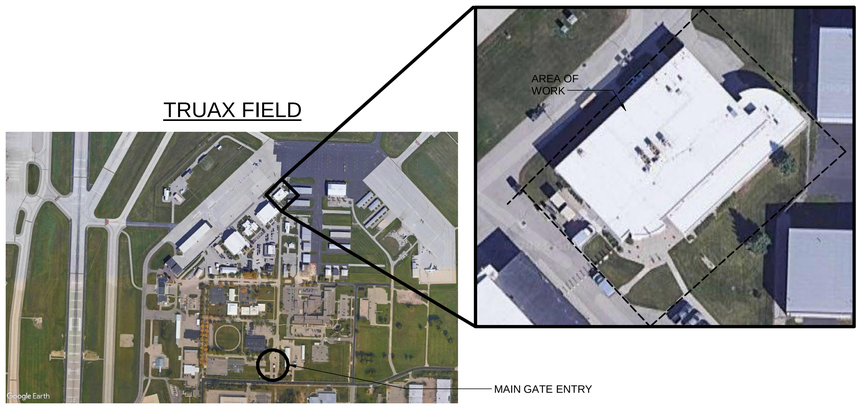
Air National Guard

F-35: Gun Shop - Repair B420

Truax Field, Madison, Wisconsin



A1 VICINTY MAP
SCALE: NTS

N
PLAN NORTH

N
TRUE NORTH

Type B-3 Submission
October 14, 2022

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Oklahoma City, OK 73118-7436
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161300 NGBJV/WI - F-35

SHEET INDEX

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G-002	SHEET INDEX
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G-102	CODE COMPLIANCE PLAN - GROUND FLOOR
CIVIL	
C-100	EXISTING TOPOGRAPHIC SURVEY
C-101	ACCESS PLAN
C-201	STORM WATER POLLUTION PREVENTION PLAN
C-202	STORM WATER POLLUTION PREVENTION DETAILS
C-301	REMOVAL PLAN
C-401	PROPOSED PLAN AND TYPICAL SECTIONS
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C-503	SANITARY DETAILS
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A-002	PARTITION TYPES
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AD150	DEMOLITION REFLECTED CEILING PLAN
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AE150	GROUND FLOOR REFLECTED CEILING PLAN
AE201	BUILDING ELEVATIONS
AE401	ENLARGED PLANS
AE402	INTERIOR ELEVATIONS
AE403	INTERIOR ELEVATIONS
AE404	CASEWORK DETAILS
AE405	CASEWORK DETAILS
AE600	DOOR SCHEDULE
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IF101	GROUND FLOOR FURNITURE PLAN
IG101	GROUND FLOOR SIGNAGE PLAN
IG500	SIGNAGE DETAILS
IG501	SIGNAGE MOUNTING HEIGHTS
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FD101	FIRE PROTECTION DEMOLITION
FP101	FIRE PROTECTION PLAN
FA101	FIRE ALARM & MASS NOTIFICATION PLAN
FA602	FIRE ALARM & MASS NOTIFICATION SYSTEM RISER DIAGRAM AND INPUT/OUTPUT MATRIX
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PD101	PLUMBING DEMOLITION
P-101	UNDERFLOOR PLAN
P-102	GROUND FLOOR PLAN
P-401	ENLARGED PLANS
P-501	DETAILS
P-701	PLUMBING SCHEDULES
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MD102	MECHANICAL DEMOLITION ROOF PLAN
MH101	MECHANICAL HVAC FIRST FLOOR PLAN
MH102	MECHANICAL HVAC ROOF PLAN
MP101	MECHANICAL PIPING
M-401	ENLARGED PLANS
M-501	DETAILS
M-502	DETAILS
M-601	FLOW DIAGRAMS
M-602	FLOW DIAGRAMS
M-701	SCHEDULES
M-702	SCHEDULES
M-801	CONTROLS
M-802	CONTROLS
M-803	CONTROLS
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ED201	ELECTRICAL DEMOLITION PLAN - LIGHTING
EG101	ELECTRICAL GROUNDING PLAN AND SYSTEM DIAGRAM
EG102	LIGHTNING PROTECTION SYSTEM ROOF PLAN
EG500	LIGHTNING PROTECTION DETAILS
EG501	LIGHTNING PROTECTION & GROUNDING DETAILS
EP101	ELECTRICAL POWER PLANS
EP401	ELECTRICAL ENLARGED PLANS
EP601	ONE-LINE DIAGRAM
EP700	ELECTRICAL POWER SCHEDULES I
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ET101	ELECTRICAL INTERIOR TELECOMMUNICATIONS PLAN AND ENLARGED PLANS
ET501	TELECOMMUNICATIONS DETAILS AND RISER DIAGRAM
EY101	ELECTRICAL INTERIOR SPECIAL SYSTEMS PLAN
EY601	TELECOMMUNICATIONS SPECIAL SYSTEMS RISER DIAGRAMS

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OKLAHOMA CITY
OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **SHEET INDEX**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: G-002

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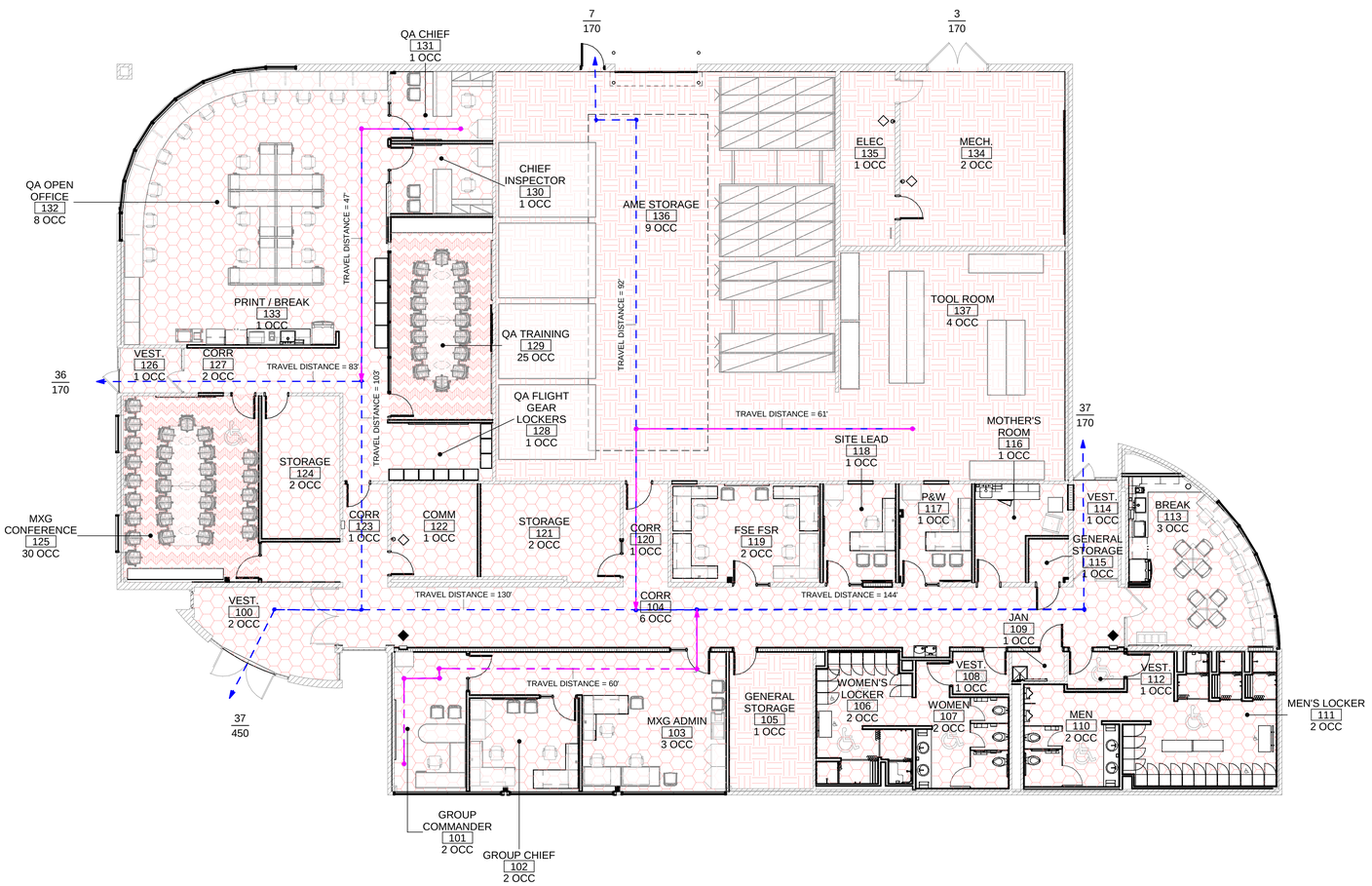
OCCUPANCY AREA SCHEDULE

ROOM NUMBER	ROOM NAME	AREA	OCCUPANT LOAD FACTOR	OCCUPANT LOAD	REMARKS
B BUSINESS					
100	VEST.	189 SF	1:150	2	
101	GROUP COMMANDER	180 SF	1:150	2	
102	GROUP CHIEF	183 SF	1:150	2	
103	MXG ADMIN	446 SF	1:150	3	
104	CORR	869 SF	1:150	6	
105	GENERAL STORAGE	205 SF	1:300	1	
106	WOMEN'S LOCKER	211 SF	1:150	2	
107	WOMEN	173 SF	1:150	2	
108	VEST.	43 SF	1:150	1	
109	JAN	28 SF	1:150	1	
110	MEN	224 SF	1:150	2	
111	MEN'S LOCKER	286 SF	1:150	2	
112	VEST.	38 SF	1:150	1	
113	BREAK	366 SF	1:150	3	
114	VEST.	78 SF	1:150	1	
115	GENERAL STORAGE	30 SF	1:150	1	
116	MOTHER'S ROOM	129 SF	1:150	1	
117	P&W	128 SF	1:150	1	
118	SITE LEAD	129 SF	1:150	1	
119	FSE FSR	262 SF	1:150	2	
120	CORR	81 SF	1:150	1	
121	STORAGE	236 SF	1:150	2	
122	COMM	143 SF	1:150	1	
123	CORR	140 SF	1:150	1	
124	STORAGE	200 SF	1:150	2	
125	MXG CONFERENCE	450 SF	1:15	30	
126	VEST.	49 SF	1:150	1	
127	CORR	237 SF	1:150	2	
128	QA FLIGHT GEAR LOCKERS	109 SF	1:150	1	
129	QA TRAINING	371 SF	1:15	25	
130	CHIEF INSPECTOR	128 SF	1:150	1	
131	QA CHIEF	127 SF	1:150	1	
132	QA OPEN OFFICE	1,114 SF	1:150	8	
133	PRINT / BREAK	110 SF	1:150	1	
B BUSINESS: 34		7,690 SF		114	

OCCUPANCY AREA SCHEDULE

ROOM NUMBER	ROOM NAME	AREA	OCCUPANT LOAD FACTOR	OCCUPANT LOAD	REMARKS
S-2 STORAGE					
134	MECH.	514 SF	1:300	2	
135	ELEC	171 SF	1:300	1	
136	AME STORAGE	2,493 SF	1:300	9	
137	TOOL ROOM	937 SF	1:300	4	
S-2 STORAGE: 4		4,115 SF		16	
TOTAL: 38		11,805 SF		130	



LIFE SAFETY LEGEND

- STANDARD PARTITION
- 1-HOUR FIRE RATING
- EGRESS - COMMON PATH
- EGRESS - EXIT ACCESS
- (000) OCCUPANT LOAD IN ROOM
- ◇000 OCCUPANT LOAD ALONG EGRESS PATH
- 00/000 EXIT COMPONENT LOAD / EXIT COMPONENT CAPACITY
- ◇ MULTI-PURPOSE TYPE 4A:60B:C FIRE EXTINGUISHER - WALL BRACKET MOUNTED AT 48" AFF
- ◆ MULTI-PURPOSE TYPE 4A:60B:C FIRE EXTINGUISHER - SEMI-RECESSED CABINET MOUNTED AT 48" AFF

OCCUPANT LOAD

AREA	LOAD FACTOR	OCCUPANCY CLASSIFICATION	OCCUPANT LOAD
821 SF	@ 1:15 NSF	B BUSINESS	55
6,664 SF	@ 1:150 GSF	B BUSINESS	58
205 SF	@ 1:300 GSF	B BUSINESS	1
4,115 SF	@ 1:300 GSF	S-2 STORAGE	16
11,805 SF			130

OCCUPANCY LEGEND

- IBC ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM
- IBC ASSEMBLY - WITHOUT FIXED SEATS - TABLES & CHAIRS
- IBC BUSINESS AREAS

EGRESS PATHS

PATH LABEL	PATH TYPE	LENGTH
1-CP	COMMON PATH	47'-1"
1A-EA	EXIT ACCESS	82'-6"
1B-EA	EXIT ACCESS	102'-7"
2-CP	COMMON PATH	59'-11"
2A-EA	EXIT ACCESS	129'-8"
2B-EA	EXIT ACCESS	134'-4"
3-CP	COMMON PATH	61'-3"
3A-EA	EXIT ACCESS	92'-1"
3B-EA	EXIT ACCESS	143'-11"

N
PLAN NORTH

N
TRUE NORTH

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

A1 LIFE SAFETY PLAN - GROUND FLOOR
SCALE: 1/8" = 1'-0"

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	TLW
DRAWN BY:	BKG
REVIEWED BY:	GAZ
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	LIFE SAFETY PLAN - GROUND FLOOR
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	G-101

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CODE SUMMARY

ITEM	2018 IBC REQUIREMENT (U.N.O.)
GENERAL	
OCCUPANCIES (IBC 2018)	BUSINESS, GROUP B (304.1) - OFFICE AREAS, ACCESSORY AREAS, BREAK, CONFERENCE, TRAINING STORAGE, GROUP S-1 (311.2) - AME STORAGE, TOOL ROOM
OCCUPANCIES (NFPA 101, 2018)	BUSINESS (6.1.11) - OFFICE AREAS
CONSTRUCTION TYPE	TYPE II-B (IBC, TABLE 601)
ALLOWABLE HEIGHT/STORIES	75 FEET (IBC, TABLE 504.3) 4 STORIES (IBC, TABLE 504.4)
ALLOWABLE AREA	69,000 SQUARE FEET (IBC 506.2)
MINIMUM EGRESS WIDTH	0.2" PER OCCUPANT (NFPA 101, TABLE 7.3.3.1)
ADAAG	FULLY COMPLIANT
FIRE PROTECTION SYSTEMS	
ADMINISTRATION AND SHOPS	WET PIPE SPRINKLER SYSTEM (UFC 3-600-01 FIRE PROTECTION)
FIRE RESISTANCE REQUIREMENTS	
BOILER ROOMS, FURNACE ROOMS, AND GENERAL STORAGE ROOMS OVER 100 SF	1 HOUR OR AUTOMATIC FIRE EXTINGUISHING SYSTEM (TABLE 509)
FIRE PROTECTION ROOM	1 HOUR (UFC 4-211-01, 3-6.7)
NON-LOADBEARING EXTERIOR WALLS	0 HOUR (TABLE 602)
FLOOR CONSTRUCTION	0 HOUR (TABLE 601)
ROOF CONSTRUCTION	0 HOUR (TABLE 601)
FIRE SEPARATION REQUIREMENTS	
BETWEEN ALL OTHER OCCUPANCIES	NOT REQUIRED - MIXED USE NONSEPARATED PER 508.3.2

BUILDING DATA

BUILDING AREA	
GROUND FLOOR	
BUSINESS	7,690 SQUARE FEET
STORAGE	4,115 SQUARE FEET
TOTAL (GROSS SQUARE FEET)	9,507 SQUARE FEET

BUILDING CODES AND STANDARDS
INTERNATIONAL BUILDING CODE 2018
INTERNATIONAL MECHANICAL CODE 2018
INTERNATIONAL PLUMBING CODE 2018
NATIONAL ELECTRICAL CODE 2020
NATIONAL FIRE CODES (NFPA) LATEST EDITIONS
NFPA 409, STANDARD FOR AIRCRAFT HANGARS 2016
NFPA 101 LIFE SAFETY CODE 2018
ICC/ANSI A117.1 2003
UNIFORM FEDERAL ACCESSIBILITY STANDARD (UFAS)
UFC 3-600-01, FIRE PROT. ENGINEERING FOR FACILITIES
UFC 1-200-01, GENERAL BUILDING REQUIREMENTS
UFC 4-010-01, MINIMUM ANTI-TERRORISM STANDARDS
UFC 4-021-01, DESIGN AND O&M: MASS NOTIFICATION SYSTEMS
ADDITIONAL UNIFIED FACILITY CRITERIA
ACCESSIBILITY FOR FIREFIGHTING
ALL WEATHER ACCESS MUST BE PAVED TO WITHIN 10M (33 FT) FROM THE BUILDING (UFC 4-211-01, 3-3.1.11)
FIRE DEPARTMENT ACCESS ROADS
MUST COMPLY WITH NFPA 1 (18.2.3.5.1) ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN 20 FT.

MEANS OF EGRESS REQUIREMENTS - 2018 NFPA 101 (U.N.O.)

	OCCUPANT LOAD FACTOR	COMMON PATH OF TRAVEL	MAXIMUM TRAVEL DISTANCE TO EXITS	MINIMUM EXIT ACCESS CORRIDOR WIDTH	MAXIMUM DEAD END CORRIDOR LENGTH	MINIMUM NUMBER OF EXITS
BUSINESS USE	150 GROSS (TABLE 7.3.1.2)	100' (38.2.5.3.1)	300' (38.2.6.3)	44" (38.2.3.2)	50' (38.2.5.2.1)	PER OCCUPANT LOAD
GENERAL PURPOSE INDUSTRIAL USE	100 GROSS (TABLE 7.3.1.2)	100' (40.2.5)	250' (TABLE 40.2.6.1)	36" (7.3.4.1)	50' (TABLE 40.2.5.1)	2 (40.2.4.1.1)
STORAGE/ MECHANICAL USE	500 GROSS (TABLE 7.3.1.2)	100' (42.2.5)	400' (TABLE 42.2.6)	36" (7.3.4.1)	100' (TABLE 42.2.5)	PER OCCUPANT LOAD

PORTABLE FIRE EXTINGUISHERS - 2018 NFPA 10 (U.N.O.)

CLASSIFICATION OF HAZARD	LIGHT (LOW) 5.4.1.1 OFFICE AREAS	ORDINARY (MODERATE) 5.4.1.2 - STORAGE, SUPPORT SHOP	
EXTINGUISHER SELECTION	4A:60B:C	4A:60B:C	
MAX TRAVEL DISTANCE	B: 50 FEET (TABLE 6.3.1.1)	B: 50 FEET (TABLE 6.3.1.1)	

PLUMBING MATRIX - TABLE 2902.1

TOTAL PLUMBING FIXTURES	B	S	REQUIRED	PROVIDED
WATER CLOSETS/URINALS (MALE)	2.14	.08	2.22	4
WATER CLOSETS (FEMALE)	2.14	.08	2.22	3
WATER CLOSETS (UNISEX)	-	-	-	-
LAVATORIES (MALE)	1.43	.08	1.51	2
LAVATORIES (FEMALE)	1.43	.08	1.51	2
LAVATORIES (UNISEX)	-	-	-	-
SERVICE SINKS	1	1	1	1
DRINKING FOUNTAINS	0.57	0.1	0.4	2

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: PDC
DRAWN BY: PDC
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: CODE COMPLIANCE PLAN - GROUND FLOOR
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: G-102

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0' 10' 20' 40'

SURVEY WAS PERFORMED BY
KL ENGINEERING IN NOVEMBER
AND DECEMBER OF 2021.

EXISTING	LEGEND
	PCC PAVEMENT
SS	STORM SEWER
W	WATER LINE
G	GAS LINE
SAN	SANITARY SEWER LINE
E	UNDERGROUND ELECTRIC LINE
FO	COMMUNICATIONS LINE
	FENCE
	TREE/BUSH

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ILLINOIS
PROFESSIONAL ENGINEER

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

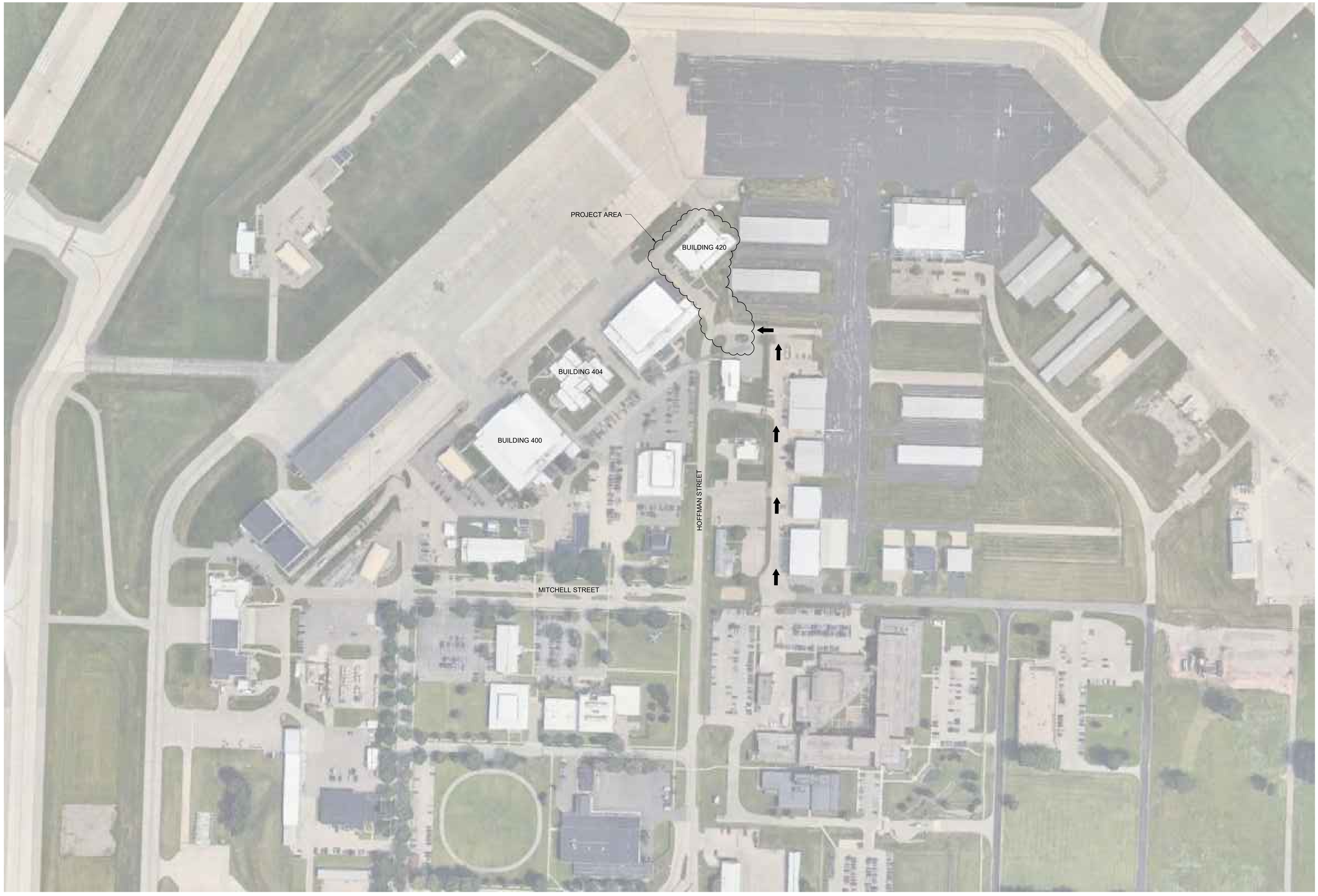
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	
PROJECT MANAGER:	MT

PROJECT NUMBER: 2021-613-00

SHEET TITLE: EXISTING TOPOGRAPHIC SURVEY

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: C-100



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Air National Guard
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PROJECT INFORMATION:

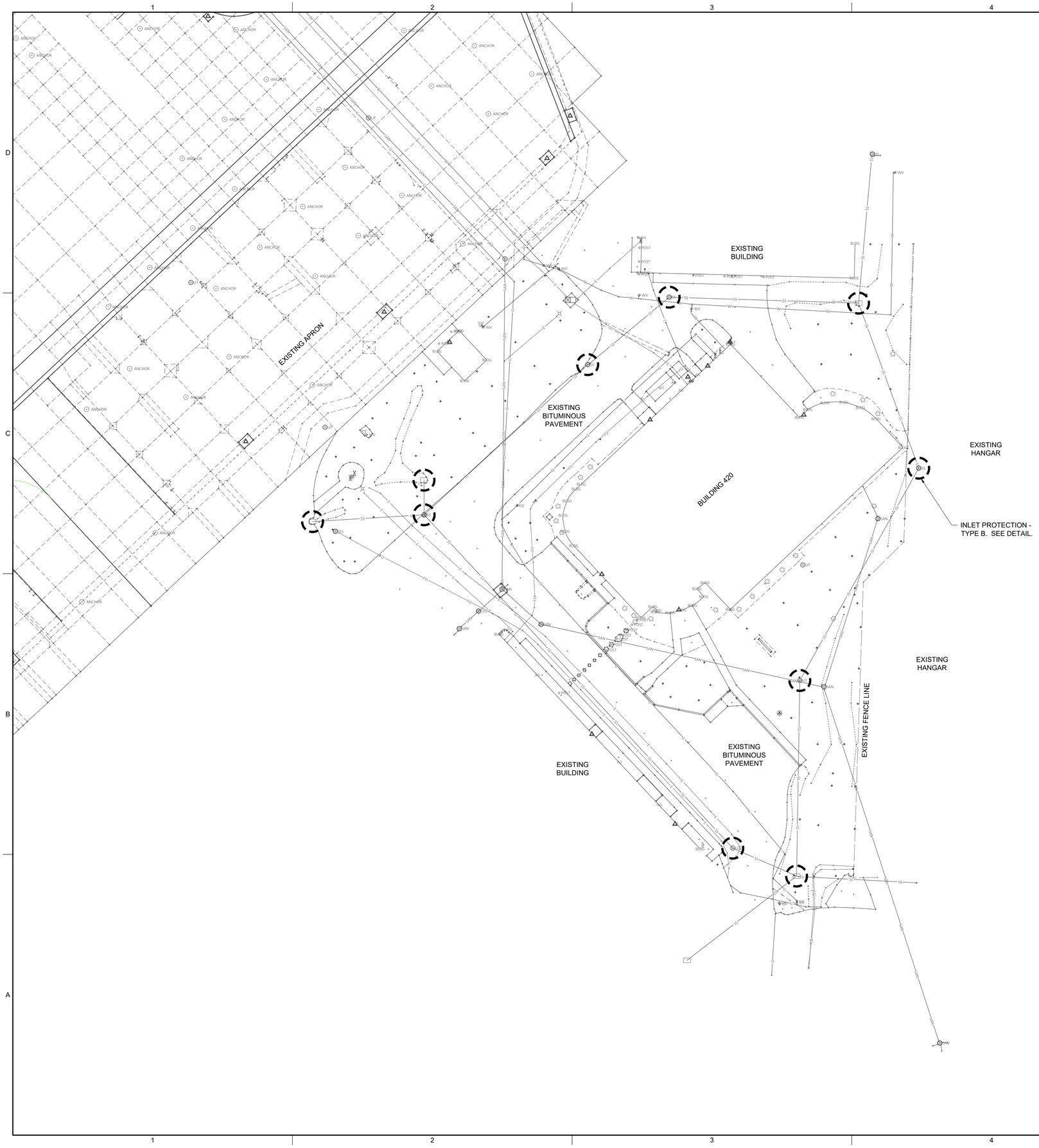
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	
PROJECT MANAGER:	MT

PROJECT NUMBER: 2021-613-00

SHEET TITLE: ACCESS PLAN

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: C-101



EXISTING	PROPOSED	LEGEND
		PCC PAVEMENT
SS		STORM SEWER
		STORM SEWER (OLI 1)
W		WATER LINE
G		GAS LINE
SAN		SANITARY SEWER LINE
E		UNDERGROUND ELECTRIC LINE
FO		COMMUNICATIONS LINE
		FENCE
		TREE/BUSH

N

0' 10' 20' 40'

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Air National Guard
F-35: Gun Shop - Repair B420
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	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	
PROJECT MANAGER:	MT

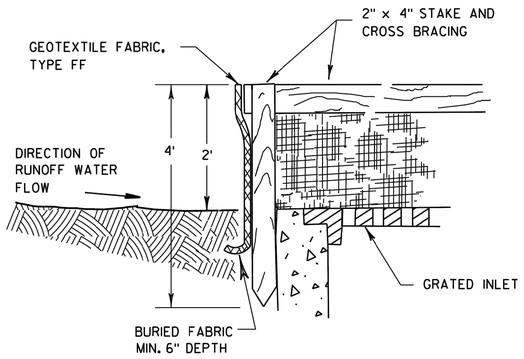
PROJECT NUMBER: 2021-613-00

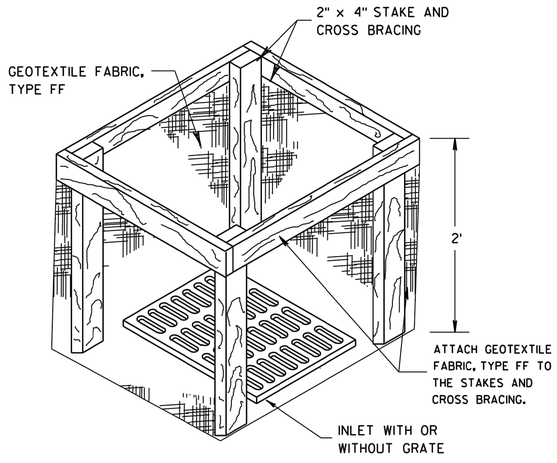
SHEET TITLE: STORM WATER POLLUTION PREVENTION PLAN

ISSUE DATE: OCTOBER 14, 2022

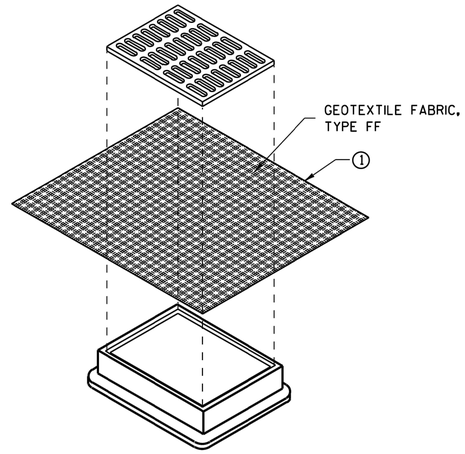
SHEET NUMBER: C-201

SDD 8e10 Inlet Protection Type A, B, C and D

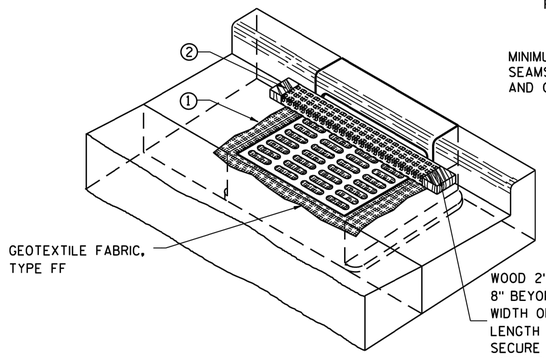




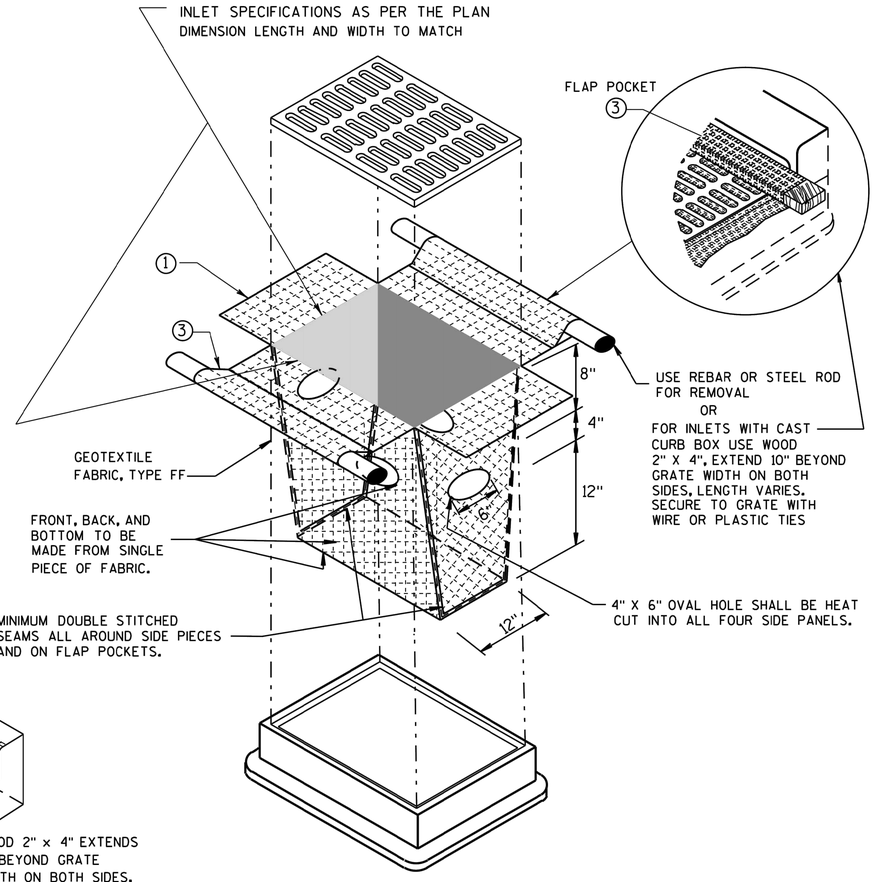
INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-16-02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 E 10-2

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LINDSAY D. HAUSMAN
E-48143-6
SPRINGFIELD
ILLINOIS
PROFESSIONAL ENGINEER

115th FIGHTER WING

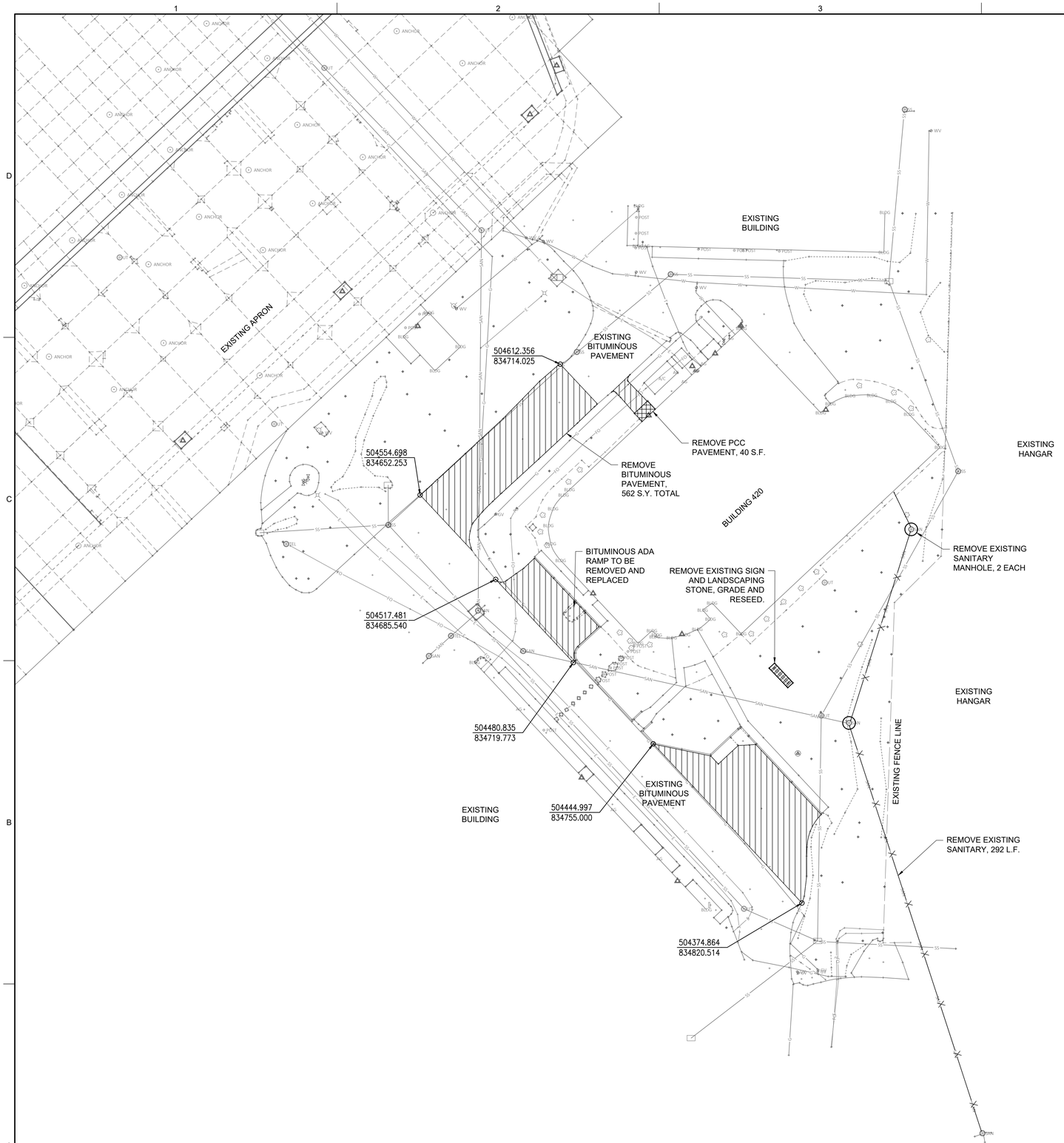
Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

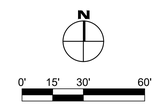
REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: LDH
DRAWN BY: LDH
REVIEWED BY:
PROJECT MANAGER: MT
PROJECT NUMBER: 2021-613-00
SHEET TITLE: STORM WATER POLLUTION PREVENTION DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: C-202





NOTES:

1. EXISTING CONDITIONS ARE BASED ON SURVEY PERFORMED BY KL ENGINEERING, INC. IN NOVEMBER AND DECEMBER OF 2021.

EXISTING	REMOVAL	LEGEND
		BITUMINOUS PAVEMENT
		PCC PAVEMENT
SS		STORM SEWER
W		WATER LINE
G		GAS LINE
SAN	X	SANITARY SEWER LINE
E		UNDERGROUND ELECTRIC LINE
FO		COMMUNICATIONS LINE
		FENCE
		TREE/BUSH

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115th FIGHTER WING

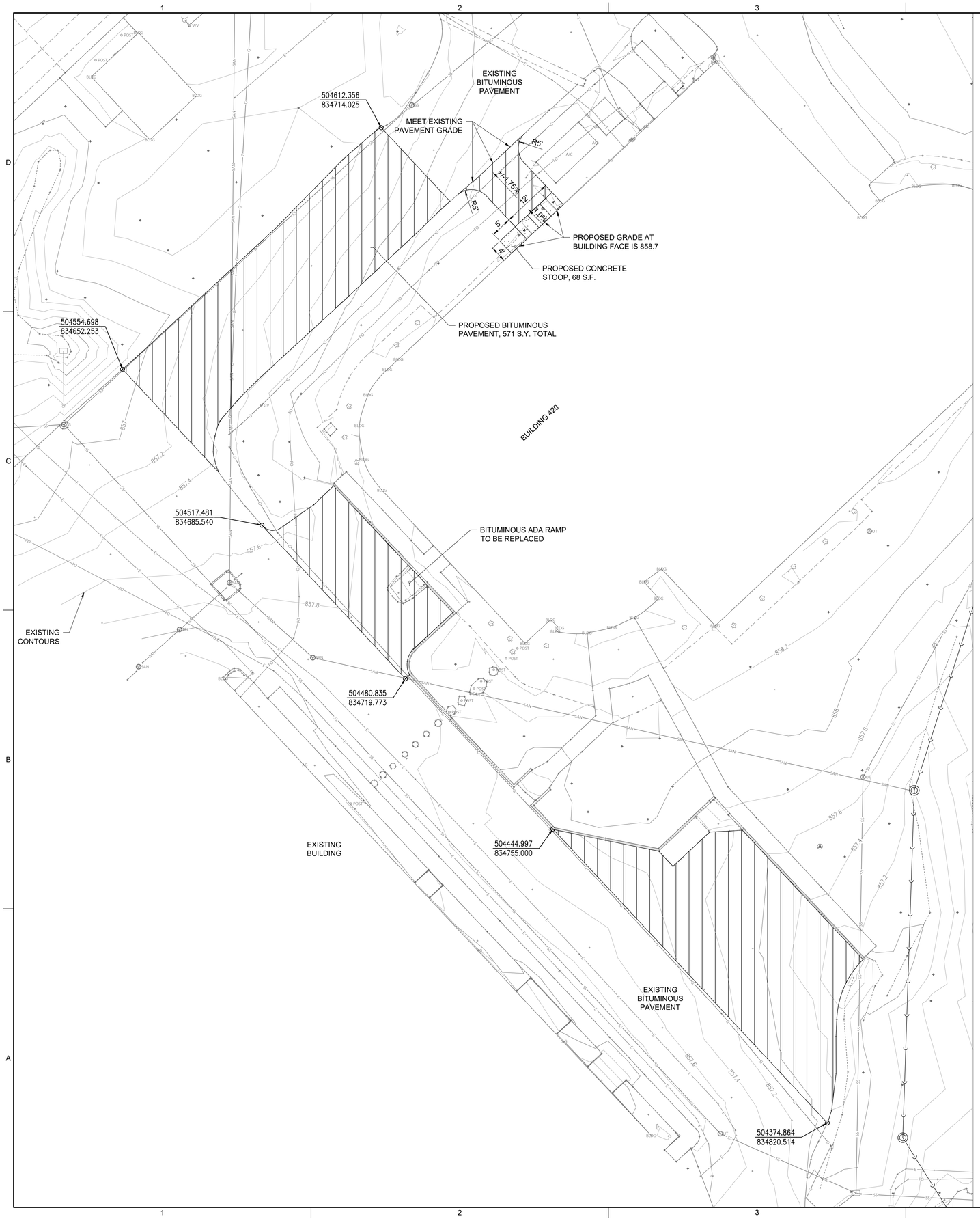
Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

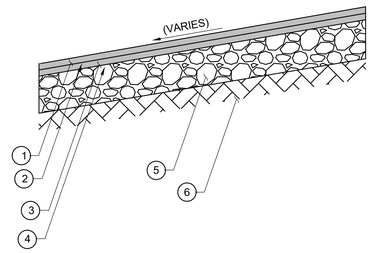
REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

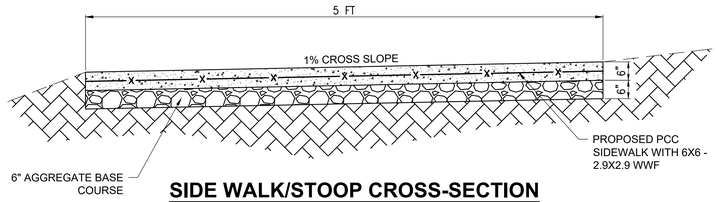
DESIGNED BY: LDH
DRAWN BY: LDH
REVIEWED BY:
PROJECT MANAGER: MT
PROJECT NUMBER: 2021-613-00
SHEET TITLE: REMOVAL PLAN
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: C-301





TYPICAL PAVEMENT SECTION

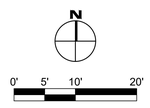
1. PROPOSED 2 INCH ASPHALT SURFACE COURSE
2. PROPOSED TACK COAT
3. PROPOSED 2 INCH ASPHALT BASE COURSE
4. PROPOSED PRIME COAT
5. PROPOSED 12 INCH CRUSHED AGGREGATE
6. COMPACTED SUBGRADE



SIDE WALK/STOOP CROSS-SECTION

NOTES

1. JOINTS SHALL BE 4 FT SPACING.
2. ALL JOINTS SHALL BE CONTRACTION JOINTS. EXPANSION JOINTS WITH 1/2" PERFORMED EXPANSION MATERIAL SHALL BE SPACED AT 36 FT MAX. INTERVALS.
3. 1/2" PERFORMED JOINT FILLER TO BE USED IN ALL LOCATIONS WHERE SIDEWALK IS ADJACENT TO PAVEMENT.



PROPOSED PAVEMENTS TO BE REMOVED AND REPLACED WILL MATCH EXISTING GRADES UNLESS OTHERWISE INDICATED.

EXISTING	PROPOSED	LEGEND
		BITUMINOUS PAVEMENT
		PCC PAVEMENT
SS		STORM SEWER
W		WATER LINE
G		GAS LINE
SAN		SANITARY SEWER LINE
E		UNDERGROUND ELECTRIC LINE
		GROUND CONTOUR
		TREE/BUSH

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Air National Guard
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REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

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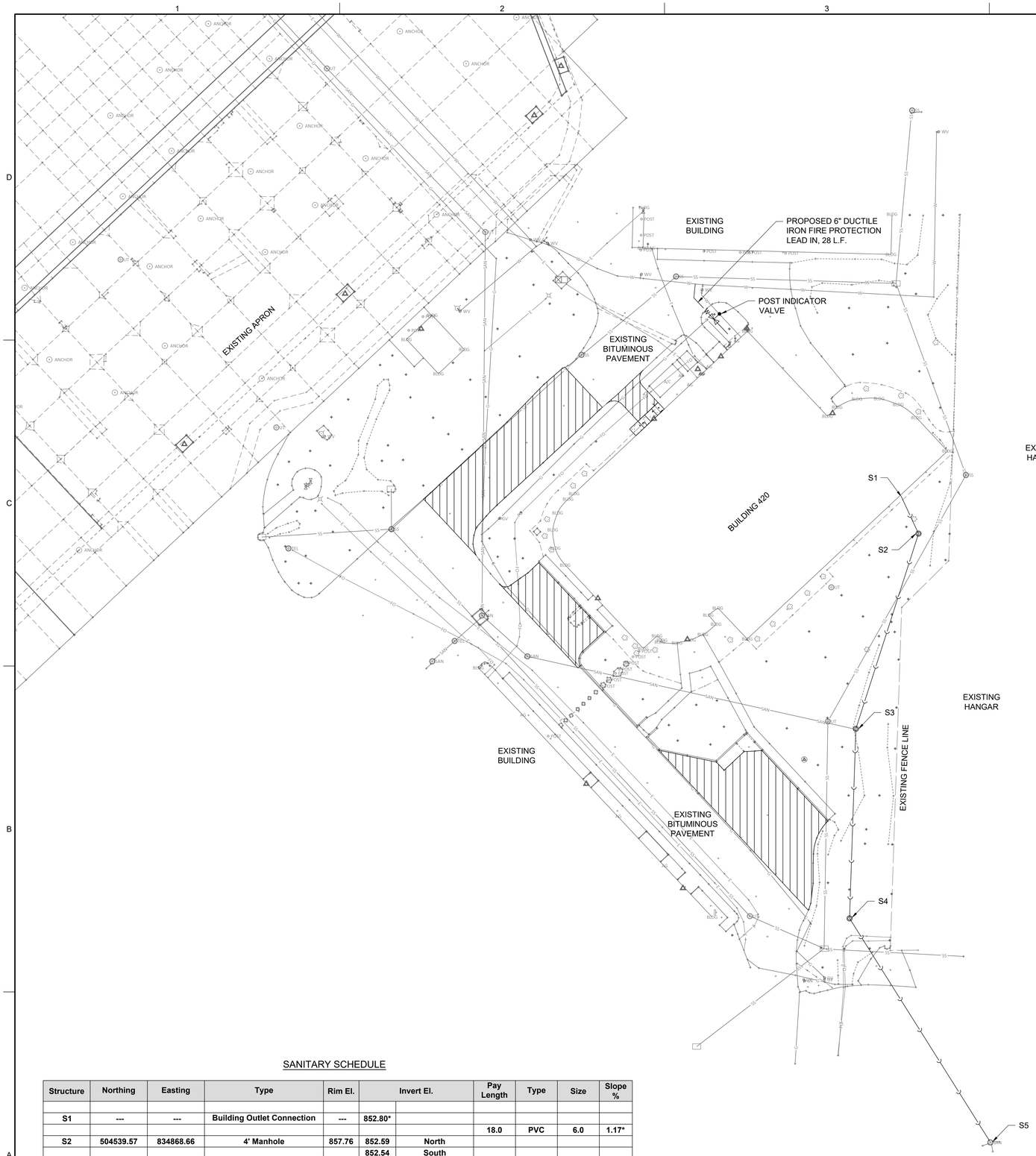
DRAWN BY:	LDH
REVIEWED BY:	
PROJECT MANAGER:	MT
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	PROPOSED PLAN AND TYPICAL SECTIONS
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	C-401



SANITARY SCHEDULE

Structure	Northing	Easting	Type	Rim El.	Invert El.		Pay Length	Type	Size	Slope %
S1	---	---	Building Outlet Connection	---	852.80*					
							18.0	PVC	6.0	1.17*
S2	504539.57	834868.66	4' Manhole	857.76	852.59	North				
					852.54	South				
							89.6	PVC	6.0	1.20
S3	504454.23	834841.27	4' Manhole	857.20	851.46	North				
					851.41	South				
					852.43	West (Existing)				
							82.9	PVC	8.0	1.20
S4	504371.34	834838.52	4' Manhole	857.30	850.42	North				
					850.37	South				
							114.6	PVC	8.0	1.20
S5	504273.39	834900.07	Connect to Existing Manhole	857.59	848.99					

* BUILDING CONNECTION INVERT IS ESTIMATED.

N

0' 10' 20' 40'

PAVEMENT REMOVED FOR SANITARY AND WATER INSTALLATION SHALL BE REPLACED WITH PROPOSED BITUMINOUS PAVEMENT SECTION, 4 INCHES OF ASPHALT ON 12 INCHES OF AGGREGATE.

EXISTING	PROPOSED	LEGEND
		BITUMINOUS PAVEMENT
		PCC PAVEMENT
SS		STORM SEWER
W	W	WATER LINE
G		GAS LINE
SAN		SANITARY SEWER LINE
E		UNDERGROUND ELECTRIC LINE
		GROUND CONTOUR
		TREE/BUSH

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REVISION HISTORY:

DESCRIPTION	DATE

PROJECT INFORMATION:

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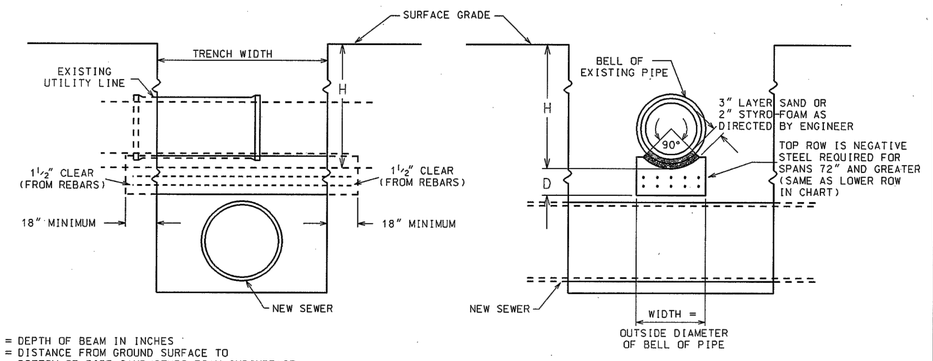
REVIEWED BY:
PROJECT MANAGER: MT
PROJECT NUMBER: 2021-613-00
SHEET TITLE: UTILITY PLAN AND SCHEDULE
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: C-501

REINFORCED CONCRETE BEAM UTILITY LINE SUPPORT TO BE USED WHEN NEW SEWER EXCAVATION IS CROSSING UNDER AN EXISTING UTILITY LINE (SEWER LINES, WATER LINES, GAS LINES, ETC.) AS DIRECTED BY THE ENGINEER.



D = DEPTH OF BEAM IN INCHES
H = DISTANCE FROM GROUND SURFACE TO BOTTOM OF PIPE SAND/STYRO-FOAM SUBSURFACE

TRENCH WIDTH	24" - 43"		44" - 58"		59" - 72"		73" - 87"	
H, ft	D	STEEL REQ'D	D	STEEL REQ'D	D	STEEL REQ'D	D	STEEL REQ'D
4 TO 5	6	#4 - 6" OC	7	#4 - 5" OC	8	#5 - 6" OC	9	#5 - 5" OC
5 TO 7	6	#4 - 6" OC	7	#5 - 6" OC	8	#5 - 5" OC	9	#5 - 5" OC
7 TO 9	6	#4 - 6" OC	7	#5 - 6" OC	8	#5 - 5" OC	9	#5 - 4" OC
9 TO 12	7	#4 - 6" OC	8	#5 - 6" OC	9	#5 - 4" OC	10	#5 - 4" OC
12 TO 15	7	#4 - 5" OC	9	#5 - 6" OC	10	#5 - 4" OC	12	#5 - 4" OC

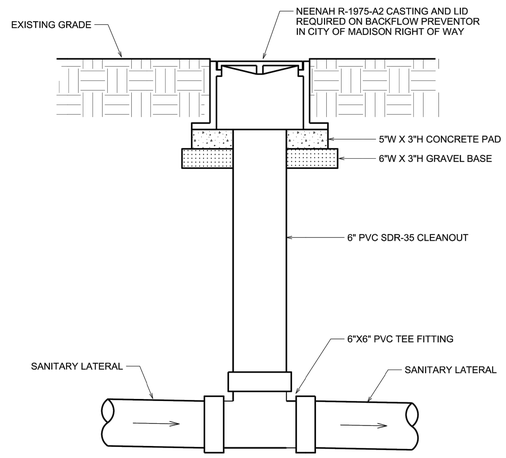
2004

CITY OF MADISON
ENGINEERING DIVISION

REINFORCED CONCRETE BEAM UTILITY LINE SUPPORT

STANDARD DETAIL DRAWING 5.8.2

5.8.2



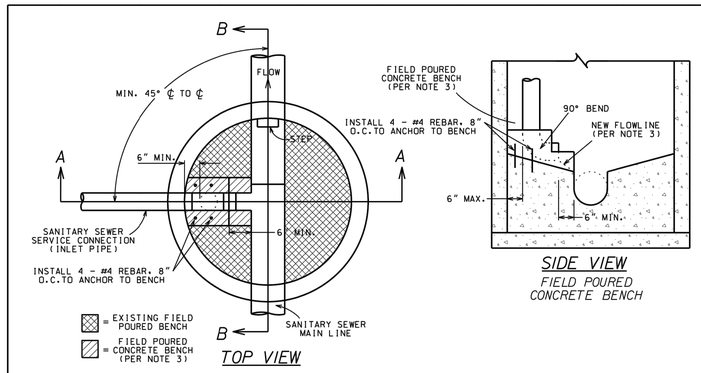
2019

CITY OF MADISON
ENGINEERING DIVISION

LATERAL CLEANOUT

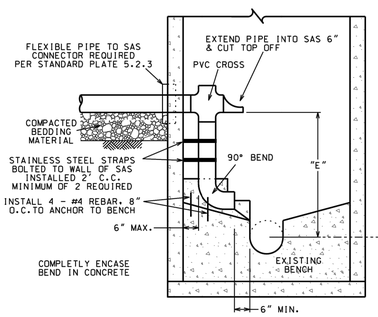
STANDARD DETAIL DRAWING 5.7.41

5.7.41

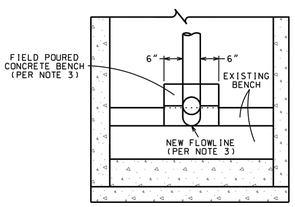


TOP VIEW

SIDE VIEW
FIELD POURED CONCRETE BENCH



SECTION A-A



SECTION B-B

DRAWING NOT TO SCALE

NOTES:

1) INSIDE DROP INLETS SHALL BE USED ONLY WHERE SITE CONDITIONS MAKE AN OUTSIDE DROP CONNECTION INFEASIBLE TO CONSTRUCT. THIS DETERMINATION SHALL BE MADE BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR INSTALLATION OF THE INSIDE DROP INLET FROM THE ENGINEER PRIOR TO CONSTRUCTION.

2) DROP INLET SHALL BE BUILT WHEN "E" IS GREATER THEN 24". "E" SHALL BE MEASURED FROM THE INVERT OF THE INCOMING PIPE TO THE SPRINGLINE OF THE OUTGOING SEWER.

3) ENCASE INLET PIPE IN CONCRETE FROM THE EXISTING BENCH TO FIRST JOINT ABOVE THE 90° BEND. FORM NEW SMOOTH FLOWLINE FROM PIPE END TO MAIN CHANNEL. ROUGH BRUSH FINISH ALL OTHER SURFACES OF THE NEW CONCRETE ENCASEMENT.

2018

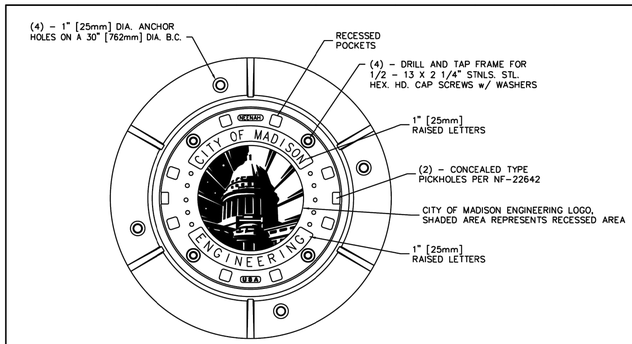
CITY OF MADISON
ENGINEERING DIVISION

INSIDE DROP FOR SANITARY MAIN & LATERAL

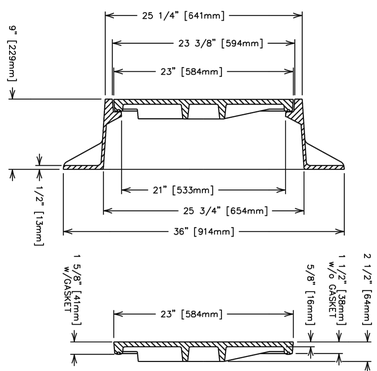
STANDARD DETAIL DRAWING 5.7.30

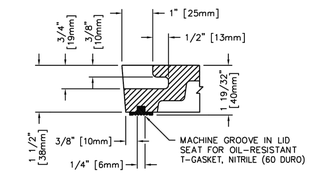
5.7.30

5.7.16A

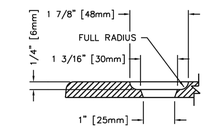


LOGO DETAIL





SELF-SEAL/CONCEALED PICK DETAIL



ANCHOR BOLT HOLE DETAIL

NEENAH R-1916C LOGO

1. FRAME AND COVER SHALL BE MACHINED AND FITTED SO THAT ROCKING AND CHATTERING WILL BE ELIMINATED.
2. ALL LIDS SHALL BE SELF-SEALING EXCEPT FOR STORM SEWERS
3. ALL LIDS SHALL HAVE CITY OF MADISON LOGO AS SHOWN IN DETAIL

LID NOTES: ALL DIMENSIONS SHOWN ARE IN ENGLISH AND [METRIC]
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B

2016

CITY OF MADISON
ENGINEERING DIVISION

SAS LOCKING FRAME & LOGO COVER

STANDARD DETAIL DRAWING 5.7.16A

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

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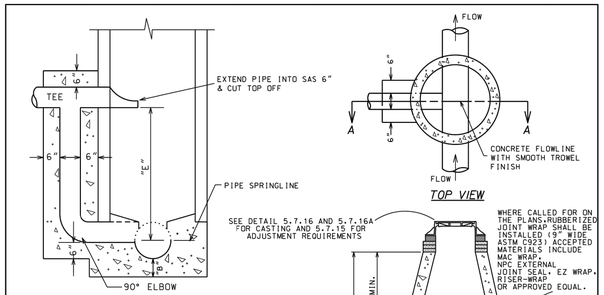
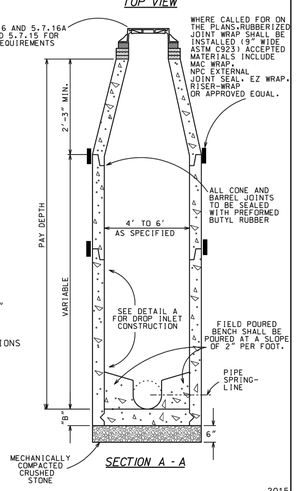
PROJECT MANAGER: MT
PROJECT NUMBER: 2021-613-00
SHEET TITLE: SANITARY DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: C-502



DETAIL A

SHOWING DROP INLET CONSTRUCTION FOR SANITARY SEWER MAINS & LATERALS



NOTES:

1) PRECAST S.A.S. SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478.

2) THICKNESS OF BASE, "B":
   6" MIN. FOR 4' DIAMETER SAS
   8" MIN. FOR 5' AND 6' DIAMETER SAS

3) FOR CASTING DESIGNATION REFER TO STANDARD DETAIL DRAWING 5.7.16 AND 5.7.16A

4) CENTERED (CONCENTRIC) CONE SHALL BE INSTALLED UNLESS OTHERWISE DIRECTED.

5) DROP INLET SHALL BE BUILT FOR ALL SEWER MAINS AND LATERALS WHEN "E" IS GREATER THAN 24". "E" SHOULD BE MEASURED FROM INVERT OF INCOMING PIPE TO THE SPRINGLINE OF THE OUTGOING SEWER. INSIDE DROP PER STANDARD DETAIL DRAWING 5.7.30 MAY BE INSTALLED FOR 4" AND 6" SERVICE CONNECTIONS WHERE OUTSIDE DROP INLET CONSTRUCTION IS INFEASIBLE. ENGINEER SHALL APPROVE INSIDE DROP INLET PRIOR TO INSTALLATION.

6) FLEXIBLE PIPE TO SAS CONNECTOR REQUIRED PER STANDARD DETAIL DRAWING 5.7.31

7) ALL BENCHES TO BE FIELD POURED CONCRETE WITH SMOOTH TROWEL FINISH. PRECAST BENCHES ONLY PERMITTED WITH PRIOR APPROVAL OF ENGINEER IN WRITING.

8) ALL JOINTS BETWEEN RINGS SHALL BE SEALED WITH ⅜" OF AIR-ENTRAINED TYPE M OR S MORTAR. THE OUTSIDE SURFACE OF THE ADJUSTING RINGS SHALL BE SEALED WITH A ½" THICK AIR-ENTRAINED MORTAR TYPE M OR S SEAL. THE METHOD USED FOR SEALING THE OUTSIDE SURFACE SHALL BE COMPATIBLE WITH THAT USED TO SEAL JOINTS BETWEEN THE RINGS.

9) PRECAST SANITARY SEWER ACCESS STRUCTURES FOR STREET RECONSTRUCTION PROJECTS AND FOR STREET EXCAVATION PERMITS REQUIRE PRECAST SHOP DRAWING APPROVAL FROM CITY ENGINEERING. PRIOR TO BEING FABRICATED BY THE MANUFACTURER NO PRECAST SHOP DRAWINGS ARE REQUIRED FOR NEW CONSTRUCTION IN SUBDIVISION DEVELOPMENTS.

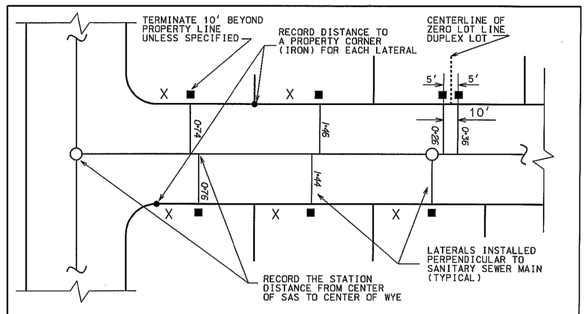
2015

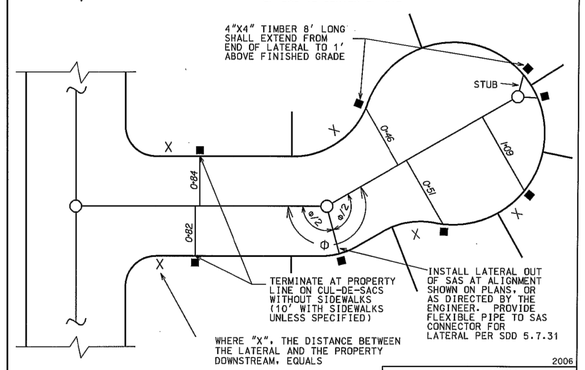
CITY OF MADISON
ENGINEERING DIVISION

SANITARY SEWER PRECAST SAS

STANDARD DETAIL DRAWING 5.7.2

5.7.2





UNLESS OTHERWISE SPECIFIED ON THE PLAN OR DIRECTED BY THE ENGINEER

NOTE:
ALL SANITARY SEWER LATERALS SHALL INCLUDE SANITARY LATERAL MARKER DISKS ABOVE THE LATERAL AT THE WYE & AT THE PROPERTY LINE.

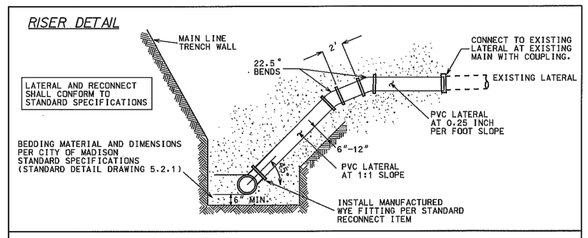
2006

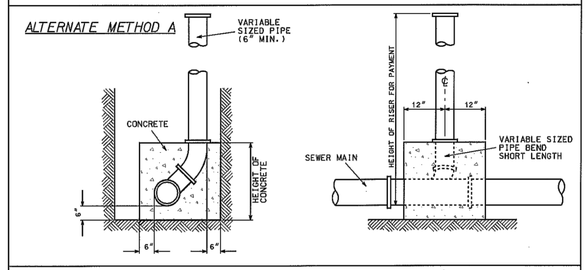
CITY OF MADISON
ENGINEERING DIVISION

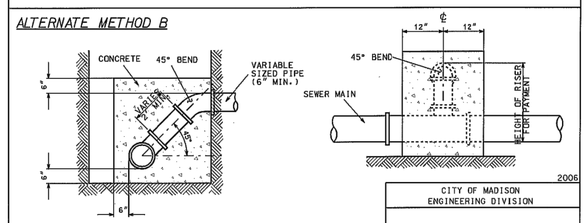
LOCATION OF SANITARY LATERALS

STANDARD DETAIL DRAWING 5.3.2

5.3.2







2006

CITY OF MADISON
ENGINEERING DIVISION

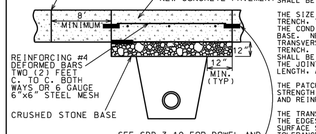
RISER DETAIL

STANDARD DETAIL DRAWING 5.3.1

5.3.1

TYPE I

CONCRETE PAVEMENT



TYPE I UTILITY TRENCH PATCH

THE PAVEMENT SHALL BE REMOVED IN TWO STAGES. THE INITIAL PAVEMENT REMOVAL SHALL BE LIMITED TO THE AREA OF THE PROPOSED TRENCH. FULL-DEPTH SAWCUTTING WILL NOT BE REQUIRED FOR THIS PHASE OF THE PAVEMENT REMOVAL. AFTER THE TRENCH HAS BEEN BACKFILLED AND COMPACTED, AND AFTER THE BASE HAS BEEN RESTORED IN THE AREA OF THE TRENCH, AND AFTER SAWCUTTING THE NEW JOINTS THE FULL DEPTH OF THE EXISTING PAVEMENT (INCIDENTAL), THE REMAINING PAVEMENT TO BE REMOVED SHALL BE REMOVED WITHOUT DISTURBING THE EXISTING BASE.

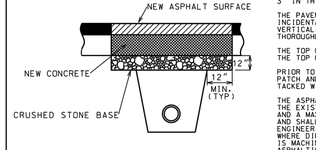
THE SIZE OF THE PATCH SHALL BE DETERMINED BY THE TOP WIDTH OF THE TRENCH, THE LOCATION AND SKEW OF THE EXISTING TRANSVERSE JOINTS, THE CONDITION OF THE EXISTING PAVEMENT, AND THE CONDITION OF THE BASE. NEW TRANSVERSE JOINTS SHALL BE PARALLEL TO THE EXISTING TRANSVERSE JOINTS, AND SHALL BE A MINIMUM OF ONE (1) FOOT FROM THE TRENCH. THE DISTANCE BETWEEN NEW AND EXISTING TRANSVERSE JOINTS SHALL BE A MINIMUM OF EIGHT (8) FEET, MEASURED PERPENDICULAR TO THE JOINTS. THE PATCH SHALL BE A MINIMUM OF EIGHT (8) FEET IN LENGTH, AND SHALL HAVE THE SAME WIDTH AS THE PAVEMENT LANE.

THE PATCH SHALL BE TEN (10) INCHES IN THICKNESS OF HIGH EARLY STRENGTH CONCRETE, DOWELED AND TIED WITH EPOXY COATED BARS, AND REINFORCED, ALL IN ACCORDANCE WITH THE TYPICAL SECTION.

THE TRANSVERSE EDGES OF THE FINISHED PATCH SHALL BE FLUSH WITH THE EDGES OF THE EXISTING CONCRETE PAVEMENT. THE LONGITUDINAL SURFACE SHALL FORM A STRAIGHT LINE FROM EDGE TO EDGE WITHIN A TOLERANCE OF ¼INCH.

TYPE II

CONCRETE WITH ASPHALTIC OVERLAY



TYPE II UTILITY TRENCH PATCH

THE PATCH SHALL BE 7" HIGH EARLY STRENGTH CONCRETE BASE WITH THE SAME REINFORCEMENT AS THE EXISTING CONCRETE BASE, OVERLAID WITH ASPHALT UPPER LAYER. WHERE SPECIFIED, OR DIRECTED BY THE ENGINEER, THE BASE SHALL BE CONSTRUCTED OF ASPHALTIC BASE COURSE MATERIAL, SHALL BE THE SAME THICKNESS AS THE EXISTING BASE, AND SHALL BE LAID IN TWO OR MORE COMPACTED LIFTS OF NOT MORE THAN 3" IN THICKNESS EACH.

THE PAVEMENT ALONG THE PATCH SHALL BE SAWCUT, FULL DEPTH, AND INCIDENTAL TO THE TRENCH PATCH. THE EDGES OF THE PATCH SHALL BE VERTICAL, FREE OF LOOSE STONES OR CONCRETE PIECES, AND SHALL BE THOROUGHLY WETTED JUST PRIOR TO POURING THE NEW CONCRETE BASE.

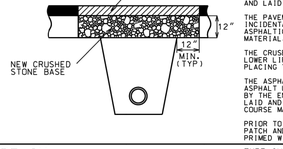
THE TOP OF THE NEW CONCRETE OR ASPHALT BASE SHALL BE FLUSH WITH THE TOP OF THE EXISTING CONCRETE BASE.

PRIOR TO PLACING THE ASPHALT UPPER LAYER, THE EDGES OF THE PATCH AND THE SURFACE OF THE NEW CONCRETE BASE SHALL BE THOROUGHLY TACKED WITH LIQUID ASPHALT.

THE ASPHALT UPPER LAYER SHALL BE OF THE SAME THICKNESS AS THE EXISTING ASPHALT OVERLAY WITH A MINIMUM THICKNESS OF 3" AND A MAXIMUM THICKNESS OF 6" UNLESS OTHERWISE SPECIFIED AND SHALL BE LAID IN ONE OR MORE COURSES AS DIRECTED BY THE ENGINEER. THE ASPHALTIC UPPER LAYER SHALL BE MACHINE LAID WHERE DIRECTED BY THE ENGINEER. WHERE THE ASPHALTIC UPPER LAYER IS MACHINE LAID, AND IS NOT MORE THAN 3" IN THICKNESS, THE ASPHALTIC SURFACE MAY BE LAID IN ONE LIFT.

TYPE III

ASPHALTIC STREET



TYPE III UTILITY TRENCH PATCH

THE PATCH SHALL BE CRUSHED STONE BASE COURSE, GRADATION NO. 2 OVERLAID WITH ASPHALT UPPER LAYER EQUAL IN THICKNESS TO THE EXISTING ASPHALTIC PAVEMENT WITH A MINIMUM THICKNESS OF 3.5" AND A MAXIMUM THICKNESS OF 6" UNLESS OTHERWISE SPECIFIED AND LAID IN ONE OR MORE COURSES AS DIRECTED BY THE ENGINEER.

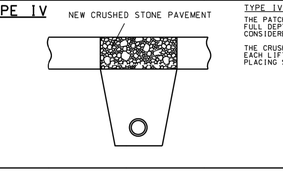
THE PAVEMENT ALONG THE PATCH SHALL BE SAWCUT, FULL DEPTH, AND INCIDENTAL TO THE TRENCH PATCH. THE EDGES OF THE EXISTING ASPHALTIC PAVEMENT SHALL BE FREE OF LOOSE STONES OR PAVEMENT MATERIAL.

THE CRUSED STONE BASE COURSE SHALL BE INSTALLED IN TWO LIFTS. THE LOWER LIFT SHALL BE THOROUGHLY MECHANICALLY COMPACTED PRIOR TO PLACING THE UPPER LIFT.

THE ASPHALT UPPER LAYER SHALL BE LAID IN TWO LIFTS. THE ASPHALT UPPER LAYER SHALL BE MACHINE LAID WHERE DIRECTED BY THE ENGINEER. WHERE THE ASPHALTIC UPPER LAYER IS MACHINE LAID AND IS NOT MORE THAN 3" IN THICKNESS, THE ASPHALT SURFACE COURSE MAY BE IN ONE LIFT.

PRIOR TO PLACING THE ASPHALT UPPER LAYER, THE EDGES OF THE PATCH AND THE SURFACE OF THE CRUSED STONE BASE SHALL BE TACKED AND PRIMED WITH LIQUID ASPHALT.

TYPE IV



TYPE IV UTILITY TRENCH PATCH

THE PATCH SHALL BE 12" CRUSHED STONE BASE COURSE, GRADATION NO. 2. FULL DEPTH SAWCUTTING OF ADJACENT PAVEMENT (IF ANY) SHALL BE CONSIDERED INCIDENTAL TO THE TRENCH PATCH.

THE CRUSHED STONE BASE COURSE SHALL BE INSTALLED IN THREE LIFTS. EACH LIFT SHALL BE THOROUGHLY MECHANICALLY COMPACTED PRIOR TO PLACING SUCCEEDING LIFTS.

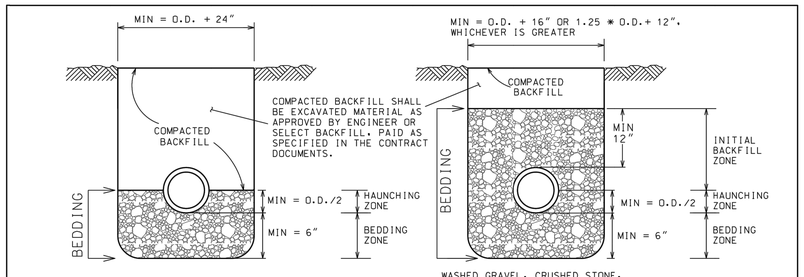
2019

CITY OF MADISON
ENGINEERING DIVISION

TYPICAL PAVEMENT PATCH SECTIONS

STANDARD DETAIL DRAWING 5.2.4

5.2.4



BEDDING FOR REINFORCED CONCRETE SEWER PIPES

BEDDING FOR SANITARY PIPE

NOTES:

UNLESS OTHERWISE SPECIFIED, ALL SANITARY PIPES, INCLUDING LATERALS AND LEADS, SHALL BE INSTALLED WITH THE TYPE OF BEDDING SHOWN FOR THE TYPE AND SIZE OF PIPE INSTALLED.

THE COSTS OF BEDDING SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PIPE.
FOR RCP, BEDDING INCLUDES THE HAUNCHING & BEDDING ZONES.
FOR PLASTIC PIPES, THE BEDDING INCLUDES THE HAUNCHING, BEDDING & INITIAL BACKFILL ZONES.
THE BEDDING SHALL BE INSTALLED & COMPACTED IN 6" MAXIMUM LIFTS.

ALL TRENCHES SHALL BE HAND BACKFILLED TO A POINT 12" ABOVE THE TOP OF THE PIPE. ALL BEDDING SHALL BE MECHANICALLY COMPACTED.

PAYMENT SHALL NOT BE MADE FOR BACKFILL WITH EXCAVATED MATERIAL, IF APPROVED. SELECT FILL, IF REQUIRED, SHALL BE PAID PER CONTRACT.

THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE 3 * O.D., THE MINIMUM TRENCH WIDTH AS SPECIFIED, AND SHALL APPLY FROM THE BOTTOM OF THE TRENCH TO A POINT 12" ABOVE THE TOP OF THE PIPE. WHERE THIS WIDTH IS EXCEEDED, THE CONTRACTOR SHALL FURNISH AND INSTALL A HIGHER TYPE OF BEDDING AT **NO EXTRA COST**. THE TYPE OF BEDDING SHALL BE DETERMINED BY THE ENGINEER.

O.D. EQUALS THE OUTSIDE DIAMETER OF THE PIPE.

DRAWING NOT TO SCALE

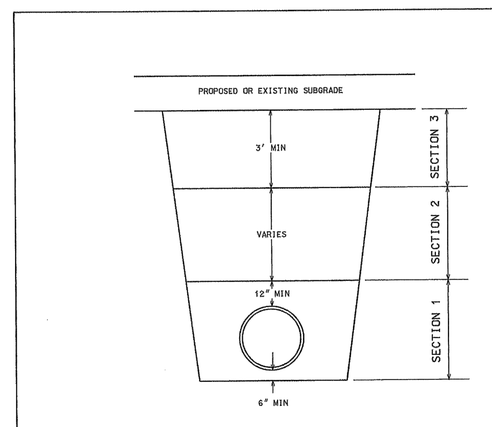
2016

CITY OF MADISON
ENGINEERING DIVISION

PIPE BEDDING AND BACKFILL

STANDARD DETAIL DRAWING 5.2.1

5.2.1



TYPICAL TRENCH COMPACTION

ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND THE COMPACTING EQUIPMENT. EACH LIFT SHALL BE MECHANICALLY COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.

IN COLD WEATHER, TRENCHES SHALL BE COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN SECTION 502.1 (e), BACKFILLING EXCAVATIONS AND COMPACTION OF BACKFILL, OF THESE SPECIFICATIONS.

SECTION 1:
MECHANICALLY COMPACTED BEDDING AS REQUIRED BY THE SPECIFICATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.
FOR ALL PLASTIC PIPE, SECTION 1 SHALL BE INSTALLED IN ACCORDANCE WITH S.D.D. 5.2.1A

SECTION 2:
MINIMUM COMPACTION OF 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO FEET ABOVE THE TOP OF PIPE.

SECTION 3:
MINIMUM COMPACTION OF 95% MAXIMUM DENSITY.

2011

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TYPICAL TRENCH COMPACTION

STANDARD DETAIL DRAWING 5.2.2

5.2.2

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SPRINGFIELD
ILLINOIS
PROFESSIONAL ENGINEER

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: LDH
DRAWN BY: LDH
REVIEWED BY:
PROJECT MANAGER: MT
PROJECT NUMBER: 2021-613-00
SHEET TITLE: SANITARY DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: C-503

ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
ADD'L	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ANCH	ANCHOR
APX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ALLOWABLE STRESS DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT/FP	ANTI-TERRORISM FORCE PROTECTION
AWS	AMERICAN WELDING SOCIETY
BM	BEAM
BO	BOTTOM OF
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BP	BASE PLATE
BR	BRACING
BRG	BEARING
BTWN	BETWEEN
CJ	CONSTRUCTION JOINT
℄	CENTER LINE
CL	CENTER LINE
CL	COLLATERAL LOAD
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONNX	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE
CR	CENTER OF RADIUS
DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DEG	DEGREE
db	DIAMETER BAR
DIA	DIAMETER
DL	DEAD LOAD
DN	DOWN
DWLS	DOWELS
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATION
EQ	EQUAL
EQUIV	EQUIVALENT
EW	EACH WAY
EXP	EXPANSION
°F/C	DEGREES FAHRENHEIT/CELSIUS
FF	FINISH FLOOR
FFE	FINISHED FLOOR ELEVATION
FIN	FINISH
FLR	FLOOR
FLG	FLANGE
FND	FOUNDATION
FT	FOOT/FEET
FTG	FOOTING
FS	FAR SIDE
GA	GAGE
GALV	GALVANIZED
GB	GRADE BEAM
HORIZ	HORIZONTAL
IBC	INTERNATIONAL BUILDING CODE
IN	INCH/INCHES
JB	JOIST BEARING
JST	JOIST
JT	JOINT
LBS	POUNDS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSH	LONG SIDE HORIZONTAL
LSSH	LONG SLOTTED HOLES
MBM	METAL BUILDING MANUFACTURER
MFR	MANUFACTURER
MAT'L	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MPH	MILES PER HOUR
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OH	OPPOSITE HAND
OPNG	OPENING
OVS	OVERSIZED
PERIM	PERIMETER
PL	PLATE
±	PLUS/MINUS
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
REF	REFER
REINF	REINFORCE/REINFORCING
REQ'D	REQUIRED
SCHED	SCHEDULE
SDI	STEEL DECK INSTITUTE
SF	SQUARE FEET
SIM	SIMILAR
SJ	SAWCUT JOINT
SJI	STEEL JOIST INSTITUTE
SL	SNOW LOAD
SSLT	SHORT SLOTTED HOLES
SSMA	STEEL STUD MANUFACTURERS ASSOCIATION
STD	STANDARD
STIFF	STIFFENER
TO	TOP OF
TOF	TOP OF FOUNDATION/FOOTING
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WL	WIND LOAD
WP	WORKING POINT
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE REINFORCEMENT

DESIGN CRITERIA:

GOVERNING BUILDING CODE: IBC 2018

BUILDING RISK CATEGORY: II

DESIGN LOADS:

DEAD LOADS:

ROOF SYSTEM	20 PSF SUPERIMPOSED
FRAMING	ACTUAL WEIGHT OF MATERIALS, UNLESS NOTED OTHERWISE
INSULATION	1 PSF
CEILING COLLATERAL	3 PSF
MISC/MECH COLLATERAL	5 PSF

LIVE LOADS:

ROOF (NON-REDUCIBLE)	20 PSF
MECH PLATFORMS	150 PSF
MECHANICAL FLOOR	250 PSF
ALL OTHER FLOORS	80 PSF
CONCENTRATED POINT LOADS	
SLAB ON GRADE (6"X6")	20,000 LBS

SNOW LOAD: (ASCE 7-16)

BASIC GROUND SNOW LOAD, (Pg)	30 PSF
TERRAIN CATEGORY	C
ROOF EXPOSURE	PARTIAL
EXPOSURE FACTOR, (Ce)	1.0
THERMAL FACTOR, (Ct)	1.0
SLOPE FACTOR, (Cs)	1.0
IMPORTANCE FACTOR, (Is)	1.10
SLOPED ROOF SNOW, (Ps)	30 PSF

WIND LOAD: (ASCE 7-16)

BUILDING DESIGN:	
BASIC WIND SPEED	107 MPH
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR, (Kzt)	1.0
BUILDING ENCLOSURE CATEGORY	ENCLOSED BUILDING

SEISMIC DESIGN DATA: (ASCE 7-16)

SHORT PERIOD ACCELERATION, S_s	0.074 g
LONG PERIOD ACCELERATION, S_1	0.048 g
SOIL SITE CLASS	D
SITE COEFFICIENT, F_a	1.6
SITE COEFFICIENT, F_v	2.4
DESIGN SPECTRAL ACCELERATION, S_{DS}	0.079 g
DESIGN SPECTRAL ACCELERATION, S_{D1}	0.077 g
SEISMIC DESIGN CATEGORY	B

R=3.0, Ω=3.0, C_d=3.0, I_e=1.00, C_s=0.026

TEMPERATURE:
STRUCTURE SHALL BE ANALYZED FOR T = +37,-53 °F (90 °F TOTAL ΔT)

MATERIAL DESIGN VALUES:

CONCRETE (MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS, NORMAL WEIGHT, UNLESS NOTED OTHERWISE)

SLABS ON GRADE AND FOUNDATIONS	4,000 PSI
ALL OTHER STRUCTURAL CONCRETE, U.N.O.	4,000 PSI

CONCRETE REINFORCEMENT(MINIMUM YIELD STRENGTH)

ALL DEFORMED BARS, UNLESS NOTED OTHERWISE.	
(ASTM A615, GRADE 60)	f_y = 60,000 PSI
WELDED WIRE FABRIC (ASTM A185)	f_y = 60,000 PSI
SMOOTH BARS (ASTM A82)	f_y = 70,000 PSI
DEFORMED BAR ANCHORS (ASTM A706)	f_y = 60,000 PSI

STRUCTURAL STEEL (MINIMUM YIELD STRENGTH)

WIDE FLANGES (ASTM A992 OR A572, GR. 50)	F_y = 50,000 PSI
HSS ROUND (ASTM A500, GRADE C)	F_y = 46,000 PSI
HSS SQUARE (ASTM A500, GRADE C)	F_y = 50,000 PSI
PIPES (ASTM A53, GRADE B)	F_y = 35,000 PSI
ALL OTHER SHAPES, PLATES AND ANCHOR BOLTS UNLESS NOTED OTHERWISE (ASTM A36)	F_y = 36,000 PSI
ANCHOR RODS	
(ASTM F 1554, WELDABLE GRADE 55)	F_y = 55,000 PSI
COLD FORMED STRUCTURAL SHAPES	F_y = 33,000 PSI (MIN)

MISCELLANEOUS NOTES:

1. REFERENCE DATUM ELEVATION 100'-0" IS EQUAL TO THE ACTUAL FINISH FLOOR ELEVATION PROVIDED BY CIVIL. REFERENCED ELEVATIONS ARE BASED ON THIS DATUM ELEVATION.
2. GENERAL NOTES AND TYPICAL DETAILS APPLY TO THE ENTIRE PROJECT AND CONVEY ENGINEERING INTENT. SPECIFIC DETAILS ARE NOT DRAWN FOR EVERY CONDITION OF CONSTRUCTION OR ASSEMBLY. MANY CONDITIONS SIMILAR TO THOSE DEPICTED EXIST AND THOSE SIMILAR CONDITIONS ARE INCLUDED IN THE CONTRACT SCOPE OF WORK. THE CONTRACTOR SHALL INCLUDE COST OF THE WORK FOR THESE SIMILAR CONDITIONS. FUTURE CLARIFICATION OF DETAILS SHALL NOT BE THE BASIS OF ADDITIONAL COMPENSATION FOR THE CONTRACTOR.

