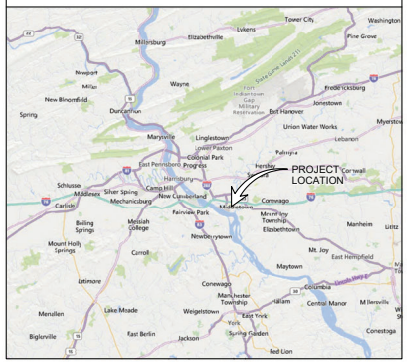
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

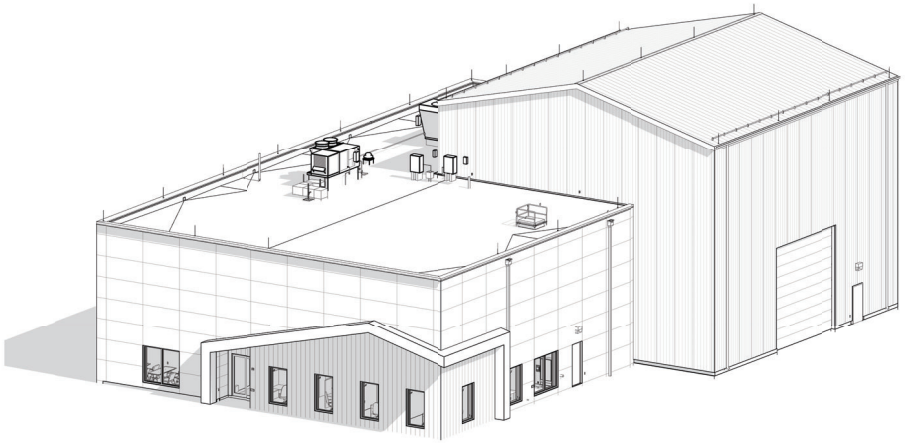
PENNSYLVANIA AIR NATIONAL GUARD - HARRISBURG ANGB, MIDDLETOWN, PA

PROJECT NUMBER: SHYQ149104

VICINITY MAP



LOCATION MAP



BID OPTION #1

FURNISH AND INSTALL OPERABLE PARTITION, TRACK, AND RELATED ITEMS BETWEEN CLASSROOMS #2 (ROOM 202B) AND #3 (ROOM 202C)

NOTE: STRUCTURAL STEEL ASSOCIATED WITH THE OPERABLE PARTITIONS IS TO BE INSTALLED AS PART OF THE BASE BID.

BID OPTION #2

FURNISH AND INSTALL BC-1, BRIDGE CRANE WITH HOIST – 2 TON, AND ALL ASSOCIATED COMPONENTS INCLUDING BUT NOT LIMITED TO BRIDGE GIRDER, RUNWAYS, POWER BAR, CRANE STOPS, HOIST, HOOK, HOIST STOPS, STRUCTURAL COLUMN CONNECTIONS, ELECTRICAL DISCONNECT AND WIRING.

BID OPTION #3

FURNISH AND INSTALL ACCESS CONTROL AND INTRUSION DETECTION SYSTEM INCLUDING CAMERAS, CAMERA MOUNTS, CARD READERS, ELECTRIC STRIKES AND HEADEND EQUIPMENT AS REQUIRED FOR A COMPLETE AND USABLE SYSTEM.

PROJECT TEAM

GANNETT FLEMING

300 Sterling Parkway, Suite 200
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PROJECT NARRATIVE

THE TWO STORY 17,000 SF FACILITY WILL HOUSE THE COMBINED TRAINING, MAINTENANCE, AND OPERATIONS ACTIVITIES ASSOCIATED WITH THE MC-130J WEAPON SYSTEM TRAINER.

THE ADMINISTRATIVE PORTION OF THE BUILDING WILL BE CONSTRUCTED OF INSULATED CONCRETE FORMS (ICF) WITH AN EXTERIOR VENEER OF FIBER CEMENT AND METAL PANELS. THE ROOF WILL BE A SINGLE PLY MEMBRANE AND INSULATION OVER METAL DECK AND BAR JOISTS.

THE SIMULATOR PORTION OF THE BUILDING WILL BE CONSTRUCTED OF A STRUCTURAL STEEL FRAME. THE WALLS WILL BE SKINNED IN INSULATED METAL PANELS SUPPORTED BY METAL GIRTS. THE ROOF WILL BE STANDING SEAM METAL ROOF OVER LIGHT GAUGE METAL TRUSSES LOCATED ABOVE THE BRIDGE CRANE.

BID DOCUMENTS, JANUARY 2026

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

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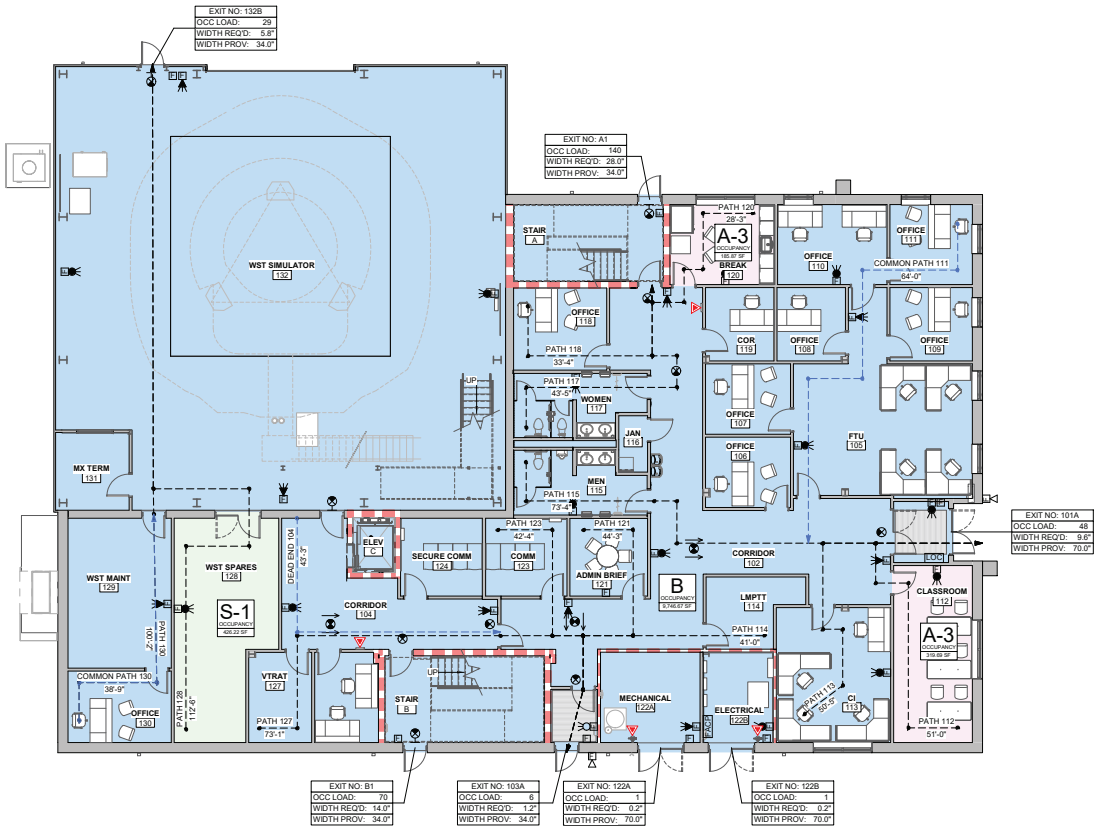

1 FIRST FLOOR - LIFE SAFETY PLAN

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

LIFE SAFETY ANALYSIS LEGEND

- 1 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 45 MINUTES.
- 2 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 90 MINUTES.
- 3 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 180 MINUTES.
- 4 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 180 MINUTES.
- S — SMOKE BARRIER PER NFPA 75 AND IBC SECTION 707.
- PATH NAME / TRAVEL DISTANCE — COMMON PATH OF TRAVEL/DEAD END WITH NAME, SEGMENT LENGTH, AND DIRECTION INDICATED
- PATH NAME / TRAVEL DISTANCE — EGRESS PATH WITH NAME, SEGMENT LENGTH, AND DIRECTION INDICATED
- STORAGE 101 300 SF IBC: 2 OCC. NFPA: 2 OCC. — ROOM TAG INDICATING SQUARE FOOTAGE AND NUMBER OF OCCUPANTS
- FIRE EXTINGUISHER LOCATION
- F — FIRE ALARM AUDIO / VISUAL NOTIFICATION
- F — FIRE ALARM AUDIO NOTIFICATION
- LIGHTED EMERGENCY EGRESS SIGN
- LOC — FIRE ALARM LOCAL OPERATOR CONTROL PANEL
- FACP — FIRE ALARM CONTROL PANEL
- F — FIRE ALARM MANUAL PULL STATION
- A-1 OCCUPANCY 1,008.63 SF — USE / OCCUPANCY CLASSIFICATION AND GROSS SQUARE FOOTAGE. SEE IBC CHAPTER 3

EXIT NO: 1 (DOOR NUMBER)
OCC LOAD: 13 (NUMBER OF PERSONS EXITING)
WIDTH REQ'D: 2.6" (REQUIRED EXIT WIDTH BASED ON PERSONS)
WIDTH PROV: 34.0" (TOTAL WIDTH OF OPENING)

EGRESS TRAVEL LENGTHS

EGRESS PATH	FROM ROOM	TRAVEL LENGTH
FIRST FLOOR		
COMMON PATH 111	OFFICE 111	64'-0"
COMMON PATH 130	OFFICE 130	38'-9"
DEAD END 104	CORRIDOR 104	43'-3"
PATH 112	CLASSROOM 112	51'-0"
PATH 113	CI 113	50'-5"
PATH 114	LMPTT 114	41'-0"
PATH 115	MEN 115	73'-4"
PATH 117	WOMEN 117	43'-5"
PATH 118	OFFICE 118	33'-4"
PATH 120	BREAK 120	28'-3"
PATH 121	ADMIN BRIEF 121	44'-3"
PATH 123	COMM 123	42'-4"
PATH 127	VTRAT 127	73'-1"
PATH 128	WST SPARES 128	112'-6"
PATH 130	OFFICE 130	100'-2"
SECOND FLOOR		
DEAD END 214		27'-3"
PATH 202A	CLASSROOM 1 202A	61'-6"
PATH 202B	CLASSROOM 2 202B	70'-3"
PATH 202D	CLASSROOM 4 202D	94'-2"
PATH 204	RESTROOM 204	37'-2"
PATH 207	MEN 207	62'-0"
PATH 212	OFFICES 212	55'-0"
PATH 213	CLIENT SYSTEM LAB 213	67'-6"
PATH 214	WST ROS 214	72'-2"

BUILDING OCCUPANCY

NAME	AREA (GROSS)
FIRST FLOOR	
A-3	505.56 SF
B	9,746.67 SF
S-1	426.22 SF
	10,678.44 SF
SECOND FLOOR	
A-3	3,156.29 SF
B	4,117.94 SF
	7,274.23 SF
TOTAL GROSS AREA	17,952.67 SF

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PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: GENERAL FIRST FLOOR LIFE SAFETY PLAN

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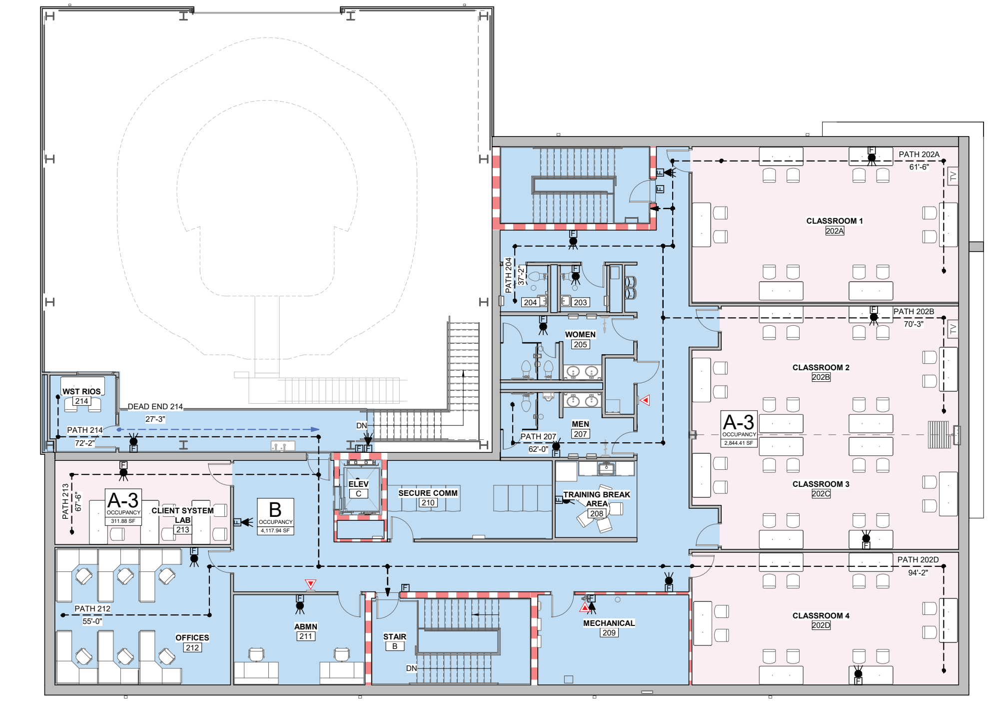

1 SECOND FLOOR - LIFE SAFETY PLAN

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

LIFE SAFETY ANALYSIS LEGEND

- 1 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 45 MINUTES.
- 2 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 90 MINUTES.
- 3 HOUR FIRE BARRIER PER NFPA 75 AND IBC SECTION 707. OPENINGS FIRE RATED FOR 180 MINUTES.
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- S — SMOKE BARRIER PER NFPA 75 AND IBC SECTION 707.
- PATH NAME / TRAVEL DISTANCE — COMMON PATH OF TRAVEL/DEAD END WITH NAME, SEGMENT LENGTH, AND DIRECTION INDICATED
- PATH NAME / TRAVEL DISTANCE — EGRESS PATH WITH NAME, SEGMENT LENGTH, AND DIRECTION INDICATED
- STORAGE 101 500 SF IBC: 2 OCC. NFPA: 2 OCC. — ROOM TAG INDICATING SQUARE FOOTAGE AND NUMBER OF OCCUPANTS
- FIRE EXTINGUISHER LOCATION
- F — FIRE ALARM AUDIO / VISUAL NOTIFICATION
- F — FIRE ALARM AUDIO NOTIFICATION
- LIGHTED EMERGENCY EGRESS SIGN
- LOC — FIRE ALARM LOCAL OPERATOR CONTROL PANEL
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- A-1 OCCUPANCY 1,006.63 SF — USE / OCCUPANCY CLASSIFICATION AND GROSS SQUARE FOOTAGE. SEE IBC CHAPTER 3

EXIT NO: 1	DOOR NUMBER
OCC LOAD: 13	NUMBER OF PERSONS EXITING
WIDTH REQ'D: 2.6"	REQUIRED EXIT WIDTH BASED ON PERSONS
WIDTH PROV: 34.0"	TOTAL WIDTH OF OPENING

EGRESS TRAVEL LENGTHS

EGRESS PATH	FROM ROOM	TRAVEL LENGTH
FIRST FLOOR		
COMMON PATH 111	OFFICE 111	64'-0"
COMMON PATH 130	OFFICE 130	38'-9"
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PATH 113	CI 113	50'-5"
PATH 114	LMPTT 114	41'-0"
PATH 115	MEN 115	73'-4"
PATH 117	WOMEN 117	43'-5"
PATH 118	OFFICE 118	33'-4"
PATH 120	BREAK 120	28'-3"
PATH 121	ADMIN BRIEF 121	44'-3"
PATH 123	COMM 123	42'-4"
PATH 127	VTRAT 127	73'-1"
PATH 128	WST SPARES 128	112'-6"
PATH 130	OFFICE 130	100'-2"
SECOND FLOOR		
DEAD END 214		27'-3"
PATH 202A	CLASSROOM 1 202A	61'-6"
PATH 202B	CLASSROOM 2 202B	70'-3"
PATH 202D	CLASSROOM 4 202D	94'-2"
PATH 204	RESTROOM 204	37'-2"
PATH 207	MEN 207	62'-0"
PATH 212	OFFICES 212	55'-0"
PATH 213	CLIENT SYSTEM LAB 213	67'-6"
PATH 214	WST RIOS 214	72'-2"

BUILDING OCCUPANCY

NAME	AREA (GROSS)
FIRST FLOOR	
A-3	505.56 SF
B	9,746.67 SF
S-1	426.22 SF
	10,678.44 SF
SECOND FLOOR	
A-3	3,156.29 SF
B	4,117.94 SF
	7,274.23 SF
TOTAL GROSS AREA	17,952.67 SF

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DRAWING TITLE: GENERAL SECOND FLOOR LIFE SAFETY PLAN

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AREA ALLOWANCE PER OCCUPANT - FIRST FLOOR

ROOM NUMBER	ROOM NAME	TOTAL AREA (NET)	NFPA SF / OCC	NFPA # OCC
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM				
116	JAN	30.15 SF	500	0.1
122A	MECHANICAL	167.19 SF	500	0.3
122B	ELECTRICAL	117.92 SF	500	0.2
123	COMM	117.62 SF	500	0.2
124	SECURE COMM	118.42 SF	500	0.2
128	WST SPARES	379.24 SF	500	0.8
131	MX TERM	105.89 SF	500	0.2
		1,036.42 SF		2.1
ASSEMBLY UNCONCENTRATED (TABLES & CHAIRS)				
112	CLASSROOM	259.44 SF	15	17.3
120	BREAK	155.89 SF	15	10.4
		415.33 SF		27.7
BUSINESS AREAS				
101	VESTIBULE	62.46 SF	150	0.4
102	CORRIDOR	875.35 SF	150	5.8
103	VESTIBULE	46.15 SF	150	0.3
104	CORRIDOR	320.38 SF	150	2.1
105	FTU	497.62 SF	150	3.3
106	OFFICE	111.23 SF	150	0.7
107	OFFICE	111.23 SF	150	0.7
108	OFFICE	93.53 SF	150	0.6
109	OFFICE	112.57 SF	150	0.8
110	OFFICE	162.88 SF	150	1.1
111	OFFICE	122.70 SF	150	0.8
113	CI	287.10 SF	150	1.9
114	LMPTT	106.96 SF	150	0.7
115	MEN	147.25 SF	150	1.0
117	WOMEN	145.04 SF	150	1.0
118	OFFICE	142.31 SF	150	0.9
119	COR	93.53 SF	150	0.6
121	ADMIN BRIEF	112.23 SF	150	0.7
126	ABMN	106.06 SF	150	0.7
127	VTRAT	105.72 SF	150	0.7
129	WST MAINT	287.94 SF	150	1.9
130	OFFICE	137.19 SF	150	0.9
132	WST SIMULATOR	3,591.45 SF	150	23.9
A	STAIR	214.49 SF	150	1.4
B	STAIR	257.15 SF	150	1.7
C	ELEV	43.13 SF	150	0.3
		8,293.63 SF		55.3
TOTAL		9,745.37 SF		85.1

AREA ALLOWANCE PER OCCUPANT - SECOND FLOOR

ROOM NUMBER	ROOM NAME	TOTAL AREA (NET)	NFPA SF / OCC	NFPA # OCC
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM				
206	JAN	30.15 SF	500	0.1
209	MECHANICAL	253.58 SF	500	0.5
210	SECURE COMM	240.99 SF	500	0.5
		524.72 SF		1.0
ASSEMBLY UNCONCENTRATED (TABLES & CHAIRS)				
202A	CLASSROOM 1	771.88 SF	15	51.5
202B	CLASSROOM 2	615.67 SF	15	41.0
202C	CLASSROOM 3	544.36 SF	15	36.3
202D	CLASSROOM 4	658.25 SF	15	43.9
208	TRAINING BREAK AREA	116.96 SF	15	7.8
213	CLIENT SYSTEM LAB	274.82 SF	15	18.3
		2,981.93 SF		198.8
BUSINESS AREAS				
201	CORRIDOR	1,063.73 SF	150	7.1
203	RESTROOM	41.41 SF	150	0.3
204	RESTROOM	42.11 SF	150	0.3
205	WOMEN	145.02 SF	150	1.0
207	MEN	147.25 SF	150	1.0
211	ABMN	220.86 SF	150	1.5
212	OFFICES	449.78 SF	150	3.0
214	WST RIOS	93.29 SF	150	0.6
		2,203.43 SF		14.7
TOTAL		5,710.08 SF		214.5

CODE ANALYSIS

PRIMARY CODES & STANDARDS
1. UFC 1-200-01: DOD BUILDING CODE
2. UFC 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES
3. INTERNATIONAL BUILDING CODE, 2021
   A. DICTATES CONSTRUCTION TYPE, OCCUPANCY, BUILDING AREA AND BUILDING HEIGHT
4. NFPA 101, LIFE SAFETY CODE, 2021
   A. DICTATES LIFE SAFETY AND EGRESS

OTHER MAJOR APPLICABLE CODES AND STANDARDS
1. ARCHITECTURAL BARRIERS ACT (ABA) ACCESSIBILITY STANDARDS, 2015
2. ICC/ANSI A117.1, 2017
3. INTERNATIONAL PLUMBING CODE, 2021
4. NFPA 70, NATIONAL ELECTRIC CODE, 2020

OCCUPANCY CLASSIFICATIONS - IBC CHAPTER 3; IAW UFC 3-600-01: 3-2.1.2
1. USE GROUP B - BUSINESS
2. USE GROUP A-3 - ASSEMBLY
   A. SECTION 303.1.2.2 READS IN PART:
      a. "A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS LESS THAN 750 SQUARE FEET IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY."
3. USE GROUP S-1 STORAGE

BUILDING HEIGHT & AREA LIMITATIONS - IBC CHAPTER 5; IAW UFC 3-600-01: 3-2.1.2
1. NONSEPARATED OCCUPANCIES
   A. THE MOST RESTRICTIVE PROVISIONS OF THIS CHAPTER SHALL APPLY TO THE TOTAL NONSEPARATED OCCUPANCY AREA.

BUILDING HEIGHT - IBC SECTION 504; IAW UFC 3-600-01: 3-2.1.2
1. TABLE 504.3 - ALLOWABLE BUILDING HEIGHT (SPRINKLERED)
   A. OCCUPANCY CLASSIFICATION A, B, AND S.
      1. ALLOWABLE HEIGHT = 75', ACTUAL = 67'
2. TABLE 504.4 ALLOWABLE NUMBER OF STORIES ABOVE GRADE (SPRINKLERED)
   A. OCCUPANCY CLASSIFICATION A, B, AND S.
      1. ALLOWABLE = 4; ACTUAL = 2

BUILDING AREA - IBC SECTION 506; IAW UFC 3-600-01: 3-2.1.2
1. SECTION 506.2.4 ALLOWABLE AREA, MIXED OCCUPANCY, MULTISTORY
   A. EACH STORY SHALL INDIVIDUALLY COMPLY WITH SECTION 508.4
   B. IAW SECTION 508.4 - SEPARATED OCCUPANCIES: THE ALLOWABLE BUILDING AREA IS BASED ON THE SUM OF THE RATIOS OF EACH SEPARATED OCCUPANCY.
   C. FIRST FLOOR
      a. GROUP B: 616 ACTUAL, 69,000 ALLOWABLE, RATIO 0.008
      b. GROUP A-3: 9,264 ACTUAL, 28,000 ALLOWABLE, RATIO 0.330
      c. GROUP S-1: 819 ACTUAL, 52,500 ALLOWABLE, RATIO 0.015
      d. AREA RATIO 0.353 > 1, THEREFORE PERMITTED
   D. SECOND FLOOR
      a. GROUP B: 3,179 ACTUAL, 69,000 ALLOWABLE, RATIO 0.046
      b. GROUP A-3: 3,987 ACTUAL, 28,000 ALLOWABLE, RATIO 0.142
      c. AREA RATIO 0.188 > 1, THEREFORE PERMITTED

BUILDING CONSTRUCTION TYPE - IBC CHAPTER 6
1. TYPE II-B
2. TABLE 601 - FIRE RESISTIVE REQUIREMENTS
   A. PRIMARY FRAME = 0-HOUR RATING
   B. BEARING WALLS, EXTERIOR = 0-HOUR RATING
   C. BEARING WALLS, INTERIOR = 0-HOUR RATING
   D. NON-BEARING WALLS & PARTITIONS, EXTERIOR = 0-HOUR RATING
   E. NON-BEARING WALLS & PARTITIONS, INTERIOR = 0-HOUR RATING
   F. FLOOR CONSTRUCTION = 0-HOUR RATING
   G. ROOF CONSTRUCTION = 0-HOUR RATING

FIRE RESISTANCE RATING BASED ON FIRE SEPARATION DISTANCE
1. TABLE 705.5 - SEPARATION OF BUILDINGS
   A. FIRE SEPARATION DISTANCE = < 5 FEET
   B. MINIMUM FIRE RESISTANCE RATING OF EXTERIOR WALLS = 1-HOUR RATING

PORTABLE FIRE EXTINGUISHERS - UFC 3-600-01
1. SECTION 9-17: PROVIDE IN ACCORDANCE WITH NFPA 10
2. TABLE E.3.5 - MAXIMUM AREA TO BE PROTECTED PER EXTINGUISHER
   A. SIZE 10-A: 11,250 SQUARE FEET EACH
   B. MAXIMUM DISTANCE OF TRAVEL: 75 FEET

MEANS OF EGRESS - NFPA, CHAPTER 7
1. SECTION 7.3.1 - OCCUPANT LOAD
   A. SEE AREA ALLOWANCE PER OCCUPANT TABLE FOR OCCUPANT BREAKDOWN.
2. 7.3.1.1 EXITS SERVING MORE THAN ONE STORY
   A. WHERE AN EXIT SERVES MORE THAN ONE STORY, ONLY THE OCCUPANT LOAD OF EACH STORY CONSIDERED INDIVIDUALLY SHALL BE USED IN COMPUTING THE REQUIRED CAPACITY OF THE EXIT AT THAT STORY
3. SECTION 7.3.3 - EGRESS CAPACITY
   A. SEE LIFE SAFETY PLAN FOR SPECIFIC ELEMENT DIMENSIONS. WORST CASE EXAMPLES ARE LISTED HEREIN.
   B. FIRST STORY (183 OCCUPANTS)
      a. DOORS - 0.2 INCHES PER OCCUPANT = 36.6 INCHES MINIMUM; 72 INCHES PROVIDED
      b. CORRIDORS - 0.2 INCHES PER OCCUPANT = 36.6 INCHES MINIMUM; 60 INCHES PROVIDED
   C. SECOND STORY (90 OCCUPANTS)
      a. DOORS - 0.2 INCHES PER OCCUPANT = 18 INCHES MINIMUM; 36 INCHES PROVIDED
      b. CORRIDORS - 0.2 INCHES PER OCCUPANT = 18 INCHES MINIMUM; 60 INCHES PROVIDED
      c. STAIRS - 0.3 INCHES PER OCCUPANT = 27 INCHES MINIMUM; 48 INCHES PROVIDED
4. SECTION 7.4 - NUMBER OF MEANS OF EGRESS
   A. LESS THAN 500 PEOPLE
      a. 2 REQUIRED, 3 PROVIDED

MEANS OF EGRESS - CHAPTER 12 - ASSEMBLY OCCUPANCIES
1. 12.1.6 CONSTRUCTION TYPE LIMITATIONS
   A. CONSTRUCTION TYPE IIB PERMITTED FOR TWO STORIES FOR ANY ASSEMBLY OCCUPANT LOAD
2. 12.2.5.1.2 COMMON PATH OF TRAVEL
   A. 75 FEET ALLOWED FOR PATHS SERVING NOT MORE THAN 50 OCCUPANTS
   B. 71 FEET ACTUAL
3. 12.2.5.3 DEAD END CORRIDORS
   A. 20 FEET ALLOWED

MEANS OF EGRESS - CHAPTER 38 - NEW BUSINESS OCCUPANCIES
1. SECTION 38.2.5.2 - MAXIMUM DEAD END CORRIDOR
   A. 50 FEET ALLOWED IN SPRINKLERED BUILDING
   B. 37 FEET ACTUAL
2. SECTION 38.2.5.3 - MAXIMUM COMMON PATH OF TRAVEL
   A. 100 FEET ALLOWED.
   B. 78 FEET ACTUAL.
3. SECTION 38.2.6 - TRAVEL DISTANCE TO EXITS
   A. 300 FEET ALLOWED IN SPRINKLERED BUILDINGS.
   B. 172 FEET ACTUAL.
4. SECTION 38.3.2.1 GENERAL STORAGE
   A. GENERAL STORAGE AND BOILER/FURNACE ROOMS SHALL BE SEPARATED FROM OTHER PATS OF THE BUILDING BY A MINIMUM 1-HOUR FIRE BARRIER.

MEANS OF EGRESS - CHAPTER 42 - STORAGE OCCUPANCIES
1. TABLE 42.2.5; ORDINARY HAZARD, FULLY-SPRINKLERED BUILDING
2. MAXIMUM DEAD END CORRIDOR
   A. 100 FEET ALLOWED
   B. 78 FEET ACTUAL
3. MAXIMUM COMMON PATH OF TRAVEL
   A. 100 FEET ALLOWED
   B. 172 FEET ACTUAL.
4. TRAVEL DISTANCE TO EXITS
   A. 400 FEET ALLOWED
   B. 172 FEET ACTUAL.

PLUMBING SYSTEMS – IBC CHAPTER 29
A. REQUIRED NUMBER OF FIXTURES - SEE PLUMBING FIXTURE COUNT SCHEDULE
B. TABLE 2902.1 - PROVIDED NUMBER OF FIXTURES
   A. WATER CLOSETS: 2 (EACH)
   B. LAVATORIES: 2 (EACH)
   C. DRINKING FOUNTAINS: 2
   D. SERVICE SINK: 1

PLUMBING FIXTURE COUNT

# ROOMS	OCCUPANCY CATEGORY	AREA	NUMBER OF OCCUPANTS TOTAL	NUMBER OF OCCUPANTS MALE	NUMBER OF OCCUPANTS FEMALE	REQUIRED WATER CLOSETS MALE	REQUIRED WATER CLOSETS FEMALE	REQUIRED LAVATORIES MALE	REQUIRED LAVATORIES FEMALE	WATER FOUNTAINS
FIRST FLOOR										
1	A-3 AUDITORIUMS AND GYMNASIUMS	259.44 SF	17.30	8.65	8.65	0.07	0.13	0.04	0.04	0.03
33	B BUSINESS	9,106.69 SF	68.75	34.38	34.38	1.38	1.38	0.86	0.86	0.69
1	S-1 STORAGE	379.24 SF	1.26	0.63	0.63	0.01	0.01	0.01	0.01	0.00
		9,745.37 SF	87.31	43.66	43.66	1.45	1.51	0.91	0.91	0.72
SECOND FLOOR										
5	A-3 AUDITORIUMS AND GYMNASIUMS	2,864.97 SF	130.63	65.31	65.31	0.52	1.00	0.33	0.33	0.26
12	B BUSINESS	2,845.11 SF	10.86	5.43	5.43	0.22	0.22	0.14	0.14	0.11
		5,710.08 SF	141.49	70.74	70.74	0.74	1.22	0.46	0.46	0.37

BUILDING OCCUPANCY

NAME	AREA (GROSS)
FIRST FLOOR	
A-3	505.56 SF
B	9,746.67 SF
S-1	426.22 SF
	10,678.44 SF
SECOND FLOOR	
A-3	3,156.29 SF
B	4,117.94 SF
	7,274.23 SF
TOTAL GROSS AREA	17,952.67 SF

DEAD END CORRIDORS

EGRESS PATH	FROM ROOM	TRAVEL LENGTH
FIRST FLOOR		
DEAD END 104	CORRIDOR 104	43'-3"
SECOND FLOOR		
DEAD END 214		27'-3"

EGRESS TRAVEL LENGTHS

EGRESS PATH	FROM ROOM	TRAVEL LENGTH
FIRST FLOOR		
COMMON PATH 111	OFFICE 111	64'-0"
COMMON PATH 130	OFFICE 130	38'-9"
DEAD END 104	CORRIDOR 104	43'-3"
PATH 112	CLASSROOM 112	51'-0"
PATH 113	CI 113	50'-5"
PATH 114	LMPTT 114	41'-0"
PATH 115	MEN 115	73'-4"
PATH 117	WOMEN 117	43'-5"
PATH 118	OFFICE 118	33'-4"
PATH 120	BREAK 120	28'-3"
PATH 121	ADMIN BRIEF 121	44'-3"
PATH 123	COMM 123	42'-4"
PATH 127	VTRAT 127	73'-1"
PATH 128	WST SPARES 128	112'-6"
PATH 130	OFFICE 130	100'-2"
SECOND FLOOR		
DEAD END 214		27'-3"
PATH 202A	CLASSROOM 1 202A	61'-6"
PATH 202B	CLASSROOM 2 202B	70'-3"
PATH 202D	CLASSROOM 4 202D	94'-2"
PATH 204	RESTROOM 204	37'-2"
PATH 207	MEN 207	62'-0"
PATH 212	OFFICES 212	55'-0"
PATH 213	CLIENT SYSTEM LAB 213	67'-6"
PATH 214	WST RIOS 214	72'-2"

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

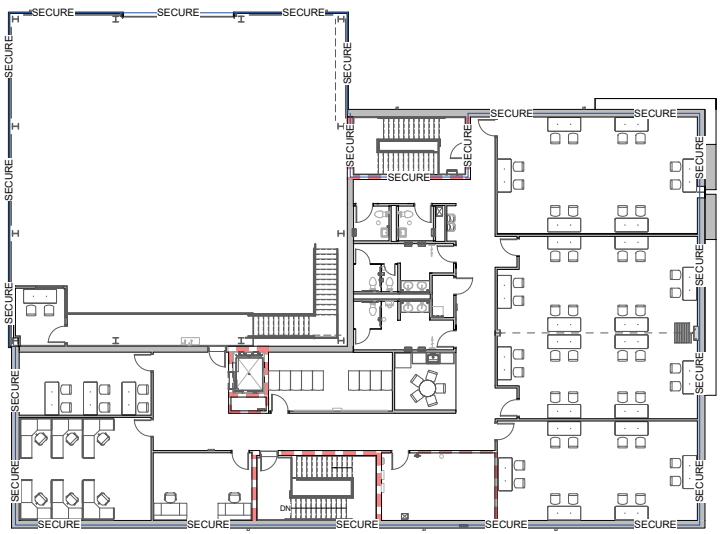
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

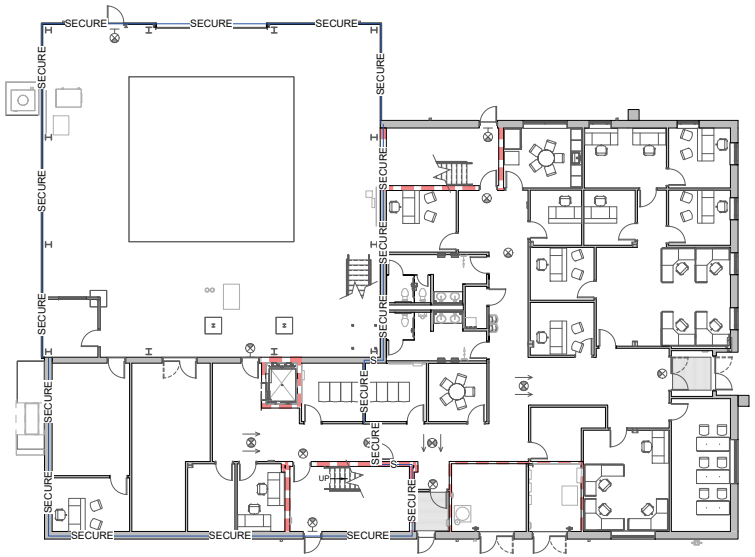
DATE: JANUARY 2026

DRAWING TITLE: GENERAL CODE ANALYSIS

DRAWING NO.: **G005**



2 **SECURITY PLAN - SECOND FLOOR**
SCALE: 3/32" = 1'-0"



1 **SECURITY PLAN - FIRST FLOOR**
SCALE: 3/32" = 1'-0"

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DRAWING NO.: **G006**

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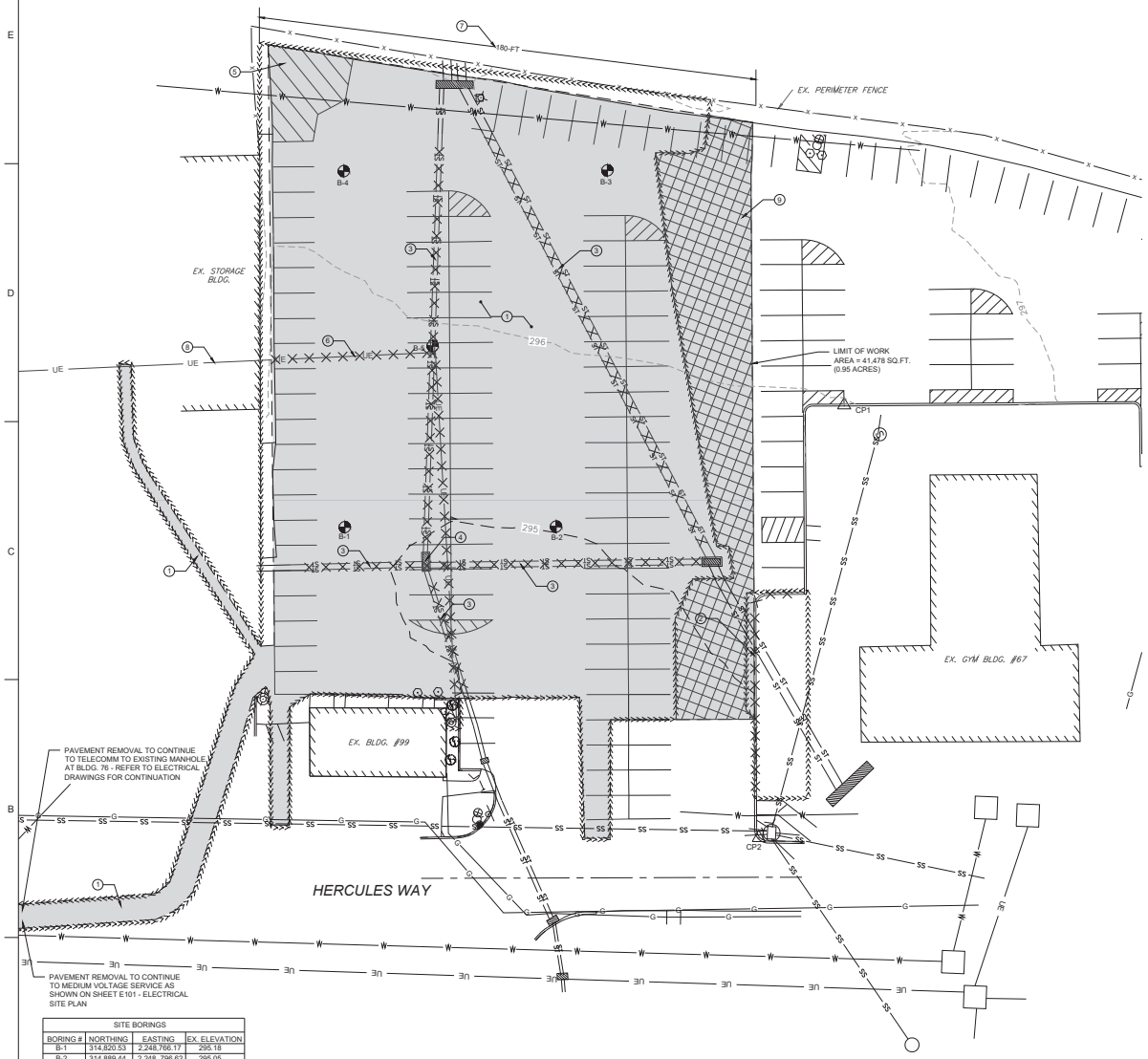

SITE BORINGS			
BORING #	NORTHING	EASTING	EX. ELEVATION
B-1	314,820.53	2,248,766.17	295.18
B-2	314,889.44	2,248, 796.62	295.05
B-3	314,957.84	2,248,688.00	296.61
B-4	314,871.86	2,248650.01	296.54
B-5	314,875.45	2,248,719.89	295.91

HORIZONTAL AND VERTICAL SURVEY CONTROL POINTS				
ID	NORTH (FT.)	EAST (FT.)	ELEVATION (FT.)	DESCRIPTION
CP1	315,000.63	2,248,798.84	296.54	PK NAIL SET IN BLDG. #67 CONCRETE CURB TO THE SOUTHWEST OF BLDG. #67
CP2	314,910.34	2,248,927.43	295.26	PK NAIL SET IN BLDG. #67 CONCRETE CURB TO THE SOUTHEAST OF BLDG. #67

1 C100 **EXISTING CONDITIONS / DEMOLITION PLAN**
SCALE: 1"= 20'

SCALE: 1"=20'

KEY NOTES

1. REMOVE BITUMINOUS PAVEMENT.
2. REMOVE CONCRETE CURB.
3. REMOVE STORM DRAIN PIPE.
4. REMOVE STORM DRAIN INLET.
5. RELOCATE DUMPSTER AS PER DIRECTION OF THE CONTRACTING OFFICER
6. REMOVE UNDERGROUND ELECTRIC
7. REMOVE CONCRETE JERSEY BARRIERS
8. UNDERGROUND ELECTRIC TO ABANDON IN PLACE
9. BITUMINOUS PAVEMENT MILL AND OVERLAY.

