CUI

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US Army Corps of Engineers ®
LOUISVILLE DISTRICT

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CUI CATEGORY: GENERAL CRITICAL INFRASTRUCTURE INFORMATION
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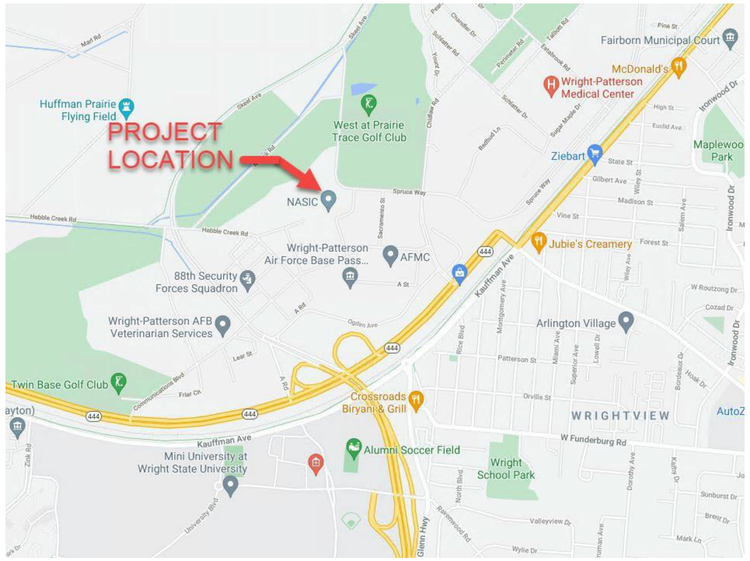
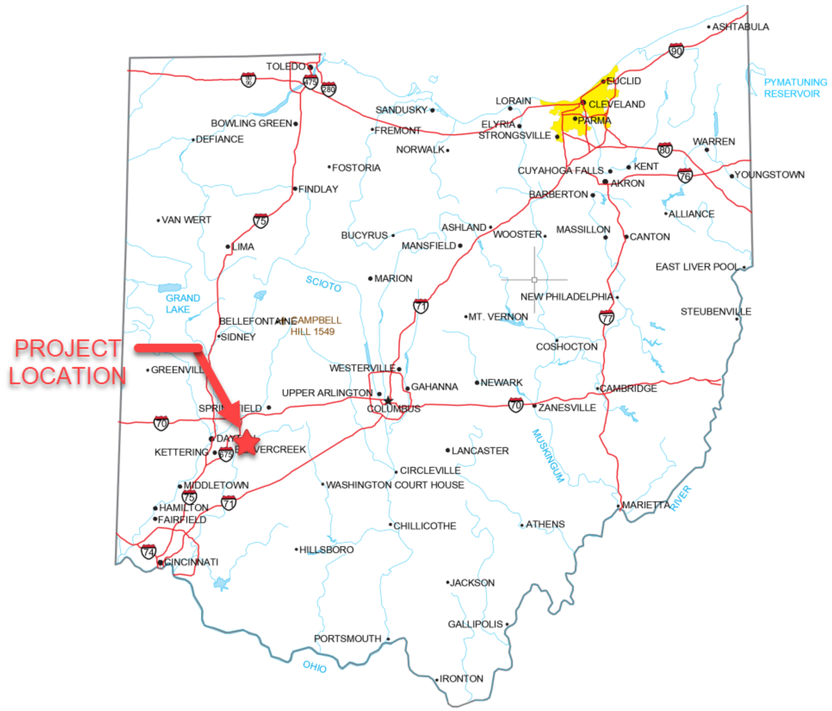
WRIGHT PATTERSON AIR FORCE BASE, OHIO
REPLACE AHU-5

PN: ZHTV-160060





SOLICITATION NO.:
CONTRACT NO.:
ISSUE DATE: 24 FEBRUARY 2023
P2#: 469978

02 March 2023
W912QR23R0022-0001
Certified Final Submittal

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: A. TUNGSETH
DRAWN BY: A. TUNGSETH
CHECKED BY: G. JOHNSON
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

COVER SHEET

SHEET ID
G-001_5
SHEET 1 OF 112

CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001
CUI

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TN502_5	COMMUNICATIONS DETAILS

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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ISSUE DATE: 02-24-23
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DRAWN BY: A. TUNGSETH
CHECKED BY: G. JOHNSON
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SIZE: 34X22

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9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SHEET INDEX

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

SHEET ID
G-002_5
SHEET 2 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

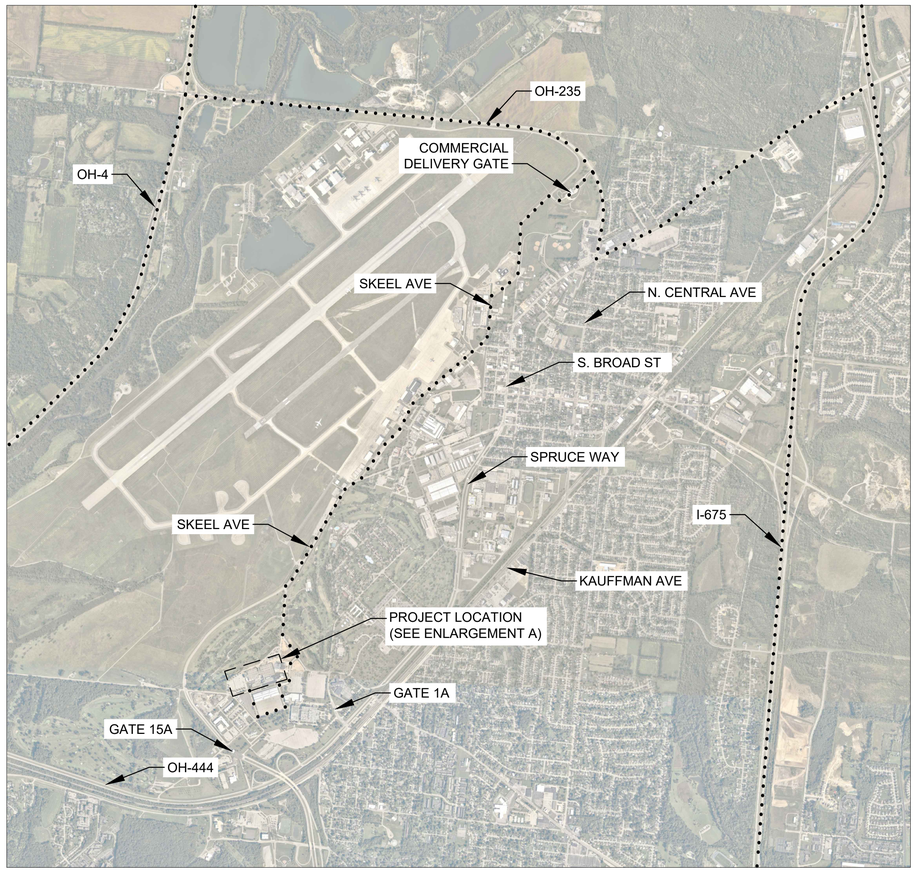
LEGEND:

PROPOSED STAGING AND LAYDOWN

PROJECT LOCATION

NOTE:

1. ANY EXISTING SURFACES AND LANDSCAPE AREAS DAMAGED DURING CONSTRUCTION MUST BE REPAIRED, REFINISHED, RE-SEEDED, RE-SODDED AND AERATED IF NECESSARY TO RESTORE PROJECT AREA TO EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY ASSOCIATED WITH THE TEMPORARY STORAGE OF MATERIALS, TOOLS AND EQUIPMENT ON THE SITE.
3. THE CONTRACTOR WILL ADHERE TO ALL SECURITY AND SAFETY PROCEDURES AS REQUIRED BY WPAFB CONTRACTOR ENTRY/SECURITY PROCEDURES INCLUDING, BUT NOT LIMITED TO, CONTRACTOR EMPLOYEE PARKING AND ACCESS TO THE BUILDING.
4. ALL HVAC EQUIPMENT MUST BE PROTECTED FROM WATER AND WEATHER DAMAGE. STORAGE ON SITE IS LIMITED AND JUST IN TIME DELIVERY MUST BE PART OF THE CONSTRUCTION.
5. RESTORATION TO THE EXISTING SITE WORK AND INSIDE OR OUTSIDE THE FACILITY MUST INCLUDE REPAIR/REPLACEMENT OF PAVEMENTS, SIDEWALKS, RAMPS, GUARDRAILS, SOD, WALLS, FLOORS, CEILINGS, OR PIPING DAMAGED DURING THE CONSTRUCTION PROCESS.
6. THE CONTRACTOR IS TO COORDINATE ACCESS TO THE SITE, INCLUDING THE LOCATION OF TEMPORARY STORAGE TRAILERS WITH THE GOVERNMENT. CONSTRUCTION TRAILER AND LAYDOWN AREA MUST BE LOCATED AT OR NEAR THE INTERSECTIONS OF ZERO RD AND WARNER ROBIN ST ADJACENT TO BUILDING 867, AREA A WPAFB.
7. TEMPORARY SECURE STORAGE STAGING AREA MUST BE WITHIN 5 MILE RADIUS OF CONSTRUCTION SITE (BUILDING 856). COORDINATE LOCATION WITH THE GOVERNMENT PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO PROVIDE ANY HEAT WHERE REQUIRED TO PROTECT THE BUILDING OR EQUIPMENT AND FOR ESCORTS IF REQUIRED FOR INSTALLATION.



A1 SITE ACCESS PLAN
SCALE: 1"=2000'

0 2000' 4000'

TRUE NORTH

B5 ENLARGEMENT A
SCALE: 1"=200'

0 200' 400'
SCALE IN FEET

TRUE NORTH

FOR REFERENCE ONLY

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: B. HANSEN
DRAWN BY: J. MCMANNON
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SUBMITTED BY: C. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
ATTN: CELRL-ED-TS-MG JR. PL
600 DR. MARTIN LUTHER KING JR. PL
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9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SITE ACCESS PLAN

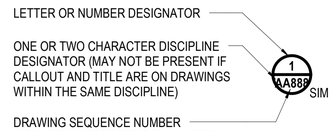
SHEET ID
GC101_5
SHEET 3 OF 112

W912QR23R0022_CUI_CF_Plans-0001

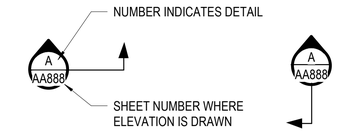
CERTIFIED FINAL

CALLOUT IDENTIFICATION

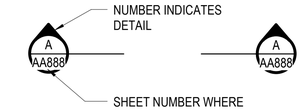
SECTION, DETAIL, AND ELEVATION SYMBOL IDENTIFIERS:



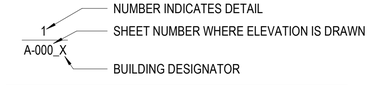
WALL SECTION CALLOUT EXAMPLE:



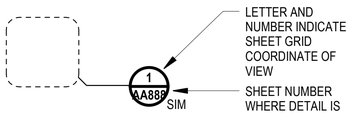
BUILDING SECTION CALLOUT EXAMPLE:



VIEW REFERENCE EXAMPLE:

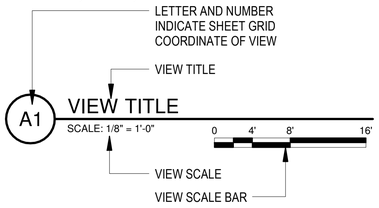


DETAIL CALLOUT EXAMPLE:

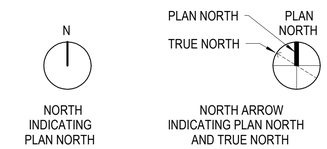


ELEVATION CALLOUT EXAMPLE:

SECTION, DETAIL, AND ELEVATION TITLE EXAMPLE:

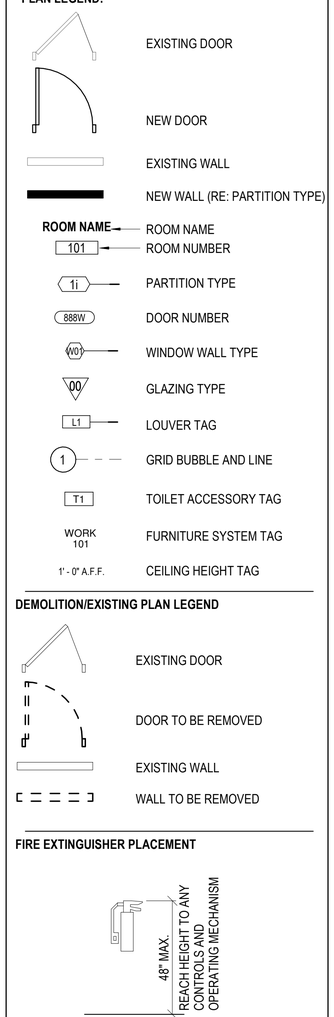


NORTH ARROW EXAMPLE:



PLAN LEGEND

PLAN LEGEND:



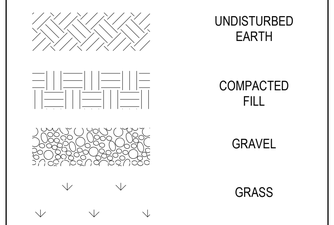
DEMOLITION/EXISTING PLAN LEGEND

FIRE EXTINGUISHER PLACEMENT

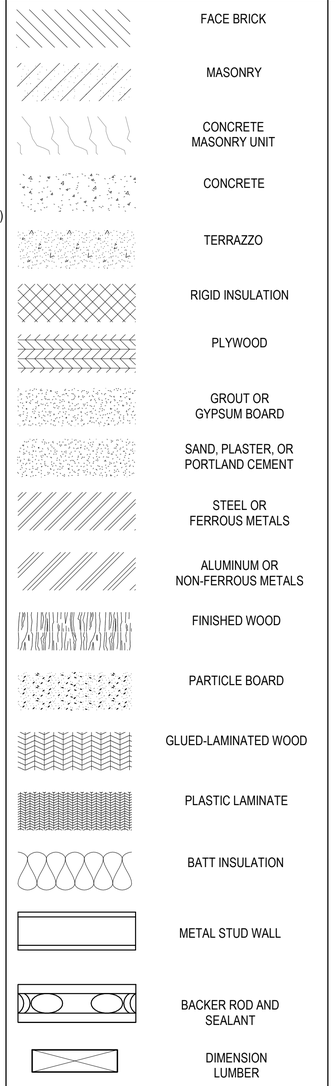
BRACKET MOUNTED

NOTE:
AT EXISTING GYPSUM BOARD WALLS TO RECEIVE FE BRACKET REMOVE GYPSUM BOARD AS REQUIRED TO INSTALL FIRE-RESISTANT TREATED WOOD BLOCKING FOR SECURE ANCHORAGE OF FE BRACKET. REPAIR / REPLACE GYPSUM BOARD AND MAKE WALL READY TO RECEIVE NEW WALL FINISH ACCORDING TO ROOM FINISH SCHEDULE.

MATERIAL SYMBOLS



MATERIAL SYMBOLS



ABBREVIATIONS

	-A-
A/E	ARCHITECT/ENGINEER
ACOUST	ACOUSTICAL
ADJ	ADJACENT, ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURE, ARCHITECT
	-B-
BD	BOARD
BITUM	BITUMINOUS
BLDG	BUILDING
BLKG	BLOCKING
BO	BOTTOM OF, AS IN "BO STEEL"
BTWN	BETWEEN
	-C-
CAB	CABINET
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CID	COMPREHENSIVE INTERIOR DESIGN
CJ	CONTROL JOINT, CONSTRUCTION JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACT, CONTRACTOR
COORD	COORDINATE
CORR	CORRUGATED OR CORRIDOR
CU	CUBIC
°C	CELSIUS
	-D-
DBL	DOUBLE
DEMO	DEMOLITION
DESCR	DESCRIPTION
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DWG / DWGS	DRAWING / DRAWINGS
	-E-
E	EAST
EA	EACH
EEW	EMERGENCY EYEWASH
EEWS	EMERGENCY EYEWASH & SHOWER
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL	ELEVATION, AS IN HEIGHT
ELAST	ELASTOMERIC
ELEC	ELECTRIC / ELECTRICAL
ELEV	ELEVATOR, OR ELEVATION AS IN NORTH ELEV
EQ	EQUAL
EQUIP	EQUIPMENT
ETC	AND SO FORTH (ETCETERA)
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
	-F-
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER WITH WALL BRACKET
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FF&E	FURNITURE, FIXTURES & EQUIPMENT
FHC	FIRE HOSE CABINET (WITH EXTINGUISHER & BRACKET)
FHR	FIRE HOSE REEL (WITH EXTINGUISHER & BRACKET)
FIN	FINISHED, FINISH
FLR	FLOOR
FT	FEET / FOOT
°F	FAHRENHEIT
	-G-
GA	GAUGE
GALV	GALVANIZED
GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED GOVERNMENT INSTALLED
GL	GIRT LINE
GRTG	GRATING
GYP	GYPSUM
GYP BD	GYPSUM BOARD
	-H-
H	HIGH
HD	HAND
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING, VENTILATION & AIR CONDITIONING
	-I-
ID	INSIDE DIAMETER
IN	INCH
INSUL	INSULATION
INT	INTERIOR
	-J-
JAN	JANITOR'S CLOSET
	-L-
L	LEFT, LONG, LENGTH
LAB	LABORATORY
LAT	LATITUDE
LAV	LAVATORY
LB or #	POUND
LGM	LOGISTICS & MAINTENANCE
LH	LEFT HAND
LONG	LONGITUDE
LVR	LOUVER
	-M-
M	METER
MACH	MACHINE
MAINT	MAINTENANCE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
	-N-
N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTP	NOTICE TO PROCEED
NTS	NOT TO SCALE
	-O-
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OPNG	OPENING
OPP	OPPOSITE
	-P-
PA	PUBLIC ADDRESS
PERIM	PERIMETER
PKG	PACKAGE
PL	PLATE
PLMB	PLUMBING
PLYWD	PLYWOOD
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
	-R-
R	RADIUS
R/A	RETURN AIR
RCP	REFLECTIVE CEILING PLAN
RD	ROOF DRAIN
RECP	RECEPTACLE
REFER	REFERENCE
REINF	REINFORCED
REQ'D	REQUIRED
REV	REVISION
RH	RIGHT HAND
RO	ROUGH OPENING
	-S-
S	SOUTH
S/A	SUPPLY AIR
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SID	STRUCTURAL INTERIOR DESIGN
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE, AS IN "SQ FT"
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STOR	STORAGE
STRUCT	STRUCTURAL
SUPP	SUPPORT
SUSP	SUSPENDED
SYS	SYSTEM
	-T-
TD	TRENCH DRAIN
TECH	TECHNICAL
THRU	THROUGH
TLT	TOILET
TO	TOP OF, AS IN "TO STEEL"
TYP	TYPICAL
	-U-
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
	-V-
VENT	VENTILATE, VENTILATOR
VERT	VERTICAL
VOL	VOLUME
	-W-
W	WEST, WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WPAFB	WRIGHT-PATTERSON AIR FORCE BASE
WT	WEIGHT

ABBREVIATIONS

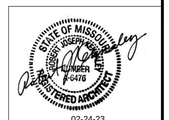
SEE ADDITIONAL FINISH MATERIAL ABBREVIATIONS IN THE MATERIAL LEGEND, DRAWING A-703_5

GENERAL NOTES

1. THE CONTRACTOR MUST INCLUDE ALL WORK REQUIRED TO COMPLY WITH ALL APPLICABLE CODES BY THE AUTHORITY HAVING JURISDICTION.
2. DIMENSIONS GOVERN. DETAILS GOVERN OVER PLANS AND ELEVATIONS. LARGE SCALE DETAILS OR PLANS GOVERN OVER SMALL SCALE DETAILS OR PLANS. DO NOT SCALE DRAWINGS.
3. ALL FLOORS MUST BE INSPECTED FOR DAMAGE, WARPING OR OTHER NOTICEABLE DEVIATIONS AND PATCHED AND LEVELED PRIOR TO COVERING WITH FLOOR FINISHES, OR ERECTION AND INSTALLATION OF COLD-FORMED FRAMING.
4. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL MANUFACTURER'S RECOMMENDED MAINTENANCE PROCEDURES AND SCHEDULES.
5. ANY MANUFACTURER'S OR BRAND NAME PRODUCTS INDICATED OR SPECIFIED ARE DONE SO TO ESTABLISH A MINIMUM LEVEL OF QUALITY.
6. ALL CONSTRUCTION MUST MEET OR EXCEED LOCAL INDUSTRY STANDARDS. DETAILS ARE PROVIDED TO INDICATE MINIMUM QUALITY AND TO GIVE STANDARDS OF CONSTRUCTION. IF A CONDITION IS NOT SPECIFICALLY DETAILED, SUBMIT A SIMILAR DETAIL FOR GUIDANCE AND APPROVAL.
7. THE LETTERS I, O, AND Q ARE NOT USED TO INDICATE DETAILS, SECTIONS OR ELEVATIONS.
8. PROVIDE PRESERVATIVE-TREATED WOOD AT ALL LOCATIONS WHERE WOOD IS IN DIRECT CONTACT WITH CONCRETE OR MASONRY.
9. PROVIDE FIRE-RESISTANT TREATED WOOD BLOCKING FOR SECURE ANCHORAGE OF ALL SHELVES, RUNNING TRIM, RAILINGS, SUSPENDED ITEMS, DOOR-STOPS, GRAB-BARS, AND OTHER SIMILAR WOODWORK, HARDWARE, SPECIALTIES, ACCESSORIES, FIXTURES, OR EQUIPMENT.
10. ALL WORK SHOWN ON DRAWINGS MUST BE BY THE CONTRACTOR UNLESS OTHERWISE NOTED BY THE ABBREVIATION NIC (NOT IN CONTRACT) .
11. PROVIDE WATER-RESISTANT GYPSUM BOARD AT ALL WET OR UNCONDITIONED AREAS INCLUDING, BUT NOT LIMITED TO, PARTITIONS BEHIND SINKS. CONTRACTOR TO ENSURE THAT FIRE RATING IS MAINTAINED.
12. PAINT, STAIN, OR COAT ALL EXPOSED SURFACES OF CONSTRUCTION UNLESS NOTED OTHERWISE OR IF SURFACES ARE PRE-FINISHED.
13. PAINT ALL EXPOSED ELECTRICAL CONDUIT, ELECTRICAL RACEWAYS AND BOXES, MECHANICAL PIPING, DUCTS AND EQUIPMENT, AND PLUMBING PIPING WITH THE EXCEPTION OF PREFINISHED AND INSULATED ITEMS, TO MATCH THE ADJACENT SURFACE.
14. ALL CONDUITS, PLUMBING, PIPING, DUCTWORK, AND OTHER EQUIPMENT EXPOSED TO VIEW MUST BE LOCATED PARALLEL OR PERPENDICULAR TO THE STRUCTURAL FRAMING SYSTEM.
15. THE CONTRACTOR MUST COORDINATE SIZE AND LOCATION OF HVAC, PLUMBING, ELECTRICAL AND TECHNOLOGY ITEMS OR OPENINGS TO AVOID CONFLICTS BETWEEN SAID ITEMS, PRIOR TO PROCEEDING WITH RELATED WORK .
16. ARCHITECTURAL DETAILS ARE APPLICABLE WHERE INDICATED BY SECTION CUT, BY NOTE, OR BY DETAIL TITLE. INCORPORATE SIMILAR DETAILS AT SIMILAR CONDITIONS UNLESS NOTED OTHERWISE. THE CONTRACTOR MAY REQUEST A CLARIFICATION IF REQUIRED, OTHERWISE THE MORE STRINGENT REQUIREMENTS WILL CONTROL.
17. ALL OPENING DIMENSIONS ARE NOMINAL. THE CONTRACTOR MUST FIELD MEASURE ALL OPENINGS AND COORDINATE WITH THE APPROPRIATE SUPPLIER.
18. SEAL AROUND ALL DOOR AND WINDOW FRAMES, COUNTERTOPS, WALL-MOUNTED FIXTURES AND EQUIPMENT TO ADJACENT WALL SURFACES.
19. THE CONTRACTOR MUST REVIEW THE DIMENSIONS OF ALL EQUIPMENT IN THE PROJECT REGARDLESS OF THE SOURCE AND COORDINATE ACCESS TO THE SPACE AND VERIFY CLEAR FLOOR SPACE IS PROVIDED AS REQUIRED TO ENSURE EASE OF INSTALLATION.
20. ALL WORK MUST BE OF GOOD QUALITY, FREE FROM DEFECTS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
21. THE CONTRACTOR MUST PROVIDE ACCESS DOORS OR PANELS AS REQUIRED FOR SERVICING OF PIPING, DUCTWORK, CABLE TRAYS, FIRE DAMPERS AND SIMILAR APPLICATIONS. ALL PROPOSED ACCESS DOOR LOCATIONS TO BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.
22. BRACE PARTITIONS, SUSPENDED CEILINGS, SOFFITS, SUSPENDED ITEMS, ETC. ONLY TO STRUCTURAL ELEMENTS ABOVE. DO NOT ANCHOR TO ROOF DECK, PLUMBING / SPRINKLER PIPES, DUCTWORK, ELECTRICAL CONDUIT OR SIMILAR ELEMENTS.
23. EXTEND ALL FLOORING AND WALL-BASE COMPLETELY INTO RECESSES, UNDER OPEN COUNTERTOPS, AND BEHIND ALL EQUIPMENT.
24. ALL MATERIALS USED FOR CONSTRUCTION MUST BE NEW AND UNDAMAGED. THE CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR ALL WORK SHOWN.
25. THE CONTRACTOR MUST BECOME FULLY ACQUAINTED WITH CONDITIONS RELATED TO THE WORK. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL CONDITIONS MUST BE REPORTED TO THE CONTRACTING OFFICER FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.
26. EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED AND REPORT TO THE CONTRACTOR IN WRITING ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY EXECUTION OF THE INSTALLERS WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. INSTALLATION WILL CONSTITUTE ACCEPTANCE OF THE SUBSTRATE AND/OR CONDITIONS.
27. "TYPICAL" (TYP) AS USED IN THESE DOCUMENTS MEANS THAT THE CONDITIONS OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
28. CONTROL JOINTS (CJ) MUST BE INSTALLED AT ALL PARTITIONS. CJ AT GYPSUM PARTITIONS MUST BE MAXIMUM 30'-0" O.C., CJ AT CONCRETE MASONRY UNIT PARTITIONS MUST BE MAXIMUM 20'-0" O.C., UNLESS OTHERWISE NOTED ON DRAWINGS.
29. NON-BEARING PARTITIONS MUST BE ISOLATED FROM THE BUILDING STRUCTURE TO PREVENT TRANSFER OF BUILDING LOADS FROM THE STRUCTURE TO THE PARTITIONS.
30. THE CONTRACTOR MUST NOT CONSIDER DEMOLITION, REPAIR, AND ALTERATION NOTES TO BE ALL-INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND ASSESS EACH AREA AND TO FULFILL THE INTENT OF THE DESIGN INDICATED BY THE CONTRACT DOCUMENTS. REFER TO SPECIFICATION SECTION 011100 - SUMMARY OF WORK AND SECTION 02 40 00 - DEMOLITION. CONTRACTOR MUST COORDINATE ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES WITH HVAC, ELECTRICAL, FIRE PROTECTION, AND PLUMBING DRAWINGS AND NOTES. PATCH OR REBUILD ANY AREAS TO REMAIN THAT HAVE BEEN DAMAGED OR DISTURBED BY HVAC, ELECTRICAL, FIRE PROTECTION, AND PLUMBING DEMOLITION.
31. ALL "EXISTING" INFORMATION ON THE CONTRACT DOCUMENTS HAS BEEN OBTAINED FROM A PREVIOUS SET OF DRAWINGS, OR FROM FIELD INVESTIGATION AND SUCH "EXISTING" INFORMATION MUST BE FIELD VERIFIED BY ALL CONTRACTORS.
32. THE PREMISES WILL BE OCCUPIED AT ALL TIMES DURING THE CONSTRUCTION SCHEDULE. THE CONTRACTOR MUST COORDINATE WITH THE CONTRACTING OFFICER REGARDING ALL INTERRUPTIONS OF UTILITIES, TEMPORARY EXITS, DUST PARTITIONS, DELIVERIES, AND ALL OTHER JOB REQUIREMENTS.
33. ALL ROOM NUMBERS ARE FOR CONSTRUCTION PURPOSES ONLY. USER HAS THE RIGHT TO RENAME AND/OR RENUMBER ROOMS.
34. THE CONTRACTOR IS TO COORDINATE ACCESS TO THE SITE, INCLUDING THE LOCATION OF TEMPORARY STORAGE TRAILERS WITH THE GOVERNMENT. REFER TO SHEET GC101_5 FOR ADDITIONAL INFORMATION.

GENERAL NOTES: CONSTRUCTION LIMITATIONS:

1. TEMPORARY SECURE STORAGE REQUIREMENTS: IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY SECURE STORAGE SPACE/TRAILER FOR THE FURNITURE AND EQUIPMENT. REFER TO ADDITIONAL INFORMATION AND STORAGE REQUIREMENTS BELOW.
   a. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.
   b. EXISTING FURNITURE FOR REFERENCE ONLY (TYPICAL). CONTRACTOR MUST FIELD VERIFY AND LABEL THE EXTENT OF ALL FURNITURE, EQUIPMENT, POWER POLES, COMPUTER POLES, CABLING WIRING AND DEMOUNTABLE PARTITIONS. CONTRACTOR MUST DISASSEMBLE, SORT FURNITURE FOR RE-USE, AND RE-ASSEMBLE AFTER CONSTRUCTION IS COMPLETE. LOCATION FOR STORAGE OF FURNITURE MUST BE DETERMINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
   c. CONTRACTOR IS RESPONSIBLE FOR INVENTORYING EACH ROOM PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR MUST LABEL, RECORD, AND TAKE PHOTOS (CONTRACTOR MUST COORDINATE WITH GOVERNMENT TO TAKE PICTURES OF THE FACILITY) OF ALL EXISTING CONDITIONS TO ENSURE THAT THE FURNITURE, CABINETS, POWER, CCTV, CONFERENCE EQUIPMENT, ETC AND COMPUTER WIRING ARE REPLACED IN THE SAME LOCATIONS. CONTRACTOR'S FAILURE TO TAKE GOOD RECORDS WILL NOT BE THE GOVERNMENT'S RESPONSIBILITY.
   d. ALL FURNITURE WILL BE REMOVED FROM CONSTRUCTION AREA BY THE CONTRACTOR AND TURNED OVER TO NASIC. CONTRACTOR MUST STORE ALL FURNITURE TO BE RE-INSTALLED IN CONTRACTOR FURNISHED LOCKABLE TRAILERS ON WPAFB. CONTRACTOR MUST BEAR THE SOLE RESPONSIBILITY TO ENSURE THAT THE FURNITURE AND EQUIPMENT IS NOT DAMAGED, AND IS REINSTALLED WITH ASSOCIATED POWER POLES, COMPUTER POWER, COMPUTER FIBER, PHONES, ETC. IN THE SAME CONFIGURATION.
2. COMMON ACCESS/EGRESS CORRIDORS: STAIR W5; ROOMS W208, W253, W279 AND W280 MUST BE MAINTAINED AS COMMON ACCESS/EGRESS CORRIDORS THROUGHOUT THE CONSTRUCTION PERIOD FOR FACILITY PERSONNEL. THESE ROOMS WILL BE LIMITED TO CONTRACTOR WORK (IE. ABATEMENT, DEMOLITION, AND NEW WORK AS DEFINED HERE-IN) FROM THE HOURS OF 1600 TO 2400. THE CORRIDORS MUST BE CLEARED OF ALL CONSTRUCTION MATERIALS AND EQUIPMENT DURING THE HOURS OF 0500 TO 1600. CONTRACTOR MUST SCHEDULE THE CONSTRUCTION WORK ACCORDINGLY. CONTRACTOR MUST COORDINATE WITH CONTRACTING OFFICER AND SECURITY OFFICER FOR ALL CONSTRUCTION EFFORTS. THE FOLLOWING SYSTEMS MUST BE MAINTAINED AND FULLY FUNCTIONAL:
   a. SECURITY INTRUSION DETECTION
   b. SECURITY SURVEILLANCE
   c. SECURITY TURNSTILE AND ALL ASSOCIATED APPARATUS
   d. INTERCOM CALL BOX AT WEST ENTRANCE
3. CONTRACTOR MUST PROVIDE THE NECESSARY TEMPORARY SUPPORTING MEANS FOR THE FOLLOWING SYSTEMS TO MAINTAIN A FULLY FUNCTIONAL EGRESS CORRIDOR:
   a. HEATING AND VENTILATION (HVAC) SYSTEMS
   b. HVAC DIRECT DIGITAL CONTROL SYSTEM
   c. LIGHTING AND EGRESS EXIT LIGHTING SYSTEMS
   d. FIRE ALARM SYSTEMS
   e. FIRE SUPPRESSION SYSTEMS
   f. ELECTRICAL POWER TO SUPPORT ALL AFOREMENTIONED SYSTEMS.



02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET ID
AG001_5
SHEET 4 OF 112

CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

1. APPLICABLE CODES AND STANDARDS		
ABBREVIATIONS	**TITLE**	**EDITION**
IBC	INTERNATIONAL BUILDING CODE	2015
IEBC	INTERNATIONAL EXISTING BUILDING CODE	2015
IMC	INTERNATIONAL MECHANICAL CODE	2015
IPC	INTERNATIONAL PLUMBING CODE	2015
NFPA 1	NATIONAL FIRE CODE	2018
NFPA 10	STANDARD FOR THE PORTABLE FIRE EXTINGUISHERS	2018
NFPA 13	STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS	2019
NFPA 70	NATIONAL ELECTRIC CODE	2017
NFPA 72	NATIONAL FIRE ALARM AND SIGNALING CODE	2019
NFPA 80	STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES	2019
NFPA 90A	STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS	2018
NFPA 101	LIFE SAFETY CODE	2018
UFC-1-200-01	DOD BUILDING CODE	JUN 2016, CHANGE 2
UFC-3-600-01	DESIGN: FIRE PROTECTION ENGINEERING FOR FACILITIES	AUG 2016, CHANGE 2
UFC-4-010-01	DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS	DEC 2018
WPAFB IFS	WPAFB INSTALLATION FACILITY STANDARDS	APRIL 2021

2. TYPE OF CONSTRUCTION (IBC 601)		
BUILDING ELEMENT	**TYPE OF CONSTRUCTION**	**FIRE RESISTANCE RATING**
PRIMARY STRUCTURAL FRAME	IIB	0 HR
BEARING EXTERIOR WALL	IIB	0 HR *
BEARING INTERIOR WALL	IIB	0 HR *
NON-BEARING EXTERIOR WALL	IIB	0 HR *
NON-BEARING INTERIOR WALL	IIB	0 HR *
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	IIB	0 HR
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	IIB	0 HR
* EXCEPT AS REQUIRED FOR OCCUPANCY SEPARATION, INCIDENTAL USE, AND OTHER PASSIVE FIRE PROTECTION.		

3. CLASSIFICATION OF OCCUPANCY			
AREAS	**OCCUPANCY**	**IBC**	**NFPA 101**
OPEN OFFICE, CIRCULATION, RESTROOMS, LOBBY, BREAKROOM	BUSINESS, GROUP B	304.1	6.1.11

4. INCIDENTAL USE AND OTHER PASSIVE FIRE PROTECTION		
AREA	**REQUIRED RATING**	**CODE**
EXISTING SHAFT ENCLOSURE 3 STORIES OR LESS	1 HR FIRE BARRIER	NFPA 101 8.6.5
CORRIDOR	0 HR BARRIER *	NFPA 101 38.3.6.1
EXISTING ELECTRICAL ROOM	SMOKE PARTITION	NFPA 101 38.3.2.1, 8.7.1.2
EXISTING MECHANICAL ROOM	1 HR FIRE BARRIER (NORTH & WEST WALLS)	NFPA 101 38.3.2.1
* NO RATING REQUIRED IF EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM.		

5. BUILDING SEPARATION (IBC TABLE 602)			
OCCUPANCY	**ELEVATION**	**RESTRICTIVE FIRE SEPARATION DISTANCE (FT) ***	**FIRE RESISTIVE RATING OF EXTERIOR WALL**
B	NORTH/SOUTH/WEST/EAST	> 10	NO RATING
* IBC 702 - FIRE SEPARATION DISTANCE = DISTANCE FROM BUILDING'S FACE TO CLOSEST INTERIOR LOT LINE, CENTERLINE OF A STREET ALLEY OR PUBLIC WAY, OR IMAGINARY LINE BETWEEN TWO BUILDINGS.			

6. OPENING PROTECTION FOR FIRE AND SMOKE RESISITIVE CONSTRUCTION				
COMPONENT	**FIRE DOOR/SHUTTER ASSEMBLIES**	**DUCT PENETRATIONS**	**OTHER PENETRATIONS**	**CODE**
1 HR FIRE BARRIER FOR MEANS OF EGRESS (INCLUDING STAIRWELLS)	1 HR	NOT PERMITTED	1 HR (PENETRATIONS PERMITTED WHEN SERVING THE STAIRWELL)	NFPA 101 TABLE 8.3.3.2.2, 7.1.3.2.1
1 HR FIRE BARRIER	3/4 HR	FIRE DAMPERS NOT REQUIRED	1 HR	NFPA 90A: 5.3.1.1 AND 5.4.1.1, NFPA 101 TABLE 8.3.3.2.2
0 HR SMOKE PARTITION	0 HR (SELF CLOSING)	SMOKE DAMPERS ON TRANSFER DUCT ONLY	0 HR	NFPA 101: 8.4

7. OCCUPANT LOAD CALCULATIONS (NFPA 101, UFC 3-600-01)					
FLOOR	**AREA**	**FUNCTION OF SPACE**	**AREA (SF)***	**OCCUPANT LOAD FACTOR (SF/PERSON)**	**OCCUPANTS**
LEVEL 2	OFFICES, BATHROOMS	BUSINESS AREAS	23975	150	160
LEVEL 2	CONFERENCE ROOM, BREAK ROOM	ASSEMBLY WITHOUT FIXED SEATING	1105	15 NET	74
LEVEL 2	MECH ROOM, ELEC ROOM, STORAGE	MECHANICAL, ELECTRICAL, OTHER BUILDING EQUIPMENT SPACES	2345	500	5
LEVEL 2	COLLABORATION SPACE	COLLABORATION ROOMS / SPACES <= 450 SF	1549	30	52

* OCCUPANT LOAD ANALYSIS ONLY INCLUDES AREAS WITHIN THE PROJECT SCOPE OF WORK AND IS NOT INTENDED TO BE A FULL BUILDING ANALYSIS.

8. OCCUPANT LOAD SUMMARY AND MINUMUM EXITS FROM FLOOR				
FLOOR	**GROSS AREA (SF)**	**OCCUPANTS**	**REQUIRED EXITS (NFPA 101)**	**REQUIRED EXIT SEPARATION (NFPA 101)**
LEVEL 2	28,974	291	2 (7.4.1.1)	1/3 DIAGONAL (7.5.1.3.3)

9. MINIMUM EXITS OR EXIT ACCESSES FROM A SPACE OR AREA (NFPA 101)			
OCCUPANCY	**CONDITION PERMITTING ONE EXIT**	**CONDITION REQUIRING TWO OR MORE EXITS**	**CODE SECTION**
BUSINESS	LESS THAN 100 FT TRAVEL DISTANCE AND LESS THAN 100 OCCUPANTS	100 FT OR GREATER TRAVEL DISTANCE OR MORE THAN 100 OCCUPANTS	38.2.4

10. COMMON PATH, DEAD-END, AND TRAVEL DISTANCE LIMITS (NFPA 101, TABLE A.7.6)			
OCCUPANCY	**COMMON PATH LIMIT (FT)**	**DEAD END LIMIT (FT)**	**TRAVEL DISTANCE LIMIT (FT)**
BUSINESS	100	50	300

11. MINIMUM EGRESS WIDTHS			
COMPONENT	**REQUIREMENT**	**WIDTH (IN)**	**NFPA 101**
EXISTING STAIR IN EGRESS ACCESS	MINIMUM	36	SECTION 7.2.2.2.1.1
DOORS IN EGRESS ACCESS	PER COMPONENT	32	SECTION 7.2.1.2.3.2
EXISTING CORRIDOR SERVING 50 OR MORE OCCUPANTS	MINIMUM	44	SECTION 39.2.3.2
EXISTING CORRIDOR SERVING LESS THAN 50 OCCUPANTS	MINIMUM	28	SECTION 7.3.4.1.2
OTHER EGRESS COMPONENTS	PER PERSON	0.2	TABLE 7.3.3.1
STAIRWAYS	PER PERSON	0.3	TABLE 7.3.3.1

12. MINIMUM INTERIOR FINISH RATINGS (NFPA 101, TABLE A.10.2.2)			
OCCUPANCY	**EXITS**	**EXIT ACESS CORRIDORS**	**OTHER SPACES**
BUSINESS	CLASS C	CLASS C	CLASS C

13. FIRE SUPPRESSION REQUIREMENTS (UFC 3-600-01 9-7, 9-10, 9-17)		
SPRINKLERS	**STANDPIPE**	**FIRE EXTINGUISHERS**
SPRINKLERS PROVIDED THROUGHOUT THE BUILDING	NOT REQUIRED	REQUIRED

14. FIRE ALARM REQUIREMENTS (UFC 3-600-01 9-18)		
MANUAL INITIATION	**AUTOMATIC INITIATION**	**OCCUPANT NOTIFICATION**
MANUAL FIRE ALARM PULL STATIONS PROVIDED AT EXITS	FLOW AND TAMPER SWITCHES, SPOT SMOKE DETECTORS AT ALARM PANELS AND DUCT SMOKE DETECTORS PROVIDED	VOICE MESSAGING, FIRE ALARM STROBES

15. SMOKE MANAGEMENT SYSTEMS (UFC 3-600-01 9-20)		
SMOKE CONTROL SYSTEM	**SMOKE AND HEAT VENTS**	**PASSIVE SMOKE MANAGEMENT**
NOT REQUIRED	NOT REQUIRED	SMOKE PARTITIONS WHERE NOTED

STATE OF MISSOURI — ROBERT JOSEPH KENNALEY — NUMBER A-6476 — REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

DATE	DESCRIPTION	MARK
02-24-23	CERTIFIED FINAL	0

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT - MARTIN LUTHER KING, JR. PL
600 DR. MARTIN LUTHER KING, JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

BUILDING CODE AND LIFE SAFETY CRITERIA

SHEET ID
AG002_5
SHEET 5 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

CUI

LIFE SAFETY GENERAL NOTES:

1. EXCEPT WHERE INDICATED, ALL LIFE SAFETY FEATURES INCLUDING, BUT NOT LIMITED TO WALL RATINGS, AND OCCUPANCY CLASSIFICATIONS MUST REMAIN UNCHANGED.
2. REFER TO ARCHITECTURAL LEGEND, ON DRAWING AG001_5 FOR ADDITIONAL INFORMATION REGARDING SYMBOLS AND ABBREVIATIONS.
3. REFER TO THE ELECTRICAL LIGHTING PLANS FOR LOCATION OF EXIT SIGNS AND EMERGENCY LIGHTING.
4. REFER TO THE FIRE SUPPRESSION AND ALARM PLANS FOR LOCATION OF FIRE PROTECTION DEVICES.
5. ALL EXISTING WALL CLASSIFICATIONS SHOWN ARE BASED ON EXISTING DRAWINGS.

OCCUPANT LOAD LEGEND

	BUSINESS	1 PERSON / 150 SF GROSS
	ASSEMBLY	1 PERSON / 15 SF NET
	BUILDING EQUIPMENT	1 PERSON / 500 SF GROSS
	BUSINESS COLLABORATION SPACE, <= 450 SF	1 PERSON / 30 SF GROSS

EGRESS PATH

CP:100|300' — CP — EGRESS PATH

TRAVEL DISTANCE

COMMON PATH OF TRAVEL

EXIT DOOR

COMMON PATH TERMINATION POINT

FIRE BARRIER LEGEND

SMOKE PARTITION

1 HR FIRE BARRIER

2 HR FIRE BARRIER

FIRE EXTINGUISHER

FE:BR

-FE: FIRE EXTINGUISHER
-BR: BRACKET MOUNTED

A:B:C TYPE DRY CHEMICAL 4A:20B:C

PLAN NORTH

0 8' 16' 24'

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE

A1 SECOND FLOOR - LIFE SAFETY PLAN
SCALE: 3/32" = 1'-0"

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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SECOND FLOOR - LIFE SAFETY PLAN

SHEET ID
AG003_5
SHEET 6 OF 112

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

CUI

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

GENERAL NOTES:

1. LEAD BASED PAINT MUST BE ASSUMED TO BE PRESENT ON EXISTING PAINTED COMPONENTS AND LEAD SOLDER JOINTS MUST BE ASSUMED TO BE PRESENT WITHIN CONNECTION POINTS ON EXISTING SEWER LINES THROUGHOUT THE MODIFICATION AREAS. ALL CONTRACTORS MUST COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION 29 CODE OF FEDERAL REGULATIONS (CFR) 1926.62 LEAD IN CONSTRUCTION STANDARD PRIOR TO ANY IMPACT OR DISTURBANCE OF THESE MATERIALS. SOME OF THE REQUIREMENTS INCLUDED WITHIN THIS STANDARD INCLUDE: INITIAL EXPOSURE MONITORING, PROVIDING PERSONAL PROTECTIVE EQUIPMENT (PPE) AND HAND WASHING FACILITIES. IN ADDITION, ALL WORK MUST BE CONDUCTED IN ACCORDANCE WITH WPAFB GENERAL ENVIRONMENTAL PROTECTION REQUIREMENTS SECTION 01 35 43.

2. THE CONTRACTOR (HAZARDOUS MATERIALS ABATEMENT CONTRACTOR) IS RESPONSIBLE FOR FOLLOWING AND ADHERING TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE SET FORTH BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA), OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA), AND OHIO ENVIRONMENTAL PROTECTION AGENCY. CONTRACTOR MUST MAINTAIN A VALID AND CURRENT LICENSE IN THE STATE OF OHIO AS AN ASBESTOS ABATEMENT CONTRACTOR.

3. IF A MATERIAL THAT WAS NOT PART OF THE ASBESTOS ASSESSMENT CONDUCTED FOR THIS PROJECT IS DISCOVERED DURING THE COURSE OF RENOVATION THEN THE CONTRACTOR IS RESPONSIBLE TO HAVE THE MATERIAL ANALYZED TO DETERMINE IF IT CONTAINS ASBESTOS.

4. THE CONTRACTOR MUST DECONTAMINATE ALL BUILDING MATERIALS, WHICH BECOME CONTAMINATED OR ARE DISTURBED FROM ASBESTOS REMOVAL.

5. THE CONTRACTOR MUST COORDINATE ALL ON-SITE WORK WITH THE ARCHITECT / ENGINEER, CONSTRUCTION MANAGER, GENERAL AND SUB-CONTRACTORS, AND WPAFB TO FACILITATE THE PROMPT COMPLETION OF ALL ASPECTS OF THE MODIFICATION PROJECT.

6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING ALL NON-ACM BUILDING MATERIALS TO ACCESS ACM. ALL SELECTIVE DEMOLITION WORK PRACTICES MUST OCCUR IN A FULL-CONTAINMENT IN THE EVENT THAT ACM BECOMES DAMAGED VIA DEMOLITION WORK PRACTICES.

7. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND CLEANUP OF ALL PCB'S AND EQUIPMENT CONTAINING PCB'S IDENTIFIED IN ENVIRONMENTAL SURVEY REPORT, ALL WORK MUST BE IN ACCORDANCE WITH SPECIFICATION SECTIONS 01 35 43.

8. THE CONTRACTOR IS RESPONSIBLE TO COMPLETE ALL REMOVAL, DISPOSAL, AND/OR DECONTAMINATION OF ALL UNIVERSAL WASTE SPECIFIED IN THE SURVEY REPORT (REFER TO 01 35 43), ITEMS CAN INCLUDE BUT ARE NOT LIMITED TO HALON'S, MERCURY CONTAINING LAMPS, MERCURY CONTAINING SWITCHES, FIRE AND/OR SMOKE DETECTORS WITH RADIOACTIVE SOURCES, NICAD, LITHIUM ION, AND LEAD-ACID BATTERIES, AND EQUIPMENT CONTAINING OZONE-DEPLETING REFRIGERANTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING AND ADHERING TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE SET FORTH BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) AND OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA), ALL WORK MUST BE IN ACCORDANCE WITH SPECIFICATION SECTION 01 35 43.

9. SPECIAL CARE SHOULD BE TAKEN BY **ALL CONTRACTORS** WHEN WORKING NEAR EXISTING ELECTRIC, WATER, GAS, AND STEAM LINES.

10. ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43.

11. COORDINATE DISPOSITION OF EXCESS RADIOACTIVE COMMODITIES, E.G. IONIZATION TYPE SMOKE DETECTORS, RADIOLUMINESCENT EMERGENCY EXIT SIGNS, OR ANY OTHER RADIOACTIVE COMMODITY AND/OR RADIOACTIVE CONTAMINANT THROUGH THE INSTALLATION RADIATION SAFETY OFFICER, 88 OMR/SGXB.

12. ALL METAL AND WIRING SHALL BE RECYCLED AT THE WPAFB BASE RECYCLING CENTER. THE WPAFB RECYCLING CENTER IS AVAILABLE FOR CONTRACTOR USE TO REDUCE WASTE DISPOSAL. ALL RECYCLABLE METAL IS TO BE RECYCLED THROUGH THE BASE RECYCLING CENTER. ALL RECYCLING MUST BE ACCOMPLISHED IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43. CONTACT WPAFB RECYCLING PROGRAM MANAGER AT 937-257-5060 TO CONFIRM WHAT MATERIALS ARE RECYCLABLE AND TO COORDINATE TURN-IN. THE CONTRACTOR SHALL SUBMIT A QUARTERLY SUMMARY REPORT TO THE GOVERNMENT CONTRACT REPRESENTATIVE IAW WPAFB SPECIFICATION SECTION 01 35 43 STATING (1) THE COST TO RECYCLE AND THE TONNAGE OF CONSTRUCTION AND DEMOLITION MATERIALS RECYCLED, (2) THE COST TO DIVERT/REUSE THE TONNAGE OF CONSTRUCTION AND DEMOLITION MATERIALS DIVERTED/REUSE, (3) THE COST TO MULCH AND THE TONNAGE AND COST OF CONSTRUCTION AND DEMOLITION MATERIALS MULCHED, (4) THE COST FOR WASTE-TO-ENERGY AND THE TONNAGE OF CONSTRUCTION AND DEMOLITION MATERIALS CONVERTED FROM WASTE-TO-ENERGY, (5) THE COST TO LANDFILL AND THE TONNAGE OF CONSTRUCTION AND DEMOLITION MATERIALS LAND-FILLED, (6) THE COST TO INCINERATE AND THE TONNAGE OF CONSTRUCTION AND DEMOLITION MATERIALS INCINERATED, AND (7) EXPLANATION OF THE DIVERSION RATE IF LESS THAN 60%. THE QUARTERLY SUMMARY REPORTS SHALL BE RECEIVED ON APRIL 7, JULY 7, OCTOBER 7, AND JANUARY 7 COVERING THE THREE MONTHS PRIOR. THE QUARTERLY SUMMARY REPORTS SHALL BE ON THE WPAFB DIVERSION FORM. FOR ADDITIONAL INFORMATION CONTACT THE RECYCLING PM, BRIAN ROBINSON, AT 937-257-5060 OR BRIAN.ROBINSON.5@US.AF.MIL.

13. TURN-IN ALL MERCURY CONTAINING DEVICES, SWITCHES AND THERMOSTATS TO 88 CEG/CEIE IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43 FOR RECYCLING.

14. TURN-IN ALL MERCURY CONTAINING LAMPS TO 88 CEG/CEIE IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43.

15. TURN-IN ALL PCB CONTAINING LIGHT BALLAST TO 88 CEG/CEIE IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43.

16. REMOVE AND DISPOSE OF ANY ASBESTOS CONTAINING MATERIAL IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43.

17. RECOVER AND RECLAIM ANY REFRIGERANT IN ACCORDANCE WITH WPAFB SPECIFICATION SECTION 01 35 43.

18. ANY USE OF RADIOACTIVE MATERIALS BY THE CONTRACTOR, INCLUDING MOISTURE DENSITY GAUGES, MUST BE APPROVED BY THE WPAFB RADIATION SAFETY OFFICER A MINIMUM OF 30 CALENDAR DAYS PRIOR TO BEING BROUGHT ONTO WPAFB. THIS REQUIREMENT IS FROM WPAFB 40-201.

19. NO ASBESTOS-CONTAINING MATERIAL MUST BE INSTALLED DURING THIS PROJECT.

20. 30 DAYS PRIOR TO START OF WORK, THE CONTRACTOR SHALL TAKE A REPRESENTATIVE SAMPLE OF THE HVAC SYSTEM WATER TO DETERMINE WHETHER IT CAN BE DRAINED DIRECTLY INTO THE SANITARY SEWER. ANALYZE THE WATER TO DETERMINE THE TOTAL LEVEL OF EACH OF THE FOLLOWING: ARSENIC, CADMIUM, CHROMIUM, COPPER, CYANIDE, LEAD, MERCURY, MOLYBDENUM, NICKEL, SELENIUM, SILVER, ZINC, SULFIDE, OIL AND GREASE, PHOSPHORUS, COD AND BOD. THE LAB PERFORMING THE ANALYSES MUST BE CERTIFIED BY OHIO EPA TO ANALYZE FOR THESE PARAMETERS. PROVIDE A COPY OF THE LAB'S REPORT TO THE CONTRACTING OFFICER, WHO WILL IN TURN FORWARD IT TO 88 CEG/CEIEA FOR A DETERMINATION ON THE WASTEWATER DISPOSAL METHOD.

21. ALL WINDOW AND DOOR FRAME CAULKING AND GLAZING WILL BE TREATED AS CONTAINING ASBESTOS UNLESS TESTING PROVES IT TO BE ASBESTOS FREE.

22. THE GENERATION OF FUGITIVE EMISSIONS MUST BE KEPT TO A MINIMUM USING APPROVED DUST SUPPRESSING METHODS SUCH AS WATER SPRAYS ON AREA OF HIGH DUST GENERATION. FOR ADDITIONAL INFORMATION PLEASE CONTACT THE 88 CEG/CEIEA AIR PM CHET POWERS AT 937-257-3349 OR BY EMAIL AT CHET.POWERS@US.AF.MIL.

23. ALL HAZARDOUS MATERIALS MUST BE PROPERLY MANAGED, LABELED AND STORED. ANY HAZARDOUS WASTE GENERATED FROM THIS CONSTRUCTION ACTIVITY MUST BE PROPERLY CHARACTERIZED, LABELED AND MANAGED BY TRAINED EMPLOYEE OF THE CONTRACTOR WITH KNOWLEDGE OF THE ACTIVITY / PROCESS WHERE THE WASTE WAS GENERATED. ALL HAZARDOUS WASTE WILL BE TURNED OVER TO THE GOV'T FOR DISPOSAL. IN ADDITION PROPER COORDINATION IS NEEDED WITH 88 CEG/CEIEC. QUESTIONS CONCERNING THE REQUIREMENTS FOR STORAGE AND DISPOSAL OF ANY HAZARDOUS MATERIALS CAN BE ADDRESSED BY THE 88 CEG/CEIEC HAZARDOUS MATERIALS PM AT KAREN.BEASON@US.AF.MIL OR 937-257-5899 OR 88 CEG/CEIEC HAZARDOUS WASTE PM, MARIA.CRUSET@US.AF.MIL OR 937-257-0023.

24. UPON COMPLETION, ALL EXPOSED SURFACES IN EACH ABATEMENT WORK AREA MUST BE MADE FREE OF ALL VISIBLE DUST AND DEBRIS VIA THE USE AND APPLICATION OF THE ENGINEERING AND WORK PRACTICE CONTROLS AND PROCEDURES SPECIFIED. THE ABSENCE OF FIBERS IN EACH WORK AREA WILL BE VERIFIED AND DOCUMENTED BY USE OF AN AGGRESSIVE AIR SAMPLING METHOD, PHASE-CONTRAST MICROSCOPY (PCM) AND TRANSMISSION ELECTRON MICROSCOPY (TEM). THE CONTRACTOR'S FAILURE TO MEET THE SPECIFIED CLEARANCE CRITERIA WILL REQUIRE HIM TO RECLEAN AND RETEST AT HIS OWN EXPENSE.

25. ALL ASBESTOS ABATEMENT WORK MAY BE DONE DURING NORMAL WORKING HOURS UNLESS THE AREA IS A COMMON ACCESS EGRESS CORRIDOR AND THEN THE WORK MUST BE DONE AFTER NORMAL WORKING HOURS (1600-2400) OR WEEKENDS.

26. THE OFFICE AREAS OUTSIDE OF CONSTRUCTION WILL REMAIN OCCUPIED BY WPAFB DURING CONSTRUCTION. CONTRACTOR MUST PROVIDE CRITICAL BARRIER TO PREVENT AIRBORNE ASBESTOS IN A WORK AREA FROM MIGRATING TO AN ADJACENT AREA. SEE H-102_5 FOR CONSTRUCTION AREA LIMITS.

27. CONTRACTOR MUST SEAL AND PROTECT ALL HVAC SYSTEM, SUPPLY AND RETURN AIR CONNECTING DUCT. ALL AIR HANDLING UNITS WILL NEED TO BE ISOLATED OR SHUT DOWN TO MEET SPECIFICATION SECTION 01 35 43. ALL VENTILATION EXHAUST AIR TO THE OUTSIDE MUST BE HEPA FILTERED DURING ABATEMENT.

28. ALL EXISTING OFFICE FURNITURE AND EQUIPMENT MUST BE REMOVED AND STORED BY CONTRACTOR PRIOR TO ABATEMENT WORK.

29. PRIOR TO BEGINNING MODIFICATION TO BLDG. 856 NOTIFICATION OF DEMOLITION AND MODIFICATION IS REQUIRED TO THE REGIONAL AIR POLLUTION AND CONTROL AGENCY (RAPCA) A MINIMUM OF 10 CALENDAR DAYS PRIOR TO BEGINNING CONSTRUCTION.

30. SOIL DISTURBANCE DURING THIS PROJECT, INCLUDING EQUIPMENT STAGING AREAS, WILL REQUIRE EROSION CONTROL MEASURES. FOR PROJECTS THAT DISTURB LESS THAN AN ACRE OF SOIL, AN EROSION CONTROL PLAN IS REQUIRED PRIOR TO SOIL DISTURBANCE. FOR PROJECTS THAT DISTURB MORE THAN AN ACRE, A NOTICE OF INTENT (NOI) MUST BE APPROVED BY THE OHIO EPA PRIOR TO ANY SOIL BEING DISTURBED AS WELL AS A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) APPROVED BY 88 CEG/CEIEA. PLEASE CONTACT THE 88 CEG/CEIEA WATER PM MIKE VAUGHN, (937-257-8028 OR MICHAEL.VAUGHN.3@US.AF.MIL) FOR ADDITIONAL INFORMATION.

31. IF ANY REFRIGERANT-CONTAINING EQUIPMENT SCHEDULED FOR NEW INSTALLATION, INCLUDING WATER COOLERS, THEY MUST UTILIZE AN HFC REFRIGERANT. CFC AND HCFC REFRIGERANTS ARE NOT AUTHORIZED FOR NEW EQUIPMENT INSTALLATION. FOR ADDITIONAL INFORMATION PLEASE CONTACT THE 88 CEG/CEIEA AIR PROGRAM MR. CHET POWERS AT 937-257-3349 OR CHET.POWERS@US.AF.MIL.

32. SUBMIT A REFRIGERANT RECORD WITHIN ONE DAY OF COMPLETION OF WORK INVOLVING REFRIGERANTS TO THE 88 CEG/CEIEA AIR PROGRAM, CHET POWERS AT 937-257-3349 OR CHET.POWERS@US.AF.MIL.

FOR REFERENCE ONLY

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: N. LASHLEY
DRAWN BY: A. TUNGSETH
CHECKED BY: G. JOHNSON
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

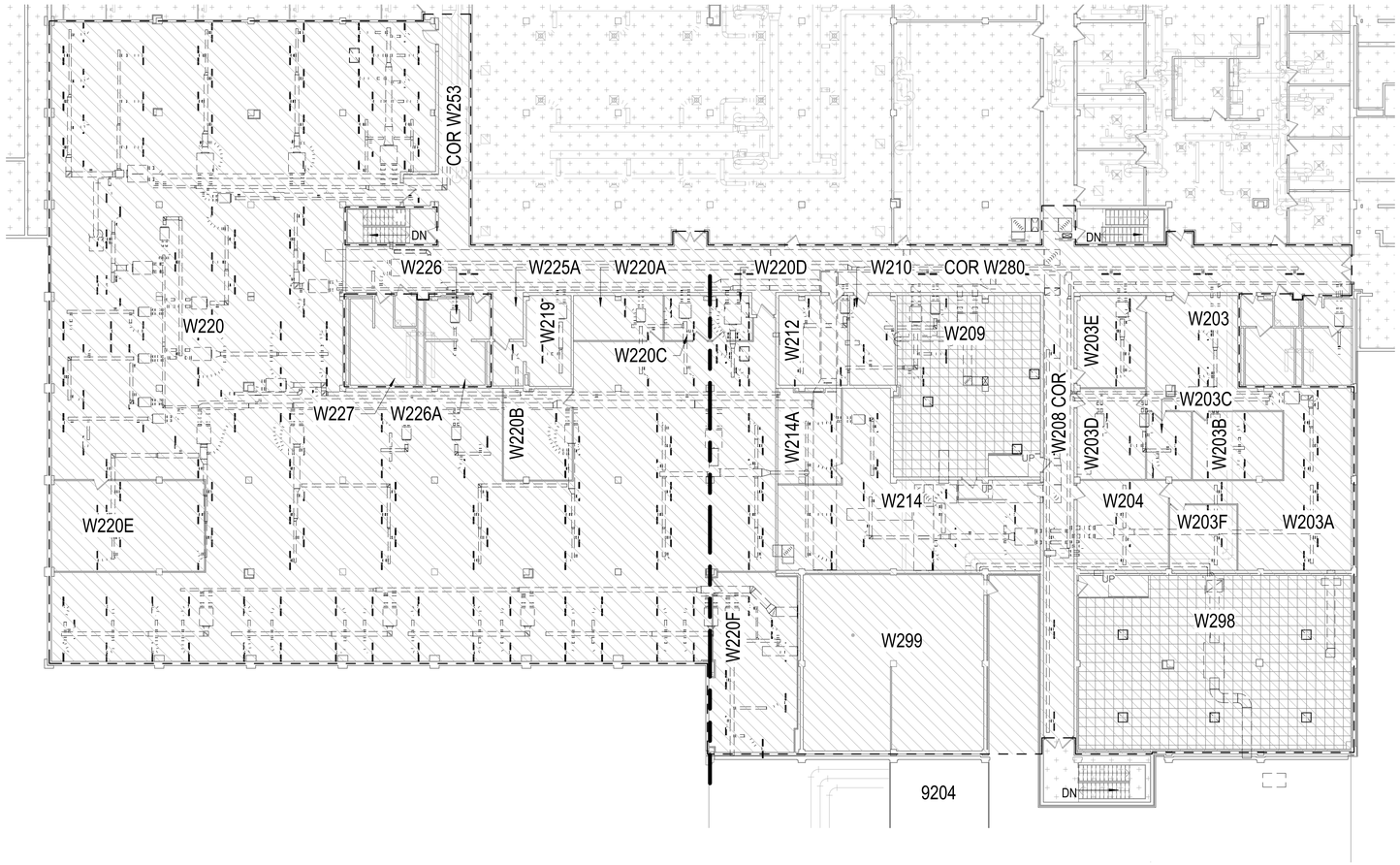
BURNS McDONNELL.
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HAZARDOUS BUILDING MATERIALS PLAN NOTES

SHEET ID
H-101_5
SHEET 7 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



LEGEND:

- CONSTRUCTION AREA LIMITS
- PROJECT AREA

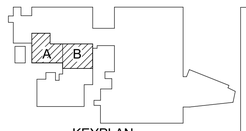
SCOPE LEGEND

- NOT IN SCOPE

A1 HAZARDOUS BUILDING MATERIALS - ACM
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 32'
SCALE IN FEET



KEYPLAN
NOT TO SCALE

FOR REFERENCE ONLY

GENERAL NOTES:

1. APPROXIMATELY 1,300 SQUARE FEET OF CATEGORY II ACM DUCT INSULATION WRAP AND ADHESIVE ASSOCIATED WITH AHU-5 IS ANTICIPATED TO BE REMOVED AS PART OF THIS PROJECT.
2. DAMAGE PIPE JOINTS AND INSULATION AROUND THE PIPES WERE OBSERVED IN MECHANICAL ROOM W299 (PIPING ASSOCIATED WITH AHU-5). 5 PIPE JOINTS/FITTINGS AND 36 LINEAR FEET OF CATEGORY II ACM PIPING WERE NOTED IN THIS LOCATION AND WILL BE REMOVED AS PART OF THIS PROJECT.
3. THERE IS 10 SQUARE FEET OF ASSUMED ACM VIBRATION CLOTH AND 10 SQUARE FEET OF ASSUMED ACM GASKETS ASSOCIATED WITH THE REMOVAL OF AHU-5.
4. THERE IS ONE ELECTRICAL BOX ASSOCIATED WITH AHU-5 WHICH CONTAINS ~100 SQUARE FEET OF TRANSITE PANEL THAT WILL BE REMOVED AS PART OF THIS PROJECT.
5. CATEGORY II ACM MASTIC ASSOCIATED WITH AHU-5 WAS DETERMINED TO BE PRESENT WITHIN/ON THE UNIT. THE FOLLOWING WERE TYPES OF MASTIC IDENTIFIED:

   • YELLOW DUCT MASTIC – ~15 SQUARE FEET APPLIED ON AHU-5 DUCT TRANSITION SEAM
   • GRAY DUCT MASTIC – ~25 SQUARE FEET APPLIED ON AHU-5 SEAMS OF THE ENTIRE UNIT

   THESE MATERIALS WILL NEED TO BE REMOVED AS PART OF THIS MODIFICATION PROJECT.
6. CATEGORY II ACM WHITE ADHESIVE (~71 SQUARE FEET) AND GRAY CAULK (~10.25 SQUARE FEET) WERE DETERMINED TO BE PRESENT ON THE VAV BOXES THROUGHOUT THE MODIFICATION AREAS AND WILL NEED TO BE REMOVED AS PART OF THIS MODIFICATION PROJECT.
7. REMOVAL AND DISPOSAL IN ACCORDANCE WITH SPECIFICATION SECTION 01 35 43.
8. ASBESTOS CONTAMINATED BUILDING COMPONENTS ARE NOT REGULATED ASBESTOS CONTAINING MATERIALS (RACM). HOWEVER, ALL MODIFICATION / DEMOLITION WORK IMPACTING THESE COMPONENTS MUST BE PERFORMED IN ACCORDANCE WITH OSHA ASBESTOS STANDARD 29 CFR 1926.1101.

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

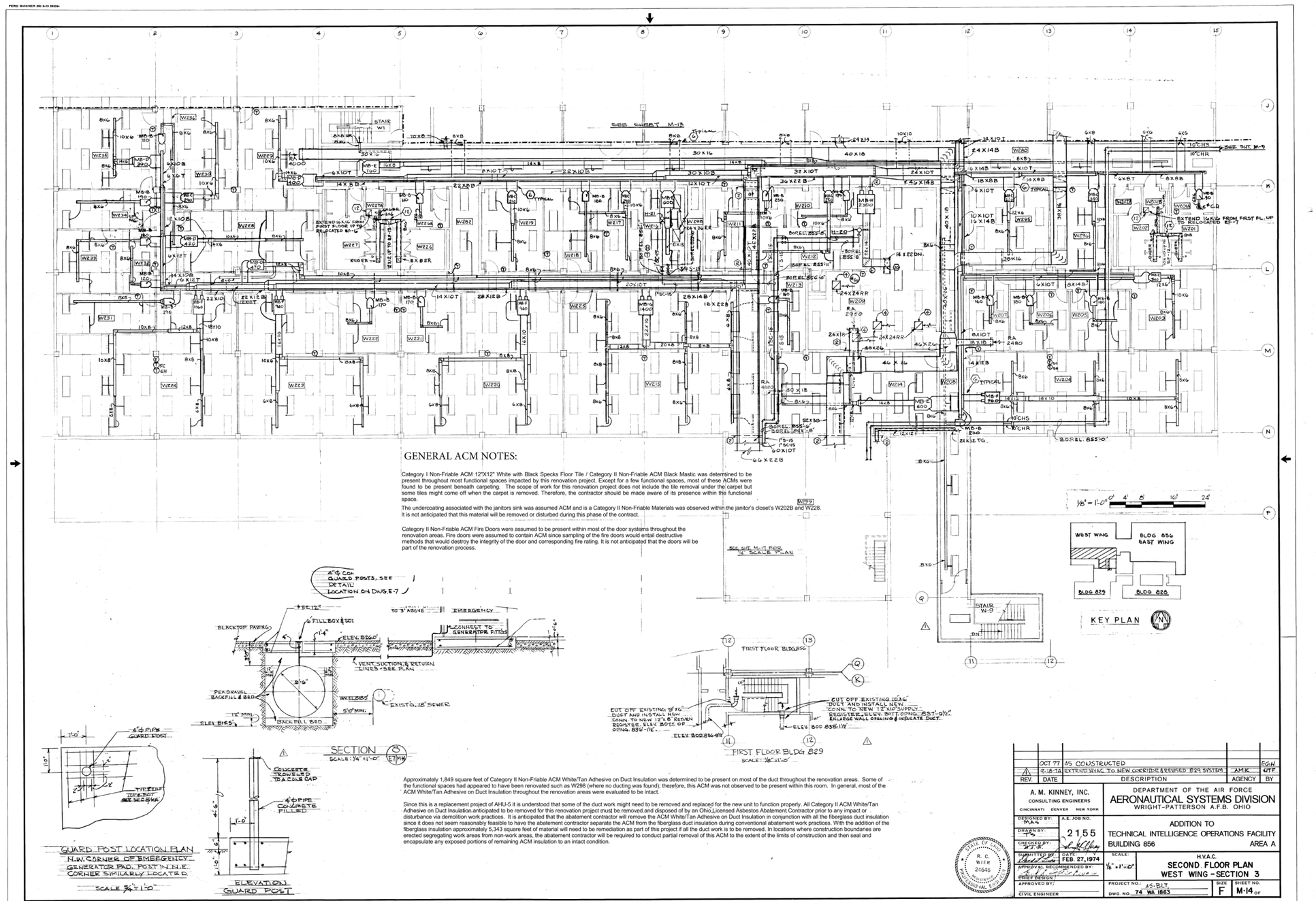
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HAZARDOUS BUILDING MATERIALS SECOND FLOOR PLAN - ACM

SHEET ID
H-102_5
SHEET 8 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)



GENERAL ACM NOTES:

Category I Non-Friable ACM 12"X12" White with Black Specks Floor Tile / Category II Non-Friable ACM Black Mastic was determined to be present throughout most functional spaces impacted by this renovation project. Except for a few functional spaces, most of these ACMs were found to be present beneath carpeting. The scope of work for this renovation project does not include the tile removal under the carpet but some tiles might come off when the carpet is removed. Therefore, the contractor should be made aware of its presence within the functional space.

The undercoating associated with the janitors sink was assumed ACM and is a Category II Non-Friable Materials was observed within the janitor's closet's W202B and W228. It is not anticipated that this material will be removed or disturbed during this phase of the contract.

Category II Non-Friable ACM Fire Doors were assumed to be present within most of the door systems throughout the renovation areas. Fire doors were assumed to contain ACM since sampling of the fire doors would entail destructive methods that would destroy the integrity of the door and corresponding fire rating. It is not anticipated that the doors will be part of the renovation process.

Approximately 1,849 square feet of Category II Non-Friable ACM White/Tan Adhesive on Duct Insulation was determined to be present on most of the duct throughout the renovation areas. Some of the functional spaces had appeared to have been renovated such as W298 (where no ducting was found); therefore, this ACM was not observed to be present within this room. In general, most of the ACM White/Tan Adhesive on Duct Insulation throughout the renovation areas were evaluated to be intact.

Since this is a replacement project of AHU-5 it is understood that some of the duct work might need to be removed and replaced for the new unit to function properly. All Category II ACM White/Tan Adhesive on Duct Insulation anticipated to be removed for this renovation project must be removed and disposed of by an Ohio Licensed Asbestos Abatement Contractor prior to any impact or disturbance via demolition work practices. It is anticipated that the abatement contractor will remove the ACM White/Tan Adhesive on Duct Insulation in conjunction with all the fiberglass duct insulation since it does not seem reasonably feasible to have the abatement contractor separate the ACM from the fiberglass duct insulation during conventional abatement work practices. With the addition of the fiberglass insulation approximately 5,343 square feet of material will need to be remediation as part of this project if all the duct work is to be removed. In locations where construction boundaries are erected segregating work areas from non-work areas, the abatement contractor will be required to conduct partial removal of this ACM to the extent of the limits of construction and then seal and encapsulate any exposed portions of remaining ACM insulation to an intact condition.

REV.	DATE	DESCRIPTION	AGENCY	BY
	OCT 77	AS CONSTRUCTED		EGH
1	9-18-74	EXTEND HVAC TO NEW CORRIDOR & REVISED B29 SYSTEM	AMK	MTF

A. M. KINNEY, INC. CONSULTING ENGINEERS — CINCINNATI DENVER NEW YORK

DESIGNED BY: MAS
DRAWN BY: MAS
CHECKED BY: M.F.F.
SUBMITTED BY: [signature] DATE: FEB. 27, 1974
APPROVAL RECOMMENDED BY: [signature] CHIEF DESIGN
APPROVED BY: CIVIL ENGINEER

A.E. JOB NO. 2155

R. C. WIER 21648 REGISTERED PROFESSIONAL ENGINEER

DEPARTMENT OF THE AIR FORCE
AERONAUTICAL SYSTEMS DIVISION
WRIGHT-PATTERSON A.F.B. OHIO

ADDITION TO
TECHNICAL INTELLIGENCE OPERATIONS FACILITY
BUILDING 856 AREA A

H.V.A.C.
SECOND FLOOR PLAN
WEST WING - SECTION 3

SCALE: 1/8" = 1'-0"
PROJECT NO.: 45-BLT
DWG. NO. 74 WA 1863
SIZE: F
SHEET NO.: M-14 OF

SEQUENCE NO. 172 OF 206

102172

FOR REFERENCE ONLY

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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SIZE: 34X22

ISSUE DATE: 02-24-23
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LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL
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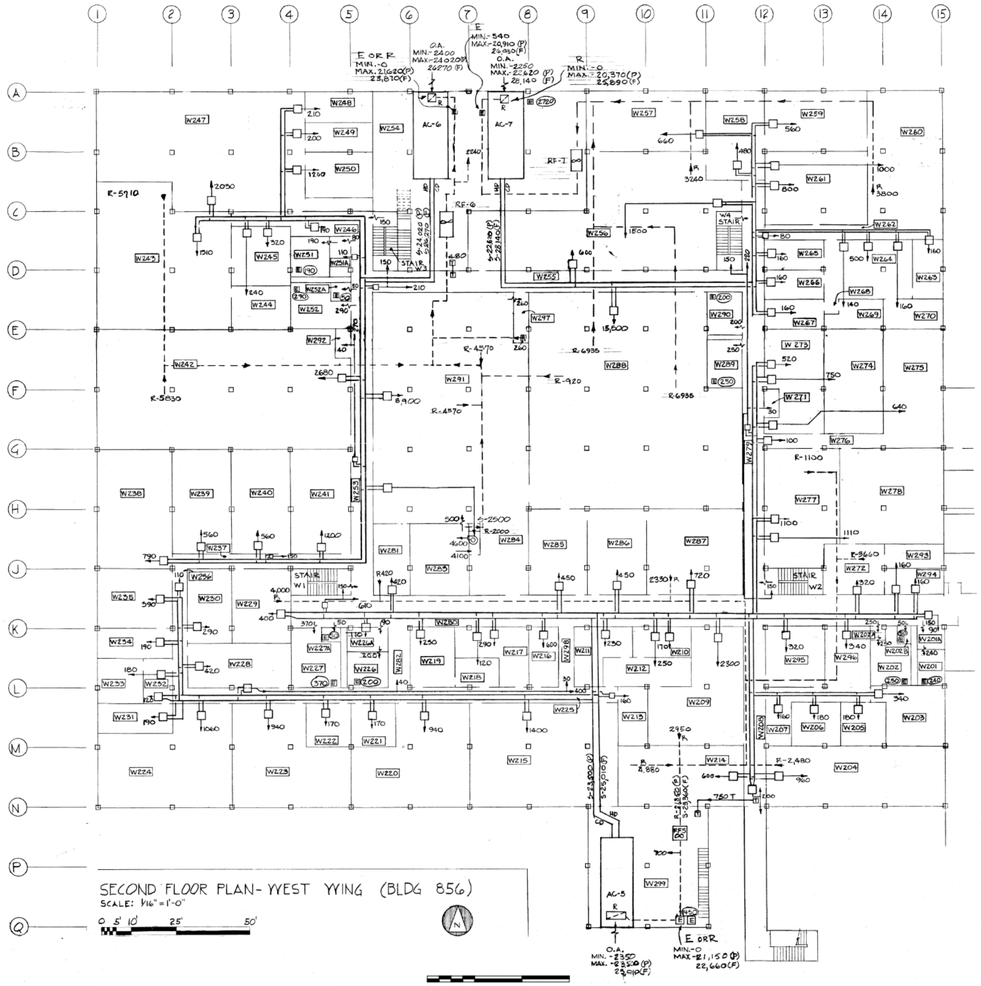
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

REFERENCE - SECOND FLOOR PLAN WEST WING

SHEET ID
H-103_5
SHEET 9 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



SECOND FLOOR PLAN- WEST WING (BLDG 856)

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

0 5' 10' 25' 50'

GENERAL SHEET NOTES

APPROXIMATLY 1,300 SQUARE FEET OF CATEGORY II ACM DUCT INSULATION WRAP AND ADHESIVE ASSOICATED WITH AHU #5 IS ANTICIPATED TO BE REMOVED AS PART OF THIS PROJECT.

DAMAGE PIPE JOINTS AND INSULATION AROUND THE PIPES WERE OBSERVED IN MECHANICAL ROOM W299 (PIPING ASSOCIATED WITH AHU#5). 5 PIPE JOINTS/FITTINGS AND 36 LINEAR FEET OF CATEGORY II ACM PIPING WERE NOTED IN THIS LOCATION AND WILL BE REMOVED AS PART OF THIS INVESTIGATION.

THERE IS 10 SQUARE FEET OF ASSUMED ACM VIBRATION CLOTH ASSOCIATED WITH THE REMOVAL OF AHU-5.

THERE IS ONE ELECTRICAL BOX ASSOCIATED WITH AHU-5 WHICH CONTAINS ~100 SQUARE FEET OF TRANSITE PANEL THAT WILL BE REMOVED AS PART OF THIS PROJECT.

CATEGORY II ACM MASTIC ASSOCIATED WITH AHU #5 WAS DETERMINED TO BE PRESENT WITHIN/ON THE UNIT. THE FOLLOWING WERE TYPES OF MASTIC IDENTIFED:

- YELLOW DUCT MASTIC – ~15 SQUARE FEET APPLIED ON AHU #5 DUCT TRANSITION SEAM
- GRAY DUCT MASTIC – ~25 SQUARE FEET APPLIED ON AHU #5 SEAMS OF THE ENTIRE UNIT

THESE MATERILAS WILL NEED TO BE REMOVED AS PART OF THIS RENOVATION PROJECT.

CATEGORY II ACM WHITE ADHESIVE (~71 SQUARE FEET) AND GRAY CAULK (~10.25 SQUARE FEET) WERE DETERMINED TO BE PRESENT ON THE VAV BOXES THROUGHOUT THE RENOVATION AREAS AND WILL NEED TO BE REMOVED AS PART OF THIS RENOVATION PROJECT.

AC-6

ROOM NO.	SUPPLY AIR DEVICES QUANTITY	TYPE	CFM EACH DESIGN/ACTUAL	RETURN AIR DEVICES NO.	TYPE	CFM EACH DESIGN/ACTUAL	EXHAUST AIR DEVICES NO.	TYPE	CFM EACH DESIGN/ACTUAL
W237	3	A	50						
W238	11	A	72	20	C	39			
W239	7	A	80	14	C	40			
W240	7	A	80	14	C	40			
W241	14	A	86	14	C	40			
				1	F	640			
W242	35	A	77	67	C	40			
W243	22	A	69	41	C	37			
W244	4	A	60	6	C	40			
W245	4	A	80	8	C	40			
W246	3	A	63						
W247	29	A	70	51	C	40			
W248	3	A	70	4	C	53			
W249	3	A	67	4	C	50			
W250	8	B	150	8	C	50			
				1	F	800			
W251							1	G	190
W251A	1	E	110						
W252							1	G	290
W252A							1	G	50
W253	5	A	54						
W254	1	K	2240				1	G	2720
							1	H	480
W255	4	A	53				1	H	480
W293	14	D	328	20	N	205			
* W291	46	M	194	81	C	50			
				4	F	1270			
W292	1	K	40						
W297							1	F	260
STAIR W3	1	K	15						

AC-7

ROOM NO.	SUPPLY AIR DEVICES QUANTITY	TYPE	CFM EACH DESIGN/ACTUAL	RETURN AIR DEVICES NO.	TYPE	CFM EACH DESIGN/ACTUAL	EXHAUST AIR DEVICES NO.	TYPE	CFM EACH DESIGN/ACTUAL
W256	8	A	75	52	C	40			
	19	A	79						
W257	8	A	83	16	C	41			
W258	6	A	80	12	C	40			
W259	9	A	42	14	C	35			
W260	13	A	77	25	C	100			
W261	10	A	60	18	C	100			
W262	1	A	80	6	F	160			
W263	3	A	53	4	C	40			
** W264	8	A	63	13	C	38			
W265	3	A	53	4	C	40			
W266	3	A	53	4	C	40			
W267	3	A	53	4	C	40			
W269	3	A	46	3	C	46			
W270	3	A	53	4	C	40			
	100	M	155	92	C	40			
W288				8	F	400			
				9	F	958			

* INCLUDES W284

** INCLUDES W268

AC-5

ROOM NO.	SUPPLY AIR DEVICES QUANTITY	TYPE	CFM EACH DESIGN/ACTUAL	RETURN AIR DEVICES NO.	TYPE	CFM EACH DESIGN/ACTUAL	EXHAUST AIR DEVICES NO.	TYPE	CFM EACH DESIGN/ACTUAL
W201							1	G	240
W201A	1	E	90						
W202							1	G	250
W202A									
W201B							1	G	50
W203	1	A	85	8	C	43			
W204	12	A	80	24	C	40			
W205	4	A	45	5	C	36			
W206	4	A	45	4	C	45			
W207	2	A	80	4	C	40			
⚠1 W208	5	A	90				1	H	750
	15	M	155	18	C	40			
W209				4	F	395			
W210	2	A	85	4	C	43			
W211	4	A	58	6	C	38			
W212	4	A	63	6	C	42			
W213	2	A	80	4	C	40			
W214	8	A	75	16	C	37			
W215	18	A	78	35	C	40			
				4	C	40			
W216	4	B	150	2	F	220			
W217	5	A	58	7	C	42			
W218	2	A	60	3	C	40			
W219	4	A	63	6	C	42			
W220	10	A	78	24	C	39			
	1	B	160						
W221	2	A	85	4	C	43			
W222	2	A	85	5	C	34			
W223	10	A	78	23	C	41			
	1	B	160						
W224	11	A	82	27	C	39			
	1	B	164						
W225	7	A	57						
W226							1	G	200
W226A	1	E	110						
W227							1	G	370
W227A							1	G	50
W228	6	A	70	11	C	38			
W229	5	A	80	10	C	40			
W230	5	A	58	7	C	41			
W231	3	A	63	5	C	38			
W232	2	A	60	3	C	40			
W233	3	A	60	4	C	45			
W234	3	A	63	5	C	38			
W235	1	A	78	10	C	39			
	1	B	156						
W236	2	A	55						
W271	1	K	30						
W272	4	A	80	6	C	53			
W273	7	A	74	13	F	160			
W274	10	A	75	14	C	35			
W275	8	A	80	2	F	100			
W276	2	A	50	16	C	40			
W277	5	B	137	19	C	40			
				2	F	170			
W278	14	A	79	21	C	40			
W279	4	A	55	2	F	135			
W280	10	A	61						
W281	2	A	70	4	C	40			
	2	B	140	1	F	240			
W282	1	A	40						
W285	4	A	75	10	C	45			
	1	B	150						
W286	4	A	75	10	C	45			
	1	B	150						
W287	10	A	72	15	C	48			
W289							1	G	250
W290							1	G	200
W293	2	A	80	4	C	40			
W294	2	A	80	2	F	40			
W295	4	A	80	8	C	40			
W296	3	B	113	9	C	38			
W298	1	A	30						
W277	1	K	700				1	G	1450
							1	H	750
STAIR W1	1	B	150						
STAIR W2	1	B	150						
STAIR W4	1	B	150						

LEGEND
(AIR FLOW DIAGRAMS ONLY)

- S SUPPLY AIR
- T TRANSFER AIR
- HD HOT DECK SUPPLY AIR
- CD COLD DECK SUPPLY AIR
- E EXHAUST (200)
- R RETURN-(RETURN THRU EACH LIGHTING TROFFER UNLESS OTHERWISE INDICATED)
- INDICATES MIXING BOXES FOR AREAS SHOWN(NOT NECESSARILY THE NUMBER OF BOXES)
- O.A. OUTSIDE AIR
- RF RETURN FAN
- AC AIR CONDITIONING UNIT
- W299 ROOM NUMBER
- 1400 NUMBERS SHOWN ARE CFM (CUBIC FEET PER MINUTE OF AIR)
- P PRESENT DESIGN
- F FUTURE DESIGN(EQUIPMENT AND MAIN DUCTS SIZED FOR 25% FUTURE INCREASE OF INTERNAL EQUIPMENT HEAT LOADS ONLY BRANCH DUCT SYSTEMS SIZED FOR PRESENT.)

REV.	DATE	DESCRIPTION	AGENCY	BY
	OCT 77	AS CONSTRUCTED		EGH
⚠1	1-15-14	MODIFIED SUPPLY TO CORRIDOR EXTENSION & STAIR #3	AMK	WTF

A. M. KINNEY, INC. CONSULTING ENGINEERS — CINCINNATI DENVER NEW YORK

DEPARTMENT OF THE AIR FORCE
AERONAUTICAL SYSTEMS DIVISION
WRIGHT-PATTERSON A.F.B. OHIO

DESIGNED BY: L.D. | A.E. JOB NO.: 2155
DRAWN BY: M.C.
CHECKED BY: R.C.W.
SUBMITTED BY: [signature] DATE: FEB 27,1974
APPROVAL RECOMMENDED BY: [signature]
CHIEF DESIGN
APPROVED BY:
CIVIL ENGINEER

ADDITION TO
TECHNICAL INTELLIGENCE OPERATIONS FACILITY
BUILDING 856 AREA A

SCALE: NONE
H.V.A.C.
AIR FLOW DIAGRAM
SECOND FLOOR-WEST WING

PROJECT NO.: AS-BLT.
DWG. NO. 74 WA 1863
SIZE: F
SHEET NO.: M-5 OF

STATE OF OHIO — R. C. WEIR — 24646 — PROFESSIONAL ENGINEER

SEQUENCE NO. 163 OF 206

102163

FOR REFERENCE ONLY

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

DESIGNED BY: N. LASHLEY
DRAWN BY: A. TUNGSSETH
CHECKED BY: G. JOHNSON
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

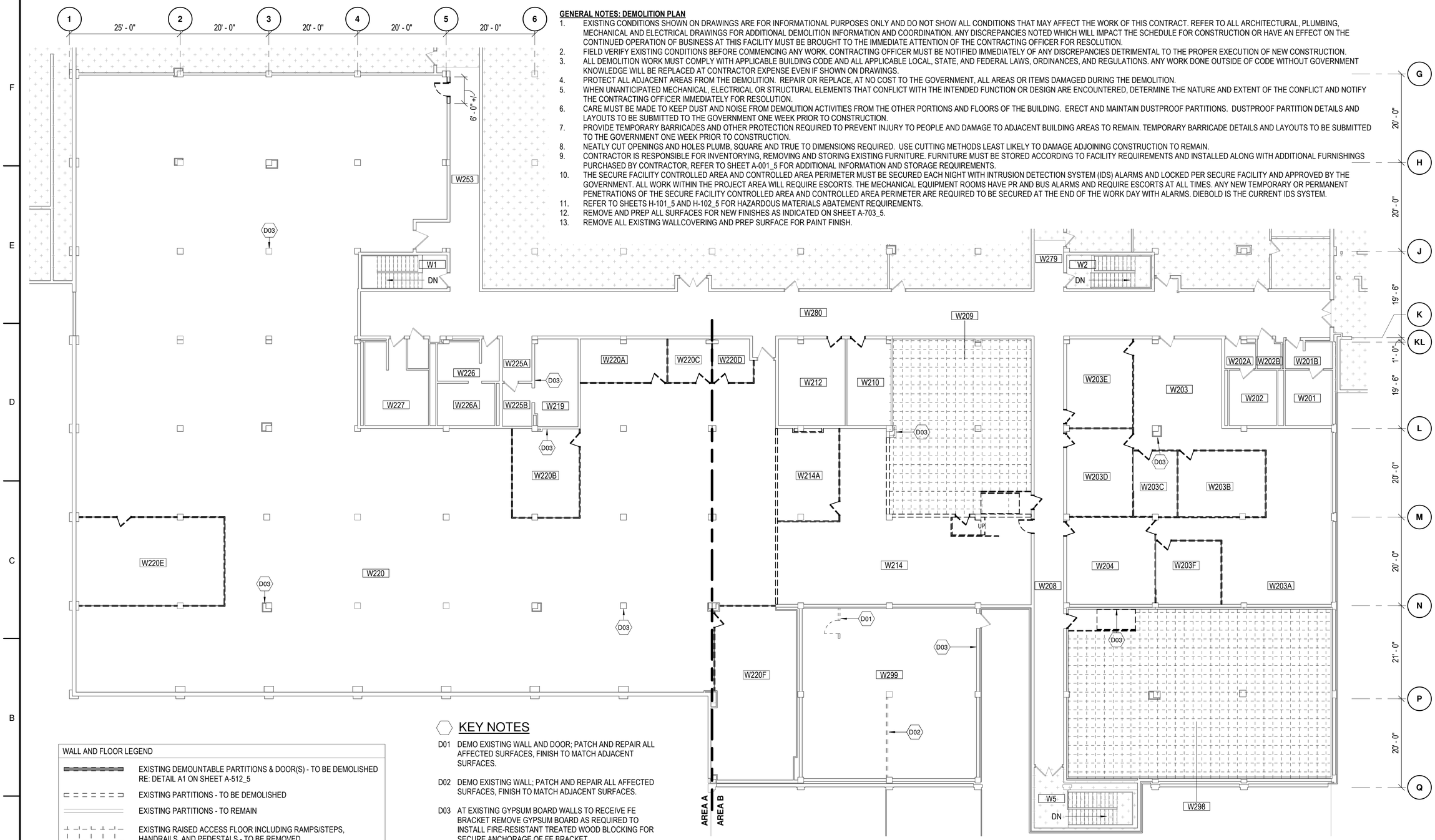
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 4699078
WRIGHT-PATTERSON AFB, OHIO

REFERENCE - SECOND FLOOR PLAN WEST WING

SHEET ID
H-104_5
SHEET 10 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



GENERAL NOTES: DEMOLITION PLAN

1. EXISTING CONDITIONS SHOWN ON DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND DO NOT SHOW ALL CONDITIONS THAT MAY AFFECT THE WORK OF THIS CONTRACT. REFER TO ALL ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION AND COORDINATION. ANY DISCREPANCIES NOTED WHICH WILL IMPACT THE SCHEDULE FOR CONSTRUCTION OR HAVE AN EFFECT ON THE CONTINUED OPERATION OF BUSINESS AT THIS FACILITY MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTING OFFICER FOR RESOLUTION.
2. FIELD VERIFY EXISTING CONDITIONS BEFORE COMMENCING ANY WORK. CONTRACTING OFFICER MUST BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES DETRIMENTAL TO THE PROPER EXECUTION OF NEW CONSTRUCTION.
3. ALL DEMOLITION WORK MUST COMPLY WITH APPLICABLE BUILDING CODE AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS, ORDINANCES, AND REGULATIONS. ANY WORK DONE OUTSIDE OF CODE WITHOUT GOVERNMENT KNOWLEDGE WILL BE REPLACED AT CONTRACTOR EXPENSE EVEN IF SHOWN ON DRAWINGS.
4. PROTECT ALL ADJACENT AREAS FROM THE DEMOLITION. REPAIR OR REPLACE, AT NO COST TO THE GOVERNMENT, ALL AREAS OR ITEMS DAMAGED DURING THE DEMOLITION.
5. WHEN UNANTICIPATED MECHANICAL, ELECTRICAL OR STRUCTURAL ELEMENTS THAT CONFLICT WITH THE INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, DETERMINE THE NATURE AND EXTENT OF THE CONFLICT AND NOTIFY THE CONTRACTING OFFICER IMMEDIATELY FOR RESOLUTION.
6. CARE MUST BE MADE TO KEEP DUST AND NOISE FROM DEMOLITION ACTIVITIES FROM THE OTHER PORTIONS AND FLOORS OF THE BUILDING. ERECT AND MAINTAIN DUSTPROOF PARTITIONS. DUSTPROOF PARTITION DETAILS AND LAYOUTS TO BE SUBMITTED TO THE GOVERNMENT ONE WEEK PRIOR TO CONSTRUCTION.
7. PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDING AREAS TO REMAIN. TEMPORARY BARRICADE DETAILS AND LAYOUTS TO BE SUBMITTED TO THE GOVERNMENT ONE WEEK PRIOR TO CONSTRUCTION.
8. NEATLY CUT OPENINGS AND HOLES PLUMB, SQUARE AND TRUE TO DIMENSIONS REQUIRED. USE CUTTING METHODS LEAST LIKELY TO DAMAGE ADJOINING CONSTRUCTION TO REMAIN.
9. CONTRACTOR IS RESPONSIBLE FOR INVENTORYING, REMOVING AND STORING EXISTING FURNITURE. FURNITURE MUST BE STORED ACCORDING TO FACILITY REQUIREMENTS AND INSTALLED ALONG WITH ADDITIONAL FURNISHINGS PURCHASED BY CONTRACTOR, REFER TO SHEET A-001_5 FOR ADDITIONAL INFORMATION AND STORAGE REQUIREMENTS.
10. THE SECURE FACILITY CONTROLLED AREA AND CONTROLLED AREA PERIMETER MUST BE SECURED EACH NIGHT WITH INTRUSION DETECTION SYSTEM (IDS) ALARMS AND LOCKED PER SECURE FACILITY AND APPROVED BY THE GOVERNMENT. ALL WORK WITHIN THE PROJECT AREA WILL REQUIRE ESCORTS. THE MECHANICAL EQUIPMENT ROOMS HAVE PR AND BUS ALARMS AND REQUIRE ESCORTS AT ALL TIMES. ANY NEW TEMPORARY OR PERMANENT PENETRATIONS OF THE SECURE FACILITY CONTROLLED AREA AND CONTROLLED AREA PERIMETER ARE REQUIRED TO BE SECURED AT THE END OF THE WORK DAY WITH ALARMS. DIEBOLD IS THE CURRENT IDS SYSTEM.
11. REFER TO SHEETS H-101_5 AND H-102_5 FOR HAZARDOUS MATERIALS ABATEMENT REQUIREMENTS.
12. REMOVE AND PREP ALL SURFACES FOR NEW FINISHES AS INDICATED ON SHEET A-703_5.
13. REMOVE ALL EXISTING WALLCOVERING AND PREP SURFACE FOR PAINT FINISH.

WALL AND FLOOR LEGEND

- EXISTING DEMOUNTABLE PARTITIONS & DOOR(S) - TO BE DEMOLISHED RE: DETAIL A1 ON SHEET A-512_5
- EXISTING PARTITIONS - TO BE DEMOLISHED
- EXISTING PARTITIONS - TO REMAIN
- EXISTING RAISED ACCESS FLOOR INCLUDING RAMPS/STEPS, HANDRAILS, AND PEDESTALS - TO BE REMOVED. IN ADDITION, REMOVE ALL ADHESIVES AND/OR PEDESTAL ATTACHMENTS TO THE EXISTING SLAB. PREP/REPAIR EXISTING SLAB FOR NEW FINISHES INDICATED

KEY NOTES

D01 DEMO EXISTING WALL AND DOOR; PATCH AND REPAIR ALL AFFECTED SURFACES, FINISH TO MATCH ADJACENT SURFACES.

D02 DEMO EXISTING WALL; PATCH AND REPAIR ALL AFFECTED SURFACES, FINISH TO MATCH ADJACENT SURFACES.

