1	20 A	1		0,6 kVA			0,6 kVA		1	20 A	1	VAV-21	4
5	Spare		20 A	1			0,0 kVA			0,6 kVA	1	20 A	1	VAV-22	6
7	VAV-08	1	20 A	1	0,6 kVA			0,0 kVA			1	20 A		Spare	8
9	Spare		20 A	1		0,0 kVA			0,0 kVA		1	20 A		Spare	10
11	VAV-19	1	20 A	1			0,6 kVA			0,0 kVA	1	20 A		Spare	12
13	VAV-18	1	20 A	1	0,6 kVA			0,0 kVA			1	20 A		Spare	14
15	Spare		20 A	1		0,0 kVA			0,0 kVA		1	20 A		Spare	16
17	Spare		20 A	1			0,0 kVA			0,0 kVA	1	20 A		Spare	18
				Total Load:	1,2 kVA		1,2 kVA			1,2 kVA					
				Total...	10,0 A		10,0 A			10,0 A					

Panel Totals

Total Connected Load:	3,6 kVA
Total Estimated Demand:	3,6 kVA
Total Connected Current:	10,0 A
Total Estimated Demand...	10,0 A

NOTES:

1. BRANCH CIRCUIT WIRING: 1"CON., 2#12 & 1#12GND

NOTES CONTINUED:

BRANCH: HP1

Location: MECHANICAL ROOM 161
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10K
Mains Type:
Mains Rating: 125 A
MCB Rating: 125 A

CKT	Load Name	Notes	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Notes	Load Name	CKT
1	*A/C CONTROL - AHU#2*	1	20 A	1	*0,9 kVA*			*0,9 kVA*			1	20 A	1	*A/C CONTROL - AHU#3*	2
3	*A/C CONTROL - AHU#6*	1	20 A	1		*0,9 kVA*			*0,9 kVA*		1	20 A	1	*RECEPTACES*	4
5	*RECEPTACES*	1	20 A	1			*0,9 kVA*			*0,6 kVA*	1	20 A	1	*LIGHTING*	6
7	*RECEPTACES*	1	20 A	1	*0,9 kVA*			*0,9 kVA*			1	20 A	1	*TIME SWITCH*	8
9	*CIR. PUMP*	1	20 A	1		*0,6 kVA*			*0,6 kVA*		1	20 A	1	*CIR. PUMP*	10
11	*CIR. PUMP*	1	20 A	1			*0,6 kVA*			*0,6 kVA*	1	20 A		*CHEMICAL FEEDER*	12
13	*CH1 CRANKCASE HTR*	1	20 A	1	*0,6 kVA*			*0,6 kVA*			1	20 A	1	*CH2 CRANKCASE HTR*	14
15	*CH1 OIL PUMP*	1	20 A	1		*0,6 kVA*			*0,6 kVA*		1	20 A	1	*CH2 OIL PUMP*	16
17	*CH1 PURGE MOTOR*	1	20 A	1			*0,6 kVA*			*0,6 kVA*	1	20 A	1	*CH2 PURGE MOTOR*	18
19					*3,0 kVA*			*1,6 kVA*							20
21	*WATER BOOSTER*	1	40 A	3		*3,0 kVA*			*1,6 kVA*		3	40 A	1	*AIR COMPRESSOR*	22
23							*3,0 kVA*			*1,6 kVA*					24
25					*0,3 kVA*			*0,9 kVA*			1	20 A	1	*MAIN TEL BACKB'D*	26
27	*AIR DYER*	1	15 A	3		*0,3 kVA*			*0,9 kVA*		1	20 A	1	*MAIN TEL BACKB'D*	28
29							*0,3 kVA*			*0,9 kVA*	1	20 A	1	*RECEPTACLE*	30
31	*F.A. CABINET*	1	20 A	1	*1,0 kVA*			*0,6 kVA*			1	20 A		*Spare*	32
33	*F.A. CABINET*	1	20 A	1		*1,0 kVA*			*0,6 kVA*		1	20 A		*Spare*	34
35	*SOLAR RECEPTACLE*	1	20 A	1			*0,6 kVA*			*0,7 kVA*	1	20 A	2	GAS FIRED BOILER BLR-1	36
37	*SOLAR RECEPTACLE*	1	20 A	1	*0,6 kVA*			*2,6 kVA*							38
39	RECEPTACLE MECH.ROOM...	2	20 A	1		0,2 kVA			*2,6 kVA*		3	20 A		*Spare*	40
41	DUCT SMOKE DETECTOR	2	20 A	1			0,2 kVA			*2,6 kVA*					42
				Total Load:	15,4 kVA		14,4 kVA			13,8 kVA					
				Total...	129,1 A		120,6 A			115,0 A					

Panel Totals

Total Connected Load:	43,6 kVA
Total Estimated Demand:	43,6 kVA
Total Connected Current:	121,0 A
Total Estimated Demand...	121,0 A

NOTES:

1. EXISTING CIRCUIT TO REMAIN, RECONNECT TO NEW PANELBOARD AS SHOWN.

NOTES CONTINUED:

2. BRANCH CIRCUIT WIRING: 3/4"CON., 2#12 & 1#12GND

BRANCH: BP4

Location: WAREHOUSE STORAGE 110F
Supply From: 45KVA BP3
Mounting: Surface
Enclosure: NEMA 1

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10KA
Mains Type:
Mains Rating: 125 A
MCB Rating: 125 A

CKT	Load Name	Notes	Trip	Poles	A	B	C	A	B	C	Poles	Trip	Notes	Load Name	CKT
1	RECEP DISPLAY 118	3	20 A	1	0,2 kVA					2,1 kVA	2	35 A	4	ODU-1	2
3	RECEPS NEW MECH ROOM	5	20 A	1			0,4 kVA			2,1 kVA					4
5	Spare	--	20 A	1						0,0 kVA	2	35 A	1	ODU-3	6
7	ODU-2	4	35 A	2	2,1 kVA					2,1 kVA					8
9						2,1 kVA				0,6 kVA	1	20 A	2	VAV-13	10
11	ODU-4	1	35 A	2			2,1 kVA				1	20 A	3	VAV-25	12
13					2,1 kVA					0,6 kVA	1	20 A	2	VAV-12	14
15	VAV-14	2	20 A	1		0,6 kVA				0,6 kVA	1	20 A	3	VAV-06	16
17	VAV-17	2	20 A	1			0,6 kVA			0,6 kVA	1	20 A	2	VAV-10	18
19	VAV-21	3	20 A	1	0,6 kVA			0,2 kVA			1	20 A	3	RECEP MERCH STORAGE 110F	20
21	ROOF MTD RECEP NEAR ODU-2	2	20 A	1		0,2 kVA				0,6 kVA	1	20 A	2	VAV-15	22
23	ROOF MTD RECEP NEAR ODU-3	5	20 A	1			0,2 kVA			0,6 kVA	1	20 A	2	VAV-16	24
25	VAV-11	2	20 A	1	0,6 kVA			0,6 kVA			1	20 A	3	VAV-24	26
27	VAV-07	3	20 A	1		0,6 kVA			0,6 kVA		1	20 A	3	VAV-03	28
29	VAV-09	2	20 A	1			0,6 kVA			0,6 kVA	1	20 A	3	VAV-04	30
31	VAV-05	3	20 A	1	0,6 kVA			0,6 kVA			1	20 A	3	VAV-02	32
33	VAV-26	3	20 A	1		0,6 kVA			0,6 kVA		1	20 A	3	VAV-27	34
35	VAV-30	3	20 A	1			0,6 kVA			0,6 kVA	1	20 A	3	VAV-28	36
37	VAV-29	3	20 A	1	0,6 kVA			1,2 kVA			1	20 A	5	EF-1	38
39	Spare	--	20 A	1		0,0 kVA			0,0 kVA		1	20 A		Spare	40
41	Spare	--	20 A	1			0,0 kVA			0,0 kVA	1	20 A		Spare	42
43	Spare		20 A	1	0,0 kVA			0,0 kVA			1	20 A		Spare	44
45	Spare		20 A	1		0,0 kVA			0,0 kVA		1	20 A		Spare	46
47	Spare		20 A	1			0,0 kVA			0,0 kVA	1	20 A		Spare	48
49	Spare		20 A	1	0,0 kVA			0,0 kVA			1	20 A		Spare	50
51	Spare		20 A	1		0,0 kVA			0,0 kVA		1	20 A		Spare	52
53	Spare		20 A	1			0,0 kVA			0,0 kVA	1	20 A		Spare	54
				Total Load:	14,1 kVA		9,5 kVA			9,1 kVA					
				Total...	117,8 A		79,8 A			76,2 A					

Panel Totals

Total Connected Load:	32,7 kVA
Total Estimated Demand:	32,7 kVA
Total Connected Current:	90,8 A
Total Estimated Demand...	90,8 A

NOTES:

1. BRANCH CIRCUIT WIRING: 1"CON., 3#6 & 1#10GND
3. BRANCH CIRCUIT WIRING: 3/4"CON., 2#12 & 1#12GND
5. BRANCH CIRCUIT WIRING: 3/4"CON., 2#8 & 1#10GND

NOTES CONTINUED:

2. BRANCH CIRCUIT WIRING: 3/4"CON., 2#10 & 1#10GND
4. BRANCH CIRCUIT WIRING: 3/4"CON., 3#8 & 1#10GND

220 Mall Lane, Suite 2, Building 850
Tyndall AFB, FL 32403, United States
Remove and Install New 850G BX and Wall HVAC System, MCC
Construction and MCC Shared Stand-Alone Equipment
Client Project Number: XLMJ21-0130

PANELBOARD SCHEDULES II

POND # 1220854

SHEET ID

E-604

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. PACK
CHECKED BY: W. McCLUGAN
APPROVED BY: S. PERRY
SIZE: ANSI D

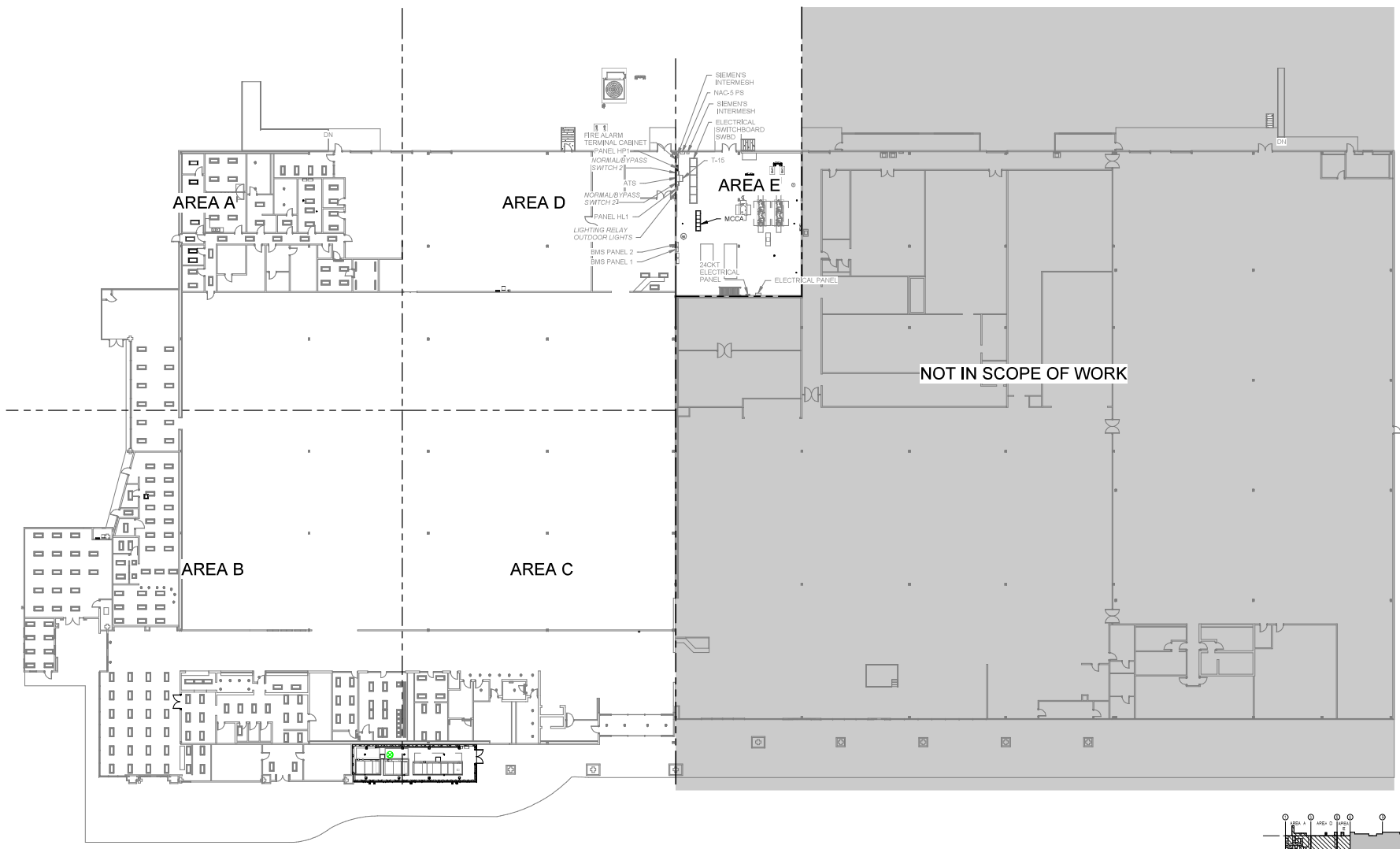
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SOLICITATION NO.: FA4626-24-R-B001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

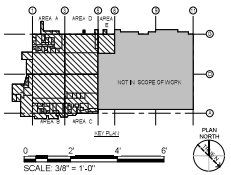
POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

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Plot Date: 9/13/2024 9:51:45 AM



1 OVERALL ELECTRICAL SITE/KEY PLAN
3/64" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUGAN
APPROVED BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4626-24-R-0004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND CDM Smith
3950 Parkway Lane Suite 500 Peachtree Corners Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC Consolidation and Fire Alarm Replacement
Client Project Number: XLWU21-0130