LEGEND:

- BITUMINOUS PAVEMENT REMOVAL
- BITUMINOUS PAVEMENT MILL AND OVERLAY
- 295 MAJOR CONTOUR
- 296 MINOR CONTOUR
- ST STORM DRAIN
- SS SANITARY SEWER
- W POTABLE / FIRE WATER LINE
- G GAS LINE
- UE UNDERGROUND ELECTRIC
- ROADWAY CENTER LINE
- x FENCE
- LIMIT OF DISTURBANCE / WORK
- CP# SURVEY CONTROL POINT
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- BOLLARD
- SIGN
- LIGHT POLE
- SHRUB
- MANHOLE
- STORM DRAIN INLET
- EXISTING FEATURE TO BE REMOVED
- BORING

GENERAL NOTES

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF LOWER SWATARA TOWNSHIP, PENNDOT, AND THE GOVERNMENT.
2. THE TOPOGRAPHY AND UTILITY LOCATIONS SHOWN ON THIS PLAN ARE FROM A FIELD SURVEY PERFORMED BY GANNETT FLEMING, DATED FEBRUARY 2024.
3. THE HORIZONTAL CONTROL FOR THIS PROJECT IS BASED UPON PA STATE PLANE COORDINATE SYSTEM PA SOUTH ZONE NAD 83.
4. THE VERTICAL CONTROL FOR THIS PROJECT IS BASED UPON NGVD-88.
5. BASED ON A REVIEW OF SITE CONDITIONS, NO PORTION OF THE PROJECT WORK AREA WOULD BE CONSIDERED AS A JURISDICTIONAL WETLAND OR WATERWAY. THEREFORE, PERMITS UNDER DEP CHAPTER 105/USACOE SECTION 404 WILL NOT BE REQUIRED.
6. EROSION AND SEDIMENT POLLUTION CONTROL PLAN APPROVAL FROM THE DAUPHIN COUNTY CONSERVATION DISTRICT IS REQUIRED PRIOR TO EARTH DISTURBANCE. ALL OF THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE EROSION AND SEDIMENTATION CONTROL PLAN APPROVED FOR THIS PROJECT. A COPY OF THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN FOR THE PROJECT MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION.
7. UTILITY CONTACTS:
   ELECTRIC SERVICE - MET-ED (1-800-545-7741)
   NATURAL GAS - UGI (1-800-276-2722)
   STORMWATER AND SANITARY - HIA (SUSQUEHANNA AREA REGIONAL AIRPORT AUTHORITY) - MR. DAVID SPAULDING - (717-948-3900)
   WATER - HIA (SUSQUEHANNA AREA REGIONAL AIRPORT AUTHORITY) - MR. DAVID SPAULDING - (717-948-3900)
8. FOR CIVIL/SITE LIMIT OF WORK SEE LIMIT OF DISTURBANCE ON EROSION AND SEDIMENTATION CONTROL PLAN.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CONTACT THE PA ONE CALL SYSTEM (1-800-242-1776) NO LESS THAN THREE (3) AND NO MORE THAN (10) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTING OFFICER PRIOR TO THE START OF ANY WORK.
3. THE CONTRACTOR SHALL VERIFY ALL BASELINES OF CONSTRUCTION, THE LOCATION OF ALL NEW CONSTRUCTION AND VERIFY ALL SETBACKS, OFFSETS AND CLEARANCES.
4. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING ANY WORK. THE CONTRACTOR WILL BE FULLY RESPONSIBLE FOR THE COST OF ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES TO REMAIN.
5. THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A WRITTEN CONSTRUCTION SEQUENCE PLAN AND COORDINATE ANY BREAK IN A UTILITY SERVICE WITH THE GOVERNMENT PRIOR TO COMMENCING ANY WORK REQUIRING A BREAK IN UTILITY SERVICE.
6. THE CONTRACTOR SHALL CONTACT THE CONTRACTING OFFICER IMMEDIATELY UPON FINDING ANY UNFORESEEN CONDITIONS DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL CONTACT THE CONTRACTING OFFICER PRIOR TO THE START OF CONSTRUCTION TO DISCUSS THE PROPOSED CONSTRUCTION AND ANY GOVERNMENT REGULATIONS OR REQUIREMENTS THAT MUST BE MET IN TERMS OF NOISE, DUST AND TRAFFIC CONSIDERATIONS.
8. THE CONTRACTOR SHALL SAWCUT ALL JOINTS IN EXISTING PAVEMENT AS REQUIRED FOR DEMOLITION AND OPEN TRENCHES.
9. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
10. UPON COMPLETION OF THE SITE CONSTRUCTION AND PERMANENT STABILIZATION OF THE SITE BY PAVEMENT AND VEGETATION, THE STORM SEWER SYSTEMS SHALL BE CLEANED OF DEBRIS AND SEDIMENT.
11. ALL CONTOURS AND ELEVATIONS SHOWN ARE FINISHED GRADE, UNLESS NOTED OTHERWISE.
12. ALL DISTURBED AREAS NOT STABILIZED WITH STRUCTURES, PAVING, AND PLANTINGS SHALL BE STABILIZED WITH SIX INCHES OF TOPSOIL, SEED AND MULCH AND WATERED TO ESTABLISH AN ADEQUATE GROWTH OF GRASS.
13. NUMERICAL DIMENSIONS AND ELEVATIONS SHOWN SHALL SUPERCEDE ANY DISCREPANCY IN THE SCALING ON THE DRAWINGS.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION WASTE FROM THE SITE.

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — COREY NOEL BRAY — ENGINEER PE096819

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

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DESIGNED:	MODELED:	CHECKED:
CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL

EXISTING CONDITIONS / DEMOLITION PLAN

DRAWING NO.: **C100**

Local File: C:\USERS\CBRAY\DOCACCDOCS\GANNETT FLEMING INC\076946-PAANG_FC_130J_SIMULATOR\PROJECT Central Files\ESS\SHEET\SY-ACSITE\076946_C_100.DWG
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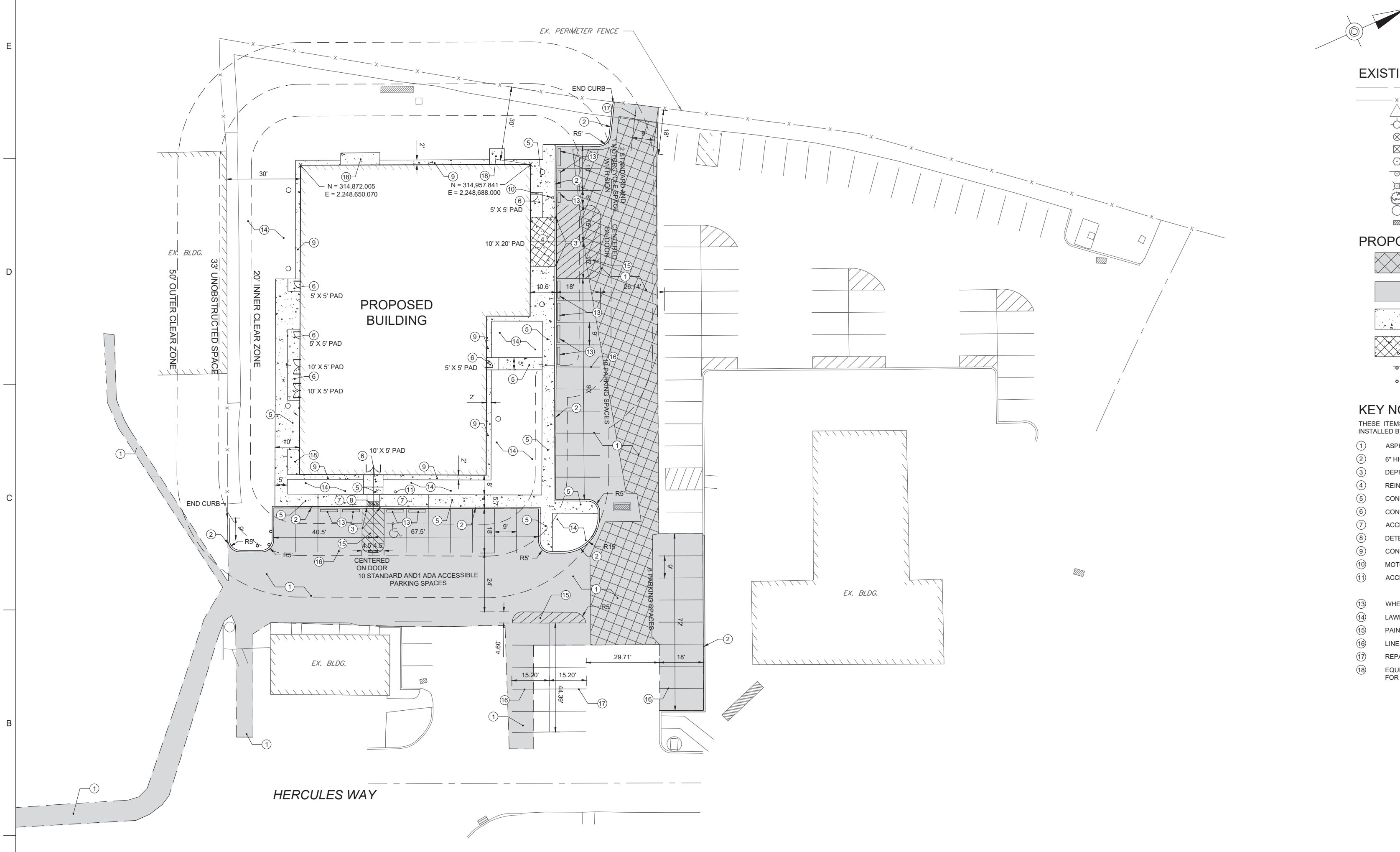

1 C101 **LAYOUT PLAN**
SCALE: 1"= 20'

EXISTING LEGEND:

- ROADWAY CENTER LINE
- FENCE
- SURVEY CONTROL POINT (CP#)
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- BOLLARD
- SIGN
- LIGHT POLE
- SHRUB
- MANHOLE
- STORM DRAIN INLET

PROPOSED LEGEND:

- MILL AND OVERLAY EXISTING PAVEMENT
- FULL DEPTH PAVEMENT REPLACEMENT
- CONCRETE PAVEMENT
- REINFORCED CONCRETE PAVEMENT
- SIGN
- BOLLARD

KEY NOTES

THESE ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

1. ASPHALT PAVEMENT.
2. 6" HIGH CONCRETE CURB.
3. DEPRESSED CURB.
4. REINFORCED CONCRETE PAVEMENT.
5. CONCRETE SIDEWALK.
6. CONCRETE DOOR PAD
7. ACCESSIBLE RAMP.
8. DETECTABLE WARNING STRIP
9. CONCRETE MOW STRIP.
10. MOTORCYCLE PARKING SPACE SIGN.
11. ACCESSIBLE PARKING SPACE SIGN.
13. WHEEL STOP
14. LAWN
15. PAINTED ISLAND
16. LINE STRIPING FOR PARKING (TYP.)
17. REPAINT EXISTING PARKING SPACES
18. EQUIPMENT PAD (SEE MECHANICAL FOR DETAILS AND SIZING)

0' 20' 40'
SCALE: 1"=20'

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CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL LAYOUT PLAN

DRAWING NO.: **C101**

Local File: C:\USERS\CBRAY\DC\ACCDOCS\GANNETT FLEMING INC\076046-PAANG_EC_130J_SIMULATOR\PROJECT
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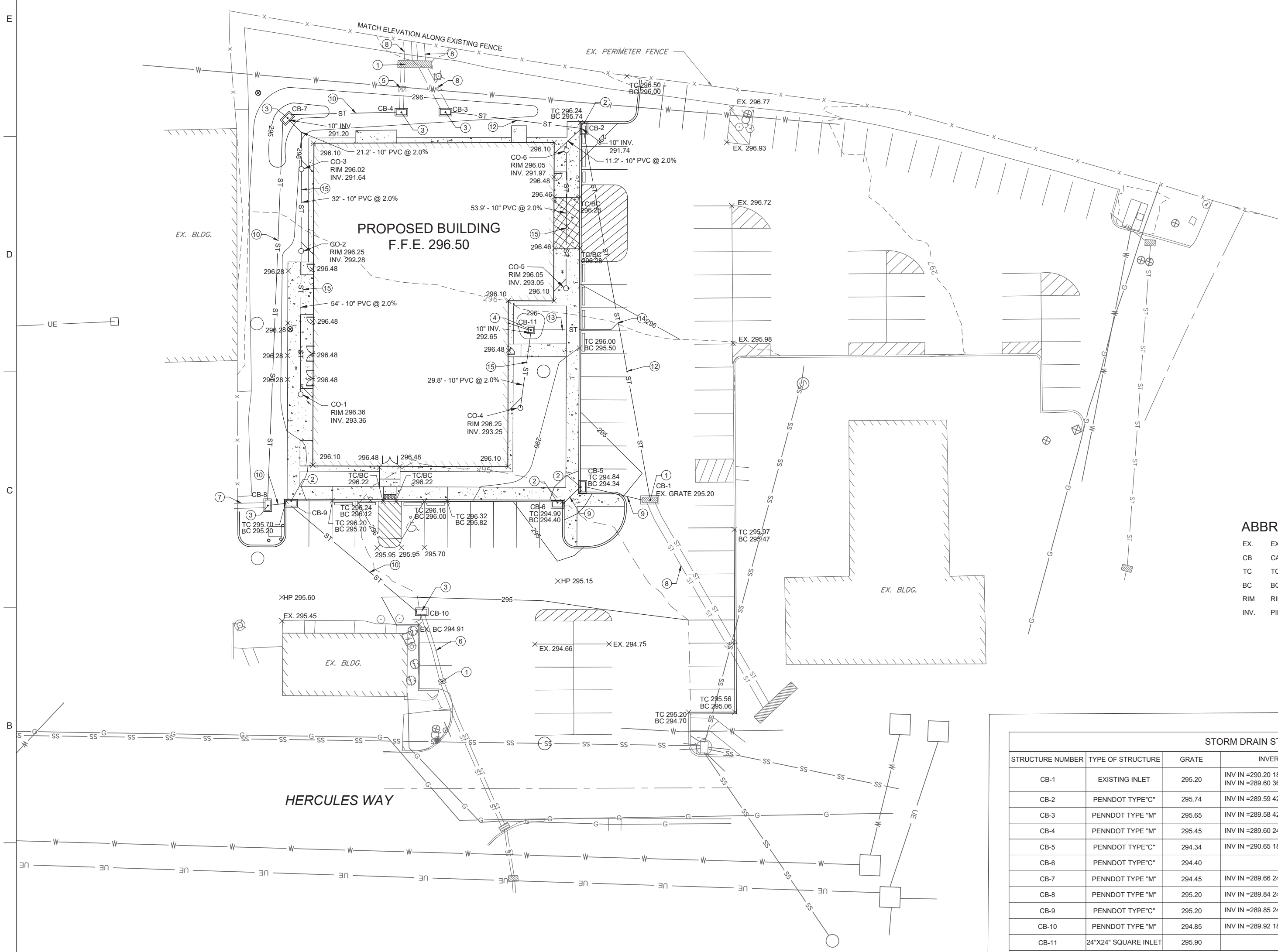

GRADING AND DRAINAGE PLAN

1 / C102 — SCALE: 1"= 20'

EXISTING LEGEND:

- 295 — MAJOR CONTOUR
- 296 — MINOR CONTOUR
- ST — STORM DRAIN
- ROADWAY CENTER LINE
- X — FENCE
- CP# — SURVEY CONTROL POINT
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- BOLLARD
- SIGN
- LIGHT POLE
- SHRUB
- MANHOLE
- STORM DRAIN INLET

PROPOSED LEGEND:

- 296 — MINOR CONTOUR
- 295 — MAJOR CONTOUR
- ST — STORM DRAIN
- CB-# — STORM DRAIN INLET
- X BC ###.## — BOTTOM OF CURB ELEVATION
- X TC ###.## — TOP OF CURB ELEVATION
- X EX. ###.## — EXISTING SPOT ELEVATION

KEY NOTES

1. EXISTING INLET.
2. PENNDOT "TYPE C" INLET.
3. PENNDOT "TYPE M" INLET.
4. 24"x24" SQUARE INLET.
5. EXISTING 15" RCP STORM DRAIN PIPE.
6. EXISTING 18" RCP STORM DRAIN PIPE.
7. EXISTING 24" RCP STORM DRAIN PIPE.
8. EXISTING 36" CMP STORM DRAIN PIPE.
9. PROPOSED 18" RCP STORM DRAIN PIPE.
10. PROPOSED 24" RCP STORM DRAIN PIPE.
11. PROPOSED 36" RCP STORM DRAIN PIPE.
12. PROPOSED 42" RCP STORM DRAIN PIPE.
13. PROPOSED 12" HDPE STORM DRAIN.
14. CORE DRILL THE 42" RCP PIPE FOR THE 12" HDPE. GROUT WITH MOTAR.
15. PROPOSED ROOF DRAIN PIPING

ABBREVIATIONS

- EX. — EXISTING
- CB — CATCH BASIN (STORM)
- TC — TOP OF CURB
- BC — BOTTOM OF CURB
- RIM — RIM ELEVATION OF STRUCTURE
- INV. — PIPE INVERT

STORM DRAIN STRUCTURE TABLE

STRUCTURE NUMBER	TYPE OF STRUCTURE	GRATE	INVERT ELEVATION (IN)	INVERT ELEVATION (OUT)
CB-1	EXISTING INLET	295.20	INV IN =290.20 18" RCP (CB-5) INV IN =289.60 36" CMP ()	INV OUT =289.60 42" RCP (CB-2)
CB-2	PENNDOT TYPE"C"	295.74	INV IN =289.59 42" RCP (CB-1)	INV OUT =289.59 42" RCP (CB-3)
CB-3	PENNDOT TYPE "M"	295.65	INV IN =289.58 42" RCP (CB-2)	INV OUT =289.58 36" CMP ()
CB-4	PENNDOT TYPE "M"	295.45	INV IN =289.60 24" RCP (CB-7)	INV OUT =289.60 15" RCP ()
CB-5	PENNDOT TYPE"C"	294.34	INV IN =290.65 18" RCP (CB-6)	INV OUT =290.65 18" RCP (CB-1)
CB-6	PENNDOT TYPE"C"	294.40		INV OUT =290.90 18" RCP (CB-5)
CB-7	PENNDOT TYPE "M"	294.45	INV IN =289.66 24" RCP (CB-8)	INV OUT =289.66 24" RCP (CB-4)
CB-8	PENNDOT TYPE "M"	295.20	INV IN =289.84 24" RCP STORM DRAIN (CB-9)	INV OUT =289.84 24" RCP (CB-7)
CB-9	PENNDOT TYPE"C"	295.20	INV IN =289.85 24" RCP STORM DRAIN (CB-10)	INV OUT =289.85 24" RCP STORM DRAIN (CB-8)
CB-10	PENNDOT TYPE "M"	294.85	INV IN =289.92 18" RCP ()	INV OUT =289.92 24" RCP STORM DRAIN (CB-9)
CB-11	24"X24" SQUARE INLET	295.90		INV OUT =292.40 12" HDPE ()

SCALE: 1"=20' (0' 20' 40')

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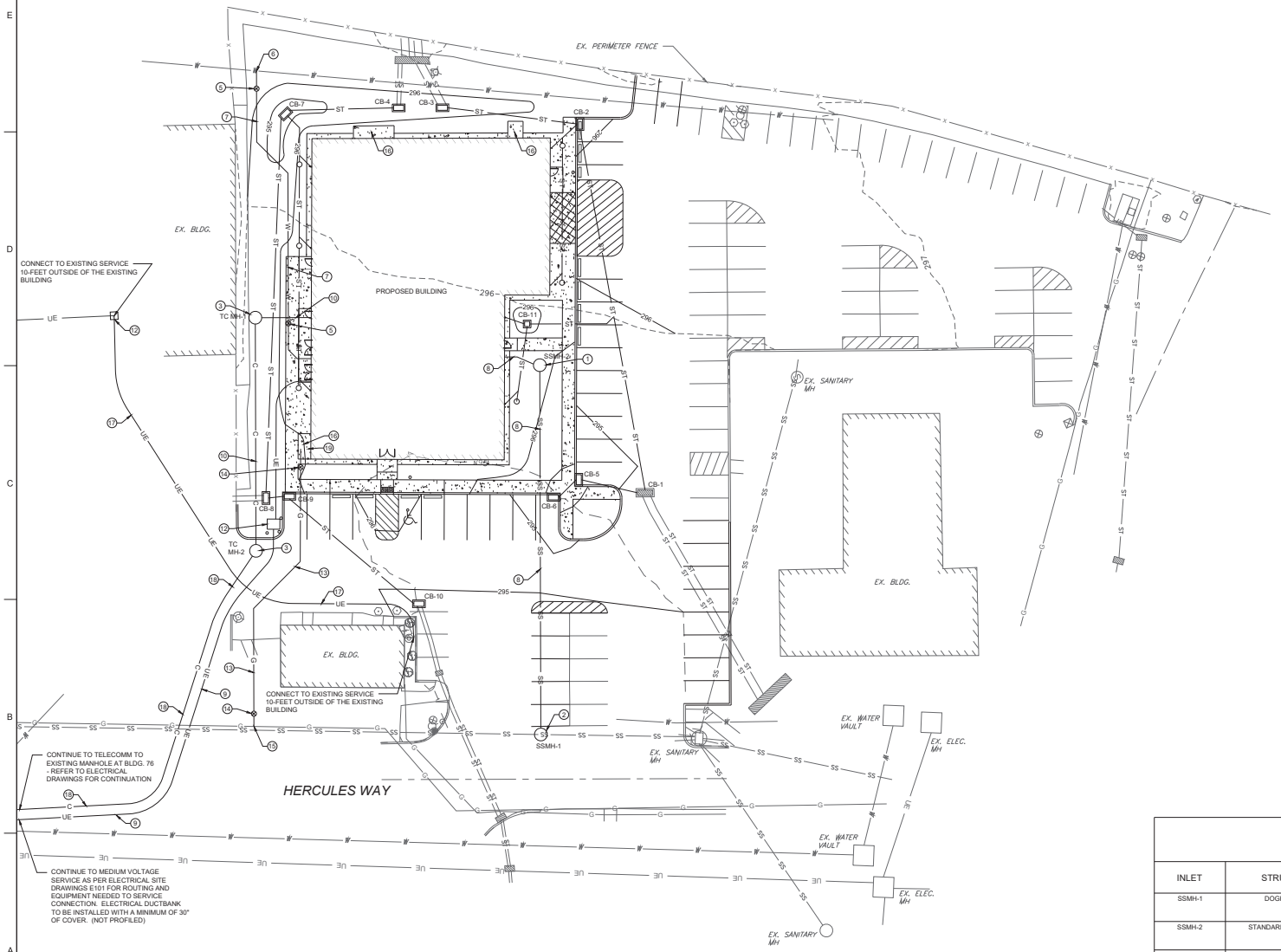
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: CNB | MODELED: DBM | CHECKED: CNB
DATE: JANUARY 2026
DRAWING TITLE: CIVIL — GRADING AND DRAINAGE PLAN
DRAWING NO.: C102



1 C103 **UTILITY PLAN**
SCALE: 1"= 20'

EXISTING LEGEND:

- MAJOR CONTOUR (295)
- MINOR CONTOUR (296)
- STORM DRAIN (ST)
- SANITARY SEWER (SS)
- POTABLE / FIRE WATER LINE (W)
- GAS LINE (G)
- ELECTRIC (UE)
- ROADWAY CENTER LINE
- FENCE
- SURVEY CONTROL POINT (CP#)
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- BOLLARD
- SIGN
- LIGHT POLE
- SHRUB
- MANHOLE
- STORM DRAIN INLET

PROPOSED LEGEND:

- 296 MINOR CONTOUR
- 295 MAJOR CONTOUR
- ST STORM DRAIN
- SS SANITARY SEWER
- W POTABLE WATER / FIRE WATER
- UE ELECTRIC DUCTBANK
- C COMMUNICATIONS DUCTBANK
- G NATURAL GAS LINE
- CB-# STORM DRAIN INLET
- SSMH-# SANITARY SEWER MANHOLE
- WATER VALVE
- TRANSFORMER
- ELECTRIC MANHOLE
- COMMUNICATIONS MANHOLE

KEY NOTES

1. PROPOSED SANITARY SEWER MANHOLE.
2. PROPOSED DOGHOUSE SANITARY SEWER MANHOLE.
3. PROPOSED COMMUNICATIONS HANDHOLE. (SEE ELECTRICAL DRAWINGS)
4. PROPOSED ELECTRIC HANDHOLE (SEE ELECTRICAL DRAWINGS).
5. PROPOSED WATER VALVE.
6. WETTAP TO EXISTING WATER LINE .
7. PROPOSED 8" DI WATER / FIRE WATER.
8. PROPOSED 4" SANITARY SEWER.
9. PROPOSED ELECTRIC DUCTBANK.
10. PROPOSED COMMUNICATIONS DUCTBANK. (SEE ELECTRICAL DRAWINGS)
11. PROPOSED SECTIONALIZER (SEE ELECTRICAL DRAWINGS)
12. PROPOSED ELECTRIC TRANSFORMER WITH THREE BOLLARDS (SEE ELECTRICAL DRAWINGS)
13. PROPOSED 2" NATURAL GAS
14. PROPOSED NATURAL GAS VALVE
15. CONNECT TO EXISTING NATURAL GAS
16. CONCRETE UTILITY PAD (REFER TO MECHANICAL DRAWINGS)
17. 2 - 4" ELECTRICAL CONDUITS WITH MINIMUM 30" OF COVER OVER THE CONDUIT (NOT PROFILED)
18. PROPOSED COMMUNICATIONS DUCTBANK WITH MINIMUM 30" OF COVER OVER THE CONDUIT (NOT PROFILED)
19. PROPOSED 2" NATURAL GAS CONNECT INTO THE PROPOSED GAS METER (BY MECHANICAL)

SANITARY SEWER TABLE

INLET	STRUCTURE TYPE	RIM	INV.	PIPE
SSMH-1	DOGHOUSE MANHOLE	294.55	IN 289.43 (SSMH-2) OUT 289.23 (EX. 4")	EXISTING 4"
SSMH-2	STANDARD SANITARY MANHOLE	296.00	IN 291.30 (BLDG) OUT 291.10 (SSMH-1)	145.4' - 4" PVC @ 1.15%
BUILDING	BUILDING INVERT		OUT 291.60 (EX)	14' - 4" PVC @ 2.1%

0' 20' 40'
SCALE: 1"=20'

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PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL
UTILITY PLAN

DRAWING NO.: **C103**

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Project Number: 962-0043
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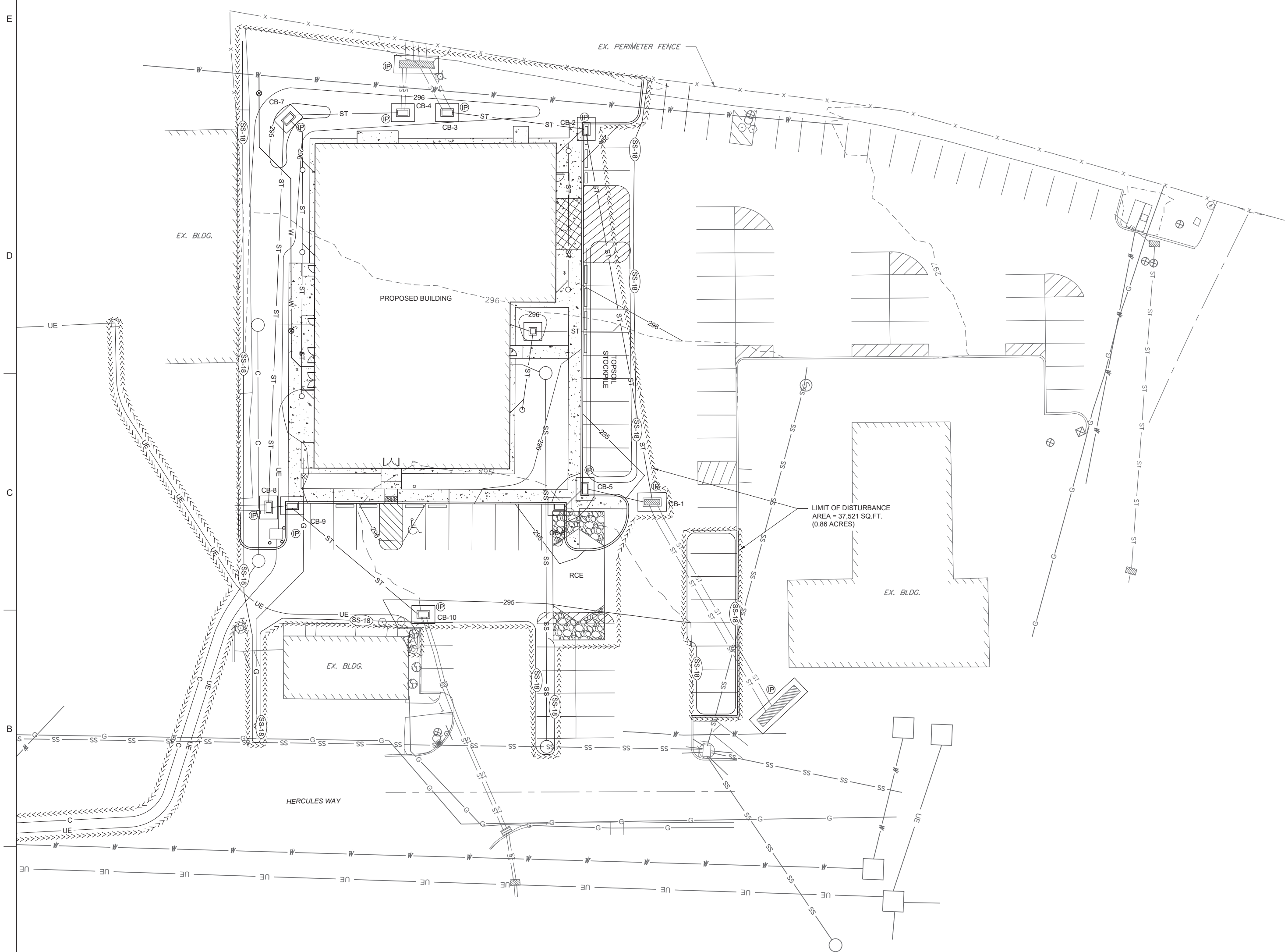

1 / C104 EROSION AND SEDIMENTATION CONTROL PLAN
SCALE: 1"= 20'

SCALE: 1"=20'

EXISTING LEGEND:

- 295 — MAJOR CONTOUR
- 296 — MINOR CONTOUR
- ST — STORM DRAIN
- SS — SANITARY SEWER
- W — POTABLE / FIRE WATER LINE
- G — GAS LINE
- UE — ELECTRIC
- ROADWAY CENTER LINE
- X — FENCE
- CP# — SURVEY CONTROL POINT
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- BOLLARD
- SIGN
- LIGHT POLE
- SHRUB
- MANHOLE
- STORM DRAIN INLET

PROPOSED LEGEND:

- 296 — MINOR CONTOUR
- 295 — MAJOR CONTOUR
- ST — STORM DRAIN
- SS — SANITARY SEWER
- W — POTABLE WATER / FIRE WATER
- UE — ELECTRIC DUCTBANK
- C — COMMUNICATIONS DUCTBANK
- LIMITS OF DISTURBANCE
- SS-18 — 18" HIGH COMPOST FILTER SOCK
- CB-# — STORM DRAIN INLET
- SSMH-# — SANITARY SEWER MANHOLE
- WATER VALVE
- TRANSFORMER
- ELECTRIC MANHOLE
- COMMUNICATIONS MANHOLE
- IP — INLET PROTECTION
- RCE — ROCK CONSTRUCTION ENTRANCE

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DATE: JANUARY 2026

DRAWING TITLE: CIVIL EROSION AND SEDIMENTATION CONTROL PLAN

DRAWING NO.: **C104**

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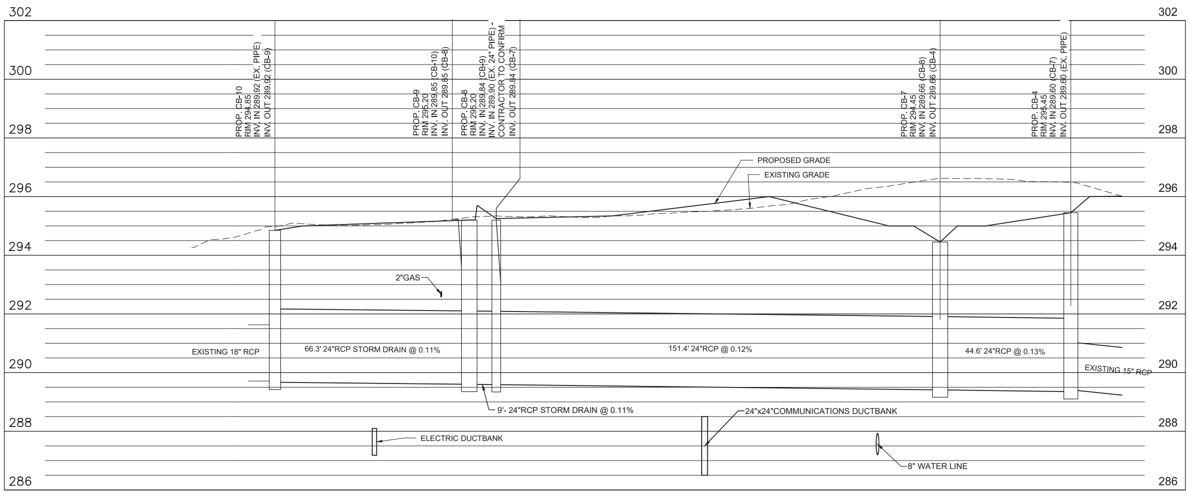
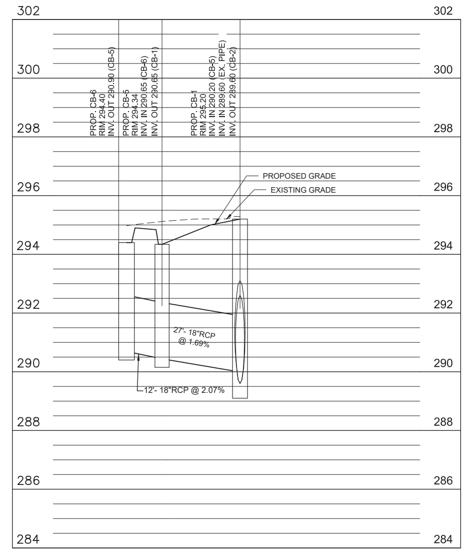
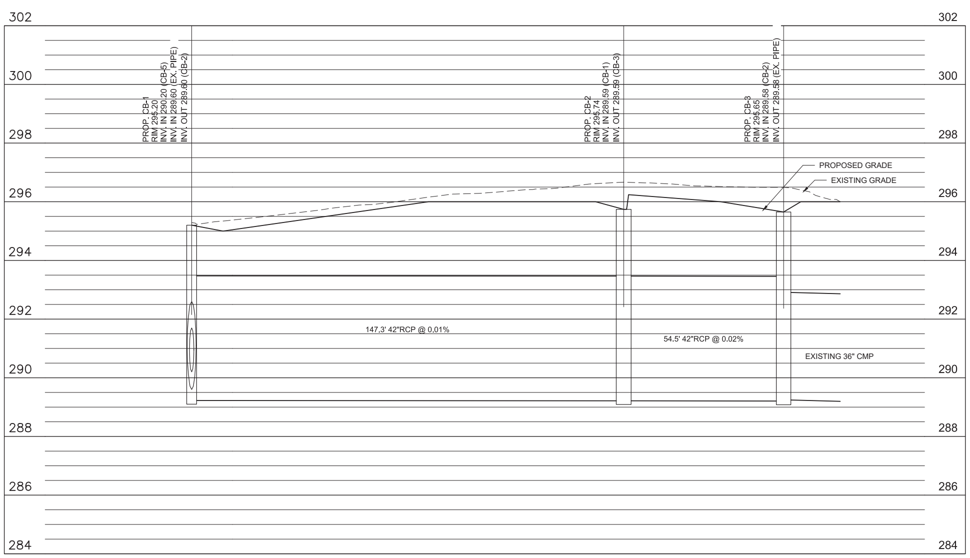


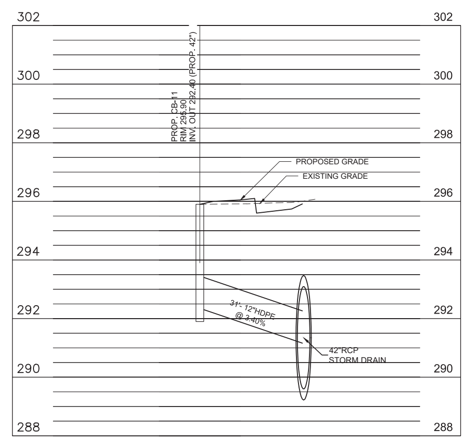
PROPOSED STORM DRAIN CB-10 TO CB-4
SCALE: 1"=20' (H)
1"=2' (V)



PROPOSED STORM DRAIN CB-6 TO CB-1
SCALE: 1"=20' (H)
1"=2' (V)



PROPOSED STORM DRAIN CB-1 TO CB-3
SCALE: 1"=20' (H)
1"=2' (V)



PROPOSED STORM DRAIN CB-11 TO 42" RCP
SCALE: 1"=20' (H)
1"=2' (V)