D03 AT EXISTING GYPSUM BOARD WALLS TO RECEIVE FE BRACKET REMOVE GYPSUM BOARD AS REQUIRED TO INSTALL FIRE-RESISTANT TREATED WOOD BLOCKING FOR SECURE ANCHORAGE OF FE BRACKET.

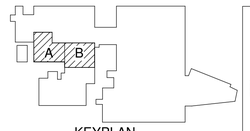
SCOPE LEGEND

NOT IN SCOPE

PLAN NORTH

0 8' 16' 24'

A1 SECOND FLOOR PLAN - DEMOLITION
SCALE: 3/32" = 1'-0"



KEYPLAN
NOT TO SCALE

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

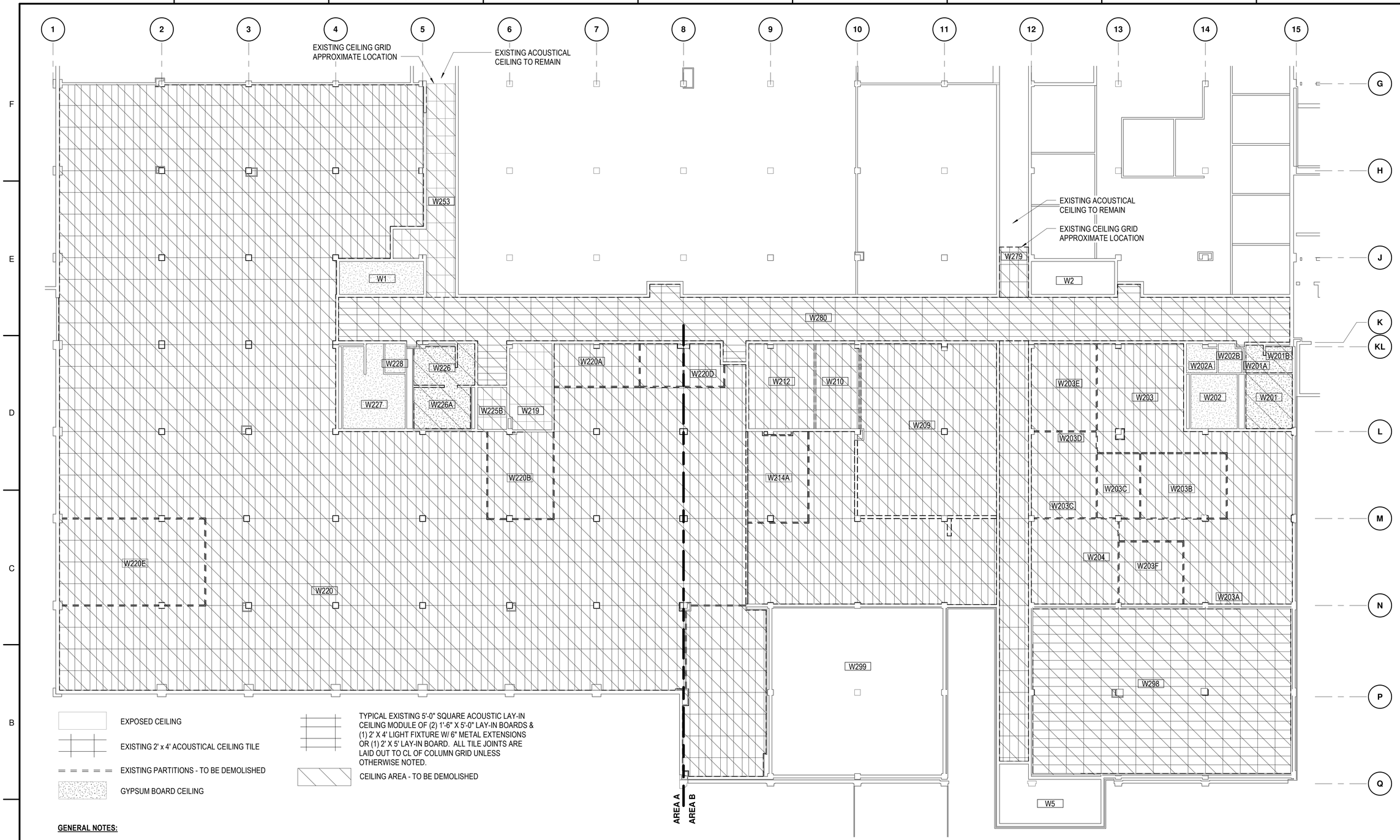
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR PLAN - DEMOLITION

SHEET ID
AD101_5
SHEET 11 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



EXPOSED CEILING

EXISTING 2' x 4' ACOUSTICAL CEILING TILE

EXISTING PARTITIONS - TO BE DEMOLISHED

GYPSUM BOARD CEILING

TYPICAL EXISTING 5'-0" SQUARE ACOUSTIC LAY-IN CEILING MODULE OF (2) 1'-6" X 5'-0" LAY-IN BOARDS & (1) 2' X 4' LIGHT FIXTURE W/ 6" METAL EXTENSIONS OR (1) 2' X 5' LAY-IN BOARD. ALL TILE JOINTS ARE LAID OUT TO CL OF COLUMN GRID UNLESS OTHERWISE NOTED.

CEILING AREA - TO BE DEMOLISHED

GENERAL NOTES:

1. REFER TO SHEETS A-001_5 AND A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.
2. REFER TO ELECTRICAL AND MECHANICAL SHEETS FOR EXISTING FIXTURES AND DEVICES.

A1 SECOND FLOOR REFLECTED CEILING PLAN - DEMOLITION
SCALE: 3/32" = 1'-0"

0 8' 16' 24'

PLAN NORTH

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE

STATE OF MISSOURI ROBERT JOSEPH KENNALEY NUMBER A-6476 REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: J. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

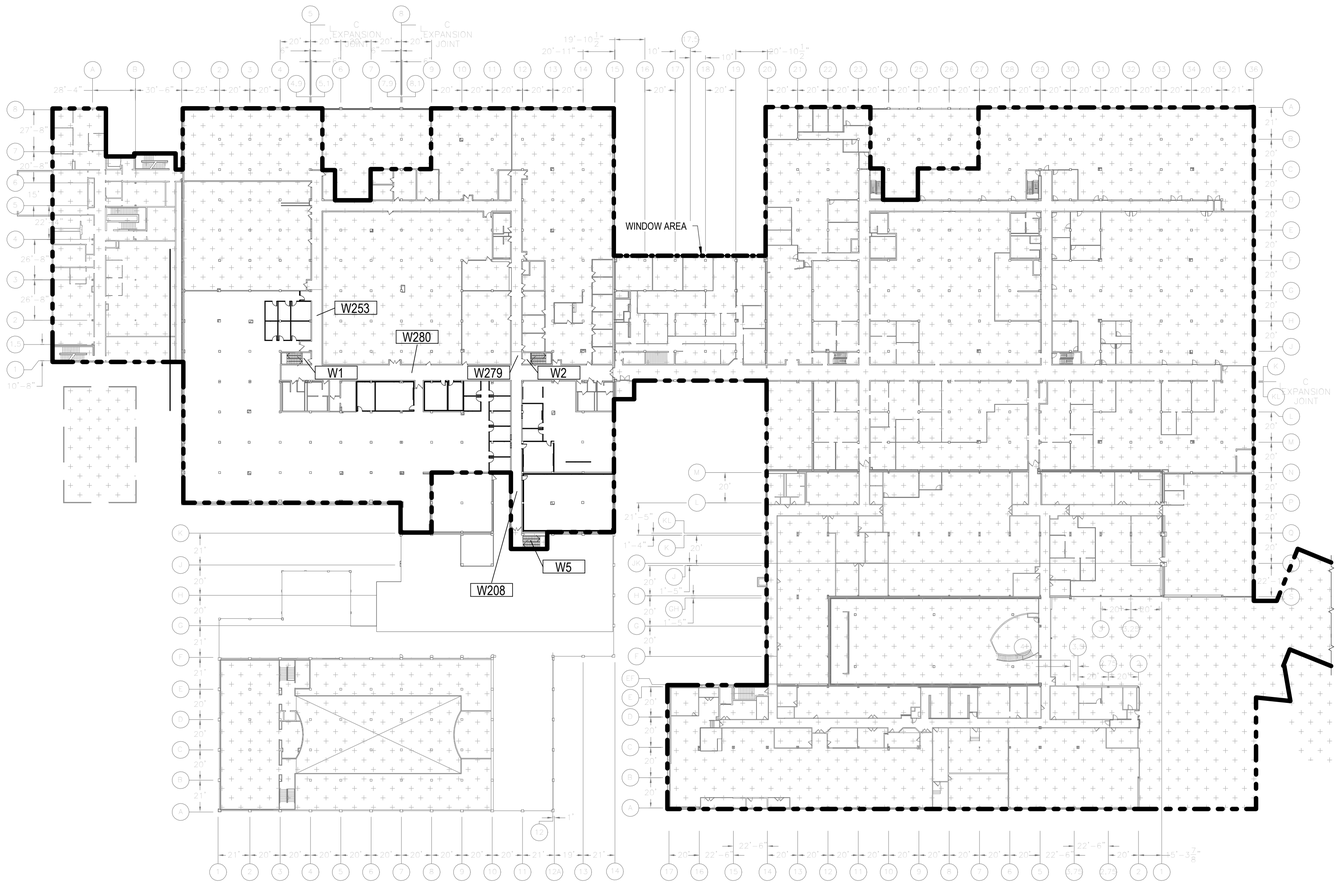
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR REFLECTED CEILING PLAN - DEMOLITION

SHEET ID
AD151_5
SHEET 12 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



B1 LEVEL 2 AHU 5 - OVERALL 2ND FLOOR PLAN
SCALE: 1" = 50'-0"

0 50' 100'

PLAN NORTH

GENERAL NOTES: CONSTRUCTION LIMITATIONS:

1. TEMPORARY SECURE STORAGE REQUIREMENTS: IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY SECURE STORAGE SPACE/TRAILER FOR THE FURNITURE AND EQUIPMENT. REFER TO ADDITIONAL INFORMATION AND STORAGE REQUIREMENTS BELOW.

   a. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.
   b. EXISTING FURNITURE FOR REFERENCE ONLY (TYPICAL). CONTRACTOR MUST FIELD VERIFY AND LABEL THE EXTENT OF ALL FURNITURE, EQUIPMENT, POWER POLES, COMPUTER POLES, CABLING WIRING AND DEMOUNTABLE PARTITIONS. CONTRACTOR MUST DISASSEMBLE, SORT FURNITURE FOR RE-USE, AND RE-ASSEMBLE AFTER CONSTRUCTION IS COMPLETE. LOCATION FOR STORAGE OF FURNITURE MUST BE DETERMINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
   c. CONTRACTOR IS RESPONSIBLE FOR INVENTORYING EACH ROOM PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR MUST LABEL, RECORD, AND TAKE PHOTOS (CONTRACTOR MUST COORDINATE WITH GOVERNMENT TO TAKE PICTURES OF THE FACILITY) OF ALL EXISTING CONDITIONS TO ENSURE THAT THE FURNITURE, CABINETS, POWER, CCTV, CONFERENCE EQUIPMENT, ETC AND COMPUTER WIRING ARE REPLACED IN THE SAME LOCATIONS. CONTRACTOR'S FAILURE TO TAKE GOOD RECORDS WILL NOT BE THE GOVERNMENT'S RESPONSIBILITY.
   d. ALL FURNITURE WILL BE REMOVED FROM CONSTRUCTION AREA BY THE CONTRACTOR AND TURNED OVER TO NASIC. CONTRACTOR MUST STORE ALL FURNITURE TO BE RE-INSTALLED IN CONTRACTOR FURNISHED LOCKABLE TRAILERS ON WPAFB. CONTRACTOR MUST BEAR THE SOLE RESPONSIBILITY TO ENSURE THAT THE FURNITURE AND EQUIPMENT IS NOT DAMAGED, AND IS REINSTALLED WITH ASSOCIATED POWER POLES, COMPUTER POWER, COMPUTER FIBER, PHONES, ETC. IN THE SAME CONFIGURATION.

2. COMMON ACCESS/EGRESS CORRIDORS: STAIR W5; ROOMS W208, W253, W279 AND W280 MUST BE MAINTAINED AS COMMON ACCESS/EGRESS CORRIDORS THROUGHOUT THE CONSTRUCTION PERIOD FOR FACILITY PERSONNEL. THESE ROOMS WILL BE LIMITED TO CONTRACTOR WORK (IE. ABATEMENT, DEMOLITION, AND NEW WORK AS DEFINED HERE-IN) FROM THE HOURS OF 1600 TO 2400. THE CORRIDORS MUST BE CLEARED OF ALL CONSTRUCTION MATERIALS AND EQUIPMENT DURING THE HOURS OF 0500 TO 1600. CONTRACTOR MUST SCHEDULE THE CONSTRUCTION WORK ACCORDINGLY. CONTRACTOR MUST COORDINATE WITH CONTRACTING OFFICER AND SECURITY OFFICER FOR ALL CONSTRUCTION EFFORTS. THE FOLLOWING SYSTEMS MUST BE MAINTAINED AND FULLY FUNCTIONAL:

   a. SECURITY INTRUSION DETECTION
   b. SECURITY SURVEILLANCE
   c. SECURITY TURNSTILE AND ALL ASSOCIATED APPARATUS
   d. INTERCOM CALL BOX AT WEST ENTRANCE

3. CONTRACTOR MUST PROVIDE THE NECESSARY TEMPORARY SUPPORTING MEANS FOR THE FOLLOWING SYSTEMS TO MAINTAIN A FULLY FUNCTIONAL EGRESS CORRIDOR:

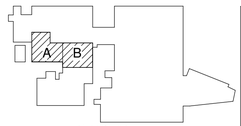
   a. HEATING AND VENTILATION (HVAC) SYSTEMS
   b. HVAC DIRECT DIGITAL CONTROL SYSTEM
   c. LIGHTING AND EGRESS EXIT LIGHTING SYSTEMS
   d. FIRE ALARM SYSTEMS
   e. FIRE SUPPRESSION SYSTEMS
   f. ELECTRICAL POWER TO SUPPORT ALL AFOREMENTIONED SYSTEMS.

GENERAL NOTES: SECURE WALLS
1. REFER TO SHEETS A-001_5 AND A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.
2. REFER TO ELECTRICAL AND MECHANICAL SHEETS FOR EXISTING FIXTURES AND DEVICES.

SCOPE LEGEND

NOT IN SCOPE

LINE TYPE LEGEND
EXISTING WALL TO REMAIN
NEW WALL
SECURE AREA PERIMETER
SECURE AREA WALL AT WINDOWS



KEYPLAN
NOT TO SCALE

STATE OF MISSOURI ROBERT JOSEPH KENNALEY NUMBER A-6476 REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

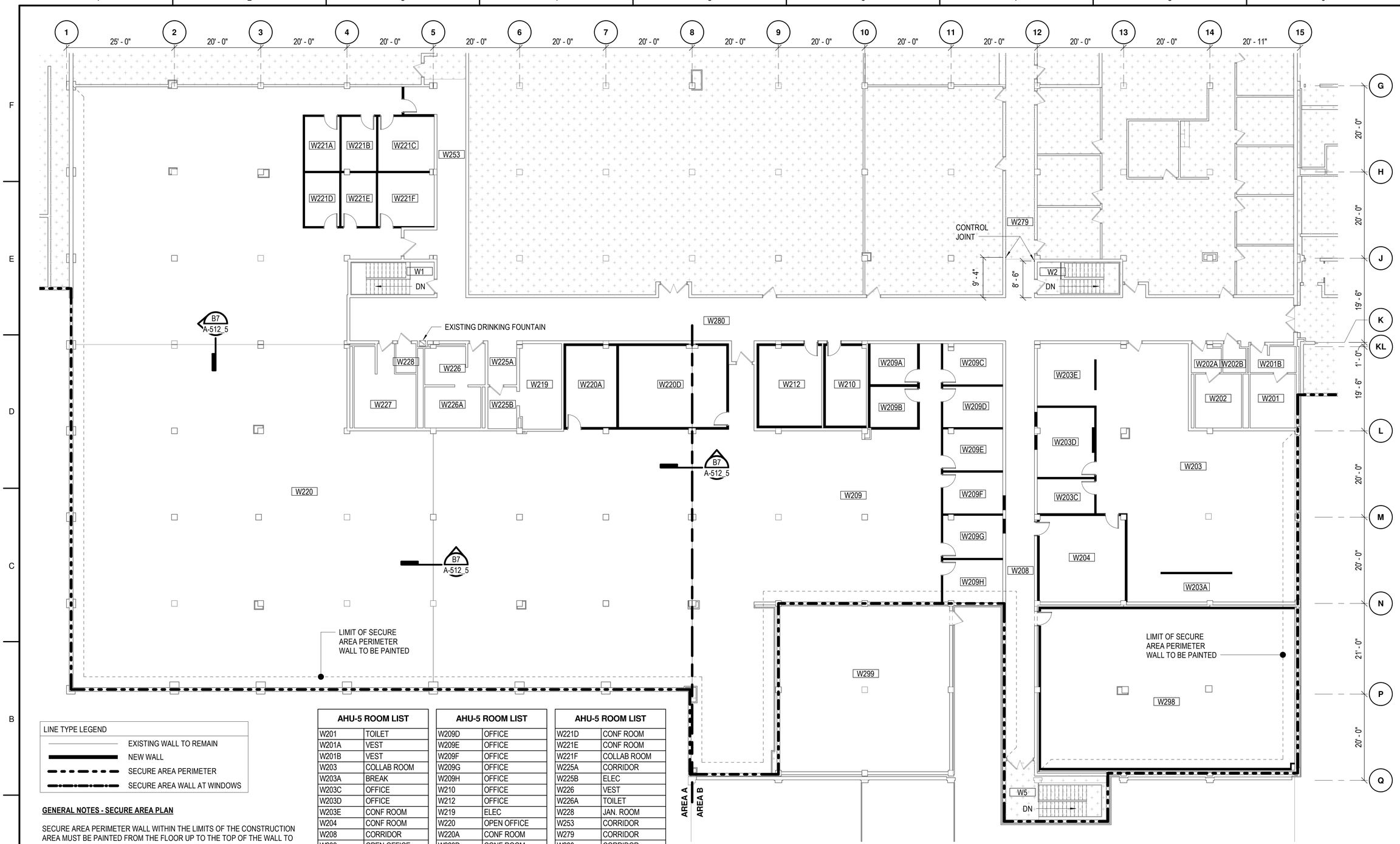
OVERALL SECOND FLOOR PLAN

SHEET ID
A-001_5
SHEET 13 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

CUI



LINE TYPE LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL
- SECURE AREA PERIMETER
- SECURE AREA WALL AT WINDOWS

GENERAL NOTES - SECURE AREA PLAN

SECURE AREA PERIMETER WALL WITHIN THE LIMITS OF THE CONSTRUCTION AREA MUST BE PAINTED FROM THE FLOOR UP TO THE TOP OF THE WALL TO THE FLOOR OR ROOF ABOVE INCLUDING ALL PORTIONS OF THE WALL ABOVE THE CEILING. SEE PLAN ABOVE FOR ADDITIONAL INFORMATION.

AHU-5 ROOM LIST	
W201	TOILET
W201A	VEST
W201B	VEST
W203	COLLAB ROOM
W203A	BREAK
W203C	OFFICE
W203D	OFFICE
W203E	CONF ROOM
W204	CONF ROOM
W208	CORRIDOR
W209	OPEN OFFICE
W209A	CONF ROOM
W209B	CONF ROOM
W209C	OFFICE

AHU-5 ROOM LIST	
W209D	OFFICE
W209E	OFFICE
W209F	OFFICE
W209G	OFFICE
W209H	OFFICE
W210	OFFICE
W212	OFFICE
W219	ELEC
W220	OPEN OFFICE
W220A	CONF ROOM
W220D	CONF ROOM
W221A	CONF ROOM
W221B	CONF ROOM
W221C	COLLAB ROOM

AHU-5 ROOM LIST	
W221D	CONF ROOM
W221E	CONF ROOM
W221F	COLLAB ROOM
W225A	CORRIDOR
W225B	ELEC
W226	VEST
W226A	TOILET
W228	JAN. ROOM
W253	CORRIDOR
W279	CORRIDOR
W280	CORRIDOR
W298	OPEN OFFICE
W299	MECHANICAL

SCOPE LEGEND

NOT IN SCOPE

PLAN NORTH

0 8' 16' 24'

KEYPLAN
NOT TO SCALE

B1 SECURE AREA SECOND FLOOR PLAN - NEW
SCALE: 3/32" = 1'-0"

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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DRAWN BY: W. NEEDLE
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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECURE AREA SECOND FLOOR PLAN - NEW

SHEET ID
A-002_5
SHEET 14 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

CUI

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

AHU-5 ROOM LIST	
W201	TOILET
W201A	VEST
W201B	VEST
W203	COLLAB ROOM
W203A	BREAK
W203C	OFFICE
W203D	OFFICE
W203E	CONF ROOM
W204	CONF ROOM
W208	CORRIDOR
W209	OPEN OFFICE
W209A	CONF ROOM
W209B	CONF ROOM
W209C	OFFICE

AHU-5 ROOM LIST	
W209D	OFFICE
W209E	OFFICE
W209F	OFFICE
W209G	OFFICE
W209H	OFFICE
W210	OFFICE
W212	OFFICE
W219	ELEC
W220	OPEN OFFICE
W220A	CONF ROOM
W220D	CONF ROOM
W221A	CONF ROOM
W221B	CONF ROOM
W221C	COLLAB ROOM

AHU-5 ROOM LIST	
W221D	CONF ROOM
W221E	CONF ROOM
W221F	COLLAB ROOM
W225A	CORRIDOR
W225B	ELEC
W226	VEST
W226A	TOILET
W228	JAN. ROOM
W253	CORRIDOR
W279	CORRIDOR
W280	CORRIDOR
W298	OPEN OFFICE
W299	MECHANICAL

GENERAL NOTES: FLOOR PLAN - NEW

1. ALL PENETRATIONS AND HOLES MUST BE SEALED PRIOR TO PAINTING.
2. PAINT MECHANICAL ROOM W299. SEE SHEET A-703_5 FOR MORE INFORMATION.
3. INTERIOR PARTITIONS ARE DIMENSIONED TO THE FACE OF GYPSUM BOARD.
4. PATCH AND REPAIR EXISTING COLUMN FURRING AND WALLS AS REQUIRED READY TO RECEIVE NEW FINISH.
5. PATCH AND REPAIR WALL, FLOOR, AND CEILING FINISHES IN ROOMS AFFECTED BY NEW WORK. REFER TO FINISH SCHEDULE FOR MATERIALS AND FINISHES.
6. PROVIDE FIRE RETARDANT TREATED STIFFENERS, BRACINGS, BACKING PLATES, BLOCKING, SUPPORTING BRACKETS AS REQUIRED FOR ANY WALL MOUNTED CABINETS, FIXTURES, ACCESSORIES OR EQUIPMENT.
7. WHERE CONCRETE FLOORS ARE DAMAGED DUE TO DEMOLITION, PROVIDE FLOOR FILLER AND LEVELER AT DAMAGED CONCRETE FLOOR AS REQUIRED TO MEET FLOORING MANUFACTURER'S SUBSTRATE REQUIREMENTS FOR NEW FLOORING.
8. REFER TO SHEET A-703_5 FOR FINISH REQUIREMENTS.
9. PATCH EXISTING PENETRATIONS AND RESTORE EXISTING CONSTRUCTION TO MATCH EXISTING ADJACENT ASSEMBLY WHERE MECHANICAL, ELECTRICAL,OR PLUMBING WORK HAS BEEN REMOVED AND PENETRATIONS ARE NOT REQUIRED.

GENERAL NOTES: SECURE AREA PERIMETER WALLS

1. ALL PENETRATIONS THROUGH SECURE AREA PERIMETER WALLS MUST MEET SECURITY REQUIREMENTS AND SOUND CRITERIA OF STC 45. NO FIELD SOUND TESTING IS REQUIRED.
2. REMOVE THE EXISTING SEALANT, NEOPRENE SPONGE MATERIAL, FILLER, ETC. AT THE TOP OF ALL CMU SECURE AREA WALLS WITHIN THE CONSTRUCTION AREA, AND REPLACE WITH ACOUSTICAL SEALANT AND INSULATION. CONTRACTOR TO REMOVE AND REPLACE ONLY THE AMOUNT OF MATERIAL THAT CAN BE COMPLETED BY THE END OF THE WORK DAY SO THAT THE SECURE AREA WALL IS SECURED AT THE END OF EACH DAY.
3. REFER TO SHEETS A-001_5 AND A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.

SCOPE LEGEND

NOT IN SCOPE

A1 OVERALL SECOND FLOOR PLAN - NEW
SCALE: 3/32" = 1'-0"

0 8' 16' 24'

PLAN NORTH

KEYPLAN
NOT TO SCALE

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

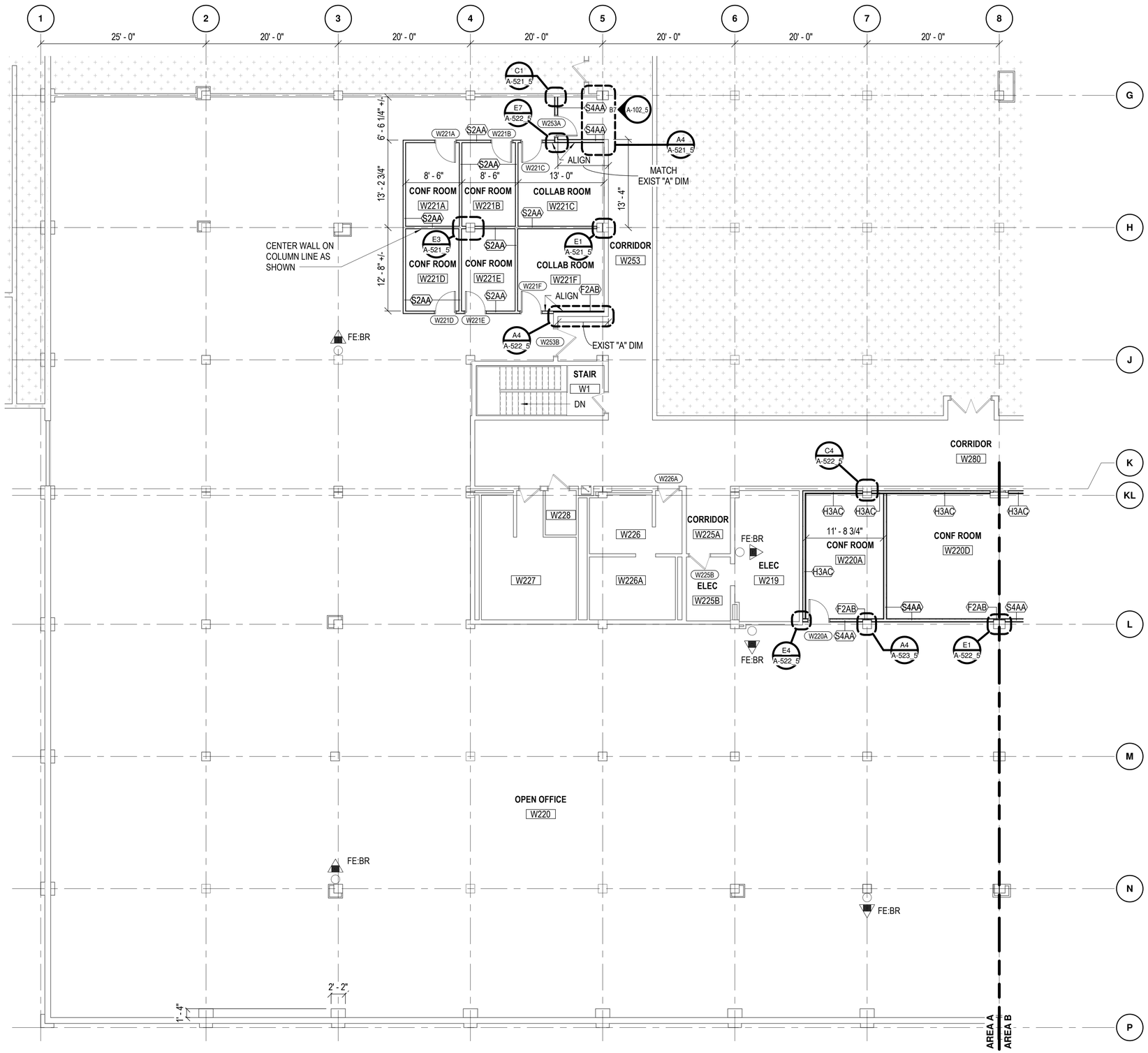
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR PLAN - NEW

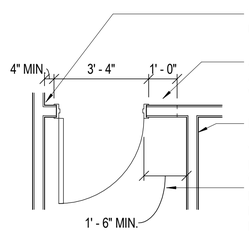
SHEET ID
A-101_5
SHEET 15 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



ARCHITECTURAL GENERAL NOTES:

REFER TO GENERAL NOTES ON SHEET A-101_5.



TYPICAL DOOR JAMB LOCATION UNLESS DIMENSIONED OTHERWISE

ALL ROOM SIGNS, LIGHT SWITCHES AND THERMOSTATS TO BE LOCATED WITHIN THIS SPACE

FINISHED WALL

VERIFY THERE IS A MINIMUM 18" CLEAR FROM DOOR STRIKE TO INTERSECTING WALL FOR ACCESSIBLE COMPLIANCE. NOTIFY CONTRACTING OFFICER FOR NON-COMPLIANCE BEFORE SETTING DOOR FRAME AND WALL LOCATIONS

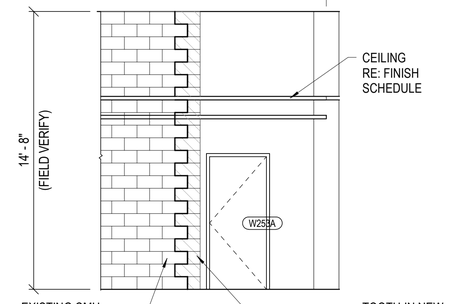
NOTE:
REVIEW GUIDELINES FOR OTHER DOOR APPROACH CLEARANCE REQUIREMENTS

E7 DOOR CLEARANCE
SCALE: 3/8" = 1'-0"

AHU-5 ROOM LIST - AREA A

SCOPE LEGEND

NOT IN SCOPE



NOTE: PLASTER NOT SHOWN FOR CLARITY. SEE PLAN DETAIL A4 ON A-521_5 FOR MORE DETAIL AND WALL FINISHES

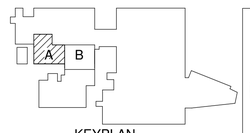
B7 CMU TOOTH-IN WALL ELEVATION
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
SCALE IN FEET

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

0 8' 16' 24'

PLAN NORTH



KEYPLAN
NOT TO SCALE

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZ/QUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR PLAN - AREA A

SHEET ID
A-102_5
SHEET 16 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CUI

ARCHITECTURAL GENERAL NOTES:

REFER TO GENERAL NOTES ON SHEET A-101_5.

AHU-5 ROOM LIST - AREA B

SCOPE LEGEND

NOT IN SCOPE

CORRIDOR W280 · CONF ROOM W220D · OPEN OFFICE W220 · OFFICE W212 · OFFICE W210 · CONF ROOM W209A · CONF ROOM W209B · OFFICE W209C · OFFICE W209D · OFFICE W209E · OPEN OFFICE W209 · OFFICE W209F · OFFICE W209G · OFFICE W209H · MECHANICAL W299 · CORRIDOR W279 · STAIR W2 · CONF ROOM W203E · COLLAB ROOM W203 · OFFICE W203D · OFFICE W203C · CONF ROOM W204 · BREAK W203A · CORRIDOR W208 · OPEN OFFICE W298 · STAIR W5 · W202A · W202B · W201A · W201B · W201 · TOILET W201 · W277 · W277H · W287

AREA A · AREA B

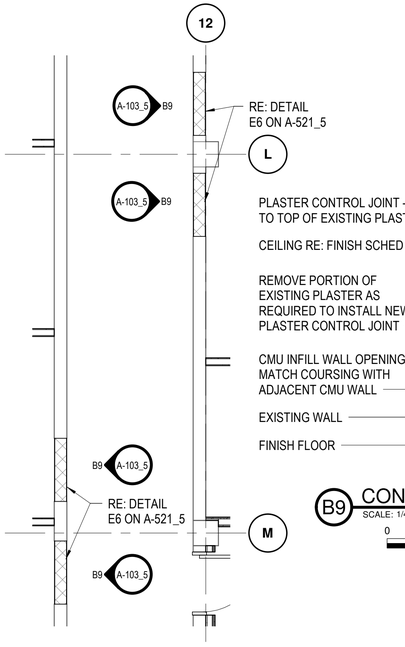
FE:BR

A1 SECOND FLOOR PLAN - AREA B

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

0 8' 16' 24'

PLAN NORTH



B9 CONTROL JOINTS

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

0 2' 4' 8'

A8 ENLARGED PLAN

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

0 2' 4' 8'

KEYPLAN NOT TO SCALE

STATE OF MISSOURI · ROBERT JOSEPH KENNALEY · NUMBER A-6476 · REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
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US ARMY CORPS OF ENGINEERS
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600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR PLAN - AREA B

SHEET ID

A-103_5

SHEET 17 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

CUI

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

EXISTING CEILING GRID APPROXIMATE LOCATION

NO WORK

EXISTING ACOUSTICAL CEILING TO REMAIN

49' - 1 1/2" +/-

INSTALL NEW ACOUSTICAL CEILING AT SAME HEIGHT AS DEMOED GYPSUM BOARD CEILING

11' - 6 3/4" +/-

EXISTING ACOUSTICAL CEILING TO REMAIN

EXISTING CEILING GRID APPROXIMATE LOCATION

INSTALL NEW ACOUSTICAL CEILING AT SAME HEIGHT AS DEMOED GYPSUM BOARD CEILING

11 5/8"

EQ

EQ

W299 OTS

AREA A

AREA B

GENERAL NOTES:

1. PROVIDE NEW 2X4 CEILING GRID AND CEILING TILES UNLESS OTHERWISE NOTED. REFER TO RCP FOR LOCATIONS.
2. REMOVE AND REPLACE PLASTER CEILINGS AS REQUIRED TO MATCH EXISTING, INCLUDING LIGHTS AND DIFFUSERS, AFTER COMPLETION OF MECHANICAL WORK IN PLENUM. PAINT CEILING TO MATCH EXISTING. ACCESS PANELS TO BE THE SAME SIZE AND IN THE SAME PLACE AS BEFORE CONSTRUCTION.
3. ALL NEW CEILINGS TO MATCH EXISTING CEILING HEIGHTS UNLESS OTHERWISE NOTED.
4. VERIFY LIGHT FIXTURE SIZE AND TYPE WITH ELECTRICAL DRAWINGS.
5. REFER TO SHEETS A-001_5 AND A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.
6. ALL CEILING AT 9'-0" UNLESS NOTED OTHERWISE.

REFLECTED CEILING PLAN NOTES:

1. CENTER CEILING GRID IN ROOM AS SHOWN.

EXPOSED CEILING

GYPSUM BOARD CEILING

NEW 2' x 4' ACOUSTICAL CEILING TILE

2' x 2' EMERGENCY LIGHT FIXTURE - RECESSED

2' x 2' LIGHT FIXTURE - RECESSED

2' x 4' EMERGENCY LIGHT FIXTURE - RECESSED

2' x 4' LIGHT FIXTURE - RECESSED

9' - 0" CEILING HEIGHT ABOVE FINISH FLOOR

HVAC AIR SUPPLY GRILLE

HVAC LINEAR AIR SUPPLY GRILLE

HVAC EXHAUST OR RETURN GRILLE

COLUMN OR POWER POLE PENETRATING CEILING

EXIT SIGNAGE

PLAN NORTH

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE

A1 SECOND FLOOR REFLECTED CEILING PLAN
SCALE: 3/32" = 1'-0"

0 8' 16' 24'

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
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9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

REFLECTED CEILING SECOND FLOOR PLAN - NEW

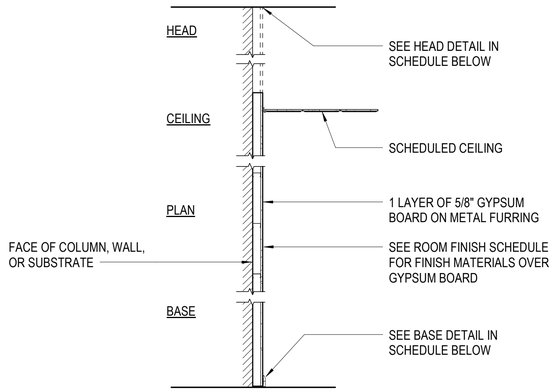
SHEET ID
A-151_5
SHEET 18 OF 112

STATE OF MISSOURI
ROBERT J. KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

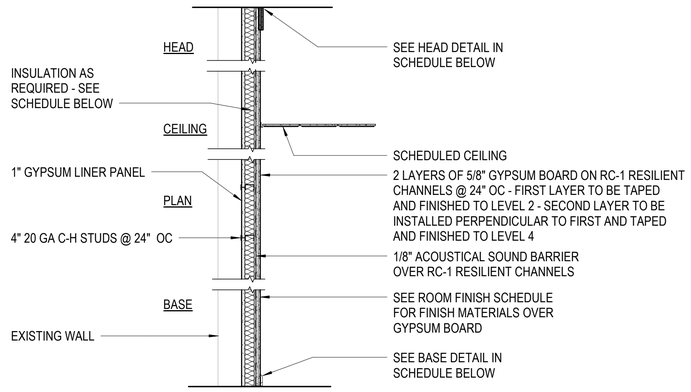
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

PARTITION TYPE F1



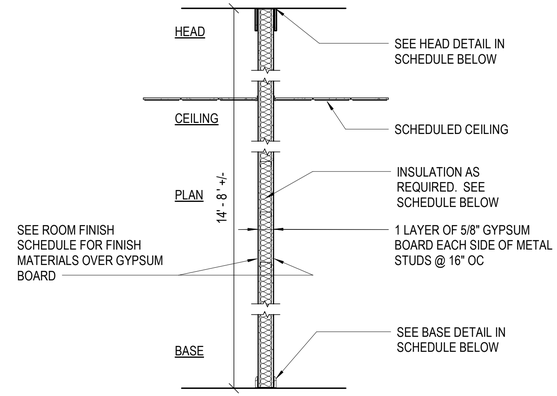
TYPE	STC	FIRE RATING	UL DESIGN NO	HEAD DETAIL	BASE DETAIL	TYPE COMMENTS
F1AA	-	-	-	E7/A502_5	C7/A502_5	7/8" HAT CHANNELS
F1AB	-	-	-	E7/A502_5	C7/A502_5	7/8" FURRING STRIPS AT 24" O.C. HORIZONTALLY
F1CA	-	-	-	E7/A502_5	C7/A502_5	2 1/2" FURRING STUDS AT 16" O.C. VERTICALLY

PARTITION TYPE H3



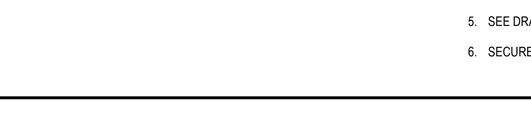
TYPE	STC	FIRE RATING	UL DESIGN NO	HEAD DETAIL	BASE DETAIL	TYPE COMMENTS
H3AC	50	-	-	A1/A-502_5	A7/A-502_5	4" C-H STUDS - 2 LAYERS 5/8" GYP BD WITH 3 1/2" SOUND ATTENUATION UNFACED BATT INSULATION

PARTITION TYPE S2



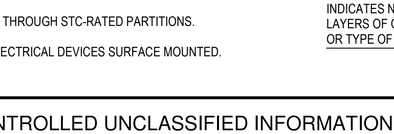
TYPE	STC	FIRE RATING	UL DESIGN NO	HEAD DETAIL	BASE DETAIL	TYPE COMMENTS
S2AA	-	-	-	E4/A-502_5	A4/A-502_5	3 5/8" METAL STUDS WITH BLANKET INSULATION.
S2AF	-	-	-	C4/A-502_5	A4/A-502_5	3 5/8" METAL STUDS WITHOUT BLANKET INSULATION.

PARTITION TYPE F2



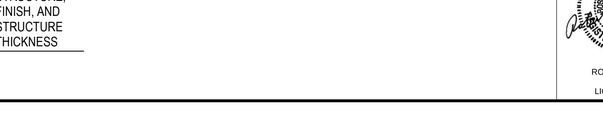
TYPE	STC	FIRE RATING	UL DESIGN NO	HEAD DETAIL	BASE DETAIL	TYPE COMMENTS
F2AB	-	-	-	E7/A502_5	C7/A502_5	7/8" HAT CHANNELS AT 16" OC

PARTITION TYPE M1



TYPE	STC	FIRE RATING	UL DESIGN NO	HEAD DETAIL	BASE DETAIL	TYPE COMMENTS
M1CB	STC-50	60 MIN	U905	E8 / A-521_5	-	8" NOMINAL MASONRY, FULLY GROUTED, SOUND TEST NOT REQUIRED, ELECTRICAL OUTLETS SHALL BE MOUNTED ON FACE OF WALLS NOT RECESSED

PARTITION TYPE S4

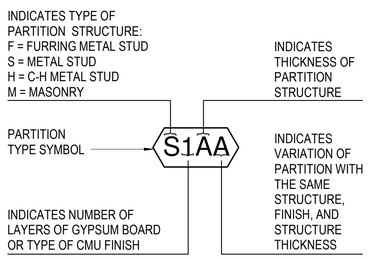


TYPE	STC	FIRE RATING	UL DESIGN NO	HEAD DETAIL	BASE DETAIL	TYPE COMMENTS
S4AA	STC-50	-	-	E1/A-502_5	C1/A-502_5	3 5/8" METAL STUDS WITH 3 1/2" SOUND ATTENUATION UNFACED BATT INSULATION.

PARTITION TYPES GENERAL NOTES:

1. PROVIDE MINIMUM 20 GAUGE METAL BACKING AS REQUIRED FOR INSTALLATION OF FIRE EXTINGUISHER BRACKETS, MESSAGE BOARDS, WALL AND BASE CABINETS, ACCESS PANELS, ELECTRICAL AND FIRE PROTECTION SYSTEM PANELS, UNLESS NOTED OTHERWISE.
2. ALL METAL STUD AND FURRING DESIGNATIONS ARE THE STEEL STUD MANUFACTURER ASSOCIATIONS (SSMA) UNIVERSAL DESIGNATOR SYSTEM FOR LIGHT GAUGE STEEL FRAMING MEMBERS. ALL METAL STUDS AND BRACING MUST BE 20 GAUGE MIN UNLESS NOTED OTHERWISE.
3. REFERENCE DRAWINGS A-102_5 AND A-103_5 FOR PARTITION TYPE LOCATIONS.
4. PROVIDE METAL STUD DIAGONAL BRACING @ 4'-0" OC MIN (ALTERNATE DIRECTIONS) TO UNDERSIDE OF METAL DECK FOR ALL WALLS GREATER THAN 14'-0" IN HEIGHT UNLESS NOTED OTHERWISE.
5. SEE DRAWING A-512_5 FOR TYPICAL PENETRATION DETAILS THROUGH STC-RATED PARTITIONS.
6. SECURE WALLS THAT ARE NOT FURRED OUT MUST HAVE ELECTRICAL DEVICES SURFACE MOUNTED.

PARTITION TYPE SYMBOL LEGEND:



02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
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SUBMITTED BY: S. JOHNSON
SIZE: 34X22

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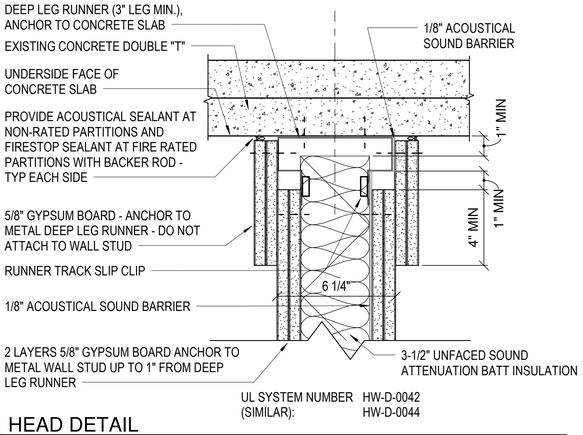
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

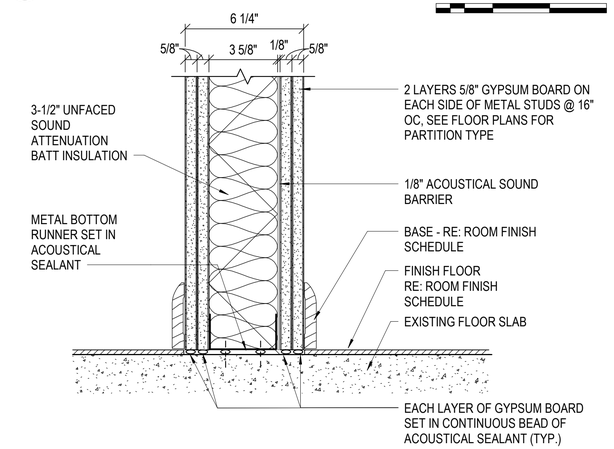
PARTITION TYPES

SHEET ID
A-501_5
SHEET 19 OF 112

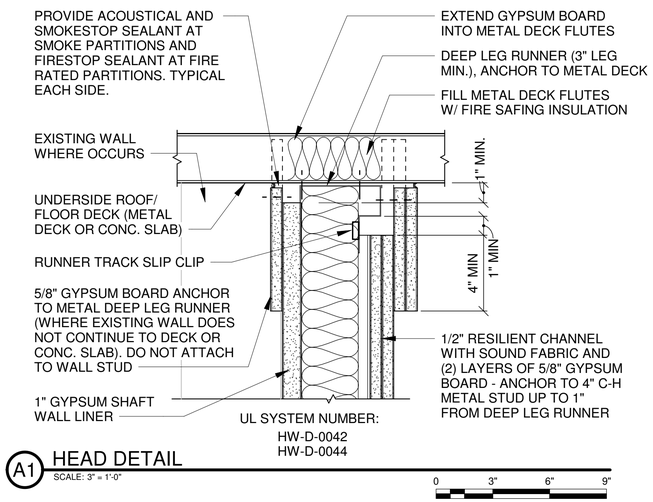
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



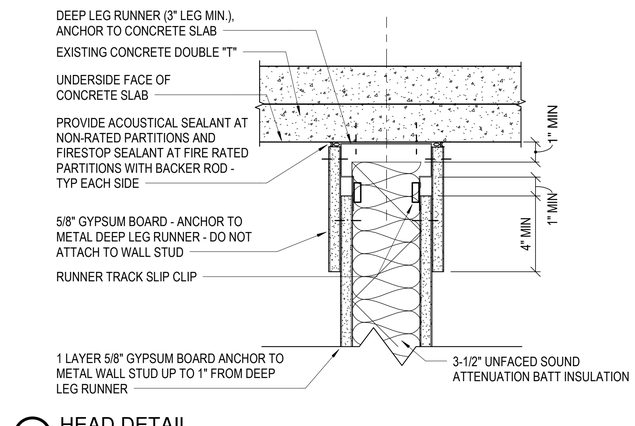
E1 HEAD DETAIL
SCALE: 3" = 1'-0"



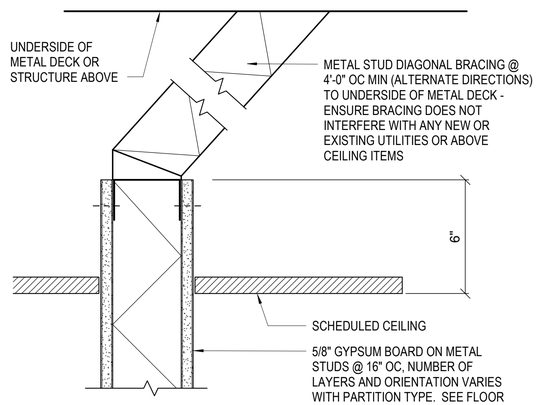
C1 BASE DETAIL
SCALE: 3" = 1'-0"



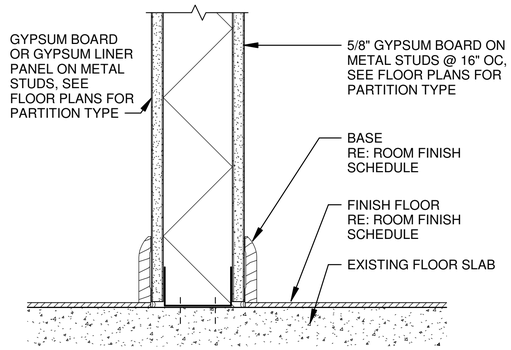
A1 HEAD DETAIL
SCALE: 3" = 1'-0"



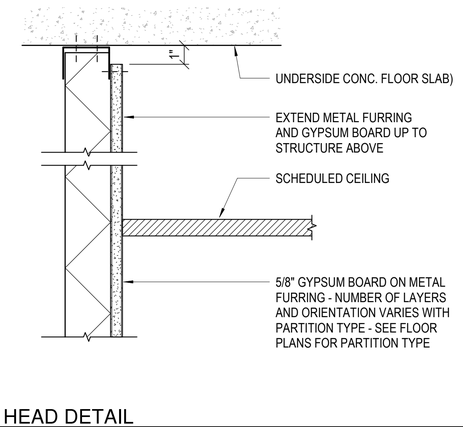
E4 HEAD DETAIL
SCALE: 3" = 1'-0"



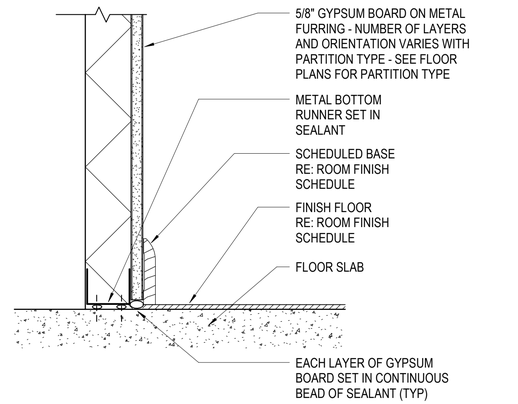
C4 HEAD DETAIL
SCALE: 3" = 1'-0"



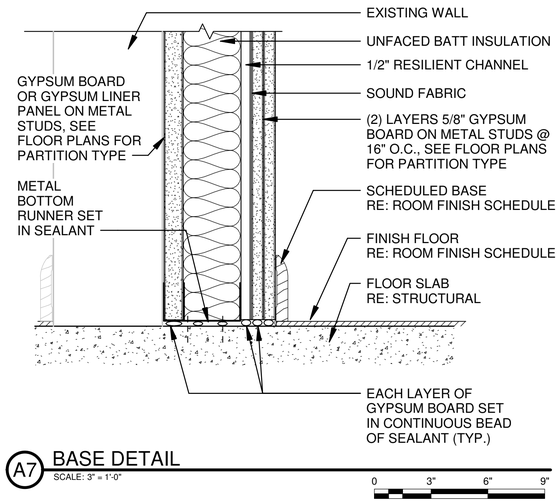
A4 BASE DETAIL
SCALE: 3" = 1'-0"



E7 HEAD DETAIL
SCALE: 3" = 1'-0"



C7 BASE DETAIL
SCALE: 3" = 1'-0"



A7 BASE DETAIL
SCALE: 3" = 1'-0"

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

CERTIFIED FINAL
02-24-23 DATE
0 MARK

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: C. SPRINKLE
CHECKED BY: E. VELAZQUEZ
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

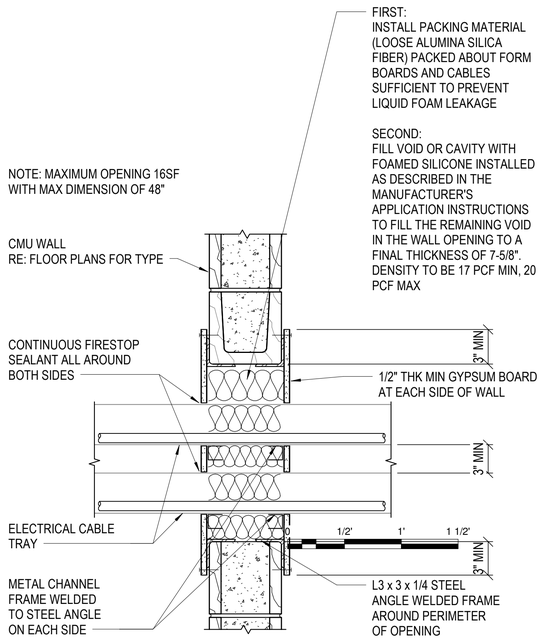
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

PARTITION DETAILS

SHEET ID
A-502_5
SHEET 20 OF 112

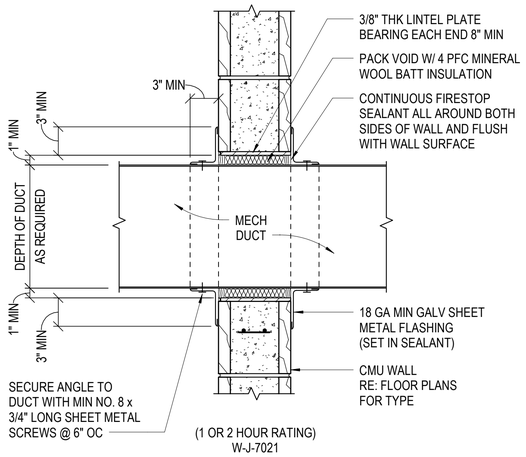
STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



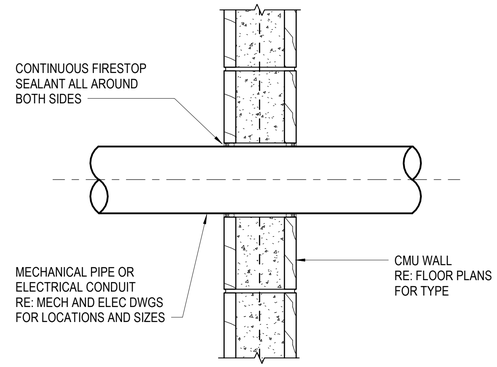
(2 HOUR RATING)
W-J-4008

D1 CMU WALL PENETRATION
SCALE: 1 1/2" = 1'-0"



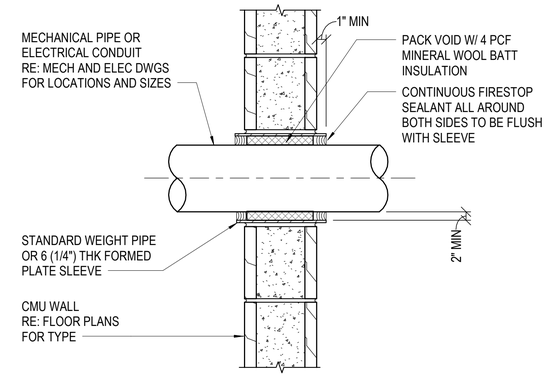
(1 OR 2 HOUR RATING)
W-J-7021

D3 CMU WALL PENETRATION
SCALE: 1 1/2" = 1'-0"



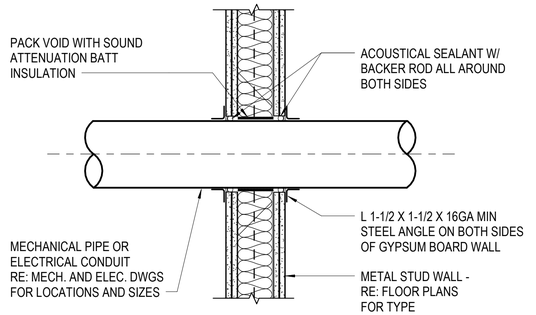
(2 HOUR RATING)
W-J-1071

D5 CMU WALL PENETRATION
SCALE: 1 1/2" = 1'-0"

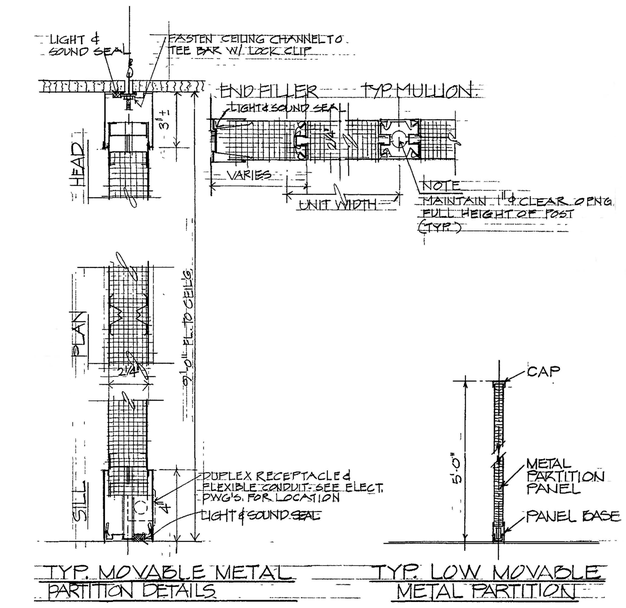


(2 HOUR RATING)
C-AJ-1498

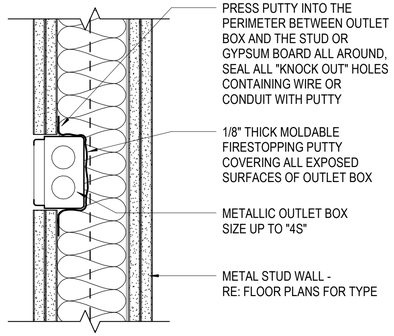
D7 CMU WALL PENETRATION
SCALE: 1 1/2" = 1'-0"



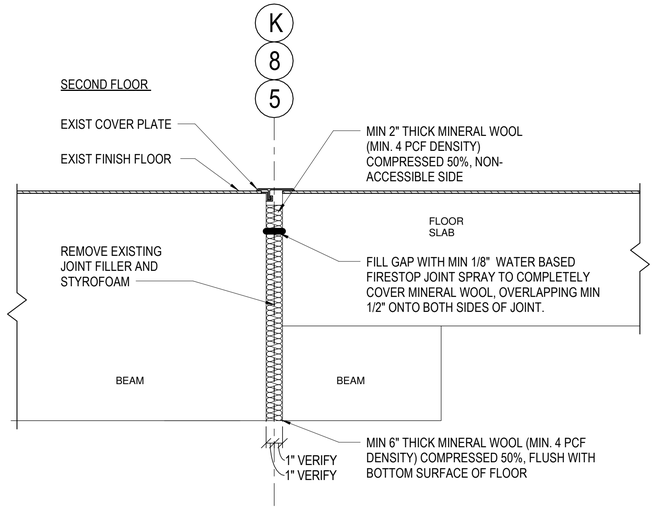
B4 STUD WALL PENETRATION
SCALE: 1 1/2" = 1'-0"



A1 EXISTING DEMOUNTABLE PARTITION DETAILS
SCALE:NTS



A4 DETAIL AT OUTLET BOX
SCALE: 3" = 1'-0"



NOTE:
TYPICAL DETAIL, FIELD VERIFY ACTUAL CONDITIONS

B7 2-HR FIRE RATED EXPANSION JOINT DETAIL
SCALE: 1 1/2" = 1'-0"

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL.
LOUISVILLE, KY 40202

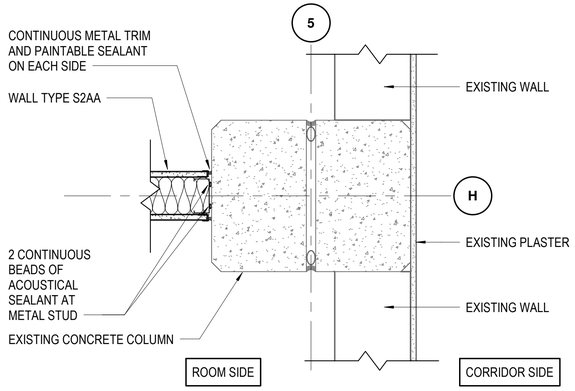
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

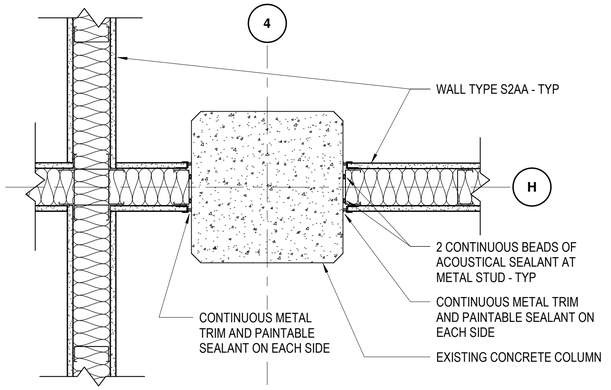
PENETRATION DETAILS

SHEET ID
A-512_5
SHEET 21 OF 112

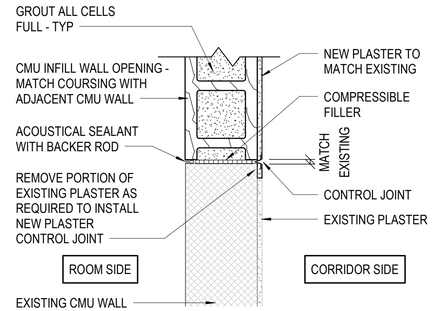
CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001
CUI



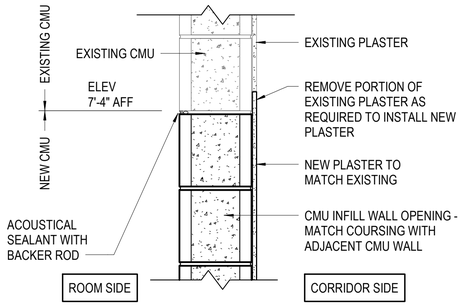
E1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



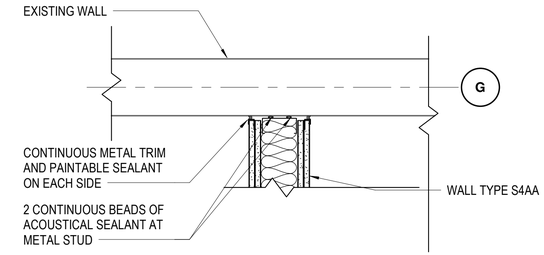
E3 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



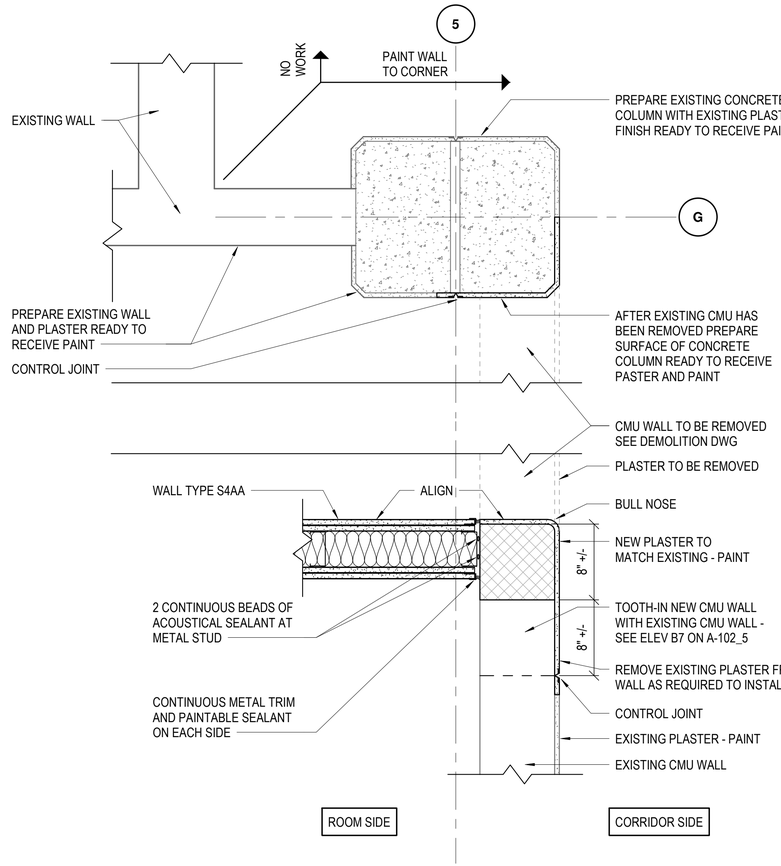
E6 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



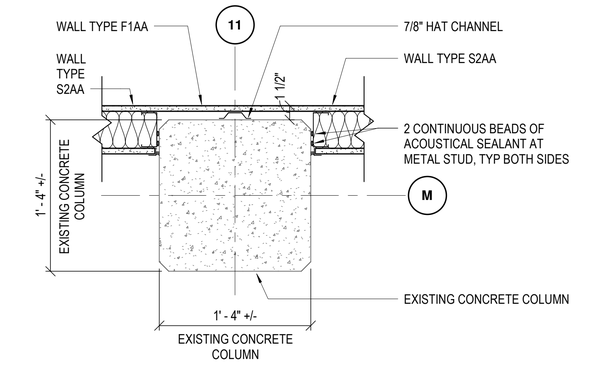
E8 CMU INFILL HEAD DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



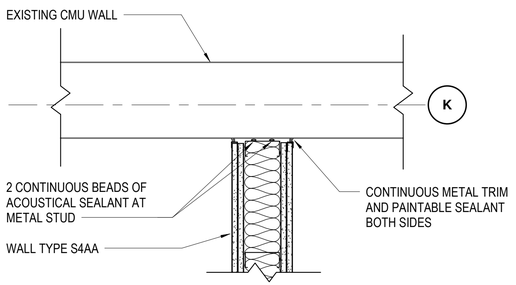
C1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



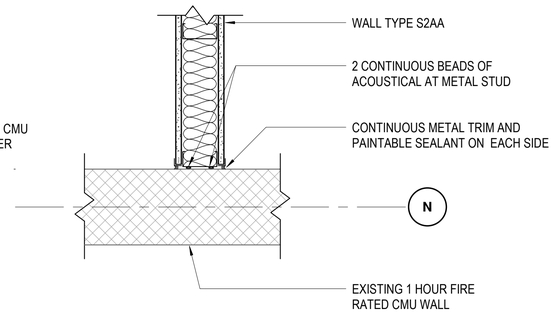
A4 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



C7 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



A1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"



A7 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2" 1' 1 1/2"

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VELAZQUEZ
SUBMITTED BY: D. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

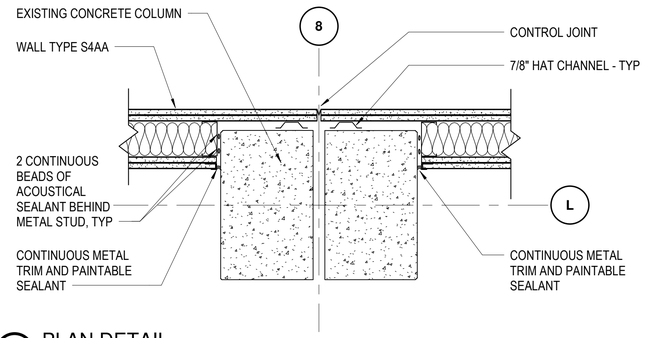
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

PLAN DETAILS

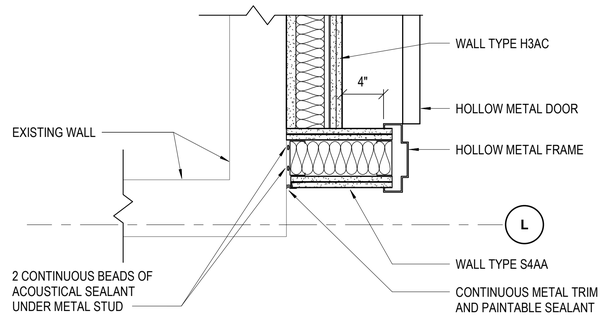
SHEET ID
A-521_5
SHEET 22 OF 112

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

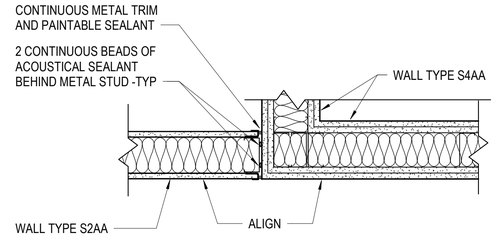
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



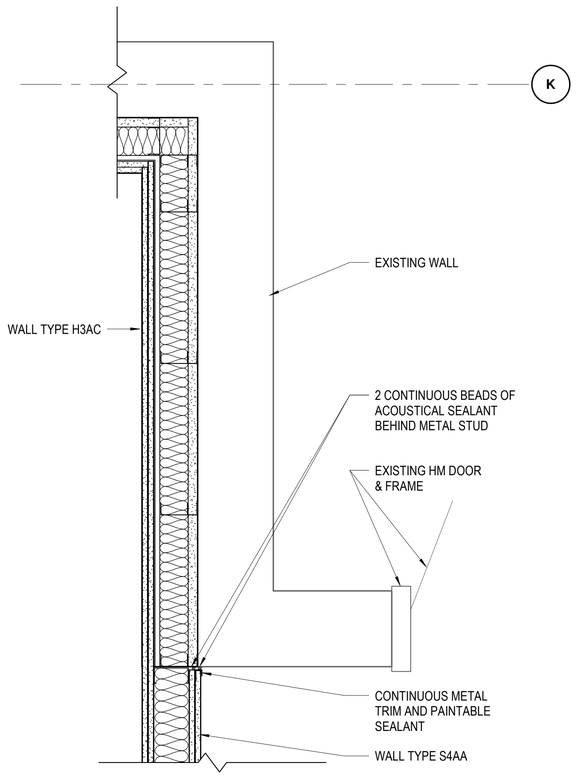
E1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



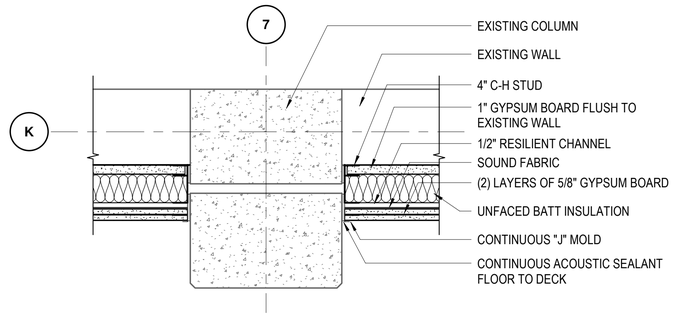
E4 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



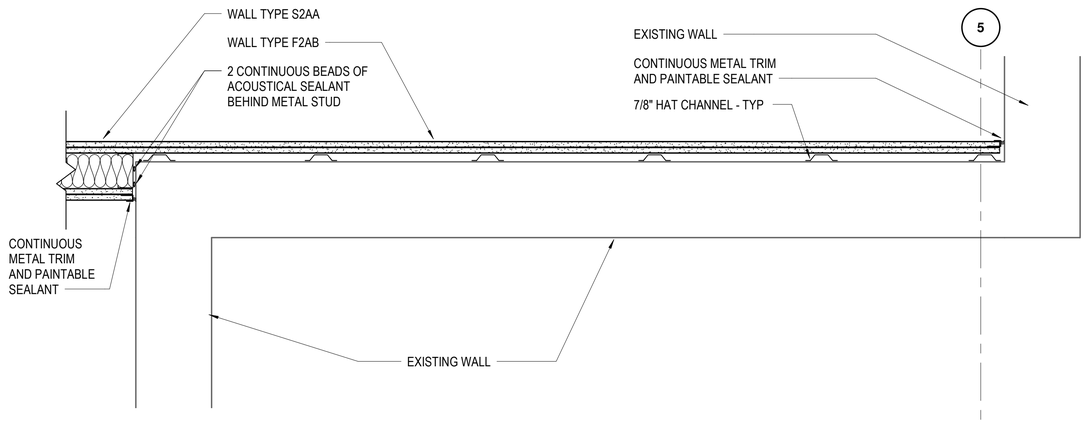
E7 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



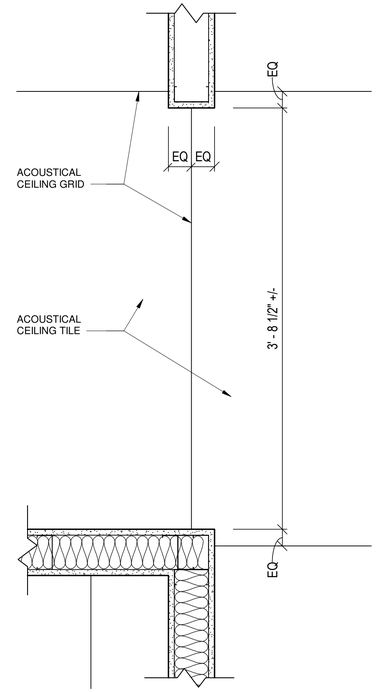
A1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



C4 DETAIL AT COLUMN
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



A4 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



A8 CEILING DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: B. KENNALEY
DRAWN BY: C. SPRINKLE
CHECKED BY: E. VELAZQUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

PLAN DETAILS

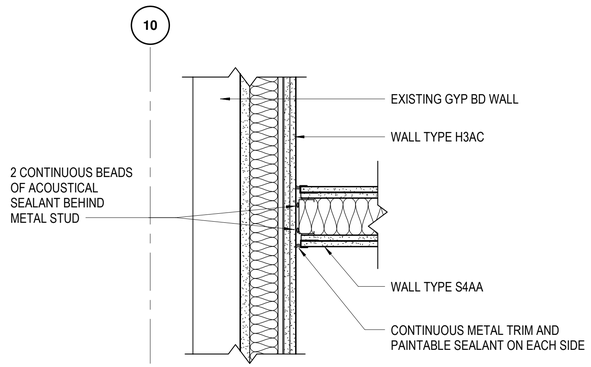
STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

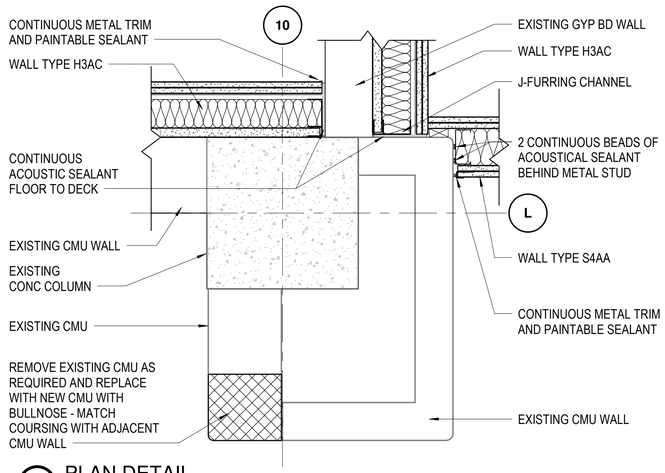
SHEET ID
A-522_5
SHEET 23 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

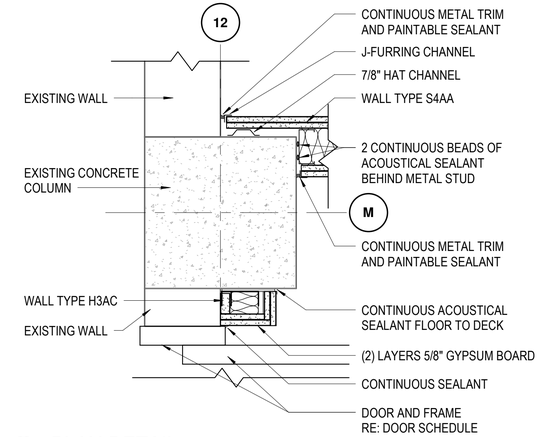
CONTROLLED UNCLASSIFIED INFORMATION (CUI)



E1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



E4 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'



E7 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

C1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

C4 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

C7 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

A1 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

A4 PLAN DETAIL
SCALE: 1 1/2" = 1'-0"
0 1/2' 1' 1 1/2'

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DATE	DESCRIPTION
0	02-24-23	CERTIFIED FINAL

ISSUE DATE: 02-24-23
SOLICITATION NO.:
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DESIGNED BY: B. KENNALEY
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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

PLAN DETAILS

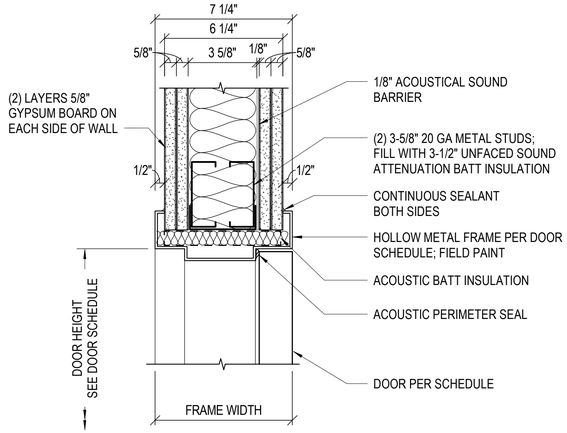
SHEET ID
A-523_5
SHEET 24 OF 112

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

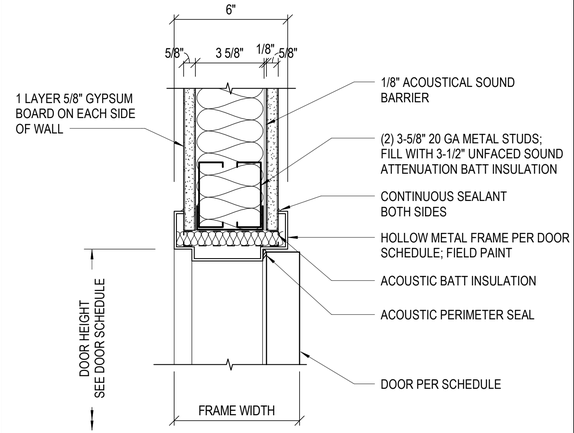
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001

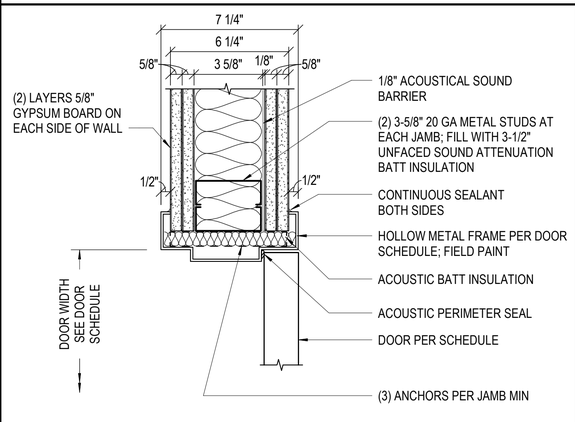
CUI



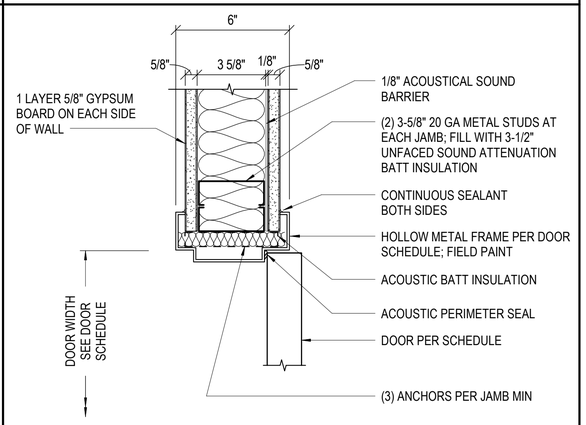
E1 DOOR HEAD
SCALE: 3" = 1'-0"



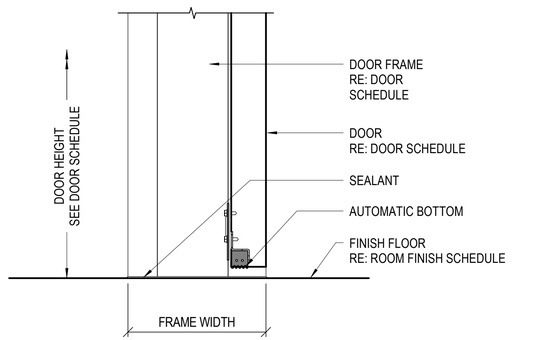
E3 DOOR HEAD
SCALE: 3" = 1'-0"



C1 DOOR JAMB
SCALE: 3" = 1'-0"



C3 DOOR JAMB
SCALE: 3" = 1'-0"



A1 DOOR SILL
SCALE: 3" = 1'-0"

DOOR HARDWARE SETS

1. THE DOOR HARDWARE SETS REPRESENT THE DESIGN INTENT AND DIRECTION OF THE OWNER AND ARCHITECT. THEY ARE A GUIDELINE ONLY AND SHOULD NOT BE CONSIDERED A DETAILED HARDWARE SCHEDULE. DISCREPANCIES, CONFLICTING HARDWARE AND MISSING ITEMS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND OWNER WITH CORRECTIONS MADE PRIOR TO THE BIDDING PROCESS. OMITTED ITEMS NOT INCLUDED IN A HARDWARE SET SHOULD BE SCHEDULED WITH THE APPROPRIATE ADDITIONAL HARDWARE REQUIRED FOR PROPER APPLICATION AND FUNCTIONALITY.
2. THE SUPPLIER IS RESPONSIBLE FOR HANDING AND SIZING ALL PRODUCTS AS LISTED IN THE DOOR HARDWARE SETS. QUANTITIES LISTED ARE FOR EACH PAIR OF DOORS, OR FOR EACH SINGLE DOOR. PROVIDE FIRE-RATED HARDWARE WHERE REQUIRED.

HARDWARE SETS

SET: 1.0
DOORS: W253A
DESCRIPTION: SINGLE OPEN OFFICE (STC)

1	MORTISE EXIT DEVICE	TYPE 3 GR1 F08 LEVER	US26D
1	CYLINDER	BEST - TYPE AS REQ'D FOR EXIT DEVICE	626
1	DOOR CLOSER PA	C02021 PT4H-BF/PT4D	AL
1	KICK PLATE	J102 10" X 2" LDW BEV CSK	US32D
1	MAGNETIC HOLDER	C00011	689

NOTES: HINGES, SOUND GASKET, DOOR BOTTOM, AND THRESHOLD (IF REQUIRED) TO BE PROVIDED BY ACOUSTIC DOOR MANUFACTURER.

OPERATION:
1. MAGNETIC HOLDER TO RELEASE UPON FIRE ALARM OR POWER FAILURE.

DOOR SCHEDULE - AHU-5

DOOR NUMBER	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	ASSEMBLY RATING (MIN)	STC (MIN)	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	HARDWARE SET	REMARKS
W201	-	-	-	-	-	-	_	-	-	-	-	5	1
W201A	-	-	-	-	-	-	_	-	-	-	-	5	1
W203A	-	-	-	-	-	-	-	-	-	-	-	5	1
W203C	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W203D	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W204A	3' - 0"	7' - 0"	F-IN	HM	1.2	HM	-	50	E4/A-602_5	C4/A-602_5	A4/A-602_5	6	
W204B	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	50	E1/A-601_5	C1/A-601_5	A1/A-601_5	4	
W209A	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	50	E1/A-601_5	C1/A-601_5	A1/A-601_5	3	
W209B	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	50	E1/A-601_5	C1/A-601_5	A1/A-601_5	3	
W209C	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W209D	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W209E	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W209F	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W209G	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W209H	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	-	E3/A-601_5	C3/A-601_5	-	2	
W210A	3' - 0"	7' - 0"	F-IN	HM	1.2	HM	-	50	E4/A-602_5	C4/A-602_5	A4/A-602_5	6	
W212A	3' - 0"	7' - 0"	F-IN	HM	1.2	HM	-	50	E4/A-602_5	C4/A-602_5	A4/A-602_5	6	
W220A	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	50	E1/A-601_5	C1/A-601_5	A1/A-601_5	3	
W220D	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	50	E1/A-601_5	C1/A-601_5	A1/A-601_5	3	
W221A	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-		E3/A-601_5	C3/A-601_5	-	2	
W221B	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-		E3/A-601_5	C3/A-601_5	-	2	
W221C	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-		E3/A-601_5	C3/A-601_5	-	2	
W221D	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-		E3/A-601_5	C3/A-601_5	-	2	
W221E	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-		E3/A-601_5	C3/A-601_5	-	2	
W221F	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-		E3/A-601_5	C3/A-601_5	-	2	
W225B	-	-	-	-	-	-	-	-	-	-	-	5	1
W226A	-	-	-	-	-	-	-	-	-	-	-	5	1
W253A	3' - 0"	7' - 0"	F-IN	HM	1.1	HM	-	50	E1/A-601_5	C1/A-601_5	A1/A-601_5	1	
W253B	-	-	-	-	-	-	-	-	-	-	-	5	1
W280A	-	-	-	-	-	-	-	-	-	-	-	5	1
W298A	3' - 0"	7' - 0"	F-IN	HM	1.2	HM	-	50	E1/A-602_5	C1/A-602_5	A4/A-602_5	6	

DOOR SCHEDULE REMARKS:

1. EXISTING DOOR - NO WORK REQUIRED. AT PROJECT COMPLETION, REPAIR OR REPLACE ANY DAMAGED PART OR FINISH OF DOOR, DOOR FRAME AND/OR DOOR HARDWARE AS NEEDED.

GENERAL DOOR NOTES:

1. ALL DOORS AND FRAMES TO BE FACTORY PAINTED.

SET: 2.0
DOORS: W203C, W203D, W209C, W209D, W209E, W209F, W209G, W209H, W221A, W221B, W221C, W221D, W221E, W221F
DESCRIPTION: SINGLE OFFICE

3	HINGE	A8112 4-1/2" X 4-1/2"	US26D
1	MORTISE LOCK (CLASSROOM)	1000 GRADE 1 LEVER*	626
1	CYLINDER	BEST - TYPE AS REQ'D FOR LOCK	626
1	WALL STOP	L02251	US32D
3	SILENCER	METAL FRAME TYPE	

SET: 3.0
DOORS: W209A, W209B, W220A, W220D
DESCRIPTION: SINGLE CONFERENCE/COLLAB (STC)

1	MORTISE LOCK (CLASSROOM)	1000 GRADE 1 LEVER*	626
1	CYLINDER	BEST - TYPE AS REQ'D FOR LOCK	626
1	WALL STOP	L02251	US32D

NOTES: HINGES, SOUND GASKET, DOOR BOTTOM, AND THRESHOLD (IF REQUIRED) TO BE PROVIDED BY ACOUSTIC DOOR MANUFACTURER.

SET: 4.0
DOORS: W204B
DESCRIPTION: SINGLE CONFERENCE (STC)

1	MORTISE LOCK (CLASSROOM)	1000 GRADE 1 LEVER*	626
1	CYLINDER	BEST - TYPE AS REQ'D FOR LOCK	626
1	SURFACE OVERHEAD STOP	C02541	630

NOTES: HINGES, SOUND GASKET, DOOR BOTTOM, AND THRESHOLD (IF REQUIRED) TO BE PROVIDED BY ACOUSTIC DOOR MANUFACTURER.

SET: 5.0
DOORS: W201, W201A, W203A, W225B, W226A, W253B, W280A
DESCRIPTION: SINGLE EXISTING DOOR

NOTES: REUSE EXISTING HARDWARE. AT PROJECT COMPLETION, REPAIR OR REPLACE ANY DAMAGED DOOR HARDWARE AS NEEDED.

DOOR TYPE

F

(FLUSH PANEL)	
TYPE	DESCRIPTION
F-IN	FLUSH PANEL INSULATED

DOOR FRAME TYPE

1

(DOOR FRAME)		
TYPE	A	B
1.1	2"	2"
1.2	2"	4"

SET: 6.0
DOORS: W204A, W210A, W212A, W298A
DESCRIPTION: SINGLE CONFERENCE (STC)

1	MORTISE LOCK (CLASSROOM)	1000 GRADE 1 LEVER*	626
1	CYLINDER	BEST - TYPE AS REQ'D FOR LOCK	626
1	SURFACE OVERHEAD STOP	C02541	630
1	DOOR CLOSER REG ARM	C02011 PT4H-BF/PT4D	AL
1	KICK PLATE	J102 10" X 2" LDW BEV CSK	US32D

NOTES: HINGES, SOUND GASKET, DOOR BOTTOM, AND THRESHOLD (IF REQUIRED) TO BE PROVIDED BY ACOUSTIC DOOR MANUFACTURER.

* CLASSROOM SECURITY LOCK FUNCTION IS CUSTOM AND DOES NOT HAVE AN ANSI/BHMA DESIGNATION. IT SHALL FUNCTION AS FOLLOWS:

- LATCHBOLT ALWAYS RETRACTED BY INSIDE LEVER/KNOB FOR EGRESS, OR BY OUTSIDE LEVER/KNOB WHEN NOT LOCKED BY THROWN DEADBOLT.
- DEADBOLT THROWN OR RETRACTED BY KEY FROM OUTSIDE, OR THUMBTURN INSIDE LOCKING OUTSIDE LEVER/KNOB.
- INDICATOR INSIDE DISPLAYS "LOCKED" WHEN OUTSIDE LEVER/KNOB IS LOCKED BY THUMBTURN INSIDE OR KEY OUTSIDE
- WHEN DEADBOLT IS THROWN, LEVER/KNOB ROTATION INSIDE RETRACTS DEADBOLT AND LATCHBOLT SIMULTANEOUSLY, AND UNLOCKS OUTSIDE LEVER/KNOB

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: S. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

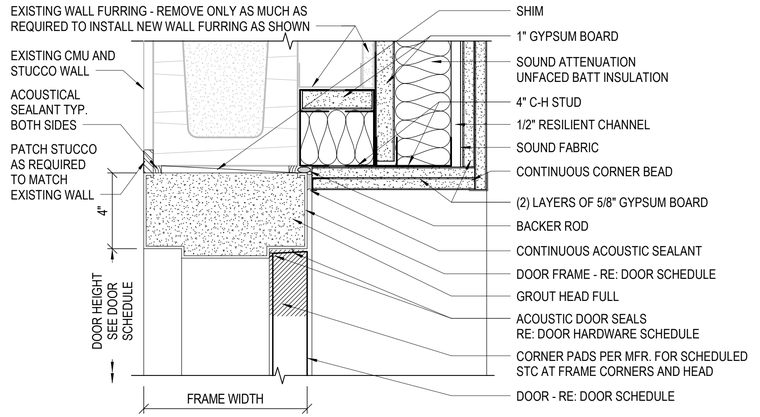
BURNS McDONNELL
9400 W 87TH PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

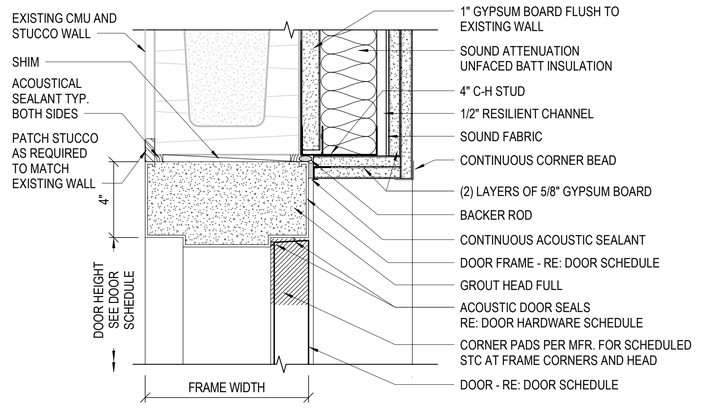
DOOR SCHEDULE, DOOR & FRAME TYPES, DOOR DETAILS

SHEET ID
A-601_5
SHEET 25 OF 112

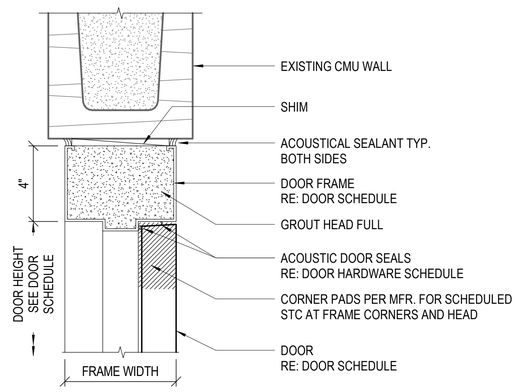
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



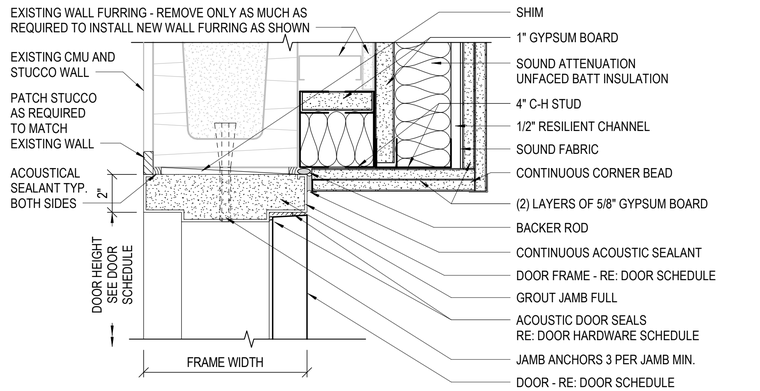
E1 DOOR HEAD - STC
SCALE: 3" = 1'-0"



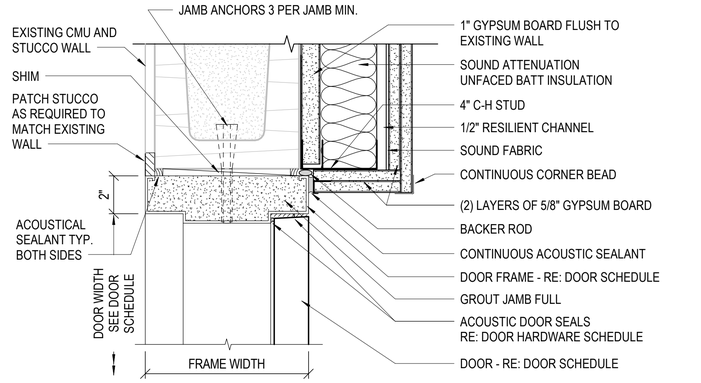
E4 DOOR HEAD - STC
SCALE: 3" = 1'-0"



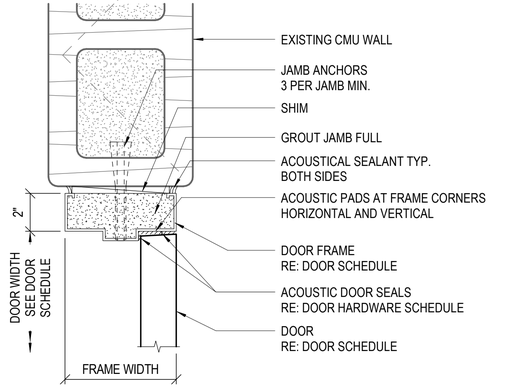
E7 DOOR HEAD - STC
SCALE: 3" = 1'-0"



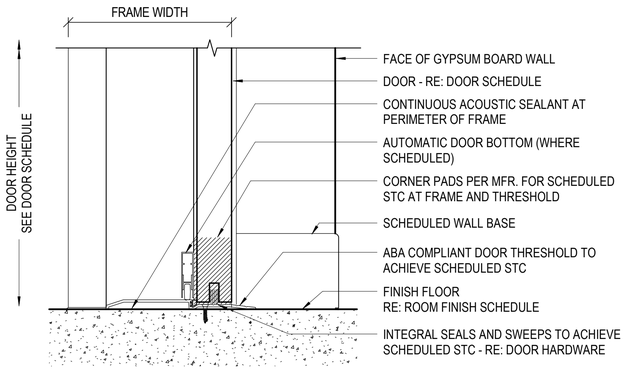
C1 DOOR JAMB - STC
SCALE: 3" = 1'-0"



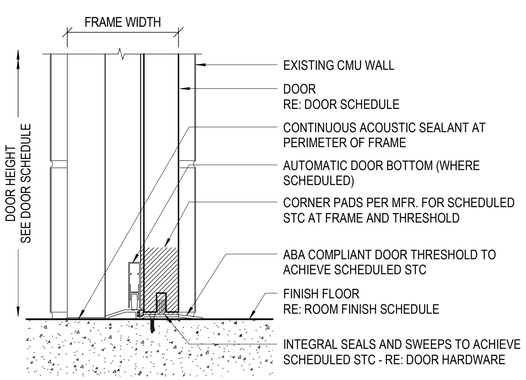
C4 DOOR JAMB - STC
SCALE: 3" = 1'-0"



C7 DOOR JAMB - STC
SCALE: 3" = 1'-0"



A4 DOOR SILL
SCALE: 3" = 1'-0"



A7 DOOR SILL - STC
SCALE: 3" = 1'-0"

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: B. KENNALEY
DRAWN BY: W. NEEDLE
CHECKED BY: E. VALEZQUEZ
SUBMITTED BY: C. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
CIVIL WORKS ENGINEERING
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

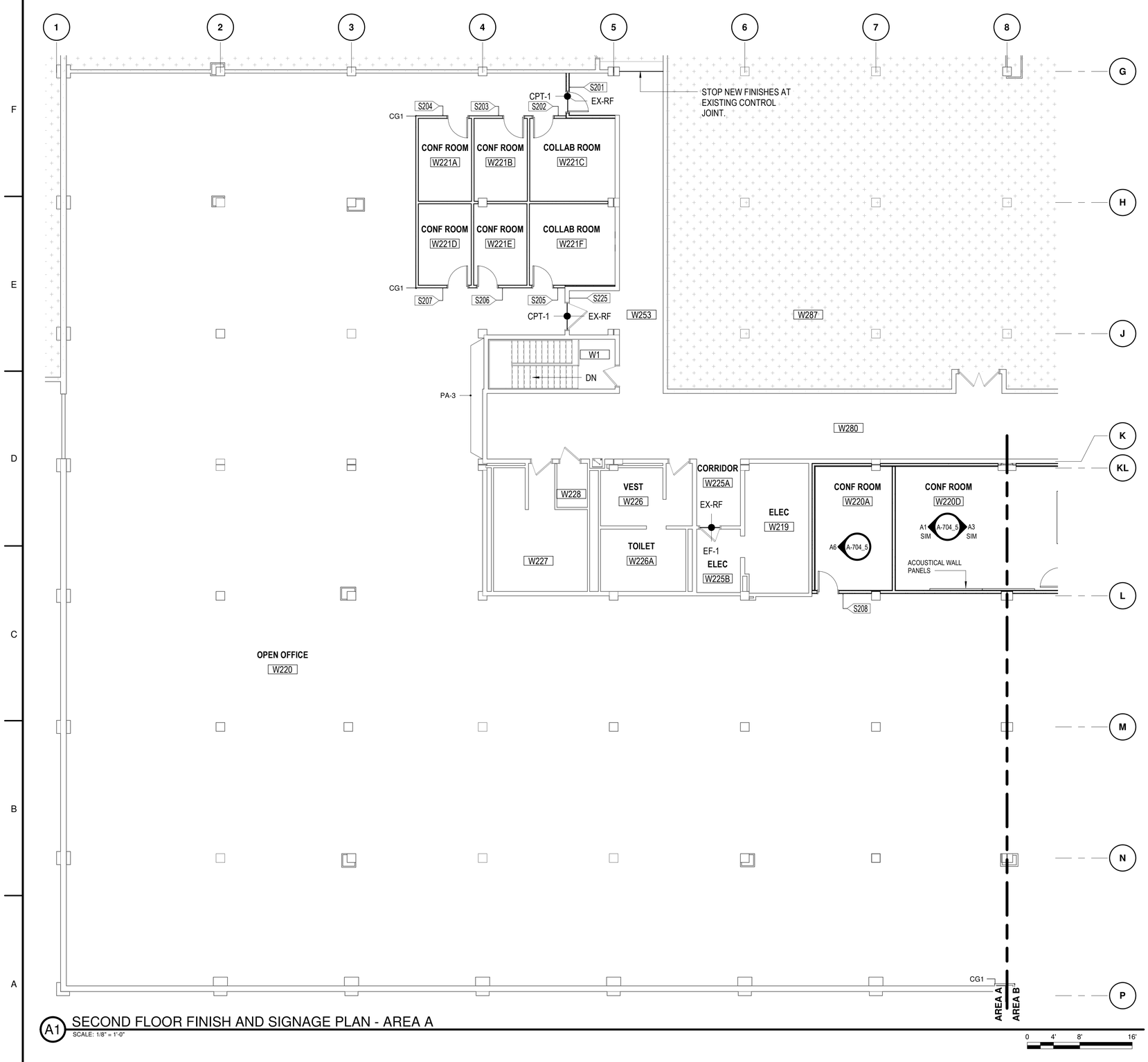
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

DOOR DETAILS

SHEET ID
A-602_5
SHEET 26 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CUI



A1 SECOND FLOOR FINISH AND SIGNAGE PLAN - AREA A
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

PLAN NORTH

GENERAL FINISH PLAN NOTES:

1. SEE ROOM FINISH SCHEDULE FOR FLOOR AND WALL FINISHES NOT INDICATED ON FLOOR PLANS.
2. SEE SPECIFICATION FOR FLOORING MATERIAL INSTALLATION REQUIREMENTS, COORDINATION OF FLOORING ACCESSORIES AND TRANSITION STRIPS BETWEEN DIFFERENT FLOOR CONDITIONS. PROVIDE THRESHOLDS PER SPECIFICATIONS AND DRAWINGS.
3. FOR FLOORING MATERIAL TRANSITIONS WHICH OCCUR AT DOORWAYS, TERMINATE FINISH TRANSITION AND TRANSITION STRIP UNDER THE DOOR AT THE DOOR STOP OR CENTER UNDER THE CLOSED DOOR.
4. WHERE TWO OR MORE PAINTED FINISHES OCCUR ON THE SAME WALL FACE OR CEILING SURFACE, A PAINT TRANSITION REVEAL IS TO PROVIDED AS INDICATED ON THE DRAWINGS.