OVERALL ELECTRICAL SITE PLAN

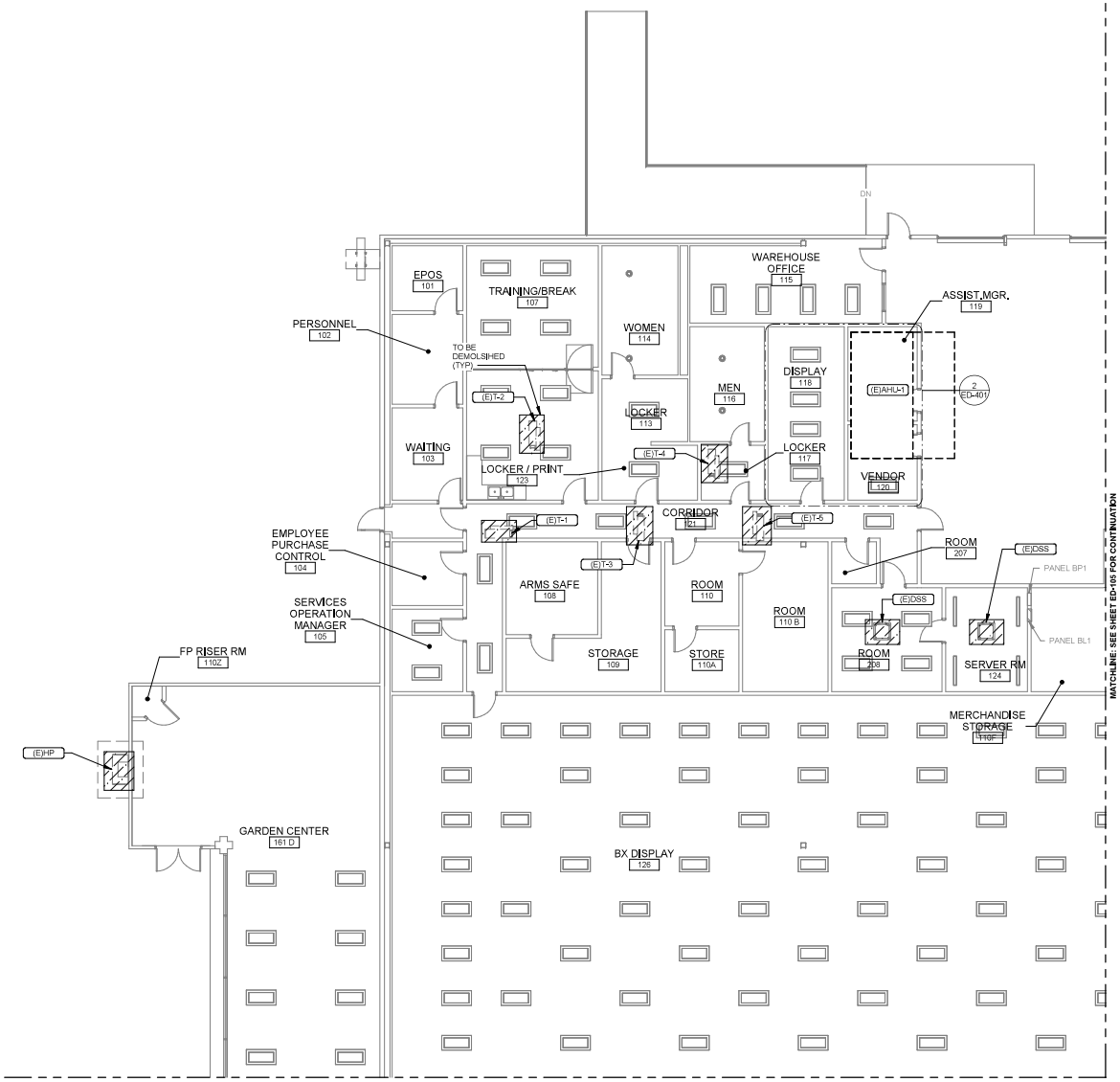
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SHEET ID
ES-101

ISSUED FOR CONSTRUCTION

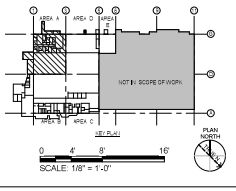
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1 ELECTRICAL DEMOLITION PLAN - AREA A

1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
QUALITY CONTROLLED BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: HEADQUARTERS
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Pathway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction Project Number: XLWJ21-0130
Client Project Number: XLWJ21-0130

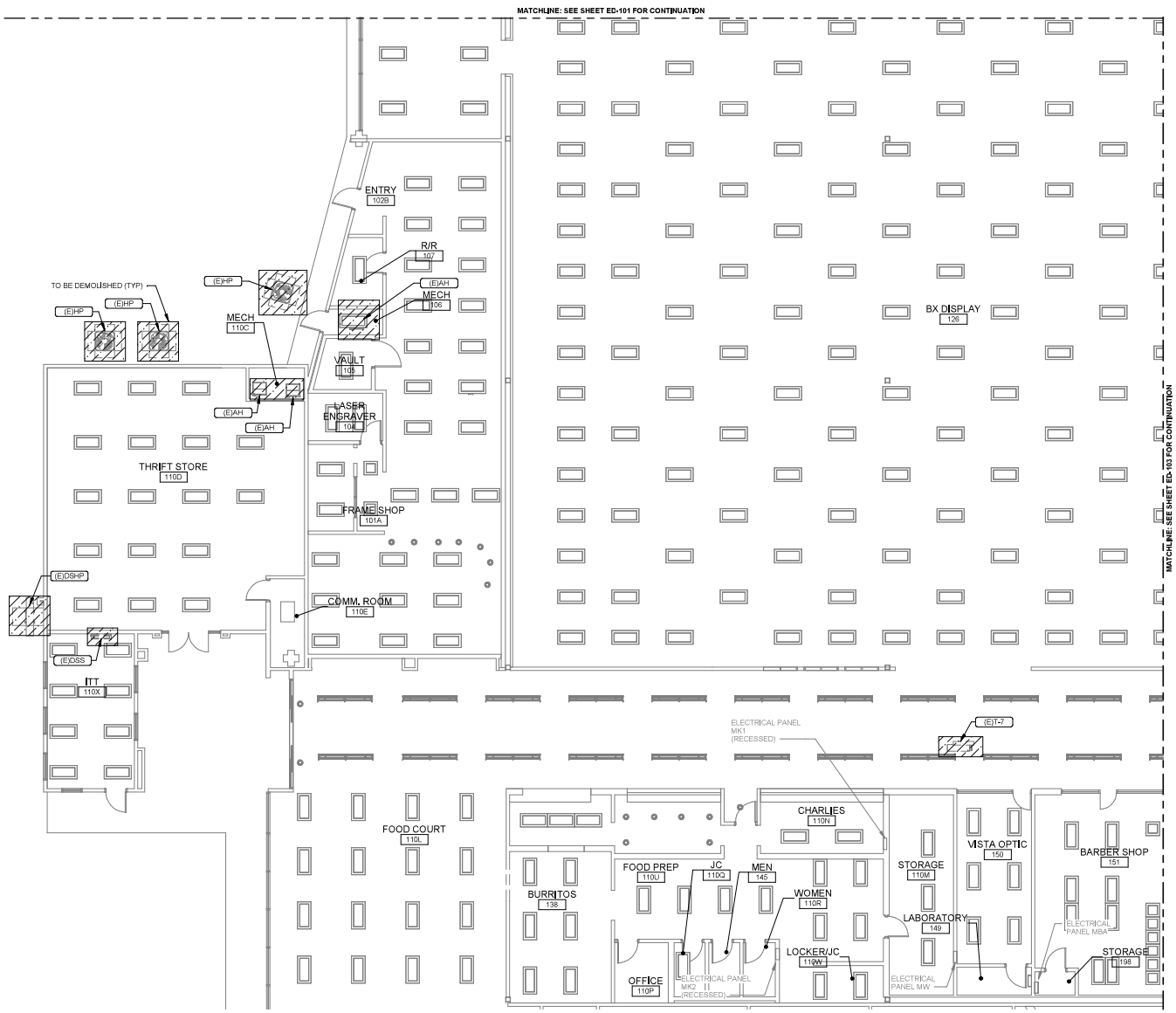
ELECTRICAL DEMOLITION PLAN - AREA A

POND # 1220554

SHEET ID
ED-101

ISSUED FOR CONSTRUCTION

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1 ELECTRICAL DEMOLITION PLAN - AREA B
1/8" = 1'-0"

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
APPROVED BY: S. PERRY
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4626-24-R-A004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction (CC) Phase and Mall HVAC Equipment
Client Project Number: XLWJ21-0130

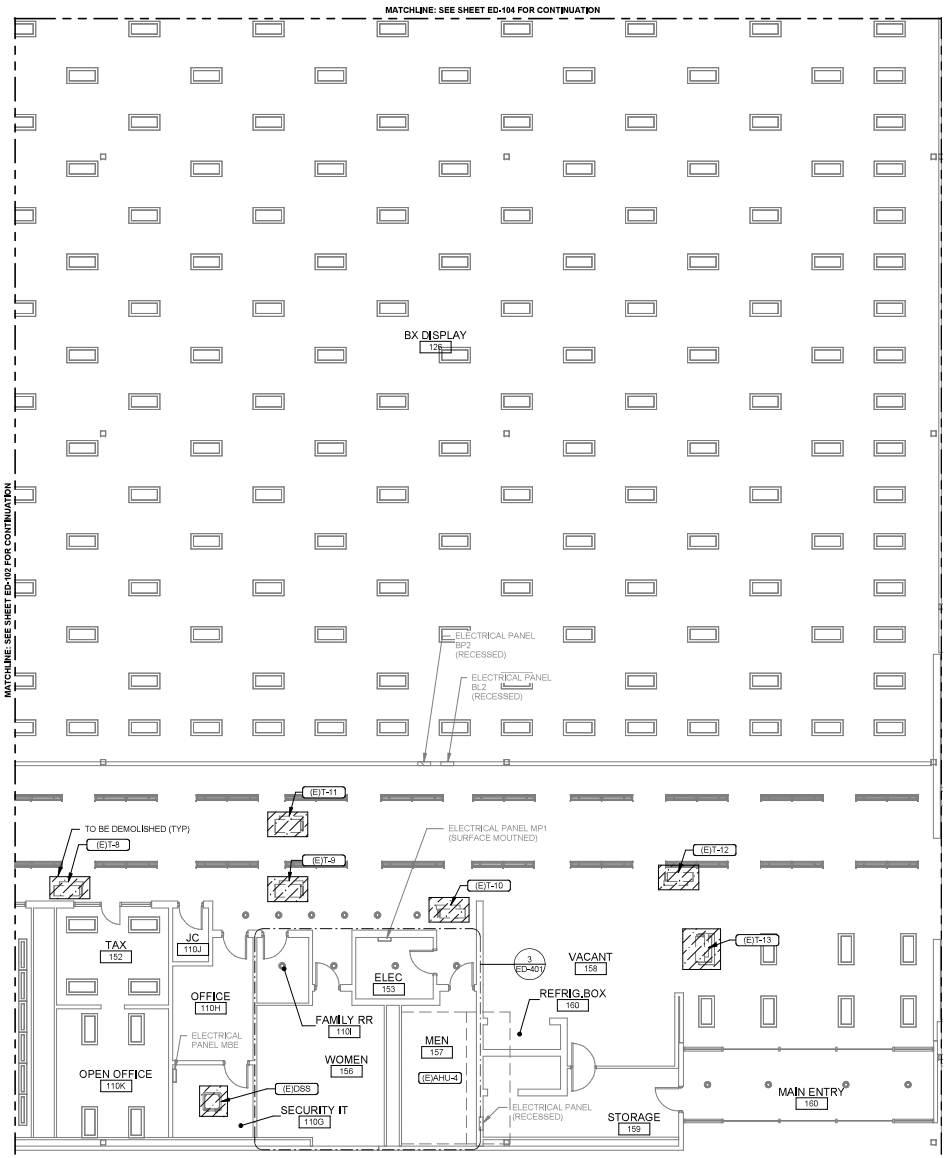
ELECTRICAL DEMOLITION PLAN - AREA B

POND # 1220554

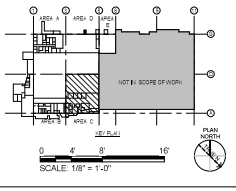
SHEET ID
ED-102

ISSUED FOR CONSTRUCTION

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Plot Date: 9/13/2024 9:51:47 AM



1 ELECTRICAL DEMOLITION PLAN - AREA C
1/8" = 1'-0"



325th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
APPROVED BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: HERE/2024/0004
CONTRACT NO.:

MARK	DESCRIPTION	DATE

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction Documents - Electrical Equipment
Client Project Number: XLWU21-0130

ELECTRICAL DEMOLITION PLAN - AREA C

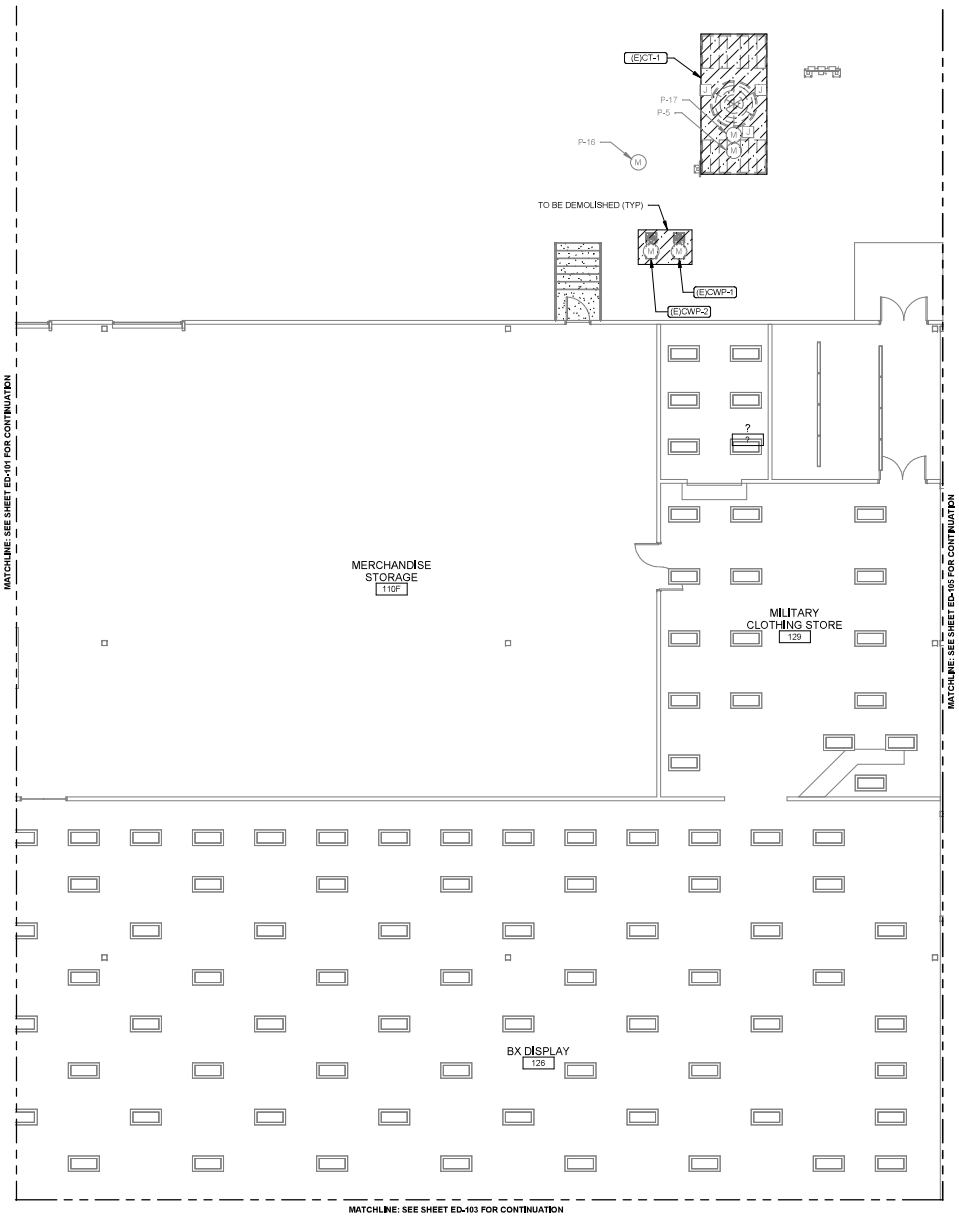
POND # 1220554

SHEET ID
ED-103

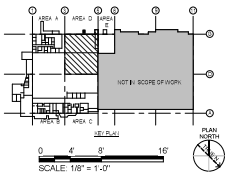
ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 9:51:48 AM

File Path: I:\2020\1220554 Tyndall AFB ESI Design\1220554_Tyndall AFB_ESI_Design_v23.rvt



1 ELECTRICAL DEMOLITION PLAN - AREA D
1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
APPROVED BY: S. PERRY
ISSUE DATE: 09/13/2024
SOLICITATION NO.: HEATING/COOLING
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction Phase Heat Pump and AHU Equipment
Client Project Number: XLWJ21-0153D