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PROJECT NUMBER: SHYQ149104

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DATE: JANUARY 2026

DRAWING TITLE: CIVIL

STORM DRAIN PROFILES

DRAWING NO.: C301

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Project Number: 962-0043
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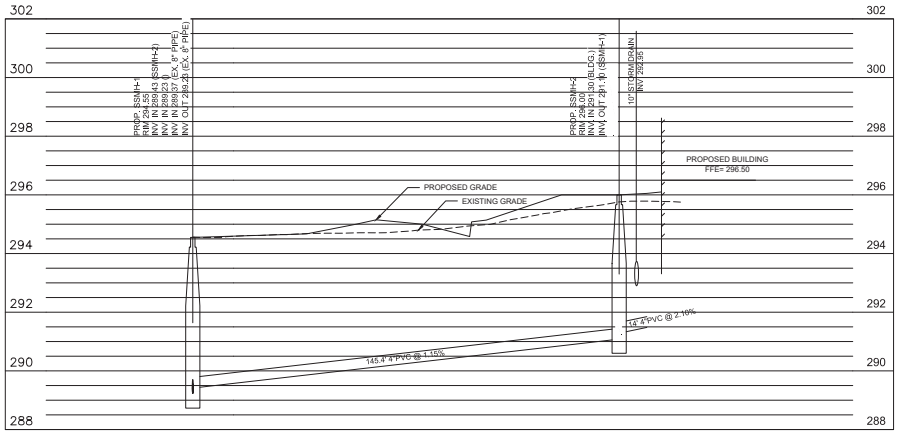
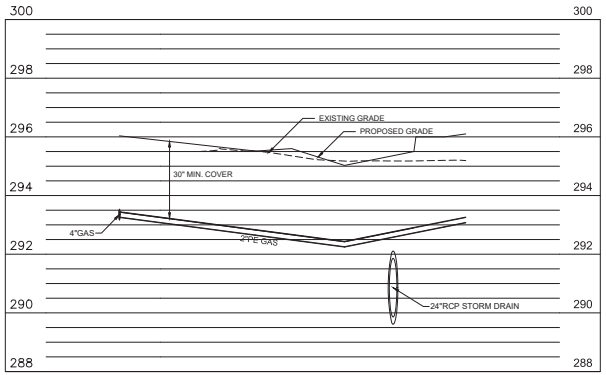
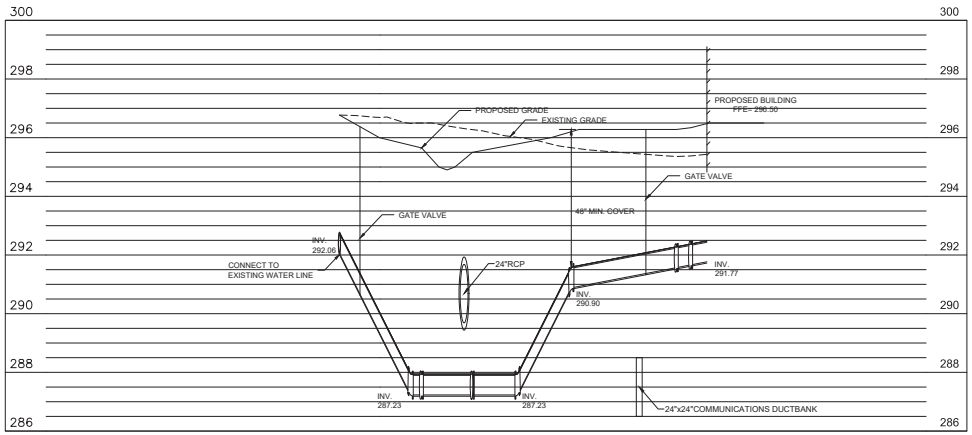


PROPOSED 4" SANITARY SEWER
SCALE: 1"=20' (H)
1"=2' (V)



NATURAL GAS LINE
SCALE: 1"=20' (H)
1"=2' (V)



PROPOSED 8' WATER LINE
SCALE: 1"=20' (H)
1"=2' (V)

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PROJECT NUMBER: SHYQ149104

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DATE: JANUARY 2026

DRAWING TITLE:
CIVIL
SANITARY SEWER, NATURAL GAS AND WATER PROFILES

DRAWING NO.:
C302

Local File: C:\USERS\CBRAY\DOCACCDOCS\GANNETT FLEMING INC\076946-PAANG_EC_130J_SIMULATOR\PROJECT Central Files\SHEETS\PACSITE\076946_C_302.DWG
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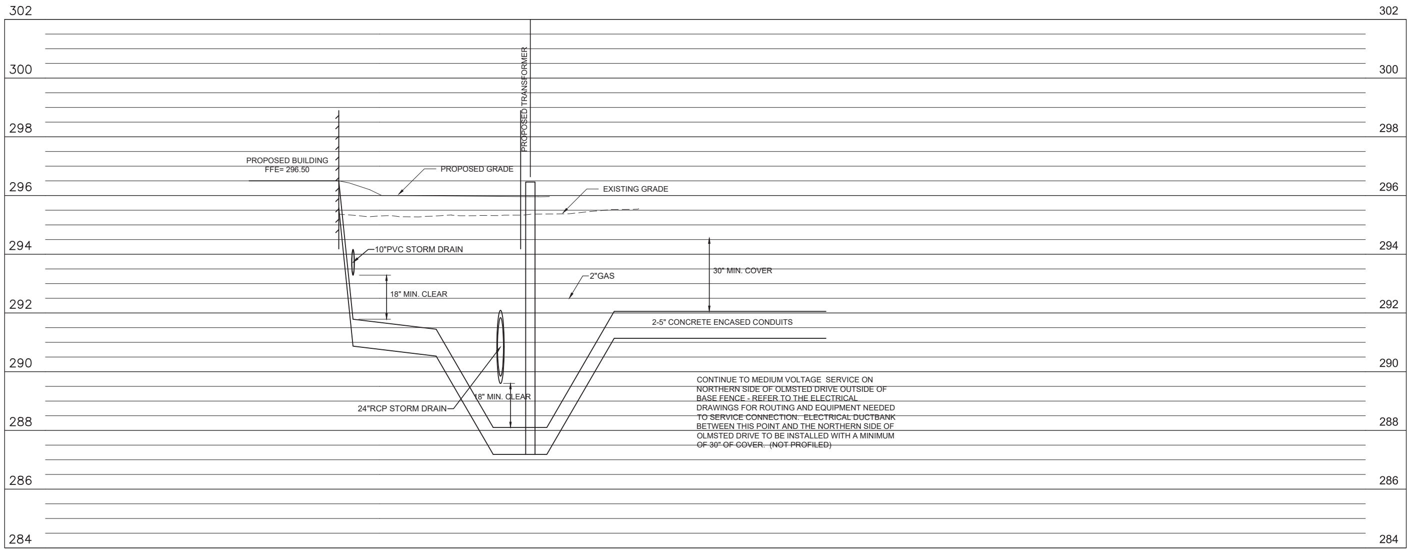
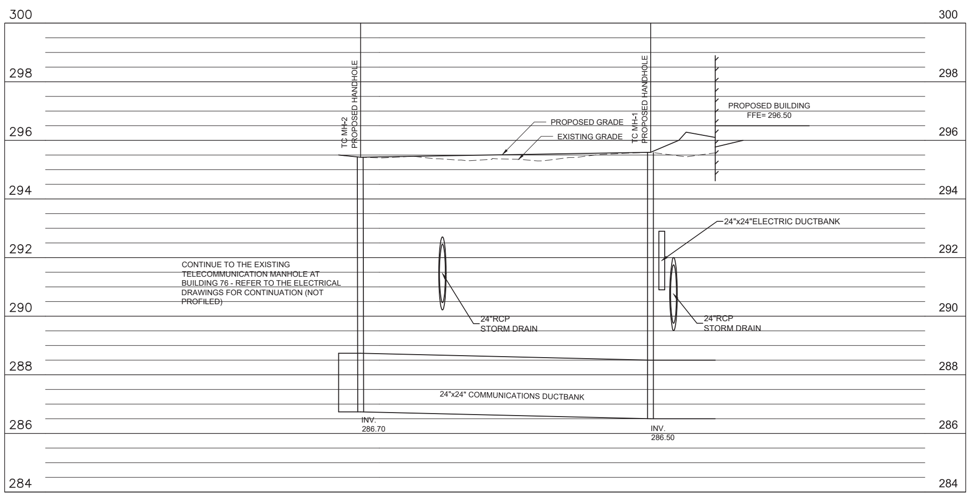


PROPOSED ELECTRIC DUCTBANK
SCALE: 1"=20' (H)
1"=2' (V)



PROPOSED COMMUNICATIONS DUCTBANK
SCALE: 1"=20' (H)
1"=2' (V)

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NO.	DATE	DESCRIPTION

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BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

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CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL ELECTRIC AND COMMUNICATIONS PROFILES

DRAWING NO.: C303

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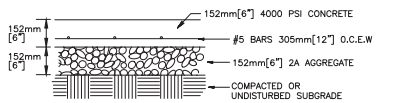
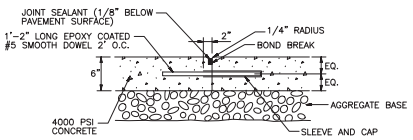
Central File:

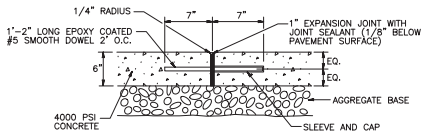
Project Number: 962-0043
3/15/2025 12:00 PM



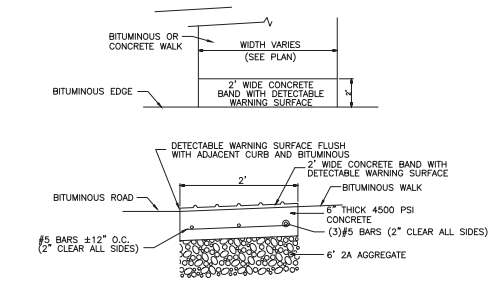
1 CONCRETE PAVING DETAIL
NO SCALE



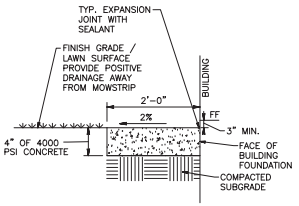
2 TYPICAL CONTRACTION JOINT AT VEHICLE CONCRETE PAVING
NO SCALE



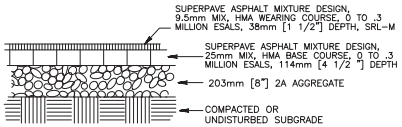
3 TYPICAL EXPANSION JOINT WITH DOWEL AT VEHICLE CONCRETE PAVING
NO SCALE



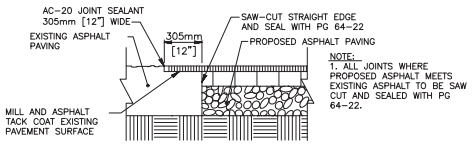
4 DETECTABLE WARNING AT CROSSWALK DETAIL
NOT TO SCALE



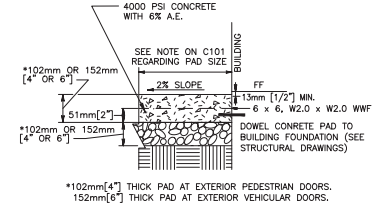
5 BUILDING MOW STRIP
NO SCALE



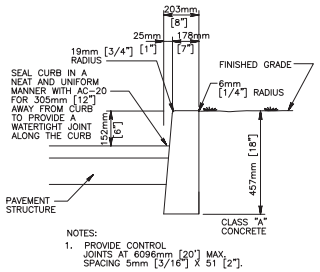
6 TYPE 'A' ASPHALT PAVING DETAIL
NO SCALE



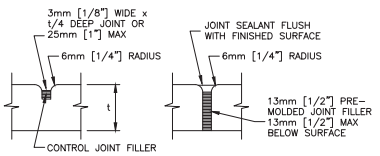
7 NEW TO EXISTING ASPHALT PAVING CONNECTION
NO SCALE

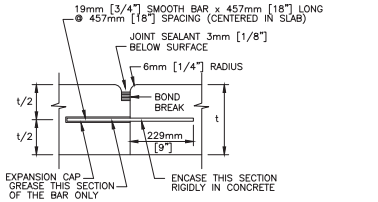


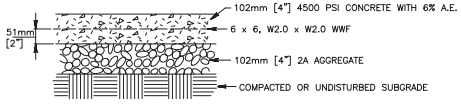
8 CONCRETE PAD CONNECTION AT EXTERIOR DOOR
NO SCALE



9 CONCRETE STRAIGHT CURB DETAIL
NO SCALE

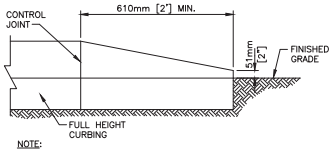






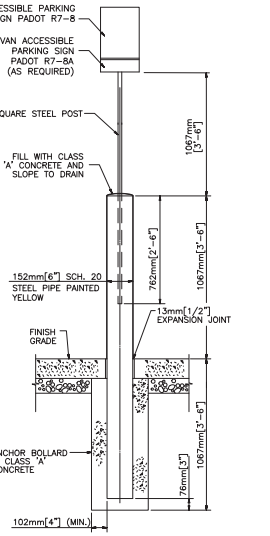
NOTES:
1. EXPANSION JOINT SPACING SHALL NOT EXCEED 9144mm [30'].
2. PROVIDE EXPANSION JOINTS WITH JOINT SEALANT.
3. CONTROL JOINT SPACING SHALL NOT EXCEED 1524mm [5'].
4. ALL SIDEWALKS TO HAVE 1/8" PER FOOT SIDE SLOPE.

10 SIDEWALK DETAILS
NO SCALE



NOTE:
1. APPLY CURB END TRANSITION AT END OF CURB LOCATIONS.

11 CURB END TRANSITION DETAIL
NO SCALE



12 ACCESSIBLE PARKING SIGN ON PERMANENT BOLLARD
NO SCALE

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NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

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DRAWING TITLE: CIVIL DETAILS

DRAWING NO.: C501

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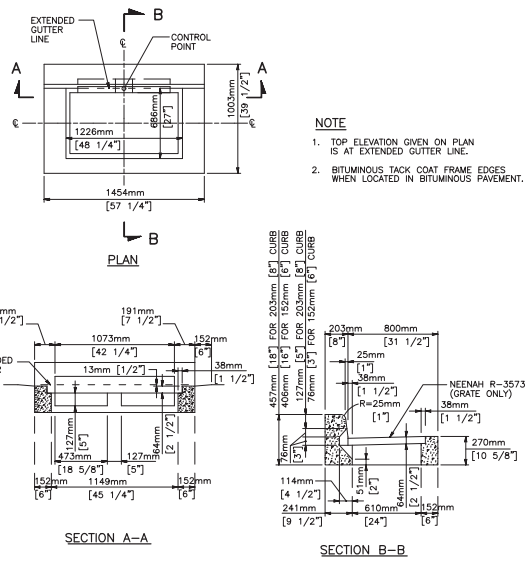
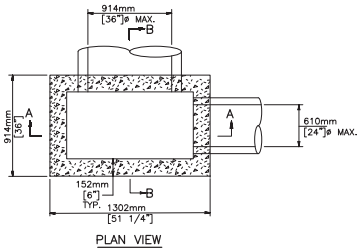


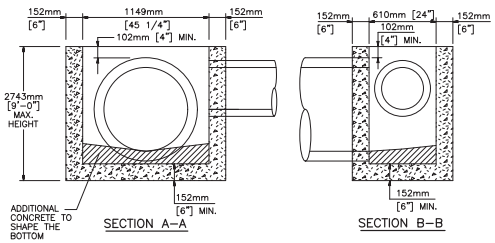
NOTE

1. TOP ELEVATION GIVEN ON PLAN IS AT EXTENDED GUTTER LINE.
2. BITUMINOUS TACK COAT FRAME EDGES WHEN LOCATED IN BITUMINOUS PAVEMENT.

① TYPE C PRECAST CONCRETE TOP UNIT

NO SCALE





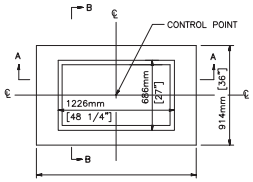
ALL STORMWATER STRUCTURES SHALL BE IN ACCORDANCE WITH PADOT STANDARD DETAILS

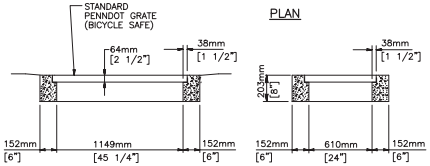
② PRECAST INLET BOX

NO SCALE

③ DOGHOUSE MANHOLE BASE

NO SCALE





④ TYPE M PRECAST CONCRETE TOP UNIT

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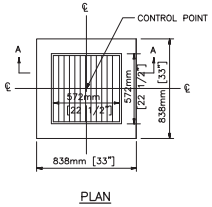

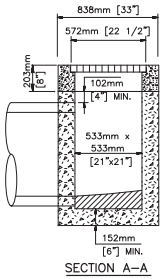

⑤ 2' x 2' CATCH BASIN

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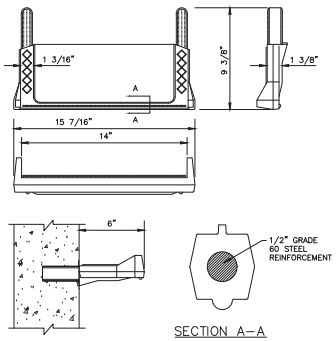
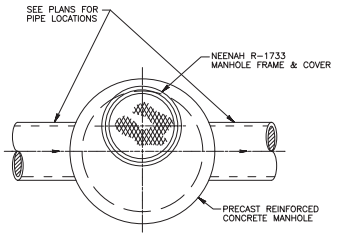
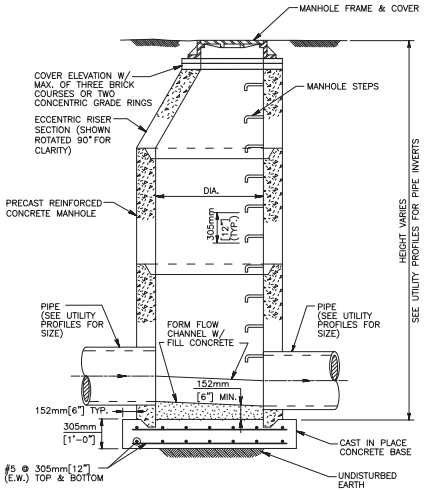


⑤ COPOLYMER POLYPROPYLENE PLASTIC MANHOLE STEP

NO SCALE





⑥ STANDARD MANHOLE DETAIL

NO SCALE

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PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL DETAILS

DRAWING NO.: **C502**

Local File: C:\USERS\CBRAYDO\ACCDOCS\GANNETT FLEMING INC\076946-PAANG_EC_130J_SIMULATOR\PROJECT Central Files\ES\SHEETS\FACSITE\076946_S_C01.DWG
Project Number: 86243043
3/18/2024 1:31 PM

1 2 3 4 5 6

E

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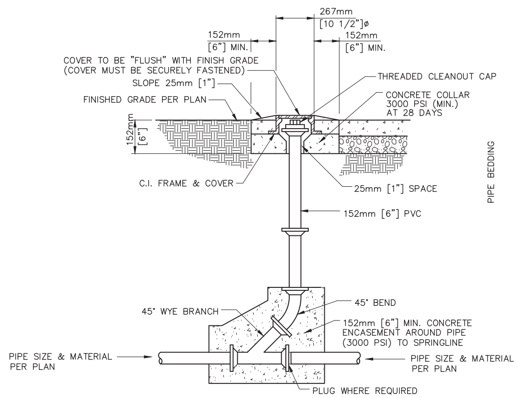
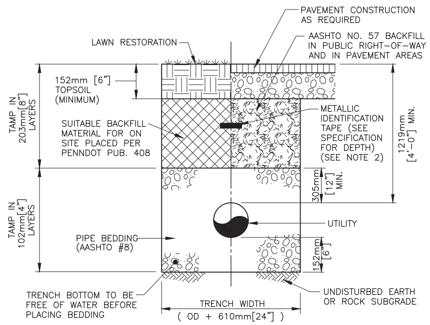
A



1 CLEANOUT DETAIL

NO SCALE

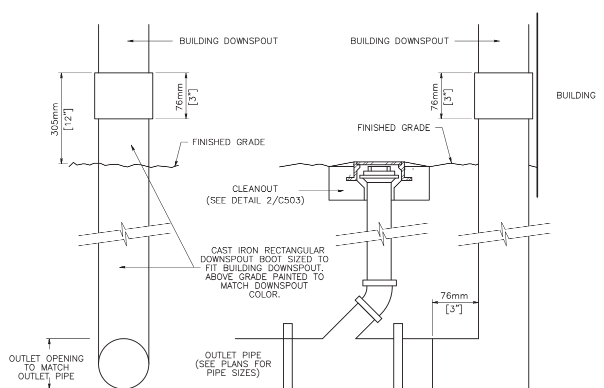


NOTES:

1. IN EXISTING PAVEMENT, SAWCUT AND SEAL WITH AC-20.
2. USE TAPE WITH ALL UTILITIES.
3. WITHIN R/W AND PAVEMENT AREAS, COMPACTION SHALL NOT BE LESS THAN 90% MAX. DENSITY AT OPTIMUM MOISTURE CONTENT PER AASHTO T-99, USING 5.5 LB. RAMMER AND 305mm[12"] DROP. FIELD DENSITY SHALL BE DETERMINED PER AASHTO T-191 STANDARD METHOD OF TEST FOR DENSITY OF SOIL IN PLACE BY THE SAND CONE METHOD.

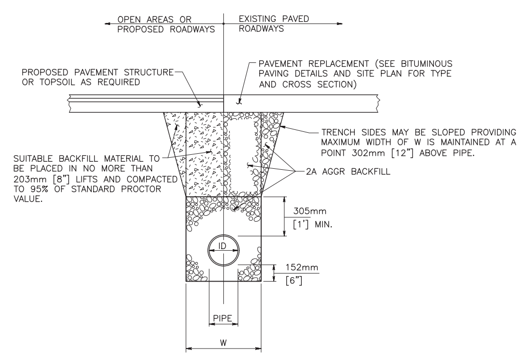
3 UTILITY TRENCH DETAIL

NO SCALE



2 CAST IRON DOWNSPOUT BOOT

NO SCALE



4 TYPICAL TRENCH DETAIL FOR STORM PIPE UNDER OPEN AREAS AND ROADWAYS

NO SCALE

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Central File:

Project Number: 962-0043
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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL DETAILS

DRAWING NO.: C503

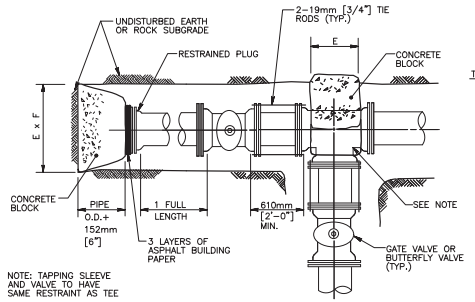
TABLE OF REACTION BACKING DIMENSIONS

DESIGN PRESSURE	PIPE DIAMETER	A	B	C	D	E	F	G	H			I			J			K	L	M
									45	22½	11¼	45	22½	11¼	45	22½	11¼			
150 PSI	407mm [16"]	1295mm [4'–3"]	1880mm [6'–2"]	1067mm [3'–6"]	610mm [2'–0"]	305mm [1'–0"]	1219mm [4'–0"]	1016mm [3'–4"]	1295mm [4'–3"]	661mm [2'–2"]	356mm [1'–2"]	1677mm [5'–6"]	762mm [2'–6"]	254mm [0'–10"]	3810mm [12'–6"]	1981mm [6'–6"]	991mm [3'–3"]	508mm [1'–8"]	813mm [2'–8"]	508mm [1'–8"]
	305mm [12"]	1067mm [3'–6"]	1524mm [5'–0"]	813mm [2'–8"]	381mm [1'–3"]	305mm [1'–0"]	914mm [3'–0"]	914mm [3'–0"]	813mm [2'–8"]	406mm [1'–4"]	305mm [1'–0"]	1067mm [3'–6"]	508mm [1'–8"]	229mm [0'–9"]	2667mm [8'–9"]	1372mm [4'–6"]	686mm [2'–3"]	457mm [1'–6"]	762mm [2'–6"]	457mm [1'–6"]
	203mm [8"]	762mm [2'–6"]	1067mm [3'–6"]	610mm [2'–0"]	305mm [1'–0"]	305mm [1'–0"]	610mm [2'–0"]	813mm [2'–8"]	457mm [1'–6"]	305mm [1'–0"]	305mm [1'–0"]	559mm [1'–10"]	153mm [0'–6"]	102mm [0'–4"]	1524mm [5'–0"]	762mm [2'–6"]	610mm [2'–0"]	407mm [1'–4"]	712mm [2'–4"]	407mm [1'–4"]
	152mm [6"]	610mm [2'–0"]	813mm [2'–8"]	457mm [1'–6"]	305mm [1'–0"]	305mm [1'–0"]	457mm [1'–6"]	762mm [2'–6"]	305mm [1'–0"]	305mm [1'–0"]	305mm [1'–0"]	305mm [1'–0"]	102mm [0'–4"]	102mm [0'–4"]	914mm [3'–0"]	610mm [2'–0"]	610mm [2'–0"]	381mm [1'–3"]	686mm [2'–3"]	381mm [1'–3"]
200 PSI	407mm [16"]	1829mm [6'–0"]	2591mm [8'–6"]	1448mm [4'–9"]	762mm [2'–6"]	381mm [1'–3"]	1219mm [4'–0"]	1016mm [3'–4"]	1677mm [5'–6"]	914mm [3'–0"]	457mm [1'–6"]	2134mm [7'–0"]	1067mm [3'–6"]	457mm [1'–6"]	1067mm [3'–6"]	2134mm [7'–0"]	1067mm [3'–6"]	508mm [1'–8"]	914mm [3'–0"]	762mm [2'–6"]
	305mm [12"]	1448mm [4'–9"]	1981mm [6'–6"]	1067mm [3'–6"]	610mm [2'–0"]	305mm [1'–0"]	914mm [3'–0"]	914mm [3'–0"]	1067mm [3'–6"]	610mm [2'–0"]	305mm [1'–0"]	1677mm [5'–6"]	610mm [2'–0"]	305mm [1'–0"]	534mm [1'–9"]	1829mm [6'–0"]	914mm [3'–0"]	457mm [1'–6"]	762mm [2'–6"]	457mm [1'–6"]
	203mm [8"]	1067mm [3'–6"]	1448mm [4'–9"]	762mm [2'–6"]	457mm [1'–6"]	305mm [1'–0"]	610mm [2'–0"]	813mm [2'–8"]	610mm [2'–0"]	381mm [1'–3"]	305mm [1'–0"]	1219mm [4'–0"]	534mm [1'–9"]	229mm [0'–9"]	2439mm [8'–0"]	1219mm [4'–0"]	762mm [2'–6"]	407mm [1'–4"]	610mm [2'–0"]	381mm [1'–3"]
	152mm [6"]	838mm [2'–9"]	1143mm [3'–9"]	686mm [2'–3"]	305mm [1'–0"]	305mm [1'–0"]	457mm [1'–6"]	762mm [2'–6"]	381mm [1'–3"]	305mm [1'–0"]	305mm [1'–0"]	914mm [3'–0"]	381mm [1'–3"]	229mm [0'–9"]	1981mm [6'–6"]	991mm [3'–3"]	762mm [2'–6"]	381mm [1'–3"]	457mm [1'–6"]	305mm [1'–0"]
250 PSI	407mm [16"]	2363mm [7'–9"]	3277mm [10'–9"]	1829mm [6'–0"]	914mm [3'–0"]	457mm [1'–6"]	1219mm [4'–0"]	1016mm [3'–4"]	4191mm [13'–9"]	2286mm [7'–6"]	1143mm [3'–9"]	2134mm [7'–0"]	1067mm [3'–6"]	381mm [1'–3"]	2134mm [7'–0"]	1067mm [3'–6"]	610mm [2'–0"]	508mm [1'–8"]	914mm [3'–0"]	1067mm [3'–6"]
	305mm [12"]	1829mm [6'–0"]	2515mm [8'–3"]	1372mm [4'–6"]	762mm [2'–6"]	381mm [1'–3"]	914mm [3'–0"]	914mm [3'–0"]	3582mm [11'–9"]	1905mm [6'–3"]	991mm [3'–3"]	1829mm [6'–0"]	914mm [3'–0"]	305mm [1'–0"]	1372mm [4'–6"]	762mm [2'–6"]	381mm [1'–3"]	457mm [1'–6"]	762mm [2'–6"]	762mm [2'–6"]
	203mm [8"]	1295mm [4'–3"]	1829mm [6'–0"]	991mm [3'–3"]	533mm [1'–9"]	305mm [1'–0"]	610mm [2'–0"]	813mm [2'–8"]	2439mm [8'–0"]	1295mm [4'–3"]	656mm [2'–3"]	1067mm [3'–6"]	610mm [2'–0"]	229mm [0'–9"]	762mm [2'–6"]	457mm [1'–6"]	305mm [1'–0"]	407mm [1'–4"]	610mm [2'–0"]	610mm [2'–0"]
	152mm [6"]	991mm [3'–3"]	1372mm [4'–6"]	762mm [2'–6"]	381mm [1'–3"]	305mm [1'–0"]	457mm [1'–6"]	762mm [2'–6"]	1981mm [6'–6"]	1067mm [3'–6"]	610mm [2'–0"]	914mm [3'–0"]	457mm [1'–6"]	153mm [0'–6"]	457mm [1'–6"]	305mm [1'–0"]	305mm [1'–0"]	381mm [1'–3"]	457mm [1'–6"]	305mm [1'–0"]

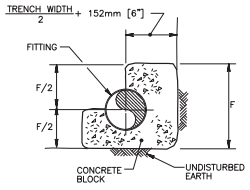
NOTES:

1. REACTION BACKING DIMENSIONS HAVE BEEN CALCULATED USING A SOIL BEARING CAPACITY OF 2000 POUNDS PER SQUARE FOOT AND A TEST PRESSURES AS INDICATED.
2. ALL FITTINGS SHALL BE MECHANICAL JOINT AND SHALL HAVE WEDGE ACTION FOLLOWER GLANDS INSTALLED TO MANUFACTURERS SPECIFICATIONS, EXCEPT IN RESTRAINED JOINT AREAS.

   ALL CONCRETE SHALL BE HIGH EARLY STRENGTH.



PLUG AND TEE



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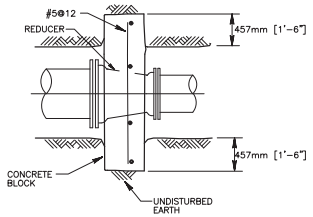
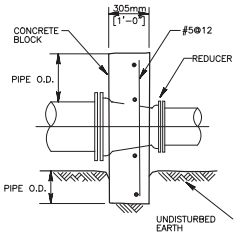
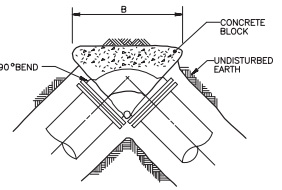


PLAN

REDUCER



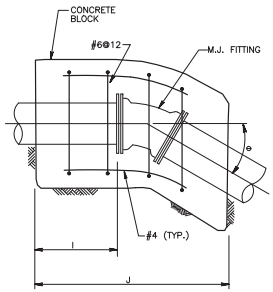
ELEVATION



90° BEND

HORIZONTAL REACTION BACKINGS

NO SCALE



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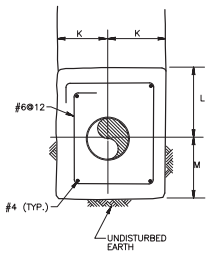

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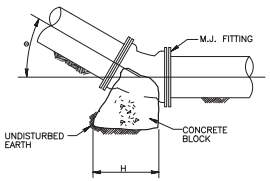

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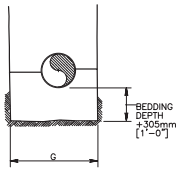

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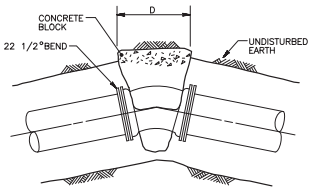
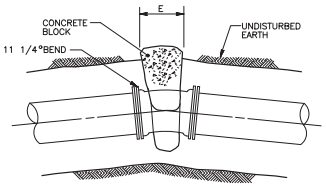
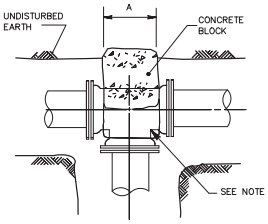


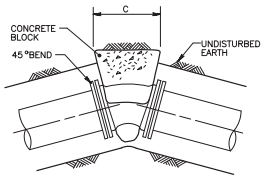
22 1/2°BEND



11 1/4°BEND



TEE AND TAPPING SLEEVE



45° BEND

① VERTICAL REACTION BACKINGS

NO SCALE

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL DETAILS

DRAWING NO.: **C504**

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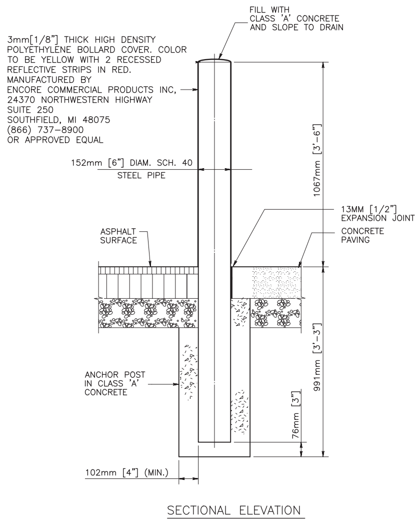
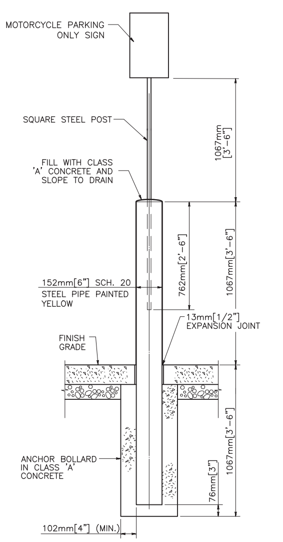


SECTIONAL ELEVATION

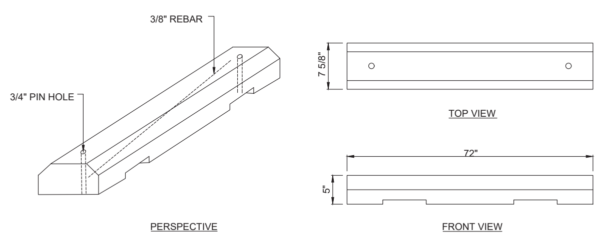
10 PERMANENT BOLLARD

NO SCALE



1 MOTORCYCLE PARKING SIGN ON PERMANENT BOLLARD

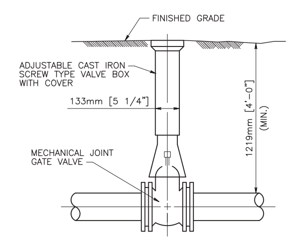
NO SCALE



NOTE: ANCHOR WHEEL STOP TO ROADWAY SURFACE WITH 2 - #6 BARS 12" LONG MIN.

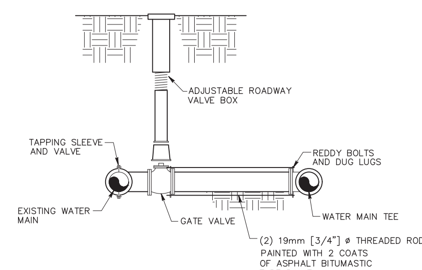
2 CONCRETE WHEEL STOP

NO SCALE



3 VALVE BOX DETAIL

NO SCALE



4 TYPICAL CONNECTION TO EXISTING WATER LINE

NO SCALE

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Project Number: 962-0043
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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER:		
SHYQ149104		
DESIGNED: CNB	MODELED: DBM	CHECKED: CNB
DATE: JANUARY 2026		
DRAWING TITLE: CIVIL DETAILS		
DRAWING NO.: C505		

NOTES:

1. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

2. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.

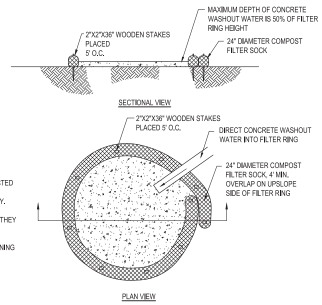
3. 18" FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

MAINTENANCE

ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.

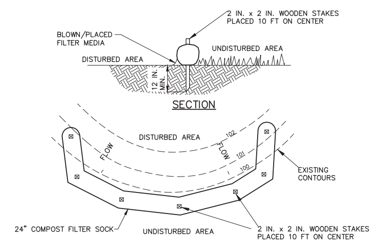
ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.

PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.



COMPOST SOCK WASHOUT DETAIL

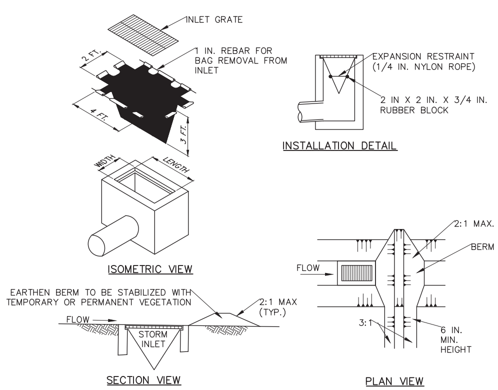
NOT TO SCALE



NOTES:
SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL.
COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

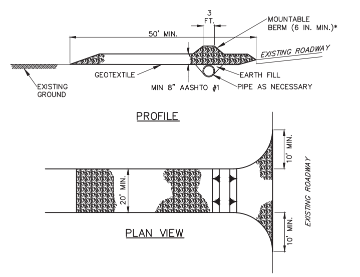
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET (IPM)

NOT TO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

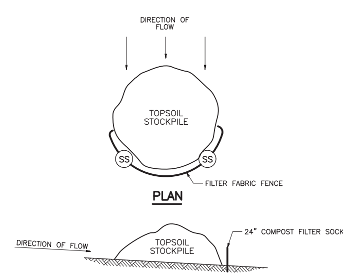
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



NOTES

STOCKPILE SLOPES MUST BE 2:1 OR FLATTER AND MUST NOT EXCEED 35 FEET IN HEIGHT.

STOCKPILES TO BE STABILIZED IMMEDIATELY PER SCHEDULE OF SEEDING, MULCHING AND SOIL SUPPLEMENTS.

TOPSOIL STOCKPILE DETAIL

NOT TO SCALE

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
COREY NOEL BRAY
ENGINEER
PE096819

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
CNB	DBM	CNB

DATE: JANUARY 2026

DRAWING TITLE: CIVIL EROSION AND SEDIMENTATION CONTROL DETAILS

DRAWING NO.: C506

Local File: C:\USERS\CBRAY\DC\ACCDOCS\GANNETT FLEMING INC\076046-PAANG_EC_130J_SIMULATOR\PROJECT FILES\SHEETS\FAC\SITE\076046_C_506.DWG
Central File: _
Project Number: 962-0043
3/18/2024 2:24 PM

PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS, SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS -- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
34. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM 8-INCH LAYERED LIFTS AT 98% DENSITY.

TEMPORARY CONTROLS

TEMPORARY CONTROL MEASURES AND FACILITIES FOR USE DURING EARTHMOVING

THE TEMPORARY CONTROL MEASURES AND FACILITIES PROPOSED FOR THIS PROJECT INCLUDE FILTER SOCKS, TEMPORARY SEEDING, INLET PROTECTION, ROCK FILTERS, AND ROCK CONSTRUCTION ENTRANCE. FOR LOCATIONS AND DIMENSIONS OF THESE TEMPORARY CONTROL MEASURES, SEE THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS.

102.4(b)(5)(x) "A MAINTENANCE PROGRAM WHICH PROVIDES FOR INSPECTION OF BMPS ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RAINFALL EVENT, INCLUDING THE REPAIR OF THE BMPS TO ENSURE EFFECTIVE AND EFFICIENT OPERATION."

UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL MEASURES AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY.

THE CONTRACTOR SHALL MAINTAIN THE PENNSYLVANIA STATE UNIVERSITY - EROSION AND SEDIMENT CONTROL INSPECTION LOG SHEET TO DOCUMENT EACH INSPECTION AND ALL BMP REPAIR, OR REPLACEMENT AND MAINTENANCE ACTIVITIES. THE LOG SHEET SHALL BE MADE AVAILABLE TO ANY REGULATORY AGENCY OFFICIAL AT THE TIME OF INSPECTION OR THEIR REQUEST.