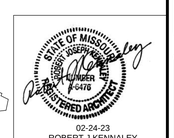
GENERAL SIGNAGE PLACEMENT PLAN NOTES:

1. REFER TO SIGNAGE SCHEDULE AND DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.
2. REFER TO SIGNAGE SCHEDULE FOR SIGN LOCATION TAG, DOOR LOCATION, SIGN TYPE, SIGN TEXT NUMBER, AND PLACEHOLDER MESSAGE TEXT.
3. REFER TO SIGNAGE MOUNTING HEIGHTS ON SIGNAGE DETAIL DRAWINGS. SIGNS TO BE WALL-MOUNTED ON THE LATCH SIDE OF DOOR OR AS INDICATED. HEIGHTS, CLEARANCES, AND CONFIGURATIONS SHOWN ARE TYPICAL AND MUST APPLY IN ALL INSTANCES UNLESS NOTED OTHERWISE.
4. INTERIOR SIGNAGE MUST COMPLY WITH UFC REQUIREMENTS, GUIDANCE FOR AIR FORCE SIGNAGE AS FOUND IN UFC 3-120-01 "SIGN STANDARDS, WITH CHANGE 3" AND BASE STANDARDS.
5. CONTRACTOR MUST ENSURE SIGNAGE ROOM NUMBER COORDINATE WITH NEW ROOM NUMBERS OR SIGNAGE MUST BE REPLACED TO MATCH EXISTING. RE: A-703_5 FOR SCHEDULE OF SIGNS.

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE



02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE-WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FINISH AND SIGNAGE PLAN - AREA A

SHEET ID
A-701_5
SHEET 27 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

A1 SECOND FLOOR FINISH AND SIGNAGE PLAN - AREA B

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

0 4' 8' 16'

PLAN NORTH

GENERAL FINISH PLAN NOTES:

1. SEE ROOM FINISH SCHEDULE FOR FLOOR AND WALL FINISHES NOT INDICATED ON FLOOR PLANS.
2. SEE SPECIFICATION FOR FLOORING MATERIAL INSTALLATION REQUIREMENTS, COORDINATION OF FLOORING ACCESSORIES AND TRANSITION STRIPS BETWEEN DIFFERENT FLOOR CONDITIONS. PROVIDE THRESHOLDS PER SPECIFICATIONS AND DRAWINGS.
3. FOR FLOORING MATERIAL TRANSITIONS WHICH OCCUR AT DOORWAYS, TERMINATE FINISH TRANSITION AND TRANSITION STRIP UNDER THE DOOR AT THE DOOR STOP OR CENTER UNDER THE CLOSED DOOR.
4. WHERE TWO OR MORE PAINTED FINISHES OCCUR ON THE SAME WALL FACE OR CEILING SURFACE, A PAINT TRANSITION REVEAL IS TO PROVIDED AS INDICATED ON THE DRAWINGS.

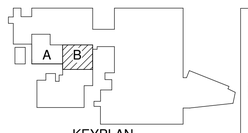
GENERAL SIGNAGE PLACEMENT PLAN NOTES:

1. REFER TO SIGNAGE SCHEDULE AND DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.
2. REFER TO SIGNAGE SCHEDULE FOR SIGN LOCATION TAG, DOOR LOCATION, SIGN TYPE, SIGN TEXT NUMBER, AND PLACEHOLDER MESSAGE TEXT.
3. REFER TO SIGNAGE MOUNTING HEIGHTS ON SIGNAGE DETAIL DRAWINGS. SIGNS TO BE WALL-MOUNTED ON THE LATCH SIDE OF DOOR OR AS INDICATED. HEIGHTS, CLEARANCES, AND CONFIGURATIONS SHOWN ARE TYPICAL AND MUST APPLY IN ALL INSTANCES UNLESS NOTED OTHERWISE.
4. INTERIOR SIGNAGE MUST COMPLY WITH UFC REQUIREMENTS, GUIDANCE FOR AIR FORCE SIGNAGE AS FOUND IN UFC 3-120-01 "SIGN STANDARDS, WITH CHANGE 3" AND BASE STANDARDS.
5. CONTRACTOR MUST ENSURE SIGNAGE ROOM NUMBER COORDINATE WITH NEW ROOM NUMBERS OR SIGNAGE MUST BE REPLACED TO MATCH EXISTING. RE: A-703_5 FOR SCHEDULE OF SIGNS.

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE



STATE OF MISSOURI ROBERT JOSEPH KENNALEY NUMBER A-6476 REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE-WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: S. JAMESON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT - PDC
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FINISH AND SIGNAGE PLAN - AREA B

SHEET ID

A-702_5

SHEET 28 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CUI

GENERAL SIGNAGE SCHEDULE NOTES:

1. REFER TO SPECIFICATION SECTION 10 14 00.20 INTERIOR SIGNAGE FOR BASIS OF DESIGN OR EQUIVALENT, PRODUCT STYLE AND COLOR.
2. REFER TO SIGNAGE PLACEMENT DRAWINGS FOR LOCATION OF INTERIOR SIGNS.
3. REFER TO SIGNAGE DETAILS FOR SIGNAGE CONSTRUCTION AND MOUNTING ELEVATION.
4. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION OF SIGNAGE INSTALLATION TO WALL CONSTRUCTION. SIGNAGE MUST BE ANCHORED THRU THE SURFACE APPLIED WALL FINISHES TO THE SUBSTRATE WALL.
5. ALL HARDWARE/MOUNTING ATTACHMENTS TO BE CONCEALED AND APPROPRIATE FOR THE RECEIVING BUILDING SURFACE.
6. ALL SIGNAGE MUST COMPLY WITH THE MOST CURRENT VERSION OF THE ARCHITECTURAL BARRIERS ACT (ABA).
7. INSTALL FIRE EXTINGUISHER IDENTIFICATION SIGN ABOVE ALL FIRE EXTINGUISHER CABINETS AND WALL BRACKET MOUNTED EXTINGUISHERS. SEE LIFE SAFETY PLANS FOR FIRE EXTINGUISHER LOCATIONS.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH SIGNAGE MANUFACTURER(S) TO PROVIDE ANY ADDITIONAL SIGNAGE AS REQUIRED BY GOVERNING MUNICIPALITY AT THE SITE LOCATION.
9. ALL MESSAGE TEXT AS SHOWN ON THE SIGN SCHEDULE IS A PLACE HOLDER ONLY AND IS NOT THE FINAL TEXT MESSAGE. ALL MESSAGE TEXT MUST BE CONFIRMED BY GOVERNMENT END USER PRIOR TO SIGNAGE SHOP DRAWINGS.

GENERAL ROOM FINISH SCHEDULE NOTES:

1. REFER TO FINISH LEGEND FOR BASIS OF DESIGN INTERIOR FINISH MATERIALS. FINISHES WHICH MATCH TECHNICAL SPECIFICATIONS ARE CONSIDERED EQUAL AND MAY BE CONSIDERED FOR APPROVAL. MATCH EXISTING PATTERNS AND FINISHES IN KIND.
2. REFER TO SPECIFICATIONS FOR FINISH TECHNICAL REQUIREMENTS.
3. REFER TO ELECTRICAL DRAWINGS, MECHANICAL DRAWINGS, AND COMMUNICATION DRAWINGS FOR COORDINATION OF BUILDING FINISHES TO BUILDING SYSTEMS.
4. ALL PAINTING MUST BE COMPLETED BY CONTRACTOR DURING OFF-SHIFT HOURS.
5. CONTRACTOR TO ELECTROSTATICALLY PAINT ALL NEW AND EXISTING METAL DOORS AND HAND ROLL DOOR FRAMES WITHIN PROJECT BOUNDARY. COLOR TO MATCH FACILITY STANDARD: PA-2.
6. CONTRACTOR TO PAINT ALL WALLS IN AHU-5 AREA.
7. PAINT BOTH SIDES OF WALL IN MECHANICAL ROOM W299 ONE COAT WHITE, INCLUDING ABOVE CEILING. PAINT SECURE SPACE EXTERIOR BOUNDARY WALLS WITHIN PROJECT AREA, INCLUDING ABOVE CEILING.
8. RE-LABEL JUNCTION BOXES AND OTHER EQUIPMENT IN MECHANICAL ROOM W299 WHERE LABELS WILL BE PAINTED OVER.
9. IN MECHANICAL ROOM W299, PAINT MISC. STEEL, EXISTING LOUVER BLANK OFF PANEL TO REMAIN. TEMPORARILY REMOVE PANEL AND RE-INSTALL AFTER INSTALLATION OF AIR HANDLING UNIT.
10. IN MECHANICAL ROOM W299, EXISTING CONCRETE FLOOR TO BE PROPERLY PREPARED TO RECEIVE PAINTED FINISH AS SCHEDULED. PREPARE FLOOR SURFACE TO REMOVE ALL DIRT, OIL, GREASE, POWDERY AND PEELING PAINT, AND OTHER CONTAMINANTS. ETCHING, BEAD BLASTING OR OTHER APPROVED MEANS WILL BE REQUIRED. REPAIR ALL CRACKS AND OTHER SURFACE IMPERFECTIONS WITH HIGH QUALITY COMPOUNDS. APPLY 2 COATS LOW VOC EPOXY PAINT, PER MANUFACTURER'S RECOMMENDATION. APPLY SILICON SAND TO MIXTURE FOR SLIP RESISTANCE. COLOR MUST BE BY SHERWIN WILLIAMS APPROVED BY WPAFB. MOISTURE LEVELS MUST BE TESTED AND AT ACCEPTABLE LEVELS PRIOR TO PAINTING, PER MANUFACTURER'S RECOMMENDATION.
11. IN MECHANICAL ROOM W299, EXISTING CEILING TO REMAIN. PATCH, CLEAN, AND PAINT. PAINT WALLS SAME COLOR AS CEILING.
12. PROVIDE CORNER GUARDS (CG-1) AS INDICATED ON PLANS.
13. ALL SECURE AREA PERIMETER WALLS MUST BE PAINTED ABOVE CEILING TO UNDERSIDE OF DECK ABOVE, AND BELOW RAISED ACCESS FLOOR TO FLOOR SLAB BELOW.

SIGNAGE SCHEDULE - SECOND FLOOR

SIGN CODE	SIGN TYPE	ROOM NUMBER	MESSAGE TEXT
S201	A	W220	OPEN OFFICE
S202	A	W221C	COLLABORATION ROOM
S203	A	W221B	CONFERENCE ROOM
S204	A	W221A	CONFERENCE ROOM
S205	A	W221F	COLLABORATION ROOM
S206	A	W221E	CONFERENCE ROOM
S207	A	W221D	CONFERENCE ROOM
S208	A	W220A	CONFERENCE ROOM
S209	A	W220D	CONFERENCE ROOM
S210	A	W209A	CONFERENCE ROOM
S211	A	W209C	OFFICE
S212	A	W209B	CONFERENCE ROOM
S213	A	W209D	OFFICE
S214	A	W209E	OFFICE
S215	A	W209F	OFFICE
S216	A	W209G	OFFICE
S217	A	W209H	OFFICE
S218	A	W203D	OFFICE
S219	A	W203C	OFFICE
S220	A	W204	CONFERENCE ROOM
S221	A	W204	CONFERENCE ROOM
S222	A	W298	OPEN OFFICE
S223	A	W203	OPEN OFFICE
S224	A	W209	OPEN OFFICE
S225	A	W220	OPEN OFFICE

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE MATERIAL	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CEILING	REMARKS
LEVEL 2									
W201	TOILET	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W201A	VEST	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W201B	VEST	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W203	COLLAB ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1 / PA-3	PA-1 / PA-3	ACT-1	
W203A	BREAK	CPT-1	RB-1	PA-1 / PA-3	PA-1	PA-1	PA-1	ACT-1	
W203C	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W203D	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W203E	CONF ROOM	CPT-1	RB-1	PA-1	PA-1 / PA-3	PA-1	PA-1	ACT-1	
W204	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W208	CORRIDOR	EXISTING	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209	OPEN OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209A	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209B	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209C	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209D	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209E	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209F	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209G	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W209H	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W210	OFFICE	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W212	OFFICE	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W219	ELEC	EF-1	-	PA-1	PA-1	PA-1	PA-1	ACT-1	
W220	OPEN OFFICE	CPT-1	RB-1	PA-1	PA-1 / PA-3	PA-1	PA-1 / PA-3	ACT-1	
W220A	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W220D	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W221A	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W221B	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W221C	COLLAB ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W221D	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W221E	CONF ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W221F	COLLAB ROOM	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W225A	CORRIDOR	EXISTING	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W225B	ELEC	EF-1	-	PA-1	PA-1	PA-1	PA-1	ACT-1	
W226	VEST	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W226A	TOILET	-	-	-	-	-	-	ACT-1	ONLY EXISTING CEILING TO BE REPLACED
W253	CORRIDOR	EXISTING	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	SEE A-701_5 AND A-702_5 FINISH PLANS FOR FINISH EXTENT
W279	CORRIDOR	RF-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	MATCH EXISTING TILE AT NEW ALCOVE
W298	OPEN OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1	
W299	MECHANICAL	EF-1	-	-	-	-	-	-	SEE GENERAL NOTES FOR MORE INFORMATION

FINISH LEGEND - BASIS OF DESIGN OR EQUIVALENT

MATERIAL	DESCRIPTION	MANUF.	MODEL	PRODUCT NUMBER	COLOR	REMARKS
CEILING FINISHES						
ACT-1	24" x 48" x 3/4"	ARMSTRONG	FINE FISSURED, SCHOOL ZONE, SQUARE LAY-IN	1714	WHITE	
FLOOR FINISHES						
CPT-1	CARPET TILE - 24" X 24"	SHAW CONTRACT	DISPERSE	59576	MAGNETIC FIELDS	
EF-1	STANDARD RESINOUS FLOORING	SHERWIN WILLIAMS	2 COAT / SILICON SAND	-	SW4031 STRUCTURAL GRAY	
EX-RF	EXISTING RESILIENT FLOORING	-	-	-	-	-
RF-1	VINYL COMPOSITION TILE 12"X12"	ARMSTRONG	IMPERIAL TEXTURE STANDARD EXCELON	51839	FORTRESS WHITE	MATCH TO EXISTING
WALL FINISHES						
AP-1	ACOUSTICAL PANEL FABRIC	CARNEGIE	XOREL HAVANA	6249	NO.5	
CG-1	4' HIGH CORNER GUARD	CONSTRUCTION SPECIALTIES	ACROVYN	SM-20	FOLKSTONE 927	INSTALLED AT ALL OUTSIDE CORNERS OF GYPSUM BOARD WALLS
PA-1	ACRYLIC/LATEX	SHERWIN WILLIAMS	EGGSHELL	SW7649	SILVERPLATE	INTERIOR ROOM WALL PAINT
PA-2	ACRYLIC/LATEX	BENJAMIN MOORE	SEMI-GLOSS	2134-30	IRON MOUNTAIN	METAL DOORS AND FRAMES
PA-3	ACRYLIC/LATEX	SHERWIN WILLIAMS	EGGSHELL	SW6530	REVEL BLUE	INTERIOR ROOM WALL PAINT
RB-1	4" TOED WALL BASE	ROPPE	RUBBER BASE	193, COVE	98 BLACK BROWN	

STATE OF MISSOURI — ROBERT JOSEPH KENNALEY — NUMBER A-6476 — REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

DATE	DESCRIPTION	MARK
02-24-23	CERTIFIED FINAL	0

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

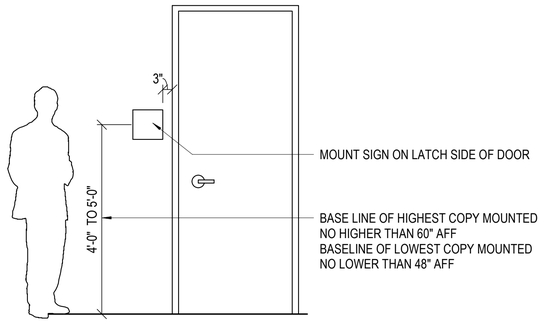
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

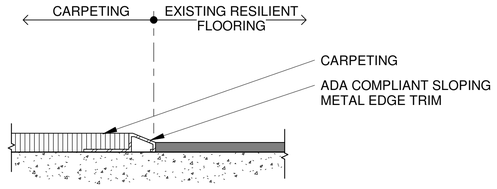
FINISH & SIGNAGE SCHEDULES AND NOTES

SHEET ID
A-703_5
SHEET 29 OF 112

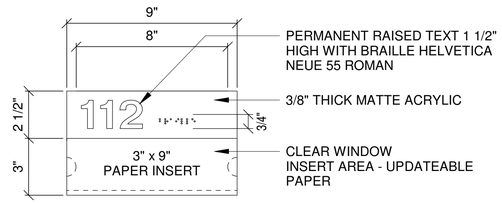
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



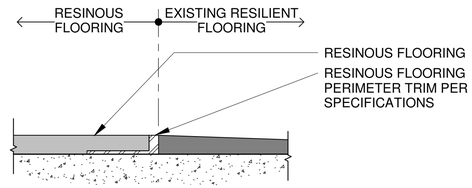
D1 TYP. SIGNAGE MOUNTING - WALL
SCALE: 1/2" = 1'-0"
0 1' 2' 4'



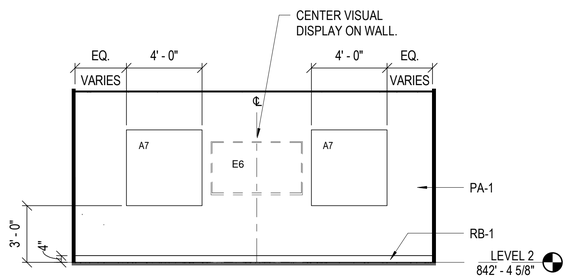
D3 FLOOR TRANSITION - RESILIENT TO CARPET
SCALE: 12" = 1'-0"
0 1" 2"



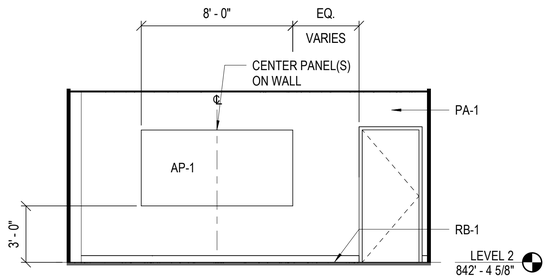
C1 SIGN TYPE A
SCALE: 3" = 1'-0"
0 3" 6" 9"



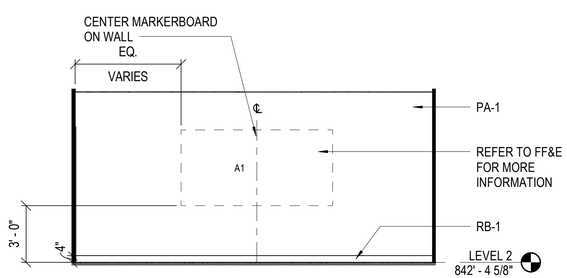
C3 FLOOR TRANSITION - RESINOUS TO RESILIENT
SCALE: 12" = 1'-0"
0 1" 2"



A1 TYPICAL CONFERENCE ROOM MEDIA ELEVATION
SCALE: 1/4" = 1'-0"
0 2' 4' 8'



A3 TYPICAL SINGLE ACOUSTICAL PANEL ELEVATION
SCALE: 1/4" = 1'-0"
0 2' 4' 8'



A6 TYPICAL MARKERBOARD ELEVATION
SCALE: 1/4" = 1'-0"
0 2' 4' 8'

STATE OF MISSOURI — ROBERT JOSEPH KENNALEY — NUMBER A-6476 — REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE-WELLER
DRAWN BY: W. NEEDLE
CHECKED BY: R. LASTER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

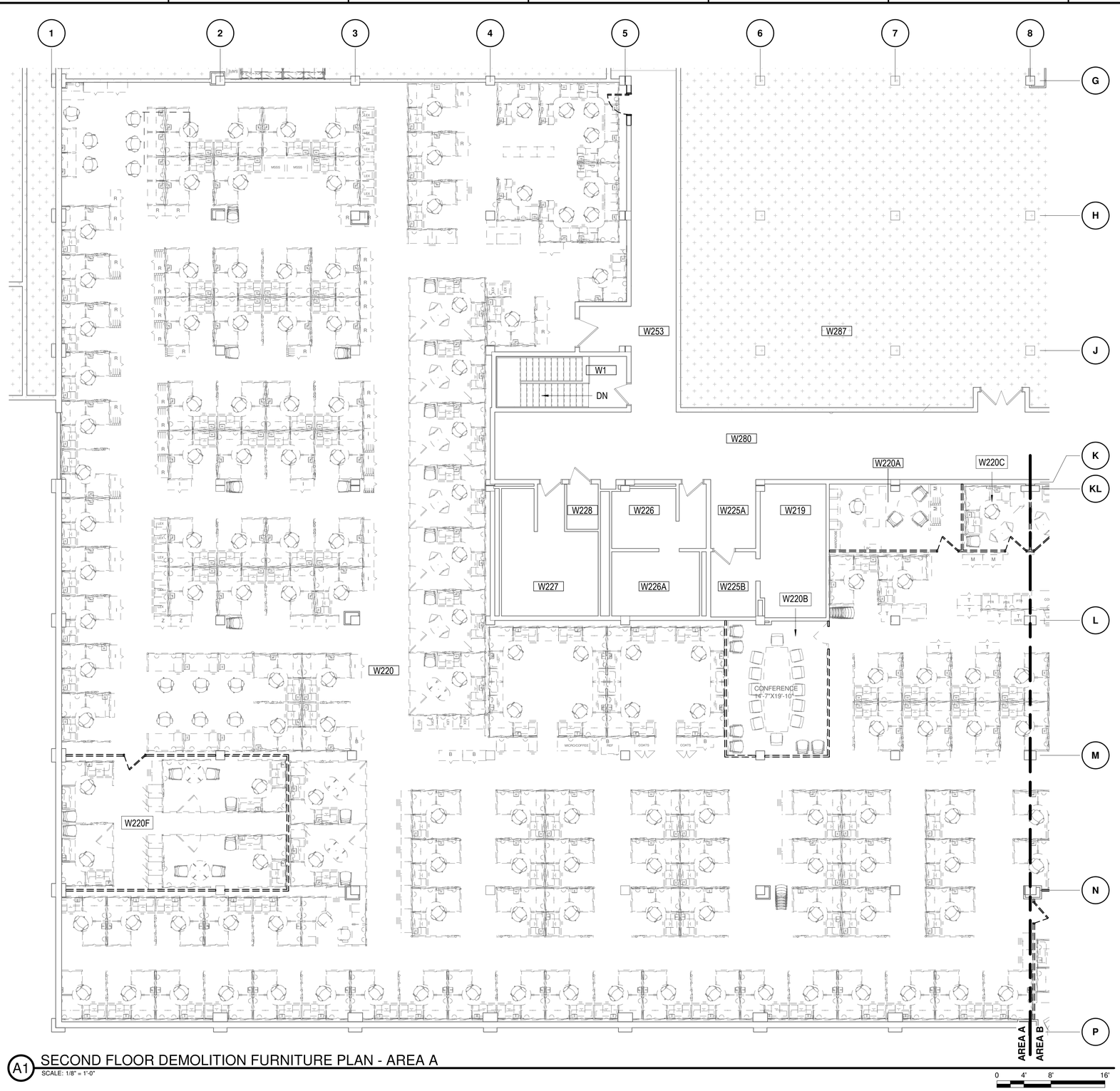
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

INTERIOR DETAILS AND ELEVATIONS

SHEET ID
A-704_5
SHEET 30 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 SECOND FLOOR DEMOLITION FURNITURE PLAN - AREA A
SCALE: 1/8" = 1'-0"

PLAN NORTH

GENERAL DEMOLITION PLAN NOTES: FURNITURE

1. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.
2. CONTRACTOR MUST FIELD VERIFY AND LABEL THE EXTENT OF ALL FURNITURE, EQUIPMENT, POWER POLES, COMPUTER POLES, CABLING, WIRING AND DEMOUNTABLE PARTITIONS. CONTRACTOR MUST DISASSEMBLE, SORT FURNITURE FOR RE-USE, AND RE-ASSEMBLE AFTER CONSTRUCTION IS COMPLETE. LOCATION FOR STORAGE OF FURNITURE MUST BE DETERMINED BY GOVT. PRIOR TO COMMENCMENT OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR INVENTORYING EACH ROOM PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR MUST LABEL ALL EXISTING CONDITIONS TO ENSURE THAT THE FURNITURE, CABINETS, POWER, CCTV, CONFERENCE EQUIPMENT, ETC. AND COMPUTER WIRING ARE ALL REPLACED IN THE SAME LOCATIONS. CONTRACTOR SHALL DIRECT GOVERNMENT TO TAKE PICTURES OF ALL EXISTING DAMAGE FOR RECORDS. PHOTOS ARE ONLY NEEDED FOR DAMAGED ITEMS. CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND NOTIFY THE GOVERNMENT OF DAMAGED ITEMS. CONTRACTOR'S FAILURE TO TAKE GOOD RECORDS WILL NOT BE THE GOVERNMENT'S RESPONSIBLITY.
4. PRIOR TO CONTRACTOR'S WORK, INDIVIDUALS' PERSONAL BELONGS WILL BE BOXED, MOVED AND/OR STORED BY THE GOVERNMENT.
5. ALL FURNITURE WILL BE REMOVED FROM CONSTRUCTION AREA BY THE CONTRACTOR AND TURNED OVER TO APPROPRIATE ENTITIES OR STORED FOR RE-INSTALLATION. CONTRACTOR MUST STORE ALL FURNITURE TO BE RE-INSTALLED IN CONTRACTOR FURNISHED LOCKABLE TRAILERS ON WPAFB. CONTRACTOR MUST BEAR THE SOLE RESPONSIBILITY TO ENSURE THAT THE FURNITURE AND EQUIPMENT IS NOT DAMAGED, AND IS REINSTALLED WITH ASSOCIATED POWER POLES, COMPUTER POWER, COMPUTER FIBER, PHONES, ETC. IN THE SAME CONFIGURATION.
6. ALL EXISTING DEMOUNTABLE PARTITIONS TO BE REMOVED.
7. ALL ARTWORK TO BE REMOVED BY WPAFB PRIOR TO BEGINNING OF WORK.
8. SEE SHEE A-002_5 FOR ROOM SCHEDULE.

DEMOLITION/EXISTING PLAN LEGEND

- EXISTING DOOR
- DOOR TO BE REMOVED
- EXISTING WALL
- WALL TO BE REMOVED
- FURNITURE TO BE REMOVED

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

US ARMY CORPS OF ENGINEERS
CONTRACTING DIVISION
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR DEMO FURNITURE PLAN - AREA A

SHEET ID
ID110_5
SHEET 31 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

GENERAL DEMOLITION PLAN NOTES: FURNITURE

1. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.
2. CONTRACTOR MUST FIELD VERIFY AND LABEL THE EXTENT OF ALL FURNITURE, EQUIPMENT, POWER POLES, COMPUTER POLES, CABLING, WIRING AND DEMOUNTABLE PARTITIONS. CONTRACTOR MUST DISASSEMBLE, SORT FURNITURE FOR RE-USE, AND RE-ASSEMBLE AFTER CONSTRUCTION IS COMPLETE. LOCATION FOR STORAGE OF FURNITURE MUST BE DETERMINED BY GOVT. PRIOR TO COMMENCMENT OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR INVENTORYING EACH ROOM PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR MUST LABEL ALL EXISTING CONDITIONS TO ENSURE THAT THE FURNITURE, CABINETS, POWER, CCTV, CONFERENCE EQUIPMENT, ETC. AND COMPUTER WIRING ARE ALL REPLACED IN THE SAME LOCATIONS. CONTRACTOR SHALL DIRECT GOVERNMENT TO TAKE PICTURES OF ALL EXISTING DAMAGE FOR RECORDS. PHOTOS ARE ONLY NEEDED FOR DAMAGED ITEMS. CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND NOTIFY THE GOVERNMENT OF DAMAGED ITEMS. CONTRACTOR'S FAILURE TO TAKE GOOD RECORDS WILL NOT BE THE GOVERNMENT'S RESPONSIBLITY.
4. PRIOR TO CONTRACTOR'S WORK, INDIVIDUALS' PERSONAL BELONGS WILL BE BOXED, MOVED AND/OR STORED BY THE GOVERNMENT.
5. ALL FURNITURE WILL BE REMOVED FROM CONSTRUCTION AREA BY THE CONTRACTOR AND TURNED OVER TO APPROPRIATE ENTITIES OR STORED FOR RE-INSTALLATION. CONTRACTOR MUST STORE ALL FURNITURE TO BE RE-INSTALLED IN CONTRACTOR FURNISHED LOCKABLE TRAILERS ON WPAFB. CONTRACTOR MUST BEAR THE SOLE RESPONSIBILITY TO ENSURE THAT THE FURNITURE AND EQUIPMENT IS NOT DAMAGED, AND IS REINSTALLED WITH ASSOCIATED POWER POLES, COMPUTER POWER, COMPUTER FIBER, PHONES, ETC. IN THE SAME CONFIGURATION.
6. ALL EXISTING DEMOUNTABLE PARTITIONS TO BE REMOVED.
7. ALL ARTWORK TO BE REMOVED BY WPAFB PRIOR TO BEGINNING OF WORK.
8. SEE SHEE A-002_5 FOR ROOM SCHEDULE.

DEMOLITION/EXISTING PLAN LEGEND

EXISTING DOOR

DOOR TO BE REMOVED

EXISTING WALL

WALL TO BE REMOVED

FURNITURE TO BE REMOVED

SCOPE LEGEND

NOT IN SCOPE

A1 SECOND FLOOR DEMOLITION FURNITURE PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

KEYPLAN
NOT TO SCALE

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
CHRISTOPHER S. PRICE
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR DEMO FURNITURE PLAN - AREA B

SHEET ID
ID111_5
SHEET 32 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

FURNITURE PLAN KEY LEGEND:

B — EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

A — EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

XX — NEW FURNITURE
CONTRACTOR FURNISHED CONTRACTOR INSTALLED (CFCI)

– – – – GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

FURNITURE PLAN KEY NOTES:

1. ALL NOTED EXISTING FURNITURE TO BE DISASSEMBLED AND STORED DURING CONSTRUCTION. STEAM CLEAN PRIOR TO RE-INSTALLING AT COMPLETION OF CONSTRUCTION.

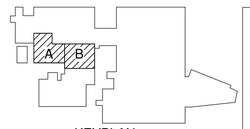
2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.

PLAN NORTH

SCOPE LEGEND

NOT IN SCOPE

0 8' 16' 24'



KEYPLAN
NOT TO SCALE

A1 SECOND FLOOR FURNITURE PLAN - OVERALL KEY
SCALE: 3/32" = 1'-0"

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FURNITURE PLAN - OVERALL KEY

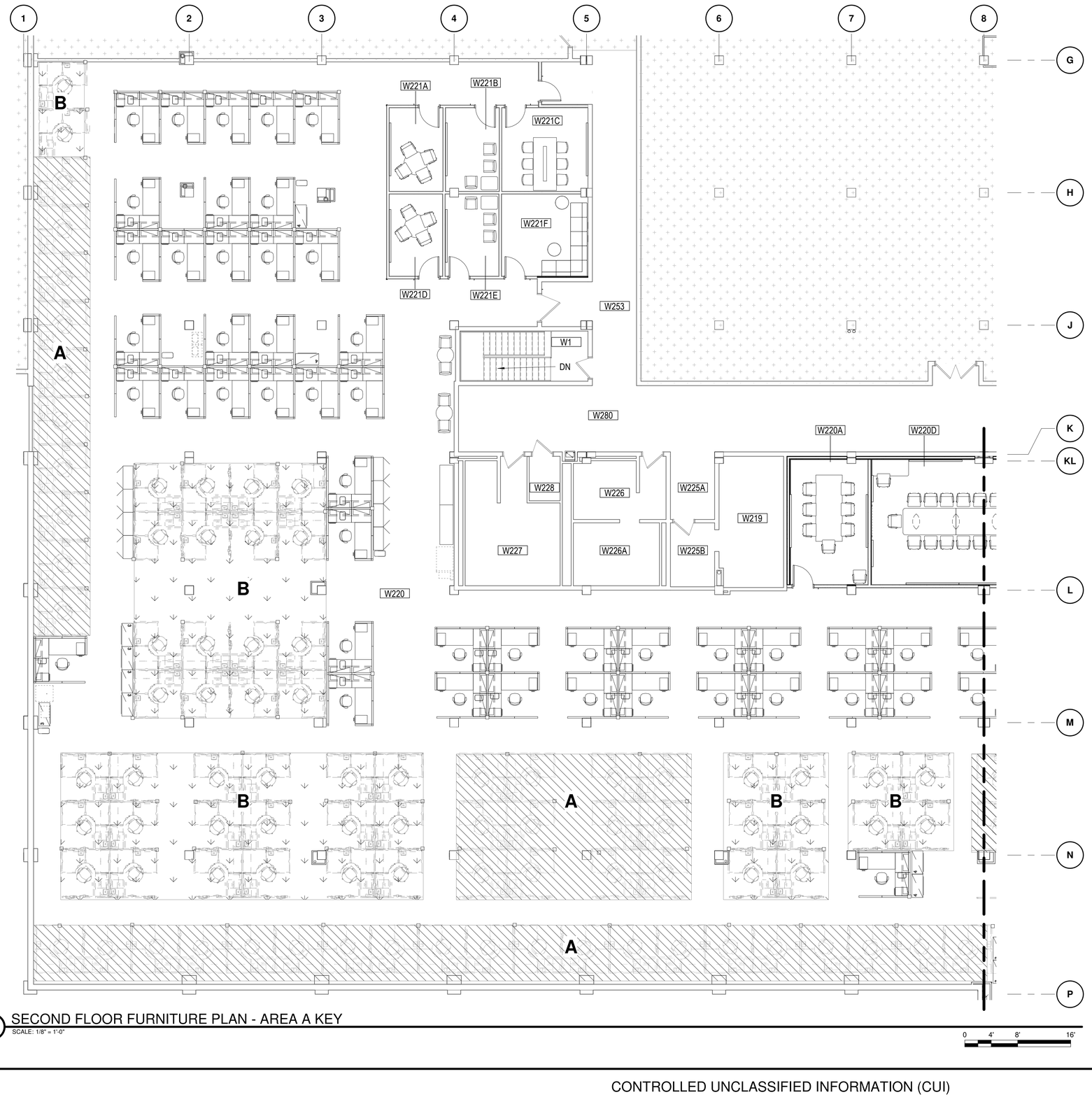
SHEET ID
I-109_5
SHEET 33 OF 112

STATE OF MISSOURI — ROBERT JOSEPH KENNALEY — NUMBER A-6476 — REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001



FURNITURE PLAN KEY LEGEND:

- EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION. GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)
- EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION. GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)
- NEW FURNITURE CONTRACTOR FURNISHED CONTRACTOR INSTALLED (CFCI)
- GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

FURNITURE PLAN KEY NOTES:

1. ALL NOTED EXISTING FURNITURE TO BE DISASSEMBLED AND STORED DURING CONSTRUCTION. STEAM CLEAN PRIOR TO RE-INSTALLING AT COMPLETION OF CONSTRUCTION.

2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.

SCOPE LEGEND

NOT IN SCOPE

A1 SECOND FLOOR FURNITURE PLAN - AREA A KEY
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

KEYPLAN
NOT TO SCALE

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: G. C. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 4699378
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FURNITURE PLAN - AREA A KEY

SHEET ID
I-110_5
SHEET 34 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

A1 SECOND FLOOR FURNITURE PLAN - AREA B KEY
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

FURNITURE PLAN KEY LEGEND:

- B — EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION. GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)
- A — EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION. GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)
- XX — NEW FURNITURE CONTRACTOR FURNISHED CONTRACTOR INSTALLED (CFCI)
- GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

FURNITURE PLAN KEY NOTES:

1. ALL NOTED EXISTING FURNITURE TO BE DISASSEMBLED AND STORED DURING CONSTRUCTION. STEAM CLEAN PRIOR TO RE-INSTALLING AT COMPLETION OF CONSTRUCTION.

2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

DESIGNED BY:	T. LEE WELLER
DRAWN BY:	S. BRANNAN
CHECKED BY:	R. LASTER
SUBMITTED BY:	C. JOHNSON
SIZE:	34X22

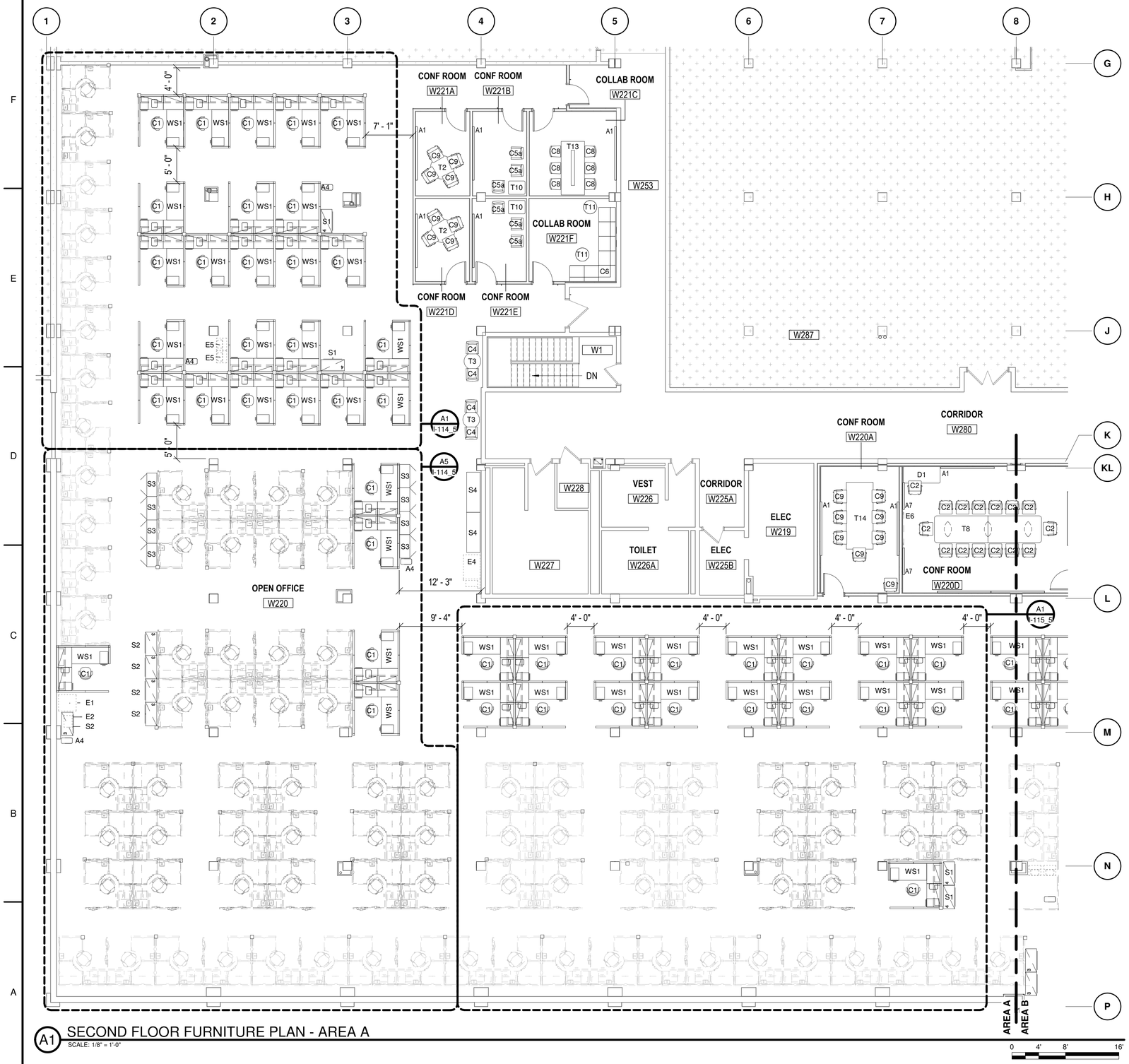
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FURNITURE PLAN - AREA B KEY

SHEET ID
I-111_5
SHEET 35 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)



A1 SECOND FLOOR FURNITURE PLAN - AREA A
SCALE: 1/8" = 1'-0"

GENERAL FURNITURE PLAN NOTES:

1. THE OFFICE AREAS OUTSIDE OF CONSTRUCTION WILL REMAIN OCCUPIED BY WPAFB DURING CONSTRUCTION. SEE PROJECT GENERAL NOTES ON SHEET AG001_5 FOR ADDITIONAL INFORMATION.
2. THE EXISTING MODULAR FURNITURE IN THE SPACES INDICATED MUST BE DISASSEMBLED AND REASSEMBLED BY PROFESSIONAL WORKERS WHO ARE FULLY TRAINED IN THE INSTALLATION OF MODULAR FURNITURE. CONTRACTOR MUST PROVIDE PROOF OF EXPERIENCE WITH THE INSTALLATION OF THE MODULAR FURNITURE. PROVIDE INDIVIDUALS EXPERIENCED WITH THE INSTALLATION OF FURNITURE. CONTRACTOR MUST PROTECT FURNITURE FROM WATER, DUST, DEBRIS, AND DAMAGE DUE TO CONSTRUCTION ACTIVITIES. FURNITURE MUST BE STORED OUTSIDE OF THE CONSTRUCTION AREA DURING CONSTRUCTION.
3. EXISTING FURNITURE FOR REFERENCE ONLY (TYPICAL). FIELD VERIFY EXTENT OF FURNITURE AND EXACT LOCATION SO THAT FURNITURE CAN BE RE-ASSEMBLED IN THE SAME LOCATION AFTER CONSTRUCTION IS COMPLETE, AS INDICATED.
4. EXISTING FURNITURE NOT BEING REUSED MUST BE INVENTORIED AND DELIVERED TO BUILDING 10867 BY THE GENERAL CONTRACTOR UNLESS DIRECTED OTHERWISE BY THE GOVERNMENT. FURNITURE MUST BE PLACED IN A CONDITIONED SPACE, STACKED WHERE APPROPRIATE, AND STORED NEATLY. GENERAL CONTRACTOR MUST DISPOSE OF UNUSED FURNITURE AS IDENTIFIED BY GOVERNMENT. GENERAL CONTRACTOR MUST COORDINATE WITH GOVERNMENT PRIOR TO DELIVERY OR DISPOSAL OF EXISTING FURNITURE.
5. PERSONAL WASTE RECEPTACLE (A2) TO BE PLACED AT EVERY DESK AND WORKSTATION.
6. NOT ALL FF&E CODES ARE USED.

FURNITURE PLAN LEGEND:

EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

NEW FURNITURE
CONTRACTOR FURNISHED CONTRACTOR INSTALLED (CFCI)

GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

FURNITURE PLAN KEY NOTES:

1. ALL NOTED EXISTING FURNITURE TO BE DISASSEMBLED AND STORED DURING CONSTRUCTION. STEAM CLEAN PRIOR TO RE-INSTALLING AT COMPLETION OF CONSTRUCTION.

2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.

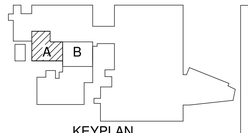
FURNITURE SCHEDULE	
ITEM CODE	DESCRIPTION
ACCESSORIES	
A1	MARKERBOARD (8' X 4')
A2	PERSONAL WASTE RECEPTACLE
A4	LARGE WASTE RECEPTACLE
A6	UTILITY POLE
A6E	EXISTING UTILITY POLE
A7	MARKERBOARD (4' X 4')
CHAIRS AND SEATING	
C1	TASK CHAIR
C2	CONFERENCE CHAIR
C4	CAFE CHAIR
C5	GUEST CHAIR
C5a	GUEST CHAIR
C6	MODULAR COUCH
C7	COUCH
C8	CAFE STOOL
C9	EXECUTIVE CONFERENCE CHAIR
C10	CONFERENCE GUEST CHAIR
DESKS	
D1	CONTROL DESK
D2	U-SHAPED DESK (8' X 8')
D3	L-SHAPED DESK (8' X 6')
EQUIPMENT	
E1	REFRIGERATOR (GFGI)
E2	COUNTERTOP MICROWAVE (GFGI)
E3	SMALL FLOOR COPIER/PRINTER (GFGI)
E4	LARGE FLOOR COPIER/PRINTER (GFGI)
E5	SHREDDER (GFGI)

FURNITURE SCHEDULE	
ITEM CODE	DESCRIPTION
E6	VISUAL DISPLAY (GFGI)
FURNITURE SYSTEMS	
WS1	L-SHAPED WORKSTATION (7' X 8')
WS2	U-SHAPED WORKSTATION (8' X 8'-6")
WS3	L-SHAPED WORKSTATION W/ TRANSACTION TOP (8' X 8')
STORAGE AND FILES	
S1	4 DRAWER LATERAL FILE (42"W X 18"D)
S2	3 DRAWER LATERAL FILE W/ LAMINATE TOP (42"W X 18"D)
S3	STORAGE CABINET (42"W X 18"D)
S4	CASEWORK CABINET (48"W X 25"D)
TABLES	
T2	ROUND TABLE (42" D)
T3	CAFE TABLE (30" D)
T4	TRAINING TABLE (60"L X 36"W)
T7	CONFERENCE TABLE (144"L X 48"W)
T8	LARGE CONFERENCE TABLE (192"L X 48"W)
T9	BREAK TABLE (84"L X 36"W)
T10	OCCASIONAL TABLE (30"L X 24"W)
T11	OCCASIONAL TABLE ROUND (12" D)
T13	CONFERENCE TABLE (96"L X 42"H) BAR HEIGHT
T14	CONFERENCE TABLE (120"L X 48"W)
T15	CONFERENCE TABLE (72"L X 36"W)

PLAN NORTH

SCOPE LEGEND

NOT IN SCOPE



KEYPLAN
NOT TO SCALE

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: T. LEE-WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: J. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

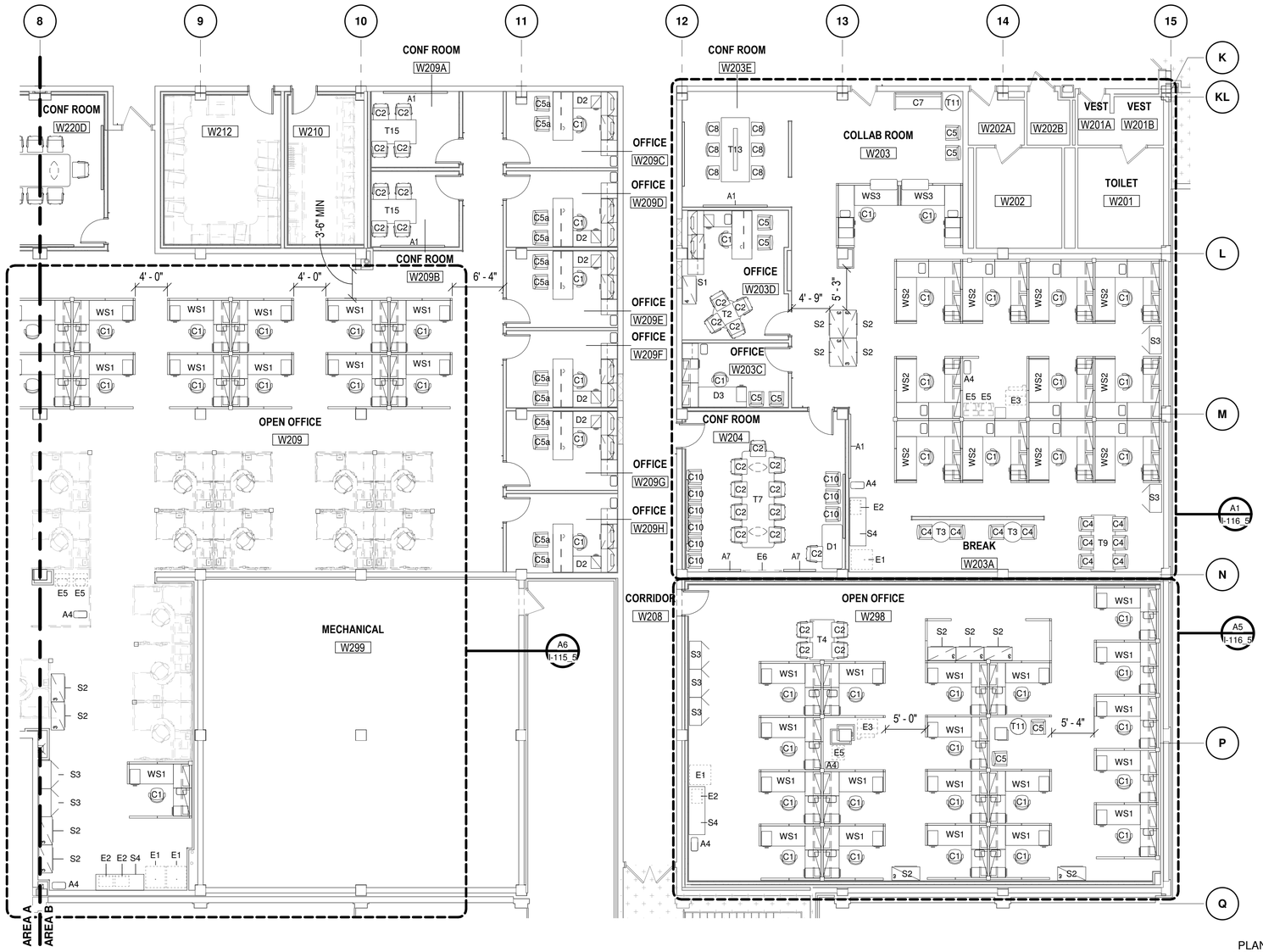
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FURNITURE PLAN - AREA A

SHEET ID
I-112_5
SHEET 36 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



A1 SECOND FLOOR FURNITURE PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

GENERAL FURNITURE PLAN NOTES:

1. THE OFFICE AREAS OUTSIDE OF CONSTRUCTION WILL REMAIN OCCUPIED BY WPAFB DURING CONSTRUCTION. SEE PROJECT GENERAL NOTES ON SHEET AG001_5 FOR ADDITIONAL INFORMATION.
2. THE EXISTING MODULAR FURNITURE IN THE SPACES INDICATED MUST BE DISASSEMBLED AND REASSEMBLED BY PROFESSIONAL WORKERS WHO ARE FULLY TRAINED IN THE INSTALLATION OF MODULAR FURNITURE. CONTRACTOR MUST PROVIDE PROOF OF EXPERIENCE WITH THE INSTALLATION OF THE MODULAR FURNITURE. PROVIDE INDIVIDUALS EXPERIENCED WITH THE INSTALLATION OF FURNITURE. CONTRACTOR MUST PROTECT FURNITURE FROM WATER, DUST, DEBRIS, AND DAMAGE DUE TO CONSTRUCTION ACTIVITIES. FURNITURE MUST BE STORED OUTSIDE OF THE CONSTRUCTION AREA DURING CONSTRUCTION.
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5. PERSONAL WASTE RECEPTACLE (A2) TO BE PLACED AT EVERY DESK AND WORKSTATION.
6. NOT ALL FF&E CODES ARE USED.

FURNITURE PLAN LEGEND:

- EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION. GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)
- EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION. GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)
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- GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

FURNITURE PLAN KEY NOTES:

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2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.

FURNITURE SCHEDULE	
ITEM CODE	DESCRIPTION
ACCESSORIES	
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A2	PERSONAL WASTE RECEPTACLE
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A6	UTILITY POLE
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A7	MARKERBOARD (4' X 4')
CHAIRS AND SEATING	
C1	TASK CHAIR
C2	CONFERENCE CHAIR
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C5	GUEST CHAIR
C5a	GUEST CHAIR
C6	MODULAR COUCH
C7	COUCH
C8	CAFE STOOL
C9	EXECUTIVE CONFERENCE CHAIR
C10	CONFERENCE GUEST CHAIR
DESKS	
D1	CONTROL DESK
D2	U-SHAPED DESK (8' X 8')
D3	L-SHAPED DESK (8' X 6')
EQUIPMENT	
E1	REFRIGERATOR (GFGI)
E2	COUNTERTOP MICROWAVE (GFGI)
E3	SMALL FLOOR COPIER/PRINTER (GFGI)
E4	LARGE FLOOR COPIER/PRINTER (GFGI)
E5	SHREDDER (GFGI)

FURNITURE SCHEDULE	
ITEM CODE	DESCRIPTION
E6	VISUAL DISPLAY (GFGI)
FURNITURE SYSTEMS	
WS1	L-SHAPED WORKSTATION (7' X 8')
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S1	4 DRAWER LATERAL FILE (42"W X 18"D)
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S4	CASEWORK CABINET (48"W X 25"D)
TABLES	
T2	ROUND TABLE (42" D)
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T9	BREAK TABLE (84"L X 36"W)
T10	OCCASIONAL TABLE (30"L X 24"W)
T11	OCCASIONAL TABLE ROUND (12" D)
T13	CONFERENCE TABLE (96"L X 42"H) BAR HEIGHT
T14	CONFERENCE TABLE (120"L X 48"W)
T15	CONFERENCE TABLE (72"L X 36"W)

SCOPE LEGEND

NOT IN SCOPE

KEYPLAN
NOT TO SCALE

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR FURNITURE PLAN - AREA B

SHEET ID
I-113_5
SHEET 37 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

FURNITURE PLAN LEGEND:

EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

NEW FURNITURE
CONTRACTOR FURNISHED CONTRACTOR INSTALLED (CFCI)

GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

SCOPE LEGEND

NOT IN SCOPE

WORKSTATION PANEL CODE:

#/A
PANEL TYPE
PANEL SIZE WIDTH / HEIGHT

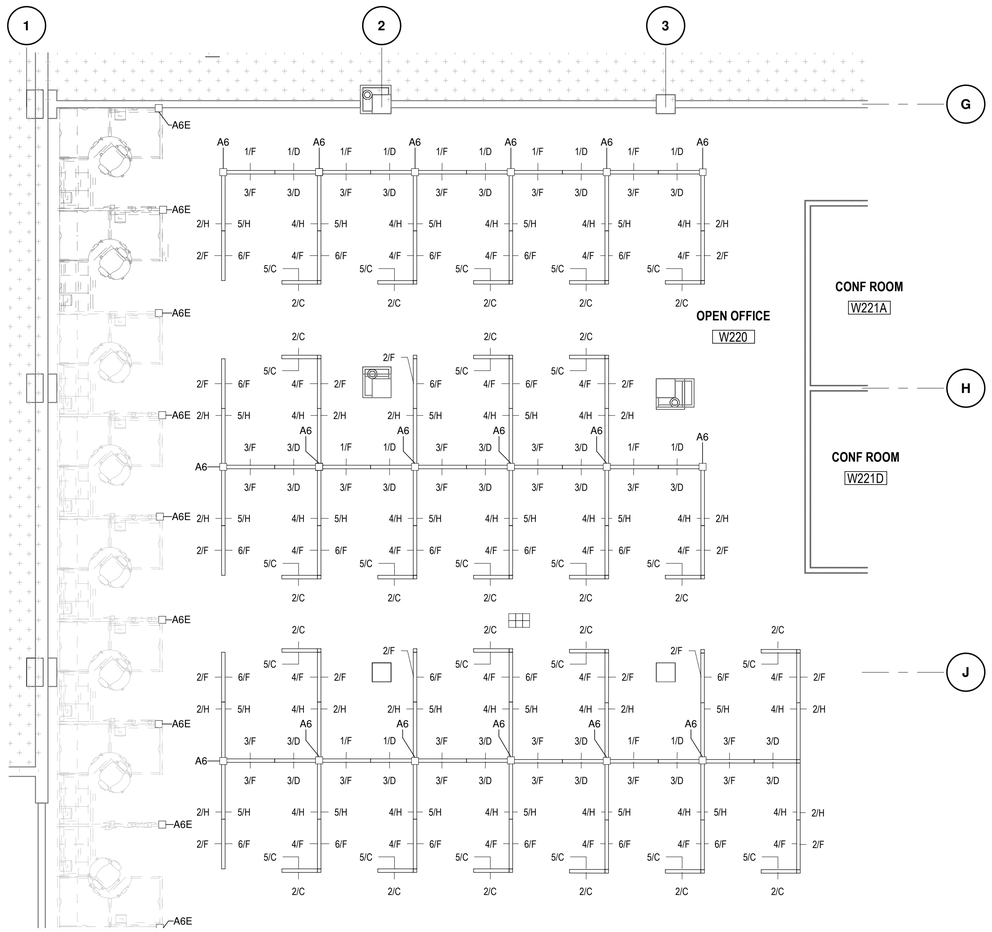
- **A -** 24/66
- **B -** 30/42
- **C -** 30/66
- **D -** 36/66
- **E -** 42/42
- **F -** 42/66
- **G -** 48/42
- **H -** 48/66

1. SEE SHEET I-117_5 FOR PANEL ELEVATIONS
2. SEE SHEET I-110_5 FOR FF&E SCHEDULE

FURNITURE PLAN KEY NOTES:

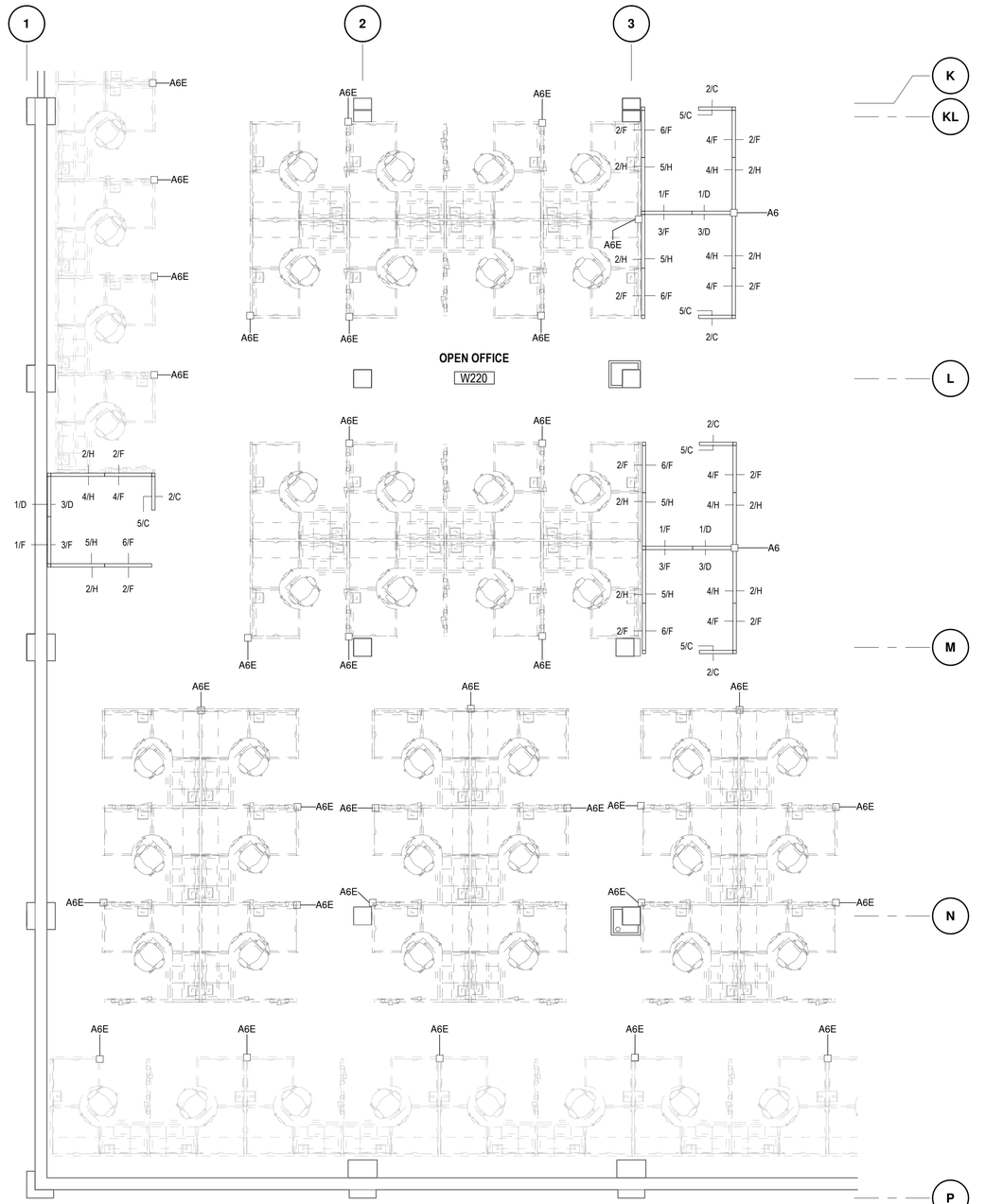
1. ALL NOTED EXISTING FURNITURE TO BE DISASSEMBLED AND STORED DURING CONSTRUCTION. STEAM CLEAN PRIOR TO RE-INSTALLING AT COMPLETION OF CONSTRUCTION.

2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.



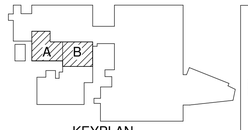
A1 SECOND FLOOR FURNITURE PLAN - OPEN OFFICE W220
SCALE: 3/16" = 1'-0"

0 4' 8' 12'



A5 SECOND FLOOR FURNITURE PLAN - OPEN OFFICE W220
SCALE: 3/16" = 1'-0"

0 4' 8' 12'



KEYPLAN
NOT TO SCALE

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT
02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: T. LEE-WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS MCDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR ENLARGED PANEL PLANS

SHEET ID
I-114_5
SHEET 38 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

FURNITURE PLAN LEGEND:

EXISTING FURNITURE - TO BE RE-INSTALLED IN NEW LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

EXISTING FURNITURE - TO BE RE-INSTALLED IN SAME LOCATION.
GOVERNMENT FURNISHED CONTRACTOR INSTALLED (GFCI)

NEW FURNITURE
CONTRACTOR FURNISHED CONTRACTOR INSTALLED (CFCI)

GOVERNMENT FURNISHED GOVERNMENT INSTALLED FURNITURE (GFGI)

FURNITURE PLAN KEY NOTES:

1. ALL NOTED EXISTING FURNITURE TO BE DISASSEMBLED AND STORED DURING CONSTRUCTION. STEAM CLEAN PRIOR TO RE-INSTALLING AT COMPLETION OF CONSTRUCTION.

2. ANY ITEMS TO BE REINSTALLED SHALL NOT SHOW ANY DAMAGE OR SIGNS OF BIOLOGICAL GROWTH.

WORKSTATION PANEL CODE:

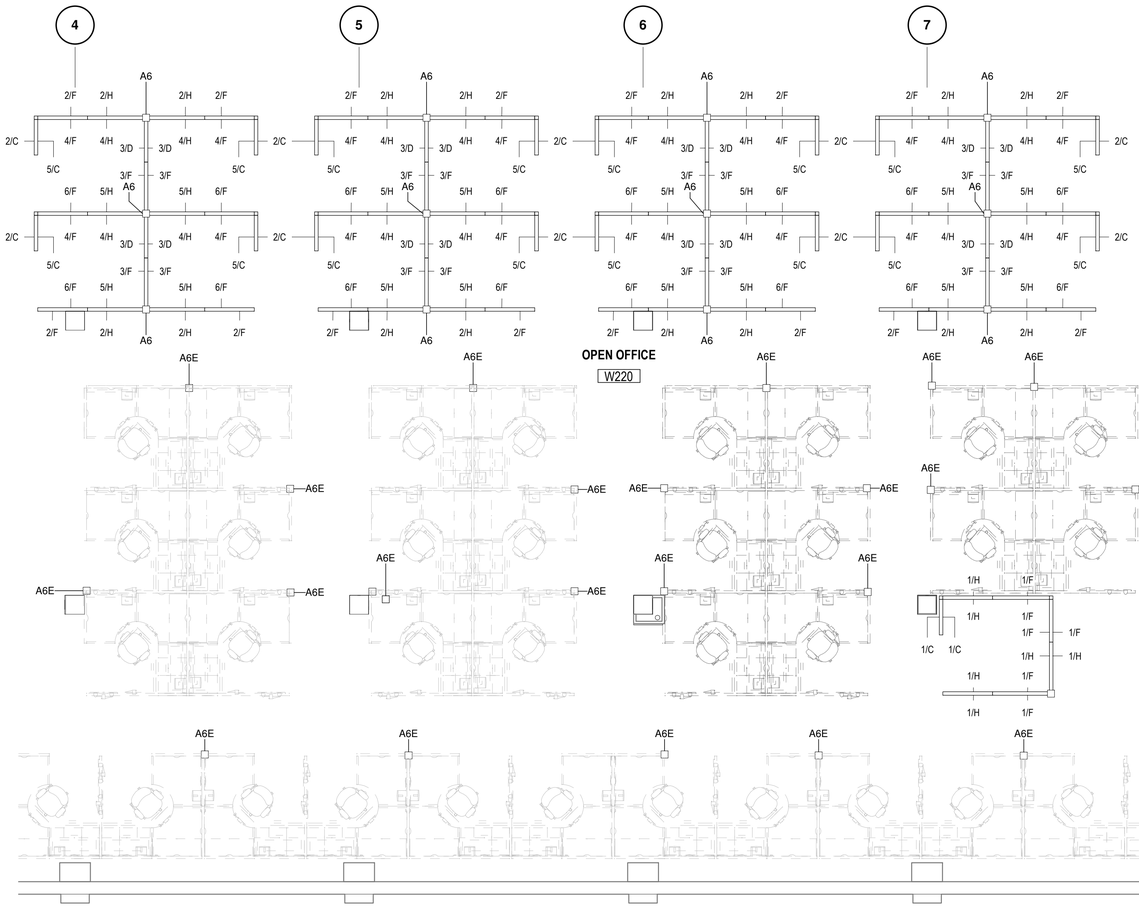
#/A
PANEL TYPE
PANEL SIZE WIDTH / HEIGHT

- **A -** 24/66
- **B -** 30/42
- **C -** 30/66
- **D -** 36/66
- **E -** 42/42
- **F -** 42/66
- **G -** 48/42
- **H -** 48/66

1. SEE SHEET I-117_5 FOR PANEL ELEVATIONS
2. SEE SHEET I-110_5 FOR FF&E SCHEDULE

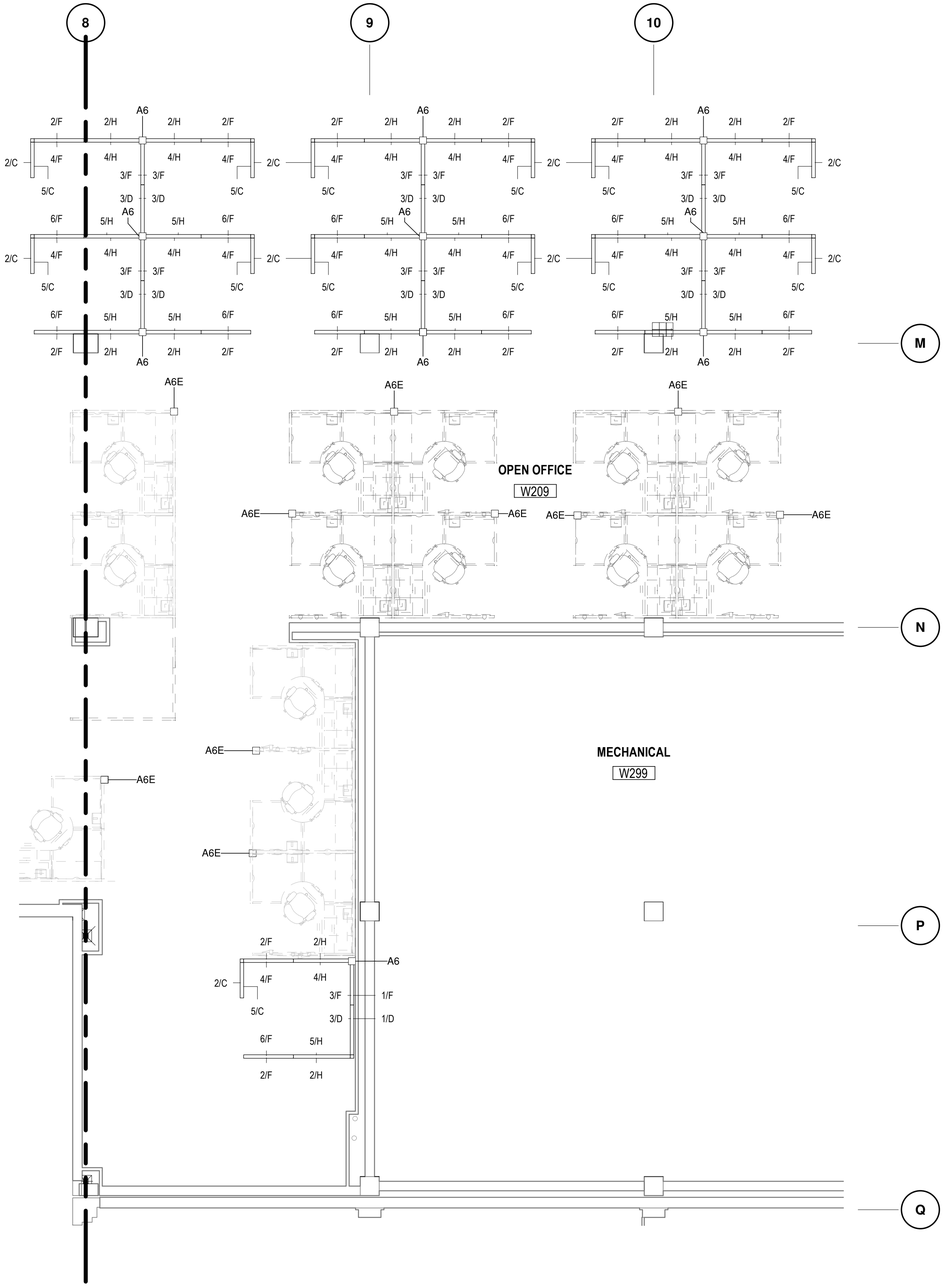
SCOPE LEGEND

NOT IN SCOPE



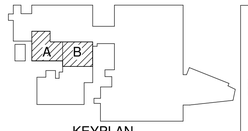
A1 SECOND FLOOR FURNITURE PLAN - OPEN OFFICE W220
SCALE: 3/16" = 1'-0"

0 4' 8' 12'



A6 SECOND FLOOR FURNITURE PLAN - OPEN OFFICE W209
SCALE: 3/16" = 1'-0"

0 4' 8' 12'



KEYPLAN
NOT TO SCALE

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: T. LEE-WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

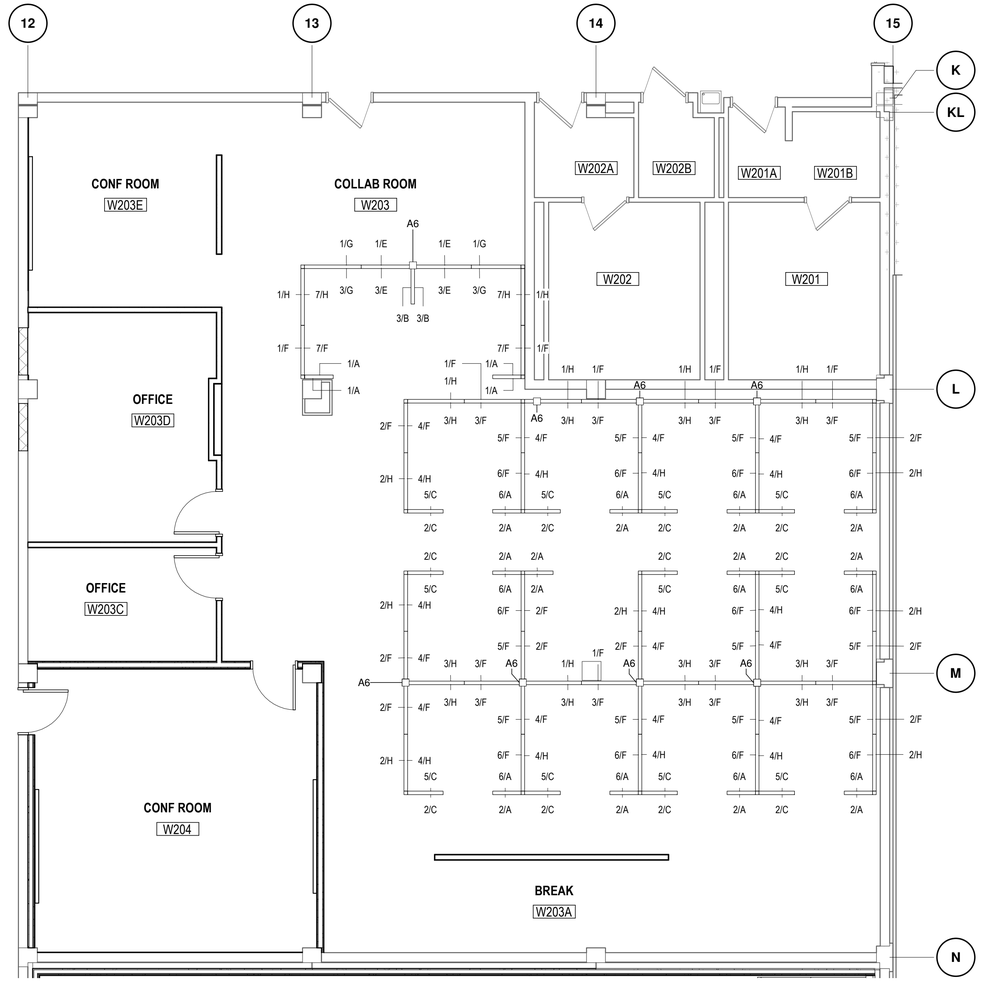
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SECOND FLOOR ENLARGED PANEL PLANS

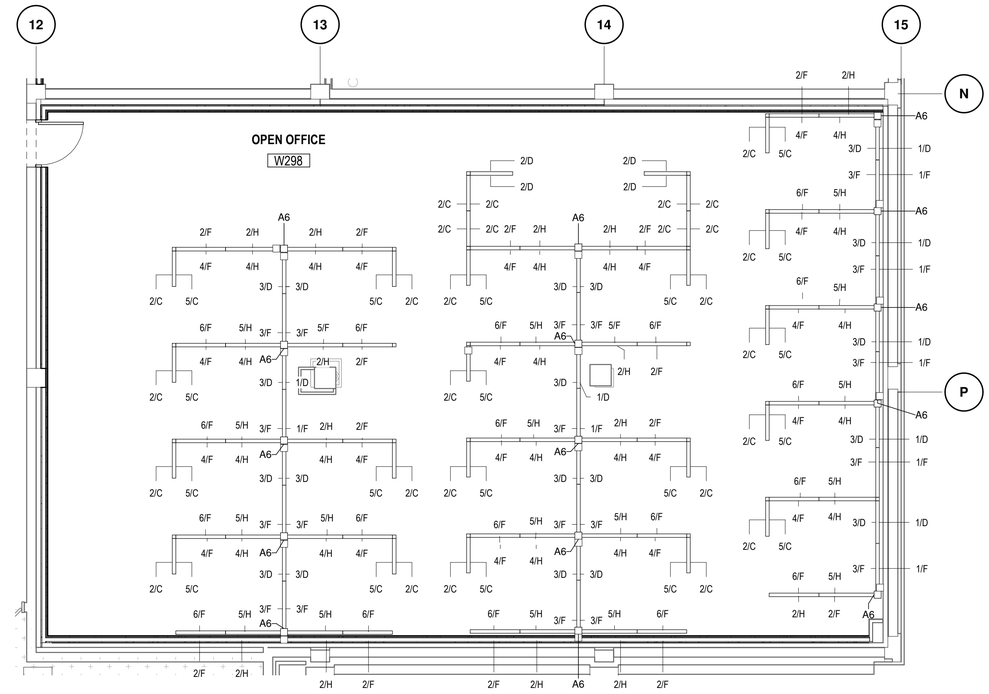
SHEET ID
I-115_5
SHEET 39 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



A1 SECOND FLOOR FURNITURE PLAN - SUITE 203
SCALE: 3/16" = 1'-0"

0 4' 8' 12'



A5 SECOND FLOOR FURNITURE PLAN - OPEN OFFICE W298
SCALE: 3/16" = 1'-0"

0 4' 8' 12'

SCOPE LEGEND

NOT IN SCOPE

WORKSTATION PANEL CODE:

#/A
PANEL TYPE
PANEL SIZE WIDTH / HEIGHT
A - 24/66
B - 30/42
C - 30/66
D - 36/66
E - 42/42
F - 42/66
G - 48/42
H - 48/66

1. SEE SHEET I-117_5 FOR PANEL ELEVATIONS
2. SEE SHEET I-110_5 FOR FF&E SCHEDULE

KEYPLAN
NOT TO SCALE

STATE OF MISSOURI
ROBERT JOSEPH KENNALEY
NUMBER A-6476
REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: T. LEE WELLER
DRAWN BY: S. BRANNAN
CHECKED BY: R. LASTER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

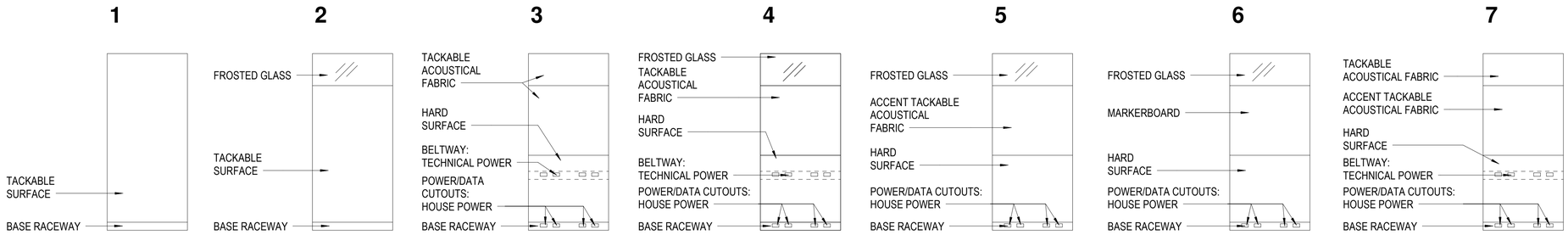
SECOND FLOOR ENLARGED PANEL PLANS

SHEET ID
I-116_5
SHEET 40 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CUI

PANEL TYPES



WORKSTATION PANEL CODE:

#/A

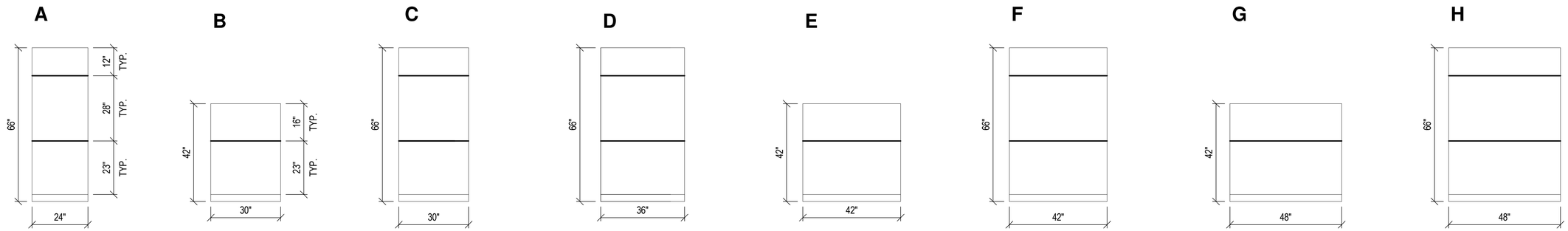
PANEL TYPE

PANEL SIZE WIDTH / HEIGHT

- **A** - 24/66
- **B** - 30/42
- **C** - 30/66
- **D** - 36/66
- **E** - 42/42
- **F** - 42/66
- **G** - 48/42
- **H** - 48/66

1. SEE SHEET I-117_5 FOR PANEL ELEVATIONS
2. SEE SHEET I-110_5 FOR FF&E SCHEDULE

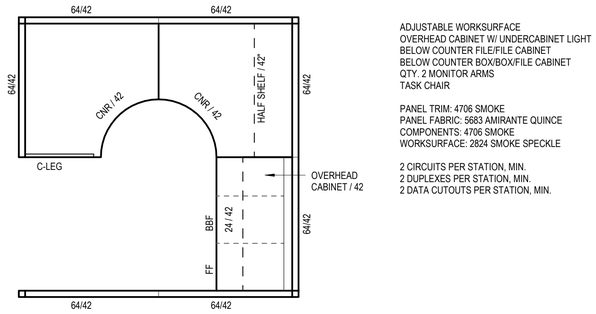
PANEL SIZES



C1 PANEL ELEVATIONS

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

0 1' 2' 4'



ADJUSTABLE WORKSURFACE
OVERHEAD CABINET W/ UNDERCABINET LIGHT
BELOW COUNTER FILE/FILE CABINET
BELOW COUNTER BOX/BOX/FILE CABINET
QTY. 2 MONITOR ARMS
TASK CHAIR

PANEL TRIM: 4706 SMOKE
PANEL FABRIC: 5683 AMIRANTE QUINCE
COMPONENTS: 4706 SMOKE
WORKSURFACE: 2824 SMOKE SPECKLE

2 CIRCUITS PER STATION, MIN.
2 DUPLEXES PER STATION, MIN.
2 DATA CUTOUTS PER STATION, MIN.

A1 TYPICAL EXISTING WORKSTATION

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

0 1' 2' 4'

STATE OF MISSOURI — ROBERT JOSEPH KENNALEY — NUMBER A-6476 — REGISTERED ARCHITECT

02-24-23
ROBERT J KENNALEY
ARCHITECT
LICENSE NO. A-6476

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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SECOND FLOOR WORKSTATION PANEL ELEVATIONS

SHEET ID

I-117_5

SHEET 41 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

PIPE LINE ABBREVIATIONS

CD	COOLING COIL CONDENSATE DRAIN
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
FPW	FIRE PROTECTION WATER

HVAC LEGEND

- CONTROL DAMPER, MOTOR OPERATED
- MANUAL BALANCE DAMPER
- FLEXIBLE DUCT CONNECTION
- RECT. ELBOW W/TURNING VANES
- TEE W/TURNING VANES
- RECTANGULAR RADIUS ELBOW
- RISE IN RESPECT TO AIR-FLOW (UP)
- DROP IN RESPECT TO AIR-FLOW (DN)
- SQUARE OR RECTANGULAR TO ROUND TRANSITION
- SUPPLY OR OUTSIDE AIR DUCT SECTION
- RETURN OR EXHAUST AIR DUCT SECTION
- ROUND FLEXIBLE DUCT (5'-0" MAX LENGTH)
- SQUARE OR RECT. SUPPLY DIFFUSER
- RETURN AIR GRILLE
- EXHAUST AIR GRILLE
- THERMOSTAT (T)
- DIFFERENTIAL PRESSURE TRANSMITTER (DP)
- AIR FLOW MEASUREMENT ARRAY (AFMA)
- CARBON DIOXIDE SENSOR (CO2)
- LINEAR SLOT SUPPLY DIFFUSER
- MOTOR (M)
- EMERGENCY SHUTOFF SWITCH (ESS)
- MANUAL VOLUME DAMPER (SINGLE LINE)
- SECURITY MANBARS
- FIRE DAMPER (FD)-

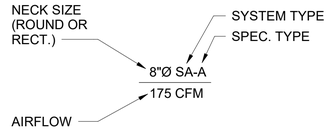
MECHANICAL ABBREVIATIONS

24"x12"	RECTANGULAR DUCT DIMENSION (INCHES)	MA	MIXED AIR
12"Ø	ROUND DUCT DIMENSION	MVD	MANUAL VOLUME DAMPER
AFF	ABOVE FINISHED FLOOR	MD	MOTORIZED DAMPER
AFMA	AIR FLOW MEASUREMENT ARRAY	MMP	MANUAL MOTOR PROTECTORS
AHU	AIR HANDLING UNIT	NC	NORMALLY CLOSED (FAIL POSITION)
ARF	ABOVE RAISED FLOOR	NG	NATURAL GAS
AS	AIR SEPARATOR	NIC	NOT IN CONTRACT
BOD	BOTTOM OF DUCT	NO	NORMALLY OPEN (FAIL POSITION)
BOP	BOTTOM OF PIPE	OA	OUTSIDE AIR
CD	COLD DUCT	OB	OPPOSED BLADE
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT	PB	PARALLEL BLADE
CRU	COMPUTER ROOM UNIT	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
CV	CONTROL VALVE	PSIG	POUNDS PER SQUARE INCH GAUGE
DN	DOWN	RED	REDUCER-REDUCING
DP	DIFFERENTIAL PRESSURE TRANSMITTER	RA	RETURN AIR
DRG	DIFFUSER, REGISTER, GRILLE	RF	RETURN FAN
EA	EXHAUST AIR	SCH	SCHEDULE
EDH	ELECTRIC DUCT HEATER	SA	SUPPLY AIR
EF	EXHAUST FAN	STC	SOUND TRANSMISSION CLASS
EG	EXHAUST GRILLE	SP	STATIC PRESSURE SENSOR
EL	ELEVATION	SR	SUPPLY REGISTER
ELL	ELBOW	ST	SOUND TRAP
ER	EXHAUST REGISTER	TA	TRANSFER AIR
ET	EXPANSION TANK	TOC	TOP OF CONCRETE
EXST	EXISTING	TOD	TOP OF DUCT
FF	FLAT FACED	TOS	TOP OF STEEL
FOB	FLAT ON BOTTOM	UH	UNIT HEATER
FOT	FLAT ON TOP	UV	ULTRAVIOLET
HD	HOT DUCT	V	VENT
INV. EL.	INVERT ELEVATION	VFD	VARIABLE FREQUENCY DRIVE

GENERAL NOTES:

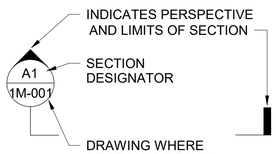
1. LEGEND IS GENERAL IN NATURE AND MAY INDICATE MORE INFORMATION THAN IS APPLICABLE TO PROJECT. SEE PLANS FOR SPECIFIC SYMBOLS AND ABBREVIATIONS.
2. PROVIDE ALL MATERIALS, VALVES, HANGERS, ETC. AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODE.
3. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
4. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
5. UNLESS OTHERWISE INDICATED, MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF DUCTS, PIPES, CONDUITS, ETC., THROUGHOUT ACCESS ROUTES AND IN MECHANICAL ROOMS.
6. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
7. VERIFY DIMENSIONS AND CONNECTION SIZE WITH FURNISHED EQUIPMENT.
8. ALL ELEVATIONS ARE ABOVE FINISHED FLOOR TO BOTTOM OF DUCT, EQUIPMENT PIPE, OR PIPE INSULATION UNLESS NOTED OTHERWISE. GRILLE & REGISTER ELEVATIONS ARE CENTERLINE.
9. DUCT DIMENSIONS INDICATED REFER TO SHEET METAL DIMENSIONS. AIR OPENING SIZE AND SHEET METAL SIZE SHALL BE THE SAME.
10. LOCATE TRANSFER AIR DUCTS AND OPENINGS 12" ABOVE HIGHEST CEILING ELEVATION UNLESS OTHERWISE NOTED. CONTRACTOR TO COORDINATE OPENING WITH UTILITIES ABOVE CEILING.
11. COORDINATE ALL WALL AND ROOF PENETRATIONS WITH ARCHITECTURAL PLANS.
12. INSTALL TEMPERATURE CONTROLS AT 54" ABOVE FINISHED FLOOR AND COORDINATE WITH OTHER DEVICES LOCATED ON WALLS. COORDINATE WITH ARCHITECTURAL WALL FINISHES. ADD 10' OF T-STAT WIRE COILED ABOVE CEILING.
13. MOUNT ALL OVERHEAD MECHANICAL EQUIPMENT, AND FIXTURES, WEIGHING 31 POUNDS OR MORE TO SUPPORTS THAT SHALL RESIST FORCES OF 0.5 TIMES THE EQUIPMENT WEIGHT IN ANY HORIZONTAL DIRECTION AND 1.5 TIMES THE EQUIPMENT WEIGHT IN THE DOWNWARD DIRECTION.
14. ALL MECHANICAL OPENINGS IN MASONRY WALLS, LESS THAN 48", SHALL BE COORDINATED WITH STANDARD STRUCTURAL DRAWING DETAILS. ALL MECHANICAL OPENINGS LARGER THAN 48" SHALL BE LOCATED AS SHOWN ON STRUCTURAL ELEVATIONS AND COORDINATED WITH STRUCTURAL DETAILS.
15. REFER TO ARCHITECTURAL DRAWINGS FOR LOUVER INFORMATION AND SECURE WALL LOCATIONS.
16. ALL EXISTING DUCTWORK AND PIPING SHOWN ON DRAWINGS IS SCHEMATIC AND IS BASED ON EXISTING RECORD DRAWINGS PROVIDED BY THE OWNER AND DO NOT REFLECT EXACT EXISTING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL ACTUAL CONDITIONS ON JOB SITE. CONTRACTOR SHALL REROUTE NEW WORK TO ACCOMMODATE EXACT LOCATIONS OF EXISTING UTILITIES, STUBOUTS, AND/OR CONNECTIONS AS PART OF THE SCOPE OF WORK OF THIS PROJECT.
17. CONTRACTOR SHALL AIR BALANCE ALL EQUIPMENT, GRILLES, AND DIFFUSERS TO CFMS SHOWN ON PLANS.