CONSTRUCTION NOTES:

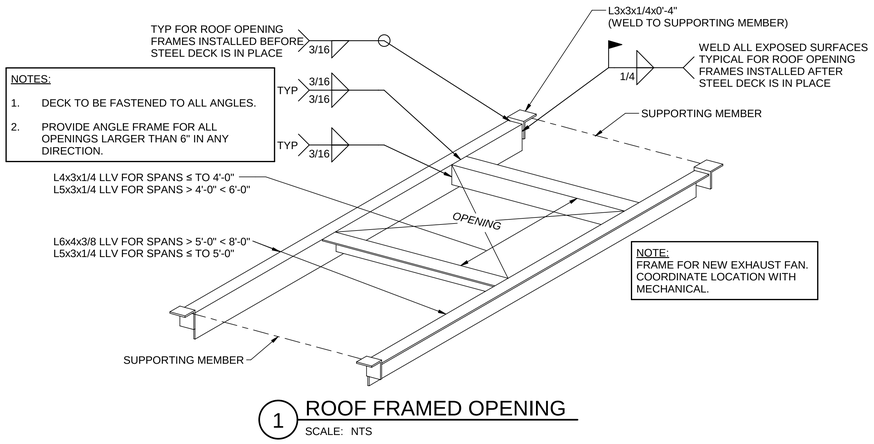
1. ALL DIMENSIONS TO EXISTING STRUCTURES MUST BE VERIFIED IN THE FIELD AS REQUIRED FOR NEW CONSTRUCTION.
2. ALL INTERFERING PIPES, UTILITIES, AND FIXTURES WILL BE RELOCATED BY CONTRACTOR AS REQUIRED.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL SHORING, PROPS, AND GUYS REQUIRED FOR THE TEMPORARY SUPPORT OF THE EXISTING STRUCTURE AND REMOVE SAME AFTER COMPLETION.
4. THE CONTRACTOR IS HELD RESPONSIBLE FOR PROTECTION OF PERSONNEL AND EQUIPMENT DURING THE COURSE OF OPERATIONS ACCORDING TO CURRENT SAFETY REGULATIONS.
5. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER COPIES OF ALL SHOP DRAWINGS OF NEW WORK FOR APPROVAL.
6. THE CONTRACTOR SHALL REPAIR ALL EXISTING WORK WHICH HAS BEEN DAMAGED BY HIS CONSTRUCTION OPERATIONS AND REMOVE ALL DEBRIS FROM THE SITE AFTER COMPLETION OF THE PROJECT.

CONCRETE CONSTRUCTION NOTES:

1. ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS, UNLESS NOTED OTHERWISE, SHALL FOLLOW THE LATEST EDITION ACI DETAILING MANUAL, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, ACI MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES, ACI SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS AND THE PROVISIONS OF ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-APPLICABLE EDITION).
2. UNLESS NOTED OTHERWISE, LAP SPLICES OR EMBEDMENT LENGTHS SHALL CONFORM TO ACI REQUIREMENTS FOR CLASS B SPLICES.
3. UNLESS NOTED OTHERWISE, CONCRETE COVER OVER STEEL REINFORCEMENT SHALL CONFORM TO MINIMUM REQUIRED BY ACI 318-APPLICABLE EDITION.
4. ALL REINFORCING SHALL BE SUPPORTED FROM THE INTERIOR OF THE CONCRETE ELEMENTS. PROVIDE ALL STANDS REQUIRED TO ADEQUATELY HOLD REINFORCEMENT IN PLACE DURING CONCRETE PLACEMENT.
5. NO PENETRATIONS ARE EXPECTED AT NEW COLUMN FOOTING AND PEDESTAL. ANY SUCH PENETRATION MUST BE APPROVED BY ARCHITECT-ENGINEER. PIPE PENETRATIONS THROUGH GRADE BEAMS SHALL NOT INTERRUPT THE LONGITUDINAL REINFORCEMENT OF THE GRADE BEAMS. GRADE BEAM PENETRATIONS NEAR PIER SUPPORTS ARE NOT PERMITTED.
6. POST INSTALLED DOWELS INTO CONCRETE SHALL USE HILTI-HY200 OR APPROVED EQUAL, UNLESS NOTED OTHERWISE. SUBSTITUTION REQUESTS SHALL PROVIDE CALCULATIONS DEMONSTRATING THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT UNDER THE CONDITIONS OF THE PROJECT. SUBSTITUTION REQUESTS SHALL FURTHER DEMONSTRATE PRODUCT APPLICABILITY BY ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USE, LOAD RESISTANCE, INSTALLATION CATEGORY, AND ANY OTHER RELEVANT PROJECT CONDITIONS.
7. UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS, PROVIDE 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES.
8. PROVIDE CONCRETE EQUIPMENT PADS OF SIZE REQUIRED FOR EQUIPMENT FURNISHED. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR NUMBER, SIZE AND LOCATION OF SUCH PADS ON THE FLOOR SLAB UNLESS OTHERWISE SHOWN. MINIMUM THICKNESS SHALL BE 4". MINIMUM REINFORCING SHALL BE #4 BARS AT 12" ON CENTER EACH WAY. TOOLED OR CHAMFERED EDGES SHALL BE PROVIDED AT ALL MECHANICAL PADS.
9. THE SIZE AND LOCATION OF ALL EQUIPMENT PADS, FLOOR PITS, TRENCH DRAINS AND OPENINGS FOR ALL DUCTS AND PIPES THROUGH FLOOR SLABS AND FOOTINGS SHALL BE VERIFIED WITH THE MECHANICAL AND ELECTRICAL CONTRACTORS REQUIREMENTS PRIOR TO PLACEMENT.
10. ALL JOINTS IN PITS AND TRENCHES SHALL BE KEYED. WATERSTOPS SHALL BE INSTALLED IN ALL CONSTRUCTION JOINTS. ALL PITS AND TRENCHES SHALL BE WATER-PROOFED.
11. ALL CONCRETE SLAB ACCESSORIES (TRENCHES, GRATING, EMBEDDED ITEMS, ETC.) SHALL BE DESIGNED FOR THE UNIFORM AND CONCENTRATED LIVE LOADS ON THIS SHEET.
12. LOCALLY SLOPE THE SLAB TO FLOOR DRAINS WITH AN 18" RADIUS AROUND THE DRAIN BODY. REFER PLUMBING FOR ADDITIONAL FLOOR DRAIN INFORMATION.
13. REFER TO THE PLUMBING SPECIFICATIONS FOR THE USE OF SLEEVES AND SEALANTS AT PLUMBING PENETRATIONS THROUGH THE SLAB ON GRADE.
14. PROVIDE BOLLARDS AS REQUIRED BY ARCHITECTURAL SHEETS.

STEEL CONSTRUCTION NOTES:

1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE APPLICABLE EDITIONS OF THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" AND THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AND AS SUPPLEMENTED BY THESE GENERAL NOTES IN ADDITION TO THE PROJECT SPECIFICATIONS.
2. THE STEEL CONTRACTOR SHALL FURNISH ERECTION BOLTS AS REQUIRED FOR FIELD CONNECTIONS.
3. ALL SHOP AND FIELD WELDS SHALL BE MADE IN ACCORDANCE WITH THE ANSI/AWS "D1.1 STRUCTURAL WELDING CODE - STEEL", APPLICABLE EDITION.
4. SUBSTITUTION OF EXPANSION ANCHORS FOR EMBEDDED ANCHORS SHOWN ON THE DRAWING WILL NOT BE PERMITTED.
5. CUTS, HOLES, COPING, ETC. REQUIRED FOR WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.
6. ALL EXTENSION BARS, RUN-OFF PLATES, AND BACKING BARS USED IN WELDED CONNECTIONS SHALL BE REMOVED AND THE JOINTS SHALL BE GROUND SMOOTH WHERE SUCH CONNECTION IS PERMANENTLY EXPOSED TO VIEW OR IS DESIGNATED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS). REFER TO ARCHITECTURAL DRAWINGS FOR ALL LOCATIONS REQUIRING AESS.
7. THE ERECTION CONTRACTOR SHALL SURVEY ANCHOR RODS AND REPORT ANY DISCREPANCIES FROM THE CONTRACT DOCUMENTS TO THE ARCHITECT-ENGINEER. ALL CORRECTIONS TO WORK MUST BE APPROVED IN WRITING BY THE ARCHITECT-ENGINEER PRIOR TO THE START OF ERECTION.
8. ALL STRUCTURAL STEEL EMBEDDED IN CONCRETE, SHALL BE HOT-DIPPED GALVANIZED, UNLESS NOTED OTHERWISE.
9. ALL ADDITIONAL FRAMING REQUIRED TO SUPPORT OR BRACE MECHANICAL OR ELECTRICAL EQUIPMENT OR PIPING NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUPPLIED BY THE MECHANICAL OR ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.



1 ROOF FRAMED OPENING
SCALE: NTS

FSB
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PROFESSIONAL ENGINEER
10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	MNO
DRAWN BY:	BNF
REVIEWED BY:	TJD
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	GENERAL NOTES
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	S-001

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SCHEDULE OF SPECIAL INSPECTIONS

Reference UFGS 01 45 35 for all requirements not noted as part of this schedule.

INSPECTION DEFINITIONS:

PERFORM: Perform these tasks for each weld, fastener, or bolted connection, and noted verification.

OBSERVE: Observe these items randomly during the course of each workday to ensure that applicable requirements are being met. Operations need not be delayed pending these inspections at contractor's risk.

DOCUMENT: Document, with a report, that the work has been performed in accordance with the contract documents. This is in addition to any other reports required in the Special Inspections guide specification.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

The Seismic Design Category for this project is: ☐ A, ☒ B, ☐ C, ☐ D, ☐ E, ☐ F (check appropriate box)

STRUCTURAL - STEEL – WELDING SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

STEEL INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.4-1		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify that the welding procedures specification (WPS) is available	**PERFORM**	
2. Verify manufacturer certifications for welding consumables are available	**PERFORM**	
3. Verify material identification	**PERFORM**	Type and grade.
4. Welder Identification System	**PERFORM**	The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
5. Fit-up of groove welds (including joint geometry)	OBSERVE	✓ Joint preparation ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) ✓ Backing type and fit (if applicable)
6. Configuration and finish of access holes	OBSERVE	
7. Fit-up of fillet welds	OBSERVE	✓ Dimensions (alignment, gaps at root) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location)
STEEL INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.4-2		
TASK	INSPECTION TYPE	DESCRIPTION
8. Use of qualified welders	**PERFORM**	Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements.
9. Control and handling of welding consumables	OBSERVE	✓ Packaging ✓ Electrode atmospheric exposure control
10. No welding over cracked tack welds	OBSERVE	
11. Environmental conditions	OBSERVE	✓ Wind speed within limits ✓ Precipitation and temperature
12. Welding Procedures Specification followed	OBSERVE	✓ Settings on welding equipment ✓ Travel speed ✓ Selected welding materials ✓ Shielding gas type/flow rate ✓ Preheat applied ✓ Interpass temperature maintained (min./max.) ✓ Proper position (F, V, H, OH) ✓ Intermix of filler metals avoided
13. Welding techniques	OBSERVE	✓ Interpass and final cleaning ✓ Each pass within profile limitations ✓ Each pass meets quality requirements

[1] **PERFORM:** Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

STRUCTURAL - STEEL – WELDING SECTION (CONTINUED)

STEEL INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.4-3		
TASK	INSPECTION TYPE [1]	DESCRIPTION
14. Welds cleaned	OBSERVE	
15. Size, length, and location of all welds	**PERFORM**	Size, length, and location of all welds conform to the requirements of the detail drawings.
16. Welds meet visual acceptance criteria	**PERFORM AND DOCUMENT**	✓ Crack prohibition ✓ Weld/base-metal fusion ✓ Crater cross section ✓ Weld profiles ✓ Weld size ✓ Undercut ✓ Porosity
17. Arc strikes	**PERFORM**	
18. k-area	**PERFORM**	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks.
19. Backing removed, weld tabs removed and finished, and fillet welds added where required	**PERFORM**	
20. Repair activities	**PERFORM AND DOCUMENT**	
21. Document acceptance or rejection of welded joint or member	**PERFORM**	

END SECTION

[1] **PERFORM:** Perform these tasks for each weld, fastener, or bolted connection, and required verification.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL – BOLTING SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

STEEL INSPECTION TASKS PRIOR TO BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.6-1		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Manufacture's certifications available for fastener materials	**PERFORM**	
2. Fasteners marked in accordance with ASTM requirements	OBSERVE	
3. Proper fasteners selected for joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	OBSERVE	
4. Proper bolting procedure selected for joint detail	OBSERVE	
5. Connecting elements, including appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	OBSERVE	
6. Proper storage provided for bolts, nuts, washers, and other fastener components	OBSERVE	
STEEL INSPECTION TASKS DURING BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 360-16: Table C-N5.6-2		
TASK	INSPECTION TYPE [1]	DESCRIPTION
7. Fastener assemblies of suitable condition, placed in all holes and washers (if required) are positioned as required	OBSERVE	
8. Joint brought to the snug-tight condition prior to pretensioning operation	OBSERVE	
9. Fastener component not turned by the wrench prevented from rotating	OBSERVE	
10. Bolts are pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges	OBSERVE	
STEEL INSPECTION TASKS AFTER BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE IBC 1705.2.1, AISC 360-10: Table C-N5.6-3		
TASK	INSPECTION TYPE [1]	DESCRIPTION
11. Document acceptance or rejection of all bolted connections	**DOCUMENT**	

END SECTION

[1] **PERFORM:** Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL - OTHER INSPECTIONS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

OTHER STEEL INSPECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.2.1, AISC 341-16: Tables J8.1 & J10.1		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Anchor rods and other embedments supporting structural steel	**PERFORM**	Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
2. Fabricated steel or erected steel frame	OBSERVE	Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.
3. Reduced beam sections (RBS) where/if occurs	**DOCUMENT**	✓ Contour and finish ✓ Dimensional tolerances
4. Protected zones	**DOCUMENT**	No holes or unapproved attachments made by fabricator or erector
5. H-piles where/if occurs	**DOCUMENT**	No holes or unapproved attachments made by the responsible contractor

END SECTION

[1] **PERFORM:** Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - CONCRETE CONSTRUCTION SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE IBC TABLE 1705.3 (ACI 318 REFERENCES NOTED IN IBC TABLE)		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Inspect reinforcement, including prestressing tendons, and verify placement.	OBSERVE	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and unacceptable rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
2. Reinforcing bar welding	OBSERVE	✓ Verify weldability of reinforcing bars other than ASTM A 706 ✓ Inspect single-pass fillet welds, maximum 5/16" in accordance with AWS D1.4
3. All other welding	**CONTINUOUS**	Visually inspect all welds in accordance with AWS D1.4
4. Cast in place anchors and post installed drilled anchors (downward inclined)	OBSERVE	Verify prior to placing concrete that cast in place anchors and post installed drilled anchors have proper embedment, spacing and edge distance.
5. Post-installed adhesive anchors in horizontal or upward inclined orientations	**CONTINUOUS AND DOCUMENT**	✓ Inspect as required per approved ICC-ES report ✓ Verify that installer is certified for installation of horizontal and overhead installation applications ✓ Inspect proof loading as required by the contract documents
6. Verify use of required mix design	OBSERVE	Verify that all mixes used comply with the approved construction documents
7. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	**CONTINUOUS**	At the time fresh concrete is sampled to fabricate specimens for strength test verify these tests are performed by qualified technicians.
8. Inspect concrete and/or shotcrete placement for proper application techniques	**CONTINUOUS**	Verify proper application techniques are used during concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
9. Verify maintenance of specified curing temperature and technique	OBSERVE	Inspect curing, cold weather protection, and hot weather protection procedures.

END SECTION

[1] **OBSERVE:** Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.
CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

FIRE PROTECTION – SMOKE CONTROL SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

SMOKE CONTROL – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2018 IBC 1705.18		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Verify device locations and perform leakage testing	OBSERVE	Perform during erection of ductwork and prior to concealment
2. Pressure difference testing, flow measurements and detection and control verification	OBSERVE	Perform prior to occupancy and after sufficient completion

END SECTION

[1] **OBSERVE:** Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

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DESIGNED BY:	MNO
DRAWN BY:	BNF
REVIEWED BY:	TJD
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	SPECIAL INSPECTIONS
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	S-002

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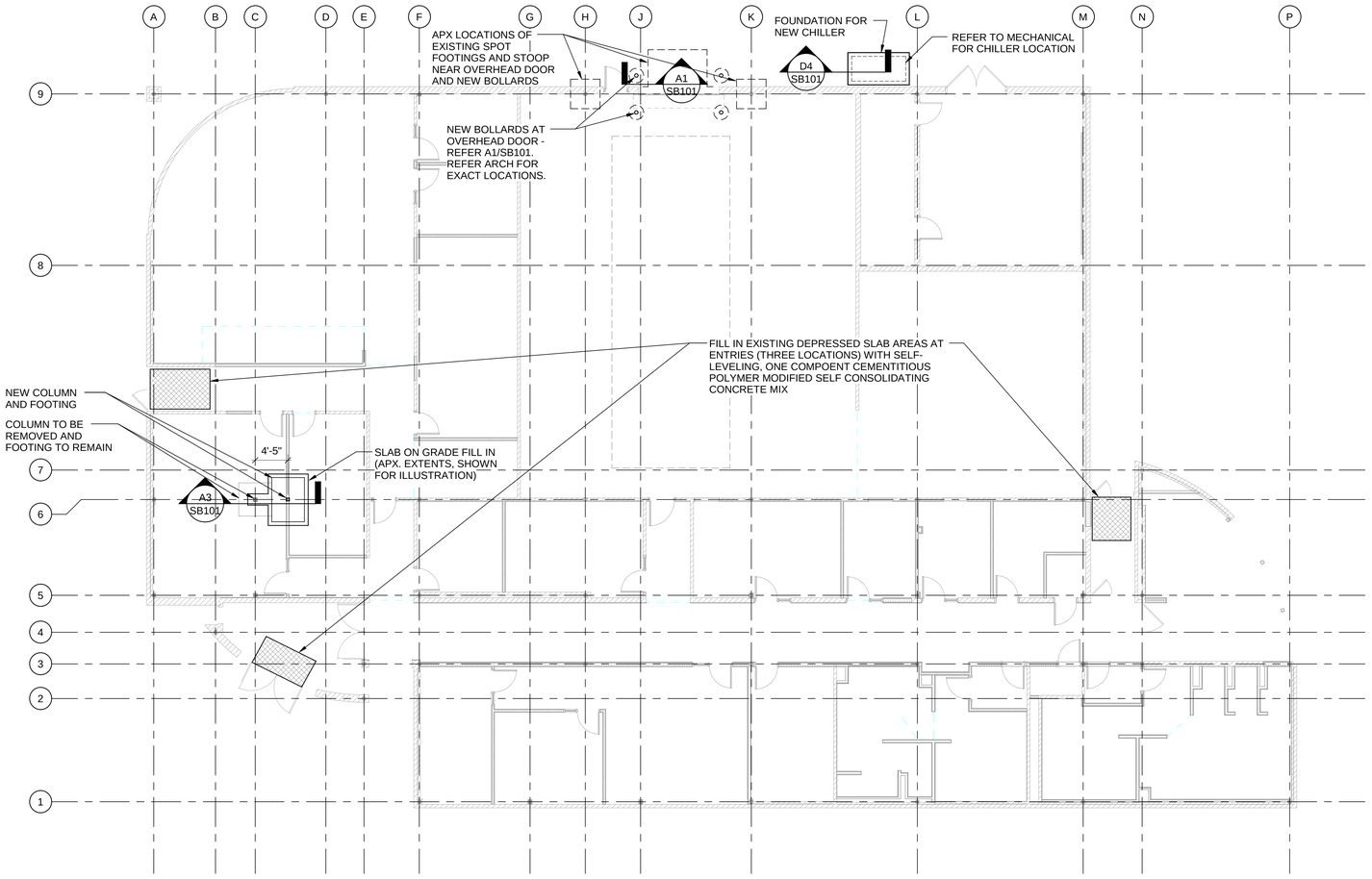
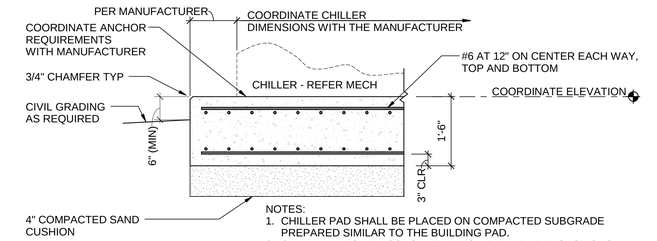


B1 SLAB/FOUNDATION PLAN

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

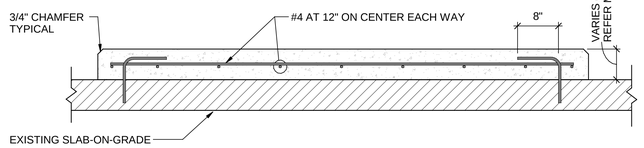


NOTES:
1. CHILLER PAD SHALL BE PLACED ON COMPACTED SUBGRADE PREPARED SIMILAR TO THE BUILDING PAD.
2. CHILLER PADS ARE CONSIDERED TO BE PAVEMENT SECTIONS AND PLACED ABOVE THE FROST LINE. MINOR VERTICAL MOVEMENT OF THE CHILLER PAD IS TO BE EXPECTED.

D4 CHILLER PAD DETAIL

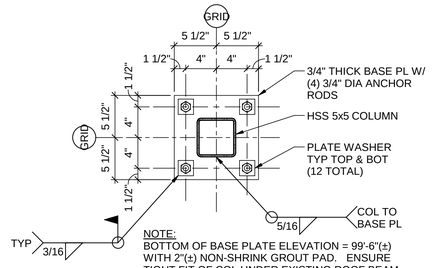
SCALE: 3/4" = 1'-0"

NOTES:
1. DRILL AND EPOXY #4 DOWELS AT 2'-0" ON CENTER TYPICAL AT PERIMETER, (4) EACH PAD MINIMUM.
2. REFER TO MECHANICAL DRAWINGS FOR PAD LOCATIONS.



C4 TYPICAL HOUSEKEEPING PAD DETAIL

SCALE: NTS



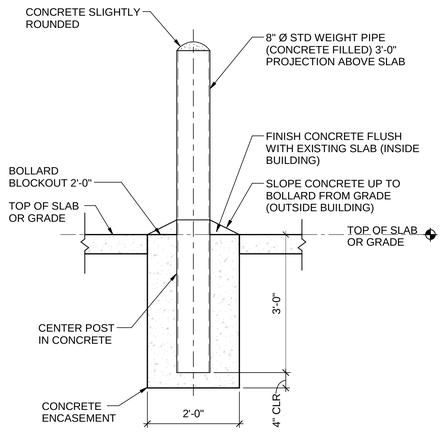
NOTE:
BOTTOM OF BASE PLATE ELEVATION = 99'-6"(±) WITH 2"(±) NON-SHRINK GROUT PAD. ENSURE TIGHT FIT OF COL UNDER EXISTING ROOF BEAM

BASE PLATE

C5 BASE PLATE

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

NOTES:
1. POST TO BE PRIMED PRIOR TO SETTING IN CONCRETE
2. TOP OF BLOCKOUT SURFACE SHALL MATCH SURROUNDING SURFACE IN COLOR, TEXTURE, AND TREATMENT.
3. COORDINATE LOCATIONS WITH ARCHITECTURAL.



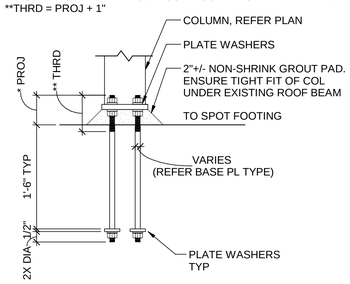
A1 BOLLARD DETAIL

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

BASE PLATE HOLE AND PLATE WASHER GEOMETRY			
ANCHOR BOLT DIAMETER	BASE PL OVS HOLE DIA.	PL WASHER DIMENSIONS	PL WASHER STD HOLE DIA.
3/4"	1 5/16"	1/2"X3"X3"	13/16"

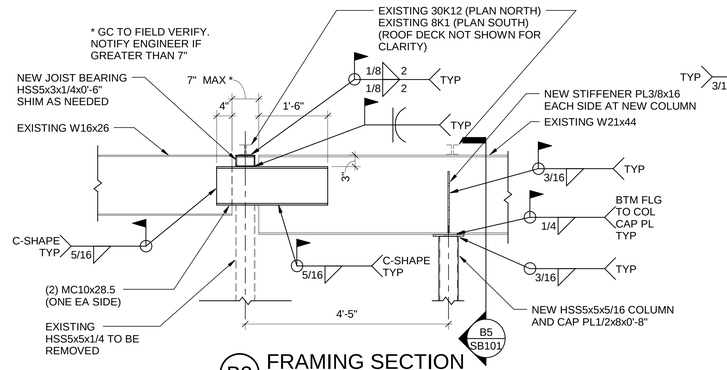
ANCHOR ROD NOTES:
1. ANCHOR RODS SHALL MEET THE REQUIREMENTS OF ASTM F1554 UNLESS NOTED OTHERWISE.
2. ALL ANCHOR RODS SHALL BE FURNISHED WITH HEAVY HEX NUTS AND PLATE WASHERS OF SPECIFICATIONS COMPATIBLE WITH THOSE OF THE THREADED SHANKS, UNLESS NOTED OTHERWISE.
3. FOR CONVENTIONAL COLUMNS (W & HSS SHAPES), A NUT AND WASHER SHALL BE PLACED UNDER THE BASE PLATE AND USED FOR LEVELING.

*PROJ = BASE PLATE THICKNESS + NSG + WASHER + DIA + 1 1/2"
**THRD = PROJ + 1"



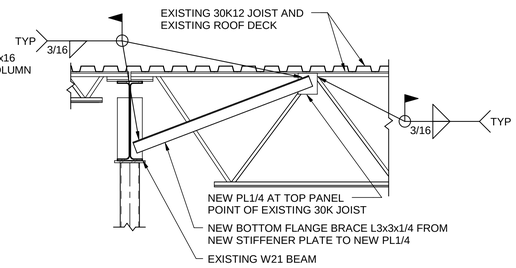
A2 BASE PLATE AND ANCHOR ROD

SCALE: NTS



B3 FRAMING SECTION

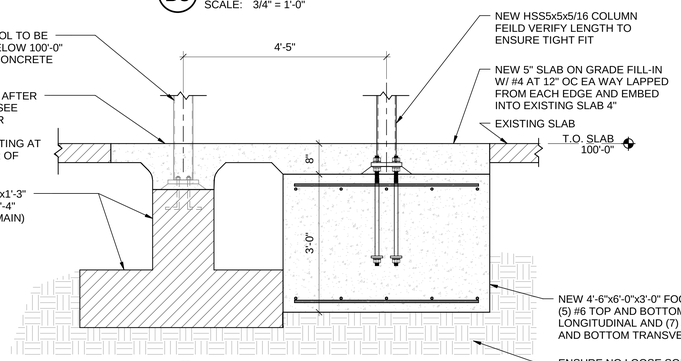
SCALE: 3/4" = 1'-0"



B5 FRAMING SECTION

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

SEQUENCE NOTES:
1. FIELD VERIFY ALL DIMESNIONS AND ELEVATIONS. ENSURE TIGHT FIT-UP OF NEW COLUMN UNDER EXISTING ROOF BEAM.
2. SHORE ENDS OF BOTH BEAMS FRAMING INTO COLUMN AT GRIDS C-6.
3. SHORE ENDS OF BOTH JOISTS FRAMING INTO COLUMN AT GRIDS C-6.
4. INSTALL NEW COLUMN AND PARTIAL DEPTH STIFFENERS UNDER EXISTING BEAM W21X44.
5. CAREFULLY DEMOLISH CONNECTION BETWEEN TWO BEAMS AND TWO JOIST SEATS AT COLUMN C-6.
6. CAREFULLY DEMOLISH HSS5x5x1/4 COLUMN AT GRID C-6.
7. INSTALL NEW (2)MC10 AS SHOWN.
8. INSTALL NEW JOIST BEARING AS SHOWN.
9. CAREFULLY REMOVE SHORING AT BEAMS AND JOISTS. IF EXCESSIVE DEFLECTION OR DEFORMATION IS OBSERVED STOP WORK AND CONTACT ENGINEER.



A3 FOUNDATION SECTION

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

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: MNO
DRAWN BY: BNF
REVIEWED BY: TJD
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **FOUNDATION PLAN AND DETAILS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: SB101

N PLAN NORTH
N TRUE NORTH

0 6" 1' 1'-6"
1 1/2" = 1'-0"
0 1' 2' 3'
3/4" = 1'-0"
0 4' 8' 16'
1/8" = 1'-0"

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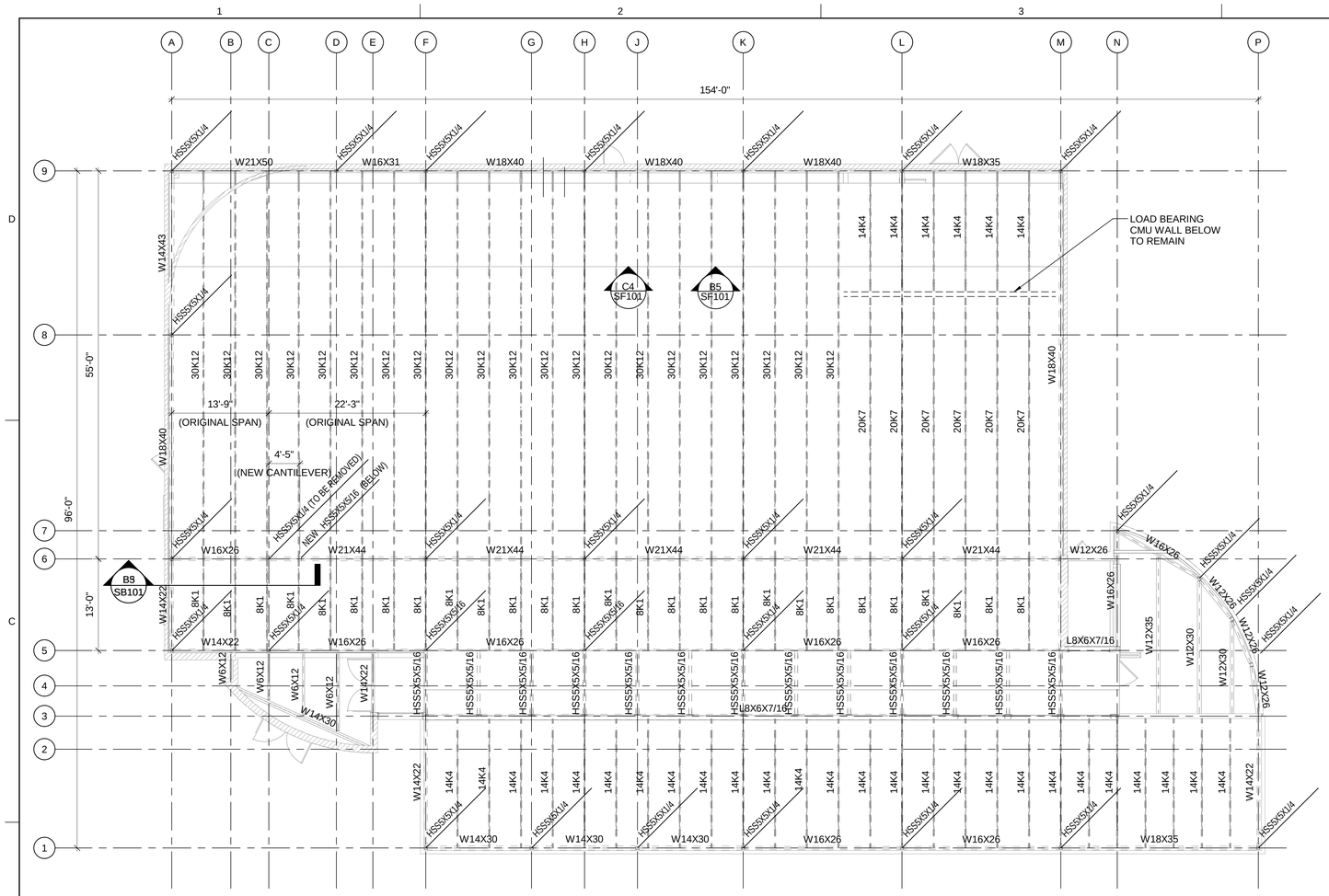
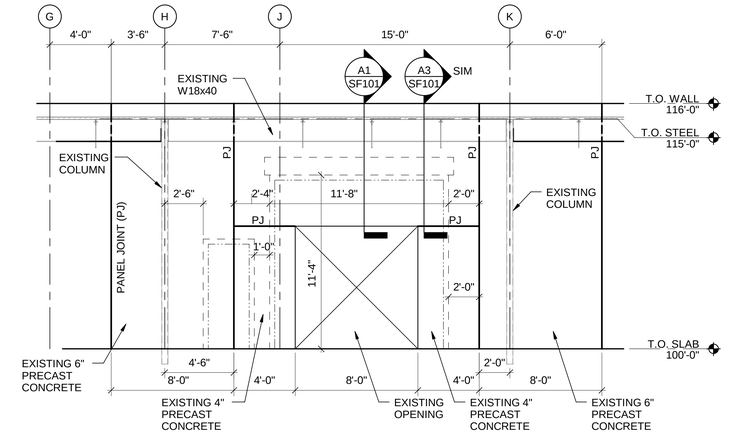


B1 EXISTING ROOF FRAMING PLAN

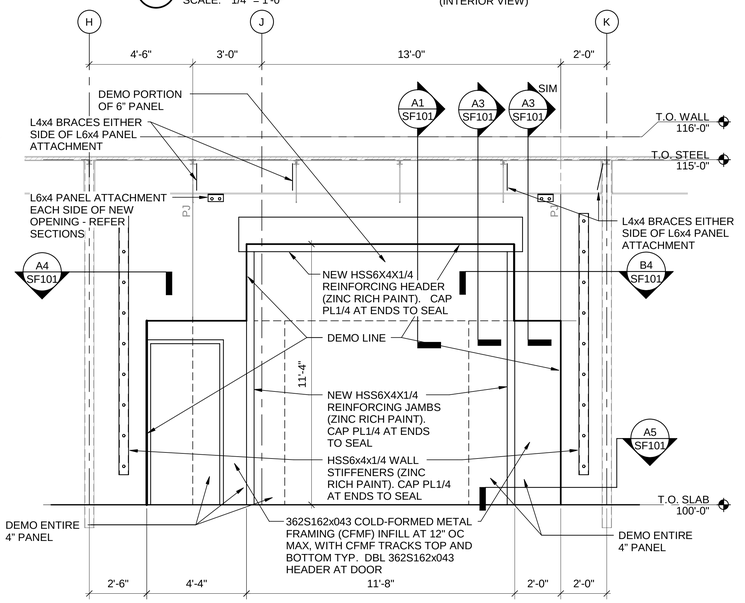
SCALE: 1/8" = 1'-0"

NOTE:
ALL BEAMS AND COLUMNS SHOWN ARE EXISTING EXCEPT THE ONE COLUMN MARKED NEW.



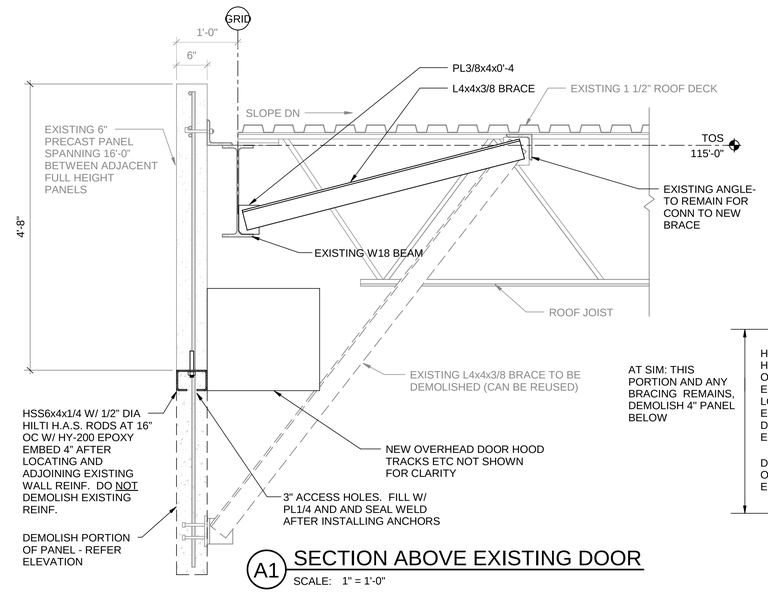
B5 DEMO VIEW - EXISTING ELEVATION

SCALE: 1/4" = 1'-0" (INTERIOR VIEW)



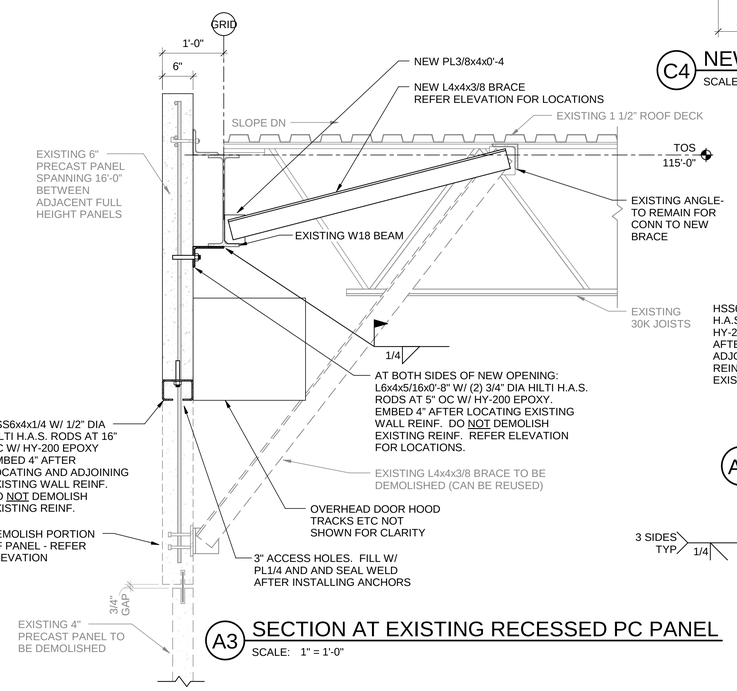
C4 NEW MAN DOOR AND ENLARGED EXISTING OVERHEAD DOOR

SCALE: 3/8" = 1'-0" (INTERIOR VIEW)



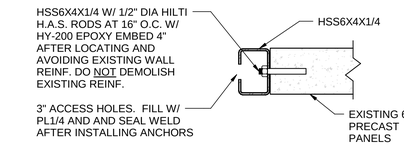
A1 SECTION ABOVE EXISTING DOOR

SCALE: 1" = 1'-0"



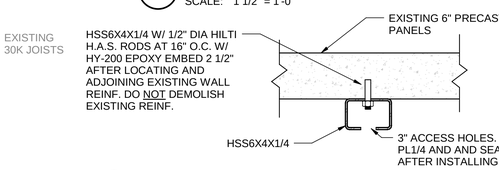
A3 SECTION AT EXISTING RECESSED PC PANEL

SCALE: 1" = 1'-0"



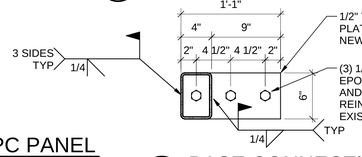
B4 SECTION AT REINFORCING JAMB HSS

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



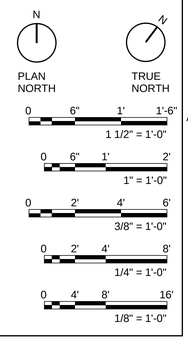
A4 SECTION AT PANEL REINFORCEMENT

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



A5 BASE CONNECTION AT JAMB HSS

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



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Madison, Wisconsin

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PROJECT INFORMATION:

DESIGNED BY: MNO
DRAWN BY: BAW
REVIEWED BY: TJD
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ROOF FRAMING PLAN AND DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: SF101

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ARCHITECTURAL ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	ADA ACCESSIBILITY GUIDELINES
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AJ	AESTHETIC JOINT
ALT	ALTERNATE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APC	ACOUSTICAL PANEL CEILING
ASI	ARCHITECT'S SUPPLEMENTAL INFORMATION
AV	AUDIO VISUAL
BLDG	BUILDING
BO	BOTTOM OF
BOT	BOTTOM
BRG	BEARING
BS	BOTH SIDES
BTWN	BETWEEN
CAB	CABINET
CFMF	COLD-FORMED METAL FRAMING
CG	CORNER GUARD
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CTB	CERAMIC TILE BASE
CWT	CERAMIC WALL TILE
CTR	CENTER
CU	CUBIC
D	DEPTH
DAT	DATUM
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET/DTL	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC (OR) ELECTRICAL
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXT	EXTERIOR
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FF EL	FINISH FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FLR	FLOOR
FPC	FIRE PROTECTION CABINET
FLUOR	FLUORESCENT
FR	FIRE RESISTIVE
FRGB	FIBER REINFORCED GYPSUM BOARD
FT	FOOT (OR) FEET
FTG	FOOTING
FURG	FURRING
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GDR	GUARD RAIL
GEN	GENERAL
GFRG	GLASS FIBER REINFORCED GYPSUM
GL	GLASS
GRD	GRADE
GYM	GYMNASIUM
GYP BD	GYPSUM BOARD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IN	INCH(ES)
INSUL	INSULATE (OR) INSULATION
INT	INTERIOR
JAN	JANITOR
JT	JOINT
KIT	KITCHEN
LAM	LAMINATE
LAV	LAVATORY
LBS	POUND(S)
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET (FOOT)
LH	LEFT HAND
LIB	LIBRARY
LIN	LINEAR
LOC	LOCATION
LTG	LIGHTING
LVR	LOUVER
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MIRR	MIRROR
MISC	MISCELLANEOUS
MJ	MASONRY EXPANSION JOINT
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
N	NORTH
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OFS	OUTSIDE FACE OF STUDS
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTIONAL
ORD	OVERFLOW ROOF DRAIN
OVHD	OVERHEAD
OZ	OUNCE(S)
PCI	PRECAST / PRESTRESSED CONCRETE INSTITUTE
PEMB	PRE-ENGINEERED METAL BUILDING
PH	PHASE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PLYWD	PLYWOOD
PR	PAIR
PRCST	PRECAST
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT (INTERIOR)
PVC	POLYVINYL CHLORIDE
QTF	QUARRY TILE FLOOR
QTB	QUARRY TILE BASE
QTY	QUANTITY
R	RADIUS (OR) RISER
RB	RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFERENCE
REBAR	REINFORCING STEEL BARS
REC	RECESSED
REF	REFERENCE (OR) REFRIGERATOR
REINF	REINFORCED
REQD	REQUIRED
REV	REVISION
RF	RESILIENT FLOORING
RFI	REQUEST FOR INTERPRETATION
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RTU	ROOF TOP UNIT
S	SOUTH
SC	SOLID CORE
SCHED	SCHEDULE(D)
SECT	SECTION
SF	SQUARE FOOT (FEET)
SHTHG	SHEATHING
SIM	SIMILAR
SPEC	SPECIFICATION(S)
SQ	SQUARE
SST	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASSIFICATION
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL (OR) STRUCTURE
T	TREAD
T&B	TOP AND BOTTOM
TBD	TO BE DETERMINED
TD	TOWEL DISPENSER
TEMP	TEMPORARY
THK	THICKNESS (THICK)
THRES	THRESHOLD
THRU	THROUGH
TO	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOJ	TOP OF JOIST
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TV	TELEVISION
TYP	TYPICAL
UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
VAR	VARIES
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VER	VERIFY
VERT	VERTICAL
VOL	VOLUME
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WH	WALL HYDRANT (OR) WATER HEATER
WT	WEIGHT
XFMR	TRANSFORMER
YD	YARD
Z	NOT USED

ARCHITECTURAL SYMBOLS LEGEND

PHASE
PACKAGE
DISCIPLINE TYPE (ARCHITECTURE SHOWN)
DISCIPLINE MODIFIER (ELEMENTS SHOWN)
DRAWING TYPE (PLAN, ELEVATION, ETC.)
SERIES/ FLOOR DESIGNATION

1 1 - AE 101

DRAWING TYPES LEGEND
0- GENERAL INFORMATION
1 - PLANS (HORIZONTAL VIEWS)
2 - ELEVATIONS (VERTICAL VIEWS)
3 - SECTIONS (SECTIONAL VIEWS)
4 - ENLARGED VIEWS (PLANS, ELEVATIONS OR SECTIONS)
5 - DETAILS
6 - SCHEDULES & DIAGRAMS

FLOOR LEVEL
3 DIGIT ROOM NUMERAL
112.01A — OFFICE SUITE DESIGNATION
SUB-ROOM NUMBER

1 GROUND FLOOR PLAN
SCALE:1/8"=1'-0"

DRAWING TITLE

LOCATED IN THE BOTTOM RIGHT SHEET CORNER

N

0 4' 8' 16'
1/8" = 1'-0"
0 2' 4' 8'
1/4" = 1'-0"

NORTH ARROW AND SCALE

DOOR NUMBER SYMBOL
REFER TO DOOR SCHEDULE
DOOR NUMBER WITH * INDICATES ACCESS CONTROL HARDWARE

PARTITION TYPE SYMBOL
REFER TO PARTITION TYPES

GLAZING TYPE SYMBOL
REFER TO GLAZING TYPES

EXTERIOR ELEVATION CALLOUT
ARROW INDICATE ELEVATION ON SHEET INDICATED

ROOM NAME
106

ROOM NAME & NUMBER SYMBOL
REFER TO ROOM FINISH SCHEDULE

INTERIOR ELEVATION CALLOUT
ARROWS INDICATE INTERIOR ELEVATION ON SHEET INDICATED

SECTION CALLOUT
ARROW INDICATE WALL SECTION ON SHEET INDICATED

DETAIL CALLOUT
ENLARGED PLAN OR DETAIL ON SHEET INDICATED

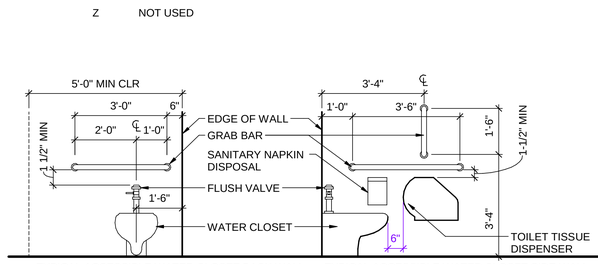
REVISION SYMBOL
REFER TO SHEET BORDER FOR REVISION HISTORY

BUILDING SECTION CALLOUT
ARROWS INDICATE BUILDING SECTION ON SHEET INDICATED

STRUCTURAL GRIDS
AS INDICATED ON DRAWINGS
Top Text
Bottom Text

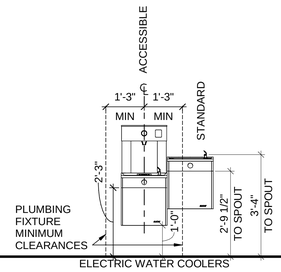
ELEVATION DATUM SYMBOL
INDICATES DATUM ELEVATION AS INDICATED

KEYNOTE SYMBOL
INDICATES INFORMATION FOUND IN KEYNOTES ON PLAN

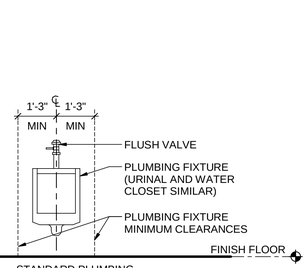


TYPICAL ACCESSIBLE WATER CLOSET BACK WALL

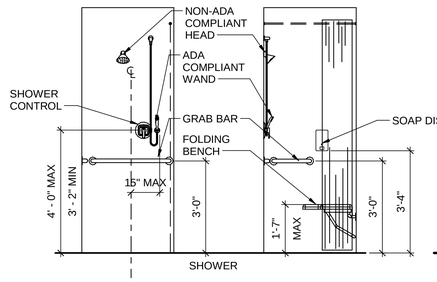
TYPICAL ACCESSIBLE WATER CLOSET SIDE WALL



ELECTRIC WATER COOLERS

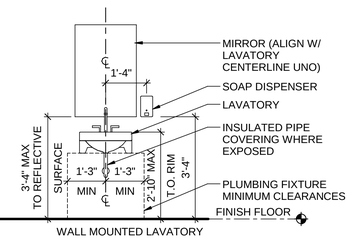


STANDARD PLUMBING FIXTURE CLEARANCES



SHOWER

PAPER TOWEL DISPENSER



WALL MOUNTED LAVATORY

TYPICAL ACCESSIBILITY, PLUMBING FIXTURE AND TOILET ACCESSORY CLEARANCES, MOUNTING HEIGHTS AND DIMENSIONS

TOILET ACCESSORY MOUNTING HEIGHT SCHEDULE

DESCRIPTION	MOUNTING HEIGHT
WATER CLOSET	15" AFF TO RIM
WATER CLOSET - ACCESSIBLE	17" AFF TO RIM
URINAL	24" AFF TO RIM
URINAL - ACCESSIBLE	17" AFF TO RIM
LAVATORY	34" AFF TO TOP
PAPER TOWEL DISPENSER	46" AFF TO BOTTOM/DISPENSER
SANITARY NAPKIN DISPOSAL	28" AFF TO TOP
TOILET PAPER DISPENSER	28" AFF TO TOP
GRAB BAR	34.5" AFF TO CENTER
ROBE HOOK/TOWEL BAR	60" AFF TO TOP
ROBE HOOK/TOWEL BAR - ACCESSIBLE	48" AFF TO TOP
COAT HOOK	60" AFF TO TOP
COAT HOOK - ACCESSIBLE	48" AFF TO TOP

NOTE: ALL TOILET ACCESSORIES LISTED ABOVE MAY NOT BE IN CONTRACT.

A3 MOUNTING HEIGHTS
SCALE: 1/2" = 1'-0"

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

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WISCONSIN
JASON T. HOLUBY
A-13101
OKLAHOMA CITY
OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **ABBREVIATIONS AND SYMBOLS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: A-001

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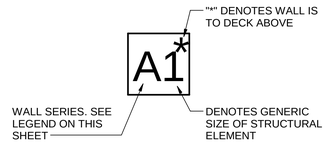
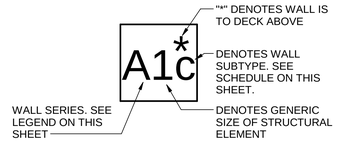


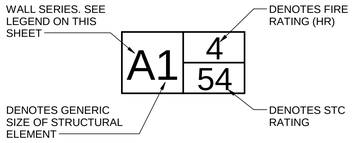
1 PARTITION TAG LEGEND

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



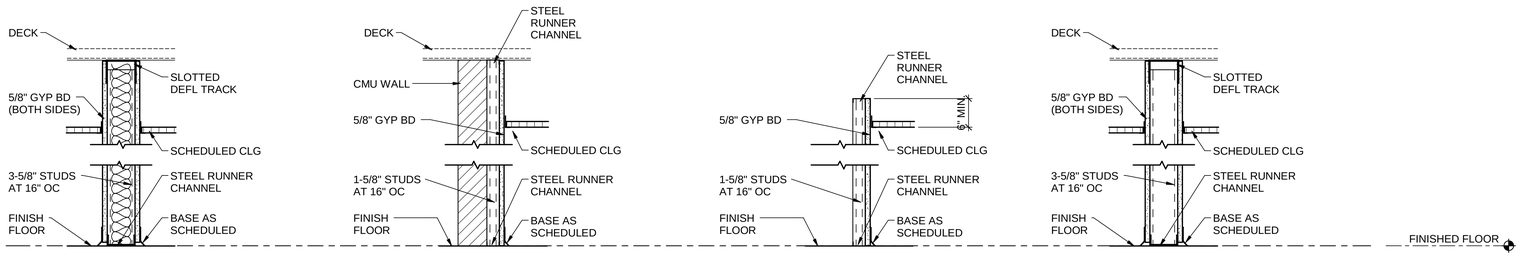
2 PARTITION TAG LEGEND

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

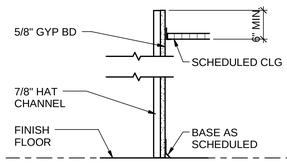


3 PARTITION TAG LEGEND

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



- A3a — NON-RATED PARTITION AS SHOWN ABOVE WITH UNFACED ACOUSTICAL BATTS AND EXTENDING GYPSUM BOARD TO DECK
- A3b — ONE HOUR-RATED PARTITION AS SHOWN ABOVE WITH UNFACED ACOUSTICAL BATTS AND EXTENDING GYPSUM BOARD TO DECK
- C2a — NON-RATED FURRING PARTITION WITH 2-1/2" STUDS AND UNFACED ACOUSTICAL BATTS IN LIEU OF 1-5/8" STUDS
- C3a — NON-RATED FURRING PARTITION WITH 3-5/8" STUDS AND UNFACED ACOUSTICAL BATTS IN LIEU OF 1-5/8" STUDS
- C3d — NON-RATED FURRING PARTITION WITH 3-5/8" STUDS WITH CONTINUOUS 20 GAUGE DEFLECTION TRACK (2 1/2" DEEP LEG TRACK) AND 20 GAUGE UPPER HORIZONTAL SPACER BARS AT ALL INTERIOR PARTITIONS EXTENDED TO DECK AND UNFACED ACOUSTICAL BATTS IN LIEU OF 1-5/8" STUDS
- F1a — NON-RATED FURRING PARTITION WITH UNFACED ACOUSTICAL BATTS IN LIEU OF 1-5/8" STUDS
- F2a — NON-RATED FURRING PARTITION WITH 2-1/2" STUDS IN LIEU OF 1-5/8" STUDS
- I2a — NON-RATED PARTITION AS SHOWN ABOVE WITH 2-1/2" STUDS IN LIEU OF 3-5/8" STUDS
- I6a — NON-RATED PARTITION AS SHOWN ABOVE WITH 6" STUDS IN LIEU OF 3-5/8" STUDS
- I6b — NON-RATED PARTITION AS SHOWN ABOVE WITH 6" STUDS IN LIEU OF 3-5/8" STUDS
- I8b — NON-RATED PARTITION AS SHOWN ABOVE WITH 8" STUDS IN LIEU OF 3-5/8" STUDS



- H0 — NON-RATED FURRING PARTITION WITH 7/8" HAT CHANNEL

4 PARTITION TYPES

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

INTERIOR PARTITION SCHEDULE

FSB MARK	SUB TYPE	PARTITION TYPE	FIRE RATING	UL NO.	WALL STC	SOUND BATTS	TYPE	TO DECK	STUD GAUGE	STUD SPACING	TYPE COMMENTS
A3	a	A3a	--	--	40	Yes	(A3) 3 5/8" STUDS, 5/8" GYP BD BOTH SIDES-0HR no batts	Yes	20 GA	16" OC	NGC 2013004
A3	b	A3b	--	--	45	Yes	(A3) 3 5/8" STUDS, 5/8" ACOUSTIC GYP BD BOTH SIDES-0HR W/BATTS	Yes	20 GA	16" OC	NGC 2013005
C2	a	C2a	--	--	--	No	(C2) 2 1/2" STUDS, 5/8" GYP BD ONE SIDE-0HR	No	20 GA	16" OC	--
C3	a	C3a	--	--	--	No	(C3) 3 5/8" STUDS, 5/8" GYP BD ONE SIDE-0HR	No	20 GA	16" OC	NGC 2013012
C3	d	C3d	--	--	S	Yes	(C3) 3 5/8" STUDS, 5/8" GYP BD ONE SIDE-0HR W/BATTS	No	20 GA	16" OC	NGC 2013012
F1	a	F1a	--	--	--	No	(F1) 1 5/8" STUDS, 5/8" GYP BD ONE SIDE-0HR	No	20 GA	16" OC	--
F2	a	F2a	--	--	--	No	(F2) 2 1/2" STUDS, 5/8" GYP BD ONE SIDE-0HR	No	20 GA	16" OC	--
H0	a	H0a	--	--	--	No	(H0) 7/8" HAT CHANNELS, 5/8" GYP BD ONE SIDE-0HR	No	--	--	--
I2	a	I2a	--	--		No	(I2) 2 1/2" STUDS, 5/8" GYP BD BOTH SIDES-0HR	No	20 GA	16" OC	--
I6	b	I6b	--	--	S	Yes	(I6) 6" STUDS, 5/8" GYP BD BOTH SIDES PLUS ONE ON EXTERIOR-0HR W/BATTS_P-4A	Yes	20 GA	16" OC	--
I6	a	I6a	--	--	--	No	(I6) 6" STUDS, 5/8" GYP BD BOTH SIDES-0HR	No	20 GA	16" OC	--
I6	b	I6b	--	--	S	Yes	(I6) 6" STUDS, 5/8" GYP BD BOTH SIDES-0HR W/BATTS	Yes	20 GA	16" OC	--
I8	b	I8b	--	--	S	Yes	(I8) 8" STUDS, 5/8" GYP BD BOTH SIDES-0HR W/BATTS	No	20 GA	16" OC	--

PARTITION TYPES LEGEND

- STANDARD PARTITION
- BATT INSULATION
- 1-HOUR FIRE RATING
- 2-HOUR FIRE RATING
- 3-HOUR FIRE RATING
- 4-HOURS FIRE RATING
- 1-HOUR FIRE/SMOKE
- DOUBLE STUD PARTITION
- CONCRETE MASONRY UNIT - HOLLOW
- CONCRETE MASONRY UNIT - GROUT FILLED
- CONCRETE MASONRY UNIT - SAND FILLED

WALL SERIES LEGEND

"A" SERIES - ACOUSTIC PARTITION
STC IS A PRIORITY. MAY OR MAY NOT NEED FIRE RATING.

"B" SERIES - SCIF WALL
STC IS A PRIORITY. MAY OR MAY NOT NEED FIRE RATING.

"C" SERIES - CHASE

"D" SERIES - DOUBLE STUD
STC OR WRAPPING AN ITEM IS PRIORITY. MAY OR MAY NOT NEED FIRE RATING.

"F" SERIES - FURRING

"G" SERIES - GENERIC

"H" SERIES - HAT CHANNEL

"I" SERIES - INTERIOR PARTITION
NO FIRE RATING, NO STC RATING.

"M" SERIES - MASONRY - FIRE RATED
FIRE RATING IS PRIORITY. MAY OR MAY NOT NEED STC.

"N" SERIES - MASONRY - NOT RATED
NO FIRE RATING. MAY OR MAY NOT NEED STC.

"P" SERIES - PARTIAL HEIGHT
NO FIRE RATING, NO STC RATING.

"R" SERIES - RATED INTERIOR PARTITION

"S" SERIES - SHAFT WALL

"U" SERIES - USER DEFINED
CREATE UNIQUE WALLS AS NEEDED.

"V" SERIES - VAULT WALL
TYPICALLY FOR CASINOS

"W" SERIES - FIRE WALL / AREA SEPARATION
PROTECTED ON BOTH SIDES OF AN EXPANSION JOINT WHEN DOUBLE STUD.

"Z" SERIES - SOUND PARTITION WITH Z-CLIPS
STC IS A PRIORITY. MAY OR MAY NOT NEED FIRE RATING.

PARTITION TYPE NOTES

A. STUD GAUGE IN PARTITION SCHEDULE IS A MINIMUM.
B. STUD SPACING IN PARTITION SCHEDULE IS MAXIMUM.
C. ALL GYPSUM BOARD SHALL BE 5/8" TYPE 'X' UNLESS NOTED OTHERWISE OR REQUIRED FOR ACOUSTIC ASSEMBLY.
D. PROVIDE CONTINUOUS 20 GAUGE DEFLECTION TRACK (2 1/2" DEEP LEG TRACK) AND 20 GAUGE UPPER HORIZONTAL SPACER BARS AT ALL INTERIOR PARTITIONS EXTENDED TO DECK.
E. SUBSTITUTE 5/8" TYPE 'X' FIRE RESISTANT TILE BACKER BOARD AT ALL LOCATIONS SCHEDULED TO RECEIVE WALL TILE.
F. ALL GYPSUM WALL BOARD SHALL BE CUT TIGHT TO FIT AND SEALED COMPLETELY AIRTIGHT WITH REQUIRED SEALANT FOR EITHER FIRE RATING OR SOUND ATTENUATION AT ALL MEP PENETRATIONS THRU INTERIOR PARTITIONS SCHEDULED TO DECK.
G. FILL ALL PERIMETER VOIDS AND HEAD OF WALL METAL DECK FLUTES WITH FIRESAFING INSULATION AT ALL FIRE RATED WALLS TO ACHIEVE COMPLETE CLOSURE AND SEAL BOTH SIDES WITH ELASTIC FIRESTOPPING SPRAY MASTIC.
H. ALL SOUND ATTENUATION BATTS SHALL BE UNFACED, 2.5 PCF, INSTALLED CONTINUOUS VERTICALLY, CUT TIGHT TO FIT AND FILL THE STUD CAVITY.
I. PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT THE FOLLOWING LOCATIONS:
   a. MECHANICAL ROOMS
   b. PLUMBING WET WALLS AT JANITOR ROOMS AND RESTROOMS
   c. LOADING DOCK AND RELATED CORRIDOR
J. PROVIDE IMPACT RESISTANT GYPSUM BOARD AT ALL CORRIDOR WALLS, UP TO 8'-0" AFF.
K. 'SM' IN PARTITION SCHEDULE INDICATES 'SMOKE' PARTITION.
L. 'S' IN PARTITION SCHEDULE INDICATES SOUND BATTS ARE TO BE PROVIDED BUT A MINIMUM STC IS NOT SPECIFIED.
M. THE TERM "TO DECK" IN THE PARTITION SCHEDULE REFERS TO THE ENTIRE WALL ASSEMBLY CONTINUING TO THE DECK ABOVE. WHEN THIS IS MARKED "NO" THEN THE WALL IS TO STOP 6" ABOVE THE CEILING UNLESS NOTED OTHERWISE. OTHER HEAD OF WALL CONDITIONS WILL BE NOTED IN THE PARTITION SCHEDULE - TYPE COMMENTS OR ON THE PLANS.
N. THE ASSEMBLY CODES IN THE TYPE COMMENTS ARE USED AS A BASIS OF DESIGN AND NOT THE ONLY METHOD OF ACHIEVING THE DESIRED PERFORMANCE CRITERIA OF A WALL ASSEMBLY.

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

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

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WISCONSIN
JASON T. HOLUBY
A-13101
OKLAHOMA CITY
OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **PARTITION TYPES**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: A-002

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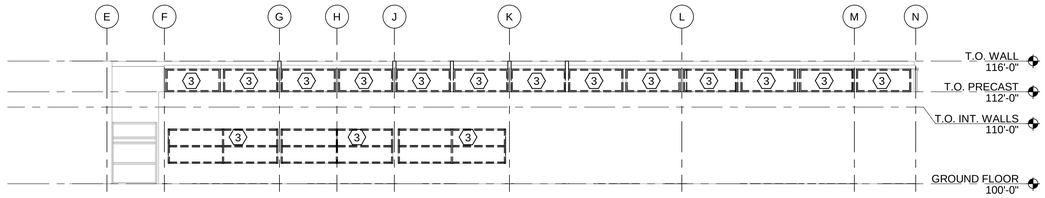
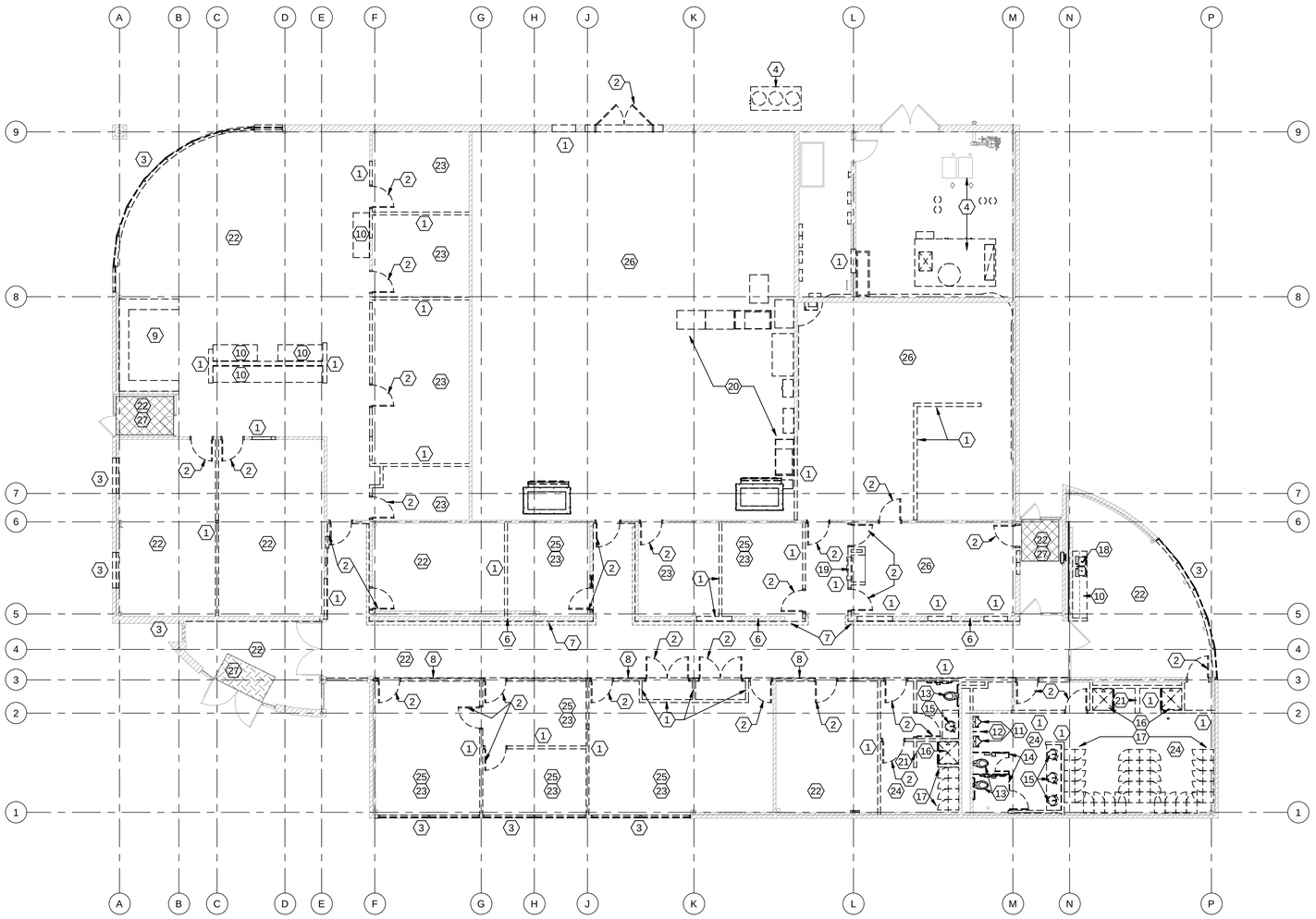


1 EXTERIOR GLAZING DEMO ELEVATION

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



A1 DEMOLITION FLOOR PLAN

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

DEMO PLAN KEYNOTES

1. DEMOLISH WALL FRAMING AND FINISHES
2. DEMOLISH DOOR AND FRAME
3. DEMOLISH WINDOW FRAME AND GLAZING
4. DEMOLISH ELECTRICAL AND MECHANICAL EQUIPMENT
5. DEMOLISH CEILINGS AND CEILING FIXTURES
6. DEMOLISH LAYER(S) OF GYPSUM BOARD AND ACOUSTIC PANELS FROM NORTH WALL IN MAIN HALLWAY (CORR 104)
7. DEMOLISH HAND RAIL
8. DEMOLISH WALL FINISH AND INSULATION, METAL STUD FRAMING TO REMAIN
9. DEMOLISH BUILT IN SHELVING UNITS
10. DEMOLISH CABINETS AND COUNTER
11. DEMOLISH URINAL
12. DEMOLISH URINAL PARTITION
13. DEMOLISH WATER CLOSET
14. DEMOLISH TOILET PARTITION
15. DEMOLISH RESTROOM SINK AND COUNTER
16. DEMOLISH SHOWER
17. DEMOLISH LOCKERS
18. DEMOLISH SINK
19. DEMOLISH ROLL TOP DOOR
20. FURNITURE TO BE REMOVED AND RETURNED TO OWNER
21. DEMOLISH WALL HEATER(S)
22. DEMOLISH VINYL COMPOSITE TILE AND PREP SURFACE FOR NEW FINISH
23. DEMOLISH CARPET AND PREP SURFACE FOR NEW FINISH
24. DEMOLISH CERAMIC TILE AND PREP SURFACE FOR NEW FINISH
25. DEMOLISH VINYL WALL COVERING AND GYP BD STUDS TO REMAIN AND REUSE
26. DEMOLISH ELECTRO STATIC DISSIPATIVE TILE AND PREP SURFACE FOR NEW FINISH
27. DEMOLISH RECESSED GRATE, PLUG DRAIN AND FILL RECESSED LEVEL TO EXISTING FLOOR GRADE

GENERAL NOTES

A. REPAIR EXISTING CONSTRUCTION AS REQUIRED TO MATCH ADJACENT CONSTRUCTION IN QUALITY, SIZE, TEXTURE, AND FINISH WHERE DAMAGED BY CONTRACTOR PERFORMING DEMOLITION WORK.
B. COORDINATE THE DISCONNECT OF ANY ELECTRIC, GAS, WATER, OR OTHER UTILITIES SERVICING ANY EXISTING EQUIPMENT THAT IS PART OF THE RENOVATION.
C. UNLESS OTHERWISE NOTED ON THE DRAWINGS, WHERE REMOVAL OF AN ITEM IS CALLED FOR, THE CONTRACTOR SHALL DISPOSE OF OFF SITE.
D. WHERE AN ITEM IS CALLED OUT TO BE REMOVED AND SALVAGED, THE CONTRACTOR SHALL REMOVE IT UNDAMAGED, STORE, AND REINSTALL IT IN ITS NEW LOCATION, INCLUDING ANY REQUIRED SUPPORTS, NEW HARDWARE, UTILITIES, OR REFINISHING.
E. WHERE ELECTRICAL WIRES AND / OR CONDUIT ARE TO BE REMOVED, PATCH EXISTING HOLES AS REQUIRED TO MACH ADJACENT FINISH SURFACE.
F. WHERE EXISTING CONCRETE FLOOR SLABS ARE TO BE DEMOLISHED, THE SLABS SHALL BE SAW CUT BEFORE REMOVAL. CORE A 2" DIAMETER HOLE AT EACH CORNER OR PERIMETER SO THAT SAWCUT CAN EXTEND INTO THE CORED HOLE PREVENTING OVER CUT. DO NOT OVER CUT AT THE CORNERS.
G. IN CONDITIONS WHERE A WALL TO BE DEMOLISHED MEETS A WALL THAT IS TO REMAIN, PATCH AND REPAIR AND FINISH THE REMAINING WALL TO MATCH THE NEW CONSTRUCTION.
H. WHERE MECHANICAL EQUIPMENT AND ACCESSORIES HAVE BEEN REMOVED ON ROOFTOPS AND WALLS, PATCH HOLES AS REQUIRED TO MATCH ADJACENT MATERIAL(S), QUALITY, AND FINISH SURFACE.
I. WALLS/CEILINGS TO BE DEMOLISHED THAT CONTAIN RECEPTACLES/LIGHTS FIXTURES SHALL BE DE-ENERGIZED. DISCONNECT & REMOVE RECEPTACLE/LIGHT FIXTURE, REMOVE CONDUIT/RACEWAY AND CONDUCTORS BACK TO READILY AVAILABLE JUNCTION BOX LOCATED ABOVE CEILING. WHERE JUNCTION BOXES ARE NOT AVAILABLE, DEMO BACK TO SOURCE.
J. WALLS WITH DATA OUTLETS TO BE DEMOLISHED SHALL HAVE CABLING AND RACEWAYS DEMOLISHED BACK TO SOURCE.
K. REMOVE ALL EXISTING FLOOR FINISHES AND PREP FOR NEW FINISHES PER MANF REQUIREMENTS.

DEMOLITION LEGEND

DEMOLISH

EXISTING TO REMAIN

N
PLAN NORTH

N
TRUE NORTH

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

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OK
REGISTERED ARCHITECT
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC

PROJECT NUMBER: 2021-613-00

SHEET TITLE: **COMPOSITE DEMOLITION FLOOR PLAN**

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: AD100

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DEMO PLAN KEYNOTES

1. REMOVE ANY AND ALL GYPSUM CEILING AND SUPPORTS
2. REMOVE CEILING TILE AND T-SUPPORTS, HANGERS
3. EXISTING CEILING TO REMAIN
4. REMOVE MECHANICAL DUCTWORK, EQUIPMENT
5. DOUBLE LAYERED GYPSUM BOARD TO BE REMOVED FROM CEILINGS IN MAIN HALLWAY
6. DEMO CLERESTORY WINDOWS ALMG SOUTH WALL OF CORRIDOR

GENERAL NOTES

A. REPAIR EXISTING CONSTRUCTION AS REQUIRED TO MATCH ADJACENT CONSTRUCTION IN QUALITY, SIZE, TEXTURE, AND FINISH WHERE DAMAGED BY CONTRACTOR PERFORMING DEMOLITION WORK.
B. COORDINATE THE DISCONNECT OF ANY ELECTRIC, GAS, WATER, OR OTHER UTILITIES SERVICING ANY EXISTING EQUIPMENT THAT IS PART OF THE RENOVATION
C. UNLESS OTHERWISE NOTED ON THE DRAWINGS, WHERE REMOVAL OF AN ITEM IS CALLED FOR, THE CONTRACTOR SHALL DISPOSE OF OFF SITE.
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E. WHERE ELECTRICAL WIRES AND / OR CONDUIT ARE TO BE REMOVED, PATCH EXISTING HOLES AS REQUIRED TO MACH ADJACENT FINISH SURFACE.
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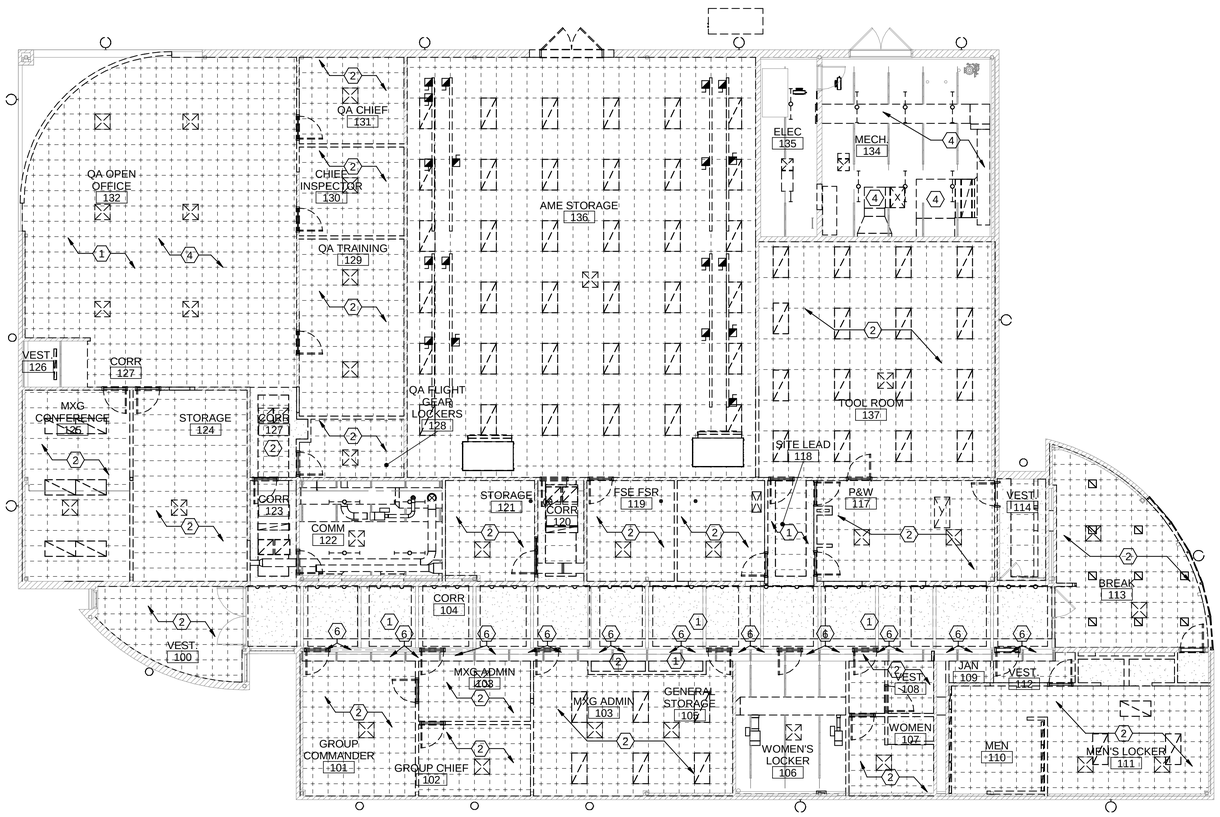
J. WALLS WITH DATA OUTLETS TO BE DEMOLISHED SHALL HAVE CABLING AND RACEWAYS DEMOLISHED BACK TO SOURCE.
K. REMOVE ALL EXISTING FLOOR FINISHES AND PREP FOR NEW FINISHES PER MANF REQUIREMENTS.

DEMOLITION LEGEND

DEMOLISH

EXISTING TO REMAIN



A1 GROUND FLOOR DEMOLITION REFLECTED CEILING PLAN

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

PLAN NORTH

TRUE NORTH

0 4' 8' 16'

1/8" = 1'-0"

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10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

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FLOOR PLAN KEYNOTES

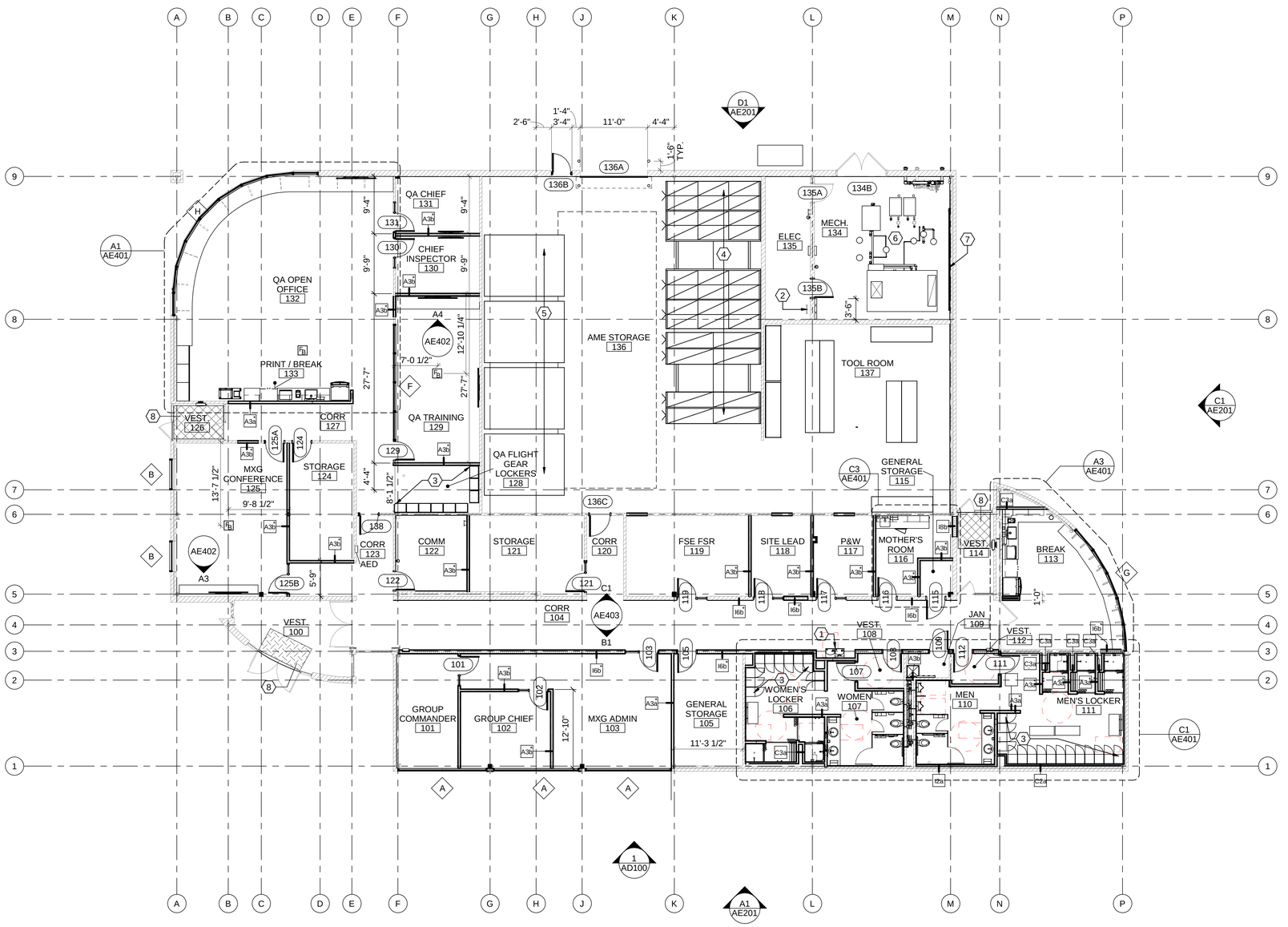
1. HI-LOW DRINKING FOUNTAIN W/ BOTTLE FILLER
2. EXISTING ROOF ACCESS LADDER
3. GEAR LOCKERS
4. HI-DENSITY MOBILE STORAGE SYSTEM
5. RACK OVER PYLON STAND
6. MECHANICAL EQUIPMENT
7. NEW CORRUGATED METAL WALL MECHANICALLY FASTENED TO LOUVER SYSTEM FRAME (FV DIMS)
8. FILL IN RECESS FROM FLOOR GRATE LEVEL. PROVIDE LEVEL FINISH WITH EXISTING FLOOR.