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL THE TEMPORARY EROSION AND SEDIMENT MEASURES TO BE IMPLEMENTED AS PART OF CONSTRUCTION AS FOLLOWS, BUT NOT LIMITED TO:

STABILIZATION:

1. ALL DISTURBED AREAS MUST BE STABILIZED IMMEDIATELY UPON THE COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY.
2. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
3. DIVERSION CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE STABILIZED IMMEDIATELY.
4. UNTIL THE SITE HAS ACHIEVED FINAL STABILIZATION THE OWNER AND/OR CONTRACTOR SHALL PROPERLY IMPLEMENT, OPERATE AND MAINTAIN ALL THE BEST MANAGEMENT PRACTICES. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGARDING, RESEEDING, REMULCHING, AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
5. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATED COVER OR OTHER PERMANENT NON-VEGETATED COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

COMPOST FILTER SOCK:

1. SILT SOCK MUST BE INSTALLED AT EXISTING LEVEL GRADE. BOTH ENDS OF EACH SOCK SECTION MUST EXTEND AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS SILT SOCKS.
3. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF (1/2) THE ABOVE GROUND HEIGHT OF THE SOCK, OR ONE-THIRD (1/3) THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK BERM.
4. THE SOCK MUST BE INSPECTED WEEKLY AND AFTER EVERY PRECIPITATION EVENT.
5. ANY SOCK SECTION WHICH HAS BEEN TORN OR DAMAGED MUST BE REPLACED OR REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE SILT SOCKS SHALL BE REPLACED AFTER 6 MONTHS. PHOTODEGRADABLE SILT SOCKS SHALL BE REPLACED AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. THE MANUFACTURER'S RECOMMENDATIONS WILL BE ADHERED TO FOR REPLACEMENT OF THE SILT SOCK DUE TO WEATHERING.

ROCK CONSTRUCTION ENTRANCE:

1. THE STRUCTURE'S THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK WILL BE MAINTAINED ON THE SITE OR BE READILY ACCESSIBLE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF PUBLIC ROADWAYS WITH WATER IS NOT PERMITTED.

TEMPORARY SEEDING

PLANTING AND SEEDING DATES EXTEND FROM MARCH 15 TO OCTOBER 15. INTERIM STABILIZATION WILL BE ACHIEVED BY MULCHING. TEMPORARY SEED MIXTURE IS AS FOLLOWS:

MIX (SPECIES)	% MIX BY WEIGHT	MIN. % PURITY	MIN. % GERMINATION	MAX. % WEED SEED	SEEDING RATE LBS. / 1000 SY
ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	100	98	90	0.15	10.00

AFTER SEEDING, APPLY STRAW MULCH AT A RATE OF 3 TONS PER ACRE TO ALL TEMPORARILY SEEDED AREAS.

PERMANENT SEEDING

PLANTING AND SEEDING DATES EXTEND FROM APRIL 1 TO JUNE 15 AND AUGUST 16 TO SEPTEMBER 15. INTERIM STABILIZATION WILL BE ACHIEVED BY MULCHING. THE OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETED.

TOPSOIL

ALL DISTURBED AREAS TO BE PERMANENTLY REVEGETATED, MUST HAVE TOPSOIL REPLACED TO A MINIMUM DEPTH OF 6" TO PROMOTE STORMWATER INFILTRATION AND PERMANENT VEGETATIVE STABILIZATION. TOPSOIL WILL BE IMPORTED ONSITE.

SEED

1. ALL SEEDS, AS SPECIFIED WILL CONFORM TO THE PENNSYLVANIA SEED ACT OF 1965, AS AMENDED, AND REGULATIONS OF THE PENNSYLVANIA DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY.
2. THE PERCENTAGE OF PURE SEED PRESENT WILL REPRESENT THE FREEDOM OF SUCH AGRICULTURAL SEEDS FROM INERT MATTER AND FROM OTHER SEEDS DISTINGUISHABLE BY THEIR APPEARANCE. THE PERCENTAGE OF GERMINATION SHOWN WILL BE ACTUAL SPROUTS AND WILL NOT INCLUDE HARD SEEDS, UNLESS SPECIFICALLY PERMITTED. ALL SEEDS PROPOSED UNDER THIS ITEM WILL BE SUBJECT TO ANALYSIS TEST BY THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, AND WILL MEET THESE SPECIFICATIONS. NO SEED WILL BE ACCEPTED WITH A TEST DATE OF MORE THAN SIX MONTHS PRIOR TO THE DATE OF SOWING AND WILL BE OF THE MOST RECENT CROP.
3. ALL SEEDS WILL BE FURNISHED TO THE PROJECT SITE IN MIX PREPARED BY THE SEED PROCESSOR. THE MIX WILL HAVE A CERTIFICATION TAG THAT WILL BE PRESENTED TO THE LANDSCAPE ARCHITECT. SEED MIXTURE WILL BE AS FOLLOWS:

TABLE 32 92 00-1 FORMULA B
(SEED MIX #1 – MAINTAINED AREAS)

FORMULA AND SPECIES	PERCENT BY WEIGHT	MINIMUM PERCENT		MAX. PERCENT WEED SEED	SEEDING RATE (LBS. PER 1000 SY)
		PURITY	GERMINATION		
PERENNIAL RYEGRASS MIXTURE (LOLIUM PERENNE). A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL RYEGRASS COMPONENT.	20	98	90	0.15	4.0
CREEPING RED FESCUE OR CHEWINGS FESCUE	30	98	85	0.15	6.0
KENTUCKY BLUEGRASS MIXTURE (POA PRATENSIS). A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 25% OF THE TOTAL BLUEGRASS COMPONENT.	50	98	80	.20	11.0
					21.0 TOTAL

PERMANENT SEEDING (CONTINUED)

TABLE 02925-5 PERLITE GRADATION -

CUMULATIVE PERCENT RETAINED ON SIEVES	STANDARD SIEVE OR MICRON SIZE (GRADE) FINE	MEDIUM	COARSE
+16 MESH OR 1MM	10% MAX.	60% MAX.	70% MIN.
+100 MESH OR 150UM	60% MIN.	85% MIN.	--

A. FERTILIZER SHALL BE APPLIED IN ACCORDANCE WITH THE SOIL TEST. IN ABSENCE OF SOIL TEST, FERTILIZER SHALL BE APPLIED AS FOLLOWS:
   10-20-20 ANALYSIS COMMERCIAL FERTILIZER @ 140 LBS./1000 S.Y. AND 38-0-0 UREA FORM FERTILIZER @ 50 LBS./1000 S.Y.
(or) 32-0-0 TO 38-0-0 SULFUR COATED UREA FERTILIZER @ 59-50 LBS./1000 S.Y. (OR) 31-0-0 IBOU FERTILIZER @ 61 LBS./1000 S.Y.
B. SPECIFICATION ITEMS OBTAINED USING PENNDOT PUBLICATION NO. 408.
C. INSPECT SEEDED AREAS AFTER EACH RAINFALL EVENT. ERODED AREAS ARE TO HAVE THE TOPSOIL REPLACED, SEED RESOWN, AND MULCH REAPPLIED AND ANCHORED.
* BLUEGRASS MIX: A COMBINATION OF CERTIFIED VARIETIES EACH AT 25% OR LESS OF MIX.
** MINIMUM 20% HARDSEED AND 50% NORMAL SPROUTS.

MULCHING

A. MULCH WILL BE APPLIED OVER SEEDED AREAS NO LATER THAN 48 HOURS AFTER SEEDING.
B. SPREAD MULCH UNIFORMLY IN A CONTINUOUS BLANKET, AT A MINIMUM RATE OF 1,200 POUNDS PER 1,000 SQUARE YARDS (3 TONS PER ACRE).
C. MULCH MAY BE SPREAD BY HAND OR WITH AN ACCEPTABLE MECHANICAL BLOWER. MACHINES WHICH CUT MULCH INTO SHORT PIECES WILL NOT BE PERMITTED.
D. MULCH TO BE ANCHORED BY USE OF NETTING OR A NONASPHALTIC EMULSION MULCH BINDER IMMEDIATELY FOLLOWING MULCH SPREADING. IF A NONASPHALTIC EMULSION MULCH BINDER IS USED, THE NUMBER OF PASSES OVER THE MULCH AS NEEDED TO SECURE IT FIRMLY SHALL NOT EXCEED THREE PASSES WITH MAXIMUM APPLIED BINDER NOT EXCEEDING TEN GALLONS PER 1,000 SQUARE FEET. ASPHALT EMULSION BINDERS ARE NOT ACCEPTABLE.

MAINTENANCE/CONTRACTOR'S RESPONSIBILITIES

A. CONTRACTOR SHALL IMPLEMENT THE EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH THE DRAWINGS.
B. ALL FACILITIES WILL BE INSPECTED AND REPAIRED, IF NECESSARY, AFTER EACH STORM EVENT OR AT A PERIOD NOT TO EXCEED ONE WEEK. SEDIMENT COLLECTED FROM THE EROSION CONTROL STRUCTURES WILL BE PLACED UPSTREAM OF THOSE CONTROLS AND STABILIZED WITH GRAVEL OR RESEEDING.
C. AT NO TIME WILL SEDIMENT BE ALLOWED TO LEAVE THE SITE AND ENTER COMMONWEALTH WATERS.
D. ANY PERMANENTLY SEEDED AREAS THAT BECOME ERODED WILL HAVE THE TOPSOIL REPLACED, THE EROSION CONTROL MATTING REPLACED (IF APPLICABLE), AND THE GRASS RESOWN AND MULCH REAPPLIED.
E. A COPY OF THIS PLAN MUST BE KEPT AVAILABLE FOR INSPECTION ON THE CONSTRUCTION SITE AT ALL TIMES THROUGHOUT THE TERM OF THE PROJECT.
F. THE INTENT OF THIS PLAN/NARRATIVE IS TO INDICATE GENERAL MEANS OF COMPLIANCE WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF CHAPTER 102, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (AS AUTHORIZED UNDER THE CLEAN STREAMS LAW). IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT THESE METHODS, PLUS ADDITIONAL METHODS, AS MAY BE NECESSARY BECAUSE OF CONDITIONS CREATED BY LOCALIZED SITE CONDITIONS AND/OR CONSTRUCTION PROCEDURES IN ORDER TO ASSURE COMPLIANCE WITH APPLICABLE LAW. IT WILL FURTHER THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL FACILITIES SO THAT THEY PERFORM AS REQUIRED BY APPLICABLE LAW.
G. FINES AND RELATED COSTS RESULTING FROM THE CONTRACTOR'S FAILURE TO PROVIDE ADEQUATE PROTECTION AGAINST SOIL EROSION AND FOR ANY VIOLATIONS OF THE CLEAN STREAMS LAW AND THE RULES AND REGULATIONS PROMULGATED THEREUNDER SHALL BE BORNE BY THE CONTRACTOR.

MAINTENANCE/OWNER'S RESPONSIBILITIES

MAINTENANCE OF ALL PERMANENT STORMWATER AND EROSION AND SEDIMENT CONTROL FACILITIES BECOMES THE RESPONSIBILITY OF THE OWNER IN PERPETUITY UPON COMPLETION OF CONSTRUCTION AND ACCEPTANCE BY OWNER, SUBJECT TO THE TERMS OF THE WARRANTY PERIOD SPECIFIED IN THE CONTRACT DOCUMENTS.

102.4(B)(5)(XI) "PROCEDURES WHICH ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH DEPARTMENT REGULATIONS."

A SEPARATE EROSION AND SEDIMENT CONTROL PLAN MUST BE APPROVED FROM DAUPHIN COUNTY CONSERVATION DISTRICT BEFORE ANY SOIL MATERIAL FROM THE SITE IS MOVED INTO ANOTHER LOCATION. THE RECYCLING OF ALL CONSTRUCTION WASTE WHERE FEASIBLE IS REQUIRED. THIS INCLUDES BUT IS NOT LIMITED TO SOIL MATERIAL, BUILDING MATERIAL, CONCRETE WASH WATER, SANITARY WASTES, ETC.

102.5 (L) "PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN"

THE *CONTRACTOR* SHALL PREPARE AND IMPLEMENT A PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLAN WHEN STORING, USING OR TRANSPORTING MATERIAL INCLUDING: FUELS, CHEMICALS, SOLVENTS, PESTICIDES, FERTILIZERS, LIME, PETROCHEMICALS, WASTEWATER, WASH WATER, CORE DRILLING WASTEWATER, CEMENT, SANITARY WASTES, SOLID WASTES, OR HAZARDOUS MATERIAL ONTO, ON OR FROM THE SITE. THE PPC PLAN SHALL BE AVAILABLE UPON REQUEST BY DAUPHIN COUNTY OR REGULATORY AGENCIES.

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT (E&S) PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE COUNTY CONSERVATION DISTRICT) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE DISTRICT MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
3. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BEST MANAGEMENT PRACTICES (BMPS) SPECIFIED BY THE CONSTRUCTION SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
4. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
5. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BMPS TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE COUNTY CONSERVATION DISTRICT AND/OR THE SOUTH-CENTRAL REGIONAL OFFICE OF DEP.
6. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS. DISCHARGE POINTS SHOULD BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.
7. UNTIL THE SITE IS STABILIZED, ALL E&S BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL E&S BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
8. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
9. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
10. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
11. ALL EXCAVATION FOR UTILITY LINE INSTALLATION SHALL BE LIMITED TO THE AMOUNT THAT CAN BE EXCAVATED, INSTALLED, BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY. ALL EXCAVATED MATERIAL SHALL BE DEPOSITED ON THE UPSLOPE SIDE OF THE TRENCH.
12. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
13. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
14. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

MATERIAL NOTES

1. ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE CHAPTER 260, §§260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
2. BUILDING MATERIALS AND WASTE CONSIST OF CONCRETE, BRICK, WOOD, METAL, GYPSUM BOARD, ASPHALT, PLASTIC, GLASS, INSULATION MATERIALS, CARDBOARD, TREES, STUMPS, EARTH, AND ROCK.
3. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY A COUNTY CONSERVATION DISTRICT OR DEP FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
5. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
6. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
7. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
8. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

PROTECTION OF INFILTRATION BMP'S NOTES

1. COMPACTION OF THE BMP AREA SHALL BE AVOIDED AND MINIMIZED DURING CONSTRUCTION.
2. E&S BMPS SHALL BE INSTALLED AND MAINTAINED DURING AND AFTER CONSTRUCTION OF THE INFILTRATION BMP'S TO PREVENT SEDIMENT FROM CLOGGING OR FILLING THE PCSM BMP OR STORAGE FACILITY.
3. TO THE MAXIMUM EXTENT PRACTICABLE, PCSM BMPS SHOULD BE CONSTRUCTED AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED ON ALL CONTRIBUTING DRAINAGE AREAS.

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER:		
SHYQ149104		
DESIGNED: CNB	MODELED: DBM	CHECKED: CNB
DATE: JANUARY 2026		
DRAWING TITLE: CIVIL EROSION AND SEDIMENTATION CONTROL NOTES		
DRAWING NO.: C801		

RECYCLING / DISPOSAL OF MATERIALS NOTES

1. BUILDING MATERIALS AND OTHER CONSTRUCTION SITE WASTES MUST BE PROPERLY MANAGED AND DISPOSED OF TO REDUCE POTENTIAL FOR POLLUTION TO SURFACE AND GROUND WATERS AS PER 25 PA. CODE § 102.4(B)(5)(XI). PROPER TRASH DISPOSAL, RECYCLING OF MATERIALS, PROPER MATERIALS HANDLING, AND SPILL PREVENTION AND CLEAN-UP REDUCE THE POTENTIAL FOR CONSTRUCTION SITE WASTES TO BE MOBILIZED BY STORMWATER RUNOFF AND CONVEYED TO SURFACE WATERS.
2. UNDER NO CIRCUMSTANCES MAY EROSION CONTROL BMPS BE USED FOR TEMPORARY STORAGE OF DEMOLITION MATERIALS OR CONSTRUCTION WASTES
3. WHEREVER HEAVY EQUIPMENT WILL BE USED DURING CONSTRUCTION OF THE CUTS AND FILLS OR PROPOSED BUILDINGS, A POLLUTION PREVENTION AND CONTINGENCY (PPC) PLAN MUST BE AVAILABLE ON SITE. THIS PLAN DOES NOT HAVE TO BE INCLUDED IN THE PERMIT APPLICATION PACKAGE SUBMITTED FOR AN NPDES CONSTRUCTION PERMIT IN PENNSYLVANIA BUT SHOULD BE AVAILABLE ON THE PROJECT SITE. THE APPLICANT MUST PREPARE AND IMPLEMENT A PPC PLAN WHEN STORING, USING OR TRANSPORTING MATERIALS INCLUDING: FUELS, CHEMICALS, SOLVENTS, PESTICIDES, FERTILIZERS, LIME, PETROCHEMICALS, WASTEWATER, WASH WATER, CORE DRILLING WASTEWATER, CEMENT, SANITARY WASTES, SOLID WASTES, OR HAZARDOUS MATERIALS ONTO, ON, OR FROM THE PROJECT SITE DURING EARTH DISTURBANCE ACTIVITIES. THE PPC PLAN MUST BE AVAILABLE UPON REQUEST BY THE DEPARTMENT OR CONSERVATION DISTRICT.
4. SOIL - SOIL DEEMED UNACCEPTABLE FOR REUSE ON-SITE OR EXPORT AS CLEAN FILL SHALL BE TRANSPORTED TO AN APPROPRIATE DISPOSAL FACILITY PURSUANCE TO APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
5. DUST CONTROL - CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE AT THE STABILIZED CONSTRUCTION ENTRANCE. THE PURPOSE IS TO TRAP DUST AND MUD THAT WOULD OTHERWISE BE CARRIED OFF-SITE BY CONSTRUCTION TRAFFIC. WATER TRUCKS WILL BE USED AS NEEDED DURING CONSTRUCTION TO REDUCE DUST GENERATED ON THE SITE. DUST CONTROL MUST BE PROVIDED BY THE CONTRACTOR TO A DEGREE THAT IS ACCEPTABLE TO THE LOCAL CONSERVATION DISTRICT. AFTER CONSTRUCTION, THE SITE WILL BE STABILIZED, WHICH WILL REDUCE THE POTENTIAL FOR DUST GENERATION.
6. SOLID WASTE DISPOSAL - NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORMWATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. THE CONTAINERS WILL BE EMPTIED AS NECESSARY BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE.
7. SANITARY FACILITIES - ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS. TEMPORARY SANITARY FACILITIES WILL BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THEY MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND WILL BE SERVICED BY A LICENSED COMMERCIAL OPERATOR.
8. WATER SOURCE - NON-STORMWATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER. WATER USED FOR CONSTRUCTION WHICH DISCHARGES FROM THE SITE MUST ORIGINATE FROM A PUBLIC WATER SUPPLY OR PRIVATE WELL APPROVED BY THE STATE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE.
9. CONCRETE WASTE FROM CONCRETE READY-MIX TRUCKS - DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN SPECIFICALLY DESIGNATED DIKED AREAS PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER AND STORMWATER THAT WILL BE DISCHARGED FROM THE SITE.

CONSTRUCTION SEQUENCE NOTES

IN GENERAL:

1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING), THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM (POST-CONSTRUCTION STORMWATER MANAGEMENT) PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
2. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE COUNTY CONSERVATION DISTRICT OR BY DEP PRIOR TO IMPLEMENTATION.
4. THE LIMITS OF DISTURBANCE (LOD), STREAMS AND WETLANDS SHOULD BE MARKED PRIOR TO DISTURBANCE ACTIVITIES (I.E. SURVEY STAKES, POSTS & ROPE, CONSTRUCTION FENCE, ETC.).
5. PER NEW NPDES REQUIREMENTS, "UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT."
6. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY E&S BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT PCSM MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS MUST BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS SHOULD BE DONE ONLY DURING THE GERMINATING SEASON. COUNTY CONSERVATION DISTRICT SHOULD BE CONTACTED PRIOR TO CONVERSION OR REMOVAL OF PRIMARY E&S BMPS AND MAY REQUIRE A SITE INSPECTION.
7. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
8. PER NEW NPDES REQUIREMENTS, "WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS. COMPLETION CERTIFICATES ARE NEEDED TO ENSURE THAT ALL WORK IS PREFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT AND THE APPROVED E&S AND PCSM PLANS."

SEQUENCE OF CONSTRUCTION:

1. FIELD-MARK LIMITS OF DISTURBANCE AND ANY ENVIRONMENTALLY SENSITIVE AREAs.
2. INSTALL THE ROCK CONSTRUCTION ENTRANCE AS SHOWN ON PLANS.
3. INSTALL FILTER BAG INLET PROTECTION AT EXISTING INLETS WITHIN THE PROJECT AREA AND THE COMPOST FILTER SOCKS AS SHOWN ON PLANS.
4. STRIP TOPSOIL FROM DIVERSION SWALANY LAWN AREAS AND STOCKPILE WHERE SHOWN ON THE PLAN.
5. REROUTE THE STORM AND ELECTRIC UTILITIES AROUND THE PROPOSED SIMULATOR BUILDING AREA. ABANDON OR REMOVE EXISTING UTILITY PIPING AND STRUCTURES.
6. REMOVE ASPHALT PAVING AND EXCAVATE FOR BUILDING.
7. CONSTRUCT PROPOSED SIMULATOR BUILDING.
8. PERFORM ROUGH GRADING BEYOND BUILDING AND INSTALL NEW UTILITIES. INSTALL INLET PROTECTION AT INSTALLED INLETS.
9. INSTALL NEW PAVEMENT AND CONCRETE PADS AND SIDEWALKS.
10. PERFORM FINAL GRADING AROUND SITE.
11. STABILIZE ALL DISTURBED PERVIOUS AREAS WITH PERMANENT VEGETATION.
12. AFTER FINAL STABILIZATION* REQUIREMENTS HAVE BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. COMPOST FILTER SOCKS MAY REMAIN IN PLACE OR THE MATERIAL FROM THE SOCK OR BERM MAY BE EITHER SPREAD OUT ON THE PROPERTY.

*FINAL STABILIZATION - AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION.

STABILIZATION NOTES

1. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
2. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES, OR 6 TO 12 INCHES ON COMPACTED SOILS, PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
3. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEEDS 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.
4. STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE. STRAW MULCH SHOULD BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
5. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.
6. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS ACCORDING TO THE STANDARDS OF THIS PLAN.
7. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
8. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
9. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE COUNTY CONSERVATION DISTRICT OR DEP.

MULCHING NOTES

1. MULCHING SHALL BE PROVIDED AS REQUIRED IN AREAS DIFFICULT TO VEGETATE, AND DURING OFF-SEASON OPERATIONS. MULCHING METHODS AND MATERIALS SHALL CONFORM TO THE FOLLOWING:
   a. MULCH MATERIALS SHALL BE UNROTTED SALT HAY, HAY OR SMALL GRAIN STRAW APPLIED AT THE RATE OF 3 TONS PER ACRE. MULCH BLOWER SHALL NOT GRIND OR CHOP THE MATERIAL. WOODCHIPS, FREE OF INSECTS AND DISEASE ARE PERMITTED AT A RATE OF 4-6 TONS PER ACRE.
   b. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% TO 95% OF THE SOIL SURFACE WILL BE COVERED.
   c. MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE SLOPE.
      - PEG AND TWINE – DRIVE 8" TO 10" PEGS TO WITHIN 2" TO 3" OF THE SOIL SURFACE EVERY 4' IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE THE MULCH TO THE SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISSCROSS OR SQUARE PATTERN, AND SECURE THE TWIN AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
      - MULCH NETTING – STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE DEGRADABLE NETTING IN AREAS TO BE MOWED.
      - MULCH MATERIALS AND BINDERS SHALL BE ROLLED IN PLACE BY TRACKED VEHICLE OR OTHER SUITABLE EQUIPMENT.
      - INSTALL ANCHOR MATERIAL RATE AT 750 LB/ACRE.
   d. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH. IN VALLEYS AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
   e. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 LBS PER ACRE, OR PER MANUFACTURER RECOMMENDATION, MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
   f. OTHER: WHERE EXCESSIVE SOIL EROSION, TRACKING OR FLOWING OF SEDIMENT IS EVIDENT OR ANTICIPATED, A MINIMUM OF 4" OF CRUSHED STONE SHALL BE PLACED WITHIN THE AFFECTED AREA AND MAINTAINED UNTIL PERMANENT STABILIZATION IS PROVIDED. ADDITIONAL STONE SHALL BE PLACED AS REQUIRED UNTIL STABILIZATION IS ACHIEVED. CRUSHED STONE SHALL CONFORM TO AASTO DESIGNATION M43. SIZE NO. 2 (2-1/2" TO 1-1/2").

LOCATION OF SURFACE WATER AND THEIR CLASSIFICATION

THE PROJECT SITE DRAINS TO THE UNNAMED TRIBUTARY (UNT) TO THE SUSQUEHANNA RIVER, WHICH IS CLASSIFIED BY CHAPTER 93 WATER QUALITY STANDARDS AS A WARM WATER FISHES (WWF) WATER COURSE.

GEOLOGIC FORMATIONS/SOIL CONDITIONS TO CAUSE POLLUTION

THERE ARE NO ANTICIPATED GEOLOGIC FORMATIONS OR SOIL CONDITIONS THAT WOULD CAUSE POLLUTION. A MAP OF THE SOILS ARE SHOWN ON THE PLAN SHEETS.

POTENTIAL THERMAL IMPACTS TO SURFACE WATERS

THERE ARE NO ANTICIPATED POTENTIAL THERMAL IMPACTS TO SURFACE WATERS. STORMWATER RUNOFF WILL BE DIRECTED TO EITHER EXISTING FACILITIES LOCATED ON SITE, OR THE PROPOSED ABOVEGROUND STORMWATER MANAGEMENT FACILITY. THE ABOVEGROUND FACILITY WILL MANAGE THE REQUIRED RATES AND VOLUME OF RUNOFF FROM THE PROPOSED IMPROVEMENTS.

EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN

EROSION AND SEDIMENT CONTROL MEASURES WILL BE PROVIDED IN ACCORDANCE WITH THE PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL. EROSION AND SEDIMENT CONTROL DRAWINGS DELINATE THE ANTICIPATED AREA OF WORK USING A LIMIT OF DISTURBANCE LINE. THIS BOUNDARY INCLUDES ALL PROJECT WORK AREAS WHICH WILL BE USED DURING CONSTRUCTION FOR SITE ACCESS, STAGING, AND CONSTRUCTION. REFER TO THE CONSTRUCTION SEQUENCE FOR A TIMELINE OF INSTALLATION.

STANDARD GRADING NOTES

1. AREAS TO BE FILLED SHOULD BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
2. AREAS WHICH ARE TO BE TOPSOILED SHOULD BE SCARIFIED TO A DEPTH OF 3 TO 5 INCHES, OR 6 TO 12 INCHES ON COMPACTED SOILS, PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHOULD HAVE A MINIMUM 6 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHOULD HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
3. ALL EARTHEN FILLS SHOULD BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, ROADWAYS, STRUCTURES AND CONDUITS, ETC. SHOULD BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
4. ALL EARTHEN FILLS SHOULD BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
5. FILL MATERIALS SHOULD BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
6. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHOULD NOT BE INCORPORATED INTO FILLS.
7. FILL SHOULD NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
8. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHOULD BE HANDLED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS FOR SUBSURFACE DRAINS OR OTHER APPROVED METHOD.
9. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.
10. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHOULD BE SHOWN ON THE PLAN MAPS AND SHOULD BE SUBJECT TO THE PROVISIONS OF THESE STANDARDS AS WELL AS THOSE OF THE APPROVED E&S PLAN. ALL APPROPRIATE PERMITS/AUTHORIZATION SHOULD BE OBTAINED PRIOR TO EARTH DISTURBANCE ACTIVITIES WITHIN THESE AREAS
11. WHEREVER POSSIBLE, FILLS SHOULD NOT BE CONSTRUCTED FROM OR BUILT UPON SOILS KNOWN TO HAVE LOW SHEAR STRENGTH OR THAT HAVE BEEN IDENTIFIED AS "LANDSLIDE PRONE" UNLESS IT CAN BE SHOWN THAT IT CAN BE DONE WITH AN ACCEPTABLE SAFETY FACTOR.
12. WHEREVER FILLS ARE TO BE CONSTRUCTED OUT OF OR ONTO SOILS IDENTIFIED AS HAVING LOW SHEAR STRENGTH OR ARE "LANDSLIDE PRONE," A REPORT SHOULD BE PREPARED BY A PROFESSIONAL GEOTECHNICAL ENGINEER OR PROFESSIONAL GEOLOGIST WHICH ADDRESSES THE FOLLOWING:
    a. THE CHARACTER OF THE BEDROCK AND ANY ADVERSE GEOLOGIC CONDITION IN THE AREA OF THE FILLS INCLUDING PREVIOUS SLOPE FAILURES.
    b. A SURVEY OF ALL SPRINGS, SEEPS, AND GROUNDWATER FLOW OBSERVED OR ANTICIPATED DURING WET PERIODS IN THE AREAS OF THE FILLS.
    c. THE MAXIMUM STEEPNESS OF SLOPE AND HEIGHT OF FILL TO BE CONSTRUCTED ON THE SITE.
    d. A STABILITY ANALYSIS INCLUDING, BUT NOT LIMITED TO, STRENGTH PARAMETERS, PORE PRESSURES, AND LONG-TERM SEEPAGE CONDITIONS. THESE DATA SHOULD BE ACCOMPANIED BY A DESCRIPTION OF ALL ENGINEERING DESIGN ASSUMPTIONS AND CALCULATIONS AS WELL AS THE ALTERNATIVES CONSIDERED IN SELECTING THE DESIGN SPECIFICATIONS AND TESTING METHODS.
    e. THE ESTIMATED FACTOR OF SAFETY USED TO DESIGN THE SLOPES. AT A MINIMUM, THE LONG-TERM SAFETY FACTOR SHOULD BE 1.5 FOR CUTS OR FILLS WITHIN 50 FEET OF PUBLIC HIGHWAYS, RAILROADS, SURFACE WATERS, OR WHERE FAILURE COULD ENDANGER PUBLIC SAFETY. THE SAFETY FACTOR SHOULD BE A MINIMUM OF 1.25 FOR ALL OTHER FILLS.

SEEDING NOTES

TEMPORARY SEEDING

THESE NOTES APPLY TO GRADED OR CLEARED AREAS THAT ARE LIKELY TO BE RE-DISTURBED OR WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED OR WHERE THERE WILL BE A CESSATION OF WORK GREATER THAN (4) DAYS.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING, OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. PERFORM ALL CULTIVATIONS AT RIGHT ANGLES TO THE SLOPE.

SOIL AMENDMENTS: APPLY 1 TON OF AGRICULTURAL GRADE LIMESTONE PER ACRE, PLUS FERTILIZER AT THE RATE OF 50-50-50 PER ACRE. WORK WELL INTO THE SOIL.

SEEDING: 90% PURE LIVE SEED (PLS)
ANNUAL RYEGRASS (ANYTIME) - 40 LBS PER ACRE (1 LB PER 1,000 SQ. FT.) (OR)
SPRING OATS (SPRING MONTHS) - 96 LBS PER ACRE (2 LBS PER 1,000 SQ. FT.) (OR)
WINTER RYE (FALL MONTHS) - 168 LBS PER ACRE (4 LBS PER 1,000 SQ. FT.)

LIME:
1 TON PER ACRE GROUND AGRICULTURAL LIMESTONE (46 LBS PER 1,000 SQ. FT.)

FERTILIZER:
1,000 LBS PER ACRE 10-10-10 (23 LBS PER 1,000 SQ. FT.)

PERMANENT SEEDING

SEEDING OF THE DISTURBED AREAS SHALL TAKE PLACE IMMEDIATELY UPON THE COMPLETION OF FINAL GRADING ACTIVITIES. THESE NOTES APPLY TO GRADED OR CLEARED AREAS, NOT SUBJECT TO IMMEDIATE OR FUTHER DISTURBANCE, WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING, OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. PERFORM ALL OPERATIONS AT RIGHT ANGLES TO THE THE SLOPE.

TOP SOIL REPLACEMENT: 4 TO 6 INCHES ON AREAS TO BE VEGETATED. A MINIMUM OF 2 INCHES ON STEEP SLOPES (3:1 OR GREATER).

SOIL AMENDMENTS: IT IS RECOMMENDED THAT SITE SPECIFIC SOIL TESTING BE PERFORMED. IN LIEU OF SOIL TEST RECOMMENDATIONS, USE THE FOLLOWING SCHEDULE: APPLY 4-6 TONS PER ACRE OF LIME (275 LBS/1,000 SF) AND 600 LBS PER ACRE 10-20-20 FERTILIZER (15 LBS/1,000 SF) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (91 LBS/1,000 SF).

SEEDING:
ATTACH AND USE SOIL TEST RESULTS AND RECOMMENDATIONS (PREFERRED) BEFORE PERMANENTLY SEEDING (OR) USE THE RECOMMENDATIONS BELOW. MULCHING IS REQUIRED FOR ALL APPLICATIONS. SOIL TESTS ARE AVAILABLE FROM PENN STATE COOPERATIVE EXTENSION. SPRING (MARCH APRIL, AND EARLY MAY) IS THE BEST TIME FOR PERMANENT SEEDING BUT DISTURBED AREAS CAN BE SEEDED ANYTIME FROM EARLY SPRING TO FALL. GRASSES GENERALLY REQUIRE AT LEAST 4 TO 6 WEEKS OF GROWTH PRIOR TO HARD FROSTS AND LEGUME SEEDINGS NEED 10 TO 12 WEEKS PRIOR TO HARD FROSTS IN THE FALL (PSU)

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

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CIVIL
EROSION AND SEDIMENTATION CONTROL NOTES

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SEEDING NOTES (CONTINUED)

APPLY THE FOLLOWING:

1) AT LEAST 6" OF TOPSOIL AND RAKE

2) SUGGESTED PERMANENT SEED MIXTURES FOR LAWN AND MOWED AREAS (PSU)

-OPEN, SUNNY LOCATIONS AND WELL-DRAINED SOILS
FINE FESCUES....................................100% AT 4-5 LB PER 1,000 SQ. FT.

-MODERATE-TO-PARTIAL SHADE
FINE FESCUES....................................40-50%
KENTUCKY BLUEGRASS....................40-50% AT 4 LB PER 1,000 SQ. FT.
PERENNIAL RYEGRASS.....................10-20%

FINE FESCUES....................................100% AT 4-5 LB PER 1,000 SQ. FT.

TURF-TYPE TALL FESCUE.................100% AT 6-8 LB PER 1,000 SQ. FT.

-HEAVY SHADE, WELL-DRAINED SOILS
FINE FESCUES....................................100% AT 4-5 LB PER 1,000 SQ. FT.

-HEAVY SHADE, POORLY-DRAINED SOILS
ROUGH BLUEGRASS............................100% AT 2-3 LB PER 1,000 SQ. FT
(POA TRIVIALIS)

-SLOPES OR UNMOWED AREAS
TALL FESCUE.....................................75%
BIRDSFOOT TREFOIL.......................25%

ALL SEED MIXTURES GIVEN ABOVE ARE FOR 100% PURE LIVE SEED (PLS). TO CALCULATE PLS, THE PERCENTAGE OF PURE SEED IS MULTIPLIED BY THE PERCENTAGE OF GERMINATION, AND THE PRODUCT IS DIVIDED BY 100. FOR EXAMPLE, TAKE 85% PURE SEED X 72% GERMINATION THEN DIVIDE BY 100 TO GET 61% PLS. TO DETERMINE HOW MUCH SEED TO PLANT, DIVIDE THE PERCENTAGE INTO 100. FOR EXAMPLE 100 DIVIDED BY 61 = 1.63. 1.63 LBS OF SEED WILL NEED TO BE PLANTED FOR EVERY POUND CALLED FOR ABOVE.

3) ADD A NURSE CROP TO THE PERMANENT GRASS MIXTURE FOR RAPID STABILIZATION AND SHADE FOR ESTABLISHMENT OF PERMANENT GRASSES.
- ANNUAL RYEGRASS 5 LBS PER ACRE (0.12 LBS PER 1,000 SQ. FT.)
- SPRING OATS 64 LBS PER ACRE (1.5 LBS PER 1,000 SQ. FT.)
- WINTER RYE 56 LBS PER ACRE (1.3 LBS PER 1,000 SQ. FT.)

TYPES, DEPTH, SLOPE, LOCATION AND LIMITATIONS OF SOILS

CONTRACTOR SHALL CONSULT WITH GEOTECHNICAL ENGINEER TO DETERMINE SOIL LIMITATIONS AND RESOLUTIONS SPECIFIC TO THIS PROJECT.