AIR DISTRIBUTION DEVICE IDENTIFICATION

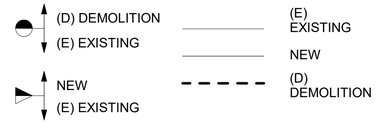


DETAIL/SECTION TITLE

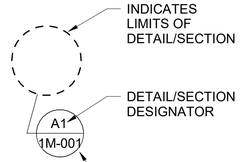
SECTION CUT SYMBOL



CONSTRUCTION INTERFACE

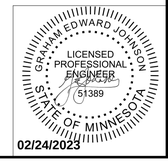


DETAIL/SECTION CALLOUT SYMBOL



PIPE LINE ACCESSORIES

- GATE VALVE
- OS&Y — OUTSIDE SCREW & YOKE
- BUTTERFLY VALVE
- CHECK VALVE
- 3 - WAY VALVE
- BALL VALVE
- GLOBE VALVE
- PDV — PUMP DISCHARGE VALVE
- BALANCING VALVE
- RELIEF, SAFETY OR THERMAL RELIEF VALVE
- CONTROL VALVE
- M — MOTORIZED CONTROL VALVE
- SUCTION DIFFUSER
- AV — AUTOMATIC AIR VENT ASSEMBLY
- MV — MANUAL AIR VENT - SEE SPECIFICATIONS FOR APPROPRIATE VALVE TYPE.
- FLEX CONNECTION
- PUMP
- THERMOMETER
- BP — BACKFLOW PREVENTION ASSEMBLY
- SELF CONTAINED PRESSURE REDUCING (REGULATING) VALVE
- PRESSURE GAUGE
- Y-TYPE STRAINER
- REMOVABLE CAP
- REDUCER (CONCENTRIC)
- REDUCER (ECCENTRIC)
- UNION
- BLIND FLANGE
- TEST CONNECTION
- * — COMPONENTS TO BE FURNISHED WITH EQUIPMENT
- M — METER



US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G JOHNSON
DRAWN BY: R PEARSON
CHECKED BY: A GIANPIETRO
QUALITY ASSURED BY: G JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

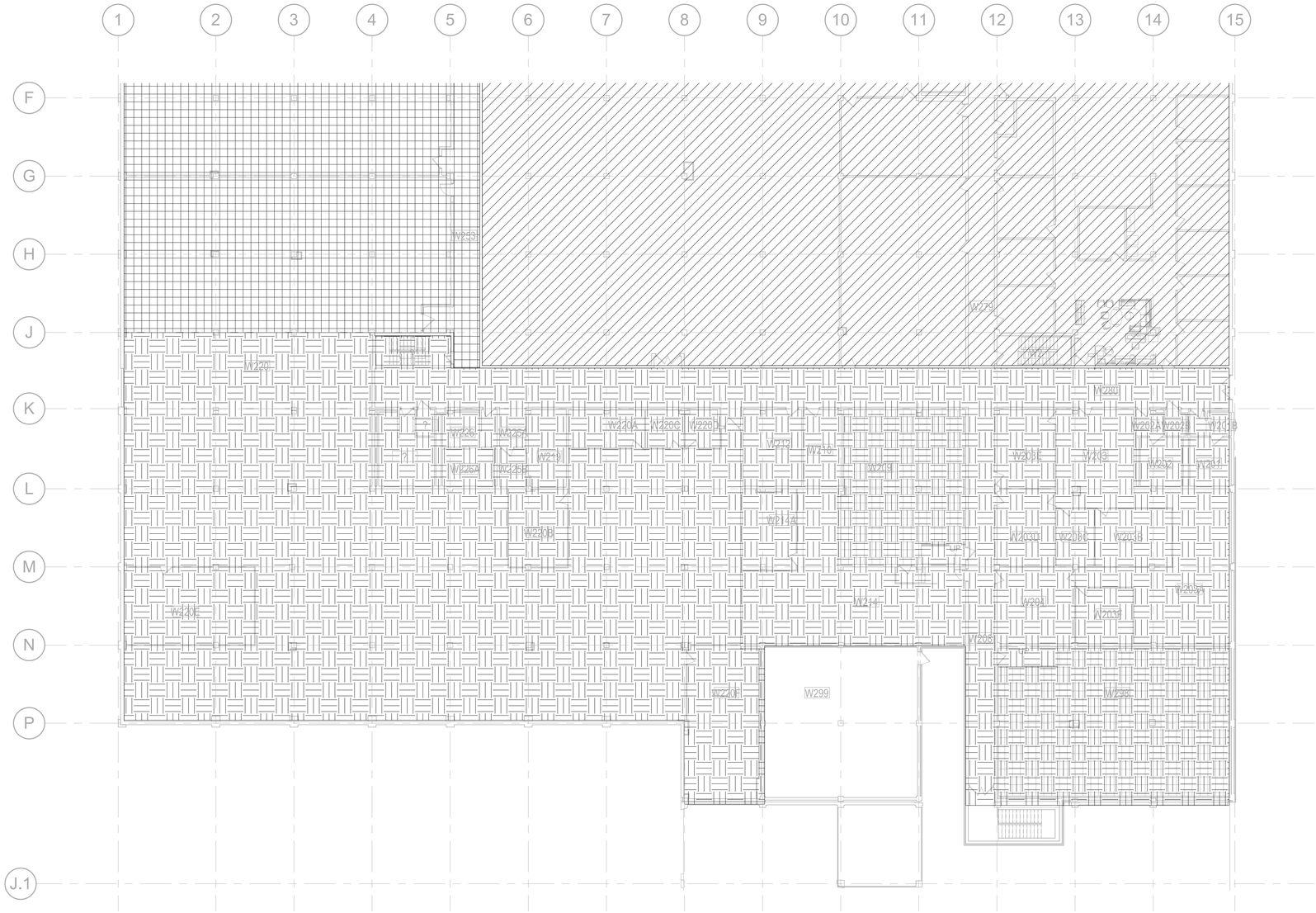
BURNS McDONNELL.
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

SHEET ID
M-001_5
SHEET 42 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



LEGEND

- AHU-7 ZONE
- AHU-5 ZONE
- AHU-6 ZONE

A1 AHU EXISTING ZONING SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 32'

KEYPLAN
NOT TO SCALE

LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
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CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

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PN: ZHTV-160060 / P2: 469978
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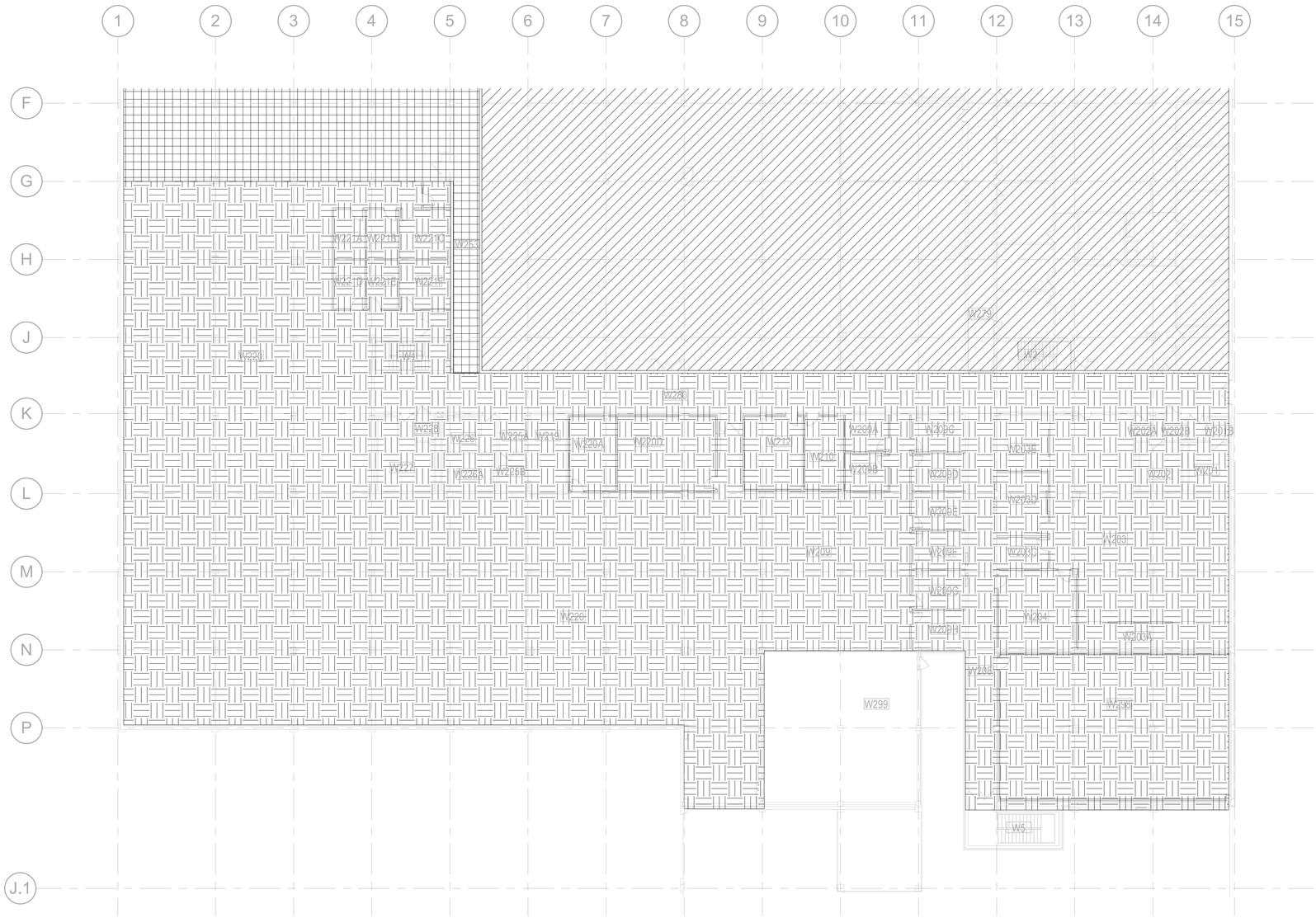
AHU ZONING EXISTING SECOND FLOOR PLAN

SHEET ID
M-002_5
SHEET 43 OF 112

CUI
W912QR23R0022_CUI_CF_Plans-0001
CERTIFIED FINAL



A1 AHU NEW ZONING SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 32'

LEGEND

AHU-7 ZONE

AHU-5 ZONE

AHU-6 ZONE

KEYPLAN
NOT TO SCALE

LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
02/24/2023

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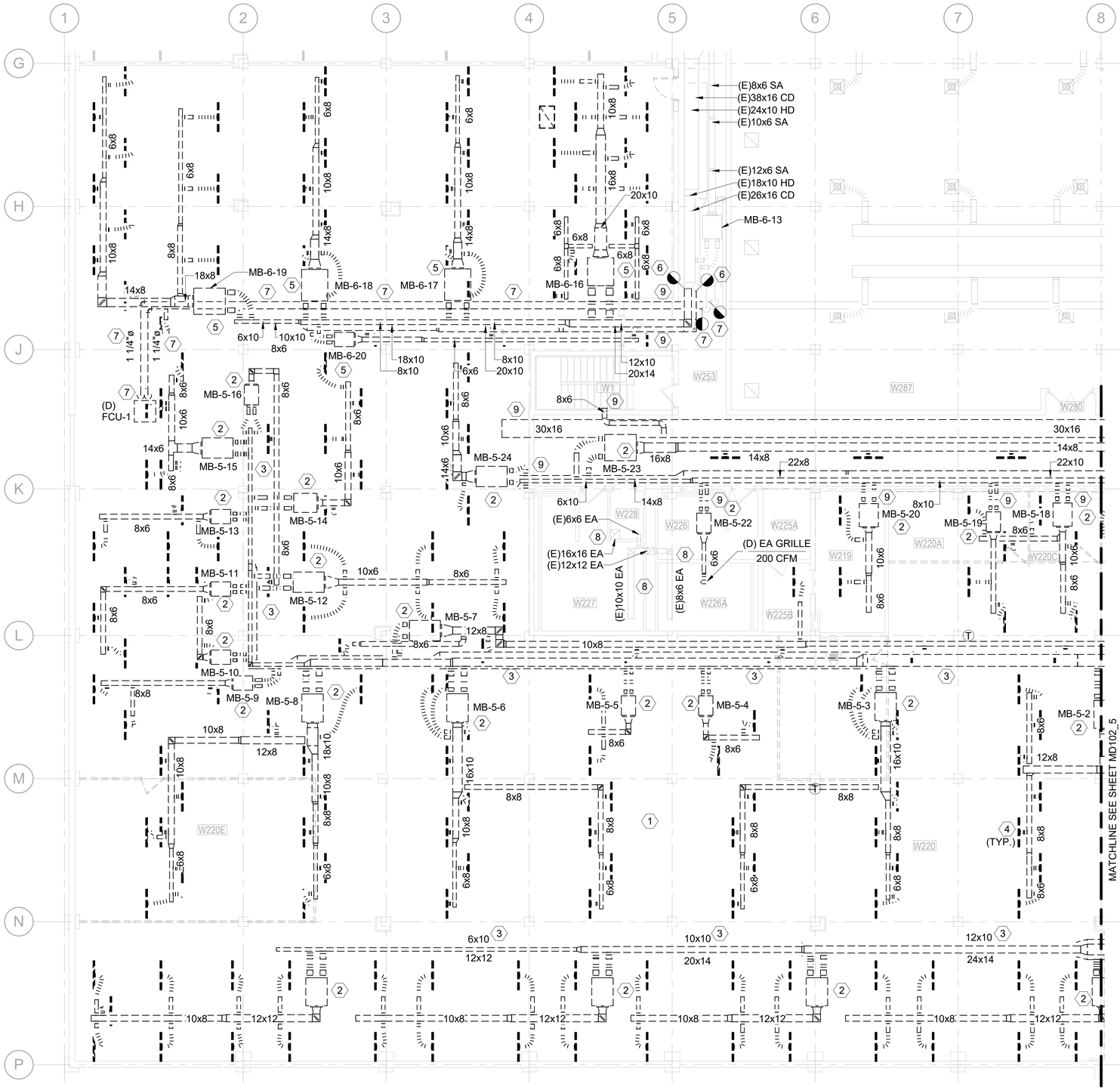
AHU ZONING SECOND FLOOR PLAN

SHEET ID
M-003_5
SHEET 44 OF 112

CUI
W912QR23R0022_CUI_CF_Plans-0001
CERTIFIED FINAL



A1 DEMO - HVAC SECOND FLOOR - AREA A
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

PLAN NORTH

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. REMOVE EXISTING COLD AND HOT DECK DUCTS, DUAL DUCT MIXING BOXES, SUPPORTS, APPURTENANCES AND ASSOCIATED THERMOSTATS.

C. REMOVE THERMOSTATS AND COMPRESSED AIR PIPING ASSOCIATED WITH AHU-5 BACK TO MAIN. CONTRACTOR TO COORDINATE WITH FACILITIES MANAGER PRIOR TO DEMO TO VERIFY WHICH SECTIONS OF PNEUMATIC PIPING ARE EXISTING TO REMAIN FOR ADJACENT HVAC SYSTEMS. GROUND MAIN AT SECURE WALLS PER DETAIL C5/M-504_5.

D. ALL ASBESTOS WORK MAY BE DONE DURING NORMAL WORKING HOURS UNLESS THE AREA IS A COMMON ACCESS AREA AND THEN THE WORK MUST BE DONE AFTER NORMAL WORKING HOURS (1600 HOURS TO 0030 HOURS) OR DURING THE WEEKEND.

E. CLOSE VOLUME DAMPERS UPSTREAM OF ALL MIXING BOXES PRIOR TO ASBESTOS ABATEMENT AND THROUGHOUT CONSTRUCTION OF THE PHASE IN WHICH THE MIXING BOX SERVES.

F. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT AND UNIVERSAL WASTE REQUIREMENTS.

G. ALL DUCTWORK, PIPING AND EQUIPMENT REMOVED AND DISCARDED SHALL COMPLY WITH DEMOLITION SPECIFICATION 02 41 00 AND SHALL BE DISPOSED OF APPROPRIATELY.

H. ALL AREAS AFFECTED BY DEMOLITION, INCLUDING UNFORESEEN EXISTING OPENINGS, SHALL BE SEALED, PATCHED, AND REPAIRED WITH LIKE MATERIALS TO MATCH ADJACENT WALL/ROOF/FLOOR/ETC. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MORE INFORMATION.

I. GENERAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR TO REMOVE WIRING AND CONDUIT FROM EQUIPMENT AND DEVICES BACK TO DISTRIBUTION PANELS.

KEYED NOTES:

1. DEMOLISH ALL HVAC EQUIPMENT AND ASSOCIATED PIPING, DUCT, LOUVERS, DUCT ACCESSORIES, PIPING APPURTENANCES, CONTROLS, WIRING, THERMOSTATS, CONTROL PANELS, HANGERS AND SUPPORTS. RECOVER ANY REFRIGERANT AND TURN OVER TO THE GOVERNMENT (SEE SPECIFICATION 01 35 43). (TYPICAL UNLESS NOTED OTHERWISE)
2. DEMOLISH AHU-5 MIXING BOX AND ASSOCIATED SUPPORTS, DUCTWORK, INSULATION AND CONTROLS.
3. DEMOLISH HOT AND COLD DUCT MAINS AND ASSOCIATED SUPPORTS, INSULATION AND DUCT ACCESSORIES.
4. DEMOLISH DUCT CONNECTION TO LIGHT TROFFER DIFFUSERS AND ASSOCIATED SUPPORTS, INSULATION AND LIGHT TROFFER FIXTURE.
5. DEMOLISH AHU-6 MIXING BOX AND ASSOCIATED SUPPORTS, DUCTWORK, INSULATION AND CONTROLS. COORDINATE WITH AHU-6 MODIFICATIONS SHOWN ON MD103_5.
6. DEMOLISH AHU-6 HOT AND COLD DUCT MAINS BACK TO POINT INDICATED AND CAP. PROVIDE NEW INSULATION FOR CAP TO MATCH EXISTING INSULATION. SEE MD103_5 FOR AHU-6 LOCATION.
7. DEMOLISH FAN COIL UNIT AND ASSOCIATED SUPPORTS, DUCTWORK, INSULATION AND CONTROLS. DEMOLISH CHILLED WATER PIPING BACK TO POINT INDICATED AND CAP. PROVIDE NEW INSULATION FOR CAP TO MATCH EXISTING INSULATION.
8. EXHAUST FANS SERVING RESTROOMS AND ASSOCIATED DUCTWORK, SUPPORTS AND GRILLES TO REMAIN UNLESS NOTED OTHERWISE. AIRFLOW RATES OF EXISTING EXHAUST FANS SHALL BE VERIFIED BY CONTRACTOR PRIOR TO SUBMITTING / PURCHASING THE VAV PROVIDING MAKEUP AIR FROM THE CORRIDOR INTO THE SPACE.
9. PATCH HOLES IN WALL TO DECK FROM DEMOLISHED DUCTWORK, SEE ARCHITECTURAL FOR REQUIREMENTS.

KEYPLAN
NOT TO SCALE

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

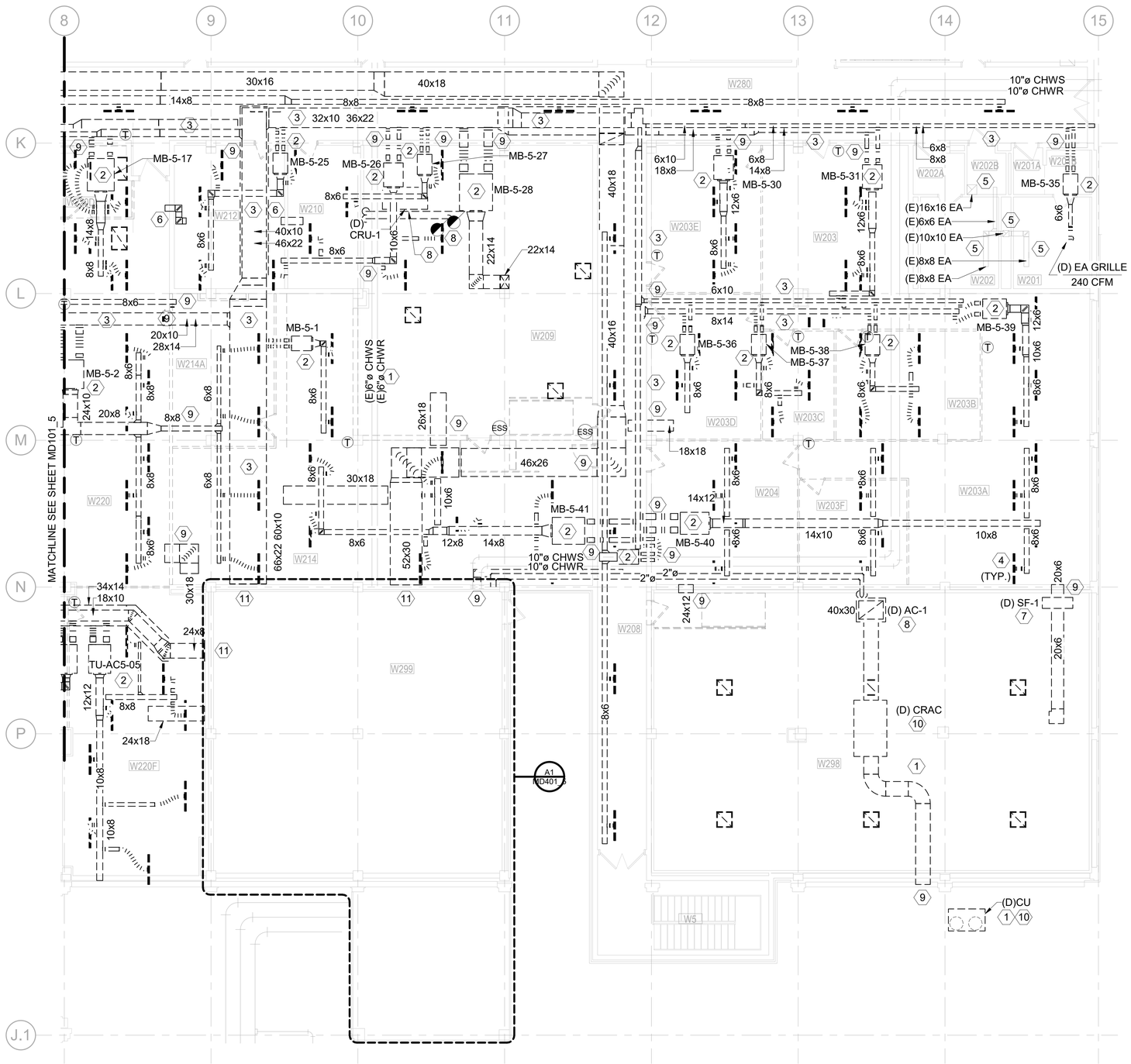
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HVAC DUCTWORK DEMOLITION SECOND FLOOR PLAN - AREA A

SHEET ID
MD101_5
SHEET 45 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 DEMO - HVAC SECOND FLOOR - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. REMOVE EXISTING COLD AND HOT DECK DUCTS, DUAL DUCT MIXING BOXES, SUPPORTS, APPURTENANCES AND ASSOCIATED THERMOSTATS.

C. REMOVE THERMOSTATS AND COMPRESSED AIR PIPING ASSOCIATED WITH AHU-5 BACK TO MAIN. CONTRACTOR TO COORDINATE WITH FACILITIES MANAGER PRIOR TO DEMO TO VERIFY WHICH SECTIONS OF PNEUMATIC PIPING ARE EXISTING TO REMAIN FOR ADJACENT HVAC SYSTEMS. GROUND MAIN AT SECURE WALLS PER DETAIL C5/M-504_5.

D. ALL ASBESTOS WORK MAY BE DONE DURING NORMAL WORKING HOURS UNLESS THE AREA IS A COMMON ACCESS AREA AND THEN THE WORK MUST BE DONE AFTER NORMAL WORKING HOURS (1600 HOURS TO 0030 HOURS) OR DURING THE WEEKEND.

E. CLOSE VOLUME DAMPERS UPSTREAM OF ALL MIXING BOXES PRIOR TO ASBESTOS ABATEMENT AND THROUGHOUT CONSTRUCTION OF THE PHASE IN WHICH THE MIXING BOX SERVES.

F. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT AND UNIVERSAL WASTE REQUIREMENTS.

G. ALL AREAS AFFECTED BY DEMOLITION, INCLUDING UNFORESEEN EXISTING OPENINGS, SHALL BE SEALED, PATCHED, AND REPAIRED WITH LIKE MATERIALS TO MATCH ADJACENT WALL/ROOF/FLOOR/ETC. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MORE INFORMATION.

H. GENERAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR TO REMOVE WIRING AND CONDUIT FROM EQUIPMENT AND DEVICES BACK TO DISTRIBUTION PANELS.

KEYED NOTES:

1. DEMOLISH ALL HVAC EQUIPMENT AND ASSOCIATED PIPING, DUCT, LOUVERS, DUCT ACCESSORIES, PIPING APPURTENANCES, CONTROLS, WIRING, THERMOSTATS, CONTROL PANELS, HANGERS AND SUPPORTS. RECOVER ANY REFRIGERANT AND TURN OVER TO THE GOVERNMENT (SEE SPECIFICATION 01 35 43). (TYPICAL UNLESS NOTED OTHERWISE)
2. DEMOLISH AHU-5 MIXING BOX AND ASSOCIATED SUPPORTS, DUCTWORK, GRILLES, INSULATION AND CONTROLS.
3. DEMOLISH HOT AND COLD DUCT MAINS AND ASSOCIATED SUPPORTS, INSULATION AND DUCT ACCESSORIES.
4. DEMOLISH DUCT CONNECTION TO LIGHT TROFFER DIFFUSERS AND ASSOCIATED SUPPORTS, INSULATION AND LIGHT TROFFER FIXTURE.
5. EXHAUST FANS SERVING RESTROOMS AND ASSOCIATED DUCTWORK, SUPPORTS AND GRILLES TO REMAIN UNLESS NOTED OTHERWISE. AIRFLOW RATES OF EXISTING EXHAUST FANS SHALL BE VERIFIED BY CONTRACTOR PRIOR TO SUBMITTING / PURCHASING THE VAV PROVIDING MAKEUP AIR FORM THE CORRIDOR INTO THE SPACE.
6. DEMOLISH EXISTING Z-DUCTS AND PATCH HOLES IN WALL FROM DEMOLISHED DUCTWORK. SEE ARCHITECTURAL FOR REQUIREMENTS.
7. DEMOLISH TRANSFER FAN AND ASSOCIATED SUPPORTS, DUCTWORK, INSULATION AND CONTROLS.
8. DEMOLISH EXISTING AIR CONDITIONING UNIT AND ASSOCIATED SUPPORTS, DUCTWORK, INSULATION AND CONTROLS. DEMOLISH CHILLED WATER PIPING BACK TO POINT INDICATED IN W299 AND CAP. PROVIDE NEW INSULATION FOR CAP TO MATCH EXISTING INSULATION.
9. PATCH HOLES IN WALL FROM DEMOLISHED DUCTWORK, PIPING AND DEVICES. SEE ARCHITECTURAL FOR REQUIREMENTS.
10. DEMOLISH EXISTING OUTSIDE AIR VENTILATOR, CONDENSING UNIT ON ADJACENT ROOF, AND ALL ASSOCIATED SUPPORTS, DUCTWORK, REFRIGERANT LINES, INSULATION AND CONTROLS.
11. REUSE EXISTING OPENING FOR NEW DUCTWORK.

KEYPLAN
NOT TO SCALE

LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
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LOUISVILLE DISTRICT

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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

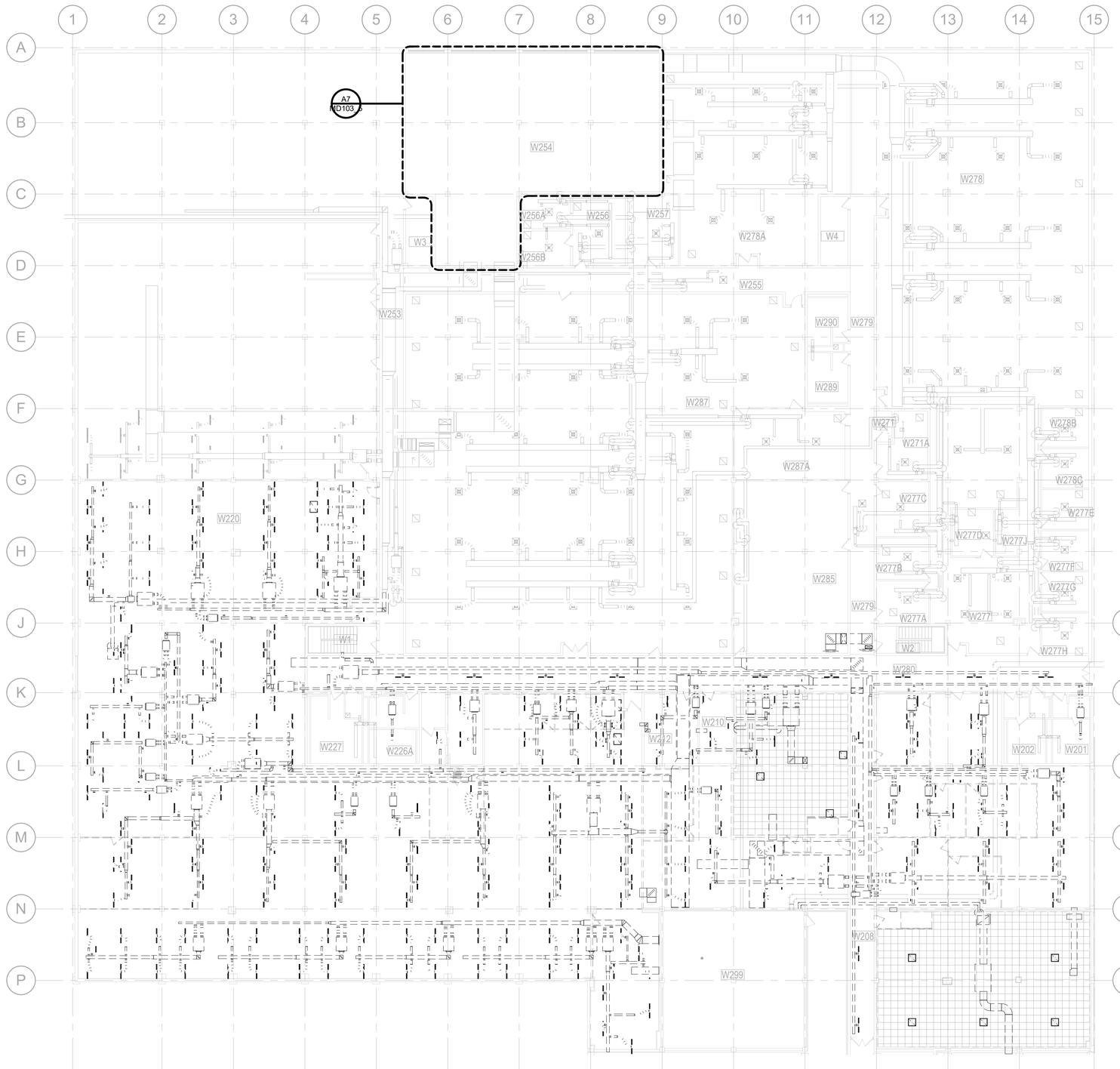
HVAC DUCTWORK DEMOLITION SECOND FLOOR PLAN - AREA B

SHEET ID
MD102_5
SHEET 46 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

CUI



A1 DEMO - HVAC SECOND FLOOR - AHU-6 MODIFICATIONS
SCALE: 1/16" = 1'-0"

0 8' 16' 32'

PLAN NORTH

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. CLOSE VOLUME DAMPERS UPSTREAM OF ALL MIXING BOXES PRIOR TO ASBESTOS ABATEMENT AND THROUGHOUT CONSTRUCTION OF THE PHASE IN WHICH THE MIXING BOX SERVES.

C. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT AND UNIVERSAL WASTE REQUIREMENTS.

D. MODIFICATIONS TO AHU-6 SHOWN ON THIS SHEET, ALONG WITH DEMOLITION OF AHU-6 MIXING BOXES ON MD101_5 MUST BE COORDINATED WITH BASE PERSONNEL FOR SCHEDULING AND DURATION OF AHU-6 SHUTDOWN. WORK MAY ONLY BE DONE AFTER NORMAL WORKING HOURS (1600 HOURS TO 0030 HOURS) OR DURING THE WEEKEND.

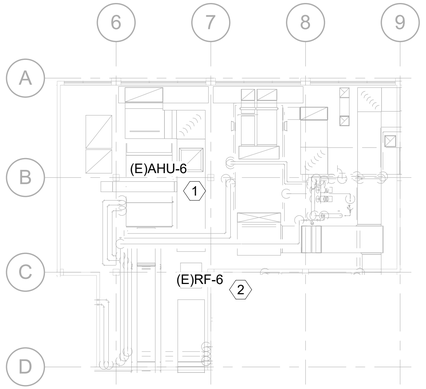
E. ALL AREAS AFFECTED BY DEMOLITION, INCLUDING UNFORESEEN EXISTING OPENINGS, SHALL BE SEALED, PATCHED, AND REPAIRED WITH LIKE MATERIALS TO MATCH ADJACENT WALL/ROOF/FLOOR/ETC. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MORE INFORMATION.

F. GENERAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR TO REMOVE WIRING AND CONDUIT FROM EQUIPMENT AND DEVICES BACK TO DISTRIBUTION PANELS.

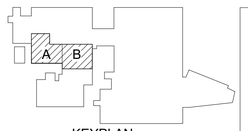
KEYED NOTES:

1 RE-SHEAVE AHU-6 SUPPLY FAN TO ACCOMMODATE REDUCTION IN AIRFLOW FROM DEMOLISHED MIXING BOXES. BALANCE TOTAL SUPPLY AIRFLOW TO 20,740 CFM VIA BULK AIRFLOW BALANCING DOWNSTREAM OF FAN.

2 RE-SHEAVE RETURN FAN RF-6 TO ACCOMMODATE REDUCTION IN AIRFLOW FROM DEMOLISHED MIXING BOXES. MATCH AHU-6 SUPPLY FAN VIA BULK AIRFLOW BALANCING DOWNSTREAM OF FAN.



A7 DEMO - ENLARGED MECHANICAL ROOM W254
SCALE: 1/16" = 1'-0"



KEYPLAN
NOT TO SCALE

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

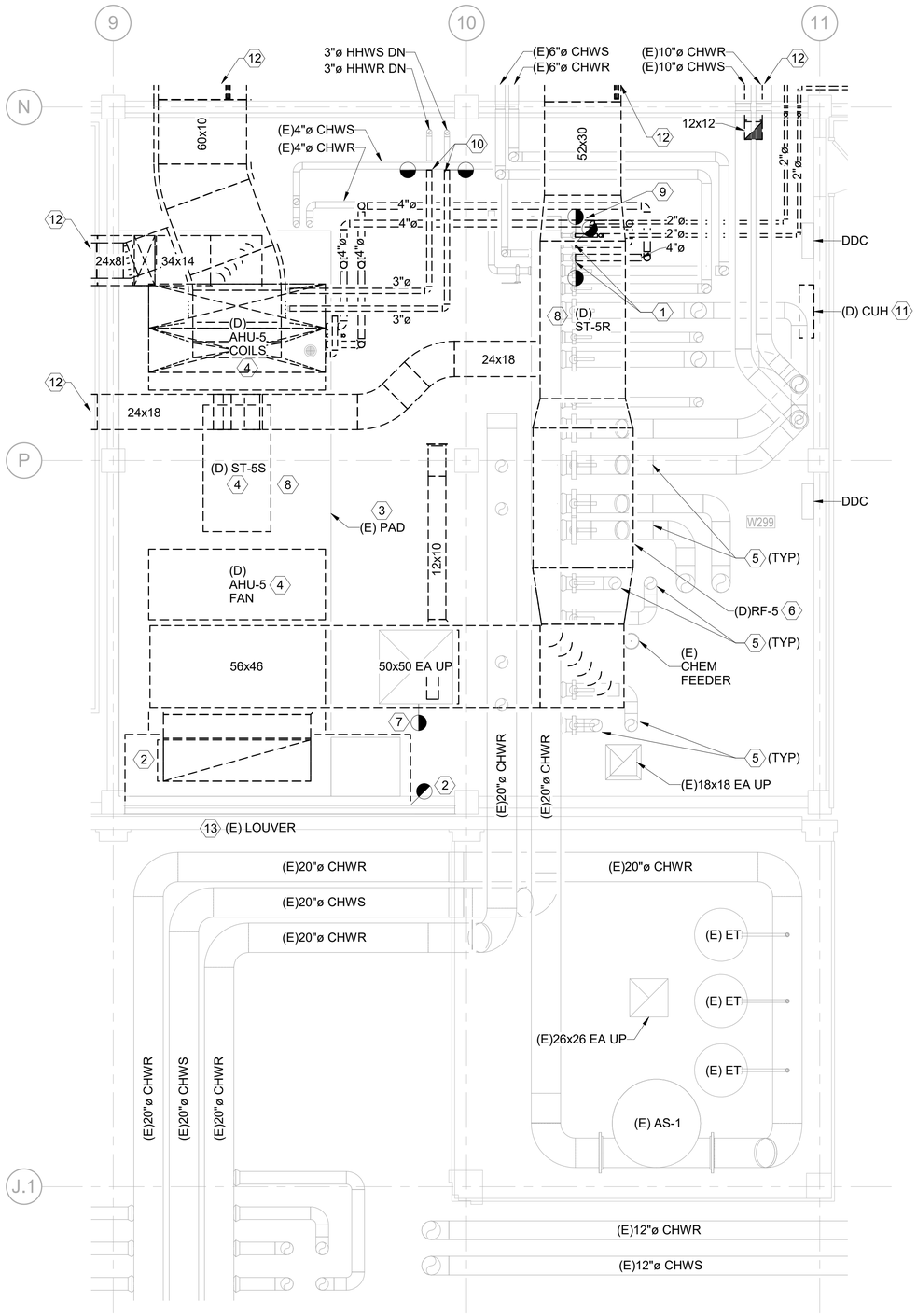
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HVAC DEMOLITION SECOND FLOOR PLAN - AHU-6 MODIFICATIONS

SHEET ID
MD103_5
SHEET 47 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 DEMO - ENLARGED MECHANICAL ROOM W299
SCALE: 1/4" = 1'-0"

PLAN NORTH

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

KEYED NOTES:

1. DEMOLISH CHILLED WATER PIPING TO AHU-5 BACK TO POINT SHOWN. PROVIDE TEMPORARY INSULATED CAP TO PROTECT SPACE UNTIL NEW PIPING IS INSTALLED.
2. DEMOLISH MIXED AIR PLENUM BACK TO EXISTING LOUVER. EXISTING LOUVER AND SECURITY MANBARS TO REMAIN. PROVIDE INSULATED SHEET METAL PANEL TO PROTECT SPACE UNTIL NEW DUCTWORK IS INSTALLED.
3. EXISTING EQUIPMENT PAD TO REMAIN AND BE REUSED FOR NEW AHU PLACEMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR INCREASING PAD SIZE TO MATCH NEW AHU DIMENSIONS, IF THAT IS REQUIRED.
4. DEMOLISH EXISTING BUILT-UP AIR HANDLER AHU-5, DUCTWORK, PIPING, UNIT CONTROLS, AND POWER CONNECTIONS UNLESS NOTED OTHERWISE ON PLAN.
5. EXISTING PIPING BELOW RETURN FAN TO REMAIN. PROTECT PIPING DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE, SCHEDULE AND OBTAIN APPROVAL FOR ANY REQUIRED CHILLED WATER SHUT-DOWN WITH CONTRACTING OFFICER PRIOR TO DEMOLITION OR INSTALLATION OF RF-5 EQUIPMENT.
6. DEMOLISH RETURN FAN RF-5, FAN MOTOR, AND EXISTING DUCTWORK AND FLEXIBLE DUCT FITTINGS. COORDINATE WITH ELECTRICAL CONTRACTOR.
7. DEMOLISH RELIEF AIR DUCT UP TO GRAVITY HOOD ON ROOF AT UNDERSIDE OF ROOF DECK. EXISTING GRAVITY HOOD TO REMAIN. EXISTING SECURITY MANBARS TO REMAIN INTACT AT ALL TIMES. PROVIDE TEMPORARY INSULATED CAP TO PROTECT SPACE UNTIL NEW DUCTWORK IS INSTALLED.
8. DEMOLISH SOUND TRAP AND ASSOCIATED SUPPORTS, DUCTWORK AND INSULATION.
9. DEMOLISH EXISTING AIR CONDITIONING UNIT SERVING W298 AND ASSOCIATED SUPPORTS, DUCTWORK, INSULATION AND CONTROLS. DEMOLISH CHILLED WATER PIPING BACK TO POINT INDICATED AND CAP. PROVIDE NEW INSULATION FOR CAP TO MATCH EXISTING INSULATION.
10. DEMOLISH HEATING WATER PIPING TO AHU-5 BACK TO POINT SHOWN. PROVIDE TEMPORARY INSULATED CAP TO PROTECT SPACE UNTIL NEW PIPING IS INSTALLED.
11. DEMOLISH FLOOR MOUNTED CABINET UNIT HEATER AND ASSOCIATED HOT WATER HEATING PIPING. CAP PIPING BACK AT CONNECTION TO MAINS WITH INSULATED CAP.
12. DEMOLISH DUCTWORK AND PROTECT EXISTING OPENING FOR ROUTING NEW DUCTWORK. SEAL OPENING TO MATCH EXISTING WALL CONDITIONS WHERE NOT USED FOR NEW WORK.
13. TEMPORARY ACCESS TO THE MECHANICAL ROOM FOR REMOVAL AND INSTALLATION OF EQUIPMENT SHALL BE THROUGH THE EXISTING INTAKE LOUVER OPENING. THE SECURITY MANBARS AT THE LOUVER OPENING ARE REQUIRED TO REMAIN INTACT DURING ALL TIMES CONSTRUCTION IS NOT ACTIVELY TAKING PLACE. MANBARS ARE REQUIRED TO BE REINSTALLED (BY WELDING OR OTHER APPROVED METHOD) AT THE CLOSE OF EACH CONSTRUCTION DAY. DURING CONSTRUCTION, LOUVER OPENING SHALL NOT BE LEFT UNSECURED AND UNATTENDED. CONTRACTOR IS REQUIRED TO PROVIDE A SECURITY PLAN REPORT TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO DEMOLITION OR NEW WORK.

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

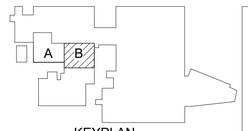
B. ALL ASBESTOS WORK MAY BE DONE DURING NORMAL WORKING HOURS UNLESS THE AREA IS A COMMON ACCESS AREA AND THEN THE WORK MUST BE DONE AFTER NORMAL WORKING HOURS (1600 HOURS TO 0030 HOURS) OR DURING THE WEEKEND.

C. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.

D. CONTRACTOR IS RESPONSIBLE FOR COORDINATING DEMOLITION WORK WITH EXISTING MECHANICAL ROOM EQUIPMENT AND BUILDING OPENINGS.

E. ALL AREAS AFFECTED BY DEMOLITION, INCLUDING UNFORESEEN EXISTING OPENINGS, SHALL BE SEALED, PATCHED, AND REPAIRED WITH LIKE MATERIALS TO MATCH ADJACENT WALL/ROOF/FLOOR/ETC. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MORE INFORMATION.

F. GENERAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR TO REMOVE WIRING AND CONDUIT FROM EQUIPMENT AND DEVICES BACK TO DISTRIBUTION PANELS.



KEYPLAN
NOT TO SCALE

LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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SUBMITTED BY: G.JOHNSON
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9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
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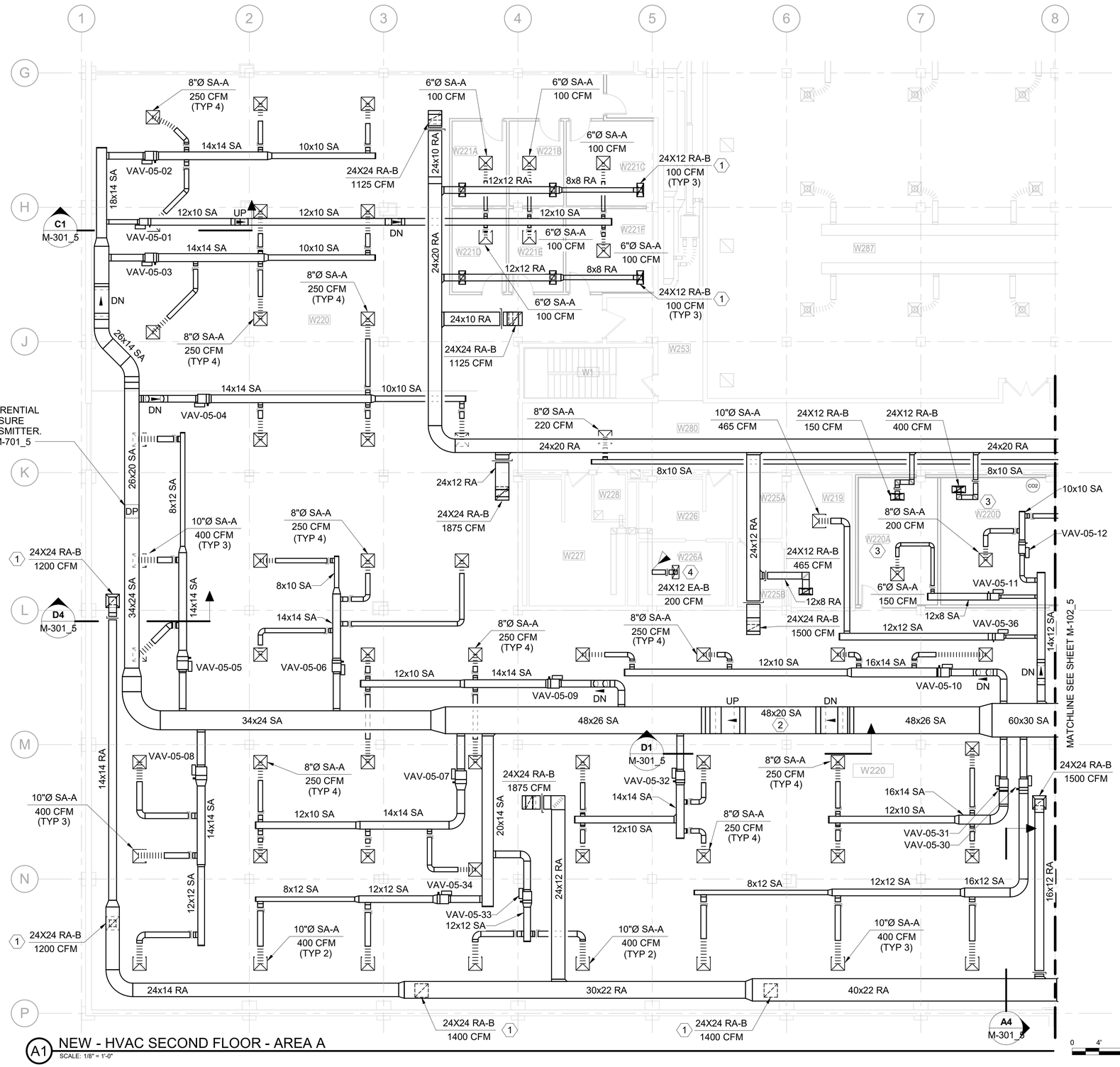
WRIGHT-PATTERSON AFB, OHIO

ENLARGED MECH ROOM W299 DEMOLITION PLAN

SHEET ID
MD401_5
SHEET 48 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 NEW - HVAC SECOND FLOOR - AREA A
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. FOR ROOM NAMING, SEE ARCHITECTURAL FINISH AND SIGNAGE PLANS OR SCHEDULES.

C. INSTALL THERMOSTATS AT 54" AFF, UNLESS NOTED OTHERWISE. PROVIDE EXTRA 10' OF THERMOSTAT WIRING COILED ABOVE CEILING TO ALLOW FOR FUTURE MOVEMENT OF THERMOSTAT.

D. CONTRACTOR RESPONSIBLE FOR REWORKING SUPPORT WIRES, FLEXIBLE CABLES, ETC. TO FACILITATE INSTALLATION OF DUCTWORK.

E. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, CRAC, VALVES, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

F. VAV INLET DUCT SIZE SHALL BE AS INDICATED ON EQUIPMENT SCHEDULE.

KEYED NOTES:

1. MANUAL BALANCING DAMPER IS LOCATED IN VERTICAL DUCT.
2. FLATTEN AND OFFSET SUPPLY AIR DUCT TO ALLOW FOR ROUTING BELOW EXISTING CABLE TRAY AND CONDUITS ABOVE CEILING. COORDINATE EXACT REQUIREMENTS IN FIELD.
3. ROOM SHALL MAINTAIN STC 50 SOUND RATING. CONTRACTOR SHALL ENSURE NEW WORK MEETS OR EXCEEDS THE STC 50 RATING REQUIREMENTS. DUCTWORK CHANGES MADE IN FIELD SHALL REQUIRE PRIOR GOVERNMENT APPROVAL.
4. EXISTING RESTROOM EXHAUST SYSTEM TO REMAIN. INSTALL NEW EXHAUST GRILLE AND DUCTWORK WHERE INDICATED DUE TO CEILING REPLACEMENT. AIRFLOW RATES OF EXISTING EXHAUST FANS AND GRILLES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO SUBMITTING / PURCHASING THE VAV PROVIDING MAKEUP AIR FROM THE CORRIDOR INTO THE SPACE. BALANCE NEW GRILLE TO MATCH EXISTING CFM.

PLAN NORTH

KEYPLAN
NOT TO SCALE

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
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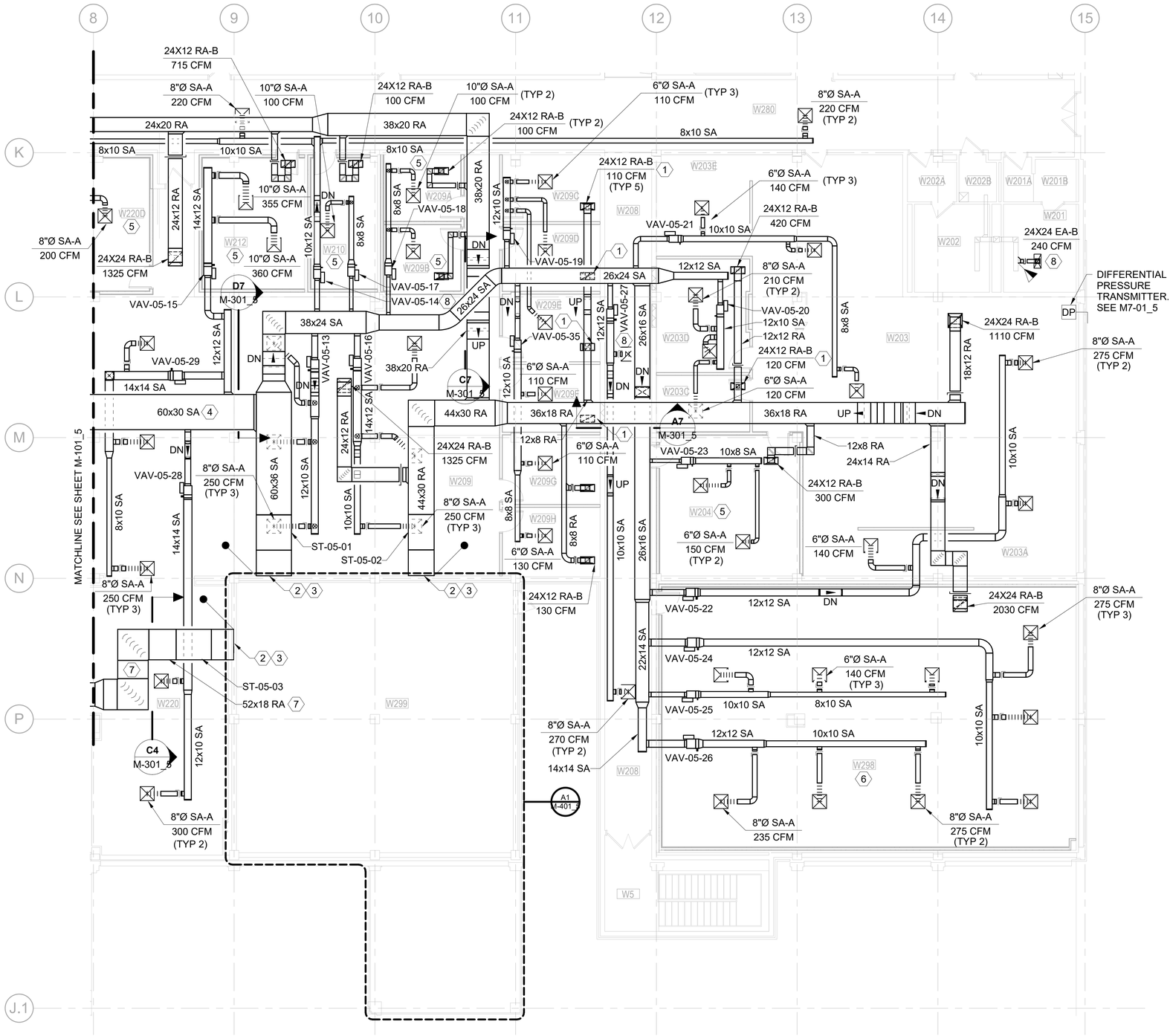
HVAC DUCTWORK SECOND FLOOR PLAN - AREA A

SHEET ID
M-101_5
SHEET 49 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 NEW - HVAC SECOND FLOOR - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. FOR ROOM NAMING, SEE ARCHITECTURAL FINISH AND SIGNAGE PLANS OR SCHEDULES.

C. INSTALL THERMOSTATS AT 54" AFF, UNLESS NOTED OTHERWISE. PROVIDE EXTRA 10' OF THERMOSTAT WIRING COILED ABOVE CEILING TO ALLOW FOR FUTURE MOVEMENT OF THERMOSTAT.

D. CONTRACTOR RESPONSIBLE FOR REWORKING SUPPORT WIRES, FLEXIBLE CABLES, ETC. TO FACILITATE INSTALLATION OF DUCTWORK.

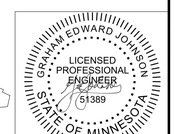
E. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, CRAC, VALVES, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

F. VAV INLET DUCT SIZE SHALL BE AS INDICATED ON EQUIPMENT SCHEDULE.

KEYED NOTES:

1. MANUAL BALANCING DAMPER IS LOCATED IN VERTICAL DUCT.
2. CONTRACTOR TO PROVIDE MANBARS INSTALLED IN DUCT PENETRATIONS AT SECURE WALL. INCLUDE INSPECTION PORTS ON THE SECURE SIDE AT EACH LOCATION. SEE DETAILS D1 & A5/M-504_5.
3. ROUTE NEW DUCT THROUGH EXISTING OPENING IN MECHANICAL ROOM WALL. CONTRACTOR SHALL ENLARGE OPENING AS REQUIRED FOR NEW WORK. SEAL UNUSED EXISTING OPENINGS TO MATCH EXISTING WALL CONSTRUCTION.
4. CONTRACTOR SHALL FIELD VERIFY FINAL SUPPLY DUCT LOCATION WITH EXISTING FIRE SPRINKLER PIPE MAIN.
5. ROOM SHALL MAINTAIN STC 50 SOUND RATING. CONTRACTOR SHALL ENSURE NEW WORK MEETS OR EXCEEDS THE STC 50 RATING REQUIREMENTS. DUCTWORK CHANGES MADE IN FIELD SHALL REQUIRE PRIOR GOVERNMENT APPROVAL.
6. ROOM SHALL MAINTAIN STC 45 SOUND RATING. CONTRACTOR SHALL ENSURE NEW WORK MEETS OR EXCEEDS THE STC 45 RATING REQUIREMENTS. DUCTWORK CHANGES MADE IN FIELD SHALL REQUIRE PRIOR GOVERNMENT APPROVAL.
7. CONTRACTOR SHALL FIELD ROUTE RETURN DUCTWORK TO COORDINATE WITH CABLE TRAY, CONDUITS/PIPING IN THIS AREA. DESIGN INTENT IS TO ALIGN THE NEW RETURN AIR DUCT WITH THE EXISTING MECHANICAL ROOM OPENING. DUCT INSTALLATION MUST REMAIN IN COMPLIANCE WITH SECURITY DETAILS ON M-504.
8. EXISTING RESTROOM EXHAUST SYSTEM TO REMAIN. INSTALL NEW EXHAUST GRILLE AND DUCTWORK WHERE INDICATED DUE TO CEILING REPLACEMENT. AIRFLOW RATES OF EXISTING EXHAUST FANS AND GRILLES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO SUBMITTING / PURCHASING THE VAV PROVIDING MAKEUP AIR FROM THE CORRIDOR INTO THE SPACE. BALANCE NEW GRILLE TO MATCH EXISTING CFM.

KEYPLAN
NOT TO SCALE



US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANFETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

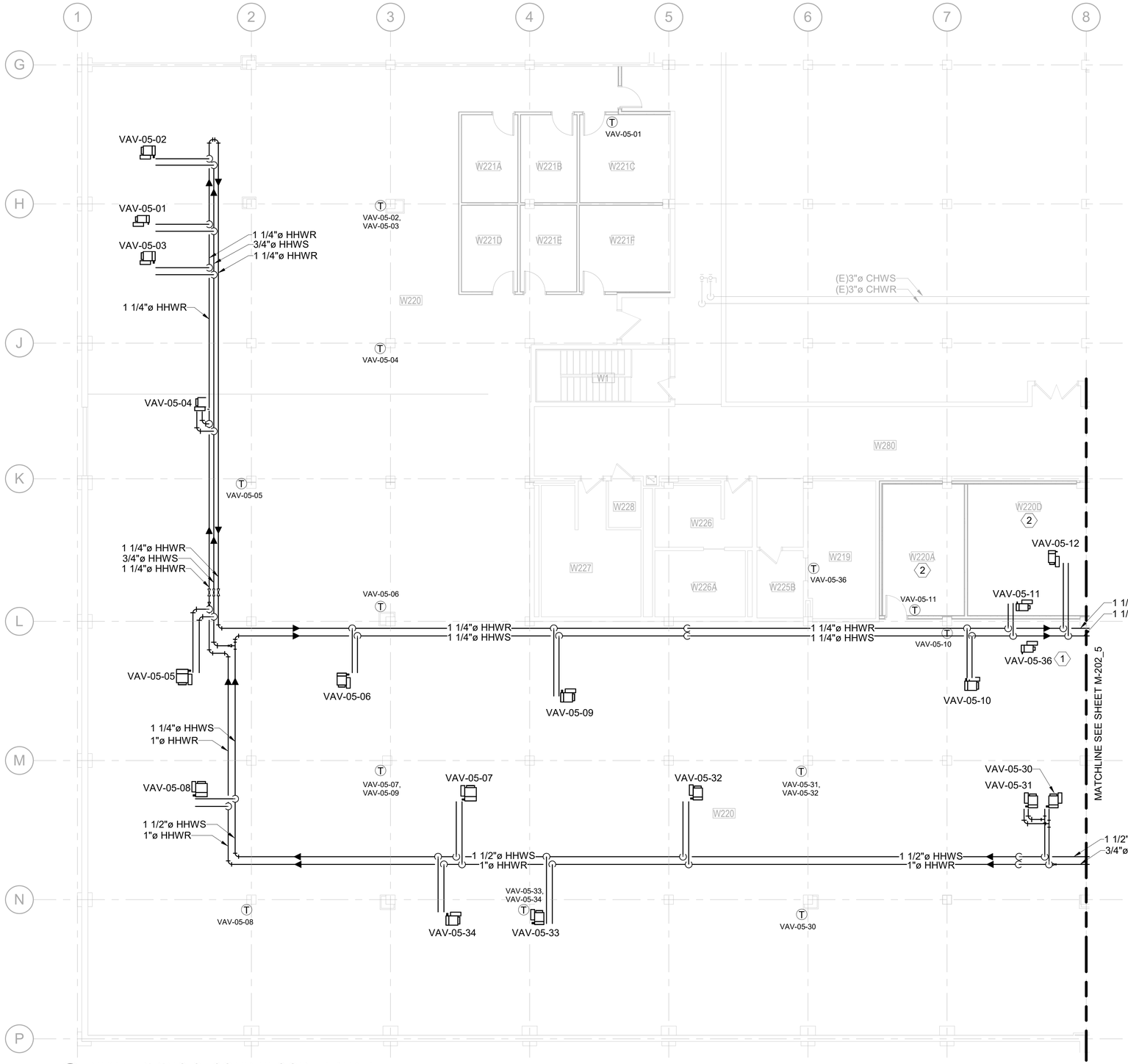
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HVAC DUCTWORK SECOND FLOOR PLAN - AREA B

SHEET ID
M-102_5
SHEET 50 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001



A1 NEW - PIPING SECOND FLOOR - AREA A
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

PLAN NORTH

KEYPLAN
NOT TO SCALE

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. FOR ROOM NAMING, SEE ARCHITECTURAL FINISH AND SIGNAGE PLANS OR SCHEDULES.

C. PROVIDE 2-WAY CONTROL VALVES AT ALL TERMINAL BOXES UNLESS NOTED OTHERWISE.

D. ALL PIPING TO BE 3/4"ø UNLESS NOTED OTHERWISE.

E. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, VALVE, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

F. FOR ADDITIONAL INFORMATION ON VALVING AND OTHER PIPE ACCESSORIES, SEE HEATING HOT WATER SCHEMATIC ON SHEET M-803_5.

G. COORDINATE FINAL VAV THERMOSTAT LOCATION WITH FURNITURE PLAN. IF REQUIRED, RELOCATE THERMOSTAT WITHIN ZONE TO AVOID CONFLICT WITH FURNITURE.

KEYED NOTES:

1 COOLING ONLY VAV BOX. NO REHEAT COIL.

2 ROOM SHALL MAINTAIN STC 50 SOUND RATING. CONTRACTOR SHALL ENSURE NEW WORK MEETS OR EXCEEDS THE STC 50 RATING REQUIREMENTS.

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
DISTRICT OF LOUISVILLE
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

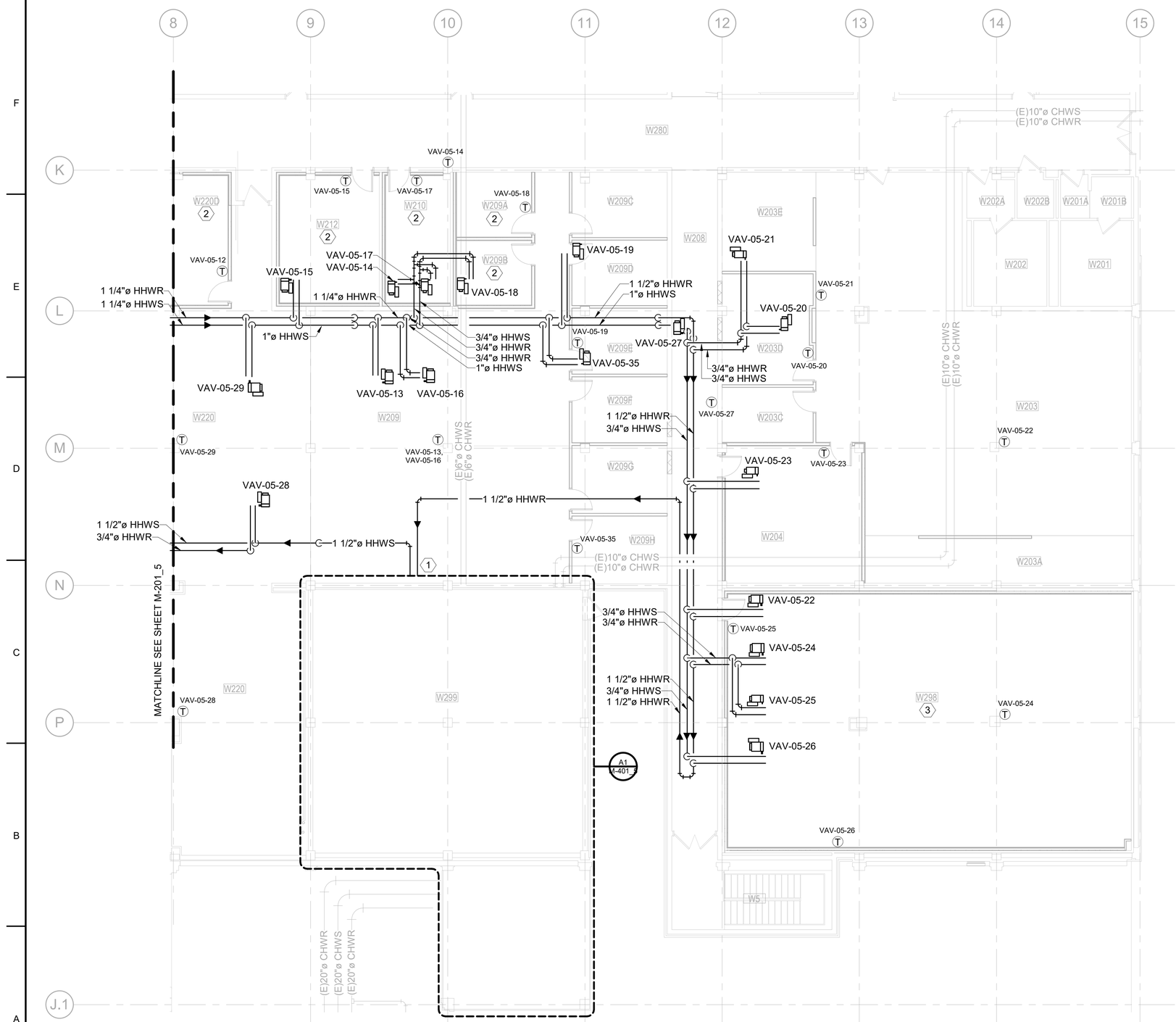
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HVAC PIPING SECOND FLOOR PLAN - AREA A

SHEET ID
M-201_5
SHEET 51 OF 112

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

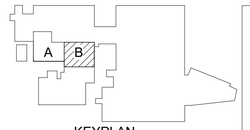
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 NEW - PIPING SECOND FLOOR - AREA B
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

PLAN NORTH



KEYPLAN
NOT TO SCALE

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. FOR ROOM NAMING, SEE ARCHITECTURAL FINISH AND SIGNAGE PLANS OR SCHEDULES.

C. PROVIDE 2-WAY CONTROL VALVES AT ALL TERMINAL BOXES UNLESS NOTED OTHERWISE.

D. ALL PIPING TO BE 3/4"Ø UNLESS NOTED OTHERWISE.

E. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, CRAC, VALVES, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

F. FOR ADDITIONAL INFORMATION ON VALVING AND OTHER PIPE ACCESSORIES, SEE HEATING HOT WATER SCHEMATIC ON SHEET M-803_5.

G. COORDINATE FINAL VAV THERMOSTAT LOCATION WITH FURNITURE PLAN. IF REQUIRED, RELOCATE THERMOSTAT WITHIN ZONE TO AVOID CONFLICT WITH FURNITURE.

KEYED NOTES:

1. REFER TO SHEET M-401_5 - ENLARGED MECHANICAL ROOM W299 PLAN FOR CONTINUATION.
2. ROOM SHALL MAINTAIN STC 50 SOUND RATING. CONTRACTOR SHALL ENSURE NEW WORK MEETS OR EXCEEDS THE STC 50 RATING REQUIREMENTS.
3. ROOM SHALL MAINTAIN STC 45 SOUND RATING. CONTRACTOR SHALL ENSURE NEW WORK MEETS OR EXCEEDS THE STC 45 RATING REQUIREMENTS.

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

HVAC PIPING SECOND FLOOR PLAN - AREA B

SHEET ID
M-202_5
SHEET 52 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

KEYED NOTES:

1. COORDINATE SUPPLY AND RETURN DUCT ROUTING TO AVOID EXISTING TO REMAIN CONDUIT, CABLE TRAY, AND FIRE PROTECTION PIPING BY OFFSETTING AND OR FLATTENING SECTIONS OF DUCT AS NEEDED.
2. OFFSET NEW HYDRONIC PIPING AS NEEDED TO AVOID EXISTING CHILLED WATER PIPING, CONDUIT, CABLE TRAY, AND FIRE PROTECTION PIPING.

GENERAL NOTES:

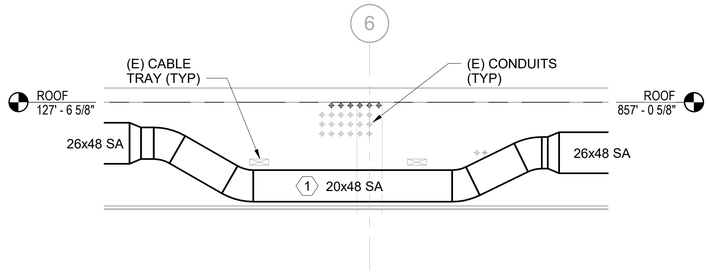
A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. PROVIDE 2-WAY CONTROL VALVES AT ALL TERMINAL BOXES UNLESS NOTED OTHERWISE.

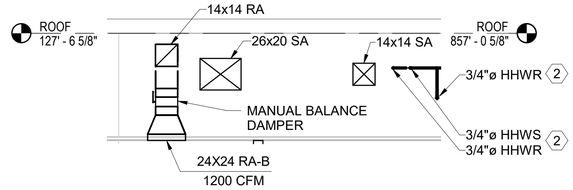
C. ALL PIPING TO BE 3/4"ø UNLESS NOTED OTHERWISE.

D. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, CRAC, VALVES, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

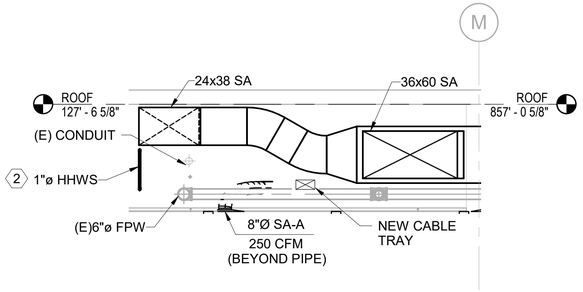
E. FOR ADDITIONAL INFORMATION ON VALVING AND OTHER PIPE ACCESSORIES, SEE HEATING HOT WATER SCHEMATIC ON SHEET M-803_5.



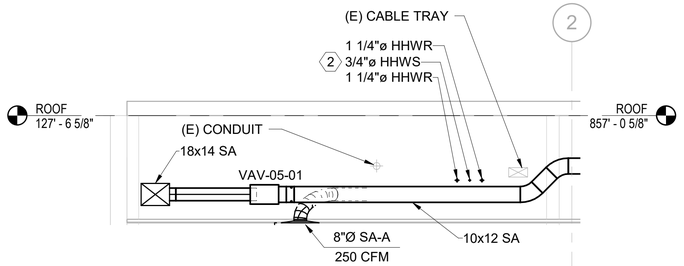
D1 SECTION NEAR GRIDS M6
SCALE 1/4" = 1'-0"



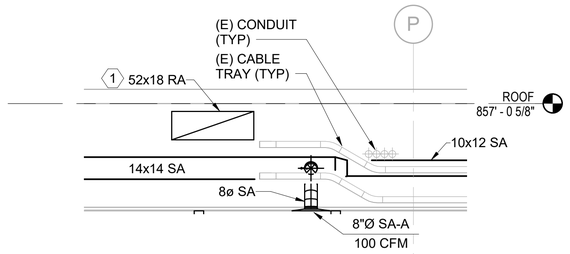
D4 SECTION NEAR GRIDS L1
SCALE 1/4" = 1'-0"



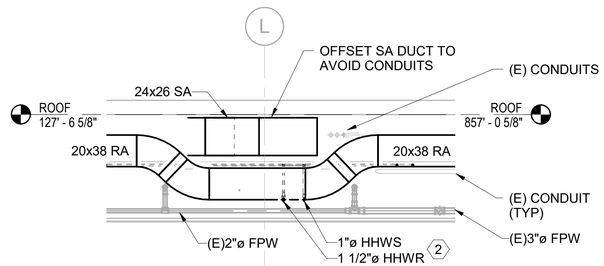
D7 SECTION NEAR GRIDS L9
SCALE 1/4" = 1'-0"



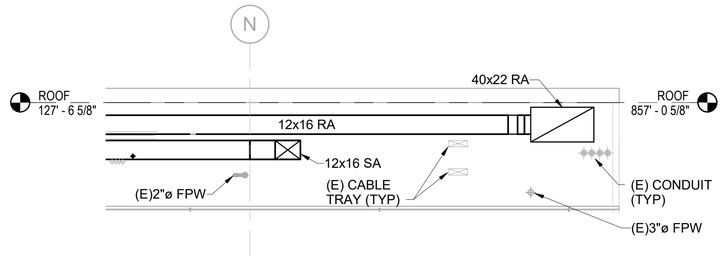
C1 SECTION NEAR GRIDS H1
SCALE 1/4" = 1'-0"



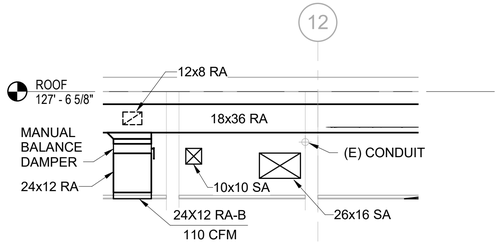
C4 SECTION NEAR GRIDS P9
SCALE 1/4" = 1'-0"



C7 SECTION NEAR GRIDS L10
SCALE 1/4" = 1'-0"



A4 SECTION NEAR GRIDS P8
SCALE 1/4" = 1'-0"



A7 SECTION NEAR GRIDS N11
SCALE 1/4" = 1'-0"

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANFETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

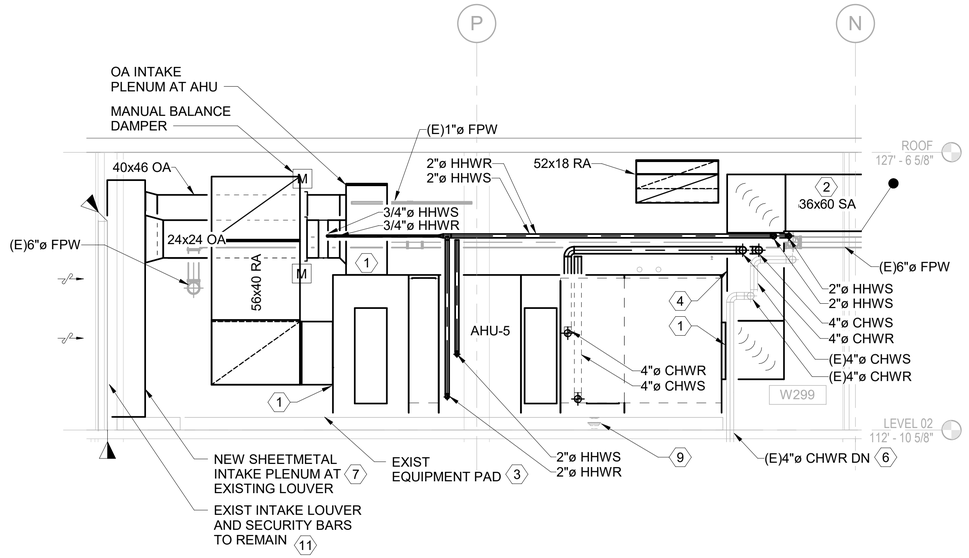
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL SECTIONS

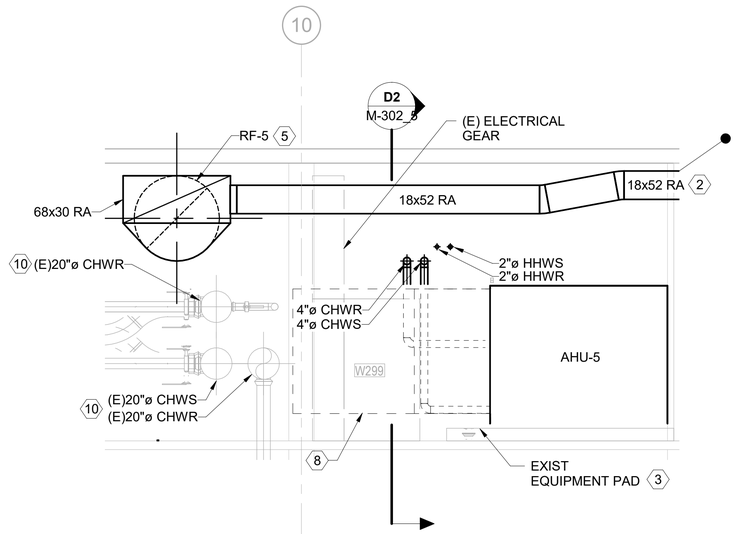
SHEET ID
M-301_5
SHEET 53 OF 112

CUI
W912QR23R0022_CUI_CF_Plans-0001
CERTIFIED FINAL



D2 SECTION - MECHANICAL ROOM W299 - LOOKING WEST

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



A2 SECTION - MECHANICAL ROOM W299 - LOOKING SOUTH

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

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, CRAC, VALVES, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

KEYED NOTES:

1. TRANSITION DUCTWORK TO AHU CONNECTION SIZE.
2. CONTRACTOR TO PROVIDE MANBARS INSTALLED IN DUCT PENETRATIONS AT SECURE WALL. INCLUDE INSPECTION PORTS ON THE SECURE SIDE AT EACH LOCATION. SEE DETAILS D1 & A5/M-504_5.
3. EXISTING EQUIPMENT PAD TO REMAIN AND BE REUSED FOR NEW AHU PLACEMENT. CONTRACTOR TO EXPAND EXISTING EQUIPMENT PAD AS REQUIRED TO ACCOMMODATE NEW AHU-5.
4. INSTALL EXTERNAL ACOUSTICAL DUCT LAGGING ON FIRST 10' OF SUPPLY AIR DUCT.
5. SUPPORT NEW RETURN FAN, RF-5 FROM STRUCTURE IN SAME LOCATION AS PREVIOUS FAN. CONNECT TO DUCTWORK WITH FLEXIBLE DUCT CONNECTIONS. MOUNT FAN MOTOR WHERE ACCESSIBLE.
6. EXISTING CHILLED WATER PIPING THROUGH FLOOR TO REMAIN. CONTRACTOR SHALL RELOCATE IF REQUIRED TO ACCOMMODATE NEW AHU PLACEMENT.
7. PROVIDE NEW 12'-6" x 15'-10" x 2'-0" INSULATED SWEETMEAT PLENUM AT EXISTING INTAKE LOUVER. EXISTING SECURITY BARS TO REMAIN INSTALLED THROUGHOUT THE ENTIRE LOUVER. CAP UNUSED LOUVER PORTIONS WITH INSULATED COVER.
8. MAINTAIN REQUIRED MECHANICAL CLEARANCES PER AHU MANUFACTURER AND COORDINATE WITH EXISTING TO REMAIN EQUIPMENT.
9. ROUTE COOLING COIL CONDENSATE DRAIN TO EXISTING FLOOR SINK NEXT TO EQUIPMENT PAD. REPLACE EXISTING FLOOR SINK GRATE WITH NEW.
10. CONTRACTOR SHALL COORDINATE, SCHEDULE AND OBTAIN APPROVAL FOR ANY REQUIRED CHILLED WATER SHUT-DOWN WITH CONTRACTING OFFICER PRIOR TO DEMOLITION OR INSTALLATION OF RF-5 EQUIPMENT.
11. TEMPORARY ACCESS TO THE MECHANICAL ROOM FOR REMOVAL AND INSTALLATION OF EQUIPMENT SHALL BE THROUGH THE EXISTING INTAKE LOUVER OPENING. THE SECURITY MANBARS AT THE LOUVER OPENING ARE REQUIRED TO REMAIN INTACT DURING ALL TIMES CONSTRUCTION IS NOT ACTIVELY TAKING PLACE. MANBARS ARE REQUIRED TO BE REINSTALLED (BY WELDING OR OTHER APPROVED METHOD) AT THE CLOSE OF EACH CONSTRUCTION DAY. DURING CONSTRUCTION, LOUVER OPENING SHALL NOT BE LEFT UNSECURED AND UNATTENDED. CONTRACTOR IS REQUIRED TO PROVIDE A SECURITY PLAN REPORT TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO DEMOLITION OR NEW WORK.

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: G JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

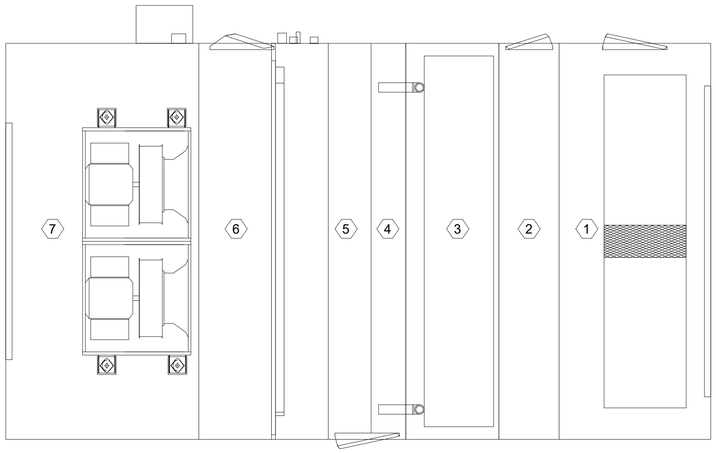
MECHANICAL SECTIONS

SHEET ID
M-302_5
SHEET 54 OF 112

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

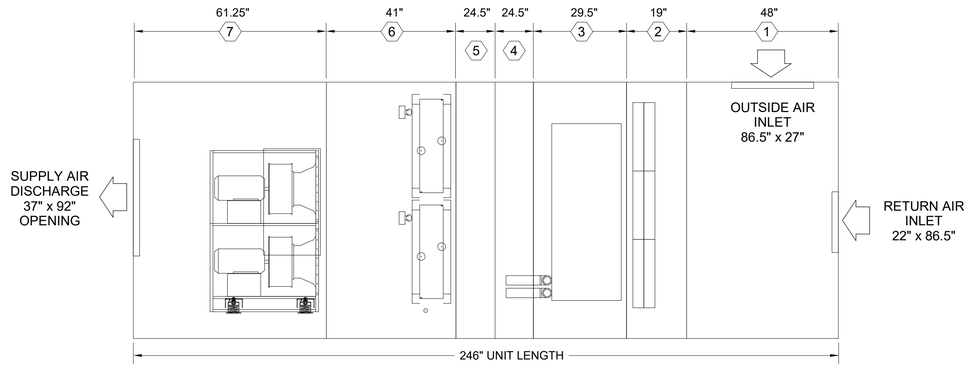
CUI



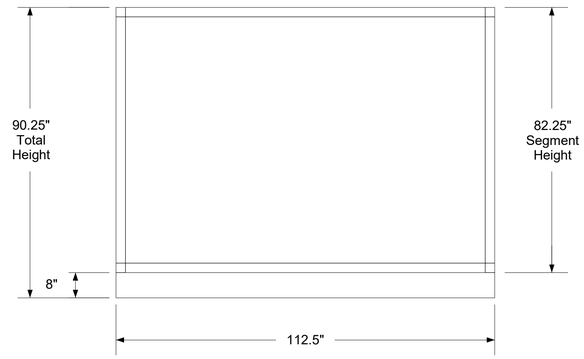
AHU-5 DETAIL - PLAN VIEW

KEYED NOTES:

1. AIR MIXING SECTION WITH AIR BLENDER
2. HIGH EFFICIENCY FILTER
3. INTEGRAL FACE & BYPASS HOT WATER HEATING COIL
4. ACCESS SECTION
5. ACCESS SECTION
6. CHILLED WATER COOLING COIL WITH ULTRAVIOLET GERMICIDAL IRRADIATION (UVGI)
7. SUPPLY FAN SECTION



AHU-5 DETAIL - ELEVATION VIEW



AHU-5 DETAIL - FRONT (INLET) END VIEW

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
CIVIL WORKS PROJECTS
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

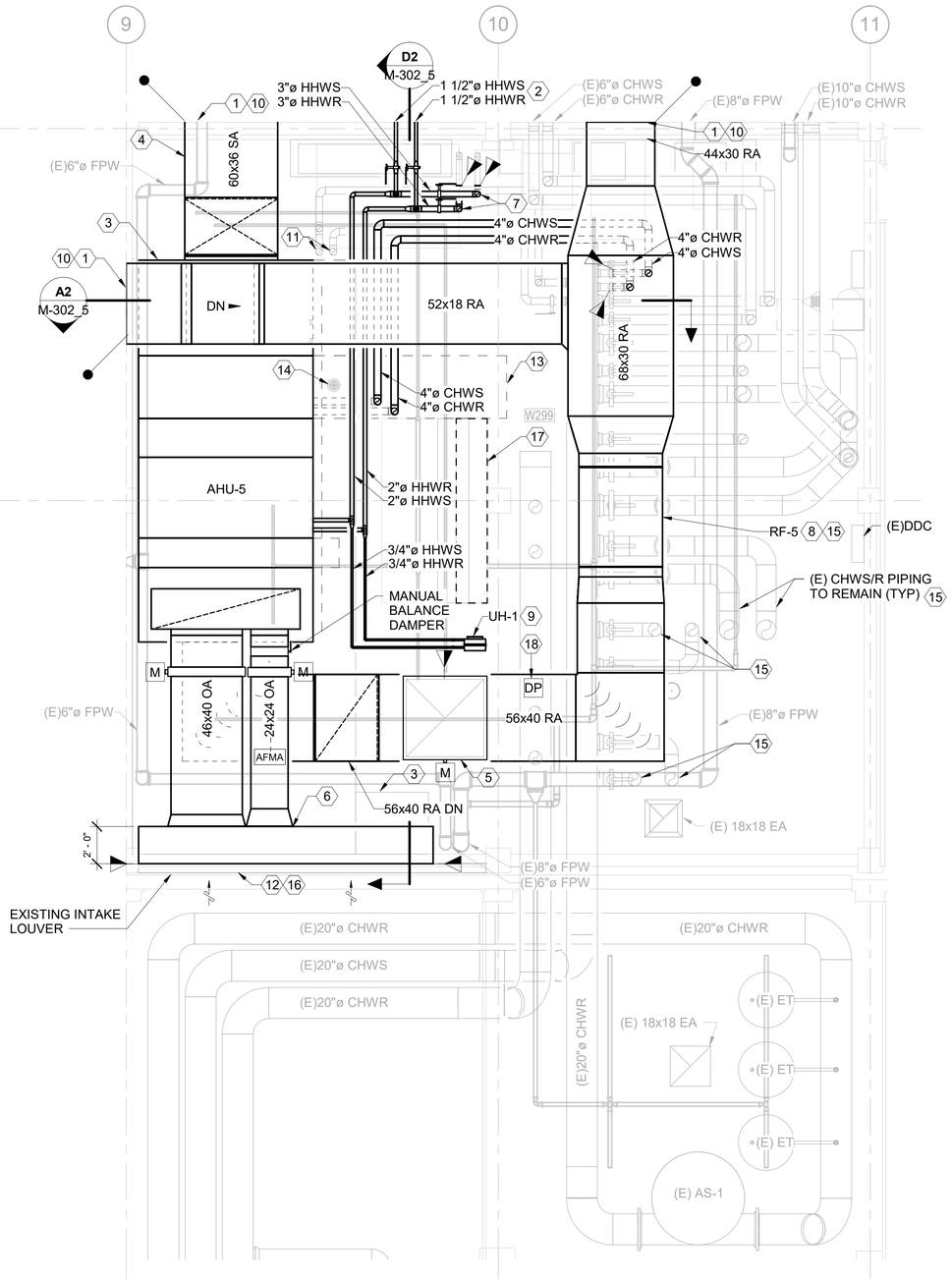
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

AIR HANDLING UNIT DETAILS

SHEET ID
M-303_5
SHEET 55 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



A1 ENLARGED MECHANICAL ROOM W299
SCALE: 1/4" = 1'-0"

PLAN NORTH

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

KEYED NOTES CONTINUED:

13. MAINTAIN REQUIRED MECHANICAL CLEARANCES PER AHU MANUFACTURER AND COORDINATE WITH EXISTING TO REMAIN EQUIPMENT.
14. ROUTE COOLING COIL CONDENSATE DRAIN TO EXISTING FLOOR SINK NEXT TO EQUIPMENT PAD. REPLACE EXISTING FLOOR SINK GRATE WITH NEW.
15. CONTRACTOR SHALL COORDINATE, SCHEDULE AND OBTAIN APPROVAL FOR ANY REQUIRED CHILLED WATER SHUT-DOWN WITH CONTRACTING OFFICER PRIOR TO DEMOLITION OR INSTALLATION OF RF-5 EQUIPMENT.
16. TEMPORARY ACCESS TO THE MECHANICAL ROOM FOR REMOVAL AND INSTALLATION OF EQUIPMENT SHALL BE THROUGH THE EXISTING INTAKE LOUVER OPENING. THE SECURITY MANBARS AT THE LOUVER OPENING ARE REQUIRED TO REMAIN INTACT DURING ALL TIMES CONSTRUCTION IS NOT ACTIVELY TAKING PLACE. MANBARS ARE REQUIRED TO BE REINSTALLED (BY WELDING OR OTHER APPROVED METHOD) AT THE CLOSE OF EACH CONSTRUCTION DAY. DURING CONSTRUCTION, LOUVER OPENING SHALL NOT BE LEFT UNSECURED AND UNATTENDED. CONTRACTOR IS REQUIRED TO PROVIDE A SECURITY PLAN REPORT TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO DEMOLITION OR NEW WORK.
17. EXISTING ELECTRICAL SWITCHGEAR, MCC4A, TO REMAIN. ALL AHU SERVICE CLEARANCES AND COIL PULL REQUIREMENTS MUST BE COORDINATED WITH THE EXISTING TO REMAIN EQUIPMENT AND PIPING.
18. RETURN AIR DUCT DIFFERENTIAL PRESSURE TRANSMITTER. SEE M-701_5.

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF NEW EQUIPMENT WITH EXISTING BUILDING AND MECHANICAL ROOM OPENINGS. PROVIDE EQUIPMENT IN SPLIT SECTIONS, AS REQUIRED, AND COORDINATE WITH EXISTING SYSTEMS IN PLACE.

C. SEE C3 & C7/M-505_5 FOR HEATING AND COOLING COIL PIPING CONNECTION DETAILS.

D. PROVIDE PERMANENT LABELS INCLUDING FLOW ARROW AND DETAILS FOR EVERY PIPE, VAV, DUCT, CRAC, VALVES, ETC. SHOWN ON PLANS. INCLUDE ROTATION ARROW FOR ALL ROTATING COMPONENTS.

E. CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEALING ANY PENETRATION ASSOCIATED WITH THIS SCOPE.

F. PROTECT EXISTING PIPING IN MECHANICAL ROOM DURING CONSTRUCTION.

KEYED NOTES:

1. CONTRACTOR TO PROVIDE MANBARS INSTALLED IN DUCT PENETRATIONS AT SECURE WALL. INCLUDE INSPECTION PORTS ON THE SECURE SIDE AT EACH LOCATION. SEE DETAILS D1 & A5/M-504_5.
2. SEE C5/M-504_5 FOR PIPE PENETRATION AT SECURE WALL.
3. EXISTING EQUIPMENT PAD TO REMAIN AND BE REUSED FOR NEW AHU PLACEMENT. CONTRACTOR TO EXPAND EXISTING EQUIPMENT PAD AS REQUIRED TO ACCOMMODATE NEW AHU-5.
4. INSTALL EXTERNAL ACOUSTICAL DUCT LAGGING ON FIRST 10' OF SUPPLY AIR DUCT DOWNSTREAM OF AHU.
5. NEW 50x50 RELIEF AIR UP FROM TOP OF DUCT TO EXISTING 50x50 RELIEF OPENING AT ROOF. INSTALL NEW MOTORIZED DAMPER IN INTERIOR DUCTWORK WHERE ACCESSIBLE. DISCHARGE THROUGH EXISTING ROOF MOUNTED RELIEF HOOD.
6. PROVIDE SEPARATE MINIMUM OUTSIDE AIR DUCT CONNECTION TO INTAKE AIR PLENUM. PROVIDE AFMS AND MANUAL BALANCE DAMPER WHERE ACCESSIBLE.
7. CONNECT NEW 3" HOT WATER SUPPLY AND RETURN PIPING TO EXISTING SYSTEM 3" HOT WATER PIPING.
8. SUPPORT NEW RETURN FAN, RF-5 FROM STRUCTURE IN SAME LOCATION AS PREVIOUS FAN. CONNECT TO DUCTWORK WITH FLEXIBLE DUCT CONNECTIONS. MOUNT FAN MOTOR WHERE ACCESSIBLE.
9. MOUNT HOT WATER UNIT HEATER MINIMUM 8'-0" AFF. DO NOT ROUTE ANY WATER PIPING OVER ELECTRICAL EQUIPMENT.
10. ROUTE NEW DUCT THROUGH EXISTING OPENING IN MECHANICAL ROOM WALL. CONTRACTOR SHALL EXPAND OPENING AS REQUIRED FOR NEW WORK. SEAL UNUSED EXISTING OPENINGS TO MATCH EXISTING WALL CONSTRUCTION.
11. EXISTING CHILLED WATER PIPING THROUGH FLOOR TO REMAIN. CONTRACTOR SHALL RELOCATE IF REQUIRED TO ACCOMMODATE NEW AHU PLACEMENT.
12. PROVIDE NEW 12'-6" x 15'-10" x 2'-0" INSULATED SWEETMEAT PLENUM AT EXISTING INTAKE LOUVER. EXISTING SECURITY BARS TO REMAIN INSTALLED THROUGHOUT THE ENTIRE LOUVER. CAP UNUSED LOUVER PORTIONS WITH INSULATED COVER.

KEYPLAN
NOT TO SCALE

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

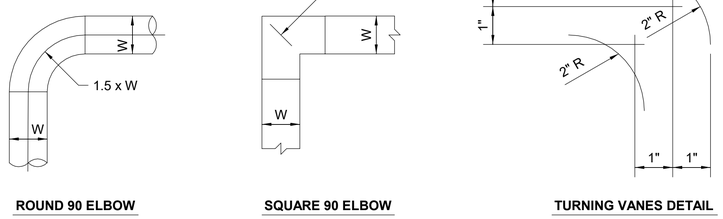
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

ENLARGED MECHANICAL ROOM W299 PLAN

SHEET ID
M-401_5
SHEET 56 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



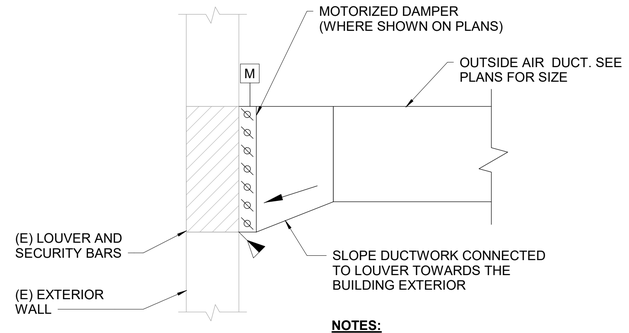
ROUND 90 ELBOW | **SQUARE 90 ELBOW** | **TURNING VANES DETAIL**

NOTE:

1. USE THIS DESIGN WHERE SQUARE 90°ELBOWS ARE SHOWN ON DRAWINGS OR IF SPACE DOES NOT PERMIT ROUND 90° ELBOWS.

RECTANGULAR TRANSITION | **RECTANGULAR TO ROUND TRANSITION**

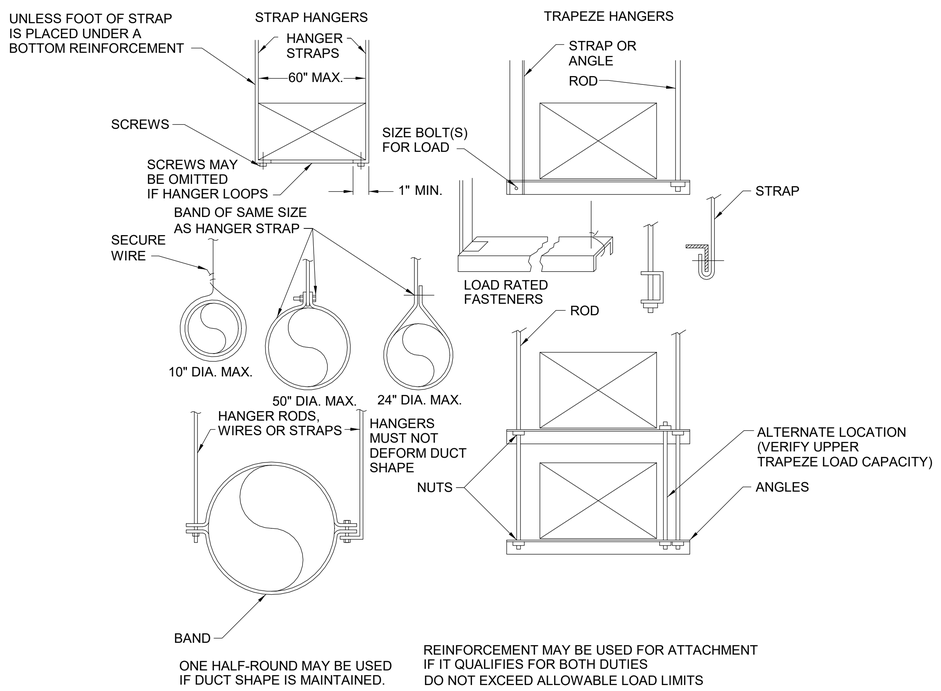
D1 LOW VELOCITY DUCT LAYOUT
SCALE:NTS



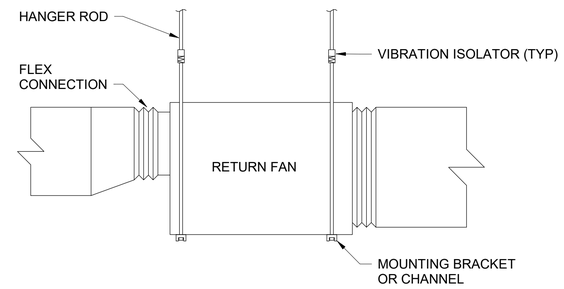
NOTES:

1. PROVIDE INSULATED CONTROL DAMPER RATED FOR -40 DEG F.

D4 DUCTWORK CONNECTED TO EXTERIOR LOUVER
SCALE:NTS



A1 LOWER DUCT HANGER ATTACHMENTS
SCALE:NTS



A6 INLINE FAN INSTALLATION
SCALE:NTS

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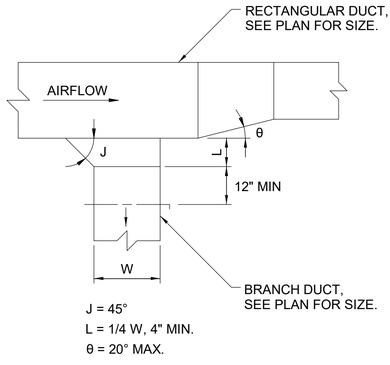
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL DETAILS

SHEET ID
M-501_5
SHEET 57 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

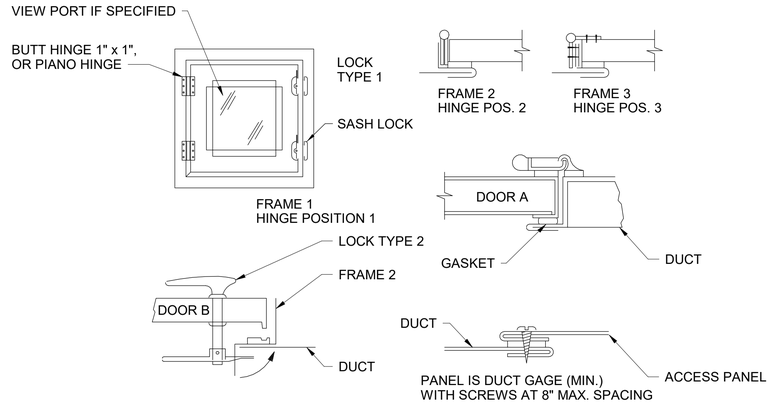


J = 45°
L = 1/4 W, 4" MIN.
θ = 20° MAX.