FLOOR PLAN LEGEND

- EXISTING TO REMAIN
- NEW CONSTRUCTION
- AREA NOT IN SCOPE OF WORK

GENERAL NOTES

A. ALL BIDDERS SHALL IMMEDIATELY BRING TO THE CONTRACTING OFFICER'S ATTENTION ANY DISCREPANCIES OR CONDITIONS WHICH IN THE CONTRACTOR'S OPINION MAY AFFECT THE EXECUTION OF THE WORK.
B. ALL BIDDERS SHALL VISIT THE SITE TO DETERMINE WHETHER OR NOT NEW WORK MEANS & METHODS OF PROPOSED PROJECT EXECUTION WILL ENDANGER EXISTING STRUCTURES BY OVERLOADING, FAILURE, OR UNPLANNED COLLAPSE. ENSURE THAT NEW WORK OPERATIONS DO NOT ENDANGER ADJACENT SPACES, STRUCTURES, OR THE PUBLIC.
C. NEW WORK MAY REQUIRE ACCESS TO INTERVENTIONS IN AREAS OUTSIDE OF THE IMMEDIATE SCOPE OF WORK, INCLUDING WORK ABOVE AND/OR BELOW THE FLOOR LEVEL WITHIN THE SCOPE AND/OR ADJACENT SUITES. ANY SUCH WORK SHALL BE EXECUTED TO RESTORE THE AREA TO FULLY OPERATIONAL CONDITIONS IN COMPLIANCE WITH ALL APPLICABLE BUILDING AND SAFETY CODE REQUISITES, AND TO CONTRACTING OFFICER'S APPROVAL. ALL WORK AS DESCRIBED IN THIS NOTE SHALL BE INCLUDED AS PART OF THE BASE CONTRACT PRICE.
D. CONTRACTOR SHALL NOTIFY LANDLORD OF ANY EXTERIOR OR UNDERGROUND UTILITY NEW WORK SCOPE REQUIRED FOR EXECUTION OF DEMOLITION SCOPE ILLUSTRATED HEREIN. CONTRACTOR SHALL TAKE ALL PRECAUTIONS REQUIRED TO PROTECT ALL UNDERGROUND OR OTHER CONCEALED UTILITIES, AND SHALL INSPECT CEILINGS AND CHASES TO ASSURE PROPER IDENTIFICATION OF EXISTING UTILITIES PRIOR TO CUTTING, PATCHING, CAPPING, ETC., AS REQUIRED AND INDICATED ON THE CONSTRUCTION DOCUMENTS.
E. VERIFY PARTITION AND OPENING LAYOUTS WITH CONTRACTING OFFICER OR CONTRACTING OFFICER'S REPRESENTATIVE IN FIELD PRIOR TO PROCEEDING WITH INSTALLATION OF PARTITION FRAMING. THE RESPONSIBILITY FOR MEETING THE DESIGN INTENT EXPRESSED IN THESE DOCUMENTS REMAINS WITH THE CONTRACTOR.
F. ALL DIMENSIONS ARE TO OUTSIDE FACE OF STUD, CENTERLINE OF COLUMNS, OR CENTERLINE OF MULLIONS UNLESS OTHERWISE NOTED. DIMENSIONS MARKED AS "CLEAR", "HOLD", OR "ALIGN" SHALL TAKE PRECEDENCE OVER OTHER DIMENSIONS. NOTIFY CONTRACTING OFFICER IMMEDIATELY OF DISCREPANCIES OR CONFLICTS WITH OTHER DIMENSIONS.
G. VERIFY PARTITION THICKNESS FOR CORRECT INSTALLATION OF DOOR FRAMES, JUNCTION BOXES, FIXTURES, FIRE EXTINGUISHER CABINETS ETC., AND FOR INTERNAL INCLUSIONS SUCH AS PLUMBING AND ELECTRICAL CONDUITS PRIOR TO BID.
H. PARTITIONS ARE LAID OUT AT 90°, UNLESS OTHERWISE NOTED.
I. INTERIOR PARTITIONS ARE "A3" UNLESS OTHERWISE NOTED. SEE ENLARGED PLANS FOR ADDITIONAL INFORMATION AS REQUIRED.
J. TYPICAL DOOR LOCATION TO THE NEAREST RETURNING PARTITION TO BE 4" MEASURED FROM THE FACE OF THE PARTITION TO THE OUTER EDGE OF JAMB AT HINGE SIDE, ALLOWING THE DOOR FOR A 90° SWING, UNLESS OTHERWISE NOTED.
K. PROVIDE APPROPRIATE PHYSICAL ISOLATION OF METALS IN CONTACT WITH DISSIMILAR METALS OR IN CONTACT WITH CEMENT BASED MATERIALS TO AVOID GALVANIC ACTION OR CORROSION.
L. INSTALL BLOCKING OR GROUNDS AT ALL PARTITIONS TO RECEIVE WALL-HUNG ELEMENTS, INCLUDING BUT NOT LIMITED TO CASEWORK, SHELVING, EQUIPMENT, ART DISPLAYS, LIGHT FIXTURES, AND BULLETIN BOARDS. PARTITIONS AT WALL CABINETS AND COUNTERS SHALL RECEIVE HORIZONTAL BLOCKING FOR STABILITY AS REQUIRED.
M. PROVIDE FIRE EXTINGUISHERS AS INDICATED ON PLAN & AS REQUIRED BY LOCAL JURISDICTION HAVING AUTHORITY.
N. ALL MILLWORK TO BE SEATED ON TOP OF SCHEDULED FLOOR FINISH UNLESS OTHERWISE NOTED.
O. ALL ACCESS PANEL LOCATIONS REQUIRED BY LOCAL JURISDICTION HAVING AUTHORITY SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO INSTALLATION.
P. INTERIOR WALL AND CEILING FINISHES SHALL COMPLY WITH IBC SECTION 803 AND SHALL BE CLASS C (FLAME-SPREAD INDEX76-200, SMOKE-DEVELOPED INDEX 0-450) WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723. INTERIOR FLOOR FINISHES SHALL COMPLY WITH IBC SECTION 804, INCLUDING DOC FF-1 "PILL TEST" (CPSC 16 CFR PART 1630) OR WITH ASTM D 2859. PROVIDE SUPPORTING DOCUMENTATION INDICATING TESTING CRITERIA TO BUILDING CODE OFFICIALS UPON REQUEST.
Q. REPAIR WALL SIMILAR TO ADJACENT CONSTRUCTION.



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

N
PLAN NORTH

TRUE NORTH

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

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10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
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SHEET TITLE: COMPOSITE GROUND FLOOR PLAN
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE100

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ACOUSTICAL CEILING BLADE SCHEDULE

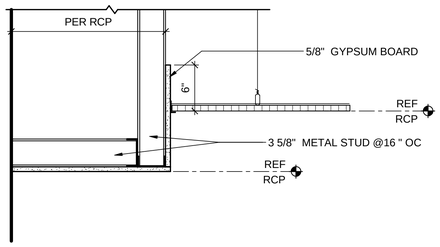
TYPE MARK	BAFFLE DEPTH	BAFFLE LENGTH	CONNECTION TYPE	NUMBER OF BAFFLES	SPACING BETWEEN BAFFLES	OVERALL LENGTH OF SYSTEM	BAFFLE MOUNTING OFFSET	ACOUSTICAL CRITERIA	FIRE RATING TESTING
ACB1	7 1/2"	72"	CABLE SUSPENSION	65	12"	4'-2 1/4"	1'-0"	ASTM C 423-17: NRC [500hz] = 1.22 NRC [1000hz] = 1.88	UL tested ASTM E-84: Class A

RCP KEYNOTES

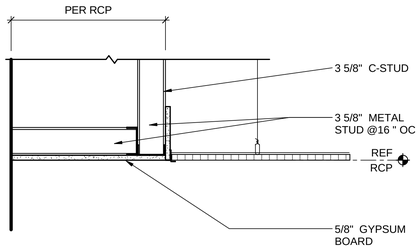
1. OPEN TO DECK
2. ELECTRICAL EQUIPMENT
3. MECHANICAL EQUIPMENT
4. HI-DENSITY MOBILE STORAGE SYSTEM
5. STORAGE RACK

TYPICAL CEILING LEGEND

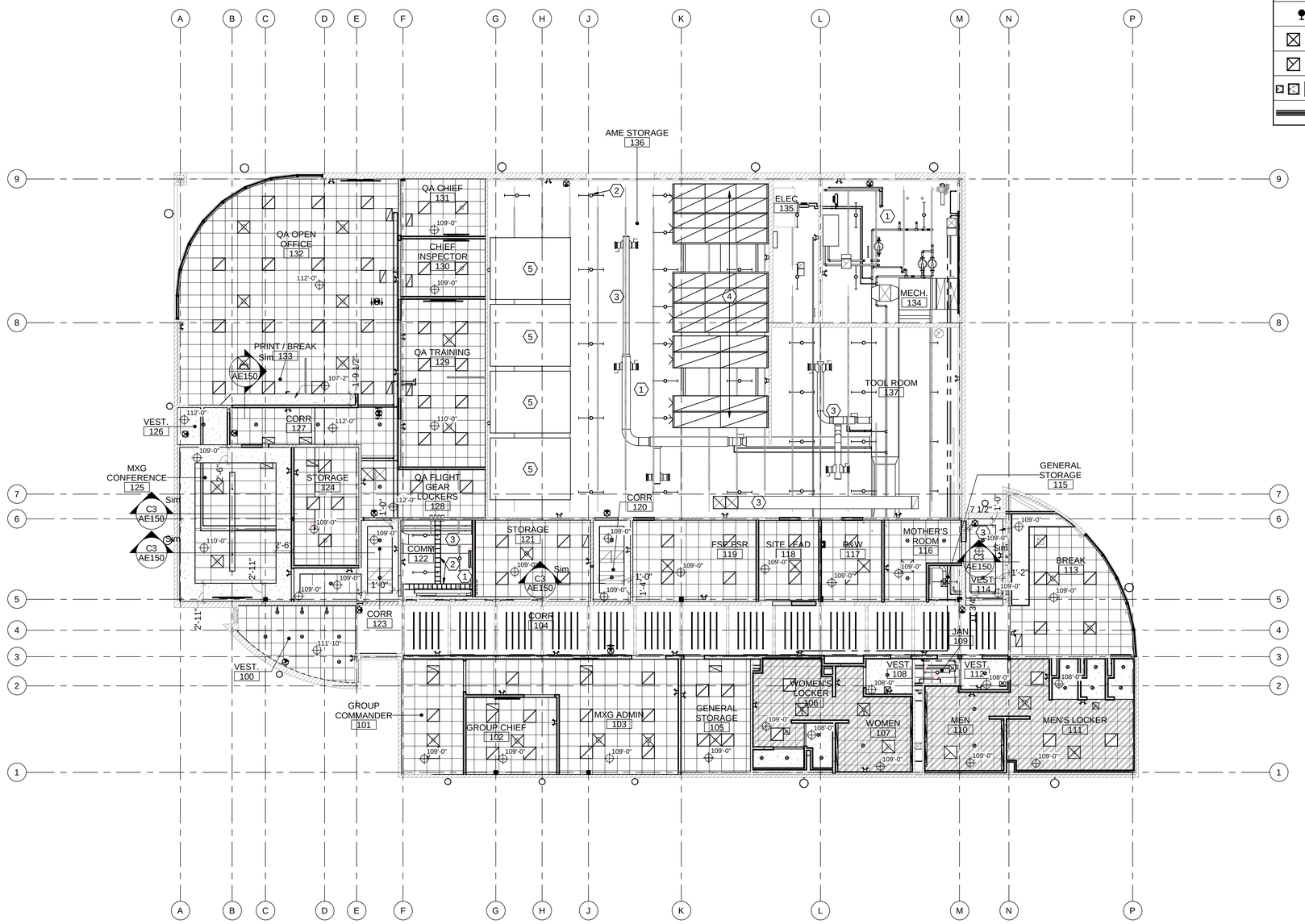
- 2' x 2' CEILING GRID
- 2' x 2' CEILING GRID - MOISTURE RESISTANT
- 2' x 2' OPEN CEILING GRID - PAINTED
- 2' x 8' CEILING GRID
- GYP BD CEILING
- SOUND-ABSORPTIVE PANEL
- 2' x 2' FIXTURE
- 2' x 4' FIXTURE - EMERGENCY
- 2' x 4' FIXTURE - CLG MTD
- 1' x 4' FIXTURE
- 1' x 4' FIXTURE - EMERGENCY
- 1' x 4' FIXTURE - SUSPENDED
- 4' FIXTURE - STRIP
- RECESSED DOWNLIGHT
- RECESSED DOWNLIGHT - EMERGENCY
- EXIT SIGNS
- WALL MTD EXTERIOR LIGHT
- WALL MTD EXTERIOR LIGHT - EMERGENCY
- SUPPLY AIR DIFFUSERS
- RETURN AIR GRILLES
- ACCESS DOORS
- SUSPENDED ACOUSTICAL BLADES



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



C3 CEILING DETAIL
SCALE: 1 1/2" = 1'-0"



A1 GROUND FLOOR REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

TRUE NORTH

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

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

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PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
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SHEET NUMBER: AE150

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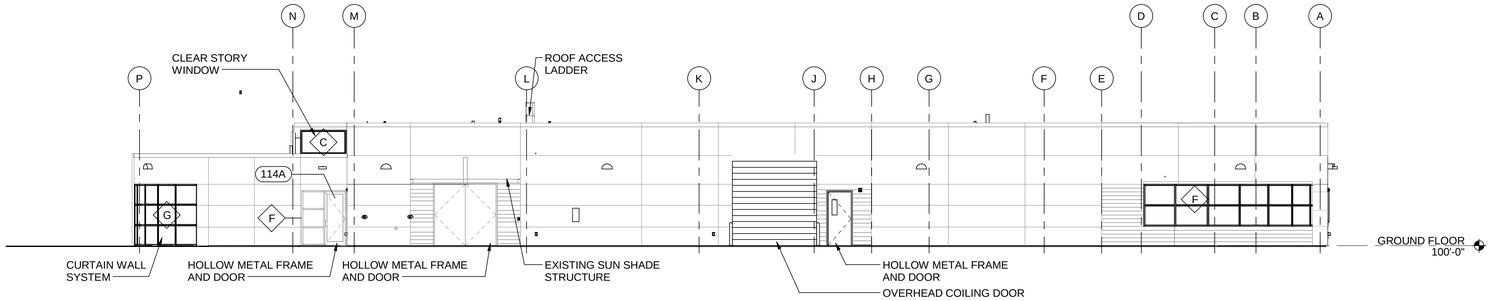
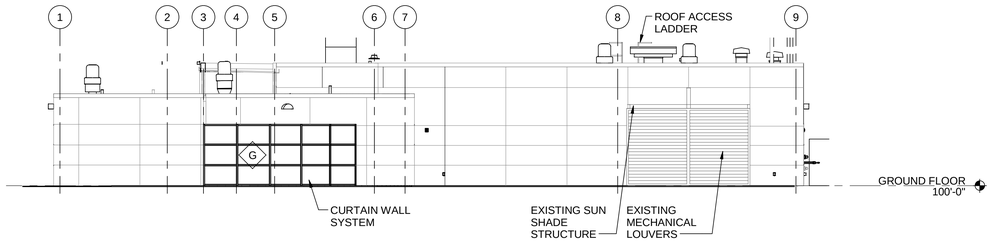
GENERAL NOTES

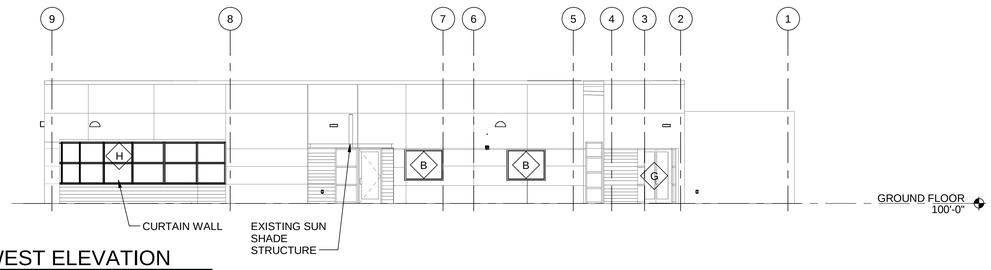
1. ALL PANEL JOINTS SEALANT AND BACKER RODS TO BE REMOVED AND REPLACED.



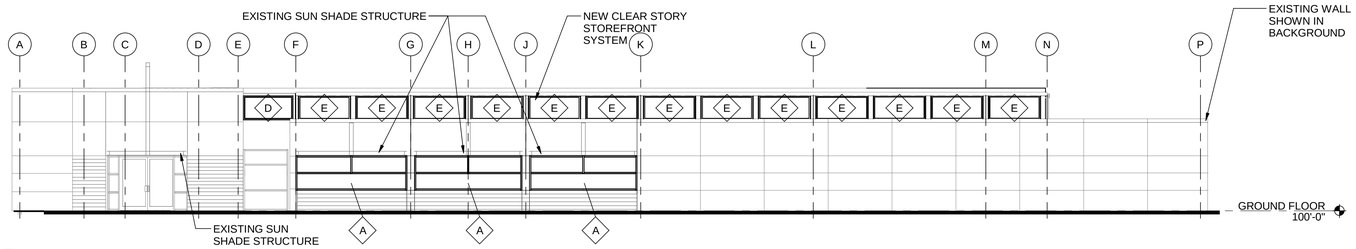
D1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



C1 EAST ELEVATION
SCALE: 1/8" = 1'-0"



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



A1 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

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

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REVISION HISTORY:

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PROJECT INFORMATION:

DESIGNED BY:	PDC
DRAWN BY:	PDC
REVIEWED BY:	GAZ
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	BUILDING ELEVATIONS
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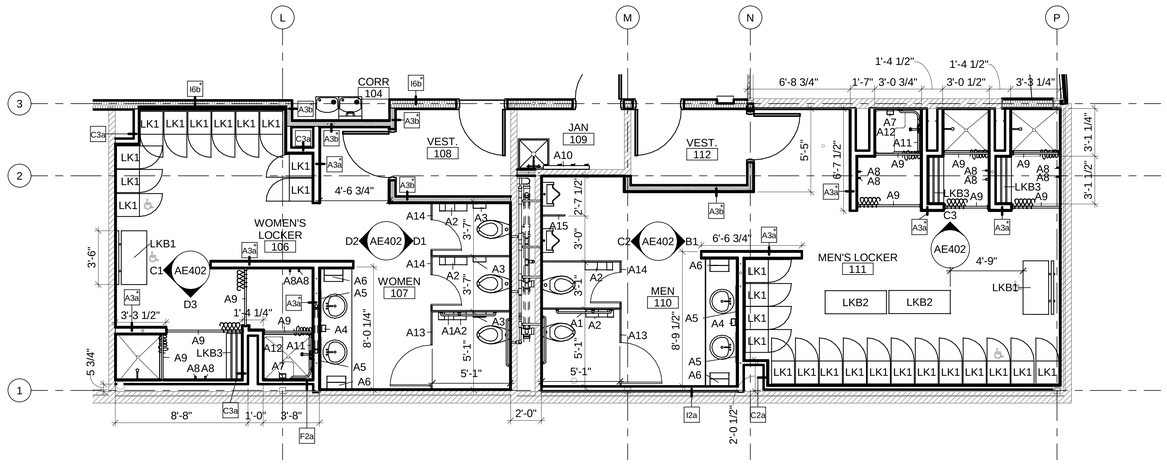
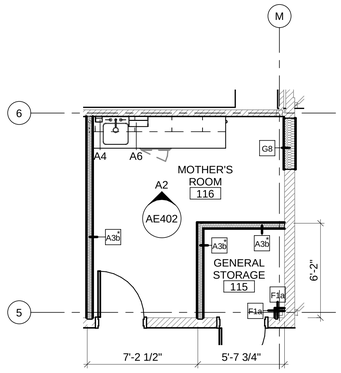


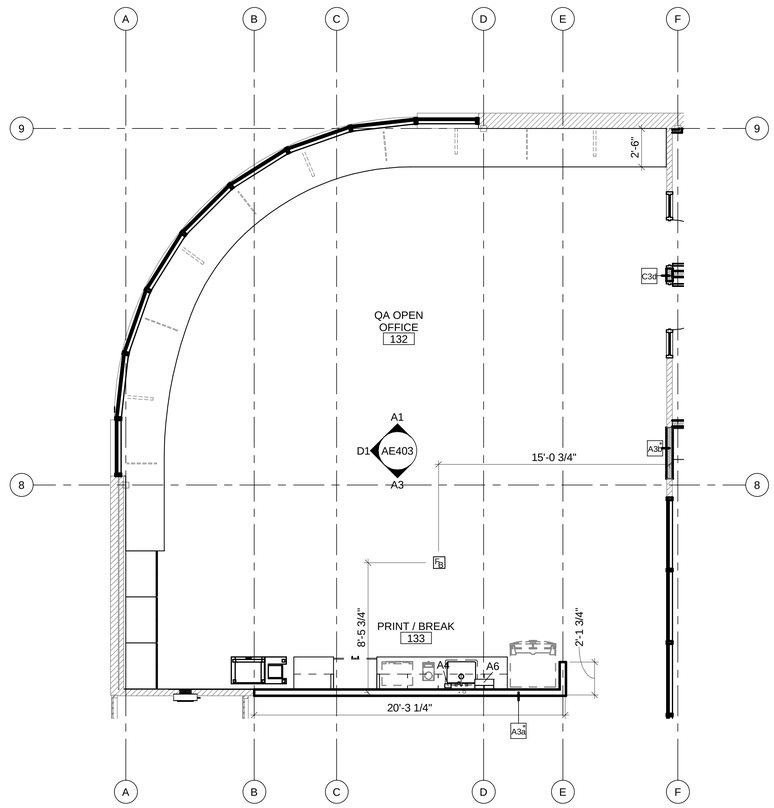
C1 ENLARGED PLAN - RESTROOMS/LOCKERS

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



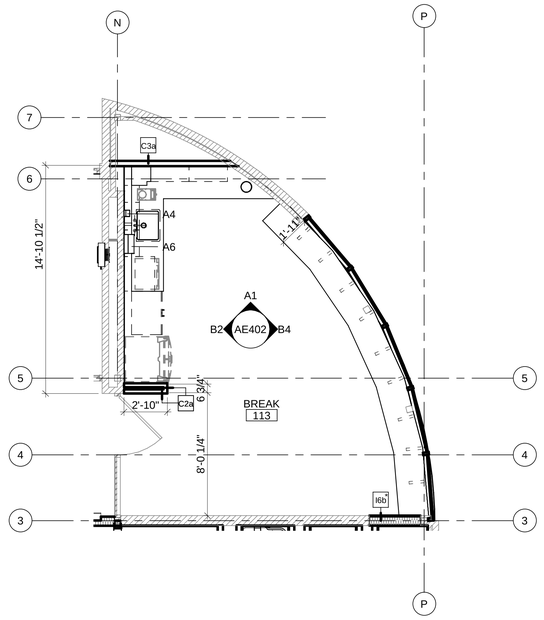
C3 ENLARGED PLAN - MOTHER'S ROOM

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



A1 A-FP01 - ENLARGED PLAN QA OPEN OFFICE

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



A3 ENLARGED PLAN - BREAK ROOM

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

TOILET ACCESSORIES

CODE	DESCRIPTION	PROVIDED BY
A1	ACCESSIBLE STAINLESS STEEL GRAB BARS	CF/CI
A2	TOILET TISSUE DISPENSER	GF/CI
A3	SANITARY NAPKIN DISPOSAL	CF/CI
A4	SOAP DISPENSER LAVATORY	GF/CI
A5	MIRROR (24"X36")	CF/CI
A6	PAPER TOWEL DISPENSER, TOUCH-FREE AUTOMATIC	GF/CI
A7	SOAP DISPENSER SHOWERS	GF/CI
A8	CLOTHES HOOK	CF/CI
A9	SHOWER CURTAIN ROD, VINYL SHOWER CURTAIN & STAINLESS STEEL SHOWER CURTAIN HOOKS	CF/CI
A10	MOP STRIP	CF/CI
A11	SHOWER GRAB BARS	CF/CI
A12	ADA SHOWER SEAT	CF/CI
A13	ACCESSIBLE TOILET PARTITION	CF/CI
A14	STANDARD TOILET PARTITION	CF/CI
A15	URINAL SCREEN	CF/CI
LK1	72"H DOUBLE TIER METAL (LOCKER 18"W x 18"D)	CF/CI
LKB1	ADA LOCKER ROOM BENCH	CF/CI
LKB2	LOCKER BENCH (18"X48")	CF/CI
LKB3	LOCKER BENCH (12"X36")	CF/CI

SYMBOL LEGEND

INDICATES ACCESSIBLE ELEMENT

N
PLAN NORTH

TRUE NORTH

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

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Oklahoma City, OK 73118-7436
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WISCONSIN
JASON T. HOLUBY
A-13101
OKLAHOMA CITY OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ENLARGED PLANS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE401

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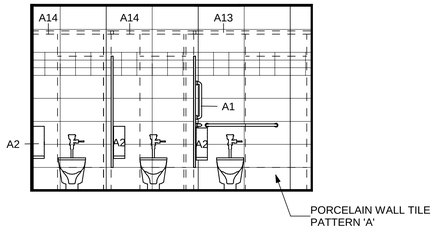
GENERAL NOTES

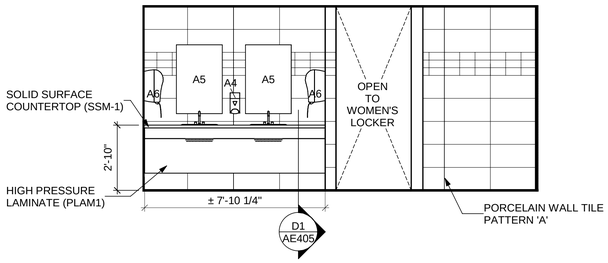
A. TOILET ROOM VANITIES TO BE SOLID SURFACE WITH INTEGRAL BOWLS AND BACKSPLASH UNLESS NOTED OTHERWISE.
B. REFER TO SHEET **AE602** FOR WALL TILE PATTERNS.
C. ALL MARKER BOARDS AND TELEVISIONS ARE SHOWN FOR COORDINATIN ONLY. TO BE FURNISHED AND INSTALLED BY CONTRACTING OFFICER.
D. ALL REFRIGERATORS, MICROWAVES, AND COPIER/PRINTERS ARE SHOWN FOR COORDINATION ONLY. TO BE FURNISHED AND INSTALLED BY CONTRACTING OFFICER.
E. REFER TO **IF101** FOR FURNITURE AND EQUIPMENT SCHEDULE.
F. ALL VISABLE SIDES, BOTTOMS, AND TOPS OF CABINETS TO BE FULLY FINISHED.

TOILET ACCESSORIES

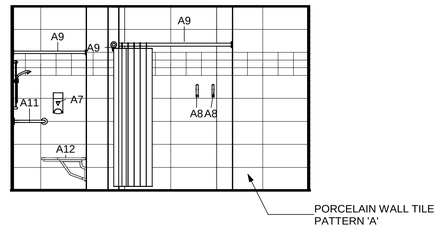
CODE	DESCRIPTION	PROVIDED BY
A1	ACCESSIBLE STAINLESS STEEL GRAB BARS	CF/CI
A2	TOILET TISSUE DISPENSER	GF/CI
A3	SANITARY NAPKIN DISPOSAL	CF/CI
A4	SOAP DISPENSER LAVATORY	GF/CI
A5	MIRROR (24"X36")	CF/CI
A6	PAPER TOWEL DISPENSER, TOUCH-FREE AUTOMATIC	GF/CI
A7	SOAP DISPENSER SHOWERS	GF/CI
A8	CLOTHES HOOK	CF/CI
A9	SHOWER CURTAIN ROD, VINYL SHOWER CURTAIN & STAINLESS STEEL SHOWER CURTAIN HOOKS	CF/CI
A10	MOP STRIP	CF/CI
A11	SHOWER GRAB BARS	CF/CI
A12	ADA SHOWER SEAT	CF/CI
A13	ACCESSIBLE TOILET PARTITION	CF/CI
A14	STANDARD TOILET PARTITION	CF/CI
A15	URINAL SCREEN	CF/CI
LK1	72"H DOUBLE TIER METAL (LOCKER 18"W x 18"D)	CF/CI
LKB1	ADA LOCKER ROOM BENCH	CF/CI
LKB2	LOCKER BENCH (18"X48")	CF/CI
LKB3	LOCKER BENCH (12"X36")	CF/CI



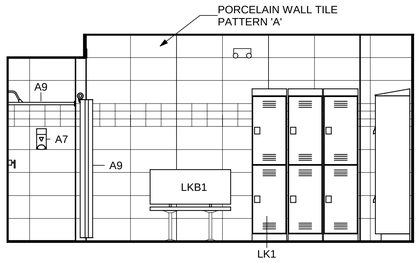
D1 107 WOMEN (EAST)
SCALE: 3/8" = 1'-0"



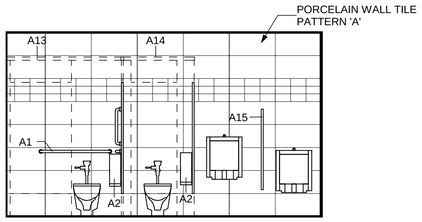
D2 107 WOMEN (WEST)
SCALE: 3/8" = 1'-0"



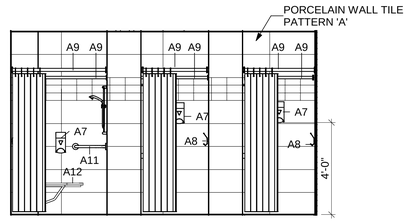
D3 106 WOMEN'S LOCKER (SOUTH)
SCALE: 3/8" = 1'-0"



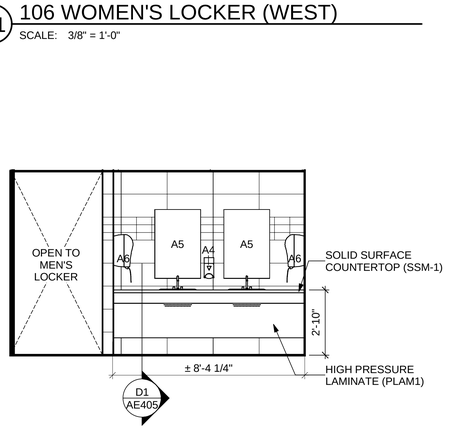
C1 106 WOMEN'S LOCKER (WEST)
SCALE: 3/8" = 1'-0"



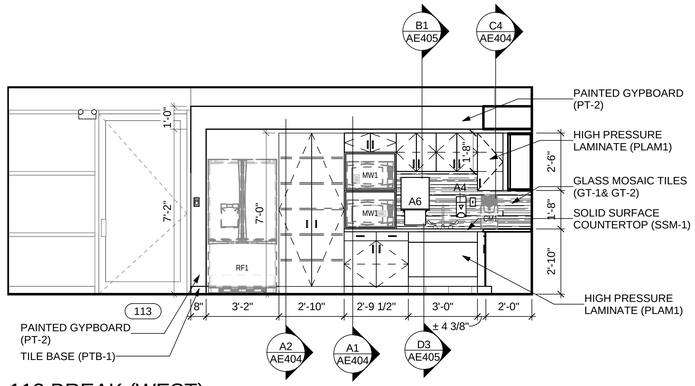
C2 110 MEN (WEST)
SCALE: 3/8" = 1'-0"



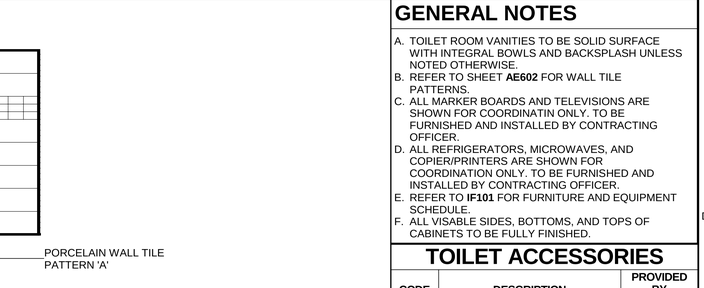
C3 111 MEN'S LOCKER (NORTH)
SCALE: 3/8" = 1'-0"



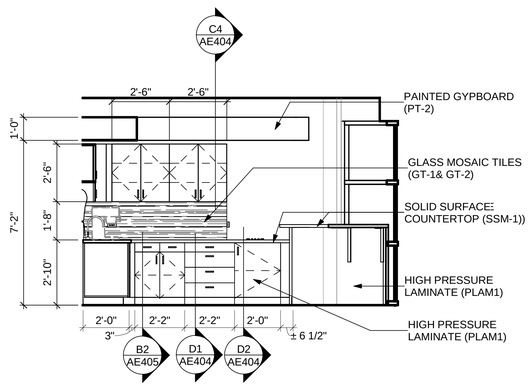
B1 110 MEN (EAST)
SCALE: 3/8" = 1'-0"



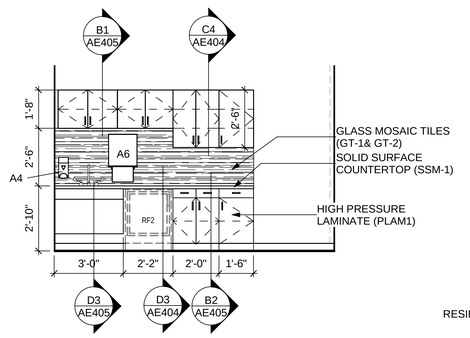
B2 113 BREAK (WEST)
SCALE: 3/8" = 1'-0"



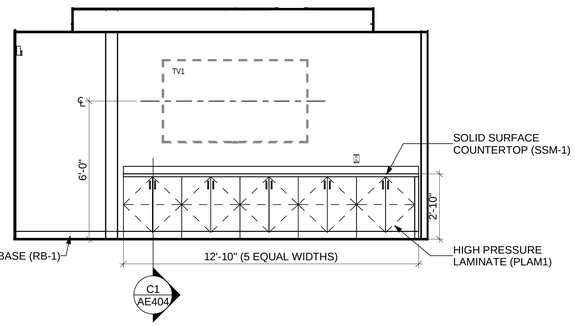
B4 113 BREAK (EAST)
SCALE: 3/8" = 1'-0"



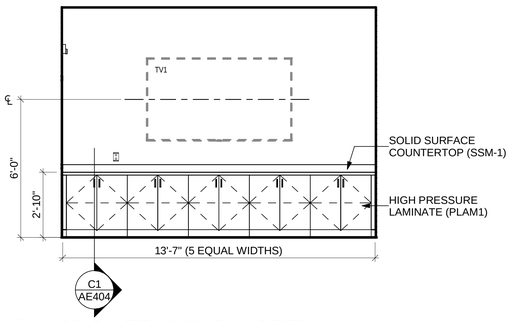
A1 113 BREAK (NORTH)
SCALE: 3/8" = 1'-0"



A2 116 MOTHER'S ROOM (NORTH)
SCALE: 3/8" = 1'-0"



A3 125 MGX CONFERENCE (SOUTH)
SCALE: 3/8" = 1'-0"



A4 129 QA TRAINING (NORTH)
SCALE: 3/8" = 1'-0"

0 2' 4' 6'
3/8" = 1'-0"

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JASON T. HOLUBY A-13101 OKLAHOMA CITY OK REGISTERED ARCHITECT 10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:
DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TBD
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **INTERIOR ELEVATIONS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE402

10/12/2022 2:57:26 PM
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TOILET ACCESSORIES

CODE	DESCRIPTION	PROVIDED BY
A1	ACCESSIBLE STAINLESS STEEL GRAB BARS	CF/CI
A2	TOILET TISSUE DISPENSER	GF/CI
A3	SANITARY NAPKIN DISPOSAL	CF/CI
A4	SOAP DISPENSER LAVATORY	GF/CI
A5	MIRROR (24"X36")	CF/CI
A6	PAPER TOWEL DISPENSER, TOUCH-FREE AUTOMATIC	GF/CI
A7	SOAP DISPENSER SHOWERS	GF/CI
A8	CLOTHES HOOK	CF/CI
A9	SHOWER CURTAIN ROD, VINYL SHOWER CURTAIN & STAINLESS STEEL SHOWER CURTAIN HOOKS	CF/CI
A10	MOP STRIP	CF/CI
A11	SHOWER GRAB BARS	CF/CI
A12	ADA SHOWER SEAT	CF/CI
A13	ACCESSIBLE TOILET PARTITION	CF/CI
A14	STANDARD TOILET PARTITION	CF/CI
A15	URINAL SCREEN	CF/CI
LK1	72"H DOUBLE TIER METAL (LOCKER 18"W x 18"D)	CF/CI
LKB1	ADA LOCKER ROOM BENCH	CF/CI
LKB2	LOCKER BENCH (18"X48")	CF/CI
LKB3	LOCKER BENCH (12"X36")	CF/CI

GENERAL NOTES

A. TOILET ROOM VANITIES TO BE SOLID SURFACE WITH INTEGRAL BOWLS AND BACKSPLASH UNLESS NOTED OTHERWISE.
B. REFER TO SHEET **AE602** FOR WALL TILE PATTERNS.
C. ALL MARKER BOARDS AND TELEVISIONS ARE SHOWN FOR COORDINATIN ONLY. TO BE FURNISHED AND INSTALLED BY CONTRACTING OFFICER.
D. ALL REFRIGERATORS, MICROWAVES, AND COPIER/PRINTERS ARE SHOWN FOR COORDINATION ONLY. TO BE FURNISHED AND INSTALLED BY CONTRACTING OFFICER.
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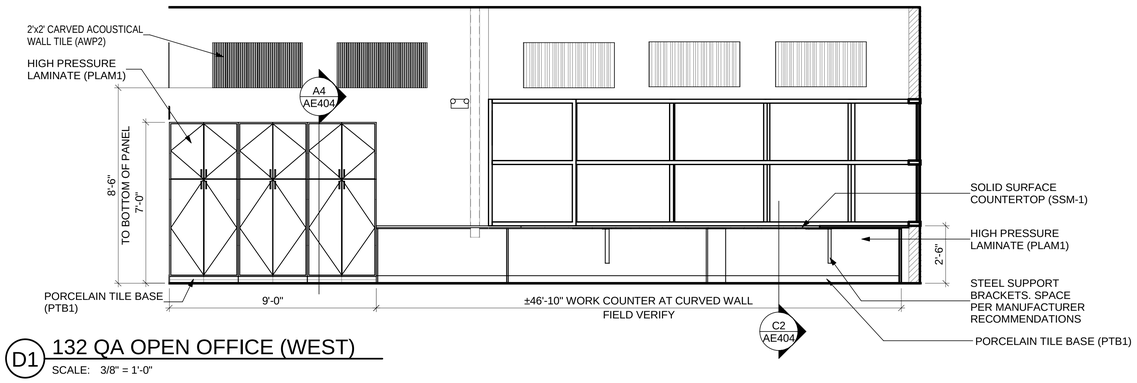
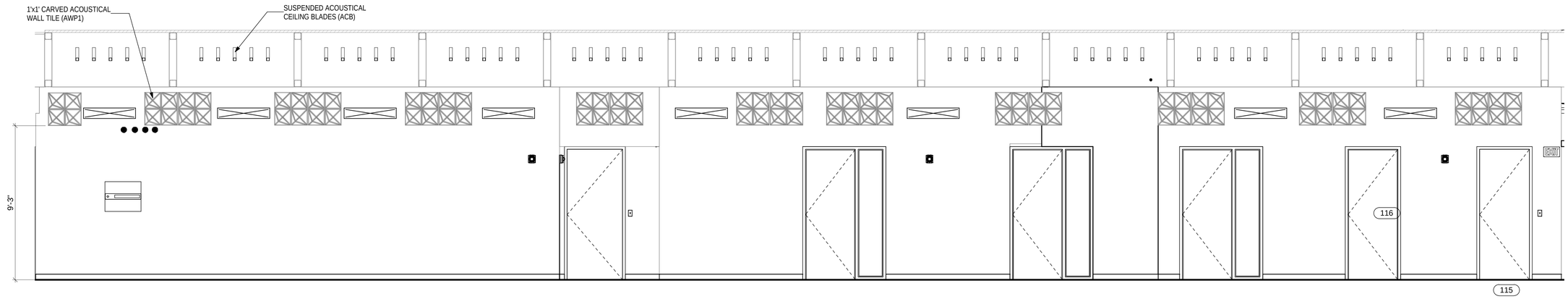
F. ALL VISABLE SIDES, BOTTOMS, AND TOPS OF CABINETS TO BE FULLY FINISHED.



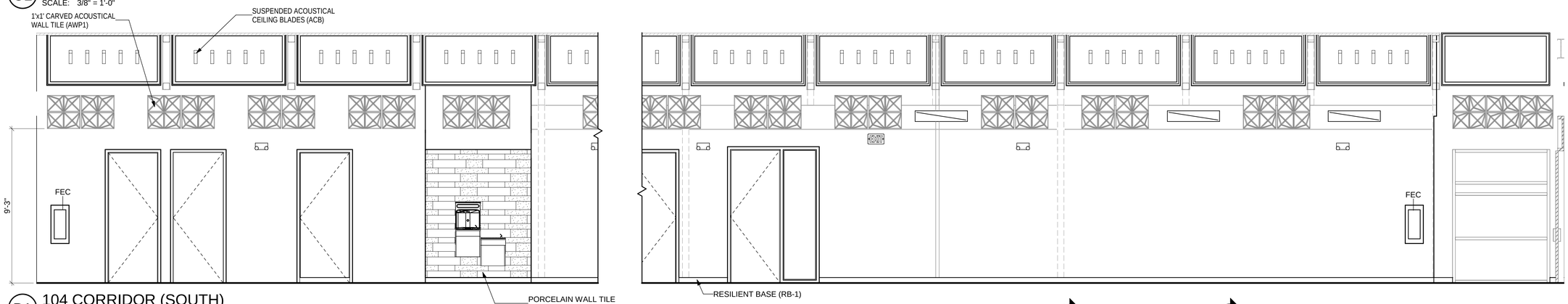
D1 132 QA OPEN OFFICE (WEST)

SCALE: 3/8" = 1'-0"



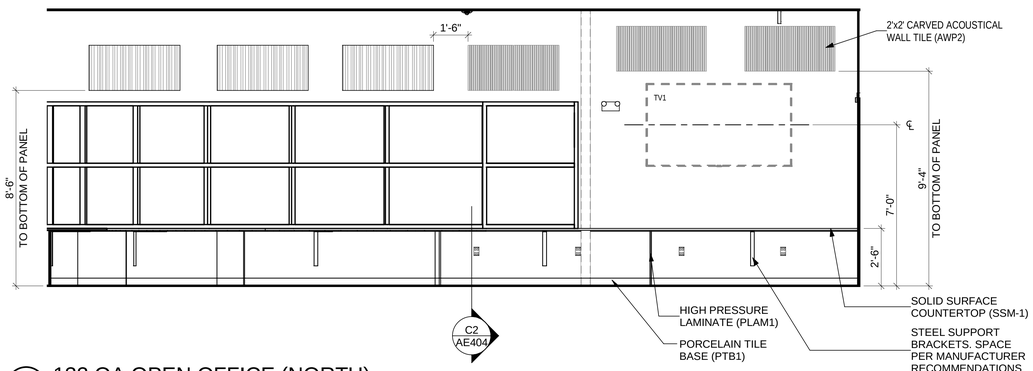
C1 104 CORRIDOR (NORTH)

SCALE: 3/8" = 1'-0"



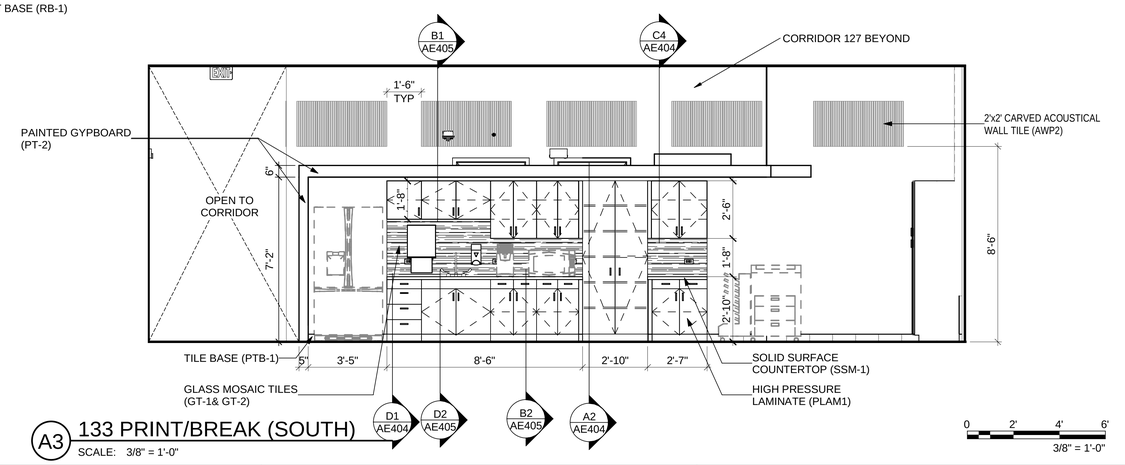
B1 104 CORRIDOR (SOUTH)

SCALE: 3/8" = 1'-0"



A1 132 QA OPEN OFFICE (NORTH)

SCALE: 3/8" = 1'-0"



A3 133 PRINT/BREAK (SOUTH)

SCALE: 3/8" = 1'-0"

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JASON T. HOLUBY
A-13101
OKLAHOMA CITY
OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TDB
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **INTERIOR ELEVATIONS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE403

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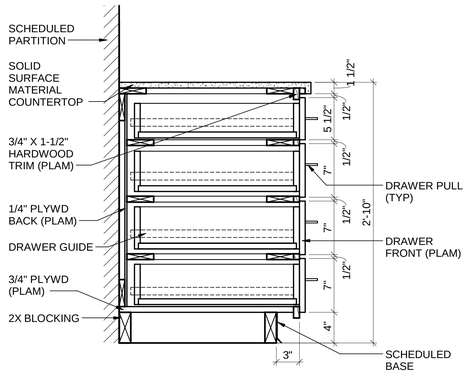
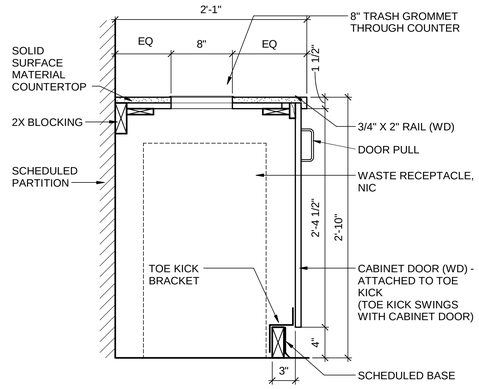


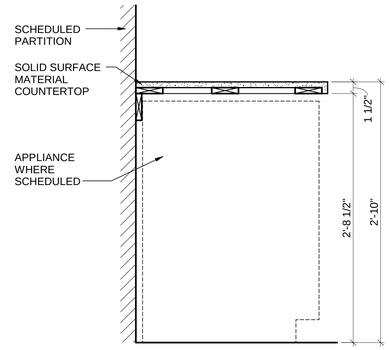
D1 CASEWORK SECTION

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



D2 CASEWORK SECTION

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

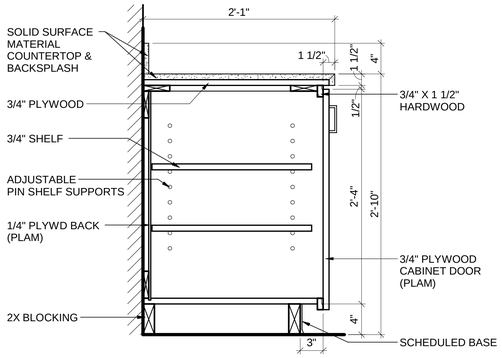


D3 CASEWORK SECTION

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

GENERAL NOTES

A. REFER TO FINISH MATERIALS SCHEDULE SHEET **AE602** FOR MATERIALS INDICATED.
B. ALL CABINETS OVER 48" HIGH NEED ONE FIXED SHELF FOR STABILITY.
C. ALL SHELVES TO BE CONSTRUCTED WITH 3/4" MDF; SHELVES OVER 30" WIDE TO BE 1" MDF.
D. PRIOR TO FABRICATION OF ALL CABINETRY, FIELD VERIFY ALL DIMENSIONS AND SITE CONDITIONS.
E. PROVIDE FULLY FINISHED SIDE PANELS AT ALL EXPOSED ENDS OF CASEWORK.
F. PROVIDE FULL-EXTENSION HEAVY DUTY GLIDES ON ALL DRAWERS.
G. REFER TO ELEVATIONS FOR INDICATIONS OF ALL FINISHES.
H. PROVIDE COLOR MATCHED JOINT SEALANT AT PERIMETER JOINTS WHERE COUNTERTOPS, BACK AND SIDE SPLASHES, AND CASEWORK ABUT WALLS.
I. COUNTERTOPS CONTAINING SINKS TO BE CONSTRUCTED WITH SOLID SURFACE MATERIAL INSTALLED OVER EXTERIOR GRADE PLYWOOD.
J. ALL VISABLE BOTTOMS AND TOPS OF CABINETS TO BE FULLY FINISHED.



C1 MILLWORK SECTION

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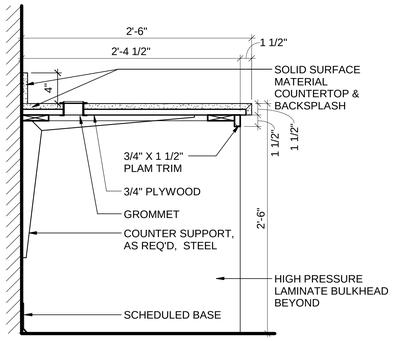

C2 CASEWORK SECTION

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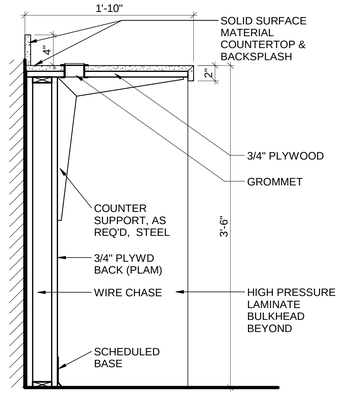

C3 CASEWORK SECTION

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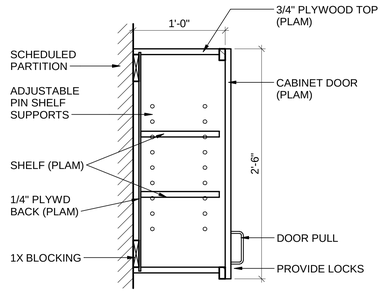

C4 CASEWORK SECTION

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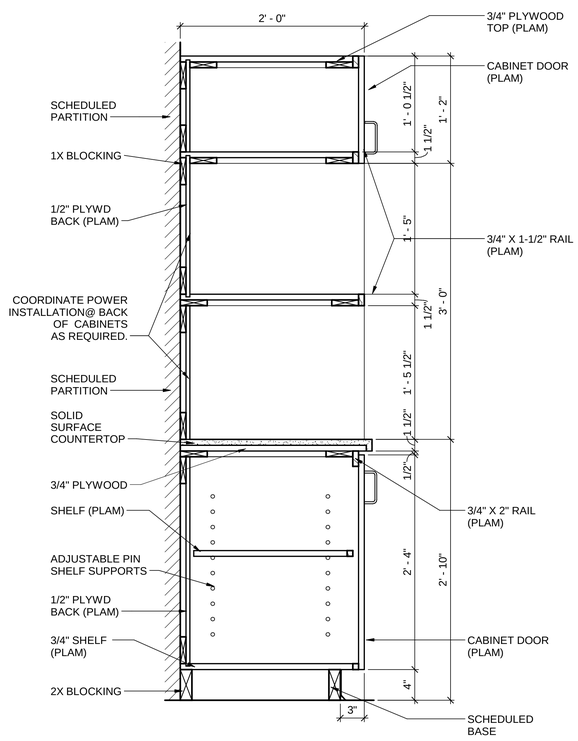
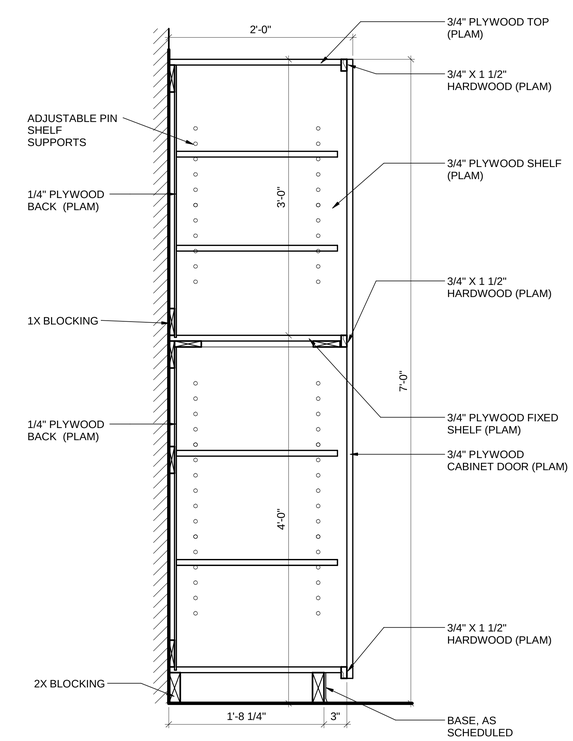


A1 CASEWORK SECTION

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



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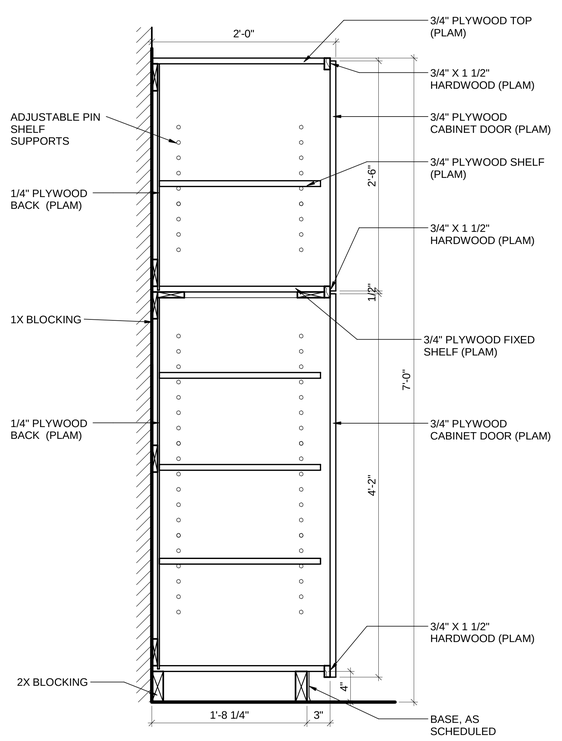

A4 CASEWORK SECTION

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

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

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Oklahoma City, OK 73118-7436
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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

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DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TDB
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **CASEWORK DETAILS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE404

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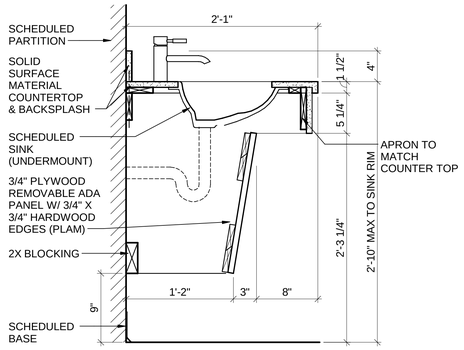
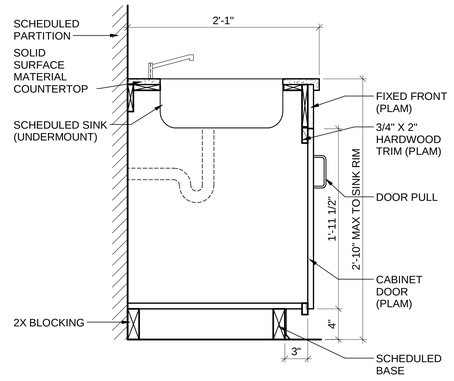


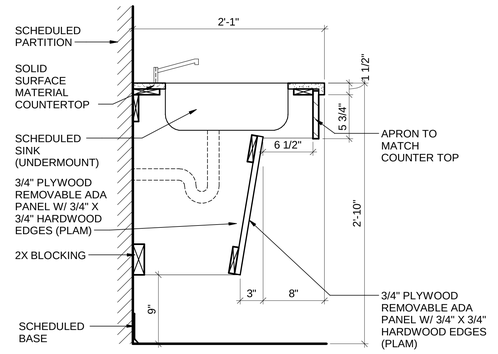
D1 CASEWORK SECTION

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



D2 CASEWORK SECTION

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



D3 CASEWORK SECTION

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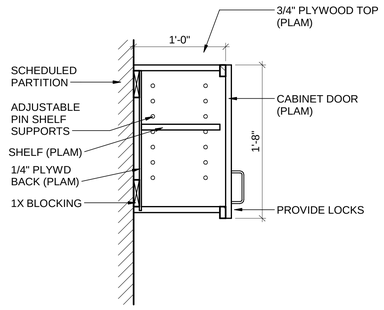
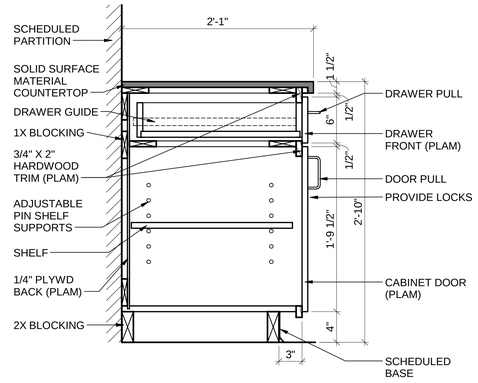


B1 CASEWORK SECTION

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



B2 CASEWORK SECTION

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

GENERAL NOTES

A. REFER TO FINISH MATERIALS SCHEDULE SHEET **AE602** FOR MATERIALS INDICATED.
B. ALL CABINETS OVER 48" HIGH NEED ONE FIXED SHELF FOR STABILITY.
C. ALL SHELVES TO BE CONSTRUCTED WITH 3/4" MDF; SHELVES OVER 30" WIDE TO BE 1" MDF.
D. PRIOR TO FABRICATION OF ALL CABINETRY, FIELD VERIFY ALL DIMENSIONS AND SITE CONDITIONS.
E. PROVIDE FULLY FINISHED SIDE PANELS AT ALL EXPOSED ENDS OF CASEWORK.
F. PROVIDE FULL-EXTENSION HEAVY DUTY GLIDES ON ALL DRAWERS.
G. REFER TO ELEVATIONS FOR INDICATIONS OF ALL FINISHES.
H. PROVIDE COLOR MATCHED JOINT SEALANT AT PERIMETER JOINTS WHERE COUNTERTOPS, BACK AND SIDE SPLASHES, AND CASEWORK ABUT WALLS.
I. COUNTERTOPS CONTAINING SINKS TO BE CONSTRUCTED WITH SOLID SURFACE MATERIAL INSTALLED OVER EXTERIOR GRADE PLYWOOD.
J. ALL VISABLE BOTTOMS AND TOPS OF CABINETS TO BE FULLY FINISHED.

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JASON T. HOLUBY
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OKLAHOMA CITY
OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TDB
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: CASEWORK DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE405

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

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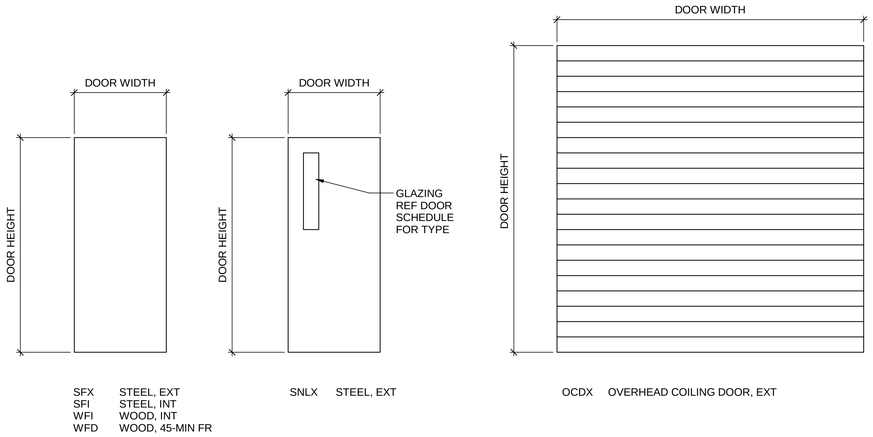
DOOR SCHEDULE

MARK	DOOR SIZE WD	DOOR SIZE HGT	DOOR SIZE THK	HARDWARE #	DOOR TYPE	FIRE RATING	STC	FRAME TYPE	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FRAME DETAIL SILL	NOTES
101	3'-0"	7'-10"	1 3/4"	103T				SG2A	B2/AE600	A2/AE600	- -	
102	3'-0"	7'-10"	1 3/4"	103T				SG2A	B2/AE600	A2/AE600	- -	
103	3'-0"	8'-0"	1 3/4"	101T	WFI			SG2A	B2/AE600	A2/AE600	- -	
105	3'-0"	7'-10"	1 3/4"	203T	WFI			S2	B2/AE600	A2/AE600	- -	
107	3'-0"	7'-10"	1 3/4"	801T	WFI			S2	B2/AE600	A2/AE600	- -	
108	3'-0"	7'-10"	1 3/4"	801T	WFI			S2	B2/AE600	A2/AE600	- -	
109	3'-0"	7'-10"	1 3/4"	201T	WFI			S2	B2/AE600	A2/AE600	- -	
111	3'-0"	7'-10"	1 3/4"	801T	WFI			S2	B2/AE600	A2/AE600	- -	
112	3'-0"	7'-10"	1 3/4"	801T	WFI			S2	B2/AE600	A2/AE600	- -	
115	3'-0"	7'-10"	1 3/4"	203T	WFI			S2	B2/AE600	A2/AE600	- -	
116	3'-0"	7'-10"	1 3/4"	341T	WFI			S2	B2/AE600	A2/AE600	- -	
117	3'-0"	7'-10"	1 3/4"	101T				SG2A	B2/AE600	A2/AE600	- -	
118	3'-0"	7'-10"	1 3/4"	101T				SG2A	B2/AE600	A2/AE600	- -	
119	3'-0"	7'-10"	1 3/4"	101T				SG2A	B2/AE600	A2/AE600	- -	
121	3'-0"	7'-10"	1 3/4"	203T				S2	B2/AE600	A2/AE600	- -	
122	3'-0"	7'-10"	1 3/4"	201T	WFI			S2	B2/AE600	A2/AE600	- -	
124	3'-0"	7'-10"	1 3/4"	203T	WFI			S2	B2/AE600	A2/AE600	- -	
125A	3'-0"	7'-10"	1 3/4"	101T	WFI			S2	B2/AE600	A2/AE600	- -	
125B	3'-0"	7'-10"	1 3/4"	101T				SG2A	B2/AE600	A2/AE600	- -	
129	3'-0"	7'-10"	1 3/4"	101T	WFI			S2	B2/AE600	A2/AE600	- -	
130	3'-0"	7'-10"	1 3/4"	103T				SG2A	B2/AE600	A2/AE600	- -	
131	3'-0"	7'-10"	1 3/4"	103T				SG2A	B2/AE600	A2/AE600	- -	
135B	3'-0"	7'-10"	1 3/4"	711RT	SFI			S2	B2/AE600	A2/AE600	- -	
136A	11'-0"	11'-0"	3/4"	001		- -		S2	C4/AE600	B4/AE600	- -	
136B	3'-0"	7'-0"	1 3/4"	C715T	SNLX			S4	C3/AE600	B3/AE600	A3/AE600	
136C	3'-4"	7'-10"	1 3/4"	C201T	WFI			S2	B2/AE600	A2/AE600	- -	
138	3'-0"	7'-10"	1 3/4"	C711	WFI			S2	B2/AE600	A2/AE600	- -	

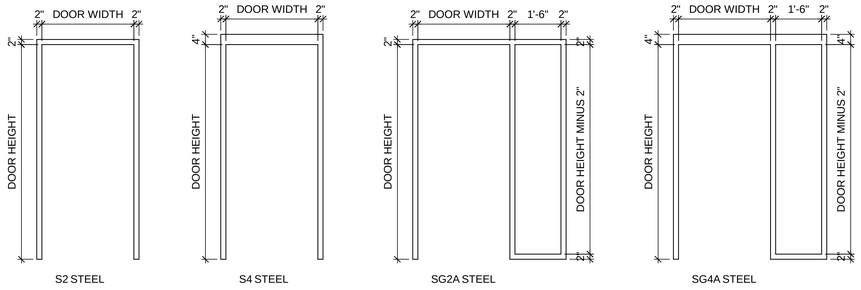


SFX STEEL, EXT
SFI STEEL, INT
WFI WOOD, INT
WFD WOOD, 45-MIN FR

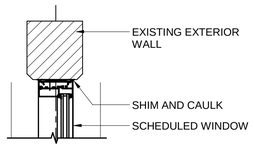
SNLX STEEL, EXT

OCDX OVERHEAD COILING DOOR, EXT

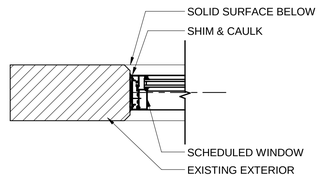
ARCHITECTURAL DOOR TYPES
SCALE: 1/2" = 1'-0"



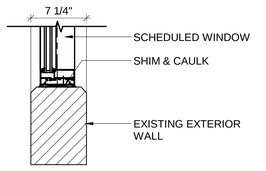
FRAME TYPES
SCALE: 1/2" = 1'-0"



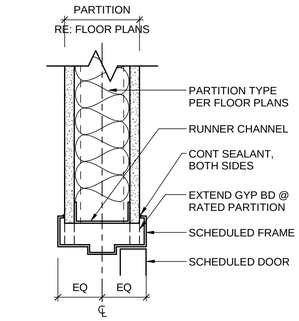
C1 WINDOW HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



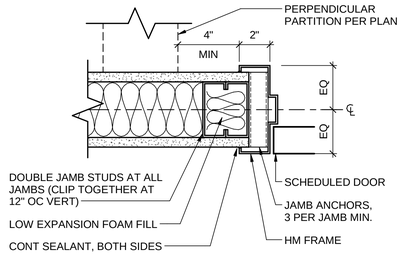
B1 WINDOW JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



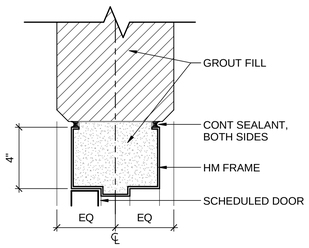
A1 WINDOW SILL DETAIL
SCALE: 1 1/2" = 1'-0"



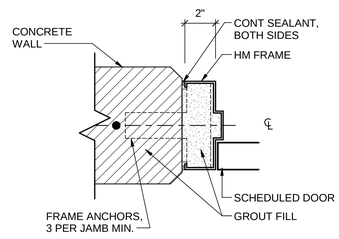
B2 HEAD DETAIL
SCALE: 3" = 1'-0"



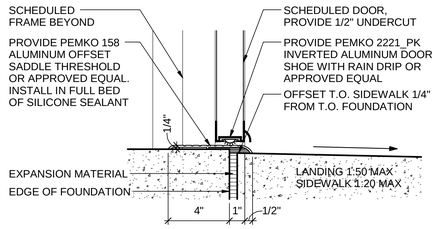
A2 JAMB DETAIL
SCALE: 3" = 1'-0"



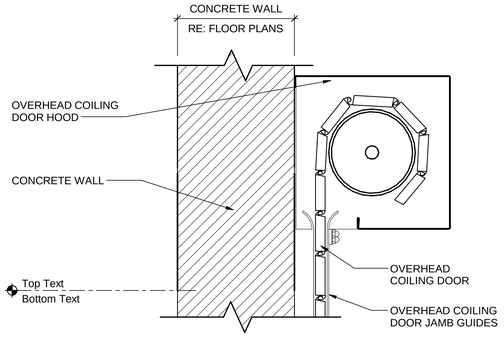
C3 HEAD DETAIL
SCALE: 3" = 1'-0"



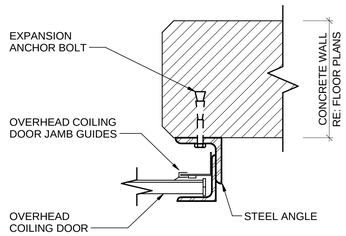
B3 JAMB DETAIL
SCALE: 3" = 1'-0"



A3 SILL DETAIL
SCALE: 3" = 1'-0"



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



B4 JAMB DETAIL
SCALE: 3" = 1'-0"

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

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

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

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OK
REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: PDC
DRAWN BY: PDC
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: DOOR SCHEDULE
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE600

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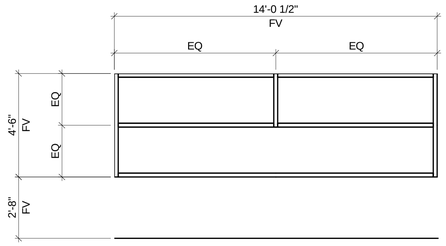
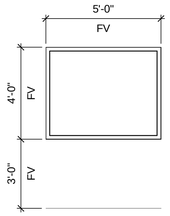
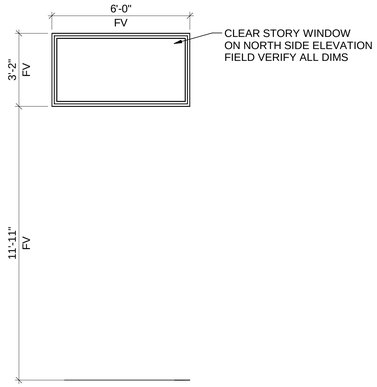


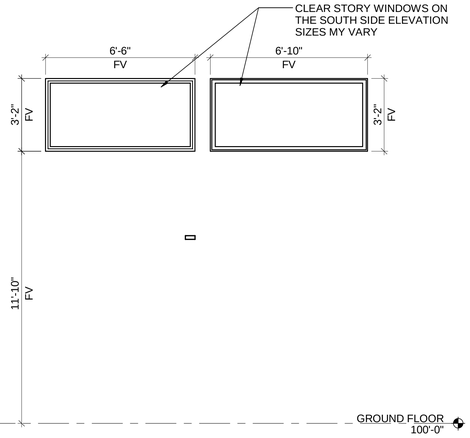
TYP	NOTE
A	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600



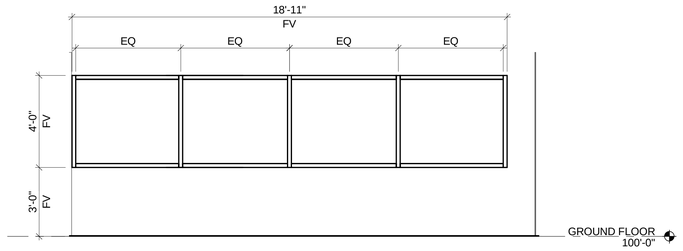
TYP	NOTE
B	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600



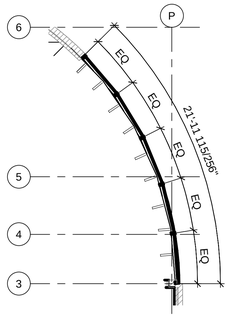
TYP	NOTE
C	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600

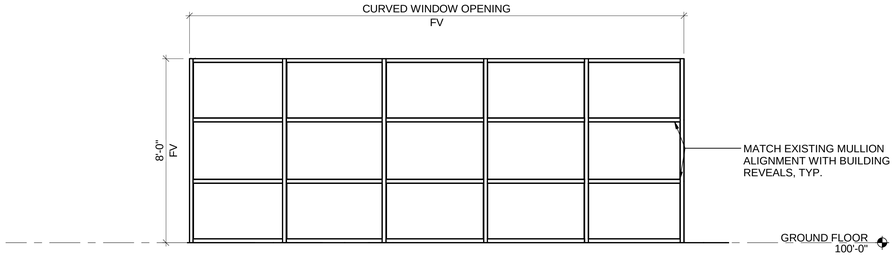


TYP	NOTE
D&E	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600

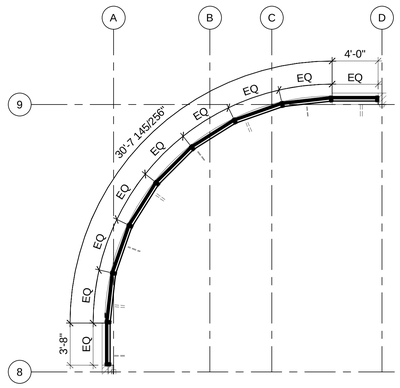


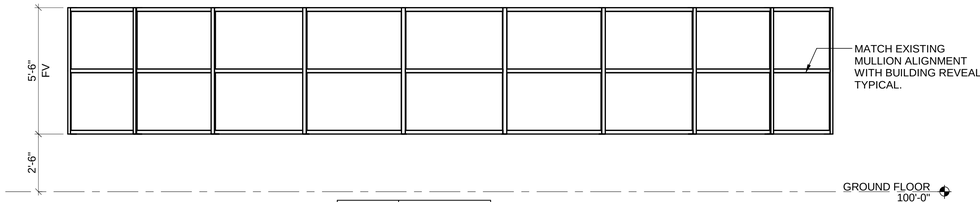
TYP	NOTE
F	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600





TYP	NOTE
G	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600





TYP	NOTE
H	1
HEAD	C1/AE600
JAMB	B1/AE600
SILL	A1/AE600

GENERAL NOTES

A. ALL FRAME DIMENSIONS ARE NOMINAL ROUGH OPENING AND CONTRACTOR SHALL COORDINATE ACTUAL OPENING SIZES WITH RESPECT TO REQUIRED SHIM SPACE AND ADJACENT MATERIAL.
B. NO EXPOSED FASTENERS SHALL BE ALLOWED IN ALUMINUM CURTAINWALL FRAMES.
C. PROVIDE MINIMAL EXPANDING FOAM AT PERIMETER SHIM CAVITY.
D. REFER TO SPECIFICATION SECTION 087100-GLAZING FOR GLAZING TYPES.
E. TEMPERED GLAZING IS INDICATED WITH A "T".
F. EXTERIOR GLAZING SHALL BE INSULATED.

SHEET KEYNOTES

1. CURTAINWALL SYSTEM: 2" X 4 - 1/2" SCREW SPLINE OR SHEAR BLOCK UNLESS NOTED OTHERWISE.

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REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: PDC
DRAWN BY: PDC
REVIEWED BY: GAZ
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: WINDOW ELEVATIONS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE601

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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISHES				CEILING FINISH	NOTES
				NORTH	SOUTH	EAST	WEST		
100	VEST.	WOC1	RB1	PT1	PT1	PT1	PT1	ACT1	
101	GROUP COMMANDER	CPT1	RB1	PT1	PT1	PT2	PT1	ACT1	3,6
102	GROUP CHIEF	CPT1	RB1	PT2	PT1	PT1	PT1	ACT1	3,6
103	MXG ADMIN	CPT1	RB1	PT1	PT1/PT2	PT1	PT1/PT2	ACT1	3,6
104	CORR	LVT1	RB1	PT1/AWP1	PT1/TILE PAT 'B'/AWP1	PT1	PT1	GYP BD/PT5/ACB1	2,4,5
105	GENERAL STORAGE	SC1	RB1	PT1	PT1	PT1	PT1	ACT1	
106	WOMEN'S LOCKER	PCT2/PCT3	- -	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	ACT2/GWB/PT6	1
107	WOMEN	PCT2	- -	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	ACT2	1
108	VEST.	PCT2	PTB2	PT1	PT1	PT1	PT1	GYP BD/PT5	
109	JAN	SC1	RB1	PT1	FRP	PT1	FRP	EXP/PT5	
110	MEN	PCT2	- -	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	ACT2	1
111	MEN'S LOCKER	PCT2/PCT3	- -	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	TILE PAT 'A'	ACT2/GYP BD/ PT6	1
112	VEST.	PCT2	PTB2	PT1	PT1	PT1	PT1	GYP BD/PT5	
113	BREAK	PCT1	PTB1	PT1/PT2/GT1	PT1	PT1	PT1/PT2/GT1	ACT1/GYP BD/PT2	3
114	VEST.	WOC1	RB1	PT1	PT1	PT1	PT1	ACT3/GYP BD/PT5	
115	GENERAL STORAGE	SC1	RB1	PT1	PT1	PT1	PT1	EXP/PT5	
116	MOTHER'S ROOM	CPT1	PTB1	PT1/GT1	PT1	PT1	PT1	ACT1	
117	P&W	CPT1	RB1	PT1	PT1	PT2	PT1	ACT1	
118	SITE LEAD	CPT1	RB1	PT1	PT1	PT2	PT1	ACT1	
119	FSE FSR	CPT1	RB1	PT2	PT1	PT1	PT1	ACT1	
120	CORR	LVT1	RB1	PT1	PT1	PT1	PT1	ACT3/GYP BD/PT5	
121	STORAGE	SC1	RB1	PT1	PT1	PT1	PT1	ACT1	
122	COMM	ESD1	RB1	PT1	PT1	PT1	PT1	EXP/PT5	
123	CORR	LVT1	RB1	PT1	PT1	PT1	PT1	ACT3/GYP BD/PT5	
124	STORAGE	SC1	RB1	PT1	PT1	PT1	PT1	ACT1	
125	MXG CONFERENCE	CPT1	RB1	PT1	PT2	PT1	PT1	ACT3/GYP BD/PT5	3,6,7
126	VEST.	WOC1	RB1	PT1	PT1	PT1	PT1	GYP BD/PT5	
127	CORR	PCT1	PTB1	PT1	PT1/AWP2	PT1	PT1/AWP2	ACT1	
128	QA FLIGHT GEAR LOCKERS	PCT1	PTB1	PT1	PT1	PT1	PT1	ACT1	
129	QA TRAINING	CPT1	RB1	PT2	PT1	PT1	PT1	ACT1	
130	CHIEF INSPECTOR	CPT1	RB1	PT1	PT2	PT1	PT1	ACT1	
131	QA CHIEF	CPT1	RB1	PT2	PT1	PT1	PT1	ACT1	
132	QA OPEN OFFICE	PCT1	PTB1	PT1/AWP2	PT1/AWP2	PT1/AWP2	PT1/AWP2	ACT1	3,4,6
133	PRINT / BREAK	PCT1	PTB1	- -	PT1/PT2/GT1	PT2	PT1	ACT1/GYP BD/PT2	4
134	MECH.	SC1	RB1	PT1	PT1	PT1	PT1	EXP/PT5	
135	ELEC	SC1	RB1	PT1	PT1	PT1	PT1	EXP/PT5	
136	AME STORAGE	SC1	RB1	PT1	PT1	PT1	PT1	EXP/PT5	
137	TOOL ROOM	SC1	RB1	PT1	PT1	PT1	PT1	EXP/PT5	

FINISH SCHEDULE NOTES

1. PROVIDE TILE PATTERN 'A' ON ALL WALLS.
2. PROVIDE TILE PATTERN 'B' ON WALLS AS INDICATED ON FLOOR FINISH PLAN IN101.
3. PROVIDE ROLLER SHADES AT ALL EXTERIOR WINDOWS THIS ROOM.
4. PROVIDE ACOUSTICAL WALL PANELS THIS ROOM.
5. PROVIDE ACOUSTICAL CEILING BLADES THIS ROOM.
6. PROVIDE SOLID SURFACE WINDOW SILLS AT ALL EXTERIOR WINDOWS THIS ROOM. SEE A1/AE600 FOR WINDOW SILL TYPICAL DETAIL.
7. PROVIDE BLACKOUT AND REGULAR ROLLER WINDOW SHADES AT ALL EXTERIOR WINDOWS THIS ROOM.

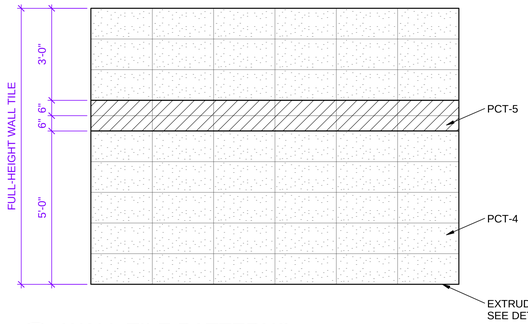
INTERIOR FINISH ABBREVATION LEGEND

ACB	ACOUSTICAL CEILING BLADE
ACT	ACOUSTICAL CEILING TILE
ACP	ACOUSTICAL CEILING PANEL
AFF	ABOVE FINISHED FLOOR
AWP	ACOUSTICAL WALL PANEL
CPT	CARPET TILE
GYP BD	GYPSUM WALL BOARD
ESD	ELECTROSTATIC DISSIPATIVE TILE
EXDW	EXPOSED DUCTWORK
EXP	EXPOSED
FRP	FIBERGLASS REINFORCED PLASTIC
GT	GLASS TILE
LVT	LUXURY VINYL TILE
PCT	PORCELAIN CERAMIC TILE
PTB	PORCELAIN TILE BASE
PT	PAINT
PLAM	PLASTIC LAMINATE
RB	RESILIENT BASE
RWS	ROLLER WINDOW SHADES
SC	SEALED CONCRETE
SS	STAINLESS STEEL
SSM	SOLID SURFACE MATERIAL
TP	TOILET PARTITION
WD	WOOD
WOC	WALK-OFF TILE

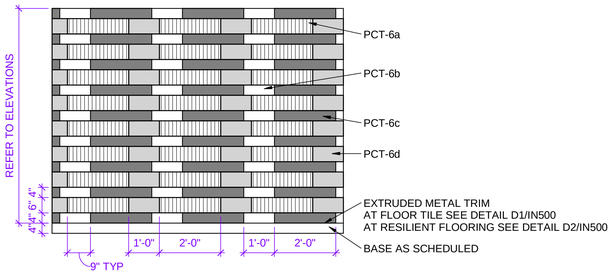
GENERAL NOTES

A. SCHEDULES ARE NOT CONCLUSIVE AND SHOULD BE CONSIDERED AS COMPLEMENTARY TO THE CONSTRUCTION DOCUMENTS AS A WHOLE. ANY QUESTIONS OR CONFLICTS SHOULD BE BROUGHT TO THE CONTRACTING OFFICER'S ATTENTION.
B. REFER TO FINISH PLAN SHEET **IN101** FOR EXTENTS OF WALL FINISHES.
C. REFER TO FINISH PLAN SHEETS **IN101** FOR FLOORING INSTALLATION PATTERN.
D. PROVIDE A SMOOTH TRANSITION BETWEEN DIFFERENT FLOOR MATERIALS.
E. ALL WINDOW SILLS SHALL BE SOLID SURFACE MATERIAL, SSM-2, UNLESS NOTED OTHERWISE.
F. CENTER FLOORING IN ROOM U.N.O. ON FINISH PLAN.
G. DO NOT INSTALL TILE LESS THAN 3". CONFIRM WITH ARCH. PRIOR TO INSTALLATION.
H. THERE SHALL BE NO EXPOSED TILE EDGES, USE EXTRUDED METAL TRIM AS INDICATED, TO FINISH ALL EDGES.
I. REFER TO FINISH MATERIALS SCHEDULE AND DETAILS SHEET **AE602** FOR WALL TILE PATTERNS.
J. REFER TO INTERIOR ELEVATIONS AND FINISH PLANS FOR WALL FINISH/DESIGN INTENT.
K. REFER TO FINISH MATERIALS SCHEDULE **AE602** FOR MATERIAL AND COLOR INFORMATION.
L. REFER TO FINISH PLANS **IN101** FOR STAINLESS STEEL CORNER GUARD LOCATIONS.
M. REFER TO FINISH PLANS **IN101** FOR ACOUSTICAL WALL PANEL LOCATIONS.
N. REFER TO INTERIOR ELEVATION SHEETS FOR ACOUSTICAL WALL PANEL PATTERN LAYOUT AND INSTALLATION HEIGHTS.