ELECTRICAL DEMOLITION PLAN - AREA D

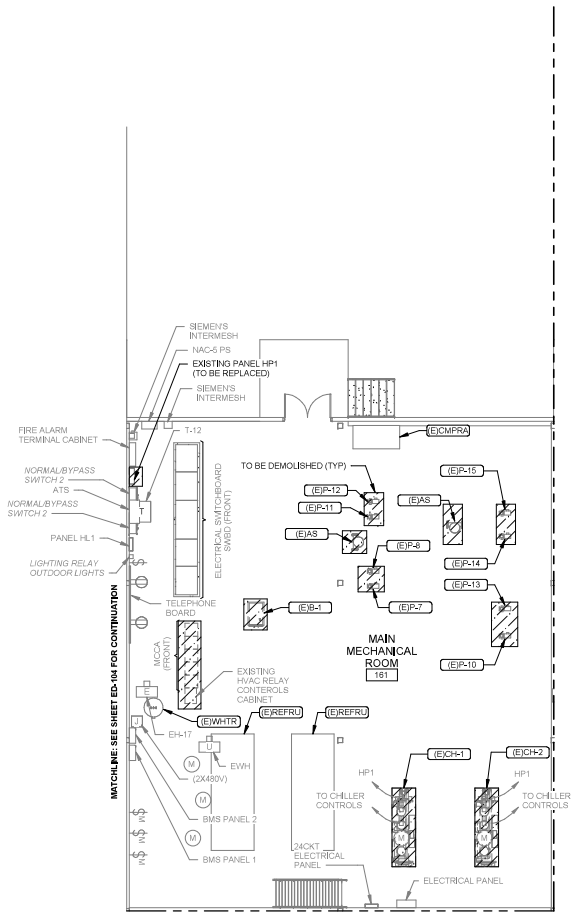
POND # 1220854

SHEET ID
ED-104

ISSUED FOR CONSTRUCTION

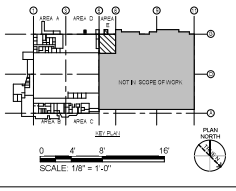
File Path: I:\1220854-Tyndall AFB ESI Design\1220854_Tyndall AFB ESI_Design_***.rvt

Plot Date: 9/13/2024 9:51:49 AM



1 ELECTRICAL DEMOLITION PLAN - AREA E

1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
APPROVED BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: HEADQUARTERS
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction Project Number: XLWJ21-0153D
Client Project Number: XLWJ21-0153D

ELECTRICAL DEMOLITION PLAN - AREA E

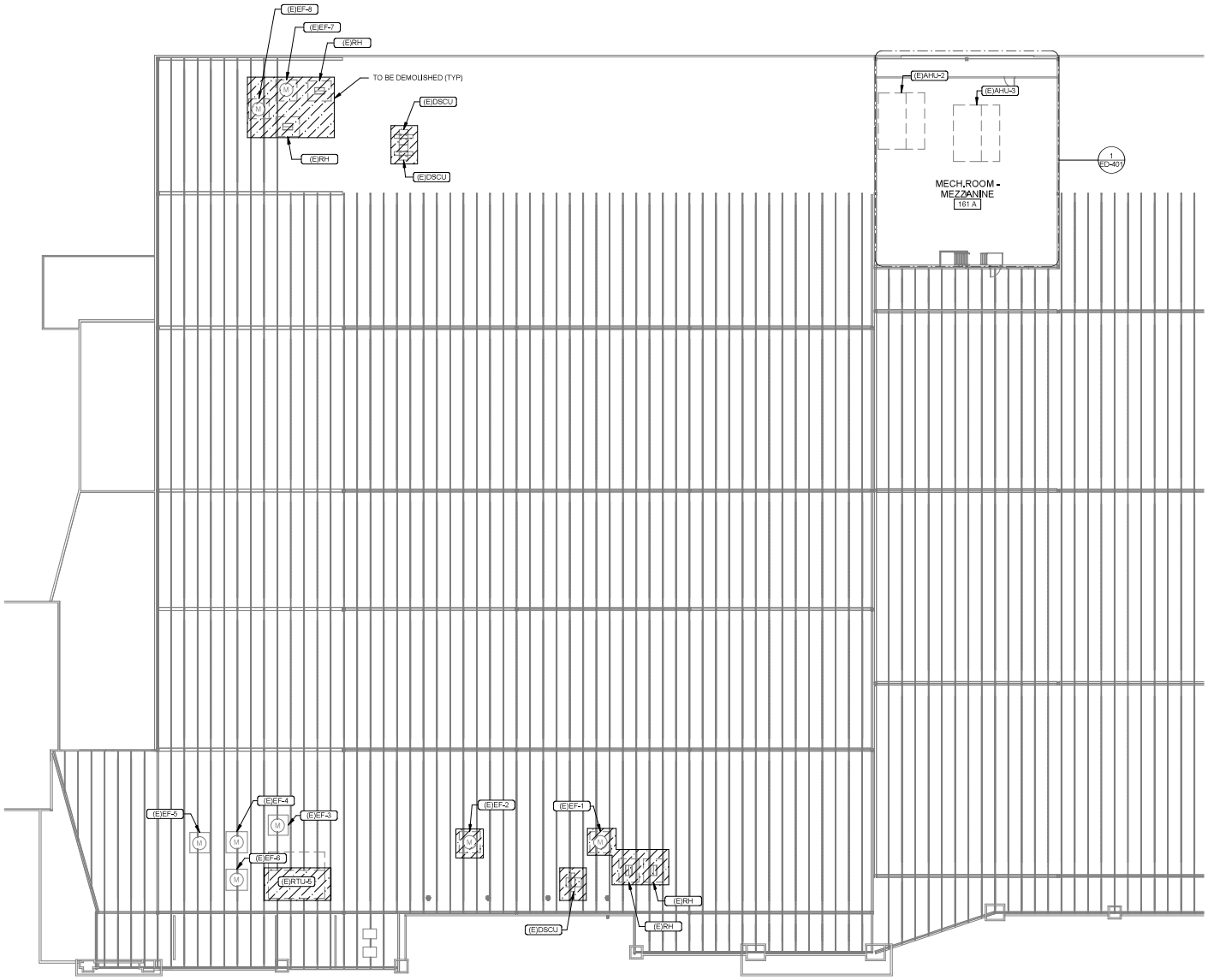
POND # 1220554

SHEET ID
ED-105

ISSUED FOR CONSTRUCTION

Plot Date: 9/13/2024 9:51:50 AM

File Path: ...



1 ROOF ELECTRICAL DEMOLITION PLAN
1/16" = 1'-0"

SCALE: 1/16" = 1'-0"

PLAN NORTH

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

File Path: I:\2021\1220354.Tyndall AFB ED Design\1220354_Tyndall AFB_ED_Design_v23.rvt

Plot Date: 9/13/2024 9:51:53 AM

DESIGNED BY:	D. FALCONER
DRAWN BY:	D. BACA
CHECKED BY:	W. McGUIGAN
SUBMITTED BY:	S. PERRY
SIZE:	ANSI D
ISSUE DATE:	09/13/2024
SOLICITATION NO.:	FA4835-24-R-0004
CONTRACT NO.:	

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

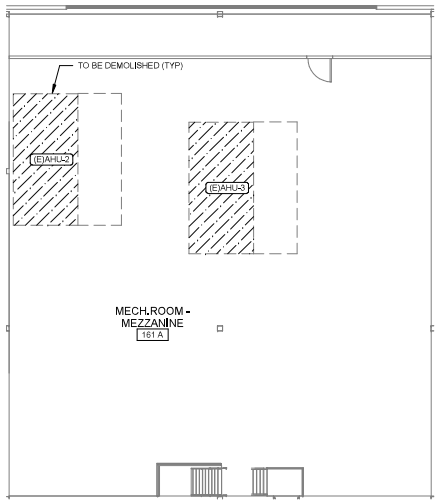
POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construct new MCC Shed and Relocate HVAC Equipment
Client Project Number: XLWJ21-0130

OVERALL MECHANICAL ROOF
ELECTRICAL DEMOLITION PLAN

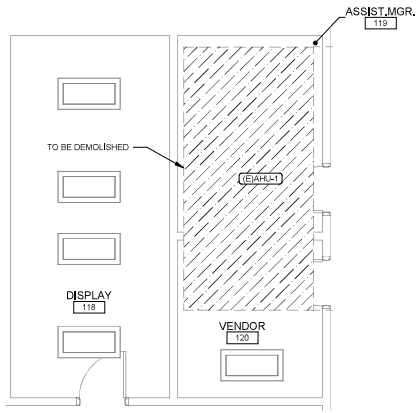
POND # 1220354

SHEET ID
ED-106



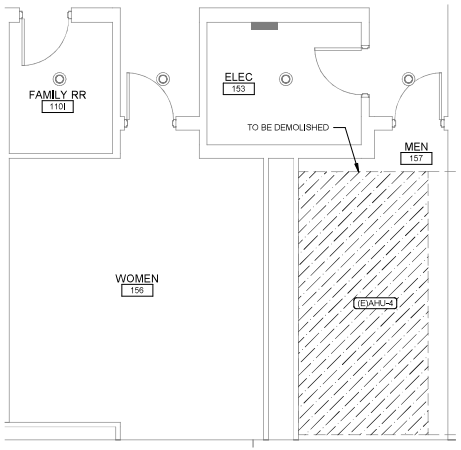
MECHANICAL ROOM 'MEZZANINE 161 A' ELECTRICAL DEMOLITION PLAN

1 / ED-106 — 1/8" = 1'-0"



MEZZANINE AREA 'A' AHU-1 ELECTRICAL DEMOLTION PLAN

2 / ED-101 — 1/4" = 1'-0"



MEZZANINE AREA 'B' AHU-4 ELECTRICAL DEMOLTION PLAN

3 / EC-103 — 1/4" = 1'-0"

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

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

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. ROCA
CHECKED BY: W. McGUIGAN
SUBMITTED BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: HEERE0004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction and Commissioning of New HVAC Equipment
Client Project Number: XLWJ21-0130

UPPER MECHANICAL ROOM & MEZZANINES ELECTRICAL DEMOLITION ENLARGED PLANS

POND # 122054

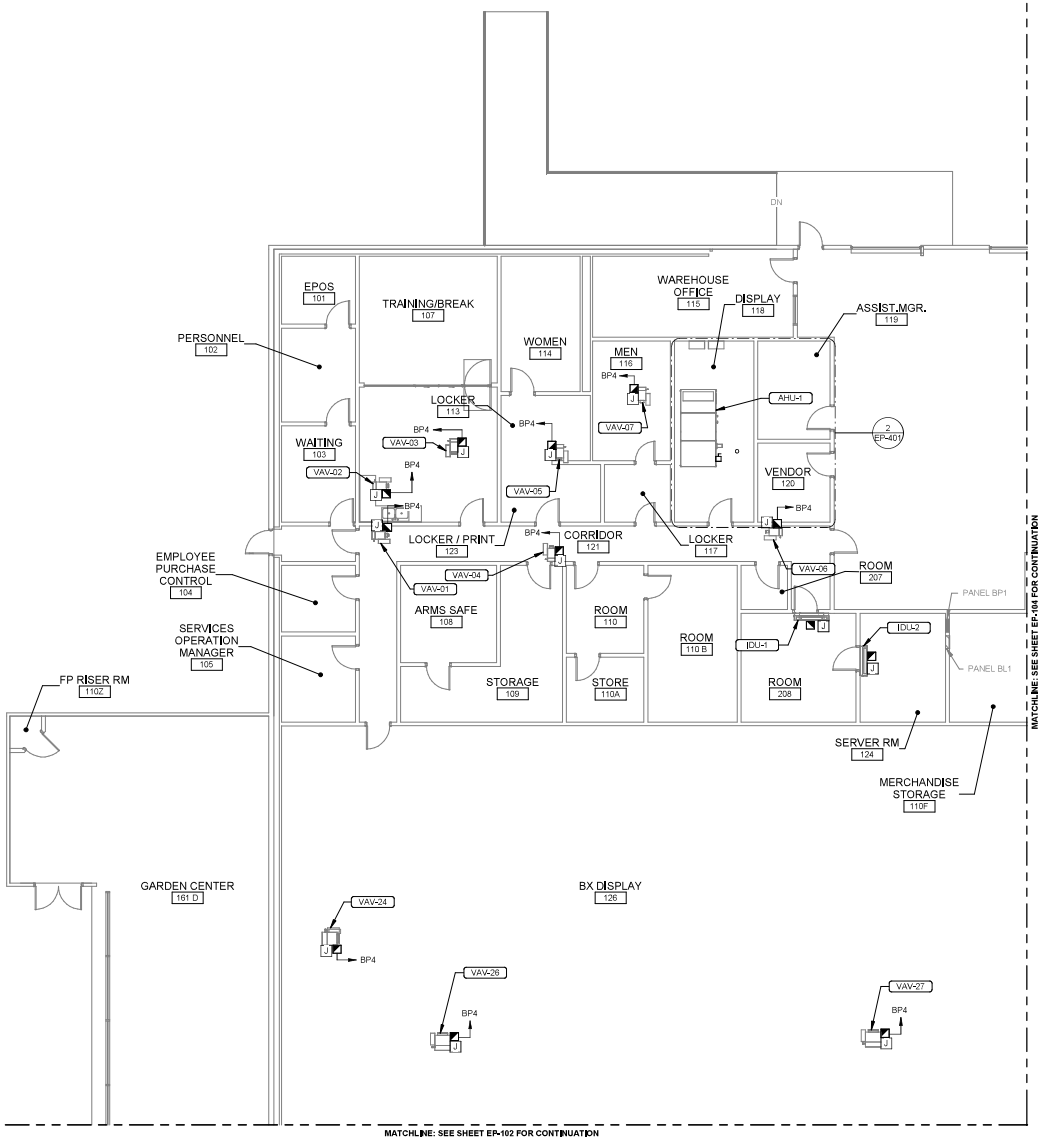
SHEET ID
ED-401

Plot Date: 9/13/2024 9:51:54 AM

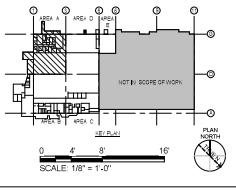
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SHEET NOTES

1. CONNECT INTERIOR MECHANICAL UNIT TO CORRESPONDING EXTERIOR MINI-SPLIT DSCU-X. COORDINATE EXACT REQUIREMENTS WITH DIVISION 23 CONTRACTOR.