NOTES:

1. TAKEOFF ON BOTH SIDES OR SINGLE SIDE AS REQUIRED BY PLANS.
2. SEE SMACNA MANUAL FOR TAP-IN DETAILS.
3. CLINCH LOCK CONNECTION TO DUCT SHALL HAVE CORNER SEALS. (SEE SMACNA MANUAL)
4. EXTRACTORS, SCOOPS, DEFLECTORS OR DAMPERS THAT PROTRUDE INTO THE MAIN DUCT SHALL NOT BE USED. BALANCING DAMPERS SHALL BE LOCATED TO PREVENT PROTRUSION INTO THE MAIN DUCT AND TO PROVIDE STABLE AIR FLOW AND MINIMAL NOISE WHEN ADJUSTED.

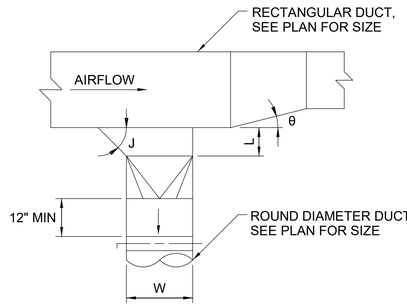
D1 RECTANGULAR BRANCH DUCT TAKE-OFF
SCALE:NTS



	DOOR SIZE	NO. OF HINGES	NO. OF LOCKS	METAL GAGE		
				FRAME	DOOR	BACK
2" W.G. STATIC AND LESS	12" x12" 16" x 20" 24" x 24"	2 2 3	1-S 2-S 2-S	24 22 22	26 24 24	26 26 26
3" W.G. STATIC	12" x 12" 16" x 20" 24" x 24"	2 2 3	1-S 1-S, 1-T, 1-B 2-S, 1-T, 1-B	22 20 20	22 20 20	26 26 26

B - BOTTOM
S - SIDE
T - TOP

D4 ACCESS DOOR IN RECTANGULAR DUCT
SCALE:NTS



J = 45°
L = 1/4 W, 4" MIN.
θ = 20° MAX.

NOTES:

1. TAKEOFF ON BOTH SIDES OR SINGLE SIDE AS REQUIRED BY PLANS.
2. SEE SMACNA MANUAL FOR TAP-IN DETAILS.
3. CLINCH LOCK CONNECTION TO DUCT SHALL HAVE CORNER SEALS. (SEE SMACNA MANUAL)
4. EXTRACTORS, SCOOPS, DEFLECTORS OR DAMPERS THAT PROTRUDE INTO THE MAIN DUCT SHALL NOT BE USED. BALANCING DAMPERS SHALL BE LOCATED TO PREVENT PROTRUSION INTO THE MAIN DUCT AND TO PROVIDE STABLE AIR FLOW AND MINIMAL NOISE WHEN ADJUSTED.

D7 ROUND BRANCH DUCT TAKE-OFF
SCALE:NTS

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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

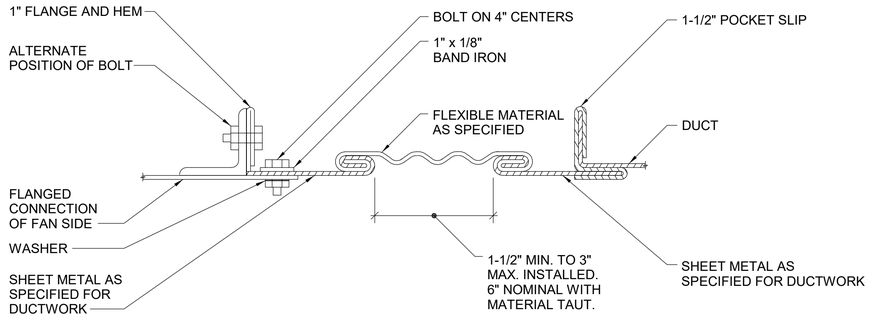
MECHANICAL DETAILS

SHEET ID
M-502_5
SHEET 58 OF 112

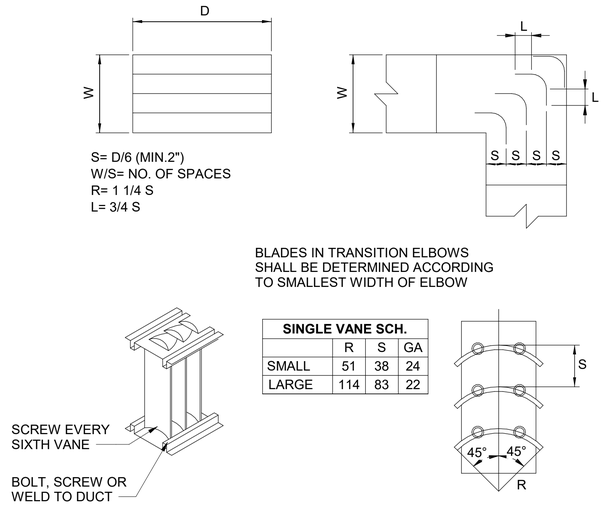
LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
02/24/2023

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

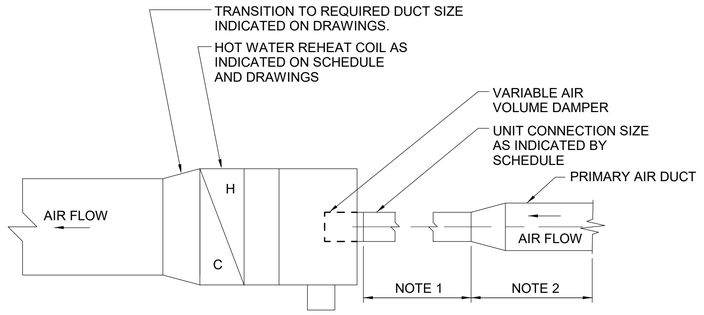


D4 RECTANGULAR FLEXIBLE CONNECTION
SCALE:NTS



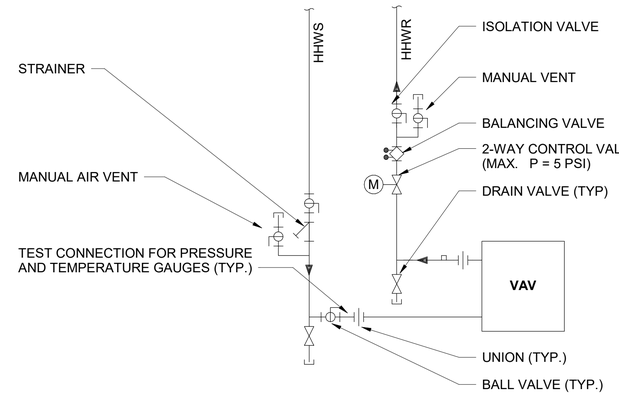
SINGLE VANE SCH.			
	R	S	GA
SMALL	51	38	24
LARGE	114	83	22

D7 RECTANGULAR DUCT ELBOW TURNING VANES
SCALE:NTS

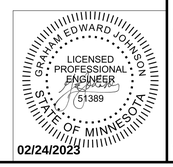


NOTES:
1. INLET DUCT TO BE UNIT CONNECTION SIZE WITH A MINIMUM OF 3 DUCT DIAMETERS LENGTH OF STRAIGHT DUCT.
2. BRANCH CONNECTION DUCT. SIZE AS INDICATED ON PLANS.
3. NO FLEXIBLE DUCTWORK ON UNIT INLET OR BRANCH CONNECTING DUCT IS ALLOWED.

A4 STANDARD SHUT-OFF VARIABLE AIR VOLUME TERMINAL UNIT DETAIL
SCALE:NTS



A7 VARIABLE AIR VOLUME BOX PIPING
SCALE:NTS



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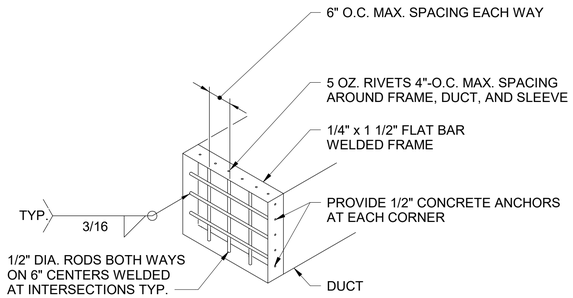
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

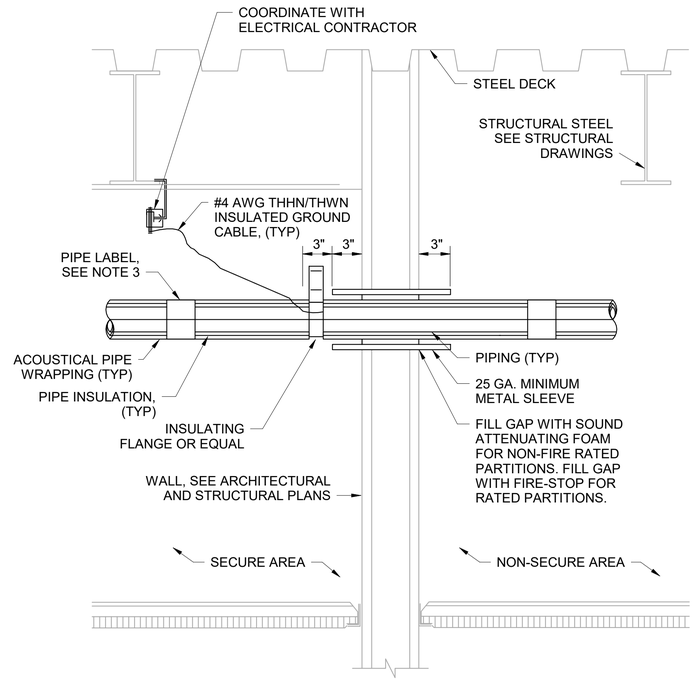
MECHANICAL DETAILS

SHEET ID
M-503_5
SHEET 59 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



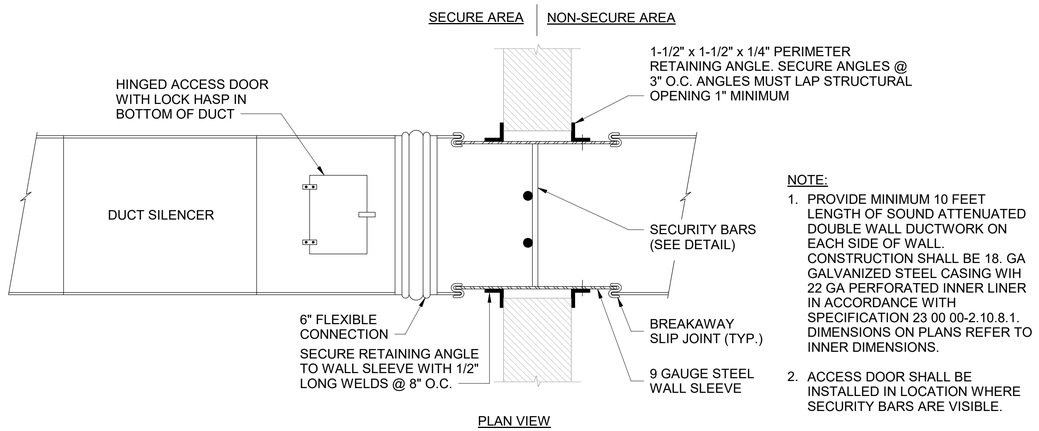
D1 DUCTWORK SECURITY MANBARS
SCALE:NTS



NOTES:

1. SECURED AREA REQUIRES THAT PENETRATIONS SUCH AS THE DETAIL SHOWN BE ACCESSIBLE FOR INSPECTION BY PROGRAM SECURITY. COORDINATE WITH CONTRACTING OFFICER DURING INSTALLATION OF PIPES CROSSING BETWEEN SECURED AREAS. GROUNDING CONNECTIONS MUST BE VISIBLE FROM BELOW FOR PHYSICAL SECURITY INSPECTIONS.
2. CONTRACTOR SHALL KEEP A LOG OF ALL PIPE PENETRATIONS INDICATING LOCATION, PURPOSE, AND INDICATION THAT THE INSTALLATION HAS BEEN COORDINATED WITH CONTRACTING OFFICER AND PROGRAM SECURITY.
3. LABEL SHALL BE PERMANENTLY AFFIXED WITHIN 2 FEET OF WALL. LABEL PIPE FUNCTION.
4. DO NOT MECHANICALLY TIE PIPE TO WALL CONSTRUCTION IN ANY WAY.
5. SPACE BETWEEN PIPE AND SLEEVE TO BE FREE OF FOREIGN MATERIAL.
6. PIPE SHALL NOT CONTACT SLEEVE AT ANY TIME. WEDGES SHALL NOT BE USED TO MAINTAIN PIPE POSITION.
7. PIPE MUST BE CENTERED IN WALL OPENING. PROVIDE ADDITIONAL CLEARANCE FOR POSITIONAL CHANGE OF PIPE DUE TO LOADING OF PIPE OR SYSTEM OPERATION.
8. INSULATION SHOULD BE CUT UP TO THE EDGE OF PIPE CLAMP TO ENSURE THAT GROUNDING IS PROPERLY CONNECTED.

C5 PIPE PENETRATION AT SECURE WALL
SCALE:NTS



NOTE:

1. PROVIDE MINIMUM 10 FEET LENGTH OF SOUND ATTENUATED DOUBLE WALL DUCTWORK ON EACH SIDE OF WALL. CONSTRUCTION SHALL BE 18. GA GALVANIZED STEEL CASING WIH 22 GA PERFORATED INNER LINER IN ACCORDANCE WITH SPECIFICATION 23 00 00-2.10.8.1. DIMENSIONS ON PLANS REFER TO INNER DIMENSIONS.
2. ACCESS DOOR SHALL BE INSTALLED IN LOCATION WHERE SECURITY BARS ARE VISIBLE.

A5 DUCT PENETRATION AT SECURE WALL WITH DUCT SILENCER
SCALE:NTS

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WRIGHT-PATTERSON AFB, OHIO

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SHEET ID
M-504_5
SHEET 60 OF 112

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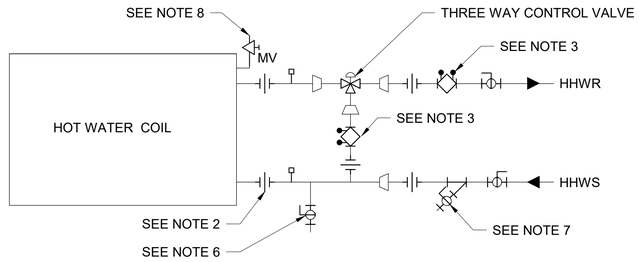
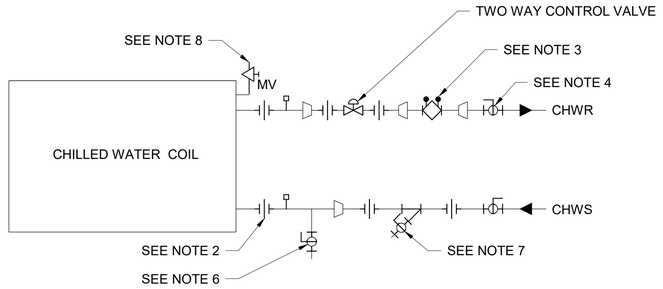


NOTES:

1. INDIVIDUAL PIPE SIZES SHALL BE THE SAME SIZE AS THE COIL TAPS.
2. LOCATE FLANGES AND UNIONS TO ALLOW FOR REMOVAL OF ALL COILS AND CONTROL VALVES.
3. CONTROL VALVES AND BALANCING VALVES SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDED SPACING PROVIDING STRAIGHT LENGTHS OF UNOBSTRUCTED PIPING UPSTREAM AND DOWNSTREAM FROM "PIPE CHANGES IN DIRECTION" AND FROM "OTHER VALVES AND COMPONENTS" IN PIPING.
4. TYPE OF ISOLATION VALVE IS DEPENDENT UPON PIPING LINE SIZE. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. TYPICAL ALL ISOLATION VALVES THIS DETAIL.
5. ALL COILS SHALL BE PIPED FOR COUNTERFLOW ARRANGEMENT; I.E. HOTTEST WATER ENTERS COIL NEAREST COIL FACE WHERE HOTTEST AIR LEAVES.
6. PROVIDE 3/4" BALL OR GATE VALVE WITH 3/4" HOSE CONNECTION FOR DRAINING AND FLUSHING. ALL COIL DRAIN CONNECTIONS SHALL BE INSTALLED THROUGH HVAC UNIT CASING TO PERMIT COMPLETE DRAINAGE OF COILS FROM UNIT EXTERIOR. TYPICAL ALL DRAIN AND FLUSH CONNECTIONS.
7. PROVIDE STRAINER WITH 3/4" BALL OR GATE VALVE WITH 3/4" HOSE CONNECTION FOR FLUSHING. TYPICAL ALL STRAINERS.
8. VENTS SHALL BE INSTALLED THROUGH HVAC UNIT CASING TO PERMIT COMPLETE VENTING OF COILS FROM UNIT EXTERIOR. TYPICAL ALL VENT CONNECTIONS.

C3 HOT WATER, SINGLE COIL, 3-WAY CONTROL VALVE
SCALE:NTS



NOTES:

1. INDIVIDUAL PIPE SIZES SHALL BE THE SAME SIZE AS THE COIL TAPS.
2. LOCATE FLANGES AND UNIONS TO ALLOW FOR REMOVAL OF ALL COILS AND CONTROL VALVES.
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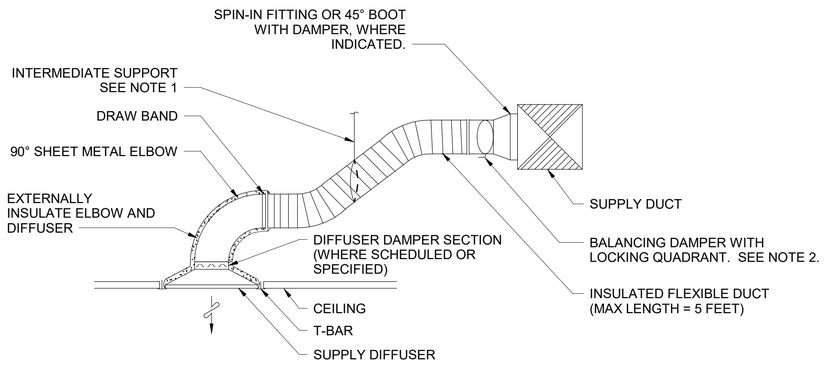
4. TYPE OF ISOLATION VALVE IS DEPENDENT UPON PIPING LINE SIZE. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. TYPICAL ALL ISOLATION VALVES THIS DETAIL.
5. ALL COILS SHALL BE PIPED FOR COUNTERFLOW ARRANGEMENT; I.E. CHILLED WATER ENTERS COIL NEAREST COIL FACE WHERE COLDEST AIR LEAVES.
6. PROVIDE 3/4" BALL VALVE WITH 3/4" HOSE CONNECTION FOR DRAINING AND FLUSHING. ALL COIL DRAIN CONNECTIONS SHALL BE INSTALLED THROUGH HVAC UNIT CASING TO PERMIT COMPLETE DRAINAGE OF COILS FROM UNIT EXTERIOR. TYPICAL ALL DRAIN AND FLUSH CONNECTIONS.
7. PROVIDE STRAINER WITH 3/4" BALL VALVE WITH 3/4" HOSE CONNECTION FOR FLUSHING. TYPICAL ALL STRAINERS.
8. VENTS SHALL BE INSTALLED THROUGH HVAC UNIT CASING TO PERMIT COMPLETE VENTING OF COILS FROM UNIT EXTERIOR. TYPICAL ALL VENT CONNECTIONS.

C7 CHILLED WATER, SINGLE COIL, 2-WAY CONTROL VALVE
SCALE:NTS



NOTES:

1. PROVIDE INTERMEDIATE SUPPORT, WHERE REQUIRED, TO PREVENT SAGGING AND KINKS AND TO KEEP FLEXIBLE DUCTWORK OFF SURROUNDING OBJECTS.
2. PROVIDE 2" DUCT EXTENSION TO ALLOW OPERATION OF DAMPER WITHOUT DAMAGE TO INSULATION.

A1 DUCT CONNECTION TO DIFFUSER
SCALE:NTS

US ARMY CORPS OF ENGINEERS
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SHEET ID
M-505_5
SHEET 61 OF 112

MAXIMUM HORIZONTAL PIPE HANGER AND SUPPORT SPACING				
NOMINAL PIPE OR TUBE DIA	STANDARD WEIGHT STEEL PIPE		COPPER TUBE	
	WATER SERVICE	VAPOR SERVICE	WATER SERVICE	VAPOR SERVICE
IN.	FT.	FT.	FT.	FT.
1/4	7	8	5	5
3/8	7	8	5	6
1/2	7	8	5	6
3/4	7	9	5	7
1	7	9	6	8
1 1/4	7	9	7	9
1 1/2	9	12	8	10
2	10	13	8	11
2 1/2	11	14	9	13
3	12	15	10	14
3 1/2	13	16	11	15
4	14	17	12	16
5	16	19	13	18
6	17	21	14	20
8	19	24	16	23
10	20	26	18	25
12	23	30	19	28
14	25	32		
16	27	35		
18	28	37		
20	30	39		
24	32	42		
30	33	44		

NOTES:

1. FOR SPACING SUPPORTS INCORPORATING TYPE 40 SHIELDS, SEE TABLE 5, MSS SP-69.
2. DOES NOT APPLY WHERE SPAN CALCULATIONS ARE MADE OR WHERE THERE ARE CONCENTRATED LOADS BETWEEN SUPPORTS SUCH AS FLANGES, VALVES, SPECIALTIES, TEC, OR CHANGES IN DIRECTION REQUIRING ADDITIONAL SUPPORTS.
3. FIRE PROTECTION PIPING: FOLLOW REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION.
4. CAST IRON AND DUCTILE IRON PIPE: MIN. OF ONE (1) HANGER PER PIPE SECTION CLOSE TO JOINT ON THE BARREL. ALSO AT CHANGE OF DIRECTION AND BRANCH CONNECTIONS.
   CAST IRON PRESSURE PIPE: 12 FT. MAX. SPACING.
   CAST IRON SOIL PIPE: 10 FT. MAX. SPACING.
5. PLASTIC AND FIBERGLASS REINFORCED PIPE: FOLLOW PIPE MANUFACTURER'S RECOMMENDATIONS FOR SPACING AND SERVICE CONDITIONS.
6. EXTRACTED FROM MSS SP-69, 1983, WITH PERMISSION OF THE PUBLISHER, THE MANUFACTURERS STANDARDIZATION SOCIETY.
7. THIS TABLE PROVIDED FOR REFERENCE ONLY. PROVIDE HANGER AND SUPPORT SPACING IN ACCORDANCE WITH MSS SP-58, SP-69 AND SPECIFICATIONS.

D1 PIPE SUPPORT SPACING
SCALE:NTS

DUCTWORK CONSTRUCTION AND LEAKAGE TESTING TABLE												
	DUCT PRESSURE CLASS INCHES OF WATER COLUMN				SUPPLY ROUND/OVAL		SUPPLY RECTANGULAR		EXHAUST/ RETURN/OUTSIDE AIR		DUCT TEST PRESSURE: INCHES OF WATER COLUMN	
SYSTEM	SUPPLY DUCT	RETURN DUCT	EXHAUST DUCT	OUTSIDE AIR DUCT	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT SEAL CLASS	DUCT LEAK CLASS		NOTES
AHU-5/RF-5	2	-	-	-	A	6	A	12	-	-	2.0	1
	-	-	-1	-1	-	-	-	-	A	24	-1.0	1

NOTES:
1. TEST IN ACCORDANCE WITH SECTION 23 05 93 - TESTING, ADJUSTING, AND BALANCING FOR HVAC, AND WITH PROCEDURES IN SMACNA HVAC AIR DUCT LEAKAGE MANUAL.

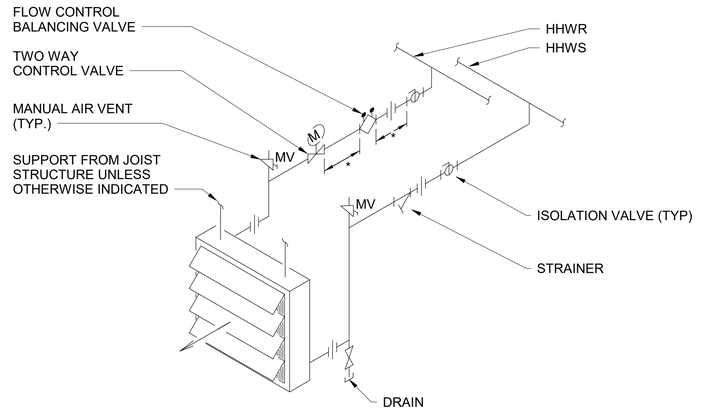
D4 DUCTWORK CONSTRUCTION AND LEAKAGE TESTING
SCALE:NTS

MIN. ROD DIAMETER FOR SINGLE ROD HANGERS		
NOMINAL PIPE OR TUBING DIA	NOMINAL ROD DIAMETER	
	A	B
IN.	IN.	IN.
1/4 THROUGH 2	3/8	3/8
2 1/2 , 3, 3 1/2	1/2	1/2
4, 5	5/8	1/2
6	3/4	5/8
8, 10, 12	7/8	3/4
14	1	7/8
16, 18	1	
20, 24	1 1/4	

NOTES:

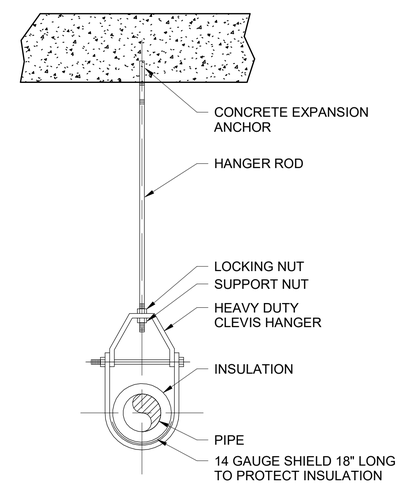
1. COLUMN A FOR USE WITH STD. WT. STEEL PIPE, CAST IRON PRESS. PIPE, CAST IRON SOIL PIPE AND GLASS PIPE.
2. COLUMN B FOR USE WITH COPPER TUBE, PLASTIC PIPE AND FIBERGLASS REINFORCED PIPE.
3. EXTRACTED FROM MSS SP-69, 1983, WITH PERMISSION OF THE PUBLISHER, THE MANUFACTURERS STANDARDIZATION SOCIETY.
4. THIS TABLE PROVIDED FOR REFERENCE ONLY. PROVIDE HANGER RODS IN ACCORDANCE WITH MSS SP-58, SP-69 AND SPECIFICATIONS.

A1 ROD DIAMETERS FOR PIPE SUPPORTS
SCALE:NTS



*THE FLOW CONTROL BALANCING VALVES SHALL BE INSTALLED BY THE CONTRACTOR IN CONFORMANCE WITH VALVE MFR'S RECOMMENDED SPACING UP/DOWNSTREAM FROM PIPE CHANGES IN DIRECTION AND/OR OTHER VALVES/COMPONENTS IN THE PIPING.

A4 UNIT HEATER - HOT WATER
SCALE:NTS



A8 CLEVIS HANGER
SCALE:NTS

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL DETAILS

SHEET ID
M-506_5
SHEET 62 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

AIR HANDLING UNIT SCHEDULE (AHU)

TAG	LOCATION	MINIMUM OUTDOOR AIRFLOW (CFM)	SF TOTAL AIRFLOW (CFM)	SUPPLY FANS (TYP 4)				COOLING COIL														HEATING COIL										ELECTRICAL				
								CAPACITY		AIR						WATER								AIR			WATER										
				ESP (IN W.C.)	TSP (IN W.C.)	SPEED (RPM)	MOTOR (HP)	TOT (MBH)	SENS (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	FACE VEL (FPM)	APD (IN W.C.)	FLUID TYPE	FLOW (GPM)	EWT (°F)	LWT (°F)	WPD (FT W.C.)	FOULING FACTOR	AIRFLOW (CFM)	CAPACITY (MBH)	EAT DB (°F)	LAT DB (°F)	FACE VEL (FPM)	FLUID TYPE	FLOW (GPM)	EWT (°F)	LWT (°F)	WPD (FT W.C.)	FOULING FACTOR	V / PH / HZ	DISCONN. BY	WEIGHT (LBS)	NOTES
AHU-5	W299	6050	23500	2	4.62	2586	7.5	934	668	80.8	67.2	55	54.4	480	0.59	WATER	186	44	54	5.1	0.00010	12945	333	38.7	55	437	WATER	25	180	160	0.5	0.00025	460 / 3 / 60	DIVISION 23	7575	1, 2, 3, 4, 5, 6, 7, 8

NOTES:
1. MOUNT UNIT ON EXISTING EQUIPMENT PAD. CONTRACTOR SHALL EXTEND EXISTING PAD WITH NEW WHERE REQUIRED TO ACCOMMODATE NEW AHU.
2. PROVIDE WITH 2" PLEATED MERV 8 PRE-FILTERS (30% EFF.) AND 4" MINI-PLEAT MERV 13 FINAL FILTERS (80-85% EFF.)
3. AIR HANDLING UNIT SHALL BE SHIPPED IN SECTIONS SIZED AS REQUIRED TO PASS THROUGH EXISTING MECHANICAL ROOM OPENINGS.
4. PROVIDE WITH MAINTENANCE LIGHTS AND 120V RECEPTACLES.
5. PROVIDE WITH FAN MOTOR VFDs PER DIVISION 26 SPECIFICATIONS.
6. PROVIDE WITH FACTORY MOUNTED AIR BLENDER SECTION AND COOLING COIL ULTRAVIOLET LIGHT SYSTEM.
7. HEATING WATER COIL SHALL BE PROVIDED WITH A VERTICAL INTEGRAL FACE AND BYPASS DAMPER WITH HEADER CONNECTIONS ON ACCESS SIDE OF AHU.
8. AHU DIMENSIONS SHALL NOT EXCEED 246"L x 112"W x 96"H. VERIFY EXISTING CONDITIONS PRIOR TO AHU PROCUREMENT. COORDINATE NEW EQUIPMENT PLACEMENT WITH EXISTING EQUIPMENT AND PIPING IN MECHANICAL ROOM SO ALL MANUFACTURER REQUIRED CLEARANCES ARE MAINTAINED.

UNIT HEATER SCHEDULE (UH)

TAG	LOCATION	ALTITUDE (FT)	ORIENTATION	MOUNTING HEIGHT (FT - IN)	AIRFLOW (CFM)	HEATING COIL							MOTOR SIZE (W)	ELECTRICAL			WEIGHT (LBS)	NOTES
						CAPACITY (MBH)	TYPE	WATERSIDE						STARTER / DISCONNECT	VOLTS	PHASE		
								FLUID TYPE	FLOW (GPM)	EWT (DEG. F)	LWT (DEG. F)	PRESSURE DROP (FT W.C.)						
UH-1	W299	823	HORIZONTAL	8'-6"	580	23.3	HOT WATER	WATER	2.5	180	160	2.2	25	DIVISION 23	115	1	25	1, 2, 3

NOTES:
1. CAPACITY HAS BEEN CORRECTED FOR WATER TEMPERATURES INDICATED.
2. PROVIDE WITH OSHA FAN GUARD.
3. PROVIDE WITH MANUFACTURERS WALL THERMOSTAT.

DIFFUSER, REGISTER, & GRILLE SCHEDULE (DRG)

TAG	DESCRIPTION	MOUNTING	THROW PATTERN	BLADE DEFLECTION	BLADE SPACING	NOTES
A	24X24 SQUARE PLAQUE FACE SUPPLY AIR DIFFUSER	LAY-IN	4-WAY			
B	ALUMINUM RECTANGULAR EGGCRATE RETURN/EXHAUST/TRANSFER AIR GRILLE	LAY-IN	-	-	1/2" X 1/2"	
C	ALUMINUM RECTANGULAR EGGCRATE RETURN/EXHAUST/TRANSFER AIR GRILLE	SURFACE	-	-	1/2" X 1/2"	

CONTROL VALVE SCHEDULE (CV)

VALVE TAG	FLUID TYPE	SERVICE	FAIL POSITION	FLOW GPM	CALCULATED VALVE Cv	PIPE SIZE INCHES	DIFFERENTIAL PRESSURE PSI	REMARKS
CV-01	HHW	VAV-05-01	OPEN	0.3	0.17	0.75	3.0	1
CV-02	HHW	VAV-05-02	OPEN	0.6	0.35	0.75	3.0	1
CV-03	HHW	VAV-05-03	OPEN	0.6	0.35	0.75	3.0	1
CV-04	HHW	VAV-05-04	OPEN	0.6	0.35	0.75	3.0	1
CV-05	HHW	VAV-05-05	OPEN	0.9	0.52	0.75	3.0	1
CV-06	HHW	VAV-05-06	OPEN	0.6	0.35	0.75	3.0	1
CV-07	HHW	VAV-05-07	OPEN	0.6	0.35	0.75	3.0	1
CV-08	HHW	VAV-05-08	OPEN	0.9	0.52	0.75	3.0	1
CV-09	HHW	VAV-05-09	OPEN	0.6	0.35	0.75	3.0	1
CV-10	HHW	VAV-05-10	OPEN	0.6	0.35	0.75	3.0	1
CV-11	HHW	VAV-05-11	OPEN	0.3	0.17	0.75	3.0	1
CV-12	HHW	VAV-05-12	OPEN	0.3	0.17	0.75	3.0	1
CV-13	HHW	VAV-05-13	OPEN	0.6	0.35	0.75	3.0	1
CV-14	HHW	VAV-05-14	OPEN	0.6	0.35	0.75	3.0	1
CV-15	HHW	VAV-05-15	OPEN	0.6	0.35	0.75	3.0	1
CV-16	HHW	VAV-05-16	OPEN	0.6	0.35	0.75	3.0	1
CV-17	HHW	VAV-05-17	OPEN	0.3	0.17	0.75	3.0	1
CV-18	HHW	VAV-05-18	OPEN	0.3	0.17	0.75	3.0	1
CV-19	HHW	VAV-05-19	OPEN	0.3	0.17	0.75	3.0	1
CV-20	HHW	VAV-05-20	OPEN	0.3	0.17	0.75	3.0	1
CV-21	HHW	VAV-05-21	OPEN	0.3	0.17	0.75	3.0	1
CV-22	HHW	VAV-05-22	OPEN	0.9	0.52	0.75	3.0	1
CV-23	HHW	VAV-05-23	OPEN	0.3	0.17	0.75	3.0	1
CV-24	HHW	VAV-05-24	OPEN	1.6	0.92	0.75	3.0	1
CV-25	HHW	VAV-05-25	OPEN	0.3	0.17	0.75	3.0	1
CV-26	HHW	VAV-05-26	OPEN	1.1	0.64	0.75	3.0	1
CV-27	HHW	VAV-05-27	OPEN	0.4	0.23	0.75	3.0	1
CV-28	HHW	VAV-05-28	OPEN	1.0	0.58	0.75	3.0	1
CV-29	HHW	VAV-05-29	OPEN	0.6	0.35	0.75	3.0	1
CV-30	HHW	VAV-05-30	OPEN	0.9	0.52	0.75	3.0	1
CV-31	HHW	VAV-05-31	OPEN	0.6	0.35	0.75	3.0	1
CV-32	HHW	VAV-05-32	OPEN	0.6	0.35	0.75	3.0	1
CV-33	HHW	VAV-05-33	OPEN	1.6	0.92	0.75	3.0	1
CV-34	HHW	VAV-05-34	OPEN	1.6	0.92	0.75	3.0	1
CV-35	HHW	VAV-05-35	OPEN	0.3	0.17	0.75	3.0	1
CV-36	HHW	AHU-5 PREHEAT	OPEN	25.0	14.43	2.0	3.0	1, 2
CV-37	CHW	AHU-5 COOLING	OPEN	186.0	83.18	4	5.0	1

NOTES:
1. CONTROL VALVES SHALL BE ELECTRIC ACTUATED AND BE SIZED AND PROVIDED BY THE CONTROLS CONTRACTOR.
2. 3-WAY CONTROL VALVE.

GRAHAM EDWARD JOHNSON
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51389
STATE OF MINNESOTA
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MECHANICAL SCHEDULES

SHEET ID
M-601_5
SHEET 63 OF 112

CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001
CUI

AHU-5 VENTILATION SCHEDULE

ROOM NUMBER	ROOM TYPE	AREA (SF)	OCCUPANCY (PEOPLE)	REQUIRED OUTSIDE AIRFLOW (CFM)	NOTES
W201	TOILET	133	0	0	NIC
W201A	VEST	27	0	0	NIC
W201B	VEST	38	0	0	NIC
W203	COLLAB ROOM	1841	13	220	
W203A	BREAK	264	4	65	
W203C	OFFICE	106	1	14	
W203D	OFFICE	210	1	22	
W203E	CONF ROOM	193	6	52	
W204	CONF ROOM	397	20	155	
W208	CORRIDOR	642	0	48	
W209A	CONF ROOM	108	4	34	
W209B	CONF ROOM	107	4	34	
W209C	OFFICE	130	1	16	
W209D	OFFICE	132	1	16	
W209E	OFFICE	132	1	16	
W209F	OFFICE	133	1	16	
W209G	OFFICE	135	1	16	
W209H	OFFICE	136	1	16	
W210	OFFICE	179	2	26	
W212	OFFICE	292	7	66	
W219	ELEC	192	0	0	NIC
W220	OPEN OFFICE	15045	151	2137	
W220A	CONF ROOM	221	9	74	
W220D	CONF ROOM	483	15	132	
W221A	CONF ROOM	102	4	33	
W221B	CONF ROOM	102	3	26	
W221C	COLLAB ROOM	164	6	50	
W221D	CONF ROOM	100	4	33	
W221E	CONF ROOM	100	3	26	
W221F	COLLAB ROOM	161	6	50	
W225A	CORRIDOR	66	0	0	NIC
W225B	ELEC	66	0	0	NIC
W226	VEST	124	0	0	NIC
W226A	TOILET	124	0	0	NIC
W253	CORRIDOR	976	0	73	
W279	CORRIDOR	83	0	0	NIC
W280	CORRIDOR	2269	0	173	
W298	OPEN OFFICE	2192	17	275	
W299	MECHANICAL	1508	0	0	NIC

*NIC INDICATES THE ROOM WAS NOT INCLUDED IN THE UPDATED VENTILATION CALCULATIONS

VARIABLE AIR VOLUME BOX SCHEDULE (VAV)

TAG	TERMINAL SPEC. TYPE	INLET SIZE (IN)	MAX DESIGN AIRFLOW (CFM)	MIN DESIGN AIRFLOW (CFM)	HOT WATER REHEAT COIL							AIR OPERATING PRESSURE DROP (IN)	MAX. WATER PRESSURE DROP (FT)	MIN. ROWS / MAX. FPI	MIN. BOX INLET PRESSURE (IN)	RADIATED SOUND (NC)	NOTES
					HEATING AIRFLOW (CFM)	CAPACITY (MBH)	MINIMUM INLET AIR TEMP. (°F)	DISCHARGE AIR TEMP. (°F)	EWT (°F)	LWT (°F)	FLOW (GPM)						
VAV-05-01	SINGLE DUCT REHEAT	8	600	400	400	14.2	55	88	180	133	0.60	0.23	0.10	2 / 10	0.75	20	3
VAV-05-02	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	142	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-03	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	142	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-04	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	142	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-05	SINGLE DUCT REHEAT	14	1200	400	600	17.7	55	83	180	159	0.90	0.06	0.07	1 / 10	0.75	16	3
VAV-05-06	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	151	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-07	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	148	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-08	SINGLE DUCT REHEAT	14	1200	400	600	17.7	55	83	180	151	0.90	0.06	0.07	1 / 10	0.75	16	3
VAV-05-09	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	148	0.60	0.09	0.08	1 / 10	0.15	18	3
VAV-05-10	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	148	0.60	0.09	0.08	1 / 10	0.2	18	3
VAV-05-11	SINGLE DUCT REHEAT	06	150	75	100	4	55	92	180	152	0.30	0.02	0.08	1 / 10	0.75	-	3
VAV-05-12	SINGLE DUCT REHEAT	06	400	120	200	6	55	83	180	145	0.30	0.06	0.10	1 / 10	0.75	15	3
VAV-05-13	SINGLE DUCT REHEAT	10	750	230	375	10	55	80	180	150	0.60	0.09	0.07	1 / 10	0.75	19	3
VAV-05-14	SINGLE DUCT REHEAT	10	620	620	620	21.3	55	87	180	133	0.90	0.13	0.10	2 / 10	0.75	19	1, 3
VAV-05-15	SINGLE DUCT REHEAT	10	715	220	350	9.8	55	81	180	150	0.60	0.09	0.07	1 / 10	0.75	19	3
VAV-05-16	SINGLE DUCT REHEAT	10	750	230	375	10	55	80	180	150	0.60	0.09	0.07	1 / 10	0.75	19	3
VAV-05-17	SINGLE DUCT REHEAT	04	100	50	75	3.6	55	99	180	141	0.30	0.01	0.08	1 / 10	0.75	11	3
VAV-05-18	SINGLE DUCT REHEAT	06	200	75	100	4	55	92	180	151	0.30	0.03	0.08	1 / 10	0.75	11	3
VAV-05-19	SINGLE DUCT REHEAT	06	330	165	165	4.9	55	83	180	139	0.30	0.07	0.08	1 / 10	0.75	18	3
VAV-05-20	SINGLE DUCT REHEAT	08	540	165	200	6	55	83	180	140	0.30	0.10	0.10	1 / 10	0.75	19	3
VAV-05-21	SINGLE DUCT REHEAT	08	420	150	200	6	55	83	180	145	0.30	0.07	0.10	1 / 10	0.75	17	3
VAV-05-22	SINGLE DUCT REHEAT	12	690	210	400	14.1	55	88	180	135	0.90	0.05	0.15	1 / 10	0.75	15	3
VAV-05-23	SINGLE DUCT REHEAT	06	300	140	165	4.9	55	82	180	147	0.30	0.06	0.08	1 / 10	0.75	16	3
VAV-05-24	SINGLE DUCT REHEAT	10	825	275	425	14	55	86	180	167	1.50	0.11	0.25	1 / 10	0.75	20	3
VAV-05-25	SINGLE DUCT REHEAT	08	420	130	210	6.1	55	82	180	153	0.30	0.07	0.10	1 / 10	0.75	17	3
VAV-05-26	SINGLE DUCT REHEAT	08	785	240	400	11.2	55	81	180	144	1.10	0.18	0.62	1 / 10	0.75	23	3
VAV-05-27	SINGLE DUCT REHEAT	08	540	540	540	15.4	55	81	180	130	0.60	0.20	0.10	2 / 10	0.75	19	1, 3
VAV-05-28	SINGLE DUCT REHEAT	08	400	120	300	9.8	55	85	180	147	1.00	0.06	0.52	1 / 10	0.75	15	3
VAV-05-29	SINGLE DUCT REHEAT	10	750	225	375	10	55	80	180	146	0.60	0.09	0.07	1 / 10	0.75	19	3
VAV-05-30	SINGLE DUCT REHEAT	14	1200	400	600	17.7	55	83	180	143	0.90	0.06	0.07	1 / 10	0.75	16	3
VAV-05-31	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	142	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-32	SINGLE DUCT REHEAT	12	1000	335	450	12.4	55	81	180	142	0.60	0.09	0.08	1 / 10	0.75	18	3
VAV-05-33	SINGLE DUCT REHEAT	12	800	240	400	15.9	55	92	180	138	1.60	0.06	0.33	1 / 10	0.75	17	3
VAV-05-34	SINGLE DUCT REHEAT	12	800	240	400	15.9	55	92	180	138	1.60	0.06	0.33	1 / 10	0.75	17	3
VAV-05-35	SINGLE DUCT REHEAT	06	350	175	175	5	55	82	180	139	0.30	0.08	0.08	1 / 10	0.75	20	3
VAV-05-36	SINGLE DUCT REHEAT	06	465	0	0	0	55	55	180	160	0.00	0.00	0.00	0	0.75	25	2, 3

NOTES:
1. CONSTANT VOLUME BOXES SERVING CORRIDORS FOR EXHAUST AIR MAKEUP AND BUILDING PRESSURIZATION.
2. COOLING ONLY. NO REHEAT COIL.
3. PROVIDE 24V CONTROL TRANSFORMER AND FACTORY DISCONNECT SWITCH.

FAN SCHEDULE (F)

TAG	LOCATION	SERVING	TYPE	AIRFLOW (CFM)	ESP (IN W.C.)	DRIVE TYPE	FAN SPEED (RPM)	TIP SPEED (FPM)	MOTOR			ELECTRICAL				WEIGHT (LBS)	NOTES
									HP	SPEED (RPM)	ENCLOSURE	VOLTS	PHASE	HERTZ	DISCONNECT BY		
RF-5	W299	AHU-05 RETURN	TUBULAR INLINE CENTRIFUGAL	23500	2	BELT	992	9479	15	1800	TEFC	460	3	60	DIVISION 26	1653	1, 2, 3

NOTES:
1. SUPPORT FAN WITH VIBRATION ISOLATION SPRING HANGERS.
2. ARRANGE MOTOR ON FAN WHERE ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE WITH VFD COMPATIBLE MOTOR. REFER TO DIVISION 26 FOR VFD SPECIFICATIONS.

SOUND TRAP SCHEDULE (ST)

	SERVING	LOCATION	TYPE	AIRFLOW (CFM)	VELOCITY (FPM)	SIZE (W" X H" X L")	APD (IN)	INSERTION LOSS (dB)								NOTES
								63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
ST-05-01	AHU-05 SUPPLY	W209	RECTANGULAR DISSIPATIVE	23500	1567	60 X 36 X 60	0.13	4	8	17	19	18	10	10	8	
ST-05-02	AHU-05 RETURN	W209	RECTANGULAR DISSIPATIVE	13765	1502	44 X 30 X 60	0.12	3	7	15	28	24	12	9	6	
ST-05-03	AHU-05 RETURN	W220	RECTANGULAR DISSIPATIVE	8575	1319	52 X 18 X 60	0.09	4	8	17	26	20	11	9	7	1

NOTES:
1. ELBOW-STYLE SOUND TRAP IS AN ACCEPTABLE ALTERNATIVE CONFIGURATION IF IT COMPLIES WITH SECURITY PENETRATION INSTALLATION REQUIREMENTS.

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANPIETRO
SUBMITTED BY: G.JOHNSON
SIZE: 34X22

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BURNS McDONNELL
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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL SCHEDULES

SHEET ID
M-602_5
SHEET 64 OF 112

LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
02/24/2023

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

LEGEND & SYMBOLS

W-X-Y-Z
##

DEVICE SYMBOL, GENERIC
USED TO REPRESENT SENSORS, INSTRUMENTS SAFETIES, AND OTHER CONTROL DEVICES
W-X-Y-Z : (SEE ABBREVIATIONS AND ACRONYMS)
GENERIC USAGE TO SHOW LOCATION OF DEVICE; PROCESS OR DEVICE BEING MEASURED OR CONTROLLED; SIGNAL TYPE; MODIFIERS AND OTHER APPLICATION INFORMATION

W-X-Y-Z
##

DEVICE SYMBOL, GENERIC
MULTIPLE OUTPUT DEVICE WHERE AT LEAST 1 OUTPUT IS ALWAYS SAFETY INTERLOCK

W-X-Y-Z
DDC
##
DIR
REV

DEVICE SYMBOL, CONTROLLER
DDC : DIRECT DIGITAL CONTROL
: DEVICE NUMBER
DIR : DIRECT CONTROL ACTION, OR
REV : REVERSE CONTROL ACTION
W-X-Y-Z : (SEE ABBREVIATIONS AND ACRONYMS)
GENERIC USAGE TO SHOW LOCATION OF DEVICE; PROCESS OR DEVICE BEING MEASURED OR CONTROLLED; SIGNAL TYPE; MODIFIERS AND OTHER APPLICATION INFORMATION

LDP
##

LOCAL DISPLAY PANEL
= SEQUENTIAL NUMBER
(WHEN MORE THAN 1 LDP)

H L P

PRESSURE SWITCH, DIFFERENTIAL, WITH GAGE
H = HIGH PRESSURE TAP
L = LOW PRESSURE TAP
SEE "DEVICE SYMBOL, GENERIC"

RST-BUT

RESET BUTTON FOR SAFETY RESET

SMOKE DETECTOR, DUCT-MOUNTED
SEE "DEVICE SYMBOL, GENERIC"

TEMPERATURE SENSOR, AVERAGING
or TEMPERATURE LOW LIMIT / FREEZESTAT
SEE "DEVICE SYMBOL, GENERIC"

TEMPERATURE SENSOR, POINT
SEE "DEVICE SYMBOL, GENERIC"

STAT

THERMOSTAT WITH SPECIFIED I/O FUNCTIONS

AFMA

AIR FLOW MEASUREMENT ARRAY,
WITH FLOW TRANSMITTER
SEE "DEVICE SYMBOL, GENERIC"

CONTROL SIGNAL LINE, LOW VOLTAGE

C — COIL, COOLING

DX — COIL, COOLING, DIRECT-EXPANSION

HC — COIL, HEAT/COOL (DUAL TEMPERATURE)

H — COIL, HEATING

PC — COIL, PRECOOL

PH — COIL, PREHEAT

U V — ULTRAVIOLET GERMICIDAL IRRADIATION (UVGI)

FAN

FILTER

HUMIDIFIER

DAMPER, BALANCING

DAMPER, PARALLEL BLADE
NORMALLY OPEN OR CLOSED AS SHOWN

DAMPER, OPPOSED BLADE
NORMALLY OPEN OR CLOSED AS SHOWN

RADIATOR

BOILER

CHILLER

SHELL AND TUBE
HEAT EXCHANGER

PLATE AND FRAME
HEAT EXCHANGER

PUMP

ACTUATOR, ELECTRIC

THERMOWELL IN PIPE

VALVE, BALANCING

V-##
NC/NO

VALVE, WITH SPRING FAILSAFE
NO = NORMALLY OPEN
NC = NORMALLY CLOSED
= VALVE NUMBER AS SHOWN
IN VALVE SCHEDULE

V-##
FL

VALVE
FL = FAIL IN LAST POSITION
= VALVE NUMBER AS SHOWN
IN VALVE SCHEDULE

V-##
COM NO NC

VALVE, 3-WAY DIVERTING
WITH SPRING FAILSAFE
NO = NORMALLY OPEN
NC = NORMALLY CLOSED
COM = COMMON PORT
= VALVE NUMBER AS SHOWN
IN VALVE SCHEDULE

V-##
NO COM NC

VALVE, 3-WAY DIVERTING
WITH SPRING RETURN FAILSAFE
NO = NORMALLY OPEN
NC = NORMALLY CLOSED
COM = COMMON PORT
= VALVE NUMBER AS SHOWN
IN VALVE SCHEDULE

PP — POSITIVE POSITIONER
SEE "ACTUATOR, PNEUMATIC"

P — PRESSURE GAGE

T — TEMPERATURE GAGE

MAIN AIR — MAIN AIR

M# — MOTOR

MS-# — MOTOR STARTER

CT — CURRENT TRANSFORMER/SWITCH

FM — FLOW METER

VFD
XX-C XX-S XX-SS

VARIABLE FREQUENCY DRIVE
XX = PROCESS/DEVICE BEING CONTROLLED

SS = START/STOP COMMAND
S = STATUS FEEDBACK (ON/OFF)
C = 4-20 mA, VDC, or SNVT CONTROL SIGNAL

ABBREVIATIONS & ACRONYMS

2P	TWO-POSITION (CONTROL SIGNAL)
ADJ	ADJUSTABLE/ADJUSTMENT
AFMA	AIRFLOW MEASUREMENT ARRAY
AI	ANALOG INPUT
ALM	ALARM
AO	ANALOG OUTPUT
BA	BREATHING AIR
BI	BINARY INPUT
BLDG	BUILDING
BLR	BOILER
BO	BINARY OUTPUT
BUT	BUTTON
BYP	BYPASS
C	COMMAND (MODULATING CONTROL SIGNAL)
CA	COMPRESSED AIR
CD	COLD DECK
CF	CONDENSER FAN
CH	CHILLER
CHW	CHILLED WATER
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CLG	COOLING
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
COM	COMMON
COMP	COMPRESSOR
CP	CONFIGURATION PROPERTY
CR	CONDENSATE WATER RETURN
CS	CONDENSATE WATER SUPPLY
CSR	CURRENT SENSING RELAY
CT	COOLING TOWER
CT	CURRENT TRANSFORMER/SWITCH
CTF	COOLING TOWER FAN
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CW	CONDENSER WATER
D	DAMPER
DA	DISCHARGE AIR
DB	DEADBAND
DDC	DIRECT DIGITAL CONTROL(LER)
DIFF	DIFFERENCE
DIR	DIRECT (CONTROL ACTION)
DIS	DISABLE
DISP	DISPLAY
DP	DEW POINT
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DT	DUAL TEMP
DTWR	DUAL TEMP WATER RETURN
DTWS	DUAL TEMP WATER SUPPLY
DX	DIRECT EXPANSION (UNIT)
EA	EXHAUST AIR
ECM	ELECTRICALLY COMMUTATED MOTOR
ECO	ECONOMIZER
EF	EXHAUST FAN
ENA	ENABLE
EP	ELECTRIC TO PNEUMATIC TRANSDUCER
EPS	ELECTRIC TO PNEUMATIC SWITCH
ESS	EMERGENCY SHUT-DOWN SWITCH
F	FLOW
FACP	FIRE ALARM CONTROL PANEL
FL	FAIL IN LAST POSITION
FLT	FILTER
H2	HYDROGEN
HD	HOT DECK
HL	HIGH LIMIT
HTG	HEATING
HTHW	HIGH TEMPERATURE HOT WATER
HUM	HUMIDIFIER
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
I/O	INPUT/OUTPUT
IR	INFRARED
IW	INDUSTRIAL WASTE
L	LEVEL
LDP	LOCAL DISPLAY PANEL
LL	LOW LIMIT
LVG	LEAVING
M	MOTOR or MAIN
M&C	MONITORING & CONTROL (SOFTWARE)
MA	MIXED AIR
MINOA	MINIMUM OUTSIDE AIR
MS	MOTOR STARTER
MUW	MAKE-UP WATER
MUW	MAKE-UP WATER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
nci	NETWORK CONFIGURATION INPUT
NO	NORMALLY OPEN
NVI	NETWORK VARIABLE INPUT
NVO	NETWORK VARIABLE OUTPUT
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
OCC	OCCUPIED
ODT	ON DELAY TIMER
OL	OVERLOAD
OVRD	OVERRIDE
OWS	OPERATOR WORKSTATION
P	PRESSURE
PC	PRE-COOLING
PCW	PRIMARY CHILLER WATER
PCWR	PRIMARY CHILLER WATER RETURN
PCWS	PRIMARY CHILLER WATER SUPPLY
PH	PREHEAT
PHW	PROCESS HOT WATER
PHWR	PROCESS HOT WATER RETURN
PHWS	PROCESS HOT WATER SUPPLY
PID	PROPORTIONAL INTEGRAL DERIVATIVE (CONTROL)
PMP	PUMP
PP	POSITIVE POSITIONER
PWR	POWER
R	RELAY
RA	RETURN AIR
RE	RELIEF AIR
REV	REVERSE (CONTROL ACTION)
REF	RELIEF FAN
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RH	REHEAT
RHT	RELATIVE HUMIDITY TRANSMITTER
RLA	RELIEF AIR
RM	ROOM
RQST	REQUEST
RST	RESET
RT	RATE
S	STATUS
SA	SUPPLY AIR
SEC	SECONDARY
SF	SUPPLY FAN
SMK	SMOKE
SNVT	STANDARD NETWORK VARIABLE TYPE
SO	SHUT-OFF
SP	SETPOINT
SS	START/STOP COMMAND
STAT	THERMOSTAT
STM	STEAM
SYS	SYSTEM
SCHD	SCHEDULER
T	TEMPERATURE
TT	TEMPERATURE TRANSMITTER
TAP	TAP, PRESSURE
TRB	TROUBLE
TSTAT	THERMOSTAT
UNOCC	UNOCCUPIED
V	VALVE
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VIB	VIBRATION
VOC	VOLATILE ORGANIC COMPOUND
WB	WET BULB (TEMPERATURE)
XFMR	TRANSFORMER
ZN	ZONE

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US ARMY CORPS OF ENGINEERS
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CONTROLS SYMBOLS & ABBREVIATIONS

SHEET ID
M-700_5
SHEET 65 OF 112

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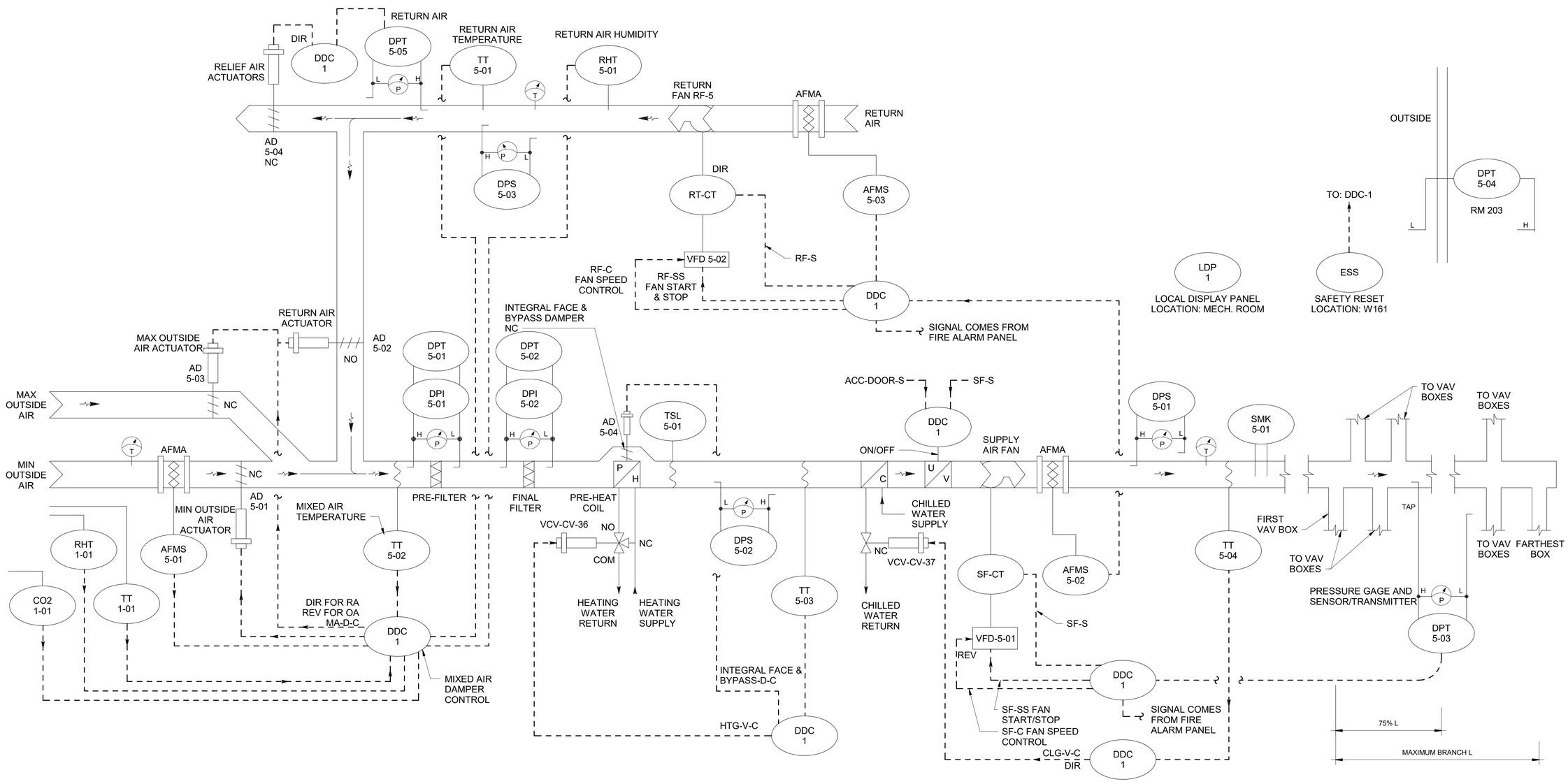

A1 AIR HANDLING UNIT AND RETURN FAN CONTROLS SCHEMATIC
SCALE:NTS

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MECHANICAL CONTROLS

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SHEET 66 OF 112

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SEQUENCE OF OPERATION
VARIABLE AIR VOLUME (VAV) AHU WITH RETURN FAN AND AIR-SIDE ECONOMIZER

GENERAL: THE HVAC SYSTEM SHALL HAVE THE FOLLOWING MODES OF OPERATION: OFF, UNOCCUPIED, UNOCCUPIED/OFF COIL PROTECTION, COOL-DOWN, WARM-UP, AIR-SIDE ECONOMIZER, AND OCCUPIED. COOL-DOWN AND WARM-UP MODE ARE INITIATED AT LEAST 1-HOUR BEFORE SCHEDULED OCCUPIED MODE. THE SYSTEM SHALL OBTAIN ITS OCCUPANCY MODE INPUT FROM THE SYTEM SCHEDULER AS SPECIFIED AND SHOWN. THE SCHEDULE SHALL BE IDENTIFIED BY OWNER DURING COMMISSIONING.

CONTRACTOR SHALL INSTALL DDC HARDWARE TO PERFORM THIS SEQUENCE OF OPERATION AND TO PROVIDE INPUTS, OUTPUTS AND ALARMS AS SPECIFIED AND SHOWN ON THE POINTS SCHEDULE. UNLESS OTHERWISE SPECIFIED, ALL MODULATING CONTROL SHALL BE PROPORTIONAL-INTEGRAL (PI) CONTROL.

SYSTEM ENABLE AND LOOP ENABLE:

OCCUPIED MODE: THE SUPPLY FAN SHALL BE ENABLED (SYS-ENA) AND COMMANDED TO RUN (SF-SS). ALL CONTROL LOOPS SHALL BE ENABLED.

UNOCCUPIED MODE: WHEN ALL SPACE TEMPERATURES ARE WITHIN THE UNOCCUPIED TEMPERATURE SETPOINT RANGES, ALL CONTROL LOOPS SHALL BE DISABLED AND THE SUPPLY FAN SHALL NOT RUN. WHEN ANY SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED TEMPERATURE SETPOINT (MINUS 3 DEG F (ADJ)) OR WHEN ANY SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED TEMPERATURE SETPOINT (PLUS 3 DEG F (ADJ)), THE SUPPLY FAN SHALL BE ENABLED (SYS-ENA) AND COMMANDED TO RUN (SF-SS). THE SUPPLY DUCT STATIC PRESSURE CONTROL, RETURN FAN VOLUME CONTROL, PREHEAT CONTROL, COOLING COIL CONTROL, MINIMUM OUTSIDE AIR CONTROL AND AIR-SIDE ECONOMIZER CONTROL LOOPS SHALL BE ENABLED.

WARM UP/COOL DOWN: THE SUPPLY FAN SHALL BE ENABLED (SYS-ENA) AND COMMANDED TO RUN (SF-SS). THE MINIMUM OUTSIDE AIR FLOW CONTROL LOOP SHALL BE DISABLED AND ALL OTHER CONTROL LOOPS SHALL BE ENABLED. THE ZONE TEMPERATURE CONTROL LOOPS FOR VAV BOXES SERVICED BY THE AHU SHALL ALSO BE ENABLED.

HAND-OFF-AUTO SWITCHES: SUPPLY FANS VARIABLE FREQUENCY DRIVE (VFD) UNIT SHALL ACCEPT A FIRE ALARM PANEL (FAP) SIGNAL THAT TAKES PRECEDENCE OVER ALL OTHER VFD INPUTS AND SWITCHES AND SHALL CAUSE THE VFD TO STOP. THE VFD SHALL ACCEPT AN OCCUPANT ACCESSIBLE EMERGENCY SHUTOFF SWITCH AS SHOWN. THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) UNIT SHALL HAVE AN INTEGRAL H-O-A SWITCH:

HAND: WITH THE H-O-A SWITCH IN HAND POSITION, THE SUPPLY FAN SHALL START AND RUN CONTINUOUSLY, UNLESS ANY SAFETIES ARE TRIPPED. FAN SPEED SHALL BE UNDER MANUAL-OPERATOR CONTROL. MIN OA DAMPER SHALL BE OPEN, MAX OA DAMPER SHALL BE CLOSED, AND RA DAMPER SHALL BE OPEN.

OFF: WITH THE H-O-A SWITCH IN OFF POSITION, THE SUPPLY FAN SHALL STOP. MIN OA DAMPER AND MAX OA DAMPER SHALL BE CLOSED, AND RA DAMPER SHALL BE OPEN.

AUTO: WITH THE H-O-A SWITCH IN AUTO POSITION, THE SUPPLY FAN SHALL RUN SUBJECT TO THE SUPPLY FAN START/STOP SIGNAL (SF-SS) AND SAFETIES. FAN SPEED, MIN OA DAMPER, MAX OA DAMPER, AND RA DAMPER SHALL BE UNDER CONTROL OF THE DDC HARDWARE.

RETURN FANS VARIABLE FREQUENCY DRIVE (VFD) UNIT SHALL ACCEPT A FIRE ALARM PANEL (FAP) SIGNAL THAT TAKES PRECEDENCE OVER ALL OTHER VFD INPUTS AND SWITCHES AND SHALL CAUSE THE VFD TO STOP. THE RETURN FAN VARIABLE FREQUENCY DRIVE (VFD) UNIT SHALL HAVE AN INTEGRAL H-O-A SWITCH:

HAND: WITH THE H-O-A SWITCH IN HAND POSITION, THE RETURN FAN SHALL RUN UNLESS ANY SAFETIES ARE TRIPPED. FAN SPEED SHALL BE UNDER MANUAL-OPERATOR CONTROL.

OFF: WITH THE H-O-A SWITCH IN OFF POSITION, THE RETURN FAN SHALL BE OFF.

AUTO: WITH THE H-O-A SWITCH IN AUTO POSITION, THE RETURN FAN SHALL RUN SUBJECT TO THE SUPPLY FAN RUNNING. FAN SPEED SHALL BE UNDER CONTROL OF THE DDC HARDWARE.

OFF MODE:
OFF MODE SHALL BE INITIATED MANUALLY IN THE BAS OR BY ALARM. AHU SHALL REMAIN IN OFF MODE UNTIL MANUALLY SWITCHED OUT OF OFF MODE IN THE BAS.

THE AHU SA FANS AND THE RA FANS SHALL BE OFF. MIN OA DAMPER SHALL BE CLOSED. MAX OA DAMPER SHALL BE CLOSED. RA DAMPER SHALL BE OPEN. CHILLED WATER VALVE SHALL BE CLOSED. HEATING HOT WATER VALVE SHALL BE CLOSED. FACE AND BYPASS DAMPERS SHALL BE OPEN TO THE HEATING COIL. RELIEF AIR DAMPERS SHALL BE CLOSED.

SPACE VAV BOXES PRIMARY AIR DAMPER SHALL BE AT MINIMUM POSITION AND RE-HEAT HOT WATER VALVE SHALL BE CLOSED.

UNOCCUPIED MODE:
UNOCCUPIED MODE SHALL BE INITIATED BY THE BAS SYSTEM BASED ON PROGRAMMED OCCUPANCY SCHEDULE.

THE AHU SA FANS AND THE RA FANS SHALL BE OFF. MIN OA DAMPER SHALL BE CLOSED. MAX OA DAMPER SHALL BE CLOSED. RA DAMPER SHALL BE OPEN. CHILLED WATER VALVE SHALL BE CLOSED. HEATING HOT WATER VALVE SHALL BE CLOSED. FACE AND BYPASS DAMPERS SHALL BE OPEN TO THE HEATING COIL. RELIEF DAMPERS SHALL BE CLOSED.

SPACE VAV BOXES PRIMARY AIR DAMPER SHALL BE AT MINIMUM POSITION AND RE-HEAT HOT WATER VALVE SHALL BE CLOSED.

IF ANY THREE SPACE TEMPERATURES FALL BELOW THE UNOCCUPIED TEMPERATURE SETPOINT MINUS 3 DEG F (ADJ), THE AHU SA FANS AND RETURN FANS SHALL ENERGIZE AND THE FAN SPEED SHALL BE CONTROLLED AS DESCRIBED IN THE "OCCUPIED" MODE. THE MIN OA DAMPER AND THE MAX OA DAMPER SHALL REMAIN CLOSED AND THE RA DAMPER SHALL REMAIN OPEN. THE AIR-SIDE ECONOMIZER MODE SHALL BE DISABLED. THE HEATING HOT WATER VALVE SHALL OPEN AND THE FACE AND BYPASS DAMPERS SHALL MODULATE TO MAINTAIN AHU LEAVING AIR TEMPERATURE SETPOINT OF 65 DEG F (ADJ). THE CHILLED WATER VALVE SHALL BE CLOSED. THE VAV BOXES DAMPER AND HEATING HOT WATER VALVE SHALL MODULATE TO MAINTAIN UNOCCUPIED SPACE TEMPERATURE SETPOINT. ONCE SPACE TEMPERATURE IS SATISFIED, AHU AND VAV BOXES SHALL RETURN TO UNOCCUPIED MODE.

IF ANY THREE SPACE TEMPERATURES RISE ABOVE UNOCCUPIED TEMPERATURE PLUS 3 DEG F (ADJ), THE AHU SA FANS AND RA FANS SHALL ENERGIZE AND FAN SPEED SHALL BE CONTROLLED AS DESCRIBED IN THE "OCCUPIED" MODE. THE MIN OA DAMPER SHALL BE CLOSED AND THE RA DAMPER SHALL REMAIN OPEN. THE AIR-SIDE ECONOMIZER MODE SHALL BE CONTROLLED AS INDICATED BELOW WITH MIN OA SETPOINT BEING 0 CFM (ADJ). THE RELIEF AIR DAMPER SHALL OPEN ONLY IF THE ECONOMIZER MODE ACTIVATES. THE HEATING HOT WATER VALVE SHALL BE CLOSED AND INTEGRAL FACE AND BYPASS DAMPERS SHALL BE BYPASSING HEATING COIL. THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN AHU LEAVING AIR TEMPERATURE OF 55 DEG F (ADJ). THE VAV BOXES DAMPER SHALL MODULATE TO MAINTAIN UNOCCUPIED SPACE TEMPERATURE SETPOINT. ONCE SPACE TEMPERATURE IS SATISFIED, AHU AND VAV BOXES SHALL RETURN TO UNOCCUPIED MODE.

UNOCCUPIED/OFF COIL PROTECTION MODE:
WHEN THE SUPPLY FAN IS DE-ENERGIZED AND THE OUTSIDE AIR IS BELOW THE OUTSIDE AIR LOW TEMPERATURE PROTECTION SETPOINT OF 35 DEG F (ADJ), THEN THE FACE AND BYPASS DAMPERS SHALL BE OPEN TO THE HEATING COIL, THE HEATING HOT WATER VALVE SHALL CYCLE TO MAINTAIN MIXED AIR TEMPERATURE OF 55 DEG F (ADJ) AND THE CHILLED WATER VALVE SHALL BE CLOSED AND AN ALARM WILL BE SENT. MIN OA DAMPER AND MAX OA DAMPER SHALL BE CLOSED. THE RA DAMPER SHALL BE OPEN. RELIEF AIR DAMPER SHALL BE CLOSED.

WHEN THE OUTSIDE AIR DROPS BELOW 10 DEG F (ADJ), THEN THE FACE AND BYPASS DAMPERS SHALL BE OPEN TO THE HEATING COIL, THE HEATING HOT WATER VALVE SHALL BE FULLY OPEN AND THE FACE AND BYPASS DAMPERS SHALL MODULATE TO MAINTAIN MIXED AIR TEMPERATURE OF 55 DEG F (ADJ).

WHEN THE OUTSIDE AIR TEMPERATURE IS MORE THAN 5 DEG F (ADJ) ABOVE THE OUTSIDE AIR LOW TEMPERATURE PROTECTION SETPOINT, OR THE MIXED AIR TEMPERATURE IS GREATER THAN 5 DEG F (ADJ) ABOVE THE MIXED AIR LOW TEMPERATURE PROTECTION SETPOINT FOR AT LEAST 30 MINUTES (ADJ), THEN THE HEATING HOT WATER VALVE AND THE CHILLED WATER VALVE SHALL BE CLOSED. THE MIN OA DAMPER AND MAX OA DAMPER SHALL BE CLOSED. THE RA DAMPER SHALL BE OPEN. THE RELIEF AIR DAMPER SHALL BE CLOSED.

FREEZESTAT SECTION:
IF THE MIXED AIR TEMPERATURE DROPS BELOW THE FREEZESTAT SET POINT, THE UNIT SHALL GO INTO OFF MODE AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

COOL-DOWN MODE:
OPTIMUM START PROGRAM SHALL START THE UNIT AT THE LATEST POSSIBLE TIME (MINIMUM 1 HOUR (ADJ)) PRIOR TO OCCUPANCY TO REACH THE OCCUPIED SPACE TEMPERATURE. IF THE AVERAGE SPACE TEMPERATURE IS ABOVE THE OCCUPIED SPACE TEMPERATURE COOLING SETPOINT, COOL-DOWN MODE WILL INITIATE.

AHU SUPPLY AND RETURN FANS SHALL ENERGIZE, AND THE FAN SPEEDS SHALL BE CONTROLLED AS DESCRIBED IN THE "OCCUPIED" MODE. RETURN AIR DAMPER SHALL BE OPEN. THE HEATING HOT WATER VALVE SHALL BE CLOSED AND INTEGRAL FACE AND BYPASS DAMPERS SHALL BE BYPASSING THE HEATING COIL. THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN AHU LEAVING AIR TEMPERATURE OF 55 DEG F (ADJ).

OA CONTROL:
THE MIN OA DAMPER SHALL BE CLOSED. THE "AIR-SIDE ECONOMIZER" MODE SHALL BE CONTROLLED AS INDICATED BELOW WITH MINIMUM OA SETPOINT BEING 0 CFM (ADJ). RELIEF AIR DAMPER AND MAX OA DAMPER SHALL ONLY OPEN IF THE AIR-SIDE ECONOMIZER SEQUENCE ACTIVATES.

VAV BOXES DAMPER SHALL MODULATE FROM MINIMUM TO MAXIMUM AIRFLOW SETPOINTS TO MAINTAIN SPACE TEMPERATURE.

COOL-DOWN MODE SHALL CONTINUE UNTIL ALL SPACES HAVE REACHED COOLING SETPOINT OR OCCUPIED SCHEDULE HAS BEGUN.

WARM-UP MODE:
OPTIMUM START PROGRAM SHALL START THE UNIT AT THE LATEST POSSIBLE TIME (MINIMUM 1 HOUR (ADJ)) PRIOR TO OCCUPANCY TO REACH THE OCCUPIED SPACE TEMPERATURE. IF THE AVERAGE SPACE TEMPERATURE IS BELOW THE OCCUPIED SPACE TEMPERATURE HEATING SETPOINT, WARM-UP MODE WILL INITIATE.

AHU SUPPLY AND RETURN FANS SHALL BE ENERGIZED, AND THE FAN SPEEDS SHALL BE CONTROLLED AS DESCRIBED IN "OCCUPIED" MODE. THE RA DAMPER SHALL REMAIN OPEN. HEATING CYCLE SHALL BE CONTROLLED AS DESCRIBED IN "OCCUPIED" MODE.

OA CONTROL:
THE MIN OA DAMPER SHALL BE CLOSED. AFTER WARM-UP MODE HAS BEEN ACTIVE FOR 15 MINUTES (ADJ.), THE MINIMUM OUTSIDE AIR DAMPER SHALL MODULATE FROM 0% OPEN TO MINIMUM SETPOINT. AFTER MINIMUM OUTSIDE AIR DAMPER HAS BEEN AT MINIMUM SETPOINT FOR 15 MINUTES (ADJ.), THE "AIR-SIDE ECONOMIZER" MODE SHALL BE CONTROLLED AS INDICATED BELOW WITH MINIMUM OA SETPOINT BEING 0 CFM (ADJ). RELIEF AIR DAMPER AND MAX OA DAMPER SHALL ONLY OPEN IF THE AIR-SIDE ECONOMIZER SEQUENCE ACTIVATES.

VAV BOXES DAMPER AND RE-HEAT HOT WATER VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

WARM-UP MODE SHALL CONTINUE UNTIL ALL SPACES HAVE REACHED OCCUPIED HEATING SETPOINT OR OCCUPIED SCHEDULE HAS BEGUN.

OCCUPIED MODE:
OCCUPIED MODE SHALL BE INITIATED BY BAS SYSTEM BASED ON PROGRAMMED OCCUPANCY SCHEDULE OR FORCED INTO TEMPORARY OCCUPIED MODE AT A THERMOSTAT OVERRIDE SWITCH.

FAN CONTROL: THE SUPPLY AND RETURN FANS SHALL BE ON. SUPPLY FAN VFDS SHALL MODULATE TO MAINTAIN DUCT STATIC PRESSURE SETPOINT OF 1.0 IN W.C. (ADJ). DUCT STATIC PRESSURE SETPOINT SHALL BE CONFIRMED/ADJUSTED DURING TEST AND BALANCING. FAN SPEEDS SHALL NOT DROP BELOW 30% (ADJ). RETURN FAN VFD SHALL MODULATE BASED ON MAINTAINING A DIFFERENTAIL AIRFLOW OF [SUPPLY AIRFLOW] MINUS [GENERAL EXHAUST + 1000 CFM PRESSURIZATION (ADJ)]. AIRFLOWS SHALL BE CONFIRMED DURING TEST AND BALANCE.

ONCE DUCT STATIC PRESSURE SETPOINT IS SATISFIED AND MAINTAINED FOR 15 MINUTES, VAV BOXES SHALL BE POLLED FOR DAMPER POSITION EVERY MINUTE (ADJ). IF VAV DAMPER POSITION IS 90% (ADJ) OR GREATER OPEN, A PRESSURE REQUEST SHALL BE GENERATED. AFTER THE VAV BOXES HAVE BEEN POLLED, IF THERE ARE NO PRESSURE REQUESTS, THE DUCT STATIC PRESSURE SETPOINT SHALL BE DECREASED BY 0.04 IN W.C. (ADJ). IF THERE ARE MORE THAN TWO (ADJ) PRESSURE REQUESTS, THE SETPOINT SHALL BE INCREASED BY 0.04 IN W.C. (ADJ). THE CONTROL LOGIC SHALL BE SLOW-ACTING TO AVOID HUNTING. DUCT STATIC PRESSURE SETPOINT SHALL NEVER EXCEED 150% OF THE DESIGN SETPOINT, AS DETERMINED BY THE TAB CONTRACTOR DURING BALANCING. IF COMMUNICATION IS LOST WITH ANY VAV BOX, THEN DUCT STATIC PRESSURE SETPOINT SHALL BE DESIGN SETPOINT AND AN ALARM SHALL BE SENT.

DAMPER CONTROL: RA DAMPER SHALL BE OPEN. RELIEF AIR DAMPER SHALL BE CONTROLLED AS DESCRIBED BELOW. MIN OA DAMPER SHALL BE OPEN AND CONTROLLED AS DESCRIBED BELOW. "AIR-SIDE ECONOMIZER" MODE SHALL BE ENABLED AND CONTROLLED AS DESCRIBED BELOW.

MINIMUM OA CAPACITY:
MAX OA DAMPER SHALL BE CLOSED.

MINIMUM OA AIRFLOW SHALL BE MEASURED BY AN AIRFLOW MONITORING STATION. MIN OA DAMPER SHALL MODULATE TO MAINTAIN MINIMUM OA AIRFLOW SETPOINT.

RETURN DAMPER SHALL MODULATE OPPOSITE THE MIN OA DAMPER.

RELIEF AIR DAMPERS SHALL MODULATE AS NECESSARY TO RELIEVE EXCESS OUTSIDE AIR AND MAINTAIN SPACE PRESSURIZATION SETPOINT.

SUPPLY AIR TEMPERATURE CONTROL:
CONTROLS SHALL MODULATE HEATING AND COOLING CYCLES TO MAINTAIN SCHEDULED SUPPLY AIR TEMPERATURE (SAT) SETPOINT. INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 55 DEG F (ADJ). SET POINT SHALL BE RESET BASED ON POLLING OF VAV BOXES COOLING DEMAND. VAV BOX COOLING DEMAND SHALL BE CALCULATED BY TAKING THE CURRENT VAV BOX AIRFLOW AND DIVIDING IT BY VAV BOX MAXIMUM COOLING AIR FLOW. THE VAV BOXES SHALL BE POLLED FOR COOLING DEMAND SIGNAL EVERY TWO MINUTES (ADJ). IF A VAV BOX COOLING DEMAND IS 95% (ADJ) OR GREATER, A COOLING REQUEST SHALL BE GENERATED. AFTER THE VAV BOXES HAVE BEEN POLLED, IF THERE ARE NO COOLING REQUESTS, THE SAT SETPOINT SHALL BE INCREASED BY 0.2 DEG F (ADJ). IF THERE ARE MORE THAN TWO (ADJ) COOLING REQUESTS, THE SAT SETPOINT SHALL BE DECREASED BY 0.3 DEG F (ADJ). THE CONTROL LOGIC SHALL BE SLOW ACTING TO AVOID HUNTING. THE MINIMUM OR INITIAL SAT SHALL BE AS INDICATED ABOVE AND THE MAXIMUM SAT SETPOINT SHALL BE 60 DEG F(ADJ). ONCE COOLING DEMAND IS ABOVE 95%, SAT SHALL BE RESET DOWN AGAIN. IF COMMUNICATION IS LOST WITH ANY VAV BOX, THEN SAT SETPOINT SHALL BE MINIMUM OR INITIAL SAT SETPOINT.

COOLING CYCLE:
IF SA TEMPERATURE IS ABOVE SA TEMPERATURE SETPOINT, CHILLED WATER VALVE SHALL MODULATE TO SATISFY SA TEMPERATURE SETPOINT.

COOLING CYCLE SHALL NOT BE ENABLED UNTIL THE HEATING CYCLE HAS BEEN OFF FOR 5 MIN (ADJ).

HEATING HOT WATER VALVE SHALL BE CLOSED AND FACE AND BYPASS DAMPERS SHALL BE BYPASSING HEATING COIL.

DEHUMIDIFICATION CYCLE:
IF RA RELATIVE HUMIDITY RISES ABOVE THE 60% RH SETPOINT (ADJ), DEHUMIDIFICATION MODE SHALL BE ENABLED. THE COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN 2 DEGREES (ADJ.) LESS THAN SUPPLY AIR TEMPERATURE SETPOINT. THE HEATING CONTROL VALVE SHALL MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT. ONCE RA RELATIVE HUMIDITY FALLS TO 55% RH (ADJ) OR LESS, DEHUMIDIFICATION MODE SHALL BE OFF.

HEATING CYCLE:
HEATING HOT WATER VALVE SHALL OPEN AND FACE AND BYPASS DAMPERS SHALL MODULATE TO SATISFY SUPPLY AIR TEMPERATURE SETPOINT SETPOINT.

CHILLED WATER VALVE SHALL BE CLOSED.

HEATING CYCLE SHALL HAVE A DEADBAND OF 4 DEG AND SHALL NOT BE ENABLED UNTIL THE COOLING CYCLE HAS BEEN OFF FOR 5 MIN (ADJ).

AIR-SIDE ECONOMIZER MODE:
THE AIR-SIDE ECONOMIZER SHALL BE ON WHEN THE OUTSIDE ENTHALPY IS 2 BTU/LB (ADJ) LESS THAN THE RETURN AIR ENTHALPY FOR MORE THAN 10 (ADJ) CONSECUTIVE MINUTES. THE AIR-SIDE ECONOMIZER WILL OTHERWISE BE OFF. ENTHALPY SHALL BE CALCULATED BASED ON FACILITY OUTDOOR AIR TEMPERATURE AND RELATIVE HUMIDITY READINGS.

THE MAX OUTSIDE AIR DAMPER AND RETURN AIR DAMPER SHALL BE MODULATED TO MAINTAIN A MIXED AIR TEMPERATURE OF 2 DEGREES LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT (INDICATED ABOVE). THE MIN OUTSIDE AIR DAMPER SHALL BE FULLY OPEN, BUT ALARM SHALL BE DEACTIVIATED.

IF THE AIR-SIDE ECONOMIZER CANNOT MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT (INDICATED ABOVE), THEN THE CHILLED WATER VALVE WILL MODULATE TO MAINTAIN AHU LEAVING AIR TEMPERATURE AT SETPOINT.

IF SUPPLY AIR TEMPERATURE FALLS BELOW SETPOINT (INDICATED ABOVE) FOR MORE THAN FIVE MINUTES, MAX OA DAMPER SHALL BE CLOSED. MIN OA DAMPER SHALL CONTINUE TO MODULATE TO MAINTAIN MINIMUM OA AIRFLOW SETPOINT (INDICATED ABOVE), AND ALARM SHALL BE ACTIVATED. OCCUPIED HEATING CYCLE (INDICATED ABOVE) WILL ACTIVATE. THIS WILL CONTINUE UNTIL SUPPLY AIR TEMPERATURE RISES ABOVE CC LAT SETPOINT FOR FIVE MINUTES. THEN MAX OA DAMPER SHALL BEGIN TO MODULATE TO MAINTAIN MIXED AIR TEMPERATURE AT AHU LAT SETPOINT AND MINIMUM OA AIRFLOW SETPOINT ALARM WILL BE DEACTIVATED.

RELIEF AIR DAMPERS SHALL MODULATE AS NECESSARY TO RELIEVE EXCESS OUTSIDE AIR AND MAINTAIN SPACE PRESSURIZATION.

THE AIR-SIDE ECONOMIZER SHALL BE ON UNTIL THE OUTSIDE AIR DRY BULB TEMPERATURE IS GREATER THAN 2 DEG F (ADJ) LESS THAN THE RETURN AIR TEMPERATURE, THE OUTSIDE AIR DRY BULB IS LESS THAN 0 DEG F (ADJ), OR THE OUTSIDE AIR ENTHALPY IS GREATER THAN 28 BTU/LB (ADJ) FOR MORE THAN 30 (ADJ) CONSECUTIVE MINUTES.

PROOFS AND SAFETIES:
THE SUPPLY FAN, RETURN FAN, AND ALL DDC HARDWARE CONTROL LOOPS SHALL BE SUBJECT TO PROOFS AND SAFETIES. SAFETIES SHALL BE DIRECT-HARDWIRE INTERLOCKED TO THE VFD AS SHOWN. DDC HARDWARE SHALL MONITOR ALL PROOFS AND SAFETIES AND FAILURE OF ANY PROOF OR ACTIVATION OF ANY SAFETY SHALL RESULT IN ALL CONTROL LOOPS BEING DISABLED AND THE AHU FAN BEING COMMANDED OFF UNTIL RESET, AND AN ALARM SHALL BE SENT TO THE BAS.

PROOFS:
- SUPPLY FAN STATUS (SF-S)
- RETURN FAN STATUS (RF-S)

SAFETIES:
- SUPPLY AIR DUCT PRESSURE HIGH LIMIT (DPS-5-01)
- SUPPLY AIR DUCT PRESSURE LOW LIMIT (DPS-5-02)
- SUPPLY AIR SMOKE (SMK-5-01)
- RETURN AIR DUCT PRESSURE HIGH LIMIT (DPS-5-03)

DDC HARDWARE RESET OF ALL PROOFS AND SAFETIES SHALL BE VIA A LOCAL BINARY PUSH-BUTTON (RST-BUT) AND A REMOTE COMMAND TO THE DDC HARDWARE. (THE OPERATOR CAN USE EITHER ONE TO PERFORM THE RESET), AS SHOWN ON THE POINTS SCHEDULE DRAWING.

ALARMS:
SMOKE DETECTOR: IF THE SUPPLY AIR SMOKE DETECTOR SENSES SMOKE IN THE DUCTWORK, AN ALARM SHALL BE SENT TO THE DDC SYSTEM FROM THE FIRE ALARM CONTROL PANEL AND THE UNIT SHALL GO INTO OFF MODE.

SUPPLY AIR HIGH STATIC PRESSURE: WHEN THE SUPPLY AIR STATIC PRESSURE EXCEEDS SETPOINT, THE HIGH-LIMIT STATIC-PRESSURE SWITCH IN THE FAN DISCHARGE SHALL STOP THE SUPPLY FAN, AND SEND A HIGH-STATIC PRESSURE ALARM TO THE DDC SYSTEM.

SUPPLY AIR LOW STATIC PRESSURE: WHEN THE SUPPLY AIR STATIC PRESSURE IS BELOW SETPOINT, THE LOW-LIMIT STATIC-PRESSURE SWITCH IN THE FAN DISCHARGE SHALL STOP THE SUPPLY FAN, AND SEND A LOW-STATIC PRESSURE ALARM TO THE DDC SYSTEM.

RETURN AIR HIGH STATIC PRESSURE: WHEN THE RETURN AIR STATIC PRESSURE EXCEEDS SETPOINT, THE HIGH-LIMIT STATIC-PRESSURE SWITCH IN THE FAN DISCHARGE SHALL STOP THE RETURN FAN, AND SEND A HIGH-STATIC PRESSURE ALARM TO THE DDC SYSTEM.

DIRTY FILTER SENSOR: IF FILTER DIFFERENTIAL PRESSURE SENSOR IS ABOVE SETPOINT, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

OUTSIDE AIRFLOW LOW: IF AIR FLOW MONITORING STATION READING OF OUTSIDE AIRFLOW DROPS BELOW 90% OF OUTSIDE AIRFLOW SETPOINT FOR MORE THAN 5 MIN. OR LONGER, THEN AN ALARM SHALL BE SENT TO THE BAS. THE FUNCTION OF THE AHU SHALL NOT BE CHANGED DUE TO THE ALARM.

HIGH SPACE C02: IF A SPACE CO2 SENSOR IS READING HIGHER THAN 900 PPM ABOVE OUTDOOR CO2 LEVELS FOR 5 MIN. OR LONGER, THEN AN ALARM SHALL BE SENT TO THE BAS. THE FUNCTION OF THE AHU SHALL NOT BE CHANGED DUE TO THE ALARM.

FREEZE STAT: IF THE FREEZE STAT SENSOR READS BELOW SETPOINT, THE AHU SHALL GO TO THE OFF MODE AND THE UNOCCUPIED/OFF COIL PROTECTION MODE SHALL BE INITIATED. AHU SHALL REMAIN OFF UNTIL RESET BY BAS.

HVAC SYSTEM EMERGENCY SHUTDOWN: CONNECT TO EXISTING FORCE PROTECTION SYSTEM. WHEN THE HVAC SYSTEM EMERGENCY SHUTDOWN SWITCH IS PRESSED, AHU SUPPLY FAN SHALL STOP, UNIT SHALL GO INTO OFF MODE, AND AN ALARM SHALL BE SENT TO THE BAS. UNIT SHALL REMAIN OFF UNTIL EMERGENCY SHUTDOWN HAS BEEN RESET.

RETURN AIRFLOW CONTROL ALARM: IF THE RETURN AIRFLOW IS NOT +/- 15% (ADJ) OF SETPOINT, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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REPLACE AHU-5
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WRIGHT-PATTERSON AFB, OHIO

MECHANICAL CONTROLS

SHEET ID
M-702_5
SHEET 67 OF 112

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EQUIPMENT SCHEDULE - AHU-5

IDENTIFIER	FUNCTION	POINT TYPE	RANGE	REMARKS
TT-5-01	RETURN AIR TEMPERATURE TRANSMITTER	ANALOG INPUT	40 F TO 140 F	
TT-5-02	MIXED AIR TEMPERATURE TRANSMITTER	ANALOG INPUT	-30 F TO 140 F	EQUAL TO CC LAT SETPOINT
TT-5-03	HEATING COIL LEAVING AIR TEMPERATURE TRANSMITTER	ANALOG INPUT	40 F TO 140 F	RESET BASED ON AIRFLOW AND VFD BOX POSITION
TT-5-04	SUPPLY AIR TEMPERATURE TRANSMITTER	ANALOG INPUT	40 F TO 140 F	RESET BASED ON VFD AND VAV BOX POSITION
RHT-5-01	RETURN AIR RELATIVE HUMIDITY TRANSMITTER	ANALOG INPUT	5% RH @ -130 F TO 95% RH @ 130 F	
DPT-5-01	PRE-FILTER DIFFERENTIAL PRESSURE TRANSMITTER	ANALOG INPUT	0 TO 5.0 IN WATER COLUMN	
DPI-5-01	PRE-FILTER DIFFERENTIAL PRESSURE INDICATION	-	0 TO 5.0 IN WATER COLUMN	
DPT-5-02	FINAL-FILTER DIFFERENTIAL PRESSURE TRANSMITTER	ANALOG INPUT	0 TO 5.0 IN WATER COLUMN	
DPI-5-02	FINAL-FILTER DIFFERENTIAL PRESSURE INDICATION	-	0 TO 5.0 IN WATER COLUMN	
DPT-5-03	SUPPLY AIR DUCT DIFFERENTIAL PRESSURE TRANSMITTER	ANALOG INPUT	0 TO 2.0 IN WATER COLUMN	LOCATE AS INDICATED ON PLANS. RESET BASED ON VFD AND VAV BOX POSITION. STARTING SETPOINT SET BY TAB CONTRACTOR.
DPT-5-04	SPACE DIFFERENTIAL PRESSURE TRANSMITTER	ANALOG INPUT	0 TO 0.5 IN WATER COLUMN	LOCATE AS INDICATED ON PLANS.
DPT-5-05	RETURN AIR DUCT DIFFERENTIAL PRESSURE TRANSMITTER	ANALOG INPUT	0 TO 2.0 IN WATER COLUMN	LOCATE AS INDICATED ON PLANS.
DPS-5-01	HIGH STATIC PRESSURE TRANSMITTER	DIGITAL INPUT	0 TO 5.0 IN WATER COLUMN	
DPS-5-02	LOW STATIC PRESSURE TRANSMITTER	DIGITAL INPUT	-5.0 TO 0 IN WATER COLUMN	
DPS-5-03	HIGH STATIC PRESSURE TRANSMITTER	DIGITAL INPUT	0 TO 5.0 IN WATER COLUMN	
AFMS-5-01	MINIMUM OUTSIDE AIR FLOW MONITORING STATION	ANALOG INPUT	10,000 CFM	SEE MECHANICAL SCHEDULES FOR DETAILS
AFMS-5-02	SUPPLY AIR FLOW MONITORING STATION	ANALOG INPUT	23500 CFM	SEE MECHANICAL SCHEDULES FOR DETAILS
AFMS-5-03	RETURN AIR FLOW MONITORING STATION	ANALOG INPUT	23500 CFM	SEE MECHANICAL SCHEDULES FOR DETAILS
AD-5-01	MINIMUM OUTSIDE AIR DAMPER	ANALOG OUTPUT	MODULATING	PROVIDE AS PART OF OUTSIDE AIRFLOW MONITORING STATION. MODULATE BASED ON MINIMUM OA SETPOINT
AD-5-02	RETURN AIR DAMPER	ANALOG OUTPUT	MODULATING	
AD-5-03	MAXIMUM OUTSIDE AIR DAMPER	ANALOG OUTPUT	MODULATING	NORMALLY CLOSED. MODULATE WITH ECONOMIZER CONTROL BASED ON MIXED AIR TEMPERATURE SETPOINT.
AD-5-04	GRAVITY HOOD RELIEF AIR DAMPER	DIGITAL OUTPUT	TWO POSITION	NORMALLY CLOSED. OPEN WITH ECONOMIZER CONTROL.
TSL-5-01	FREEZE STAT	DIGITAL INPUT	-	
SMK-5-01	SUPPLY AIR SMOKE DETECTOR	DIGITAL INPUT	-	MOUNT IN AHU SUPPLY AIR DISCHARGE SECTION
VLV-CV-37	CHILLED WATER VALVE	ANALOG OUTPUT	-	
VLV-CV-36	HEATING HOT WATER VALVE	ANALOG OUTPUT	-	
VFD-5-01	SUPPLY FAN VFD - START/STOP	DIGITAL OUTPUT	-	
	SUPPLY FAN VFD - MODULATION	ANALOG OUTPUT	-	
	SUPPLY FAN VFD - STATUS	DIGITAL INPUT	-	
	SUPPLY FAN VFD - CURRENT	ANALOG INPUT	-	
VFD-5-02	RETURN FAN VFD - START/STOP	DIGITAL OUTPUT	-	
	RETURN FAN VFD - MODULATION	ANALOG OUTPUT	-	
	RETURN FAN VFD - STATUS	DIGITAL INPUT	-	
	RETURN FAN VFD - CURRENT	ANALOG INPUT	-	
ESS	BUILDING HVAC EMERGENCY SHUT-DOWN SWITCH	DIGITAL INPUT	-	HARDWIRED RELAY TO EXISTING ESS ONLY
AD-5-04	INTEGRAL FACE AND BYPASS DAMPER	ANALOG OUTPUT	MODULATING	PROVIDE AS PART OF INTEGRAL FACE AND BYPASS DAMPER PREHEAT COIL
TT-1-01	FACILITY OUTSIDE AIR TEMPERATURE TRANSMITTER	ANALOG INPUT	-30 F TO 130 F	FACILITY SENSOR; EXISTING
RHT-1-01	FACILITY OUTSIDE AIR RELATIVE HUMIDITY TRANSMITTER	ANALOG INPUT	5% RH @ -130 F TO 95% RH @ 130 F	FACILITY SENSOR; EXISTING
C02-1-01	FACILITY OUTDOOR AIR CARBON DIOXIDE SENSOR	ANOLOG INPUT	0 TO 2000 PPM	FACILITY SENSOR; EXISTING

INPUT/OUTPUT SCHEDULE - AHU-5

POINT DESCRIPTION	INPUT: DIGITAL: ON/OFF STATUS	OPEN/CLOSE STATUS	PRESS./DIFF. PRESS. INPUT	TEMPERATURE SENSOR	SAFETY ALARM(S)	FLOW CONTACT / MOISTURE	LEVEL	AUXILIARY CONTACT	EMERGENCY STOP BUTTON	LOW TEMP CUTOUT
AHU-5									X	
SUPPLY FAN VFD	X								X	
RETURN FAN VFD	X									
OUTSIDE AIR										
MINIMUM OUTSIDE AIR DAMPER										
MAXIMUM OUTSIDE AIR DAMPER										
RETURN AIR			X							
RETURN AIR DAMPER										
MIXED AIR										
PRE-HEAT COIL										
PRE-HEAT COIL VALVE										X
PRE-HEAT COIL - FACE AND BYPASS DAMPER										
PRE-HEAT COIL SUPPLY AIR TEMPERATURE										
COOLING COIL										
COOLING COIL VALVE										
COOLING COIL SUPPLY AIR TEMPERATURE										
SUPPLY AIR			X	X						
SUPPLY AIR SMOKE DETECTOR				X		X		X		
SUPPLY DUCT										
PRE FILTER										
FINAL FILTER										
SPACE										
RELIEF AIR										
RELIEF AIR DAMPER										

POINT DESCRIPTION	INPUT: ANALOG: TEMPERATURE	PRESSURE (PSIG, PSIA, PSID)	FLOW (CFM, GPM)	% RH	POSITION	CURRENT/AMPERAGE	CARBON DIOXIDE LEVEL	RUN TIME
AHU-5								
SUPPLY FAN VFD						X		
RETURN FAN VFD						X		
OUTSIDE AIR	X		X	X			X	
MINIMUM OUTSIDE AIR DAMPER					X			
MAXIMUM OUTSIDE AIR DAMPER					X			
RETURN AIR	X			X				
RETURN AIR DAMPER					X			
MIXED AIR	X							
PRE-HEAT COIL								
PRE-HEAT COIL VALVE					X			
PRE-HEAT COIL - FACE AND BYPASS DAMPER					X			
PRE-HEAT COIL SUPPLY AIR TEMPERATURE	X							
COOLING COIL								
COOLING COIL VALVE					X			
COOLING COIL SUPPLY AIR TEMPERATURE	X							
SUPPLY AIR	X	X						
SUPPLY AIR SMOKE DETECTOR								
SUPPLY DUCT		X						
PRE FILTER		X						
FINAL FILTER		X						
SPACE	+	X					+	
RELIEF AIR								
RELIEF AIR DAMPER					+			

POINT DESCRIPTION	OUTPUT: DIGITAL: ON/OFF/AUTO	ON/OFF	OPEN/CLOSE	ENABLE/DISABLE	CONTROL RELAY	ANALOG: POSITION ADJ	SET POINT ADJ	MODULATION	OPEN/CLOSED	SPEED ADJUST
AHU-5		X								
SUPPLY FAN VFD		X						X		
RETURN FAN VFD		X						X		
OUTSIDE AIR										
MINIMUM OUTSIDE AIR DAMPER							X	X		
MAXIMUM OUTSIDE AIR DAMPER								X		
RETURN AIR										
RETURN AIR DAMPER								X		
MIXED AIR							X			
PRE-HEAT COIL										
PRE-HEAT COIL VALVE								X		
PRE-HEAT COIL - FACE AND BYPASS DAMPER								X		
PRE-HEAT COIL SUPPLY AIR TEMPERATURE							X			
COOLING COIL										
COOLING COIL VALVE								X		
COOLING COIL SUPPLY AIR TEMPERATURE							X			
SUPPLY AIR										
SUPPLY AIR SMOKE DETECTOR										
SUPPLY DUCT							X			
PRE FILTER										
FINAL FILTER										
SPACE										
RELIEF AIR										
RELIEF AIR DAMPER								+		

POINT DESCRIPTION	ALARMS: DIGITAL: HIGH	LOW	MOISTURE	ANALOG: HIGH	LOW	RUN TIME	EMERGENCY STOP BUTTON	FUNCTIONS: SCHEDULED START/STOP	HUMID. / DEHUMIDIFICATION	HEATING / COOLING CYCLE	OCCUPIED / UNOCCUPIED	OPTIMUM START/STOP	FIRE-SMOKE CONTROL	ENTHALPY CALCULATION	ECONOMIZER CONTROL	SET POINT RESET / OVERRIDE	CFM CALCULATION	TREND	SYSTEM GRAPHIC
AHU-5							X	X		X	X	X							X
SUPPLY FAN VFD																X		X	
RETURN FAN VFD																X		X	
OUTSIDE AIR			X											X	X		X	X	
MINIMUM OUTSIDE AIR DAMPER																		X	
MAXIMUM OUTSIDE AIR DAMPER																		X	
RETURN AIR				X											X			X	
RETURN AIR DAMPER																		X	
MIXED AIR																		X	
PRE-HEAT COIL																			
PRE-HEAT COIL VALVE																		X	
PRE-HEAT COIL - FACE AND BYPASS DAMPER																		X	
PRE-HEAT COIL SUPPLY AIR TEMPERATURE																X		X	
COOLING COIL																			
COOLING COIL VALVE																		X	
COOLING COIL SUPPLY AIR TEMPERATURE																X		X	
SUPPLY AIR	X	X		X									X			X		X	
SUPPLY AIR SMOKE DETECTOR																			
SUPPLY DUCT																X		X	
PRE FILTER	X																	X	
FINAL FILTER	X																	X	
SPACE	+																	X	
RELIEF AIR																			
RELIEF AIR DAMPER																		X	

NOTES:
1. SYSTEM GRAPHIC SHALL PROVIDE DISPLAY OF ALL POINTS.