PATTERN 'A'



PATTERN 'B'



C3 WALL TILE PATTERNS
SCALE: 1/2" = 1'-0"

FINISH LEGEND

FINISH I.D	DESCRIPTION	PRODUCT LINE OR COLOR	SIZE	COMMENTS
FLOORING FINISHES				
CPT1	CARPET TILE	3HDP NORDIC STORIES-HIDDEN PLAINS / 13-119 ESKER	50CMx50CMx0.31"	QUARTER TURN INSTALLATION
ESD1	ELECTROSTATIC DISSIPATIVE TILE	ESD RUBBER TILE F410 MARENGO	24"x24"x0.080"	...
LVT1	LUXURY VINYL TILE	QUIETLIFE: FOLKWOOD FLW145 ANTIQUE	25CMx150CMx5MM	ACOUSTICAL LUXURY VINYL TILE
PCT1	PORCELAIN CERAMIC TILE	ALASKA ASK04 GLACIER	12"x24"x10.5mm	STACKED INSTALLATION
PCT2	PORCELAIN CERAMIC TILE	COLOR BLOX 2.0 CBX17 I SEE THE MOON	12"x24"x3/8"	STACKED INSTALLATION
PCT3	PORCELAIN CERAMIC TILE	COLOR BLOX 2.0 CBX17 I SEE THE MOON; MOSAICS	3"x3"x1/4"	SHOWER FLOORS
SC1	SEALED CONCRETE	CLEAR SEALANT	...	...
WOC1	WALK-OFF TILE	TT-12 FLUFF CORD STRIP TILE BLACK	12"x12"	QUARTER TURN INSTALLATION
BASE FINISHES				
RB1	RESILIENT BASE	TRADITIONAL BASEWORKS THERMOSET RUBBER TA6 BEDROCK	4" H	WITH TOE FOR RESILIENT; TOELESS FOR CARPETING
PTB1	PORCELAIN TILE BASE	ALASKA ASK04 GLACIER BULLNOSE	4"x24"	...
PTB2	PORCELAIN TILE BASE	COLOR BLOX 2.0 CBX17 I SEE THE MOON BULLNOSE	4"x12"	...
WALL FINISHES				
FRP	FIBERGLASS REINFORCED PANEL	CLASS A; PEBBLED P100 WHITE	4'x8'	...
GT1	GLASS TILE	COLOR WAVE RANDOM INTERLOCKING EVENING MIXER CW28	12"x18"x5/16"	ADD 25% MIX OF 1"x6" TWILIGHT BLUE TO INTERLOCKING MOSAIC EVENING MIXER
		COLOR WAVE STRAIGHT JOINT LINER CW14 TWILIGHT BLUE	1"x6"x5/16"	
PT1	PAINT	0523 FELICITY	...	FIELD
PT2	PAINT	0526 METROPOLIS MOOD	...	...
PT3	PAINT	0508 MIDNIGHT MAGIC	...	...
PCT4	PORCELAIN CERAMIC TILE	COLOR BLOX 2.0 CBX03 SLINKY	12"x24"x3/8"	TILE PATTERN 'A'
PCT5	PORCELAIN CERAMIC TILE	RETRO ACTIVE ROYAL NAVY PO	6"x24"x5/16"	TILE PATTERN 'A'
PCT6a	PORCELAIN CERAMIC TILE	RETRO ACTIVE ROYAL NAVY PTN	6" x 24" x 5/16"	TILE PATTERN 'B'
PCT6b		RETRO ACTIVE ROYAL NAVY UPS	4" x 12" x 5/16"	
PCT6c		RETRO ACTIVE ROYAL NAVY PO	4" x 24" x 5/16"	
PCT6d		RETRO ACTIVE ROYAL NAVY UPS	6" x 12" x 5/16"	
AWP1	ACOUSTICAL WALL PANEL	FRACTURE CARVED WALL TILE; BASE COLOR: 29 DARK BLUE; TOP COLOR: 04 LIGHT GREY	12MM TILE	...
AWP2	ACOUSTICAL WALL PANEL	TUBULAR CARVED WALL TILE LARGE; BASE COLOR: 29 DARK BLUE; TOP COLOR: 38 MATTE GREY	12MM TILE	PROVIDE WRAPPED PANELS AT CURVED WALL
CEILING FINISHES				
ACB1	ACOUSTICAL CEILING BLADE	STRAIGHT CEILING BAFFLE COLOR: 04 LIGHT GREY	7.5" x 72" x 9MM	CABLE TO DECK INSTALLATION
ACT1	ACOUSTICAL CEILING TILE	CIRRUS HIGH NRC ANGLED TEGULAR NO. 556 WHITE	24"x24"x7/8"	PRELUDE 15/16" EXPOSED TEE WHITE
ACT2	ACOUSTICAL CEILING TILE	OPTIMA HEALTH ZONE SQUARE TEGULAR NO. 3214PB WHITE	24"x24"x1"	CLEAN ROOM 15/16" EXPOSED TEE WHITE
ACT3	ACOUSTICAL CEILING TILE	METALWORKS CONCEALED 6664M10 SILVER GREY (SG)	24"x96"x5/8"	...
OCG	OPEN CEILING GRID	360° PAINTED GRID SUSPENSION SYSTEM PRELUDE XL WITH AXIOM CLASSIC PERIMETER TRIM 4" STRAIGHT COLOR: RAL 3001 SIGNAL RED	24"x24"	...
PT5	PAINT	0011 SUGAR DUST	...	...
PT6	EPOXY PAINT	0011 SUGAR DUST	...	...
EXP	EXPOSED STRUCTURE; FRAMING, DECK, DUCTWORK & EQUIPMENT	PT-2 - 0526 METROPOLIS MOOD	...	ALL EXPOSED CEILINGS UNLESS NOTED OTHERWISE
EXMP	EXPOSED METAL PIPING	PT-2 - 0526 METROPOLIS MOOD	...	SEMI-GLOSS; ALL METAL PIPES W/OUT FACTORY APPLIED PAINT OR PROTECTIVE COATING

CASEWORK FINISHES				
PLAM	PLASTIC LAMINATE	PRALINES AND CREAM WW160	...	...
SSM1	SOLID SURFACE MATERIAL	CHILLED EARTH 9228SS	...	COUNTERTOPS
SSM2	SOLID SURFACE MATERIAL	BONE MATTE	...	WINDOW SILLS
MISC. FINISHES				
APL	ACCESS PANELS	PAINT TO MATCH ADJACENT SURFACE	...	....
ESR	ELECTRIC SWITCHES & RECEPTACLES	GRAY	...	...
EWP	ELECTRIC SWITCHES & RECEPTACLES WALL PLATES	STAINLESS STEEL	...	...
EP	ELECTRICAL PANEL	ANSI 61 GRAY OR STANDARD GRAY FINISH	...	...
GR1	GROUT	#540, COLOR: TRUFFLE	...	USE WITH PCT1 & PCT2 FLOOR TILES
GR2	GROUT	#542, COLOR: GRAYSTONE	...	USE WITH TILE PATTERN 'A'
GR3	GROUT	#370, COLOR: DOVE GRAY	...	USE WITH TILE PATTERN 'B'
GR4	GROUT	#544, COLOR: ROLLING FOG	...	USE WITH GLASS TILE
FEC	FIRE EXTIGUISHER CABINET	STAINLESS STEEL	...	...
LKR	LOCKER	VANGUARD; COLOR: 028 GRAY	...	...
PRF	PRIVACY FILM	COLOR: WHITE; PATTERN TO BE SELECTED BY BASE	...	...
SG1	SIGNAGE	COPY COLOR: 710 LIGHT GREY	...	...
SG2	SIGNAGE	HEADER INSERT FINISH: 734 DARK GREY	...	...
SG3	SIGNAGE	SLIMLINE ENDCAP: 101-ALU ALUMINUM	...	...
SG4	SIGNAGE	ACCENT INSERT FINISH: 734 DARK GREY	...	...
SSCG	STAINLESS STEEL CORNER GUARD	STANDARD TYPE 304 STAINLESS STEEL NO. 4 SATIN FINISH	3-1/2" WINGS	PROVIDE AT ALL OUTSIDE CORNERS
SSKP	STAINLESS STEEL KICKPLATE	TYPE 304 STAINLESS STEEL NO. 4 SATIN FINISH	12" HIGH	...
INSTL	INTERIOR STEEL DOORS AND FRAMES	0508 MIDNIGHT MAGIC	...	...
TA	TOILET ACCESSORIES	STAINLESS STEEL NO. 4	...	...
TP	TOILET PARTITION	HINEY HIDERS; HAMMERED STAINLESS	...	...
TS	TRANSITIONS	FINISH: SATIN ANODIZED ALUMINUM	...	REFER TO TRANSITION LEGEND IN101 FOR TRANSITION TYPES
TWP	TELECOMMUNICATION RECEPTACLE WALL PLATES	STAINLESS STEEL	...	...
RWS1	ROLLER WINDOW SHADES	5X MANUAL SHADE SYSTEM; ECOVEIL SCREENS 1550 SERIES 3% OPEN. SHADE: 1554 BLACK/BROWN FASCIA:QUAKER BROWN	...	...
RWS2	ROLLER WINDOW SHADES	5X MANUAL SHADE SYSTEM; CHELSEA BLACKOUT 0250 SERIES. SHADE: ONYX 0283 FASCIA:QUAKER BROWN	...	BLACKOUT SHADE

ACOUSTICAL WALL PANEL SCHEDULE

TYPE MARK	PRODUCT TYPE	TYPE	TILE WIDTH	TILE HEIGHT	MODEL	ACOUSTICAL CRITERIA	FIRE RATING TESTING	COUNT
AWP1	CARVED WALL TILE	18MM TILE	11 3/4"	11 3/4"	FRACTURE	ASTM C 423-17: NRC = 0.75 (Material)	Class A PET felt material tested under ASTM E-84.	216
AWP2	CARVED WALL TILE	9MM TILE (LARGE)	23 1/2"	23 1/2"	TUBULAR	ASTM C 423-17: NRC = 0.75 (Material)	Class A PET felt material tested under ASTM E-84.	26

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

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JASON T. HOLUBY A-13101 OKLAHOMA CITY OK REGISTERED ARCHITECT 10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TDB
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ROOM FINISH SCHEDULE, INTERIOR FINISH MATERIALS LEGEND, AND DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: AE602

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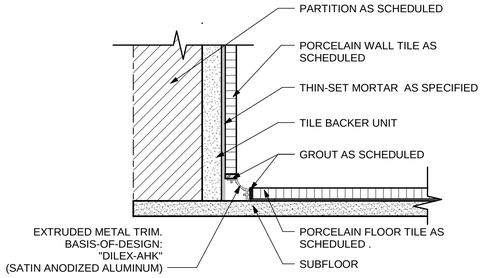
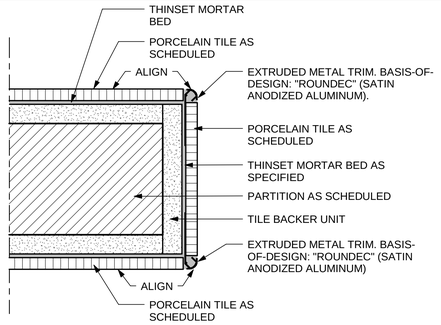


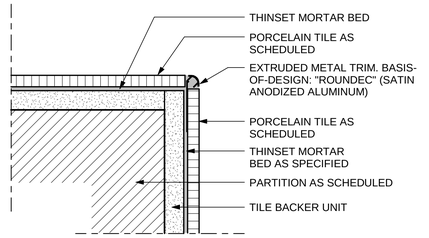
D1 WALL TILE AT FLOOR TILE DETAIL

SCALE: 6" = 1'-0"



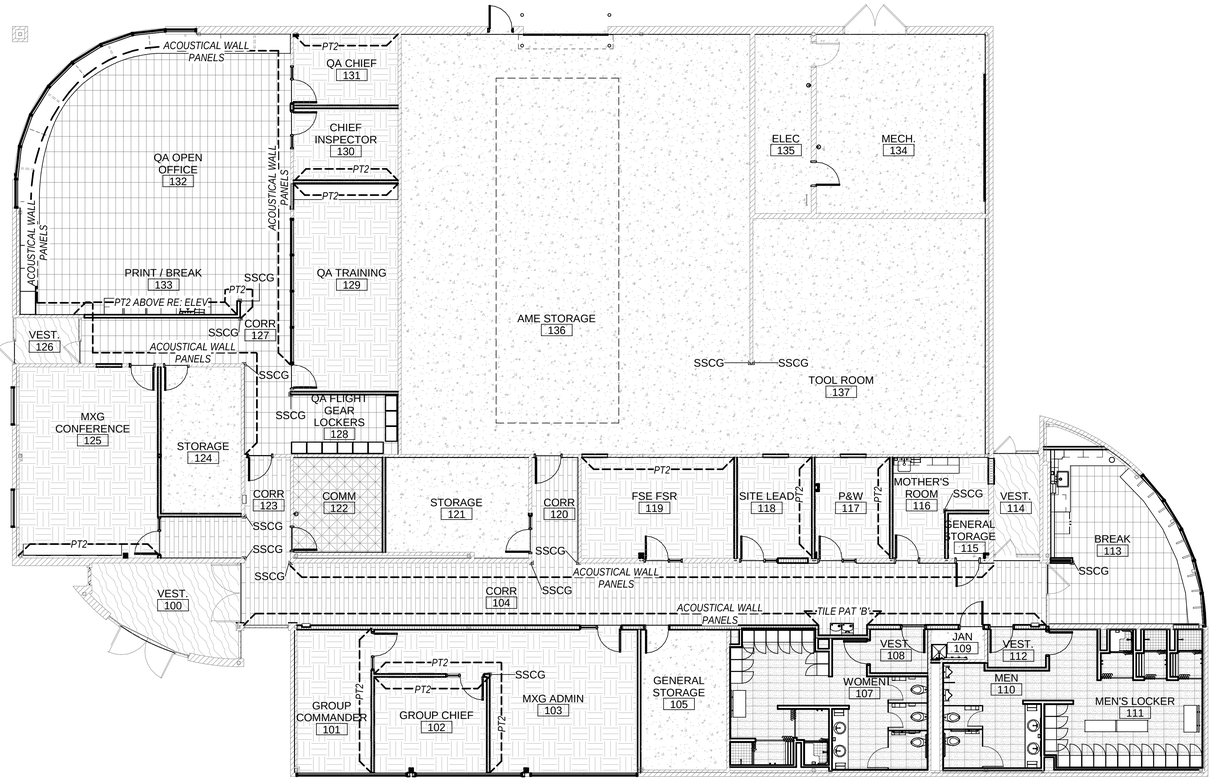
D2 WALL TILE AT WING WALLS DETAIL

SCALE: 6" = 1'-0"



1 WALL TILE AT OUTSIDE CORNER DETAIL

SCALE: 6" = 1'-0"



A1 FINISH FLOOR PLAN

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

GENERAL NOTES

A. SCHEDULES ARE NOT CONCLUSIVE AND SHOULD BE CONSIDERED AS COMPLEMENTARY TO THE CONSTRUCTION DOCUMENTS AS A WHOLE. ANY QUESTIONS OR CONFLICTS SHOULD BE BROUGHT TO THE CONTRACTING OFFICER'S ATTENTION.
B. REFER TO FINISH PLAN SHEETS (IN101) FOR EXTENTS OF WALL FINISHES.
C. REFER TO FINISH PLAN SHEETS (IN101) FOR FLOORING INSTALLATION PATTERN.
D. REFER TO FINISH MATERIALS SCHEDULE AND DETAILS SHEET AE-602 FOR WALL TILE PATTERNS.
E. PROVIDE A SMOOTH TRANSITION BETWEEN DIFFERENT FLOOR MATERIALS.
F. ALL WINDOW SILLS SHALL BE SOLID SURFACE MATERIAL, SSM-2, UNLESS NOTED OTHERWISE.
G. CENTER FLOORING IN ROOM U.N.O. ON FINISH PLAN.
H. DO NOT INSTALL TILE LESS THAN 3". CONFIRM WITH ARCH. PRIOR TO INSTALLATION.
I. REFER TO FINISH MATERIALS SCHEDULE AE-602 FOR MATERIAL MANUFACTURER AND COLOR.
J. REFER TO INTERIOR ELEVATIONS FOR WALL FINISH/DESIGN INTENT & ENLARGED PLANS.
K. THERE SHALL BE NO EXPOSED TILE EDGES, USE SCHLUTER TRIM AS INDICATED, TO FINISH ALL EDGES. SEE DETAILS (SHEET IN101)
L. REFER TO INTERIOR FINISH DETAILS (SHEET IN500) FOR ACOUSTICAL WALL PANEL SIZES AND INSTALLATION HEIGHTS.

TRANSITION LEGEND

TS1 - CPT TO PCT, WOC TO PCT, LVT TO PCT
SCHLUTER, SCHIENE, SATIN ANODIZED ALUMINUM PROVIDE LEVELER TO BRING BOTH FINISHES TO THE SAME LEVEL.

TS2 - PCT TO SC
SCHLUTER, RENO-RAMP, SATIN ANODIZED ALUMINUM

TS3 - LVT TO SC
SCHLUTER, VINPRO-U, SATIN ANODIZED ALUMINUM

TS4 - LVT TO ESD
SCHLUTER, VINPRO-S, SATIN ANODIZED ALUMINUM

TS5 - LVT TO CPT, LVT TO WOC
SCHLUTER, VINPRO-S, SATIN ANODIZED ALUMINUM

TS6 - PCT FLOOR TO PCT WALL
SCHLUTER, DILEX-AHK,SATIN ANODIZED ALUMINUM

FINISH LEGEND

- CPT-1: CARPET TILE
- ESD1: ELECTROSTATIC DISSIPATIVE TILE
- LVT1: LUXURY VINYL TILE
- PCT-1: PORCELAIN TILE
- PCT-2: PORCELAIN TILE
- PCT-3: PORCELAIN TILE
- SC1: SEALED CONCRETE
- WOC1: WALK OFF TILE
- SSGC: STAINLESS STEEL CORNERGUARD

N
PLAN NORTH

N
TRUE NORTH

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

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

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ARCHITECT
10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TDB
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **GROUND FLOOR FINISH PLAN**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: IN101

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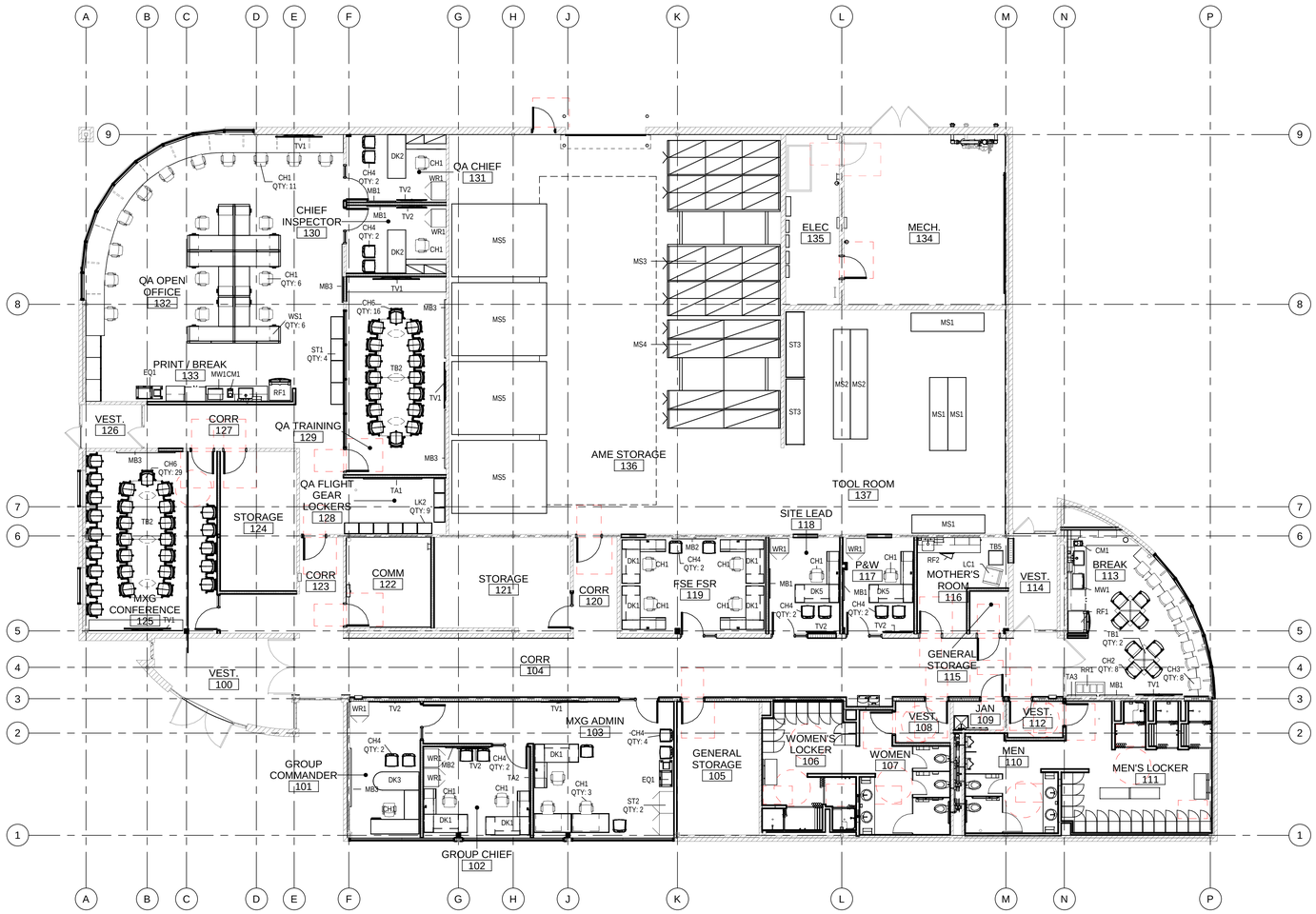
FURNITURE & EQUIPMENT SCHEDULE-GF/GI

CODE	DESCRIPTION
CH1	TASK CHAIR
CH2	DINING CHAIR, NESTING
CH3	BAR HEIGHT STOOL, STACKABLE
CH4	GUEST CHAIR
CH6	CONFERENCE CHAIR
CM1	COMMERCIAL COFFEE MAKER
CM2	COMMERCIAL K-CUPCOFFEE MAKER
DK1	DESK 6' x 6' (L-SHAPED)
DK2	DESK 6' x 8' (L-SHAPED)
DK3	DESK 6' x 8' (U-SHAPED)
DK4	DESK W/ PED (60"x30")
DK5	DESK 6' x 7' (L-SHAPED)
EQ1	COPY, FAX, PRINTER
LC1	LOUNGE CHAIR, UPHOLSTERED W/ ARMS
LK2	DOUBLE HEIGHT GEAR LOCKER (24"W x 18"D)
MB1	MARKER BOARD (48"x48")
MB2	MARKER BOARD (72"x48")
MB3	MARKER BOARD (96"x48")
MS1	MODULAR CABINET W/WORKSURFACE
MS2	MODULAR CABINETS W/OVERHEAD CABINETS & WORKSURFACE
MS3	HIGH DENSITY STORAGE (8 SHELVES)
MS4	HIGH DENSITY STORAGE (4 SHELVES)
MS5	RACK OVER PYLON STAND
MW1	MICROWAVE
RF1	FULL SIZE REFRIGERATOR W/ ICE & WATER
RF2	UNDER-COUNTER REFRIGERATOR
RR1	RECYCLING RECEPTACLE MULTI-UNIT (4 OPENINGS)
ST1	3 DRAWER LATERAL FILE (36"Wx20"Dx36"H) W/LAMINATE TOP
ST2	STORAGE CABINET (36"Wx23-1/8"Dx84"H)
ST3	UTILITY SHELVING, 108"W x 30"D x 87"H, MTL
TA1	TACK BOARD (96"x48")
TA2	TACK BOARD (72"x48")
TA3	TACK BOARD (48"x48")
TB1	SQUARE CAFE TABLE (48"x48")
TB2	16' BOAT SHAPE CONFERENCE TABLE
TB5	SIDE TABLE (24"x24")
TV1	86" SMART TV
TV2	55" SMART TV
WR1	WARDROBE (30"Wx24"Dx74"H)
WS1	LOW PANEL WORKSTATION, 6' x 6'

GENERAL NOTES

A. ALL FURNITURE AND EQUIPMENT SHOWN FOR COORDINATION ONLY.
B. MARKER BOARDS AND TACK BOARDS ARE TO BE INSTALLED TO 60"AFF ON CENTER UNLESS NOTED OTHERWISE.
C. TELEVISIONS ARE TO BE MOUNTED TO 60"AFF ON CENTER UNLESS NOTED OTHERWISE.
D. LOCKERS AND LOCKER BENCHES ARE TO BE PROVIDED BY THE CONTRACTOR AS PART OF THE CONTRACTING DOCUMENTS.
E. PROVIDE A COMMON LAMINATE TOP ACROSS ALL FILING CABINETS (ST1) SHOWN LOCATED TOGETHER.



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

PLAN NORTH
TRUE NORTH
0 4' 8' 16'
1/8" = 1'-0"

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

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REVISION HISTORY:

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PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TDB
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: GROUND FLOOR FURNITURE PLAN
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: IF101

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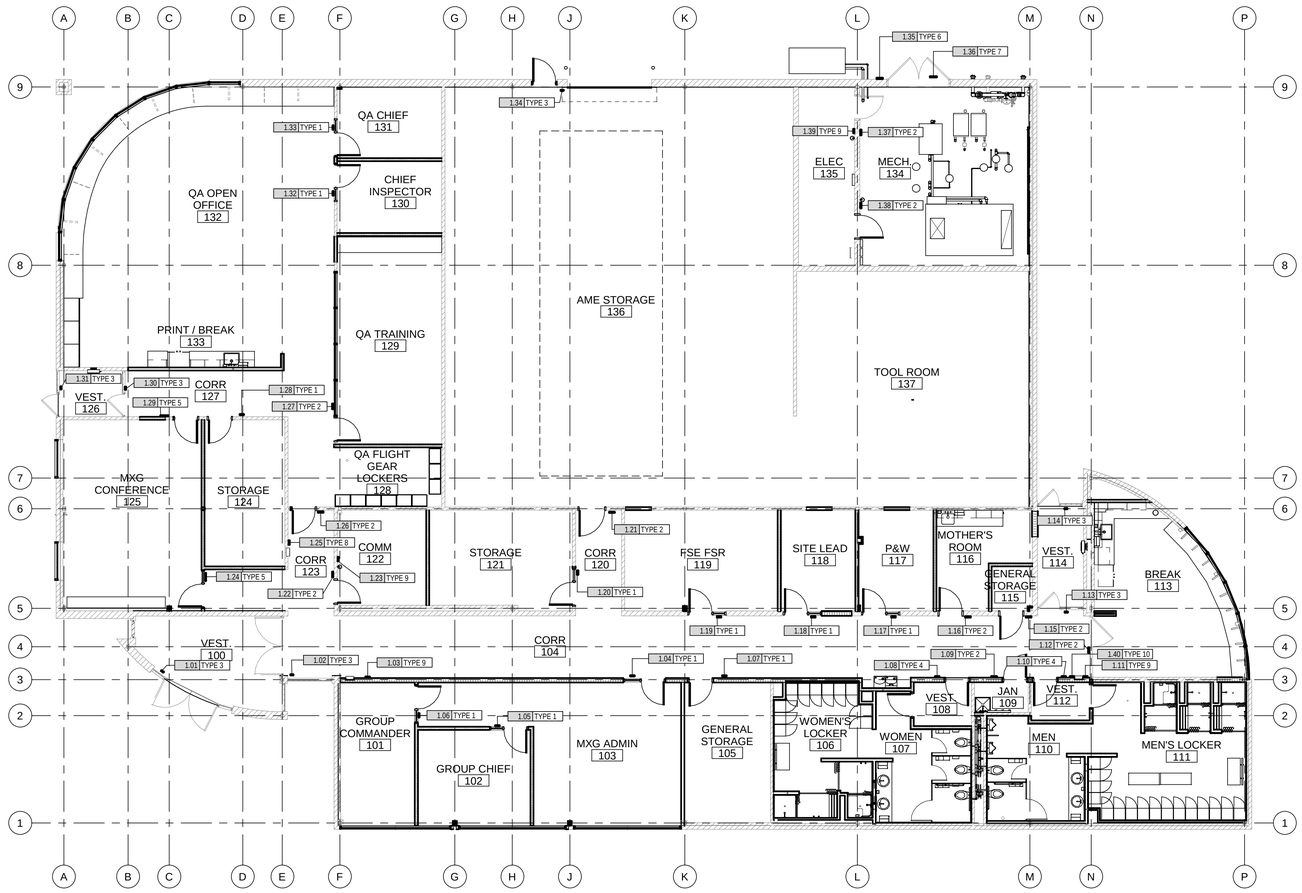
INTERIOR SIGNAGE SCHEDULE

SIGN NUMBER	SIGN TYPE	ROOM NO.	ROOM NAME ON DRAWING	MESSAGE TEXT (ENGLISH)	NOTES
1.01	TYPE 3	100	VEST.	EXIT	
1.02	TYPE 3	104	CORR	EXIT	
1.03	TYPE 9	104	CORR		RE: SIGNAGE DETAIL B3/IG500
1.04	TYPE 1	103	MXG ADMIN		
1.05	TYPE 1	102	GROUP CHIEF		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.06	TYPE 1	101	GROUP COMMANDER		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.07	TYPE 1	105	GENERAL STORAGE		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.08	TYPE 4	108	VEST.		
1.09	TYPE 2	109	JAN		
1.10	TYPE 4	112	VEST.		
1.11	TYPE 9	104	CORR		RE: SIGNAGE DETAIL B3/IG500
1.12	TYPE 2	113	BREAK	BREAKROOM	
1.13	TYPE 3	114	VEST.	EXIT	
1.14	TYPE 3	114	VEST.	EXIT	
1.15	TYPE 2	115	GENERAL STORAGE	STORAGE	
1.16	TYPE 2	116	MOTHER'S ROOM	MOTHER'S ROOM	
1.17	TYPE 1	117	P&W		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.18	TYPE 1	118	SITE LEAD		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.19	TYPE 1	119	FSE FSR		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.20	TYPE 1	121	STORAGE		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.21	TYPE 2	136	AME STORAGE	STORAGE	
1.22	TYPE 2	122	COMM		
1.23	TYPE 9	122	COMM		RE: SIGNAGE DETAIL B3/IG500
1.24	TYPE 5	125	MXG CONFERENCE	CONFERENCE ROOM	
1.25	TYPE 8	123	CORR		RE: SIGNAGE DETAIL B2/IG500
1.26	TYPE 2	127	CORR		
1.27	TYPE 2	129	QA TRAINING	TRAINING	
1.28	TYPE 1	124	STORAGE		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.29	TYPE 5	125	MXG CONFERENCE	CONFERENCE ROOM	
1.30	TYPE 3	126	VEST.	EXIT	
1.31	TYPE 3	126	VEST.	EXIT	
1.32	TYPE 1	130	CHIEF INSPECTOR		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.33	TYPE 1	131	QA CHIEF		PAPER INSERT: VERIFY TEXT TO BE PRINTED ON INSERT
1.34	TYPE 3	136	AME STORAGE	EXIT	
1.35	TYPE 6	134	MECH.	MECHANICAL	PROVIDE EXTERIOR GRADE
1.36	TYPE 7	134	MECH.	FIRE RISER ROOM	RE: SIGNAGE DETAIL B1/IG500
1.37	TYPE 2	135	ELEC	ELECTRICAL	
1.38	TYPE 2	135	ELEC	ELECTRICAL	
1.39	TYPE 9	135	ELEC		RE: SIGNAGE DETAIL B3/IG500
1.40	TYPE 10	112	VEST.		RE: SIGNAGE DETAIL B4/IG500



A1 SIGNAGE PLAN

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

GENERAL NOTES

A. REFER TO SHEET IG-500 FOR SIGNAGE DETAILS.
B. REFER TO SHEET IG-501 FOR SIGNAGE MOUNTING HEIGHTS.
C. CONTRACTOR TO VERIFY ALL ROOM NAMES/NUMBERS.
D. MOUNT ALL SIGNS ACCORDING TO MOUNTING ELEVATION DIMENSIONS UNLESS NOTED OTHERWISE IN SIGNAGE SCHEDULE.
E. CONTRACTOR SHALL VERIFY ALL SIGNAGE REQUIREMENTS (SIZE, COPY, ROOM NUMBERS, MESSAGE COPY, GRAPHIC IMAGES, ETC.) WITH CONTRACTING OFFICER PRIOR TO PROCUREMENT AND COORDINATE FINAL LOCATIONS WITH CONTRACTING OFFICER PRIOR TO INSTALLATION.
F. FOR SIGNS MOUNTED ON GLASS PROVIDE A BACK PANEL ON OPPOSITE SIDE OF GLASS TO HIDE MOUNTING ATTACHEMENT.
G. SIGNS MUST MEET ADA REQUIREMENTS.
H. ALL PICTOGRAPHS SHALL HAVE A FIELD HEIGHT OF 6" MIN.
I. A CLEAR AREA OF NO PROTRUSIONS AROUND SIGNAGE REQUIRED. FLOOR CLEARANCE OF 18"LX18"W AND ELEVATION OF 18"WX80"H.
J. SIGNAGE INSTALLER TO INSTALL SIGNAGE TO BE INLINE FROM SIGN TO SIGN WITHIN ADA REQUIRED INSTALL AREA AS INDICATED.
K. REFER TO COLOR LEGEND FOR INTERIOR SIGNAGE FINISHES.

SIGNAGE LEGEND

N
PLAN NORTH

TRUE NORTH

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

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REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TBD
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **GROUND FLOOR SIGNAGE PLAN**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: IG101

10/12/2022 10:57:24 AM
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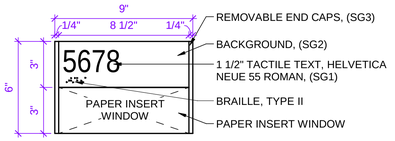
GENERAL NOTES

A. REFER TO SHEET IG-500 FOR SIGNAGE DETAILS.
B. REFER TO SHEET IG-501 FOR SIGNAGE MOUNTING HEIGHTS.
C. CONTRACTOR TO VERIFY ALL ROOM NAMES/NUMBERS.
D. MOUNT ALL SIGNS ACCORDING TO MOUNTING ELEVATION DIMENSIONS UNLESS NOTED OTHERWISE IN SIGNAGE SCHEDULE.
E. CONTRACTOR SHALL VERIFY ALL SIGNAGE REQUIREMENTS (SIZE, COPY, ROOM NUMBERS, MESSAGE COPY, GRAPHIC IMAGES, ETC.) WITH CONTRACTING OFFICER PRIOR TO PROCUREMENT AND COORDINATE FINAL LOCATIONS WITH CONTRACTING OFFICER PRIOR TO INSTALLATION.
F. FOR SIGNS MOUNTED ON GLASS PROVIDE A BACK PANEL ON OPPOSITE SIDE OF GLASS TO HIDE MOUNTING ATTACHEMENT.
G. SIGNS MUST MEET ADA REQUIREMENTS.
H. ALL PICTOGRAPHS SHALL HAVE A FIELD HEIGHT OF 6" MIN.
I. A CLEAR AREA OF NO PROTRUSIONS AROUND SIGNAGE REQUIRED. FLOOR CLEARANCE OF 18"LX18"W AND ELEVATION OF 18"WX80"H.
J. SIGNAGE INSTALLER TO INSTALL SIGNAGE TO BE INLINE FROM SIGN TO SIGN WITHIN ADA REQUIRED INSTALL AREA AS INDICATED.
K. REFER TO COLOR LEGEND FOR INTERIOR SIGNAGE FINISHES.

SIGNAGE LEGEND

X.X.XX | TYPE X

- SIGN TYPE
- SIGN NUMBER
- SECTOR (MAY BE A # OR LETTER)
- FLOOR LEVEL



D1 SIGN TYPE 1
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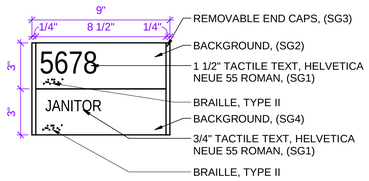

D2 SIGN TYPE 2
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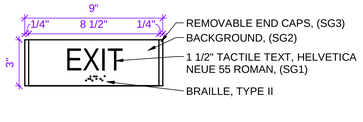

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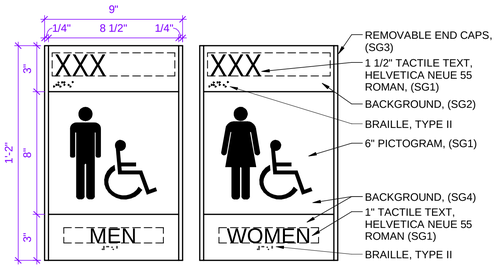
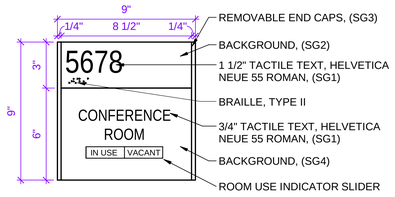
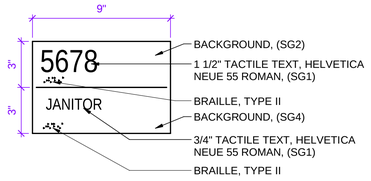


C1 SIGN TYPE 4
SCALE: 3" = 1'-0"



C2 SIGN TYPE 5
SCALE: 3" = 1'-0"

*EXTERIOR GRADE



C4 SIGN TYPE 6
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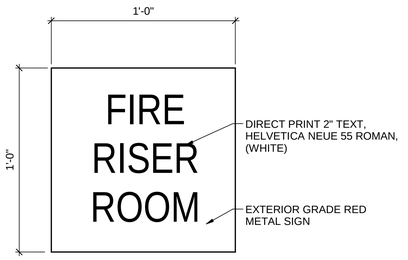
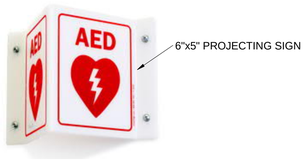


B1 SIGN TYPE 7
SCALE: 3" = 1'-0"



B2 SIGN TYPE 8
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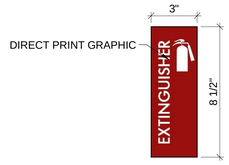

B3 SIGN TYPE 9
SCALE: 3" = 1'-0"

B4 SIGN TYPE 10
SCALE: 3" = 1'-0"

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

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REGISTERED
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW
DRAWN BY: TLW
REVIEWED BY: TBD
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: SIGNAGE DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: IG500

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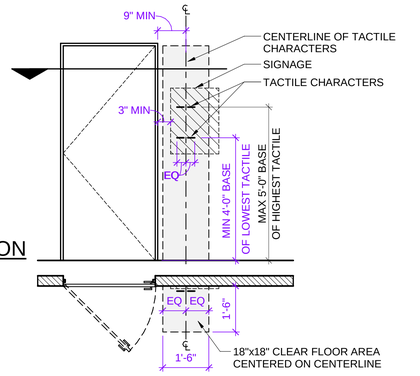
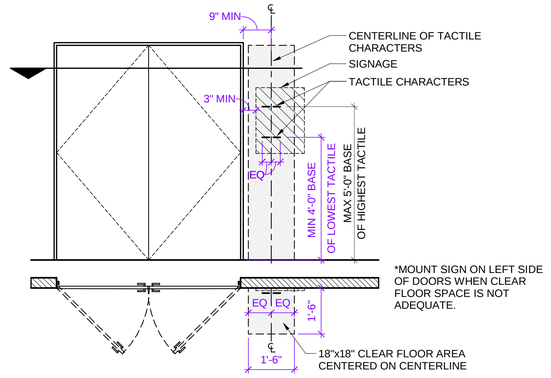


ELEVATION

PLAN

1 MOUNTING TYPE - SINGLE DOOR

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

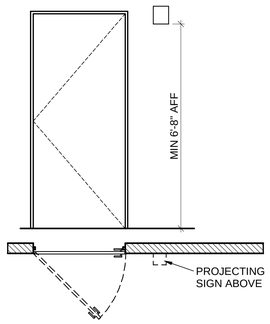


ELEVATION

PLAN

3 MOUNTING TYPE - DOUBLE DOORS - TWO ACTIVE LEAFS

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

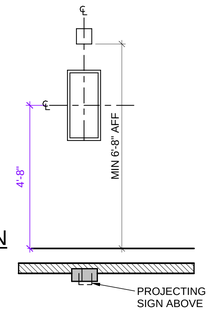


ELEVATION

PLAN

2 MOUNTING TYPE - DOOR PROJECTING SIGN

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



ELEVATION

PLAN

4 MOUNTING TYPE - EQUIPMENT PROJECTING SIGN

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

0 1' 2' 4'

1/2" = 1'-0"

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10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: TLW

DRAWN BY: TLW

REVIEWED BY: TBD

PROJECT MANAGER: NWC

PROJECT NUMBER: 2021-613-00

SHEET TITLE: SIGNAGE MOUNTING HEIGHTS

ISSUE DATE: OCTOBER 14, 2022

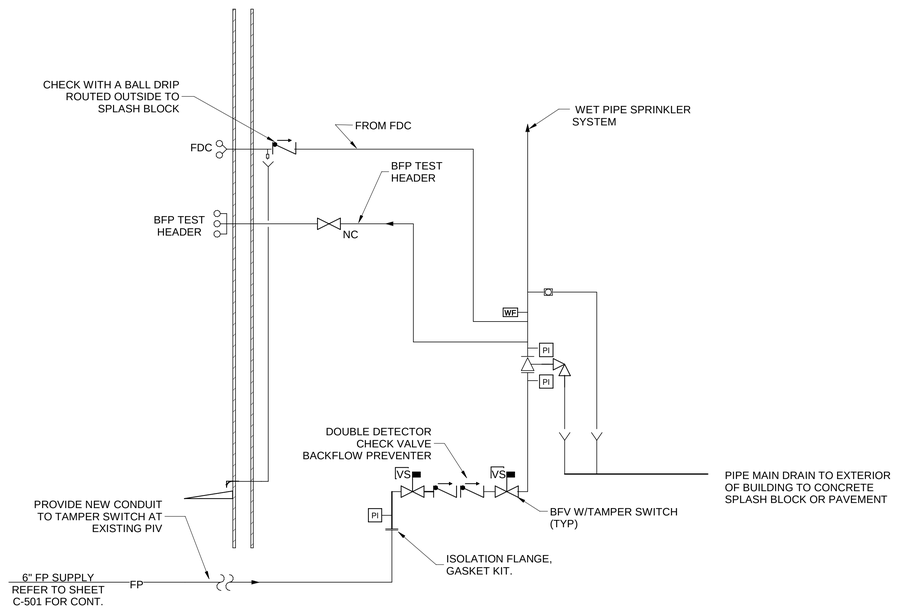
SHEET NUMBER: IG501

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
F	FIRE ALARM MANUAL PULL STATION	KB	KNOX (KEY) BOX
C	CEILING MOUNTED FIRE ALARM/MNS SPEAKER/STROBE	FI	FIBER INTERFACE
		LOC	LOCAL OPERATING CONSOLE
WP	WALL MOUNTED FIRE ALARM/MNS SPEAKER/STROBE, WP INDICATES WEATHER PROOF	SPD	SURGE PROTECTION DEVICE
		FACU	FIRE ALARM & MASS NOTIFICATION CONTROL UNIT
WP	WATERFLOW ALARM SPEAKER / STROBE WP INDICATES WEATHER PROOF	P	SMOKE DETECTOR - PHOTOELECTRIC
CO	CARBON MONOXIDE DETECTOR	XX	DUCT SMOKE DETECTOR; XX INDICATES ASSOCIATED UNIT
		ET	EMERGENCY TEXT SIGN
		AOM	ADDRESSABLE OUTPUT MODULE
		AIM	ADDRESSABLE INPUT MODULE

FIRE SUPPRESSION LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	RISER CHECK VALVE	WF	WATERFLOW SWITCH (VANE TYPE)
	CHECK VALVE	VS	VALVE SUPERVISORY SWITCH
	FUNNEL DRAIN WITH AIR GAP		ITC
			FDC OR BFP TEST CONN.
	OS&Y GATE VALVE		SPLASH BLOCK
	POST INDICATOR VALVE	PI	PRESSURE GAUGE WITH VALVE
	CONTROL VALVE		BUTTERFLY VALVE



A1 FIRE PROTECTION SCHEMATIC PIPING DIAGRAM

SCALE: NTS

ABBREVIATIONS

ABV ..... ABOVE
ADMIN ..... ADMINISTRATIVE
AFF ..... ABOVE FINISHED FLOOR
AUTO ..... AUTOMATION

BLDG ..... BUILDING
BFP ..... BACKFLOW PREVENTER
BFV ..... BUTTERFLY VALVE

CD ..... CANDELA
CO ..... CARBON MONOXIDE
CONN ..... CONNECT, CONNECTION
CONT ..... CONTINUE, CONTINUATION

DEPT ..... DEPARTMENT
DET ..... DETECTOR, DETAIL
DI ..... DUCTILE IRON
DISCH ..... DISCHARGE

EH ..... EXTRA HAZARD
EQ ..... EQUAL
EQUIP ..... EQUIPMENT

FA ..... FIRE ALARM
FAA ..... FIRE ALARM ANNUNCIATOR
FACU ..... FIRE ALARM CONTROL UNIT
FD ..... FIRE DEPARTMENT
FDC ..... FIRE DEPARTMENT CONNECTION
FP ..... FIRE PROTECTION, FIRE PUMP
FL ..... FLOOR
FT ..... FOOT, FEET

GPM ..... GALLONS PER MINUTE

HAZ ..... HAZARD
HVLS ..... HIGH VOLUME LOW SPEED
HYDR ..... HYDRAULIC
ITC ..... INSPECTOR'S TEST CONNECTION
I / O ..... INPUT / OUTPUT

LH ..... LIGHT HAZARD
LOC ..... LOCAL OPERATING CONSOLE

MECH ..... MECHANICAL
MNS ..... MASS NOTIFICATION SYSTEM

NA ..... NOT APPLICABLE
N.C. ..... NORMALLY CLOSED
NTS ..... NOT TO SCALE

OH ..... ORDINARY HAZARD
OS&Y ..... OUTSIDE STEM AND YOKE

PIV ..... POST INDICATING VALVE
PMP ..... PUMP
PRESS ..... PRESSURE
PSI ..... POUNDS PER SQUARE INCH

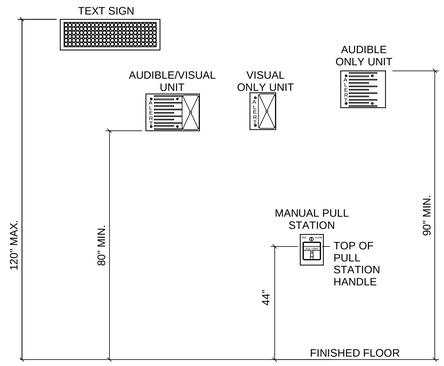
REF ..... REFERENCE, REFER

SF ..... SQUARE FOOT
SCH ..... SCHEDULE
SHT ..... SHEET
STA ..... STATION
SUPV ..... SUPERVISORY
SUP ..... SUPERVISION
SYS ..... SYSTEM

TYP ..... TYPICAL
TRANS ..... TRANSMIT
TEMP ..... TEMPERATURE

UGND, UG ..... UNDERGROUND
UNO ..... UNLESS NOTED OTHERWISE

W/ ..... WITH
W/O ..... WITHOUT
WP ..... WET PIPE, WEATHERPROOF



NOTES:

A. VERIFY EXACT MOUNTING HEIGHTS WITH PROJECT REQUIREMENTS. DEVICES MAY OR MAY NOT APPLY TO THIS PROJECT. REFER TO PLANS.
B. ALL NEW DEVICES SHALL BE INSTALLED ACCORDING TO THE MOUNTING HEIGHTS INDICATED U.N.O.

A3 FIRE ALARM MOUNTING HEIGHT DETAIL

SCALE: NTS

FIRE SUPPRESSION NOTES

A. THE DESIGN AND INSTALLATION OF THE FIRE PROTECTION SYSTEM SHALL BE IN STRICT ACCORDANCE WITH UFC 3-600-01, NFPA 13, NFPA 72, UFC 4-021-01, ECB 2018-17, ADOPTED STATE AND LOCAL CODES AND THE CONTRACT DOCUMENTS.
B. PROVIDE AUTOMATIC WET PIPE SPRINKLER SYSTEM IN ACCORDANCE WITH UFC 3-600-01 REQUIREMENTS WITH DESIGN DENSITY AND DESIGN AREA FOR THE HAZARD CLASSIFICATION LISTED IN THE FIRE PROTECTION DESIGN SCHEDULE. THE INSPECTOR'S TEST VALVES SHALL BE LOCATED NO MORE THAN 7 FEET AFF.
C. ALL HANGERS SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH NFPA 13.
D. ALL VALVES (DRAINS, INSPECTOR'S TEST, CONTROL) SHALL BE IDENTIFIED BY SIGNAGE.
E. BRANCH LINES SHALL BE ARRANGED FOR FLUSHING. READILY REMOVABLE FITTINGS SHALL BE PROVIDED AT THE END OF ALL CROSS MAINS.
F. ALL SPRINKLERS SHALL BE INSTALLED IN THE CENTER OF THE CEILING TILES +/- 6 INCHES.
G. PROVIDE SPRINKLERS BELOW ALL OBSTRUCTIONS TO DISCHARGE, PER NFPA 13.
H. PROVIDE AUTOMATIC AIR VENTS AT HIGH POINTS OF PIPING TO VENT MINIMUM 98% OF THE SYSTEM'S VOLUMETRIC CAPACITY. SLOPE PIPING TO RISER, DRAIN TRAPPED PIPING.
I. PRELIMINARY HYDRANT FLOW TEST CONDUCTED ON OCTOBER 26th, 2021 UTILIZING HYDRANTS 6125-2661 AND 6125-5 INDICATES AN AVAILABLE WATER SUPPLY WITH A STATIC PRESSURE OF 90 PSI AND A RESIDUAL PRESSURE OF 84 PSI FLOWING 1500 GPM. CONTRACTOR SHALL PERFORM THEIR OWN HYDRANT FLOW TEST ON WHICH TO BASE HYDRAULIC CALCULATIONS.
J. PROVIDE LOCK/SUPERVISORY SWITCH AT POST INDICATOR VALVE ON INCOMING WATER SUPPLY
K. BRACE EQUIPMENT OVER 31 POUNDS FOR FORCE PROTECTION. DESIGN TO RESIST 0.5 X WEIGHT IN ANY HORIZONTAL DIRECTION AND 1.5 X THE WEIGHT IN THE VERTICAL.
L. ALL DRAINS AND TEST CONNECTIONS SHALL DISCHARGE TO CONCRETE SURFACE OR SPLASH BLOCK AT THE EXTERIOR OF THE BUILDING.

FIRE ALARM NOTES

A. DEMOLISH EXISTING FIRE ALARM SYSTEM IN ITS ENTIRETY. REMOVE ALL EXISTING CONTROL PANELS, POWER SUPPLIES, INITIATING DEVICES, NOTIFICATION DEVICES, CONDUCTORS, PATHWAYS, AND EQUIPMENT SUPPORT.
B. PROVIDE AUTOMATIC FIRE ALARM/MASS NOTIFICATION SYSTEM WITH VISUAL/AUDIO NOTIFICATION APPLIANCES IN ACCORDANCE WITH UFC 3-600-01, UFC 4-021-01, ECB 2018-17, AND NFPA 72 REQUIREMENTS.
C. SPEAKERS AND VISUAL NOTIFICATION SHALL BE PROVIDED THROUGHOUT THE BUILDING FOR VOICE INTELLIGIBILITY AND OCCUPANT NOTIFICATION. WEATHER PROOF EXTERIOR SPEAKERS SHALL BE PROVIDED IN PUBLIC AREAS AND ANY AREAS COMMONLY USED BY OCCUPANTS.
D. VISUAL NOTIFICATION SHALL BE PROVIDED IN ALL EMPLOYEE WORK, COMMON, AND PUBLIC AREAS.
E. MANUAL PULL STATIONS SHALL BE PROVIDED AT THE BUILDING EXITS, AND SHALL BE EASILY ACCESSIBLE, UNOBSTRUCTED, AND VISIBLE.
F. ALL FIRE ALARM CIRCUITS SHALL BE INSTALLED IN CONDUIT AND SHALL BE SECURELY FASTENED TO THE STRUCTURE.
G. PROVIDE SMOKE DETECTION AT EACH POWER EXTENDER PANEL.
H. COORDINATE SPEAKER LOCATIONS WITH LOC'S IN ORDER TO PREVENT FEEDBACK.
I. PROVIDE SURGE PROTECTION DEVICES EVERYWHERE FIRE ALARM SYSTEM CONDUCTORS ENTER AND EXIT THE BUILDING AND ON ALL 120V CIRCUITS TO CONTROL PANELS, TRANSMITTERS, AMPLIFIER PANELS AND BOOSTER PANELS, ADJACENT TO PANEL IN HINGED TERMINAL BOX. SPD'S SHALL BE UL 1449 AND UL 1283 LISTED.
J. SPEAKERS AND VISUAL NOTIFICATION SHALL BE PROVIDED THROUGHOUT THE BUILDING FOR VOICE INTELLIGIBILITY AND OCCUPANT NOTIFICATION. PROVIDE EXTERIOR SPREAKERS IN PUBLIC AREAS AND AREAS COMMONLY USED BY OCCUPANTS. NOTIFICATION APPLIANCES SHOWN TO ILLUSTRATE DESIGN INTENT ONLY. FINAL LOCATION AND QUANTITY SHALL BE DETERMINED BY FIRE ALARM DESIGNER/INSTALLER TO PROVIDE VISIBLE AND AUDIBLE COVERAGE PER NFPA 72 AND UFC 4-021-01.
K. PROVIDE DUCT SMOKE DETECTORS IN ALL HVAC SUPPLY DUCTS WHERE REQUIRED BY UFC 3-600-01 AND NFPA 90A, WITH AUXILIARY CONTACTS TO PROVIDE CONTROL INTERLOCK AND SHUTDOWN OF THE HVAC SYSTEMS.
L. FIRE ALARM SYSTEM SHALL BE A MONACO MAAP-X. MONACO MUST BE CONTACTED EARLY IN THE BIDDING PROCESS TO ENSURE ACCURATE BIDS.
M. CONTRACTOR'S QUALIFIED FIRE PROTECTION ENGINEER MUST BE DIRECTLY INVOLVED AND IN RESPONSIBLE CHARGE OF FIRE PROTECTION DESIGN, SHOP DRAWING PREPARATION, CONSTRUCTION, INSPECTION, ACCEPTANCE TESTING AND COMMISSIONING.

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LIANE F OZMUN
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PROFESSIONAL ENGINEER
10/14/2022

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: LFO
DRAWN BY: JTM
REVIEWED BY: LFO
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **FIRE PROTECTION LEGEND & ABBREVIATIONS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: F-001

10/12/2022 1:26:26 PM
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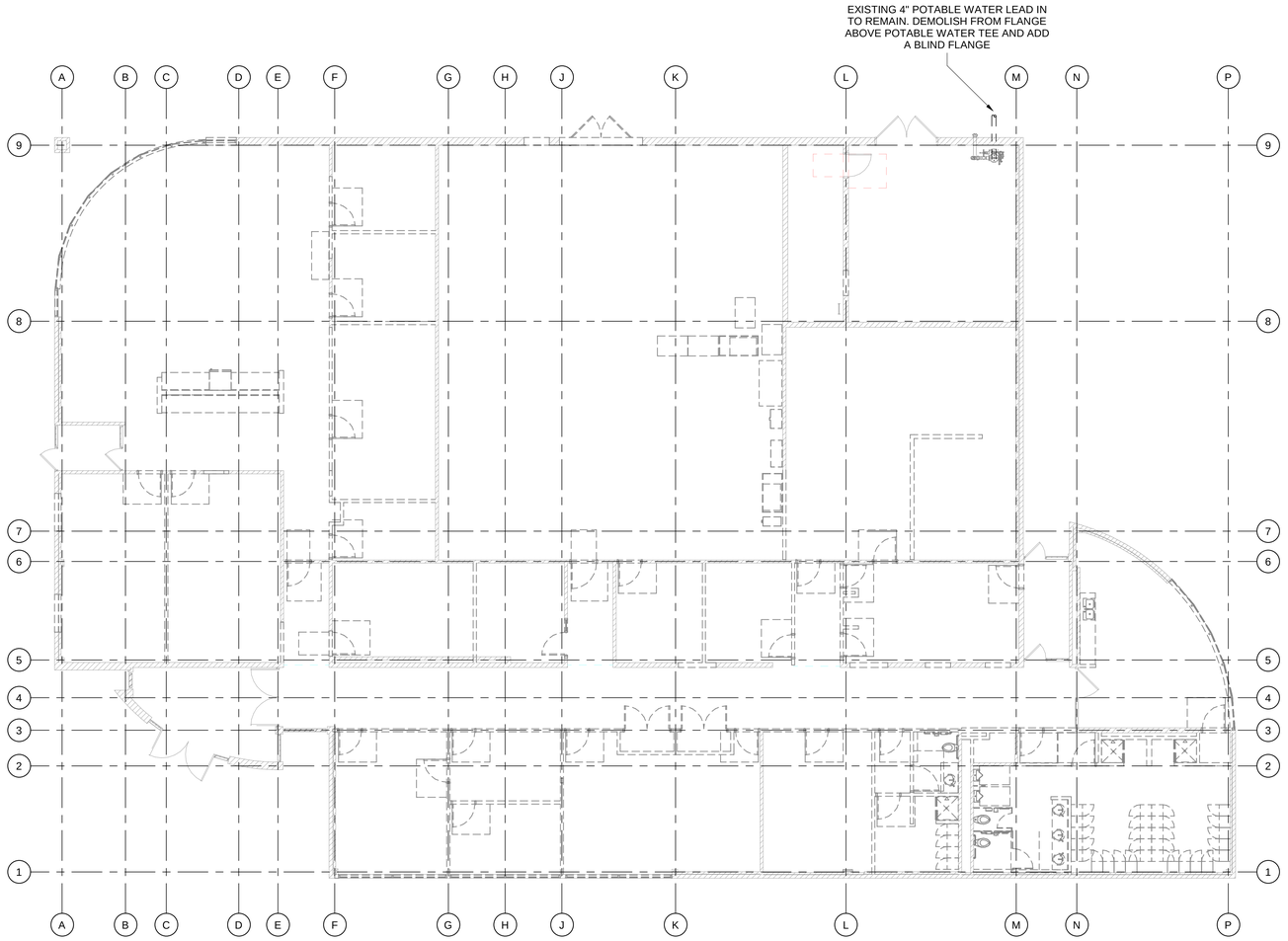
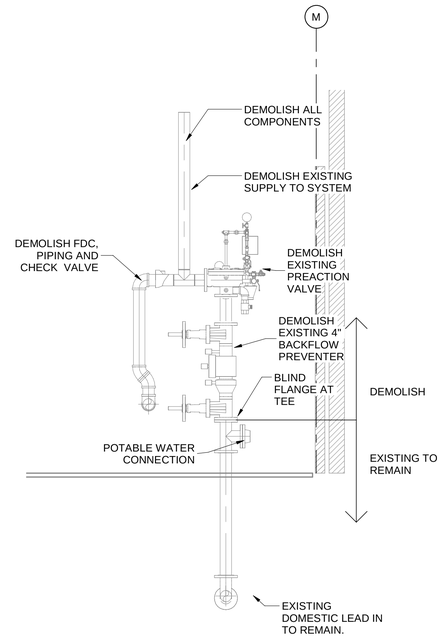
DEMOLITION NOTES

1. DEMOLISH EXISTING PREACTION FIRE PROTECTION SYSTEM IN ITS ENTIRETY INCLUDING PIPING, SPRINKLER SUPPORTS, ATTACHEMENTS, APPURTENANCES AND BACKFLOW PREVENTER.
2. EXISTING 4" LEAD IN TO REMAIN TO SUPPLY POTABLE WATER CONNECTION.
3. DEMOLISH EXISTING FIRE ALARM SYSTEM IN ITS ENTIRETY, INCLUDING PANELS, DEVICES, APPLIANCES, CABLING, CONDUIT, BOXES SUPPORTS, ETC.



A1 FIRE PROTECTION DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



A4 SECTION AT EXISTING RISER
SCALE: 1/2" = 1'-0"

PLAN NORTH

TRUE NORTH

1/2" = 1'-0"

1/8" = 1'-0"

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115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: LFO
DRAWN BY: JTM
REVIEWED BY: LFO
PROJECT MANAGER: NWC
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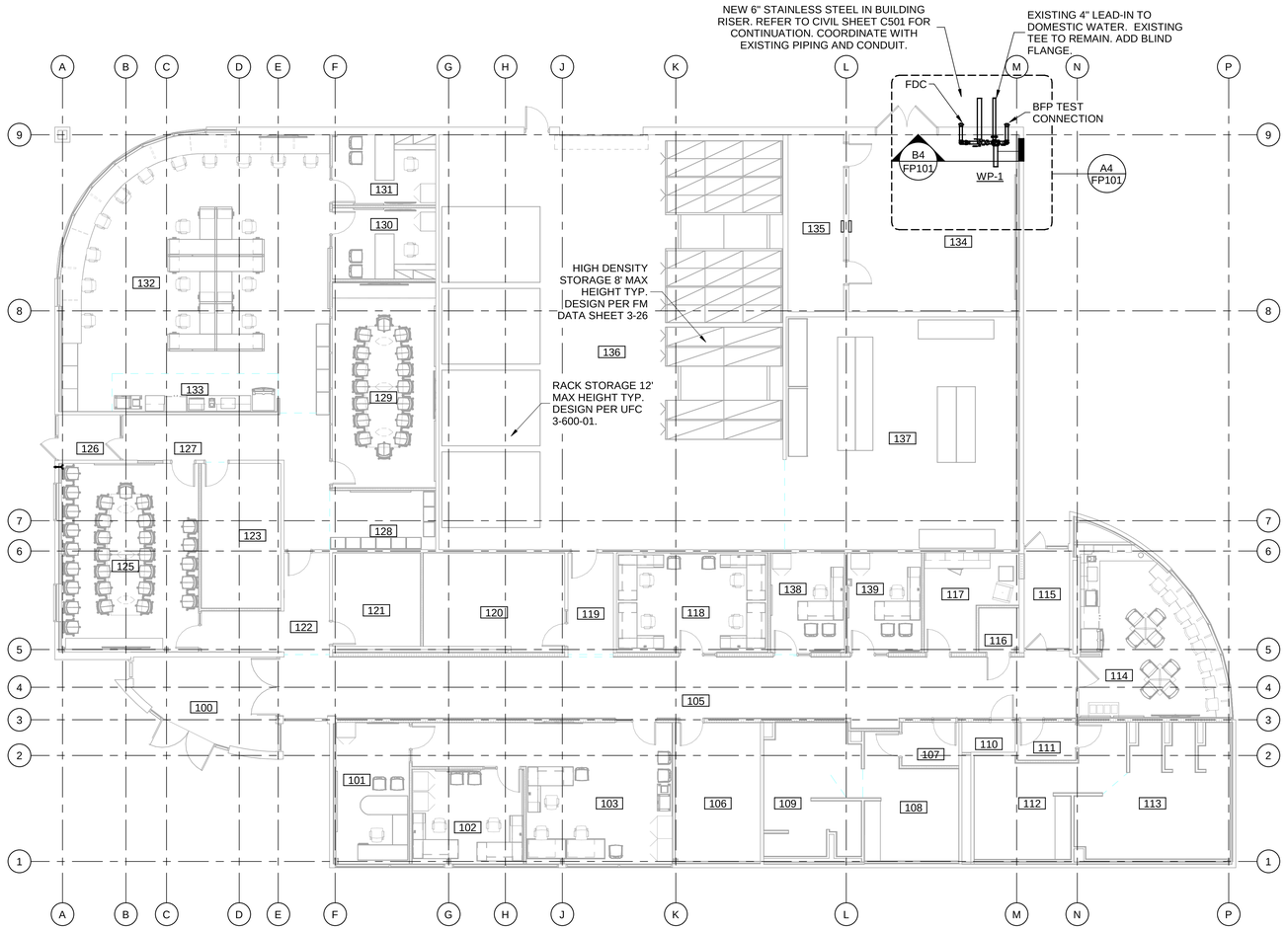
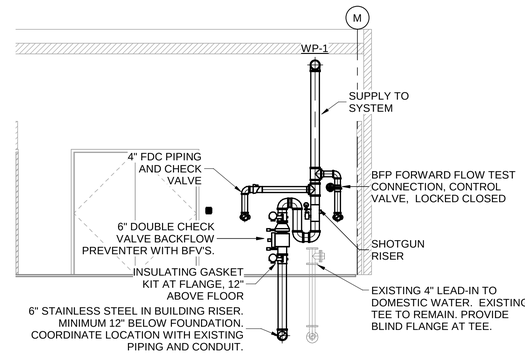


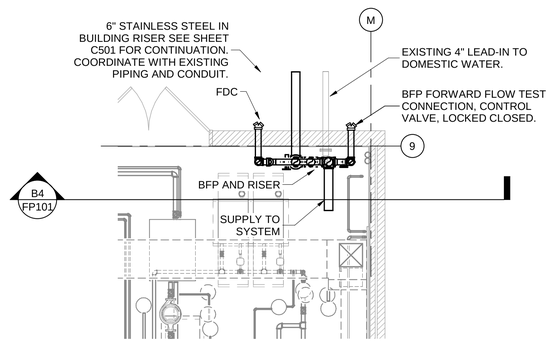
A1 FIRE PROTECTION PLAN

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



B4 SECTION AT FIRE PROTECTION RISER

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



A4 ENLARGED FIRE PROTECTION PLAN

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

FIRE PROTECTION DESIGN SCHEDULE			
NUMBER	NAME	HAZARD	NOTES
100	VEST.	LH	1
101	GROUP COMMANDER	LH	1
102	GROUP CHIEF	LH	1
103	MXG ADMIN	LH	1
105	CORR	LH	1
106	GENERAL STORAGE	OH	1
107	VEST.	LH	1
108	WOMEN	LH	1
109	WOMEN'S LOCKERS	LH	1
110	JAN	OH	1
111	VEST.	LH	1
112	MEN	LH	1
113	MEN'S LOCKERS	LH	1
114	BREAK	LH	1
115	VEST.	LH	1
116	GENERAL STORAGE	OH	1
117	MOTHER'S ROOM	LH	1
118	FSE FSR	LH	1
119	CORR	LH	1
120	STORAGE	OH	1
121	COMM	OH	1,4
122	CORR	LH	1
123	STORAGE	OH	1
125	MXG CONFERENCE	LH	1
126	VEST.	LH	1
127	CORR	LH	1
128	QA FLIGHT GEAR LOCKERS	OH	1
129	QA TRAINING	LH	1
130	CHIEF INSPECTOR	LH	1
131	QA CHIEF	LH	1
132	QA OPEN OFFICE	LH	1
133	PRINT / BREAK	LH	1
134	MECH.	OH	1,2
135	ELEC	OH	1,5
136	AME STORAGE	EH	1,3
137	TOOL ROOM	OH	1
138	SITE LEAD	LH	1
139	P&W	LH	1

NOTES:
1. PROVIDE AUTOMATIC WET PIPE SPRINKLER SYSTEM WITH DESIGN DENSITY AND DESIGN AREA PER NFPA 13 AND UFC 3-600-01, TABLE 9-3, WITH A DESIGN DENSITY AND AREA PER UFC 3-600-01 FOR THE HAZARD CLASSIFICATION LISTED IN THE FIRE SUPPRESSION DESIGN SCHEDULE.
2. PROVIDE NEW WET PIPE SYSTEM, 6" BACKFLOW PREVENTER AND 6" STAINLESS STEEL IN BUILDING RISER.
3. CLASS I THROUGH IV COMMODITIES, UNENCAPSULATED TOP 12 FEET HIGH, ON MULTIPLE ROW RACKS. DESIGN PER UFC 3-600-01. PROTECT HIGH DENSITY STORAGE PER FMG DATA SHEET 3-26.
4. PROVIDE SIDEWALL SPRINKLERS. DO NOT ROUTE PIPING INTO ROOM OR THROUGH CEILING.
5. DO NOT ROUTE PIPING OVER ELECTRICAL EQUIPMENT. ONLY PIPING SERVING ROOM SHALL ENTER ROOM.

N PLAN NORTH

TRUE NORTH

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

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

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10/14/2022

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

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DRAWN BY: JTM
REVIEWED BY: LFO
PROJECT MANAGER: NWC
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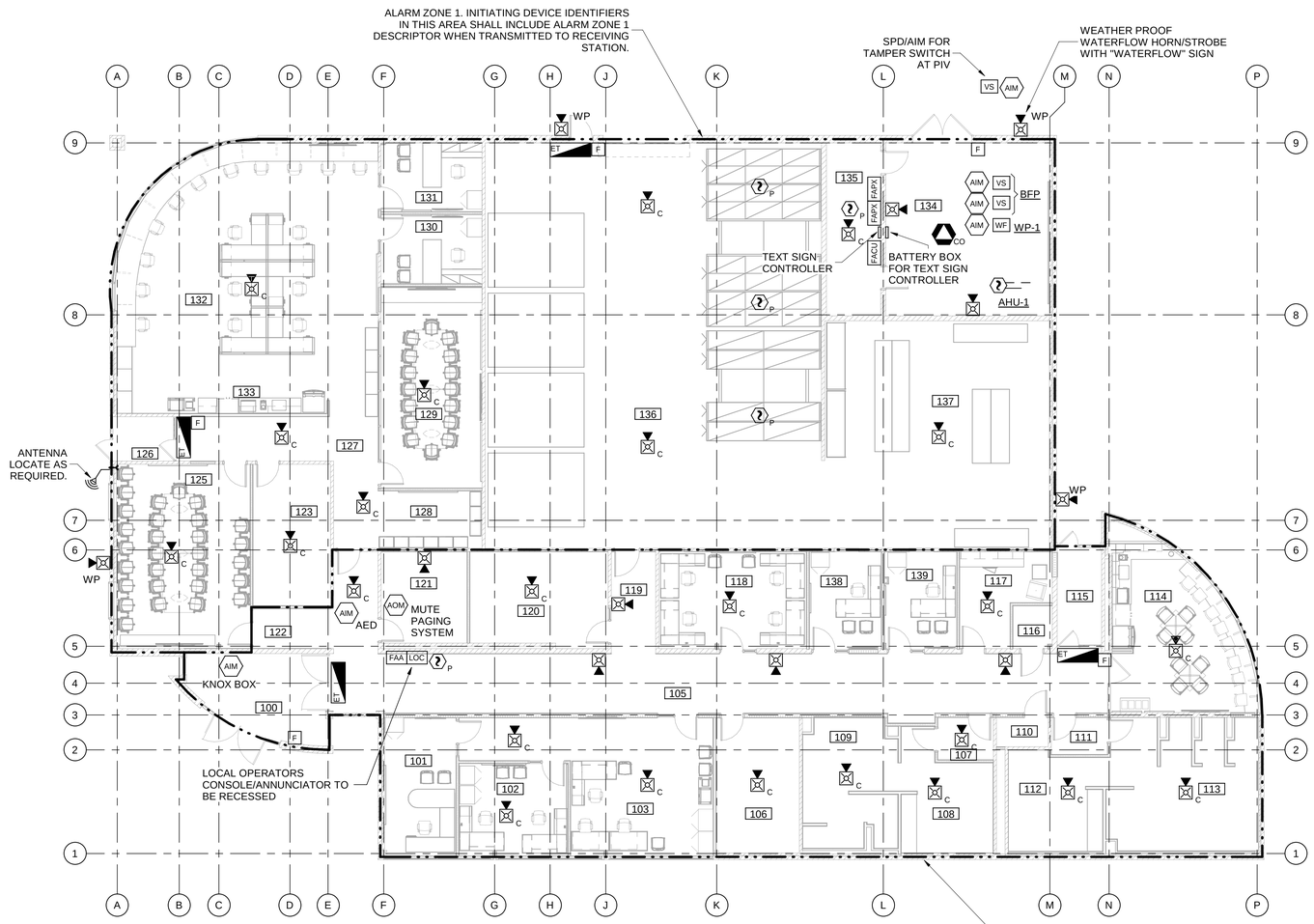
GENERAL NOTES

A. THE DESIGN AND INSTALLATION OF THE FIRE PROTECTION SYSTEM SHALL BE IN STRICT ACCORDANCE WITH UFC 4-021-01; ECB 2018-17; UFC 3-600-01; NFPA 13; NFPA 70; NFPA 20; NFPA 72; NFPA 90A; ADOPTED STATE AND LOCAL CODES, AND THE CONTRACT DOCUMENTS.



B1 FIRE ALARM & MASS NOTIFICATION PLAN
SCALE: 1/8" = 1'-0"

ROOM NAME SCHEDULE	
Number	Name
100	VEST.
101	GROUP COMMANDER
102	GROUP CHIEF
103	MXG ADMIN
105	CORR
106	GENERAL STORAGE
107	VEST.
108	WOMEN
109	WOMEN'S LOCKERS
110	JAN
111	VEST.
112	MEN
113	MEN'S LOCKERS
114	BREAK
115	VEST.
116	GENERAL STORAGE
117	MOTHER'S ROOM
118	FSE FSR
119	CORR
120	STORAGE
121	COMM
122	CORR
123	STORAGE
125	MXG CONFERENCE
126	VEST.
127	CORR
128	QA FLIGHT GEAR LOCKERS
129	QA TRAINING
130	CHIEF INSPECTOR
131	QA CHIEF
132	QA OPEN OFFICE
133	PRINT / BREAK
134	MECH.
135	ELEC
136	AME STORAGE
137	TOOL ROOM
138	SITE LEAD
139	P&W

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

N
PLAN NORTH

N
TRUE NORTH

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SHEET NUMBER: FA101

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FACU SYSTEM OUTPUTS

FACU SYSTEM INPUTS

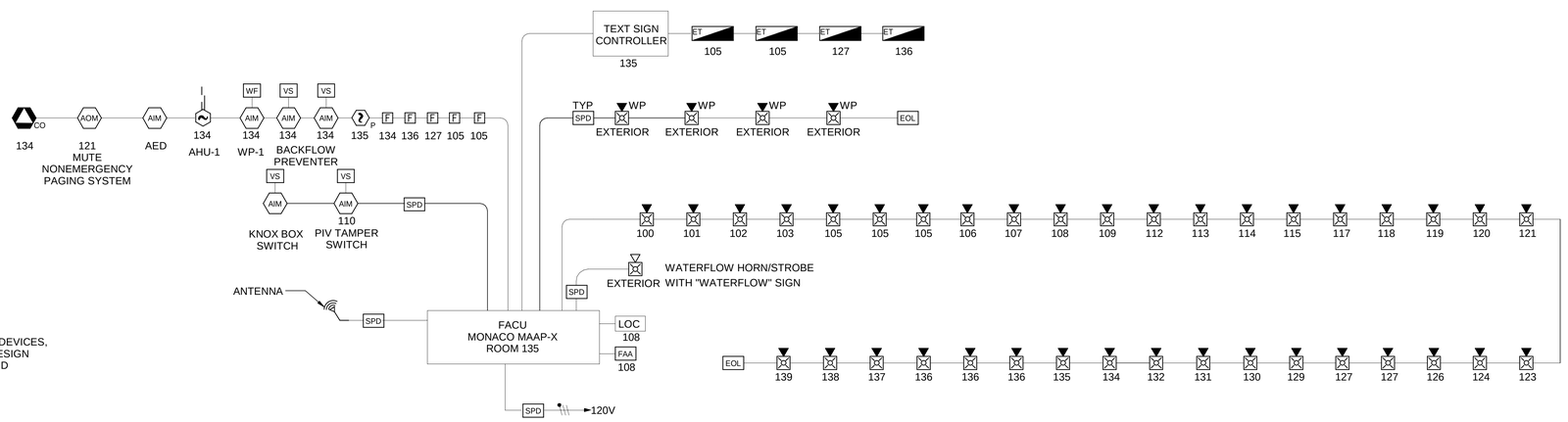
		CONTROL UNIT ANNUNCIATION								NOTIFICATION												AUXILIARY FUNCTIONS								MASS NOTIFICATION SYSTEM									
		ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL			ACTIVATE AUDIBLE NOTIFICATION APPLIANCES	ACTIVATE VISIBLE NOTIFICATION APPLIANCES	ACTIVATE EMERGENCY VISUAL TEXT SIGNS	DISPLAY / PRINT CHANGE OF STATUS	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION BY POINT AND LOCATION WITH ALARM ZONE DESIGNATION	TRANSMIT FIRE SUPERVISORY SIGNAL TO SUPERVISING STATION BY POINT AND LOCATION	TRANSMIT FIRE TROUBLE SIGNAL TO SUPERVISING STATION	TRANSMIT MNS SIGNAL TO SUPERVISING STATION	TRANSMIT WATERFLOW ALARM TO SUPERVISING STATION	ACTIVATE WATERFLOW SPEAKER/STROBE	TRANSMIT CO ALARM TO SUPERVISING STATION	SHUTDOWN ASSOCIATED AHU	MUTE PAGING SYSTEM								MNS MESSAGE - 1	MNS MESSAGE - 2	MNS MESSAGE - 3	MNS MESSAGE - 4	MNS MESSAGE - 5	MNS MESSAGE - 6	MNS MESSAGE - 7	MNS MESSAGE - 8	ACTIVATE CARBON MONOXIDE DETECTED	DE-ACTIVATE MNS MESSAGES AFTER 10 MINUTES	ACTIVATE EMERGENCY TEXT SIGNS				
	ALARM CONDITIONS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	II				
1	MANUAL FIRE ALARM PULL STATION	●	●							●	●	●	●	●								●													●				
2	SMOKE DETECTOR	●	●							●	●	●	●	●								●													●				
3	WATERFLOW SWITCH (SPRINKLER SYSTEM)	●	●							●	●	●	●	●				●	●			●													●				
4	CO DETECTOR	●	●							●	●	●	●							●		●												●	●	●				
	SUPERVISORY CONDITIONS																																							
5	VALVE TAMPER SWITCH, WATERFLOW COVER TAMPER			●	●								●		●																									
6	MASS NOTIFICATION SYSTEM ACTIVATED DURING FIRE EVENT			●	●								●		●																				●				
7	AED MONITOR			●	●								●		●																									
8	DUCT SMOKE DETECTOR			●	●								●		●							●																		
9	KNOX BOX SUPERVISION			●	●								●		●																									
	TROUBLE CONDITIONS																																							
10	FIRE ALARM CONTROL PANEL AC POWER FAILURE					●	●						●			●																								
11	FIRE ALARM CONTROL PANEL LOW BATTERY					●	●						●			●																								
12	OPEN CIRCUIT					●	●						●			●																								
13	GROUND FAULT					●	●						●			●																								
14	NOTIFICATION APPLIANCE CIRCUIT SHORTED					●	●						●			●																								
15	ALL OTHER TROUBLE CONDITIONS					●	●						●			●																								
16																																								
	MASS NOTIFICATION SYSTEM CONDITIONS																																							
17	ACU MICROPHONE KEYED-ALL CALL										●	●	●				●																				●				
18	LOC MICROPHONE KEYED-ALL CALL (MAIN ACU HAS PRIORITY)										●	●	●				●																				●				
19	MASS NOTIFICATION SYSTEM INPUT 1										●	●	●				●										●										●				
20	MASS NOTIFICATION SYSTEM INPUT 2										●	●	●				●											●									●				
21	MASS NOTIFICATION SYSTEM INPUT 3										●	●	●				●												●								●				
22	MASS NOTIFICATION SYSTEM INPUT 4										●	●	●				●													●							●				
23	MASS NOTIFICATION SYSTEM INPUT 5										●	●	●				●														●						●				
24	MASS NOTIFICATION SYSTEM INPUT 6										●	●	●				●															●					●				
25	MASS NOTIFICATION SYSTEM INPUT 7										●	●	●				●																●				●				
26	MASS NOTIFICATION SYSTEM INPUT 8										●	●	●				●																	●			●				
27																																								
28																																								
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH	II				

B1 FIRE ALARM & MASS NOTIFICATION SYSTEM INPUT/OUTPUT MATRIX

SCALE: NTS

NOTES:

1. PROVIDE SURGE SUPPRESSION ON ALL 120 V POWER SUPPLIES, ANTENNAS, AND CIRCUITS SERVING DEVICES EXTERIOR TO THE BUILDING, INCLUDING PIV SUPERVISION AND NOTIFICATION.
2. PROVIDE SMOKE DETECTION AND 120 V POWER FROM FA CIRCUIT FOR ALL POWER EXTENDER PANELS.
3. PROVIDE ADDITIONAL DEVICES AND APPLIANCES WHERE NECESSARY TO MEET THE REQUIREMENTS OF THE DESIGN CRITERIA.
4. PROVIDE REMOTE KEYED TEST SWITCH WITH LED INDICATORS MAX. 7' AFF AT EACH DUCT SMOKE DETECTOR.
5. RISER DIAGRAM IS DIAGRAMMATIC IN NATURE AND ALL CIRCUITS, DEVICES, APPLIANCES AND EQUIPMENT REQUIRED FOR THIS DELEGATED DESIGN ARE NOT SHOWN. PROVIDE ADDITIONAL DEVICES, APPLIANCES AND EQUIPMENT WHERE REQUIRED BY REFERENCED CRITERIA, FOR COMPLETE AND INTELLIGIBLE SYSTEM.



A1 FIRE ALARM / MNS RISER DIAGRAM

SCALE: NTS

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115TH FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: LFO
DRAWN BY: JTM
REVIEWED BY: LFO
PROJECT MANAGER: NWC

PROJECT NUMBER: 2021-613-00

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GENERAL NOTES

(APPLIES TO ALL SHEETS)

A. SLOPE SOIL AND WASTE PIPE 4" AND LARGER AT 1/8" PER FT. MINIMUM, SIZE LESS THAN 4" SLOPE 1/4" PER FT. MINIMUM, UNLESS NOTED OTHERWISE.
B. ALL PIPING SHALL BE COORDINATED WITH CIVIL UTILITY PIPING, FIRE PROTECTION, DUCTWORK, MECHANICAL PIPING, LIGHTING, STRUCTURAL AND ARCHITECTURAL SYSTEMS.
C. PIPE CLEANOUTS SHALL BE LINE SIZE (6" MAX.). LOCATE 100' APART MAXIMUM FOR SIZES UP THROUGH 6".
D. PLUMBING VENTS THROUGH ROOF (VTR) SHALL BE 3" MINIMUM. SMALLER VTR'S INDICATED SHALL INCREASE TO 3" PIPE, 12" BELOW ROOF. INSTALL VENT THRU ROOF (VTR) PENETRATIONS PER ARCH DETAILS.
E. ACCESS PANELS SHALL BE PROVIDED FOR ALL WATER HAMMER ARRESTORS LOCATED IN WALLS TO ACCESS EQUIPMENT. PANEL SHALL BE AS LARGE AS PRACTICAL FOR THE FUNCTION THEY ARE INTENDED.