1 ELECTRICAL PLAN - AREA A
1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
APPROVED BY: S. PERRY
ISSUE DATE: 09/13/2024
SOLICITATION NO.: HEATING/COOLING
CONTRACT NO.:
SIZE: ANSI D

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith

3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 B/X and Mall HVAC System, MCC
Construction Project Number: XLMJ21-0130
Client Project Number: XLMJ21-0130

ELECTRICAL PLAN - AREA A

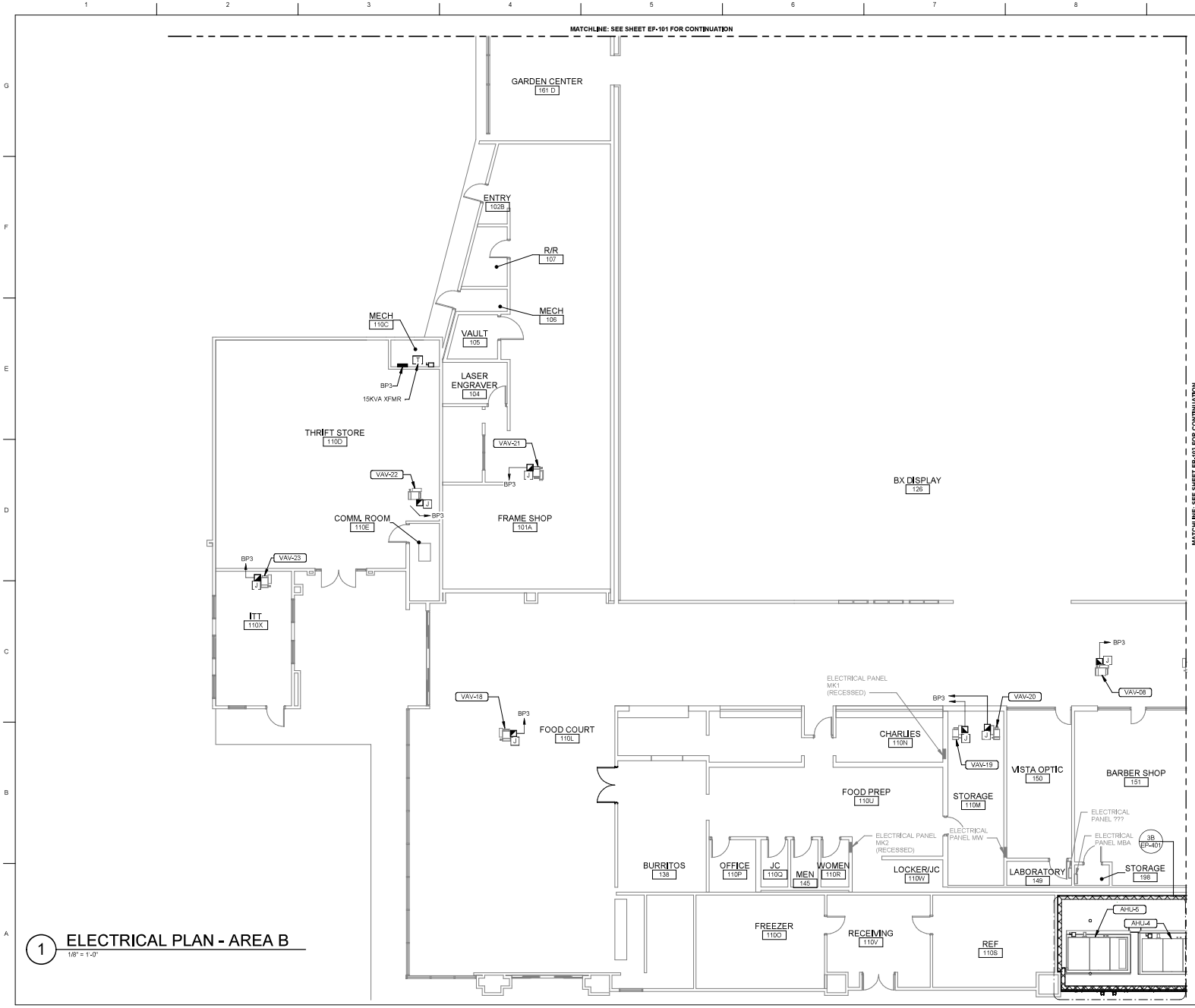
POND # 1220554

SHEET ID
EP-101

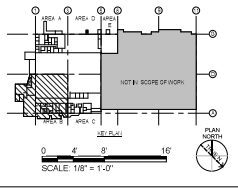
ISSUED FOR CONSTRUCTION

File Path: I:\2022\1220554 Tyndall AFB B3\Design\1220554_Tyndall AFB_B3_Design_V1.rvt

Plot Date: 9/13/2024 9:51:55 AM



1 ELECTRICAL PLAN - AREA B
1/8" = 1'-0"



325th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND CDM Smith

3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: D. FALCONER
DRAWN BY: R. ROCA
CHECKED BY: W. McGUIGAN
QUALITY CHECKED BY: S. PERRY
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: HHEE2024-R-0004
CONTRACT NO.:

MARK	DESCRIPTION	DATE

File Path: I:\0001\220\220554 Tyndall AFB EIS Design\220554_Tyndall AFB_EIS_Design_Area_B.rvt
Plot Date: 9/13/2024 9:51:55 AM

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 8950 BX and Wall HVAC System, MCC
Construction Project Number: XLWJ21-0153
Client Project Number: XLWJ21-0153D

ELECTRICAL PLAN - AREA B

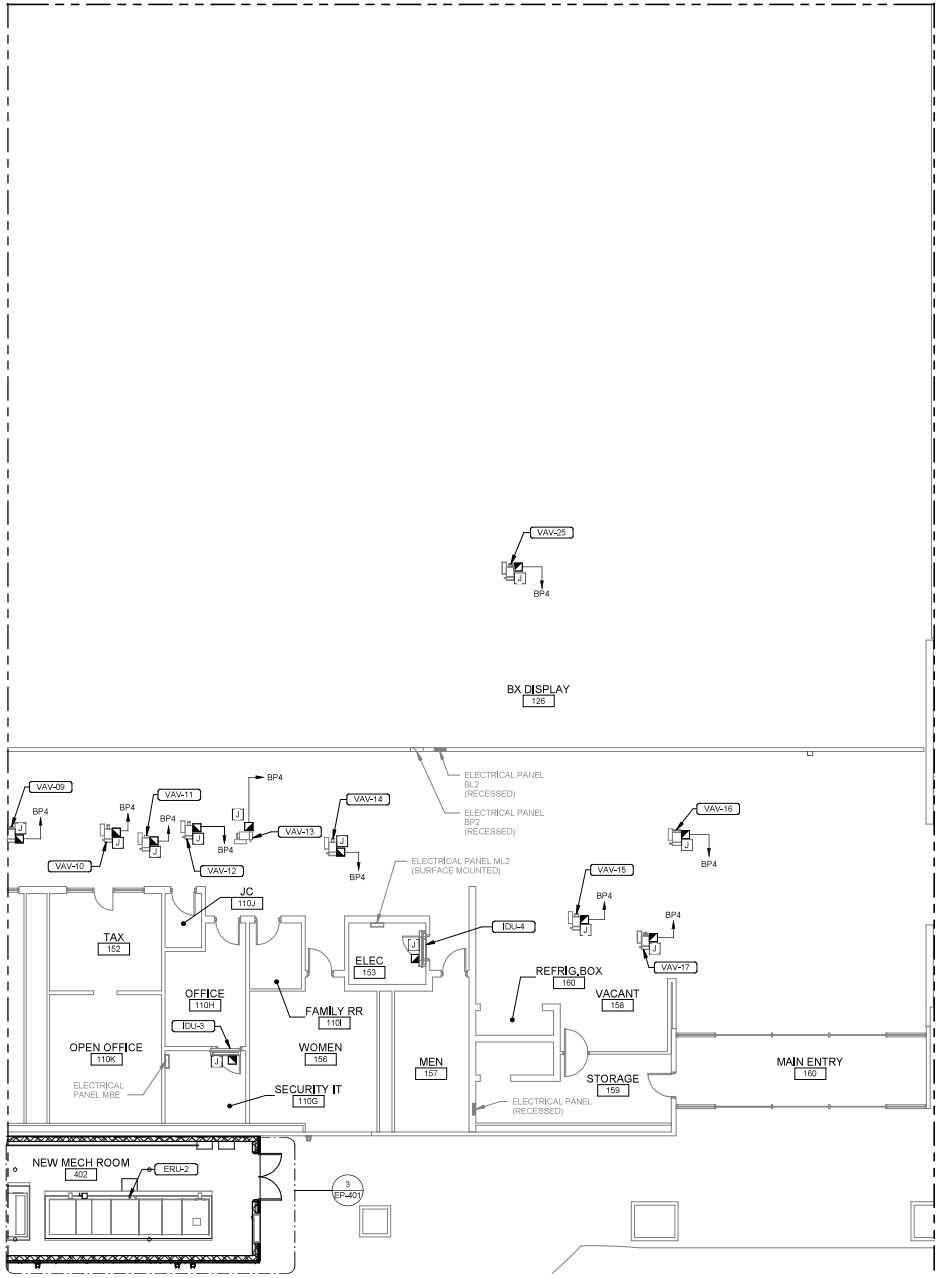
POND # 1220554

SHEET ID
EP-102

ISSUED FOR CONSTRUCTION

MATCHLINE: SEE SHEET EP-104 FOR CONTINUATION

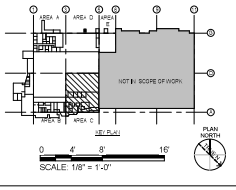
MATCHLINE: SEE SHEET EP-102 FOR CONTINUATION



1 ELECTRICAL PLAN - AREA C
1/8" = 1'-0"

SHEET NOTES

1. CONNECT INTERIOR MECHANICAL UNIT TO CORRESPONDING EXTERIOR MINI-SPLIT DSCU-X. COORDINATE EXACT REQUIREMENTS WITH DIVISION 23 CONTRACTOR.



325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith

3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: D. FALCONER
DRAWN BY: D. ROCK
CHECKED BY: W. McGUIGAN
QUALIFIED BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4626-24-B-0001
CONTRACT NO.:

MARK	DESCRIPTION	DATE

File Path: I:\2022\1220554 Tyndall AFB EIS Design\1220554_Tyndall AFB_EIS_Design_Project_Folder\1220554_Tyndall AFB_EIS_Design_Project_Folder_Project_Files\1220554_Tyndall AFB_EIS_Design_Project_Folder_Project_Files_Revit_Files\1220554_Tyndall AFB_EIS_Design_Project_Folder_Project_Files_Revit_Files_Central_File.rvt

Plot Date: 9/13/2024 9:51:56 AM

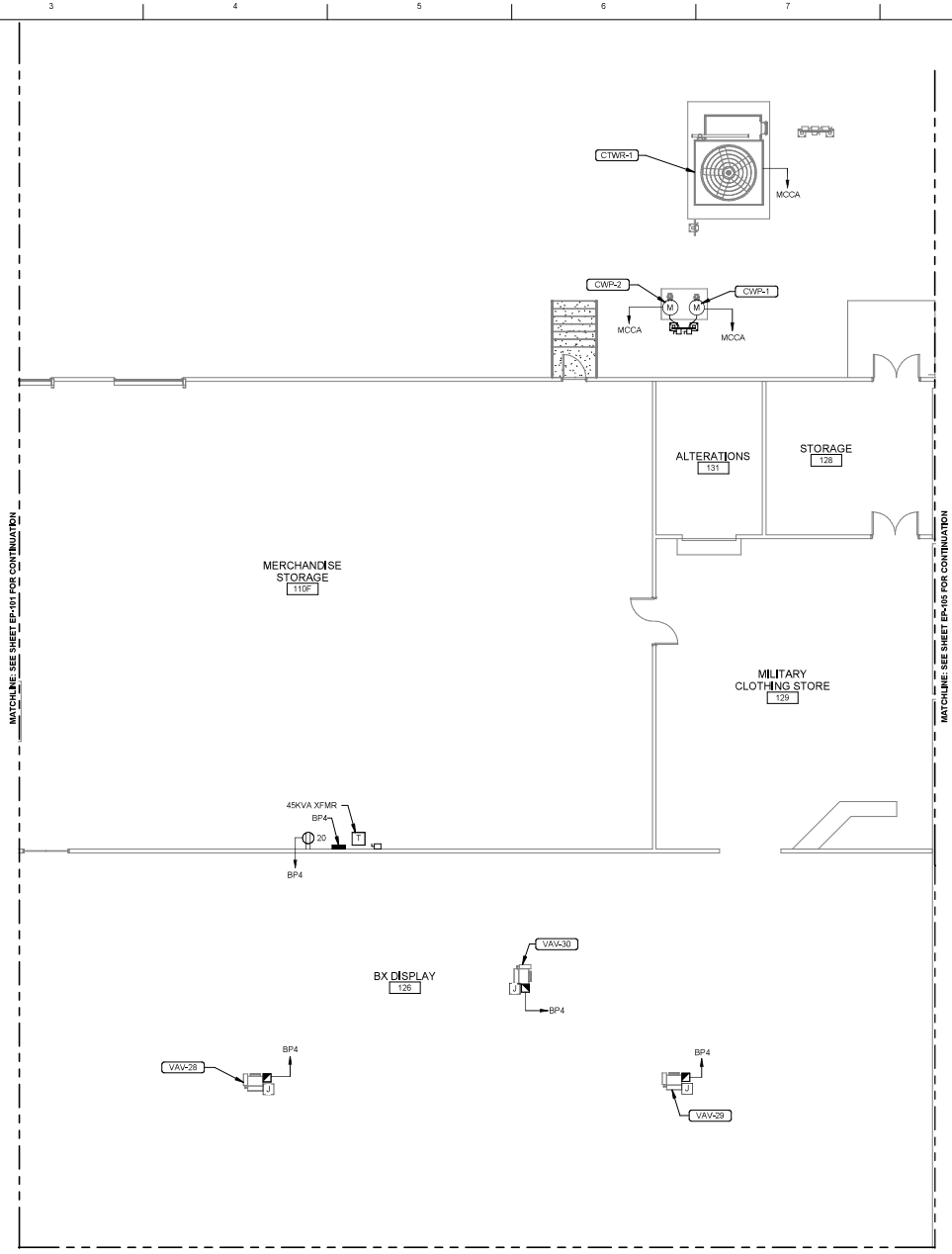
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New 85/50 BX and Mall HVAC System, MCC Construction and Electrical Modifications, and Equipment
Client Project Number: XLWJ21-0130

ELECTRICAL PLAN - AREA C

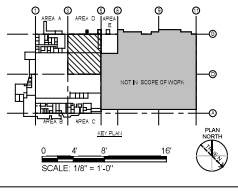
POND # 1220554

SHEET ID
EP-103

ISSUED FOR CONSTRUCTION



1 ELECTRICA PLAN - AREA D
1/8" = 1'-0"



MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
SUBMITTED BY: S. PERRY
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4626-24-R-0010
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction and Electrical Modifications, HVAC Equipment
Client Project Number: XLWJ21-0130

ELECTRICAL PLAN - AREA D

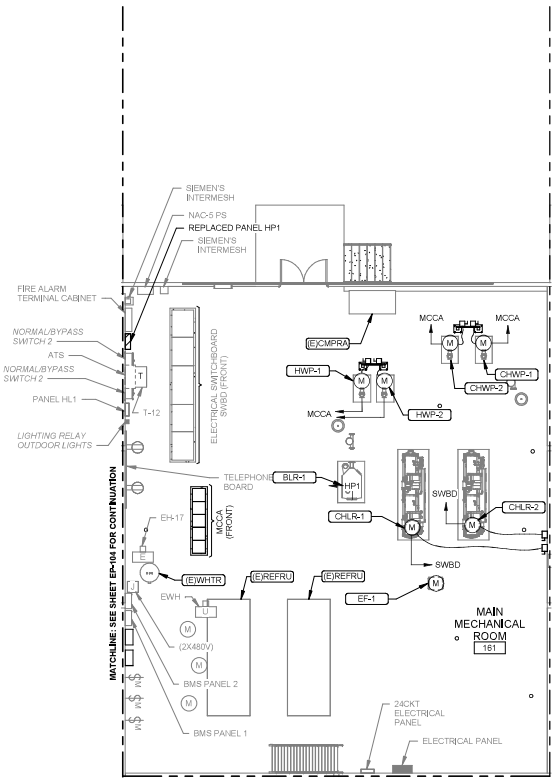
POND # 122054

SHEET ID
EP-104

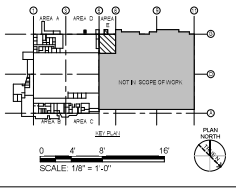
ISSUED FOR CONSTRUCTION

File Path: I:\2021\122054 Tyndall AFB B3 Design\122054_Tyndall AFB_B3_Design_v24.rvt

Plot Date: 9/13/2024 9:51:57 AM



1 ELECTRICAL PLAN - AREA E
1/8" = 1'-0"



DESIGNED BY:	D. FALCONER
DRAWN BY:	D. FALCONER
CHECKED BY:	W. McGUIGAN
APPROVED BY:	S. PERRY
SIZE:	ANSI D
ISSUE DATE:	09/13/2024
SOLICITATION NO.:	FA4626-24-B-0004
CONTRACT NO.:	