+ NUMBER AS INDICATED ON PLANS

OPERATING PARAMETERS - AHU-5

FUNCTION	SETPOINT	REMARKS
OUTSIDE AIR LOW TEMPERATURE PROTECTION	35 DEG F	COIL FREEZE PROTECTION
OUTSIDE AIR LOW TEMPERATURE PROTECTION	10 DEG F	COIL FREEZE PROTECTION, VALVE FULLY OPEN
MIXED AIR LOW TEMPERATURE PROTECTION	55 DEG F	COIL FREEZE PROTECTION
ECONOMIZER CONTROL - TEMPERATURE	HIGH - RETURN AIR MINUS 2 DEG F LOW - 0 DEG F	MUST MEET TEMPERATURE AND ENTHALPY REQUIREMENTS FOR AT LEAST 30 MIN
ECONOMIZER CONTROL - ENTHALPY	HIGH - 28 BTU/LB	MUST MEET TEMPERATURE AND ENTHALPY REQUIREMENTS FOR AT LEAST 30 MIN
DUCT STATIC PRESSURE	1.0 IN WC	0.5 TO 1.5 IN WC RANGE. SETPOINT SET BY TAB CONTRACTOR. RESET BASED ON VFD AND VAV BOX DAMPER POSITION. LOCATE IN DUCTWORK, AS INDICATED ON PLANS
MINIMUM OA AIRFLOW	6100 CFM	ALARM -10% OF SETPOINT FOR 5 MIN.
SUPPLY AIR TEMPERATURE	55 DEG F TO 60 DEG F	RESET BASED ON VFD AND VAV DAMPER POSITION
COILING COIL FREEZE STAT ALARM	35 DEG F	
HEATING COIL LEAVING AIR TEMPERATURE	53 DEG F TO 58 DEG F	TRACKS SUPPLY AIR TEMPERATURE MINUS 2 DEG F
SPACE PRESSURIZATION	0.05 IN WC	SPACE VS. OUTSIDE DIFFERENTIAL PRESSURE; CONTROLS RELIEF AIR
RETURN AIR RELATIVE HUMIDITY	60%	
OCCUPIED MODE		MONDAY - SATURDAY: 0600 HRS - 1800 HRS
FILTER ALARM	1.0 IN WC	PRESSURE DROP ACROSS EACH BANK
RETURN AIR HIGH STATIC ALARM	2.0 IN WC	
SUPPLY AIR HIGH STATIC ALARM	3.5 IN WC	
SUPPLY AIR LOW STATIC ALARM	0.5 IN WC	

GENERAL NOTES:

A. FIBER NETWORK CONNECTIONS (TO THE BAS) WILL BE PROVIDED BY CUSTOMER. REFER TO SPECIFICATION SECTION 01 11 00 FOR REQUIRED NOTICE DURATION TO ALLOW CUSTOMER TO PREPARE FOR NEW CONNECTIONS.

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

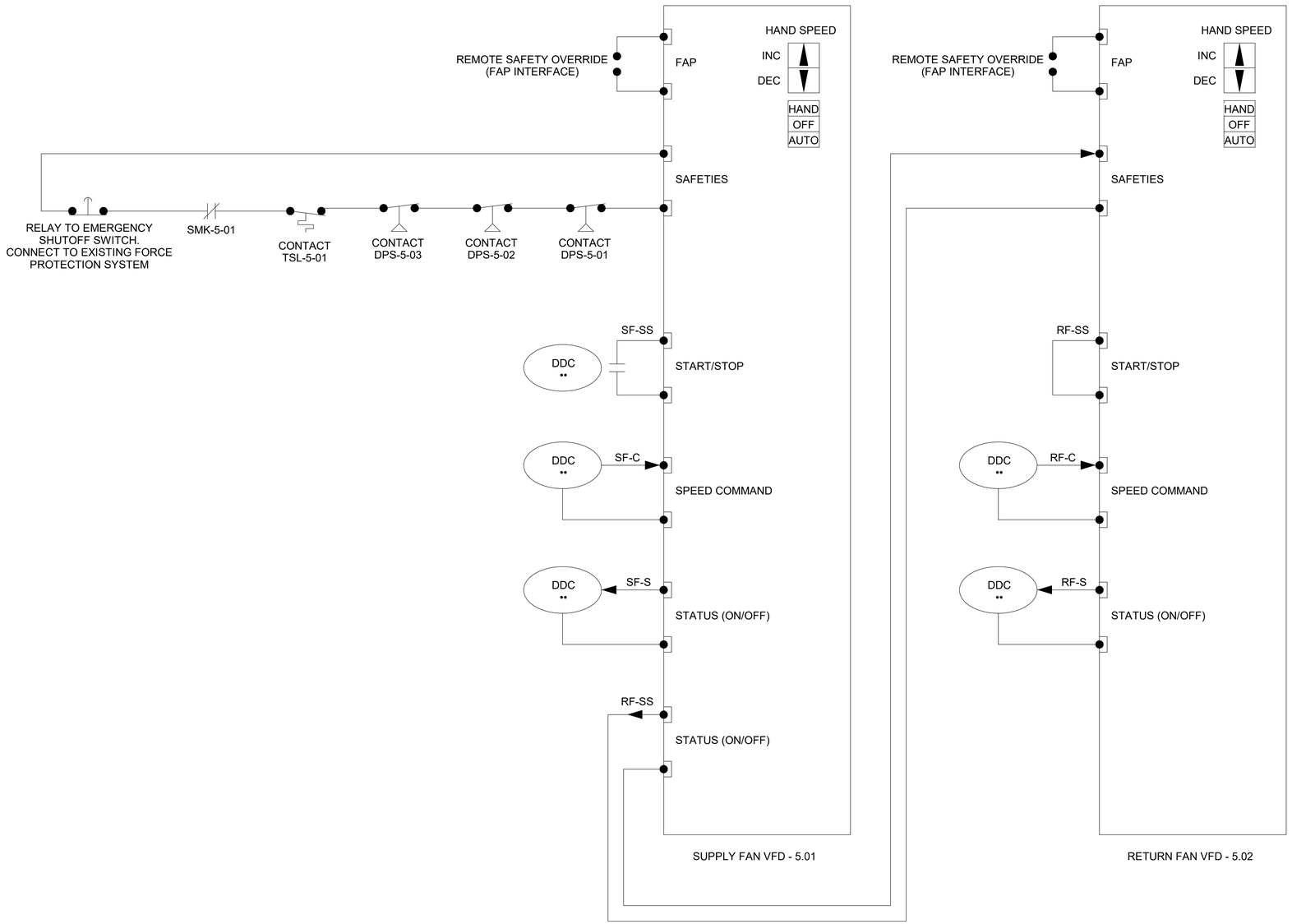
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL CONTROLS

SHEET ID
M-703_5
SHEET 68 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 AHU-5 LADDER DIAGRAM
SCALE:NTS

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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MECHANICAL CONTROLS

SHEET ID
M-704_5
SHEET 69 OF 112

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

EQUIPMENT SCHEDULE - VAV				
IDENTIFIER	FUNCTION	POINT TYPE	RANGE	REMARKS
VAV-D-C	VAV BOX CONTROL DAMPERS	ANALOG OUTPUT	-	SEE SCHEDULE FOR DETAILS. SEE PLAN FOR LOCATIONS.
VAV-SA-F	VAV BOX FLOW TRANSMITTER	ANALOG INPUT	-	NUMBER AND LOCATION AS INDICATED ON PLANS.
HTG-V-C	VAV BOX RE-HEAT HOT WATER VALVE	ANALOG OUTPUT		NUMBER AS INDICATED ON PLANS.
VAV-DA-T	VAV BOX SUPPLY AIR TEMPERATURE TRANSMITTER	ANALOG INPUT	40 F TO 140 F	SETPOINT AND NUMBER AS INDICATED ON PLANS.
ZN-T	SPACE TEMPERATURE	ANALOG INPUT	40F TO 100F	NUMBER AND LOCATION AS INDICATED ON PLANS.
ZN-CO2	SPACE CARBON DIOXIDE SENSOR	ANALOG INPUT	0 TO 2000 PPM	NUMBER AND LOCATION AS INDICATED ON PLANS.

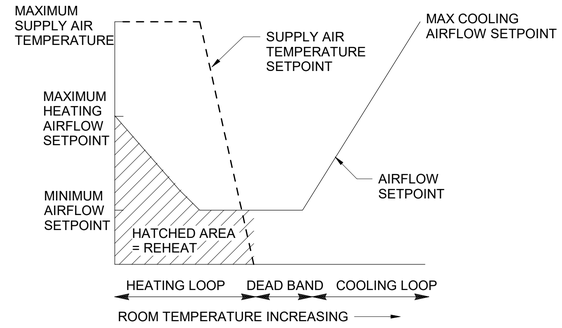
OPERATING PARAMETERS - VAV		
FUNCTION	SETPOINT	REMARKS
SPACE TEMPERATURE - OCCUPIED	68 DEG F HTG 78 DEG F CLNG	
SPACE TEMPERATURE - UNOCCUPIED	55 DEG F HTG 85 DEG F CLNG	
SPACE CO2 LEVEL	0 - 800 PPM	ABOVE OA CO2 LEVEL ALARM OVER 900 ABOVE OA CO2

INPUT/OUTPUT SCHEDULE - VAV

POINT DESCRIPTION	INPUT: DIGITAL: ON/OFF STATUS	OPEN/CLOSE STATUS	PRESS./DIFF. PRESS. INPUT	TEMPERATURE SENSOR	SAFETY ALARM(S)	FLOW CONTACT / MOISTURE	LEVEL	AUXILIARY CONTACT	INPUT: ANALOG: TEMPERATURE	PRESSURE (PSIG, PSIA, PSID)	FLOW (CFM, GPM)	% RH	POSITION	CURRENT/AMPERAGE	CARBON DIOXIDE LEVEL	RUN TIME	OUTPUT: DIGITAL: ON/OFF/AUTO	ON/OFF	OPEN/CLOSE	ENABLE/DISABLE	CONTROL RELAY	SETPOINT	OUTPUT: ANALOG: POSITION ADJ	SET POINT ADJ	MODULATION	OPEN/CLOSED	SPEED ADJUST	ALARMS: DIGITAL: HIGH	LOW	MOISTURE	ALARMS: ANALOG: HIGH	LOW	RUN TIME	FUNCTIONS: SCHEDULED START/STOP	HUMID / DEHUMIDIFICATION	HEATING / COOLING CYCLE	OCCUPIED / UNOCCUPIED	OPTIMUM START/STOP	FIRE-SMOKE CONTROL	ENTHALPY CALCULATION	ECONOMIZER CONTROL	SET POINT RESET / OVERRIDE	CFM CALCULATION	TREND	SYSTEM GRAPHIC
VAV BOX											X																															X		X
SPACE									X						X							X										X	X			X	X				X		
PRIMARY AIR DAMPER													X												X															X		X		
HEATING COIL VALVE													X												X															X		X		
SUPPLY AIR TEMPERATURE									X															X																	X		

NOTES:
1. SYSTEM GRAPHIC SHALL PROVIDE DISPLAY OF ALL POINTS.

+ NUMBER AS INDICATED ON PLANS



SEQUENCE OF OPERATION - VAV TERMINAL UNIT WITH HOT WATER REHEAT

GENERAL:
THE HVAC SYSTEM SHALL HAVE THE FOLLOWING MODES OF OPERATION: UNOCCUPIED, WARM-UP, COOL-DOWN, AND OCCUPIED.

UNOCCUPIED:
UNOCCUPIED MODE SHALL BE INITIATED BY THE DDC SYSTEM.

VAV DAMPER SHALL BE AT MINIMUM POSITION.

IF THE ZONE TEMPERATURE FALLS BELOW OR RISES ABOVE THE UNOCCUPIED HEATING OR COOLING TEMPERATURE SETPOINT, THE UNIT SHALL OPERATE AS DESCRIBED IN "OCCUPIED" MODE UNTIL THE SETPOINT HAS BEEN SATISFIED.

ZONE UNOCCUPIED OVERRIDE: THE THERMOSTAT SHALL HAVE AN UNOCCUPIED OVERRIDE BUTTON. UPON THE BUTTON BEING DEPRESSED THE TERMINAL UNIT SHALL GO INTO OCCUPIED MODE FOR ONE HOUR (ADJ) AND THEN REVERT TO UNOCCUPIED MODE.

WARM-UP/COOL-DOWN:
VAV BOX DAMPER AND HEATING VALVE SHALL MODULATE AS DESCRIBED IN THE "OCCUPIED" MODE SECTION.

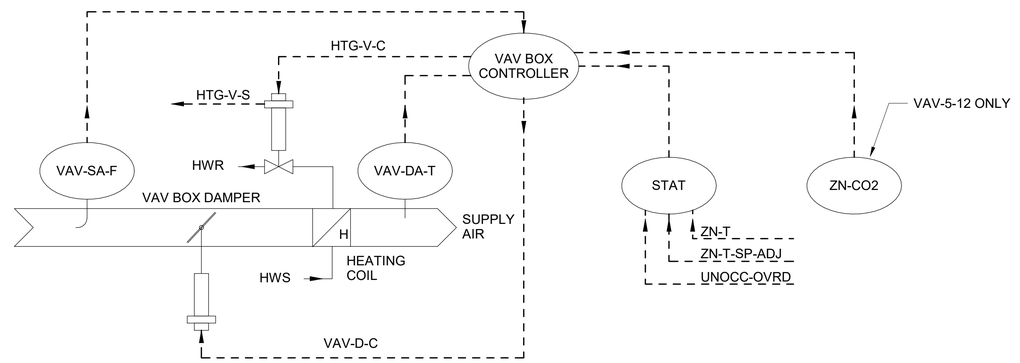
OCCUPIED:
OCCUPIED MODE SHALL BE INITIATED BY THE CONTROLS SYSTEM.

ZONE TEMPERATURE CONTROL: VAV BOX DAMPER SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITION TO MAINTAIN VAV BOX SUPPLY AIR FLOW AT SETPOINT AS MEASURED BY A MULTI-POINT FLOW SENSING ELEMENT AT THE INLET OF THE VAV BOX. UPON A RISE IN ZONE TEMPERATURE ABOVE COOLING SETPOINT THE AIRFLOW SETPOINT SHALL BE PROPORTIONALLY INCREASED FROM MINIMUM TOWARD MAXIMUM FLOW AS THE DIFFERENCE BETWEEN THE ZONE TEMPERATURE AND ZONE TEMPERATURE COOLING SETPOINT INCREASES. WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING AND HEATING SETPOINTS THE AIRFLOW SHALL BE MAINTAINED AT MINIMUM FLOW.

UPON A FALL IN ZONE TEMPERATURE BELOW HEATING SETPOINT THE HEATING VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT. UPON A FURTHER FALL IN ZONE TEMPERATURE, THE AIRFLOW SETPOINT SHALL BE PROPORTIONALLY INCREASED FROM MINIMUM TOWARD HEATING MAXIMUM FLOW AS THE DIFFERENCE BETWEEN THE ZONE TEMPERATURE AND ZONE TEMPERATURE HEATING SETPOINT INCREASES.

ZONE TEMPERATURE SETPOINT ADJUST: THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE SETPOINT COOLER OR WARMER AT THE THERMOSTAT. THE ZONE TEMPERATURE SETPOINT SHALL BE THE STORED SETPOINT (CLG/HTG) PLUS/MINUS THE OCCUPANT ADJUSTMENT.

ZONE CO2 MONITORING: IF THE ZONE CO2 CONCENTRATION EXCEEDS THE DESIGN VALUE BY 10% OR MORE AN ALARM SHALL BE GENERATED AND SENT TO THE DDC SYSTEM.



VAV BOX WITH REHEAT CONTROL DIAGRAM

A1 VAV CONTROL DIAGRAM
SCALE:NTS

GRAHAM EDWARD JOHNSON
LICENSED PROFESSIONAL ENGINEER
51389
STATE OF MINNESOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

DATE	DESCRIPTION	MARK
02-24-23	CERTIFIED FINAL	0

DESIGNED BY: G.JOHNSON
DRAWN BY: R.PEARSON
CHECKED BY: A.GIANFETRO
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

MECHANICAL CONTROLS

SHEET ID
M-705_5
SHEET 70 OF 112

CUI
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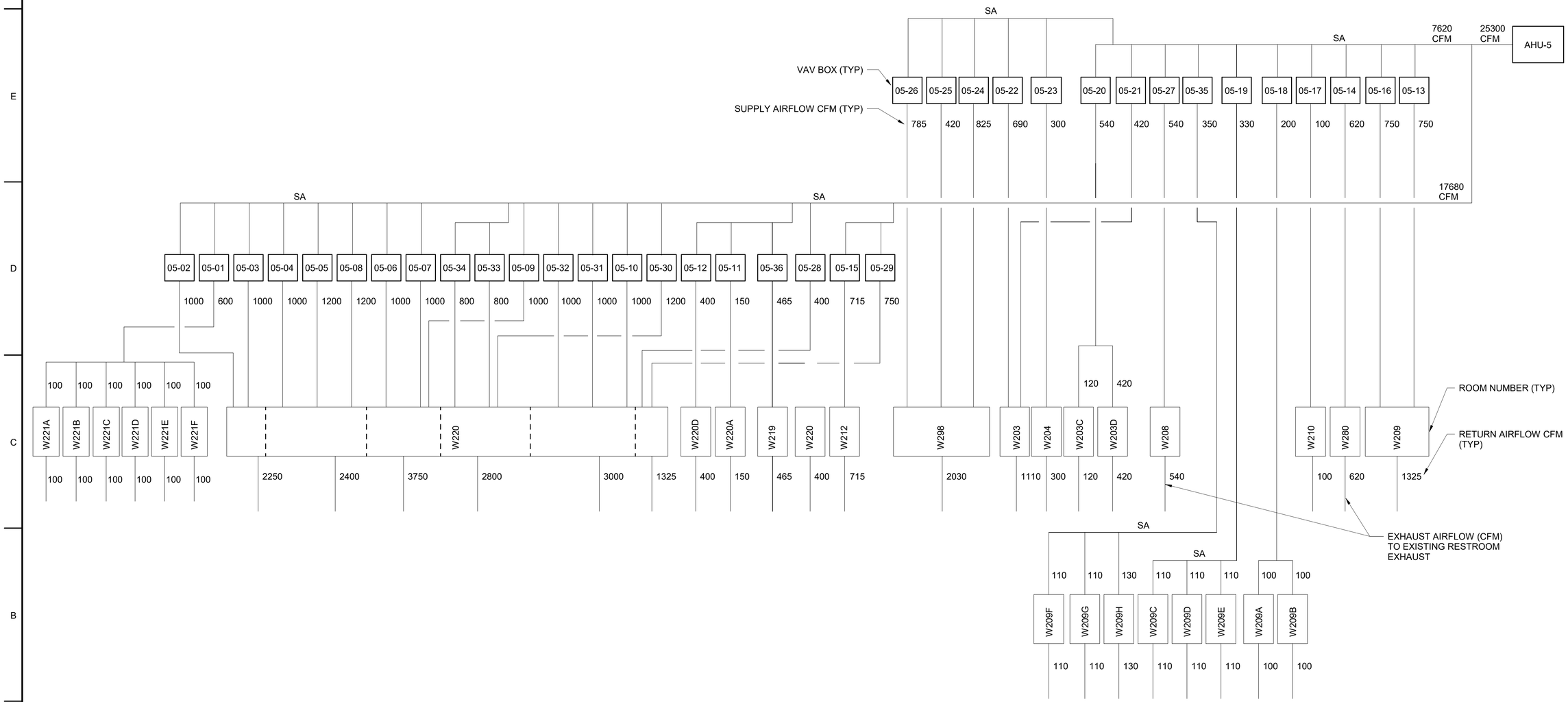
CERTIFIED FINAL

GENERAL NOTES:

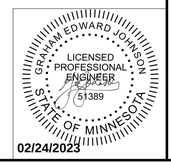
A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. AIR BALANCING FOR THE LARGE OPEN SPACE COMPRISED OF ROOMS W220 AND W209 SHALL BE NEUTRAL OVERALL FOR TOTAL SUPPLY AND RETURN.

C. AIRFLOW SUMS REPRESENTS VAV BOX PEAK FLOWS. THIS AIRFLOW MAY BE DIFFERENT FROM THE TOTAL AHU AIRFLOW WHICH IS SIZED ON SYSTEM BLOCK AIRFLOWS.



A1 AHU-5 AIRFLOW SCHEMATIC
SCALE:NTS



US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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SUBMITTED BY: G.JOHNSON
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SOLICITATION NO.:
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US ARMY CORPS OF ENGINEERS
CONSTRUCTION DIVISION
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

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9400 WARD PARKWAY, KANSAS CITY, MO 64114

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WRIGHT-PATTERSON AFB, OHIO

AIRFLOW SCHEMATIC

SHEET ID
M-801_5
SHEET 71 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

GENERAL NOTES:

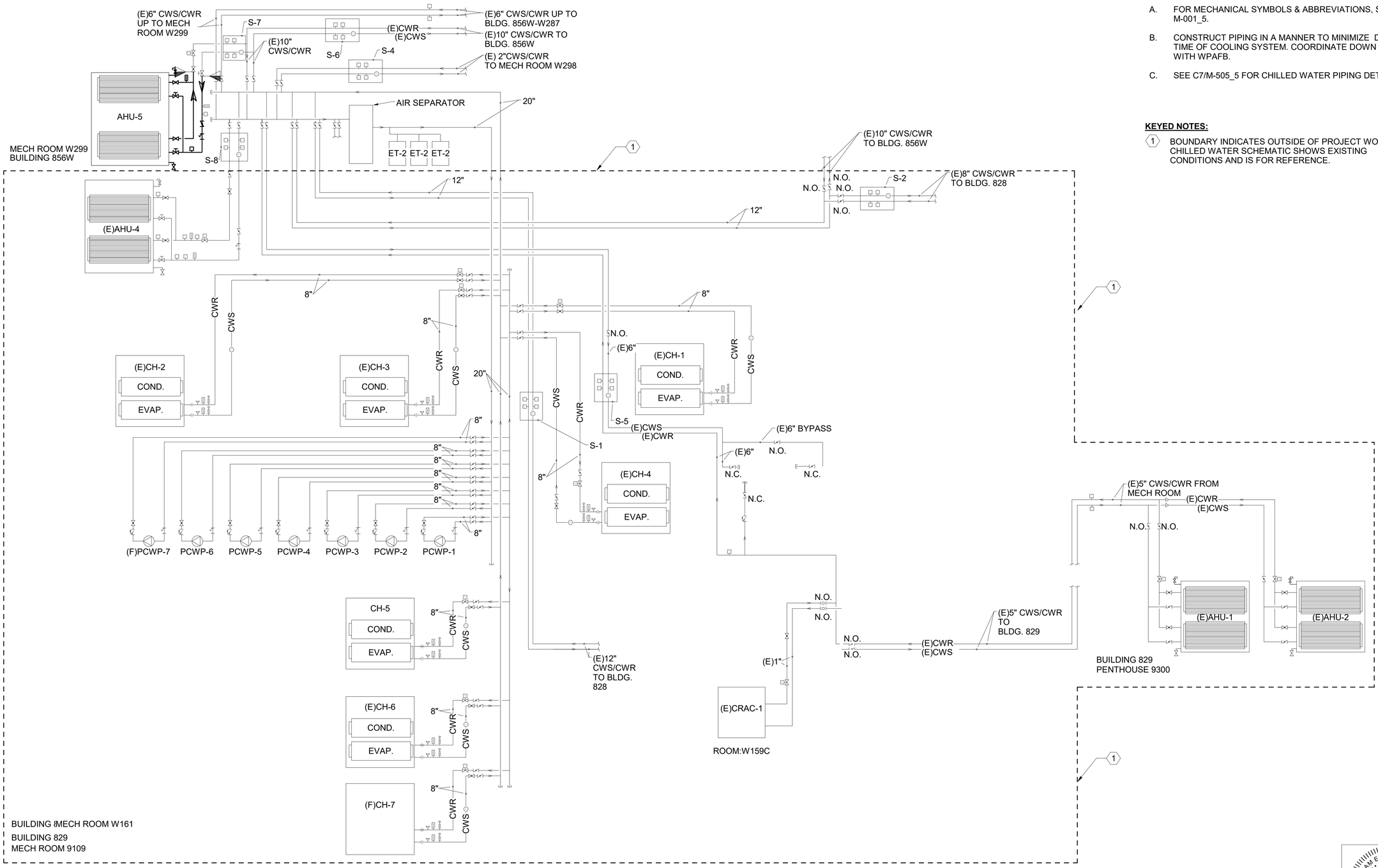
A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. CONSTRUCT PIPING IN A MANNER TO MINIMIZE DOWN TIME OF COOLING SYSTEM. COORDINATE DOWN TIME WITH WPAFB.

C. SEE C7/M-505_5 FOR CHILLED WATER PIPING DETAIL.

KEYED NOTES:

1 BOUNDARY INDICATES OUTSIDE OF PROJECT WORK AREA. CHILLED WATER SCHEMATIC SHOWS EXISTING CONDITIONS AND IS FOR REFERENCE.



A1 AHU-5 CHILLED WATER SCHEMATIC - CONNECTION TO EXISTING SYSTEM
SCALE:NTS

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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US ARMY CORPS OF ENGINEERS
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CHILLED WATER SCHEMATIC

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STATE OF MINNESOTA
02/24/2023

SHEET ID
M-802_5
SHEET 72 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

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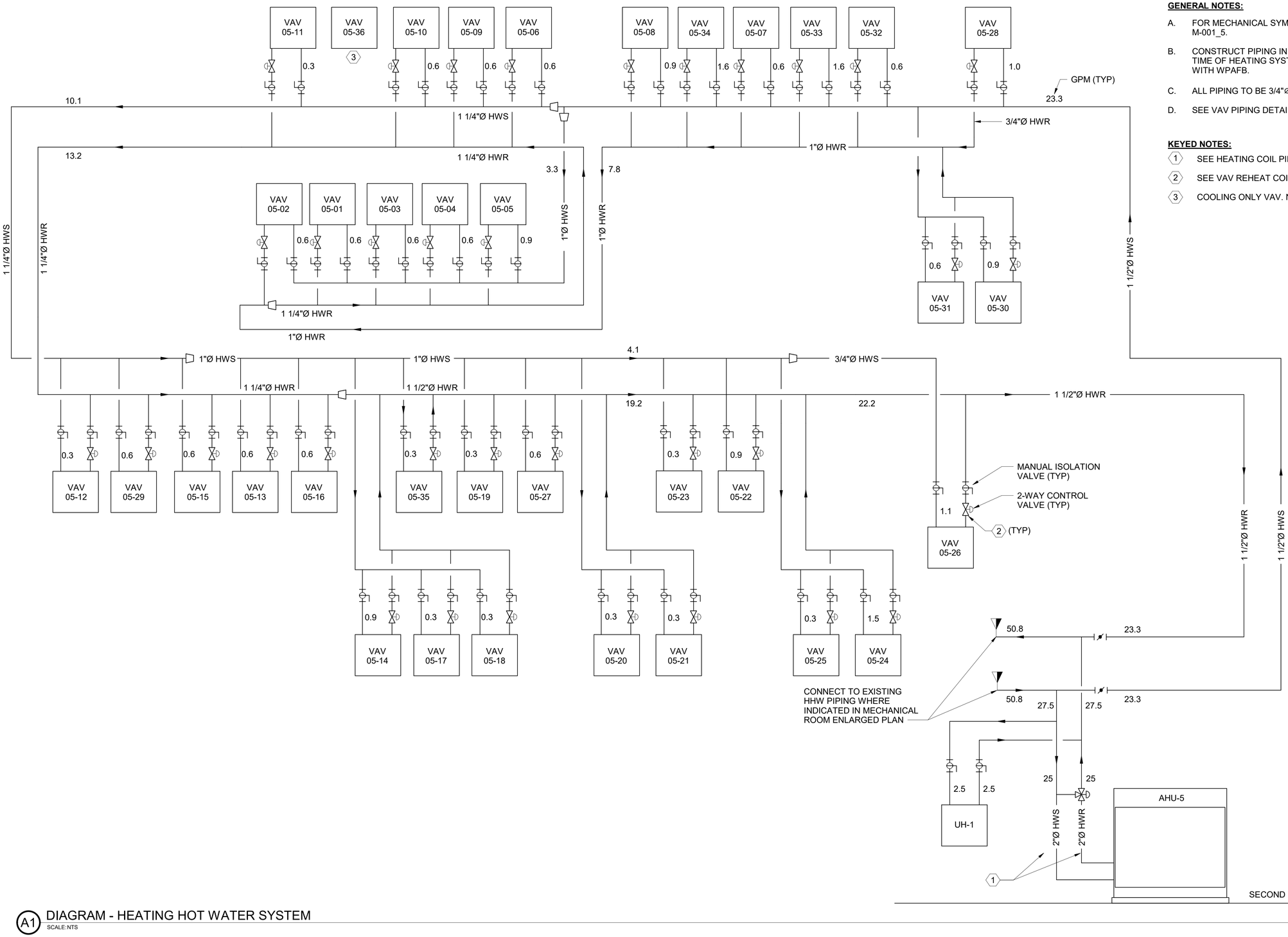

A1 DIAGRAM - HEATING HOT WATER SYSTEM
SCALE: NTS

GENERAL NOTES:

A. FOR MECHANICAL SYMBOLS & ABBREVIATIONS, SEE M-001_5.

B. CONSTRUCT PIPING IN A MANNER TO MINIMIZE DOWN TIME OF HEATING SYSTEM. COORDINATE DOWN TIME WITH WPAFB.

C. ALL PIPING TO BE 3/4"Ø UNLESS NOTED OTHERWISE.

D. SEE VAV PIPING DETAIL A7/M-503_5.

KEYED NOTES:

1. SEE HEATING COIL PIPING DETAIL C3/M-505_5.
2. SEE VAV REHEAT COIL PIPING DETAIL A7/M-503-5.
3. COOLING ONLY VAV. NO REHEAT COIL.

LICENSED PROFESSIONAL ENGINEER
GRAHAM EDWARD JOHNSON
51389
STATE OF MINNESOTA
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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
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HEATING HOT WATER SCHEMATIC

SHEET ID
M-803_5
SHEET 73 OF 112

CUI
W912QR23R0022_CUI_CF_Plans-0001
CERTIFIED FINAL

FIRE ALARM/MASS NOTIFICATION SYSTEM LEGEND

BATT	SECONDARY POWER SUPPLY (BATTERY)
FACU/ACU	COMBINATION FIRE ALARM CONTROL UNIT AND AUTONOMOUS CONTROL UNIT
NAC	NOTIFICATION APPLIANCE CIRCUIT BOOSTER POWER SUPPLY
SPD	SURGE PROTECTION DEVICE
AMP	AMPLIFIER
	SPEAKER / STROBE COMBINATION
S	SPEAKER
	WALL MOUNT STROBE
S	IN-DUCT PHOTOELECTRIC SMOKE DETECTOR S = SUPPLY
P	CEILING MOUNTED SMOKE DETECTOR P = PHOTOELECTRIC
AOM	ADDRESSABLE OUTPUT MODULE
AIM	ADDRESSABLE INPUT MODULE
	GROUND
	REMOTE ALARM INDICATOR

SYMBOL IDENTIFICATION LEGEND

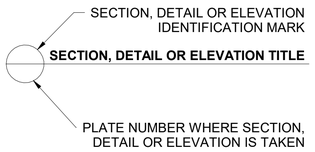
EXISTING EQUIPMENT

NEW EQUIPMENT

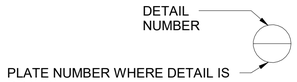
ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR
AWG	AMERICAN WIRE GAGE
dBA	DECIBEL A-WEIGHTED
FA	FIRE ALARM
FACU	FIRE ALARM CONTROL UNIT
IDC	INITIATING DEVICE CIRCUIT
MNS	MASS NOTIFICATION SYSTEM
NAC	NOTIFICATION APPLIANCE CIRCUIT
NEC	NATIONAL ELECTRICAL CODE
SLC	SIGNALING LINE CIRCUIT
SPD	SURGE PROTECTION DEVICE
STC	SOUND TRANSMISSION CLASS
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES

DETAIL/SECTION TITLE



DETAIL CALLOUT SYMBOL



DESIGN CRITERIA:

1. AUDIBLE NOTIFICATION SHALL BE PROVIDED FOR ALL AREAS AND ROOMS THROUGHOUT THE AREA OF WORK. THE FOLLOWING DESIGN CRITERIA SHALL BE ACCOMPLISHED WITH ALL DOORS CLOSED. WHERE THIS DESIGN CRITERIA IS NOT ACCOMPLISHED DURING COMMISSIONING, THE CONTRACTOR SHALL PROVIDE ADDITIONAL DEVICES TO MEET THE MINIMUM DESIGN CRITERIA REQUIREMENTS AT NO ADDITIONAL COST. AS-BUILT DRAWINGS SHALL DEMONSTRATE THE ADDITIONAL DEVICES AND OR MODIFICATIONS TO THE INSTALLED DEVICES DO NOT EXCEED THE LIMITATIONS OF THE FACU/ACU, NAC BOOSTER PANEL, OR AMPLIFIER (INCLUSIVE OF SAFETY FACTORS).
2. IN AREAS WHERE ADDITIONAL NOTIFICATION IS PROVIDED, THE PERFORMANCE MUST ADHERE TO THE SOUND POWER CRITERIA WITHIN THE SPECIFICATIONS, CONTRACT DRAWINGS, AND NFPA 72.
3. IN AREAS WHERE ADDITIONAL AUDIBLE NOTIFICATION IS PROVIDED, THE SOUND POWER OF THE AUDIBLE NOTIFICATION SHALL BE A MINIMUM OF 70 DBA AND 15 DBA OVER THE AMBIENT CONDITIONS AT THE MOST REMOTE LOCATION WITHIN THE ROOM OR AREA. THE FOLLOWING CRITERIA SHALL BE UTILIZED FOR REVIEW AND APPROVAL OF SHOP DRAWINGS.
   A. THE SOUND POWER SHALL BE REDUCED BY 6 DBA EACH TIME THE DISTANCE BETWEEN THE APPLIANCE AND THE LISTENER IS DOUBLED. STARTING DISTANCE IS PER MANUFACTURER'S DATASHEET, TYPICALLY 10 FT.
   B. THE SOUND POWER SHALL BE REDUCED IN ACCORDANCE WITH THE MANUFACTURER'S DATASHEET FOR SOUND POWER DISTRIBUTION NOT PERPENDICULAR TO THE SPEAKER FACE. REFER TO MANUFACTURER'S TYPICAL SOUND OUTPUT DISTRIBUTION DIAGRAM.
   C. A MINIMUM 15 DBA LOSS SHALL BE ASSUMED THROUGH A STANDARD CLOSED DOOR.
   D. ALL STC RATED DOORS AND BARRIERS ARE ASSUMED TO BE SOUND PROOF ALLOWING NO TRANSMISSION OF SOUND.
4. MEET THE FOLLOWING INTELLIGIBILITY CRITERIA:
   A. ACHIEVE A CIS SCORE OF 0.8 IN EACH ROOM MEASURED AT 5 FT AFF.
   B. A LESSER CIS IS PERMITTED IN AREAS OF THE BUILDING WITH EXCESSIVE SOUND REFLECTIONS, SUCH AS ROOMS WITH HARD SURFACES (METAL, TILE, OR CONCRETE), WHERE THE OCCUPANT CAN WALK NO MORE THAN 33 FT TO A LOCATION IN THAT ROOM THAT ACHIEVES THE MINIMUM CIS. THIS AREA MUST BE READILY ACCESSIBLE, WITHOUT REQUIRING THE OCCUPANT TO WALK THROUGH A SECURED DOOR/AREA OR EXIT THE BUILDING.
   C. A LESSER CIS IS PERMITTED IN NORMALLY UNOCCUPIED ROOM OF THE BUILDING, WHERE THE OCCUPANT CAN WALK NO MORE THAN 50 FT TO A LOCATION IN THAT ROOM THAT ACHIEVES THE MINIMUM CIS. THIS AREA MUST BE READILY ACCESSIBLE, WITHOUT REQUIRING THE OCCUPANT TO WALK THROUGH A SECURED DOOR/AREA OR EXIT THE BUILDING. NORMALLY UNOCCUPIED ROOMS ARE CONSIDERED TO BE STORAGE ROOMS < 100 SF, MECHANICAL / ELECTRICAL ROOMS, COMMUNICATION CLOSETS, AND FIRE PROTECTION ROOMS.
5. STROBE SPACING FOR THE FIRE ALARM/MASS NOTIFICATION SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 72.

GENERAL FIRE ALARM NOTES:

1. PROVIDE MODIFICATIONS TO THE EXISTING FIRE ALARM/MASS NOTIFICATION SYSTEM AS INDICATED IN THESE DRAWINGS. THE EXISTING FA/MNS DEVICES ARE FED BY A TRANSPONDER PANEL LOCATED IN ROOM W271. THE SYSTEM FACU/ACU IS A SIMPLEX 4100ES LOCATED IN ROOM W147C.
2. COORDINATE ALL REQUIRED SYSTEMS TO THE SATISFACTION OF THE ENGINEER AND AUTHORITY HAVING JURISDICTION. CORRECT ANY DEFICIENCIES, INCONSISTENCIES, OR POORLY COORDINATED INSTALLATIONS AT NO ADDITIONAL COST.
3. THE FIRE ALARM DRAWINGS ARE SCHEMATIC IN NATURE AND SHOW A MINIMAL QUANTITY OF DEVICES. CONTRACTOR SHALL DETERMINE THE FINAL QUANTITY AND LOCATION OF ALL DEVICES IN ACCORDANCE WITH THE SPECIFICATIONS, CONTRACT DRAWINGS, AND MANUFACTURER'S WRITTEN RECOMMENDATIONS TO BE COMPLIANT WITH ALL APPLICABLE CODES AND STANDARDS. ADDITIONAL DEVICES SHALL BE PROVIDED FOR A FULLY FUNCTIONING FIRE ALARM SYSTEM AS REQUIRED BY NFPA 72 AND UFC 3-600-01.
4. ALL NEW CONDUITS SHALL BE CONCEALED IN WALLS, FLOOR SLABS OR CEILINGS UNLESS OTHERWISE INDICATED. CONDUIT SHALL NOT BE MOUNTED INSIDE SECURE WALLS UNLESS IT SERVES THE SECURE AREA. EXCEPTION: CONDUIT SHALL BE ALLOWED TO BE SURFACE MOUNTED ON WALLS AND CEILINGS IN UNFINISHED AREAS (E.G. MECHANICAL ROOM) AND WHEN NECESSARY TO PREVENT COMPROMISING SECURE WALLS. WHERE CONDUIT FEEDS DEVICES NOT MOUNTED DIRECTLY ON THE WALL OR CEILING, THE CONDUIT SHALL BE ROUTED AS A SINGLE PENDENT TYPE DROP TO EACH DEVICE.
5. ALL NEW EXPOSED FIRE ALARM CONDUITS AND JUNCTION BOXES IN UNFINISHED AREAS SHALL BE PRE-FINISHED RED FROM THE FACTORY. CONDUIT AND JUNCTION BOXES EXPOSED IN FINISHED AREAS SHALL BE FINISHED TO MATCH ADJACENT FINISHES.
6. CONDUIT SHALL BE SUPPORTED IN STRICT ACCORDANCE WITH THE NEC (E.G.10 FT INTERVALS AND 3 FT FROM TERMINATION). TENSION ONLY HANGERS ARE NOT PERMITTED (E.G. BATWINGS). TYPE OF CONDUIT UTILIZED SHALL BE IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS UNLESS OTHERWISE NOTED. FLEXIBLE CONDUIT IS ONLY PERMITTED FOR TERMINATION AT DEVICES MOUNTED ON PIPING OR SUBJECTED TO REMOVAL (E.G. FLOW SWITCHES, TAMPER SWITCHES, SPEAKERS AND STROBES MOUNTED IN REMOVABLE CEILINGS).
7. NAC AND IDC CONDUCTOR SIZE SHALL NOT BE LESS THAN 16 AWG, SLC CONDUCTOR SIZING SHALL NOT BE LESS THAN 18 AWG. ALL CONDUCTORS SHALL BE CONSISTENTLY COLOR COORDINATED THROUGH THE SYSTEM TO MATCH EXISTING IN RELATION TO DEVICES THEY FEED (E.G. SLC - BLACK/RED, STROBE - YELLOW/BLUE). ADDRESSABLE SLC CIRCUITS SHALL BE PROVIDED WITH SHIELDED CONDUCTORS. SHIELDING SHALL BE GROUNDED AT ONE END OF THE CIRCUIT. ALL CIRCUITS SHALL BE PROVIDED WITH LABELING AT POINT OF TERMINATION.
8. CONDUCTORS SHALL BE RUN FROM DEVICE TO DEVICE WITHOUT SPLICES. WIRE NUTS SHALL BE PROHIBITED. TERMINAL STRIPS SHALL BE UTILIZED WHERE CONDUCTORS CANNOT BE DIRECTLY TERMINATED AT THE DEVICE.
9. FIRE ALARM EQUIPMENT PANELS SHALL NOT BE USED AS RACEWAY FOR ROUTING POWER WIRING OR LOW VOLTAGE WIRING. ONLY WIRING TERMINATING WITHIN THE PANEL SHALL BE ROUTED INTO THE PANEL. POWER WIRING AND POWER LIMITED WIRING SHALL BE SEPARATED BY A MINIMUM OF TWO INCHES WITHIN THE EQUIPMENT PANELS.
10. MOUNTING DEVICES IN THE FACU/ACU, AMP, AND NAC BOOSTER PANELS WHICH ARE NOT UL LISTED AS PART OF THE PANEL IS PROHIBITED.
11. ALL POWER SUPPLIES TO FACU/ACU, AMP, AND NAC BOOSTER PANELS SHALL BE PROVIDED WITH SPD. SPD SHALL BE MOUNTED IN A SEPARATE ENCLOSURE.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
15102
CAMDEN M. KNOFF
NORTH DAKOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KNOFF	CHECKED BY: K. KNEPPER
DRAWN BY: M. MAFFEI	SUBMITTED BY: C. KNOFF
	SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
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FIRE ALARM GENERAL NOTES, LEGEND, AND ABBREVIATIONS

SHEET ID
FA001_5
SHEET 74 OF 112

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

A1 FIRE ALARM/MASS NOTIFICATION SECOND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

NOTES:

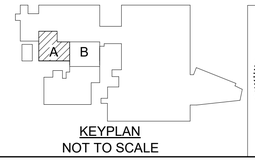
1. REFER TO FA001_5 FOR GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND SYMBOLS.
2. ALL NEW PENETRATIONS IN SECURE AREA WALLS SHALL BE AS INDICATED IN DETAIL C1 ON SHEET E-501_5. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF SECURE AREA PERIMETER WALLS.
3. EXISTING NOTIFICATION DEVICE LOCATIONS ARE SHOWN ONLY IN THE SCOPE OF WORK AREAS. ALL LOCATIONS AND DEVICE TYPES SHOWN ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED FOR ACCURACY. CONTRACTOR ASSUMES RESPONSIBILITY AND SHALL FIELD VERIFY THE TYPES OF DEVICES AND EXACT LOCATIONS.

KEYED NOTES:

1. DEMOLISH ALL EXISTING WALL AND CEILING MOUNTED NOTIFICATION APPLIANCES THOUGHOUT SCOPE OF WORK AREA.
2. DURING CONSTRUCTION AND UPON REMOVAL OF ACOUSTIC CEILING TILES, INSTALL TEMPORARY SPOT-TYPE HEAT DETECTION IN ALL SCOPE OF WORK AREAS, SPACED IN ACCORDANCE WITH NFPA 72. HEAT DETECTION SHALL BE INSTALLED BY A NICET LEVEL III TECHNICIAN AND BE CONNECTED TO THE EXISTING FACU/ACU SERVING THIS AREA. CIRCUITING TO HEAT DETECTORS IS NOT REQUIRED TO BE IN CONDUIT. REMOVE ALL TEMPORARY HEAT DETECTORS AT COMPLETION OF CONSTRUCTION AND PRIOR TO RECONSTRUCTION OF ACOUSTIC CEILING TILES.

FIRE ALARM HATCH LEGEND:

	NO WORK REQUIRED.
	PROVIDE AUDIBLE NOTIFICATION THROUGHOUT THE AREA TO ACHIEVE THE DESIGN CRITERIA.
	PROVIDE AUDIBLE AND VISUAL NOTIFICATION THROUGHOUT THE AREA TO ACHIEVE THE DESIGN CRITERIA.



KEYPLAN
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
15102
CAMDEN M. KNOFF
SOUTH DAKOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KNOFF
DRAWN BY: M. MAFFEI
CHECKED BY: K. KNEPPER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

BURNS MCDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

FIRE ALARM SECOND FLOOR PLAN - AREA A

SHEET ID
FA101_5
SHEET 75 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

A2 FIRE ALARM/MASS NOTIFICATION SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'
SCALE IN FEET

NOTES:

1. REFER TO FA001_5 FOR GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND SYMBOLS.
2. ALL NEW PENETRATIONS IN SECURE AREA WALLS SHALL BE AS INDICATED IN DETAIL C1 ON SHEET E-501_5. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF SECURE AREA PERIMETER WALLS.
3. EXISTING NOTIFICATION DEVICE LOCATIONS ARE SHOWN ONLY IN THE SCOPE OF WORK AREAS. ALL LOCATIONS AND DEVICE TYPES SHOWN ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED FOR ACCURACY. CONTRACTOR ASSUMES RESPONSIBILITY AND SHALL FIELD VERIFY THE TYPES OF DEVICES AND EXACT LOCATIONS.

KEYED NOTES:

1. DURING CONSTRUCTION AND UPON REMOVAL OF ACOUSTIC CEILING TILES, INSTALL TEMPORARY SPOT-TYPE HEAT DETECTION IN ALL SCOPE OF WORK AREAS, SPACED IN ACCORDANCE WITH NFPA 72. HEAT DETECTION SHALL BE INSTALLED BY A NICET LEVEL III TECHNICIAN AND BE CONNECTED TO THE EXISTING FACU/ACU SERVING THIS AREA. CIRCUITING TO HEAT DETECTORS IS NOT REQUIRED TO BE IN CONDUIT. REMOVE ALL TEMPORARY HEAT DETECTORS AT COMPLETION OF CONSTRUCTION AND PRIOR TO RECONSTRUCTION OF ACOUSTIC CEILING TILES.
2. PROVIDE AN ADDRESSABLE OUTPUT MODULE FOR DIRECT SHUTDOWN OF AHU-5. COORDINATE EXACT LOCATIONS AND CONNECTION TO AHU-5 WITH MECHANICAL CONTRACTOR.
3. DEMOLISH ALL EXISTING WALL AND CEILING MOUNTED NOTIFICATION APPLIANCES THOUGHOUT SCOPE OF WORK AREA.

FIRE ALARM HATCH LEGEND:

	NO WORK REQUIRED.
	PROVIDE AUDIBLE NOTIFICATION THROUGHOUT THE AREA TO ACHIEVE THE DESIGN CRITERIA.
	PROVIDE AUDIBLE AND VISUAL NOTIFICATION THROUGHOUT THE AREA TO ACHIEVE THE DESIGN CRITERIA.

KEYPLAN
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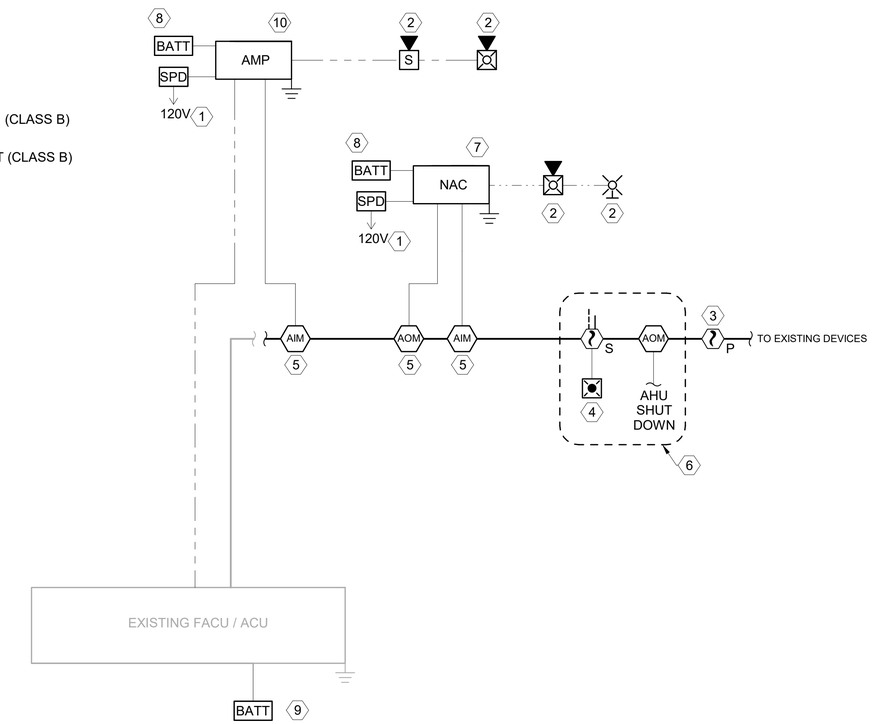
FIRE ALARM SECOND FLOOR PLAN - AREA B

SHEET ID
FA102_5
SHEET 76 OF 112

CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001
CUI

CIRCUIT LEGEND

- SIGNALING LINE CIRCUIT (CLASS B)
- INITIATING DEVICE CIRCUITS
- VISIBLE NOTIFICATION APPLIANCE CIRCUIT (CLASS B)
- AUDIBLE NOTIFICATION APPLIANCE CIRCUIT (CLASS B)



FIRE ALARM CONTROL UNIT / AUTONOMOUS CONTROL UNIT (FACU / ACU) FUNCTIONAL MATRIX

	ANNUNCIATION AT LOCAL PANEL			NOTIFICATION					AUXILIARY FUNCTION
ALARM CONDITIONS	AUDIO-VISUAL FIRE ALARM INDICATION BY DEVICE	AUDIO-VISUAL TROUBLE INDICATION BY DEVICE	AUDIO-VISUAL SUPERVISORY INDICATION BY DEVICE	SMOKE DETECTION FIRE ALARM SIGNAL TO FIRE DEPARTMENT	HEAT DETECTION FIRE ALARM SIGNAL TO FIRE DEPARTMENT	COMMON TROUBLE SIGNAL TO FIRE DEPARTMENT	COMMON SUPERVISORY SIGNAL TO FIRE DEPARTMENT	FIRE ALARM AUDIO / VISUAL ANNOUNCEMENT	SHUT-DOWN ASSOCIATED AIR HANDLING EQUIPMENT
SMOKE DETECTOR OVER FACU/ACU, AMPS AND NAC PANELS	X			X				X	
TEMPORARY HEAT DETECTOR	X				X				
TROUBLE CONDITIONS									
AC POWER FAILURE		X				X			
LOW BATTERY		X				X			
OPEN CIRCUIT FAULT		X				X			
GROUND FAULT		X				X			
NOTIFICATION APPLIANCE CIRCUIT SHORT		X				X			
SUPERVISORY CONDITIONS									
IN-DUCT SMOKE DETECTORS			X				X		X

FIRE ALARM MATRIX GENERAL NOTES:

1. THE FUNCTIONALITY OF THE MATRIX ON THIS SHEET SHALL MODIFY THE EXISTING FACU/ACU PROGRAMMING. ANY EXISTING PROGRAMING NOT MODIFIED BY THIS MATRIX SHALL REMAIN.

ALARM RISER GENERAL NOTES:

1. REFER TO SHEET FA001_5 FOR GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS, AND SYMBOLS.
2. THE FIRE ALARM RISER SHOWS THE INTENT OF THE FIRE ALARM INFRASTRUCTURE. NOT ALL DEVICES ARE SHOWN. PROVIDE THE QUANTITY OF DEVICES AS REQUIRED TO COMPLY WITH NFPA 72, UFC 3-600-01, AND CONTRACT DOCUMENTS.
3. THE CIRCUITRY CLASSIFICATIONS INDICATED ON THIS DRAWING HAVE NOT BEEN VERIFIED. ASSUME ALL RESPONSIBILITY AND VERIFY THE EXISTING CIRCUITRY CLASSIFICATION. WHERE AN EXISTING CIRCUIT IS EXPANDED, THE EXISTING CIRCUITRY CLASSIFICATION SHALL REMAIN.
4. WHERE AN ADDRESSABLE INPUT MODULE IS UTILIZED, PROVIDE AN END-OF-LINE RESISTOR TO MONITOR THE INTEGRITY OF THE CLASS B CIRCUIT TO THE CONVENTIONAL DEVICE.

KEYED NOTES:

1. CIRCUIT BREAKER SHALL BE COLORED RED, LOCKABLE, AND LABELED FIRE ALARM.
2. QUANTITY AND LOCATION BY CONTRACTOR'S DESIGN TO MEET DESIGN CRITERIA.
3. PROVIDE SMOKE DETECTION ABOVE NEW AMP AND NAC PANELS (IF PROVIDED).
4. PROVIDE INDICATING LIGHT AND SIGN NEAR HVAC UNIT MODULE ON SMOKE DETECTION WHERE INDICATING LIGHT ON THE SMOKE DETECTOR IS NOT VISIBLE FROM FLOOR.
5. PROVIDE ADDRESSABLE INPUT AND OUTPUT MODULE(S) AS REQUIRED TO ACHIEVE THE FUNCTIONALITY INDICATED IN THE FIRE ALARM MATRIX.
6. PROVIDE SUPPLY DUCT SMOKE DETECTORS AND DIRECT SHUT DOWN FOR THE FOLLOWING UNITS: AHU-5. REFERENCE MECHANICAL DRAWINGS FOR EXACT LOCATION.
7. PROVIDE ADDITIONAL BOOSTER PANELS AS REQUIRED. LOCATE NEW PANEL IN THE SAME LOCATION AS THE EXISTING.
8. WHERE EXISTING NAC OR SPEAKER CIRCUIT IS EXPANDED, PROVIDE NEW BATTERIES TO PROVIDE INCREASED CAPACITY FOR THE REVISED NOTIFICATION CIRCUITRY.
9. PROVIDE NEW BATTERIES TO PROVIDE INCREASED BATTERY CAPACITY FOR THE REVISED FIRE ALARM SYSTEM.
10. WHERE THE EXISTING AMP PANEL HAS CAPABILITIES FOR EXPANSION, IT MAY BE USED AS LONG AS EXPANDING THE EXISTING PANEL DOES NOT EXCEED THE DESIGN CRITERIA. IF THE EXISTING AMP PANEL CANNOT BE EXPANDED, PROVIDE A NEW PANEL FOR THE SYSTEM MODIFICATIONS.

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WRIGHT-PATTERSON AFB, OHIO

FIRE ALARM RISER DIAGRAM AND MATRIX

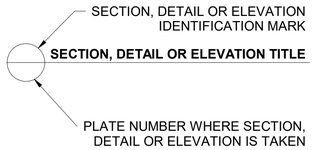
SHEET ID
FA601_5
SHEET 77 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

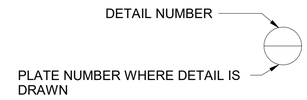
FIRE SUPPRESSION ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
BMCD	BURNS AND MCDONNELL
FP	FIRE PROTECTION
NC	NORMALLY CLOSED
(S)	ELECTRICALLY SUPERVISED
SQ FT	SQUARE FOOT

DETAIL/SECTION TITLE



DETAIL CALLOUT SYMBOL



FIRE PROTECTION SPRINKLER SYSTEM DESIGN CRITERIA

MARK	HAZARD CLASSIFICATION	SYSTEM TYPE	DENSITY GPM/SF	REMOTE AREA SQ FT	MAXIMUM AREA PER HEAD SQ FT	HOSE DEMAND GPM	SPRINKLER CHARACTERISTICS			
							TEMP RATING	TYPE	K-FACTOR	FINISH
NO HATCH	NOT IN SCOPE	-	-	-	-	-	-	-	-	-
	LIGHT HAZARD	WET	0.10	1500	225	250	MATCH EXISTING	MATCH EXISTING	5.6	MATCH EXISTING
	ORDINARY HAZARD	WET	0.20	2500	130	250	MATCH EXISTING	MATCH EXISTING	8.0	MATCH EXISTING

FIRE SUPPRESSION GENERAL NOTES

1. PROVIDE ALL NECESSARY COMPONENTS FOR REVISIONS TO THE EXISTING WET-PIPE SPRINKLER SYSTEMS AS INDICATED IN THESE DRAWINGS.
2. ALL SYSTEMS WHICH REQUIRE COORDINATION BETWEEN TRADES SHALL BE TO THE SATISFACTION OF THE BMCD ENGINEER AND AUTHORITY HAVING JURISDICTION. CORRECT ANY DEFICIENCIES, INCONSISTENCIES, OR POORLY COORDINATED INSTALLATIONS AT NO ADDITIONAL COST.
3. DETERMINE FINAL DESIGN REQUIREMENTS (DEVICE QUANTITY, SIZE, AND LOCATIONS). DRAWINGS INDICATE MINIMUM REQUIREMENTS; VERIFY AND COORDINATE FINAL DESIGN REQUIREMENTS WITH THESE CONSTRUCTION DOCUMENTS, SPECIFICATIONS, REFERENCE DOCUMENTS, APPLICABLE CODES, AND FACILITY USER REQUIREMENTS.
4. PERFORM A HYDRANT FLOW TEST IN ACCORDANCE WITH NFPA 291 AND BASE ALL HYDRAULIC CALCULATIONS ON THIS FLOW TEST. CONTACT AND COORDINATE WITH BASE FIRE MARSHALL PRIOR TO PROCEEDING WITH FLOW TEST.
5. PAINT ALL EXPOSED FIRE SUPPRESSION PIPING RED IN UNFINISHED AREAS. PIPING EXPOSED IN FINISHED SPACES SHALL BE PAINTED TO MATCH THE SURROUNDINGS.
6. REFER TO SHEET FX100_5 FOR EXISTING APPROXIMATE PIPE ROUTING. THE INFORMATION ON SHEET FX100_5 HAS NOT BEEN VERIFIED FOR ACCURACY. VERIFY ALL EXISTING CONDITIONS AND ASSUME ALL RESPONSIBILITY FOR ANY ASSUMPTIONS MADE BY OR FROM THESE SHEETS.

REGISTERED PROFESSIONAL ENGINEER
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CAMDEN M. KNOFF
SOUTH DAKOTA
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LOUISVILLE DISTRICT

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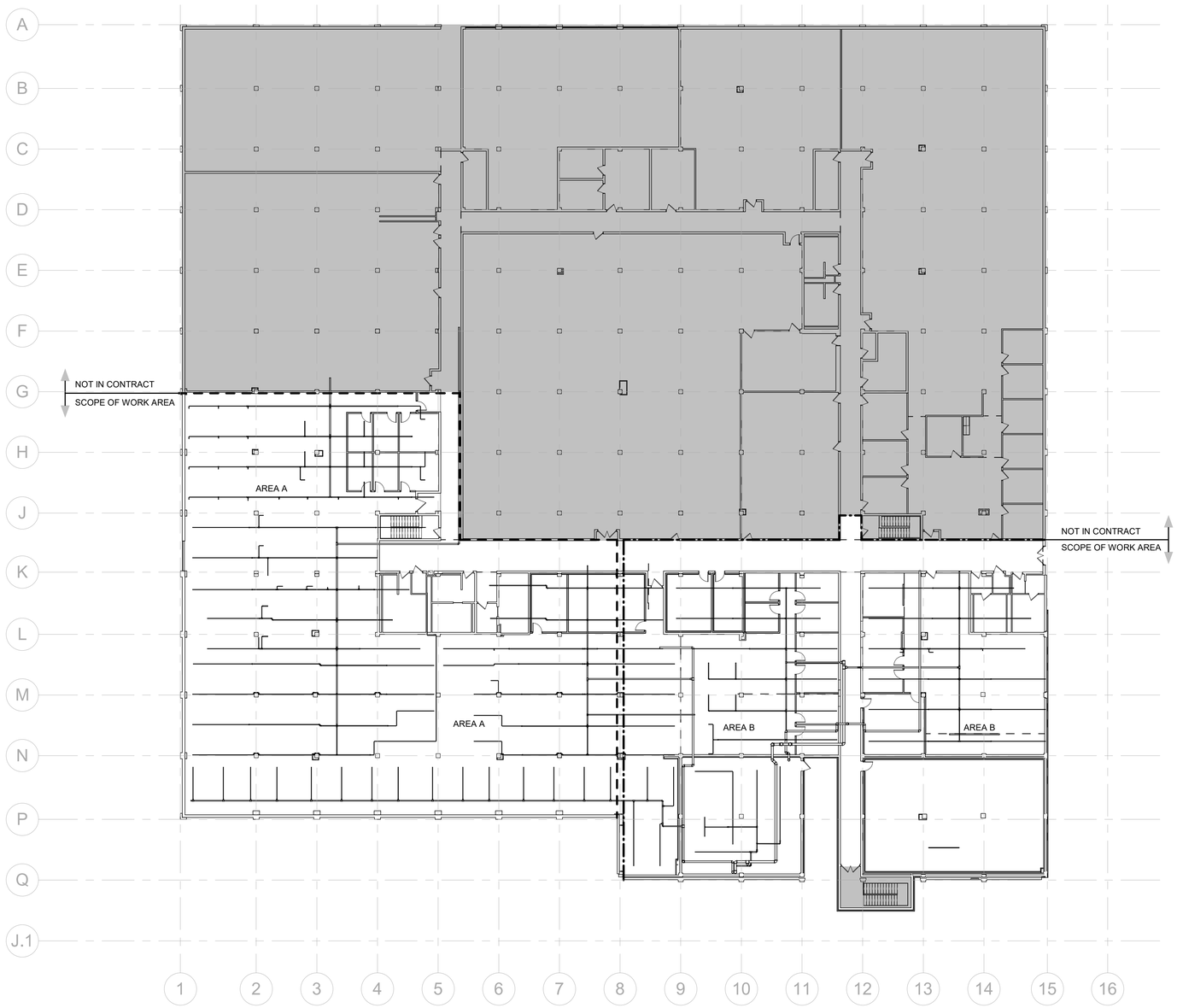
FIRE SUPPRESSION NOTES, LEGEND, AND ABBREVIATIONS

SHEET ID
FX001_5
SHEET 78 OF 112

CONTROLLED UNCLASSIFIED INFORMATION (CUI)



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

NOTES:

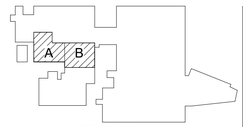
1. REFER TO FX001_5 FOR GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND SYMBOLS.

AREA SCHEDULE

NOT IN SCOPE

AREA A

AREA B



KEYPLAN
NOT TO SCALE

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CAMDEN M. KNOFF
NORTH DAKOTA
02/24/2023

US ARMY CORPS OF ENGINEERS
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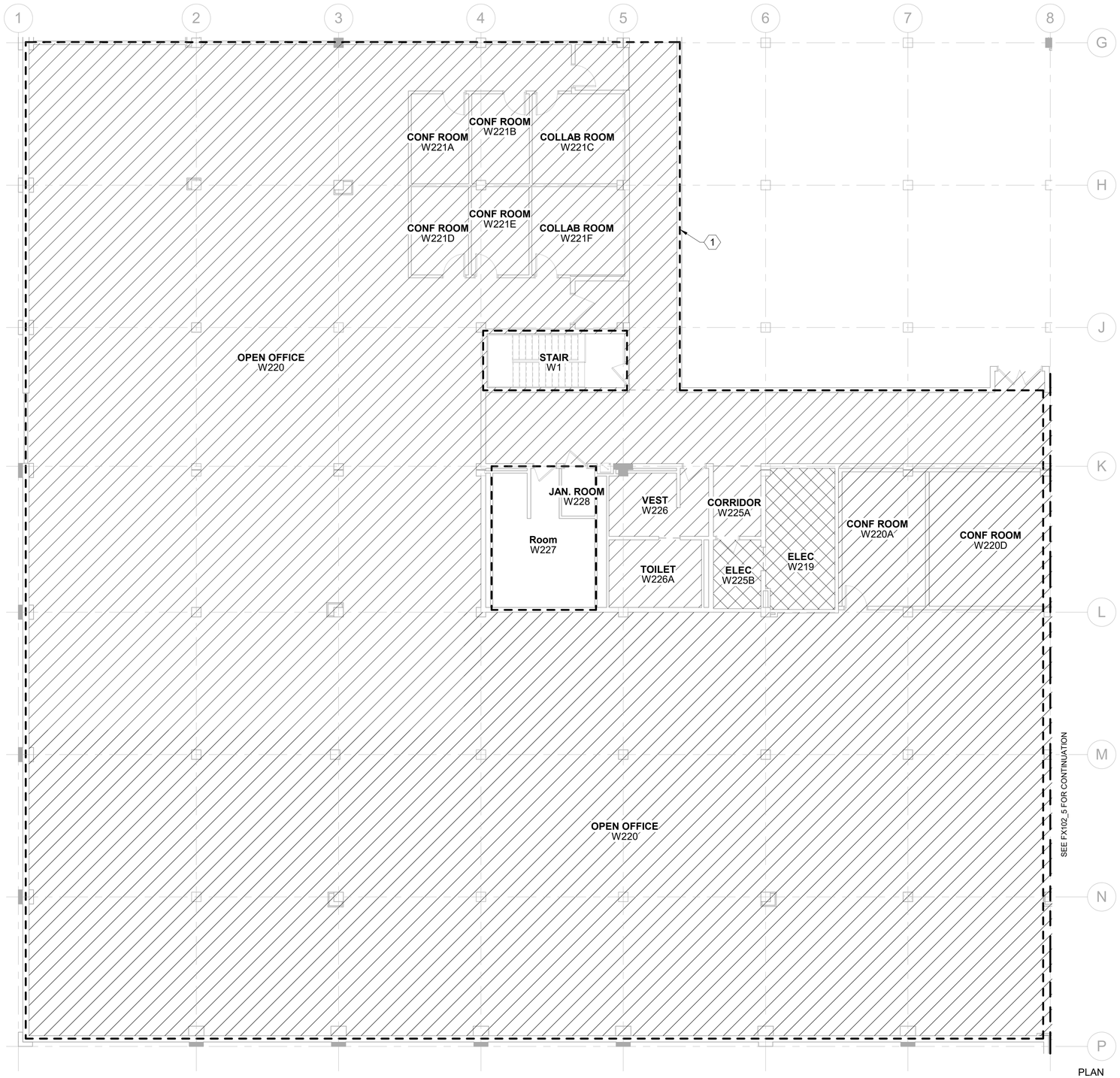
FIRE SUPPRESSION OVERALL FLOOR PLAN

SHEET ID
FX100_5
SHEET 79 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 FIRE SUPPRESSION SECOND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

NOTES:

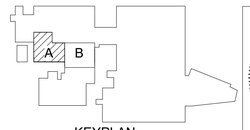
1. REFER TO FX001_5 FOR GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND SYMBOLS.
2. NO NEW PIPING PENETRATIONS SHALL BE PROVIDED IN SECURE AREA WALLS.
3. COORDINATE SPRINKLER PIPE ROUTING WITH NEW AND EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT.

KEYED NOTES:

(1) MODIFY EXISTING SPRINKLER SYSTEM AND PROVIDE NEW SPRINKLERS AS NECESSARY TO ACCOMMODATE NEW CEILING AND WALL LAYOUTS IN ACCORDANCE WITH NFPA 13 REQUIREMENTS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CHANGES IN CEILING LAYOUT.

HAZARD SCHEDULE

MARK	HAZARD CLASSIFICATION
NO HATCH	NO WORK REQUIRED
	LIGHT HAZARD
	ORDINARY HAZARD



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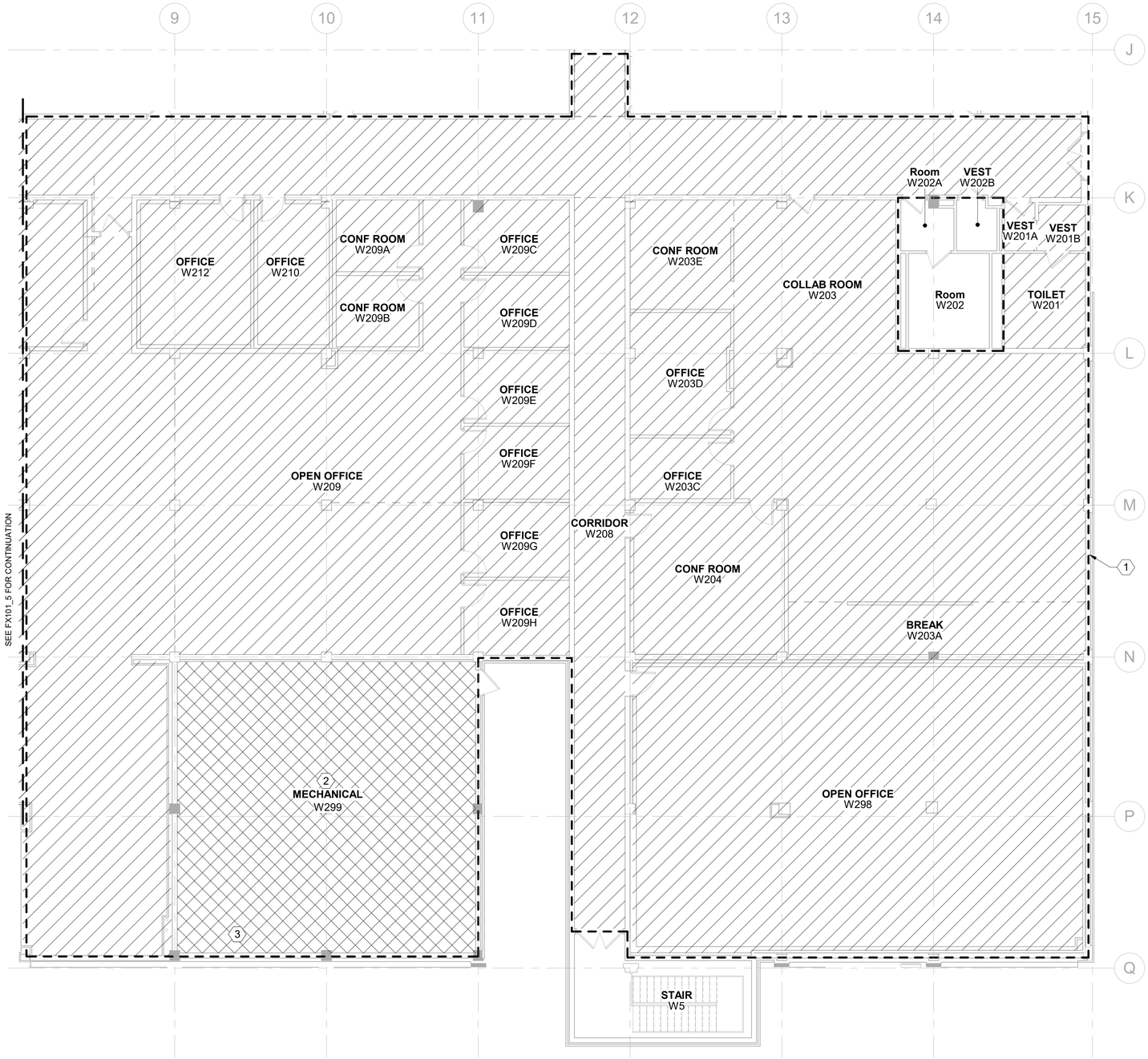
FIRE SUPPRESSION SECOND FLOOR PLAN - AREA A

SHEET ID
FX101_5
SHEET 80 OF 112

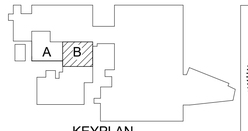
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A2 FIRE SUPPRESSION SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
SCALE IN FEET

PLAN NORTH



KEYPLAN
NOT TO SCALE

NOTES:

1. REFER TO FX001_5 FOR GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND SYMBOLS.
2. NO NEW PIPING PENETRATIONS SHALL BE PROVIDED IN SECURE AREA WALLS.
3. COORDINATE SPRINKLER PIPE ROUTING WITH NEW AND EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT.

KEYED NOTES:

1. MODIFY EXISTING SPRINKLER SYSTEM AND PROVIDE NEW SPRINKLERS AS NECESSARY TO ACCOMMODATE NEW CEILING AND WALL LAYOUTS IN ACCORDANCE WITH NFPA 13 REQUIREMENTS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CHANGES IN CEILING LAYOUT.
2. IN ROOMS WITH EXPOSED CEILINGS, MODIFY SPRINKLER COVERAGE AND PIPING AS REQUIRED TO ACCOUNT FOR NEW MECHANICAL AND ELECTRICAL EQUIPMENT. PROVIDE SPRINKLERS UNDER LARGE OBSTRUCTIONS AS REQUIRED BY NFPA 13.
3. ELEVATE ANY EXISTING 6 INCH SPRINKLER PIPING SPANNING IN FRONT OF THE INTAKE LOUVER TO A HEIGHT ABOVE THE LOUVER AS REQUIRED TO AVOID BLOCKING THE LOUVER OPENING.

HAZARD SCHEDULE

MARK	HAZARD CLASSIFICATION
NO HATCH	NO WORK REQUIRED
	LIGHT HAZARD
	ORDINARY HAZARD

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FIRE SUPPRESSION SECOND FLOOR PLAN - AREA B

SHEET ID
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SHEET 81 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

LEGEND NOTES

1. SYMBOLS ORIENTATION DOES NOT IMPLY DEVICE OR EQUIPMENT ORIENTATION UNLESS NOTED AS SUCH. SEE REFLECTED CEILING PLANS FOR LIGHT FIXTURE POSITIONS AND ORIENTATIONS.
2. SYMBOL SIZE DOES NOT IMPLY EQUIPMENT SIZE, UON.
3. MOUNTING HEIGHT INDICATED IN LEGEND AND ON THE DRAWINGS MUST BE THE DISTANCE MEASURED FROM THE CENTER OF THE DEVICE TO THE FINISHED FLOOR.
4. NOT ALL SYMBOLS ON THIS SHEET ARE USED AS PART OF THIS PROJECT.

SYMBOLS - GROUNDING/LIGHTNING PROTECTION

- GROUND ROD
- GROUND TEST WELL
- LIGHTNING PROTECTION AIR TERMINAL
- STATIC GROUND
- GROUND BAR
  - MGB = MAIN GROUND BUSBAR
  - PBB, SBB = TELECOMM BONDING BUSBARS
  - MPG = LAB MULTIPOINT GROUND (AND STATIC)
- BOLTED GROUND CONNECTION
- EXOTHERMIC WELDED CONNECTION

SYMBOLS - MODIFIERS

AC	ABOVE COUNTER MOUNTING
C	RECESSED IN CEILING
CB	COFFEE BREWER
CO	COPIER
DW	DISHWASHER
EP OR EXP	EXPLOSION PROOF
F	RECESSED IN FLOOR
GD	GARBAGE DISPOSAL
GFI	GROUND FAULT CIRCUIT INTERRUPTER
IG	ISOLATED GROUND
MW	MICROWAVE
PR	PRINTER
PROJ	PROJECTOR
REF	REFRIGERATOR
SB	SMART BOARD
SH	SHREDDER
SP	SINGLE POINT CONNECTION
SW: XX	CONTROLLED BY SWITCH LABELED "XX"
TV	TELEVISION OR DISPLAY MONITOR
VM	VENDING MACHINE
WC	WALL-MOUNTED CLOCK
WF	WATER COOLER
WP	WEATHERPROOF, WITH GFI
WPIU	WEATHERPROOF IN USE, WITH GFI
XX" AFF	MOUNT XX" AFF
XX" AFP	MOUNT XX" AFP

SYMBOLS - POWER

WIRING RACEWAY TYPES

- LADDER TYPE CABLE TRAY
- EXPOSED CONDUIT - SINGLE LINE
- CONCEALED CONDUIT - SINGLE LINE
- CONDUIT ROUTED VERTICALLY

RECEPTACLES

- 120V, NEMA 5-20R, MOUNT AT 18" UON

RECESSED SIMPLEX	SURFACE SIMPLEX
RECESSED DUPLEX	SURFACE DUPLEX
RECESSED QUAD	SURFACE QUAD
CEILING RECESSED DUPLEX	FLOORBOX RECESSED DUPLEX
FLOORBOX RECESSED	SPECIAL RECEPTACLE (REFER TO DRAWINGS FOR NEMA CONFIGURATION)
CORD REEL	
POWER POLE (NEW) PP	POWER POLE (EXISTING) PP(E)TO BE REUSED WHERE NOTED

RECEPTACLES WITH COMM OUTLETS

- SEE COMMUNICATIONS OUTLET DETAILS FOR POWER AND COMMUNICATIONS REQUIREMENTS

- FB1 — RECESSED FLOOR BOX W. DUPLEX 5-20R POWER/SPARE GANG FOR USER AV CABLES.
- FB2 — RECESSED FLOOR BOX W. DUPLEX 5-20R POWER, SPARE GANG FOR FUTURE POWER (OR COMM), AND SPECIAL RECEPTACLE (IF NOTED)
- SURFACE POWER/COMM, REFER TO A1/EP501 FOR INSTALLATION REQUIREMENTS
- RECESSED POWER/COMM, REFER TO A1/EP501 FOR INSTALLATION REQUIREMENTS
- SF# — POWER/COMMUNICATION JUNCTION BOX CONNECTION. REFER TO DETAIL B1 ON SHEET EP502 AND A1 ON SHEET EP503.
  - NUMBER OF WORKSTATION ON CIRCUIT

POWER DEVICES GENERAL INFORMATION

- LP-X / GFI — PANELBOARD - CIRCUIT; SYMBOL MODIFIER(S); ANY RECEPTACLE LISTED ABOVE
- EF-X / J / LP-X / GFI — EQUIPMENT IDENTIFICATION; PANELBOARD - CIRCUIT; SYMBOL MODIFIER(S); ANY JUNCTION BOX LISTED ABOVE
- EF-X / HL-X / GFI — EQUIPMENT IDENTIFICATION; PANELBOARD - CIRCUIT; SYMBOL MODIFIER(S); MECHANICAL EQUIPMENT CONNECTION
- REMOTE DISCONNECT SWITCH

JUNCTION BOXES

- COORDINATE JUNCTION BOX INSTALLATION WITH NEARBY EQUIPMENT.
- (J) RECESSED IN WALL, UON
- [J] RECESSED IN FLOOR, UON
- J SURFACE ON WALL, UON

EQUIPMENT CONNECTIONS

- (M) MECHANICAL EQUIPMENT CONNECTION. PROVIDE DISCONNECT / STARTER / VFD AS INDICATED
- (E) ELECTRICAL CONNECTION

EQUIPMENT

- LP11 — EQUIPMENT IDENTIFIER
- ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, TRANSFORMERS, SWITCHBOARDS AND PANELBOARDS ARE DRAWN TO SCALE IN THE PLANS AND ARE CALLED OUT WITH A UNIQUE IDENTIFIER.

SWITCHES

- DISCONNECT SWITCH
  - "SP" MODIFIER = SINGLE POINT / DISCONNECT PART OF EQUIPMENT
- COMBINATION STARTER/DISCONNECT SWITCH
- M — MOTOR-RATED SWITCH

SYMBOLS - COMMUNICATIONS

- WICS — EXISTING WICS BOX MOUNTED ABOVE THE CEILING. FIBER TYPE AVAILABLE; Y - YELLOW FIBER; R - RED FIBER; G - GREEN FIBER
- CF: COMMUNICATIONS POLE (NEW)
- CP-E: COMBINATION POWER/COMMUNICATIONS POLE (EXISTING) TO BE RE-USED WHERE NOTED.
- CF-E: COMMUNICATIONS POLE (EXISTING) TO BE RE-USED WHERE NOTED.

SYMBOLS - LIGHTING

LIGHTING FIXTURES

- REFER TO FIXTURE SCHEDULE FOR FIXTURE TYPE INFORMATION
- LINEAR FIXTURE
- EMERGENCY FIXTURE WITH LIFE SAFETY BRANCH CIRCUITING, UON (NOTE: ALL FIXTURES NOTED ON PLAN WITH HALF-SHADE INDICATE EMERGENCY)
- DOWNLIGHT OR SPOTLIGHT, UON
- EXIT SIGNS, CEILING: ARROW INDICATES EGRESS DIRECTION
- EXIT SIGNS, WALL: ARROW INDICATES EGRESS DIRECTION

FIXTURE GENERAL INFORMATION

F1E / LP-1 / 10' - 0" / a
- FIXTURE TYPE
- 'E' DENOTES EMERGENCY FIXTURE
- PANELBOARD - CIRCUIT NUMBER
- FIXTURE MOUNTING HEIGHT (IF APPLICABLE)
- SWITCH 'LEG'
  - THE SWITCH WITH SAME LETTER OPERATES THIS FIXTURE

CONTROL DEVICES GENERAL INFORMATION

- (OS) OCCUPANCY SENSOR
- (PS) DAYLIGHT SENSOR

LINE VOLTAGE TOGGLE SWITCH — x

DEMARCATION
- EP: EXPLOSION PROOF
- a: DENOTES SWITCH "LEG". SWITCH OPERATES FIXTURES IN SPACE WITH SAME LETTER.
- 3: 3-WAY SWITCH
- 4: 4-WAY SWITCH

NOTE: NO DEMARCATION OR SWITCH 'LEG' INDICATES THAT THE SWITCH CONTROLS ALL OF THE FIXTURES (EXCEPT EXIT SIGNAGE) WITHIN SPACE. ADDITIONAL DEMARCATIONS SEPARATED BY A COMMA "," INDICATE ADDITIONAL SWITCHES WITHIN A COMMON SWITCH BACKBOX.

LOW VOLTAGE SWITCH — x

DEMARCATION
- EP: EXPLOSION PROOF
- #: # OF PUSH BUTTONS ON LOW VOLTAGE SWITCH

NOTE: SWITCH CONTROLS ALL LIGHT FIXTURES AND SWITCH LEGS (EXCEPT EXIT SIGNAGE) WITHIN THE SAME ROOM, UON. REFER TO LOW VOLTAGE SWITCH CONTROL SCHEMES FOR SAMPLE SWITCH CONTROL PROGRAMMING.

SYMBOLS - ONE-LINE

- CONNECTION
- CONTINUATION
- SEPARABLE CONNECTOR OR CONNECTION FOR DRAWOUT ASSEMBLIES
- FUSED DISCONNECT SWITCH
- TRANSFORMER
- GROUND
- DELTA - WYE TRANSFORMER CONNECTION
- DM — DIGITAL METER
- SPD — SURGE PROTECTIVE DEVICE
- VFD — VARIABLE FREQUENCY DRIVE
- ST — SHUNT TRIP
- KWH — KILOWATT HOUR METER
- VS — VOLTMETER SELECTOR SWITCH
- AS — AMMETER SELECTOR SWITCH
- (V) — VOLTMETER
- (A) — AMMETER
- CIRCUIT BREAKER
- SWITCH
- DISCONNECT SWITCH
- SPECIAL RECEPTACLE
- M — PANELBOARD (PANELBOARD NAMED 'M')
- LIGHTNING ARRESTOR
- AUTOMATIC TRANSFER SWITCH
- MFM — MULTI-FUNCTION DIGITAL METER
- G / N — NEUTRAL CONNECTION TO GROUND
- (G) — DIESEL ENGINE GENERATOR
- K — KIRK-KEY INTERLOCK
- (R) — RELAY
- (C) — CONTACTOR
- PHOTOCELL
- (20) — ELECTRICAL MOTOR, 20 - MOTOR HORSEPOWER

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL.
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

ELECTRICAL SYMBOLS LEGEND - 1 OF 2

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

SHEET ID
E-001_5
SHEET 82 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

ABBREVIATIONS

A	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AV	AUDIO/VIDEO
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BBC	BONDING BACKBONE CONDUCTOR
BICSI	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
C	CONDUIT
CAT	CATEGORY
CATV	CABLE TELEVISION
CBP	COPPER BACKBONE PATCH PANEL
CCTV	CLOSED CIRCUIT TELEVISION
CH	CHILLED WATER
CL	CENTERLINE
COMM	COMMUNICATIONS
COR	CONTRACTING OFFICER REPRESENTATIVE
CPP	COPPER HORIZONTAL PATCH PANEL
CT	CABLE TRAY
CU	COPPER
DBL. N.	DOUBLE NEUTRAL
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
EIA	ELECTRONICS INDUSTRIES ASSOCIATIONS
EM/NL	EMERGENCY / NIGHT LIGHT
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
ETR	EXISTING TO REMAIN
EX OR EXP	EXPLOSION PROOF
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FO	FIBER OPTIC
FPD	FLAT PANEL DISPLAY
FPP	FIBER OPTIC PATCH PANEL
FT	FEET OR FOOT
GFCI	GOVERNMENT FURNISHED, CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED AND INSTALLED
GFI	GROUND FAULT INTERRUPTER
G OR GND	GROUND
GFE	GOVERNMENT FURNISHED EQUIPMENT
GFR	GROUND FAULT RELAY
GFP	GROUND FAULT PROTECTION
GRS	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HZ	HERTZ
IDS	INTRUSION DETECTION SYSTEM
IG	ISOLATED GROUND
IPDS	INTEGRATED POWER DISTRIBUTION SYSTEM
K	KILO
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KWH	KILOWATT HOURS
LC	LIGHTING CONTACTOR
LP	LIGHTNING PROTECTION
LPS	LIGHTNING PROTECTION SYSTEM
LSI	LONG TIME, SHORT TIME, INSTANTANEOUS
LW	LOCKABLE WIREWAY
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MH	MAINTENANCE HOLE
MLO	MAIN LUGS ONLY
MM	MULTIMODE
MN/PA	MASS NOTIFICATION/PUBLIC ADDRESS
MTD	MOUNTED
N	NEUTRAL CONDUCTOR
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NIC	NOT IN CONTRACT
NIPR	NON-CLASSIFIED INTERNET PROTOCOL ROUTING
NL	NIGHT LIGHT
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
PBB	PRIMARY BONDING BUSBAR
PDU	POWER DISTRIBUTION UNIT
PIV	POST INDICATOR VALVE
PR	PAIR
PVC	POLYVINYL CHLORIDE
RBB	RACK BONDING BUSBAR
RECEPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
RMC	RIGID METAL CONDUIT
RTU	ROOFTOP UNIT
SBB	SECONDARY BONDING BUSBAR
SBC	SECONDARY BONDING CONDUCTOR
SCCR	SHORT CIRCUIT CURRENT RATING
STP	SHIELDED TWISTED PAIR
SIPR	SECRET INTERNET PROTOCOL ROUTING
SM	SINGLE MODE
SPD	SURGE PROTECTION DEVICE
SPECS	CONTRACT SPECIFICATIONS
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SRG	STATIC REFERENCE GRID
STR	STRAND
T	TRANSFORMER
TB	TELEPHONE BACKBOARD
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TDMM	TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TECH	TECHNICIAN
TR	TELECOMMUNICATIONS ROOM
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
TZC	TIME ZONE CLOCK
UL	UNDERWRITERS' LABORATORIES
UON	UNLESS OTHERWISE NOTED
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VA	VOLT AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE OR WATT
WICS	WALLMOUNT INTERCONNECT CENTER (CORNING)
WP	WEATHERPROOF
WPIU	WEATHERPROOF WHILE IN USE
XFMR	TRANSFORMER
Z	IMPEDANCE

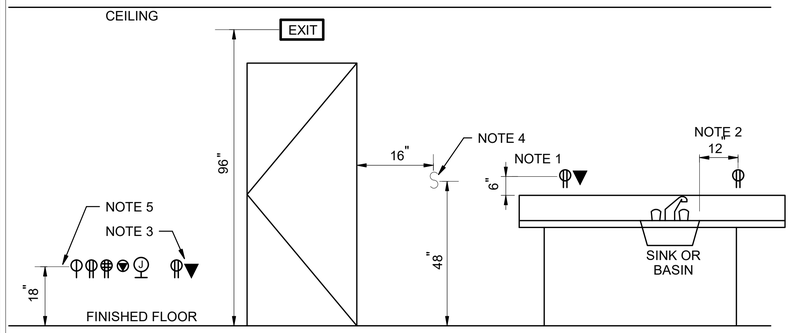
GENERAL NOTES

1. SYMBOL ORIENTATION DOES NOT IMPLY DEVICE OR EQUIPMENT ORIENTATION. UNLESS NOTED AS SUCH.
2. SYMBOL SIZE DOES NOT IMPLY EQUIPMENT SIZE, UON.
3. MOUNTING HEIGHT INDICATED IN LEGEND AND ON THE DRAWINGS MUST BE THE DISTANCE MEASURED FROM THE CENTER OF THE DEVICE TO THE FINISHED FLOOR.
4. NOT ALL SYMBOLS ARE USED.
5. ALL RECEPATACLES INDICATED WITH A "WP" SUBSCRIPT MUST BE GFI AND INSTALLED WITH A CAST, GASKETED, AND "WHILE IN USE COVER."
6. NEW SWITCHBOARDS AND PANEL BOARDS MUST BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARD IN ACCORDANCE WITH THE REQUIREMENTS OF NEC ARTICLE 110.16.
7. COORDINATE WITH MECHANICAL CONTRACTOR REGARDING ELECTRICAL REQUIREMENTS OF ACTUAL MECHANICAL EQUIPMENT PROVIDED.
8. ALL SYSTEMS THAT REQUIRE COORDINATION BETWEEN TRADES MUST BE TO THE SATISFACTION OF THE CONTRACTING OFFICER. ANY DEFICIENCIES, INCONSISTENCIES, OR POORLY COORDINATED INSTALLATIONS MUST BE CORRECTED BY THE CONTRACTOR.
9. ALL ELECTRICAL WORK MUST COMPLY WITH NEC (NFPA 70), NFPA 72, NFPA 101, AND DEPARTMENT OF DEFENSE UNIFIED FACILITIES CRITERIA (UFC) OR TECHNICAL LETTERS, IN ADDITION TO LOCAL CODES AND ORDINANCES.
10. PROVIDE A GREEN CONTINUOUS INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ALL ELECTRICAL, BRANCH AND FEEDER CIRCUITS.
11. EVERY MAJOR COMPONENT OF THE RACEWAY SYSTEMS EXCLUDING CONDUITS AND FITTINGS MUST BE MARKED WITH VOLTAGE, PANEL AND CIRCUIT NUMBER.
12. ALL NEW OUTLETS IN THE AREA UNDER CONTRACT MUST RECEIVE NEW AND VERIFIED LABELS.
13. REMOVE ALL EMPTY AND ABANDONED CONDUIT AND JUNCTION BOXES. PROPERLY SEAL OPENINGS LEFT IN WALLS DUE TO DEMOLITION WORK.
14. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.
15. ITEMS IN BOLD AND/OR DASHED ARE TO BE DEMOLISHED. ITEMS GRAYSCALE ARE EXISTING TO REMAIN.
16. UNLESS INDICATED AS EXISTING, ALL MATERIALS AND LABOR MUST BE CONSIDERED NEW.