SYMBOL	DESCRIPTION
——	DOMESTIC COLD WATER
——NPW——	NON-POTABLE WATER (MAKE-UP)
——	DOMESTIC HOT WATER
——	DOMESTIC HOT WATER RETURN
– – V – –	SOIL OR WASTE VENT
——SS——	SOIL OR WASTE - ABOVE FLOOR
– – SS – –	SOIL OR WASTE - BELOW FLOOR OR GRADE
——CA——	COMPRESSED AIR - ABOVE FLOOR
– – A – –	COMPRESSED AIR - BELOW FLOOR OR GRADE
——D——	DRAIN
——G——	NATURAL GAS, LOW PRESSURE (0.5 PSI)
——MG——	NATURAL GAS, MEDIUM PRESSURE (50 PSIG)
——FP——	FIRE PROTECTION MAIN
——CD——	CONDENSATE DRAIN
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	RISE OR DROP
	TEE DOWN
	TEE UP
	TOP CONNECTION
	BOTTOM CONNECTION
	SIDE CONNECTION
	BALL VALVE
	GATE VALVE OR ISOLATION VALVE
(GPM)	CIRCUIT BALANCING VALVE - SET FOR GPM SHOWN IN ().
	ANGLE VALVE
	CHECK VALVE (STRAIGHT)
	CHECK VALVE (SWING GATE)
	GLOBE VALVE
	PRESSURE REDUCING VALVE

SYMBOL	DESCRIPTION
	ASME RELIEF VALVE
	PRESSURE AND TEMPERATURE RELIEF
	REDUCER, ECCENTRIC
	REDUCER, CONCENTRIC
CO	CLEANOUT, FLOOR
CO	CLEANOUT, WALL
	WATER HAMMER ARRESTOR
	STRAINER, "Y" TYPE
	DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE
	REDUCED PRESSURE BACKFLOW PREVENTER W/STRAINER
HB	HOSE BIBB
WH	WALL HYDRANT
	PIPE ANCHOR
	PIPE SLEEVE THRU WALL, FOOTING ETC
	FLOW IN DIRECTION OF ARROW
	PIPE SLOPE IN DIRECTION OF ARROW
T1	THERMOMETER
TW	THERMOMETER WELL
PI C	PRESSURE GAUGE WITH GAUGE COCK (C=COMPOUND GAUGE)
	LUBRICATED PLUG VALVE
	UNION
	BLIND FLANGE
	CAP
	COMPRESSED AIR RELIEF VALVE
	RELIEF VALVE
	PIPE ROUTED TO FLOOR DRAIN
	LAVATORY
	WATER CLOSET
	URINAL
	SERVICE SINK/BASIN
	SINK
	SHOWER HEAD
	DRINKING FOUNTAIN
	FLOOR DRAIN
A	COMPRESSED AIR OUTLET STATION

TEXT SYMBOLS

∠ ..... ANGLE
° ..... DEGREE
Ø ..... DIAMETER
ϕ ..... PHASE
Ø ..... ROUND
% ..... PERCENT

ABV*	ABOVE
AFF	ABOVE FINISHED FLOOR
AGA	AMERICAN GAS ASSOCIATION
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT,ARCHITECTURAL
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
B/B	BACK TO BACK
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
BTUH	BTU/HOUR
CA*	COMPRESSED AIR
CAP	CAPACITY
CBV*	CIRCUIT BALANCING VALVE
CFH*	CUBIC FEET PER HOUR
CI	CAST IRON
CL	CENTER LINE
CLG	CEILING
CO	CLEAN OUT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CONN	CONNECT
CONT	CONTINUE, CONTINUOUS
CORD	COORDINATE
CORR	CORRIDOR
CP*	CHROME PLATED
CTR	CENTER
CW	COLD WATER
D	DRAIN
DEG	DEGREE
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGRAM, DIAGRAMMATIC
DN	DOWN
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWV	DRAIN, WASTE, VENT
E	EAST
EA	EACH
EL	ELEVATION
ELEC	ELECTRIC
ELL*	ELBOW
EMER	EMERGENCY
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EST	ESTIMATE
ETC	ET CETERA (AND SO FORTH)
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXT	EXTERIOR
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FF*	FINISHED FLOOR
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FH	FIRE HYDRANT
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FM	FACTORY MUTUAL
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT, FEET
FTG	FOOTING
FURN	FURNISHED

FV	FLUSH VALVE
FIG	FIGURE
FIXT	FIXTURE
G	NATURAL GAS
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPH	GALLON PER HOUR
GPM	GALLON PER MINUTE
HB	HOSE BIBB
HORIZ	HORIZONTAL
HOSP	HOSPITAL
HP	HORSEPOWER
HR*	HOUR
HSKPG	HOUSEKEEPING
HT	HEIGHT
HW	HOT WATER
HWR	HOT WATER RETURN
HYD	HYDRAULIC
HYD	HYDRANT
Hz	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN WC	INCHES WATER COLUMN
IN*	INCHES
INFO	INFORMATION
INSUL	INSULATION
INV EL	INVERT ELEVATION
IPC*	INTERNATIONAL PLUMBING CODE
IPS	IRON PIPE SIZE
ISO	ISOMETRIC
JAN CLO	JANITOR'S CLOSET
K	THOUSAND
KW	KILOWATT
KWH	KILOWATT HOUR
L	LITER
LAV	LAVATORY
LBS	POUNDS
LF	LINEAR FEET (FOOT)
LKR	LOCKER
MA*	MEDICAL AIR
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MFG	MANUFACTURING
MFR	MANUFACTURER
MG*	MEDIUM PRESSURE NATURAL GAS
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MODIFY
MTD	MOUNTED
MULT	MULTIPLE
N	NORTH
NA	NOT APPLICABLE
NC*	NORMALLY CLOSED
NCS*	NATIONAL CAD STANDARDS
NEG	NEGATIVE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NPW	NONPOTABLE WATER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPT	OPTIONAL

OPP	OPPOSITE
ORIG	ORIGINAL
OUT	OUTLET
OZ	OUNCE
PCT	PERCENT
PH	PHASE
PKG	PACKAGE
PLBG	PLUMBING
PPM	PARTS PER MILLION
PRELIM	PRELIMINARY
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQ. IN. ABSOLUTE
PSIG	POUNDS PER SQ. IN. GAGE
PVC	POLYVINYL CHLORIDE
PWR	POWER
QA	QUALITY ASSURANCE
QTY	QUANTITY
RD	ROOF DRAIN
REF	REFERENCE
REQD	REQUIRED
REV	REVISE, REVISION
RFI	REQUEST FOR INFORMATION
RFP	REQUEST FOR PROPOSAL
RM	ROOM
RPBP*	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RPS	REVOLUTIONS PER SECOND
S	SOUTH
s*	SECOND
SCHED	SCHEDULE
SCHEM	SCHEMATIC
SECT	SECTION
SF	SQUARE FEET (FOOT)
SPEC	SPECIFICATION
SQ	SQUARE
STOR	STORAGE
STRUCT	STRUCTURAL
SYS	SYSTEM
T&P	TEMPERATURE AND PRESSURE
TECH	TECHNICAL
TEMP	TEMPERATURE
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
THRU	THROUGH
TSTAT	THERMOSTAT
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V*	VOLT
VOL	VOLUME
VTR	VENT THRU ROOF
W	WATT
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSE
WC	WATER COLUMN
WG	WATER GAGE
WH	WATER HYDRANT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
WT	WEIGHT
XFMR	TRANSFORMER
YH	YARD HYDRANT
YR	YEAR

NOTES:
1. NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED ON THIS PROJECT.
2. ABBREVIATIONS WITH * ARE NOT INCLUDED IN THE CURRENT NATIONAL CAD STANDARDS.

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10/14/22

115TH FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: WBB
DRAWN BY: WBB
REVIEWED BY: APC
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: LEGEND & ABBREVIATIONS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: P-001

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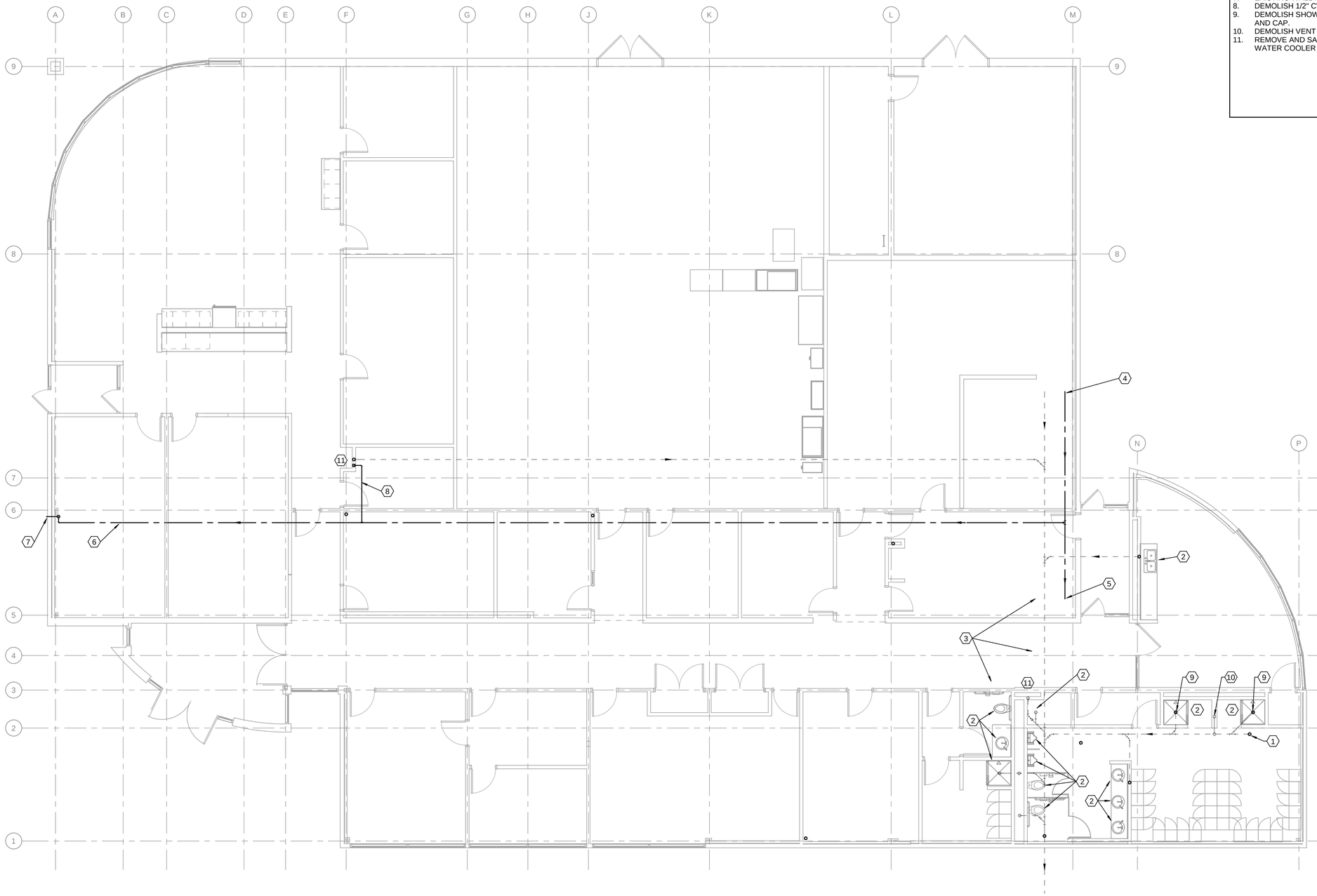

GENERAL NOTES

A. REFER TO SHEET FOR P-001 FOR GENREAL NOTES THAT APPLY TO THIS SHEET.

SHEET KEYNOTES

1. DEMOLISH PIPING AT EXISTING FLOOR CLEANOUT.
2. DEMOLISH EXISTING PLUMBING FIXTURE. DEMOLISH EXISTING VENT PIPING SERVING FIXTURE.
3. DEMOLISH ALL VENT PIPING SERVING FIXTURES THIS AREA BACK TO THE EXISTING VENT THRU ROOF. EXISTING VENT THRU ROOF TO REMAIN.
4. EXISTING 2" CW FROM MECHANICAL ROOM TO REMAIN.
5. DEMOLISH ALL EXISTING CW BEYOND THIS POINT.
6. EXISTING 3/4" CW TO REMAIN.
7. EXISTING WALL HYDRANT TO REMAIN.
8. DEMOLISH 1/2" CW SERVING WATER COOLER.
9. DEMOLISH SHOWER DRAIN TO BELOW FLOOR AND CAP.
10. DEMOLISH VENT PIPING.
11. REMOVE AND SALVAGE EXISTING ELECTRIC WATER COOLER TO RETURN TO OWNER.

A1 DEMOLITION PLAN
SCALE: 3/16" = 1'-0"

PLAN NORTH

TRUE NORTH

0 4' 8' 12'
3/16" = 1'-0"

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Air National Guard
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Madison, Wisconsin

REVISION HISTORY:

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PROJECT MANAGER: NWC
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ISSUE DATE: OCTOBER 14, 2022
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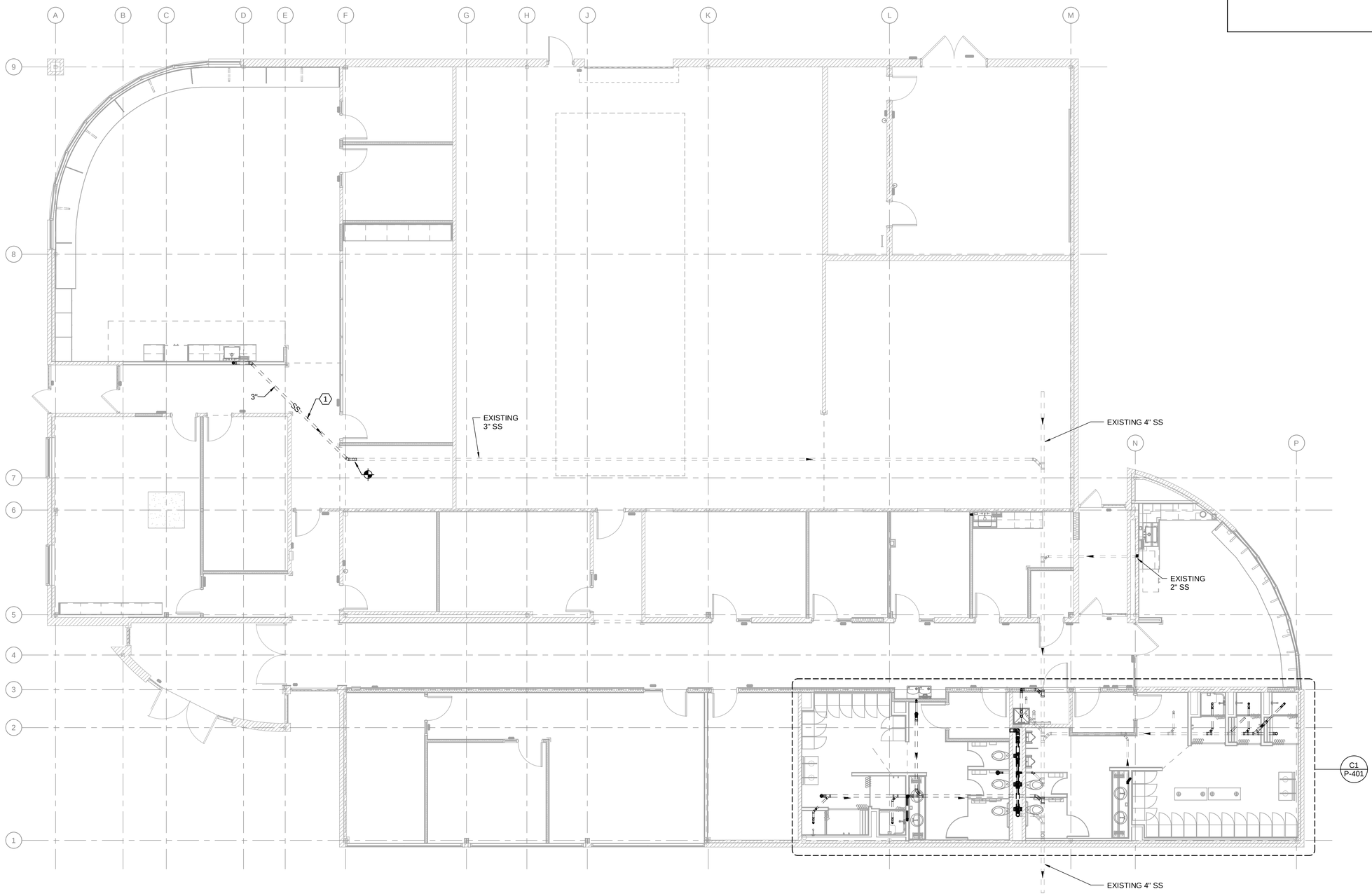
GENERAL NOTES

A. REFER TO SHEET FOR P-001 FOR GENREAL NOTES THAT APPLY TO THIS SHEET.

SHEET KEYNOTES

1. WHERE NEW WASTE PIPE IS SHOWN BELOW FLOOR, SAWCUT FLOOR AS REQUIRED TO INSTALL NEW. REPAIR FLOOR TO MATCH EXISTING. TYPICAL



A1 UNDERFLOOR PLAN
SCALE: 3/16" = 1'-0"

N
PLAN NORTH

TRUE NORTH

0 4' 8' 12'
3/16" = 1'-0"

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Air National Guard
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Madison, Wisconsin

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SHEET NUMBER: P-101

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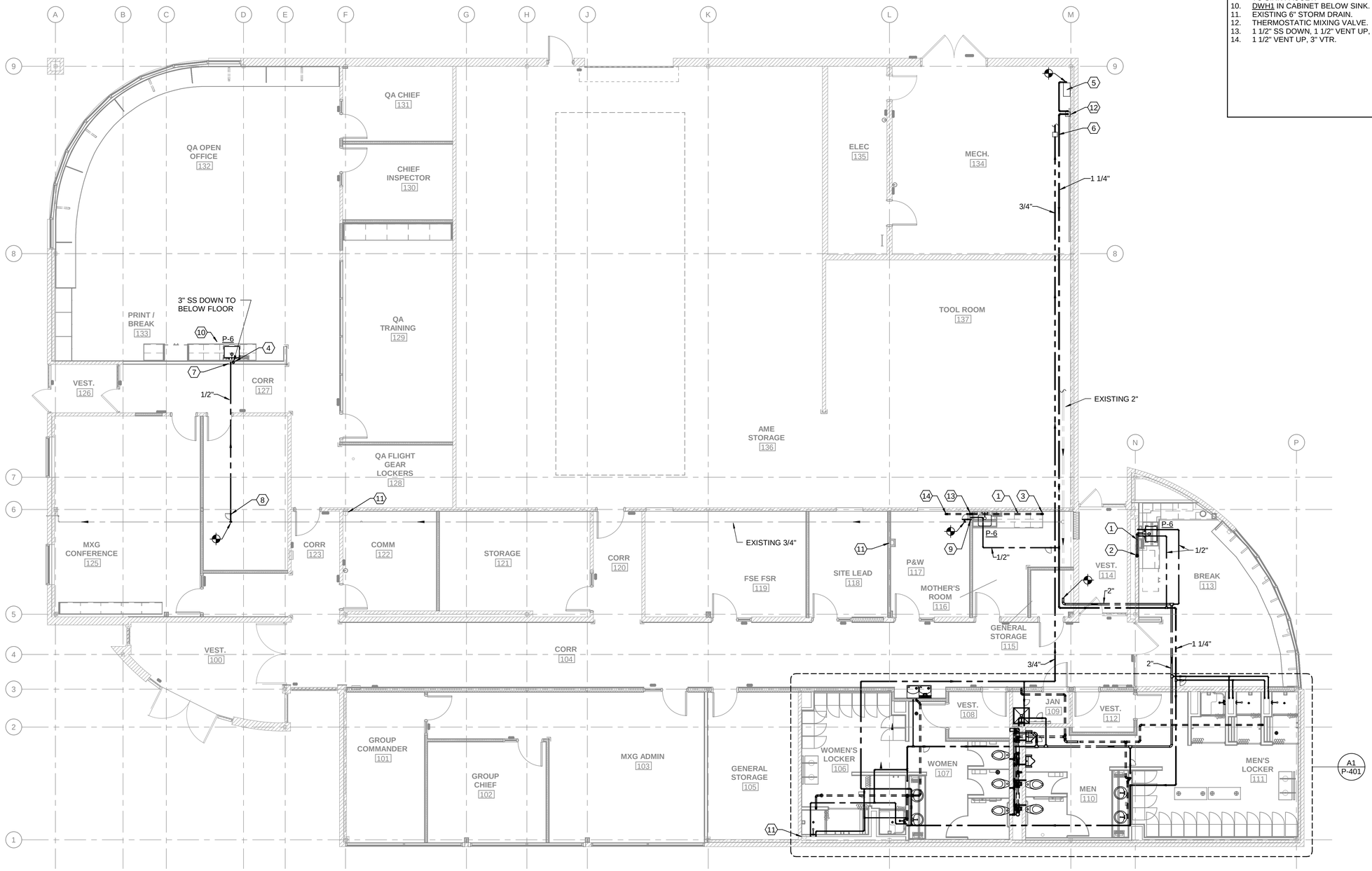
GENERAL NOTES

A. REFER TO SHEET FOR P-001 FOR GENREAL NOTES THAT APPLY TO THIS SHEET.

SHEET KEYNOTES

1. 1 1/2" SS FROM SINK, ROUTE ABOVE FLOOR.
2. CONNECT NEW SINK DRAIN TO EXISTING 2" SS, 1 1/2" VENT UP, 3" VTR.
3. 1 1/2" SS DOWN, CONNECT TO EXISTING 4" SS BELOW FLOOR.
4. 2" VENT UP TO NEW 3" VTR.
5. EXISTING GAS-FIRED INSTANTANOUS WATER HEATER TO REMAIN. REF C1/P-501.
6. CIRCULATING PUMP.
7. 1/2" CW DOWN TO INSTANTANEOUS WATER HEATER. REF B1/P-501.
8. ISOLATION VALVE, TYP.
9. 1/2" CW & 1/2" HW DOWN IN NEW WALL, ROUTE TO SINK FAUCET.
10. DWH1 IN CABINET BELOW SINK.
11. EXISTING 6" STORM DRAIN.
12. THERMOSTATIC MIXING VALVE.
13. 1 1/2" SS DOWN, 1 1/2" VENT UP, IN NEW WALL.
14. 1 1/2" VENT UP, 3" VTR.



A1 GROUND FLOOR PLAN

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

N PLAN NORTH

TRUE NORTH

0 4' 8' 12'

3/16" = 1'-0"

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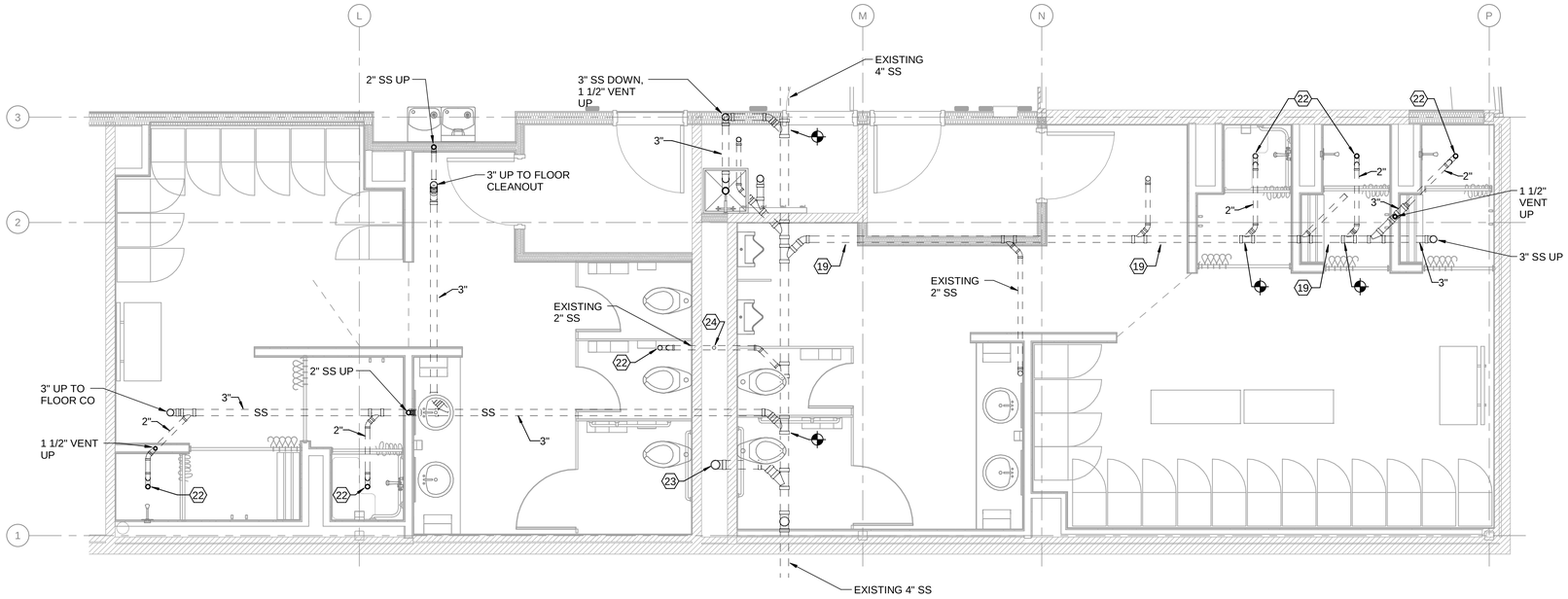
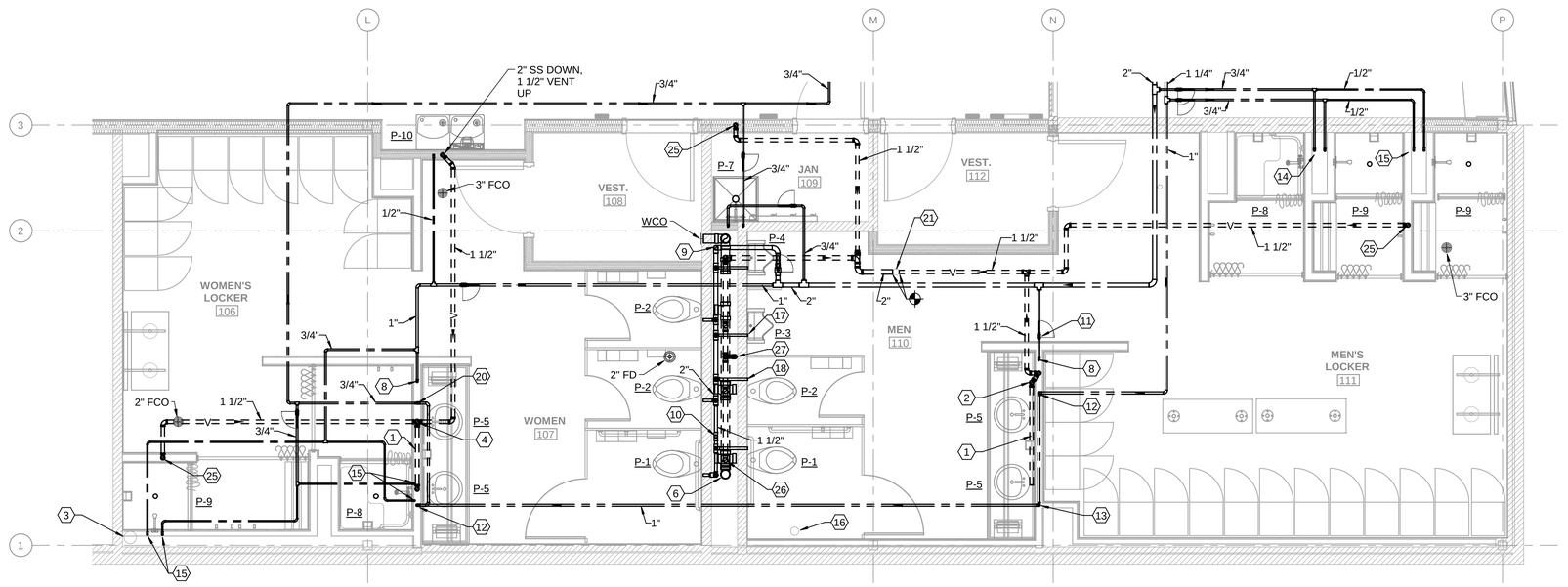


C1 ENLARGED UNDERFLOOR PLAN
SCALE: 3/8" = 1'-0"



A1 ENLARGED PLUMBING PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET FOR P-001 FOR GENREAL NOTES THAT APPLY TO THIS SHEET.

SHEET KEYNOTES

1. ROUTE 1 1/2" SS AND 1 1/2" VENT SERVING LAV ABOVE FLOOR.
2. CONNECT TO EXISTING 2" SS.
3. EXISTING 6" STORM DRAIN TO REMAIN.
4. 2" SS DOWN TO BELOW FLOOR, 1 1/2" VENT UP, 3" VTR.
5. PROVIDE NEW CARRIERS AT TOILETS AND URINALS.
6. ROUTE NEW ABOVE FLOOR SS FROM TOILETS AND URINALS AND CONNECT TO EXISTING 4" SS HERE.
7. APPROXIMATE LOCATION OF EXISTING 3" VENT THRU ROOF. ROUTE NEW VENT PIPING SERVING NEW FIXTURES IN THIS AREA TO THIS POINT AND CONNECT TO EXISTING VTR.
8. 3/4" CW DOWN, 1/2" CW TO EACH LAV.
9. 2" CW DOWN TO SERVE WATER CLOSETS AND URINALS.
10. PDI C WATER HAMMER ARRESTOR.
11. ISOLATION VALVE (BALL) TYP.
12. 1" HW DOWN IN WALL TO BELOW LAVS.
13. 1" HW UP TO ABOVE CEILING.
14. 3/4" CW AND 3/4" HW DOWN, 1/2" CW AND 1/2" HW TO EACH SHOWER.
15. 1/2" CW AND 1/2" HW TO SHOWER.
16. EXISTING FLOOR CLEANOUT TO REMAIN.
17. 1" TO URINAL, TYP.
18. 1 1/4" TO WATER CLOSET, TYP.
19. EXISTING 3" SS.
20. 3/4" HW UP TO ABOVE CEILING.
21. EXISTING 3" VTR.
22. 2" SS UP FROM 2" TRAP.
23. EXISTING 4" SS FROM BELOW.
24. EXISTING 1 1/2" VENT FROM BELOW.
25. 1 1/2" VENT FROM BELOW.
26. ALL VENT PIPING AT WATER CLOSETS AND URINALS IS 2".
27. CONNECT NEW 1 1/2" VENT TO EXISTING AT FLOOR.

PLAN NORTH

TRUE NORTH

0 2' 4' 6'
3/8" = 1'-0"

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Air National Guard
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Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

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ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	P-401

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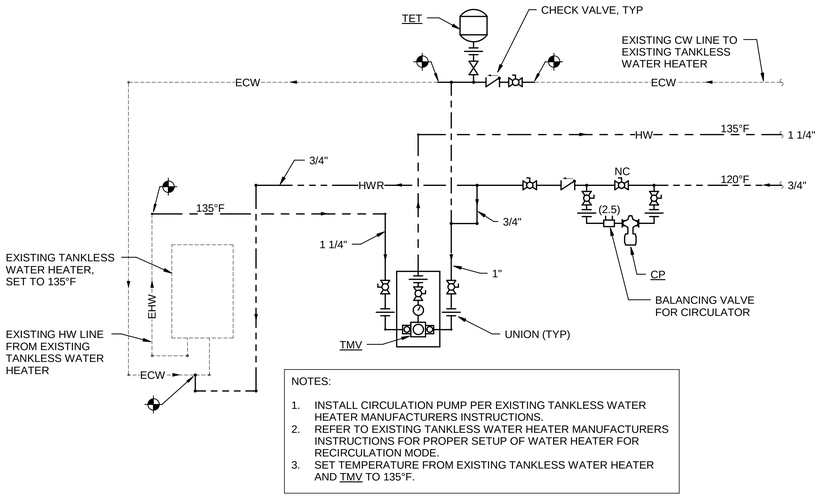
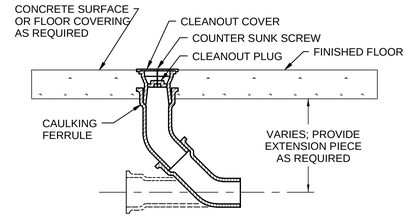


NOTES:

1. INSTALL CIRCULATION PUMP PER EXISTING TANKLESS WATER HEATER MANUFACTURERS INSTRUCTIONS.
2. REFER TO EXISTING TANKLESS WATER HEATER MANUFACTURERS INSTRUCTIONS FOR PROPER SETUP OF WATER HEATER FOR RECIRCULATION MODE.
3. SET TEMPERATURE FROM EXISTING TANKLESS WATER HEATER AND TMV TO 135°F.

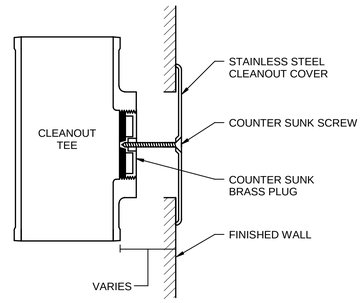
C1 EXISTING WATER HEATER PIPING SCHEMATIC

SCALE: NTS



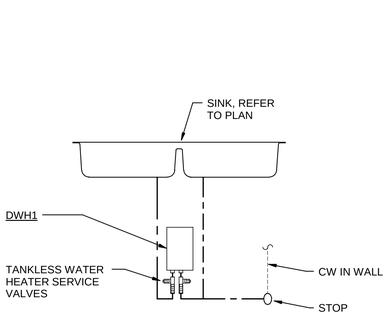
D3 FLOOR CLEANOUT DETAIL

SCALE: NTS



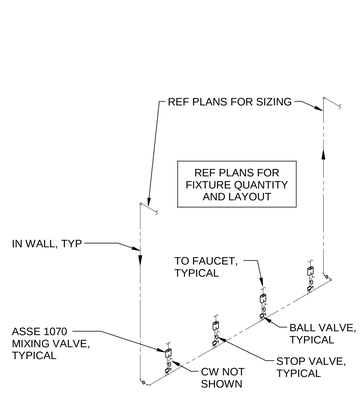
D5 WALL CLEANOUT DETAIL

SCALE: NTS



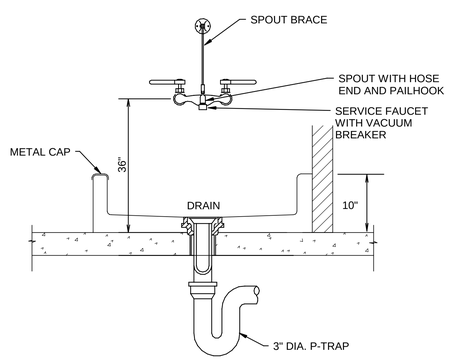
B1 WATER PIPING AT SINK

SCALE: NTS



B2 HW PIPING @ RESTROOM LAVS

SCALE: NTS



B3 MOP SINK DETAIL

SCALE: NTS

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

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PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	PIPING ROUGH-IN (IN)				DESCRIPTION
		WASTE	VENT	CW	HW	
P-1	WATER CLOSET (ABA)	4	2	1-1/4	- - -	WHITE VITREOUS CHINA WALL-HUNG TOILET. PROVIDE CHROME HARDWIRED SENSOR OPERATED 1.28 GPF FLUSH VALVE. PROVIDE CARRIER. MOUNT AT ABA HEIGHT. SEE NOTE 1
P-2	WATER CLOSET	4	2	1-1/4	- - -	WHITE VITREOUS CHINA WALL-HUNG TOILET. PROVIDE CHROME HARDWIRED SENSOR OPERATED 1.28 GPF FLUSH VALVE. PROVIDE CARRIER. MOUNT AT STANDARD HEIGHT. SEE NOTE 1
P-3	URINAL (ABA)	2	1-1/2	1	- - -	WHITE VITREOUS CHINA WALL-HUNG URINAL. PROVIDE HARDWIRED SENSOR OPERATED 0.125 GPF FLUSH VALVE. MOUNT AT ABA HEIGHT. SEE NOTE 1.
P-4	URINAL	2	1-1/2	1	- - -	WHITE VITREOUS CHINA WALL-HUNG URINAL. PROVIDE HARDWIRED SENSOR OPERATED 0.125 GPF FLUSH VALVE. MOUNT AT STANDARD HEIGHT. SEE NOTE 1.
P-5	LAVATORY (ABA)	1-1/4	1-1/4	1/2	1/2	OVAL 13 X 18 20 GAUGE STAINLESS STEEL UNDERMOUNT LAV. PROVIDE GRID DRAIN AND POLISHED CHROME, HARDWIRED SENSOR OPERATED FAUCET WITH 0.35 GPM FLOW RATE, ABOVE DECK MIXING AND INTEGRAL ASSE 1070 THERMOSTATIC MIXING VALVE. SEE NOTE 2 & 3.
P-6	SINK (ABA)	2	1-1/2	1/2	1/2	SINGLE BOWL, 21" X 16" X 5" DEEP, 18 GAUGE STAINLESS STEEL UNDERMOUNT SINK WITH STRAINER, AND REAR CENTER DRAIN. PROVIDE 1.5 GPM FAUCET WITH 8" GOOSENECK AND SPRAY. SEE NOTE 3.
P-7	MOP SERVICE BASIN	3	2	3/4	3/4	24" X 24" TERRAZZO MOP BASIN WITH 6" DROP FRONT, STAINLESS STEEL CAPS ON ALL CURBS. PROVIDE HOSE & HOSE BRACKET, WALL GUARD AND FAUCET .
P-8	SHOWER TRIM (ABA)	2	1-1/2	1/2	1/2	PROVIDE SHOWER/HAND SHOWER SYSTEM COMPLETE WITH PRESSURE BALANCING VALVE, METAL LEVER HANDLES AND SCREWDRIVER STOPS, DUAL OUTLET DIVERTER VALVE, HAND SHOWER WITH NON-POSITIVE SHUTOFF, 36" GRAB BAR, 1.5 GPM FLOW RESTRICTORS, 60" FLEXIBLE METAL HOSE AND INTEGRAL SERVICE STOPS. PROVIDE IN-LINE ASSE 1014 VACUUM BREAKER.
P-9	SHOWER TRIM	2	1-1/2	1/2	1/2	PROVIDE SHOWER SYSTEM COMPLETE WITH PRESSURE BALANCING VALVE, METAL LEVER HANDLE AND SCREWDRIVER STOPS, AND 1.5 GPM FLOW RESTRICTOR. PROVIDE IN-LINE ASSE 1014 VACUUM BREAKER.
P-10	HI-LO EWC (ABA)	1-1/4	1-1/4	1/2	- - -	BOTTLE FILLING STATION, & VERSATILE BI-LEVEL ADA COOLER, FILTERED, 8 GPH, LIGHT GRAY , 115 VOLT, 5.0 FLA. SEE NOTE 3.

NOTES:
1. PROVIDE ALL MFANUFACTURER'S EQUIPMENT/TRANSFORMER(S) ETC. AS REQUIRED TO POWER ALL TOILET AND URINAL FLUSHOMETERS.
2. PROVIDE ALL MFANUFACTURER'S EQUIPMENT/TRANSFORMER(S) ETC. AS REQUIRED TO POWER ALL FAUCETS.
3. CONTRACTOR SHALL PROVIDE C.P. SUPPLIES W/LOOSE-KEY STOPS, C.P. 'P' TRAP W/CLEANOUT, AND WALL ESCUTCHEONS AS REQUIRED

PLUMBING EQUIPMENT SCHEDULE

MARK	EQUIPMENT	SIZE	DESCRIPTION
CP	CIRCULATING PUMP	3/4"	PUMP SHALL BE CAPABLE OF 3 GPM AT 30 FT HEAD. AUTOMATIC OVERLOAD PROTECTION, LEAD FREE BRONZE CONSTRUCTION FOR POTABLE WATER. VOLTAGE: 120V, 60 HZ. AMPERAGE: < 2 AMPS. IN-RUSH CURRENT: < 2.5 AMPS.
TET	THERMAL EXPANSION TANK	3/4"	ANSI/NSF 61 CERTIFIED EXPANSION TANK, STEEL CONSTRUCTION, BUTYL DIAPHRAGM, 6.4 GALLON TANK VOLUME, 3.2 GALLON TANK ACCEPTANCE, 250 PSIG MAXIMUM WORKING PRESSURE.
TMV	THERMOSTATIC MIXING VALVE	1", 1 1/4"	ASSE 1017 THERMOSTATIC MIXING VALVE WITH SURFACE MOUNTED CABINET, 38 GPM @ 10 PSI DROP.

FLOOR DRAIN / SHOWER DRAIN / ROOF DRAIN / CLEANOUT SCHEDULE

MARK	FIXTURE	LOCATION	SIZE	DESCRIPTION
FCO	FLOOR CLEANOUT	SEE PLANS	SEE PLANS	CAST IRON WITH ADJUSTABLE HOUSING, FLANGED FERRULE AND SQUARE SATIN FINISH NICKEL BRONZE TOP.
FD	FLOOR DRAIN	SEE PLANS	SEE PLANS	CAST IRON BODY WITH FLANGE, INTEGRAL CLAMPING COLLAR, 1/2" PRIMER TAP WITH PLUG AND 6" X 6" SQUARE THREADED ADJUSTABLE SATIN FINISH NICKEL BRONZE TOP.
SD	SHOWER DRAIN	SEE PLANS	SEE PLANS	CAST IRON BODY WITH FLANGE, INTEGRAL CLAMPING COLLAR, 1/2" PRIMER TAP WITH PLUG AND 6" X 6" SQUARE THREADED ADJUSTABLE SATIN FINISH NICKEL BRONZE TOP.
WCO	WALL CLEANOUT	SEE PLANS	PIPE SIZE	CLEANOUT TEE AND PLUG WITH 6" DIAMETER STAINLESS STEEL CLEANOUT COVER.

NOTES:
1. ALL 'P' TRAPS (DEEP SEAL TYPE), MOUNTING HARDWARE, ETC. CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.

WATER HEATER SCHEDULE (TANKLESS)

MARK	FIXTURE	CAPACITY (HEATING)	ELECTRICAL	DESCRIPTION
DWH1	ELECTRIC WATER HEATER	55 DEG RISE @ 1 GPM	208V / 1P / 60H, 8 KW 29 A	ADJUSTABLE TEMPERATURE RANGE OF 70° F-140° F. MAX OPERATING PRESSURE OF 150 PSI. REPLACEABLE CARTRIDGE INSERT ELEMENT. REPLACEABLE FILTER IN THE INLET CONNECTOR.

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

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SYMBOL	DESCRIPTION
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CD	CONDENSATE DRAIN
SA	SUPPLY AIR DUCT
RA	RETURN AIR DUCT
EA	EXHAUST AIR DUCT
MA	MAKE-UP AIR DUCT
CA	COMPRESSED AIR
CF	CHEMICAL FEED
	RISER DOWN (ELBOW)
	45° DOWN (ELBOW)
	RISER UP (ELBOW)
	RISE OR DROP
	TEE DOWN
	TEE UP
	TOP CONNECTION
	BOTTOM CONNECTION
	SIDE CONNECTION
	DIRECTION OF FLOW
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	FLEXIBLE CONNECTOR
	EXPANSION JOINT
	PIPE ANCHOR
	PIPE SLEEVE THRU WALL
	PIPE GUIDE
AS	AIR SEPARATOR (AS)
	BLIND FLANGE
	PIPE CAP
	STRAINER
	BLOWDOWN STRAINER
	CALIBRATED MANUAL BALANCING VALVE
A	AUTOMATIC BALANCING VALVE
AV	AUTOMATIC AIR VENT
	STEAM TRAP
	ORIFICE PLATE
MAV	MANUAL AIR VENT
	TEST PLUG
P1	PRESSURE GAUGE
T1	TEMPERATURE GAUGE
	GAUGE AND COCK
TW	THERMOMETER WELL
	THERMOMETER
	PRESSURE REDUCING VALVE (PRV)
	LOCK SHIELD VALVE
	CHECK VALVE

SYMBOL	DESCRIPTION
	BACK FLOW PREVENTION DEVICE (BFP)
	PLUG VALVE
	RELIEF OR SAFETY VALVE
	TEMPERATURE / PRESSURE RELIEF VALVE
	OPEN FUNNEL DRAIN
	BALL VALVE
	GATE VALVE
	BUTTERFLY VALVE
	GLOBE VALVE
	THREE-WAY VALVE
	ANGLE VALVE
	ELECTRIC VALVE OPERATOR
	PNEUMATIC VALVE OPERATOR
	PUMP SUCTION DIFFUSER W/ INTEGRAL STRAINER
	TRIPLE DUTY VALVE
	PUMP (P)
A	AUDIBLE ALARM HORN
	COMBINATION VALVE INCLUDING ISOLATION VALVE, STRAINER, DIELECTRIC UNION, P/T PORTS AND DRAIN VALVE
	COMBINATION VALVE INCLUDING DIELECTRIC UNION, AIR VENT AND P/T PORT
FCV	COMBINATION VALVE INCLUDING ISOLATION VALVE, UNION P/T PORT, AND AUTOMATIC FLOW CONTROL VALVE
FCV	AUTOMATIC FLOW CONTROL VALVE (FCV)
	CONNECT TO EXISTING
	REMOVE BEYOND / BETWEEN POINT(S)
	FLEXIBLE DUCT
	DUCT SECTION, SUPPLY
	DUCT SECTION, RETURN
	DUCT SECTION, EXHAUST
	DUCT SECTION, FLAT OVAL
	DUCT SECTION, ROUND

?	C	CONTROLLER
	D	DAMPER MOTOR
	DM	ELECTRICAL DEMAND METER
	DPS	DIFFERENTIAL PRESSURE SWITCH
	DPT	DIFFERENTIAL PRESSURE TRANSMITTER
	FS	FLOW SENSING SWITCH (or FSS)
	H	DUCT HUMIDITY SENSOR
	M	ELECTRIC MOTOR
	MS	MOTOR STARTER
	PT	PRESSURE TRANSMITTER
	S	SWITCH
	SD	SMOKE DETECTOR
	T	DUCT TEMPERATURE SENSOR
	TT	TEMPERATURE TRANSMITTER
	V	VIBRATION SWITCH
	VFD	VARIABLE FREQUENCY DRIVE
	W	WATT TRANSDUCER
	WB	DEW POINT (WET BULB)

EXISTING TO REMAIN

DEMOLISHED IN CURRENT PHASE

NEW CONSTRUCTION IN CURRENT PHASE

? A		COMPRESSED AIR OUTLET
	CO2	CARBON DIOXIDE SENSOR
	CS	CURRENT SENSING RELAY
	HS	SPACE HUMIDITY SENSOR
	LV	LOUVER
	PS	PRESSURE SWITCH
	PT	PRESSURE SENSOR / TRANSMITTER
	RTC	REMOTE TEMPERATURE CONTROLLER
	T	SPACE TEMPERATURE SENSOR

SYMBOL	DESCRIPTION
	SIDE WALL SUPPLY GRILLE OR REGISTER, REVERSE ARROW INDICATES EXHAUST OR RETURN
	CEILING DIFFUSER SQUARE PATTERN. NO ARROWS INDICATE 4-WAY AIR PATTERN
	CEILING DIFFUSER ROUND PATTERN. NO ARROWS INDICATE 4-WAY AIR PATTERN
	LINEAR DIFFUSER. NO ARROWS INDICATE 2-WAY AIR PATTERN
	90° RECTANGULAR ELBOW UP WITH TURNING VANES
	90° ROUND ELBOW UP
	90° RECTANGULAR ELBOW DOWN WITH TURNING VANES
	90° ROUND ELBOW DOWN
	90° RECTANGULAR ELBOW HORIZ. WITH TURNING VANES
	90° ROUND ELBOW, HORIZONTAL
	45° RECTANGULAR BEND
	45° RECTANGULAR BEND, 1-1/2 RADIUS
	45° ROUND BEND, 1-1/2 RADIUS
3" MIN.	RECTANGULAR TEE, DIVERGING, MAIN AND TAP (45° ENTRY) TYPICAL FOR ALL SUPPLY RECTANGULAR TAPS
	ROUND LOW-LOSS TEE
	ROUND PRESSURE TAP
VD VD	STRAIGHT SIDED BRANCH SPLIT. TRANSITION TO FULL SIZE BEFORE ELBOW. * WITH TURNING VANES
VD VD	BRANCH OR WYE SPLIT. TRANSITION TO FULL SIZE BEFORE ELBOW.* WITH TURNING VANES
VD VD	WYE SPLIT. TRANSITION TO FULL SIZE BEFORE ELBOW. * WITH TURNING VANES
VD VD VD	THREE WAY SPLIT. TRANSITION TO FULL SIZE BEFORE ELBOW.* WITH TURNING VANES
	DUCT PRESSURE CLASSIFICATION
	RECTANGULAR & ROUND END CAPS

* LOCATE OPPOSED BLADE MANUALLY OPERATED BALANCING DAMPER 3X DUCT DEPTHS DOWNSTREAM FROM ELBOW

MECHANICAL CALLOUTS:

DIFFUSERS, REGISTERS, AND GRILLES:

A-1 / 888 — DEVICE TYPE, REFER TO SCHEDULE FOR FACE AND INLET/OUTLET SIZE; DEVICE AIRFLOW (CFM)

RECTANGULAR DUCT:

12x12 — DIMENSIONS (IN x IN)

ROUND DUCT or PIPE:

12 ø — SIZE (IN)

DAMPER:		
?	BDD	BACK DRAFT DAMPER
	FD	FIRE DAMPER
	FSD	FIRE AND SMOKE DAMPER
	OA	OUTSIDE AIR DAMPER
	RA	RETURN AIR DAMPER
	SD	SMOKE DAMPER
ACCESS DOOR	VD	MANUAL VOLUME DAMPER
	NO LABEL	MANUAL VOLUME DAMPER

NOTE: ALL OTHER DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE.

ABBREVIATIONS

A*	AIR
ABV*	ABOVE
AC	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFMD	AIR FLOW MONITORING DEVICE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AME	ANNULAR METERING ELEMENT
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APD	AIR PRESSURE DROP
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECT, ARCHITECTURAL
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
ASI	ARCHITECT'S SUPPLEMENTAL INSTRUCTION
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT/FP	ANTI TERRORISM / FORCE PROTECTION
ATT	ATTENUATOR
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
BAL	BALANCE
BD*	BOILER BLOWDOWN
BDD	BACKDRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BFW	BOILER FEEDWATER
BFWP	BOILER FEEDWATER PUMP
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLR	BOILER
BLW*	BELOW
BOT	BOTTOM
BP*	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT / HOUR
BYP	BYPASS
C	CELSIUS
CAB	CABINET
CAP	CAPACITY
CC*	COOLING COIL
CD*	CONDENSATE DRAIN
CERT	CERTIFY
CFM	CUBIC FEET PER MINUTE
CHEM	CHEMICAL
CHL	CHILLER
CL	CENTER LINE
CLASS	CLASSIFICATION
CLG	CEILING
cm	CENTIMETER
cm/s	CENTIMETER PER SECOND
CNDS	CONDENSATE
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
COMP	COMPRESSOR
CONC	CONCRETE
CONN	CONNECT
CONT	CONTINUE / CONTINUOUS
COORD	COORDINATE
CORR	CORRIDOR
CRAC*	COMPUTER ROOM AIR CONDITIONER
CTR	CENTER
CTRL	CONTROL
CU	CUBIC
CW	COLD WATER PIPING
CWP	CHILLED WATER PUMP
D*	DRAIN
dB	DECIBEL
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEG (°)	DEGREE
DEMO	DEMOLITION / DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DIA (Ø)	DIAMETER
DIAG	DIAGRAM / DIAGRAMMATIC
DIM	DIMENSION
DIV	DIVISION
DN*	DOWN
DP	DEW POINT
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWV	DRAIN, WASTE, AND VENT
E	EAST
EA	EXHAUST AIR
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	EVAPORATIVE COOLER
ECON	ECONOMIZER
EER	ENERGY EFFICIENCY RATIO
EF*	EXHAUST FAN
EFF	EFFICIENCY
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
ELL	ELBOW
EMER	EMERGENCY
ESP	EXTERNAL STATIC PRESSURE
EST	ESTIMATE
ET*	EXPANSION TANK
ETC	ET CETERA (AND SO FORTH)
EVAP	EVAPORATE / EVAPORATIVE
EWT	ENTERING WATER TEMP.
EX	EXAMPLE
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERIOR / EXTERNAL
F	FAHRENHEIT
FA	FIRE ALARM
FCU	FAN COIL UNIT
FCV	FLOW CONTROL VALVE
FF*	FINISHED FLOOR
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FIN	FINISH
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FP	FIRE PROTECTION
FPD*	FIRE PROTECTION, DRY PIPE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FREQ	FREQUENCY
FSTAT	FREEZESTAT
FT	FOOT / FEET
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GFS	GLYCOL FEED SYSTEM
GOVT	GOVERNMENT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRV	GRAVITY ROOF VENTILATOR
HB	HOSE BIBB
HC	HEATING COIL
HCU	HEAT AND CURE UNIT
HFD	HEATING, VENTILATING, AND DEHUMIDIFYING UNIT
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR*	HOUR
HSKPG	HOUSEKEEPING
HT	HEIGHT
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HVU	HEATING AND VENTILATING UNIT
HW	HOT WATER
HWP*	HEATING WATER PUMP
Hz	HERTZ
I/O	INPUT/OUTPUT
IAH*	INTAKE AIR HOOD
ID	INSIDE DIAMETER
IFR	IN FLOOR RADIANT HEAT
IH*	INTAKE HOOD
IN WC	INCHES WATER COLUMN
IN*	INCH / INCHES
INFO	INFORMATION
IPLV*	INTERNAL PART LOAD VALUE
IPS	IRON PIPE SIZE
ISO	ISOMETRIC
K	KELVIN
K	KILO
K	THOUSAND
kg	KILOGRAM
kPa	KILOPASCAL
kW	KILOWATT
kWh	KILOWATT HOUR
L	LITER
L/s	LITERS PER SECOND
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LEL	LOWER EXPLOSIVE LIMIT
LF	LINEAR FEET / FOOT
LKR	LOCKER
LPM	LITRES PER MINUTE
LRA	LOCKED ROTOR AMPS
m	METER
MAINT	MAINTENANCE
MAN	MANUAL
MATL	MATERIAL
MAU	MAKE UP AIR UNIT
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MD	MANUAL DAMPER
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MFG	MANUFACTURING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
mm	MILLIMETER
MOD	MODIFY
ms	MILLISECOND
MTD	MOUNTED
MULT	MULTIPLE
mW	MILLIWATT
N	NORTH
NA	NOT APPLICABLE
NAT	NATURAL
NC	NORMALLY CLOSED
NC	NOISE CRITERIA
NCS	NATIONAL CAD STANDARD
NEG	NEGATIVE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O	OXYGEN
OA	OUTSIDE AIR
OAU	OUTDOOR AIR UNIT
OBD*	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DAMPER
OPP	OPPOSITE
OPT	OPTION / OPTIONAL
ORIG	ORIGINAL
OUT	OUTLET
OZ	OUNCE
PA	PASCAL
PBU	PAINT BOOTH UNIT
PCT (%)	PERCENT
PCWP*	PRIMARY CHILLED WATER PUMP
PD	PRESSURE DROP
PD	PRESSURE DIFFERENCE
PH (Φ)	PHASE
PKG	PACKAGE
PLBG	PLUMBING
PN	PART NUMBER
PNEU	PNEUMATIC
PPM	PARTS PER MILLION
PRELIM	PRELIMINARY
PRESS	PRESSURE
PRI	PRIMARY
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
PT*	POINT
PVC	POLYVINYL CHLORIDE
PWR	POWER
QA	QUALITY ASSURANCE
QTY	QUANTITY
R	THERMAL RESISTANCE
RA	RETURN AIR
RAF*	RETURN AIR FAN
RAH*	RELIEF AIR HOOD
REC'D	RECEIVED
REF	REFERENCE
REQ'D	REQUIRED
RET	RETURN
REV	REVISE / REVISION
RF*	RETURN FAN
RFI	REQUEST FOR INFORMATION
RFP	REQUEST FOR PROPOSAL
RH*	RELATIVE HUMIDITY
RH*	RELIEF HOOD
RHC	REHEAT COIL
RHG*	REFRIGERANT HOT GAS
RL*	REFRIGERANT LIQUID LINE
RM	ROOM
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RPS	REVOLUTIONS PER SECOND
RS*	REFRIGERANT SUCTION LINE
RV	RELIEF VALVE
RV	RELIEF VENT
S	SOUTH
SA	SUPPLY AIR
SCHED	SCHEDULE
SCHEM	SCHEMATIC
SCWP*	SECONDARY CHILLED WATER PUMP
SECT	SECTION
SF	SQUARE FEET / FOOT
SF	SUPPLY FAN
SG*	STEAM GENERATOR
SH	STEAM HUMIDIFIER
SPEC	SPECIFICATION
SPLY	SUPPLY
SQ	SQUARE
ST PR	STATIC PRESSURE
STD	STANDARD
STOR	STORAGE
STRUCT	STRUCTURAL
SW	SWITCH
SYS	SYSTEM
T&P	TEMPERATURE AND PRESSURE
TD	TEMPERATURE DIFFERENCE
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEMP	TEMPERATURE
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
THRU	THROUGH
TK*	TANK
TP	TOTAL PRESSURE
TR*	TEMPERATURE RISE
TSTAT	THERMOSTAT
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VAR	VARIES
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VENT	VENTILATION / VENTILATOR
VERT	VERTICAL
VF*	VENTILATION FAN
VOL	VOLUME
VP	VELOCITY PRESSURE
VRF	VARIABLE REFRIGERANT FLOW
VS	VENT STACK
W	WATT
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN
WG	WATER GAUGE
WH	WATER HEATER
WT	WEIGHT
YD	YARD
YH	YARD HYDRANT
YR	YEAR

NOTE:
"*" INDICATES SYMBOL OR ABBREVIATION IS NOT IN THE NATIONAL CADD STANDARDS (NCS).
NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN IN THIS SHEET ARE USED ON THIS PROJECT.

GENERAL PROJECT NOTES

A. MECHANICAL PLANS AND SECTIONS ARE INTENDED TO ILLUSTRATE THE SCOPE OF WORK ACCURATELY, HOWEVER THEY ARE STILL DIAGRAMMATIC IN NATURE. REPRESENTATIONS OF EQUIPMENT, VALVES, FITTINGS, ETC. SHOWN ON THESE DRAWINGS MAY NOT REFLECT THE LOOK OR SIZE OF THE ACTUAL MATERIALS SPECIFIED.

B. MECHANICAL DRAWINGS DO NOT SHOW ALL MINOR ITEMS THAT MUST BE INSTALLED. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR A FULLY FUNCTIONING SYSTEM COMPLIANT WITH ALL APPLICABLE CODES AND LAWS.

C. PLAN AND SECTION DRAWINGS DO NOT SHOW ALL REQUIRED BRANCH PIPING OR VALVES AND GAUGES. REFER TO FLOW DIAGRAMS, DETAILS AND PROJECT SPECIFICATIONS FOR REQUIRED PIPING, VALVES AND GAUGES.

D. SECTION DRAWINGS DO NOT SHOW ALL REQUIRED WORK IN THE AREA THEY ARE CUT. SECTION DRAWINGS ARE PROVIDED TO ILLUSTRATE ONLY CERTAIN CONDITIONS THAT MAY BE TOO CONGESTED TO ILLUSTRATE IN A PLAN VIEW.

E. MECHANICAL DRAWINGS DO NOT SHOW ALL REQUIRED OFFSETS IN PIPING AND DUCTWORK REQUIRED FOR INSTALLATION COORDINATED WITH ALL OTHER DISCIPLINES SUCH AS STRUCTURAL STEEL. THE CONTRACTOR SHALL PROVIDE ELBOWS IN PIPING AND DUCTWORK, ONLY WHEN ABSOLUTELY REQUIRED, TO AVOID CONFLICT WITH OTHER MECHANICAL COMPONENTS OR WORK OF OTHER TRADES. OFFSETS SHALL USE ELBOWS OF LEAST DEGREE TURN AS POSSIBLE.

F. ALL DUCT SIZES INDICATED REPRESENT INSIDE CLEAR DIMENSIONS. CONTRACTOR SHALL ADJUST SHEET METAL SIZE TO ACCOUNT FOR LINER THICKNESS WHEN LINER IS REQUIRED PER THE CONTRACT DOCUMENTS.

G. ALL EXPOSED PIPING NOT REQUIRED BY THE SPECIFICATIONS TO BE INSULATED SHALL BE PAINTED PER THE SPECIFICATION SECTION "PAINTING".

H. MANUFACTURERS' NAMES, MODEL NUMBERS OR SPECIFIC PRODUCT LINES LISTED IN THE CONTRACT DOCUMENTS ARE GIVEN ONLY TO INDICATE THE BASIS OF DESIGN. ANY PRODUCT MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS MAY BE SUBMITTED FOR APPROVAL.

I. MODIFY ROUTING OF PIPING AT EQUIPMENT CONNECTION POINTS FROM THAT SHOWN TO MATCH ACTUAL LOCATION OF CONNECTION POINTS FOR SPECIFIC EQUIPMENT PURCHASED. CONNECT ALL EQUIPMENT IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

J. ALL FLUE PIPES FROM GAS-FIRED EQUIPMENT AND ASSOCIATED DIRECT VENT COMBUSTION AIR PIPES (IF USED) SHALL BE SIZED BY THE GAS-FIRED EQUIPMENT MANUFACTURER BASED ON THE SPECIFIC PIPE ROUTING AND ELEVATIONS FOR THIS PROJECT. LIKEWISE THE MATERIALS OF ALL FLUE PIPING AND DIRECT VENT COMBUSTION AIR PIPING SHALL BE AS REQUIRED BY THE MANUFACTURER OF THE GAS-FIRED EQUIPMENT THE PIPING IS CONNECTED TO. FLUE PIPING SHALL BE INSTALLED PER CODE.

K. PIPING, DUCTWORK AND EQUIPMENT HANGERS AND SUPPORTS SHALL NOT INTERFERE WITH OPERATION AND MAINTENANCE OF EQUIPMENT.

L. EVERY PIECE OF FLOOR OR GRADE MOUNTED HVAC OR PLUMBING EQUIPMENT SHALL HAVE A 6 INCH TALL CONCRETE HOUSEKEEPING PAD. THIS APPLIES AS WELL TO EQUIPMENT SUPPORTED BY STEEL STRUCTURE OR LEGS. ALL HOUSEKEEPING PADS SHALL EXTEND BEYOND THE OUTER PERIMETER OF THE EQUIPMENT, SUPPORT STRUCTURE OR LEGS BY AT LEAST 3 INCHES.

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WISCONSIN — AARON P. CAMPBELL — E-49561-6 — OKLAHOMA CITY OK — PROFESSIONAL ENGINEER
10/14/22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: CAD
DRAWN BY: CAD
REVIEWED BY: JDN
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: LEGEND & ABBREVIATIONS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: M-001

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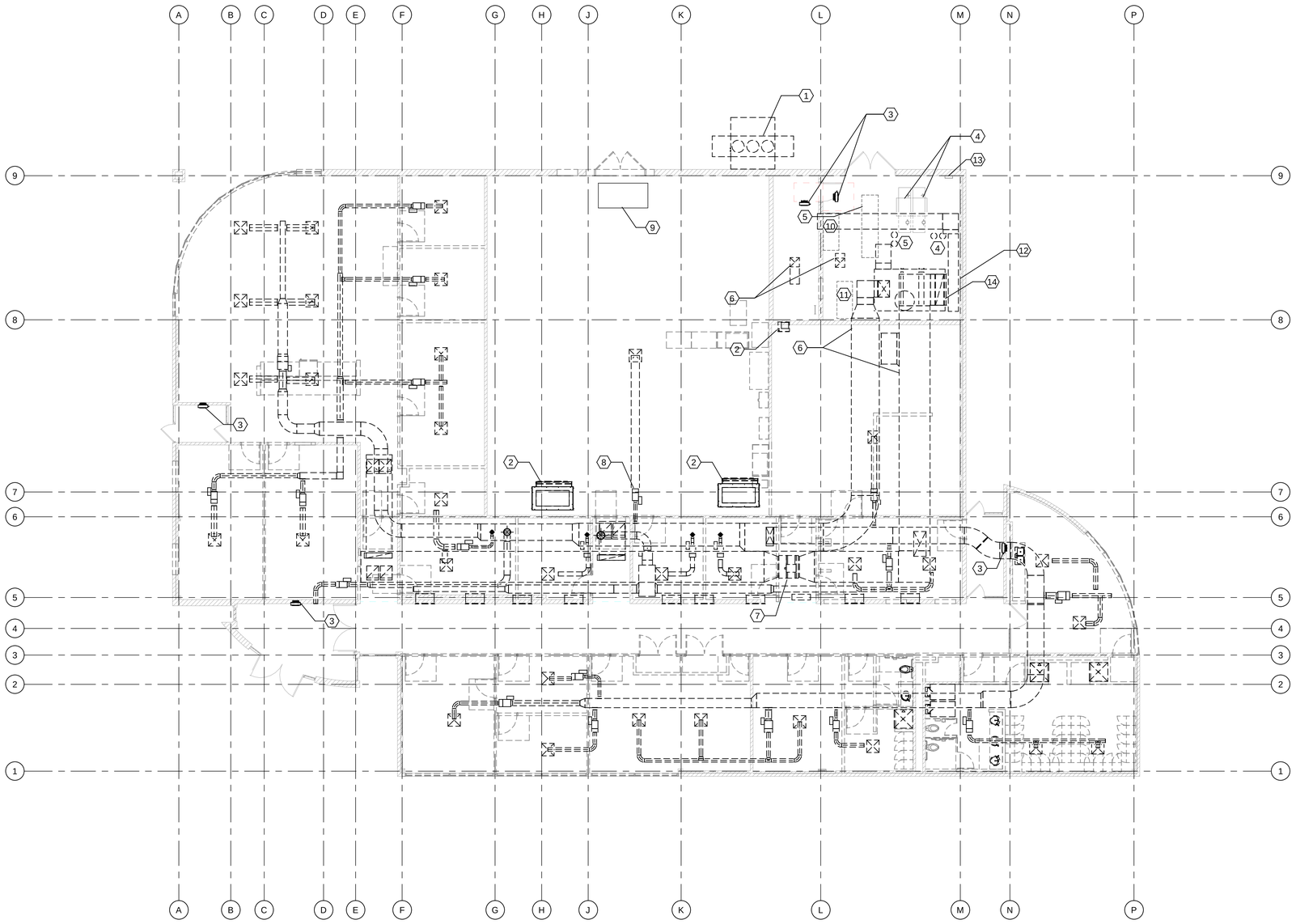

A1 FIRST FLOOR MECHANICAL DEMO PLAN

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

GENERAL NOTES

A. REFER TO SHEET M-001 FOR GENERAL NOTES APPLICABLE TO THIS SHEET.
B. DASHED LINES INDICATE EQUIPMENT AND DUCTWORK TO BE DEMOLISHED IN THE NEW CONSTRUCTION.

SHEET KEYNOTES

1. EXISTING CONDENSING UNIT, PIPING, POWER, AND CONTROLS TO BE DEMOLISHED AND REPLACED WITH NEW CONDENSING UNIT FOR NEW CHILLER.
2. AHU WITH ASSOCIATED PIPING, POWER, CONTROLS, AND ACCESSORIES TO BE REMOVED AND SALVAGED TO RETURN TO OWNER..
3. EXISTING UNIT HEATERS TO BE DEMOLISHED AND REPLACED WITH NEW UNIT HEATERS.
4. EXISTING BOILERS, PRIMARY HEATING WATER PUMPS, POWER, AND CONTROLS TO BE EXISTING TO REMAIN. HEATING WATER ACCESSORIES (EXPANSION TANK, AIR SEPARATOR, CHECMICAL FEED) AND VARAIBLE HEATING WATER PUMPS (P-4 AND P-5) TO BE DEMOLISHED AND REPLACED WITH NEW EQUIPMENT.
5. CHILLER, CONDENSING UNIT, CHILLED WATER PUMP, PIPING AND ACCESSORIES TO BE DEMOLISHED AND REPLACED WITH NEW UNITS.
6. ALL EXISTING DUCTWORK AND AIR TERMINALS TO BE DEMOLISHED AND REPLACED WITH NEW. MAJOR PENETRATIONS THROUGH WALLS TO REMAIN WILL BE REUSED AS POSSIBLE.
7. DEMOLISH RETURN AIR FAN, SUPPORTS, POWER, AND CONTROLS.
8. DEMOLISH VAV TERMINALS, PIPING, AND CONTROLS. TYPICAL OF ALL.
9. EXISTING CABINET UNIT HEATER TO BE DEMOLISHED.
10. REMOVE AND SALVAGE LAB COMPRESSED AIR SYSTEM AND RETURN TO OWNER.
11. EXISTING COMPRESSED AIR SYSTEM TO REMAIN TO SERVE NEW TOOL ROOM.
12. SERIES OF EXISTING SIDEWALL LOUVERS FOR OUTSIDE AIR AND COMBUSTION AIR TO BE ABANDONED AND BLANKED OFF ON INTERIOR SIDE WITH GALVANIZED CORRUGATED SHEET METAL.
13. EXISTING BAS CONTROLS PANEL TO BE REMOVED FROM MECHANICAL ROOM AND RELOCATED TO COMM ROOM 122. ENSURE CONTINUAL OPERATION AS MUCH AS POSSIBLE.
14. AHU WITH ASSOCIATED PIPING, POWER, CONTROLS, AND ACCESSORIES TO BE REMOVED AND SALVAGED TO RETURN TO OWNER..

N
PLAN NORTH

TRUE NORTH

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

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10/14/22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: CAD
DRAWN BY: CAD
REVIEWED BY: JDN
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: MECHANICAL DEMOLITION FIRST FLOOR PLAN
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: MD101

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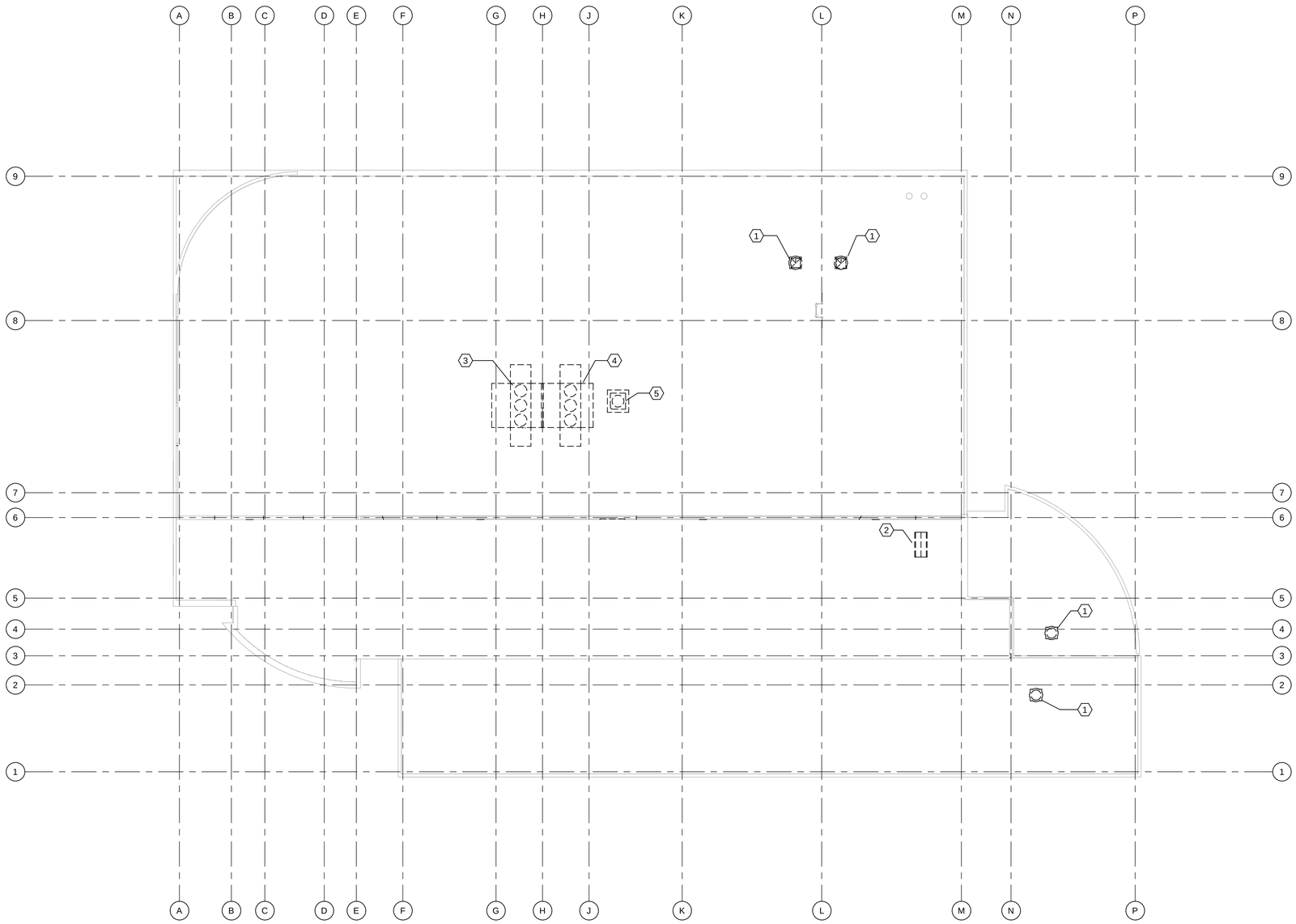
GENERAL NOTES

A. REFER TO SHEET M-001 FOR GENERAL NOTES APPLICABLE TO THIS SHEET.

SHEET KEYNOTES

1. EXISTING EXHAUST FANS, ROOF CURBS, AND POWER TO BE REPLACED.
2. EXISTING EXHAUST HOOD, ROOF CURBS, AND POWER TO BE REMOVED.
3. EXISTING AC-1 CONDENSER, PIPING, POWER, CONTROLS, AND ACCESSORIES TO BE DEMOLISHED.
4. EXISTING AC-2 CONDENSER, PIPING, POWER, CONTROLS, AND ACCESSORIES TO BE DEMOLISHED.
5. EXISTING AC-3 CONDENSER, PIPING, POWER, CONTROLS, AND ACCESSORIES TO BE DEMOLISHED.



A1 ROOF MECHANICAL DEMO PLAN
SCALE: 1/8" = 1'-0"

N
PLAN NORTH

TRUE NORTH

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

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10/14/22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	CAD
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REVIEWED BY:	JDN
PROJECT MANAGER:	NWC
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SHEET TITLE:	MECHANICAL DEMOLITION ROOF PLAN
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	MD102

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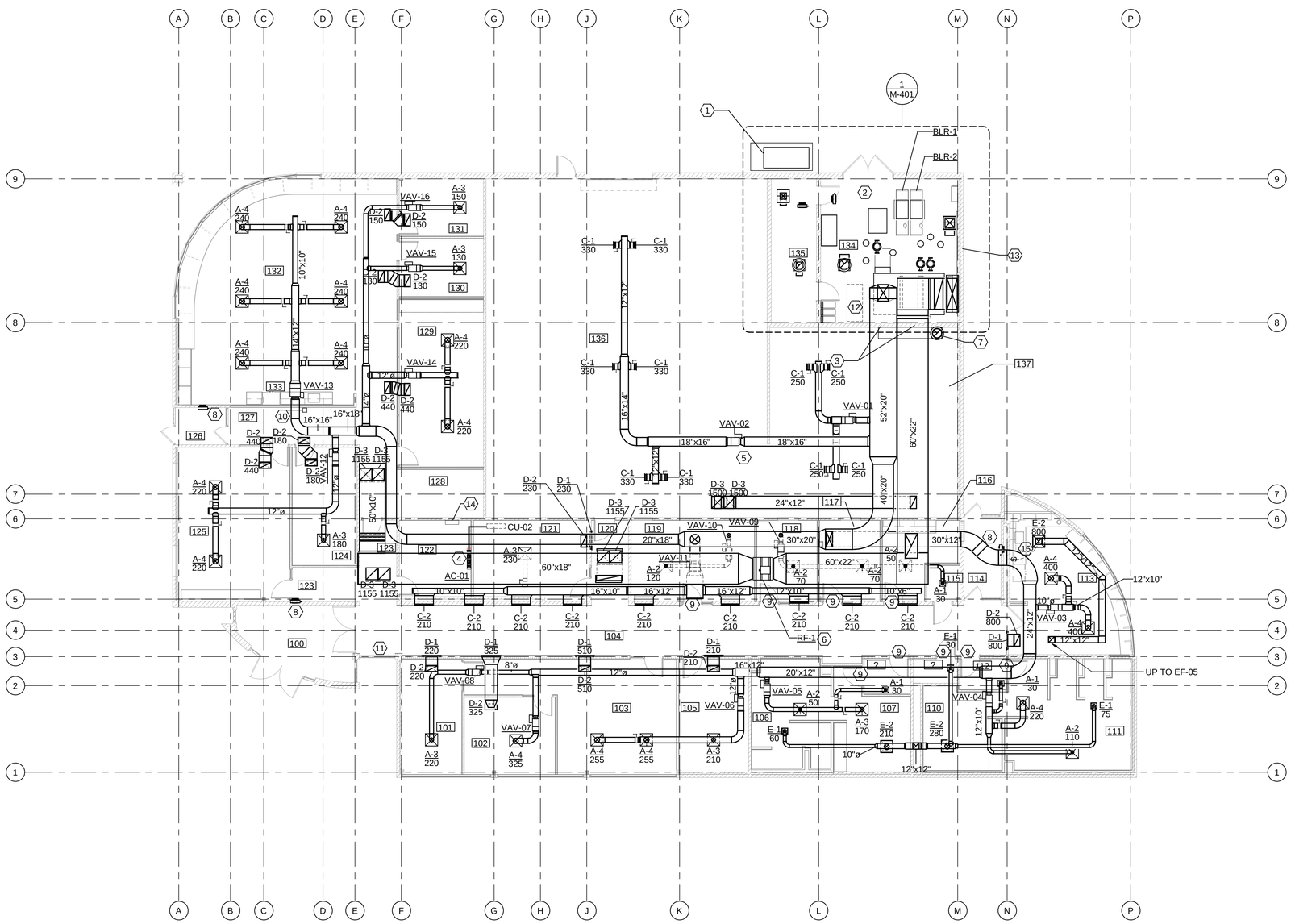

A1 FIRST FLOOR MECHANICAL HVAC PLAN

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

GENERAL NOTES

A. REFER TO SHEET M-001 FOR GENERAL NOTES APPLICABLE TO THIS SHEET.
B. SEAL ALL DUCTWORK IN ACCORDANCE WITH SMACNA SEAL CLASS "A".
C. DUCTWORK DIMENSIONS SHOWN REPRESENT INSIDE CLEAR DIMENSIONS. OUTSIDE DUCT DIMENSIONS SHALL BE LARGER TO ACCOMMODATE DUCT INSULATION WHERE PROVIDED.
D. ELECTRICAL EQUIPMENT SHOWN FOR REFERENCE ONLY.
E. DIFFUSER RUNOUTS TO BE SAME SIZE AS THE NECK OF THE DUCT UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

1. EXISTING CONDENSING UNIT PAD TO BE REUTILIZED FOR NEW CU-01.
2. EXISTING MECHANICAL ROOM TO BE REUTILIZED AS MECHANICAL ROOM. NEW EQUIPMENT LAYOUT WITHIN EXISTING AREA.
3. NEW DUCTWORK TO UTILIZE EXISTING PENETRATIONS THROUGH WALLS TO REMAIN WHERE POSSIBLE. COORDINATE PENETRATIONS AND MAIN DUCTS WITH NEW VENT HOOD EXHAUST DUCT TO ROOF.
4. NEW SPLIT SYSTEM AC UNIT FOR COMM ROOM COOLING.
5. NEW VAV TERMINAL WITH HOT WATER HEATING COIL. TYPICAL OF ALL.
6. NEW RETURN AIR FAN SUSPENDED ABOVE CEILING.
7. APPROXIMATE LOCATION OF NEW VENT HOOD AND DRY FILM BOOTH. BOOTH EQUIPMENT PROVIDED BY OWNER. VENT HOOD AND ASSOCIATED EXHAUST FAN PROVIDED BY CONTRACTOR.
8. NEW HEATING WATER WALL-MOUNTED CABINET UNIT HEATER TO REPLACE EXISTING UNIT.
9. UNDERCUT DOOR TO ALLOW FOR RETURN AIR FLOW.
10. STATIC PRESSURE SENSOR SPT1-1.
11. EMERGENCY HVAC SHUTOFF SWITCH.
12. AIR COMPRESSOR SYSTEM EXISTING TO REMAIN TO SERVE TOOL ROOM.
13. SERIES OF EXISTING SIDEWALL LOUVERS FOR OUTSIDE AIR AND COMBUSTION AIR TO BE ABANDONED AND BLANKED OFF ON INTERIOR SIDE WITH GALVANIZED CORRUGATED SHEET METAL.
14. EXISTING BAS CONTROLS PANEL TO BE REMOVED FROM MECHANICAL ROOM AND RELOCATED TO COMM ROOM 122. ENSURE CONTINUAL OPERATION AS MUCH AS POSSIBLE.
15. EF-05 TO BE CONTROLLED BY ON/OFF SWITCH MOUNTED AT 45" A.F.F. SEE B2/AE402 FOR FURTHER DETAILS.

Space Schedule

Number	Name
100	VEST.
101	GROUP COMMANDER
102	GROUP CHIEF
103	MXG ADMIN
104	CORR
105	GENERAL STORAGE
106	WOMEN'S LOCKER
107	WOMEN
108	VEST.
109	JAN
110	MEN
111	MEN'S LOCKER
112	VEST.
113	BREAK
114	VEST.
115	GENERAL STORAGE
116	MOTHER'S ROOM
117	P&W
118	SITE LEAD
119	FSE FSR
120	CORR
121	STORAGE
122	COMM
123	CORR
124	STORAGE
125	MXG CONFERENCE
126	VEST.
127	CORR
128	QA FLIGHT GEAR LOCKERS
129	QA TRAINING
130	CHIEF INSPECTOR
131	QA CHIEF
132	QA OPEN OFFICE
133	PRINT / BREAK
134	MECHANICAL
135	ELECTRICAL
136	AME STORAGE
137	TOOL ROOM

N PLAN NORTH

N TRUE NORTH

0 4' 8' 16'

1/8" = 1'-0"

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10/14/22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	CAD
DRAWN BY:	CAD
REVIEWED BY:	JDN
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	MECHANICAL HVAC FIRST FLOOR PLAN
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	MH101

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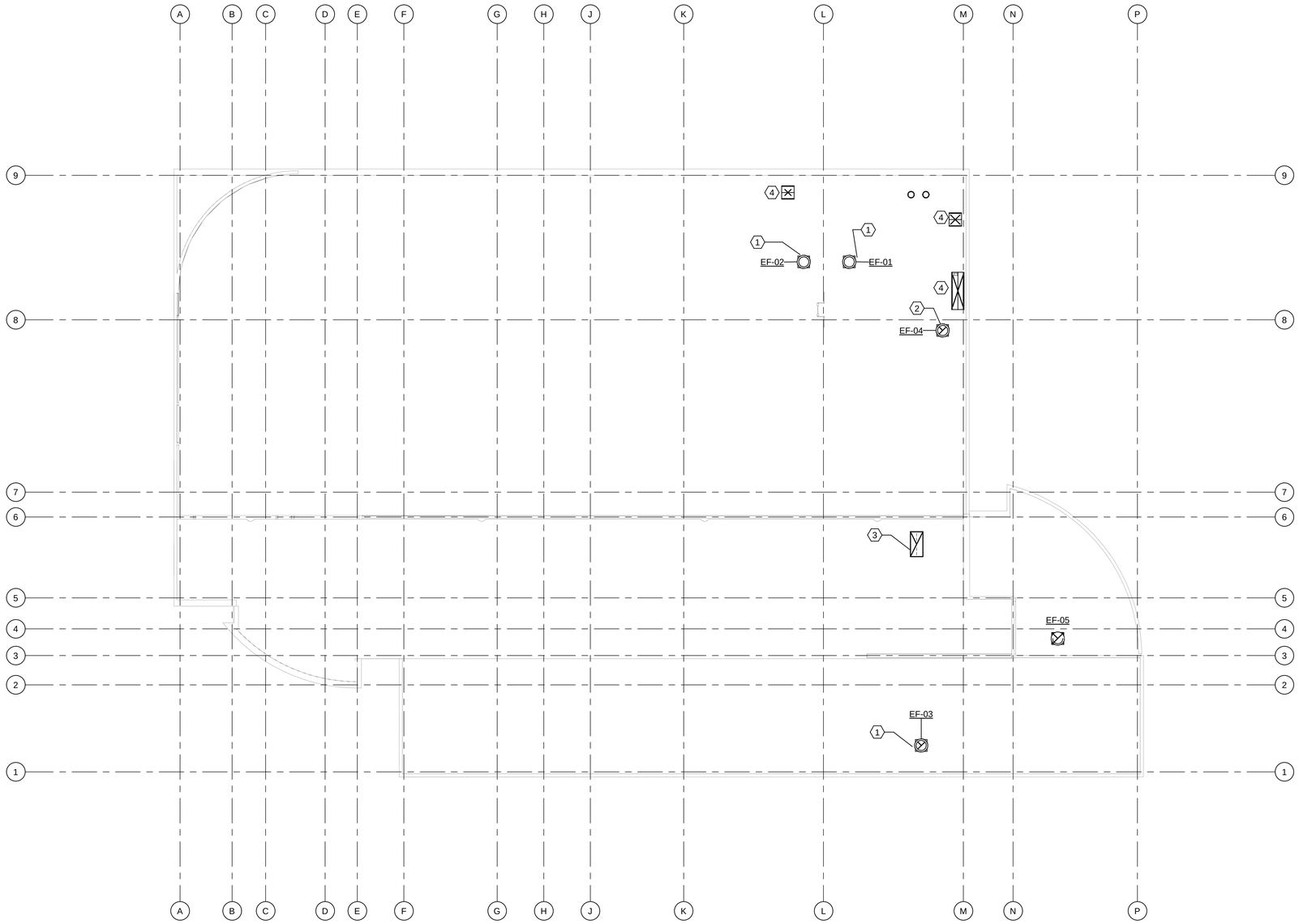
GENERAL NOTES

A. REFER TO SHEET M-001 FOR GENERAL NOTES APPLICABLE TO THIS SHEET.

SHEET KEYNOTES

1. NEW EXHAUST FAN. REUTILIZE EXISTING ROOF PENETRATION AND CURB IF POSSIBLE.
2. PROVIDE NEW EXHAUST FAN AND ROOF CURB TO EXHAUST PAINT BOOTH IN TOOL ROOM 137.
3. NEW RELIEF AIR HOOD TO REPLACE EXISTING. DUCT DOWN TO RETURN AIR DUCT BELOW.
4. NEW GRAVITY INTAKE HOOD FOR MAKE UP AIR AND INTAKE DUCTS. BASIS OF DESIGN GREENHECK FGI. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.