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith

3950 Pelham Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction MCC Power and Mall HVAC Equipment
Client Project Number: XLWJ21-0153

ELECTRICAL PLAN - AREA E

POND # 1220554

SHEET ID

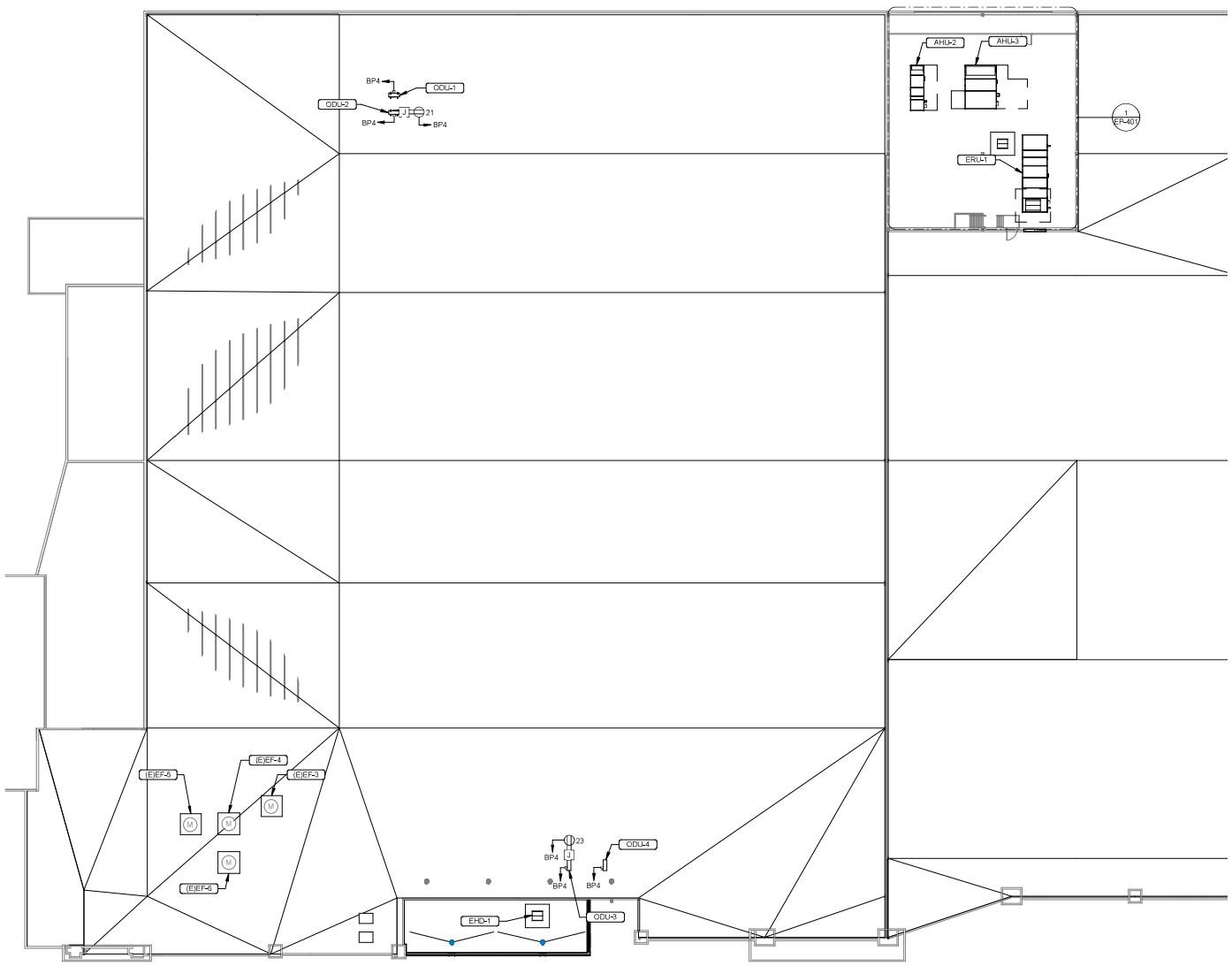
EP-105

MARK	DESCRIPTION	DATE

ISSUED FOR CONSTRUCTION

File Path: I:\2021\1220554 Tyndall AFB ESI Design\1220554_Tyndall AFB_ESI_Design_Task_Order_01\Drawings\Electrical\1220554_Tyndall AFB_ESI_Design_Task_Order_01_EP-105.dwg

Plot Date: 9/13/2024 9:51:59 AM



1 ROOF ELECTRICAL PLAN
1/16" = 1'-0"

0 8' 16' 32'
SCALE: 1/16" = 1'-0"

PLAN NORTH

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

File Path: I:\...\Tyndall AFB ESI Design\220564_Tyndall AFB_ESI_Design_Y21\...

Plot Date: 9/13/2024 9:52:01 AM

DESIGNED BY: D. FALCONER
DRAWN BY: D. ROSA
CHECKED BY: W. McGUIGAN
SUBMITTED BY: S. PERRY
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA8903-24-R-B004
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construct and MCC Power Feed for New HVAC Equipment
Client Project Number: XLWU21-0130

OVERAL MECHANICAL ROOF
ELECTRICAL PLAN
PONd # 1220554

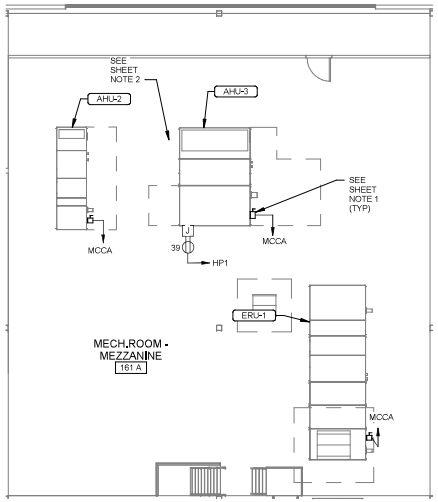
SHEET ID
EP-106

SHEET NOTES

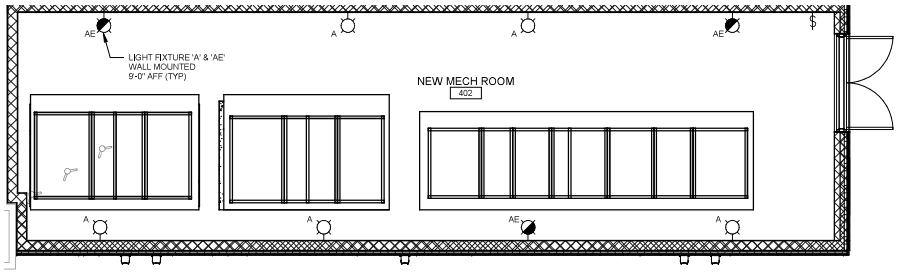
1. EQUIPMENT DISCONNECT PROVIDED BY DIVISION 23. CONTRACTOR SHALL PROVIDE NECESSARY WIRING AND CONDUIT AS INDICATED ON ONE LINE DIAGRAMS AND PANELBOARD SCHEDULES.
2. PROVIDE 120V POWER TO DUCT SMOKE DETECTOR. CONNECT TO PANEL HP1 AS SHOWN ON SHEET E-604. COORDINATE WITH MECHANICAL CONTRACTOR AND FIRE ALARM CONTRACTOR ON EXACT LOCATION AND CONNECTION REQUIREMENTS.

Lighting Fixture Schedule						
Type Mark	Luminaire Input Watts	Luminaire Lumens	Total Light Loss Factor	Manufacturer	Photometric File Name	Emergency Luminaire
A	104 W	8374 lm	0.9	Acuity Brands Lighting	TWH LED 30C 1000 40K T3M MVOLT.ies	No
AE	104 W	8374 lm	0.9	Acuity Brands Lighting	TWH LED 30C 1000 40K T3M MVOLT.ies	

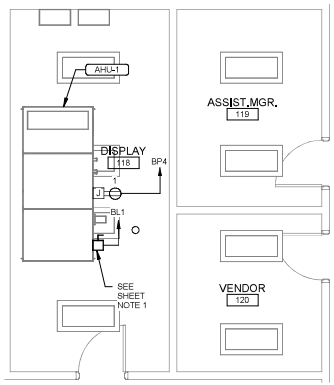
LIGHTING CALCULATIONS					
Calculation Points Name	Average	Maximum	Minimum	Avg/Min	Max/Min
NEW MECH ROOM 402	22 fc	34 fc	10 fc	2.1	3.3



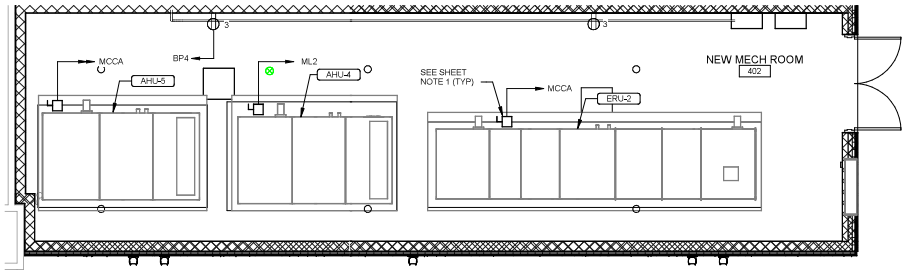
1 EP-106 — MECHANICAL ROOM 'MEZZANINE 161 A' ELECTRICAL PLAN
1/8" = 1'-0"



3A EP-102/103 — NEW MECH ROOM LIGHTING PLAN
1/4" = 1'-0"



2 EP-101 — MEZZANINE AREA 'A' AHU-1 ELECTRICAL PLAN
1/4" = 1'-0"



3B EP-102/103 — NEW MECH ROOM POWER PLAN
1/4" = 1'-0"

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

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

325th CWL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Peachtree Lane
Suite 500
Norcross, Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction Project Number: XLWJ21-0130
Client Project Number: XLWJ21-0130

UPPER MECHANICAL ROOM & MEZZANINES
ELECTRICAL ENLARGED PLANS

POND # 1220054

SHEET ID
EP-401

ISSUED FOR CONSTRUCTION

MARK	DESCRIPTION	DATE

DESIGNED BY: D. FALCONER
DRAWN BY: D. FALCONER
CHECKED BY: W. McGUIGAN
QA/QC BY: S. PERRY
SIZE: ANSI D

ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4626-24-B-0004
CONTRACT NO.:

File Path: H:\...\Tyndall AFB ES Design\220054_Tyndall AFB_ES_Design_Y24.rvt
Plot Date: 9/13/2024 9:52:03 AM

SYMBOL	DESCRIPTION
X	TELECOMMUNICATION DATA LINK ONLY, 8 PIN RJ45 TYPE STANDARD HEIGHT WHERE X INDICATES THE NUMBER OF PORTS
X	SIPERNET LINK, OM3 MULTIMODE FIBER OPTIC, LC CONNECTOR 42" AFF WHERE X INDICATES THE NUMBER OF PORTS
X	X INDICATES: ACS - ACCESS CONTROL SYSTEM DS - DOOR SWITCH DUR - DURESS SYSTEM
CCTV	LOCATION OF DATA OUTLET FOR CCTV CAMERA, PROVIDE WALL MOUNTED OUTLET WITH 1 DATA PORT, INSTALL BELOW FINISHED CEILING, MINIMUM OF 2 METER ABOVE FINISHED FLOOR WHERE POSSIBLE
TV	CABLE TELEVISION LINK, RG6 TYPE, F-TYPE CONNECTOR
RG6	COAXIAL, RG6 TYPE, F-TYPE CONNECTOR
	NEW TELECOMMUNICATIONS MAINTENANCE HOLE
C	EXISTING TELECOMMUNICATIONS MAINTENANCE HOLE
	TELECOMMUNICATIONS RACEWAY/CONDUIT
	NEW TELECOMMUNICATIONS CABINET. FLOOR MOUNTED UNLESS OTHERWISE NOTED.
	CABLE LADDER, 12" WIDE WITH 9" RUNG SPACING. PROVIDE MINIMUM 12" CLEARANCE ABOVE CABLE LADDER.
	COMMUNICATIONS WIRE BASKET CABLE TRAY - COMPLY WITH TIA/EIA GROUNDING AND BONDING REQUIREMENTS
	PLENUM-RATED SLEEVE ASSEMBLY WITH GROUNDING BUSHINGS AND UL LISTED FIRESTOPPING AS REQUIRED, LENGTH AS REQUIRED TO EXTEND BEYOND BOTH SIDES OF WALL
NEW | EXISTING	NEW AND EXISTING LINE TYPES
FO FO FO	FIBER OPTIC CABLE, TYPE AND NUMBER OF STRANDS AS NOTED

TYPICAL ABBREVIATIONS	
AFC	ABOVE FINISHED COUNTER
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITIES HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECTURAL
AWG	AMERICAN WIRE GAUGE
BLR	BOILER
C	CONDUIT
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFGI	CONTRACTOR FURNISHED, GOVERNMENT INSTALLED
CHLR	CHILLER
CHWP	CHILLED WATER PUMP
CLG	CEILING
CMP	COMMUNICATIONS PLENUM
CMPRA	AIR COMPRESSOR
CMR	COMMUNICATIONS RISER
CO	CONDUIT ONLY WITH PULL STRING
COL	COLUMN
CONN	CONNECT or CONNECTION
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CTWR	COOLING TOWER
CU	COPPER
CWP	COLD WATER PUMP
DB	DECIBEL
DDC	DIRECT DIGITAL CONTROLS
EA	EACH
EDP	ELECTRICAL DISTRIBUTION PANEL
EF	EXHAUST FAN
EHD	EXHAUST HOOD
EIA	ELECTRONIC INDUSTRY ALLIANCE
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ERU	ENERGY RECOVERY UNIT
EXIST or (E)	EXISTING
EXT	EXTERIOR
FLR	FLOOR
FOPT	FIBER OPTIC
FOPTP	FIBER OPTIC PANEL
FT	FOOT or FEET
G or GND	GROUND
GFI	GROUND FAULT CIRCUIT INTERRUPTER
H	HEIGHT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWP	HOT WATER PUMP
IDU	INDOOR UNIT
IDS	INTRUSION DETECTION SYSTEM
IN	INCH or INCHES
JB or JBOX	JUNCTION BOX
LAN	LOCAL AREA NETWORK
MATL	MATERIAL
MAX	MAXIMUM
MCC	MAIN CROSS CONECT
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MAINTENANCE HOLE
MHZ	MEGAHERTZ
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
OC	ON-CENTER
ODU	OUTDOOR UNIT
OFNR	OPTICAL FIBER NONCONDUCTIVE RISER
PNL	PANEL
PR	PAIR
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
RECPT	RECEPTACLE
REFRU	REFRIGERATION RACK, REFRIGERATION UNIT
REQD	REQUIRED
REV	REVISION
RGB	RED, GREEN, BLUE
RM	ROOM
RTU	REMOTE TERMINAL UNIT
SCHD	SCHEDULE
SECT	SECTION
SFTP	SHIELDED FOILED TWISTED PAIR CABLE
SPECS	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SERV	SERVICE
SYS	SYSTEM
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TEL	TELEPHONE
TR	TELECOMMUNICATIONS EQUIPMENT ROOM
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM
TTB	TELEPHONE TERMINAL BOARD
TELTC	TELEPHONE TERMINAL CABINET
VAV	VARIABLE AIR VOLUME UNIT
WHTR	WATER HEATER

PROJECT GENERAL NOTES

1. PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION. MATERIALS AND WORKMANSHIP SHALL FULLY COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF TIA/EIA STANDARDS.
2. MAINTAIN 30-CM CLEAR SPACE ABOVE CABLE TRAYS AND PROVIDE HORIZONTAL ACCESS TO CABLE TRAYS. BOTTOM OF TRAYS SHALL BE MOUNTED 7.6-CM MINIMUM ABOVE DROP CEILINGS TO ALLOW ROOM FOR REMOVAL AND REPLACEMENT OF CEILING TILES.
3. CATEGORY 6 AND 6A HORIZONTAL CABLING, TERMINATIONS SHALL BE T568A PIN OUT STANDARD UNLESS NOTED OTHERWISE.
4. LABELING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT, TIA-606-A STANDARDS. LABELS ON HORIZONTAL CABLING SHALL BE MACHINE PRINTED, 6-MM FONT HEIGHT WITH BLACK LETTERS ON A WHITE BACKGROUND AND SHALL BE LOCATED WITHIN 10-CM OF CABLE TERMINATIONS. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.