EXISTING CONDITIONS NOTES

1. THE ELECTRICAL DEMOLITION SHEETS SHOW EXISTING CONDITIONS THAT HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS AND ORIGINAL DRAWINGS. ADDITIONAL COMPONENTS AND CONDITIONS THAT ARE NOT SHOWN ON THE DRAWINGS MAY EXIST AND MAY REQUIRE ADJUSTMENTS THAT ARE NOT NOTED ON THE DRAWINGS.
2. NOT ALL EXISTING UTILITES AND OR ELECTRICAL SYSTEMS ARE SHOWN ON PLANS. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
3. OBTAIN WRITTEN PERMISSION FROM THE CONTRACTING OFFICER PRIOR TO SHUTTING OFF SERVICES OR SYSTEMS WHICH MAY AFFECT OTHER AREAS BEYOND THE LIMITS OF THE DEMOLITION AREA. PROVIDE TEMPORART POWER AS REQUIRED.
4. ALL ELECTRICAL EQUIPMENT AND DEVICES TO BE DEMOLISHED: COMPLETELY REMOVE ALL CONDUCTORS AND CONDUIT BACK TO SOURCE. WHERE CONDUIT REMOVAL IS NOT POSSIBLE, CAP CONDUIT AND MAKE SAFE.
5. REMOVE, STORE, CLEAN, RE-INSTALL, RECONNECT AND MAKE OPERATIONAL COMPONENTS INDICATED FOR RELOCATION OR RE-USE.
6. RESTORE ALL INTERIOR/EXTERIOR WALLS, CEILINGS, FLOORS, AND CONCRETE WORK REQUIRING PATCHING, PLASTERING, PAINTING AND ANY OTHER REPAIRS DUE TO ELECTRICAL WORK TO RESTORE THE ORIGINAL FINISH AND APPEARANCE.
7. PROTECT EXISTING ELECTRICAL EQUIPMENT INDICATED TO REMAIN. IF DAMAGED OR DISTURBED IN THE COURSE OF THE WORK, REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL CAPACITY, QUALITY AND FUNCTIONALITY.
8. PROVIDE TEMPORARY POWER AS REQUIRED FOR ALL EXISTING TO REMAIN ELECTRICAL, MECHANICAL, AND CONTROLS EQUIPMENT AFFECTED BY SCHEDULED POWER OUTAGES. COORDINATE REQUIREMENTS WITH COR.
9. DEMOLISH ALL ABANDONED NETWORK CABLING. CONTRACTOR TO ASSUME A MINUMIM OF 300 NETWORK CABLES AT 150LF EACH. DEMOLISH AS INDICATED ON THE DRAWINGS.

TYPICAL DEVICE MOUNTING DETAIL AND NOTES



TYPICAL DEVICE MOUNTING HEIGHTS (UON):

REF	REFRIGERATOR, 48" AFF
ICE	ICE MACHINE, 48" AFF
CO	COPIER OR PLOTTER, 18" AFF
GD	GARBAGE DISPOSAL, 18" AFF (NOTE 6)
FPD	FLAT PANEL DISPLAY (NOTE 6)
TV	TELEVISION (NOTE 6)
SB	SMART BOARD (NOTE 6)
TZC	TIME ZONE CLOCK (NOTE 6)
WF	WATER COOLER (NOTE 6)
COF	COFFEE MAKER (NOTE 1, NOTE 6)
MIC	MICROWAVE (NOTE 1, NOTE 6)
AC	ABOVE COUNTER, SEE "DEVICE MOUNTING NOTES", (NOTE 1)
CRD	CREDENZA, 18" AFF

NOTES:

1. COORDINATE ABOVE COUNTER DEVICES AND RECEPTACLES WITH CASEWORK OR COUNTERS SUCH THAT THE DEVICES AND RECEPTACLES ARE LOCATED AT +42" AFF OR 6" ABOVE THE COUNTERTOP OR BACKSPLASH, WHICHEVER IS HIGHER.
2. ALL RECEPTACLES INSTALLED WITHIN 6'-0" OF ANY SINK OF BASIN MUST HAVE GFI PROTECTION. DO NOT INSTALL RECEPTACLES WITHIN 12" OF THE EDGE OF A SINK OR BASIN.
3. COORDINATE WITH THE COMMUNICATIONS DRAWINGS TO ENSURE THAT A DUPLEX RECEPTACLE IS INSTALLED WITHIN 18" HORIZONTAL TO ALL SIGNAL AND DATA DEVICE LOCATIONS, UON.
4. SWITCHES AND OTHER FLUSH WALL-MOUNTED DEVICES MUST BE MOUNTED WITHIN 16" OF DOORFRAME. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR DOORS WITH ADJACENT SIDELIGHTS. WHERE DEVICES ARE SHOWN ADJACENT TO THE DOOR ON THE HINGE-SIDE OF THE DOOR, AND THE DOOR SWINGS IN A MANNER THAT MUST BLOCK THE DEVICE, MOUNT THE DEVICE 12" BEYOND THE DOOR SWING. COORDINATE ROUGH-IN LOCATIONS WITH DIV. 27 AND 28 DEVICES AS WELL. COORDINATE MOUNTING LOCATION WITH OTHER TRADES TO ENSURE A UNIFORM MOUNTING AND AESTHETICALLY-PLEASING APPEARANCE.
5. MOUNTING HEIGHT INDICATED IN LEGEND AND ON THE DRAWINGS MUST BE THE DISTANCE MEASURED FROM THE CENTER OF THE DEVICE TO THE FINISHED FLOOR, UON.
6. COORDINATE FINAL RECEPTACLE HEIGHT AND LOCATION FOR ALL DEVICE RECEPTACLES WITH ARCHITECTURAL/INTERIORS AND AV PLANS.

ARC FLASH LABEL FOR EQUIPMENT

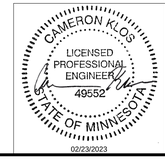
1. PROVIDE SELF-ADHESIVE VINYL LABEL TO AFFIX TO ELECTRICAL EQUIPMENT TO WARN OF ARC FLASH HAZARDS.
2. THE LABEL FORMAT AND TEXT MUST BE IN ACCORDANCE WITH THE FIGURE BELOW.
3. THE LABEL MUST BE LOCATED ON THE EQUIPMENT TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
4. THE SIZE OF THE LABEL MUST BE:

EQUIPMENT	TYPE HEIGHT	WIDTH
INDOOR	50mm	75mm
OUTDOOR	100mm	150mm

5. A DOWNLOADABLE WINDOWS METAFILE IS AVAILABLE ON THE WHOLE BUILDING DESIGN GUIDE WEBSITE (WWW.WDBG.ORG) FOR USE IN A LABEL MAKING MACHINE.

   A. THE FILE IS LOCATED ON THE "NAVFAC CADD DETAILS" PAGE. TO NAVIGATE TO THIS LOCATION, FOLLOW: HOME > DOCUMENTS & REFERENCES > CCB >CADD LIBRARY > NAVFAC CADD RESOURCES > NAVFAC CADD DETAILS.

6. PROVIDE ARC FLASH WARNING LABELS ON ELECTRICAL EQUIPMENT LIKELY TO REQUIRE EXAMINATION, SERVICING, OR MAINTENANCE WHILE ENERGIZED. EQUIPMENT MUST INCLUDE BUT NOT LIMITED TO INCLUDE PAD-MOUNTED TRANSFORMERS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, INDUSTRIAL CONTROL PANELS, AND METER SOCKET ENCLOSURES.
7. PROVIDE A COPY OF THE ARC FLASH STUDY REQUIRED BY SECTION 26 28 01.00 10 POSTED IN THE ELECTRICAL ROOM.



US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

DATE	DESCRIPTION	MARK
02-24-23	CERTIFIED FINAL	0

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

ELECTRICAL SYMBOLS LEGEND - 2 OF 2

SHEET ID
E-002_5
SHEET 83 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

A1 OVERALL SECOND FLOOR DEMOLITION PLAN
SCALE: 1/16" = 1'-0"

0 8' 16' 32'

PLAN NORTH

DEMOLITION NOTES:

1. FOR ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS, SEE SHEETS E-001_5 AND E-002_5.
2. COORDINATE WITH THE CONTRACTING OFFICER AND FACILITY SECURITY OFFICER, A MINIMUM OF 10 WORKING DAYS PRIOR TO DEMOLITION , TO IDENTIFY ACTIVE FIBERS IN DEMOLITION AREAS. PROVIDE AN ACCEPTABLE MEANS FOR FACILITY SECURITY OFFICER TO VISUALLY INSPECT THE FIBER DURING THE DEMOLITION PROCESS.
3. EXISTING POWER POLES ARE FED USING WIREMOLD WALKERFLEX MODULAR WIRING SYSTEM. SEE DETAIL A4/EP-501_5 FOR ADDITIONAL INFORMATION.
4. IN ACCORDANCE WITH NEC ARTICLES 645.5, 725.25, AND 800.25, DEMOLISH ALL ABANDONED CONDUCTORS, ELECTRICAL RACEWAYS, ELECTRICAL CONNECTIONS, AND ASSOCIATED EQUIPMENT ABOVE CEILING. PROVIDE THE GOVERNMENT 10 BUSINESS DAYS TO IDENTIFY ALL ABANDONED ELECTRICAL WIRING, CONDUIT AND COMMUNICATIONS CABLING UPON COMPLETION OF THE CEILING REMOVAL. REMOVE ALL IDENTIFIED WIRING, CONDUIT, CABLING INCLUDING REMOVAL OF CABLING BACK TO IT'S SOURCE AND ABANDONED CONDUIT IN THE PROJECT BOUNDARY AREA. PROPERLY SEAL OPENINGS LEFT IN WALLS FROM DEMOLITION WORK. IN ADDITION TO DEVICE CABLING SHOWN ON DEMOLITION DRAWINGS THE FOLLOWING ADDITIONAL CABLING HAS BEEN IDENTIFIED FOR DEMOLITION:
   a. EXISTING RED PHONE CABLING: 35,000 FEET OF UTP CABLING, REMOVE FROM DEVICE TO TELECOM ROOM SOURCE.
   b. (1) 25 PAIR BACKBONE CABLE AND ASSOCIATED TERMINAL BOARDS. ESTIMATED LENGTH 300LF.
5. THE EXISTING BUILDING MUST REMAIN OPERATIONAL DURING CONSTRUCTION. PROVIDE TEMPORARY POWER AS NEEDED.
6. ALL WICS PANELS ARE EXISTING TO REMAIN, UON.
7. EXISTING COMMUNICATIONS DEVICES ARE NOT SHOWN ON DEMOLITION PLANS, CONTRACTOR IS REQUIRED TO:
   a. DEMOLISH ALL EXISTING FIBER OPTIC CABLING FROM WORK STATION DEVICE BOX TO SERVING WICS PANEL, TYPICAL 4 PER EXISTING DESK AND/OR MODULAR WORK STATION; UON.
   b. DEMOLISH ALL EXISTING CAT. 5 UTP PHONE CABLING FROM WORKSTATION TO TELECOMMUNICATION ROOM (W271A), TYPICAL 1 PHONE DEVICE PER EXISTING DESK AND/OR MODULAR WORK STATION, UON.
8. REFER TO H-SERIES SHEETS FOR ALL HAZARDOUS BUILDING MATERIAL, ASBESTOS/LEAD ABATEMENT, AND UNIVERSAL WASTE REQUIREMENTS.
9. REFER TO A-101_5 FOR PATCH AND REPAIR REQUIREMENTS.
10. EXISTING ABOVE CEILING RECEPTACLES, DEMO EXISTING ABOVE CEILING RECEPTACLES AND REPLACE WITH J-BOX, TYPICAL OF 20 LOCATIONS IN PROJECT AREA.
11. EXISTING ABOVE CEILING AMPLIFIERS, RELOCATE BELOW CEILING ON NEAREST AVAILABLE WALL. PROVIDE SURFACE MOUNT DUPLEX RECEPTACLE ON WALL NEAR AMPLIFIER, TIE INTO NEAREST AVAILABLE 120V BRANCH CIRCUIT. SPLICE AND EXTEND RG6 COAX CABLE DOWN TO AMPLIFIER. TYPICAL OF 5 LOCATIONS IN PROJECT AREA.
12. EXISTING CONDUITS PENETRATING SECURE PERIMETER WALL, VERIFY CONDUIT BONDING CONNECTION, CONNECT TO NEAREST BUILDING STEEL AS REQUIRED. REFER TO C1/EP501_5. TYPICAL OF 25 EXISTING CONDUIT LOCATIONS IN PROJECT AREA.
13. EXISTING ABOVE CEILING CONDUIT AND CABLE TRAY IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO NOTIFY COR IF THERE ARE ANY CONFLICTS WITH NEW WORK.
14. CONTRACTOR TO VERIFY EXISTING BRANCH CIRCUITS PRIOR TO DEMOLITION. ALL CIRCUITS NOTED ON PLAN ARE BASED ON FIELD SURVEYS AND EXISTING AS-BUILT DRAWINGS. POWER POLES SHOWN WITHOUT BRANCH CIRCUITS WERE NOT ABLE TO BE IDENTIFIED IN THE FIELD. THE CONTRACTOR MUST DETERMINE EXISTING CIRCUITS. SEE EP100 SERIES DRAWINGS FOR REUSED BRANCH CIRCUITS.
15. THE SECURE FACILITY CONTROLLED AREA AND CONTROLLED AREA PERIMETER MUST BE SECURED EACH NIGHT WITH INTRUSION DETECTION SYSTEM (IDS) ALARMS AND LOCKED PER SECURE FACILITY REQUIREMENTS AND APPROVED BY THE GOVERNMENT. ALL WORK WITHIN THE PROJECT AREA WILL REQUIRE ESCORTS. THE MECHANICAL EQUIPMENT ROOMS HAVE PIR AND BUS ALARMS AND REQUIRE ESCORTS AT ALL TIMES. ANY NEW TEMPORARY OR PERMANENT PENETRATIONS OF THE SECURE FACILITY CONTROLLED AREA AND CONTROLLED AREA PERIMETER ARE REQUIRED TO BE SECURED AT THE END OF THE WORK DAY WITH ALARMS. DIEBOLD IS THE CURRENT IDS SYSTEM.
16. ITEMS IN BOLD AND/OR DASHED ARE TO BE DEMOLISHED. ITEMS GRAYSCALE ARE EXISTING TO REMAIN.

LEGEND:

AREA/ROOMS NOT IN SCOPE

CONSTRUCTION BOUNDARY

FURNITURE IN THIS AREA TO BE REMOVED AND REPLACED WITH NEW FURNITURE. DISCONNECT POWER TO THE POWER POLE AND REMOVE THE BRANCH CIRCUIT BACK TO SOURCE UNLESS THE CIRCUIT IS NOTED TO BE RE-USED. IF CIRCUIT IS TO BE RE-USED, DISCONNECT POWER TO THE POWER POLE, REMOVE THE BRANCH CIRCUIT BACK TO THE NEAREST JUNCTION BOX AND EXTEND TO NEW POWER POLE LOCATION AS INDICATED. SEE A4/EP501_5 FOR MORE INFORMATION. REMOVE, CLEAN, AND STORE EXISTING POWER POLES TO BE RE-INSTALLED IN NEW OFFICE CONFIGURATION.

FURNITURE IN THIS AREA TO BE REMOVED AND REINSTALLED IN A NEW CONFIGURATION. DISCONNECT POWER TO THE POWER POLE AND REMOVE THE BRANCH CIRCUIT BACK TO THE NEAREST JUNCTION BOX. SEE A4/EP501_5 FOR MORE INFORMATION. DOCUMENT THE EXISTING CIRCUIT INFORMATION AND EXTEND BRANCH CIRCUIT AS REQUIRED FOR RE-INSTALLATION. POWER POLES WILL BE REINSTALLED IN NEW LOCATION AS INDICATED. REMOVE, CLEAN, AND STORE EXISTING POWER POLES TO BE RE-INSTALLED IN NEW OFFICE CONFIGURATION.

KEYPLAN
NOT TO SCALE

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: J. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL.
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

OVERALL SECOND FLOOR DEMOLITION PLAN

SHEET ID
ED100_5
SHEET 84 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001

CUI

A1 SYSTEMS DEMOLITION SECOND FLOOR PLAN - AREA A

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

PLAN NORTH

0 4' 8' 16'

DEMOLITION NOTES:

1. FOR GENERAL DEMOLITION REQUIREMENTS REFER TO ED100_5.

KEYED NOTES: (#)

1. THIS ROOM TO BE DEMOLISHED, DEMOLISH ALL DEVICES, EQUIPMENT, AND ASSOCIATED BRANCH CIRCUITING BACK TO SOURCE, UON. RECEPTACLES ON EXISTING WALLS MUST REMAIN.
2. DEMOLISH EXISTING EMERGENCY LIGHTING BRANCH CIRCUITS BACK TO THIS LOCATION.
3. DEMOLISH EXISTING CABLE TRAY SERVING COPPER PHONE SYSTEM, REMOVE ALL CABLING BACK TO SOURCE.
4. DEMOLISH EXISTING WALKERFLEX DISTRIBUTION UNIT SERVING OFFICE MODULAR FURNITURE IN THE AREA. SEE DETAIL A4/EP-501_5 FOR REQUIREMENT, TYPICAL FOR ALL OFFICE MODULAR FURNITURE.
5. THIS CONDUIT AND JUNCTION BOX AND ASSOCIATED CABLING TO REMAIN. PROTECT AND KEEP SAFE DURING CONSTRUCTION.
6. DEMOLISH EXISTING ELECTRICAL CONNECTION FOR MECHANICAL EQUIPMENT BACK TO SOURCE.

LEGEND:

AREA/ROOMS NOT IN SCOPE

KEYPLAN NOT TO SCALE

CAMERON KLOS LICENSED PROFESSIONAL ENGINEER 49552 STATE OF MINNESOTA 02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

ISSUE DATE: 02-24-23
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LOUISVILLE DISTRICT
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LOUISVILLE, KY 40202

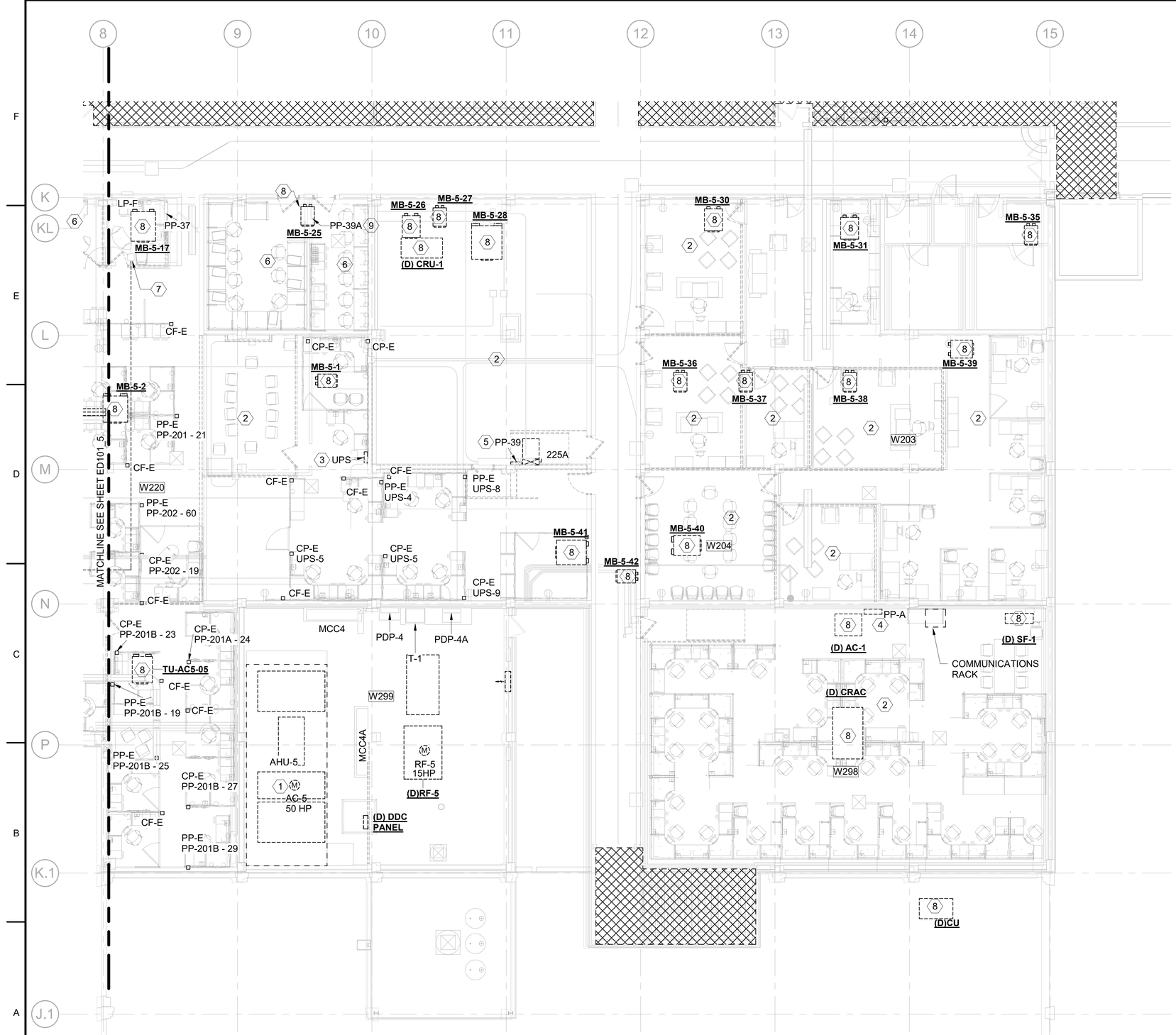
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

SYSTEMS DEMOLITION SECOND FLOOR PLAN - AREA A

SHEET ID
ED101_5
SHEET 85 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



A1 SYSTEMS DEMOLITION SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

KEYPLAN
NOT TO SCALE

DEMOLITION NOTES:

1. FOR GENERAL DEMOLITION REQUIREMENTS REFER TO ED100_5.

KEYED NOTES: (#)

1. DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL CONNECTIONS AND CONTROLS FOR AHU-5 BACK TO SOURCE (MCC-4). SEE SHEET ED601_5 FOR DETAILS AND ADDITIONAL REQUIREMENTS.
2. THIS ROOM TO BE DEMOLISHED, DEMOLISH ALL COMMUNICATIONS EQUIPMENT, COMMUNICATIONS DEVICES, ELECTRICAL DEVICES, EQUIPMENT, AND ASSOCIATED BRANCH CIRCUITING BACK TO SOURCE, UON. RECEPTACLES ON EXISTING WALLS MUST REMAIN.
3. DEMOLISH EXISTING PANEL 'UPS' AND ITS ASSOCIATED FEEDERS AND BRANCH CIRCUITS. VERIFY ALL BRANCH CIRCUITS SERVED BY THE PANEL PRIOR TO DEMOLITION. IF A BRANCH CIRCUIT OR CIRCUITS EXTEND OUTSIDE OF PROJECT SCOPE BOUNDARY, NOTIFY COR IN ORDER TO COORDINATE WORK EFFORTS. THE IDENTIFIED BRANCH CIRCUITS THAT EXTEND OUTSIDE OF THE PROJECT SCOPE BOUNDARY WILL BE REQUIRED TO BE RE-CIRCUITED TO NEW PANEL PP-60A LOCATED IN W219, UTILIZING SPARE CIRCUITS IN PANEL. ASSUME 10% OF CIRCUITS IN PANEL TO BE RE-CIRCUITED.
4. DEMOLISH EXISTING PANEL 'PP-A' AND ITS ASSOCIATED FEEDERS AND BRANCH CIRCUITS. VERIFY ALL BRANCH CIRCUITS SERVED BY THE PANEL PRIOR TO DEMOLITION. IF A BRANCH CIRCUIT OR CIRCUITS EXTEND OUTSIDE OF PROJECT SCOPE BOUNDARY, NOTIFY COR IN ORDER TO COORDINATE WORK EFFORTS. THE IDENTIFIED BRANCH CIRCUITS THAT EXTEND OUTSIDE OF THE PROJECT SCOPE BOUNDARY WILL BE REQUIRED TO BE RE-CIRCUITED TO PANEL PP-60A PP-60A LOCATED IN W219, UTILIZING SPARE CIRCUITS IN PANEL. ASSUME 10% OF CIRCUITS IN PANEL TO BE RE-CIRCUITED.
5. DEMOLISH EXISTING PANEL 'PP-39' AND ITS ASSOCIATED FEEDERS AND BRANCH CIRCUITS. VERIFY ALL BRANCH CIRCUITS SERVED BY THE PANEL PRIOR TO DEMOLITION. IF A BRANCH CIRCUIT OR CIRCUITS EXTEND OUTSIDE OF PROJECT SCOPE BOUNDARY, NOTIFY COR IN ORDER TO COORDINATE WORK EFFORTS. THE IDENTIFIED BRANCH CIRCUITS THAT EXTEND OUTSIDE OF THE PROJECT SCOPE BOUNDARY WILL BE REQUIRED TO BE RE-CIRCUITED TO PANEL PP-39A LOCATED IN W210, UTILIZING SPARE CIRCUITS IN PANEL. ASSUME 10% OF CIRCUITS IN PANEL TO BE RE-CIRCUITED.
6. DISCONNECT AND REMOVE ALL EXISTING TELECOMMUNICATIONS AND POWER DEVICES/RECEPTACLES OFF OF EXISTING WALLS IN THIS SPACE. PROVIDE TEMPORARY SUPPORTING MEANS THROUGHOUT THE COMPLETION OF CONSTRUCTION. COORDINATE ALL WORK WITH GENERAL CONTRACTOR PRIOR TO WORK. REFER TO EP102 FOR MORE INFORMATION.
7. DEMOLISH EXISTING EMERGENCY LIGHTING BRANCH CIRCUITS BACK TO THIS LOCATION SHOWN.
8. DEMOLISH EXISTING ELECTRICAL CONNECTION FOR MECHANICAL EQUIPMENT BACK TO SOURCE.
9. DISCONNECT AND REMOVE PANEL PP-39A FROM EXISTING WALL. PROVIDE TEMPORARY SUPPORTING MEANS FOR PANEL AND ASSOCIATED CONDUIT THROUGHOUT THE COMPLETION OF CONSTRUCTION. COORDINATE ALL WORK WITH GENERAL CONTRACTOR PRIOR TO WORK. VERIFY EXISTING BRANCH CIRCUITS TO REMAIN ARE ALSO SUPPORTED.

LEGEND:

AREA/ROOMS NOT IN SCOPE

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
CONSTRUCTION DIVISION
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

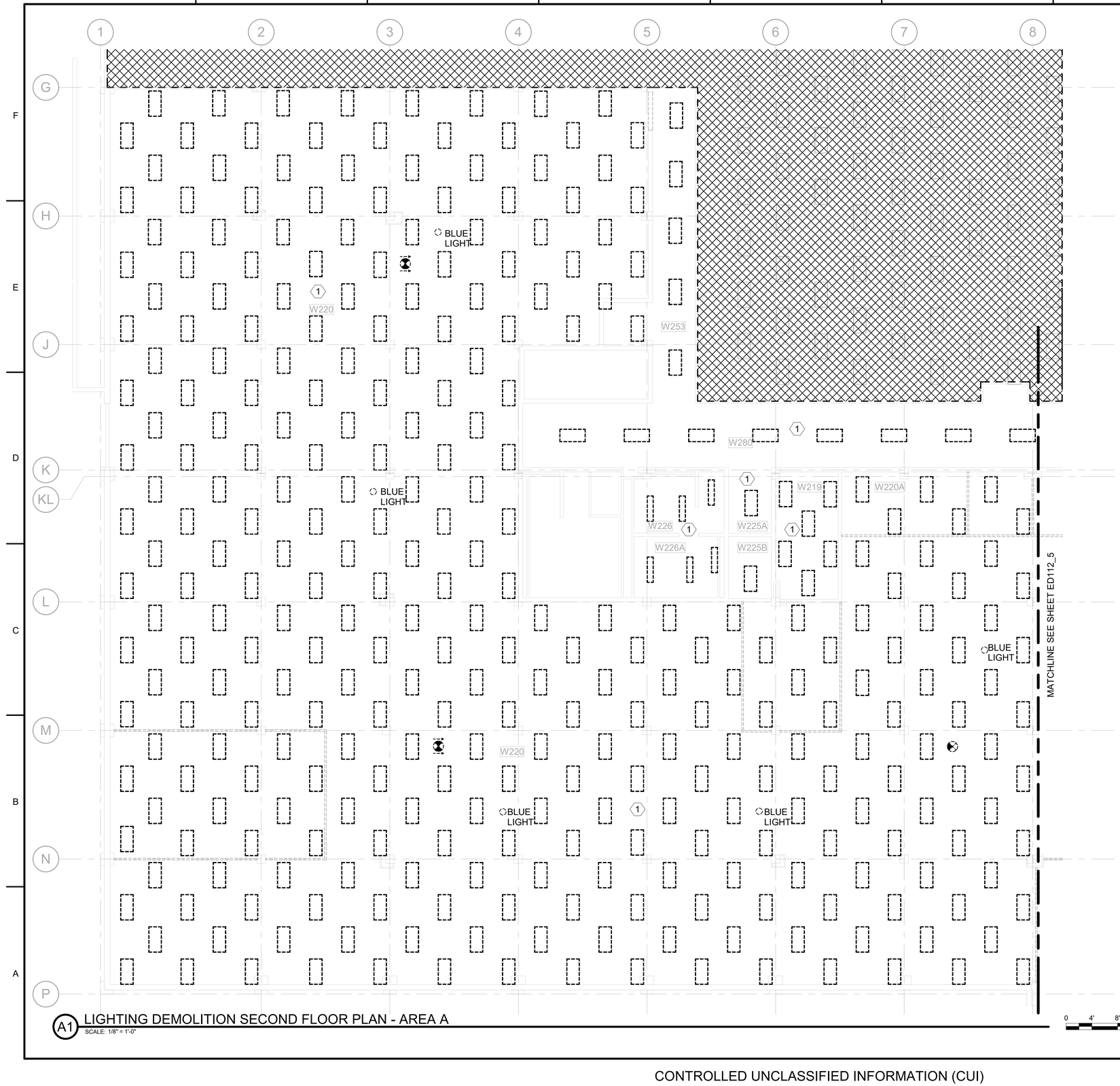
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO
B

SYSTEMS DEMOLITION SECOND FLOOR PLAN - AREA B

SHEET ID
ED102_5
SHEET 86 OF 112

CAMERON K. KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



A1 LIGHTING DEMOLITION SECOND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

DEMOLITION NOTES:

1. FOR ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS, SEE SHEETS E-001_5 AND E-002_5.
2. DEMOLISH ALL EXISTING LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS UON. PROVIDE TEMPORARY WORK LIGHTING AS REQUIRED.
3. DEMOLISH ALL EXISTING EXIT LIGHT FIXTURES UON.
4. DEMOLISH ALL EXISTING EMERGENCY LIGHT FIXTURES UON.
5. DEMOLISH ALL EXISTING BLUE WARNING LIGHTS AND ASSOCIATED CONTROLS, UON.
6. REFER TO ARCHITECTURE DRAWINGS FOR PATCH AND REPAIR REQUIREMENTS.

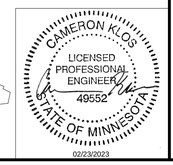
KEYED NOTES: (#)

1. EMERGENCY FIXTURES LOCATED IN THIS AREA ARE CIRCUITED TO EXISTING PANEL LP-N. NORMAL LIGHT FIXTURES LOCATED IN THIS AREA ARE CIRCUITED TO EXISTING PANEL LP-D, LOCATED IN CORRIDOR W253 AND EXISTING PANEL LP-F, LOCATED IN CORRIDOR W280. ALL PANELS SHOWN ON SHEET ED100_5.

LEGEND:

AREA/ROOMS NOT IN SCOPE

KEYPLAN
NOT TO SCALE



US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL.
LOUISVILLE, KY 40202

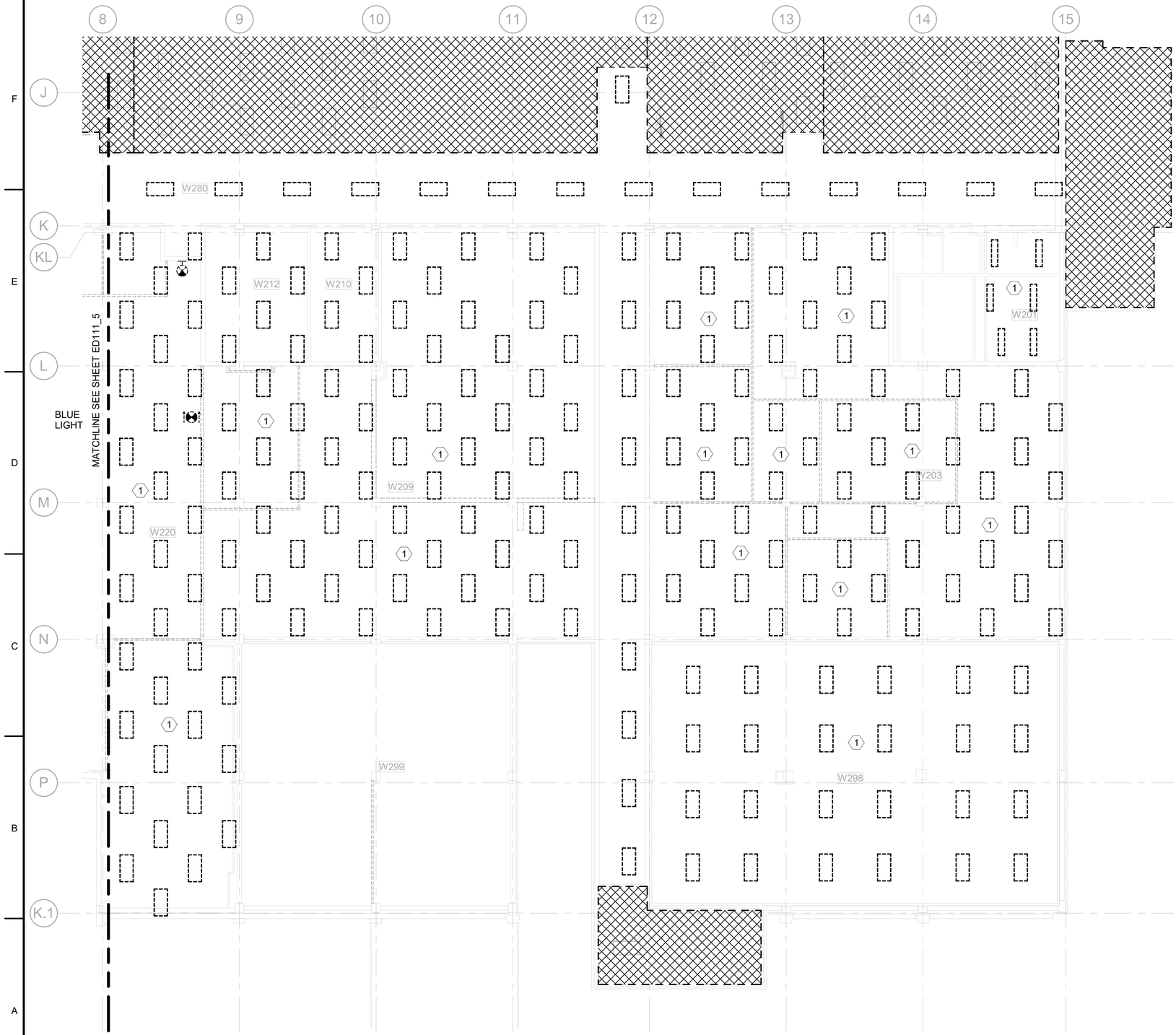
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

LIGHTING DEMOLITION SECOND FLOOR PLAN - AREA A

SHEET ID
ED111_5
SHEET 87 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



DEMOLITION NOTES:

1. FOR ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS, SEE SHEETS E-001_5 AND E-002_5.
2. DEMOLISH ALL EXISTING LIGHTING FIXTURES AND ASSOCIATED LIGHTING CONTROLS UON. PROVIDE TEMPORARY WORK LIGHTING AS REQUIRED.
3. DEMOLISH ALL EXISTING EXIT LIGHT FIXTURES UON.
4. DEMOLISH ALL EXISTING EMERGENCY LIGHT FIXTURES UON.
5. DEMOLISH ALL EXISTING BLUE WARNING LIGHTS AND ASSOCIATED CONTROLS, UON.
6. REFER TO ARCHITECTURE DRAWINGS FOR PATCH AND REPAIR REQUIREMENTS.

KEYED NOTES: (#)

1. EMERGENCY FIXTURES LOCATED IN THIS AREA ARE CIRCUITED TO EXISTING PANEL LP-N. NORMAL LIGHT FIXTURES LOCATED IN THIS AREA ARE CIRCUITED TO EXISTING PANEL LP-D, LOCATED IN CORRIDOR W253 AND EXISTING PANEL LP-F, LOCATED IN CORRIDOR W280. ALL PANELS SHOWN ON SHEET ED100_5.

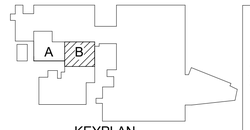
LEGEND:

AREA/ROOMS NOT IN SCOPE

A1 LIGHTING DEMOLITION SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'



KEYPLAN
NOT TO SCALE

CAMERON K. LOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
CHRISTOPHER S. BOND U.S. COURTHOUSE
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

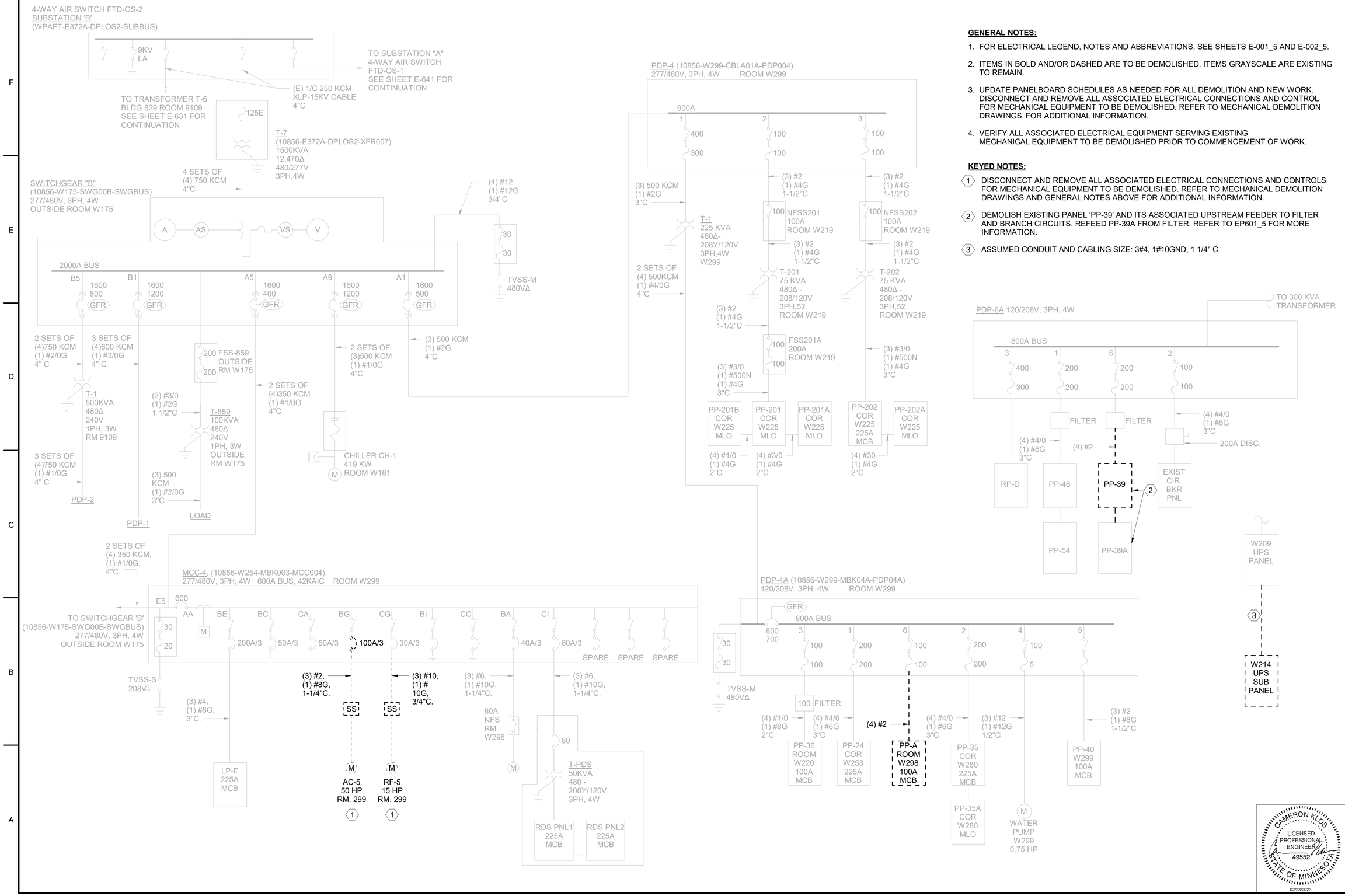
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

LIGHTING DEMOLITION SECOND FLOOR PLAN - AREA B

SHEET ID
ED112_5
SHEET 88 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



GENERAL NOTES:

1. FOR ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS, SEE SHEETS E-001_5 AND E-002_5.
2. ITEMS IN BOLD AND/OR DASHED ARE TO BE DEMOLISHED. ITEMS GRAYSCALE ARE EXISTING TO REMAIN.
3. UPDATE PANELBOARD SCHEDULES AS NEEDED FOR ALL DEMOLITION AND NEW WORK. DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL CONNECTIONS AND CONTROL FOR MECHANICAL EQUIPMENT TO BE DEMOLISHED. REFER TO MECHANICAL DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
4. VERIFY ALL ASSOCIATED ELECTRICAL EQUIPMENT SERVING EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED PRIOR TO COMMENCEMENT OF WORK.

KEYED NOTES:

1. DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL CONNECTIONS AND CONTROLS FOR MECHANICAL EQUIPMENT TO BE DEMOLISHED. REFER TO MECHANICAL DEMOLITION DRAWINGS AND GENERAL NOTES ABOVE FOR ADDITIONAL INFORMATION.
2. DEMOLISH EXISTING PANEL 'PP-39' AND ITS ASSOCIATED UPSTREAM FEEDER TO FILTER AND BRANCH CIRCUITS. REFEED PP-39A FROM FILTER. REFER TO EP601_5 FOR MORE INFORMATION.
3. ASSUMED CONDUIT AND CABLING SIZE: 3#4, 1#10GND, 1 1/4" C.

US ARMY CORPS OF ENGINEERS
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REPLACE AHU-5
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WRIGHT-PATTERSON AFB, OHIO

ELECTRICAL DEMOLITION ONE-LINE DIAGRAM

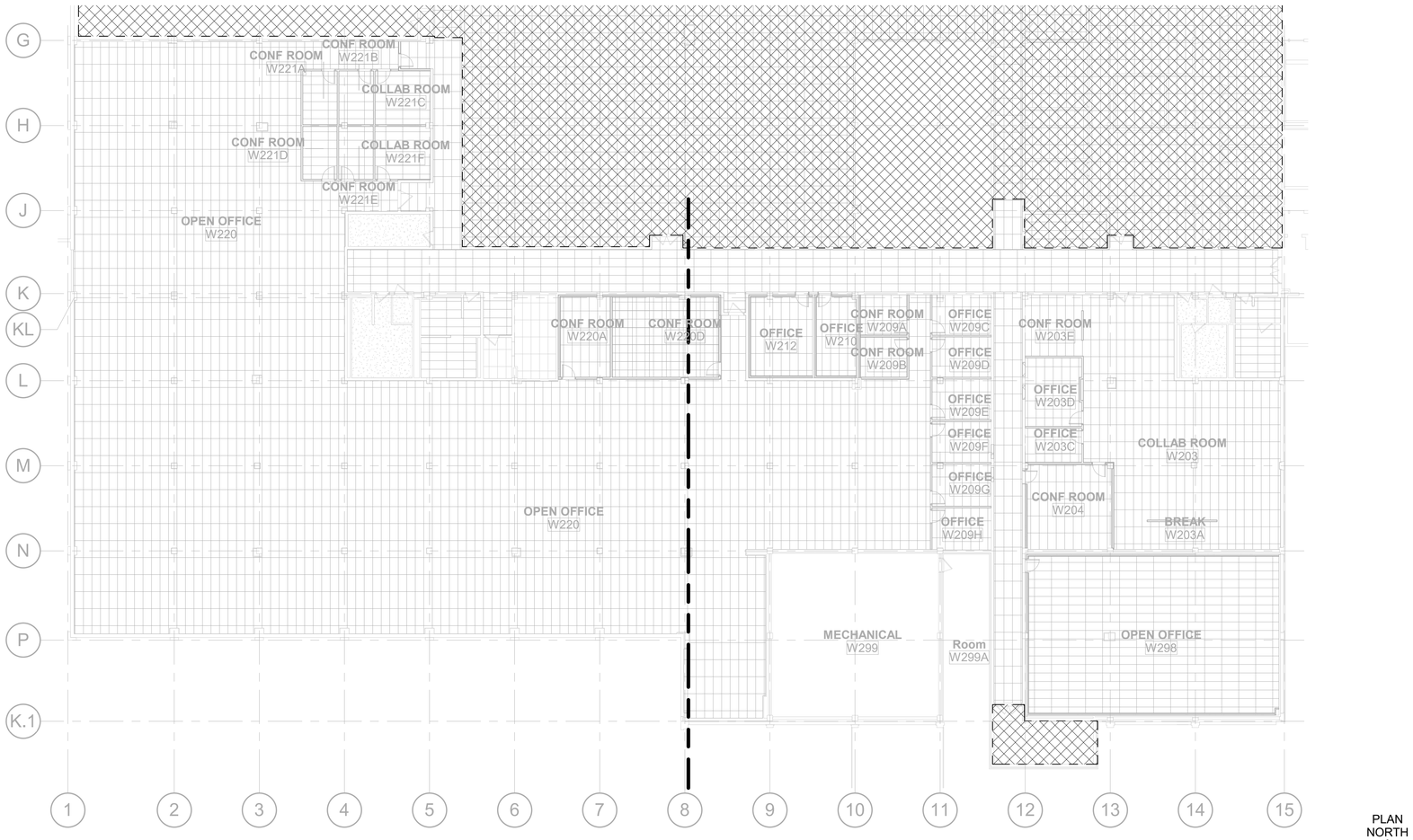
CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

SHEET ID
ED601_5
SHEET 89 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

GENERAL NOTES:

1. REFER TO E-001_5 AND E-002_5 FOR LEGEND, SYMBOLS, EXISTING CONDITIONS NOTES AND GENERAL NOTES.
2. WHERE A CONDUIT, METAL DUCT, PIPING, OR OTHER METAL CONDUCTORS PENETRATE A WALL FROM A NON-SECURED TO SECURED AREA, REFER TO DETAIL C1 ON SHEET EP501_5 FOR GROUNDING AND SEALING REQUIREMENTS. SEE SHEET A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.
3. LIGHTING FIXTURES WITH LABEL 'N/L' NEXT TO THEM INDICATES NIGHT LIGHT AND EMERGENCY EGRESS. CIRCUIT NIGHT LIGHTS TO UNSWITCHED HOT OF EMERGENCY LIFE SAFETY PANEL SUCH THAT LIGHT REMAINS "ON" AT ALL TIMES.
4. EMERGENCY EGRESS LIGHTING AND EXIT LIGHTING MUST BE CIRCUITED TO EMERGENCY LIFE SAFETY PANEL 'LPN' LOCATED IN ROOM W141. PROVIDE 3/4"C, 2# 10, 1#10 GROUND FOR ALL BRANCH CIRCUITS INDICATED.
5. SEE SHEET EL610_5 FOR LIGHTING FIXTURE SCHEDULE.
6. CIRCUIT IDENTIFICATION, LABEL EACH JUNCTION BOX NEAREST EACH LIGHT FIXTURE WITH PANEL NAME AND CIRCUIT NUMBER.
7. SWITCH IDENTIFICATION, LABEL EACH SWITCH PLATE WITH PANEL NAME AND CIRCUIT NUMBER.
8. PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL LIGHTING AND POWER BRANCH CIRCUITS REQUIRING A NEUTRAL CONDUCTOR, SHARED NEUTRALS ARE NOT ALLOWED.
9. EMERGENCY LIGHT FIXTURE IDENTIFICATION, LABEL FIXTURE AS "EMERGENCY EGRESS LIGHT".



A1 OVERALL SECOND FLOOR LIGHTING PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 32'

LEGEND:

AREA/ROOMS NOT IN SCOPE

NEW 2' X 4' ACOUSTICAL CEILING TILE

KEYPLAN
NOT TO SCALE

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

OVERALL SECOND FLOOR LIGHTING PLAN

SHEET ID
EL100_5
SHEET 90 OF 112

CERTIFIED FINAL

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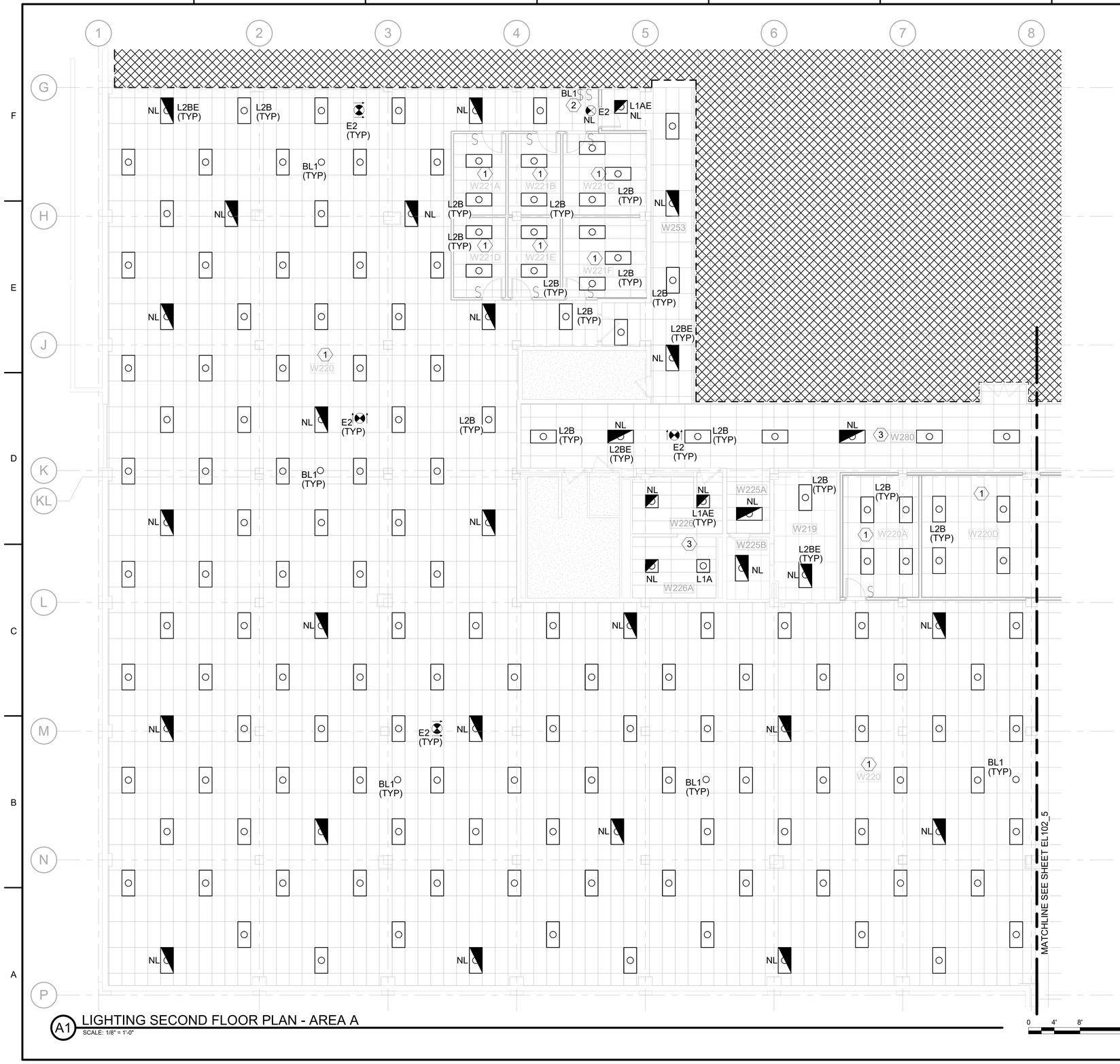


A1 LIGHTING SECOND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO E-001_5 AND E-002_5 FOR LEGEND, SYMBOLS, EXISTING CONDITIONS NOTES AND GENERAL NOTES.
2. WHERE A CONDUIT, METAL DUCT, PIPING, OR OTHER METAL CONDUCTORS PENETRATE A WALL FROM A NON-SECURED TO SECURED AREA, REFER TO DETAIL C1 ON SHEET EP501_5 FOR GROUNDING AND SEALING REQUIREMENTS. SEE SHEET A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.
3. LIGHTING FIXTURES WITH LABEL 'N/L' NEXT TO THEM INDICATES NIGHT LIGHT AND EMERGENCY EGRESS. CIRCUIT NIGHT LIGHTS TO UNSWITCHED HOT OF EMERGENCY LIFE SAFETY PANEL SUCH THAT LIGHT REMAINS "ON" AT ALL TIMES.
4. EMERGENCY EGRESS LIGHTING AND EXIT LIGHTING MUST BE CIRCUITED TO EMERGENCY LIFE SAFETY PANEL 'LPN' LOCATED IN ROOM W141. PROVIDE 3/4"C, 2# 10, 1#10 GROUND FOR ALL BRANCH CIRCUITS INDICATED.
5. SEE SHEET EL610_5 FOR LIGHTING FIXTURE SCHEDULE.
6. CIRCUIT IDENTIFICATION, LABEL EACH JUNCTION BOX NEAREST EACH LIGHT FIXTURE WITH PANEL NAME AND CIRCUIT NUMBER.
7. SWITCH IDENTIFICATION, LABEL EACH SWITCH PLATE WITH PANEL NAME AND CIRCUIT NUMBER.
8. PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL LIGHTING AND POWER BRANCH CIRCUITS REQUIRING A NEUTRAL CONDUCTOR, SHARED NEUTRALS ARE NOT ALLOWED.
9. EMERGENCY LIGHT FIXTURE IDENTIFICATION, LABEL FIXTURE AS "EMERGENCY EGRESS LIGHT".

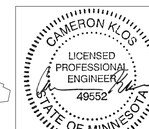
KEYED NOTES: (#)

1. CIRCUIT NEW LIGHT FIXTURES TO THE SAME BRANCH CIRCUITS THAT SERVED THE AREA. UTILIZE EXISTING BRANCH CIRCUIT HOME RUNS AND EXTEND CIRCUITING AS REQUIRED FOR NEW LIGHTING LAYOUTS AS SHOWN.
2. BLUE LED INDICATING LIGHT CONTROL, PROVIDE BLUE-HANDLED TOGGLE SWITCH WITH BLUE COVER PLATE. MOUNT CENTER-LINE OF SWITCH AT 60" AFF.
3. RECONNECT NEW LIGHT FIXTURES TO EXISTING LIGHTING CONTROLS OF SPACE.

LEGEND:

AREA/ROOMS NOT IN SCOPE

KEYPLAN
NOT TO SCALE



US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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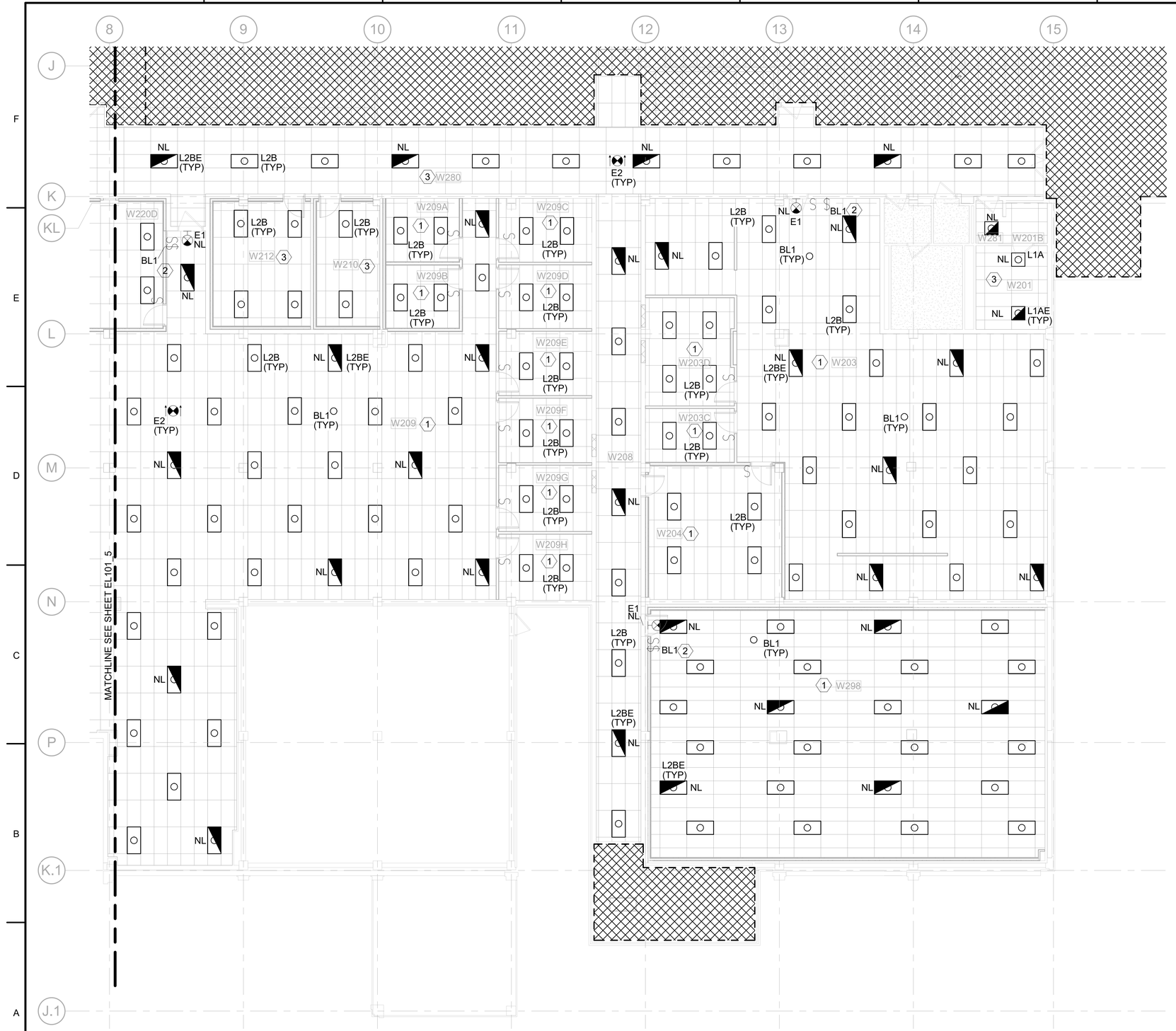
WRIGHT-PATTERSON AFB, OHIO

LIGHTING SECOND FLOOR PLAN - AREA A

SHEET ID
EL101_5
SHEET 91 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



GENERAL NOTES:

1. REFER TO E-001_5 AND E-002_5 FOR LEGEND, SYMBOLS, EXISTING CONDITIONS NOTES AND GENERAL NOTES.
2. WHERE A CONDUIT, METAL DUCT, PIPING, OR OTHER METAL CONDUCTORS PENETRATE A WALL FROM A NON-SECURED TO SECURED AREA, REFER TO DETAIL C1 ON SHEET EP501_5 FOR GROUNDING AND SEALING REQUIREMENTS. SEE SHEET A-002_5 FOR SECURE AREA PERIMETER WALL LOCATIONS.
3. LIGHTING FIXTURES WITH LABEL 'N/L' NEXT TO THEM INDICATES NIGHT LIGHT AND EMERGENCY EGRESS. CIRCUIT NIGHT LIGHTS TO UNSWITCHED HOT OF EMERGENCY LIFE SAFETY PANEL SUCH THAT LIGHT REMAINS "ON" AT ALL TIMES.
4. EMERGENCY EGRESS LIGHTING AND EXIT LIGHTING MUST BE CIRCUITED TO EMERGENCY LIFE SAFETY PANEL 'LPN' LOCATED IN ROOM W141. PROVIDE 3/4"C, 2# 10, 1#10 GROUND FOR ALL BRANCH CIRCUITS INDICATED.
5. SEE SHEET EL610_5 FOR LIGHTING FIXTURE SCHEDULE.
6. CIRCUIT IDENTIFICATION, LABEL EACH JUNCTION BOX NEAREST EACH LIGHT FIXTURE WITH PANEL NAME AND CIRCUIT NUMBER.
7. SWITCH IDENTIFICATION, LABEL EACH SWITCH PLATE WITH PANEL NAME AND CIRCUIT NUMBER.
8. PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL LIGHTING AND POWER BRANCH CIRCUITS REQUIRING A NEUTRAL CONDUCTOR, SHARED NEUTRALS ARE NOT ALLOWED.
9. EMERGENCY LIGHT FIXTURE IDENTIFICATION, LABEL FIXTURE AS "EMERGENCY EGRESS LIGHT".

KEYED NOTES: (#)

1. CIRCUIT NEW LIGHT FIXTURES TO THE SAME BRANCH CIRCUITS THAT SERVED THE AREA. UTILIZE EXISTING BRANCH CIRCUIT HOME RUNS AND EXTEND CIRCUITING AS REQUIRED FOR NEW LIGHTING LAYOUTS AS SHOWN.
2. BLUE LED INDICATING LIGHT CONTROL, PROVIDE BLUE-HANDLED TOGGLE SWITCH WITH BLUE COVER PLATE. MOUNT CENTER-LINE OF SWITCH AT 60" AFF.
3. RECONNECT NEW LIGHT FIXTURES TO EXISTING LIGHTING CONTROLS OF SPACE.

LEGEND:

AREA/ROOMS NOT IN SCOPE

A1 LIGHTING SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

KEYPLAN
NOT TO SCALE

CAMERON K. KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
CRESTWILL FIELD OFFICE
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

LIGHTING SECOND FLOOR PLAN - AREA B

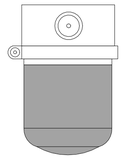
SHEET ID
EL102_5
SHEET 92 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

TYPE: BL1

FEATURES

MOUNTING: CEILING



GENERAL DESCRIPTION

FLASHING BLUE BEACON LIGHT FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.

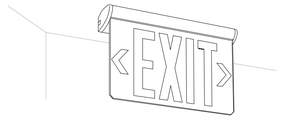
E1 TYPICAL BLUE INDICATING LIGHT DETAIL

SCALE:NTS

TYPE: E1, E2

FEATURES

MOUNTING: CEILING MOUNT, WALL MOUNT



GENERAL DESCRIPTION

RED EXIT LIGHT FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.

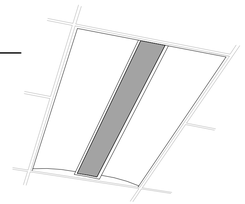
C1 TYPICAL EXIT SIGN DETAIL

SCALE:NTS

TYPE: L2B, L2BE

FEATURES

MOUNTING: CEILING RECESSED



GENERAL DESCRIPTION

2'X4' LIGHT FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.

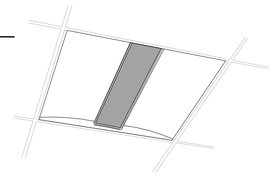
A1 TYPICAL RECESSED 2'X4' LIGHTING DETAIL

SCALE:NTS

TYPE: L1A, L1AE

FEATURES

MOUNTING: CEILING RECESSED

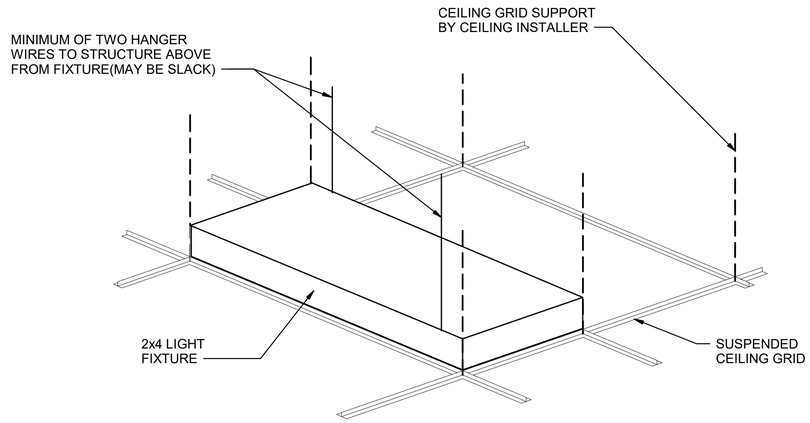


GENERAL DESCRIPTION

2'X2' LIGHT FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.

C5 LIGHTING PLATE RECESSED 2X2

SCALE:NTS



A5 TYPICAL RECESSED FIXTURE SUPPORT DETAIL

SCALE:NTS

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LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL.
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

LIGHTING DETAILS

SHEET ID

EL501_5

SHEET 93 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

LIGHTING CONTROL SCHEDULE

SPACE NUMBER	SPACE NAME	ASHRAE LIGHTING CONTROLS
W201	TOILET	EXISTING
W201B	VEST	EXISTING
W203	COLLAB ROOM	OS2
W203A	BREAK	OS2
W203C	OFFICE	VS1
W203D	OFFICE	VS1
W203E	CONF ROOM	OS2
W204	CONF ROOM	VS1
W208	CORRIDOR	EXISTING
W209	OPEN OFFICE	OS2
W209A	CONF ROOM	VS1
W209B	CONF ROOM	VS1
W209C	OFFICE	VS1
W209D	OFFICE	VS1
W209E	OFFICE	VS1
W209F	OFFICE	VS1
W209G	OFFICE	VS1
W209H	OFFICE	VS1
W210	OFFICE	VS1
W212	OFFICE	VS1
W219	ELEC	EXISTING
W220	OPEN OFFICE	OS2
W220A	CONF ROOM	VS1
W220D	CONF ROOM	VS1
W221A	CONF ROOM	VS1
W221B	CONF ROOM	VS1
W221C	COLLAB ROOM	VS1
W221D	CONF ROOM	VS1
W221E	CONF ROOM	VS1
W221F	COLLAB ROOM	VS1
W225A	CORRIDOR	EXISTING
W225B	ELEC	EXISTING
W226	VEST	EXISTING
W226A	TOILET	EXISTING
W253	CORRIDOR	EXISTING
W280	CORRIDOR	EXISTING
W298	OPEN OFFICE	OS2

LIGHTING CONTROL LEGEND

LIGHTING CONTROLS	MANUAL (ON/OFF)	MANUAL DIMMING (MULTI-LEVEL FUNCTIONALITY)	OCCUPANCY SENSOR AUTOMATIC ON TO 50% OUTPUT	OCCUPANCY SENSOR AUTOMATIC ON TO 100% OUTPUT	OCCUPANCY SENSOR AUTOMATIC DIM TO 50% OUTPUT WHEN NO MOTION IS SENSED WITHIN THE SPACE FOR 15 MINUTES	OCCUPANCY SENSOR AUTOMATIC OFF WHEN NO MOTION IS SENSED WITHIN THE SPACE FOR 15 MINUTES	OCCUPANCY SENSOR AUTOMATIC OFF WHEN NO MOTION IS SENSED WITHIN THE SPACE FOR 2 HOURS	DAYLIGHT SENSOR TO DIM DESIGNATED FIXTURES WHEN DAYLIGHT CONTRIBUTION IS PRESENT
OS2	X	X	X			X		
VS1	X	X				X		

GENERAL NOTES

1. OCCUPANCY SENSOR LAYOUT MUST BE DETERMINED BY MANUFACTURER PRIOR TO COMMENCING WORK.
2. CONTRACTOR MUST ENGAGE OCCUPANCY SENSOR MANUFACTURER'S REPRESENTATIVE TO PERFORM INITIAL ADJUSTMENT AND TUNE-UP OF ALL OCCUPANCY SENSORS.
3. ALL OCCUPANCY SENSORS OUTSIDE OF SECURED AREAS MUST BE DUAL TECHNOLOGY. ALL OCCUPANCY SENSORS INSTALLED WITHIN SECURED AREAS MUST BE PIR ONLY. REFER TO ARCHITECTURAL SHEETS FOR SECURED BOUNDARY PLANS.

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WRIGHT-PATTERSON AFB, OHIO

LIGHTING CONTROL SCHEDULE

SHEET ID
EL601_5
SHEET 94 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

LIGHT FIXTURE SCHEDULE

FIXTURE TYPE NAME	MODIFIER	LAMP TYPE	COLOR TEMP	NOMINAL FIXTURE LUMENS	VOLTAGE	WATTAGE	DESCRIPTION	MOUNTING
BL1		LED	0 K	0 lm	120 V	12 W	BLUE, LED INDICATING LIGHT WITH 360 DEGREE ROTATION. 4" DIAMETER AND 4.25" HEIGHT.	SURFACE
E1		LED	3200 K	5 lm	277 V	5 W	LED EMERGENCY EXIT LIGHT. FIXTURE FED FROM LIFE SAFETY BRANCH CIRCUIT.	UNIVERSAL
E2		LED	3200 K	5 lm	277 V	5 W	DOUBLE SIDED LED EMERGENCY EXIT LIGHT. FIXTURE FED FROM LIFE SAFETY BRANCH CIRCUIT.	UNIVERSAL
L1A		LED	4000 K	3300 lm	277 V	26 W	HIGH EFFICACY, 2' X 2' RECESSED VOLUMETRIC LED TROFFER, ACRYLIC LINEAR PRISMATIC DIFFUSER	CEILING, RECESSED
L1A	E	LED	4000 K	3300 lm	277 V	26 W	SAME AS L1A BUT FED FROM LIFE SAFETY BRANCH CIRCUIT	CEILING, RECESSED
L2B		LED	4000 K	4281 lm	277 V	31 W	HIGH EFFICACY 2' X 4' RECESSED VOLUMETRIC LED TROFFER, ACRYLIC LINEAR PRISMATIC DIFFUSER	CEILING, RECESSED
L2B	E	LED	4000 K	4281 lm	277 V	31 W	SAME AS L2B BUT FED FROM LIFE SAFETY BRANCH CIRCUIT	CEILING, RECESSED

GENERAL NOTES:

1. LIGHT FIXTURES MUST BE MINIMUM 80 CRI, UON.
2. PROVIDE ALL LIGHT FIXTURES WITH DIMMING DRIVERS CAPABLE OF DIMMING DOWN TO 10% WITHOUT FLICKERING, NOISE, OR OTHER DEFECTS IN LIGHTING FUNCTIONALITY, UON.
3. VERIFY FUNCTIONALITY OF ALL DRIVERS WITH LIGHTING CONTROL SYSTEM.
4. ALL EXIT SIGNS MUST BE UNSWITCHED.

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LIGHTING FIXTURE SCHEDULE

SHEET ID
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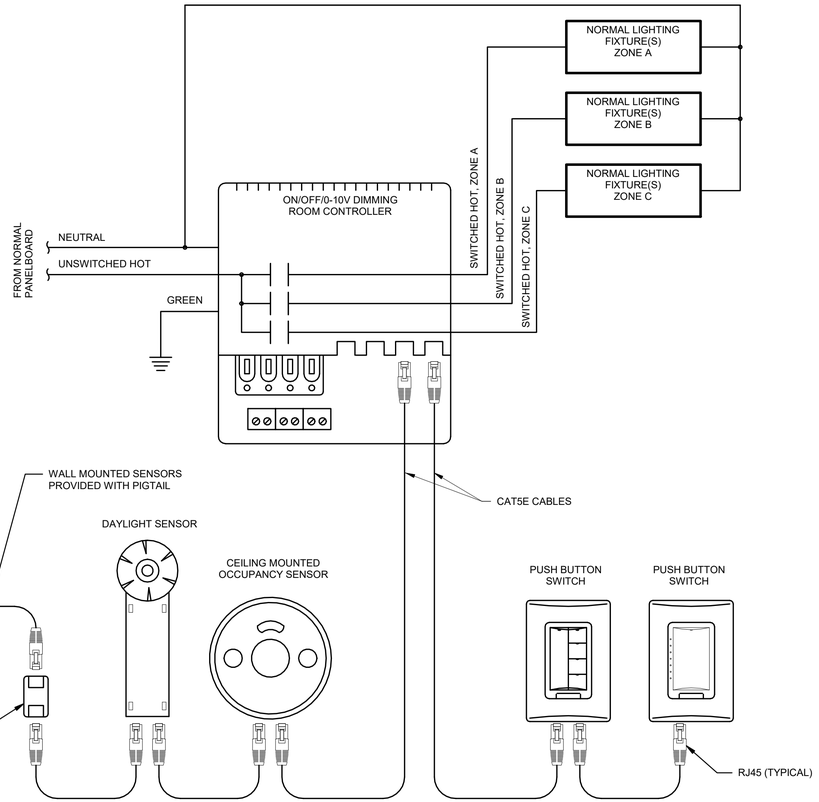
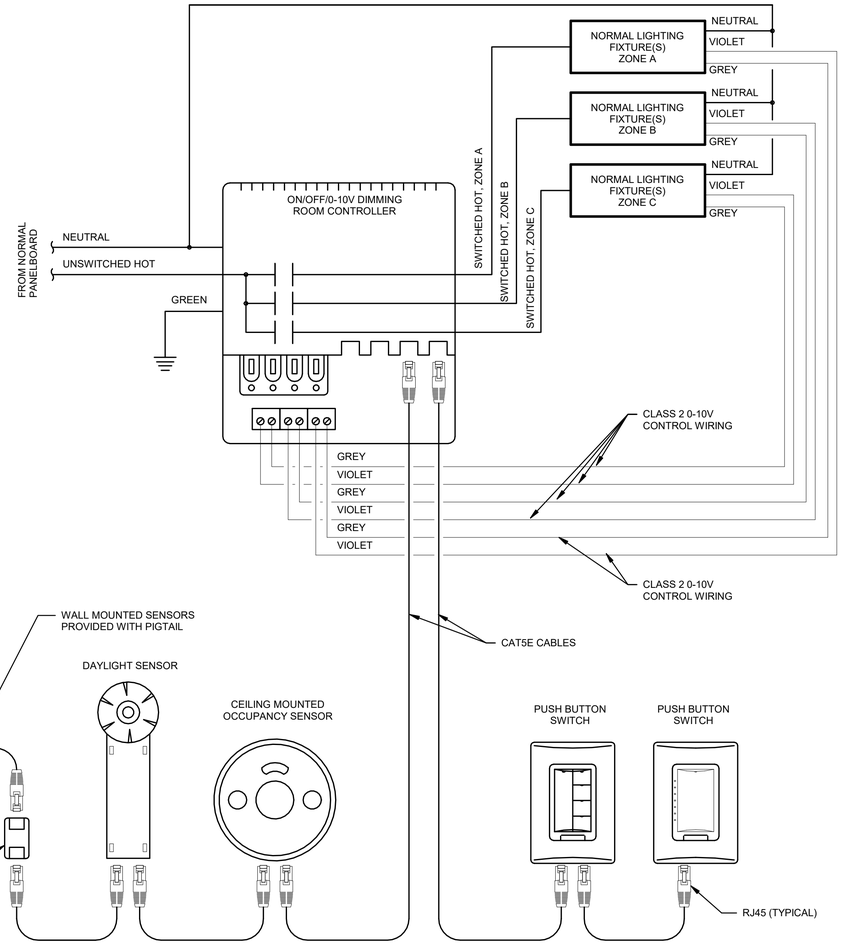


NOTES:

1. LIGHTING CONTROL CABLING MUST BE PLENUM RATED.
2. LIGHTING CONTROL CABLING MUST BE INSTALLED IN CONDUIT IN THE FOLLOWING LOCATIONS: BLOCK WALLS, GYPSUM PARTITION WALLS, EXPOSED CEILINGS, AND GYPSUM (HARD LID) CEILING AREAS.
3. OPEN CABLING MAY BE USED IN LAY-IN CEILING AREAS. CABLING MUST BE SUSPENDED A MINIMUM OF 8 INCHES ABOVE CEILINGS BY CABLE SUPPORTS NO GREATER THAN 60 INCHES APART. CABLE MUST NOT BE RUN THROUGH STRUCTURAL MEMBERS OR IN CONTACT WITH PIPES, DUCTS, OR OTHER POTENTIALLY DAMAGING ITEMS. PLACEMENT OF CABLE PARALLEL TO POWER CONDUCTORS MUST BE AVOIDED WHERE POSSIBLE.
4. TYPICAL CONNECTIONS TO SWITCHES AND SENSORS ARE SHOWN IN THIS DETAIL. REFER TO FLOOR PLANS AND LIGHTING CONTROL SCHEDULE FOR CONTROL STRATEGIES IN EACH SPACE.

A1 TYPICAL ROOM CONTROLLER WIRING DIAGRAM - ON/OFF ONLY

SCALE: NTS



NOTES:

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4. TYPICAL CONNECTIONS TO SWITCHES AND SENSORS ARE SHOWN IN THIS DETAIL. REFER TO FLOOR PLANS AND LIGHTING CONTROL SCHEDULE FOR CONTROL STRATEGIES IN EACH SPACE.

A5 TYPICAL ROOM CONTROLLER WIRING DIAGRAM - ON/OFF/DIMMING

SCALE: NTS

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LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
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LOUISVILLE DISTRICT

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LIGHTING CONTROL WIRING DIAGRAMS

SHEET ID

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SHEET 96 OF 112

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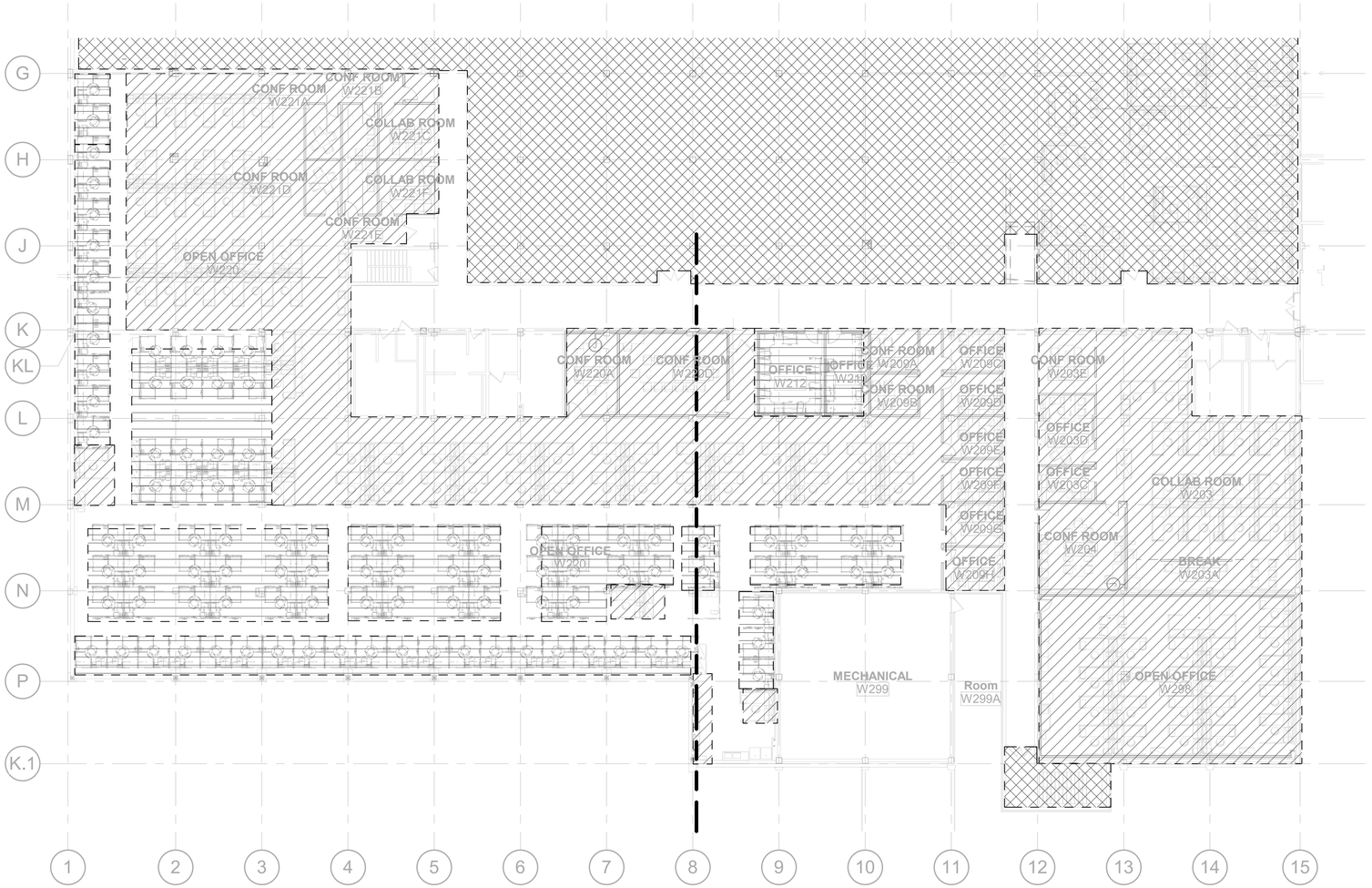


A1 OVERALL SECOND FLOOR POWER PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 32'

GENERAL NOTES:

1. REFER TO SHEET E-001_5 AND E-002_5 FOR SYMBOLS AND ABBREVIATIONS.
2. ANY NEW DEVICE TO BE MOUNTED ON EXISTING SECURE PERIMETER WALL MUST BE SURFACE MOUNT.
3. BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. MINIMIZE IMPACT TO OTHER PARTS OF THE BUILDING TO THE GREATEST EXTENT POSSIBLE. SCHEDULE OUTAGES DURING OFF HOURS AND COORDINATE ALL OUTAGES WITH THE COR PRIOR TO COMMENCEMENT OF WORK.
4. LABEL POWER POLES AND RECEPTACLES WITH VOLTAGE, SOURCE PANEL AND CIRCUIT. HOUSE POWER OUTLETS (OUTLETS CIRCUITED TO PP-60 AND PP-60A) TO BE IVORY AND BE LABELED AS HOUSE POWER, TECHNICAL POWER OUTLETS (OUTLETS CIRCUITED TO PP-204 AND PP-204A) TO BE GREY AND BE LABELED AS TECHNICAL POWER.

LEGEND:

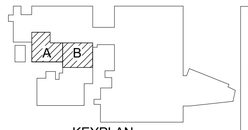
AREA/ROOMS NOT IN SCOPE

CONSTRUCTION BOUNDARY

FURNITURE IN THIS AREA TO BE REMOVED AND REPLACED WITH NEW FURNITURE. DISCONNECT POWER TO THE POWER POLE AND REMOVE THE BRANCH CIRCUIT BACK TO SOURCE UNLESS THE CIRCUIT IS NOTED TO BE RE-USED. IF CIRCUIT IS TO BE RE-USED, DISCONNECT POWER TO THE POWER POLE, REMOVE THE BRANCH CIRCUIT BACK TO THE NEAREST JUNCTION BOX AND EXTEND TO NEW POWER POLE LOCATION AS INDICATED. SEE A4/EP501_5 FOR MORE INFORMATION. REMOVE, CLEAN, AND STORE EXISTING POWER POLES TO BE RE-INSTALLED IN NEW OFFICE CONFIGURATION.

FURNITURE IN THIS AREA TO BE REMOVED AND REINSTALLED IN A NEW CONFIGURATION. DISCONNECT POWER TO THE POWER POLE AND REMOVE THE BRANCH CIRCUIT BACK TO THE NEAREST JUNCTION BOX. SEE A4/EP501_5 FOR MORE INFORMATION. DOCUMENT THE EXISTING CIRCUIT INFORMATION AND EXTEND BRANCH CIRCUIT AS REQUIRED FOR RE-INSTALLATION. POWER POLES WILL BE REINSTALLED IN NEW LOCATION AS INDICATED. REMOVE, CLEAN, AND STORE EXISTING POWER POLES TO BE RE-INSTALLED IN NEW OFFICE CONFIGURATION.

KEYPLAN
NOT TO SCALE



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OVERALL SECOND FLOOR POWER PLAN

SHEET ID
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SHEET 97 OF 112

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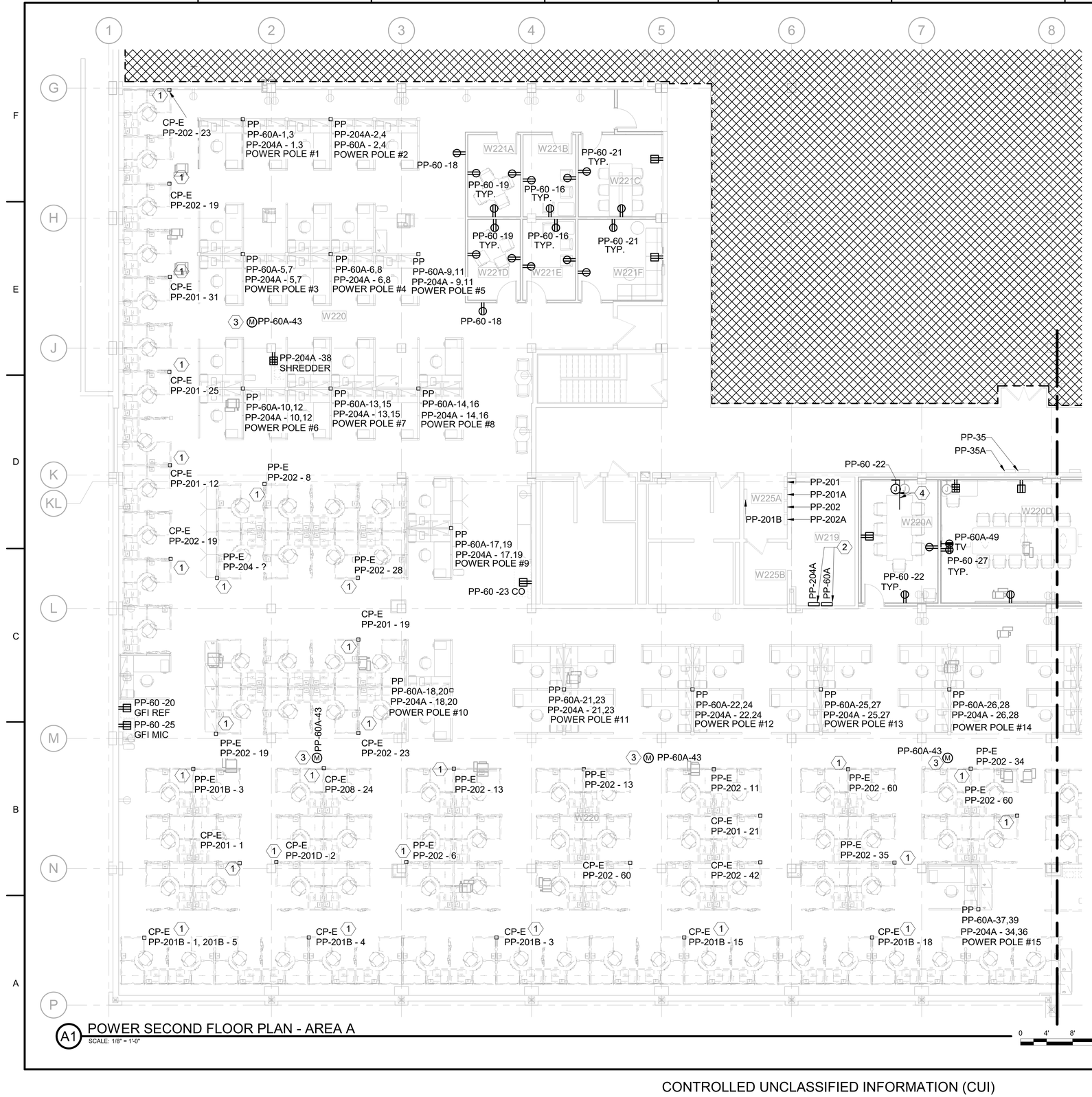


A1 POWER SECOND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

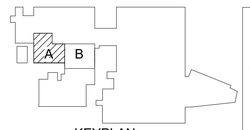
1. REFER TO SHEET E-001_5 AND E-002_5 FOR SYMBOLS AND ABBREVIATIONS.
2. ANY NEW DEVICE TO BE MOUNTED ON EXISTING SECURE PERIMETER WALL MUST BE SURFACE MOUNT.
3. BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. MINIMIZE IMPACT TO OTHER PARTS OF THE BUILDING TO THE GREATEST EXTENT POSSIBLE. SCHEDULE OUTAGES DURING OFF HOURS AND COORDINATE ALL OUTAGES WITH THE COR PRIOR TO COMMENCEMENT OF WORK.
4. LABEL POWER POLES AND RECEPTACLES WITH VOLTAGE, SOURCE PANEL AND CIRCUIT. HOUSE POWER OUTLETS (OUTLETS CIRCUITED TO PP-60 AND PP-60A) TO BE IVORY AND BE LABELED AS HOUSE POWER, TECHNICAL POWER OUTLETS (OUTLETS CIRCUITED TO PP-204 AND PP-204A) TO BE GREY AND BE LABELED AS TECHNICAL POWER.

KEYED NOTES: ⟨#⟩

1. EXTEND BRANCH CIRCUIT FROM NEAREST JUNCTION BOX. REUSE EXISTING POWER POLE REMOVED DURING DEMOLITION.
2. REFER TO ONE LINE DIAGRAM ON EP601_5 FOR MORE INFORMATION ON NEW TRANSFORMERS AND PANELS.
3. PROVIDE 120V POWER CONNECTION FOR 24VDC POWER SUPPLY FOR VAV. POWER SUPPLY PROVIDED BY DIV. 23. COORDINATE LOCATION OF POWER SUPPLY WITH MECHANICAL DRAWINGS. PROVIDE (1) POWER CONNECTION PER (6) VAV BOXES.
4. PROVIDE LOW-PROFILE OVERFLOOR BLACK ALUMINUM 4-CHANNEL RACEWAY FOR POWERING OF CONFERENCE ROOM TABLE. PROVIDE POWER CABLING FROM WALL-MOUNTED JUNCTION BOX THROUGH (1) CHANNEL OF RACEWAY TO POWER MODULE LOCATED IN DESK. COORDINATE INSTALLATION WITH FURNITURE MANUFACTURER AND INSTALLERS. RACEWAY SYSTEM MUST BE UL LISTED FOR THIS APPLICATION. PROVIDE ALL REQUIRED ACCESSORIES AND FITTINGS.

LEGEND:

AREA/ROOM NOT IN SCOPE



KEYPLAN
NOT TO SCALE

CAMERON K. LOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
EASTERN KENTUCKY
600 DR. MARTIN LUTHER KING, JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

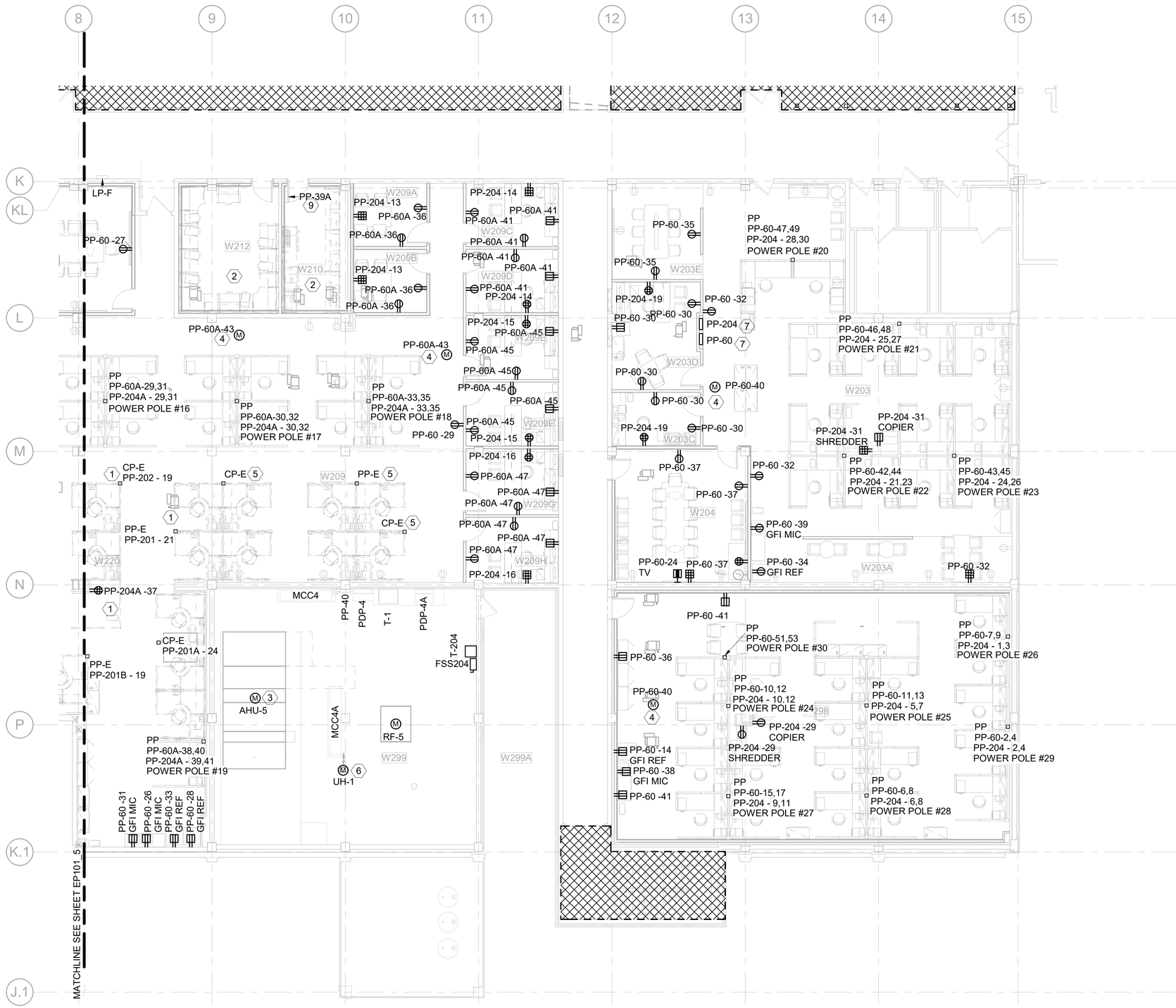
POWER SECOND FLOOR PLAN - AREA A

SHEET ID
EP101_5
SHEET 98 OF 112

W912QR23R0022_CUI_CF_Plans-0001

CERTIFIED FINAL

CUI



A1 POWER SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

GENERAL NOTES:

1. REFER TO SHEET E-001_5 AND E-002_5 FOR SYMBOLS AND ABBREVIATIONS.
2. ANY NEW DEVICE TO BE MOUNTED ON EXISTING SECURE PERIMETER WALL MUST BE SURFACE MOUNT.
3. BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. MINIMIZE IMPACT TO OTHER PARTS OF THE BUILDING TO THE GREATEST EXTENT POSSIBLE. SCHEDULE OUTAGES DURING OFF HOURS AND COORDINATE ALL OUTAGES WITH THE COR PRIOR TO COMMENCEMENT OF WORK.
4. LABEL POWER POLES AND RECEPTACLES WITH VOLTAGE, SOURCE PANEL AND CIRCUIT. HOUSE POWER OUTLETS TO BE IVORY AND BE LABELED AS HOUSE POWER, TECHNICAL POWER OUTLETS TO BE GREY AND BE LABELED AS TECHNICAL POWER.

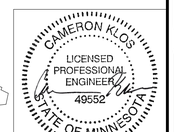
KEYED NOTES: (#)

1. EXTEND BRANCH CIRCUIT FROM NEAREST JUNCTION BOX. REUSE EXISTING POWER POLE REMOVED DURING DEMOLITION.
2. SURFACE MOUNT EXISTING RECEPTACLES AND OTHER DEVICES TO NEW WALL IN SAME LOCATION. EXTEND CONDUIT AND CABLING AS REQUIRED FROM EXISTING JUNCTION BOX SERVING RECEPTACLES. ASSUME 5 RECEPTACLES PER SPACE.
3. PROVIDE 480V POWER TO MECHANICAL AHU-5. DISCONNECT/VFD PROVIDED BY DIV. 23. SEE EP601_5 FOR DETAILS. PROVIDE (3) SEPARATE 120V POWER CIRCUIT FOR UV LIGHTS, LIGHTS/SWITCH, AND RECEPTACLE. UTILIZE EXISTING SPARES 15, 17, AND 19 IN PANEL PP-40. PROVIDE 2#12AWG, #12GND, 3/4" C FOR EACH CIRCUIT.
4. PROVIDE 120V POWER CONNECTION FOR 24VDC POWER SUPPLY FOR VAV. POWER SUPPLY PROVIDED BY DIV. 23. COORDINATE LOCATION OF POWER SUPPLY WITH MECHANICAL CONTRACTOR. PROVIDE (1) POWER CONNECTION PER (6) VAV BOXES.
5. VERIFY HOUSE POWER AND TECHNICAL POWER CIRCUIT FOR RE-INSTALLED POWER POLE. EXISTING CIRCUITS IN THIS AREA WERE UNABLE TO BE VERIFIED.
6. PROVIDE 120V POWER CONNECTION FOR UH-1. PROVIDE 2# 12AWG, #12GND, 3/4" C FROM EXISTING SPARE IN PP-40 CIRCUIT #21.
7. REFER TO ONE LINE DIAGRAM ON EP601_5 FOR MORE INFORMATION ON NEW TRANSFORMERS AND PANELS.
8. PROVIDE 480V POWER TO MECHANICAL RF-5. DISCONNECT/VFD PROVIDED BY DIV. 26. SEE EP601_5 FOR DETAILS.
9. SURFACE MOUNT EXISTING PANEL PP-39A AND ASSOCIATED CONDUITS TO NEW WALL. EXTEND EXISTING CONDUIT AND CONDUCTORS AS REQUIRED.