A1 ROOF MECHANICAL HVAC PLAN
SCALE: 1/8" = 1'-0"

N
PLAN NORTH

N
TRUE NORTH

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

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Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

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SHEET NUMBER: MH102

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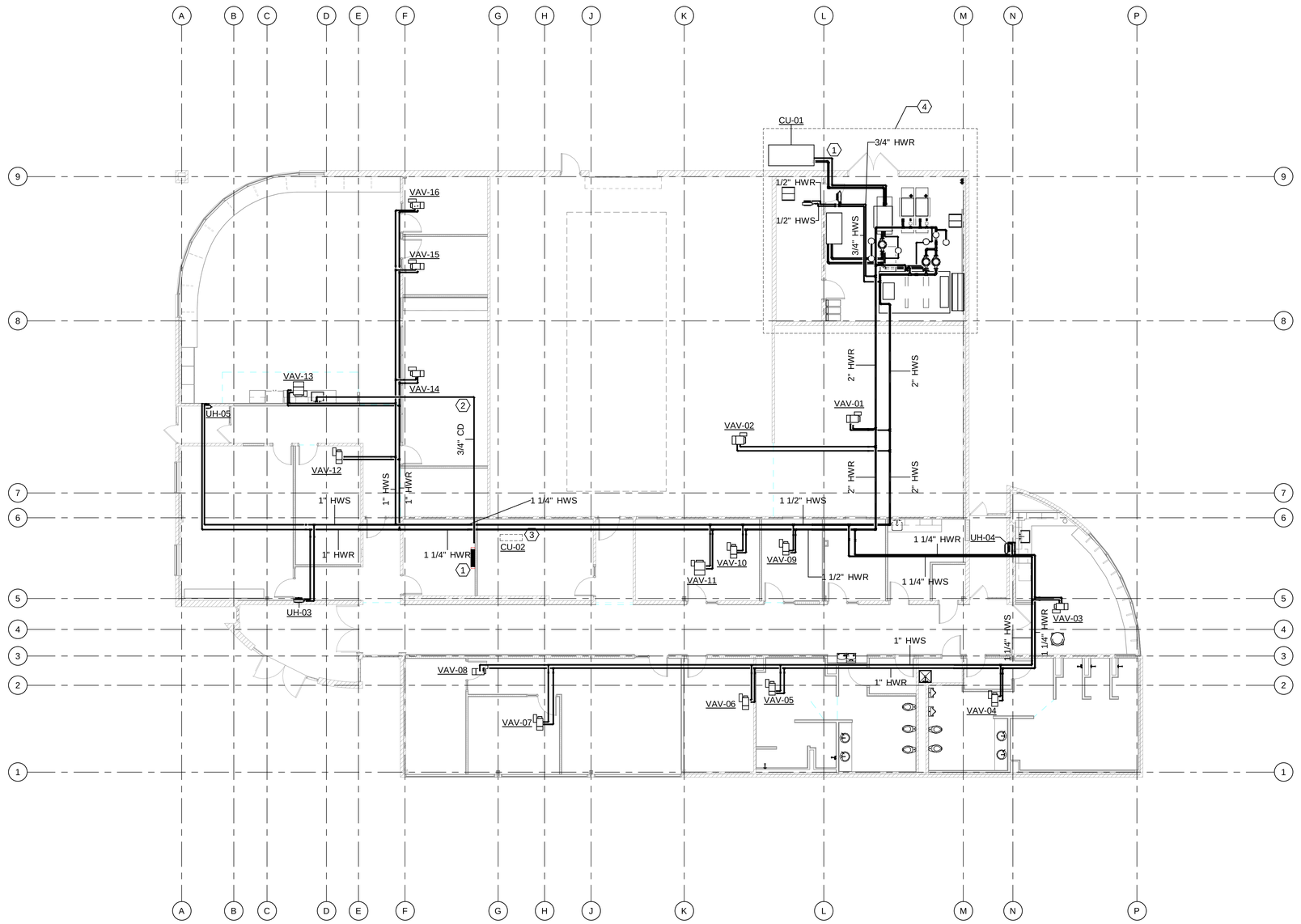

A1 MECHANICAL PIPING PLAN

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

GENERAL NOTES

A. REFER TO SHEET M-001 FOR GENERAL NOTES APPLICABLE TO THIS SHEET.
B. REFER TO MECHANICAL PIPING DIAGRAMS FOR PIPE SIZES NOT INDICATED ON THE PLANS.
C. WALL SENSORS (THERMOSTATS AND HUMIDISTATS) SHALL BE MOUNTED AT 48" A.F.F. U.N.O.
D. ELECTRICAL EQUIPMENT SHOWN FOR REFERENCE ONLY.
E. ALL EQUIPMENT WITH HYDRONIC PIPING SHALL HAVE ISOLATION VALVES ON SUPPLY AND RETURN PIPING.

SHEET KEYNOTES

1. SIZE REFRIGERANT SUCTION & LIQUID LINES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. ROUTE CONDENSATE DRAIN TO THE NEAREST BACK OF SINK AND TIE INTO LAVATORY TAILPIECE.
3. CONDENSING UNIT TO BE PLACED IN CEILING SPACE WITH MAINENTANCE ACCESS.
4. SEE M-401 FOR FURTHER DETAILS IN ENLARGED PLAN.

Space Schedule

Number	Name
100	VEST.
101	GROUP COMMANDER
102	GROUP CHIEF
103	MXG ADMIN
104	CORR
105	GENERAL STORAGE
106	WOMEN'S LOCKER
107	WOMEN
108	VEST.
109	JAN
110	MEN
111	MEN'S LOCKER
112	VEST.
113	BREAK
114	VEST.
115	GENERAL STORAGE
116	MOTHER'S ROOM
117	P&W
118	SITE LEAD
119	FSE FSR
120	CORR
121	STORAGE
122	COMM
123	CORR
124	STORAGE
125	MXG CONFERENCE
126	VEST.
127	CORR
128	QA FLIGHT GEAR LOCKERS
129	QA TRAINING
130	CHIEF INSPECTOR
131	QA CHIEF
132	QA OPEN OFFICE
133	PRINT / BREAK
134	MECHANICAL
135	ELECTRICAL
136	AME STORAGE
137	TOOL ROOM

N
PLAN NORTH

TRUE NORTH

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

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Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

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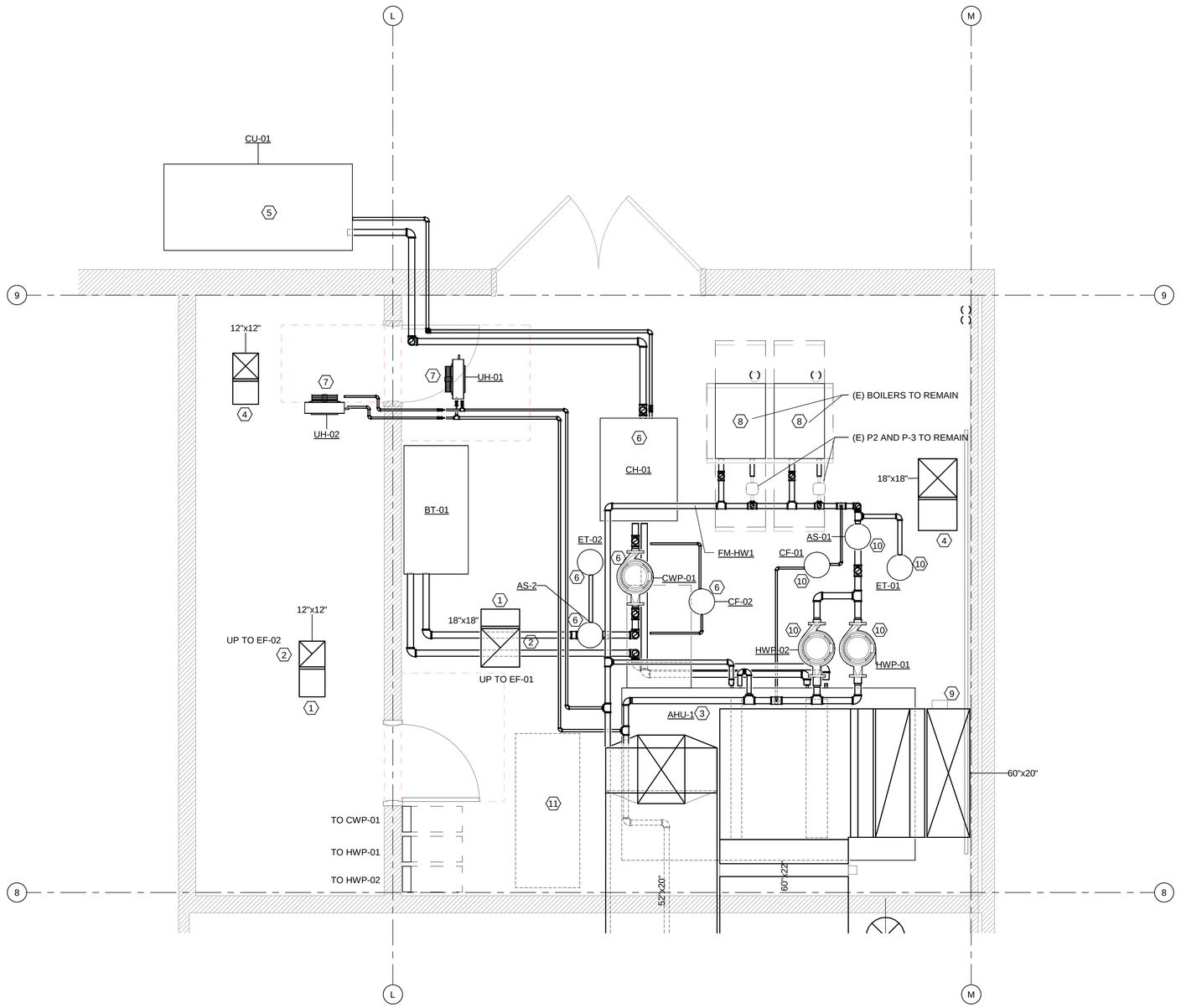

1 FIRST FLOOR MECHANICAL ROOM ENALRGED PLAN

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

GENERAL NOTES

A. REFER TO SHEET M-001 FOR GENERAL NOTES APPLICABLE TO THIS SHEET.
B. SEAL ALL DUCTWORK IN ACCORDANCE WITH SMACNA SEAL CLASS "A".
C. DUCTWORK DIMENSIONS SHOWN REPRESENT INSIDE CLEAR DIMENSIONS. OUTSIDE DUCT DIMENSIONS SHALL BE LARGER TO ACCOMODATE DUCT INSULATION WHERE PROVIDED.
D. ELECTRICAL EQUIPMENT SHOWN FOR REFERENCE ONLY.
E. DIFFUSER RUNOUTS TO BE SAME SIZE AS THE NECK OF THE DUCT UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

1. NEW EXHAUST AIR DUCTWORK UP TO ROOF MOUNTED EXHAUST FAN WITH 1/2" BIRDSCREEN METAL MESH ON INLET.
2. UP TO EXHAUST AIR FAN ON ROOF.
3. NEW AHU-1 TO SERVE OFFICE AREAS. OUTSIDE AIR TO BE DUCTED FROM ROOF HOOD. RELIEF AIR TO BE HANDLED WITH ROOF HOOD OVER TOOL ROOM, SEE 1/MH101 FOR CONTINUATION. ENSURE NEW AHU SHALL FIT WITHIN THE EXISTING FOOTPRINT AND CAN RESIDE ON EXISTING PAD.
4. GRAVITY BACKDRAFT DAMPERS TO ALLOW OUTSIDE AIR TO MECHANICAL AND ELECTRICAL ROOMS. PROVIDE WITH 1/2" BIRDSCREEN METAL MESH ON OUTLET IN SPACE. DUCT TO ROUTE UP TO ROOF WITH ROOF HOOD. BASIS OF DESIGN GREENHECK FGI.
5. EXISTING CONDENSING UNIT PAD TO BE REUTILIZED FOR NEW CU-01.
6. NEW CHILLED WATER PUMP AND ASSOCIATED ACCESSORIES.
7. NEW HOT WATER HEATED UNIT HEATERS TO REPLACE EXISTING UNIT HEATERS IN SPACES.
8. EXISTING CONDENSING BOILERS TO REMAIN ALONG WITH VENTING, PRIMARY HEATING WATER PUMPS, AND CONTROLS. ASSOCIATED ACCESSORIES (EXPANSION TANK, AIR SEPARATOR, CHECMICAL FEED) AS WELL AS SECONDARY HEATING WATER PUMPS TO BE REPLACED WITH NEW.
9. MOTORIZED DAMPER TO CONTROL OUTSIDE AIR TO AHU-1. INTERLOCK WITH MOTORIZED DAMPER ON RELIEF AIR HOOD AND MODULATE ACCORDING TO BAS COMMAND. OUTSIDE AIR DUCT TO ROUTE UP TO ROOF WITH ROOF HOOD. BASIS OF DESIGN: GREENHECK FGI.
10. NEW HEATING WATER ACCESSORIES (EXPANSION TANK, AIR SEPARATOR, CHEMICAL FEED) AND SECONDARY HEATING WATER PUMPS.
11. AIR COMPRESSOR SYSTEM EXISTING TO REMAIN TO SERVE TOOL ROOM.

PLAN NORTH

TRUE NORTH

0 1' 2' 4'

1/2" = 1'-0"

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Madison, Wisconsin

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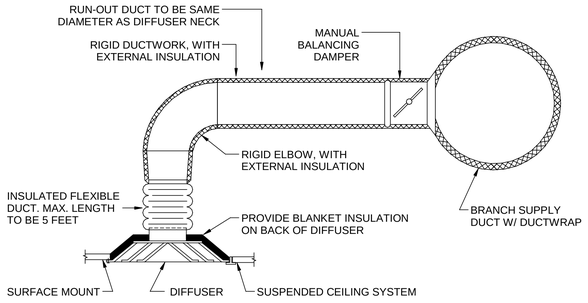
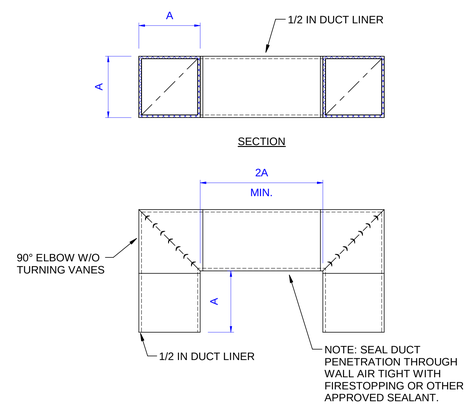


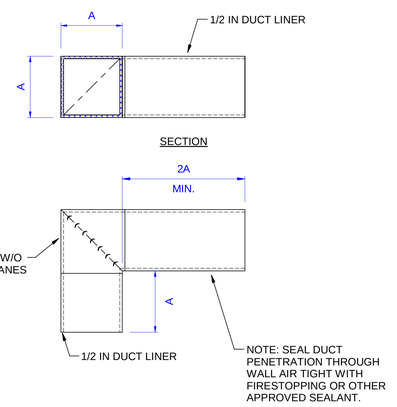
C1 TYPICAL DIFFUSER INSTALLATION

SCALE: NTS



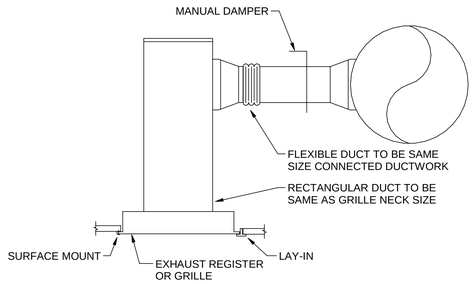
D2 TYPICAL TRANSFER DUCT DETAIL (C-Shape)

SCALE: NTS



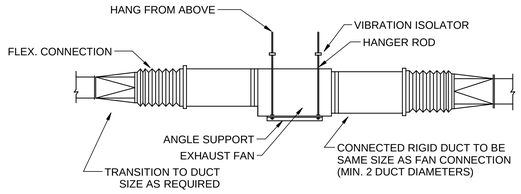
D4 TYPICAL TRANSFER DUCT DETAIL (L-Shape)

SCALE: NTS



C2 TYPICAL EXHAUST/RETURN GRILLE INSTALLATION DETAIL

SCALE: NTS



C4 CENTRIFUGAL IN-LINE FAN INSTALLATION DETAIL

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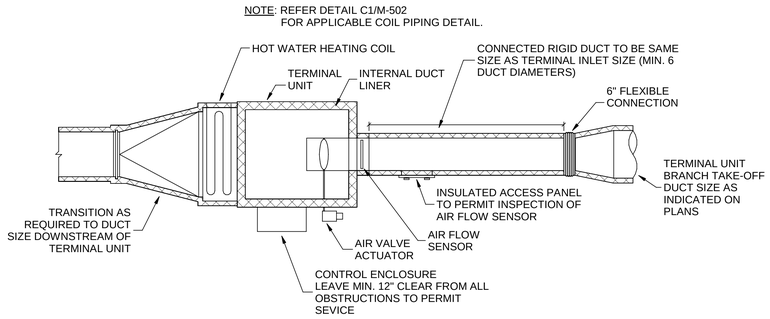
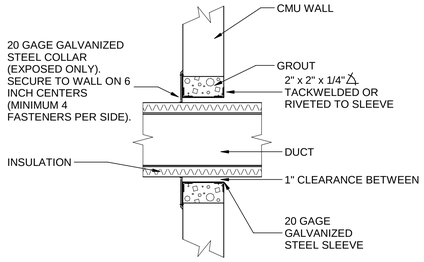


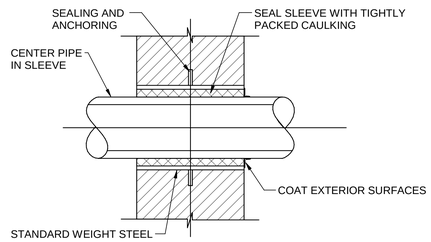
B1 TYPICAL SINGLE-DUCT VAV TERMINAL UNIT INSTALLATION DETAIL

SCALE: NTS



B3 DUCT PENETRATION THROUGH NON-FIRE RATED WALLS

SCALE: NTS



B4 PIPE PENETRATION THROUGH EXTERIOR WALL

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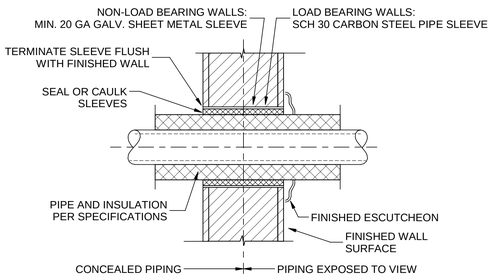

A1 TYPICAL INTERIOR WALL PIPE PENETRATION DETAIL

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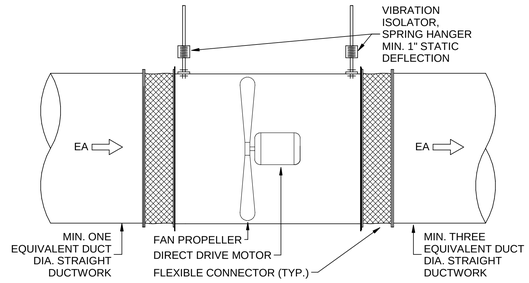

A2 HORIZONTAL MOUNTED AXIAL INLINE FAN INSTALLATION DETAIL

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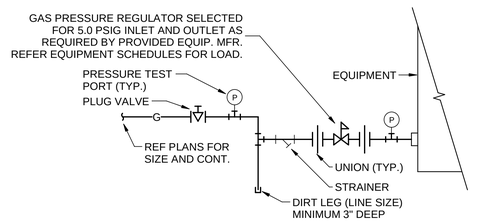

A4 TYPICAL GAS CONNECTION DETAIL

SCALE: NTS

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10/14/22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

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PROJECT INFORMATION:

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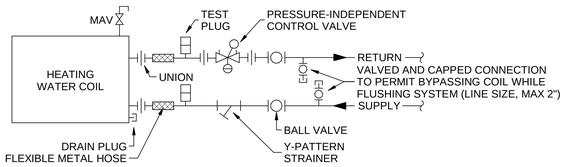

C1 TERMINAL UNIT PIPING DETAIL
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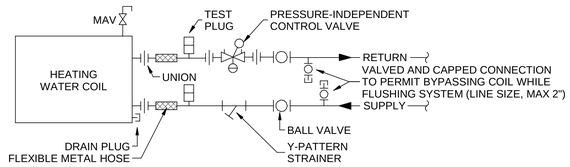

C2 UNIT HEATER PIPING DETAIL
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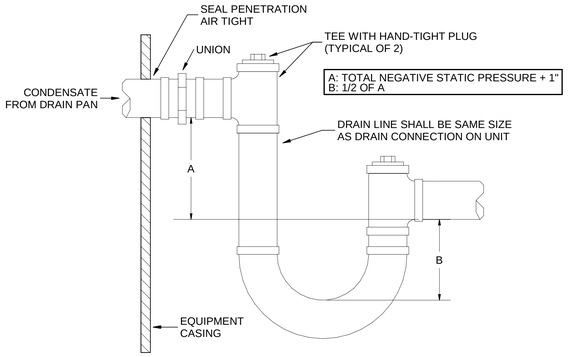

B1 TYPICAL DRAW-THRU CONDENSATE DRAIN DETAIL
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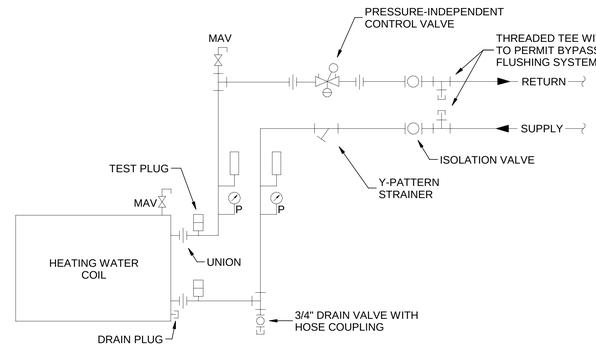

B2 AIR HANDLING UNIT PIPING DETAIL
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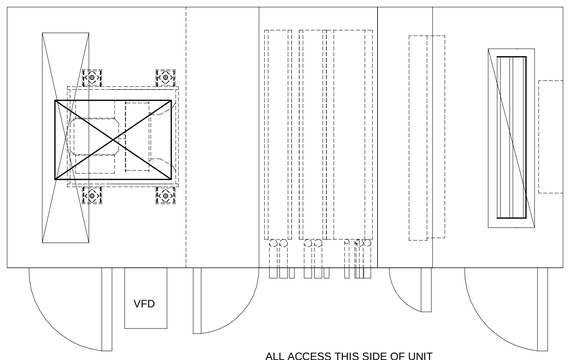
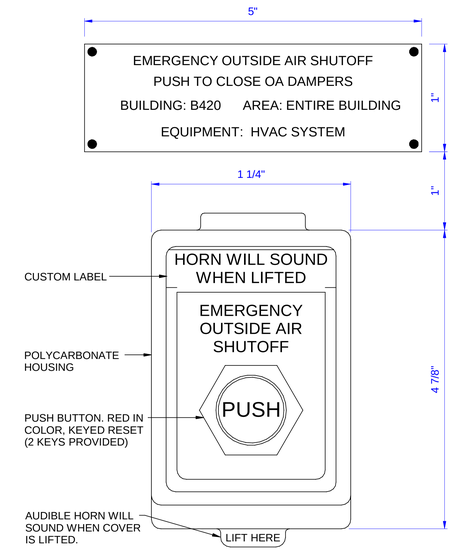


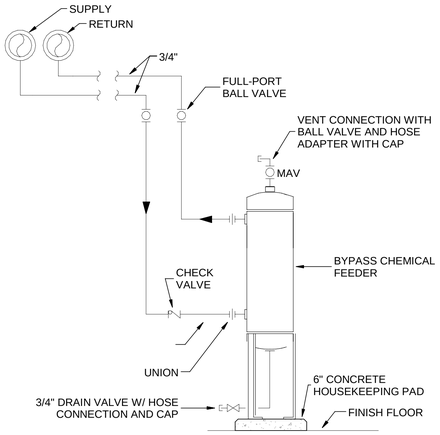
C4 COMPONENT DETAIL OF AHU-01
SCALE: NTS



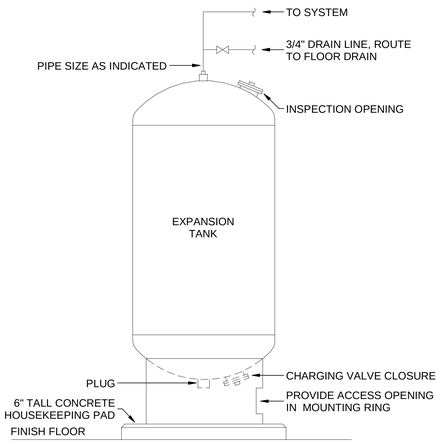
NOTES:

1. ENGRAVED PLASTIC SIGN, GREEN WITH WHITE LETTERING, INSTALLED 1" ABOVE SHUTOFF BUTTON. 1" TALL x 5" WIDE. "EMERGENCY OUTSIDE AIR SHUTOFF" LETTERING 1/2" TALL, OTHER LETTERING 1/16" TALL.
2. SIGN STATES BUILDING NUMBER, AREA AFFECTED, OR "ENTIRE BUILDING" IF BUTTON AFFECTS ENTIRE BUILDING.
3. SIGN LISTS EQUIPMENT TAG NAMES OF ALL HVAC EQUIPMENT AFFECTED BY SHUTDOWN SYSTEM.
4. EMERGENCY SHUTOFF SWITCH TO BE MOUNTED TO NEW/EXISTING SINGLE GANG BOX.
5. WHEN USED WITH MULTIPLE HVAC UNITS, INTERFACE WITH D.D.C. PANEL. WHEN USED WITH SINGLE HVAC UNIT, UTILIZE DIRECT RELAY.

A4 EMERGENCY OUTSIDE AIR SHUTOFF SWITCH DETAIL
SCALE: NTS



A1 CHEMICAL BYPASS FEEDER DETAIL
SCALE: NTS



A2 EXPANSION TANK DETAIL
SCALE: NTS

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REFER TO DETAIL B2/M-502 FOR AHU VALVING AND CONNECTION DETAIL.

AHU-01

350,000 BTU/H
69.8 GPM

2.5" CHWS

SYSTEM BYPASS LINE

3"

2 1/2" BYPASS CONTROL VALVE

3"

2.5" CHWS

2.5" CHWR

2.5" CHWR

AV

CWBT-1

200 GAL

1 1/4"

AV

P1

XT-1

3"

FD

AIR SEPARATOR AS-1

CF

2.5" CHWS

3/4"

3/4"

CF

CF

3"

DPT

350,000 BTU/H
29.2 TONS
63.5 GPM

P1

FD

CF-1

REF. CHEMICAL FEEDER DETAIL

CWP-1

69.8 GPM
57 FT HEAD

FD

2.5" CHWR

2.5" CHWR

CH-01

CU-01

30 TONS

1 CHILLED WATER FLOW DIAGRAM

SCALE: NTS

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10/14/22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	CAD
DRAWN BY:	CAD
REVIEWED BY:	JDN
PROJECT MANAGER:	NWC

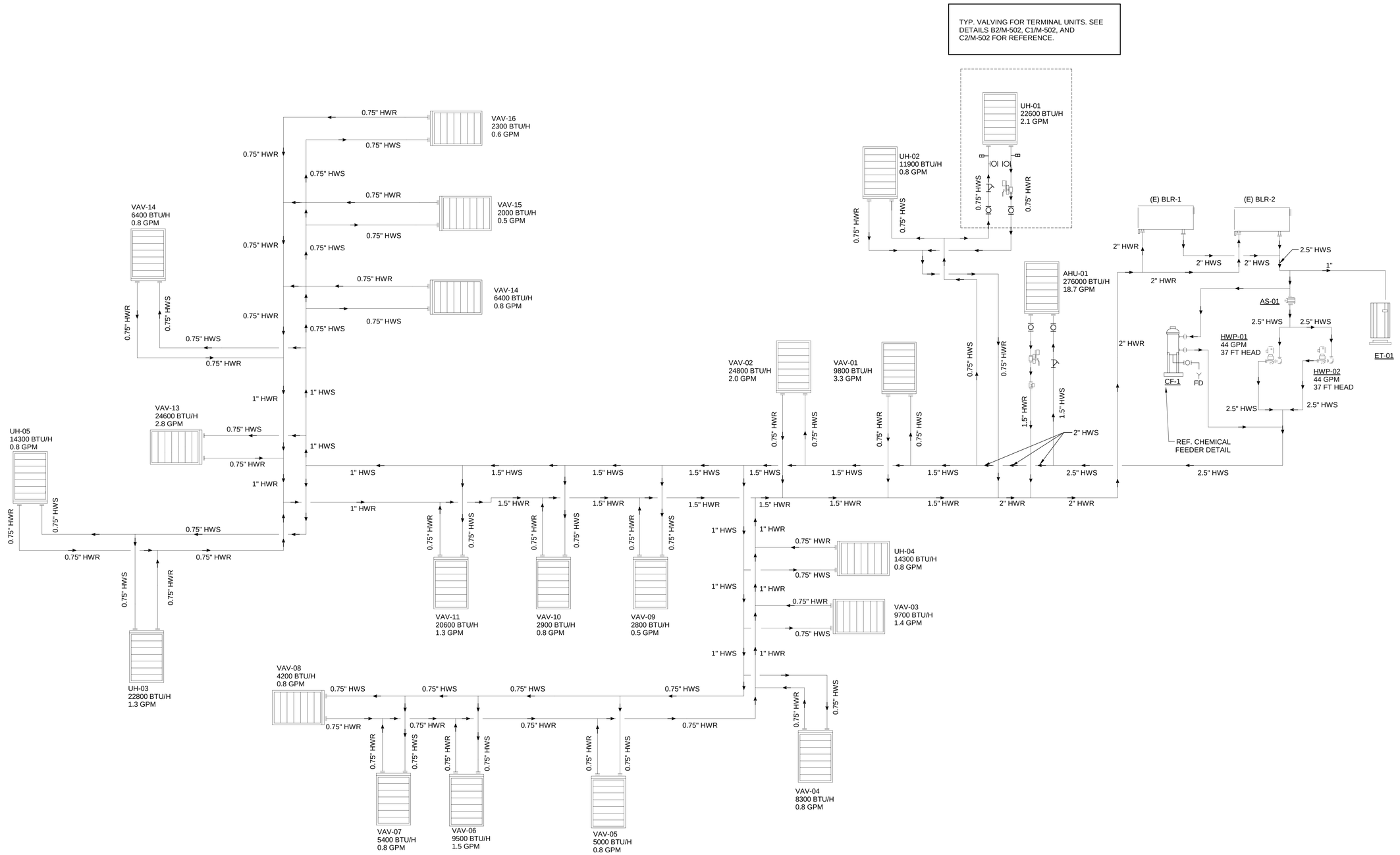
PROJECT NUMBER: 2021-613-00

SHEET TITLE: **FLOW DIAGRAMS**

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: M-601

TYP. VALVING FOR TERMINAL UNITS. SEE DETAILS B2/M-502, C1/M-502, AND C2/M-502 FOR REFERENCE.



1 HEATING WATER FLOW DIAGRAM

SCALE: NTS

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AIR HANDLING UNIT SCHEDULE

MARK	SERVES	FAN DATA				MOTOR DATA				COOLING COIL DATA					PRE-HEAT COIL DATA							NOTES
		MAX. CFM	MIN. CFM	MIN. O/A	ESP (IN. WC.)	QTY	MOTOR HP EACH	MOTOR HP TOTAL	MOTOR (V / ϕ / HZ)	COIL CFM	TOTAL MBH	COIL GPM	MAX AIR DP (IN. W.C.)	MAX WATER DP (FT)	COIL CFM	ENTERING DB (°F)	LEAVING DB (°F)	TOTAL MBH	COIL GPM	MAX AIR PD (IN. W.C.)	MAX WATER PD (FT)	
AHU-01	OFFICES	10785	3235	1685	1 1/4"	2	7.5	15	208 / 3 / 60	10585	350000	69.8	1	5	3140	-5	104.7	276.8	18.7	1	5	ALL LISTED

NOTES:
1. CHILLED WATER COILS SELECTED FOR 45°F ENTERING WATER TEMPERATURE AND 60°F LEAVING WATER TEMPERATURE.
2. HEATING WATER COILS SELECTED FOR 150°F ENTERING WATER TEMPERATURE AND 120°F LEAVING WATER TEMPERATURE.
3. PROVIDE UNIT WITH MODULATING HOT GAS REHEAT FOR HUMIDITY CONTROL.
4. VARIABLE FREQUENCY DRIVE FOR SUPPLY FANS.
5. PROVIDE 2" MERV-8 PREFILTERS AND 4" MERV-13 MAIN FILTERS.
6. PROVIDE HEATING AND COOLING COILS WITH FACTORY-APPLIED CORROSION RESISTANT EPOXY COATING.
7. PROVIDE INTERFACE CARDS FOR COMMUNCIATION WITH BAS SYSTEM AS REQUIRED.
8. PROVIDE SINGLE POINT POWER WITH A NON-FUSED DISCONNECT SWITCH.

MINI-SPLIT INDOOR UNIT SCHEDULE

MARK	TYPE	SPACE TEMPERATURE SETPOINTS		COOLING DATA		HEATING DATA		ELECTRICAL DATA			NOTES
		COOLING (ºF)	HEATING (ºF)	TOTAL CAPACITY (MBH)	EAT DB/WB (ºF/ºF)	HEATING CAPACITY (MBH)	EAT DB (ºF)	V/Ø/HZ	MCA		
AC-01	WALL MOUNTED	76.0	65.0	12.0	76.0 / 63.4	12.0	65.0	208 / 1 / 60	0.31		ALL

NOTES:
1. SUPPLIED WITH REMOTE CONTROL FOR WALL MOUNTED UNIT.
2. MECHANICAL CONTRACTOR TO PROVIDE ELECTRICAL DISCONNECT SWITCH.
3. SPECIFIED UNIT HAS LOW AMBIENT CONTROL, ANTI-SHORT CYCLE TIMER, FAN CONTROL RELAY, AND USES R-410A REFRIGERANT.
4. CONTRACTOR TO PROVIDE AND INSTALL CONDENSATE PUMP AND DISCONNECT SWITCH.

AIR DISTRIBUTION DEVICE SCHEDULE

MARK	TYPE	SERVICE	FACE SIZE (IN.xIN.)	NECK SIZE (IN.xIN. OR IN.)	NOTES
A-1	SQUARE CEILING DIFFUSER	SUPPLY	12X12	6Ø	1, 2
A-2	SQUARE CEILING DIFFUSER	SUPPLY	24X24	6Ø	1, 2
A-3	SQUARE CEILING DIFFUSER	SUPPLY	24X24	8Ø	1, 2
A-4	SQUARE CEILING DIFFUSER	SUPPLY	24X24	10Ø	1, 2
A-5	SQUARE CEILING DIFFUSER	SUPPLY	24X24	12Ø	1, 2
C-1	DOUBLE DEFLECTION GRILLE	SUPPLY	12X10	PER MFR	1, 2, 3
C-2	DOUBLE DEFLECTION GRILLE	SUPPLY	36X6	PER MFR	1, 2, 3
D-1	DOUBLE DEFLECTION GRILLE	RETURN	36X6	PER MFR	1, 2, 3
D-2	DOUBLE DEFLECTION GRILLE	EXHAUST	12X12	10X10	1, 2, 3
D-3	DOUBLE DEFLECTION GRILLE	EXHAUST	24X24	22X22	1, 2, 3
E-1	DOUBLE DEFLECTION GRILLE	EXHAUST	12X12	10X10	1, 2, 3
E-2	DOUBLE DEFLECTION GRILLE	EXHAUST	24X24	22X22	1, 2, 3

NOTES:
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND MECHANICAL DRAWINGS TO COORDINATE DEVICE MOUNTING AND BORDER TYPE TO MATCH CEILING TYPE OR SURFACE MOUNT.
2. REFER TO ARCHITECT FOR FINISH. MATERIAL IS ALUMINUM.
3. INTEGRAL FACE-OPERATED BALANCING DAMPER.

FAN SCHEDULE

MARK	SERVICE	LOCATION	FAN TYPE	CAPACITY (CFM)	ESP (IN. W.C.)	FAN SPEED (RPM)	MOTOR POWER (BHP)	DRIVE TYPE	MOTOR DATA		INLET SOUND POWER (dBA)	NOTES
									HP	V / Ø / HZ		
EF-01	VENTILATION COOLING	MECHANICAL ROOM	ROOF MOUNTED	1700	0.375	1104	0.27	DIRECT	1/2	120 / 1 / 60	59	2, 4, 6, 7, 10
EF-02	VENTILATION COOLING	ELECTRIC ROOM	ROOF MOUNTED	600	0.375	1625	0.08	DIRECT	1/6	120 / 1 / 60	55	2, 4, 6, 7, 10
EF-03	RESTROOM EXHAUST	RESTROOM	SIDEWALL AXIAL	655	0.5	1268	0.09	DIRECT	1/4	120 / 1 / 60	54	2, 4, 6, 7, 10
EF-04	BOOTH EXHAUST*	TOOL ROOM	ROOF MOUNTED	-	-	-	-	-	-	-	-	12
EF-05	BREAK ROOM EXHAUST	BREAK ROOM	ROOF MOUNTED	800	0.25	1488	0.1	DIRECT	1/6	120 / 1 / 60	57	2, 4, 6, 7, 10
RF-01	AHU-01 RETURN / RELIEF	ABOVE 118	INLINE TUBE AXIAL	8917	0.75	1160	2.2	DIRECT	3	208 / 3 / 60	70	1,2,3,4,5,7,9,11

NOTES:
1. PROVIDE SPRING ISOLATORS FOR SUPPORT.
2. UNIT SHALL BE UL-705 LISTED FOR POWER VENTILATION SERVICE.
3. PROVIDE WITH INLET AND OULET FLANGE.
4. FAN SELECTION SHALL HAVE A NON-OVERLOADING MOTOR HP.
5. VARIABLE FREQUENCY DRIVEN NEMA PREMIUM EFFICIENT MOTOR WITH SHAFT GROUNDING RINGS.
6. ELECTRONICALLY COMMUTATED MOTOR WITH INTEGRAL SPEED CONTROL.
7. MOTOR RATED FOR 105°F.
8. BACKWARD INCLINED ALUMINUM FAN WHEEL.
9. CAST ALUMINUM PROPELLER.
10. MECHANICAL CONTRACTOR SHALL PROVIDE MOTOR STARTER FOR THIS FAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
11. MECHANICAL CONTRACTOR SHALL PROVIDE VARIABLE SPEED DRIVE FOR THIS FAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. EXHAUST HOOD TO BE PROVIDED BY BASE. CONFIRM SIZE, ELECTRICAL CONNECTIONS, DUCTWORK CONNECTIONS, AND DUCT ROUTING WITH BASE PRIOR TO INSTALLATION.

UNIT HEATER SCHEDULE

MARK	TYPE	SERVES	CAPACITY (BTUH)	AIRFLOW (CFM)	EAT (°F)	FLOW (GPM)	HEAT SOURCE	MAX. WPD (FT. W.C.)	EWT (°F)	LWT (°F)	ELECTRICAL DATA		NOTES
											HP	V / Ø / HZ	
UH-01	HORIZONTAL	MECHANICAL ROOM	22600	750	50	2.1	HEATING WATER	0.05	150	120	1/20	115 / 1 / 60	ALL
UH-02	HORIZONTAL	ELECTRICAL ROOM	11900	395	50	0.77	HEATING WATER	0.002	150	120	16 WATT	115 / 1 / 60	ALL
UH-03	CABINET UNIT HEATER	VEST 100	22800	335	50	1.34	HEATING WATER	0.16	150	120	1/15	115 / 1 / 60	ALL
UH-04	CABINET UNIT HEATER	VEST 114	14300	230	50	0.84	HEATING WATER	0.06	150	120	1/15	115 / 1 / 60	ALL
UH-05	CABINET UNIT HEATER	VEST 126	14300	230	50	0.84	HEATING WATER	0.06	150	120	1/15	115 / 1 / 60	ALL

NOTES:
1. PROVIDE TYPE 'H1' VIBRATION ISOLATION HANGERS WITHIN 12" OF STRUCTURAL ATTACHMENT.
2. PROVIDE INTEGRAL MANUFACTURER THERMOSTAT.
3. PROVIDE WITH DISCONNECT SWITCH.

OUTDOOR CONDENSING UNIT SCHEDULE

MARK	ASSOCIATED EQUIPMENT	TYPE	REFRIGERANT	COOLING DATA		HEATING DATA		DIMENSIONS (IN X IN X IN)	ELECTRICAL DATA			NOTES
				NET TOTAL CAPACITY (MBH)	OUTDOOR AMBIENT (ºF)	NET TOTAL CAPACITY (MBH)	OUTDOOR AMBIENT (ºF)		V/Ø/HZ	MCA	MOP	
CU-01	AHU-01	AIR CONDITIONER	R410A	350.0	90.0	-	-	89 X 41 X 74	208 / 3 / 60	14.9	20	1, 2, 3
CU-02	AC-01	AIR CONDITIONER	R410A	12.0	90.0	12.0	-5.0	28 X 11 X 20	208 / 1 / 60	10	15	1, 2, 4

NOTES:
1. FACTORY INSTALLED DISCONNECT.
2. ELECTRONICALLY COMMUTATED MOTORS.
3. CU-01 TO BE PROVIDED WITH THE CH-01 FOR INTEGRATED DESIGN.
4. CU-02 TO BE PROVIDED WITH AC-01 AND PROVIDED WITH SINGLE POINT POIWER CONNECTION. INDOOR UNIT TO BE POWERED BY CONDENSING UNIT. CU-02 TO BE PLACED ABOVE CEILING WITHIN THE BUILDING.

WATER COOLED CHILLER SCHEDULE

MARK	LOCATION	TYPE	EVAPORATOR DATA						CONDENSER DATA				ELECTRICAL DATA			DIMENSIONS (IN X IN X IN)	NOTES
			CAPACITY (TONS)	FLOW (GPM)	FLUID TYPE	EWT (ºF)	LWT (ºF)	MAX. PD. (FT. H2O)	FLOW (GPM)	FLUID TYPE	EWT (ºF)	LWT (ºF)	MCA	MOCP	V / Φ / Hz		
CH-01	MECHANICAL ROOM	WATER COOLED	30	63.5	WATER	95	85	15	92	30% GLYCOL 70% WATER	54	44	125.6	175	208 / 3 / 60	57 X 32 X 65	ALL LISTED

NOTES:
1. CHILLER SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVE AND INTEGRAL HARMONICS FILTER.
2. CHILLER MICROPROCESSOR CONROLLER SHALL COMMUNICATE WITH THE BAS SYSTEM.
3. PROVIDE WITH FACTORY INSTALLED DISCONNECT.
4. PROVIDE WITH SOUND ENCLOSURE.
5. CU-01 CONDENSER PROVIDED WITH CHILLER UNIT FOR INTEGRATED DESIGN.

VAV BOX SCHEDULE

MARK	AIRFLOW			HOT WATER COIL							MAX. RAD. NC	INLET SIZE	NOTES
	MAX. COOLING AIRFLOW (CFM)	MAX. HEATING AIRFLOW (CFM)	MIN. AIRFLOW (CFM)	CAPACITY (MBH)	EAT (°F)	LAT (°F)	FLOW (GPM)	MIN. ROWS	MAX. WPD (FT. W.C.)	MAX. APD (IN. W.C.)			
VAV-01	1000	300	300	9.8	55.0	85	3.3	1	1.1	.15	22	9	ALL
VAV-02	2000	600	600	24.8	55.0	93.1	2	2	0.35	0.53	26	12	ALL
VAV-03	600	180	180	9.7	55.0	104.6	1.4	2	0.29	0.23	23	7	ALL
VAV-04	360	108	108	8.3	55.0	126	0.8	3	0.18	0.25	20	6	ALL
VAV-05	250	75	75	5.0	55.0	116.4	0.8	2	0.17	0.06	15	7	ALL
VAV-06	720	220	220	12.1	55.0	105.7	0.7	2	0.12	0.31	23	8	ALL
VAV-07	325	98	98	5.4	55.0	106	0.8	2	0.12	0.14	25	5	ALL
VAV-08	220	66	66	4.2	55.0	113.8	0.8	2	0.12	0.07	20	5	ALL
VAV-09	220	66	66	2.8	55.0	113.8	0.5	1	0.17	0.07	29	4	ALL
VAV-10	130	39	39	2.9	55.0	123.2	0.8	2	0.12	0.03	11	5	ALL
VAV-11	2120	640	640	22.6	55.0	87.5	1.7	1	0.16	0.09	23	14	ALL
VAV-12	480	144	144	9.7	55.0	117	0.8	3	0.18	0.41	24	6	ALL
VAV-13	1440	432	432	24.6	55.0	107.4	2.8	2	0.37	0.17	20	14	ALL
VAV-14	440	132	132	6.4	55.0	99.8	0.8	2	0.12	0.23	23	6	ALL
VAV-15	130	39	39	2	55.0	101.4	0.4	1	0.12	0.02	18	4	ALL
VAV-16	150	45	45	2.3	55.0	102	0.6	1	0.2	0.02	14	5	ALL

NOTES:
1. REFER TO "MECHANICAL CALLOUTS" DESCRIPTIONS ON SHEET M-001.
2. RATED AT 0.75 IN. W.C. INLET PRESSURE AND 0.25 IN. W.C. OUTLET PRESSURE.
3. E.W.T. IS 150°F. FINS PER INCH MIN. IS 10. HEATING MEDIUM IS WATER. E.A.T. IS 49°F. INLET STATIC PRESSURE IS 1.0" W.C. DOWNSTREAM STATIC PRESSURE DROP IS 0.25"W.C.
4. WRAP THE HEATING WATER COIL WITH INSULATION
5. PROVIDE WITH 24V CONTROL TRANSFORMER. POWERED BY 120V ELECTRICAL SUPPLY. DISCONNECT BY E.C.

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DUCT CONSTRUCTION AND LEAKAGE TESTING SCHEDULE

SYSTEM	DUCT PRESSURE CLASS				SUPPLY				RETURN / OUTSIDE AIR		DUCT TEST PRESSURE: INCHES OF WATER COLUMN
	INCHES OF WATER COLUMN				ROUND		RECTANGULAR				
	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	
AHU-01	1				A	3	A	6			1.0
				-0.5					A	6	0.5
EF-01			-0.5						A	24	0.5
RF-01			-1.0						A	24	1.0

FLOW CONTROL VALVE SCHEDULE

MARK	ASSOCIATED EQUIPMENT	FLUID TEMP (°F)	DESIGN FLOW RATE (GPM)	NOMINAL VALVE SIZE (IN.)	VALVE MAX. FLOW RATE (GPM)	DIFF. PRESSURE RANGE (ΔPSIG)		VALVE TYPE	ACTION	NOTES
						MIN.	MAX.			
FCV-HW1	HW MIN FLOW BYPASS	150.0	22	2	50	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW2	BLR-01 ISO VALVE	150.0	42.2	2	-	-	-	BALL	2-POSITION	2,5,6,7,8
FCV-HW3	BLR-02 ISO VALVE	150.0	42.2	2	-	-	-	BALL	2-POSITION	2,5,6,7,8
FCV-HW4	VAV-01	150.0	3.3	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW5	VAV-02	150.0	2.0	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW6	VAV-03	150.0	1.4	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW7	VAV-04	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW8	VAV-05	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW9	VAV-06	150.0	1.5	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW10	VAV-07	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW11	VAV-08	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW12	VAV-09	150.0	0.5	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW13	VAV-10	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW14	VAV-11	150.0	1.3	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW15	VAV-12	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW16	VAV-13	150.0	2.8	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW17	VAV-14	150.0	0.8	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW18	VAV-15	150.0	0.5	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW18	VAV-16	150.0	0.6	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW19	UH-01	150.0	2.1	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW20	UH-02	150.0	0.77	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW21	UH-03	150.0	1.34	3/4	7	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW22	UH-04	150.0	0.84	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW23	UH-05	150.0	0.84	1/2	5	5.0	60.0	PICV	MODULATING	1,2,3,4,8
FCV-HW24	AHU-01	150.0	69.8	2.5	85.0	5.0	60.0	PICV	MODULATING	1,2,3,4,8

NOTES:
1. PROVIDE PRESSURE INDEPENDENT CONTROL VALVE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. PROVIDE ACTUATOR FOR USE WITH 24V POWER SOURCE.
3. PROVIDE ACTUATOR WITH 0-100% POSITION INDICATOR.
4. REFER TO CONTROL DIAGRAMS FOR NECESSARY ACTUATOR FAILURE POSITIONS.
5. PROVIDE ACTUATOR WITH LIMIT SWITCHES.
6. PROVIDE ACTUATOR WITH NEMA 4X ENCLOSURE.
7. PROVIDE ACTUATOR WITH 600 IN-LB MINIMUM OUTPUT TORQUE AT 24V.
8. 2-WAY VALVE.

PUMP SCHEDULE

MARK	TYPE	SERVICE	CONNECTION SIZE		DUTY POINT			MOTOR			NOTES
			INLET (IN.)	OUTLET (IN.)	CAPACITY (GPM)	TDH (FT. WC.)	BHP	RPM	HP	V / ϕ / Hz	
CWP-01	HORIZONTAL CLOSE-COUPLED IN-LINE CENTRIFUGAL	CHILLED WATER	2.5	2.5	69.8	57.0	2.03	1760	3	208 / 1 / 60	ALL
HWP-01	HORIZONTAL CLOSE-COUPLED IN-LINE CENTRIFUGAL	HEATING WATER	2.5	2.5	44.0	37.3	0.63	1760	1	208 / 1 / 60	ALL
HWP-02	HORIZONTAL CLOSE-COUPLED IN-LINE CENTRIFUGAL	HEATING WATER	2.5	2.5	44.0	37.3	0.63	1760	1	208 / 1 / 60	ALL

NOTES:
1. PROVIDE NEMA MG-1 PREMIUM EFFICIENCY INVERTER-DUTY MOTOR WITH SHAFT GROUNDING RINGS AND TEFC ENCLOSURE.
2. PROVIDE UNIT-MOUNTED VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT.
3. PUMP SELECTION SHALL HAVE A NON-OVERLOADING MOTOR HP.
4. PROVIDE SUCTION DIFFUSER WITH REMOVABLE STRAINER AND LINE SIZE SYSTEM CONNECTION. INCLUDE 10-MESH OR BETTER START-UP STRAINER AND FINAL STAINLESS STEEL STRAINER.
5. CAPABLE OF INTEGRATION INTO BACNET FRONT-END CONTROL SYSTEM.
6. INTEGRATED SENSORLESS PUMP CONTROL.

EXPANSION TANK SCHEDULE

MARK	TYPE	SERVICE	MIN. TANK VOLUME (GAL)	MIN. VOLUME ACCEPTANCE (GAL)	MIN. SYSTEM FILL PRESSURE (PSIG)	RELIEF VALVE WORKING PRES. (PSIG)	NOTES
ET-01	DIAPHRAGM, VERTICAL FLOOR-MOUNTED	HEATING WATER	3.2	1.6	15	50	ALL
ET-02	DIAPHRAGM, VERTICAL FLOOR-MOUNTED	CHILLED WATER	42.3	3.4	17	50	ALL

NOTES:
1. PROVIDE ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.
2. SELECTION BASED ON HEATING WATER SYSTEM VOLUME: 350 GAL.

AIR SEPARATOR SCHEDULE

MARK	TYPE	SERVICE	SYSTEM CONNECTION	MIN. FLOW (GPM)	MAX. WPD (PSIG)	NOTES
AS-01	IN-LINE COALESCING AIR/DIRT SEPARATOR	HEATING WATER	3	44.0	3	ALL
AS-02	IN-LINE COALESCING AIR/DIRT SEPARATOR	CHILLED WATER	3	69.8	3	ALL

NOTES:
1. PROVIDE ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.
2. PROVIDE TOP-SIDE THREADED CONNECTION FOR AIR VENT AND BOTTOM-SIDE THREADED CONNECTION FOR DRAIN VALVE.
3. FLANGED CONNECTIONS.

FLOW METER SCHEDULE

MARK	TYPE	SERVICE	LINE SIZE (IN.)	MAX FLOW (GPM)	MIN FLOW (GPM)	NOTES
FM-HW01	ELECTROMAGNETIC INSERTION FLOW METER	HEATING WATER	2	44.0	10	ALL

NOTES:
1. FLUID IS WATER WITH EXPECTED MAX TEMP OF 150°F AND MIN TEMP OF 130°F.
2. PROVIDE ALL ADAPTERS AND FITTINGS NECESSARY FOR INTERFACE WITH A BACNET DDC SYSTEM.
3. WET CALIBRATED AND ACCURATE TO WITHIN +/- 1% OF READING.
4. NEMA 4 ENCLOSURE.

BUFFER TANK SCHEDULE

MARK	TYPE	SERVICE	WATER TEMP (°F)	SYSTEM CONNECTION (IN.)	TYPE	VOLUME (GAL.)	INTERIOR BAFFLE?	NOTES
BT-01	VERTICAL	CHILLED WTAER	45	3	FLANGED	150	YES	ALL

NOTES:
1. DOME-BOTTOM, ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.
2. PROVIDE WITH LEGS TO KEEP FEEDER ABOVE MECHANICAL ROOM FLOOR.
3. PROVIDE UNIT MANUFACTURER'S FILTER BAG KIT INCLUDING ONE SPARE FILTER.

CHEMICAL FEEDER SCHEDULE

MARK	SERVICE	VOLUME (GAL)	NOTES
CF-01	HEATING WATER	2	ALL
CF-02	CHILLED WATER	2	ALL

NOTES:
1. DOME-BOTTOM, ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.
2. PROVIDE WITH LEGS TO KEEP FEEDER ABOVE MECHANICAL ROOM FLOOR.
3. PROVIDE UNIT MANUFACTURER'S FILTER BAG KIT INCLUDING ONE SPARE FILTER.

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10/14/22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: CAD
DRAWN BY: CAD
REVIEWED BY: JDN
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: SCHEDULES
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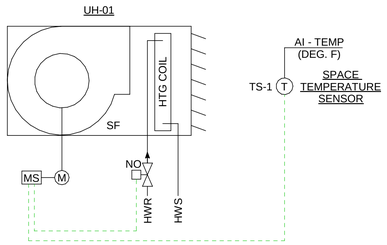


EQUIPMENT INPUT / OUTPUT SUMMARY UH-01	BO		BI				AI					AO				PROGRAMS				
	ENABLE / DISABLE	OPEN / CLOSE	STATUS	STATUS OPEN	ALARM	ENERGIZED / DE-ENERGIZED	AIRFLOW (CFM)	POSITION (% OPEN)	FREQUENCY (HZ)	TEMPERATURE (DEG. F.)	RELATIVE HUMIDITY (%)	FREQUENCY (HZ)	ELECTRIC	POSITION (% OPEN)	RESET	HIGH LIMIT ALARM	LOW LIMIT ALARM	ALARM / ABNORMAL OFF	RUN TIME TOTAL	GRAPHIC
SPACE TEMPERATURE SENSOR, TS-1										●							●			●
HEATING WATER CONTROL VALVE								●												●

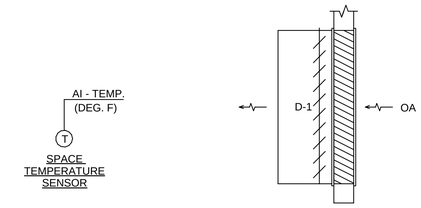
SEQUENCE OF OPERATION: HYDRONIC UNIT HEATER UH-01
(SIMILAR FOR UH-02, UH-03, UH-04; UH-05)

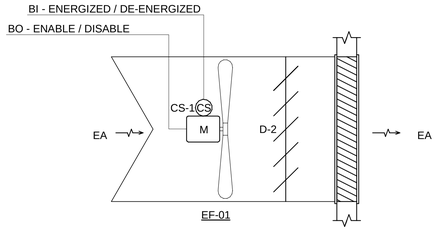
UNIT HEATER SHALL REMAIN CONTINUOUSLY ENABLED UNLESS DISABLED BY LOCAL OPERATOR COMMAND AT DISCONNECT SWITCH. WHEN SPACE TEMPERATURE AS SENSED BY SPACE TEMPERATURE SENSOR DROPS BELOW 50°F (ADJ.), UNIT HEATER SUPPLY FAN SHALL BE ENERGIZED AND HEATING COIL CONTROL VALVE SHALL OPEN. WHEN SPACE TEMPERATURE REACHES 55°F (ADJ.), UNIT HEATER SUPPLY FAN SHALL BE DE-ENERGIZED AND HEATING COIL CONTROL VALVE SHALL CLOSE.

BAS SHALL MONITOR SPACE TEMPERATURE SENSOR. IF SPACE TEMPERATURE DROPS BELOW 40°F (ADJ.), BAS SHALL GENERATE A LEVEL 3 ALARM.

D1 HYDRONIC UNIT HEATER CONTROLS

SCALE: NTS





SEQUENCE OF OPERATION: EF-01
(SIMILAR FOR EF-02)

GENERAL:
EXHAUST FAN EF-01 SHALL BE ENABLED / DISABLED AUTOMATICALLY ACCORDING TO SEQUENCE OF OPERATIONS OUTLINED BELOW, UNLESS OTHERWISE COMMANDED BY BAS OPERATOR OR LOCAL COMMAND.

SPACE TEMPERATURE CONTROL:
WHEN SPACE TEMPERATURE EXCEEDS 85°F (ADJ.), EXHAUST FAN SHALL BE ENERGIZED.

WHEN SPACE TEMPERATURE DROPS BELOW 83°F (ADJ.), EXHAUST FAN SHALL BE DE-ENERGIZED.

IF CURRENT SENSING RELAY INDICATES EXHAUST FAN HAS FAILED, A LEVEL 3 ALARM SHALL BE GENERATED AT THE BAS. STATUS OF FAN AS INDICATED BY CURRENT SENSING RELAY SHALL BE MONITORED AT THE BAS.

EQUIPMENT INPUT / OUTPUT SUMMARY EF-01	BO		BI				AI					AO				PROGRAMS				
	ENABLE / DISABLE	OPEN / CLOSE	STATUS	STATUS OPEN	ALARM	ENERGIZED / DE-ENERGIZED	AIRFLOW (CFM)	PRESSURE (IN. W.G.)	FREQUENCY (HZ)	TEMPERATURE (DEG. F.)	RELATIVE HUMIDITY (%)	FREQUENCY (HZ)	ELECTRIC	POSITION (% OPEN)	RESET	HIGH LIMIT ALARM	LOW LIMIT ALARM	ALARM / ABNORMAL OFF	RUN TIME TOTAL	GRAPHIC
EF-01 ENABLE / DISABLE	●																	●	●	●
EF-01 CURRENT SENSING RELAY, CS-1					●	●													●	●
SPACE TEMPERATURE SENSOR, TS-1										●										●

A1 VENTILATION EXHAUST FAN CONTROLS

SCALE: NTS

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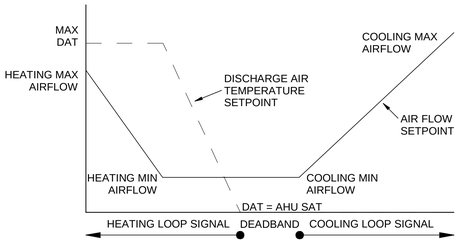


EQUIPMENT INPUT / OUTPUT SUMMARY VAV TERMINAL UNITS	BO					BI			AI					AO			PROGRAMS				
	ENABLE / DISABLE	OPEN / CLOSE	OCCUPIED / UNOCCUPIED	STATUS	STATUS OPEN	ALARM	AIRFLOW (CFM)	POSITION (% OPEN)	FREQUENCY (HZ)	TEMPERATURE (DEG. F.)	RELATIVE HUMIDITY (%)	FREQUENCY (HZ)	ELECTRIC	POSITION (% OPEN)	RESET	HIGH LIMIT ALARM	LOW LIMIT ALARM	ALARM / ABNORMAL OFF	RUN TIME TOTAL	GRAPHIC
SINGLE DUCT TERMINAL UNIT WITH REHEAT, VARIABLE VOLUME																				●
TERMINAL UNIT OCCUPIED / UNOCCUPIED			●																	●
TERMINAL UNIT DDC CONTROLLER STATUS				●														●		●
SUPPLY AIR VOLUME, AFS-1							●										●			●
SUPPLY AIR VALVE POSITION, AV-1								●												●
REHEAT COIL CONTROL VALVE, V-1								●												●
LEAVING SUPPLY AIR TEMPERATURE, TS-1										●						●	●			●
ZONE TEMPERATURE SENSOR, TS-2										●						●	●			●
RTU-01 SUPPLY AIR TEMPERATURE										●										●

C2 DUAL-MAX VAV CONTROLS

SCALE: NTS

SEQUENCE OF OPERATION

WHEN TERMINAL UNIT IS IN UNOCCUPIED MODE, TERMINAL UNIT AIR VALVE AND REHEAT COIL CONTROL VALVE SHALL REMAIN FULLY CLOSED. IF TERMINAL UNIT DDC CONTROLLER DETECTS A FAULT CONDITION, TERMINAL UNIT AIR VALVE SHALL FAIL IN POSITION, REHEAT COIL CONTROL VALVE SHALL OPERATE ACCORDING TO NORMAL SEQUENCE OF OPERATION, AND A LEVEL 4 ALARM SHALL BE GENERATED AT THE BAS.

OCCUPANCY: OCCUPANCY RECEIVED FROM THE BAS NETWORK BY TIME SCHEDULE AND OPTIMIZED START. IF NO UPDATE IS RECEIVED FROM THE BAS NETWORK FOR MORE THAN THE COMMUNICATIONS FAILURE DELAY OF 15 MINUTES (ADJ.), OCCUPANCY COMMAND FALLS BACK INTO OCCUPIED MODE.

OCCUPANCY STATUS: IS DERIVED AS MENTIONED ABOVE. THE OCCUPANT CAN FORCE THE SYSTEM INTO BYPASS MODE DURING UNOCCUPIED MODE VIA THE LCD TOUCHSCREEN ZONE TEMPERATURE SENSOR. THE OVERRIDE DELAY CAN BE ADJUSTED THROUGH BYPASS TIME 120 MIN. (ADJ.).

SPACE TEMPERATURE SETPOINTS:

UNOCCUPIED COOLING SETPOINT:	COOLING SETPOINT DURING UNOCCUPIED MODE.	85°F
OCCUPIED COOLING SETPOINT:	COOLING SETPOINT DURING OCCUPIED MODE.	78°F
OCCUPIED HEATING SETPOINT:	HEATING SETPOINT DURING OCCUPIED MODE.	68°F
UNOCCUPIED HEATING SETPOINT:	HEATING SETPOINT DURING UNOCCUPIED MODE.	55°F
SETPOINT OFFSET:	SETPOINT ADJUSTMENT VIA LCD TOUCHSCREEN ZONE SENSOR.	+/- 2°F

THE ACTUAL COOLING SETPOINT IS DERIVED BASED ON OCCUPANCY STATUS AND SETPOINT OFFSET. THE ACTUAL HEATING SETPOINT IS DERIVED BASED ON OCCUPANCY STATUS AND SETPOINT OFFSET. THE EFFECT SETPOINT REFLECTS ACTUAL COOLING SETPOINT OR ACTUAL HEATING SETPOINT DEPENDING ON HVAC MODE STATUS.

HVAC MODE COMMAND: HVAC MODE COMMAND IS RECEIVED FROM THE BAS NETWORK. IF NO UPDATE IS RECEIVED FROM THE NETWORK FOR MORE THAN COMMUNICATION FAILURE DELAY 15 MIN. (ADJ.), HVAC MODE COMMAND FALLS BACK TO AUTO. THE MODES ARE: AUTO, HEAT, MORNING WARM UP, COOL, PRE COOL, AND OFF.

AIR FLOW CONTROL SETPOINTS:

MINIMUM FLOW SETPOINT:	MINIMUM FLOW SETPOINT DURING OCCUPIED MODE.
MAXIMUM COOLING FLOW SETPOINT:	MAXIMUM FLOW SETPOINT DURING COOLING MODE.
MINIMUM HEATING FLOW SETPOINT:	MINIMUM FLOW SETPOINT WHEN REHEAT COIL IS ACTIVE.
MAXIMUM HEATING FLOW SETPOINT:	MAXIMUM FLOW SETPOINT DURING HEATING MODE.
MINIMUM UNOCCUPIED FLOW SETPOINT:	MINIMUM FLOW SETPOINT DURING UNOCCUPIED MODE.

THE ACTUAL FLOW SETPOINT IS CALCULATED BASED ON THE CONTROL VARIABLES DESCRIBED BELOW.

DUCT INLET TEMPERATURE:
DUCT INLET TEMPERATURE IS RECEIVED FROM THE AHU SERVING THE TERMINAL UNIT VIA THE BAS NETWORK. USING DUCT INLET TEMPERATURE AND TEMPERATURE SETPOINT AVERAGE (ACTUAL COOLING SETPOINT AND ACTUAL HEATING SETPOINT) THE SYSTEM EVALUATES WHETHER THE INLET TEMPERATURE IS SUITABLE FOR COOLING OR HEATING THE SPACE. IF HVAC MODE STATUS IS IN MORNING WARM-UP, THE AIR IS BY DEFAULT CONSIDERED SUITABLE FOR HEATING THE SPACE.

COOLING MODE:
WHEN THE AIR IS SUITABLE FOR COOLING THE SPACE, ACTUAL FLOW SETPOINT MODULATES BETWEEN MINIMUM FLOW SETPOINT AND MAXIMUM COOLING FLOW SETPOINT BASED ON TERMINAL LOAD. OTHERWISE, WHEN THE AIR IS TOO WARM, ACTUAL FLOW SETPOINT IS BY DEFAULT EQUAL TO MINIMUM FLOW SETPOINT.

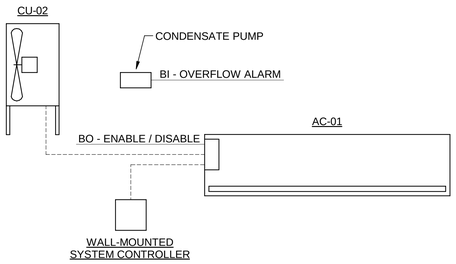
HEATING MODE:
WHEN THE AIR IS SUITABLE FOR HEATING THE SPACE, ACTUAL FLOW SETPOINT MODULATES BETWEEN MINIMUM FLOW SETPOINT AND MAXIMUM HEATING FLOW SETPOINT. OTHERWISE, WHEN THE AIR IS TOO COLD, ACTUAL FLOW SETPOINT IS BY DEFAULT EQUAL TO MINIMUM FLOW SETPOINT. REGARDLESS, WHEN DUCT HEATING IS REQUIRED, MINIMUM FLOW SETPOINT IS REPLACED BY THE HIGHEST VALUE BETWEEN MINIMUM FLOW SETPOINT AND MINIMUM HEATING FLOW SETPOINT.

OCCUPANCY STATUS:
WHEN IN UNOCCUPIED MODE, THE MINIMUM FLOW SETPOINT IS REPLACED BY MINIMUM UNOCCUPIED FLOW SETPOINT.

DUAL MAXIMUM:
IN HEATING MODE, THE ACTUAL FLOW SETPOINT IS CONTROLLED BY THE FOLLOWING METHOD. THE FIRST 50 PERCENT OF THE HEATING LOAD ADJUSTS THE DISCHARGE AIR SETPOINT BETWEEN 53°F (ADJ.) AND SCHEDULED MAXIMUM LEAVING AIR TEMPERATURE SETPOINT (ADJ.). THE SECOND 50 PERCENT OF THE HEATING LOAD ADJUSTS THE ACTUAL FLOW SETPOINT BETWEEN MINIMUM HEATING FLOW SETPOINT AND MAXIMUM HEATING FLOW SETPOINT.

AIR FLOW CALCULATION:
THE ACTUAL FLOW IS CALCULATED USING THE DIFFERENTIAL PRESSURE FROM THE ONBOARD SENSOR AND THE VAV BOX K-FACTOR CALIBRATED DURING TEST & BALANCE.

HOT WATER REHEAT:
WHEN ACTUAL FLOW IS AT HEATING MINIMUM AND SPACE TEMPERATURE DROPS BELOW THE ACTUAL HEATING SETPOINT, THEN MODE SHALL BE HEATING. FROM 0% TO 50% HEATING, THE AIR VALVE SHALL MODULATE TO MAINTAIN HEATING MINIMUM AIRFLOW AND REHEAT COIL CONTROL VALVE SHALL MODULATE TO PROVIDE DISCHARGE AIR TEMPERATURE BETWEEN 53°F (ADJ.) AND SCHEDULED MAXIMUM LEAVING AIR TEMPERATURE SETPOINT (ADJ.) AS NEEDED TO MAINTAIN THE ACTUAL HEATING SETPOINT. FROM 51% TO 100% HEATING THE REHEAT COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN SCHEDULED MAXIMUM LEAVING AIR TEMPERATURE SETPOINT (ADJ.) AND TERMINAL UNIT AIR VALVE SHALL MODULATE AIR FLOW BETWEEN THE HEATING MINIMUM AND HEATING MAXIMUM VALUES TO MAINTAIN SPACE TEMPERATURE ACTUAL HEATING SETPOINT.



SEQUENCE OF OPERATION: DX SPLIT SYSTEMS AC-01

DX SPLIT SYSTEM EVAPORATOR UNIT AC-01 SHALL BE ENABLED LOCALLY BY OPERATOR COMMAND AT WALL-MOUNTED SYSTEM CONTROLLER FURNISHED BY DX SPLIT SYSTEM MANUFACTURER. AC-01 AND CU-02 SHALL OPERATE IN ACCORDANCE WITH PACKAGED CONTROL SEQUENCE TO MAINTAIN SPACE TEMPERATURE AS SENSED AND SET AT WALL-MOUNTED SYSTEM CONTROLLER. IF A CONDENSATE OVERFLOW ALARM IS GENERATED BY CONDENSATE PUMP, EMCS SHALL BE NOTIFIED AND SHALL DISABLE AC-01.

A1 SPLIT SYSTEM HEAT PUMP CONTROL SEQUENCE

SCALE: NTS

BAS SHALL INCLUDE A MINIMUM OF FOUR USER LEVELS AND SHALL ESTABLISH ASSOCIATED PERMISSIONS AS OUTLINED BELOW.

1. VIEW/READ ONLY
   A. SELF EXPLANATORY
2. MECHANICAL TECH
   A. BASIC ZONE SETPOINT ADJUSTMENTS
   B. EQUIPMENT ROTATION
   C. SHUTDOWN/START-UP A PIECE OF EQUIPMENT.
   D. LEVEL 1 AFTER-HOURS ALARM NOTIFICATIONS TO ON-CALL TECH.
   E. LEVEL 1, 2, 3, & 5 ALARM CONSOLE ACCESS DURING WORKING HOURS NOTIFICATIONS
3. BAS TECH
   A. CALIBRATE SENSORS (NOT A NORMAL OCCURRENCE)
   B. ADJUST EQUIPMENT SETPOINTS.
   C. ALL ALARM CONSOLE ACCESS.
4. ENERGY MANAGER
   A. REPORTING
   B. TIME SCHEDULES
   C. LEVEL 4 ENERGY ALARM CONSOLE ACCESS

A3 BAS USER LEVELS

SCALE: NTS

ALARM LEVELS	
LEVEL	DESCRIPTION
1	CRITICAL / LIFE SAFETY
2	SIGNIFICANT EQUIPMENT FAILURE
3	NON-CRITICAL EQUIPMENT FAILURE
4	ENERGY CONSERVATION ALERT
5	MAINTENANCE NOTIFICATION

1. CRITICAL/LIFE SAFETY
   A. LIFE SAFETY
      a. FIRE ALARM MONITOR POINTS
      b. SMOKE CONTROL EVENTS/FAILURE
      c. ELEVATOR MONITORING POINTS
   B. ELECTRICAL
      a. GENERATOR FAILED TO START
      b. GENERATOR BATTERY CHARGER FAILURE
      c. UPS PROBLEM
      d. BREAKER TRIPPED UNDER FAULT
   C. CRITICAL
      a. AFTER-HOURS HEATING FAILURE WHEN IT'S COLD OUTSIDE.
      b. SOME DATA CENTER ALARMS
      c. ISOLATION ROOM PRESSURE FAILURE
      d. LABORATORY CONTROLS MAJOR FAILURE
      e. IN SOME CASES, CHILLER OR BOILER FAILURE
      f. FREEZE STATS
      g. PERIMETER HEATING FAULTS
      h. FREEZE ALARMS
   D. SECURITY
      a. SECURITY PANIC BUTTONS
      b. PERIMETER DOOR FORCED
      c. PANIC ALARMS
2. SIGNIFICANT EQUIPMENT FAILURE
   A. THESE SHOULD BE FAIRLY OBVIOUS FROM THE CUSTOMER TYPE.
   B. MAJOR CHILLED WATER, HEATING WATER, AHU EQUIPMENT FAILURES/ALARMS
   C. LOSS OF A CAMERA OR ACCESS CONTROL
   D. GENERATOR ALARMS NOT RELATED TO STARTING OR COMPROMISING THE GENERATOR'S OPERATION.
   E. UPS BATTERY MONITOR ALARM
   F. FAN FAILURE ALARM
3. NON-CRITICAL EQUIPMENT FAILURE
   A. HOA IN HAND
   B. MINOR EQUIPMENT FAILURE WHEN FREEZING IS NOT A CONCERN.
4. ENERGY CONSERVATION ALERT
   A. RUNTIME EXCEEDED
   B. T&R ALARM
   C. AFTER-HOURS OVERRIDE
   D. ECONOMIZER NOT FUNCTIONING
5. MAINTENANCE NOTIFICATION
   A. DIRTY FILTER
   B. CHANGE THE BACKUP BATTERIES
   C. SENSOR FAILURE

A4 BAS ALARM LEVELS AND TYPICAL ALARMS

SCALE: NTS

THE FOLLOWING UTILITIES MUST BE METERED AND MONITORED AT THE BASE WIDE ENERGY AND UTILITY MONITORING SYSTEM:

A. ELECTRICAL POWER USAGE
   a. TOTAL PERIOD CONSUMPTION
   b. DEMAND INTERVAL PEAK FOR THE PERIOD, WITH TIME OF OCCURRENCE
   c. ENERGY CONSUMPTION (KWH) OVER EACH DEMAND INTERVAL
   d. TIME-OF-USE PEAK, SEMI-PEAK, OFF-PEAK, OR BASELINE TOTAL KWH CONSUMPTION
   e. REACTIVE POWER DURING EACH DEMAND INTERVAL
   f. POWER FACTOR DURING EACH DEMAND INTERVAL
   g. OUTSIDE AIR (OA) TEMPERATURE AND RELATIVE HUMIDITY (RH) TAKEN AT THE MAXIMUM AND MINIMUM OF OA TEMPERATURE OF THE REPORT PERIOD WITH THE TIME AND DATES OF OCCURRENCE
   h. CALCULATED HEATING AND COOLING DEGREE DAYS BASED ON A 65°F BALANCE POINT
B. ELECTRICAL PEAK DEMAND
   a. ACTUAL PEAK FOR EACH DEMAND INTERVAL FOR THAT DAY
C. WATER USAGE
   a. BEGINNING AND ENDING DATES AND TIMES
   b. TOTAL ENERGY WATER USAGE FOR THE CURRENT AND PREVIOUS DAY
   c. TOTAL WATER USAGE FOR THE CURRENT AND PREVIOUS MONTH
D. WATER PEAK DEMAND
   a. ACTUAL PEAK FOR EACH DEMAND INTERVAL FOR THAT DAY
E. GAS USAGE
   a. BEGINNING AND ENDING DATES AND TIMES
   b. TOTAL ENERGY WATER USAGE FOR THE CURRENT AND PREVIOUS DAY
   c. TOTAL WATER USAGE FOR THE CURRENT AND PREVIOUS MONTH
F. GAS PEAK DEMAND
   a. ACTUAL PEAK FOR EACH DEMAND INTERVAL FOR THAT DAY

A5 UTILITY METERING

SCALE: NTS

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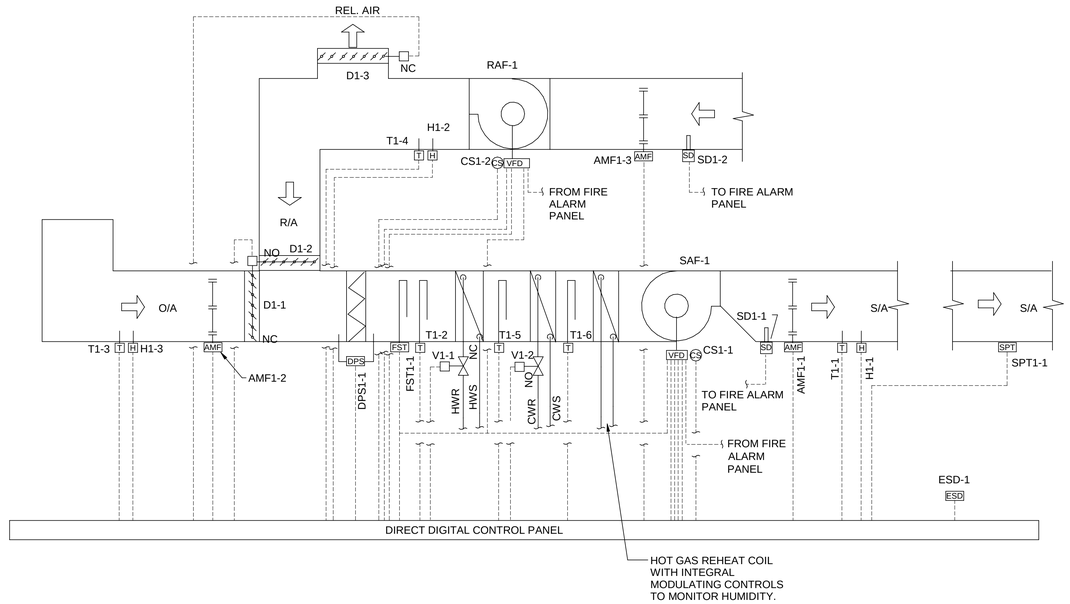

CONTROL SEQUENCE FOR AIR HANDLING UNIT AHU-01

GENERAL
AHU-01 SUPPLY FAN SAF-1 VFD SHALL BE ENABLED BY EMCS OPERATOR COMMAND OR SOFTWARE PROGRAM WITH H-O-A IN AUTO OR MANUALLY WITH H-O-A IN HAND. WHEN SAF-1 VFD IS ENABLED, AHU-01 RETURN AIR FAN RAF-1 VFD SHALL BE ENABLED AND BOTH FAN VFD SHALL MODULATE FAN SPEED IN ACCORDANCE WITH THE CONTROL SEQUENCE. IF EITHER FAN CURRENT SENSING RELAY (CS1-1, CS1-2) INDICATES A FAILURE TO START AFTER A 20 SECOND TIME DELAY (ADJ.), BOTH FAN VFD SHALL BE DISABLED AND AN ALARM MESSAGE SHALL BE GENERATED IN THE EMCS. WHEN SAF-1 VFD IS ENABLED, DAMPER D1-1, D1-2 AND D1-3 AND CONTROL VALVES V1-1, V1-2 SHALL MODULATE IN ACCORDANCE WITH THE CONTROL SEQUENCE. WHEN SAF-1 VFD IS DISABLED, RAF-1 VFD SHALL BE DISABLED, D1-1 AND D1-3 SHALL CLOSE, D1-2 SHALL OPEN, V1-1 SHALL CLOSE TO THE CHILLED WATER COIL AND V1-2 SHALL CONTINUE TO RESPOND TO IT'S CONTROL SEQUENCE.

AIR VOLUME CONTROL
WHEN SAF-1 AND RAF-1 VFD ARE ENABLED, SAF-1 VFD SHALL MODULATE FAN SPEED TO MAINTAIN A REMOTE SUPPLY DUCT STATIC PRESSURE SETPOINT AS MONITORED BY SPT1-1. AHU STATIC PRESSURE SETPOINT SHALL BE RESET BASED ON THE CONNECTED VAV TERMINAL UNIT REQUIRING THE MOST PRESSURE. THE SETPOINT SHALL BE RESET LOWER UNTIL ONE OF THE CONNECTED VAV TERMINAL UNIT AIR VALVES IS NEARLY WIDE OPEN. SUPPLY AND RETURN DUCT AIR FLOW RATES SHALL BE MONITORED BY AMF1-1 AND AMF1-3 RESPECTIVELY. RAF-1 VFD SHALL MODULATE FAN SPEED TO TRACK SAF-1 AIR FLOW RATE AND MAINTAIN A SET AIR FLOW RATE DIFFERENTIAL IN ACCORDANCE WITH THE SCHEDULE. OUTSIDE AIR FLOW RATE SHALL BE MONITORED BY AMF1-2.

ECONOMIZER CONTROL
EMCS SOFTWARE SHALL CALCULATE RETURN AIR ENTHALPY UTILIZING THE RETURN AIR DRY BULB TEMPERATURE AND RELATIVITY HUMIDITY AS MONITORED BY T1-4 AND H1-2 RESPECTIVELY. OUTSIDE AIR ENTHALPY SHALL BE CALCULATED UTILIZING OUTSIDE AIR DRY BULB TEMPERATURE AND RELATIVE HUMIDITY AS MONITORED BY T1-3 AND H1-3 RESPECTIVELY. IF THE OUTSIDE AIR ENTHALPY IS GREATER THEN THE RETURN AIR ENTHALPY, DAMPERS D1-1, D1-2 AND D1-3 SHALL MODULATE IN SEQUENCE TO MAINTAIN THE SCHEDULED UNIT LOW MINIMUM OUTSIDE AIR FLOW RATE AS MONITORED BY AMF1-2. IF THE OUTSIDE AIR ENTHALPY IS LESS THAN THAT THE RETURN AIR ENTHALPY BY 3 BTU/LB. (ADJ.), DAMPERS D1-1, D1-2 AND D1-3 SHALL MODULATE IN SEQUENCE TO MAINTAIN A MIXED AIR TEMPERATURE OF 52 DEGREE F. DRY BULB (ADJ.) AS MONITORED BY AVERAGING ELEMENT TEMPERATURE SENSOR T1-2.

PREHEAT COIL CONTROL
PREHEAT COIL LEAVING AIR TEMPERATURE SENSOR T1-5 SHALL MODULATE VALVE V1-1 TO MAINTAIN SETPOINT, 55 DEGREE F. (ADJ.).

COOLING COIL CONTROL
SUPPLY AIR TEMPERATURE SENSOR T1-6 SHALL MODULATE VALVE V1-1 TO MAINTAIN SETPOINT, 55 DEGREE F. (ADJ.).

FREEZESTAT CONTROL
AVERAGING ELEMENT FREEZESTAT FST1-1 SHALL DISABLE SAF-1 VFD AND RAF-1 VFD BY HARD WIRE CONNECTION DIRECT FROM FST1-1 ON SENSING A MIXED AIR TEMPERATURE OF 35 DEGREE F. (ADJ.) OR LESS. EMCS SHALL INDICATE FAN ABNORMAL OFF STATUS. FREEZESTAT, ONCE TRIPPED, SHALL REQUIRE LOCAL RESET AT THE FREEZESTAT. WHEN FREEZESTAT IS RESET, SAF-1 AND RAF-1 VFD'S SHALL BE AUTOMATICALLY ENABLED IF FANS ARE COMMANDED ON BY EMCS AND H-O-A'S ARE IN AUTO OR FAN H-O-A ARE IN HAND.

DUCT SMOKE DETECTORS
WHEN SMOKE IS DETECTED BY EITHER SD1-1 OR SD1-2, THE DUCT SMOKE DETECT (S) IN ALARM SHALL SIGNAL THE FIRE ALARM PANEL. SIGNAL FROM THE FIRE ALARM PANEL SHALL DISABLE SAF-1 AND RAF-1 VFD'S. WHEN DUCT SMOKE DETECTOR (S) ALARMSIGNAL (S) ARE RESET AT THE FIRE ALARM PANEL, SAF-1 AND RAF-1 VFD'S SHALL AUTOMATICALLY BE ENABLED IF FANS ARE COMMANDED ON BY THE EMCS WITH H-O-A IN AUTO OR FAN H-O-A ARE IN HAND.

FILTER MONITORING
DIFFERENTIAL PRESSURE SWITCH DPS1-1 SHALL INDICATE A DIRTY FILTER CONDITION IN THE EMCS.