1. SOIL TYPES POORLY SUITED AS SOURCES OF TOPSOIL RESTRICT OR PLACE CONDITIONS ON PLANNING VEGETATIVE STABILIZATION. ACIDIC, LOW FERTILITY, EXCESSIVE DRYNESS AND EXCESSIVE WETNESS LIMIT PLANT GROWTH.
   RESOLUTIONS: IDENTIFYING AND RESOLVING CHARACTERISTICS, THAT RENDER THE SOIL TYPES POORLY, SUITED AS TOPSOIL.
2. ACIDIC SOIL TYPES EXHIBITING pH REACTION VALUES LOWER THAN ABOUT 5.5, LIMIT VEGETATIVE STABILIZATION. SOIL TESTS MIGHT BE NECESSARY TO DETERMINE SITE SPECIFIC pH REACTION.
   RESOLUTIONS: APPLYING LIME CONSISTENT WITH RATES DETERMINED BY SOIL TESTING; SELECTING VEGETATIVE SPECIES TOLERANT TO ACIDIC SOIL CONDITIONS; AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS. SPECIFIC TOLERANCE INFORMATION IS PROVIDED IN TABLE 1 OF THE EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLAND PUBLISHED BY PENN STATE.
3. LOW FERTILITY SOIL TYPES LACKING IN SUFFICIENT AMOUNTS OF ESSENTIAL PLANT NUTRIENTS SUCH AS: NITROGEN, PHOSPHOROUS, POTASSIUM, SULFUR, MAGNESIUM, CALCIUM, IRON, MANGANESE, BORON, CHLORINE, ZINC, COPPER AND MOLYBDENUM, LIMIT VEGETATION STABILIZATION. SOIL TESTS MIGHT BE NECESSARY TO DETERMINE SITE SPECIFIC SOIL FERTILITY.
   RESOLUTIONS: INCORPORATING SOIL NUTRIENTS CONSISTENT WITH RATES DETERMINED BY SOIL TESTING; SELECTIVE VEGETATIVE SPECIES TOLERANT TO LOW FERTILITY SOIL CONDITIONS, AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS. SPECIFIC TOLERANCE INFORMATION IS PROVIDED IN TABLE 1 OF THE EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLAND PUBLISHED BY PENN STATE.
4. ERODIBLE SOIL TYPES EXHIBITING K VALUES GREATER THAN 0.36 OR PLASTICITY INDEX VALUES LOWER THAN 10, LIMIT VEGETATIVE STABILIZATION OF CHANNELS.
   RESOLUTIONS: TEMPORARY CHANNEL LINING, PROVIDING PERMANENT CHANNEL LINING, DECREASING CHANNEL GRADE, INCREASING CHANNEL WIDTH, SELECTING VEGETATIVE WITH GREATER RETARDANCE, SELECTING PERMANENT LININGS OTHER THAN GRASSES, AND IMPLEMENTING COMBINATION OF THESE AND/OR METHODS. VEGETATIVE RETARDANCE INFORMATION IS PROVIDED IN TABLES 6 AND 7 OF THE EROSION AND SEDIMENT POLLUTION CONTROL MANUAL PUBLISHED BY PADEP.
5. WET SOIL TYPES HAVE EXCESSIVE ROOT ZONE AND SOIL MOISTURES. SOME SOIL SURVEYS INDICATE WETNESS, HIGH WATER TABLE AND FLOODING. THIS INDICATOR IS AFFECTED BY SOIL DISTURBANCE.
   RESOLUTIONS: SELECTING VEGETATIVE SPECIES TOLERANT TO WET CONDITIONS, TILING VEGETATIVE AREAS, AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS. SPECIFIC TOLERANCE INFORMATION IS PROVIDED IN TABLE 1 OF THE EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLAND PUBLISHED BY THE PENN STATE.
6. DRY SOIL TYPES LACK SUFFICIENT ROOT ZONE SOIL MOISTURES. THIS INDICATOR IS AFFECTED BY SOIL DISTURBANCE.
   RESOLUTIONS: SELECTING VEGETATIVE SPECIES TOLERANT TO DRY CONDITIONS, IRRIGATING VEGETATED AREAS AND IMPLEMENTING COMBINATION OF THESE AND/OR OTHER METHODS. SPECIFIC TOLERANCE INFORMATION IS PROVIDED IN TABLE 1 OF THE EROSION CONTROL & CONSERVATION PLANTINGS ON NONCROPLAND PUBLISHED BY PENN STATE.
7. SOIL TYPES SUSCEPTIBLE TO SINKHOLE AND SOLUTION CHANNEL/CHAMBER FORMATION POSE LIMITATIONS ON LOCATING RESERVOIR AREAS OF SEDIMENT BASINS, SEDIMENT TRAPS, STORMWATER RETENTION BASINS, AND STORMWATER DETENTION BASINS.
   RESOLUTIONS: LOCATING THOSE FACILITIES ON OTHER SOIL TYPES, LINING RESERVOIR AREAS WITH IMPERMEABLE LININGS, LIMITING STANDING WATER DEPTHS, LIMITING RETENTION TIMES AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS.
8. SOIL TYPES THAT EXHIBIT INSTABILITY IN POND EMBANKMENTS OR SUSCEPTIBILITY TO PIPING AND SEEPING POSE LIMITATIONS ON PLANNING EMBANKMENTS OF SEDIMENT BASINS, SEDIMENT TRAPS, STORMWATER RETENTION BASINS AND STORMWATER DETENTION BASINS.
   RESOLUTIONS: IMPORTING OTHER SOIL FOR EMBANKMENT OF THOSE FACILITIES, LOCATING THOSE FACILITIES ON OTHER SOIL TYPES, LIMITING EMBANKMENT SLOPE STEEPNESS AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS.
9. SOIL THAT ARE DIFFICULT TO COMPACT, UNSUITABLE FOR WINTER GRADING, OR SUSCEPTIBLE TO FROST ACTION POSE LIMITATIONS ON PLANNING EMBANKMENTS OF SEDIMENT BASINS, SEDIMENT TRAPS, STORMWATER RETENTION BASINS AND STORMWATER DETENTION BASINS.
   RESOLUTIONS: IMPORTING OTHER SOIL FOR EMBANKMENT OF THOSE FACILITIES, LOCATING THOSE FACILITIES ON OTHER SOIL TYPES, NOT CONSTRUCTING EMBANKMENTS DURING PERIODS PRONE TO FROST AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS.
10. SUSCEPTIBILITY FOR THE DEVELOPMENT OF SINKHOLE WITHIN IDENTIFIED SOILS.
   RESOLUTIONS: IN THE EVENT THAT PRESENCE OF A SINKHOLE IS DETECTED DURING THE COURSE OF WORK, CORRECTIVE MEASURES SHALL BE PERFORMED UNDER THE OBSERVATION AND GUIDANCE OF THE OWNER'S GEOTECHNICAL CONSULTANT. EXCAVATE THE LOOSE, WET SOILS SURROUNDING THE SINKHOLE TO EXPOSE THE SINKHOLE "THROAT" (THE OPENING IN THE ROCK) AND THE ADJACENT STABLE SOILS/ROCK WHERE POSSIBLE, THE EXCAVATION SHALL EXTEND A MINIMUM OF TWO FEET (2') BEYOND THE STABLE SOILS OR TO THE ROCK SURFACE, WHICHEVER IS ENCOUNTERED FIRST. FILL THE EXPOSED SINKHOLE "THROAT" WITH LEAN CONCRETE TO BLOCK THE MIGRATION OF THE UPPER LAYERS OF SOIL THROUGH THE ROCK OPENING. AFTER CONCRETE HAS CURED OVERNIGHT BACKFILL THE REMAINDER OF THE EXCAVATION WITH CLAYEY SOILS TO PROVIDE A LOW PERMEABILITY BARRIER. THE CLAYEY SOILS SHALL BE PLACED IN 8" LIFTS AND EACH LIFT COMPACTED BY REPEATED PASSES OF THE COMPACTION EQUIPMENT UNTIL STABLE. CARE SHALL BE TAKEN TO ASSURE THAT THE SOIL AT THE EDGES OF THE EXCAVATION ARE WELL COMPACTED.

MAINTENANCE PROGRAM

1. THE FOLLOWING MAINTENANCE PROGRAM HAS BEEN DEVELOPED TO PROVIDE FOR THE INSPECTION OF BMPs ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RUNOFF EVENT, AND TO INCLUDE THE REPAIR OF THE BMPs TO ENSURE THEIR EFFECTIVE AND EFFICIENT OPERATION:
2. UNTIL THE SITE IS STABILIZED AND DURING CONSTRUCTION ACTIVITIES, ALL BMPs MUST BE MAINTAINED PROPERLY BY THE CONTRACTOR. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY AND IN ACCORDANCE WITH THESE PROCEDURES, PLANS AND DETAILS. ANY AREAS DISTURBED DURING MAINTENANCE MUST BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE GENERAL CONSERVATION NOTES AND SPECIFICATIONS. ALL SITE INSPECTIONS MUST BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE INDICATING THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG MUST BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.
   - FOR ALL AREAS THAT REFERENCE MANAGEMENT OF SEDIMENT: THE SEDIMENT SHALL BE DISPOSED ON-SITE AND/OR IN ACCORDANCE WITH THE SOIL MANAGEMENT PLAN AND APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

BMP	INSPECTION	OPERATIONS & MAINTENANCE
COMPOST FILTER SOCK	WEEKLY AND AFTER EACH RAINFALL EVENT	ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK. DAMAGED SOCK SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATION OR REPLACED WITHIN 24 HOURS OF INSPECTION.
PUMPED WATER FILTER BAG	DAILY	IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED. REPLACE WITH A NEW FILTER BAG.
ROCK CONSTRUCTION ENTRANCE	DAILY	ALL SEDIMENT DEPOSITED ON PAVED ROADWAY SHALL BE RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. MAINTAIN ENTRANCE THICKNESS TO SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE .
EROSION CONTROL BLANKET	WEEKLY AND AFTER EACH RAINFALL EVENT	IF WASHOUTS OCCUR, EVALUATE IF CONCENTRATED FLOW IS LIKELY TO HAPPEN AGAIN. IF SO, RE-SEED AND STABILIZE WITH AN APPROPRIATE ROLLED EROSION CONTROL PRODUCT. IF CONCENTRATED FLOW IS NOT LIKELY TO HAPPEN AGAIN, RE-SEED AND APPLY MULCH. RE-APPLY SEED TO THE BARE AREAS AS NEEDED TO ESTABLISH 70% STABILIZATION. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS
INLET FILTER BAG	WEEKLY AND AFTER EACH RAINFALL EVENT	FILTER BAGS SHOULD BE CLEANED AND/OR REPLACED WHEN THE BAG IS HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE BYPASSING OF INLET. IF DAMAGED, REPLACE WITH SPECIFIED FILTER BAG
ROCK APRONS	WEEKLY	ROCK APRON DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. INSPECT FOR SIGNS OF EROSION, SCOUR, AND SEDIMENT ACCUMULATION. WHENEVER CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION, SEDIMENT DEPOSITION SHALL BE REMOVED. DAMAGED LINING SHALL BE REPAIRED AND REPLACED. ADD/REPLACE ROCK AS NEEDED.
CONCRETE WASHOUT	DAILY	ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING.

TRENCH EXCAVATION NOTES

1. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING, BEFORE PIPE PLACEMENT AND/OR BACKFILLING OCCURS. WATER REMOVED FROM TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF AL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

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DRAWING TITLE: CIVIL EROSION AND SEDIMENTATION CONTROL NOTES

DRAWING NO.: C803

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A. GENERAL

1. THE STRUCTURE IS DESIGNED TO ACT AS A STRUCTURAL UNIT UPON COMPLETION. DESIGN AND PROVIDE NECESSARY BRACING, TEMPORARY SUPPORTS, AND SHORING TO RESIST ALL FORCES TO WHICH THE STRUCTURE MAY BE SUBJECTED DURING CONSTRUCTION, INCLUDING LATERAL LOADS, EQUIPMENT, AND OPERATION OF THE SAME.
2. WORK SHALL BE COORDINATED WITH THE VARIOUS TRADES TO AVOID CONFLICT OF INTERFERENCE WITH REINFORCING STEEL OR STRUCTURAL STEEL MEMBERS.
3. THE LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE IDENTIFIED IN THE FIELD BEFORE CONSTRUCTION COMMENCES.
4. REPRODUCTION OF STRUCTURAL CONTRACT DRAWINGS FOR USE AS SHOP DRAWINGS IS STRICTLY PROHIBITED. SHOP DRAWINGS WHICH ARE PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED WITHOUT REVIEW.
5. VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO STARTING WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
6. CONTRACTOR SHALL EXERCISE EXTREME CARE DURING THE CONSTRUCTION OF NEW STRUCTURE TO AVOID DAMAGE TO EXISTING STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL MEANS AND METHODS REQUIRED FOR FACILITATING CONSTRUCTION OF THE WORK AND FOR ENSURING THE SAFETY, STABILITY AND INTEGRITY OF ADJACENT STRUCTURES AND FACILITIES.
7. DETAILS, SECTIONS AND NOTES SHOWN ON THESE DRAWINGS ARE INTENDED TO BE TYPICAL, AND SHALL APPLY TO SIMILAR CONDITIONS ELSEWHERE UNLESS NOTED OTHERWISE.

B. DESIGN CRITERIA

1. BUILDING CODE: UFC 3-301-01, ASCE 7-16 INCLUDING SUPPLEMENT 1
2. RISK CATEGORY ____ II
3. DESIGN LOADS
   - A. FLOOR LOADS
     - a. LOBBIES ____ 100 PSF
     - b. OFFICE+PARTITIONS ____ 100 PSF
     - c. CORRIDORS ____ 100 PSF
     - d. LIGHT STORAGE ____ 125 PSF
     - e. HEAVY STORAGE ____ 150 PSF
     - f. MECHANICAL ROOM ____ 150 PSF
     - g. STAIRS ____ 100 PSF
     - h. CATWALKS FOR MAINTENANCE AND ACCESS ____ 40 PSF
   - B. ROOF LIVE LOAD ____ 20 PSF/2000 LB POINT LOAD
   - C. SNOW LOAD
     - a. GROUND SNOW LOAD ____ 25 PSF
     - b. EXPOSURE CATEGORY ____ C
     - c. SNOW EXPOSURE FACTOR (C_e) ____ 1.0
     - d. THERMAL FACTOR (C_t) ____ 1.1
     - e. IMPORTANCE FACTOR (I_s) ____ 1.0
     - f. ROOF SLOPE FACTOR (C_s) ____ 1.0
     - g. FLAT ROOF SNOW LOAD ____ 20.0 PSF
     - h. DRIFT AND SLIDING SNOW ____ SEE DIAGRAMS
   - D. WIND DESIGN DATA
   - E. BASIC WIND SPEED (V_{ULT}) ____ 115 MPH
     (V_{ASD}) ____ 90 MPH
     - a. EXPOSURE CATEGORY ____ C
     - b. INTERNAL PRESSURE COEFFICIENT (GC_{pi}) ____ +/- 0.18
   - F. SEISMIC DESIGN DATA
     - a. IMPORTANCE FACTOR (I_E) ____ 1.0
     - b. MAPPED SPECTRAL RESPONSE (S_S) ____ 0.138g
     - c. MAPPED SPECTRAL RESPONSE (S_1) ____ 0.043g
     - d. SPECTRAL RESPONSE (S_{DS}) ____ 0.12g
     - e. SPECTRAL RESPONSE (S_{D1}) ____ 0.043g
     - f. SITE CLASS ____ C
     - g. SEISMIC DESIGN CATEGORY ____ A
     - h. SEISMIC SYSTEM:
       STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE (SIMULATOR ENCLOSURE)
       ORDINARY REINFORCED MASONRY SHEAR WALLS (OFFICE BUILDING)
       ORDINARY REINFORCED CONCRETE SHEAR WALLS (OFFICE BUILDING)
     - i. DESIGN BASE SHEAR ____ .5 K (SIMULATOR ENCLOSURE)
       .25 K (OFFICE BUILDING)
     - j. SEISMIC RESPONSE COEFFICIENT ____ 0.12
     - k. RESPONSE MODIFICATION FACTOR ____ 3 (SIMULATOR ENCLOSURE)
       2 (OFFICE BUILDING)
     - l. DEFECTION AMPLIFICATION FACTOR ____ 3
       2
     - m. ANALYSIS PROCEDURE:
       EQUIVALENT LATERAL FORCE PROCEDURE
4. DESIGN DEAD LOADS
   - A. SELF WEIGHT OF MATERIALS
   - B. COLLATERAL LOAD ____ 5 PSF

C. CONCRETE

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS (PSI), TYPE OF CONCRETE, MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO), TOTAL AIR, SLUMP AND CONCRETE USE:

STRENGTH	TYPE	W/C	AIR	SLUMP	USE
4,000 PSI	NORMAL	0.45	---	4"-6"	SLAB ON GRADE, FOOTINGS
4,000 PSI	NORMAL	0.45	4.5"-6.5"%	4"-6"	FOUNDATION WALLS
4,000 PSI	LIGHTWEIGHT	0.45	NONE	4"-6"	CONCRETE ON METAL DECK

2. REINFORCEMENT BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60, DEFORMED.
3. WELDED REINFORCEMENT BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A706, GRADE 60, DEFORMED.
4. WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A185.
5. CONCRETE DESIGN IS IN CONFORMANCE WITH "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-19)
6. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS ETC. IN ACCORDANCE WITH "ACI DETAILING MANUAL (MNL-66(20)).
7. UNLESS SHOWN OTHERWISE, BARS AT SPLICES SHALL BE LAPPED IN ACCORDANCE WITH THE TABLE "REINFORCING STEEL LAP SPLICES AND EMBEDMENTS" SHOWN ON THIS SHEET.
8. WELDED WIRE REINFORCING SHALL BE LAPPED AT LEAST ONE FULL PANEL (8 INCHES MINIMUM OVERLAP). TIE PANELS SECURELY. CROSS TIES SHALL BE SEPARATED BY 2 INCHES MINIMUM.
9. DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING STEEL, UNLESS SHOWN OTHERWISE ON DRAWINGS.
10. ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED AROUND ALL FLOOR AND WALL OPENINGS IN ACCORDANCE WITH TYPICAL DETAILS UNLESS NOTED OTHERWISE.
11. CONCRETE COVER FOR REINFORCEMENT BARS SHALL CONFORM TO THE FOLLOWING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
    - A. UNFORMED SURFACES IN CONTACT WITH GROUND ---------- 3 INCHES
    - B. FORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO WEATHER, AND ALL FOUNDATION WALLS ---------- 2 INCHES
    - C. COLUMNS, PIERS ---------- 2 INCHES
    - D. INSULATED CONCRETE FORM WALLS ABOVE GRADE ---------- 1-1/2 INCHES
    - E. EXTERIOR EXPOSURE, TOP OF SLABS ---------- 1-1/2 INCHES
    - F. INTERIOR EXPOSURE, TOP OF SLABS ---------- 1 INCH
12. CHAMFER EXPOSED CONCRETE EDGES 3/4 INCH X 3/4 INCH UNLESS NOTED OTHERWISE.
13. FOR LOCATION OF FLOOR DRAINS, SEE PLUMBING AND ARCHITECTURAL DRAWINGS
14. CONCRETE WORK SHALL BE COORDINATED WITH ALL ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL WORK, AND ALL EQUIPMENT. VERIFY INSTALLATION AND LOCATIONS OF ALL EMBEDDED ITEMS INCLUDING BUT NOT LIMITED TO INSERTS, ANCHOR BOLTS, DOWELS, BLOCKOUTS, SLEEVES, EMBEDDED PIPING, AND EMBEDDED CONDUIT PRIOR TO CONCRETE PLACEMENT.
15. CONCRETE JOINT LOCATIONS NOT SHOWN ON STRUCTURAL DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO START OF WORK. SEE SPECIFICATION 03 30 00 FOR CONCRETE PLACEMENT GUIDELINES.
16. REINFORCEMENT SHALL NOT BE WELDED UNLESS NOTED OTHERWISE.
17. CONCRETE SLABS SHALL BE PLACED SO THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE DRAWINGS.
18. REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS, CORNERS, AND INTERSECTIONS UNLESS OTHERWISE NOTED. REINFORCING STEEL SHALL NOT BE CONTINUOUS THROUGH SLAB ON GRADE CONTROL JOINTS.
19. PROVIDE ANCHORAGE INSERTS IN EXTERIOR CONCRETE FACE OF FOUNDATION WALLS FOR ARCHITECTURAL FACADE. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR TYPE AND SIZE.
20. FOR EXTENTS OF RECESSED SLAB AREAS NOT DETAILED IN THE STRUCTURAL PLANS, SEE ARCHITECTURAL DRAWINGS.
21. MECHANICAL SPLICES SHALL BE PERMITTED SUBJECT TO APPROVAL BY THE ENGINEER. MECHANICAL SPLICES SHALL DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NO WELDED CONNECTIONS ARE PERMITTED.

REINFORCING STEEL LAP SPLICES AND EMBEDMENTS

BAR SIZE	MINIMUM LAP SPLICE LENGTH (INCHES)				MINIMUM EMBEDMENT LENGTH (INCHES)			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
CLEAR COVER	< 2"	≥ 2"	< 2"	≥ 2"	< 2"	≥ 2"	< 2"	≥ 2"
3	14	14	12	12	12	12	12	12
4	19	19	14	14	14	14	12	12
5	27	23	21	18	21	18	16	14
6	38	28	29	21	29	21	22	17
7	61	40	47	31	47	31	36	24
8	76	46	59	35	59	35	45	27
9	93	57	71	44	71	44	55	34
10	112	70	87	54	87	54	67	42
11	133	84	102	65	102	65	79	50

NOTES:
1. TABLE BASED ON ACI 318 WITH $f'_c \geq 4,000$ PSI AND $f_y = 60,000$ PSI.
2. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT.
3. HORIZONTAL WALL REINFORCEMENT IS CONSIDERED A TOP BAR.
4. CLEAR COVER = CONCRETE COVER FOR REINFORCEMENT BARS.
5. MULTIPLY ABOVE VALUES BY 1.5 FOR EPOXY-COATED REINFORCEMENT.

D. FOUNDATIONS

1. FOUNDATIONS SHALL BE HP PILES EXTENDING THROUGH EXISTING SOILS TO REFUSAL. ALLOWABLE CAPACITY OF HP PILES ARE AS FOLLOWS:

PILE SIZE	VERTICAL CAPACITY (KIPS)	UPLIFT CAPACITY (KIPS)	LATERAL CAPACITY (KIPS)
HP10x57	212	13	11

2. ALL FOUNDATIONS NOT SUPPORTED ON PILES OR PILE CAPS HAVE BEEN DESIGNED FOR AN ASSUMED NET ALLOWABLE BEARING CAPACITY OF 1,500 PSF. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER FOR FIELD VERIFICATION OF THE ASSUMED VALUE. SHOULD THE VALUE BE LESS THAN ASSUMED, CONTACT THE PROFESSIONAL IMMEDIATELY.
3. PROVIDE EXCAVATION SUPPORT MEASURES SUFFICIENT TO PROTECT ADJACENT FACILITIES FROM DETRIMENTAL MOVEMENT. DESIGN, INSTALL AND MONITOR SUPPORT MEASURES.
4. PROVIDE SUFFICIENT DEWATERING MEASURES TO ALLOW ALL WORK TO PROCEED IN THE DRY. MAINTAIN GROUNDWATER LEVELS AT LEAST 2 FEET BELOW WORKING SUBGRADE.
5. STRUCTURAL FILL SHOULD BE FREE OF ORGANIC AND DELETERIOUS MATERIAL. ORGANIC CONTENT MAY NOT EXCEED 4%.
6. STRUCTURAL FILL SHALL MEET THE REQUIREMENTS IN GEOTECHNICAL REPORT.
7. BEARING SURFACE UPON WHICH THE FOUNDATIONS ARE TO BE CONSTRUCTED SHALL BE EXAMINED AND APPROVED BY THE PROFESSIONAL GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE FOUNDATION CONCRETE. UNACCEPTABLE MATERIAL SHALL BE REMOVED AND REPLACED (SEE SPECIFICATION FOR ADDITIONAL INFORMATION).
8. FROST DEPTH PER GEOTECHNICAL REPORT IS 36 INCHES BELOW GRADE (MINIMUM)

E. SLAB-ON-GRADE

1. VAPOR BARRIER SHALL BE PLACED DIRECTLY UNDER THE SLAB.
2. A MINIMUM OF 6 INCHES OF COMPACTED PennDOT 2A COARSE AGGREGATE SHALL BE PROVIDED UNDER SLAB.
3. PROOFROLL ALL FLOOR SLAB SUBGRADES IN ACCORDANCE WITH THE SPECIFICATIONS. THE PROFESSIONAL GEOTECHNICAL ENGINEER WILL OBSERVE PROOFROLLING, AND DETERMINE THE SUITABILITY OF THE SUBGRADE MATERIALS. IF DIRECTED BY THE PROFESSIONAL, REMOVE UNSUITABLE MATERIALS AND REPLACE WITH APPROVED MATERIAL BENEATH THE FLOOR SLABS. NOTIFY THE PROFESSIONAL A MINIMUM OF 48 HOURS IN ADVANCE OF PROOFROLLING.
4. ALL STRUCTURAL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8" LOOSE THICKNESS AND WITHIN TWO PERCENT OPTIMUM MOISTURE FOR COMPACTION. THE FILL SHOULD BE COMPACTED TO 100 PERCENT OF MAXIMUM DRY DENSITY WITHIN TWO PERCENT OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE STANDARD COMPACTION TEST (ASTM D698).

F. STRUCTURAL STEEL

1. STRUCTURAL STEEL WIDE FLANGE AND WT MEMBERS SHALL CONFORM TO ASTM A992 GRADE 50.
2. PLATES, BARS, CHANNELS, AND ANGLES SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.
3. HOLLOW STRUCTURAL STEEL RECTANGULAR/SQUARE/ROUND MEMBERS SHALL CONFORM TO ASTM A500, GRADE C.
4. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC 360, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AND AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES". AISC PROVISIONS FOR LOAD FACTORED RESISTANCE DESIGN (LRFD) SHALL BE USED TO DESIGN AND DETAIL ALL CONNECTIONS.
5. SHOP CONNECTIONS SHALL BE MADE WITH HIGH-STRENGTH BOLTS OR BY WELDING. FIELD CONNECTIONS SHALL BE MADE WITH HIGH-STRENGTH BOLTS, EXCEPT WHERE WELDING IS INDICATED ON THE DRAWINGS. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM DESIGNATION A325 BEARING TYPE CONNECTION WITH THREADS INCLUDED IN SHEAR PLANE UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE 3/4" DIAMETER UNLESS NOTED OTHERWISE.
6. BEAM TO BEAM OR BEAM TO COLUMN CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE DESIGNED AS SHEAR CONNECTIONS WITH SUFFICIENT CAPACITY TO RESIST REACTIONS SHOWN ON THE FRAMING PLANS. WHERE NO REACTION IS SHOWN ON PLAN, REFER TO THE BEAM CONNECTION TABLE FOR SHEAR REQUIREMENTS. MINIMUM DEPTH OF THE CONNECTING ELEMENT SHALL BE NO LESS THAN ONE-HALF THE BEAM DEPTH.
7. BRACING CONNECTIONS NOT FULLY DETAILED ON THE DRAWINGS SHALL BE DESIGNED WITH SUFFICIENT CAPACITY TO RESIST THE LOADS INDICATED ON THE FRAMING ELEVATIONS. WHERE NO BRACING MEMBER REACTIONS ARE INDICATED, THE CONNECTIONS SHALL BE DESIGNED FOR THE NET DESIGN AXIAL STRENGTH OF THE BRACING MEMBER.
8. SHEAR CONNECTORS SHALL BE 3/4" DIAMETER HEADED STUDS WITH MINIMUM NOMINAL SHEAR STRENGTH OF 28.7 KIPS PER CONNECTOR AND F_U = 65 ksi. SHEAR CONNECTORS TO BE FIELD APPLIED.
9. ALL WELD SIZES, NOT INDICATED OR THOSE TO BE DESIGNED FOR MEMBER LOADS GIVEN ON THE DRAWINGS, SHALL COMPLY WITH THE LATEST A.W.S. D1.1 BUT IN NO CASE SHALL WELD SIZE BE LESS THAN 3/16 INCH.
10. ALL STEEL ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 55 UNLESS NOTED OTHERWISE.
11. USE NON-SHRINK, NON-METALLIC GROUT UNDER BASE PLATES.
12. NATURAL MILL CAMBER OF BEAMS SHALL BE PLACED UP.
13. THE STRUCTURAL BEAMS ARE NOT DESIGNED FOR USE AS LIFT BEAMS.
14. ADEQUATE TEMPORARY BRACING SHALL BE PROVIDED DURING CONSTRUCTION.
15. MINIMUM THICKNESS OF STRUCTURAL STEEL SHALL BE 1/4 INCH.
16. MILL EACH END OF COLUMN SECTION EXCEPT FREE END OF ROOF SECTION COLUMN.
17. PAINT AS PER SPECIFICATIONS UNLESS NOTED OTHERWISE. ITEMS DESIGNATED IN THE DRAWINGS AND SPECIFICATIONS TO RECEIVE FIREPROOFING DO NOT REQUIRE PAINT OR PRIMER.
18. BEAMS ARE TO BE EQUALLY SPACED BETWEEN COLUMN LINES UNLESS OTHERWISE NOTED.
19. FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY ENGINEER FOR EACH SPECIFIC CASE.

BEAM CONNECTION TABLE - LRFD

BEAM SIZE	MIN # OF BOLTS	LRFD SHEAR REACTION, KIPS
W10	2	25
W12	3	50
W14	3	50
W16	3	50
W18	4	70
W21	5	90
W30	7	133
W36	7	133

G. CONCRETE MASONRY

1. ALL MASONRY MATERIALS FOR CONSTRUCTION SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (TMS 402) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (TMS 602).
2. CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO ASTM C-90 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI UNLESS OTHERWISE NOTED.
3. CONCRETE MASONRY UNITS (CMU) SHALL BE NORMAL WEIGHT (125 PCF).
4. ALL MORTAR SHALL CONFORM TO ASTM C 270 AND TMS 602.
5. ALL MORTAR BELOW GRADE SHALL BE 'TYPE 'M' MORTAR AND SHALL HAVE MINIMUM AVERAGE STRENGTH OF 2,500 PSI AT 28 DAYS
6. ALL MORTAR ABOVE GRADE SHALL BE TYPE 'S' MORTAR AND SHALL HAVE A MINIMUM AVERAGE STRENGTH OF 2,000 PSI AT 28 DAYS.
7. GROUT FILL FOR MASONRY WALLS AND BOND BEAMS SHALL CONFORM TO ASTM C476 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS. FILL SHALL BE PLACED IN 4'-0" MAXIMUM LIFTS.
8. REINFORCING STEEL SHALL BE AS FOLLOWS: DEFORMED BARS: ASTM A615 GRADE 60 UNCOATED, JOINT REINFORCEMENT: ASTM A82 WITH DEFORMED LONGITUDINAL WIRES; HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.
9. VERTICAL WALL REINFORCING SHALL BE LAP SPLICED IN ACCORDANCE WITH SCHEDULE BELOW:
   - #4 BAR SHALL BE LAP SPLICED 24 INCHES
   - #5 BAR SHALL BE LAP SPLICED 30 INCHES
   - #6 BAR SHALL BE LAP SPLICED 36 INCHES

H. POST INSTALLED ANCHORS

1. INSTALL ANCHORS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE APPLICABLE APPROVED ICC-ES LEGACY REPORT.
2. ADHESIVE ANCHORS SHALL NOT BE USED TO RESIST GRAVITY LOADS IN FIRE-RATED CONSTRUCTION.
3. ADHESIVE ANCHORS SHALL NOT BE USED IN TENSION APPLICATIONS.
4. INSTALL EXPANSION ANCHORS ONLY AFTER CONCRETE HAS REACHED ITS MINIMUM SPECIFIED 28 DAYS COMPRESSIVE STRENGTH.

I. METAL ROOF DECKING

1. ROOF DECKING SHALL CONFORM TO THE LATEST SDI "STEEL DECK DESIGN MANUAL" AND ANSI/SDI-RD1.0-10 "STANDARD FOR STEEL ROOF DECK"
2. UNLESS NOTED OTHERWISE. ROOF DECK SHALL BE G60 ZINC COATED (GALVANIZED) 20 GAGE (0.0358 INCH) 1-1/2 INCH DEEP WIDE RIB WITH THE FOLLOWING PROPERTIES:
   - f_y = 50 KSI
   - MIN. I_p = 0.201 IN^4/FT
   - MIN. I_n = 0.222 IN^4/FT
   - MIN. S_p = 0.234 IN^3/FT
   - MIN. S_n = 0.247 IN^3/FT
3. LIGHT GAGE FRAMING MECHANICAL, ELECTRICAL OR OTHER EQUIPMENT SHALL NOT BE SUSPENDED FROM OR ATTACHED TO ANY METAL ROOF DECKING.
4. CONNECTIONS TO STEEL SUPPORTS SHALL BE BY MECHANICAL FASTENERS (#12 SCREWS) IN A 36/7 PATTERN (EVERY FLUTE)
5. ALL DECK SIDELAP CONNECTIONS SHALL BE BY MECHANICAL FASTENERS (#12 SCREWS) @ 4" O.C.
6. THE SPACING OF MECHANICAL FASTENERS REQUIRED FOR SATISFACTORY ATTACHMENT OF DECK TO SUPPORTING MEMBERS SHALL BE AS NOTED ON THE DRAWINGS.
7. STEEL ROOF DECK SHALL BE ORIENTED AS INDICATED ON THE DRAWINGS. DECK SHALL BE PLACED IN A MINIMUM 3-SPAN CONDITION UNLESS NOTED OTHERWISE.

J. METAL COMPOSITE FLOOR DECKING

1. COMPOSITE FLOOR DECKING SHALL CONFORM TO THE LATEST SDI "STEEL DECK DESIGN MANUAL" AND ANSI/SDI-C-2017 STANDARD FOR COMPOSITE STEEL FLOOR DECK".
2. UNLESS NOTED OTHERWISE. COMPOSITE STEEL FLOOR DECK SHALL BE 20 GAGE (0.0358 INCH) 1 1/2 INCH DEEP WIDE RIB WITH THE FOLLOWING PROPERTIES:
   - f_y = 50 KSI
   - MIN. I_p = 0.197 IN^4/FT
   - MIN. I_n = 0.217 IN^4/FT
   - MIN. S_p = 0.224 IN^3/FT
   - MIN. S_n = 0.229 IN^3/FT
3. THE SPACING OF MECHANICAL FASTENERS REQUIRED FOR SATISFACTORY ATTACHMENT OF DECK TO SUPPORTING MEMBERS SHALL BE AS NOTED ON THE DRAWINGS.

K. LIGHT GAUGE TRUSSES

1. LIGHT GAUGE TRUSSES SHALL BE DESIGNED IN CONFORMANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, AMERICAN IRON AND STEEL INSTITUTE STANDARD FOR COLD-FORMED STEEL FRAMING - TRUSS DESIGN, AND THE LIGHT GAUGE ENGINEERS ASSOCIATION FIELD INSTALLATION GUIDE.
2. ALL WELDING SHALL CONFORM TO THE APPLICABLE PROVISIONS OF AWS D1.1 AND D1.3.
3. TRUSS MEMBERS SHALL CONFORM TO ASTM A653 "SHEET STEEL, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY COATED (GALVANIZED) BY THE HOT DIP PROCESS" FOR ALL CHORD AND WEB MEMBERS: FABRICATE COMPONENTS OF STRUCTURAL QUALITY STEEL SHEET PER ASTM A653 WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI. BRACING, BRIDGING AND BLOCKING MEMBERS: FABRICATE COMPONENTS OF COMMERCIAL QUALITY STEEL SHEET PER ASTM A653 WITH A MINIMUM YIELD STRENGTH OF 33,000 PSI.
4. TRUSS DESIGN REQUIREMENTS AND LOADING ARE LISTED IN SPECIFICATIONS AND IN THE DESIGN CRITERIA.
5. PROVIDE COMPONENTS WITH PROTECTIVE ZINC COATING COMPLYING WITH ASTM A653, MINIMUM G60 COATING.
6. CARE SHALL BE TAKEN DURING HANDLING, DELIVERY AND ERECTION. BRACE, BLOCK, OR REINFORCE TRUSSES AS NECESSARY TO MINIMIZE MEMBER AND CONNECTION STRESSES. REFER TO ICSEA "FIELD INSTALLATION GUIDE". DURING CONSTRUCTION, ADEQUATELY DISTRIBUTE ALL LOADS APPLIED TO THE LIGHT GAUGE TRUSS ROOF SYSTEM SO AS NOT TO EXCEED THE CARRYING CAPACITY OF ANY ONE TRUSS OR OTHER COMPONENT.
7. CONSTRUCTION LOADS SHALL NOT BE PLACED ON UNBRACED MEMBERS.

DELEGATED DESIGN

OPEN WEB STEEL JOISTS (AS INDICATED ON PLAN)
LIGHT GAUGE ROOF TRUSSES
TRUSS ATTACHMENT TO ROOF STEEL
COLD FORMED METAL FRAMING
STRUCTURAL STEEL CONNECTIONS
BRIDGE CRANE AND RAIL

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL GARY DAVID GARBACIK ENGINEER NO. 044314-E
1/27/2026
Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

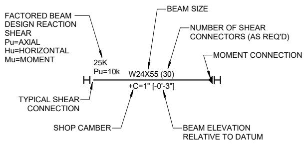
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

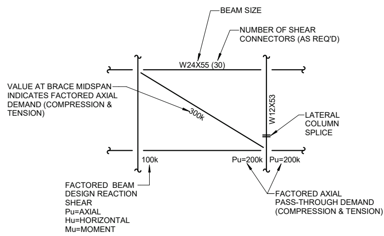
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL GENERAL STRUCTURAL NOTES - 1

DRAWING NO.: **S001**



BEAM LEGEND



NOTES:
1. SEE BEAM CONNECTION TABLE IN GENERAL NOTES FOR SHEAR CAPACITY OF BEAM CONNECTIONS WHERE NOT NOTED ON PLAN

BRACED FRAME LEGEND

ABBREVIATIONS

ADDL	ADDITIONAL
ALT	ALTERNATE
AL	ALUMINUM
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIAL
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
B/B	BACK TO BACK
BETW	BETWEEN
BM	BEAM
BRG	BEARING
BOT	BOTTOM
B/ OR BO	BOTTOM OF
CANT	CANTILEVER
C/C	CENTER TO CENTER
CHKD	CHECKERED
CIR	CIRCULAR
₵, L OR CL	CENTERLINE
CLR	CLEAR
CJ	CONTROL JOINT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTION
COORD	COORDINATE
CMU	CONCRETE MASONRY UNIT
DBA	DEFORMED BAR ANCHOR
DEP	DEPRESSION
DET	DETAIL
DIA	DIAMETER
DN	DOWN
DWGS	DRAWINGS
EA	EACH
EF	EACH FACE
EL OR ELEV	ELEVATION
ELECT	ELECTRICAL
EMBED	EMBEDMENT
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EX OR EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FOOT (FEET)
FTG	FOOTING
GALV	GALVANIZED
H	HIGH
HCA	HEADED CONCRETE ANCHOR
HORIZ	HORIZONTAL
HPT	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
ID	INSIDE DIAMETER
IF	INSIDE FACE
INT	INTERIOR
INV	INVERT
JT	JOINT
K	KIPS
LAND	LANDING
LWC	LIGHT WEIGHT CONCRETE
LG	LONG
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LPT	LOW POINT
MCJ	MASONRY CONTROL JOINT
MRF	MANUFACTURER
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
NWC	NORMAL WEIGHT CONCRETE
NTS	NOT TO SCALE
NO OR #	NUMBER
OD	OUTSIDE DIAMETER
OC	ON CENTER
OH	OPPOSITE HAND
OPP	OPPOSITE
OPNG	OPENING
OF	OUTSIDE FACE
PL	PLATE
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
REINF	REINFORCEMENT
REQD	REQUIRED
SF	SQUARE FOOT (FEET)
SH	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SPA	SPACE
SQ	SQUARE
SS	STAINLESS STEEL
STIFF	STIFFENER
STL	STEEL
SYMM	SYMMETRICAL
T/ OR TO	TOP OF
TOS	TOP OF STEEL OR TOP OF SLAB
THIK	THICK
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WWR	WELDED WIRE REINFORCEMENT
W	WIDE
WF	WIDE FLANGE
W/	WITH
WP	WORK POINT
VERT	VERTICAL
VIF	VERIFY IN FIELD

ROOF WIND PRESSURES (PSF)

EFFECTIVE WIND AREA (FT^2)	ZONE 1			ZONE 2e	ZONE 3r	EFFECTIVE WIND AREA (FT^2)	ZONE 2n	ZONE 2r	ZONE 3e
	P(+)	P(-)	P(+)	P(-)	P(-)		P(-)	P(-)	P(-)
≤ 2	25.6	-63.5	25.6	-63.5	-110.1	≤ 2	-92.6	-92.6	-92.6
20	18.8	-63.5	18.8	-63.5	-110.1	10	-92.6	-92.6	-92.6
50	16.0	-38.6	16.0	-38.6	-73.4	100	-50.9	-50.9	-50.9
≥ 100	16.0	-19.8	16.0	-19.8	-57.6	≥ 250	-34.4	-34.4	-34.4

CHART PRESSURES ARE ULTIMATE PER THE REFERENCED CODE AND MAY BE MULTIPLIED BY 0.6 TO ACHEIVE SERVICE VALUES.

WALL WIND PRESSURES (PSF)

EFFECTIVE WIND AREA (FT^2)	ZONE 4		ZONE 5	
	P(+)	P(-)	P(+)	P(-)
≤ 10	34.4	-37.3	34.4	-46.0
50	30.8	-33.7	30.8	-38.8
200	27.7	-30.6	27.7	-32.6
≥ 500	25.6	-28.5	25.6	-28.5

CHART PRESSURES ARE ULTIMATE PER THE REFERENCED CODE AND MAY BE MULTIPLIED BY 0.6 TO ACHEIVE SERVICE VALUES.

HIGH ROOF COMPONENTS AND CLADDING PRESSURES

ROOF WIND PRESSURES (PSF)

EFFECTIVE WIND AREA (FT^2)	ZONE 1'		ZONE 1		ZONE 2		ZONE 3	
	P(+)	P(-)	P(+)	P(-)	P(+)	P(-)	P(+)	P(-)
≤ 10	21.5	-13.9	21.5	-56.9	21.5	-72.1	21.5	-94.9
100	19.0	-13.9	19.0	-46.5	19.0	-58.7	19.0	-68.1
200	19.0	-13.9	19.0	-43.4	19.0	-54.7	19.0	-60.0
≥ 500	19.0	-13.9	19.0	-39.2	19.0	-49.3	19.0	-49.3

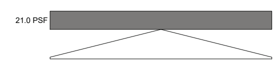
CHART PRESSURES ARE ULTIMATE PER THE REFERENCED CODE AND MAY BE MULTIPLIED BY 0.6 TO ACHEIVE SERVICE VALUES.