LEGEND:

AREA/ROOM NOT IN SCOPE

KEYPLAN
NOT TO SCALE



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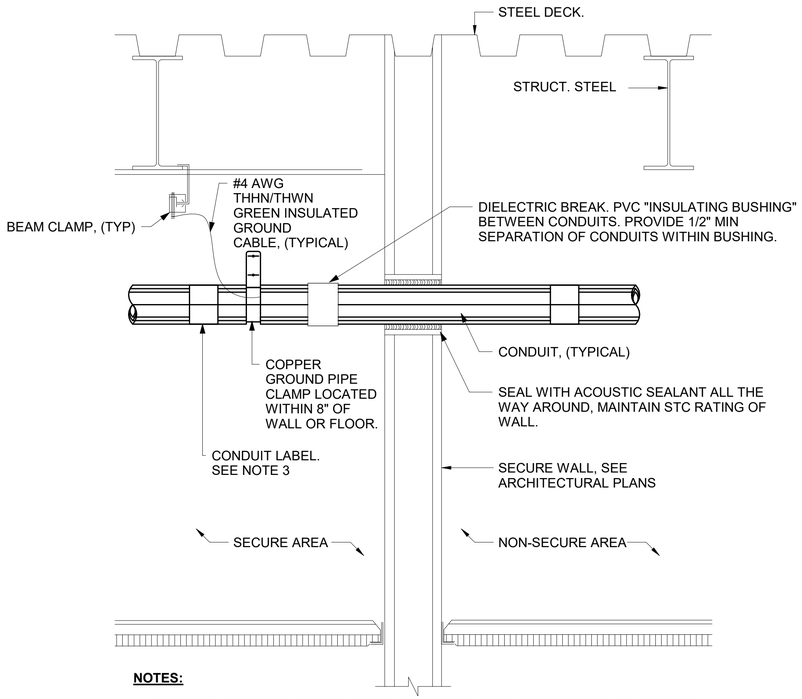
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

POWER SECOND FLOOR PLAN - AREA B

SHEET ID
EP102_5
SHEET 99 OF 112

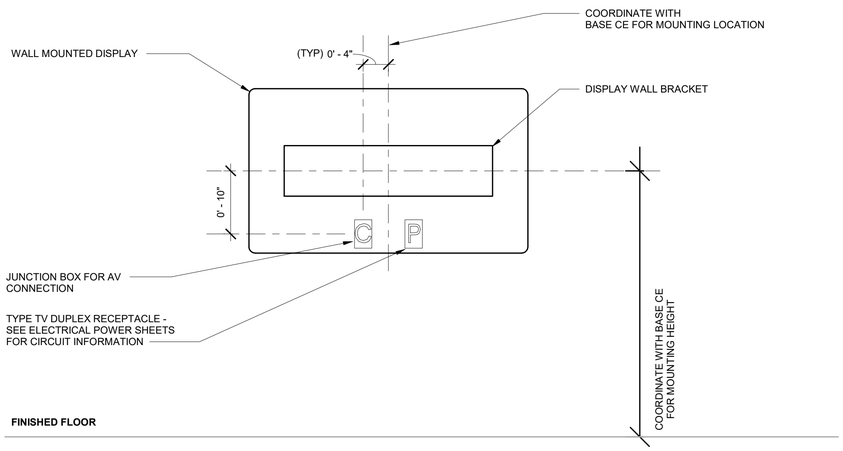
CUI
W912QR23R0022_CUI_CF_Plans-0001
CERTIFIED FINAL



NOTES:

1. SECURED AREA REQUIRES THAT PENETRATIONS SUCH AS THE DETAIL SHOWN BE ACCESSIBLE FOR INSPECTION BY PROGRAM SECURITY. COORDINATE WITH CONTRACTING OFFICER DURING INSTALLATION.
2. KEEP A LOG OF ALL CONDUIT PENETRATIONS INDICATING LOCATION, PURPOSE AND INDICATION THAT THE INSTALLATION HAS BEEN COORDINATED WITH CONTRACTING OFFICER AND PROGRAM SECURITY.
3. LABEL MUST BE PERMANENTLY AFFIXED. LABEL CONDUIT FUNCTION.
4. INSTALLATION MUST MAINTAIN STC RATING OF WALL, STC 50 MINIMUM.

C1 CONDUIT PENETRATION AT SECURE WALL
SCALE:NTS



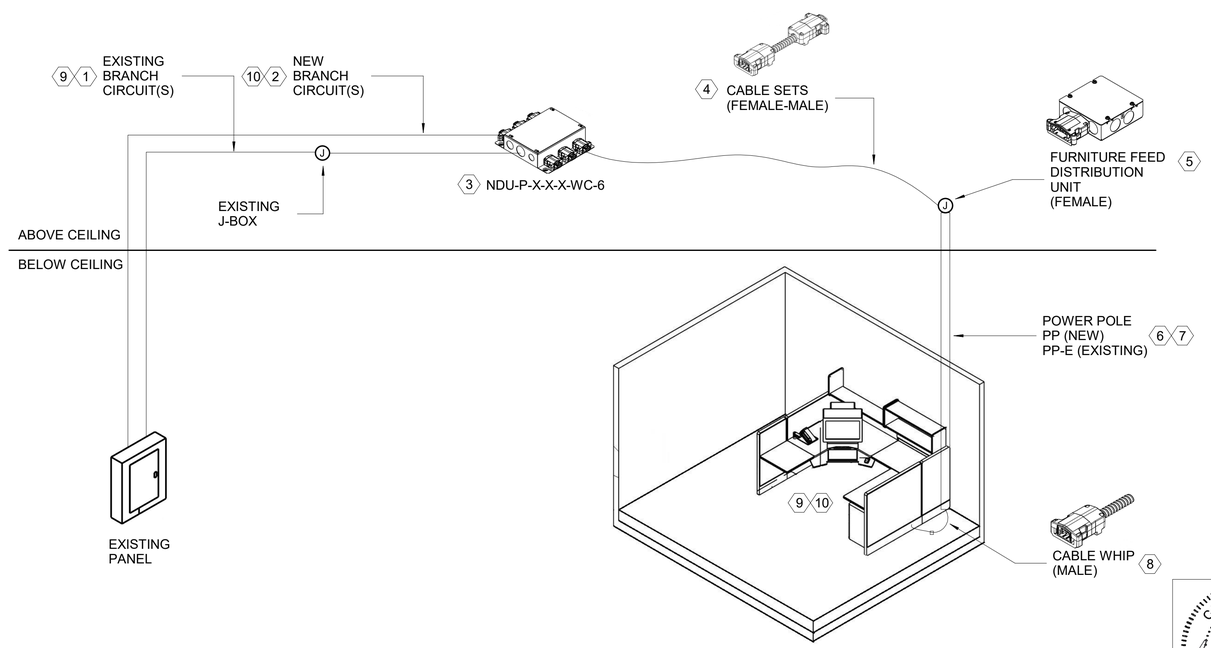
A1 TYPICAL FLAT PANEL DISPLAY OUTLET INSTALLATION ELEVATION
SCALE:NTS

GENERAL NOTES:

1. FOR NEW FURNITURE, PROVIDE CIRCUITS AS SHOWN. EACH HOUSE POWER CIRCUIT CAN FEED UP TO (4) WORKSTATIONS. EACH TECHNICAL POWER CIRCUIT CAN FEED UP TO (2) WORKSTATIONS. SPECIFIC FURNITURE COMPONENTS REQUIRED TO MAINTAIN THESE ELECTRICAL CONDITIONS MUST BE COORDINATED WITH FURNITURE LAYOUT.
2. FOR EXISTING FURNITURE, EXTEND EXISTING BRANCH CIRCUIT AS SHOWN. SEE A4/EP501_5 FOR DETAILS.
3. DEMO EXISTING WALKERFLEX SYSTEM ELECTRICAL COMPONENTS IN ITS ENTIRETY.

KEYED NOTES: (#)

1. DEMOLISH EXISTING BRANCH CIRCUIT WIRING BACK TO SERVING ELECTRICAL PANEL. EXISTING CONDUIT AND JUNCTION BOXES TO WALKERFLEX DISTRIBUTION UNITS (NDU) MUST REMAIN.
2. PROVIDE NEW BRANCH CIRCUIT(S) AS INDICATED.
3. DEMO EXISTING WALKERFLEX DISTRIBUTION UNIT(NDU). PROVIDE NEW NEMA 1 JUNCTION BOX, SIZE AS REQUIRED PER NEC.
4. DEMO EXISTING WALKERFLEX CABLE SET(S). PROVIDE NEW BRANCH CIRCUIT CONNECTION TO POWER POLE.
5. DEMO EXISTING WALKERFLEX FURNITURE FEED DISTRIBUTION UNIT. PROVIDE NEW NEMA 1 JUNCTION BOX, SIZE PER NEC.
6. DEMO EXISTING POWER POLE(S) NOT RE-USED. WHERE NOTED FOR RE-USE, DISCONNECT, REMOVE, AND STORE FOR RE-USE. AFTER FURNITURE RE-INSTALL; INSTALL EXISTING POWER POLE AND NEW BRANCH CIRCUIT CONNECTION.
7. WHERE NOTED AS NEW POWER POLE (PP), PROVIDE A NEW POWER POLE AND INSTALL NEW BRANCH CIRCUIT CONNECTION.
8. DEMO EXISTING WALKERFLEX CABLE WHIP. PROVIDE NEW BRANCH CIRCUIT IN POWER POLE. PROVIDE NEW FURNITURE WHIP CONNECTION.
9. FOR POWER POLES INDICATED AS RELOCATED, EXTEND BRANCH CIRCUIT FROM NEAREST JUNCTION BOX TO NEW POWER POLE LOCATION. UTILIZE EXISTING BRANCH CIRCUIT NUMBERS SERVING EXISTING FURNITURE.
10. FOR POWER POLES INDICATED AS NEW, PROVIDE NEW BRANCH CIRCUIT WIRING FROM NEW ELECTRICAL PANEL. PROVIDE NEW BRANCH CIRCUITS AS INDICATED.



A4 TYPICAL WALKERFLEX SYSTEM LAYOUT
SCALE:NTS

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SUBMITTED BY: C. DAWSON
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CHRISTOPHER S. ERICKSON
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL.
9400 WARD PARKWAY, KANSAS CITY, MO 64114

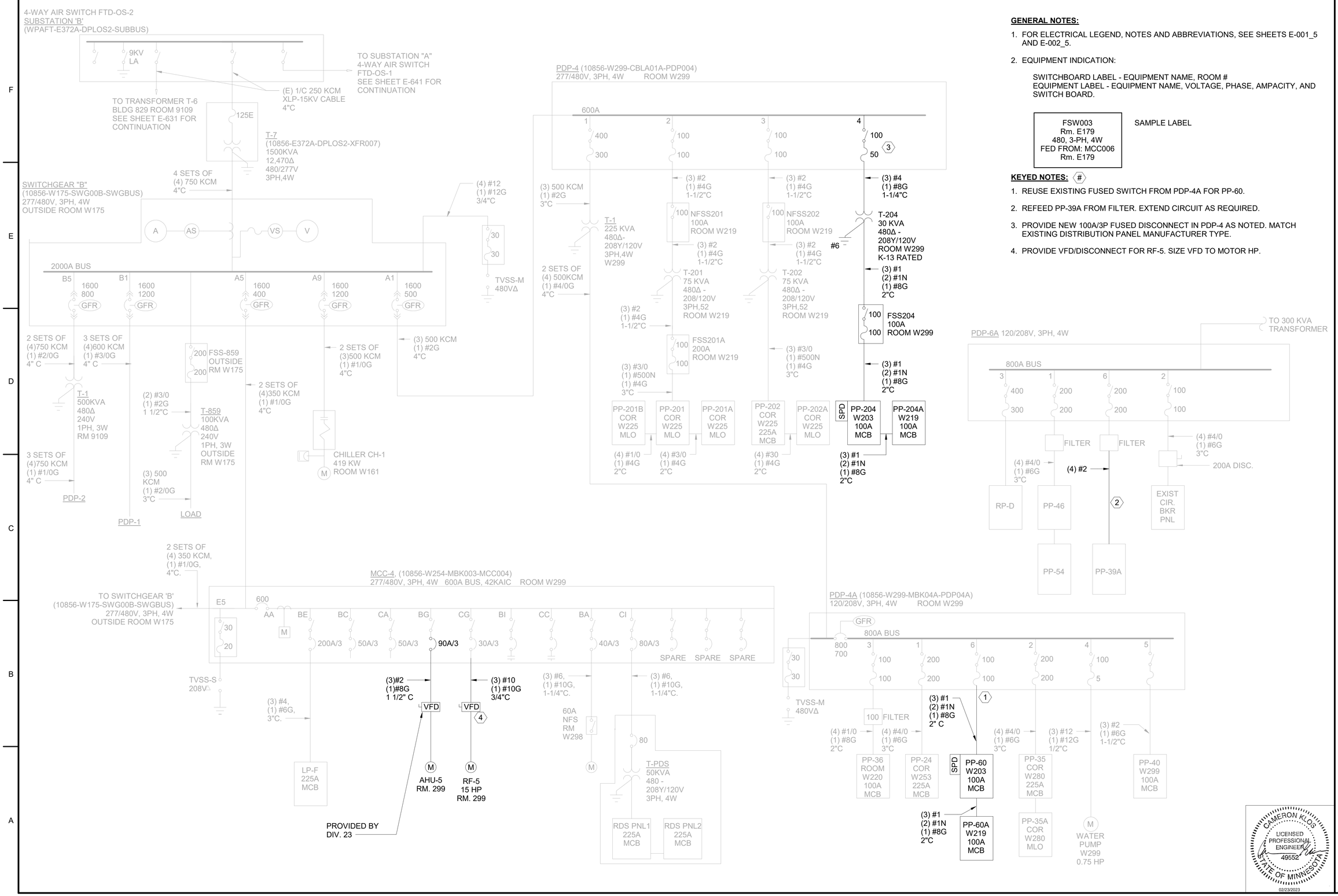
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

ELECTRICAL DETAILS

SHEET ID
EP501_5
SHEET 100 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CUI



GENERAL NOTES:

1. FOR ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS, SEE SHEETS E-001_5 AND E-002_5.
2. EQUIPMENT INDICATION:

   SWITCHBOARD LABEL - EQUIPMENT NAME, ROOM #
   EQUIPMENT LABEL - EQUIPMENT NAME, VOLTAGE, PHASE, AMPACITY, AND SWITCH BOARD.

FSW003 Rm. E179 480, 3-PH, 4W FED FROM: MCC006 Rm. E179

SAMPLE LABEL

KEYED NOTES: ⟨#⟩

1. REUSE EXISTING FUSED SWITCH FROM PDP-4A FOR PP-60.
2. REFEED PP-39A FROM FILTER. EXTEND CIRCUIT AS REQUIRED.
3. PROVIDE NEW 100A/3P FUSED DISCONNECT IN PDP-4 AS NOTED. MATCH EXISTING DISTRIBUTION PANEL MANUFACTURER TYPE.
4. PROVIDE VFD/DISCONNECT FOR RF-5. SIZE VFD TO MOTOR HP.

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ELECTRICAL ONE-LINE DIAGRAM

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SHEET ID
EP601_5
SHEET 101 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

PANELBOARD: PP-204A (TECHNICAL POWER)

LOCATION: ELEC W219
SUPPLY FROM: PP-204
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 Wye
PHASE: 3
WIRES: 4

A.I.C. RATING: MIN 10 KAIC
MAINS TYPE: MCB
MAINS RATING: 100 A
MCB RATING: 100 A

NOTES:
SUITABLE FOR NON-LINEAR LOADS.

#	BKR	P	LOAD SERVED	WIRE / GROUND / CONDUIT	A		B		C		WIRE / GROUND / CONDUIT	LOAD SERVED	P	BKR	#
1	20	2	POWER POLE #1 W220	4#12, 1#12G, 3/4" C	488	325					4#12, 1#12G, 3/4" C	POWER POLE #2 W220	2	20	2
3	--	--	--	--			488	325			--	--	--	--	4
5	20	2	POWER POLE #3 W220	4#12, 1#12G, 3/4" C					488	650	4#12, 1#12G, 3/4" C	POWER POLE #4 W220	2	20	6
7	--	--	--	--	488	650					--	--	--	--	8
9	20	2	POWER POLE #5 W220	4#12, 1#12G, 3/4" C			163	650			4#12, 1#12G, 3/4" C	POWER POLE #6 W220	2	20	10
11	--	--	--	--					163	650	--	--	--	--	12
13	20	2	POWER POLE #7 W220	4#12, 1#12G, 3/4" C	650	163					4#12, 1#12G, 3/4" C	POWER POLE #8 W220	2	20	14
15	--	--	--	--			650	163			--	--	--	--	16
17	20	2	COMM/POWER POLE #9 W220	4#12, 1#12G, 3/4" C					325	325	4#12, 1#12G, 3/4" C	COMM/POWER POLE #10 W220	2	20	18
19	--	--	--	--	325	325					--	--	--	--	20
21	20	2	POWER POLE #11 W220	4#12, 1#12G, 3/4" C			650	650			4#12, 1#12G, 3/4" C	POWER POLE #12 W220	2	20	22
23	--	--	--	--					650	650	--	--	--	--	24
25	20	2	POWER POLE #13 W220	4#12, 1#12G, 3/4" C	650	650					4#12, 1#12G, 3/4" C	POWER POLE #14 W220	2	20	26
27	--	--	--	--			650	650			--	--	--	--	28
29	20	2	POWER POLE #16 W220	4#12, 1#12G, 3/4" C					650	650	4#12, 1#12G, 3/4" C	POWER POLE #17 W220	2	20	30
31	--	--	--	--	650	650					--	--	--	--	32
33	20	2	POWER POLE #18 W209	4#12, 1#12G, 3/4" C			650	650			2#12, 1#12G, 3/4" C	POWER POLE #15 W220	2	20	34
35	--	--	--	--					650	650	--	--	--	--	36
37	20	1	Receptacle OPEN OFFICE W220	2#12, 1#12G, 3/4" C	720	720					2#12, 1#12G, 3/4" C	W220 SHREDDERS	1	20	38
39	20	2	W220 POWER POLE #19	4#12, 1#12G, 3/4" C			163								40
41	--	--	--	--					163	0		SPARE	1	20	42
43						0						SPARE	1	20	44
45	20	1	SPARE				0	0				SPARE	1	20	46
47	20	1	SPARE						0	0		SPARE	1	20	48
49	20	1	SPARE		0	0					(SPD LEADS)	SPD	3	30	50
51	20	1	SPARE				0	0			--	--	--	--	52
53	20	1	SPARE						0	0	--	--	--	--	54
				TOTAL LOAD:	7453 VA		6500 VA		6663 VA						
				TOTAL AMPS:	62 A		54 A		56 A						

PANEL TOTALS	
TOTAL CONNECTED LOAD:	20615 VA
TOTAL ESTIMATED DEMAND LOAD:	15308 VA
TOTAL CONNECTED CURRENT:	57 A
TOTAL ESTIMATED DEMAND...	42 A
DEMAND WITH EXPANSION:	51 A

PANELBOARD: PP-60A (HOUSE POWER)

LOCATION: ELEC W219
SUPPLY FROM: PP-60
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 Wye
PHASE: 3
WIRES: 4

A.I.C. RATING: MIN 10 KAIC
MAINS TYPE: MCB
MAINS RATING: 100 A
MCB RATING: 100 A

NOTES:
SUITABLE FOR NON-LINEAR LOADS.

#	BKR	P	LOAD SERVED	WIRE / GROUND / CONDUIT	A		B		C		WIRE / GROUND / CONDUIT	LOAD SERVED	P	BKR	#
1	20	2	POWER POLE #1 W220	4#12, 1#12G, 3/4" C	488	325					4#12, 1#12G, 3/4" C	POWER POLE #2 W220	2	20	2
3	--	--	--	--			488	325			--	--	--	--	4
5	20	2	POWER POLE #3 W220	4#12, 1#12G, 3/4" C					488	650	4#12, 1#12G, 3/4" C	POWER POLE #4 W220	2	20	6
7	--	--	--	--	488	650					--	--	--	--	8
9	20	2	POWER POLE #5 W220	4#12, 1#12G, 3/4" C			163	650			4#12, 1#12G, 3/4" C	POWER POLE #6 W220	2	20	10
11	--	--	--	--					163	650	--	--	--	--	12
13	20	2	POWER POLE #7 W220	4#12, 1#12G, 3/4" C	650	163					4#12, 1#12G, 3/4" C	POWER POLE #8 W220	2	20	14
15	--	--	--	--			650	163			--	--	--	--	16
17	20	2	COMM/POWER POLE #9 W220	4#12, 1#12G, 3/4" C					325	325	4#12, 1#12G, 3/4" C	COMM/POWER POLE #10 W220	2	20	18
19	--	--	--	--	325	325					--	--	--	--	20
21	20	2	POWER POLE #11 W220	4#12, 1#12G, 3/4" C			650	650			4#12, 1#12G, 3/4" C	POWER POLE #12 W220	2	20	22
23	--	--	--	--					650	650	--	--	--	--	24
25	20	2	POWER POLE #13 W220	4#12, 1#12G, 3/4" C	650	650					4#12, 1#12G, 3/4" C	POWER POLE #14 W220	2	20	26
27	--	--	--	--			650	650			--	--	--	--	28
29	20	2	POWER POLE #16 W220	4#12, 1#12G, 3/4" C					650	650	4#12, 1#12G, 3/4" C	POWER POLE #17 W209	2	20	30
31	--	--	--	--	650	650					--	--	--	--	32
33	20	2	POWER POLE #18 W209	4#12, 1#12G, 3/4" C			650	65			2#12, 1#12G, 3/4" C	Lighting OPEN OFFICE W220	1	20	34
35	--	--	--	--					650	720	2#12, 1#12G, 3/4" C	W209B, W209A RECEPTS	1	20	36
37	20	2	POWER POLE #15 W220	2#12, 1#12G, 3/4" C	650	163					4#12, 1#12G, 3/4" C	W220 POWER POLE #19	2	20	38
39	--	--	--	--			650	163			--	--	--	--	40
41	20	1	W209C, W209D RECEPTS	2#12, 1#12G, 3/4" C					1080	0		SPARE	1	20	42
43	20	1	VAV W220	2#12, 1#12G, 3/4" C	180	0						SPARE	1	20	44
45	20	1	W209E, W209F RECEPTS	2#12, 1#12G, 3/4" C			1080	0				SPARE	1	20	46
47	20	1	W209G, W209H RECEPTS	2#12, 1#12G, 3/4" C					1080	0		SPARE	1	20	48
49	20	1	TV CONF ROOM W220D	2#12, 1#12G, 3/4" C	500	0					(SPD LEADS)	SPD	3	30	50
51	20	1	Lighting OPEN OFFICE W220	2#12, 1#12G, 3/4" C			52	0			--	--	--	--	52
53	20	1	SPARE						0	0	--	--	--	--	54
				TOTAL LOAD:	7505 VA		7697 VA		8730 VA						
				TOTAL AMPS:	63 A		64 A		73 A						

PANEL TOTALS	
TOTAL CONNECTED LOAD:	23932 VA
TOTAL ESTIMATED DEMAND LOAD:	17329 VA
TOTAL CONNECTED CURRENT:	66 A
TOTAL ESTIMATED DEMAND...	48 A
DEMAND WITH EXPANSION:	58 A

PANELBOARD: PP-204 (TECHNICAL POWER)

LOCATION: COLLAB ROOM W203
SUPPLY FROM: T-204
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 Wye
PHASE: 3
WIRES: 4

A.I.C. RATING: MIN 10 KAIC
MAINS TYPE: MCB
MAINS RATING: 100 A
MCB RATING: 100 A

NOTES:
SUITABLE FOR NON-LINEAR LOADS.

#	BKR	P	LOAD SERVED	WIRE / GROUND / CONDUIT	A		B		C		WIRE / GROUND / CONDUIT	LOAD SERVED	P	BKR	#
1	20	2	POWER POLE #26 W298	4#12, 1#12G, 3/4" C	488	325					4#12, 1#12G, 3/4" C	POWER POLE #29 W298	2	20	2
3	--	--	--	--			488	325			--	--	--	--	4
5	20	2	POWER POLE #25 W298	4#12, 1#12G, 3/4" C					650	650	4#12, 1#12G, 3/4" C	POWER POLE #28 W298	2	20	6
7	--	--	--	--	650	650					--	--	--	--	8
9	20	2	POWER POLE #27 W298	4#12, 1#12G, 3/4" C			325	650			4#12, 1#12G, 3/4" C	POWER POLE #24 W298	2	20	10
11	--	--	--	--					325	650	--	--	--	--	12
13	20	1	W209A, W209B RECEPTS	2#12, 1#12G, 3/4" C	720	720					2#12, 1#12G, 3/4" C	W209C, W209D RECEPTS	1	20	14
15	20	1	W209F, W209E RECEPTS	2#12, 1#12G, 3/4" C			720	720			2#12, 1#12G, 3/4" C	W209H, W209G RECEPTS	1	20	16
17										7453	4#1, 1#8G, 3/4" C	PP-204A	3	100	18
19	20	1	W203D, W203C RECEPTS	2#12, 1#12G, 3/4" C	720	6500					--	--	--	--	20
21	20	2	POWER POLE #22 W203	4#12, 1#12G, 3/4" C			488	6663			--	--	--	--	22
23	--	--	--	--					488	650	4#12, 1#12G, 3/4" C	POWER POLE #23 W203	2	20	24
25	20	2	POWER POLE #21 W203	4#12, 1#12G, 3/4" C	650	650					--	--	--	--	26
27	--	--	--	--			650	325			4#12, 1#12G, 3/4" C	COMM/POWER POLE #20 W203	2	20	28
29	20	1	W298 PRINTER/SHREDDER	2#12, 1#12G, 3/4" C					1380	325	--	--	--	--	30
31	20	1	W203 PRINTER/SHREDDER	2#12, 1#12G, 3/4" C	1720										32
33															34
35															36
37															38
39															40
41	20	1	SPARE						0						42
43	20	1	SPARE		0										44
45	20	1	SPARE				0								46
47	20	1	SPARE						0						48
49	20	1	SPARE		0	0					(SPD LEADS)	SPD	3	30	50
51	20	1	SPARE				0	0			--	--	--	--	52
53	20	1	SPARE						0	0	--	--	--	--	54
				TOTAL LOAD:	13793 VA		11353 VA		12570 VA						
				TOTAL AMPS:	116 A		95 A		106 A						

PANEL TOTALS	
TOTAL CONNECTED LOAD:	37715 VA
TOTAL ESTIMATED DEMAND LOAD:	24368 VA
TOTAL CONNECTED CURRENT:	105 A
TOTAL ESTIMATED DEMAND...	68 A
DEMAND WITH EXPANSION:	81 A

PANELBOARD: PP-60 (HOUSE POWER)

LOCATION: COLLAB ROOM W203
SUPPLY FROM: PDP-4A
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 Wye
PHASE: 3
WIRES: 4

A.I.C. RATING: MIN 10 KAIC
MAINS TYPE: MCB
MAINS RATING: 100 A
MCB RATING: 100 A

NOTES:
SUITABLE FOR NON-LINEAR LOADS. PROVIDE 100% RATED 100A MAIN CIRCUIT BREAKER.

#	BKR	P	LOAD SERVED	WIRE / GROUND / CONDUIT	A		B		C		WIRE / GROUND / CONDUIT	LOAD SERVED	P	BKR	#
1	100	3	PP-60A	4#1, 1#8G, 3/4" C	7505	325					4#12, 1#12G, 3/4" C	POWER POLE #29 W298	2	20	2
3	--	--	--	--			7697	325			--	--	--	--	4
5	--	--	--	--					8730	650	4#12, 1#12G, 3/4" C	POWER POLE #28 W298	2	20	6
7	20	2	POWER POLE #26 W298	4#12, 1#12G, 3/4" C	488	650					--	--	--	--	8
9	--	--	--	--			488	650			4#12, 1#12G, 3/4" C	POWER POLE #24 W298	2	20	10
11	20	2	POWER POLE #25 W298	4#12, 1#12G, 3/4" C					650	650	--	--	--	--	12
13	--	--	--	--	650	180					2#12, 1#12G, 3/4" C	W298 FRIDGE	1	20	14
15	20	2	POWER POLE #27 W298	4#12, 1#12G, 3/4" C			325	1080			2#10, 1#10G, 3/4" C	W221B, W221E RECEPTS	1	20	16
17	--	--	--	--					325	360	2#12, 1#12G, 3/4" C	W220 RECEPTS	1	20	18
19	20	1	W221A, W221D RECEPTS	2#10, 1#10G, 3/4" C	1080	180					2#12, 1#12G, 3/4" C	W220 FRIDGE	1	20	20
21	20	1	W221C, W221F RECEPTS	2#10, 1#10G, 3/4" C			1080	720			2#12, 1#12G, 3/4" C	W220A RECEPTS	1	20	22
23	20	1	W220 COPIER	2#12, 1#12G, 3/4" C					1000	500	2#12, 1#12G, 3/4" C	TV CONF ROOM W204	1	20	24
25	20	1	W220 MICROWAVE	2#12, 1#12G, 3/4" C	180	180					2#12, 1#12G, 3/4" C	W220 MICROWAVE	1	20	26
27	20	1	W220D RECEPTS	2#12, 1#12G, 3/4" C			1260	180			2#12, 1#12G, 3/4" C	W220 FRIDGE	1	20	28
29	20	1	W220 CONV RECEPTS	2#12, 1#12G, 3/4" C					180	900	2#12, 1#12G, 3/4" C	W203D, W203C RECEPTS	1	20	30
31	20	1	W220 MICROWAVE	2#12, 1#12G, 3/4" C	180	720					2#12, 1#12G, 3/4" C	W203-1 RECEPTS	1	20	32
33	20	1	W220 FRIDGE	2#12, 1#12G, 3/4" C			180	180			2#12, 1#12G, 3/4" C	Receptacle BREAK W203A	1	20	34
35	20	1	W203E RECEPTS	2#12, 1#12G, 3/4" C					360	180	2#12, 1#12G, 3/4" C	W298 COPIER	1	20	36
37	20	1	W204 RECEPTS	2#12, 1#12G, 3/4" C	1080	180					2#12, 1#12G, 3/4" C	W298 MICROWAVE	1	20	38
39	20	1	Receptacle COLLAB ROOM W203	2#12, 1#12G, 3/4" C			180	60			2#12, 1#12G, 3/4" C	W203, W298 VAV POWER SUPPLY	1	20	40
41	20	1	W298 RECEPTS	2#12, 1#12G, 3/4" C					540	488	4#12, 1#12G, 3/4" C	POWER POLE #22 W203	2	20	42
43	20	2	POWER POLE #23 W203	4#12, 1#12G, 3/4" C	650	488					--	--	--	--	44
45	--	--	--	--			650	650			4#12, 1#12G, 3/4" C	POWER POLE #21 W203	2	20	46
47	20	2	POWER POLE #20 W203	4#12, 1#12G, 3/4" C					325	650	--	--	--	--	48
49	--	--	--	--	325	0					(SPD LEADS)	SPD	3	30	50
51	20	2	W298 POWER POLE #30	2#12, 1#12G, 3/4" C			90	0			--	--	--	--	52
53	--	--	--	--					90	0	--	--	--	--	54
				TOTAL LOAD:	15040 VA		15795 VA		16578 VA						
				TOTAL AMPS:	125 A		133 A		139 A						

PANEL TOTALS	
TOTAL CONNECTED LOAD:	47412 VA
TOTAL ESTIMATED DEMAND LOAD:	29177 VA
TOTAL CONNECTED CURRENT:	132 A
TOTAL ESTIMATED DEMAND...	81 A
DEMAND WITH EXPANSION:	97 A

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL.
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

ELECTRICAL PANEL SCHEDULES

SHEET ID
EP602_5
SHEET 102 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

LEGEND NOTES

1. SYMBOL ORIENTATION DOES NOT IMPLY DEVICE OR EQUIPMENT ORIENTATION, UON.
2. SYMBOL SIZE DOES NOT IMPLY EQUIPMENT SIZE, UON.
3. MOUNTING HEIGHT INDICATED IN LEGEND AND ON THE SHEETS MUST BE THE DISTANCE MEASURED FROM THE CENTER OF THE DEVICE TO THE FINISHED FLOOR.
4. NOT ALL SYMBOLS ON THIS SHEET ARE USED AS PART OF THIS PROJECT.

INSIDE PLANT GENERAL NOTES

1. HORIZONTAL CABLING THROUGHOUT THE FACILITY MUST NOT EXCEED 295 FEET IN CABLE LENGTH PER TIA GUIDELINES. CONTRACTOR MUST ROUTE PATHWAYS AND CABLES TO ENSURE THIS DISTANCE IS NOT EXCEEDED. CONTRACTOR MUST NOTIFY COR PRIOR TO PATHWAY AND CABLE INSTALLATION IF THERE ARE AREAS WHERE THE EXPECTED CABLE LENGTH MAY BE IN EXCESS OF 295 FEET.
2. HORIZONTAL CABLING SERVING WALL MOUNTED COMMUNICATIONS OUTLETS IN STANDARD WALLS MUST BE ROUTED FROM COMMUNICATIONS OUTLET IN MINIMUM 1" CONDUIT FROM EACH COMMUNICATIONS OUTLET TO AREA CABLE TRAY, AND IN AREA CABLE TRAY TO DESIGNATED COMMUNICATION ROOM.
3. ALL CONDUITS MUST BE CONCEALED UNLESS OTHERWISE NOTED ON PLAN. CONDUITS INSTALLED IN SPACES WITH CONCRETE OR CMU WALLS MUST BE SURFACE MOUNTED AND PAINTED TO MATCH WALL FINISH. SEE ARCHITECTURAL PLANS FOR WALL FINISHES.
4. ALL CABLING MUST BE LABELED IN ACCORDANCE WITH TIA-606-C, LABELING STANDARD FOR NETWORKS.
5. USE WIDE BEND RADIUS CONDUITS FOR ALL CONDUITS CONTAINING COMMUNICATIONS CABLING TO FACILITATE CABLE PULLING.
6. ALL COMMUNICATION EQUIPMENT AND OUTLET INSTALLATION LOCATIONS MUST BE COORDINATED WITH FURNITURE INSTALLATION.
7. COORDINATE PENETRATIONS IN FIRE-RATED WALLS WITH DETAILS SHOWN ON ARCHITECTURAL SHEETS.
8. ALL PENETRATIONS IN WALLS, INCLUDING FIRE-RATED WALLS, MUST CONFORM TO THE ARCHITECTURAL PENETRATION DETAILS ON ARCHITECTURAL SHEETS.
9. CONTRACTOR MUST PROVIDE CONDUITS, BACKBOXES, AND PULL-STRINGS FOR GFGI EQUIPMENT. COORDINATE FINAL LOCATIONS OF GFGI EQUIPMENT WITH THE COR PRIOR TO SUBMITTING CONDUIT AND BACKBOX LOCATION SHOP DRAWINGS FOR GOVERNMENT REVIEW.
10. MAINTAIN 12-INCHES CLEAR SPACE ABOVE CABLE TRAYS AND PROVIDE HORIZONTAL ACCESS TO CABLE TRAYS. BOTTOM OF TRAYS MUST BE MOUNTED 3" MINIMUM ABOVE DROP CEILINGS TO ALLOW ROOM FOR REMOVAL AND REPLACEMENT OF CEILING TILES.
11. ALL BACKBONE CABLE RUNS MUST HAVE 10' MAINTENANCE LOOPS AT BOTH ENDS. ALL HORIZONTAL CABLE RUNS MUST HAVE 10' MAINTENANCE LOOPS AT THE TR END.
12. INSTALL TELECOMMUNICATIONS PULL BOXES IN STRAIGHT SECTIONS OF CONDUIT. DO NOT USE BOXES IN LIEU OF SWEEPING BENDS. PROVIDE BOXES WHEN:
    A. RACEWAY SECTIONS INCLUDES (2) TWO OR MORE 90 DEGREE SWEEPING BENDS OR EQUIVALENT.
    B. LENGTH OF RACEWAY SECTION IS GREATER THAN 100 FEET.

ABBREVIATIONS

AC	ABOVE COUNTER
ACS	ACCESS CONTROL SYSTEM
AFF	ABOVE FINISHED FLOOR
ANSI	AMERICAN NATIONAL STANDARDS
AV	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BBC	BACKBONE BONDING CONDUCTOR
BICSI	BUILDING INDUSTRY CONSULTANTS SERVICE INTERNATIONAL
BMS	BALANCED MAGNETIC SWITCH -OR- BUILDING MANAGMENT SYSTEM
C	CONDUIT
CAT	CATEGORY (E.G. CAT6)
CATV	CABLE TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CL	CENTERLINE
COMM	TELECOMMUNICATIONS
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CPP	COPPER PATCH PANEL
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CT	CABLE TRAY
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEV	ELEVATOR
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
ESS	ELECTRONIC SECURITY SYSTEMS
EXP	EXPLOSION PROOF
FB	FLOORBOX
FO	FIBER OPTIC
FPD	FLAT PANEL DISPLAY
FPP	FIBER OPTIC PATCH PANEL
FT	FEET OR FOOT
G	GROUND
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED
GND	GROUND
GRS	GALVANIZED RIGID STEEL CONDUIT
GYP	GYPSUM WALLBOARD
HCM	HORIZONTAL CABLE MANAGER
HZ	HERTZ
IDS	INTRUSION DETECTION SYSTEM
IP	INTERNET PROTOCOL
K	KILO
KCMIL	THOUSAND CIRCULAR MILS
LAN	LOCAL AREA NETWORK
LED	LIGHT EMITTING DIODE
MAX	MAXIMUM
MH	MAINTENANCE HOLE
MHZ	MEGAHERTZ
MM	MULTI-MODE
MN/PA	MASS NOTIFICIATION / PUBLIC ADDRESS
MPOE	MAIN POINT OF ENTRY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OSP	OUTSIDE PLANT
OTDR	OPTICAL TIME DOMAIN REFLECTOMETRY
PA	PUBLIC ANNOUNCEMENT AND PAGING
PBB	PRIMARY BONDING BUSBAR
PDU	POWER DISTRIBUTION UNIT
PET	PROTECTED ENTRANCE TERMINAL
POE	POWER OVER ETHERNET
PTZ	PAN, TILT, ZOOM
RBB	RACK BONDING BUSBAR
RBC	RACK BONDING CONDUCTOR
RGS	RIGID GALVANIZED STEEL CONDUIT
RMS	ROOT MEAN SQUARE
SBB	SECONDARY BONDING BUSBAR
SBC	SECONDARY BONDING CONDUCTOR
SCCR	SHORT CIRCUIT CURRENT RATING
SJB	SECURITY JUNCTION BOX
SM	SINGLE-MODE
SPECS	SPECIFICATIONS
STI	SPEECH TRANSMISSION INDEX
STP	SHIELDED TWISTED PAIR
STR	STRAND
SYM	SYMMETRICAL
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
TDR	TIME DOMAIN REFLECTOMETRY
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TR	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
UBC	UNIT BONDING CONDUCTOR
UG	UNDERGROUND
UL	UNDERWRITERS' LABORATORIES
UM	MICROMETER
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VA	VOLT AMPERES
VAC	VOLTS, ALTERNATING CURRENT
VOIP	VOICE OVER INTERNET PROTOCOL
VSS	VIDEO SURVEILLANCE SYSTEM
VTC	VIDEO TELECONFERENCE
W	WATT
WAO	WORK AREA OUTLET
WIC	WALL-MOUNTABLE INTERCONNECT CENTER
WP	WALLPHONE -OR- WEATHERPROOF
XFMR	TRANSFORMER
Z	IMPEDANCE

SYMBOLS - ONE-LINE

WIRING RACEWAY TYPES

- EXPOSED CONDUIT - SINGLE LINE
- CONCEALED CONDUIT - SINGLE LINE
- CONDUIT ROUTED VERTICALLY

OUTLETS

- SEE SCHEDULE AND DETAILS ON TN500 SERIES SHEETS FOR COMMUNICATION OUTLET INFORMATION
- ▼1 FURNITURE MOUNTED COMMUNICATION OUTLET 18" AFF UON.
- ▽1 WALL MOUNTED COMMUNICATION OUTLET 18" AFF UON.

COMMUNICATIONS GENERAL INFORMATION

- ▼1 (OR) ▯1 — FACEPLATE TYPE (REFER TO COMM DETAILS ON TN500 SERIES SHEETS FOR FACEPLATE TYPE DESCRIPTIONS)

OUTLETS WITH ELECTRICAL RECEPTACLES

- SEE COMMUNICATIONS OUTLET DETAILS FOR POWER AND COMMUNICATIONS REQUIREMENTS
- BOX AND CONDUIT PROVIDED AS PART OF ELECTRICAL SCOPE OF WORK
- RECESSED FLAT PANEL BOX.
- TV SURFACE FLAT PANEL BOX.

CABLE TRAY

- TELECOMMUNICATIONS WIRE BASKET CABLE TRAY, 12" WIDE X 4" DEEP, UON, MOUNTING HEIGHT AS INDICATED ON SHEETS - COMPLY WITH TIA-607-D GROUNDING AND BONDING REQUIREMENTS
- TELECOMMUNICATION LADDER STYLE CABLE RUNWAY, SIZE AND MOUNTING HEIGHT AS INDICATED ON SHEETS - COMPLY WITH TIA-607-D GROUNDING AND BONDING REQUIREMENTS

COMM ROOM EQUIPMENT

- COMMUNICATIONS RACK
- COMMUNICATIONS CABINET
- TELECOMMUNICATIONS PRIMARY BONDING BUSBAR (PBB) OR SECONDARY BONDING BUSBAR (SBB)
  - SEE DETAIL D5 ON SHEET [EG503] FOR PBB
  - SEE DETAIL A5 ON SHEET [EG503] FOR SBB
- FIRE RATED PLYWOOD BACKBOARD ALONG WALL AS SHOWN ON PLANS. PAINTING NOT REQUIRED.
- CONDUIT INTO ROOM FROM FLOOR BELOW
  - 4" UON
  - PROVIDE PROTECTIVE BUSHING AT BOTH ENDS

COMMUNICATIONS DEVICES

- (J) JUNCTION BOX, CEILING
- (J) JUNCTION BOX, WALL
- (S) 8" ROUND CEILING LOUDSPEAKER
- (H) WALL MOUNT HORN LOUDSPEAKER

SYMBOLS - MODIFIERS

AC	ABOVE COUNTER MOUNTING
FPD	FLAT PANEL DISPLAY
PROJ	PROJECTOR
SB	SMART BOARD
TV	TELEVISION
XX" AFF	MOUNT XX" AFF TO CENTER OF DEVICE
XX"W X X"D	WIDTH AND DEPTH OF CABLE TRAY

SYMBOLS - COMMUNICATIONS

- # ▼ WORKSTATION FURNITURE COUPLER TERMINATED FIBER (#);
  Y - YELLOW FIBER, QUANTITY OF FIBER AS INDICATED
  R - RED FIBER, QUANTITY OF FIBER (1), UON
  G - GREEN FIBER, QUANTITY OF FIBER (1), UON
  6 PORT SURFACE MOUNT OUTLET BOX WITH LC CONNECTORS.
- # ▽ WALL PLATE TERMINATED FIBER (#);
  Y - YELLOW FIBER, QUANTITY OF FIBER AS INDICATED
  R - RED FIBER, QUANTITY OF FIBER (1), UON
  G - GREEN FIBER, QUANTITY OF FIBER (1), UON
  P - CAT 6 STP, PHONE DEVICE
  6 PORT FLUSH MOUNT SINGLE GANG OR EQUAL WITH LC CONNECTORS.
- P ▼ WORKSTATION DEVICE
  P - CAT 6 STP, PHONE DEVICE
- P ▽ WALL PLATE
  P - CAT 6 STP, PHONE DEVICE
- WICS EXISTING WICS BOX MOUNTED ABOVE THE CEILING. FIBER TYPE AVAILABLE;
  Y - YELLOW FIBER
  R - RED FIBER
  G - GREEN FIBER
- CF: COMMUNICATIONS POLE (NEW)
- CP-E: COMBINATION POWER/COMMUNICATIONS POLE (EXISTING) TO BE RE-USED WHERE NOTED.
- CF-E: COMMUNICATIONS POLE (EXISTING) TO BE RE-USED WHERE NOTED.

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

DATE	DESCRIPTION	MARK
02-24-23	CERTIFIED FINAL	0

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22
ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

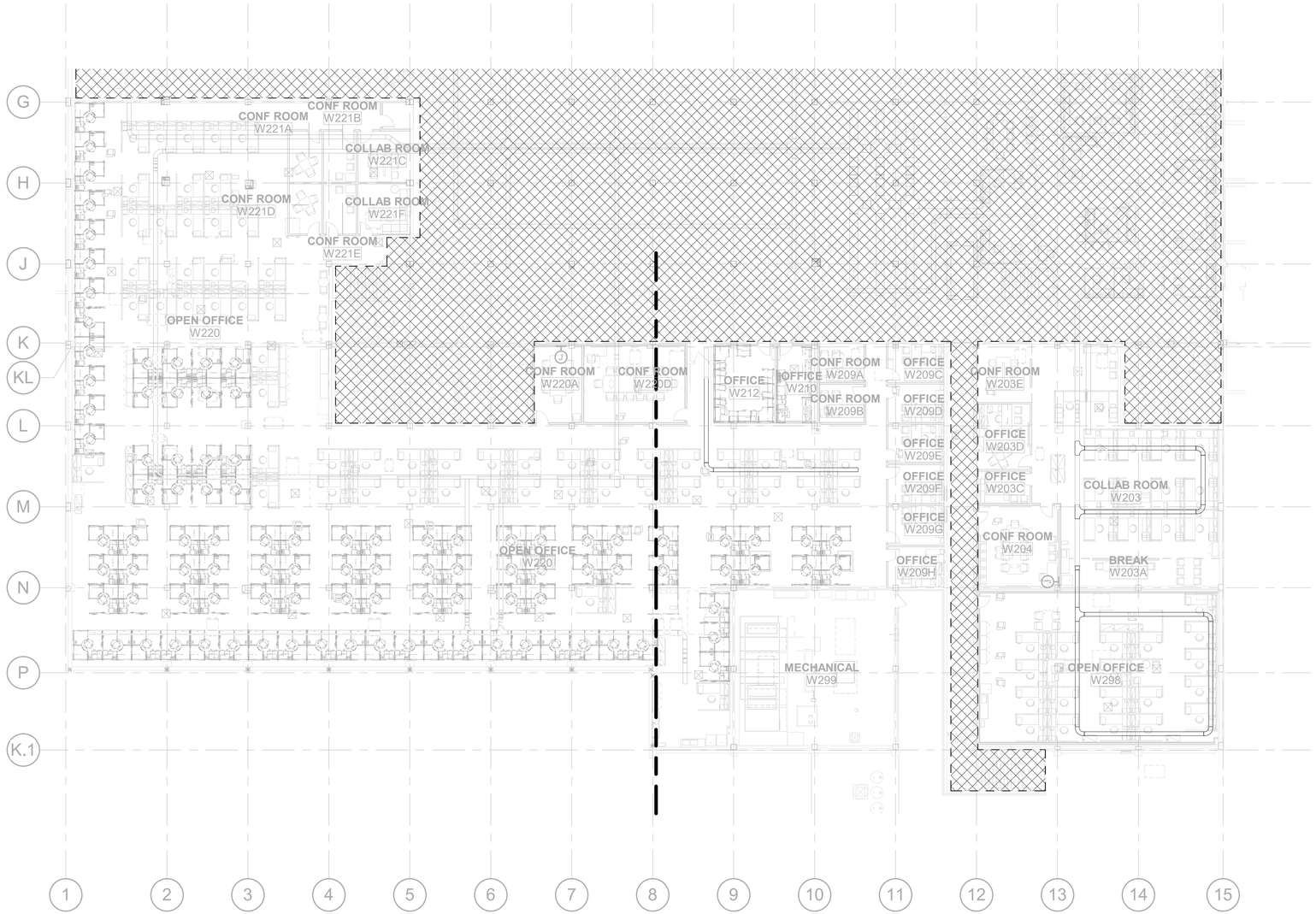
COMMUNICATIONS LEGEND

SHEET ID
T-001_5
SHEET 103 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

GENERAL NOTES:

1. REFER TO T-001_5 FOR TELECOMMUNICATIONS GENERAL NOTES, SYMBOLS LEGEND, AND ABBREVIATIONS.
2. REFER TO T-001_5 FOR EQUIPMENT LABELING INFORMATION.
3. INTERCEPT EXISTING CABLE TRAY, PROVIDE NEW CABLE TRAY AS NOTED. PROTECT AND KEEP SAFE REMAINING EXISTING CABLING.
4. PROVIDE APPROPRIATE PENETRATIONS THROUGH WALLS AS REQUIRED PER PENETRATION DETAILS ON TC501_5. REFER TO ARCHITECTURAL DRAWINGS FOR SECURE BOUNDARY REQUIREMENTS. PROVIDE CABLE TRAY THROUGH WALL PENETRATION FOR ALL NON-RATED WALLS.
5. REFER TO TC501_5 FOR TYPICAL CABLE TRAY AND CONDUIT INSTALLATION DETAILS FOR NON-RATED WALLS.
6. REFER TO PENETRATION DETAILS ON ARCHITECTURE SHEETS FOR CONDUIT PENETRATION REQUIREMENTS.
7. PROVIDE CABLE TRAY BONDING PER MANUFACTURE RECOMMENTDATION IN COMPLICANCE WITH NEC 250.96(A). PROVIDE CABLE TRAY UL CLASSIFIED SPLICES AND BOND TO BUILDING STEEL VIA CABLE TRAY SUPPORT STRUCTURE.
8. PROVIDE CABLE WATERFALL SUPPORTS FOR ALL CABLING TO/FROM FIRE-RATED WALL PENETRATIONS TO CABLE TRAY OR CABLE RUNWAY THAT DIFFER IN ELEVATIONS BY MORE THAN 6-INCHES.



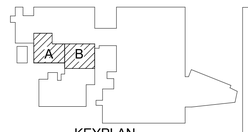
A1 OVERALL CABLE TRAY PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 32'

LEGEND:

AREA/ROOM NOT IN SCOPE



KEYPLAN
NOT TO SCALE

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
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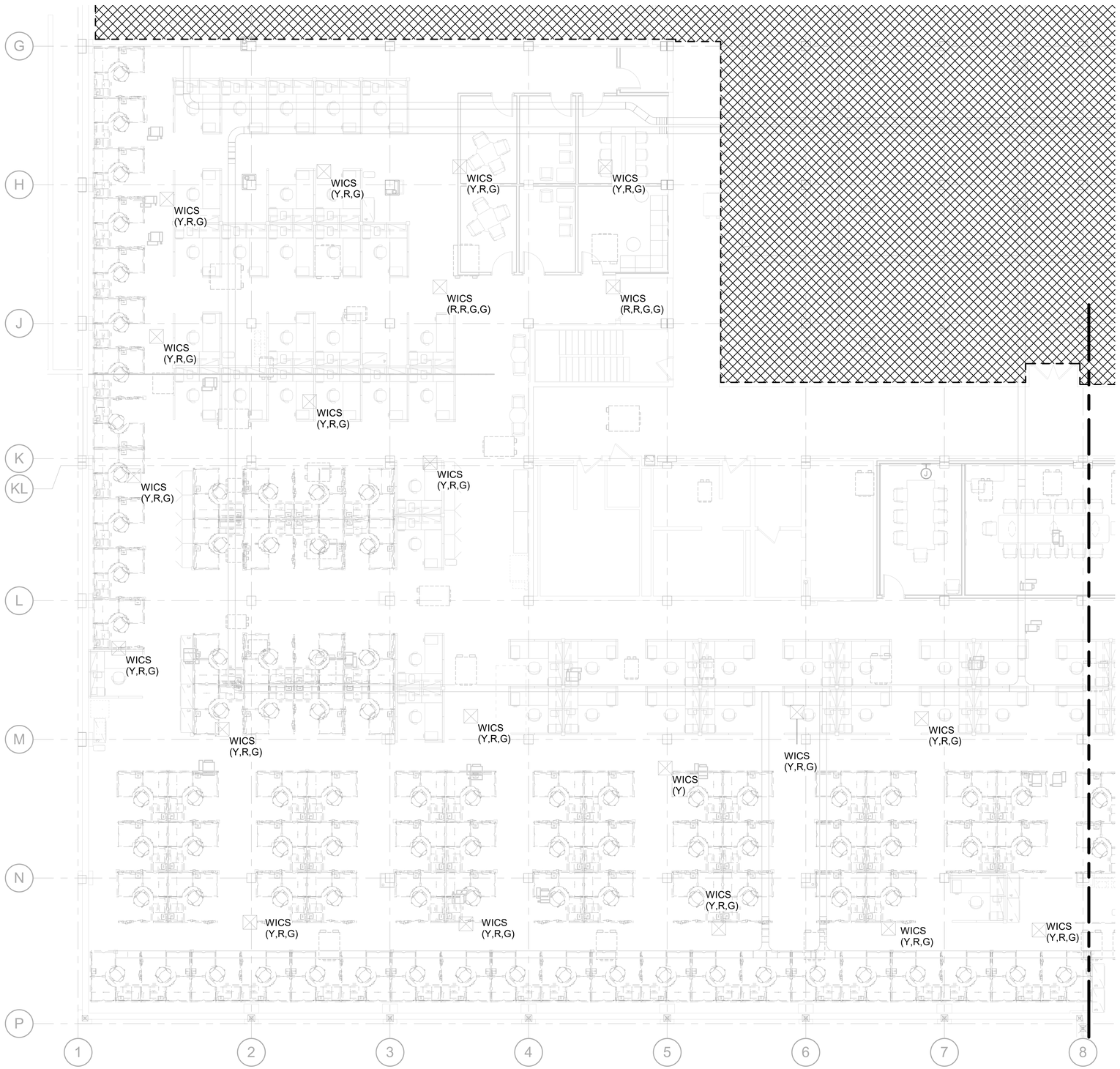
OVERALL CABLE TRAY PLAN

SHEET ID
TC100_5
SHEET 104 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001



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LEGEND:

AREA/ROOM NOT IN SCOPE

PLAN NORTH

0 4' 8' 16'

KEYPLAN
NOT TO SCALE

A1 CABLE TRAY PLAN - AREA A
SCALE: 1/8" = 1'-0"

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
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CONTRACT NO.:

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DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: S. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
CHARLESTOWN SE PETER KING JR. PL
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

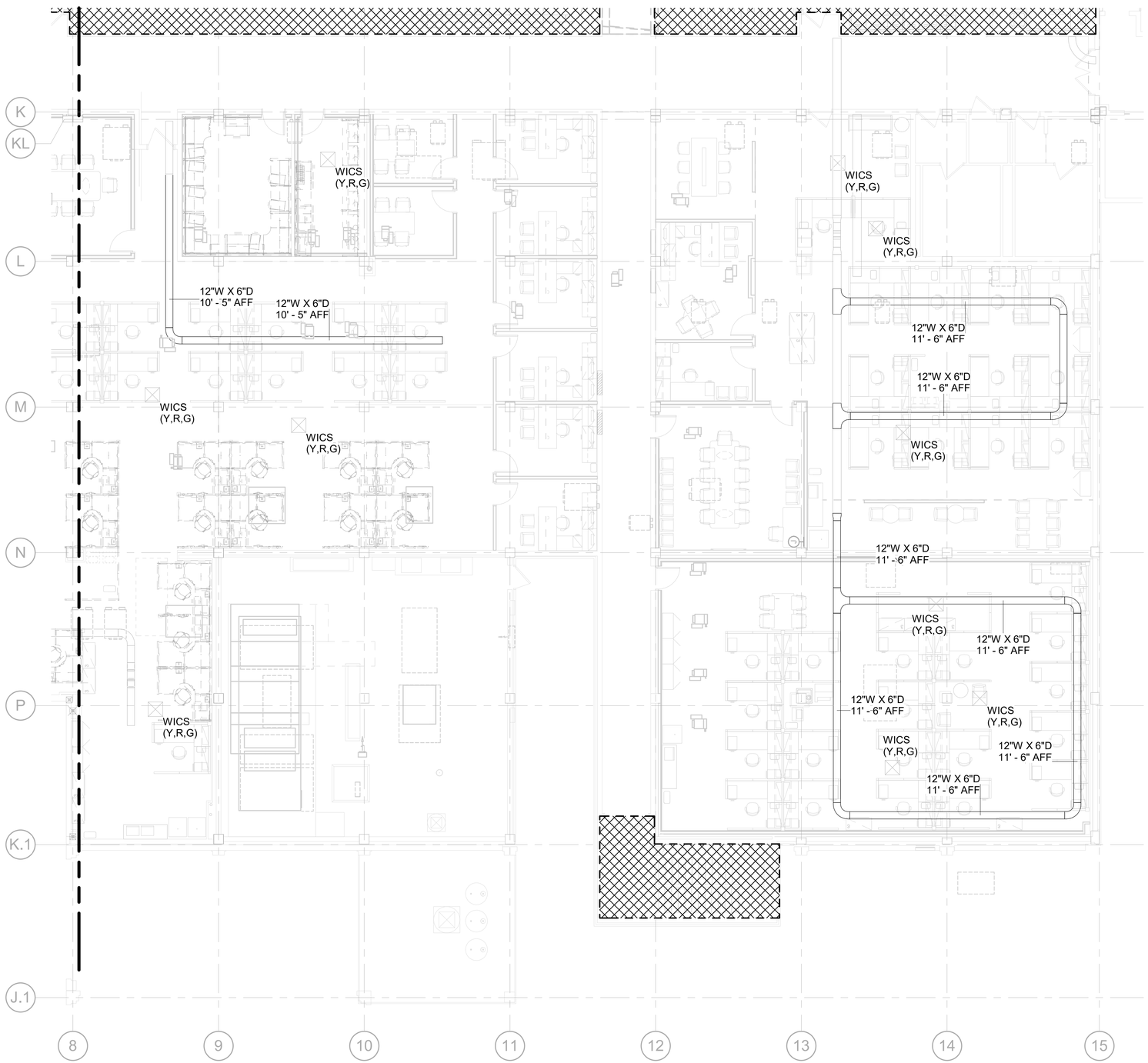
CABLE TRAY PLAN - AREA A

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

SHEET ID
TC101_5
SHEET 105 OF 112

CERTIFIED FINAL

W912QR23R0022_CUI_CF_Plans-0001



A1 CABLE TRAY PLAN - AREA B
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO T-001_5 FOR TELECOMMUNICATIONS GENERAL NOTES, SYMBOLS LEGEND, AND ABBREVIATIONS.
2. REFER TO T-001_5 FOR EQUIPMENT LABELING INFORMATION.
3. INTERCEPT EXISTING CABLE TRAY, PROVIDE NEW CABLE TRAY AS NOTED. PROTECT AND KEEP SAFE REMAINING EXISTING CABLING.
4. PROVIDE APPROPRIATE PENETRATIONS THROUGH WALLS AS REQUIRED PER PENETRATION DETAILS ON TC501_5. REFER TO ARCHITECTURAL DRAWINGS FOR SECURE BOUNDARY REQUIREMENTS. PROVIDE CABLE TRAY THROUGH WALL PENETRATION FOR ALL NON-RATED WALLS.
5. REFER TO TC501_5 FOR TYPICAL CABLE TRAY AND CONDUIT INSTALLATION DETAILS FOR NON-RATED WALLS.
6. REFER TO PENETRATION DETAILS ON ARCHITECTURE SHEETS FOR CONDUIT PENETRATION REQUIREMENTS.
7. PROVIDE CABLE TRAY BONDING PER MANUFACTURE RECOMMENDATION IN COMPLIANCE WITH NEC 250.96(A). PROVIDE CABLE TRAY UL CLASSIFIED SPLICES AND BOND TO BUILDING STEEL VIA CABLE TRAY SUPPORT STRUCTURE.
8. PROVIDE CABLE WATERFALL SUPPORTS FOR ALL CABLING TO/FROM FIRE-RATED WALL PENETRATIONS TO CABLE TRAY OR CABLE RUNWAY THAT DIFFER IN ELEVATIONS BY MORE THAN 6-INCHES.

LEGEND:

AREA/ROOM NOT IN SCOPE

PLAN NORTH

0 4' 8' 16'

KEYPLAN NOT TO SCALE

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING, JR. PL
LOUISVILLE, KY 40202

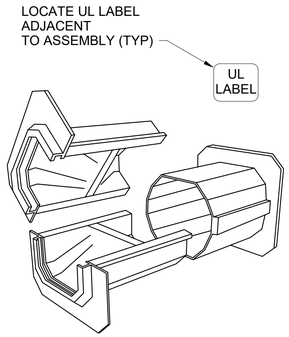
BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

CABLE TRAY PLAN - AREA B

SHEET ID
TC102_5
SHEET 106 OF 112

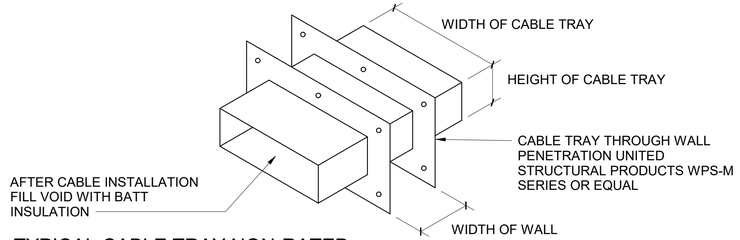
CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI



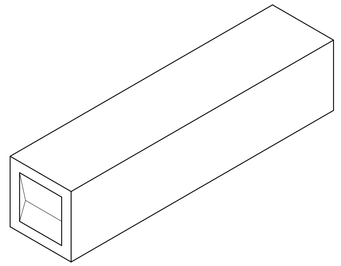
NOTES

1. PATHWAY ADJUSTS TO ACCOMMODATE WALL THICKNESSES BETWEEN 4" AND 8".
2. PATHWAYS CAN BE GANGED FOR ADDITIONAL CAPACITY.
3. DEVICE NOT SUITABLE FOR USE IN FIRE RATED BARRIERS.
4. PLENUM TESTED TO UL 2043.
5. SMOKE BARRIER UL LISTING.
6. MINIMUM STC RATING OF 50. STC TESTING FOR 0-100% FILL.

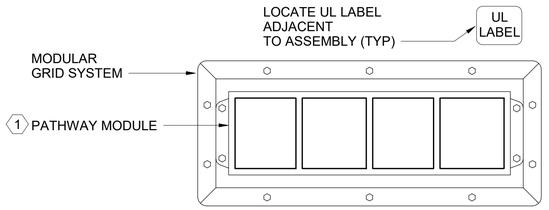
D1 TYPICAL SMOKE AND STC PENETRATION DETAIL
SCALE:NTS



D4 TYPICAL CABLE TRAY NON-RATED WALL PENETRATION DETAIL
SCALE:NTS



SINGLE MODULE



SAMPLE 4-GANG

NOTES

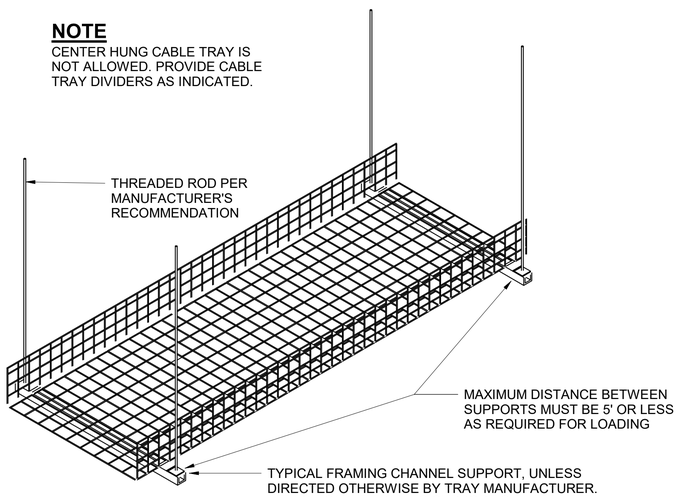
1. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. PART NUMBERS LISTED FOR REFERENCE AND MAY NOT REPRESENT ALL REQUIRED COMPONENTS FOR A COMPLETE INSTALLATION. SEE SPECIFICATIONS.
3. MUST BE UL LISTED AS A 2 HOUR FIRE RATED ASSEMBLY.
4. MINIMUM STC RATING OF 50. STC TESTING FOR 0-100% FILL.

KEYED NOTES:

1 ROUTE NETWORK CABLING THROUGH MODULES.

A4 TYPICAL 2-HOUR FIRE-RATED AND STC PENETRATION DETAIL
SCALE:NTS

NOTE
CENTER HUNG CABLE TRAY IS NOT ALLOWED. PROVIDE CABLE TRAY DIVIDERS AS INDICATED.



A1 TYPICAL BASKET CABLE TRAY DETAIL
SCALE:NTS

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DATE
0	02-24-23

CERTIFIED FINAL

ISSUE DATE: 02-24-23
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CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: C. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
CELL DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

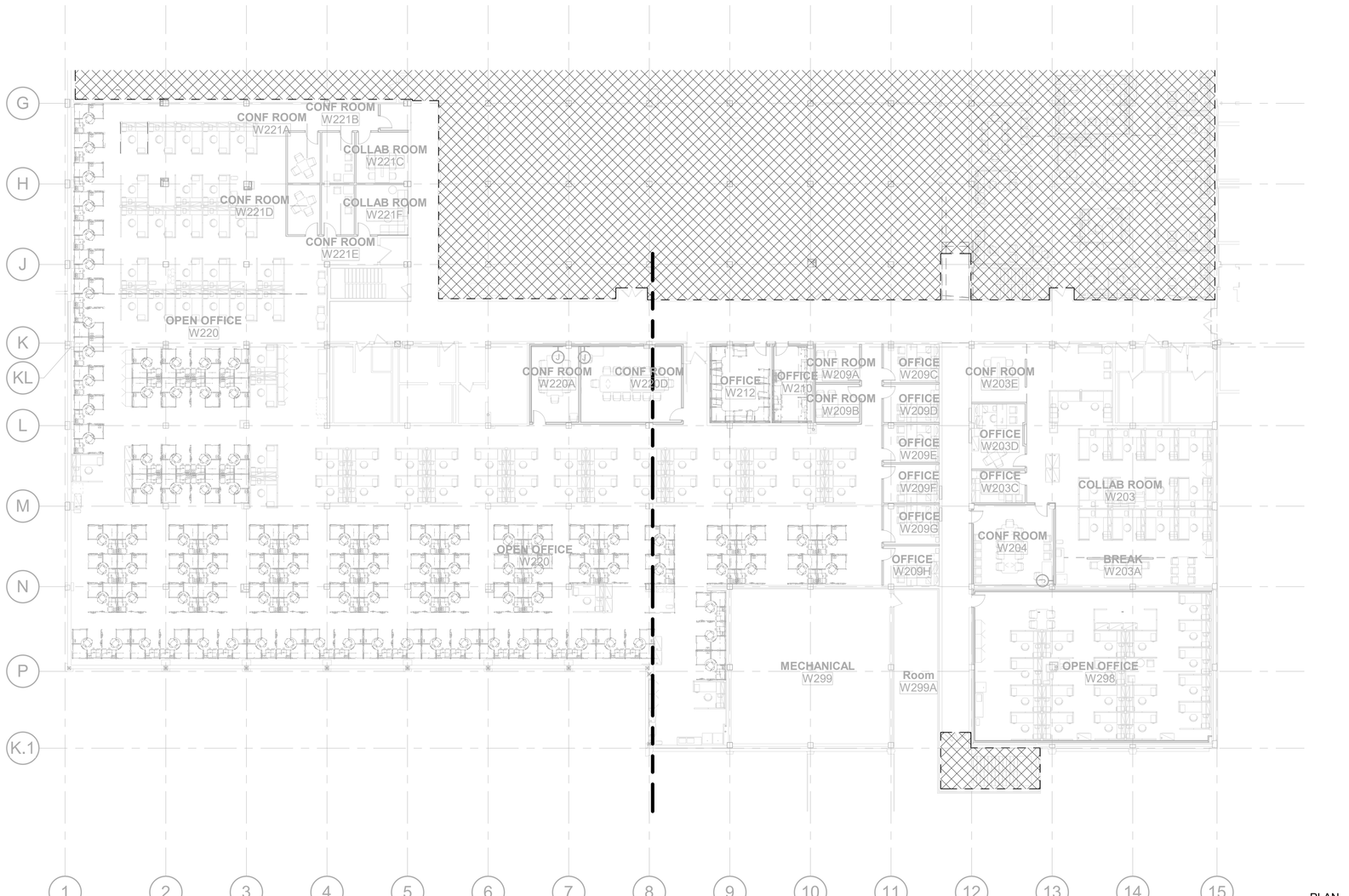
REPLACE AHU-5
PN: ZHTV-160060 / P2: 4699978
WRIGHT-PATTERSON AFB, OHIO

CABLE TRAY DETAILS

SHEET ID
TC501_5
SHEET 107 OF 112

CAMERON K. KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



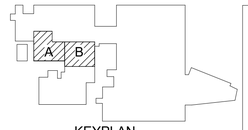
A1 OVERALL SECOND FLOOR COMMUNICATIONS PLAN
SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8" 16" 32"

LEGEND:

AREA/ROOM NOT IN SCOPE



KEYPLAN
NOT TO SCALE

GENERAL NOTES: COMMUNICATIONS

1. REFER TO T-001_5 FOR TELECOMMUNICATION GENERAL NOTES, SYMBOLS LEGEND, AND ABBREVIATIONS.
2. REFER TO T-001_5 FOR EQUIPMENT LABELING INFORMATION.
3. REFER TO TYPICAL TELECOMMUNICATIONS DETAILS, SHEETS TN501_5 AND TN502_5.
4. INSTALL FIBER OPTIC CABLING FROM THE NEAREST WICS BOX LOCATED ABOVE CEILING TO DEVICE LOCATIONS INDICATED. FIBER PATCHING AT WICS BOX WILL BE GFGI.
5. FURNISH AND INSTALL WORK STATION FURNITURE COUPLER AND/OR WALL PLATE AS INDICATED.
6. GOVERNMENT TO RELOCATE WICS BOXES IF REQUIRED. COORDINATE WICS BOX LOCATIONS WITH GOVERNMENT. ENSURE 4' CLEARANCE BE MAINTAINED AROUND WICS BOX.
7. TYPE 'P' DEVICE CABLING MUST BE ROUTED BACK TO MUCS ROOM. TERMINATE IN COMMUNICATION RACK AS DIRECTED BY NASIC. PROVIDE COPPER PATCH PANELS AS REQUIRED FOR NEW WORK TO BE PERFORMED.

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

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CHECKED BY: W. SCHWEITZER
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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS McDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

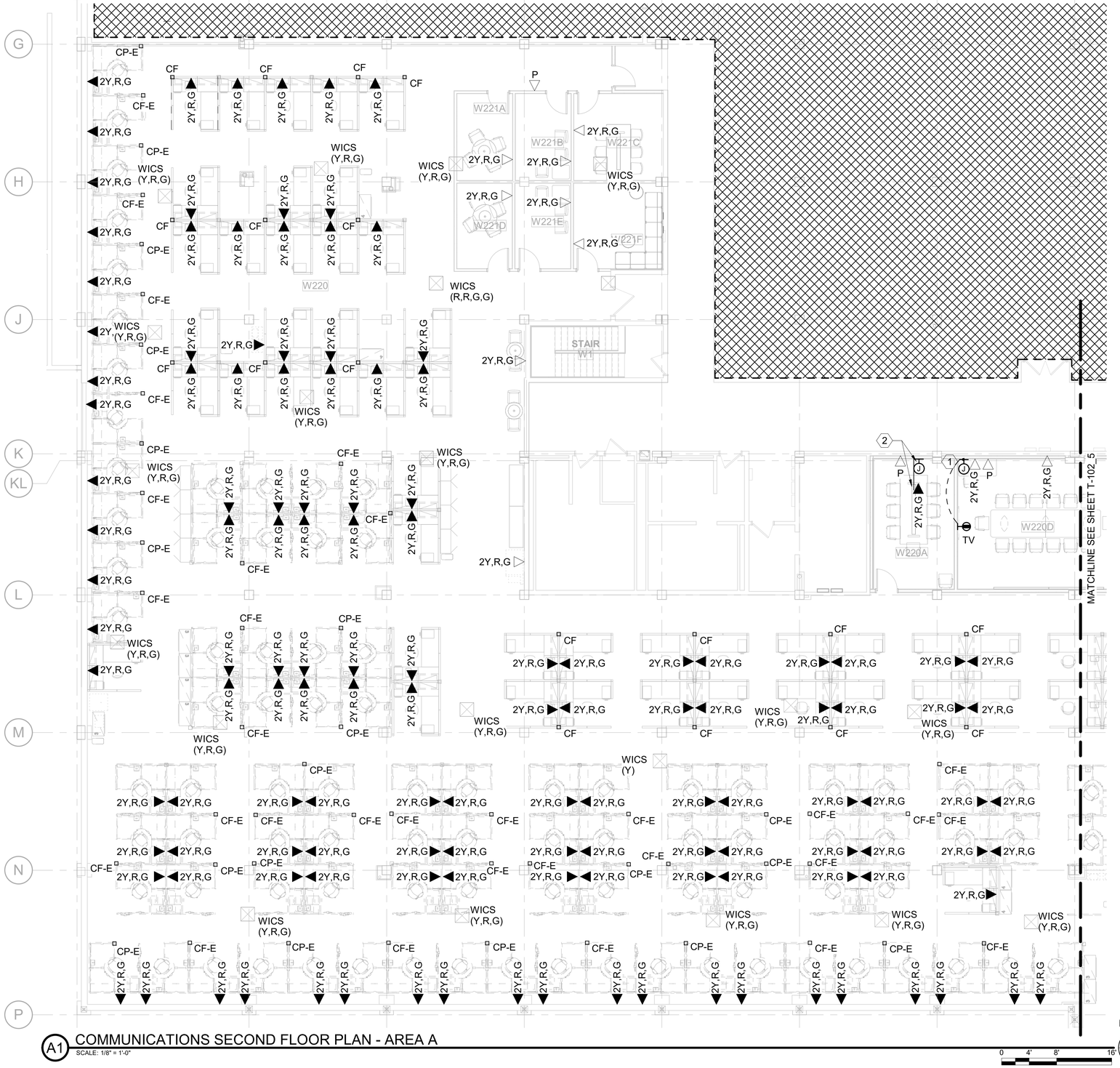
REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

OVERALL SECOND FLOOR COMM PLAN

SHEET ID
TN100_5
SHEET 108 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001

CONTROLLED UNCLASSIFIED INFORMATION (CUI)



A1 COMMUNICATIONS SECOND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

GENERAL NOTES: COMMUNICATIONS

1. REFER TO T-001_5 FOR TELECOMMUNICATION GENERAL NOTES, SYMBOLS LEGEND, AND ABBREVIATIONS.
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5. FURNISH AND INSTALL WORK STATION FURNITURE COUPLER AND/OR WALL PLATE AS INDICATED.
6. GOVERNMENT TO RELOCATE WICS BOXES IF REQUIRED. COORDINATE WICS BOX LOCATIONS WITH GOVERNMENT. ENSURE 4' CLEARANCE BE MAINTAINED AROUND WICS BOX.
7. TYPE 'P' DEVICE CABLING MUST BE ROUTED BACK TO MUCS ROOM. TERMINATE IN COMMUNICATION RACK AS DIRECTED BY NASIC. PROVIDE COPPER PATCH PANELS AS REQUIRED FOR NEW WORK TO BE PERFORMED.

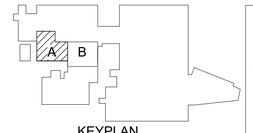
KEYED NOTES: (#)

1. PROVIDE JUNCTION BOX AND 1-1/4" CONDUIT FOR AV CONNECTION TO TV. CABLING TO BE GFGI.
2. PROVIDE JUNCTION BOX FOR FIBER CONNECTION TO CONFERENCE ROOM TABLE. PROVIDE 2Y,R,G THROUGH (3) CHANNELs of RACEWAY (SHOWN ON EP101_5) TO BREAKOUT MODULE MOUNTED ON INTERIOR OF LEG OF TABLE. GOVERNMENT TO PROVIDE FIBER PATCH CORDS FROM BREAKOUT MODULE THROUGH FURNITURE TO POWER/DATA MODULE AND LEAVE COILED FOR USE. COORDINATE INSTALLATION WITH FURNITURE MANUFACTURER AND INSTALLERS.

LEGEND:

AREA/ROOM NOT IN SCOPE

KEYPLAN
NOT TO SCALE



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49552
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US ARMY CORPS OF ENGINEERS
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REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
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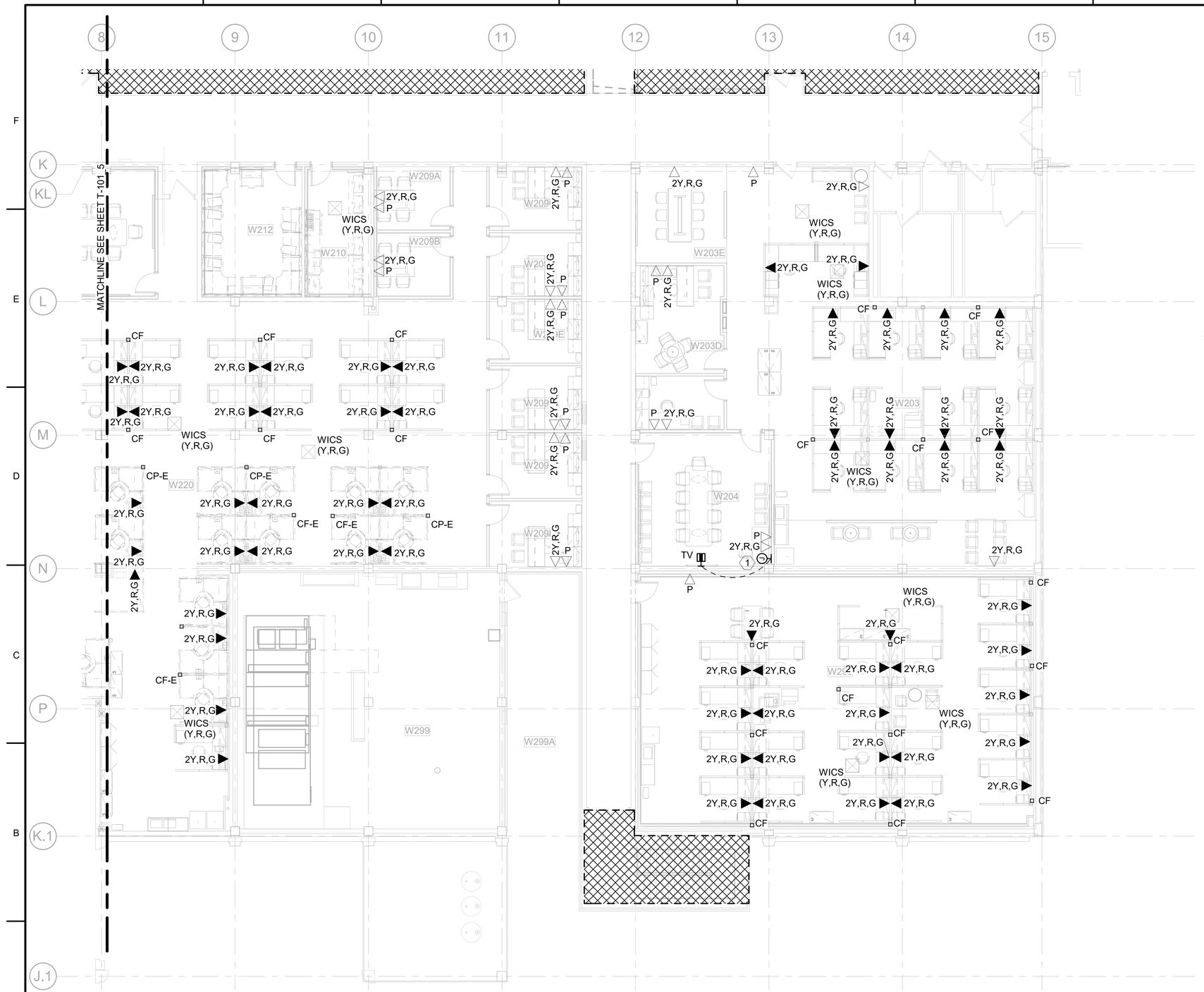
COMMUNICATIONS SECOND FLOOR PLAN - AREA A

SHEET ID
TN101_5
SHEET 109 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001



GENERAL NOTES: COMMUNICATIONS

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5. FURNISH AND INSTALL WORK STATION FURNITURE COUPLER AND/OR WALL PLATE AS INDICATED.
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7. TYPE 'P' DEVICE CABLING MUST BE ROUTED BACK TO MUCS ROOM. TERMINATE IN COMMUNICATION RACK AS DIRECTED BY NASIC. PROVIDE COPPER PATCH PANELS AS REQUIRED FOR NEW WORK TO BE PERFORMED.

KEYED NOTES: (#)

1. PROVIDE JUNCTION BOX AND CONDUIT FOR AV CONNECTION TO TV. CABLING TO BE GFGI.
2. SURFACE MOUNT EXISTING DATA OUTLETS AND DEVICES TO NEW WALL IN SIMILAR LOCATION. ASSUME 5 DATA OUTLETS PER SPACE.

LEGEND:

AREA/ROOM NOT IN SCOPE

A1 COMMUNICATIONS SECOND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16'

KEYPLAN
NOT TO SCALE

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

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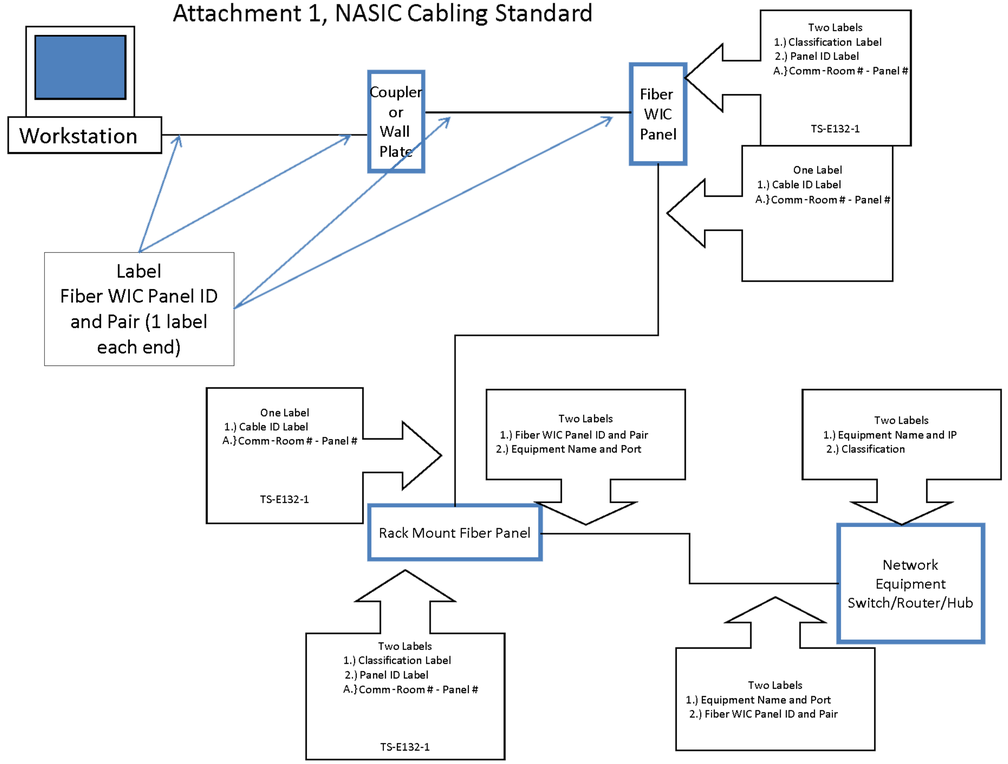
COMMUNICATIONS SECOND FLOOR PLAN - AREA B

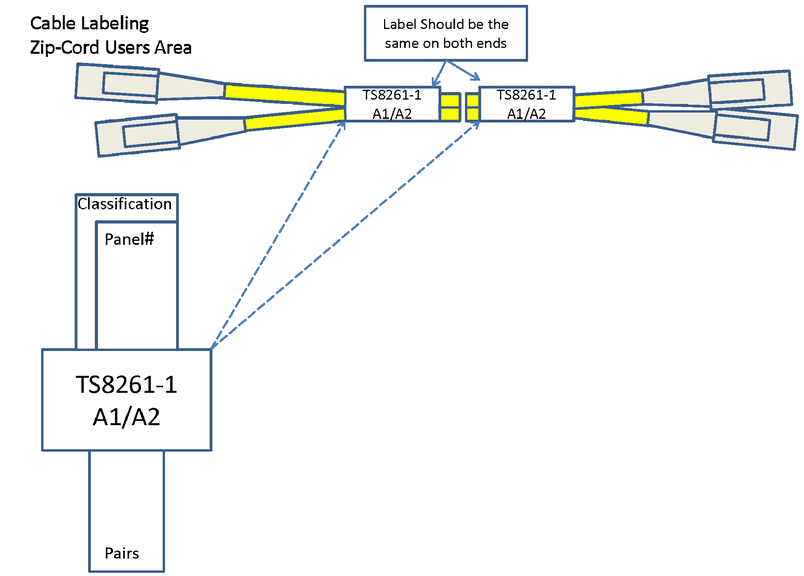
SHEET ID
TN102_5
SHEET 110 OF 112

CERTIFIED FINAL W912QR23R0022_CUI_CF_Plans-0001 CUI

Attachment 1, NASIC Cabling Standard



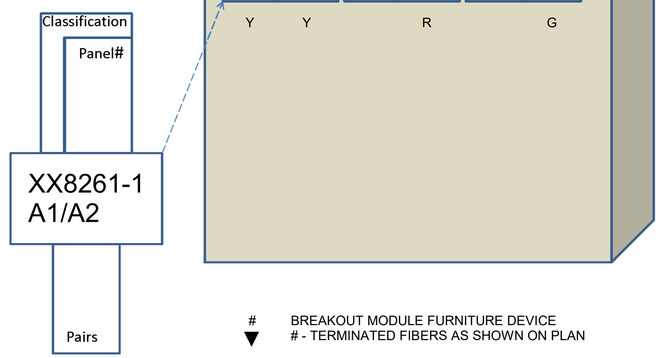
C1 TYPICAL SECURE FACILITY LABELING STANDARD
SCALE:NTS



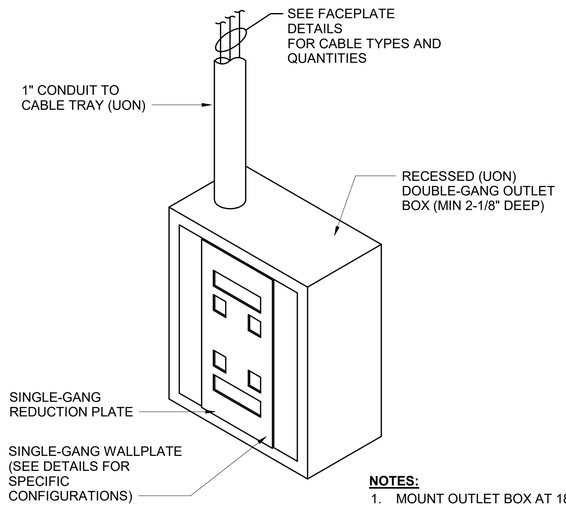
D6 MTP TO MTP JUMPER LABELLING
SCALE:NTS

MODULAR JACK AND CABLING FACEPLATE INFORMATION SCHEDULE

APPEARANCE	DESIGNATOR	MODULAR JACK		CABLE	
		DESCRIPTION	COLOR	DESCRIPTION	COLOR
	B	CAT6 RJ-45 NON-KEYED (DATA, VOIP)	BLUE	4-PAIR CATEGORY 6 STP	BLUE

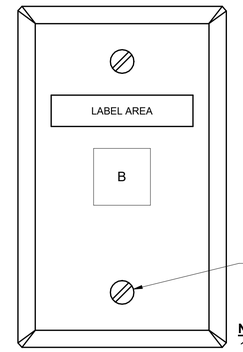


A1 TYPICAL BREAKOUT MODULE FURNITURE LABELING AHU_5
SCALE:NTS



NOTES:
1. MOUNT OUTLET BOX AT 18" AFF (UON).

A4 TYPICAL COMMUNICATIONS BACKBOX
SCALE:NTS



NOTES:
1. COORDINATE ALL TYPE P MOUNTING LOCATIONS WITH NASIC SC/XP.

A7 COMM OUTLET TYPE P
SCALE:NTS

CAMERON K.LOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

	DATE
CERTIFIED FINAL	02-24-23
DESCRIPTION	
0	
MARK	

ISSUE DATE: 02-24-23
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US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
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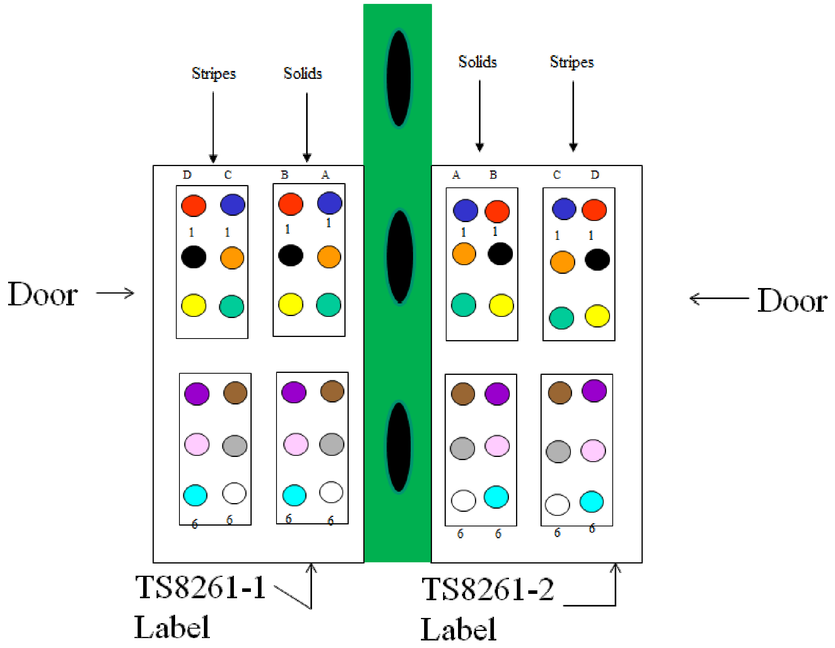
COMMUNICATIONS DETAILS

SHEET ID
TN501_5
SHEET 111 OF 112

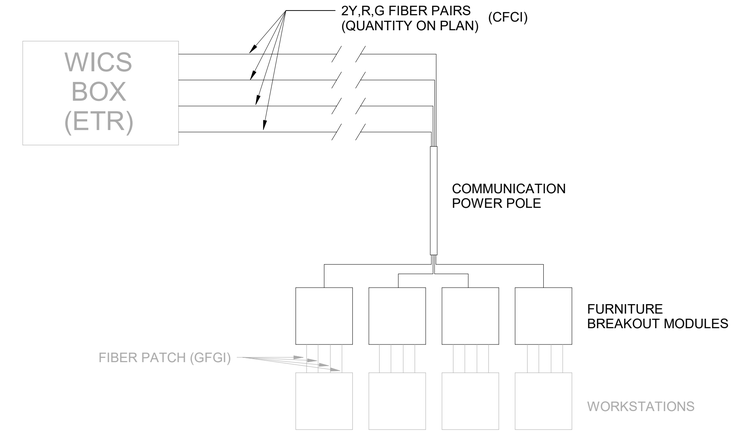
W912QR23R0022_CUI_CF_Plans-0001

CERTIFIED FINAL

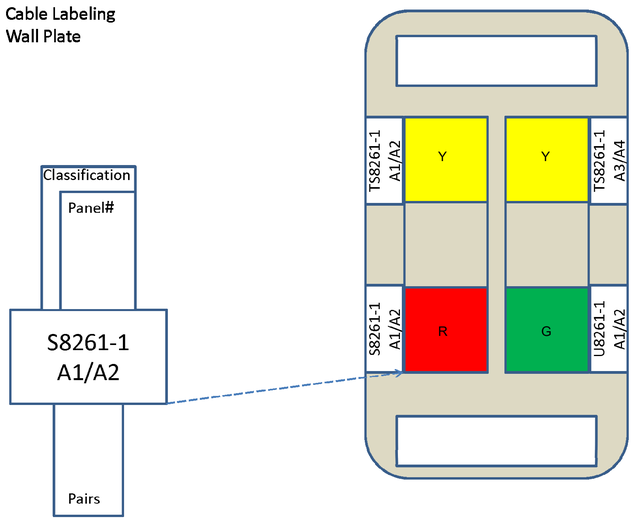
Ceiling Mounted WICS (Corning WICS Panel WIC-024)



C1 TYPICAL CEILING MOUNTED WICS
SCALE:NTS



C5 TYPICAL WICS TO WORKSTATION CONNECTION
SCALE:NTS



A1 TYPICAL CABLE FACEPLATE
SCALE:NTS

AHU5 TYPE 2Y,R,G COMMUNICATIONS DROPS BY ROOM NUMBER

ROOM		OUTLET	
NO.	NAME	TYPE	QUANTITY
W203	COLLAB ROOM	2Y,R,G	15
W203A	BREAK	2Y,R,G	1
W203C	OFFICE	2Y,R,G	1
W203D	OFFICE	2Y,R,G	1
W203E	CONF ROOM	2Y,R,G	1
W204	CONF ROOM	2Y,R,G	1
W209	OPEN OFFICE	2Y,R,G	16
W209A	CONF ROOM	2Y,R,G	1
W209B	CONF ROOM	2Y,R,G	1
W209C	OFFICE	2Y,R,G	1
W209D	OFFICE	2Y,R,G	1
W209E	OFFICE	2Y,R,G	1
W209F	OFFICE	2Y,R,G	1
W209G	OFFICE	2Y,R,G	1
W209H	OFFICE	2Y,R,G	1
W220	OPEN OFFICE	2Y,R,G	144
W220A	CONF ROOM	2Y,R,G	1
W220D	CONF ROOM	2Y,R,G	2
W221A	CONF ROOM	2Y,R,G	1
W221B	CONF ROOM	2Y,R,G	1
W221C	COLLAB ROOM	2Y,R,G	1
W221D	CONF ROOM	2Y,R,G	1
W221E	CONF ROOM	2Y,R,G	1
W221F	COLLAB ROOM	2Y,R,G	1
W298	OPEN OFFICE	2Y,R,G	22
Grand total: 219			219

AHU5 TYPE P COMMUNICATIONS DROPS BY ROOM NUMBER

ROOM		OUTLET	
NO.	NAME	TYPE	QUANTITY
W203	COLLAB ROOM	P	1
W203C	OFFICE	P	1
W203D	OFFICE	P	1
W204	CONF ROOM	P	1
W209A	CONF ROOM	P	1
W209B	CONF ROOM	P	1
W209C	OFFICE	P	1
W209D	OFFICE	P	1
W209E	OFFICE	P	1
W209F	OFFICE	P	1
W209G	OFFICE	P	1
W209H	OFFICE	P	1
W220	OPEN OFFICE	P	1
W220A	CONF ROOM	P	1
W220D	CONF ROOM	P	1
W298	OPEN OFFICE	P	1
Grand total: 16			16

CAMERON KLOS
LICENSED PROFESSIONAL ENGINEER
49552
STATE OF MINNESOTA
02/23/2023

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT

MARK	DESCRIPTION	DATE
0	CERTIFIED FINAL	02-24-23

ISSUE DATE: 02-24-23
SOLICITATION NO.:
CONTRACT NO.:

DESIGNED BY: C. KLOS
DRAWN BY: D. BRADLEY
CHECKED BY: W. SCHWEITZER
SUBMITTED BY: G. JOHNSON
SIZE: 34X22

US ARMY CORPS OF ENGINEERS
LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR. PL
LOUISVILLE, KY 40202

BURNS MCDONNELL
9400 WARD PARKWAY, KANSAS CITY, MO 64114

REPLACE AHU-5
PN: ZHTV-160060 / P2: 469978
WRIGHT-PATTERSON AFB, OHIO

COMMUNICATIONS DETAILS

SHEET ID
TN502_5
SHEET 112 OF 112

CERTIFIED FINAL
W912QR23R0022_CUI_CF_Plans-0001