UNOCCUPIED (NIGHT SETBACK) MODE CONTROL
EMCS SOFTWARE OR EMCS OPERATOR COMMAND SHALL PLACE THE AHU IN AN UNOCCUPIED MODE. IN THIS MODE, AHU SHALL BE IN A NORMAL DISABLED MODE. IF ONE OR MORE OF THE SPACE TEMPERATURE SENSORS IN SPACES SERVED BY THE AHU MONITORS A FALL IN SPACE TEMPERATURE BELOW 55 DEGREE F. (ADJ) OR A RISE IN SPACE TEMPERATURE ABOVE 85 DEGREE F. (ADJ), THE AHU FANS SHALL BE ENABLED WITH THE NORMAL ECONOMIZER SEQUENCES DISABLED. D1-2 SHALL BE FULL OPEN AND D1-1 AND D1-3 SHALL BE FULL CLOSED. IF THE SPACE TEMPERATURE (S) IS LESS THAN THE NIGHT SETBACK LOW LIMIT SETPOINT, THE CHILLED WATER COIL CONTROL VALVE SHALL CLOSE TO THE COIL AND SUPPLY AIR TEMPERATURE CONTROL SHALL BE DISABLED. PREHEAT COIL LEAVING AIR TEMPERATURE SETPOINT SHALL BE RESET TO 85 DEGREE F. (ADJ) AND THE AHU SHALL SUPPLY 85 DEGREE F. AIR UNTIL ALL SPACE TEMPERATURE SENSORS MONITOR SPACE TEMPERATURES GREATER THAN THE LOW LIMIT SETPOINT. IF SPACE TEMPERATURE (S) ARE HIGHER THAN THE NIGHT SETBACK HIGH LIMIT SETPOINT, NORMAL SUPPLY AIR TEMPERATURE CONTROL SHALL BE ACTIVATED. WHEN ALL SPACE TEMPERATURES ARE BETWEEN THE LOW AND HIGH NIGHT SETBACK LIMITS, AHU SHALL BE NORMALLY DISABLED. IF AHU IS IN AN UNOCCUPIED DISABLED MODE AND A NIGHT SETBACK OVERRIDE BUTTON ON THE SPACE TEMPERATURE SENSOR SERVED BY THE AHU IS NORMALLY PUSHED, THE AHU SHALL BE NORMALLY ENABLED AND RUN WITH ALL CONTROL SEQUENCES FUNCTIONAL FOR THE SET SOFTWARE TIME PERIOD AS DESCRIBED IN THE VAV TERMINAL UNIT CONTROL SEQUENCE.

OPTIMUM START CONTROL
WHEN AHU IS DISABLED IN A EMCS SOFTWARE SCHEDULED UNOCCUPIED MODE. AHU SHALL BE ENABLED BY EMCS OPTIMUM START SOFTWARE PRIOR TO THE SCHEDULED OCCUPIED MODE START TIME BASED ON THE AVERAGE DIFFERENCE BETWEEN THE MONITORED SPACE TEMPERATURES AND THE OCCUPIED SPACE TEMPERATURE SETPOINTS AND THE OUTSIDE AIR TEMPERATURE. EARLY START TIMES SHALL BE ADJUSTED BASED ON ACTUAL BUILDING OPERATING EXPERIENCE TO MINIMIZE EARLY START RUN TIMES WHILE ACHIEVING OCCUPIED SPACE TEMPERATURE PRIOR TO OCCUPANCY.

EMERGENCY SHUTDOWN
EMERGENCY SHUTDOWN SWITCH (ESD-1) ACTIVATION SHALL IMMEDIATELY DE-ENERGIZE THE SUPPLY AND RETURN FAN AND CLOSE THE OUTSIDE AIR DAMPER D1-1. AN ALARM MESSAGE SHALL BE SENT TO THE EMCS. REFER TO MP101 FOR SWITCH LOCATION.

SUPPLY AIR / RETURN AIR AIR FLOW DIFFERENTIAL SETPOINT	
AHU-01	655 CFM

EQUIPMENT INPUT/OUTPUT SUMMARY

	POINT TYPES																		PROGRAMS											
	DO				DI		AI					AO																		
	ENABLE/DISBLE	EMERGENCY SHUTDOWN	START/STOP	OPEN/CLOSE	STAUS	ALARM	AIRFLOW	TEMPERATURE	PRESSURE	HUMIDITY %RH	% AMPS	ELECTRIC	PNEUMATIC	RESET					HIGH LIMIT ALARM	LOW LIMIT ALARM	ABNORMAL OFF	RUNTIME TOTAL	TOTAL FLOW	BTU CALCULATION	AVERAGE	COMPARATIVE ENTHALPY					GRAPHIC
AHU-01																														●
SAF-1 VFD	●													●																●
VFD FAULT						●															●									●
VFD BYPASS					●																									●
AMF1-1							●							●																●
SPT1-1									●					●					●						●					●
CURRENT SWITCH CS1-1					●																									●
RAF-1 VFD	●																													●
VFD FAULT						●															●									●
VFD BYPASS					●																									●
AMF1-2							●							●																●
AMF1-3							●							●																●
O/A DAMPER D1-1												●		●																●
RETURN AIR DAMPER D1-2												●		●																●
RELIEF AIR DAMPER D1-3												●		●																●
CURRENT SWITCH, CS1-2					●																									●
FILTER DPS1-1					●																●									●
CC VALVE V1-1												●		●																●
HW VALVE V1-2												●		●																●
SA TEMP T1-1							●							●							●	●								●
FREEZESTAT FST1-1					●																●	●								●
MIXED AIR TEMP T1-2							●							●							●	●					●			●
O/A TEMP T1-3							●							●													●			●
RETURN AIR TEMP T1-4							●							●													●			●
PREHEAT TEMP T1-5							●							●							●	●								●
O/A HUMIDITY H1-1								●						●													●			●
RETURN AIR HUMIDITY H1-2								●						●													●			●
EMERGENCY SHUTDOWN SWITCH, ESD-01	●			●																										●

1 AHU-01 CONTROL DIAGRAM
SCALE: NTS

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Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:
DESIGNED BY: CAD
DRAWN BY: CAD
REVIEWED BY: JDN
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: CONTROLS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: M-803

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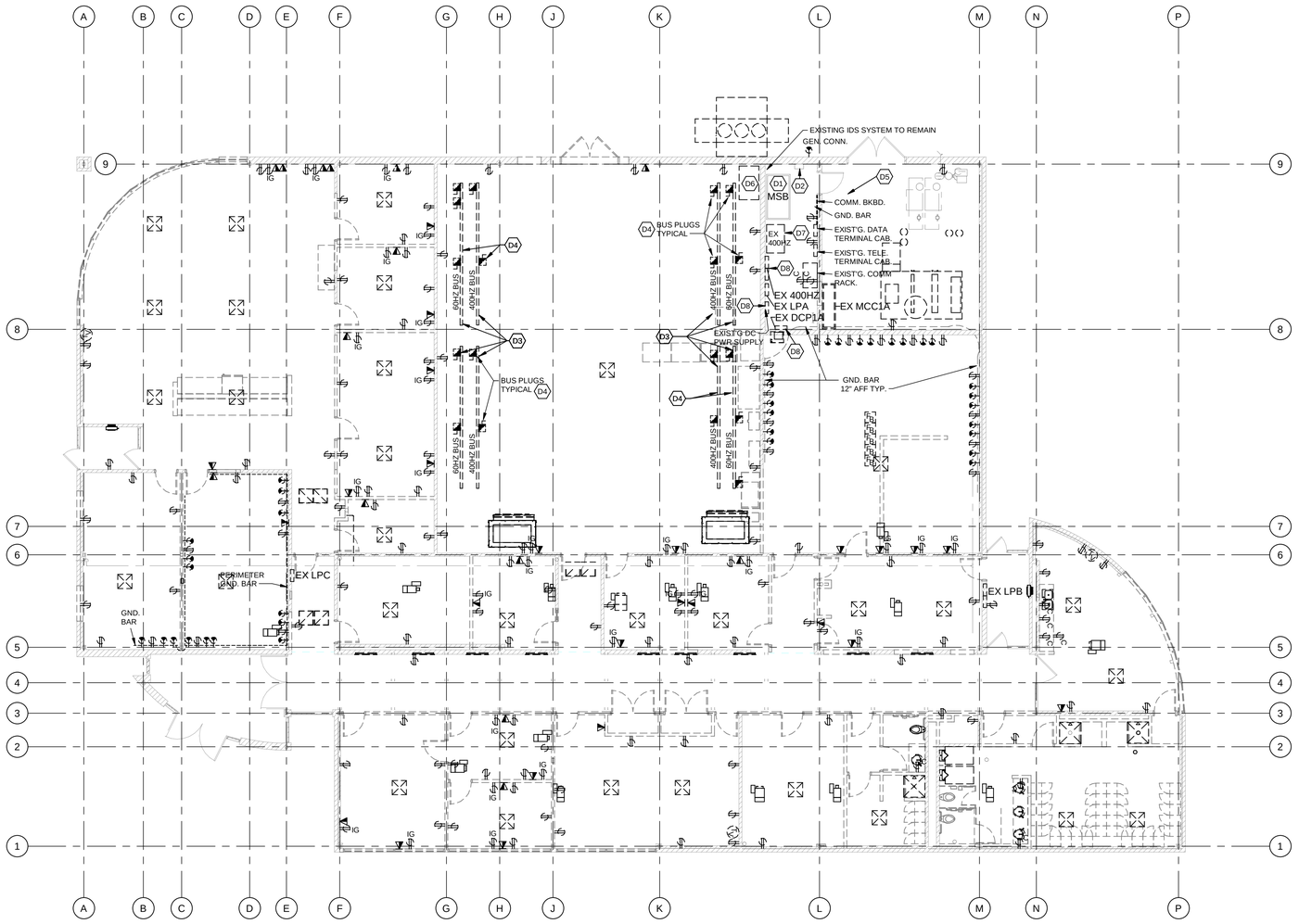
ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
LIGHT FIXTURES	
	WALL WASHER
	WALL WASHER EMERGENCY
	RECESSED DOWN LIGHT
	RECESSED DOWN LIGHT EMERGENCY
	SURFACE
	SURFACE EMERGENCY
	SUSPENDED
	INCANDESCENT TRACK LIGHT
	TRACK LIGHT WITH INTEGRAL BALLAST
	WALL MOUNTED LIGHT
	WALL MOUNTED EMERGENCY
	STRIP LIGHT FIXTURE
	STRIP LIGHT FIXTURE W/ EMERGENCY BATTERY PACK
	RECESSED LIGHT FIXTURE
	RECESSED LIGHT FIXTURE EMERGENCY
	SUSPENDED LIGHT FIXTURE
	SUSPENDED LIGHT FIXTURE EMERGENCY
	SURFACE MOUNTED LIGHT FIXTURE
	SURFACE MOUNTED LIGHT FIXTURE EMERGENCY
	WALL MOUNTED LIGHT - ROUND
	WALL MOUNTED LIGHT - ROUND EMERGENCY
	WALL MOUNTED LIGHT - SQUARE
	WALL MOUNTED LIGHT - SQUARE EMERGENCY
	WALL MOUNTED SINGLE SIDE EXIT LIGHT
	WALL MOUNTED DOUBLE SIDE EXIT LIGHT
	CEILING MOUNTED SINGLE SIDE EXIT LIGHT
	CEILING MOUNTED DOUBLE SIDE EXIT LIGHT
	COMBINATION FAN - LIGHT
EB	BATTERY POWERED EMERGENCY LIGHT
EB	BATTERY POWER FOR REMOTE HEAD
	REMOTE HEAD
	FLOOD LIGHT
	SITE LIGHTING FIXTURE
	BOLLARD
LIGHTING DEVICES	
LC	LIGHTING CONTACTOR
	DAYLIGHT SENSOR
$_{MD}$	OCCUPANCY SENSOR MOTION DETECTOR - CEILING MOUNTED
$_{MD}$	OCCUPANCY SENSOR MOTION DETECTOR - POWER PACK / CONTROL RELAY

SYMBOL	DESCRIPTION
$	SINGLE POLE SWITCH
$2	TWO POLE SWITCH
$3	THREE WAY SWITCH
$4	FOUR WAY SWITCH
$DM	DIMMER SWITCH
$DMD	DIMMER SWITCH WITH MOTION DETECTOR
$MD	MOTION DETECTOR - WALL MOUNTED SWITCH
$WP	WEATHER PROOF SWITCH
$2MD	DUAL RELAY PIR OCCUPANCY SENSOR
$K	KEY OPERATED SWITCH
$V	LOW VOLTAGE SWITCH
ELECTRICAL FIXTURES	
	RECEPTACLE DUPLEX
$_C$	RECEPTACLE - COUNTER TOP
$_{GFI}$	RECEPTACLE - GROUND FAULT INTERRUPTER
$^{C}_{GFI}$	RECEPTACLE - COUNTER TOP/ GROUND FAULT INTERRUPTER
$^{WP}_{GFI}$	RECEPTACLE - WEATHERPROOF GROUND FAULT INTERRUPTER
$_{IG}$	RECEPTACLE - ISOLATED GROUND
$_{SP}$	RECEPTACLE - SURGE PROTECTOR
$_{WP}$	RECEPTACLE - WEATHERPROOF
	RECEPTACLE DUPLEX - CEILING MOUNTED
	RECEPTACLE DUPLEX - FLOOR MOUNTED
	RECEPTACLE DUPLEX - HALF SWITCHED CONTROLLED
	RECEPTACLE DUPLEX - HIGH VOLTAGE
	RECEPTACLES - SPECIAL PURPOSE (SEE KEYNOTES FOR TYPE)
	RECEPTACLES - SPECIAL PURPOSE (SEE KEYNOTES FOR TYPE)
	SIMPLEX RECEPTACLE
	SIMPLEX RECEPTACLE - FLOOR
	QUADRUPLEX
	QUADRUPLEX - CEILING
	QUADRUPLEX - FLOOR
	FLOOR BOX
	MOTOR CONNECTION
	PUSH BUTTON - SWITCH
	2 PUSH BUTTON - SWITCH
	3 PUSH BUTTON - SWITCH
	POWER POLE
	TELECOMMUNICATIONS POWER POLE
	METER AND SOCKET BASE

SYMBOL	DESCRIPTION
ELECTRICAL FIXTURES	
$M	MANUAL MOTOR STARTER
$P	PILOT LIGHT SWITCH
R	RELAY
PC	PHOTOCELL
TV	TV OUTLET
CCTV	CLOSED CIRCUIT TV MONITOR
CM	CONTROL MODULE
ELECTRICAL EQUIPMENT	
CR	CARD READER
J	JUNCTION BOX
J	FLOOR JUNCTION BOX
DL	UNFUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	DISCONNECT SWITCH FURNISHED WITH EQUIPMENT
	COMBINATION MOTOR STARTER
	MOTOR STARTER
T	TRANSFORMER
DC	DOOR CONTACT
VFD	VARIABLE FREQUENCY DRIVE
	120 / 208 VOLT PANEL BOARD
	277 / 480 VOLT PANEL BOARD
DATA DEVICES	
$_D$	JUNCTION BOX - DATA
	TELEPHONE
P	PUBLIC TELEPHONE
W	WALL TELEPHONE
	TELEPHONE / DATA OUTLET
	DATA OUTLET
S	TELEPHONE OUTLET FLOOR
	TELEPHONE/DATA OUTLET FLOOR
	DATA OUTLET FLOOR
	DATA OUTLET CEILING
	TELEPHONE/DATA OUTLET CEILING
S	SPEAKER - SURFACE MOUNTED OR SUSPENDED
$_R$	SPEAKER - RECESSED
	WALL SPEAKER
MP	MICROPHONE
	BUZZER
IR	INFRARED MOTION SENSOR

SYMBOL	DESCRIPTION
DATA DEVICES	
	CLOSED CIRCUIT TV CAMERA
TV	TV OUTLET
A	AMPLIFIER
BMS	BALANCED MAGNETIC SWITCH
BG	BREAK GLASS SENSOR



A1 ELECTRICAL DEMOLITION PLAN - POWER

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

GENERAL NOTES

A. DEMOLISH ALL ELECTRICAL EQUIPMENT PER DETAIL C1 ON SHEET EP601 UNLESS OTHERWISE NOTED. (UON).
B. NOT ALL ELECTRICAL DEVICES, SECURITY DEVICES, TELECOM DEVICES AND TELECOMMUNICATIONS EQUIPMENT IS SHOWN ON THIS SHEET AND SHALL BE DEMOLISHED.
C. DEMOLISH ALL ELECTRICAL DEVICES, SECURITY DEVICES AND TELECOMMUNICATIONS EQUIPMENT AS WELL AS ALL CONDUIT AND WIRING WITHIN THE FACILITY. UNLESS OTHERWISE NOTED.
D. FOR BRANCH CIRCUITS OR SECTIONS OF BRANCH CIRCUITS TO BE DEMOLISHED, ANY CONDUIT AND/OR WIRING CAN BE REUSED WHERE PRACTICAL. ALL ABANDONED CONDUIT AND WIRING SHALL BE DEMOLISHED.
E. CU GROUND BARS AND BUS BARS TO BE DEMOLISHED BY OWNER PRIOR TO CONSTRUCTION.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
D1	EXISTING MAIN SWITCHBOARD TO REMAIN.
D2	EXISTING METER TO REMAIN.
D3	EXISTING BUSWAY TO BE DEMOLISHED AND RETURNED TO OWNER
D4	EXISTING BUSPLUGS TO BE DEMOLISHED AND RETURNED TO OWNER.
D5	RETAIN EXISTING TELECOM BEP BACKBOARD GROUND BAR, AND FOPP TO REMAIN.
D6	EXISTING POWER CONDITIONER TO BE DEMOED. RETURN TO OWNER
D7	400HZ INVERTER AND PANELS TO BE DEMOED AND RETURNED TO OWNER.
D8	DC POWER SUPPLIES AND PANELS TO BE DEMOLISHED AND RETURNED TO OWNER.

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REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	STS
DRAWN BY:	STS
REVIEWED BY:	JTL
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	ELECTRICAL DEMOLITION PLAN - POWER
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	ED101

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1/8" = 1'-0"

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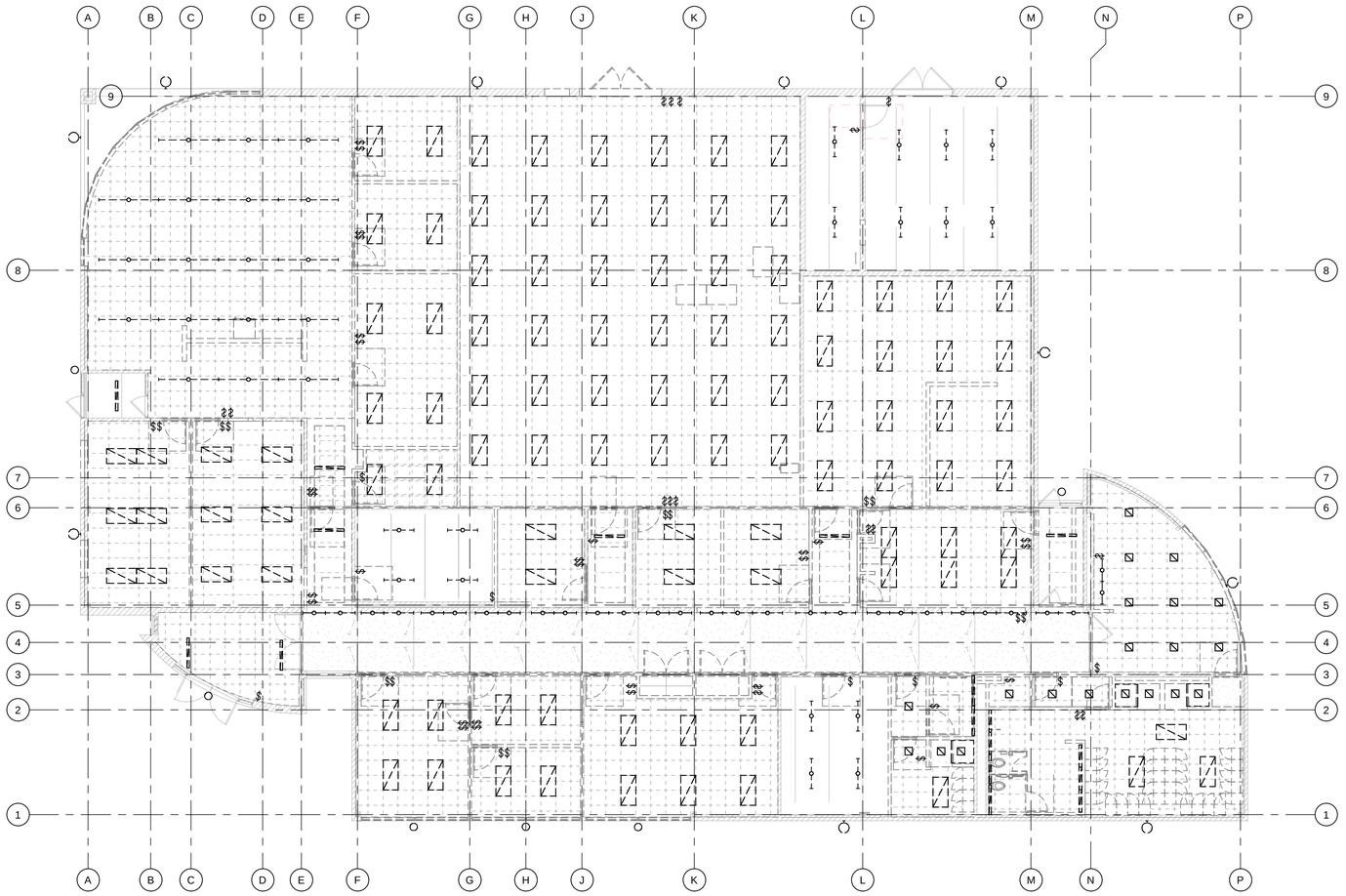
GENERAL NOTES

A. DEMOLISH ALL INTERIOR AND EXTERIOR LIGHT FIXTURES AND LIGHTING DEVICES UNO.
B. DEMOLISH ALL EXISTING LIGHTING AND LIGHTING CONTROL CIRCUITS AND CONDUCTORS.
C. NOT ALL LIGHTING FIXTURES AND LIGHTING CONTROL DEVICES ARE SHOWN ON THIS SHEET AND SHALL BE DEMOLISHED.
D. FOR BRANCH CIRCUITS OR SECTIONS OF BRANCH CIRCUITS TO BE DEMOLISHED, ANY CONDUIT AND/OR WIRING CAN BE REUSED WHERE PRACTICAL. ALL ABANDONED CONDUIT AND WIRING SHALL BE DEMOLISHED.



A1 ELECTRICAL DEMOLITION PLAN - LIGHTING
SCALE: 1/8" = 1'-0"

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Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

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DRAWN BY:	STS
REVIEWED BY:	JTL
PROJECT MANAGER:	NWC
PROJECT NUMBER:	2021-613-00
SHEET TITLE:	ELECTRICAL DEMOLITION PLAN - LIGHTING
ISSUE DATE:	OCTOBER 14, 2022
SHEET NUMBER:	ED201

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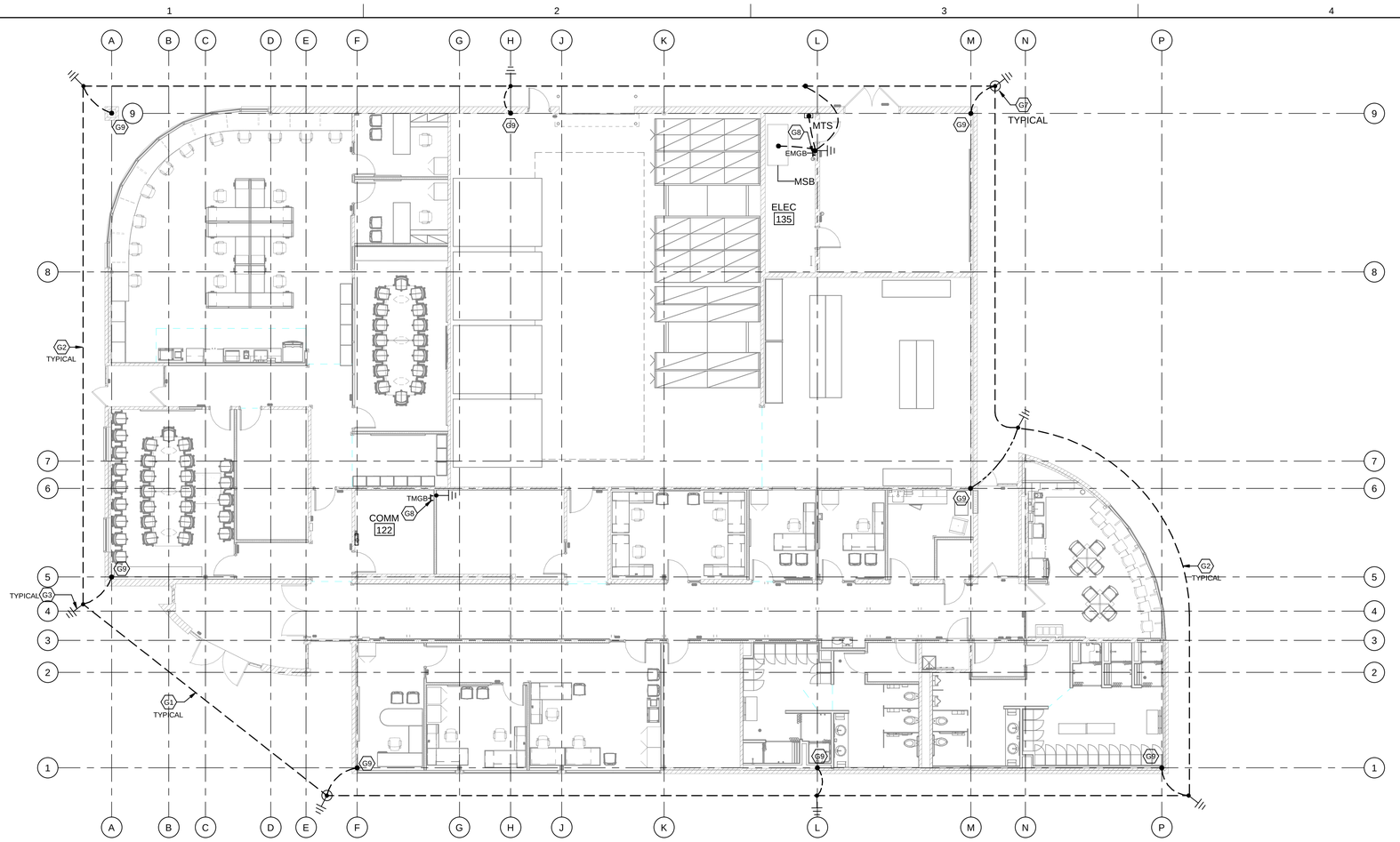
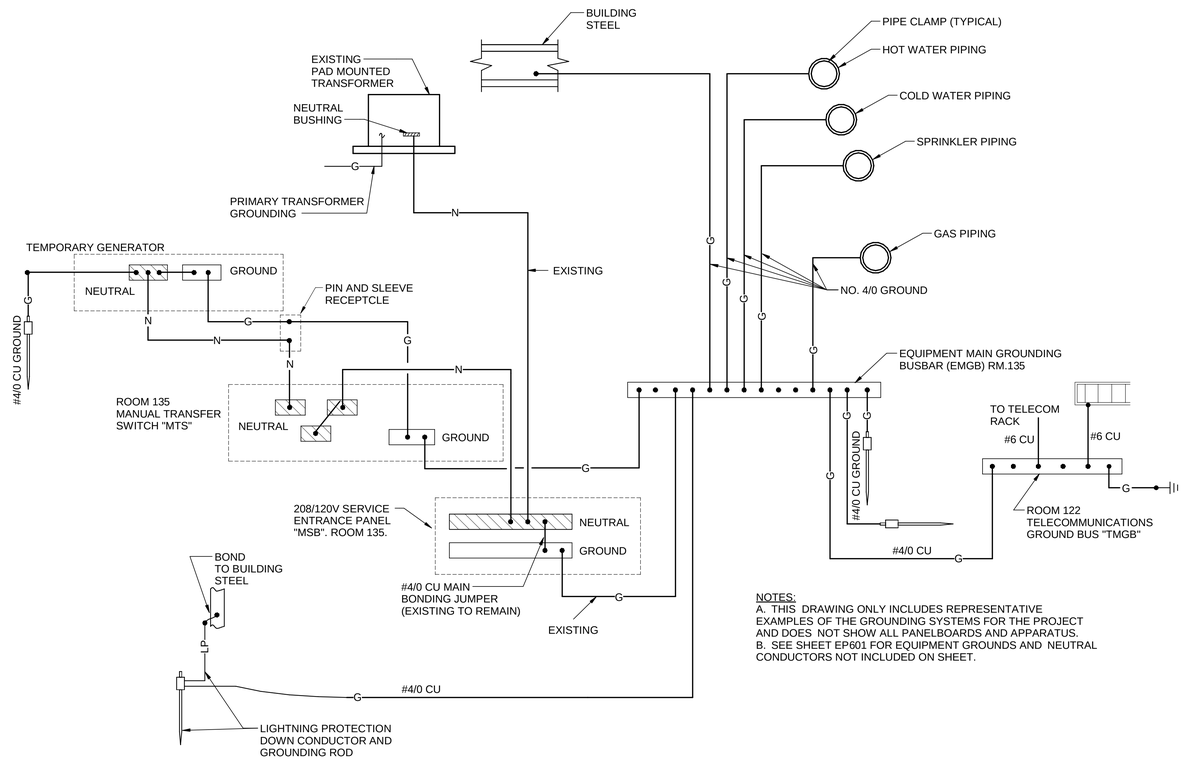


B1 ELECTRICAL GROUNDING PLAN
SCALE: 1/8" = 1'-0"



NOTES:
A. THIS DRAWING ONLY INCLUDES REPRESENTATIVE EXAMPLES OF THE GROUNDING SYSTEMS FOR THE PROJECT AND DOES NOT SHOW ALL PANELBOARDS AND APPARATUS.
B. SEE SHEET EP601 FOR EQUIPMENT GROUNDS AND NEUTRAL CONDUCTORS NOT INCLUDED ON SHEET.

A3 GROUNDING SYSTEM DIAGRAM
SCALE: NTS

GENERAL NOTES

A. DO NOT INSTALL CONDUIT AND CONDUCTORS ON THE BUILDING'S EXTERIOR SURFACE.
B. RUN LPS DOWN CONDUCTORS FOR THE ENTRY CANOPY ON THEIR COLUMNS IN 1" PVC CONDUIT. CONCEAL FROM VIEW AS MUCH AS POSSIBLE. PAINT TO MATCH COLUMNS' FINISHES. RE: SHEET AE101 FOR DIMENSIONED AREAS.
C. INSTALL CONDUIT AND CONDUCTORS SUCH THAT NO TRIP HAZARDS ARE PRESENT DUE TO THE LPS INSTALLATION.
D. SEAL PENETRATIONS IN THE BUILDING DUE TO THE LPS INSTALLATION WITH APPROVED SEALANT. REPAIR AND REFINISH TO MATCH THE SURFACE BEING DISTURBED.
E. REFER TO DETAILS C1 AND C2/EG501 FOR TYPICAL BEND RADIUS AND BELOW GRADE SPLICE.
F. CONTRACTOR SHALL FIELD VERIFY SITE FOR EXISTING BUILDING COUNTERPOISE AND GROUNDING PRIOR TO BID.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
G1	SAW CUT CONCRETE SIDEWALKS AND PAVING TO INSTALL LIGHTNING PROTECTION SYSTEM (LPS) CONDUCTORS, COUNTERPOISE AND GROUND RODS. TYPICAL. CONNECT TO THE DOWN CONDUCTORS WITH 4/0 AWG COPPER CONDUCTOR 36" BELOW GRADE AND CONECT TO THE LPS ROUND RODS FOR THE LPS DOWN CONDUCTOR AND COUNTERPOISE SYSTEM. USE EXOTHERMIC WELDS. REPAIR CONCRETE AND ASPHALT SURFACES TO MATCH EXISTING.
G2	4/0 BARE COPPER COUNTERPOISE AROUND PERIMETER OF BLDG BURRIED 36" BELOW GRADE. CAREFULLY MARK AND COORDINATE CONFLICTS WITH ALL OTHER UTILITIES. SAW CUT CONCRETE SIDEWALKS, PAVING AND ASPHALT AS REQUIRED FOR INSTALLATION THEN PATCH AND REPAIR SURFACES TO MATCH EXISTING. TYPICAL.
G3	GROUND ROD FOR LPS DOWN CONDUCTOR AND COUNTERPOISE. RE: DETAIL D1/EG501.
G7	TEST WELL FOR COUNTERPOISE RE: DETAIL B1/EG501.
G8	REFER TO DETAILS B4 & C4/EG501 FOR BUS DETAILS.
G9	BOND STEEL COLUMN TO GROUND LOOP WITH #4/0 COPPER. SEE DETAILS B4 ON EG500 AND D2 ON EG501.

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REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:
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DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
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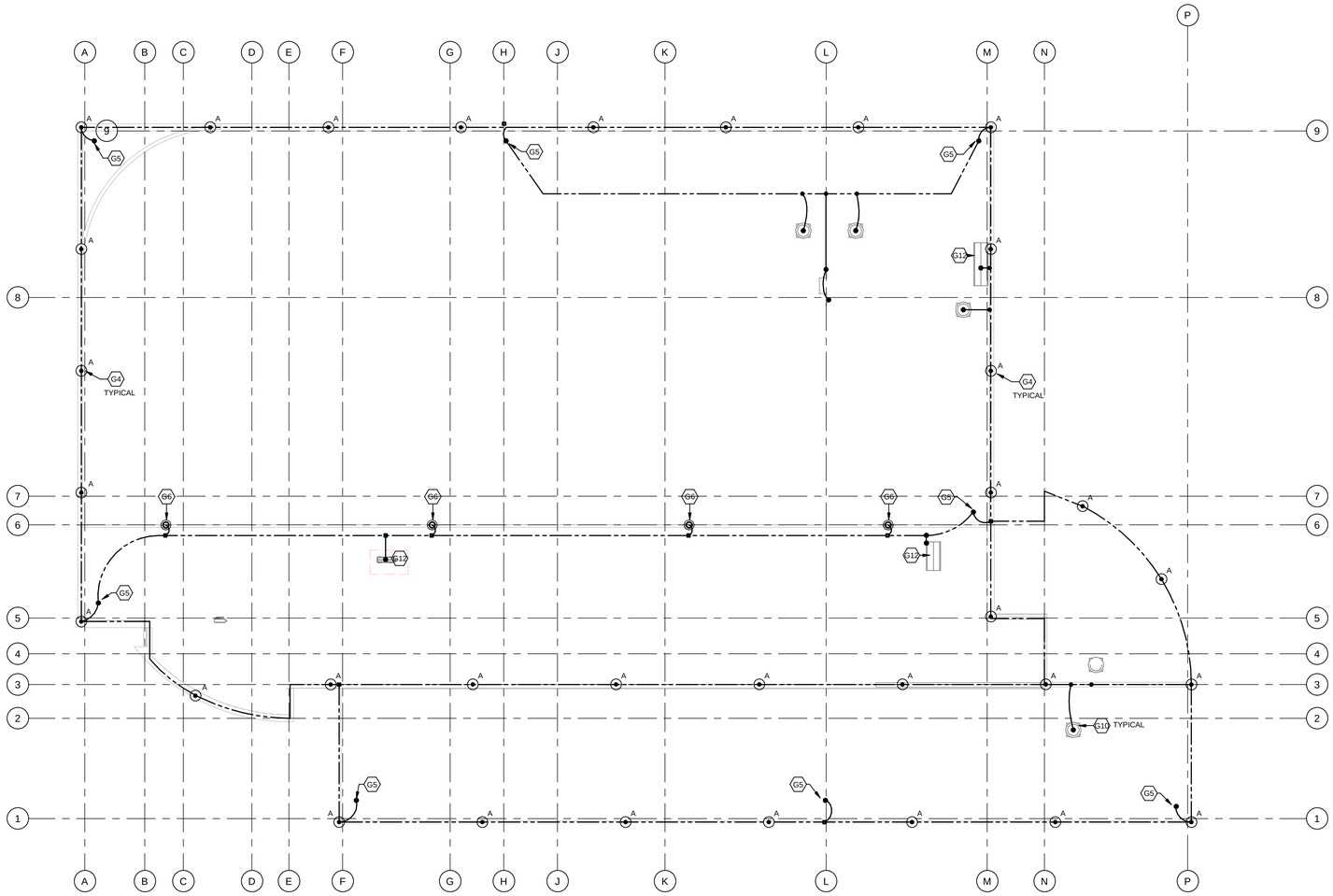

B1 LIGHTNING PROTECTION SYSTEM ROOF PLAN

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

GENERAL NOTES

A. LIGHTNING PROTECTION SYSTEM (LPS) SHALL BE IN ACCORDANCE WITH NFPA 780, UFC 3-575-01 AND AFMAN 32-1065 GROUNDING SYSTEMS, ALL LATEST EDITIONS.
B. LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE CLASS I UL LABELED MATERIALS. COMBINATIONS OF MATERIALS THAT FORM ELECTROLYTIC COUPLES OF SUCH A NATURE THAT, IN THE PRESENCE OF MOISTURE, CORROSION IS ACCELERATED, SHALL NOT BE USED.
C. LOCATION OF MAIN CONDUCTORS AND DOWN CONDUCTORS ARE APPROXIMATE.
D. BENDS IN CONDUCTORS SHALL BE NOT LESS THAN 8" RADIUS FOR A 90 DEGREE BEND.
E. DOWN CONDUCTORS SHALL RUN INSIDE THE BUILDING. REFER TO DETAIL B4 ON SHEET EG500.
F. COORDINATE DOWN CONDUCTORS WITH COLUMNS.
G. PER UFC 3-575-01 SECTION 3, THE CONTRACT FOR A LIGHTNING PROTECTION SYSTEM PROJECT, OR FOR ANY PROJECT ON A FACILITY CONTAINING A LIGHTNING PROTECTION SYSTEM, SHALL REQUIRE A LIGHTNING PROTECTION INSPECTION PRIOR TO ACCEPTANCE. THE LIGHTNING PROTECTION SYSTEM SHALL BE INSPECTED BY A COMMERCIAL, THIRD PARTY INSPECTOR WHOSE SOLE WORK IS LIGHTNING PROTECTION, AND SHALL BE CERTIFIED BY THIS THIRD-PARTY INSPECTOR AS COMPLIANT WITH AFI 32-1065 AND NFPA 780, IN THAT PRIORITY ORDER.
H. ROOF PENETRATIONS SHALL BE MADE IN A MANNER THAT DOES NOT VOID OR ALTER ROOF WARRANTY.
I. DO NOT PLACE CABLE SPLICE HARDWARE BOLTS WITH PROTRUDING BOLT DOWN TOWARDS MEMBRANE BECAUSE THE BOLT END WILL POKE A HOLE IN THE MEMBRANE.
J. ADD A WEAR PAD UNDER ALL HARDWARE SPLICES/BOLT HEADS TO PROVIDE ADDED LIFE TO THE WEARING AWAY OF THE MEMBRANE DUE TO WIND INDUCED MOVEMENT OF CABLE HARDWARE.
K. ADD WEAR PADS UNDER ALL SECUREMENT TABS FOR CONDUCTOR CABLES. WIND MOVEMENT CAN PULL THE SECUREMENT TABS AND RIP THE ROOF MEMBRANE. WEAR PADS CAN DISTRIBUTE THE STRESS LOAD OVER A LARGER AREA.
L. ADD CABLE ANCHORS NEAR ALL CABLE SPLICES TO MINIMIZE WIND INDUCED CABLE HARDWARE MOVEMENT.
M. ENSURE ALL WIRE CABLE ENDS CURL UPWARDS AWAY FROM THE ROOF MEMBRANE. DOWNWARD CURLS PUSH INTO THE MEMBRANE AND CAUSE A WEAR PATTERN AND EVENTUALLY A HOLE.
N. ENDS OF CABLES HAVE STRANDS THAT FRAY FROM CABLES AND CAN POKE A HOLE IN THE MEMBRANE. SECURE CABLE ENDS TO PREVENT STRANDS FROM FRAYING.
O. REFER TO DETAIL A1/EG500 FOR ABOVE GRADE LPS SPLICES.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
G4	SEE PARAPET AIR TERMINAL DETAIL C1/EG500 FOR FURTHER INFORMATION.
G5	SEE TYPICAL THRU-ROOF CABLE CONNECTION DETAIL A4/EG500 FOR FURTHER INFORMATION.
G6	SEE TYPICAL ROOF DRAIN CABLE CONNECTION DETAIL A3/EG500 FOR FURTHER INFORMATION.
G10	SEE TYPICAL EXHAUST FAN/MECHANICAL AIR TERMINAL BONDED TO LPS. SEE DETAIL A1/EG501 FOR FURTHER INFORMATION.
G12	BOND MECHANICAL EQUIPMENT TO LPS SYSTEM. RE: A2/EG501

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REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

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DRAWN BY:	STS
REVIEWED BY:	JTL
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SHEET NUMBER:	EG102

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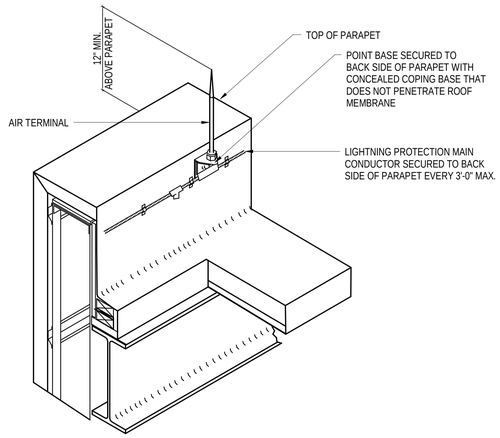
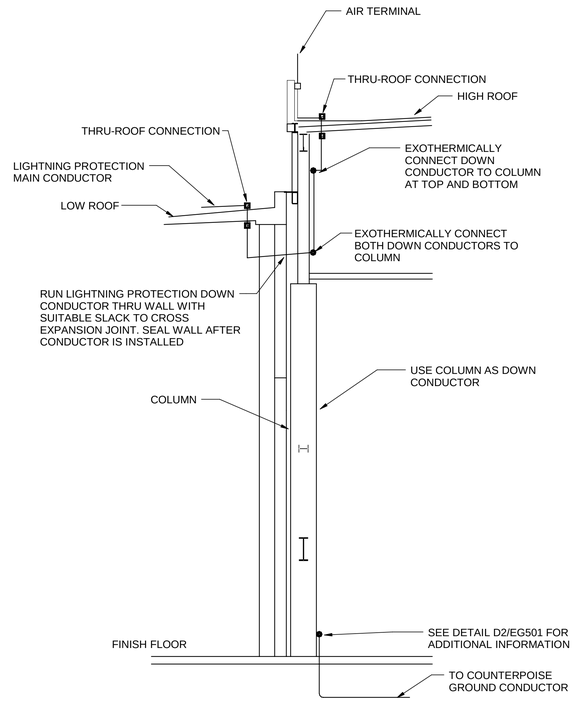
GENERAL NOTES

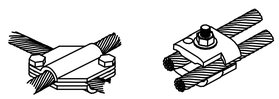
A. INSTALLATION OF ASSEMBLIES/SYSTEMS SHALL COMPLY WITH UFC 4-010-05



C1 AIR TERMINAL CONNECTION @ PARAPET - TYPE "A"
SCALE: NTS



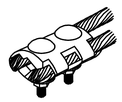
B4 LIGHTNING PROTECTION DOWN CONDUCTOR THRU ROOF DETAIL
SCALE: NTS



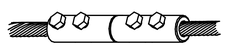
Cross Run Connector

Parallel Connector

Bonding Connector

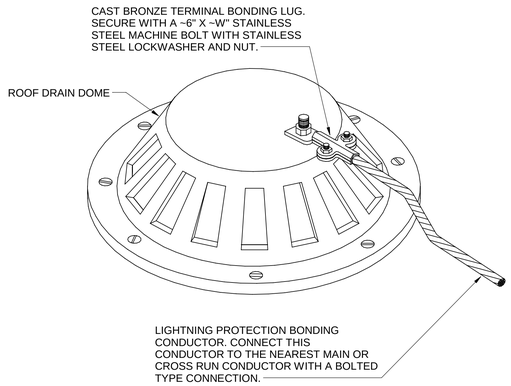


Parallel Connector

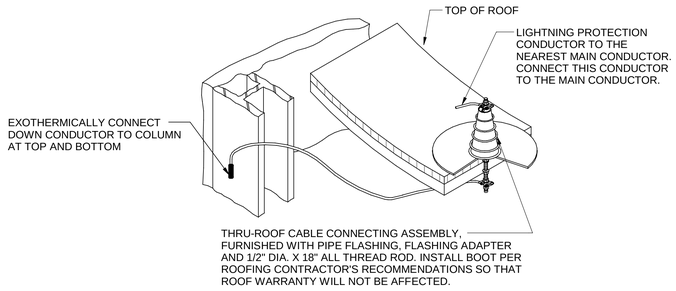


Bi-Metal Connector

A1 LIGHTNING PROTECTION SYSTEM ABOVE GRADE TYPICAL CABLE CONNECTOR DETAIL
SCALE: NTS



A3 TYPICAL ROOF DRAIN CABLE CONNECTION DETAIL
SCALE: NTS



A4 TYPICAL THRU-ROOF CABLE CONNECTION DETAIL
SCALE: NTS

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WISCONSIN
JOHN T LITTLE E-47833 EDMOND OK
PROFESSIONAL ENGINEER
10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **LIGHTNING PROTECTION DETAILS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EG500

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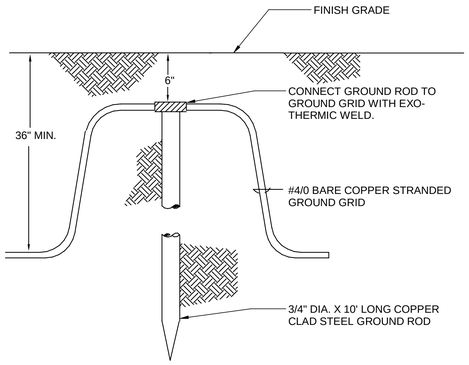
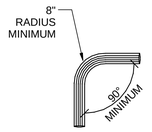
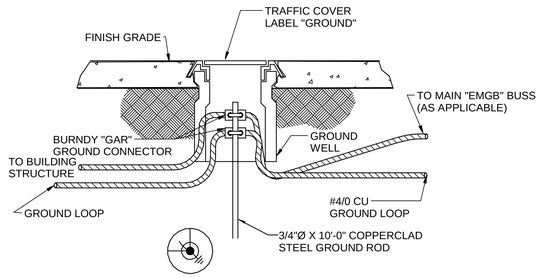


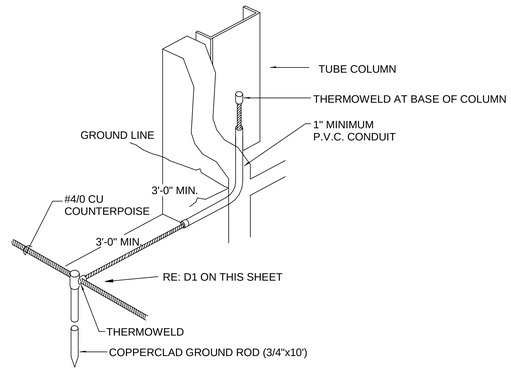
D1 GROUND ROD CONNECTION
SCALE: NTS



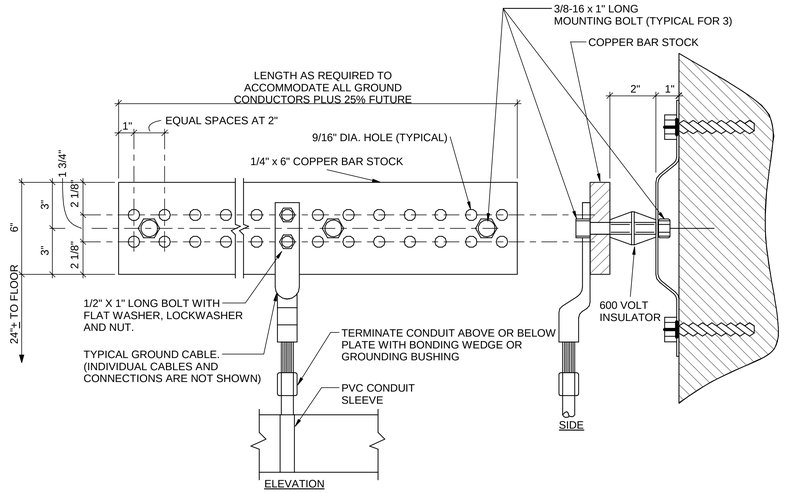
C1 TYPICAL ACCEPTABLE CABLE BEND
SCALE: NTS



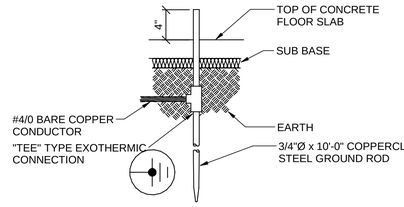
B1 GROUND TEST WELL DETAIL
SCALE: NTS



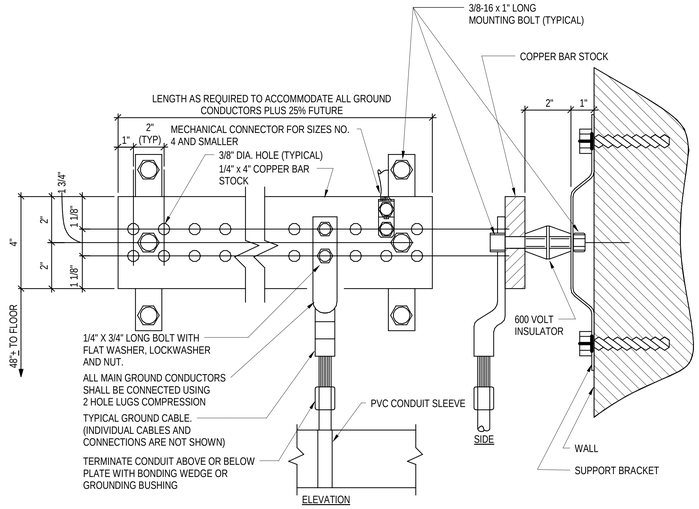
D2 BUILDING STEEL CONNECTION DETAIL
SCALE: NTS



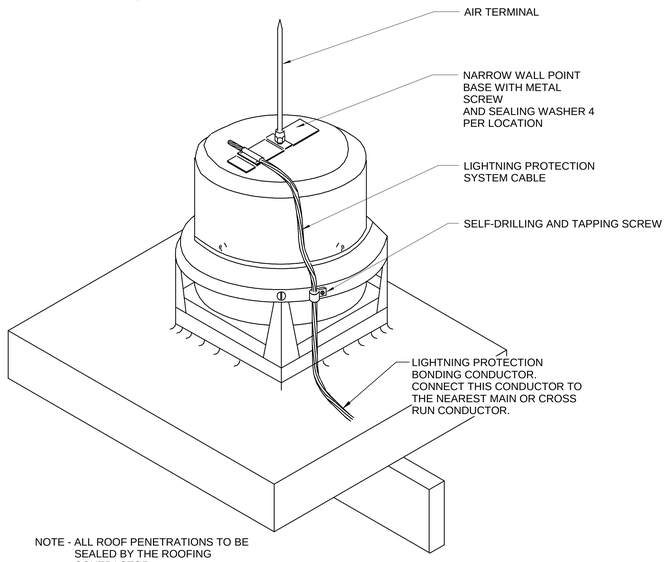
C4 ELECTRICAL MAIN GROUND BUS "EMGB" DETAIL
SCALE: NTS



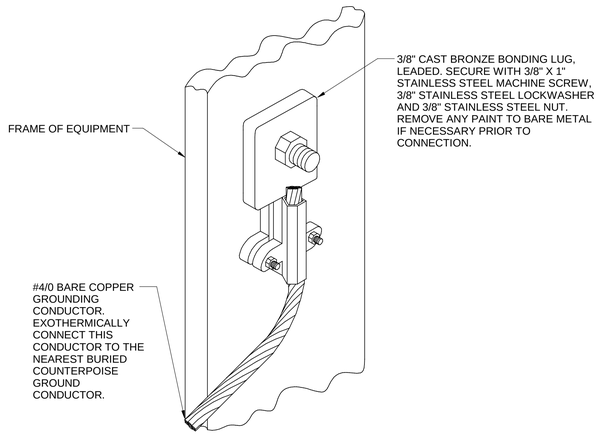
B2 EQUIPMENT GROUNDING ROD
SCALE: NTS



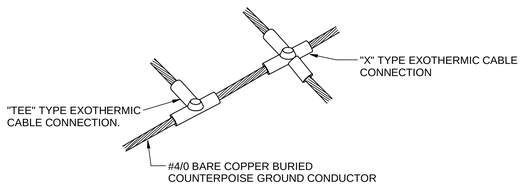
B4 TELECOMMUNICATIONS MAIN GROUND BUS (TMGB) DETAIL
SCALE: NTS



A1 TYPICAL EXHAUST FAN/MECHANICAL AIR TERMINAL
SCALE: NTS



A2 TYPICAL EQUIPMENT GROUNDING CONNECTION DETAIL
SCALE: NTS



A4 BELOW FLOOR GRADE TEE SPLICE
SCALE: NTS

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SHEET TITLE: **LIGHTNING PROTECTION & GROUNDING DETAILS**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EG501

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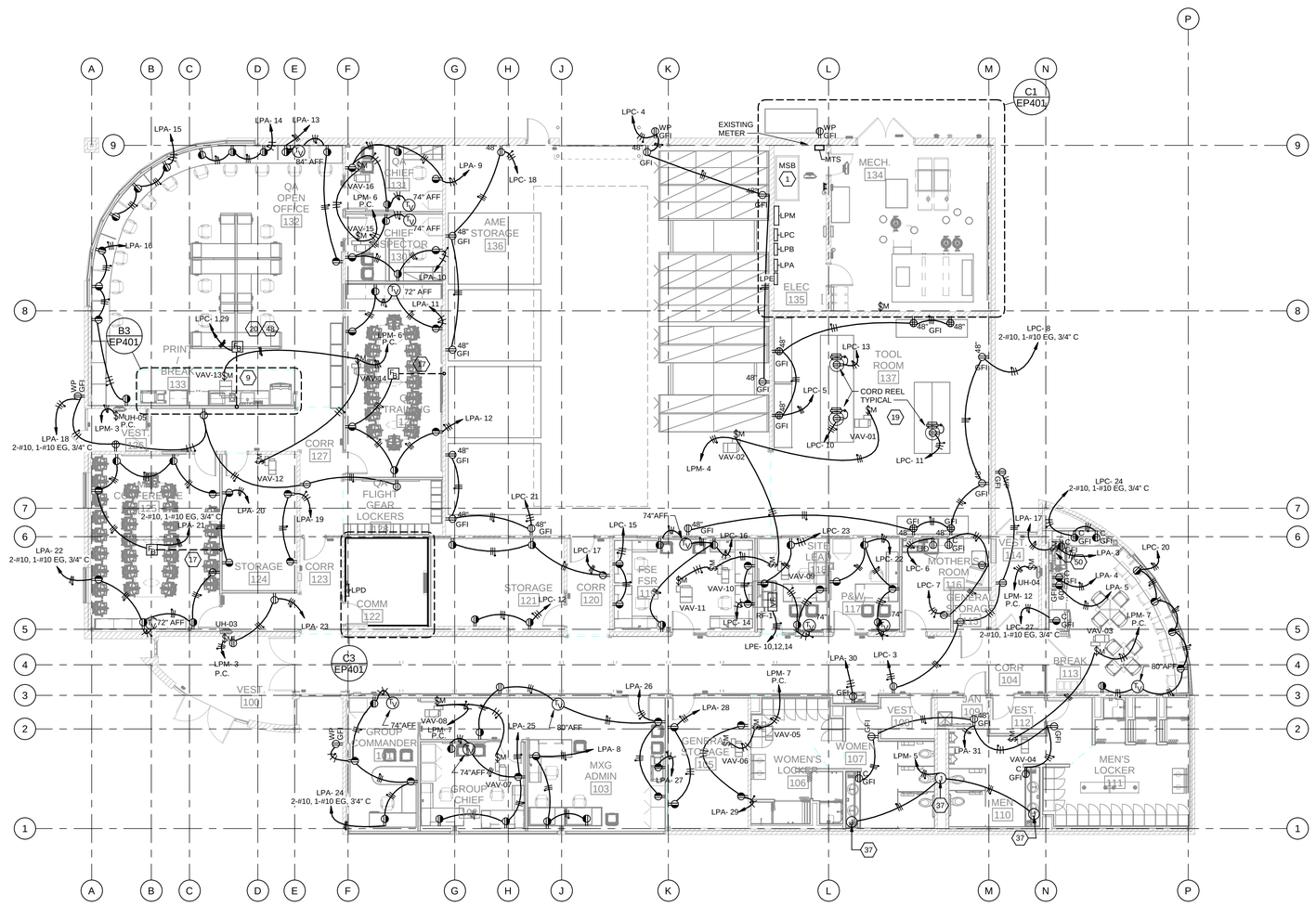
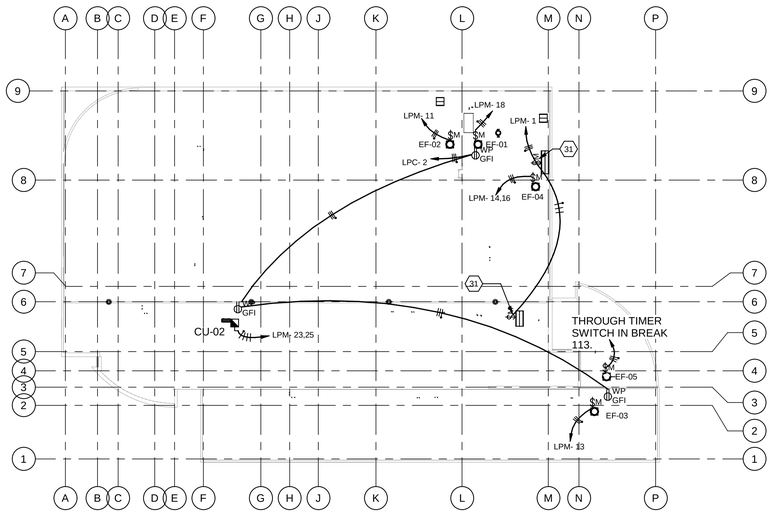


B2 ELECTRICAL POWER PLAN - GROUND FLOOR

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



A1 ELECTRICAL POWER PLAN - ROOF

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

GENERAL NOTES POWER

A. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #12AWG. CONDUCTORS FOR 120V COPPER BRANCH CIRCUITS MORE THAN 100 FT SHALL NOT BE SMALLER THAN #10AWG AND MORE THAN 200 FT SHALL NOT BE SMALLER THAN #8AWG.
B. VERTICALLY ALIGN ALL WALL BOXES WHEREVER POSSIBLE (I.E. RECEPTACLES, LIGHT SWITCHES, THERMOSTATS, FIRE ALARM DEVICES). VERIFY WITH ARCHITECT PRIOR TO INSTALLATION.
C. ALL DEVICE PLATES AND J-BOXES SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER. FACEPLATES WITH CLEAR STICK-ON LABEL AND 1/4" LETTERING. J-BOXES WITH PERMANENT MARKER WITH 1/2" LETTERS MIN.
D. CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULE). BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
E. ALL CONDUIT AND WIRING TO MECHANICAL EQUIPMENT AND ROOF TOP RECEPTACLES SHALL BE ROUTED BELOW ROOF INSIDE BUILDING ENVELOPE. ALL PENETRATIONS SHALL BE THOROUGHLY SEALED AND SHALL NOT VOID ROOF MANUFACTURER'S WARRANTY.
F. ALL EQUIPMENT CONNECTIONS ARE BASED ON BASIS OF DESIGN EQUIPMENT. ACTUAL EQUIPMENT SHALL BE SELECTED DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ACTUAL EQUIPMENT PROVIDED AND ASSOCIATED CUT SHEETS BEFORE ROUGH-IN AND MODIFY DEVICES, BREAKERS, CONDUIT AND WIRING AS REQUIRED IN COORDINATION WITH PROJECT ENGINEER AT NO ADDITIONAL EXPENSE TO THE OWNER.
G. PROVIDE ROUGH-IN FOR ALL THERMOSTAT LOCATIONS. COORDINATE WITH MECHANICAL.
H. TV BOXES SHALL CONTAIN (1) DUPLEX RECEPTACLE.
I. FLOOR BOX SHALL CONTAIN (2) DUPLEX RECEPTACLES. UNLESS OTHERWISE NOTED.
J. REFER TO DETAIL A1 ON SHEET EP401 FOR TYPICAL RECEPTACLE CONTROL.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
1	EXISTING MSB TO REMAIN.
9	TRENCH TO SYSTEMS FURNITURE. SIZE TRENCH FOR 3/4"C FOR POWER AND (2) 1"C FOR DATA. STUB CONDUITS ABOVE CEILING.
17	TRENCH TO FLOOR BOX. SIZED FOR 3/4"C FOR POWER, (3) 1"C FOR DATA, AND 1 1/4" FOR AV. STUB CONDUITS ABOVE CEILING.
19	CORD REEL WITH 25' OF TYPE SEOW CABLE (2-#12, 1-#12EG). PROVIDE AND INSTALL DUPLEX GFI RECEPTACLE IN GANG FS BOX. REFER TO DETAIL A3 ON SHEET EP401.
20	FLOOR BOX SHALL CONTAIN FURNITURE WHIP FOR GFGI SYSTEMS FURNITURE.
31	POWER FOR MOTORIZED DAMPERS. COORDINATE WITH MOTORIZED DAMPER INSTALLER FOR FINAL TERMINATIONS.
37	POWER FOR AUTOMATIC FLUSH VALVES. COORDINATE FINAL TERMINATIONS WITH FLUSH VALVE INSTALLER.
48	THROUGH POWER PACK FOR HALF SWITCHED CONTROLLED RECEPTACLES.
50	1HP RATED TIMER SWITCH FOR EF-05. PROVIDE PUSH BUTTON SWITCH WITH ON/OFF, 5, 10, 15, AND 30 MINUTE OPERATION.

EQUIPMENT ELECTRICAL SCHEDULE

Type Mark	Volts/#Poles-VA	Panel	Circuit Number	Description
AC-01	208 V/1-64 VA	LPM	23,25	DISCONNECT SWITCH PROVIDED BY MECHANICAL. POWERED FROM CU-02
AHU-1	208 V/3-17400 VA	LPM	32,34,36	DISCONNECT SWITCH PROVIDED BY MECHANICAL
BLR-01 & 02	120 V/1-180 VA	LPM	9	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
CH-01	208 V/3-36200 VA	LPM	38,40,42	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
CP	120 V/1-1176 VA	LPM	17	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 1 MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
CU-01	208 V/3-4294 VA	LPM	31,33,35	DISCONNECT SWITCH PROVIDED BY MECHANICAL
CU-02	208 V/1-1664 VA	LPM	23,25	DISCONNECT SWITCH PROVIDED BY MECHANICAL
CWP-01	208 V/1-3890 VA	LPM	28,30	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
DWH	120 V/1-600 VA	LPM	8	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 1 MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
DWH2	208 V/1-8000 VA	LPM	19,21	PROVIDE 240V, 3P, 60A, SINGLE THROW, HEAVY DUTY, NEMA 3R DISCONNECT SWITCH.
EF-01	120 V/1-1176 VA	LPM	18	MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
EF-02	120 V/1-528 VA	LPM	11	MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
EF-03				MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
EF-04	208 V/1-1830 VA	LPM	14,16	MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 2 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
HWP-01	208 V/1-1830 VA	LPE	13,15	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
HWP-02	208 V/1-1830 VA	LPE	9,11	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
P-2	120 V/1-696 VA	LPE	2	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
P-3	120 V/1-696 VA	LPE	7	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
RF-1	208 V/3-3818 VA	LPE	10,12,14	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
UH-01	120 V/1-506 VA	LPM	12	DISCONNECT SWITCH PROVIDED WITH UNIT
UH-02	120 V/1-16 VA	LPM	12	DISCONNECT SWITCH PROVIDED WITH UNIT
UH-03	120 V/1-50 VA	LPM	3	DISCONNECT SWITCH PROVIDED WITH UNIT
UH-04	120 V/1-120 VA	LPM	12	DISCONNECT SWITCH PROVIDED WITH UNIT
UH-05	120 V/1-50 VA	LPM	3	DISCONNECT SWITCH PROVIDED WITH UNIT
VAV	120 V/1-50 VA		VARIES	TYPICAL. PROVIDE 120V POWER TO CONTROL TRANSFORMER PER MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE MOTOR RATED SWITCH FOR LOCAL MEANS OF DISCONNECT.

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PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ELECTRICAL POWER PLANS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EP101

PLAN NORTH
TRUE NORTH

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1/8" = 1'-0"
0 8' 16' 32'
1/16" = 1'-0"

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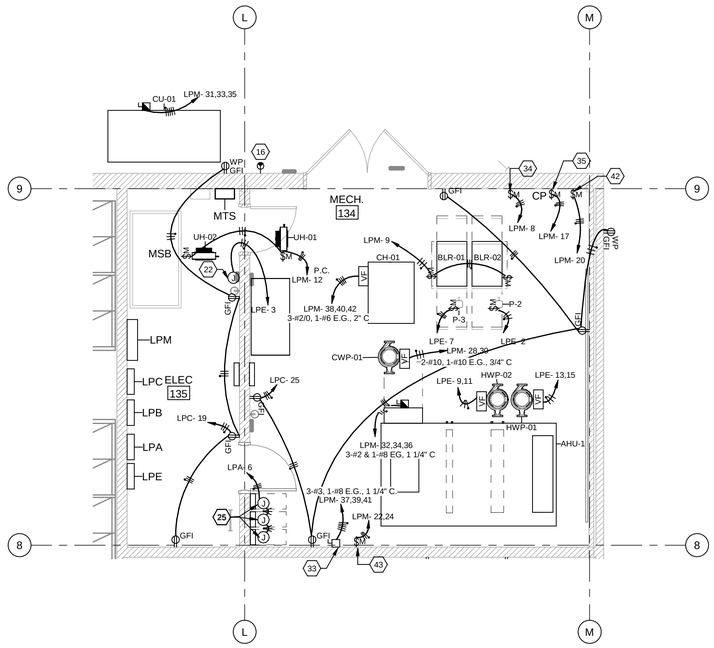
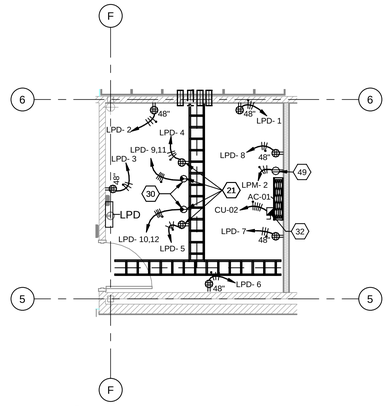


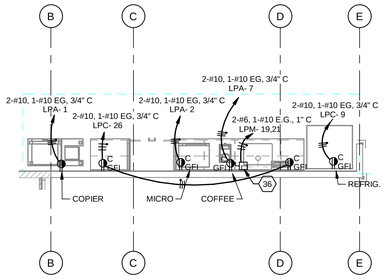
C1 ENLARGED ELECTRICAL RM 135 AND MECH 134

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



C3 ENLARGED COMM RM 122

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



B3 ENLARGED POWER PLAN - PRINT/BREAK 133

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

EQUIPMENT ELECTRICAL SCHEDULE

Type Mark	Volts/#Poles-VA	Panel	Circuit Number	Description
AC-01	208 V/1-64 VA	LPM	23,25	DISCONNECT SWITCH PROVIDED BY MECHANICAL. POWERED FROM CU-02
AHU-1	208 V/3-17400 VA	LPM	32,34,36	DISCONNECT SWITCH PROVIDED BY MECHANICAL
BLR-01 & 02	120 V/1-180 VA	LPM	9	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
CH-01	208 V/3-36200 VA	LPM	38,40,42	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
CP	120 V/1-1176 VA	LPM	17	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 1 MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
CU-01	208 V/3-4294 VA	LPM	31,33,35	DISCONNECT SWITCH PROVIDED BY MECHANICAL
CU-02	208 V/1-1664 VA	LPM	23,25	DISCONNECT SWITCH PROVIDED BY MECHANICAL
CWP-01	208 V/1-3890 VA	LPM	28,30	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
DWH	120 V/1-600 VA	LPM	8	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 1 MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
DWH2	208 V/1-8000 VA	LPM	19,21	PROVIDE 240V, 3P, 60A, SINGLE THROW, HEAVY DUTY, NEMA 3R DISCONNECT SWITCH.
EF-01	120 V/1-1176 VA	LPM	18	MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
EF-02	120 V/1-528 VA	LPM	11	MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
EF-03				MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
EF-04	208 V/1-1830 VA	LPM	14,16	MOTOR STARTER PROVIDED BY MECHANICAL. E.C. PROVIDE 20 AMP, 2 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
HWP-01	208 V/1-1830 VA	LPE	13,15	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
HWP-02	208 V/1-1830 VA	LPE	9,11	VARIABLE FREQUENCY DRIVE WITH INTEGRAL MEANS OF DISCONNECT PROVIDED WITH UNIT
P-2	120 V/1-696 VA	LPE	2	E.C. PROVIDE 20 AMP, 1 POLE, NEMA 3R MOTOR RATED SWITCH AS MEANS OF DISCONNECT.
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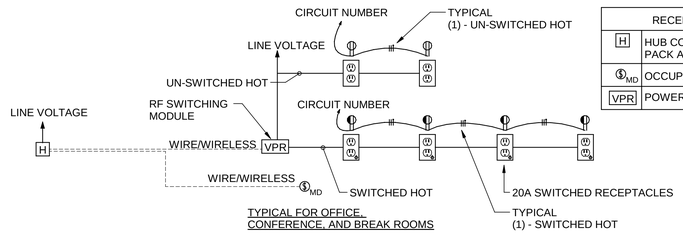
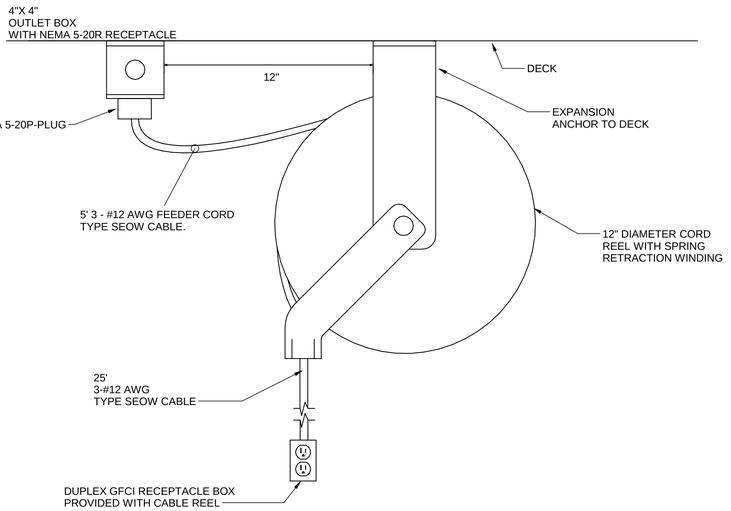
UH-03	120 V/1-50 VA	LPM	3	DISCONNECT SWITCH PROVIDED WITH UNIT
UH-04	120 V/1-120 VA	LPM	12	DISCONNECT SWITCH PROVIDED WITH UNIT
UH-05	120 V/1-50 VA	LPM	3	DISCONNECT SWITCH PROVIDED WITH UNIT
VAV	120 V/1-50 VA		VARIES	TYPICAL. PROVIDE 120V POWER TO CONTROL TRANSFORMER PER MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE MOTOR RATED SWITCH FOR LOCAL MEANS OF DISCONNECT.



RECEPTACLE CONTROL LEGEND	
H	HUB CONNECTION POINT FOR POWER PACK AND OCCUPANCY SENSORS
MD	OCCUPANCY/VACANCY SENSOR
VPR	POWER PACK SWITCHING RELAY MODULE

A1 TYPICAL RECEPTACLE CONTROL DETAIL

SCALE: NTS



A3 DECK MOUNTED CORD REEL

SCALE: NTS

GENERAL NOTES POWER

A. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #12AWG. CONDUCTORS FOR 120V COPPER BRANCH CIRCUITS MORE THAN 100 FT SHALL NOT BE SMALLER THAN #10AWG AND MORE THAN 200 FT SHALL NOT BE SMALLER THAN #8AWG.
B. VERTICALLY ALIGN ALL WALL BOXES WHEREVER POSSIBLE (I.E. RECEPTACLES, LIGHT SWITCHES, THERMOSTATS, FIRE ALARM DEVICES). VERIFY WITH ARCHITECT PRIOR TO INSTALLATION.
C. ALL DEVICE PLATES AND J-BOXES SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER. FACEPLATES WITH CLEAR STICK-ON LABEL AND 1/4" LETTERING. J-BOXES WITH PERMANENT MARKER WITH 1/2" LETTERS MIN.
D. CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULE). BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
E. ALL CONDUIT AND WIRING TO MECHANICAL EQUIPMENT AND ROOF TOP RECEPTACLES SHALL BE ROUTED BELOW ROOF INSIDE BUILDING ENVELOPE. ALL PENETRATIONS SHALL BE THOROUGHLY SEALED AND SHALL NOT VOID ROOF MANUFACTURER'S WARRANTY.
F. ALL EQUIPMENT CONNECTIONS ARE BASED ON BASIS OF DESIGN EQUIPMENT. ACTUAL EQUIPMENT SHALL BE SELECTED DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER'S ACTUAL EQUIPMENT PROVIDED AND ASSOCIATED CUT SHEETS BEFORE ROUGH-IN AND MODIFY DEVICES, BREAKERS, CONDUIT AND WIRING AS REQUIRED IN COORDINATION WITH PROJECT ENGINEER AT NO ADDITIONAL EXPENSE TO THE OWNER.
G. PROVIDE ROUGH-IN FOR ALL THERMOSTAT LOCATIONS. COORDINATE WITH MECHANICAL.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
16	100A, 3P, 4W, PIN AND SLEEVE. NEMA 3R, 208V RECEPTACLE WITH IN-USE COVER FOR TEMPORARY GENERATOR.
21	RECEPTACLES MOUNTED TO LADDER RACK. COORDINATE INSTALLATION HEIGHT WITH LADDER RACK INSTALLER.
22	POWER TO FACP. COORDINATE WITH FIRE PROTECTION INSTALLER.
25	POWER FOR HVAC CONTROL PANELS
30	L6-30R RECEPTACLE. PROVIDE 2-#10, 1-#10 EG. IN 3/4" C.
32	INDOOR UNIT POWERED FROM OUTDOOR UNIT.
33	PROVIDE 240V, 3P, 100A, SINGLE THROW, HEAVY DUTY, NEMA 1 DISCONNECT SWITCH. DISCONNECT SWITCH FOR EXISTING AIR COMPRESSOR.
34	POWER FOR NATURAL GAS WATER HEATER SPARK IGNITION. COORDINATE WITH WATER HEATER INSTALLER FOR FINAL TERMINATIONS.
35	POWER FOR CIRCULATING PUMP. COORDINATE WITH CIRCULATING PUMP INSTALLER FOR FINAL TERMINATIONS.
36	PROVIDE 240V, 3P, 60A, SINGLE THROW, HEAVY DUTY, NEMA 3R DISCONNECT SWITCH. DISCONNECT SWITCH FOR ELECTRIC WATER HEATER. COORDINATE FINAL TERMINATIONS WITH WATER HEATER INSTALLER.
42	POWER FOR PREACTION AIR COMPRESSOR. COORDINATE WITH FIRE PROTECTION AC INSTALLER FOR FINAL TERMINATIONS.
43	POWER FOR AIR COMPRESSOR AIR DRYER. PROVIDE 20 AMP, 2 POLE, NEMA 1 MOTOR RATED SWITCH AS MEANS OF DISCONNECT. COORDINATE WITH AIR DRYER INSTALLER FOR FINAL TERMINATIONS.
49	POWER FOR CONDENSATE PUMP. COORDINATE WITH CONDENSATE PUMP INSTALLER FOR FINAL TERMINATIONS.

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WISCONSIN
JOHN T LITTLE
E-47833
EDMOND
OK
PROFESSIONAL ENGINEER
10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ELECTRICAL ENLARGED PLANS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EP401

N
PLAN NORTH
TRUE NORTH
0 2' 4' 8'
1/4" = 1'-0"

GROUND FLOOR

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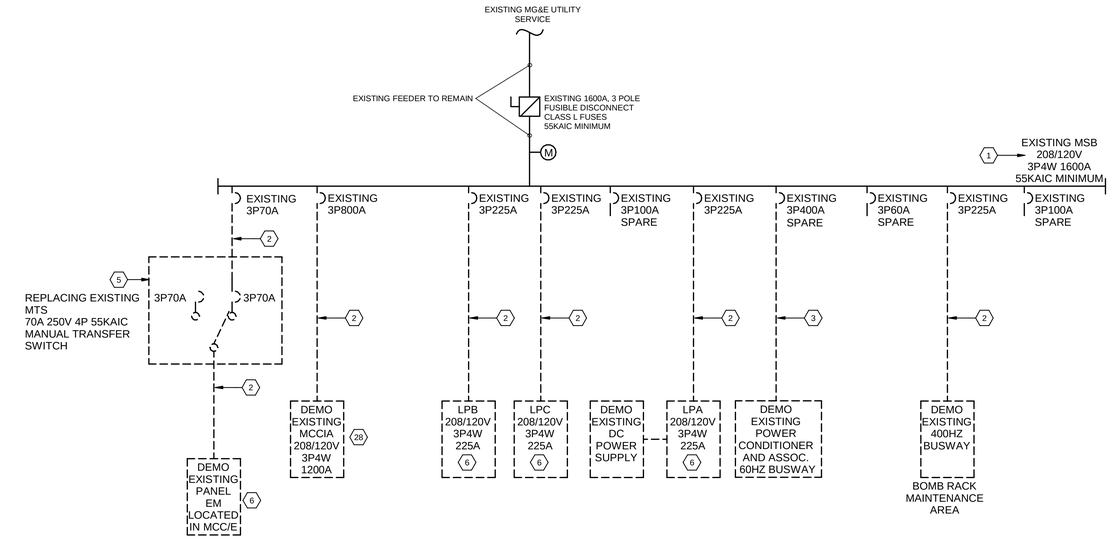
KEYNOTES

KEY VALUE	KEYNOTE TEXT
1	EXISTING MSB TO REMAIN.
2	DEMO EXISTING FEEDER AND REPLACE WITH NEW. SEE ONELINE RISER DIAGRAM - NEW.
3	DEMO EXISTING FEEDER. BREAKER TO REMAIN AS SPARE.
5	EXISTING MANUAL TRANSFER SWITCH TO BE REPLACED WITH NEW.
6	EXISTING PANELBOARD TO BE REPLACED.
15	SURGE PROTECTION DEVICE. SIZED PER MANUFACTURER'S RECOMENDATION.
28	DEMOLISH EXISTING MCCIA.



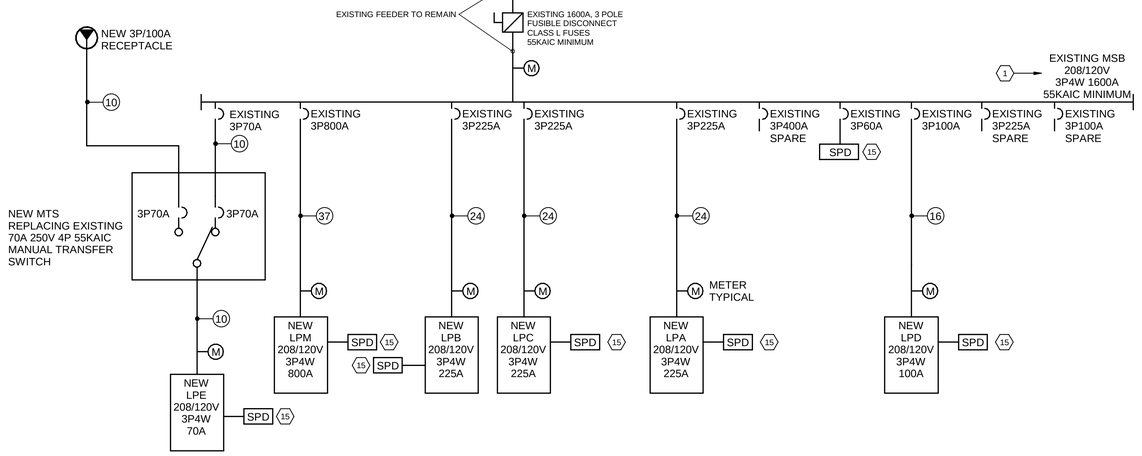
C1 ELECTRICAL ONE-LINE DIAGRAM - DEMOLITION

SCALE: NTS

FEEDER SCHEDULE

NO	WIRE AND CONDUIT	AMPS	NO	WIRE AND CONDUIT	AMPS
1	3-#12 & 1-#12 EG, 3/4"C	20	2	4-#12 & 1-#12 EG, 3/4"C	20
3	3-#10 & 1-#10 EG, 3/4"C	30	4	4-#10 & 1-#10 EG, 3/4"C	30
5	3-#8 & 1-#10 EG, 1"C	40	6	4-#8 & 1-#10 EG, 1"C	40
7	3-#6 & 1-#10 EG, 1"C	55	8	4-#6 & 1-#10 EG, 1"C	55
9	3-#4 & 1-#8 EG, 1 1/4"C	70	10	4-#4 & 1-#8 EG, 1 1/4"C	70
11	3-#3 & 1-#8 EG, 1 1/4"C	85	12	4-#3 & 1-#8 EG, 1 1/4"C	85
13	3-#2 & 1-#8 EG, 1 1/4"C	95	14	4-#2 & 1-#8 EG, 1 1/4"C	95
15	3-#1 & 1-#6 EG, 1 1/2"C	110	16	4-#1 & 1-#6 EG, 1 1/2"C	110
17	3-#1/0 & 1-#6 EG, 1 1/2"C	150	18	4-#1/0 & 1-#6 EG, 1 1/2"C	150
19	3-#2/0 & 1-#6 EG, 2"C	175	20	4-#2/0 & 1-#6 EG, 2"C	175
21	3-#3/0 & 1-#6 EG, 2"C	200	22	4-#3/0 & 1-#6 EG, 2"C	200
23	3-#4/0 & 1-#4 EG, 2"C	230	24	4-#4/0 & 1-#4 EG, 2 1/2"C	230
25	3-#250kcmil & 1-#4 EG, 2 1/2"C	255	26	4-#250kcmil & 1-#4 EG, 2 1/2"C	255
27	3-#300kcmil & 1-#4 EG, 2 1/2"C	285	28	4-#300kcmil & 1-#4 EG, 3"C	285
29	3-#350kcmil & 1-#3 EG, 2 1/2"C	310	30	4-#350kcmil & 1-#3 EG, 3"C	310
31	3-#400kcmil & 1-#3 EG, 2 1/2"C	335	32	4-#400kcmil & 1-#3 EG, 3"C	335
33	3-#500kcmil & 1-#3 EG, 3"C	380	34	4-#500kcmil & 1-#3 EG, 3 1/2"C	380
35	3-#600kcmil & 1-#3 EG, 3 1/2"C	420	36	4-#600kcmil & 1-#3 EG, 4"C	420
			37	2 SETS OF 4-#600kcmil & 1-#1/0 EG, 4"C	840

SCHEDULE NOTES :
1. RESIZE GROUND CONDUCTOR FOR PARALLEL FEEDERS AS REQUIRED PER SECTION #250-122 OF THE NEC. INCREASE SIZE OF CONDUIT AS REQUIRED FOR ADDITIONAL GROUNDING.
2. ALL AMPACITIES INDICATED ARE COPPER BASED ON TEMPERATURE RATING OF 60°C INSULATION ON CONDUCTORS #1 AND SMALLER AND 75°C INSULATION ON CONDUCTORS #1/0 AND LARGER.



B3 ELECTRICAL ONE-LINE DIAGRAM - NEW

SCALE: NTS

SHORT CIRCUIT CALCULATIONS

Transformers

	Name	PH	Size	Pri.V	Sec.V	%Z	SCA,3PH
TA	PDMT	3-PH	500	12470	208	4.75	29,219

	Name	Cond	Cable	Size	Qty	Feet	SCA,3PH
S/F	PNL MSB	PVC, ABS	1/c,CU	600	4	85	27,670

Main-Feeders

	Name	Cond	Cable	Size	Qty	Feet	SCA,3PH
F1	LPM	EMT	1/c,CU	600	2	10	26,349
F2	LPA	EMT	1/c,CU	4/0	1	25	20,023
F3	LPB	EMT	1/c,CU	4/0	1	20	21,195
F4	LPC	EMT	1/c,CU	4/0	1	15	22,512
F5	LPD	EMT	1/c,CU	1	1	160	4,570
F6	LPE	EMT	1/c,CU	4	1	65	5,607

APPROXIMATELY 50% MOTOR CONTRIBUTION INCLUDED.