WALL WIND PRESSURES (PSF)

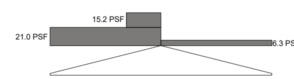
EFFECTIVE WIND AREA (FT^2)	ZONE 4		ZONE 5	
	P(+)	P(-)	P(+)	P(-)
≤ 10	27.4	-29.7	27.4	-36.5
50	24.6	-26.9	24.6	-30.9
200	22.2	-24.4	22.2	-26.1
≥ 500	20.6	-22.8	20.6	-22.8

CHART PRESSURES ARE ULTIMATE PER THE REFERENCED CODE AND MAY BE MULTIPLIED BY 0.6 TO ACHEIVE SERVICE VALUES.

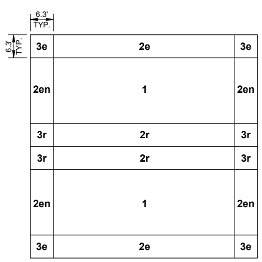
LOW ROOF COMPONENTS AND CLADDING PRESSURES



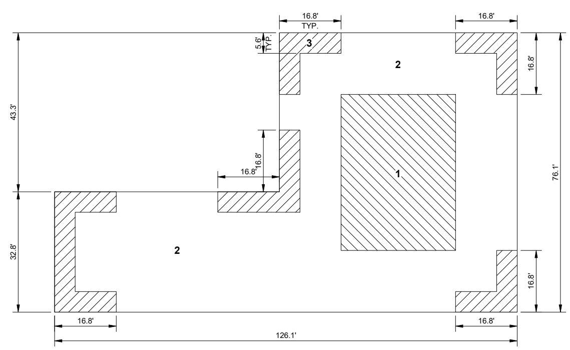
SECTION A-A
HIGH ROOF TRUSS BALANCED SNOW LOADING (TYPICAL)



SECTION A-A
HIGH ROOF TRUSS UNBALANCED SNOW LOADING (TYPICAL/REVERSIBLE)

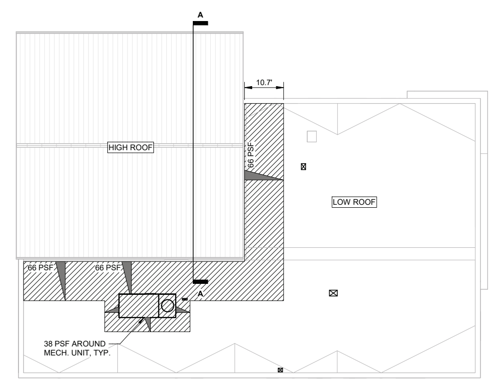


HIGH ROOF PLAN



ADMIN ROOF PLAN

C&C PLANS



SNOW DRIFT PLAN

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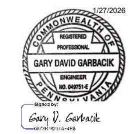


PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

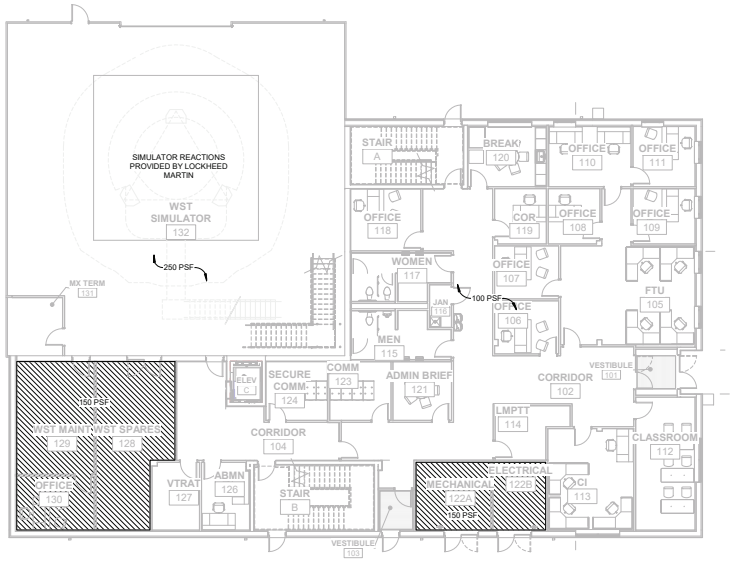
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

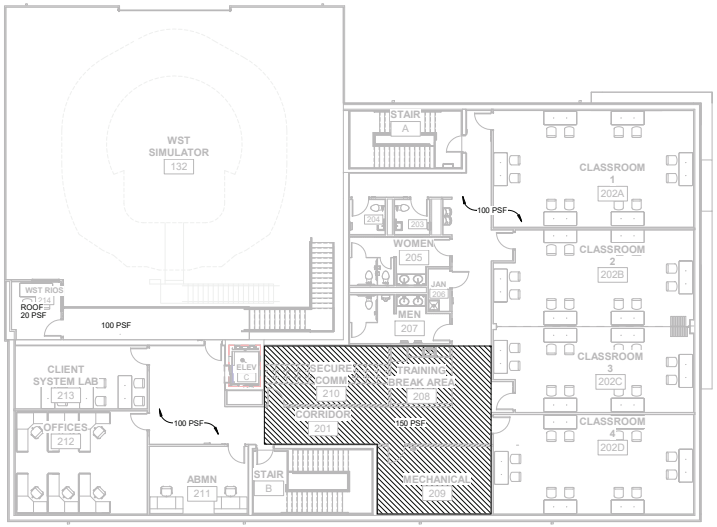
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL GENERAL STRUCTURAL NOTES - 2

DRAWING NO.: S002



1 **GROUND FLOOR LOADING**
SCALE: 3/32" = 1'-0"



2 **SECOND FLOOR LOADING**
SCALE: 3/32" = 1'-0"

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER
12/27/2026

Signed by: Gary D. Garbacik

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

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PROJECT NUMBER: SHYQ149104

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DRAWING TITLE: STRUCTURAL
GENERAL STRUCTURAL NOTES - 3

DRAWING NO.: **S003**

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_S_central_R23.rvt
Central File: BIM360_A_central_R21.rvt
Project Number: SHYQ149104
1/27/2026 3:43:11 PM

IBC SPECIAL INSPECTION/STRUCTURAL OBSERVATIONS NOTES

A. SPECIAL INSPECTION

1. SPECIAL INSPECTION WILL BE IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE SECTION 1704. REFER TO THE TABLES CONTAINED ON THIS SHEET AFOR PROJECT SPECIFIC INSPECTION TYPES AND FREQUENCIES.
2. SPECIAL INSPECTION IS REQUIRED OF MATERIALS, INSTALLATION, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
3. THE OWNER, OR PROFESSIONAL ACTING AS THE OWNER'S AGENT, WILL EMPLOY AN INDEPENDENT TESTING AND INSPECTION AGENCY TO PERFORM THE SPECIAL INSPECTIONS.
4. COORDINATE SCHEDULES WITH AGENCY PERFORMING SPECIAL INSPECTION TO ENSURE AMPLE TIME IS AVAILABLE TO PERFORM REQUIRED TASKS.
5. THE SPECIAL INSPECTOR SHALL PROVIDE REPORTS TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND THE OWNER'S DESIGNATED REPRESENTATIVE AND BUILDING OFFICIAL, IF REQUIRED. THESE REPORTS MUST BE IN COMPLIANCE WITH 2021INTERNATIONAL BUILDING CODE.
6. THE SPECIAL INSPECTOR SHALL IMMEDIATELY NOTIFY THE CONTRACTOR IN WRITING OF NON-CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS, OR OTHER VIOLATIONS OF THE APPLICABLE REFERENCED MATERIAL STANDARDS WITHIN THE SCOPE OF THE SPECIAL INSPECTION REQUIREMENTS.
7. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT AT A TIME AGREED TO PRIOR TO START OF WORK, TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND OWNER'S REPRESENTATIVE STATING WHETHER WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED, REPORTED, AND FOUND TO BE IN COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS, AND THE APPLICABLE REFERENCED MATERIAL STANDARDS. FINAL REPORTS SHALL CATALOG ALL INSPECTION, TESTING, RELATED ENGINEER SIGNED REPORTS, AND CORRECTION OF ANY DISCREPANCIES.

B. STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM. THESE OBSERVATIONS DO NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTION AS DEFINED BY SPECIAL INSPECTION.
2. THE STRUCTURAL OBSERVER IS NOT INSPECTING FOR OSHA COMPLIANCE AND TEMPORARY CONSTRUCTION, SUCH AS BRACING, SHORING, MEANS AND METHODS, ETC. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE FACILITIES FOR THE STRUCTURAL OBSERVER.
3. THE STRUCTURAL OBSERVER IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES TO THE CONTRACT DOCUMENTS. IF THE CONTRACTOR WISHES TO QUESTION THE STRUCTURAL OBSERVER'S INTERPRETATION OF THE CONTRACT DOCUMENTS, THIS MAY BE DONE WITH THE APPROPRIATE MEASURES LISTED IN THE CONTRACT DOCUMENTS. THE STRUCTURAL OBSERVER IS NOT AUTHORIZED TO STOP OR DELAY THE WORK. IF THE CONTRACTOR ELECTS TO CONTINUE WITH A CERTAIN WORK AFTER BEING NOTIFIED BY THE STRUCTURAL OBSERVER THAT SUCH WORK IS UNACCEPTABLE, HE DOES SO AT HIS OWN RESPONSIBILITY AND RISK.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE STRUCTURAL WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY STRUCTURAL OBSERVATION PROVIDED BY OTHERS DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY. DEFICIENCIES SHALL BE REPORTED BY THE STRUCTURAL OBSERVER IN WRITING TO THE OWNER.
5. STRUCTURAL DEVIATIONS FROM THE CONTRACT DOCUMENTS FOUND AT A LATER DATE AND DECLARED TO BE SIGNIFICANT BY THE STRUCTURAL ENGINEER SHALL BE CORRECTED BY THE CONTRACTOR IMMEDIATELY.
6. PRIOR TO COMMENCEMENT OF OBSERVATIONS, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT IDENTIFYING THE FREQUENCY AND EXTENT OF STRUCTURAL OBSERVATIONS.

TABLE NOTES

1. PERIODIC SPECIAL INSPECTION. THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF WORK. (2015 IBC 1702).
2. CONTINUOUS SPECIAL INSPECTION. THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. (2015 IBC 1702).
3. ITEMS NOT SHOWN MAY REQUIRE CONTINUOUS OR PERIODIC SPECIAL STRUCTURAL INSPECTION AT THE DISCRETION OF THE PROFESSIONAL. ITEMS LISTED MAY REQUIRE ALTERNATE FREQUENCIES OF INSPECTION OTHER THAN SHOWN UNDER DIRECTION OF THE PROFESSIONAL.
4. WELDING OF REINFORCING STEEL NOT ACCEPTABLE UNLESS DIRECTED BY THE ENGINEER OF RECORD.
5. FABRICATOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE TO BUILDING OFFICIAL STATING WORK PERFORMED WAS IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
6. SEE TESTING REFERENCE SCHEDULE ON THIS SHEET.
7. WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED.
8. WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PREFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 INCHES (75 mm) OF THE WELD.

TESTING REFERENCE SCHEDULE

SPECIAL INSPECTION TABLE	SPECIFICATION DIVISION (TESTING REQUIREMENTS)	2015 IBC REFERENCE
01 45 33-01	05	1705.2
01 45 33-02	05	1705.2.2
01 45 33-03	05	1705.2
01 45 33-04	03	1705.3
01 45 33-05	03/05	-
01 45 33-06	04	1705.4
01 45 33-08	31	1705.6
01 45 33-09	31	1705.7

TABLE 01 45 33-01 REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
MATERIAL VERIFICATION OF STRUCTURAL STEEL:	IDENTIFICATION MARKINGS PER AISC 360	PERIODIC	-
	MANUFACTURER CERTIFIED TEST REPORTS	PERIODIC	-
	QUALITY ASSURANCE PLAN	PERIODIC	
INSPECTION OF ANCHOR RODS:	DIAMETER	CONTINUOUS	-
	GRADE	CONTINUOUS	-
	TYPE AND LENGTH OF ANCHOR ROD	CONTINUOUS	-
	EXTENT OR EMBEDMENT DEPTH INTO CONCRETE	CONTINUOUS	-
INSPECTION PRIOR TO WELDING:	WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	CONTINUOUS	-
	IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	PERIODIC	-
	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	PERIODIC	-
	MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	CONTINUOUS	-
	MATERIAL IDENTIFICATION (TYPE/GRADE)	PERIODIC	-
	WELDING CERTIFICATION AND WELDER IDENTIFICATION SYSTEM	PERIODIC	7
	FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	PERIODIC	-
	CONFIGURATION AND FINISH OF ACCESS HOLES	PERIODIC	-
	FIT-UP OF FILLET WELDS	PERIODIC	-
INSPECTION DURING WELDING	USE OF QUALIFIED WELDERS	PERIODIC	-
	CONTROL AND HANDLING OF WELDING CONSUMABLES	PERIODIC	-
	NO WELDING OVER CRACKED TACK WELDS	PERIODIC	-
	ENVIRONMENTAL CONDITIONS • WIND SPEED, PRECIPITATION AND TEMPERATURE	PERIODIC	-
	WPS FOLLOWED	PERIODIC	-
	WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS	PERIODIC	-
INSPECTION AFTER WELDING	WELDS CLEANED	PERIODIC	-
	SIZE, LENGTH AND LOCATION OF WELDS	CONTINUOUS	-
	WELDS MEET VISUAL ACCEPTANCE CRITERIA	CONTINUOUS	-
	ARC STRIKES	CONTINUOUS	-
	K-AREA	CONTINUOUS	8
	BACKING REMOVED AND WELD TABS REMOVED	CONTINUOUS	-
	REPAIR ACTIVITIES	CONTINUOUS	-
	DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	CONTINUOUS	-
INSPECTION PRIOR TO BOLTING	MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	CONTINUOUS	-
	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	PERIODIC	-
	PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THE THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	PERIODIC	-
	PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	PERIODIC	-
	CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	PERIODIC	-
	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	PERIODIC	-
	PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	PERIODIC	-
INSPECTION DURING BOLTING	FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	PERIODIC	-
	JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	PERIODIC	-
	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	PERIODIC	-
	FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	PERIODIC	-
INSPECTION AFTER BOLTING	DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	CONTINUOUS	-
INSPECTION OF STEEL FRAME JOINT DETAILS	DETAILS, SUCH AS BRACING AND STIFFENING	PERIODIC	-
	MEMBER LOCATIONS	PERIODIC	-
	APPLICATION OF JOINT DETAILS AT EACH CONNECTION	PERIODIC	-

TABLE 01 45 33-02 - STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
MATERIAL VERIFICATION OF COLD-FORMED STEEL AND COLD-FORMED STEEL DECK	IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	PERIODIC	-
	MANUFACTURER'S CERTIFIED TEST REPORTS	PERIODIC	-
INSPECTION OF WELDING	COLD-FORMED STEEL DECK 1. FLOOR AND ROOF DECK WELDS	PERIODIC	4
	REINFORCING STEEL 1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706	PERIODIC	4
	2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT	CONTINUOUS	4
	3. SHEAR REINFORCEMENT	CONTINUOUS	4
	4. OTHER REINFORCING STEEL	PERIODIC	4

TABLE 01 45 33-03 - COMPOSITE CONSTRUCTION

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT	PLACEMENT AND INSTALLATION OF STEEL DECK	CONTINUOUS	-
	PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	CONTINUOUS	-
	DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	CONTINUOUS	-

TABLE 01 45 33-04 REQUIRED VERIFICATION/INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
STRUCTURAL CAST-IN-PLACE CONCRETE	INSPECT REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	PERIODIC	-
	INSPECT REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 01 45 33-1.	-	(4)
	INSPECT ANCHOR RODS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE.	CONTINUOUS	-
	INSPECT ANCHORS INSTALLED IN HARDENED CONCRETE.	PERIODIC	-
	VERIFY USE OF REQUIRED DESIGN MIX.	PERIODIC	-
	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	CONTINUOUS	-
	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONTINUOUS	-
	INSPECT FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC	-

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1/27/2026
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER NO. 040714
Signed by: Gary D. Garbacik

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

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DRAWING TITLE: STRUCTURAL SPECIAL INSPECTION/STRUCTURAL OBSERVATIONS NOTES - 1

DRAWING NO.: **S004**

IBC SPECIAL INSPECTION/STRUCTURAL OBSERVATIONS NOTES

TABLE 01 45 33-05 REQUIRED VERIFICATION/INSPECTION OF POST-INSTALLED ANCHORS

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
POST-INSTALLED ANCHORS	VERIFY DRILL BIT TYPE AND SIZE.	CONTINUOUS	-
	VERIFY HOLE DEPTH AND CLEANLINESS.	CONTINUOUS	-
	VERIFY PRODUCT DESCRIPTION INCLUDING NAME, ROD TYPE, DIAMETER, AND LENGTH.	CONTINUOUS	-
	VERIFY ADHESIVE EXPIRATION DATE.	CONTINUOUS	-
	VERIFY PROPER INSTALLATION TECHNIQUE.	PERIODIC	-
	VERIFY FASTENER EMBEDMENT, SPACING, AND EDGE/END DISTANCE.	CONTINUOUS	-

TABLE 01 45 33-06 REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
STRUCTURAL REINFORCED MASONRY	COMPLY WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS.	PERIODIC	-
	VERIFY F_M AND F_{AAC} PRIOR TO CONSTRUCTION AND FOR EVERY 5,000 SQUARE FEET DURING CONSTRUCTION.	PERIODIC	-
	VERIFY PROPORTIONS OF MATERIALS IN PREMIXED OR PREBLENDED MORTAR, PRESTRESSING GROUT, GROUT OTHER THAN SELF-CONSOLIDATING AND GROUT AS DELIVERED TO THE SITE.	PERIODIC	-
	VERIFY SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT.	CONTINUOUS	-
	VERIFY THE FOLLOWING TO ENSURE COMPLIANCE:		-
	a. PROPORTIONS OF SITE-PREPARED MORTAR, GROUT, AND PRESTRESSING GROUT FOR BONDED TENDONS.	PERIODIC	-
	b. PLACEMENT OF MASONRY UNITS AND CONSTRUCTION OF MORTAR JOINTS.	PERIODIC	-
	c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES PRIOR TO GROUT PLACEMENT.	PERIODIC	-
	d. GROUT SPACE IS CLEAN PRIOR TO GROUT	CONTINUOUS	-
	e. PLACEMENT OF GROUT.	CONTINUOUS	-
	f. PLACEMENT OF GROUT FOR PRESTRESSING TENDONS.	CONTINUOUS	-
	g. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	PERIODIC	-
	h. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	CONTINUOUS	-
	i. SPECIFIED SIZE, GRADE, AND TYPE OF REINFORCEMENT, ANCHOR BOLTS, PRESTRESSING TENDONS, AND ANCHORAGES.	PERIODIC	-
	j. WELDING OF REINFORCING BARS.	CONTINUOUS	-
	k. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40º F) OR HOT WEATHER (TEMPERATURE ABOVE 90º F)	PERIODIC	-
	l. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	CONTINUOUS	-
	OBSERVE PREPARATION OF ANY REQUIRED GROUT OR MORTAR SPECIMENS AND/OR PRISMS.	CONTINUOUS	-

TABLE 01 45 33-08 REQUIRED VERIFICATION/INSPECTION OF SOILS

VERIFICATION/ INSPECTION ITEMS	VERIFICATION/ INSPECTION TASK (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
SOILS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY.	PERIODIC	-
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC	-
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	PERIODIC	-
	VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	CONTINUOUS	-
	PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	PERIODIC	-

TABLE 01 45 33-09 REQUIRED VERIFICATION AND INSPECTION OF DRIVEN DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION ITEMS	VERIFICATION AND INSPECTION TASKS (TABLE NOTES 6)	INSPECTION FREQUENCY (TABLE NOTES 1,2,3)	COMMENTS (TABLE NOTES)
DRIVEN DEEP FOUNDATION ELEMENTS	VERIFY ELEMENT MATERIALS, SIZES, AND LENGTHS COMPLY WITH THE REQUIREMENTS.	CONTINUOUS	-
	DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS AS REQUIRED.	CONTINUOUS	-
	OBSERVE DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	CONTINUOUS	-
	VERIFY PLACEMENT LOCATIONS AND PLUMBNESS; CONFIRM TYPE AND SIZE OF HAMMER; RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION; DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP, AND BUTT ELEVATIONS; AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.	CONTINUOUS	-
	FOR STEEL ELEMENTS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH TABLE 01 45 33-1	CONTINUOUS	-

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Gary D. Garbacik

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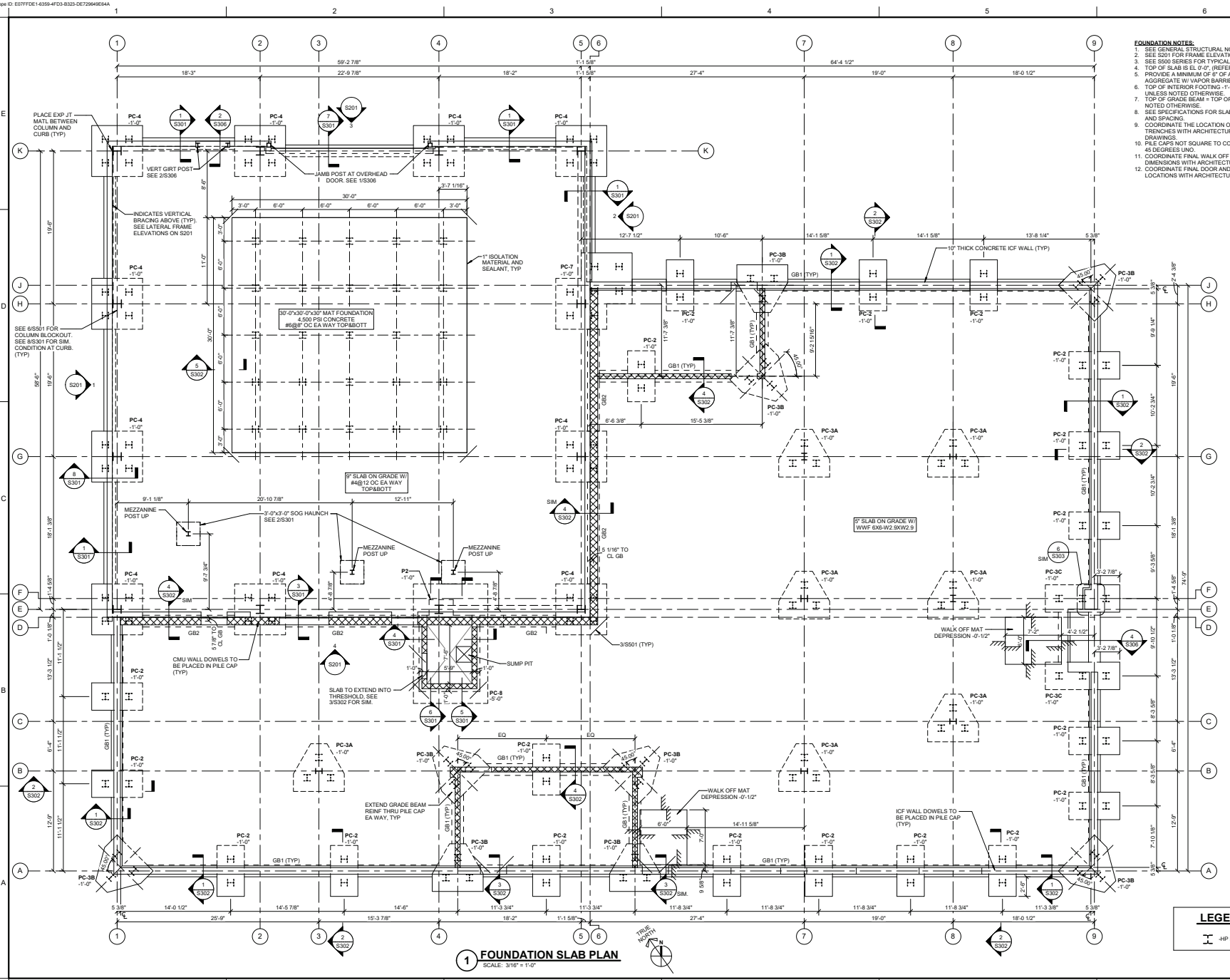
REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104		
DESIGNED: JR/DA	MODELED: JR/KP	CHECKED: GG
DATE: JANUARY 2026		
DRAWING TITLE: STRUCTURAL SPECIAL INSPECTION/STRUCTURAL OBSERVATIONS NOTES - 2		
DRAWING NO.: S005		



1 FOUNDATION SLAB PLAN
SCALE: 3/16" = 1'-0"

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DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL FOUNDATION PLAN

DRAWING NO.: **S101**

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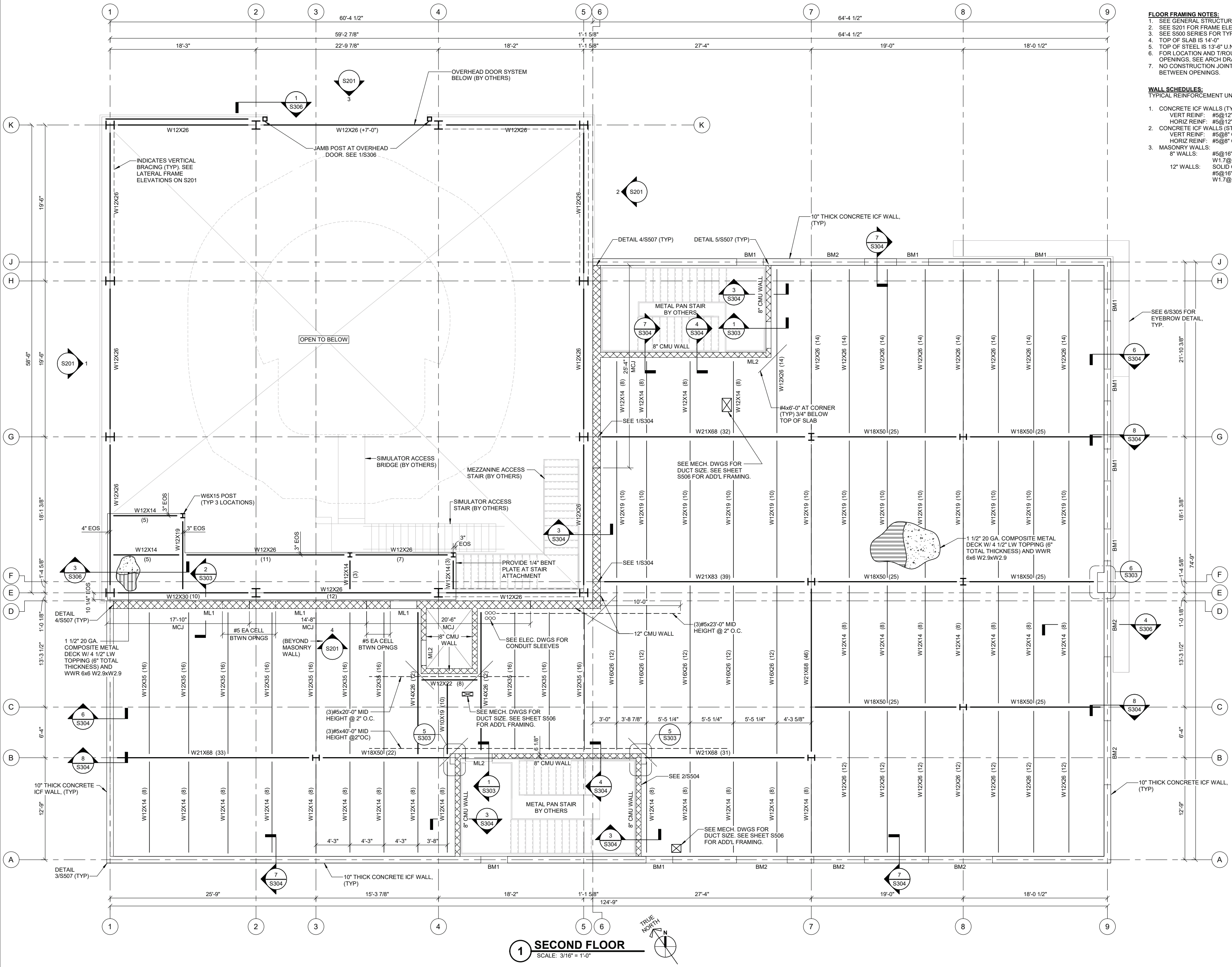

FLOOR FRAMING NOTES:

1. SEE GENERAL STRUCTURAL NOTES ON S000 SERIES.
2. SEE S201 FOR FRAME ELEVATIONS.
3. SEE S500 SERIES FOR TYPICAL DETAILS.
4. TOP OF SLAB IS 14'-0"
5. TOP OF STEEL IS 13'-6" U.N.O.
6. FOR LOCATION AND T/ROUGH OPENING FOR WALL OPENINGS, SEE ARCH DRAWINGS.
7. NO CONSTRUCTION JOINTS ARE ALLOWED IN WALL PIERS BETWEEN OPENINGS.

WALL SCHEDULES:

TYPICAL REINFORCEMENT UNO ON PLANS.

1. CONCRETE ICF WALLS (TYP):
   - VERT REINF: #5@12" OC EACH FACE
   - HORIZ REINF: #5@12" OC EACH FACE
2. CONCRETE ICF WALLS (STAIRS):
   - VERT REINF: #5@8" OC EACH FACE
   - HORIZ REINF: #5@8" OC EACH FACE
3. MASONRY WALLS:
   - 8" WALLS: #5@16" OC CENTERED; W1.7@16" OC JOINT REINF
   - 12" WALLS: SOLID GROUTED; #5@16" OC CENTERED; W1.7@16" OC JOINT REINF

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DRAWING TITLE: STRUCTURAL SECOND FLOOR FRAMING PLAN

DRAWING NO.: **S102**

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Project Number: SHYQ149104
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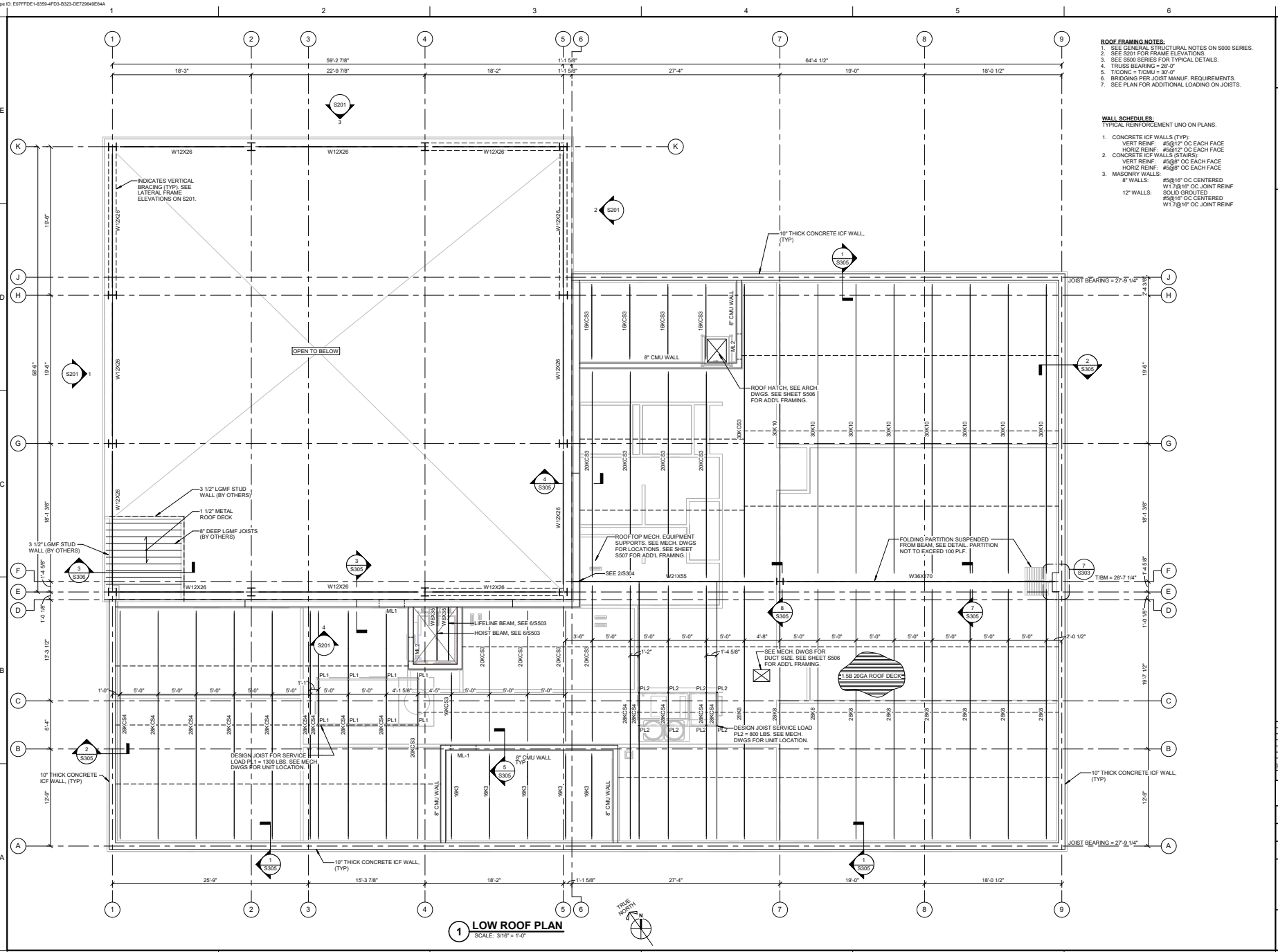

1 **LOW ROOF PLAN**
SCALE: 3/16" = 1'-0"

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DRAWING TITLE:
STRUCTURAL
LOW ROOF FRAMING PLAN

DRAWING NO.:
S103

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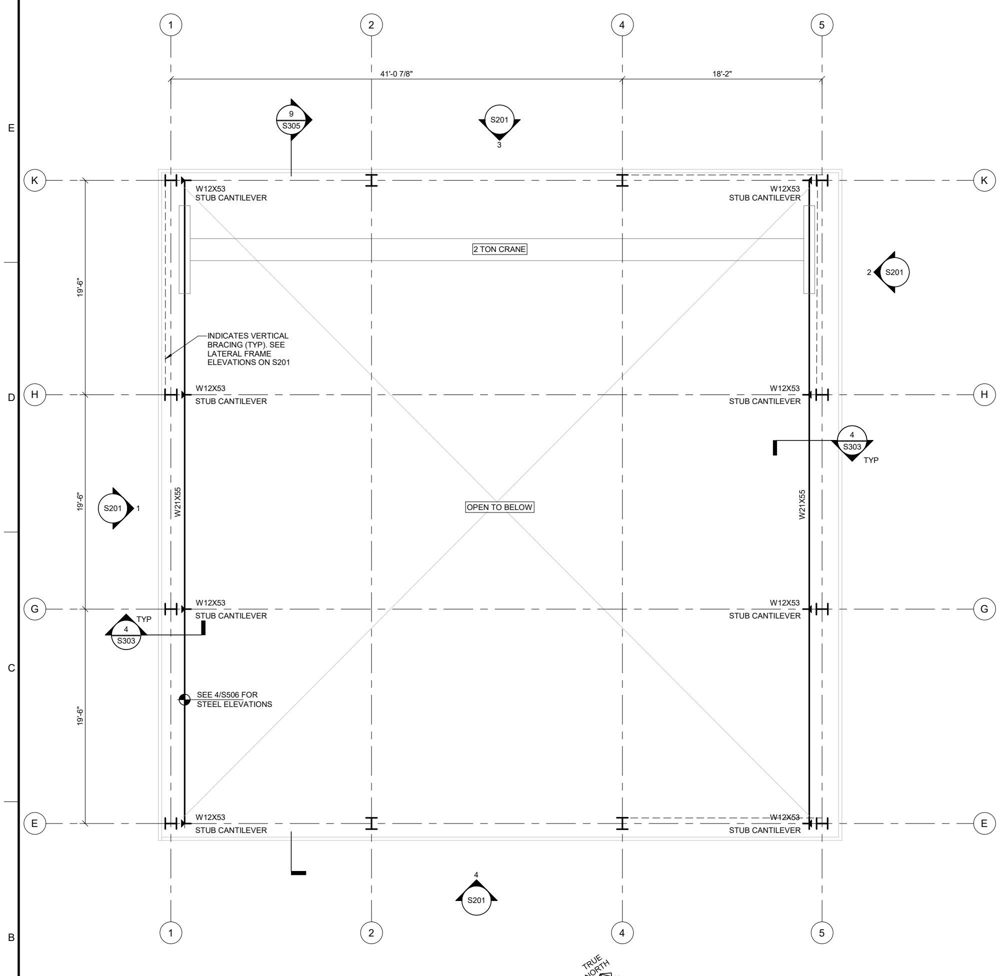

1 OVERHEAD CRANE PLAN
SCALE: 3/16" = 1'-0"

PARTIAL PLAN FRAMING NOTES:
1. SEE GENERAL STRUCTURAL NOTES ON S001 AND S002.
2. SEE S201 FOR FRAME ELEVATIONS.
3. SEE S500 SERIES FOR TYPICAL DETAILS.

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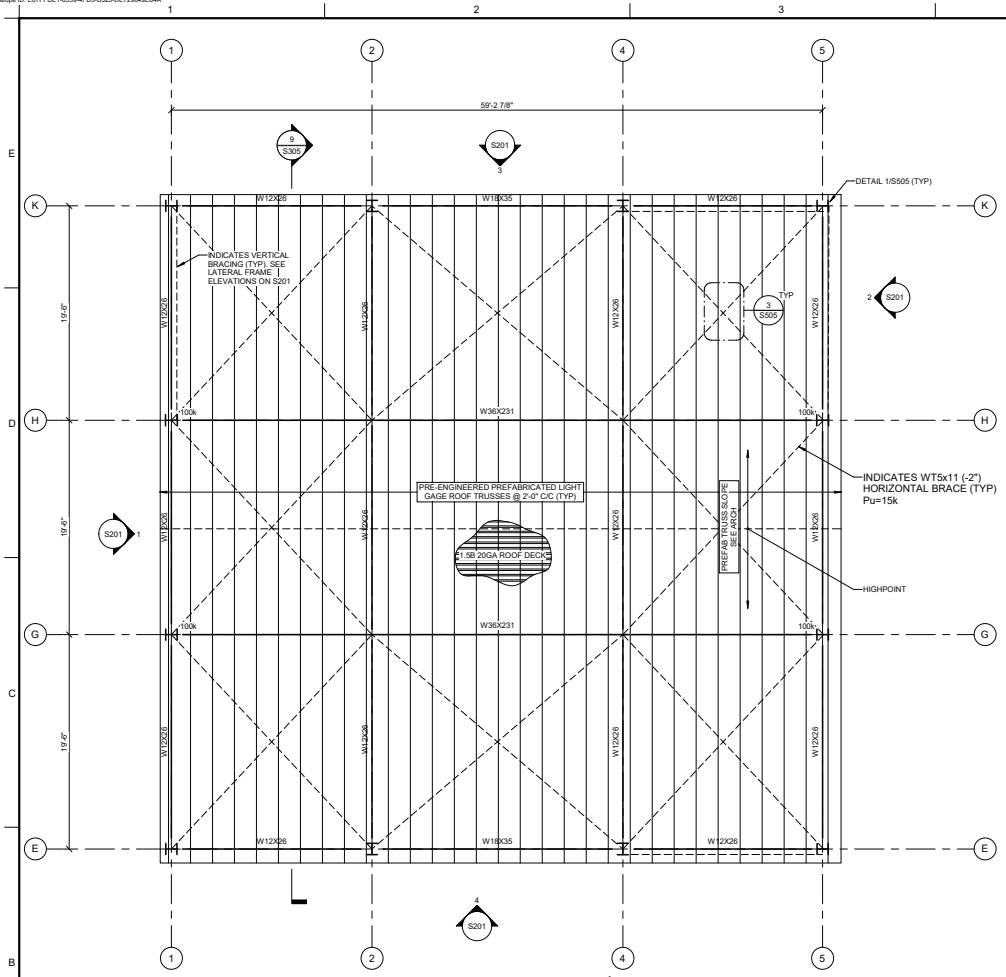
DRAWING TITLE: STRUCTURAL OVERHEAD CRANE FRAMING PLAN

DRAWING NO.: **S104**



1 HIGH ROOF PLAN
SCALE: 3/16" = 1'-0"

ROOF FRAMING NOTES:

1. SEE GENERAL STRUCTURAL NOTES ON S000 SERIES.
2. SEE S201 FOR FRAME ELEVATIONS.
3. SEE S500 SERIES FOR TYPICAL DETAILS.
4. TOP OF STEEL EL = 43'-0" UNLESS NOTED OTHERWISE.
5. TRUSS MEMBERS INCLUDING PERMANENT CONTINUOUS LATERAL RESTRAINT MEMBERS AND ROOF DIAPHRAGM BLOCKING MEMBERS ARE TO BE DESIGNED BY TRUSS MANUFACTURER.
6. SEE ARCH DWGS FOR ROOF TRUSS SLOPE AND EXTENTS OF OVERHANG.