BICSI DESIGNED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD
Michael S Watkins
9/10/2024

MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: M. WATKINS
CHECKED BY: A. KLOPP
APPROVED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: -
CONTRACT NO.: -

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

CPM Smith
3900 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mail Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mail HVAC System, MCC
Construct new MCC Shelter for New HVAC Equipment
Client Project Number: XLWJ21-1013D

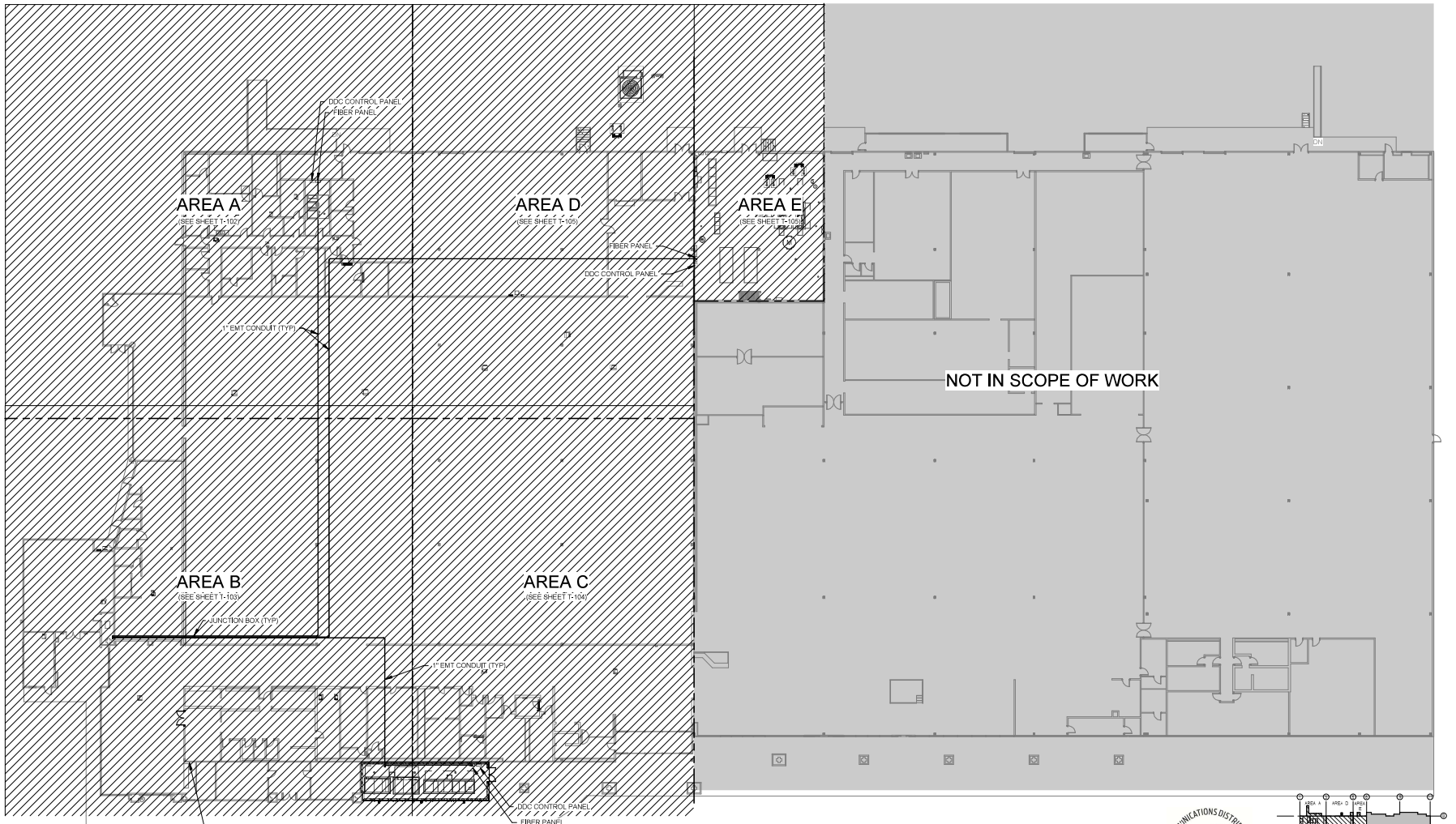
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PONDH120564

SHEET ID
T-001

ISSUED FOR CONSTRUCTION

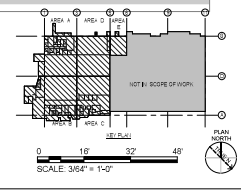
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1 OVERALL ELECTRICAL SITE/KEY PLAN
3/64" = 1'-0"

WAIVER OF UNRESTRICTED DISTRIBUTION DESIGNER
Bicsi
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD

Michael S Watkins
9/10/2024



MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: D. BACK
CHECKED BY: A. ALLOPP
APPROVED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4890-25-R-0002
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Pathway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Wall HVAC System, MCC
Construction Phase Services Support
Client Project Number: XLWJ21-0153D

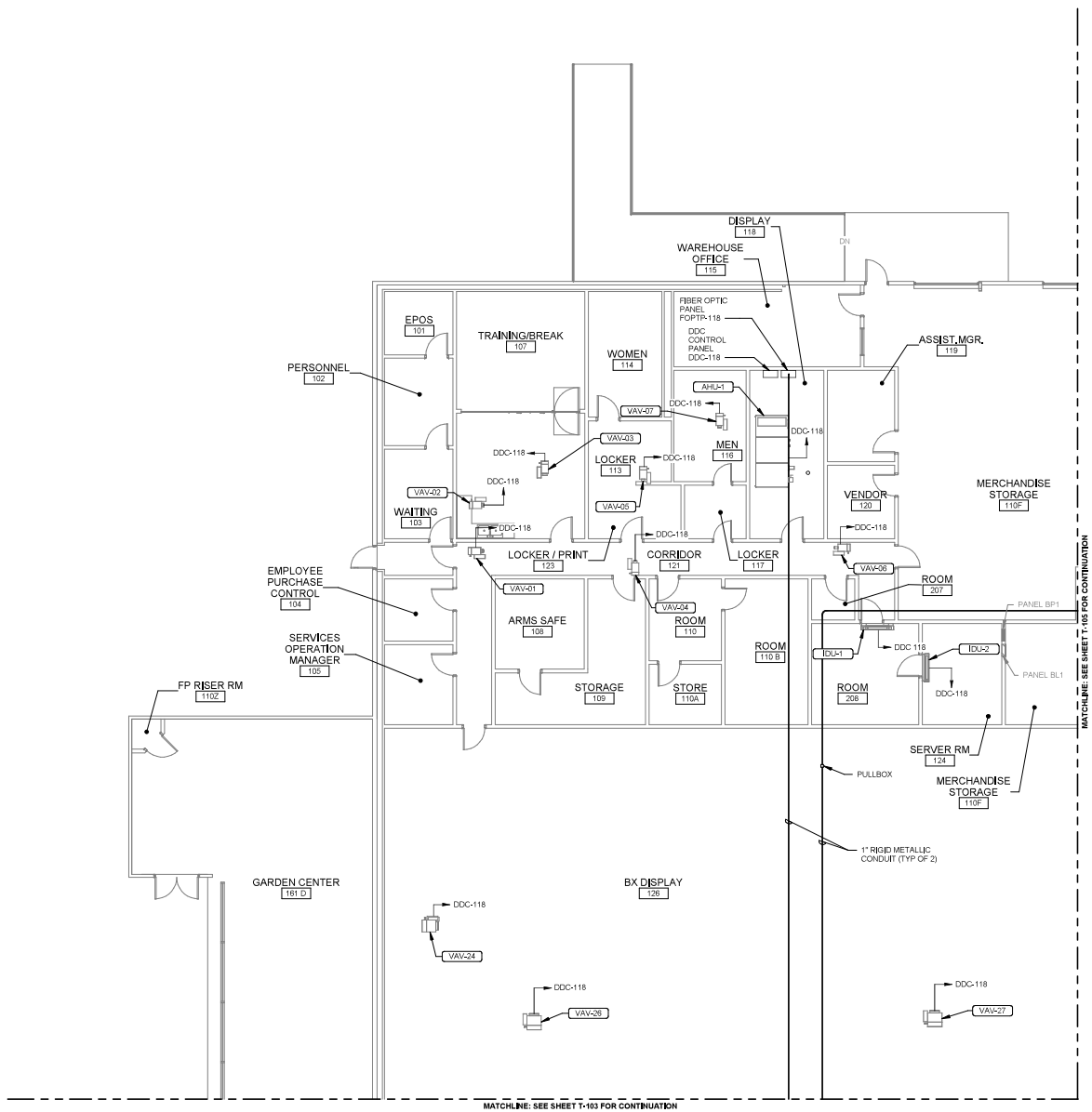
OVERALL TELECOMMUNICATION KEY PLAN

POND # 122054

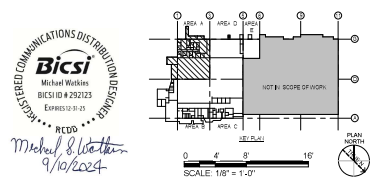
SHEET ID
T-101

ISSUED FOR CONSTRUCTION

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Plot Date: 9/10/2024 8:30:34 AM



1 TELECOMMUNICATION PLAN - AREA A
1/8" = 1'-0"



BICSI REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD
Michael S. Watkins
9/10/2024

MARK	DESCRIPTION	DATE

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Plot Date: 9/10/2024 8:30:34 AM

DESIGNED BY:	P. JENKINS
DRAWN BY:	D. BOCK
CHECKED BY:	A. ALLOPP
QUALITY CHECKED BY:	M. WATKINS
SIZE:	ANSI D
ISSUE DATE:	09/13/2024
SOLICITATION NO.:	FA4861-24-R-B001
CONTRACT NO.:	

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith

3950 Pathway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction (CC) Phase and Mall HVAC Equipment
Client Project Number: XLWJ21-0130

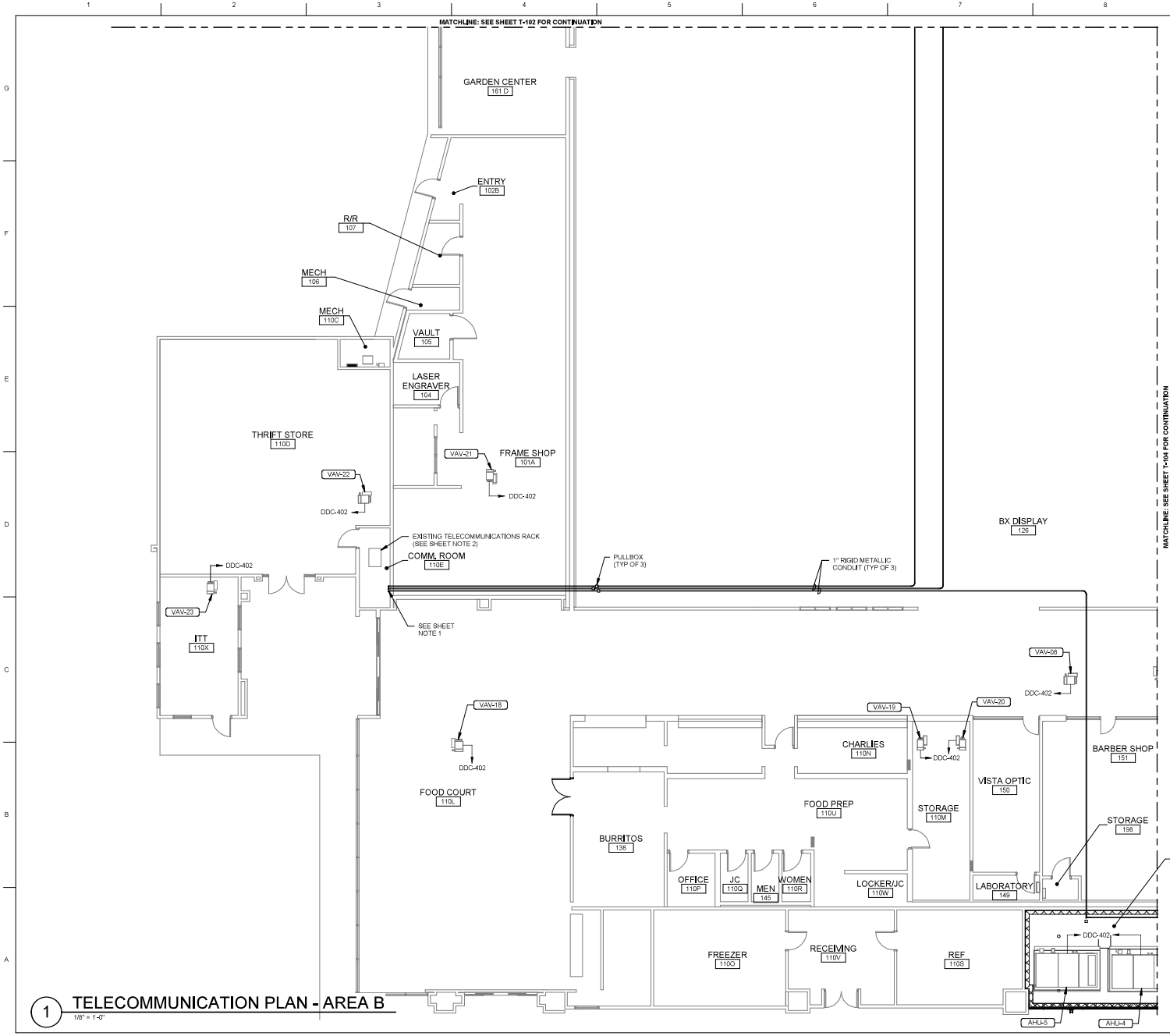
TELECOMMUNICATION PLAN - AREA A

POND # 1220854

SHEET ID

T-102

ISSUED FOR CONSTRUCTION

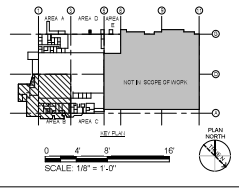


1 TELECOMMUNICATION PLAN - AREA B
1/8" = 1'-0"

SHEET NOTES

1. PENETRATIONS INTO COMM. ROOM TO BE FIRESTOPPED IN ACCORDANCE WITH SECTION 07 84 00.
2. TERMINATE NEW FIBER CABLE TO EXISTING SPARE FIBER PATCH PANEL PORTS.