ELECTRICAL METERING

		AGGREGATE LOADS				
PANEL NAME	LOCATION	METERING REQUIRED	LIGHTING	HVAC	PLUG LOADS LESS THAN 25KVA	NON-HVAC LOADS GREATER THAN 25KVA
PANEL LPA	ELEC 135	YES			X	
PANEL LPB	ELEC 135	YES	X			
PANEL LPC	ELEC 135	YES			X	
PANEL LPD	COMM 122	YES			X	
PANEL LPE	ELEC 135	YES	X		X	
PANEL LPM	ELEC 135	YES		X		
MAIN SWITCHBOARD MSB	ELEC 135	YES				X

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PROFESSIONAL ENGINEER
10-14-22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ONE-LINE DIAGRAM
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EP601

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Switchboard: MSB

Location: ELEC 135
Supply From: UTILTY XFMRMR
Mounting: FLOOR
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: EXISTING
Mains Type: FUSED SWITCH
Mains Rating: 1600 A

Notes:
EXISTING 1600A FUSED SWITCH SWITCHBOARD WITH EXISTING BREAKERS.

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	LPD	3	100 A	100 A	12242 VA	
2	SPD*	3	--	60 A	0 VA	
3	LPB	3	225 A	225 A	4815 VA	
4	LPC	3	225 A	225 A	22110 VA	
5	SPARE	3	--	400 A	0 VA	
6	SPACE WITH PROVISIONS	--	--	--	0 VA	--
7	SPACE WITH PROVISIONS	--	--	--	0 VA	--
8	LPM	3	800 A	800 A	108617 VA	
9	LPA	3	225 A	225 A	26698 VA	
10	SPARE	3	--	225 A	0 VA	
11	LPE VIA MTS	3	70 A	70 A	12864 VA	
12	SPARE	3	--	100 A	0 VA	
				Total Conn. Load:	187346 VA	
				Total Amps:	520 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LIGHTING	7687 VA	100.00%	7687 VA		
POWER	0 VA	0.00%	0 VA	**Total Conn. Load:**	187346 VA
RECEPTACLE	59594 VA	58.39%	34797 VA	**Total Est. Demand:**	144614 VA
MECHANICAL	119565 VA	85.00%	101630 VA	**Total Conn.:**	520 A
FIRE PROTECTION	500 VA	100.00%	500 VA	**Total Est. Demand:**	401 A

Notes:
*SIZED PER MANUFACTURER.

Branch Panel: LPA

Location: ELEC 135
Supply From: MSB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: 30KA
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	RECEPTACLE PRINT / BREAK 133	20 A	1	1000 VA	1500 VA		1	20 A	MICROWAVE - PRINT / BREAK 133	2
3	RECEPTACLE BREAK 113	20 A	1		1500 VA	1500 VA	1	20 A	RECEPTACLE BREAK 113	4
5	RECEPTACLE BREAK 113	20 A	1			1500 VA	1500 VA	1	20 A	CONTROL PANELS - MECH. 134	6
7	COFFEE MACH - PRINT / BREAK 133	20 A	1	1500 VA	540 VA			1	20 A	RECEPTACLE MXG ADMIN 103	8
9	RECEPTACLE-QA CHIEF 131	20 A	1		900 VA	900 VA		1	20 A	RECEPTACLE-CHIEF INSPECTOR 130	10
11	RECEPTACLE-QA TRAINING WEST	20 A	1			720 VA	900 VA	1	20 A	RECEPTACLE-QA TRAINING EAST	12
13	RECEPTACLE-QA OPEN OFFICE 132	20 A	1	720 VA	540 VA			1	20 A	RECEPTACLE-QA OPEN OFFICE 132	14
15	RECEPTACLE-QA OPEN OFFICE 132	20 A	1		540 VA	720 VA		1	20 A	RECEPTACLE-QA OPEN OFFICE 132	16
17	EF-05 ROOF	20 A	1			578 VA	900 VA	1	20 A	RECEPTACLE-VEST. 126/CORR. 127/QA FG...	18
19	RECEPS E - STORAGE 124	20 A	1	360 VA	360 VA			1	20 A	RECEPS W - STORAGE 124	20
21	RECEPTACLE-MXG CONFERENCE 125	20 A	1			1080 VA	900 VA	1	20 A	RECEPTACLE-MXG CONFERENCE 125	22
23	RECEPS - CORR 123/VEST. 100	20 A	1				360 VA	1080 VA	1	20 A	RECEPTACLE GROUP COMMANDER 101	24
25	RECEPS - GROUP CHIEF 102	20 A	1	900 VA	900 VA				1	20 A	RECEPTACLE-MXG ADMIN. 103	26
27	RECEPTACLE-MXG ADMIN 103 COPIER	20 A	1			1000 VA	360 VA		1	20 A	RECEPTACLE-GENERAL STORAGE 105	28
29	RECEPTACLE-GENERAL STORAGE 105	20 A	1					360 VA	180 VA	1	20 A	RECEPTACLE-CORR 104 DRINKING FOUNTAIN	30
31	RECEP - RMS 107, 109, & 110	20 A	1	900 VA	0 VA					1	20 A	SPARE	32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1				0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	38
39	SPACE WITH PROVISIONS	--	--			0 VA	0 VA			--	--	SPACE WITH PROVISIONS	40
41	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	42
43	SPACE WITH PROVISIONS	--	--	0 VA	0 VA					--	--	SPACE WITH PROVISIONS	44
45	SPACE WITH PROVISIONS	--	--			0 VA	0 VA			--	--	SPACE WITH PROVISIONS	46
47	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	48
49	METER POWER	15 A	3	0 VA	0 VA					3	60 A	SPD*	50
51	--	--	--			0 VA	0 VA			--	--	--	52
53	--	--	--					0 VA	0 VA	--	--	--	54
		Total Load:		9220 VA		9400 VA			8078 VA				
		Total...		78 A		80 A			67 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
RECEPTACLE	24620 VA	70.31%	17310 VA		
MECHANICAL	2078 VA	85.00%	1766 VA	**Total Conn. Load:**	26698 VA
				Total Est. Demand:	19076 VA
				Total Conn.:	74 A
				Total Est. Demand:	53 A

Notes:
*SIZED PER MANUFACTURER RECOMMENDATION.

Branch Panel: LPM

Location: ELEC 135
Supply From: MSB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: 30KA
Mains Type: MLO
Mains Rating: 800 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	DAMPERS - ROOF	20 A	1	100 VA	180 VA			1	20 A	AC-01 CP - COMM 122	2
3	UH-03 & 05 - RMS 100 & 126	20 A	1		100 VA	250 VA		1	20 A	VAV-01,02,09,10,11	4
5	FLUSH VALVES - RMS 107 & 110	20 A	1			150 VA	250 VA	1	20 A	VAV-12,13,14,15,16	6
7	VAV-03,04,05,06,07,08	20 A	1	300 VA	600 VA			1	20 A	DWH - MECH 134	8
9	BLR-01 & 02 - MECH 134	20 A	1		360 VA	0 VA		1	20 A	SPARE	10
11	EF-02 - ROOF	15 A	1			528 VA	642 VA	1	20 A	UH-01, 02, & 04 - RMS 114, 134, & 135	12
13	EF-03 - ROOF	20 A	1	696 VA	1830 VA			2	15 A	EF-04	14
15	SPARE	20 A	1		0 VA	0 VA		--	--	--	16
17	CP - MECH 134	20 A	1			1176 VA	1176 VA	1	20 A	EF-01 - ROOF	18
19	DWH2 - PRINT / BREAK 133	50 A	2	4000 VA	696 VA			1	15 A	FA PREACTION AC - MECH 134	20
21	--	--	--		4000 VA	1123 VA		2	15 A	AIR COMP PP-2 AIR RYER - MECH. 134	22
23	CU-02 - ROOF	15 A	2			864 VA	0 VA	--	--	--	24
25	--	--	--	864 VA	0 VA			1	20 A	SPARE	26
27	SPARE	20 A	1		0 VA	1945 VA		2	35 A	CWP-01 - MECH 134	28
29	SPARE	20 A	1			0 VA	1945 VA	--	--	--	30
31	CU-01 - EXTERIOR	20 A	3	1431 VA	5800 VA			3	90 A	AHU-1 - MECH 134	32
33	--	--	--		1431 VA	5800 VA		--	--	--	34
35	--	--	--			1431 VA	5800 VA	--	--	--	36
37	AIR COMPRESSOR PP-2 - MECH 134	100 A	3	8983 VA	12067 VA			3	175 A	CH-01 - MECH. 134	38
39	--	--	--		8983 VA	12067 VA		--	--	--	40
41	--	--	--			8983 VA	12067 VA	--	--	--	42
43	SPACE WITH PROVISIONS	--	--	0 VA	0 VA			--	--	SPACE WITH PROVISIONS	44
45	SPACE WITH PROVISIONS	--	--		0 VA	0 VA		--	--	SPACE WITH PROVISIONS	46
47	SPACE WITH PROVISIONS	--	--			0 VA	0 VA	--	--	SPACE WITH PROVISIONS	48
49	SPD*	60 A	3	0 VA	0 VA			3	15 A	METER POWER	50
51	--	--	--		0 VA	0 VA		--	--	--	52
53	--	--	--			0 VA	0 VA	--	--	--	54
		Total Load:		37547 VA		36059 VA		35012 VA			
		Total...		314 A		302 A		292 A			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MECHANICAL	108617 VA	85.00%	92324 VA		
				Total Conn. Load:	108617 VA
				Total Est. Demand:	92324 VA
				Total Conn.:	301 A
				Total Est. Demand:	256 A

Notes:
*SIZED PER MANUFACTURER RECOMMENDATION.

Branch Panel: LPB

Location: ELEC 135
Supply From: MSB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: 30KA
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING-EXTERIOR WEST SIDE	20 A	1	293 VA	543 VA			1	20 A	LIGHTING-101,102,103,105,106,107,108	2
3	LIGHTING-EXTERIOR EAST SIDE	20 A	1			461 VA	489 VA	1	20 A	LIGHTING-100,122,123,124,125	4
5	LIGHTING-104,120	20 A	1				613 VA	989 VA	1	20 A	LIGHTING-134,135,136,137	6
7	LIGHTING-126,127,128,129,130,131,132,133	20 A	1	732 VA	0 VA				1	20 A	SPARE	8
9	LIGHTING-109,110,111,112,113,114,115,116,1...	20 A	1			696 VA	0 VA		1	20 A	SPARE	10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA				1	20 A	SPARE	14
15	SPARE	20 A	1		0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA				1	20 A	SPARE	20
21	SPARE	20 A	1		0 VA	0 VA			1	20 A	SPARE	22
23	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	24
25	SPACE WITH PROVISIONS	--	--	0 VA	0 VA					--	--	SPACE WITH PROVISIONS	26
27	SPACE WITH PROVISIONS	--	--		0 VA	0 VA				--	--	SPACE WITH PROVISIONS	28
29	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	30
31	SPACE WITH PROVISIONS	--	--	0 VA	0 VA					--	--	SPACE WITH PROVISIONS	32
33	SPACE WITH PROVISIONS	--	--		0 VA	0 VA				--	--	SPACE WITH PROVISIONS	34
35	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	36
37	SPD*	60 A	3	0 VA	0 VA				3	15 A	METER POWER	38
39	--	--	--		0 VA	0 VA			--	--	--	40
41	--	--	--			0 VA	0 VA		--	--	--	42
		Total Load:		1568 VA		1646 VA		1601 VA				
		Total...		13 A		14 A		13 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LIGHTING	4815 VA	100.00%	4815 VA		
				Total Conn. Load:	4815 VA
				Total Est. Demand:	4815 VA
				Total Conn.:	13 A
				Total Est. Demand:	13 A

Notes:
*SIZED PER MANUFACTURER RECOMMENDATION.

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WISCONSIN
JOHN T LITTLE E-47833 EDMOND OK
PROFESSIONAL ENGINEER
10-14-22

115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC

PROJECT NUMBER: 2021-613-00

SHEET TITLE: **ELECTRICAL POWER SCHEDULES I**

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: EP700

10/12/2022 2:59:27 PM

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Branch Panel: LPC

Location: ELEC 135
Supply From: MSB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: 30KA
Mains Type: MLO
Mains Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FLOORBOX QA OPEN OFFICE 132	20 A	1	0 VA	540 VA					1	20 A	RECEPTACLE-ROOF	2
3	RECEPS - RMS 104, 114, & 115	20 A	1			720 VA	720 VA			1	20 A	RECEPTACLE-AME STORAGE N	4
5	RECEPTACLE-TOOL ROOM 137	20 A	1					1440 VA	1500 VA	1	20 A	MINI FRIDGE - MOTHER'S ROOM 116	6
7	RECEPS - MOTHER RM 116	20 A	1	1110 VA	1260 VA					1	20 A	RECEPTACLE-TOOL ROOM SE	8
9	FRIDGE - PRINT / BREAK SE 3	20 A	1			1500 VA	180 VA			1	20 A	RECEPTACLE-TOOL RM CORD REEL #2	10
11	RECEPTACLE-TOOL RM CORD REEL #3	20 A	1					180 VA	360 VA	1	20 A	RECEPTACLE-STORAGE 121	12
13	RECEPTACLE-TOOL RM CORD REEL #1	20 A	1	180 VA	360 VA					1	20 A	RECEPTACLE-FSE 119 NORTH DESK	14
15	RECEPTACLE-FSE 119 SOUTH DESK	20 A	1			360 VA	720 VA			1	20 A	RECEPTACLE-FSE 119	16
17	RECEPTACLE-STOR. 121/CORR. 120	20 A	1					540 VA	540 VA	1	20 A	RECEPTACLE-AME STORAGE SW	18
19	RECEPTACLE-ELEC. ROOM 135	20 A	1	720 VA	1080 VA					1	20 A	RECEPTACLE BREAK 113	20
21	RECEPTACLE-AME STORAGE SE	20 A	1			540 VA	900 VA			1	20 A	RECEPTACLE-P&W 117	22
23	RECEPTACLE-SITE LEAD 118	20 A	1					900 VA	1500 VA	1	20 A	RECEPTACLE BREAK 113	24
25	RECEPS - MECH 134	20 A	1	900 VA	1500 VA					1	20 A	RECEPS - PRINT/BREAK SE 2	26
27	RECEPTACLE BREAK 113	20 A	1			1500 VA	0 VA			1	20 A	SPARE	28
29	FLOORBOX QA OPEN OFFICE 132	20 A	1					360 VA	0 VA	1	20 A	SPARE	30
31	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	34
35	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	36
37	SPACE WITH PROVISIONS	--	--	0 VA	0 VA					--	--	SPACE WITH PROVISIONS	38
39	SPACE WITH PROVISIONS	--	--			0 VA	0 VA			--	--	SPACE WITH PROVISIONS	40
41	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	42
43	SPACE WITH PROVISIONS	--	--	0 VA	0 VA					--	--	SPACE WITH PROVISIONS	44
45	SPACE WITH PROVISIONS	--	--			0 VA	0 VA			--	--	SPACE WITH PROVISIONS	46
47	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	48
49	SPD	60 A	3	0 VA	0 VA					3	15 A	METER POWER	50
51	--	--	--			0 VA	0 VA			--	--	--	52
53	--	--	--					0 VA	0 VA	--	--	--	54
		Total Load:		7650 VA		7140 VA		7320 VA					
		Total...		64 A		60 A		61 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
POWER	0 VA	0.00%	0 VA		
RECEPTACLE	22110 VA	72.61%	16055 VA	**Total Conn. Load:**	22110 VA
				Total Est. Demand:	16055 VA
				Total Conn.:	61 A
				Total Est. Demand:	45 A

Notes:
*SIZED PER MANUFACTURER RECOMMENDATION.

Branch Panel: LPD

Location: COMM 122
Supply From: MSB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: 10KA
Mains Type: MAIN BREAKER
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTACLE-COMM 122	20 A	1	360 VA	360 VA					1	20 A	RECEPTACLE COMM 122	2
3	RECEPTACLE COMM 122	20 A	1			360 VA	360 VA			1	20 A	RECEPTACLE COMM 122	4
5	RECEPTACLE COMM 122	20 A	1					360 VA	360 VA	1	20 A	RECEPTACLE COMM 122	6
7	RECEPTACLE COMM 122	20 A	1	360 VA	360 VA					1	20 A	RECEPTACLE COMM 122	8
9	RECEPTACLE COMM 122	30 A	2			2496 VA	2496 VA			2	30 A	RECEPTACLE COMM 122	10
11	--	--	--					2496 VA	2496 VA	--	--	--	12
13	SPARE	20 A	1	0 VA	0 VA					2	30 A	SPARE	14
15	SPARE	20 A	1			0 VA	0 VA			--	--	--	16
17	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	18
19	SPACE WITH PROVISIONS	--	--	0 VA	0 VA					--	--	SPACE WITH PROVISIONS	20
21	SPACE WITH PROVISIONS	--	--			0 VA	0 VA			--	--	SPACE WITH PROVISIONS	22
23	SPACE WITH PROVISIONS	--	--					0 VA	0 VA	--	--	SPACE WITH PROVISIONS	24
25	SPD*	60 A	3	0 VA	0 VA					3	15 A	METER POWER	26
27	--	--	--			0 VA	0 VA			--	--	--	28
29	--	--	--					0 VA	0 VA	--	--	--	30
		Total Load:		1440 VA		5712 VA		5712 VA					
		Total...		12 A		53 A		53 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
RECEPTACLE	12864 VA	88.87%	11432 VA		
				Total Conn. Load:	12864 VA
				Total Est. Demand:	11432 VA
				Total Conn.:	36 A
				Total Est. Demand:	32 A

Notes:
*SIZED PER MANUFACTURER RECOMMENDATION.

Branch Panel: LPE

Location: ELEC 135
Supply From: MSB
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 WYE
Phases: 3
Wires: 4

A.I.C. Rating: 10KA
Mains Type: MAIN BREAKER
Mains Rating: 100 A
MCB Rating: 70 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING-101,102,103,105,106,107	20 A	1	464 VA	696 VA					1	15 A	P-2 - MECH 134	2
3	FACU - ELEC 135	20 A	1			500 VA	493 VA			1	20 A	LIGHTING- 110, 111,112, 113, 114, 116, 117,...	4
5	LIGHTING-126,127,128,129,130,131,132,133	20 A	1					496 VA	678 VA	1	20 A	LIGHTING-100,104,120,121,122,123,124,125	6
7	P-3 - MECH 134	15 A	1	696 VA	741 VA					1	20 A	LIGHTING-134,135,136,137	8
9	HWP-02 - MECH 134	15 A	2			915 VA	1273 VA			3	20 A	RF-1 - SITE LEAD 118	10
11	--	--	--					915 VA	1273 VA	--	--	--	12
13	HWP-01 - MECH 134	15 A	2	915 VA	1273 VA					--	--	--	14
15	--	--	--			915 VA	0 VA			3	60 A	SPD*	16
17	METER POWER	15 A	3					0 VA	0 VA	--	--	--	18
19	--	--	--	0 VA	0 VA					--	--	--	20
21	--	--	--			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	24
25	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	26
27	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	28
29	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	30
		Total Load:		4785 VA		4096 VA		3361 VA					
		Total...		41 A		35 A		28 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LIGHTING	2872 VA	100.00%	2872 VA		
MECHANICAL	8870 VA	85.00%	7540 VA	**Total Conn. Load:**	12242 VA
FIRE PROTECTION	500 VA	100.00%	500 VA	**Total Est. Demand:**	10912 VA
				Total Conn.:	34 A
				Total Est. Demand:	30 A

Notes:
*SIZED PER MANUFACTURER RECOMMENDATION.

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115th FIGHTER WING

Air National Guard Base
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **STS**
DRAWN BY: **STS**
REVIEWED BY: **JTL**
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **ELECTRICAL POWER SCHEDULES II**
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EP701

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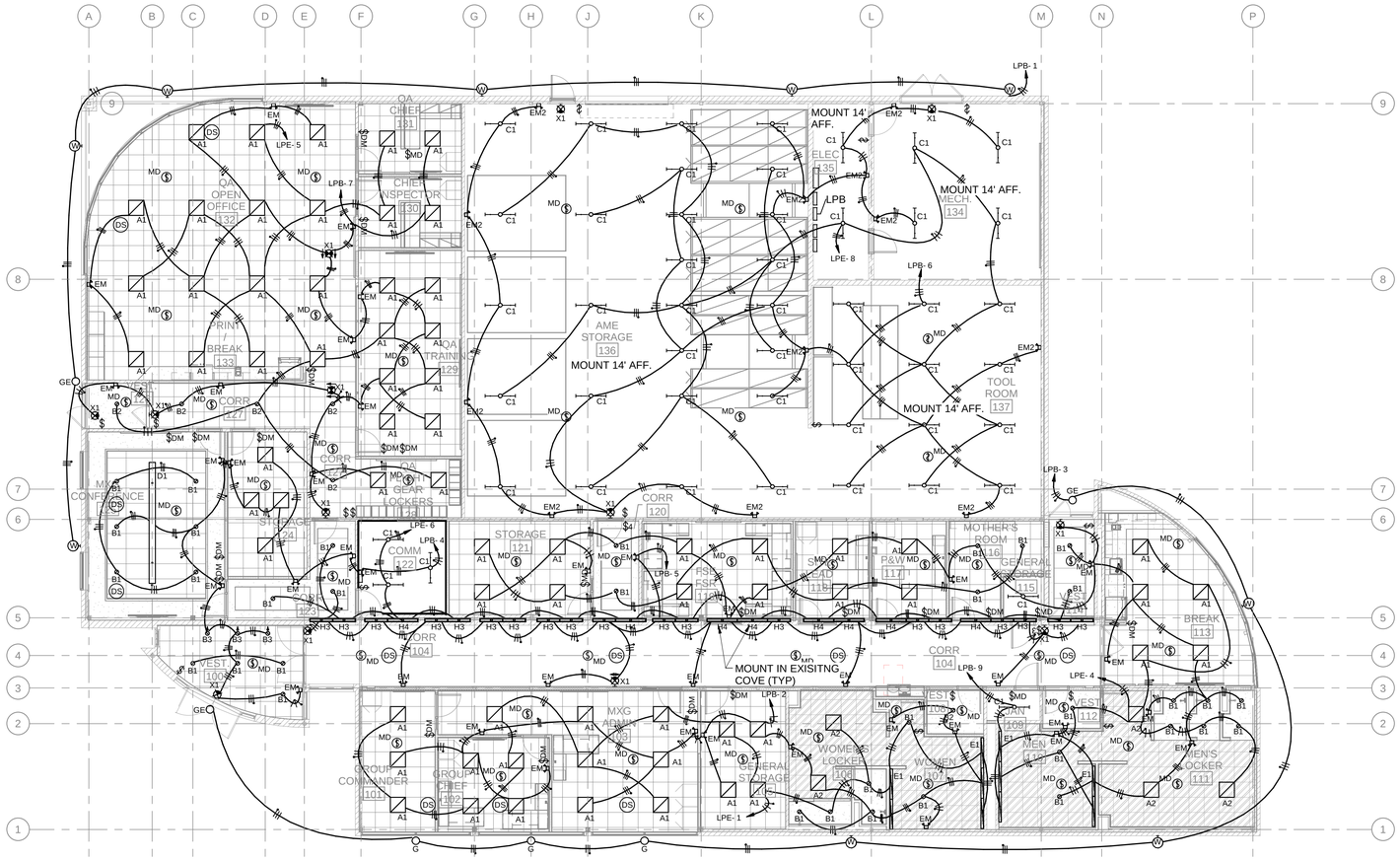

B2 ELECTRICAL INTERIOR LIGHTING PLAN

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

LIGHTING CONTROL MATRIX SCHEDULE

Room: Name	RM NO.	FIXTURE TYPES	DIMMING	OCCUPANCY SENSOR	DAYLIGHT SENSOR	CONTROL TYPE	SEQUENCE OF OPERATION
VEST.	100	B1, B1E, B3, X1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
GROUP COMMANDER	101	A1	YES	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
GROUP CHIEF	102	A1	YES	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
MXG ADMIN	103	A1	YES	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
CORR	104	H3, H4	NO	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
GENERAL STORAGE	105	A1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
WOMEN'S LOCKER	106	A2, B1, E1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY
WOMEN	107	B1, E1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY
VEST.	108	B2	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY
JAN	109	C1	NO	YES	NO	MOTION SENSOR	WALL BOX OCCUPANCY SENSOR WITH MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
MEN	110	B1, E1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY
MEN'S LOCKER	111	A2, B1, E1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY
VEST.	112	B1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
BREAK	113	A1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
VEST.	114	F1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
GENERAL STORAGE	115	C1	NO	YES	NO	MOTION SENSOR	WALL BOX OCCUPANCY SENSOR WITH MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
MOTHER'S ROOM	116	B1	YES	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
P&W	117	A1	YES	YES	NO	MOTION SENSOR	WALL BOX OCCUPANCY SENSOR WITH MANUAL OVERRIDE & DIMMING, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
SITE LEAD	118	A1	YES	YES	NO	MOTION SENSOR	WALL BOX OCCUPANCY SENSOR WITH MANUAL OVERRIDE & DIMMING, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
FSE FSR	119	A1	YES	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
CORR	120	F1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
STORAGE	121	A1	YES	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
COMM	122	C1	NO	NO	NO	NONE	WALL BOX DIGITAL TIMER SWITCH WITH PRESET TIME SETTINGS
CORR	123	A1, F1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
STORAGE	124	A1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
MXG CONFERENCE	125	B1, D1	YES	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
VEST.	126	B2	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
CORR	127	B2	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
QA FLIGHT GEAR LOCKERS	128	A1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
QA TRAINING	129	A1	YES	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
CHIEF INSPECTOR	130	A1	YES	YES	NO	MOTION SENSOR	WALL BOX OCCUPANCY SENSOR WITH MANUAL OVERRIDE & DIMMING, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
QA CHIEF	131	A1	YES	YES	NO	MOTION SENSOR	WALL BOX OCCUPANCY SENSOR WITH MANUAL OVERRIDE & DIMMING, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY
QA OPEN OFFICE	132	A1	YES	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
PRINT / BREAK	133	A1	YES	YES	YES	MOTION SENSOR, DAYLIGHT SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE DIMMER SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 20 MINUTES OF VACANCY, LIGHTS AUTOMATICALLY DIM VIA DAYLIGHT SENSOR
MECH.	134	C1	NO	NO	NO	NONE	WALL BOX DIGITAL TIMER SWITCH WITH PRESET TIME SETTINGS
ELEC	135	C1	NO	NO	NO	NONE	WALL BOX DIGITAL TIMER SWITCH WITH PRESET TIME SETTINGS
AME STORAGE	136	C1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY
TOOL ROOM	137	C1	NO	YES	NO	MOTION SENSOR	OCCUPANCY SENSOR, MANUAL OVERRIDE SWITCH, LIGHTS SHALL TURN ON UPON ENTRY AND OFF AFTER 30 MINUTES OF VACANCY

GENERAL NOTES

A. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #12AWG. CONDUCTORS FOR 120V COPPER BRANCH CIRCUITS MORE THAN 100 FT SHALL NOT BE SMALLER THAN #10AWG AND MORE THAN 200 FT SHALL NOT BE SMALLER THAN # 8AWG.
B. VERTICALLY ALIGN ALL WALL BOXES WHEREVER POSSIBLE (I.E. RECEPTACLES, LIGHT SWITCHES, THERMOSTATS, FIRE ALARM DEVICES). VERIFY WITH ARCHITECT PRIOR TO INSTALLATION.
C. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION ON MOUNTING HEIGHTS OF WALL MOUNTED FIXTURES.
D. CONNECT EMERGENCY AND EXIT LIGHTS TO UNSWITCHED HOT LEG OF LIGHTING CIRCUIT FOR CONTINUOUS OPERATION.
E. WHERE PLANS SHOW MULTIPLE LINE VOLTAGE SWITCHES SHOWN IN ONE LOCATION, DESIGN INTENT IS TO INSTALL SWITCHES IN MULTI-GANG BOXES.
F. CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE WIRING AS REQUIRED FOR DIMMING OF LIGHT FIXTURES.
G. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMMER SWITCHES TO BE FULLY COMPATIBLE WITH THE FIXTURES AND LAMPS PROVIDED BEFORE SUBMITTING DEVICES FOR APPROVAL.
H. ALL DIMMER SWITCHES SHALL BE SLIDE TO DIM WITH PUSH BUTTON ON/OFF.
I. OCC SENSOR COVERAGE VARIES PER MANUFACTURER. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY COMPLETE COVERAGE IN AREAS/ROOMS WITH SENSORS SHOWN WITH ACTUAL OCCUPANCY SENSORS PROVIDED. PROVIDE EXTENDED RANGE OCCUPANCY SENSORS OR ADDITIONAL OCCUPANCY SENSORS WHERE REQUIRED TO ACHIEVE FULL COVERAGE.
J. COORDINATE MOUNTING HEIGHTS OF ALL FIXTURES SUSPENDED AND WALL MOUNT WITH ARCHITECT PRIOR TO INSTALLATION.
K. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE ANY ADDITIONAL BRACING OR SUPPORT AS REQUIRED TO SUSPEND LIGHT FIXTURES. BRACING SHALL BE PAINTED TO MATCH CEILING WHERE EXPOSED.
L. CIRCUIT WIRING IS NOT SHOWN. PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUITING AND SWITCHING / CONTROL AS SHOWN.
M. SEE LIGHTING CONTROL MATRIX FOR INTENT OF CONTROL REQUIRED FOR EACH ROOM. PROVIDE ALL SENSORS, RELAYS, POWERPACKS, DEVICES WIRING ETC. AS REQUIRED FOR A COMPLETE AND OPERATIONAL (CODE COMPLIANT) SYSTEM.
N. REFER TO DETAILS ON SHEET EL501 FOR LIGHTING CONTROLS.

N

PLAN NORTH

TRUE NORTH

0 4' 8' 16'

1/8" = 1'-0"

FSB
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10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ELECTRICAL INTERIOR LIGHTING PLAN
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EL101

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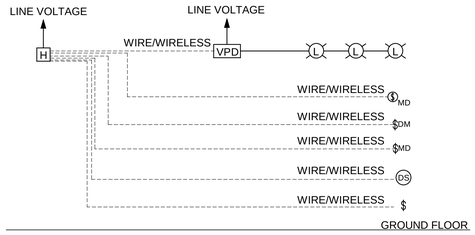


TYPICAL SEQUENCE OF OPERATION:

OCCUPANCY SENSOR(S) SHALL TURN LIGHTS ON AUTOMATICALLY UPON ENTRY TO THE SPACE. AFTER 20 MINUTES OF VACANCY, LIGHTS SHALL TURN OFF AUTOMATICALLY.

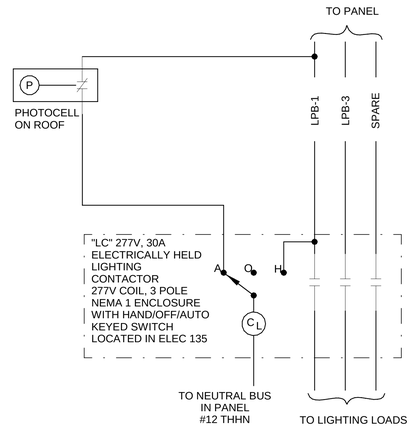
WALL STATIONS SHALL BE ABLE TO MANUALLY TURN THE LIGHTS ON/OFF AND OVERRIDE SENSOR. THE WALL STATION SHALL BE ABLE TO DIM THE LIGHTS FROM 100% TO MINIMUM.

DAYLIGHT SENSORS SHALL DIM THE LIGHTS TO MAINTAIN A MINIMUM DESIGN OF 50fc FOR PRIMARY AND SECONDARY ZONES.

LIGHTING CONTROL LEGEND	
H	HUB CONNECTION POINT FOR POWER PACK, OCCUPANCY SENSORS, SWITCHES, AND DAYLIGHT SENSORS.
VPD	POWER PACK DIMMING MODULE WITH 0-10V CONTROL
L	LED FIXTURE
$MD	OCCUPANCY SENSOR
$DM	DIMMABLE CONTROL SWITCH
$MD	MOTION DETECTOR SWITCH WITH DIMMABLE CONTROL
DS	DAYLIGHT SENSOR
$	MANUAL ON/OFF

C3 INTERIOR LIGHTING CONTROL DIAGRAM

SCALE: NTS



A5 EXTERIOR LIGHTING CONTROL DIAGRAM

SCALE: NTS

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WISCONSIN
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PROFESSIONAL ENGINEER
10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: LIGHTING CONTROL DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EL501

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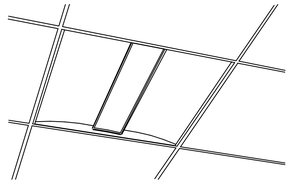


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

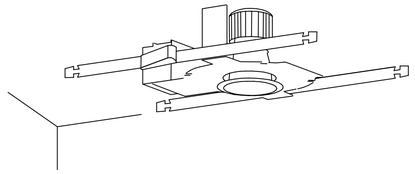
LUMINAIRE REQUIREMENTS:

1. HOUSING - HEAVY GAUGE COLD ROLLED STEEL OR DIE CAST ALUMINUM. SIZE SHOWN AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - FROSTED ACRYLIC OR POLYCARBONATE LENS WITH DIE FORMED COLD ROLLED SHEET STEEL REFLECTORS.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 100 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DRY OR DAMP LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING RECESSED IN HARD OR ACOUSTICAL TILE CEILING.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, INTEGRAL OCCUPANCY/VACANCY SENSOR, VARIOUS SIZE AND OUTPUT OPTIONS, SURFACE-MOUNTING KIT.

DIRECT/INDIRECT LED LUMINAIRE

C1 TYPE A1 & A2 LIGHT FIXTURE

SCALE: NTS



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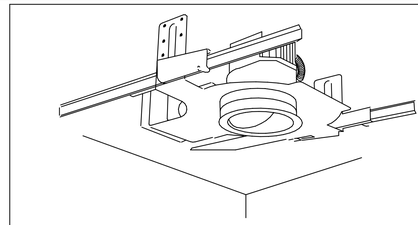
LUMINAIRE REQUIREMENTS:

1. HOUSING - COLD-ROLLED STEEL OR DIE CAST ALUMINUM, WITH HEAT SINK. APERTURE SIZE AND SHAPE AS INDICATED IN LUMINAIRE SCHEDULE.
2. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 70 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
3. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
4. CERTIFICATION - UL LISTED FOR DRY LOCATION OR DAMP LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
5. MOUNTING - RECESSED IN HARD OR ACOUSTICAL TILE CEILING. PROVIDE T-BAR HANGERS FOR INSTALLATION IN ACOUSTICAL TILE CEILINGS OR TABS WHEN MOUNTING IN HARD CEILINGS.
6. OPTIONS - EMERGENCY BATTERY BACK-UP, VARIOUS ACRYLIC OR POLYCARBONATE LENSES, REFLECTORS, LOUVERS, AND TRIMS. VARIOUS BEAM ANGLES. IC-RATED HOUSING.

FIXED RECESSED DOWNLIGHT

C2 TYPE B1, B2 LIGHT FIXTURE

SCALE: NTS



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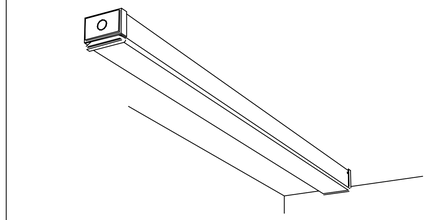
LUMINAIRE REQUIREMENTS:

1. HOUSING - COLD-ROLLED STEEL OR DIE CAST ALUMINUM, WITH HEAT SINK. APERTURE SIZE AND SHAPE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - WALL WASH REFLECTOR OR LENS OPTIMIZED FOR WALL WASH APPLICATION.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 60 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DRY LOCATION OR DAMP LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - RECESSED IN HARD OR ACOUSTICAL TILE CEILINGS OR TABS WHEN MOUNTING IN HARD CEILINGS.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, VARIOUS ACRYLIC OR POLYCARBONATE LENSES, REFLECTORS, LOUVERS, AND TRIMS. VARIOUS BEAM ANGLES. IC-RATED HOUSING.

WALLWASH RECESSED DOWNLIGHT

C3 TYPE B3 LIGHT FIXTURE

SCALE: NTS



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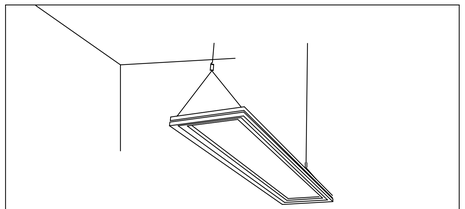
LUMINAIRE REQUIREMENTS:

1. HOUSING - EXTRUDED ALUMINUM OR WELDED STEEL HOUSING WITH SNAP-ON END CAPS. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - DIFFUSE ACRYLIC LENS.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 90 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DAMP OR WET LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - PENDANT, STEM, OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - INTEGRAL OCCUPANCY SENSOR, EMERGENCY BATTERY BACK-UP, VARIOUS PROFILE DIMENSIONS AND RUN LENGTHS, AND VARIOUS CLEAR OR FROSTED POLYCARBONATE LENSES.

LED INDUSTRIAL LIGHT

C4 TYPE C1 LIGHT FIXTURES

SCALE: NTS



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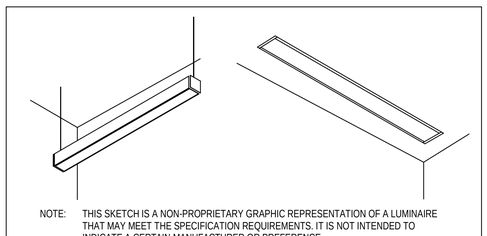
LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE CAST ALUMINUM FRAME AND HEAT SINK WITH ENAMELED FINISH. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - ACRYLIC OR POLYCARBONATE REFRACTIVE LENS. EDGE-LIT, LAMBERTIAN, NARROW, WIDE, OR ASYMMETRIC LIGHT DISTRIBUTION AS INDICATED IN LUMINAIRE SCHEDULE.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 75 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE. INTEGRAL TO LUMINAIRE OR REMOTE-LOCATED IN ACCESSIBLE LOCATION.
5. CERTIFICATION - UL LISTED FOR DRY OR DAMP LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - PENDANT, STEM, OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, VARIOUS PROFILE DIMENSIONS AND RUN LENGTHS, AND VARIOUS CLEAR OR FROSTED POLYCARBONATE LENSES, BAFFLES, OR LOUVERS.

DIRECT/INDIRECT LED PENDANT

B1 TYPE D1 LIGHT FIXTURE

SCALE: NTS



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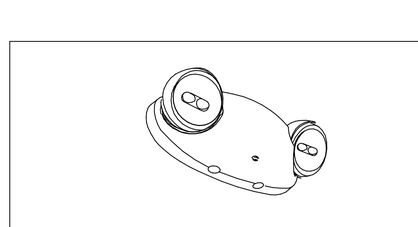
LUMINAIRE REQUIREMENTS:

1. HOUSING - HEAVY GAUGE COLD ROLLED STEEL, EXTRUDED ALUMINUM, OR DIE CAST ALUMINUM BODY. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - FROSTED ACRYLIC OR POLYCARBONATE LENS. LAMBERTIAN, NARROW, WIDE, OR ASYMMETRIC LIGHT DISTRIBUTION AS INDICATED IN LUMINAIRE SCHEDULE.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 110 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DRY OR DAMP LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - PENDANT, STEM, OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE, OR RECESSED IN HARD OR ACOUSTICAL TILE CEILING.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, INTEGRAL OCCUPANCY/VACANCY SENSOR, VARIOUS PROFILE DIMENSIONS AND RUN LENGTHS, AND VARIOUS CLEAR OR FROSTED POLYCARBONATE LENSES, BAFFLES, OR LOUVERS.

LINEAR LED SLOT

B2 TYPE E1 LIGHT FIXTURE

SCALE: NTS



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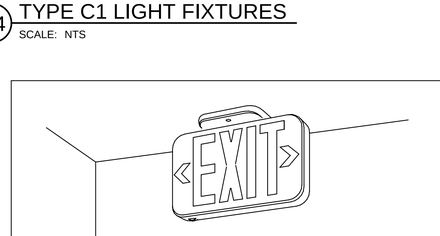
LUMINAIRE REQUIREMENTS:

1. HOUSING - HIGH-IMPACT, UV-STABILIZED, INJECTION-MOLDED THERMOPLASTIC HOUSING.
2. LIGHT SOURCE - SOLID STATE LEDS
3. DRIVER - INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND BATTERY BACKUP AND SELF DIAGNOSTICS INTEGRAL TO UNIT.
4. CERTIFICATION - NFPA 101. UL LISTED FOR DAMP OR WET LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
5. MOUNTING - WALL SURFACE MOUNTED.
6. OPTIONS - WHITE OR BLACK FINISH.

LED EMERGENCY LIGHTING UNIT (ELU)

B3 TYPE EM & EM2 LED EMERGENCY LIGHTING UNIT

SCALE: NTS



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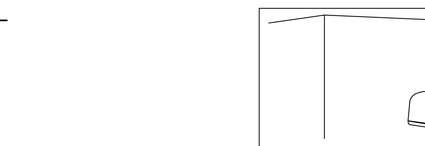
LUMINAIRE REQUIREMENTS:

1. BLACK HOUSING - BRUSHED ALUMINUM FACE(S) .
2. LIGHT SOURCE - SOLID STATE LEDS.
3. DRIVER - INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD.
4. CERTIFICATION - NFPA 101. UL LISTED FOR DAMP OR WET LOCATION AND ROHS COMPLIANT.
5. MOUNTING - SURFACE MOUNTED ON CEILING AND/OR WALL.
6. OPTIONS - RED LETTERING, ONE- OR TWO-SIDED. ELU REMOTE HEAD CAPABILITIES. BATTERY BACKUP AND SELF DIAGNOSTICS.

EXIT SIGN

B4 TYPE X1 EXIT SIGN

SCALE: NTS



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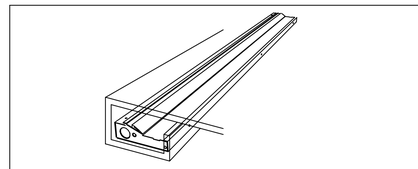
LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST OR EXTRUDED ALUMINUM HOUSING WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK INCORPORATED DIRECTLY INTO HOUSING OR DRIVER COMPARTMENT.
2. OPTICS - PRECISION MOLDED ACRYLIC LENS WITH TYPE II, III, OR IV DISTRIBUTIONS. BUG UPLIGHT RATING OF U0, WITH GLARE RATING AS DETERMINED BY LIGHTING ZONE INSTALLED.
3. LIGHT SOURCE - SOLID STATE LEDS, 4000K CCT UON, MINIMUM 70 CRI UON, AND MINIMUM EFFICACY OF 80 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR WET LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - VARIOUS LIGHT DISTRIBUTIONS. INTEGRAL MOTION SENSOR, PHOTOCELL, BATTERY BACK-UP.

LED WALL PACK

A2 TYPE W LED WALL PACK

SCALE: NTS



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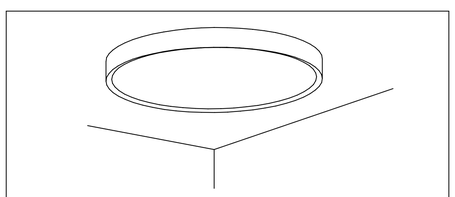
LUMINAIRE REQUIREMENTS:

1. HOUSING - FABRICATED METAL HOUSING WITH POWDER COAT FINISH. LENGTH AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - CLEAR OR FROSTED ACRYLIC LENS.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 90 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DRY LOCATION OR DAMP LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - END-TO-END CONNECTIONS, SUITABLE FOR SURFACE MOUNT.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, VARIOUS PROFILE DIMENSIONS AND RUN LENGTHS, VARIOUS CLEAR OR FROSTED POLYCARBONATE LENSES, AND ASYMETRIC SPECULAR REFLECTOR WITH 60-DEGREE TO 120-DEGREE BEAM ANGLE. OPTIONAL FIELD-ADJUSTABLE AIMING.

INDIRECT COVE LIGHT

A3 TYPE H3 & H4 - INDIRECT COVE LIGHT

SCALE: NTS



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LUMINAIRE REQUIREMENTS:

1. HOUSING - EXTRUDED ALUMINUM OR STAINLESS STEEL HOUSING. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - MATTE ACRYLIC OR POLYCARBONATE DIFFUSER.
3. LIGHT SOURCE - SOLID STATE LEDS, 4000K CCT UON, MINIMUM 70 CRI UON, AND MINIMUM EFFICACY OF 55 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR WET LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, SIZE, SHAPE, AND LUMEN OUTPUT

LED ROUND CEILING SURFACE MOUNT

A4 TYPE G & GE LIGHT FIXTURES

SCALE: NTS

5801 Broadway Extension, Suite 500
Oklahoma City, OK 73118-7436
405.840.2931 | fsb-ae.com

WISCONSIN
JOHN T LITTLE
E-47833
EDMOND OK
PROFESSIONAL ENGINEER
10-14-22

115TH FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: STS
DRAWN BY: STS
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: LIGHT FIXTURE DETAILS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EL601

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LIGHTING FIXTURE SCHEDULE

ID	DETAIL NUMBER	DESCRIPTION	VOLTAGE	LIGHT SOURCE	LUMENS	MOUNT	ELEVATION	COLOR TEMPERATURE	CRI	WATTAGE	DIMMING	REMARKS
A1	SEE DETAIL C1/EL601	(1) 2X2 DIRECT/INDIRECT; CEILING RETENTION CLIPS;	120 V	LED	4000 lm	GRID		3500 K	80	30 W	0-10V TO 10%	SUPPORTS 120/277
A2	SEE DETAIL C1/EL601	(1) 2X2 DIRECT/INDIRECT; GYP CLG FLANGE KIT;	120 V	LED	4000 lm	GYP		3500 K	80	30 W	0-10V TO 10%	SUPPORTS 120/277
B1	SEE DETAIL C2/EL601	(1) DOWNLIGHT 6 INCH ROUND; 6 INCH CONICAL REFLECTOR; RECESSED; MEDIUM 60 DEG BEAM ANGLE; SEMI SPECULAR CLEAR FINISH; POLISHED FLANGE; THDI 11.2%; MINIMUM STARTING TEMPERATURE -40 DEG C; SOUND RATING CLASS A STANDARDS; CULUS DAMP AND WET LOCATION LISTED IN PROTECTED CEILING; IP20 ABOVE FINISHED CEILING; IP64 BELOW FINISHED CEILING; TEN YEAR LIMITED WARANTY	120 V	LED	1000 lm	GYP OR GRID		3500 K	80	10 W	0-10V TO 1%	6" RECESSED CAN
B2	SEE DETAIL C2/EL601	(1) DOWNLIGHT 6 INCH ROUND; 6 INCH CONICAL REFLECTOR; RECESSED; MEDIUM 60 DEG BEAM ANGLE; SEMI SPECULAR CLEAR FINISH; POLISHED FLANGE; THDI 11.2%; MINIMUM STARTING TEMPERATURE -40 DEG C; SOUND RATING CLASS A STANDARDS; CULUS DAMP AND WET LOCATION LISTED IN PROTECTED CEILING; IP20 ABOVE FINISHED CEILING; IP64 BELOW FINISHED CEILING; TEN YEAR LIMITED WARANTY	120 V	LED	1500 lm	GYP OR GRID		3500 K	80	18 W	0-10V TO 1%	6" RECESSED CAN
B3	SEE DETAIL C3/EL601	(1) DOWNLIGHT 6 INCH ROUND; 6 INCH CONICAL REFLECTOR; RECESSED; MEDIUM 60 DEG BEAM ANGLE; SEMI SPECULAR CLEAR FINISH; POLISHED FLANGE; THDI 11.2%; MINIMUM STARTING TEMPERATURE -40 DEG C; SOUND RATING CLASS A STANDARDS; CULUS DAMP AND WET LOCATION LISTED IN PROTECTED CEILING; IP20 ABOVE FINISHED CEILING; IP64 BELOW FINISHED CEILING; TEN YEAR LIMITED WARANTY	120 V	LED	1000 lm	GYP OR GRID	11'-10"	3500 K	80	11 W	0-10V TO 1%	6" RECESSED CAN
C1	SEE DETAIL C4/EL601	(1) LENSED STRIPLIGHT; 4 FT LENGTH;	120 V	LED	5000 lm	SUSPENDED (CHAIN)	12'-0" UNO	3500 K	80	32 W	0-10V TO 10%	SUPPORTS 120/277. 2' FROM STRUCTURE. COORDINATE WITH OTHER DISCIPLINES.
D1	SEE DETAIL B1/EL601	(1) DIRECT/INDIRECT SUSPENDED LUMINAIRE; 20% UP/80%DN; 1300 LUMENS PER FT: AIRCRAFT CABLE 4 FT; ; SATIN WHITE DIFFUSER LENS SHIELDING DOWN; WHITE FINISH; TEN YEAR WARRANTY: EMERGENCY BATTERY PACK AT END	120 V	LED	19200 lm	**SUSPENDED (CABLE ON GRID)	12'-0"	3500 K	80	160 W	0-10V TO 1%	**CONTRACTOR DETERMINES EXACT PART NUMBER TO MATCH LENGTH AND GRID TYPE DEPICTED IN LIGHTING PLAN VIEW; INCREMENTAL LUMENS 795 LM/FT D, 810 LM/FT U; INCREMENTAL WATTAGE 11.7 W/FT; SUPPORTS 120/277
E1	SEE DETAIL B2/EL601	(1) DIRECT RECESSED LUMINAIRE; 4 INCH WIDE; LUMENS PER FT **INCREMENTAL LENGTH SET IN 1 INCH INCREMENTS; SINGLE CIRCUIT; SATIN FLUSH DIFFUSER; MATTE WHITE; 90% (L90) OF INITIAL OUTPUT AT 100,000+ HRS; 70% (L70) OF INITIAL LIGHT OUTPUT AT 400,000+ HRS; CULUS LISTED FOR DAMP LOCATIONS; TESTED TO LM-79 AND LM-80; TEN YEAR WARRANTY	120 V	LED	3180 lm	**GYP	8'-0"	3500 K	80	27 W	0-10V TO 1%	**CONTRACTOR DETERMINES EXACT PART NUMBER TO MATCH LENGTH AND GRID TYPE DEPICTED IN LIGHTING PLAN VIEW; INCREMENTAL LUMENS 400 LM/FT; INCREMENTAL WATTAGE 3.5 W/FT; SUPPORTS 120/277
EM	SEE DETAIL B3/EL601	(1) EMERGENCY LIGHT; WHITE HOUSING; INJECTION MOLDED, COLOR STABLE, HIGH IMPACT THERMOPLASTIC MATERIAL; 220 LUMEN, SEALED NICKEL CADMIUM BATTERY; TWO LONG LIFE LED EMERGENCY HEADS; UL 924 LISTED WITH A MINIMUM OF 90 MIN OF RUN TIME AND 17 FT OF EMERGENCY EGRESS COVERAGE; BROWNOUT CIRCUIT; TEST SWITCH/ POWER INDICATOR LIGHT; OPERATING TEMPERATURE 10 DEG C TO 40 DEG C; TEN YEAR WARRANTY ON FIXTURES; SEVEN YEAR PRORATED BATTERY WARRANTY	120 V	LED		SURFACE (WALL)	8'-0"			0 W		SUPPORTS 120/277
EM2	SEE DETAIL B3/EL601	(1) INDUSTRIAL EMERGENCY LIGHT; WHITE HOUSING; INJECTION MOLDED, COLOR STABLE, HIGH IMPACT THERMOPLASTIC MATERIAL; 1100 LUMEN, SEALED NICKEL CADMIUM BATTERY; TWO LONG LIFE LED EMERGENCY HEADS; UL 924 LISTED WITH A MINIMUM OF 90 MIN OF RUN TIME AND 17 FT OF EMERGENCY EGRESS COVERAGE; BROWNOUT CIRCUIT; TEST SWITCH/ POWER INDICATOR LIGHT; OPERATING TEMPERATURE 10 DEG C TO 40 DEG C; TEN YEAR WARRANTY ON FIXTURES; SEVEN YEAR PRORATED BATTERY WARRANTY	120 V	LED		SURFACE (WALL)	8'-0"			0 W		SUPPORTS 120/277
G	SEE DETAIL A4/EL601	(1) 8" CANOPY ROUND; INTEGRATED UNIVERSAL MOUNTING PLATE; BUG RATING B3-U3-G2; IP65 RATED; ULCUL WET LOCATION LISTED; TM21 LUMEN MAINTENANCE 89.6% (50,000 HOURS); OPERATING TEMPERATURE -40 DEG C TO 40 DEG C;TEN YEAR WARRANTY	120 V	LED	1500 lm	SURFACE (CEILING)	10'-0"	4000 K	70	63 W	N/A	SUPPORTS 120/277
GE	SEE DETAIL A4/EL601	(1) 8" CANOPY ROUND; INTEGRATED UNIVERSAL MOUNTING PLATE; BUG RATING B3-U3-G2; IP65 RATED; ULCUL WET LOCATION LISTED; TM21 LUMEN MAINTENANCE 89.6% (50,000 HOURS); OPERATING TEMPERATURE -40 DEG C TO 40 DEG C; TEN YEAR WARRANTY, COLD WEATHER EMERGENCY BATTERY PACK.	120 V	LED	1500 lm	SURFACE (CEILING)	10'-0"	4000 K	70	63 W	N/A	SUPPORTS 120/277
H3	SEE DETAIL A3/EL601	(1) SURFACE 3 FT COVE LUMINAIRE; ASYMMETRIC REFLECTOR; 1 DRIVER; TM21 RATING L91>60,000; DAMP LOCATION LISTED; END-TO-END CONNECTIONS, 1000 LUMENS PER FT	120 V	LED	3000 lm	SURFACE (CEILING OR WALL)	10'-0"	3500 K	80	29 W	0-10V TO 1%	SUPPORTS 120/277
H4	SEE DETAIL A3/EL601	(1) SURFACE 4 FT COVE LUMINAIRE; ASYMMETRIC REFLECTOR; 1 DRIVER; TM21 RATING L91>60,000; DAMP LOCATION LISTED; END-TO-END CONNECTIONS, 1000 LUMENS PER FT	120 V	LED	4000 lm	SURFACE (CEILING OR WALL)	10'-0"	3500 K	80	38 W	0-10V TO 1%	SUPPORTS 120/277
W	SEE DETAIL A2/EL601	(1) WEDGE WALL LUMINAIRE; 1 LIGHT SQUARE; 600MA DRIVE CURRENT; IP66 ENCLOSURE RATING; B1-U1-G1 BUG RATING; BRONZE; ULCUL LISTED; LM79 AND LM80 COMPLIANT; TEN YEAR WARRANTY	120 V	LED	4195 lm	SURFACE (WALL)	10'-0"	4000 K	70	33 W	0-10V	SUPPORTS 120/277
X1	SEE DETAIL B4/EL601	(1) DIE CAST EXIT LIGHT; THIN PROFILE FOR ARCHITECTUAL APPLICATIONS; BRUSHED ALUMINUM FACE; RED LETTER, UL 924 DAMP LOCATION LISTED; SELF DIAGNOSTIC; NFPA 101 COMPLIANT CHEVRON DIRECTIONAL INDICATORS INCLUDED; BROWNOUT CIRCUIT; TEST SWITCH/ POWER INDICATOR LIGHT; SEALED NICKEL CADMIUM; TEN YEAR WARRANTY; 7 YEAR PRO RATED BATTERY WARRANTY	120 V	LED	0 lm	WALL/ CEILING/ END	8'-0" UNO	0 K	0	1 W	N/A	SUPPORTS 120/277

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115th FIGHTER WING

Air National Guard F-35: Gun Shop - Repair B420

Madison, Wisconsin

REVISION HISTORY:

△	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	STS
DRAWN BY:	STS
REVIEWED BY:	JTL
PROJECT MANAGER:	NWC

PROJECT NUMBER: 2021-613-00

SHEET TITLE: LIGHTING FIXTURE SCHEDULE

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: EL700

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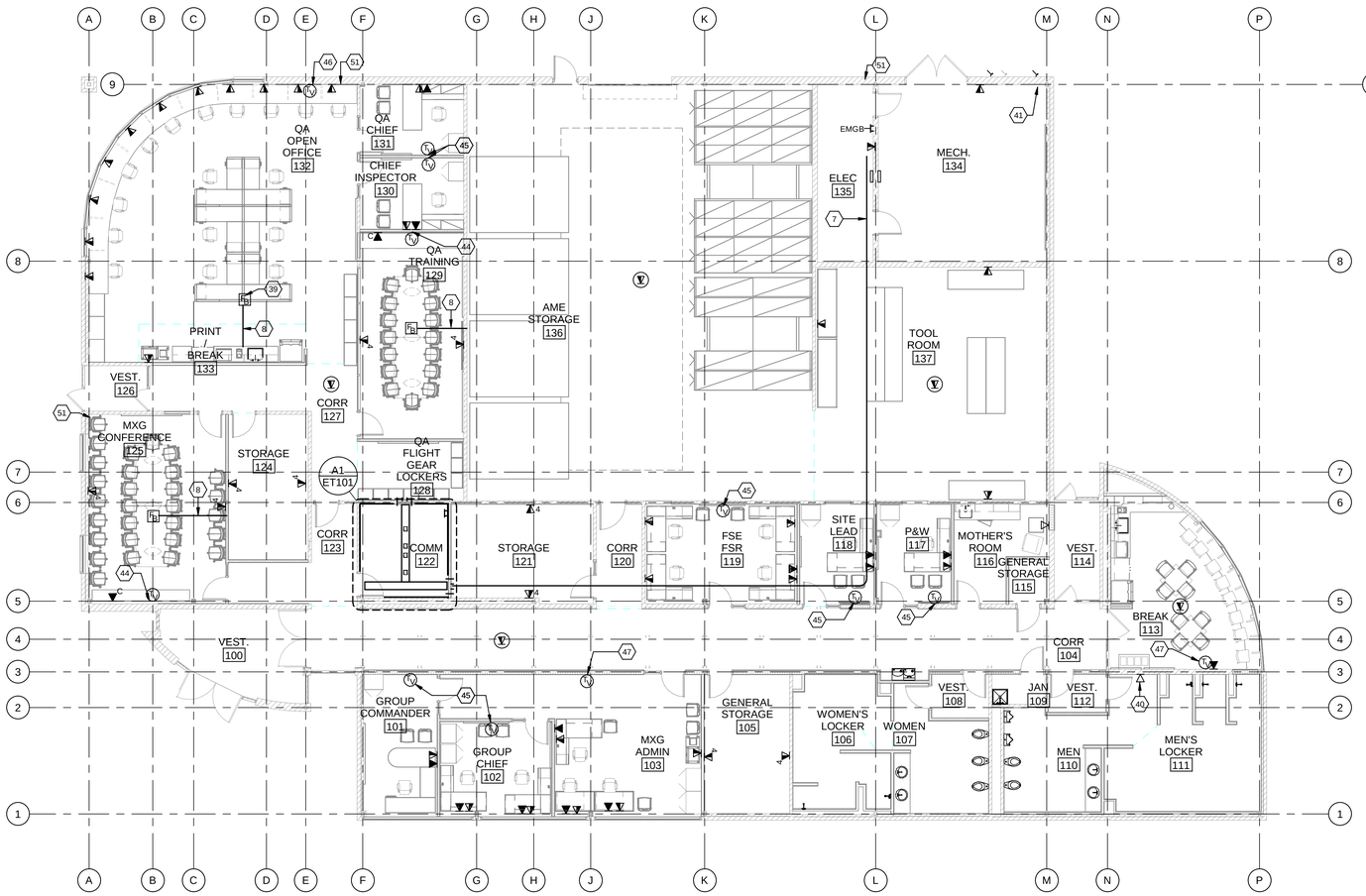
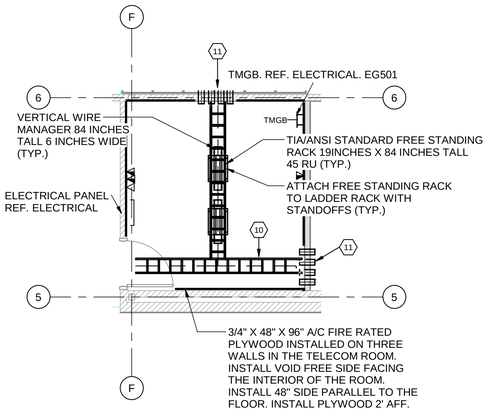


B1 ELECTRICAL INTERIOR TELECOMMUNICATIONS PLAN

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



A1 ENLARGED TELECOMMUNICATIONS PLAN - COMM 122

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

GENERAL NOTES

A. ANY DIMENSIONS SHOWN ON THESE DRAWINGS ARE INTENDED TO PROVIDE A GENERAL LOCATION AS REQUESTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS PRIOR TO ROUGH-IN AND IMMEDIATELY REPORT ANY CONFLICTS WITH THE OUTLET PLACEMENT TO THE CONTRACTING OFFICER'S REPRESENTATIVE.
B. ALL CABLE BUNDLES WILL BE SUPPORTED EVERY 48"-60" OC WITH A J-HOOK OR OTHER APPROVED PATHWAY DEVICE. REFERENCE SPECIFICATIONS AND DETAILS FOR ADDITIONAL CABLING PATHWAY INSTALLATION REQUIREMENTS. CONTRACTOR WHO VIOLATES THESE REQUIREMENTS WILL BE REQUIRED TO REPLACE THE AFFECTED CABLE PLANT AT THEIR EXPENSE.
C. PLASTIC TIE WRAPS ARE NOT PERMITTED AT ANY TIME ON THIS INSTALLATION. ALL CABLE ROUGH-IN AND DRESS-OUT WILL BE WITH VELCRO ONLY. ALL CABLES BUNDLED WITH PLASTIC TIE WRAPS SHALL BE IMMEDIATELY REPLACED AT THE CONTRACTOR'S EXPENSE.
D. DO NOT INSTALL ANY CABLES IN ANY CONDUIT SLEEVE, STUB UP, OR WALL CAP WITHOUT A PROTECTIVE BUSHING. CABLES PULLED INTO UNPROTECTED CONDUITS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. DO NOT INSTALL ANY CABLING INTO ANY CONDUIT THAT HAS NOT BEEN CONFIRMED TO BE BLOWN CLEAR. COORDINATE PRIOR TO ROUGH IN OF ANY CABLING.
E. ANY CABLING FOUND PAINTED DURING THE CONSTRUCTION PROCESS WILL BE REPLACED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE TO AVOID CONFLICTS.
F. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REFERENCE BOTH THE PROJECT DRAWINGS AND THE PROJECT SPECIFICATIONS. TOGETHER THEY FORM THE COMPLETE CONTRACT DOCUMENTS. PLEASE REFERENCE THE PROJECT SPECIFICATIONS FOR ALL MATERIALS, EQUIPMENT AND COMPONENTS NOT INDICATED ON THE DRAWING SET.
G. CONTRACTOR SHALL COORDINATE TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL LOCATIONS SO THAT DATA AND POWER ARE AT THE SAME HEIGHT. REFERENCE TECHNOLOGY AND MEP SHEETS FOR COORDINATION.
H. ALL CABLING INSTALLED IN AREAS WITH EXPOSED CEILINGS SHALL BE INSTALLED IN A PROPERLY SIZED CONDUIT PATHWAY. CONDUIT PATHWAYS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE CONDUIT MAY BE PAINTED TO MATCH CEILING COLOR AS DIRECTED BY THE CONTRACT DOCUMENTS.
I. CONTRACTOR SHALL BE RESPONSIBLE FOR STOPPING ALL TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL CONDUIT PENETRATIONS FROM WATER OR RODENT INGRESS IN ALL BUILDINGS UPON COMPLETION OF THE PROJECT.
J. COORDINATE ROUGH-IN FOR THE CAMERAS AND IDS/ACS WITH THE SYSTEMS INSTALLER VIA THE CONTRACTING OFFICER'S REPRESENTATIVE.
K. COORDINATE THE LOCATION OF POWER AND DATA FOR FURNITURE, EQUIPMENT, & FURNITURE SYSTEMS WITH PROVIDER. REFER TO SHEET IF101 AND THE POWER PLANS FOR COORDINATION.
L. CONNECT GFE WORKSTATION WHIPS FOR THE FINAL SYSTEMS FURNITURE CONNECTION.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
7	2"C WITH (1) 24 STRAND 0S2 SMF PLENUM RATED FROM EXISTING FOPP TO NEW COMM. ROOM 122 AND (1) 50 PAIR CU FROM EXISTING 110 BEP TO NEW COMM. ROOM 122.
8	TRENCH TO FLOOR BOX. REFER TO ET501 FOR FLOOR BOX DATA REQUIREMENTS. SEE EP101 FOR TRENCH SIZE.
10	LADDER RACK, 12" X 6", WITH 12" RUNG SPACING. MOUNT 112" AFF. ADJUST EXACT WEIGHT TO COORDINATE WITH CABLE SUPPORT AND SLEEVES THROUGH WALL
11	(4) 4" SLEEVES.
39	PROVIDE DATA WHIP FOR GFGI SYSTEMS FURNITURE. SVGA AND HDMI NOT REQUIRED FOR FLOOR BOX.
40	EXISTING DATA DROP OUTLET BOX FOR PHONE. PROVIDE NEW CAT6A CABLING TO ROOM 122.
41	RE-ROUTE ANDOVER BUILDING AUTOMATION CABLING TO COMM ROOM 122.
44	POWER TO TV 6'0" AFF.
45	POWER TO TV 6'2" AFF.
46	POWER TO TV 7'0" AFF.
47	POWER TO TV 6'8" AFF
51	MAINTAIN ALL ASSOCIATED EQUIPMENT AND CABLING TO ROOF MOUNTED ANTENNA, INCLUDING BUT NOT LIMITED TO CONDUIT, CABLING, AND PENETRATIONS. APPROXIMATE LOCATION OF ROOF MOUNTED ANTENNA AND EQUIPMENT. FIELD VERIFY FINAL LOCATION AS REQUIRED.

N
PLAN NORTH

TRUE NORTH

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

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

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10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: ATJ
DRAWN BY: JDB
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: ELECTRICAL INTERIOR TELECOMMUNICATIONS PLAN AND ENLARGED PLANS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: ET101

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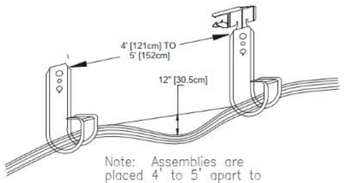
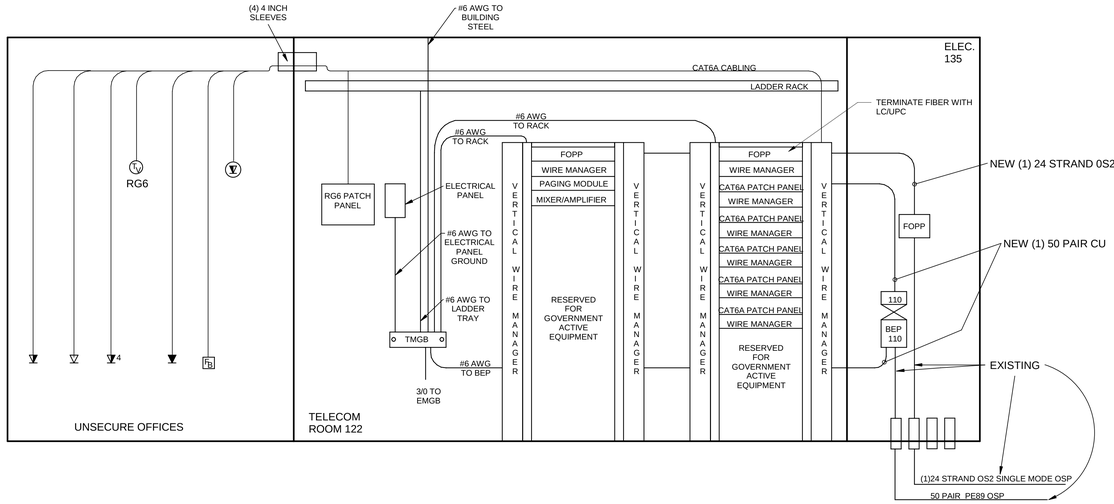
GENERAL NOTES

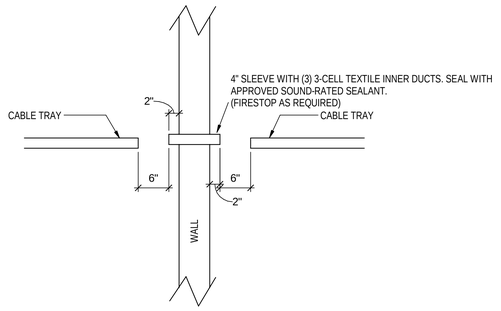
A. REFER TO DETAIL A1, SHEET E-001 FOR DEVICE MOUNTING HEIGHTS, UNO.
B. REFER TO DETAIL A1, ON THIS SHEET FOR THE FACEPLATE DETAILS.
C. REFER TO DETAIL B3, ON THIS SHEET FOR ROUGH-IN AND CABLING REQUIREMENTS FOR EACH FACEPLATE.



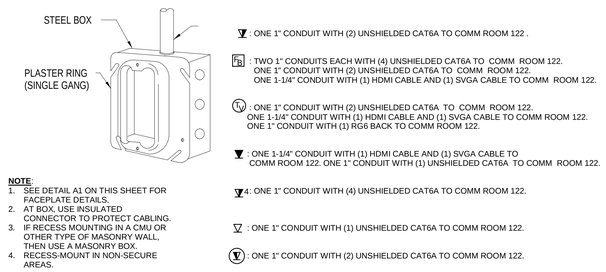
C1 J-HOOK DETAIL
SCALE: NTS



C3 TELECOMMUNICATIONS RISER DIAGRAM
SCALE: NTS

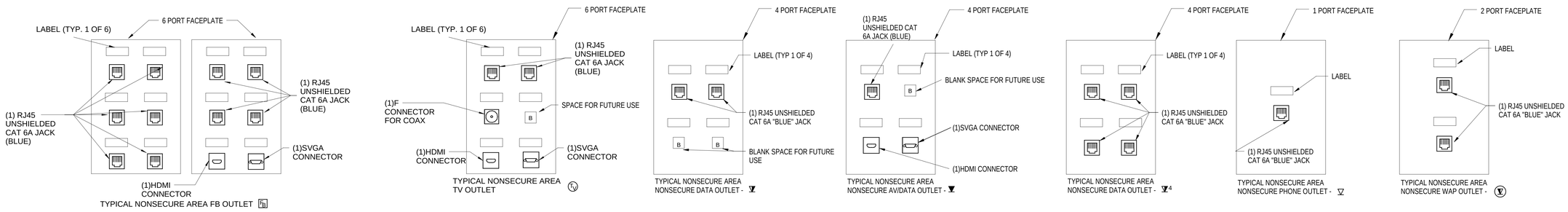


B1 SLEEVE DETAIL
SCALE: NTS



NOTE:
1. SEE DETAIL A1 ON THIS SHEET FOR FACEPLATE DETAILS.
2. AT BOX, USE INSULATED CONNECTOR TO PROTECT CABLING.
3. IF RECESS MOUNTING IN A CMU OR OTHER TYPE OF MASONRY WALL, THEN USE A MASONRY BOX.
4. RECESS-MOUNT IN NON-SECURE AREAS.

B3 TYPICAL ROUGH-IN FOR FACEPLATES
SCALE: NTS



A1 TELECOMMUNICATIONS FACE PLATE DETAILS
SCALE: NTS

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Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: ATJ
DRAWN BY: JDB
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: **TELECOMMUNICATIONS DETAILS AND RISER DIAGRAM**
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SHEET NUMBER: ET501

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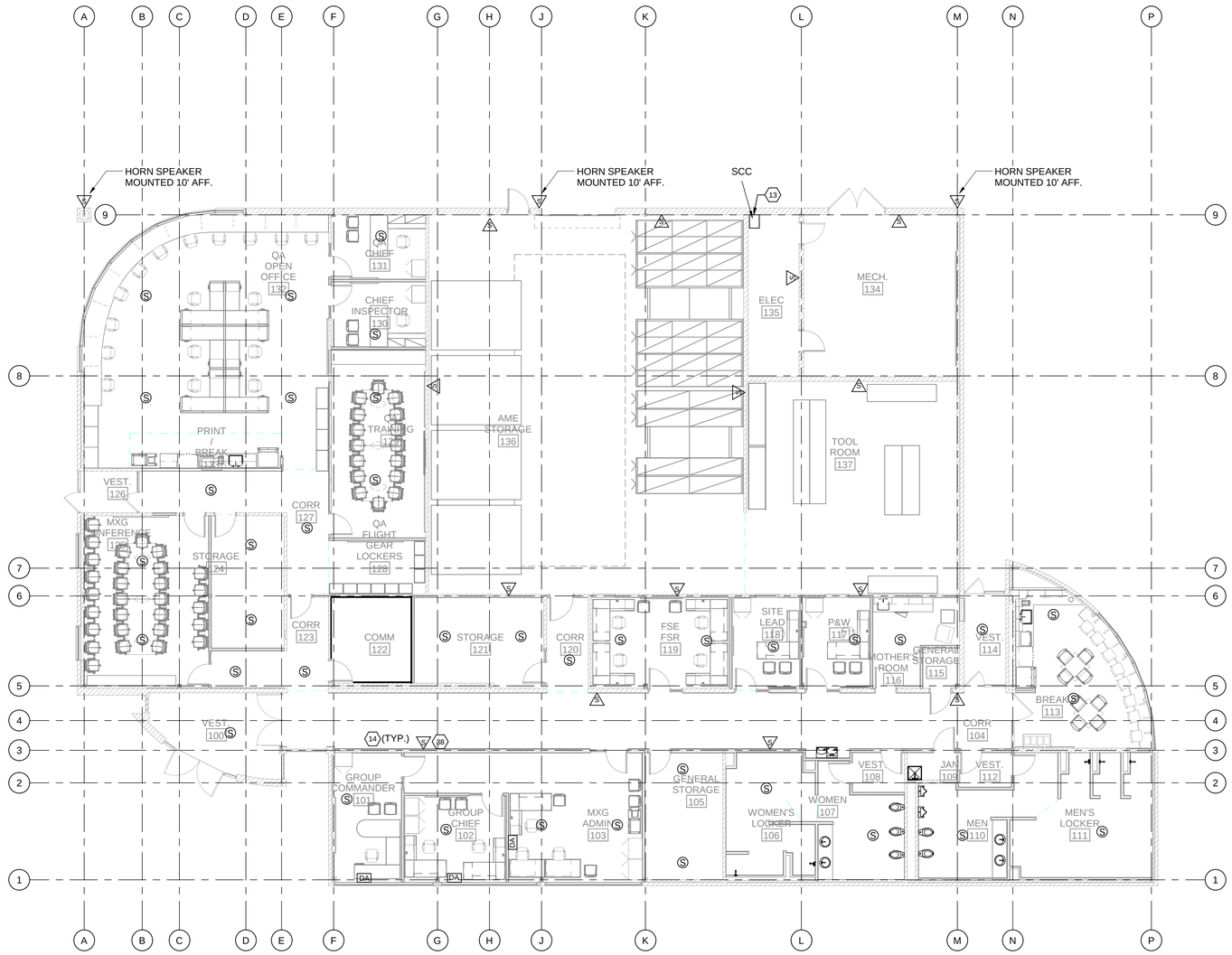

A1 ELECTRICAL INTERIOR SPECIAL SYSTEMS PLAN

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

GENERAL NOTES

A. ANY DIMENSIONS SHOWN ON THESE DRAWINGS ARE INTENDED TO PROVIDE A GENERAL LOCATION AS REQUESTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS PRIOR TO ROUGH-IN AND IMMEDIATELY REPORT ANY CONFLICTS WITH THE OUTLET PLACEMENT TO THE CONTRACTING OFFICER'S REPRESENTATIVE.

B. ALL CABLE BUNDLES WILL BE SUPPORTED EVERY 48"-60" OC WITH A J-HOOK OR OTHER APPROVED PATHWAY DEVICE. REFERENCE SPECIFICATIONS AND DETAILS FOR ADDITIONAL CABLING PATHWAY INSTALLATION REQUIREMENTS. CONTRACTOR WHO VIOLATES THESE REQUIREMENTS WILL BE REQUIRED TO REPLACE THE AFFECTED CABLE PLANT AT THEIR EXPENSE.

C. PLASTIC TIE WRAPS ARE NOT PERMITTED AT ANY TIME ON THIS INSTALLATION. ALL CABLE ROUGH-IN AND DRESS-OUT WILL BE WITH VELCRO ONLY. ALL CABLES BUNDLED WITH PLASTIC TIE WRAPS SHALL BE IMMEDIATELY REPLACED AT THE CONTRACTOR'S EXPENSE.

D. DO NOT INSTALL ANY CABLES IN ANY CONDUIT SLEEVE, STUB UP, OR WALL CAP WITHOUT A PROTECTIVE BUSHING. CABLES PULLED INTO UNPROTECTED CONDUITS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. DO NOT INSTALL ANY CABLING INTO ANY CONDUIT THAT HAS NOT BEEN CONFIRMED TO BE BLOWN CLEAR. COORDINATE PRIOR TO ROUGH IN OF ANY CABLING.

E. ANY CABLING FOUND PAINTED DURING THE CONSTRUCTION PROCESS WILL BE REPLACED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE TO AVOID CONFLICTS.

F. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REFERENCE BOTH THE PROJECT DRAWINGS AND THE PROJECT SPECIFICATIONS. TOGETHER THEY FORM THE COMPLETE CONTRACT DOCUMENTS. PLEASE REFERENCE THE PROJECT SPECIFICATIONS FOR ALL MATERIALS, EQUIPMENT AND COMPONENTS NOT INDICATED ON THE DRAWING SET.

G. CONTRACTOR SHALL COORDINATE TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL LOCATIONS SO THAT DATA AND POWER ARE AT THE SAME HEIGHT. REFERENCE TECHNOLOGY AND MEP SHEETS FOR COORDINATION.

H. ALL CABLING INSTALLED IN AREAS WITH EXPOSED CEILINGS SHALL BE INSTALLED IN A PROPERLY SIZED CONDUIT PATHWAY. CONDUIT PATHWAYS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE CONDUIT MAY BE PAINTED TO MATCH CEILING COLOR AS DIRECTED BY THE CONTRACT DOCUMENTS.

I. CONTRACTOR SHALL BE RESPONSIBLE FOR STOPPING ALL TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL CONDUIT PENETRATIONS FROM WATER OR RODENT INGRESS IN ALL BUILDINGS UPON COMPLETION OF THE PROJECT.

J. COORDINATE ROUGH-IN FOR THE CAMERAS AND IDS/ACS WITH THE SYSTEMS INSTALLER VIA THE CONTRACTING OFFICER'S REPRESENTATIVE.

K. COORDINATE THE LOCATION OF POWER AND DATA FOR FURNITURE, EQUIPMENT, & FURNITURE SYSTEMS WITH PROVIDER. REFER TO SHEET IF101 AND THE POWER PLANS FOR COORDINATION.

L. CONNECT GFE WORKSTATION WHIPS FOR THE FINAL SYSTEMS FURNITURE CONNECTION.

KEYNOTES

KEY VALUE	KEYNOTE TEXT
13	EXISTING IDS/ACS TO REMAIN
14	WALL MOUNT SPEAKER 9' AFF.
38	USE BIDIRECTIONAL LOUDSPEAKERS IN CORRIDOR 104.

N
PLAN NORTH

TRUE NORTH

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

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10-14-22

115th FIGHTER WING

Air National Guard
F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: ATJ
DRAWN BY: JDB
REVIEWED BY: JTL
PROJECT MANAGER: NWC

PROJECT NUMBER: 2021-613-00

SHEET TITLE: ELECTRICAL INTERIOR SPECIAL SYSTEMS PLAN

ISSUE DATE: OCTOBER 14, 2022

SHEET NUMBER: EY101

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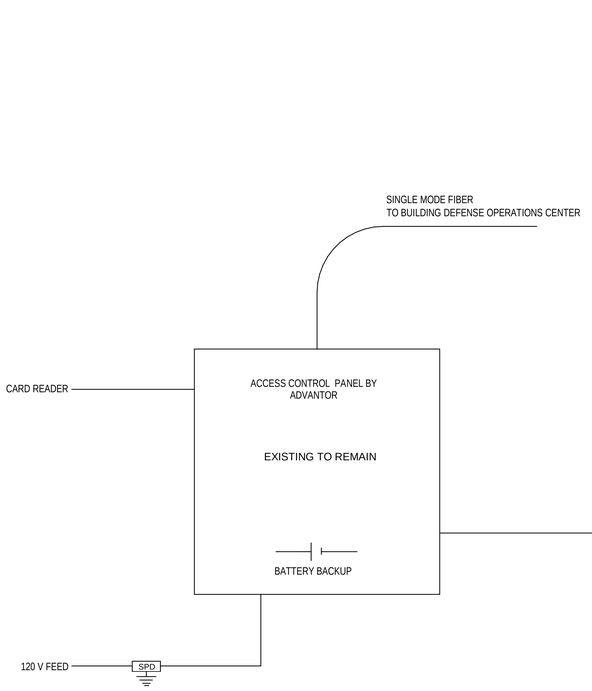
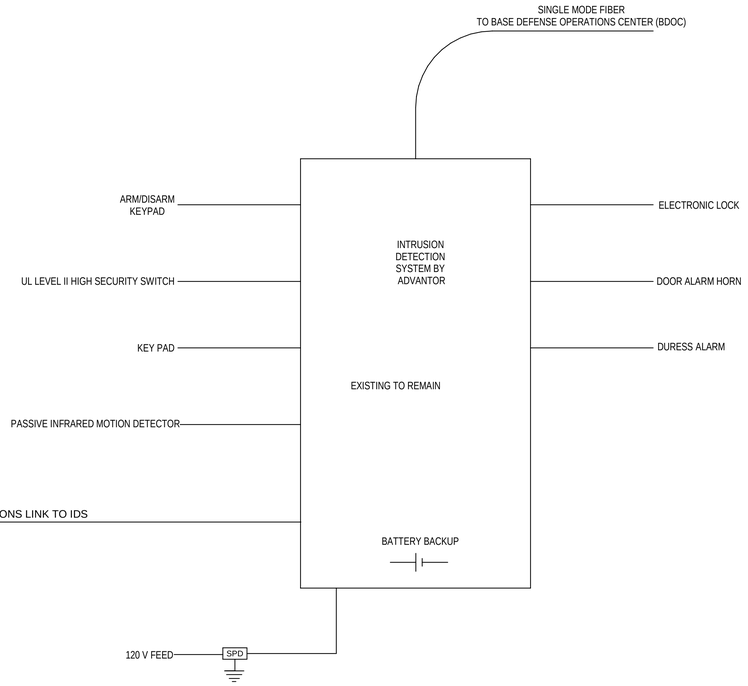
GENERAL NOTES

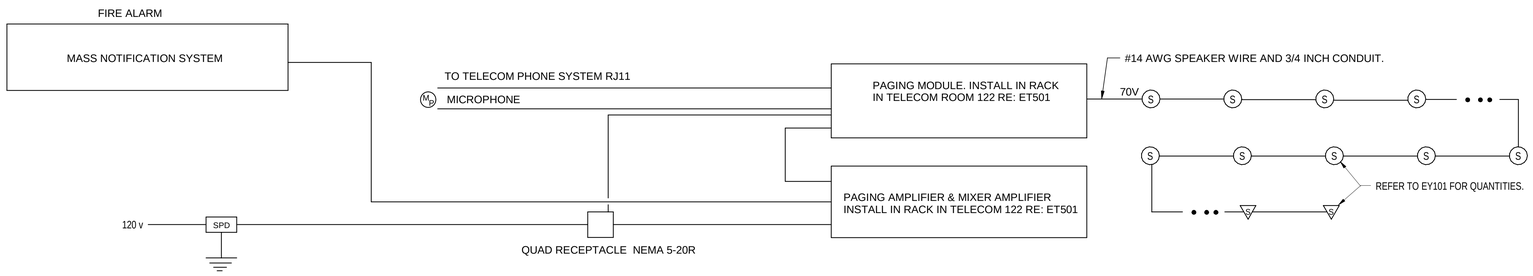
A. THE ESS SYSTEM (ACS/IDS/CCTV) SYSTEM IS EXISTING AND TO REMAIN (BY ADVANTOR).
B. POWER, CONDUIT AND ROUGH-IN JUNCTION BOXES ARE PROVIDED IN THIS CONTRACT (CFCI).



B1 SPECIAL SYSTEMS ACCESS CONTROL RISER DIAGRAM
SCALE: NTS



B3 SPECIAL SYSTEMS INTRUSION DETECTION SYSTEM
SCALE: NTS



A2 SPECIAL SYSTEMS PUBLIC ADDRESS RISER DIAGRAM
SCALE: NTS

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115th FIGHTER WING

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F-35: Gun Shop - Repair B420
Madison, Wisconsin

REVISION HISTORY:

	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: ATJ
DRAWN BY: JDB
REVIEWED BY: JTL
PROJECT MANAGER: NWC
PROJECT NUMBER: 2021-613-00
SHEET TITLE: TELECOMMUNICATIONS SPECIAL SYSTEMS RISER DIAGRAMS
ISSUE DATE: OCTOBER 14, 2022
SHEET NUMBER: EY601

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