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DRAWING TITLE:
STRUCTURAL
HIGH ROOF FRAMING PLAN

DRAWING NO.:
S105

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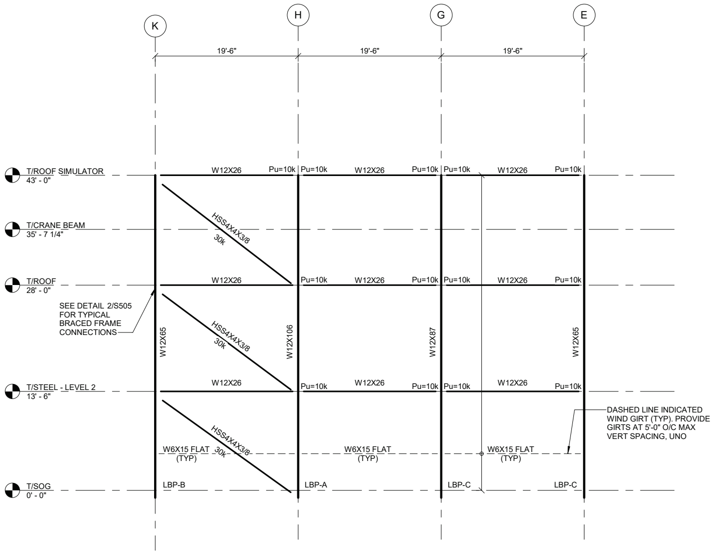
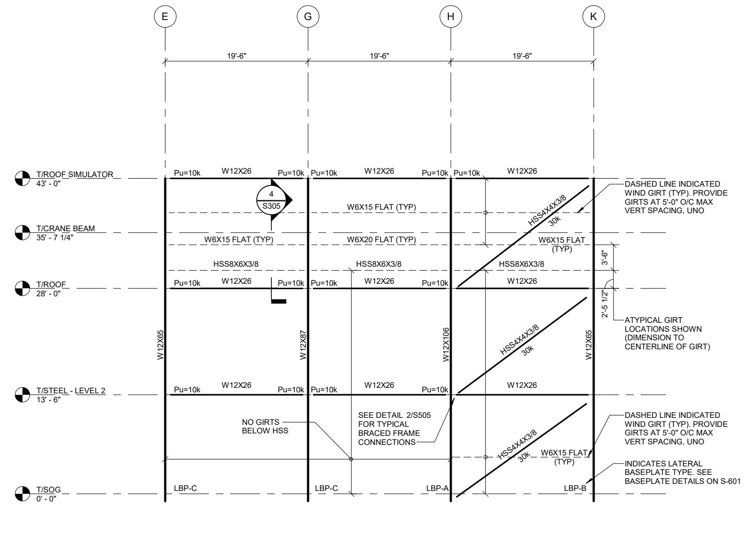
Central File: BM5581_A_central_R21.rvt

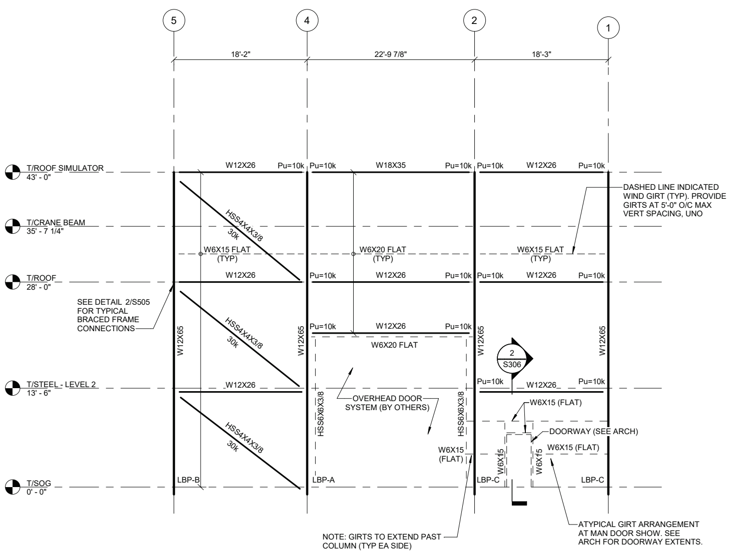
FRAMING ELEVATION NOTES:
1. SEE GENERAL STRUCTURAL NOTES ON S001.
2. SEE S500 SERIES FOR TYPICAL DETAILS.
3. WF FRAMING INDICATED AS "FLAT" TO BE ORIENTED WITH FLANGES VERTICAL.
4. SEE S506 FOR WIND GIRT FRAMING DETAILS.



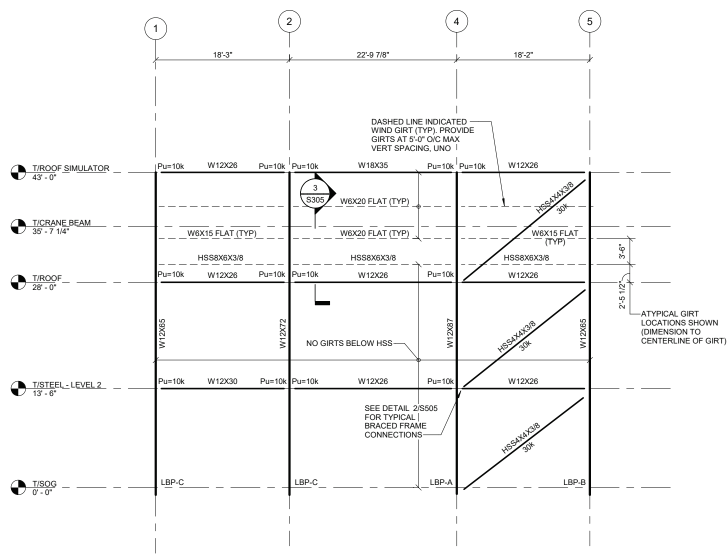
1 **WEST ELEVATION (ALONG GRID 1)**
SCALE: 1/8" = 1'-0"



2 **EAST ELEVATION (ALONG GRID 5)**
SCALE: 1/8" = 1'-0"



3 **NORTH ELEVATION (ALONG GRID K)**
SCALE: 1/8" = 1'-0"



4 **SOUTH ELEVATION (ALONG GRID E)**
SCALE: 1/8" = 1'-0"

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DRAWING TITLE:
STRUCTURAL FRAME ELEVATIONS

DRAWING NO.:
S201

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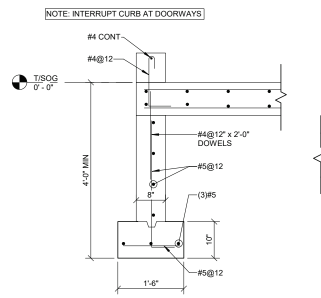
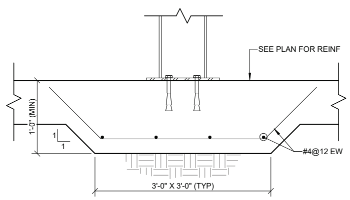
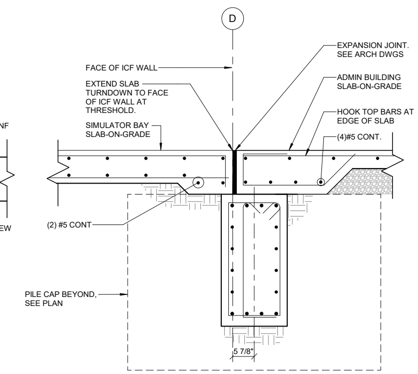


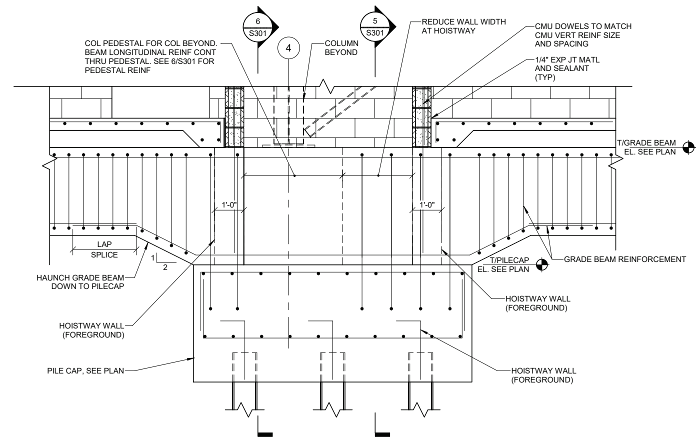
1 TYPICAL FROST WALL SECTION
SCALE: 3/4" = 1'-0"



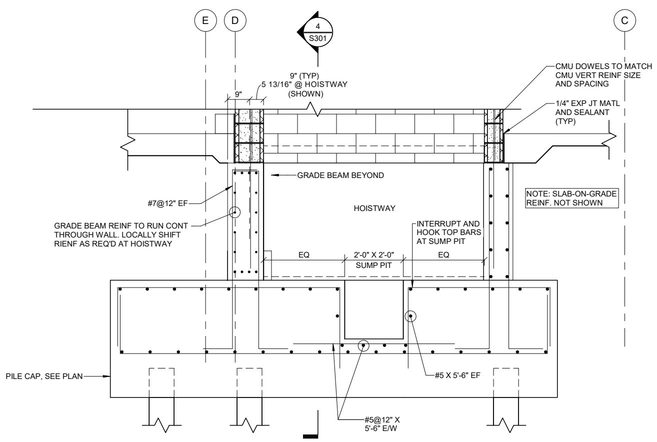
2 HAUNCH SLAB AT POST
SCALE: 1" = 1'-0"



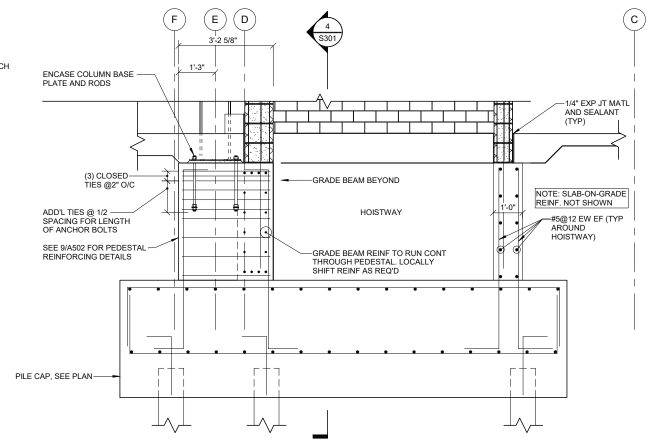
3 SECTION
SCALE: 3/4" = 1'-0"



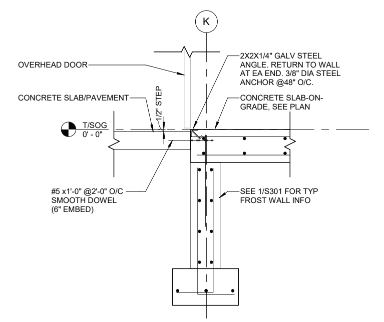
4 GRADE BEAM AT HOISTWAY
SCALE: 1/2" = 1'-0"



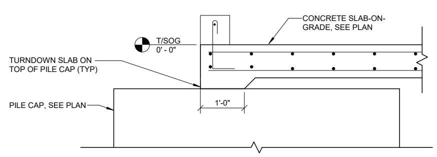
5 SECTION AT HOISTWAY
SCALE: 1/2" = 1'-0"



6 SECTION AT HOISTWAY
SCALE: 1/2" = 1'-0"



7 SECTION AT OVERHEAD DOOR THRESHOLD
SCALE: 3/4" = 1'-0"



8 TURNDOWN ON PILE CAP
SCALE: 3/4" = 1'-0"

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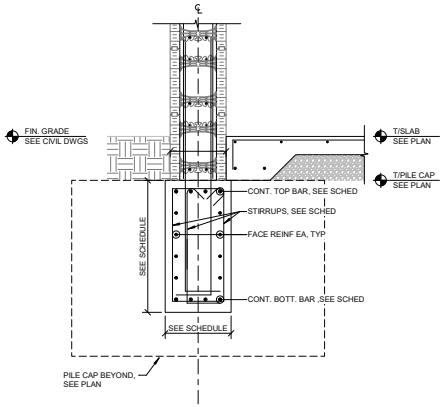
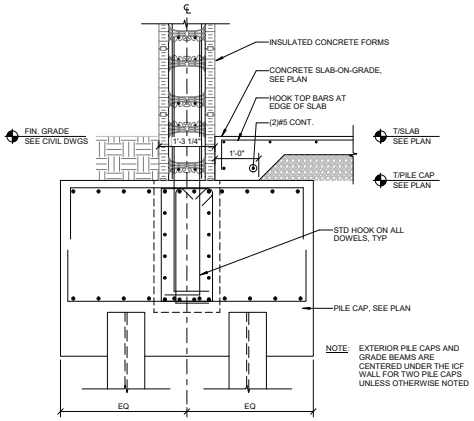
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL SECTIONS AND DETAILS

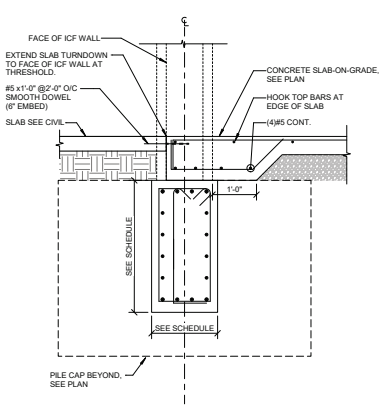
DRAWING NO.: S301



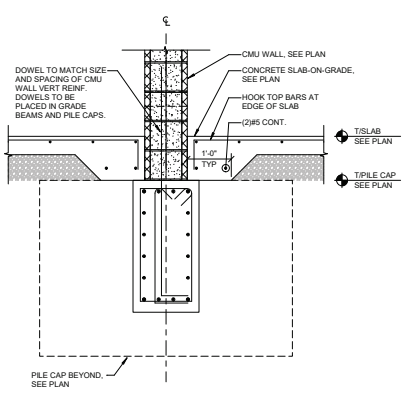
1 SECTION THROUGH FOUNDATION GRADE BEAM
SCALE: 3/4" = 1'-0"



2 SECTION THROUGH FOUNDATION PILE CAP
SCALE: 3/4" = 1'-0"

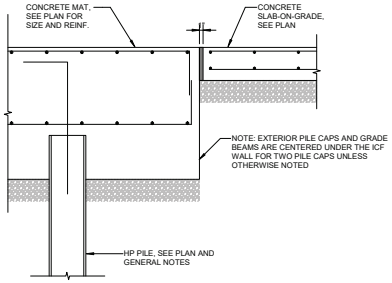


3 SECTION THROUGH THRESHOLD
SCALE: 3/4" = 1'-0"



4 SECTION THROUGH GRADE BEAM - CMU
SCALE: 3/4" = 1'-0"

GRADE BEAM SCHEDULE							
LABEL	BEAM W	BEAM H	TOP	BOT	SIDE	STIRRUPS (CLOSED 135°)	COMMENTS
GB1	18"	36"	(4)#9	(4)#9	#6@6"	3 LEGS #4@4" FOR 24", REMAINDER 3 LEGS #4@6"	SEE DETAIL 10/S502 FOR PILE CAP TO GRADE BEAM DETAIL
GB2	18"	36"	(4)#10	(4)#10	#6@6"	3 LEGS #4@6"	SEE DETAIL 10/S502 FOR PILE CAP TO GRADE BEAM DETAIL



5 SLAB TRANSITION DETAIL
SCALE: 3/4" = 1'-0"

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DRAWING NO.: **S302**

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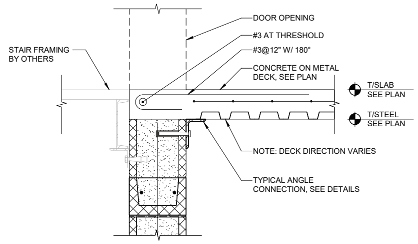
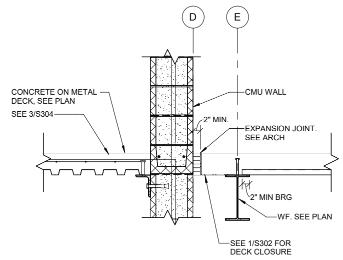
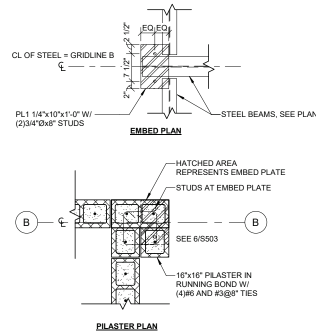


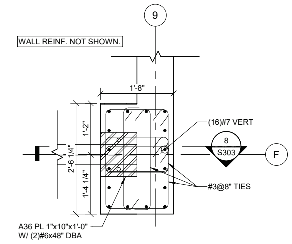
1 **COMPOSITE DECK AT CMU WALL THRESHOLD**
SCALE: 1" = 1'-0"



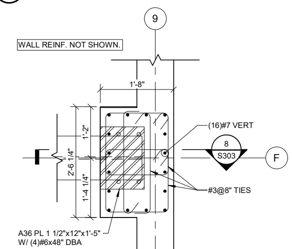
2 **SECTION AT WALKWAY**
SCALE: 3/4" = 1'-0"



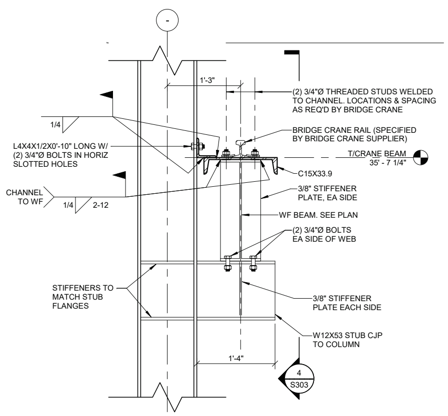
5 **CMU PILASTER DETAIL AT FLOOR**
SCALE: 3/4" = 1'-0"



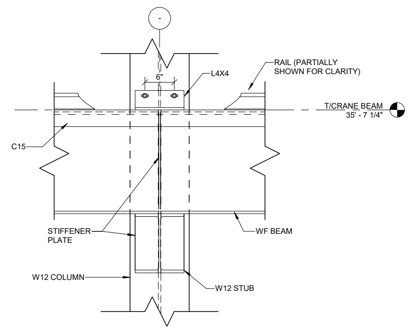
6 **PILASTER DETAIL AT FLOOR**
SCALE: 3/4" = 1'-0"



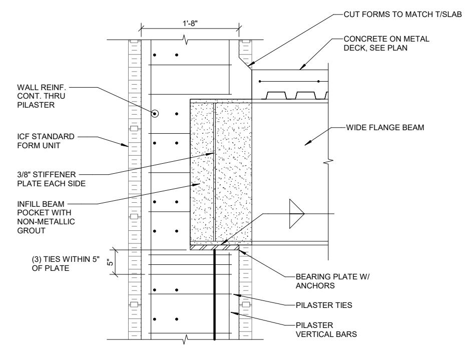
7 **PILASTER DETAIL AT ROOF**
SCALE: 3/4" = 1'-0"



3 **BRIDGE CRANE SUPPORT ON STEEL COLUMN**
SCALE: 1" = 1'-0"



4 **BRIDGE CRANE SUPPORT SECTION**
SCALE: 1" = 1'-0"



8 **BEAM POCKET AT PILASTER**
SCALE: 1" = 1'-0"

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
GARY DAVID GARBACIK
NO. 049751-E
Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

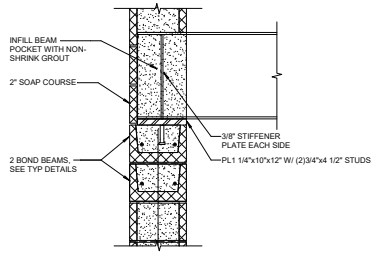
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

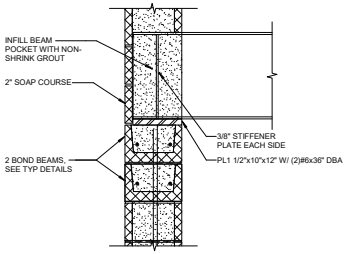
REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104		
DESIGNED: JR/DA	MODELED: JR/KP	CHECKED: GG
DATE: JANUARY 2026		
DRAWING TITLE: STRUCTURAL SECTIONS AND DETAILS		
DRAWING NO.: S303		



SECTION



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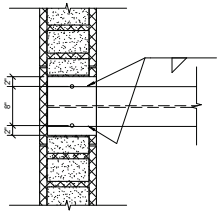
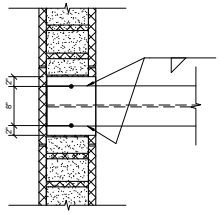


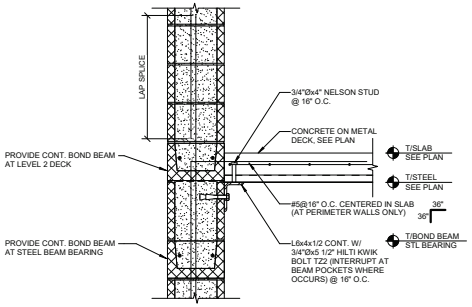
PLAN

1 BEAM POCKET AT FLOOR - CMU
SCALE: 1" = 1'-0"

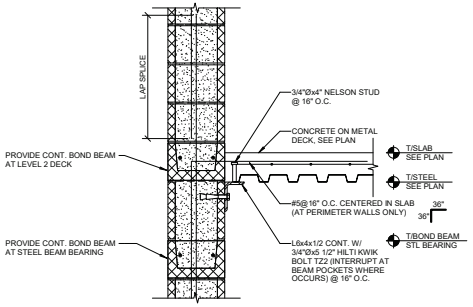


PLAN

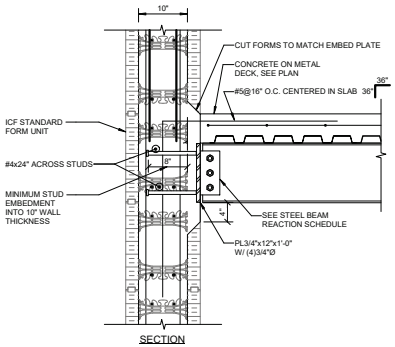
2 BEAM POCKET AT ROOF - CMU
SCALE: 1" = 1'-0"



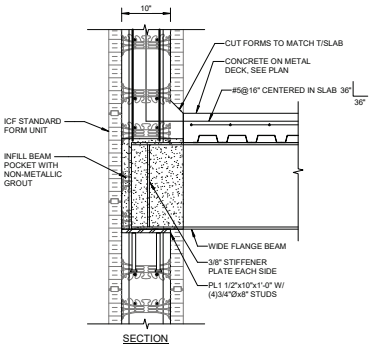
3 COMPOSITE DECK CONNECTION AT CMU WALL
SCALE: 1" = 1'-0"



4 COMPOSITE DECK CONNECTION AT CMU WALL
SCALE: 1" = 1'-0"



SECTION



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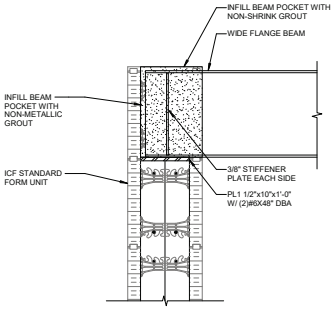

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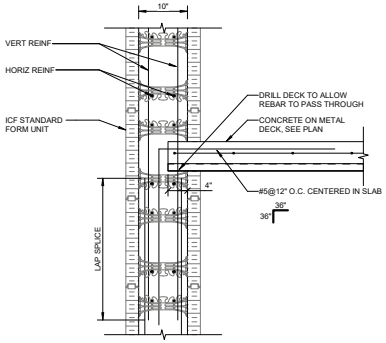
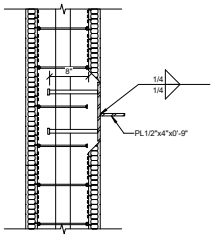
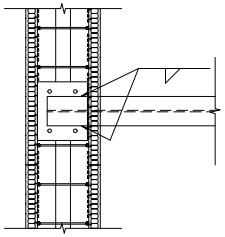


6 COMPOSITE DECK BEARING ON ICF
SCALE: 1" = 1'-0"



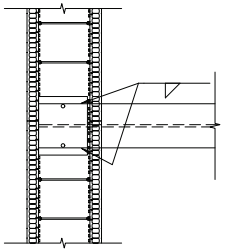
PLAN

7 SHEAR TAB CONNECTION AT ICF WALL
SCALE: 1" = 1'-0"



PLAN

8 BEAM POCKET AT FLOOR - ICF
SCALE: 1" = 1'-0"



PLAN

9 WIDE FLANGE BEAM POCKET AT ICF WALL
SCALE: 1" = 1'-0"

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL GARY DAVID GARBACIK ENGINEER NO. 040751-E VALID 1/27/2026
Signed by: Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

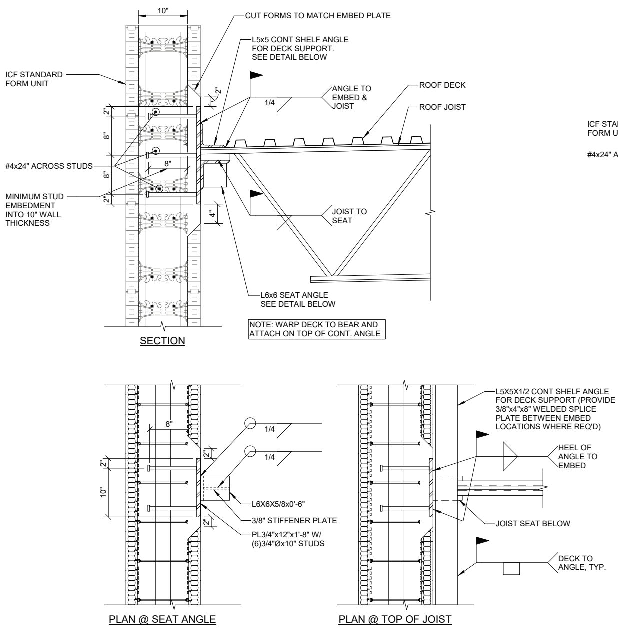
DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

DATE: JANUARY 2026

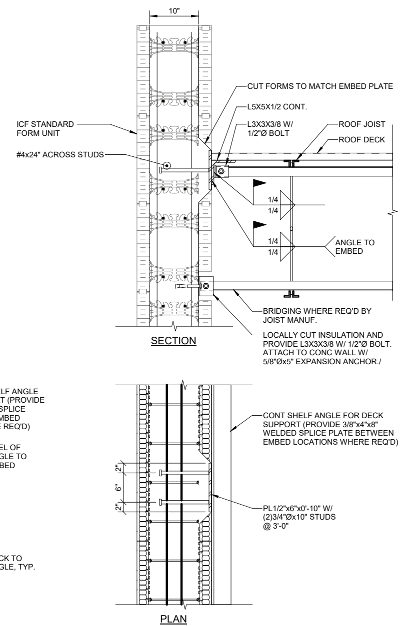
DRAWING TITLE: STRUCTURAL SECTIONS AND DETAILS

DRAWING NO.: **S304**

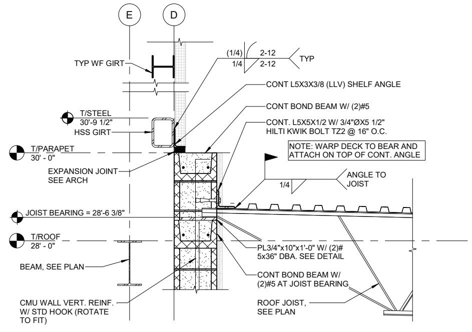
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_S_central_R23.rvt
Central File: BM1001_A_central_R21.rvt
Project Number: SHYQ149104
1/27/2026 3:43:33 PM



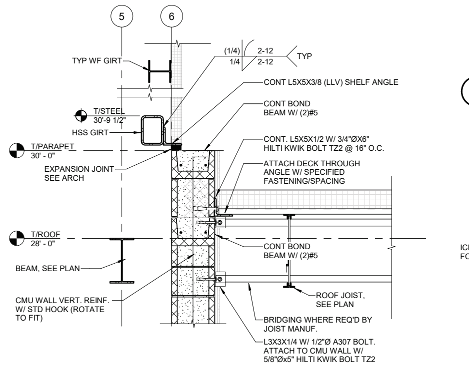
1 ROOF JOIST CONNECTION TO ICF
SCALE: 1" = 1'-0"



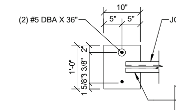
2 ROOF DECK CONNECTION TO ICF
SCALE: 1" = 1'-0"



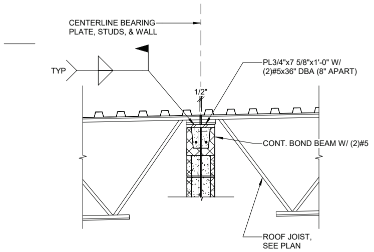
3 SECTION THROUGH ROOF AT INTERFACE
SCALE: 3/4" = 1'-0"



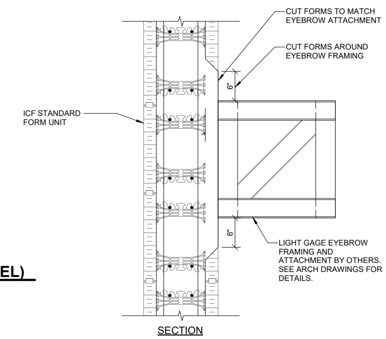
4 SECTION THROUGH ROOF AT INTERFACE (PARALLEL)
SCALE: 3/4" = 1'-0"



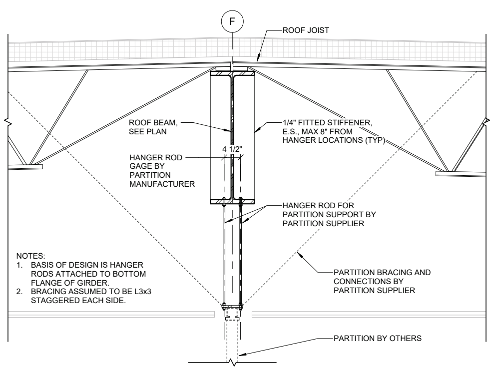
JOIST BEARING PLATE DETAIL



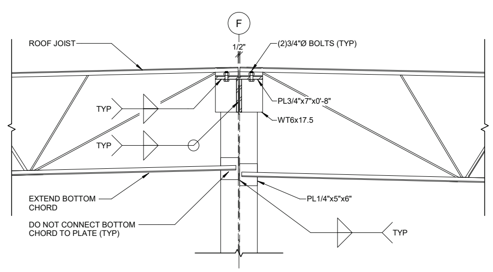
5 ROOF TRUSS BEARING ON CMU WALL
SCALE: 3/4" = 1'-0"



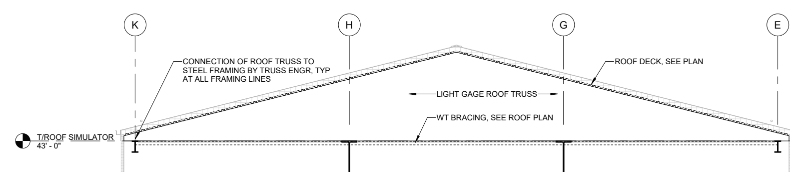
6 EYEBROW CONNECTION
SCALE: 1" = 1'-0"



7 OPERABLE PARTITION
SCALE: 3/4" = 1'-0"



8 ROOF JOIST TO COLUMN CONNECTION
SCALE: 3/4" = 1'-0"



9 SECTION THROUGH SIMULATOR ENCLOSURE ROOF
SCALE: 3/16" = 1'-0"

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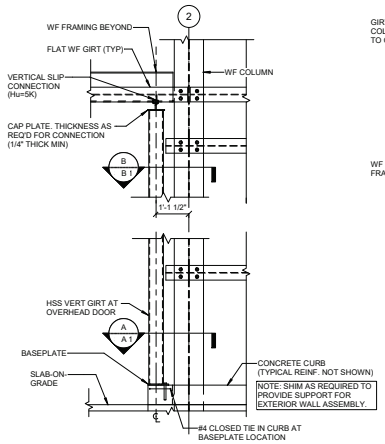
1/27/2026
COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — GARY DAVID GARBACIK — NO. 048731-E

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

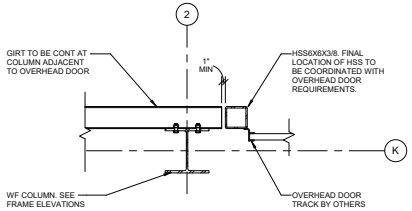
NO.	DATE	DESCRIPTION
REVISIONS		

BID DOCUMENTS

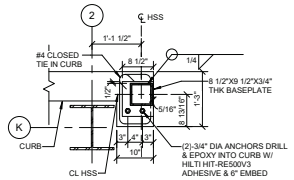
PROJECT NUMBER: SHYQ149104		
DESIGNED: JR/DA	MODELED: JR/KP	CHECKED: GG
DATE: JANUARY 2026		
DRAWING TITLE: STRUCTURAL SECTIONS AND DETAILS		
DRAWING NO.: S305		



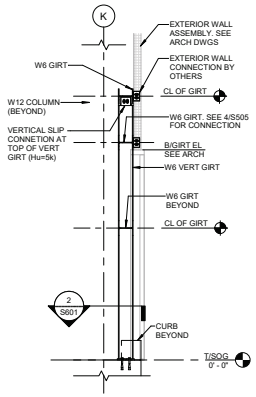
1 OVERHEAD DOOR DETAIL
SCALE: 1/2" = 1'-0"



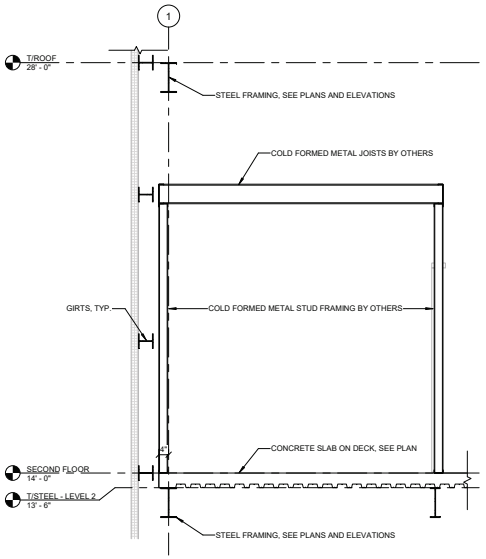
SECTION B-B



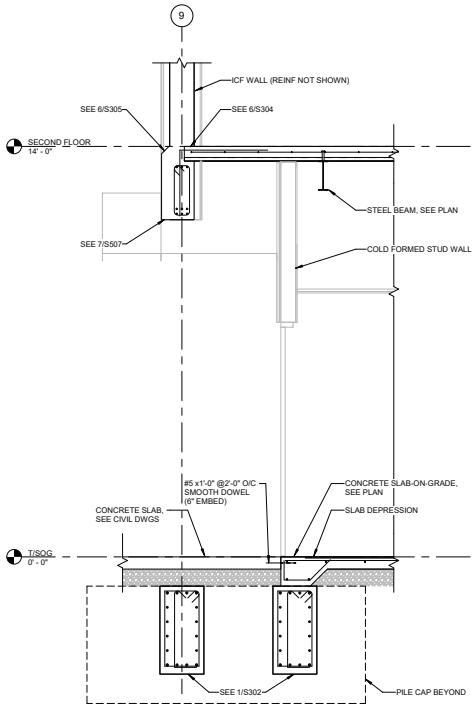
SECTION A-A



2 SECTION AT VERT GIRT
SCALE: 1/2" = 1'-0"



3 SECTION THROUGH LGMF FRAMING
SCALE: 1/2" = 1'-0"



4 SECTION THROUGH ENTRYWAY
SCALE: 1/2" = 1'-0"

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1/27/2026
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER
NO. 044511-E
Signed by: Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD
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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

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JR/DA	JR/KP	GG

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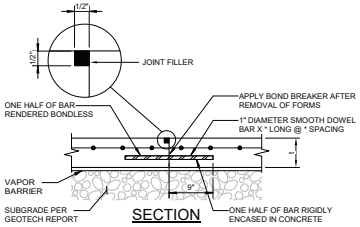
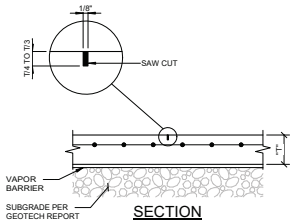
DRAWING TITLE: STRUCTURAL SECTIONS AND DETAILS

DRAWING NO.: **S306**

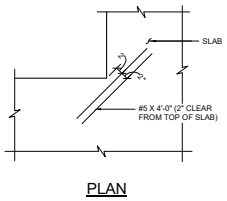


DOWEL BAR CHART		
SLAB THICKNESS	BAR DIAMETER AND LENGTH	SPACING
5" - 6"	3/4" X 16"	12"
7" - 8"	1" X 18"	12"
9" - 12"	1 1/4" X 18"	12"

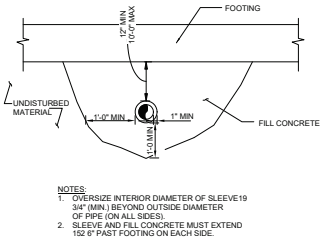
1 TYP SLAB ON GRADE DOWELED CONST. JT DETAIL
SCALE: NOT TO SCALE



2 TYP SLAB ON GRADE CONTRACTION JOINT
SCALE: NOT TO SCALE

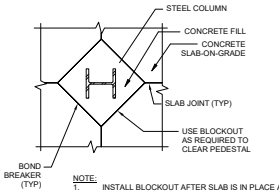


3 TYP SLAB DETAIL AT INSIDE CORNER
SCALE: NOT TO SCALE



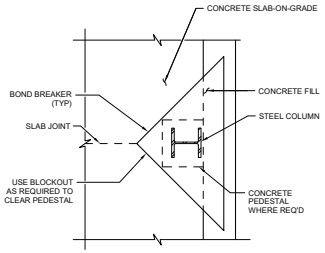
NOTES:
1. OVERSIZE INTERIOR DIAMETER OF SLEEVE19 3/4" (MIN.) BEYOND OUTSIDE DIAMETER OF PIPE (ON ALL SIDES).
2. SLEEVE AND FILL CONCRETE MUST EXTEND 152.6" PAST FOOTING ON EACH SIDE.