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD
Michael S. Watkins
9/10/2024



MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: D. ROCK
CHECKED BY: A. ALLORP
APPROVED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: HEET0025GA
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Peachtree Lane
Suite 500
Norcross, Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New Bldg 950 BX and Mall HVAC System, MCC
Construction Documents - Phase 1 HVAC Equipment
Client Project Number: XLWJ21-0130

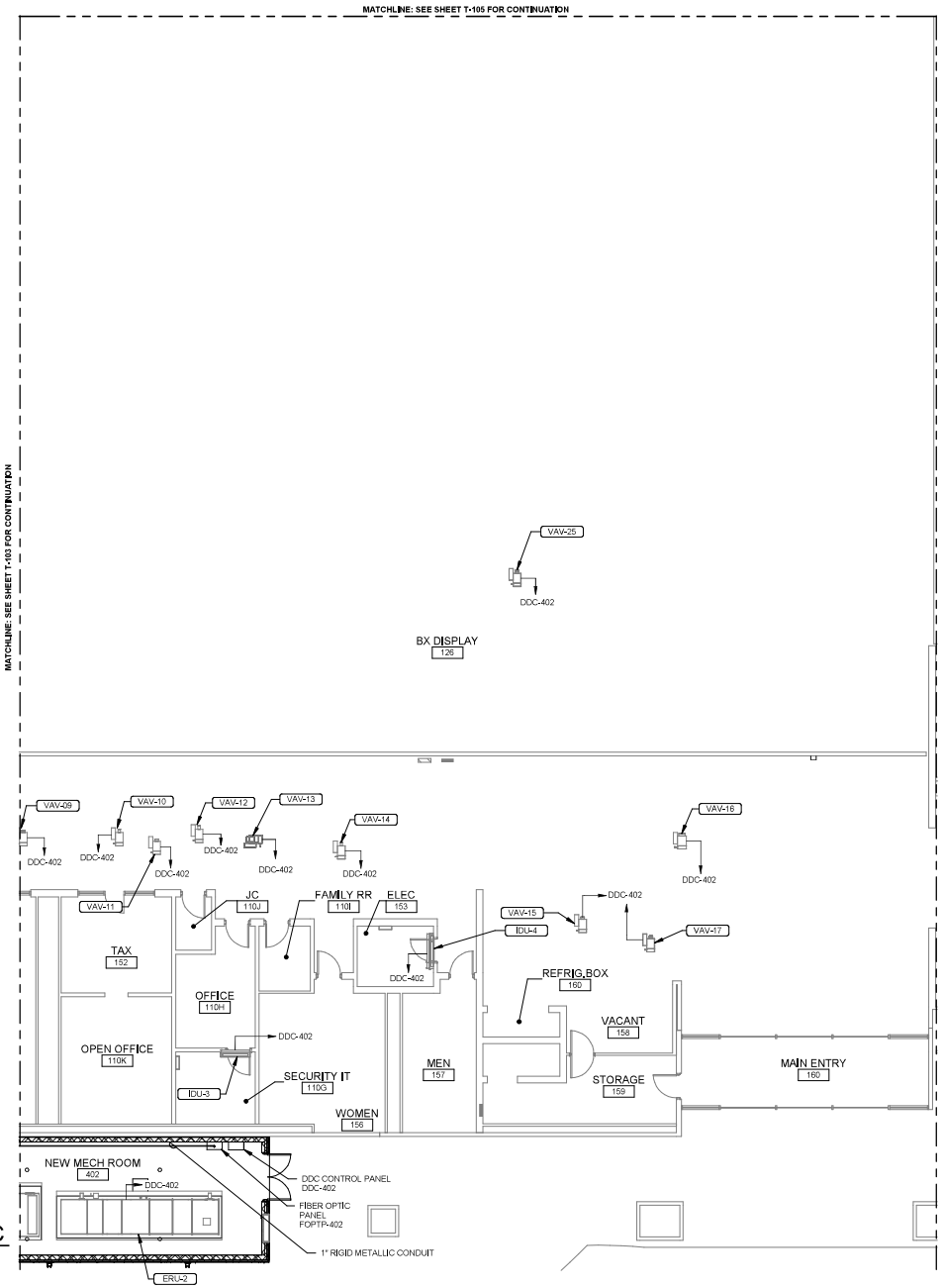
TELECOMMUNICATION PLAN - AREA B

POND # 1220854

SHEET ID
T-103

ISSUED FOR CONSTRUCTION

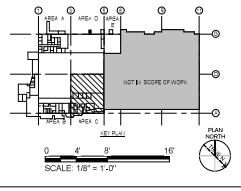
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1 TELECOMMUNICATION PLAN - AREA C
1/8" = 1'-0"

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD

Michael S. Watkins
9/10/2024



MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: D. ROCA
CHECKED BY: A. ALLORP
QUALITY CONTROLLED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4861-24-B-C003
CONTRACT NO.:

325th CML ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Norcross, Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mall HVAC System, MCC
Construction Project Number: XLWJ21-0130
Client Project Number: XLWJ21-0130

TELECOMMUNICATION PLAN - AREA C

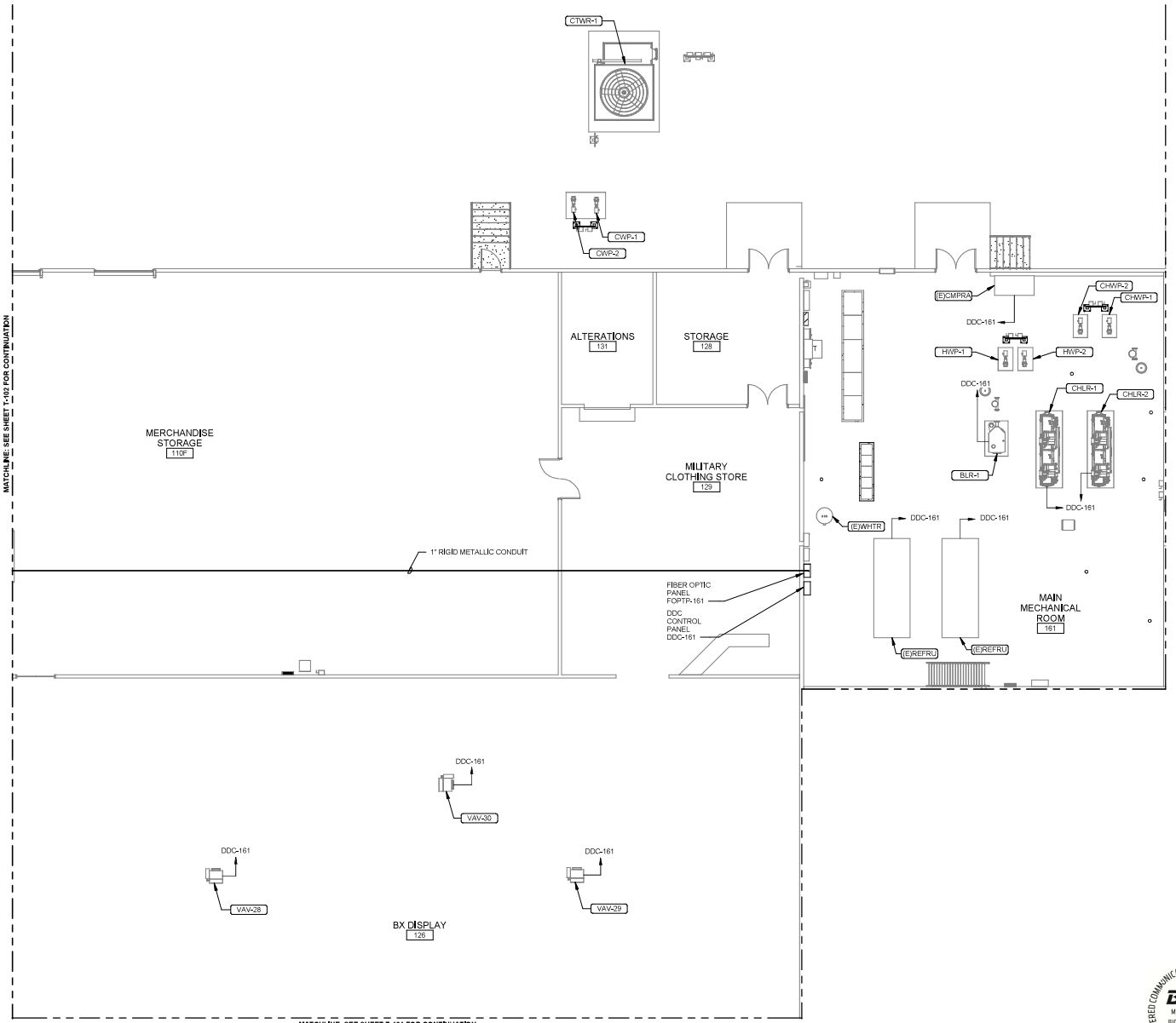
POND # 1220854

SHEET ID
T-104

ISSUED FOR CONSTRUCTION

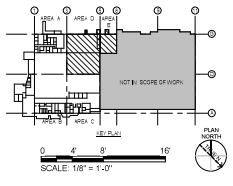
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Plot Date: 9/10/2024 8:30:35 AM



1 TELECOMMUNICATION PLAN - AREA D AND AREA E
1/8" = 1'-0"

BICSI Michael Watkins BICSI ID # 292123 Expires 12-31-25 RCDD
Michael S. Watkins 9/10/2024



MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: D. CHAVEZ
CHECKED BY: A. ALLORP
QUALITY CONTROLLED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4626-24-R-B001
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Pathway Lane
Suite 500
Peachtree Corners
Georgia 30092

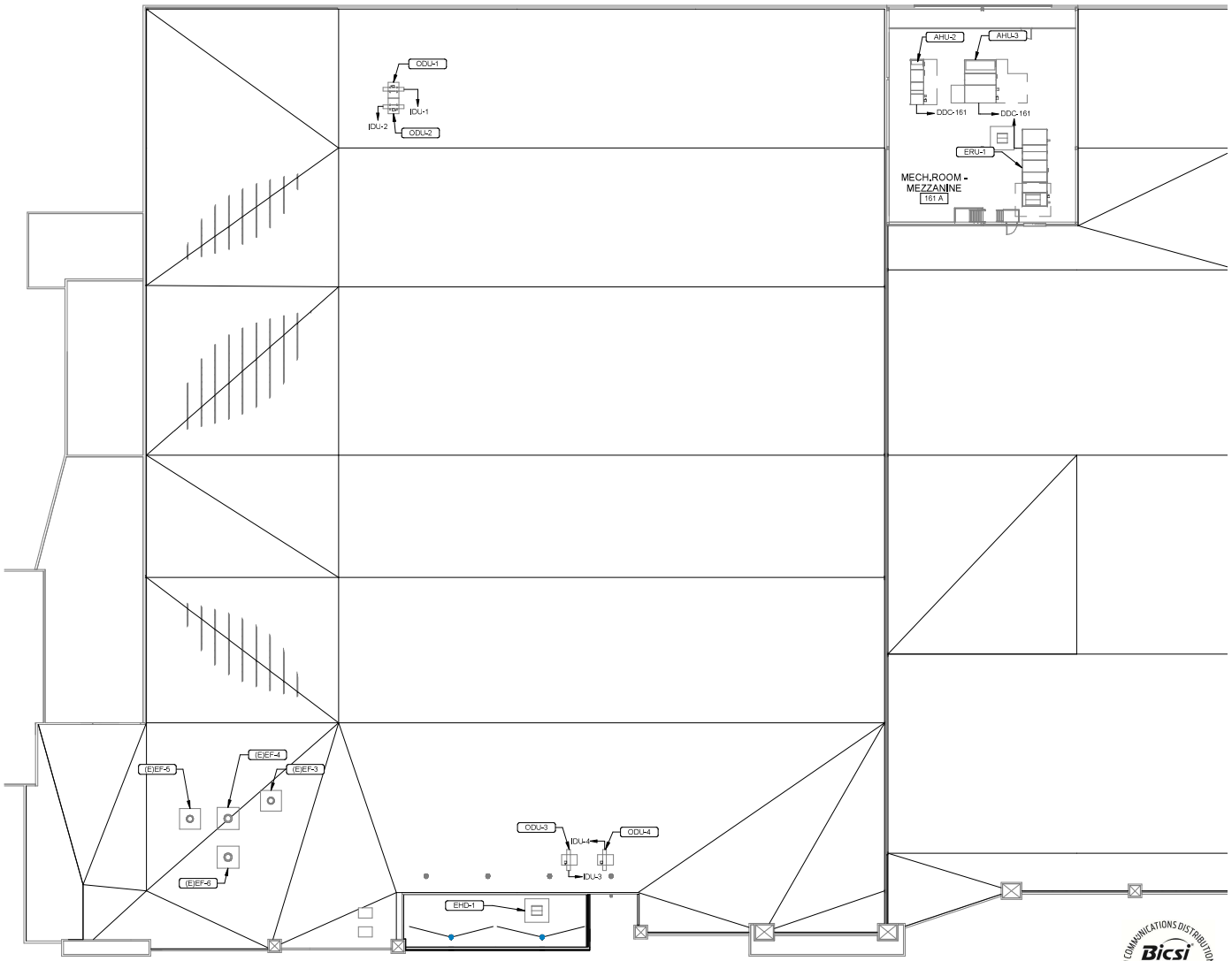
220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New Bldg 950 BX and Mall HVAC System, MCC
Construction and Telecommunications Equipment
Client Project Number: XLWU21-0130

TELECOMMUNICATION PLAN - AREA D AND AREA E
POND # 122054

SHEET ID
T-105

ISSUED FOR CONSTRUCTION

Plot Date: 9/10/2024 8:30:39 AM
File Path: ...



1 TELECOMMUNICATION ROOF PLAN
1/16" = 1'-0"

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD

Michael S. Watkins
9/10/2024

SCALE: 1/16" = 1'-0"

PLAN NORTH

MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: D. ROCA
CHECKED BY: A. ALLORP
QUALITY CONTROLLED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.:
HEADQUARTERS
CONTRACT NO.:

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND
CDM Smith
3950 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

220 Mall Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New Bldg 950 and Mall HVAC System, MCC
Construction MCC Phase 1 and Mall HVAC Equipment
Client Project Number: XLWJ21-0130

OVERALL TELECOMMUNICATION ROOF PLAN

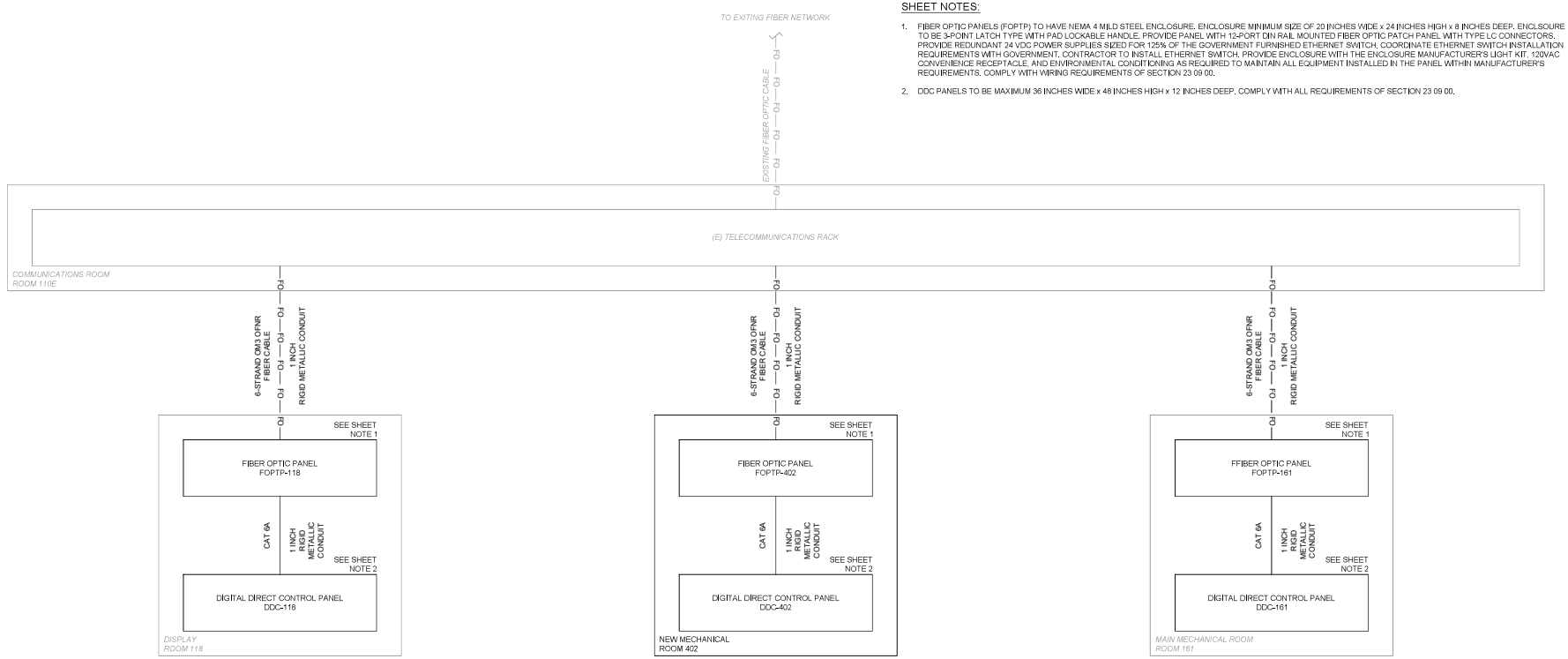
POND # 122054

SHEET ID
T-106

ISSUED FOR CONSTRUCTION

Plot Date: 9/10/2024 8:30:37 AM

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SHEET NOTES:

1. FIBER OPTIC PANELS (FOPTP) TO HAVE NEMA 4 MILD STEEL ENCLOSURE. ENCLOSURE MINIMUM SIZE OF 20 INCHES WIDE x 24 INCHES HIGH x 8 INCHES DEEP. ENCLSOURE TO BE 3-POINT LATCH TYPE WITH PAD LOCKABLE HANDLE. PROVIDE PANEL WITH 12-PORT DIN RAIL MOUNTED FIBER OPTIC PATCH PANEL WITH TYPE LC CONNECTORS. PROVIDE REDUNDANT 24 VDC POWER SUPPLIES SIZED FOR 125% OF THE GOVERNMENT FURNISHED ETHERNET SWITCH. COORDINATE ETHERNET SWITCH INSTALLATION REQUIREMENTS WITH GOVERNMENT. CONTRACTOR TO INSTALL ETHERNET SWITCH. PROVIDE ENCLOSURE WITH THE ENCLOSURE MANUFACTURER'S LIGHT KIT, 120VAC CONVENIENCE RECEPTACLE, AND ENVIRONMENTAL CONDITIONING AS REQUIRED TO MAINTAIN ALL EQUIPMENT INSTALLED IN THE PANEL WITHIN MANUFACTURER'S REQUIREMENTS. COMPLY WITH WIRING REQUIREMENTS OF SECTION 23 09 00.
2. DDC PANELS TO BE MAXIMUM 36 INCHES WIDE x 48 INCHES HIGH x 12 INCHES DEEP. COMPLY WITH ALL REQUIREMENTS OF SECTION 23 09 00.

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
Michael Watkins
BICSI ID # 292123
EXPIRES 12-31-25
RCDD
Michael S Watkins
9/10/2024

MARK	DESCRIPTION	DATE

DESIGNED BY: P. JENKINS
DRAWN BY: D. JENKINS
CHECKED BY: A. KLOPP
QA/QC PERFORMED BY: M. WATKINS
SIZE: ANSI D
ISSUE DATE: 09/13/2024
SOLICITATION NO.: FA4418-24-R-A001
CONTRACT NO.: -

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

CPM Smith
3900 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

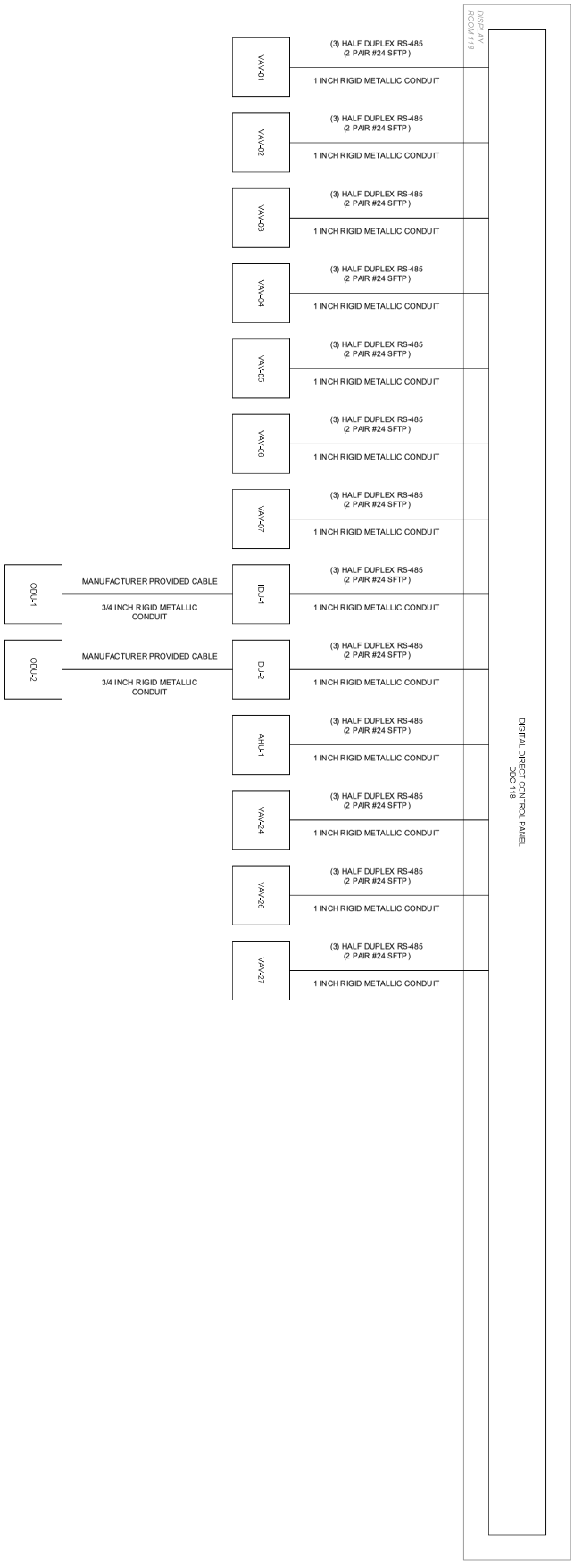
220 Mail Lane, Suite 2, Building 950
Tyndall AFB, FL 32403, United States
Remove and Install New B950 BX and Mail HVAC System, MCC
Construction and Replacement of HVAC Equipment
Client Project Number: XLWJ21-10130

TELECOMMUNICATIONS
OVERALL RISER
PONDNT220564

SHEET ID
T-201

ISSUED FOR CONSTRUCTION

Plot Date: 9/10/2024 11:03:53 AM
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REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BICSI ID #182123
EXPIRES 11-30-25
RCDD

220 Mall Lane, Suite 2, Building 950
Tyndall AFB , FL 32403, United States

Remove and Install New B950 BX and Mall HVAC System, MCC Controls and MCC Power Board for HVAC Equipment
Client Project Number: XLWU21-1013D

TELECOMMUNICATIONS
AREA A RISER

POND#122065.4

SHEET ID
T-202

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

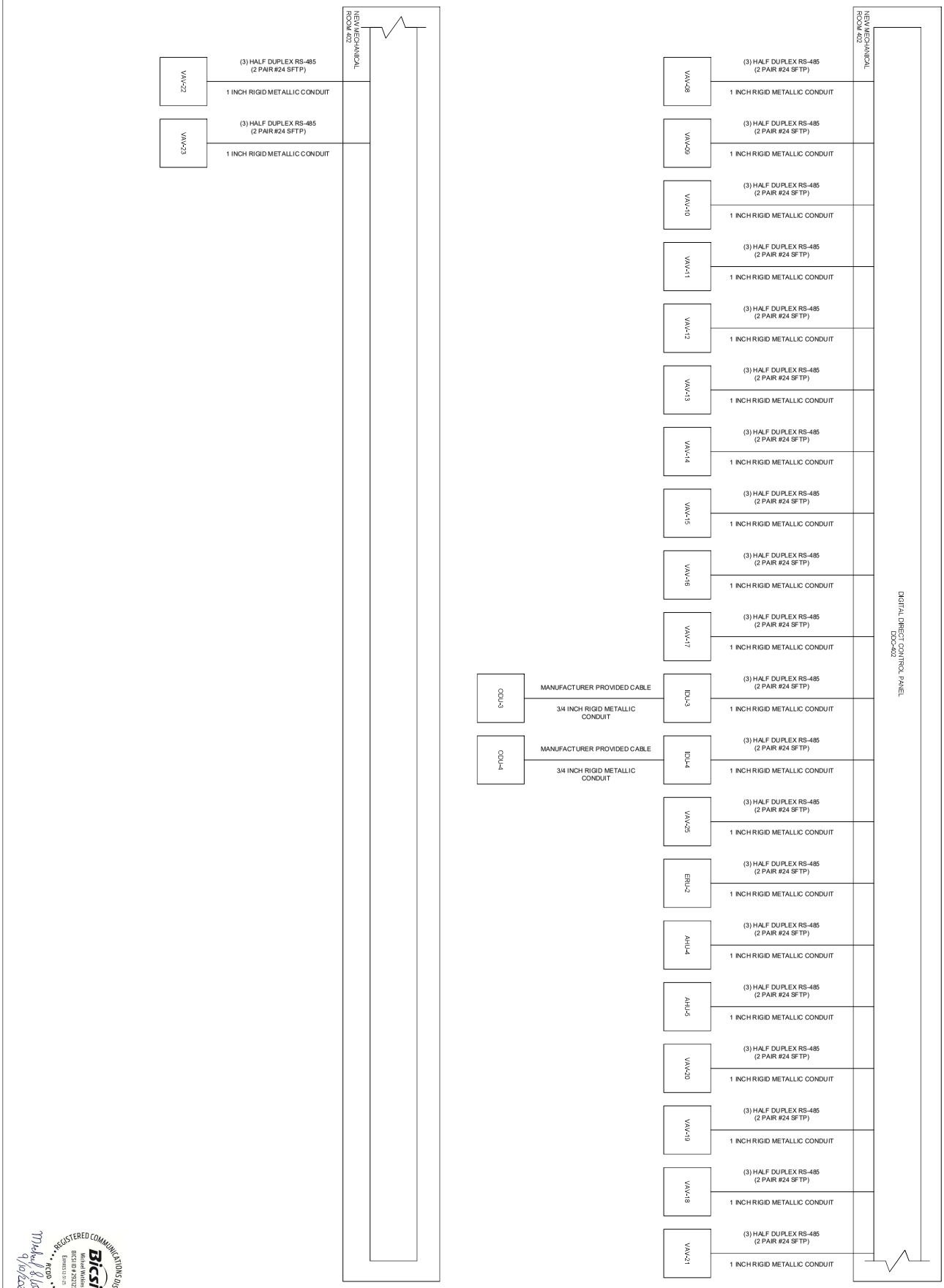
DESIGNED BY: P. JENKINS	ISSUE DATE: 09/13/2024
DRAWN BY: P. JENKINS	SOLICITATION NO.: FA4819228F0141
CHECKED BY: A. KLOPP	CONTRACT NO.: -
SUBMITTED BY: M. WATKINS	
SIZE: ANSI D	

MARK	DESCRIPTION	DATE

ISSUED FOR CONSTRUCTION

Plot Date: 9/10/2024 11:46:34 AM

File Path: C:\pw_pf\pjenkins\d0373397-202-RISER.dwg



REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
RCDD
BICSI ID #382123
Expires 01-31-25

Michael Watkins 9/10/2024

220 Mall Lane, Suite 2, Building 950
Tyndall AFB , FL 32403, United States

Remove and Install New B950 BX and Mall HVAC System, MCC Controls and MCC Power Board for HVAC Equipment
Client Project Number: XLWU21-1013D

TELECOMMUNICATIONS
AREA B & C RISER

POND#122654

SHEET ID
T-203

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

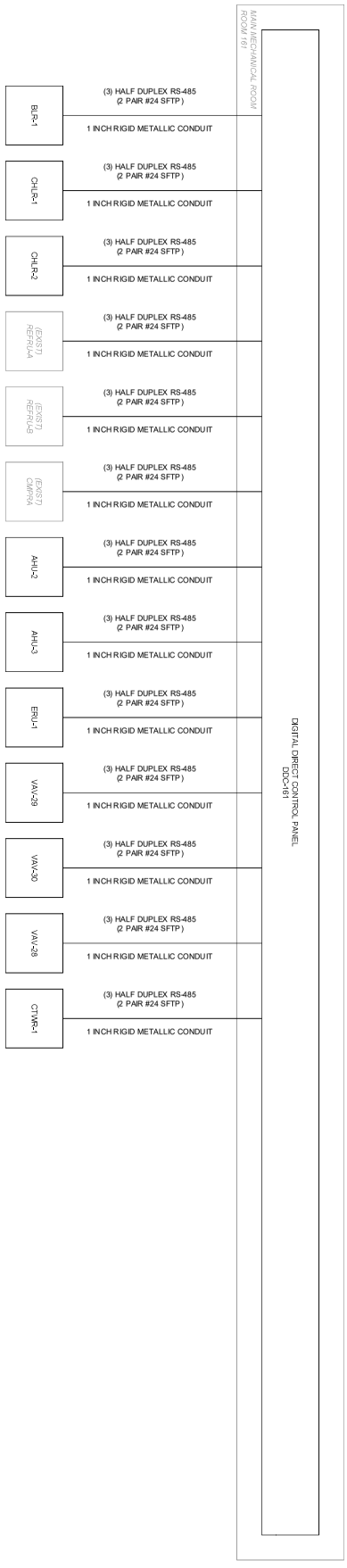
DESIGNED BY: P. JENKINS	ISSUE DATE: 09/13/2024
DRAWN BY: P. JENKINS	SOLICITATION NO.: FA4819228041
CHECKED BY: A. KLOPP	CONTRACT NO.: -
SUBMITTED BY: M. WATKINS	
SIZE: ANSI D	

MARK	DESCRIPTION	DATE

ISSUED FOR CONSTRUCTION

Plot Date: 9/10/2024 11:50:01 AM

File Path: C:\pw_pf\jenkinsp\d0373097-203-RISER.dwg



REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BICSI ID #182123
EXPIRES 11-30-25

Michael Watkins 9/10/2024

220 Mall Lane, Suite 2, Building 950
Tyndall AFB , FL 32403, United States

Remove and Install New B950 BX and Mall HVAC System, MCC Controls and MCC Power Board for HVAC Equipment
Client Project Number: XLWU21-1013D

TELECOMMUNICATIONS
AREA D & E RISER

POND#122054

SHEET ID
T-204

325th CIVIL ENGINEER SQUADRON
TYNDALL AFB, FLORIDA

POND

CDM Smith
3500 Parkway Lane
Suite 500
Peachtree Corners
Georgia 30092

DESIGNED BY: P. JENKINS	ISSUE DATE: 09/13/2024
DRAWN BY: P. JENKINS	SOLICITATION NO.: FA4819228F0041
CHECKED BY: A. KLOPP	CONTRACT NO.: -
SUBMITTED BY: M. WATKINS	
SIZE: ANSI D	

MARK	DESCRIPTION	DATE

ISSUED FOR CONSTRUCTION

Plot Date: 9/10/2024 12:04:11 PM

File Path: C:\pw_pf\jenkinsp\d0 3730997-204 RISER.dwg