4 PIPE PENETRATION DETAIL
SCALE: NOT TO SCALE



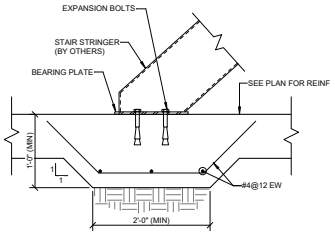
NOTE:
1. INSTALL BLOCKOUT AFTER SLAB IS IN PLACE AND CURED.

5 INTERIOR COLUMN BLOCKOUT DETAIL
SCALE: NOT TO SCALE

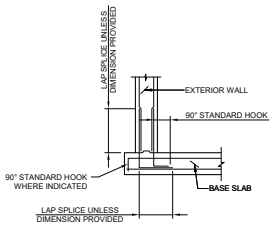


NOTE:
1. INSTALL BLOCKOUT AFTER SLAB IS IN PLACE AND CURED.

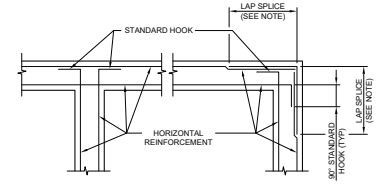
6 EXTERIOR COLUMN BLOCKOUT DETAIL
SCALE: NOT TO SCALE



7 HAUNCH SLAB AT STAIR STRINGER
SCALE: 1" = 1'-0"

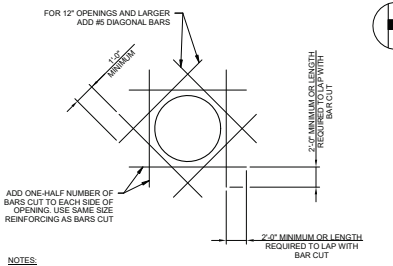


8 TYPICAL WALL REINFORCEMENT
SCALE: NOT TO SCALE



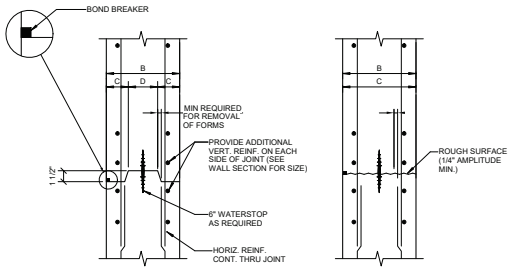
NOTE:
1. WHERE 2 DIFFERENT BAR SIZES OCCUR AT CORNER, THE CORNER BAR SHALL BE THE LARGER BAR SIZE.

9 WALL CORNER REINFORCEMENT
SCALE: NOT TO SCALE



NOTES:
1. CIRCULAR OPENING SHOWN, RECTANGULAR OPENING SIMILAR.
2. EXTRA REINFORCING SHALL BE PROVIDED IN BOTH FACES UNLESS TYPICAL REINFORCING IS PLACED IN SINGLE LAYER ONLY.
3. WHEN DOWEL BARS ARE CUT PROVIDE DOWELS EACH SIDE OF OPENING IN ACCORDANCE WITH THIS DETAIL.

10 REINFORCING AT WALL AND SLAB OPENINGS
SCALE: NOT TO SCALE



11 TYPICAL WALL VERTICAL CONSTRUCTION JOINT
SCALE: 1 1/2" = 1'-0"

JOINT NOTES:
1. WATERSTOPS SHALL BE PLACED IN JOINT AS REQUIRED IN THE SPECIFICATIONS.
2. FOR KEYED JOINT IN WALL TERMINATE I KEY 6" FROM TOP OF WALL WHERE TOP OF WALL IS EXPOSED TO VIEW.
3. IN WALLS PROVIDE 3/4"X3/4" CHAMFER EACH SIDE OF CONSTRUCTION JOINTS WHERE EXPOSED TO VIEW.
4. IN SLABS PROVIDE TOOLED EDGE (1/4"R.) EACH SIDE OF CONSTRUCTION JOINTS WHERE EXPOSED TO FOOT TRAFFIC (EXCEPT WHERE SUBSEQUENT FINISH WILL BE APPLIED.)

SCHEDULE OF DIMENSIONS		
B	C	D
LESS THAN 9"	B/3	B/3
9" TO 16"	3 1/2"	VARIES
16" TO 21"	5 1/2"	VARIES
MORE THAN 21"	B/3	B/3

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — GARY DAVID GARBACIK — ENGINEER — 12/27/2026

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

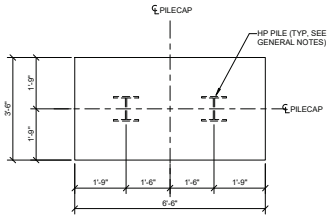
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

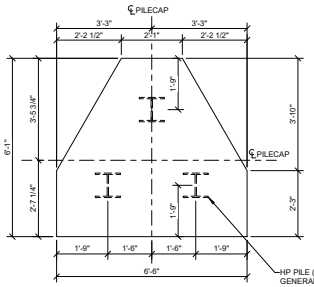
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL
TYPICAL DETAILS - FOUNDATIONS

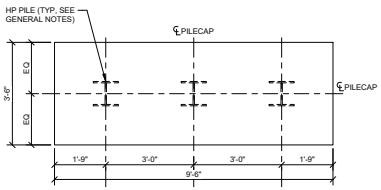
DRAWING NO.: **S501**



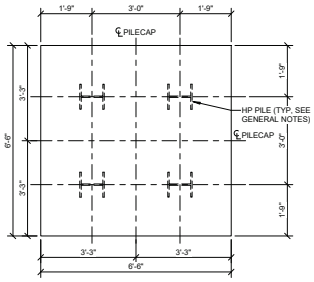
1 **PC-2 PLAN**
SCALE: 1/2" = 1'-0"



2 **PC-3A/PC-3B PLAN**
SCALE: 1/2" = 1'-0"



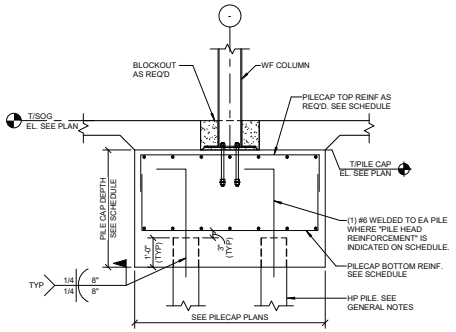
3 **PC-3C PLAN**
SCALE: 1/2" = 1'-0"



4 **PC-4 PLAN**
SCALE: 1/2" = 1'-0"

PILECAP SCHEDULE						
MARK	DEPTH	BOTTOM REINFORCEMENT		TOP REINFORCEMENT		PILE HEAD REINFORCEMENT
		LONG WAY	SHORT WAY	LONG WAY	SHORT WAY	
PC-2	48"	(7) #9	(12) #7	(7) #9	(12) #7H	NONE
PC-3A	48"	3-WAY (5) #9 EW		3-WAY (5) #9 EW		NONE
PC-3B	48"	3-WAY (5) #9 EW		3-WAY (5) #9 EW		YES
PC-3C	48"	(5) #9	(19) #7	(5) #9	(19) #7	NONE
PC-4	48"	(9) #8	(9) #8	(9) #8	(9) #8	YES
PC-7	52"	(13) #8	(13) #8	(13) #8	(13) #8	YES
PC-8	48"	(13) #8	(21) #8	(13) #8	(21) #8	YES

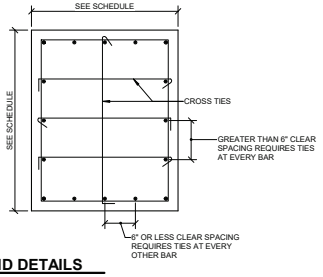
NOTES:
1. ALL REINFORCEMENT TO HAVE 90° HOOK
2. FOR PILE CAPS WITH PILE HEAD REINFORCEMENT, ALL PILES UNDER CAP TO HAVE REINFORCEMENT.



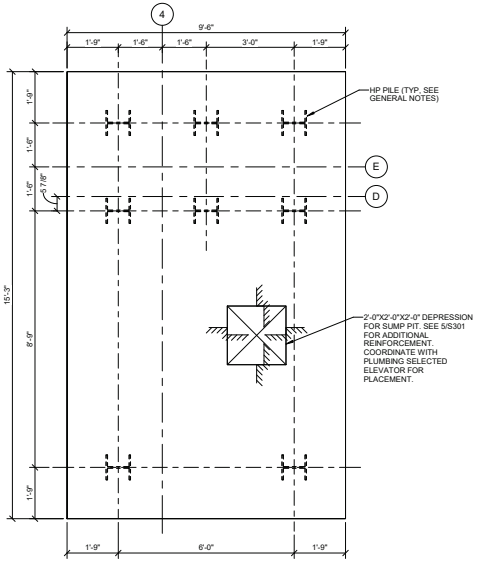
6 **TYPICAL PILECAP SECTION**
SCALE: 1/2" = 1'-0"

PEDESTAL SCHEDULE				
TAG	DIMENSIONS	VERTICAL REINFORCEMENT	CLOSED TIES	NOTES
P1	2'-6"x2'-6"	(12) #8	#4@12"	-
P2	3'-2 5/8"x3'-4"	(16) #9	#4@12"	SEE DETAILS ON S301

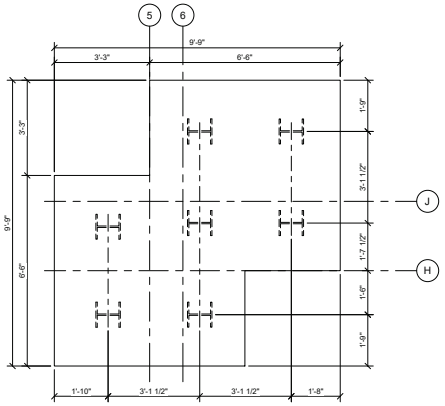
NOTES:
1. PLACE BARS EQUALLY SPACED AROUND COLUMN U.N.O.
2. ARRANGE TIES SUCH THAT EVERY CORNER AND ALTERNATE LONGITUDINAL BAR ARE TIED WHERE BAR CLEAR SPACING IS 6" OR LESS. TIE ALL BARS WHERE CLEAR SPACING EXCEEDS 6".
3. ALTERNATE 90° AND 135° HOOK ENDS ON ADJACENT CROSS-TIES



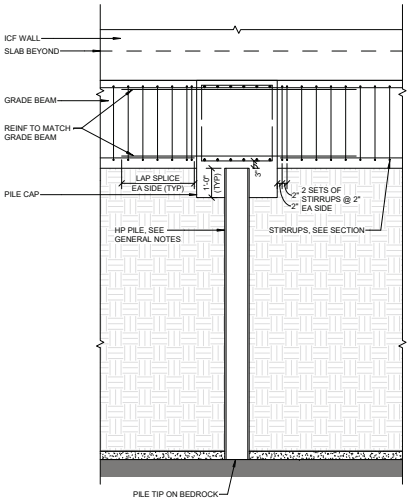
9 **PEDESTAL SCHEDULE AND DETAILS**
SCALE: NTS



8 **PC-8 PLAN**
SCALE: 1/2" = 1'-0"



7 **PC-7 PLAN**
SCALE: 1/2" = 1'-0"



10 **TYPICAL PILE CAP TO GRADE BEAM DETAIL**
SCALE: 1/2" = 1'-0"

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1/27/2026
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL GARY DAVID GARBACIK ENGINEER NO. 040314-E
Signed by Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

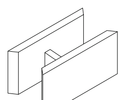
DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

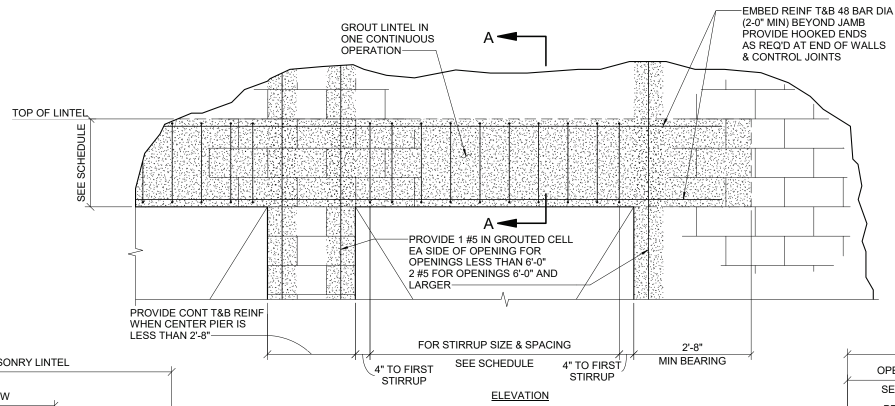
DATE: JANUARY 2026

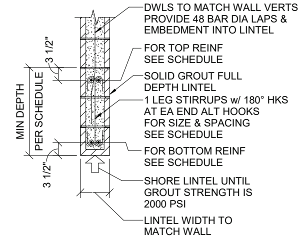
DRAWING TITLE: STRUCTURAL
TYPICAL DETAILS - FOUNDATIONS

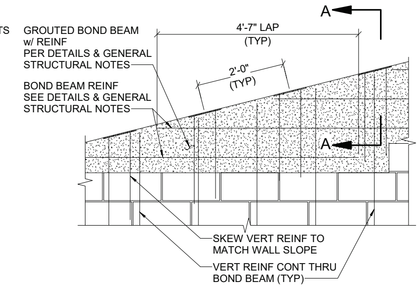
DRAWING NO.: **S502**

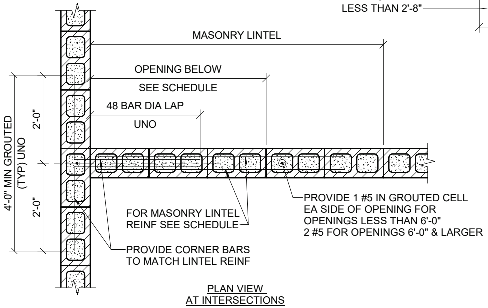
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_S_central_R23.rvt
Central File: BM1581_A_central_R21.rvt
Project Number: SHYQ149104
1/27/2026 3:43:42 PM







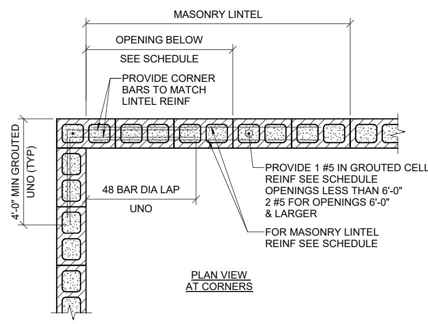


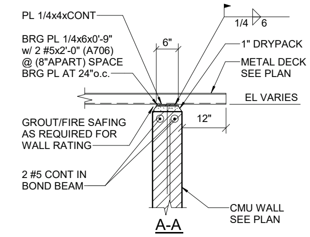


MASONRY COURSING SHOWN SCHEMATIC

MARK	WALL THICKNESS (NOMINAL)	MIN DEPTH	BOTTOM REINF (CONT)	TOP REINF (CONT)	STIRRUPS
ML1	12"	32"	2 #6	2 #6	#3@8"
ML2	8"	32"	2 #5	2 #5	#3@8"

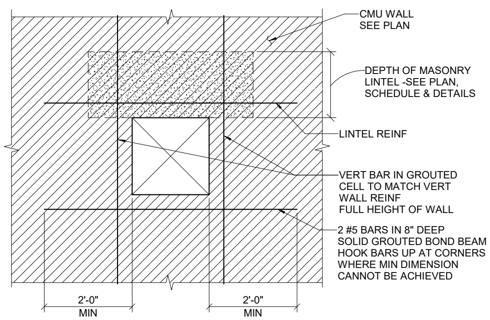
NOTES:
1. PROVIDE LINTEL TYPE BLOCKS AT BOTTOM COURSE OF LINTELS (TYP).
2. NO VERTICAL JOINTS ARE ALLOWED AT JAMB EDGE.

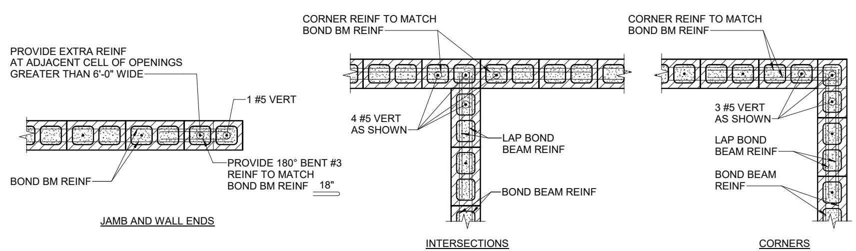


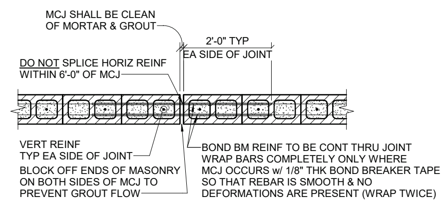


2 STEPPED BOND BEAM AND DECK ATTACHMENT
SCALE: 3/4" = 1'-0"

1 TYPICAL MASONRY LINTEL DETAIL
SCALE: 3/4" = 1'-0"







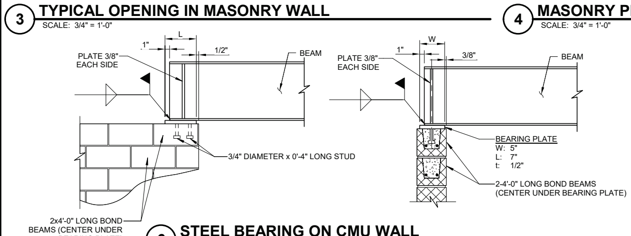
NOTES:
1. GROUT ALL MASONRY WALLS SOLID.
2. PROVIDE MINIMUM #5 @ 48" VERT REINF AT CENTER OF WALL PROVIDE DWLS TO MATCH AT BASE OF WALL.
3. IN ADDITION TO JOINT REINFORCING-PROVIDE 2 #5 CONT IN BOND BEAMS 8'-0" ABOVE FINISHED FLOOR AND AT THE TOP OF WALL.
4. LAP REINFORCING 48 BAR DIAMETERS AT SPLICES.

NOTE:
SPACE MASONRY CONTROL JOINTS @ 24'-0"o.c. AND NO CLOSER THAN 2'-8" TO JAMBS AND WALL ENDS AND NO MORE THAN 12'-0" FROM CORNERS UNLES OTHERWISE SHOWN ON DRAWINGS.

3 TYPICAL OPENING IN MASONRY WALL
SCALE: 3/4" = 1'-0"

4 MASONRY PLAN VIEWS
SCALE: 3/4" = 1'-0"

5 MASONRY CONTROL JOINT
SCALE: 3/4" = 1'-0"



6 STEEL BEARING ON CMU WALL
SCALE: 1" = 1'-0"

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_S_central_R23.rvt
Central File: BIM360://_A_central_R20.rvt

Project Number: SHYQ149104
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REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER
NO. 049751-E
1/27/2026
Signed by: Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

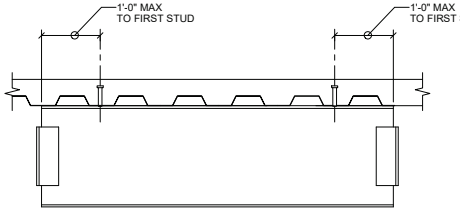
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL
TYPICAL DETAILS - MASONRY

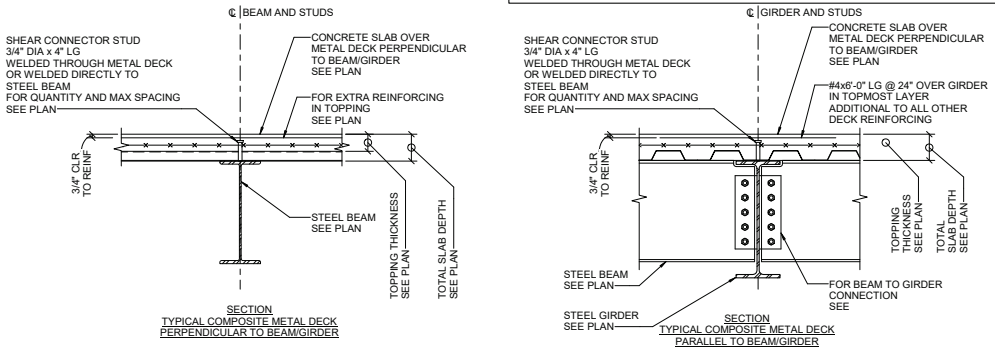
DRAWING NO.: S503



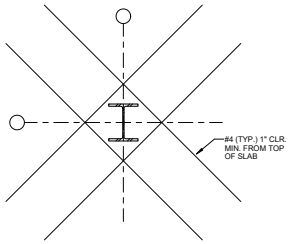
SHEAR STUD PLACEMENT NOTES:
1. ALL SHEAR STUDS TO BE 3/4" DIA. USE 5" LG STUDS IN 6 1/4" DECK DEPTH UNLESS NOTED OTHERWISE.
2. THE NUMBER OF STUDS IS INDICATED ON THE PLANS THUSLY [XX].
3. WHERE NOT OTHERWISE INDICATED ON PLAN, PROVIDE MINIMUM OF 1 SHEAR STUD PER 2 FOOT OF BEAM LENGTH.
4. MINIMUM CENTER TO CENTER SPACING OF THE STUDS ALONG THE LONGITUDINAL AXIS SHALL OF THE COMPOSITE BEAM SHALL BE 4 1/2" AND THE MAXIMUM CENTER TO CENTER SPACING SHALL BE 32". MINIMUM CENTER TO CENTER SPACING ALONG THE TRANSVERSE AXIS SHALL BE3".
5. WHERE DECK IS PERPENDICULAR TO THE COMPOSITE BEAMS, STUDS SHALL BE PLACED AS FOLLOWS:

   CASE #1 (MORE DECK FLUTES THAN STUDS)
   PLACE ONE STUD IN EVERY OTHER DECK FLUTE, THEN STARTING AT EACH END OF THE BEAM, PLACE THE REMAINING STUDS IN UNUSED DECK FLUTES. THE NUMBER OF STUDS ON EACH HALF OF THE BEAM SHOULD BE EQUAL. FOR SPACING LIMITATIONS, SEE NOTE 3.
   CASE #2 (MORE STUDS THAN DECK FLUTES)
   PLACE ONE STUD IN EVERY OTHER DECK FLUTE, THEN STARTING AT EACH END OF THE BEAM, PLACE THE REMAINING STUDS IN UNUSED DECK FLUTES. THE NUMBER OF STUDS ON EACH HALF OF THE BEAM SHOULD BE EQUAL. FOR SPACING LIMITATIONS, SEE NOTE 3.

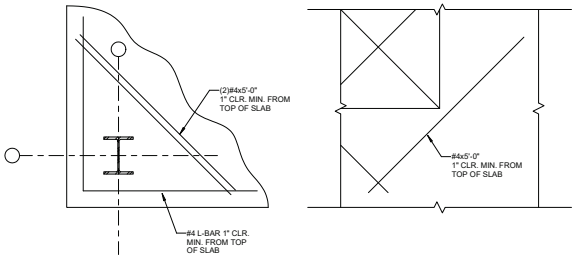
6. WHERE DECK IS PARALLEL TO THE COMPOSITE BEAM, THE STUDS SHALL BE UNIFORMLY SPACED IN A SINGLE ROW. IF A MINIMUM STUD SPACING OF 4 1/2" CENTER TO CENTER CANNOT BE MAINTAINED IN A SINGLE ROW, THEN THE STUDS SHALL BE UNIFORMLY SPACED IN A DOUBLE ROW.
7. SEE BEAM LEGEND ON S002 FOR BEAM NOTATION INFORMATION.



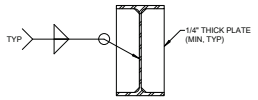
1 TYPICAL COMPOSITE FLOOR FRAMING
SCALE: 1" = 1'-0"



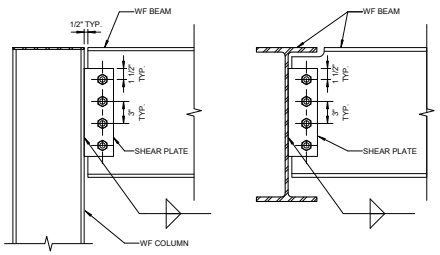
2 SLAB REINFORCEMENT AT COLUMN
SCALE: 3/4" = 1'-0"



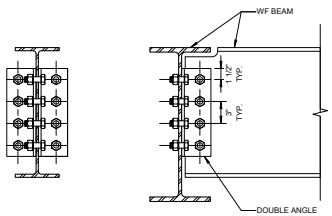
3 CORNER SLAB REINFORCEMENT
SCALE: 3/4" = 1'-0"



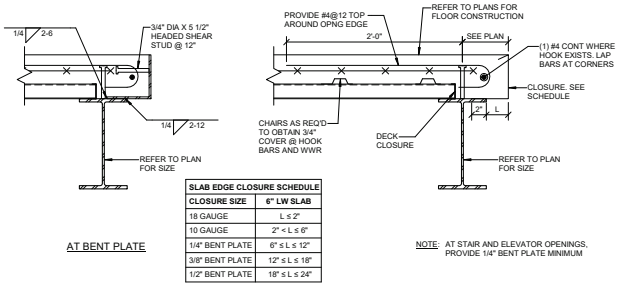
4 TYP FITTED STIFFENER PLATE
SCALE: 1 1/2" = 1'-0"



5 TYPICAL SINGLE SHEAR PLATE CONNECTION
SCALE: 1 1/2" = 1'-0"



6 TYPICAL DOUBLE ANGLE SHEAR CONNECTION
SCALE: 1 1/2" = 1'-0"



SLAB EDGE CLOSURE SCHEDULE	
CLOSURE SIZE	6" LW SLAB
18 GAUGE	L ≤ 2'
10 GAUGE	2" < L ≤ 6"
1/4" BENT PLATE	6" ≤ L ≤ 12"
3/8" BENT PLATE	12" ≤ L ≤ 18"
1/2" BENT PLATE	18" ≤ L ≤ 24"

NOTE: AT STAIR AND ELEVATOR OPENINGS, PROVIDE 1/4" BENT PLATE MINIMUM

11 TYP EDGE CONDITION AT SLAB EDGE OR INTERIOR OPENING
SCALE: 1 1/2" = 1'-0"

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER
NO. 040514
Signed by: Gary D. Garbacik
1/27/2026

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

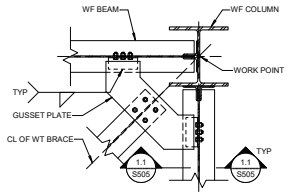
DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

DATE: JANUARY 2026

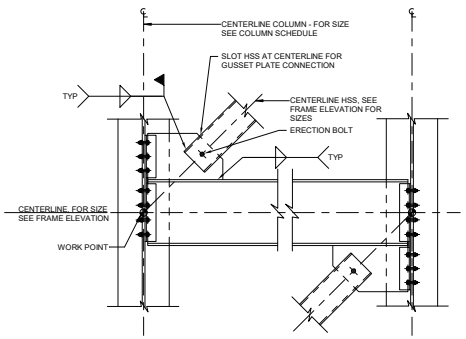
DRAWING TITLE:
STRUCTURAL
TYPICAL DETAILS - STEEL FRAMING

DRAWING NO.:
S504

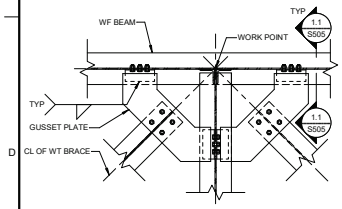
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_S_central_R23.rvt
Central File: BM1081_A_central_R21.rvt
Project Number: SHYQ149104
1/27/2026 3:43:45 PM



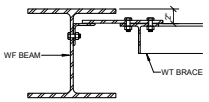
AT COLUMN



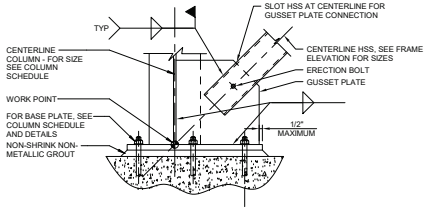
BRACE AT COLUMN WEB



AT BEAM



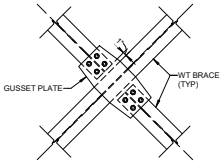
SECTION 1.1



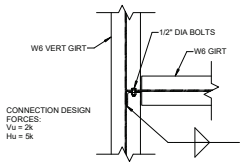
BASE PLATE AT COLUMN WEB

1 TYPICAL WT BRACING CONNECTION DETAILS
SCALE: NTS

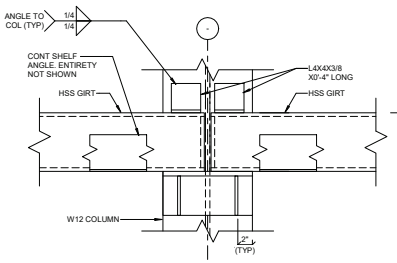
2 BRACED FRAME CONNECTION DETAIL
SCALE: NTS



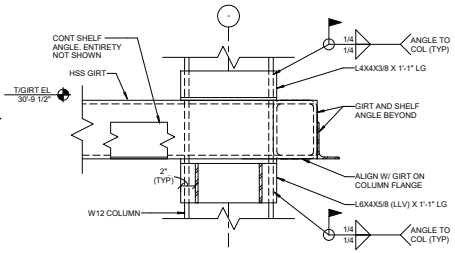
3 TYP X-BRACE FRAME CONNECTION DETAIL
SCALE: NTS



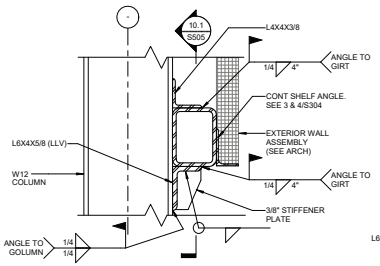
4 DOOR HEADER GIRT CONNECTION DETAIL
SCALE: 1" = 1'-0"



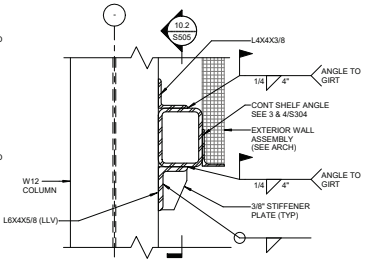
SECTION 10.1



SECTION 10.2

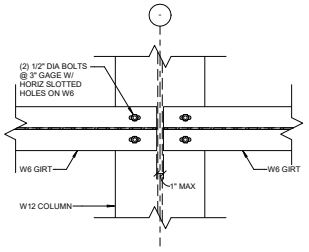


AT COLUMN FLANGE

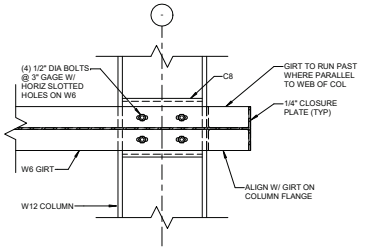


AT COLUMN WEB

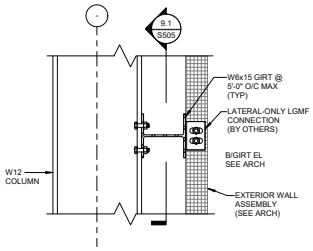
5 TYPICAL HSS GIRT CONNECTIONS
SCALE: 1 1/2" = 1'-0"



SECTION 6.1



SECTION 6.2



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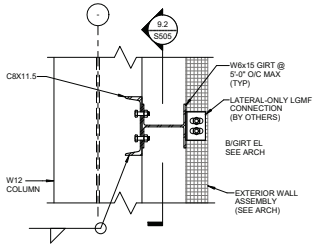

AT COLUMN WEB

6 TYPICAL WF GIRT CONNECTIONS
SCALE: 1 1/2" = 1'-0"

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REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER
1/27/2026

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

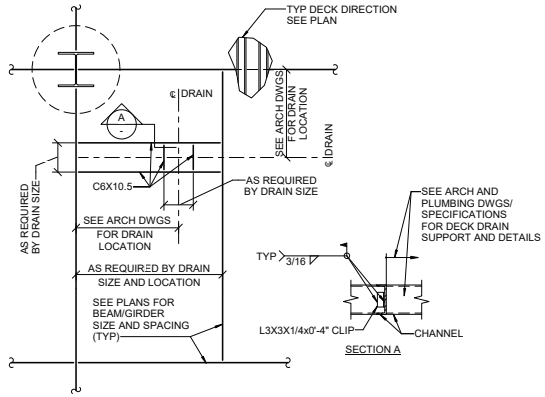
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

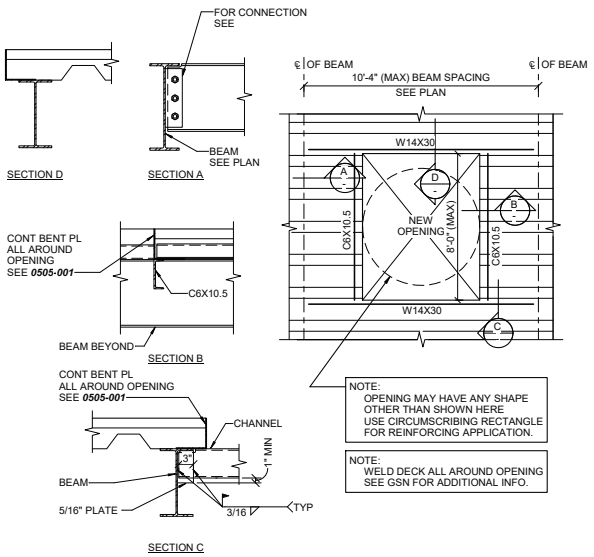
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL
TYPICAL DETAILS - STEEL FRAMING

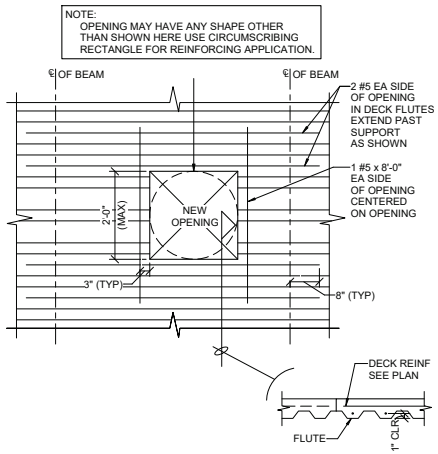
DRAWING NO.: **S505**



1 STEEL FRAMING AT DECK DRAINS
SCALE: 1" = 1'-0"



2 LARGE OPENINGS IN FLOOR DECK
SCALE: 1" = 1'-0"

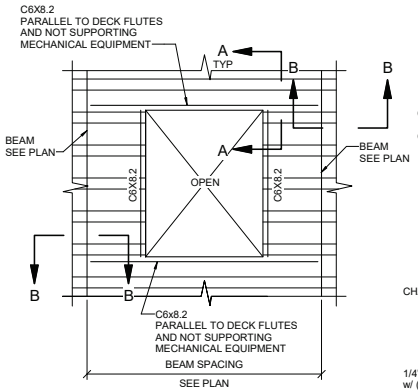


NOTE:
PROVIDE CONCRETE BLOCKOUT FOR OPENINGS - DECKING SHALL NOT BE CUT UNTIL ADJACENT CONCRETE REACHES DESIGN STRENGTH.

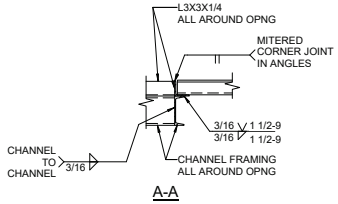
PROVIDE 1 #5 REBAR AT EA FACE OF OPENING WHEN ONE (1) FLUTE IS TO BE CUT.

SPACING BETWEEN OPENINGS SHALL BE GREATER THAN 4'-0" FOR OPENING SPACING 4'-0" OR LESS OR LARGER SIZED OPENINGS SEE

3 SMALL OPENINGS IN FLOOR DECK
SCALE: 1" = 1'-0"

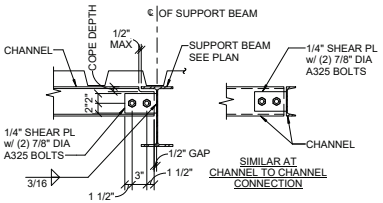


NOTES:
THIS DETAIL APPLIES TO THE FOLLOWING OPENINGS:
1. ACCESS HATCH.
2. EXHAUST FAN.
3. DUCT OPENINGS NOT SUPPORTING EQUIPMENT.
4. RELIEF HOOD.



A-A

NOTE:
WELD DECK ALL AROUND OPENING SEE GSN.

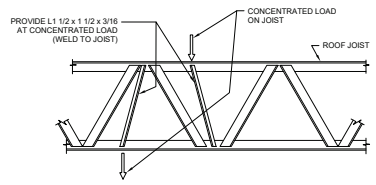


NOTES:
1. MAXIMUM COPE DEPTH FOR C6 BEAM IS 1".
2. PROVIDE STANDARD ROUND HOLES IN BEAMS PROVIDE HORIZONTAL SHORT SLOTTED HOLES IN SHEAR PLATES.

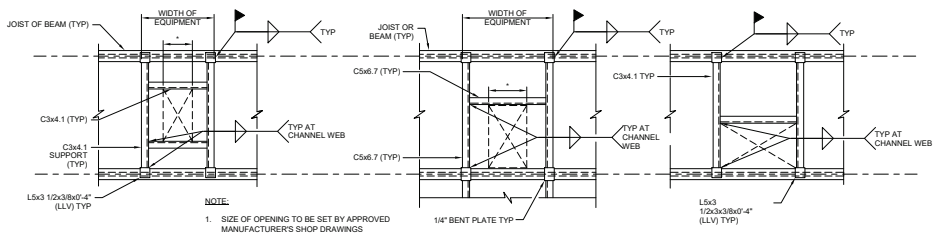
TYPICAL CHANNEL TO SUPPORT CONNECTION

B-B

4 OPENINGS IN METAL DECK
SCALE: 1" = 1'-0"



5 JOIST FRAMING AT CONCENTRATED LOADS
SCALE: NTS



FRAMING FOR EXAUST FANS AND INTAKE RELIEF HOODS

FRAMING FOR HEADING, HEATING, AND AIR CONDITIONING UNITS

FRAMING FOR ROOF DRAINS

6 TYPICAL FRAMING FOR ROOF OPENING & EQUIPMENT
SCALE: 1" = 1'-0"

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1/27/2026
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL GARY DAVID GARBACIK ENGINEER NO. 040751-E
Signed by: Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

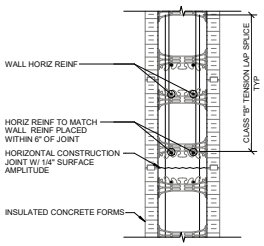
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	-

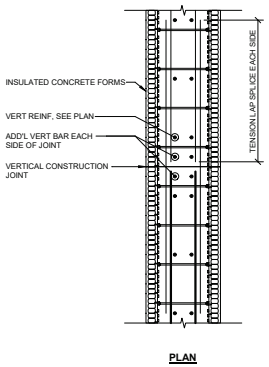
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL TYPICAL DETAILS - STEEL FRAMING

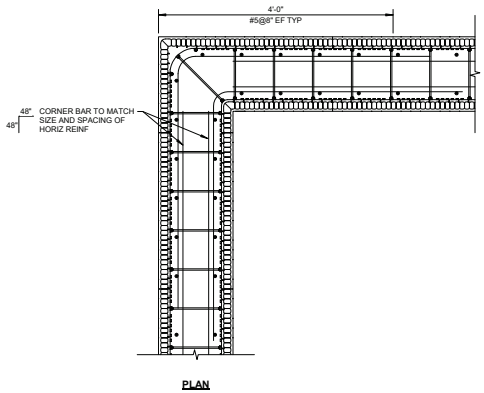
DRAWING NO.: S506



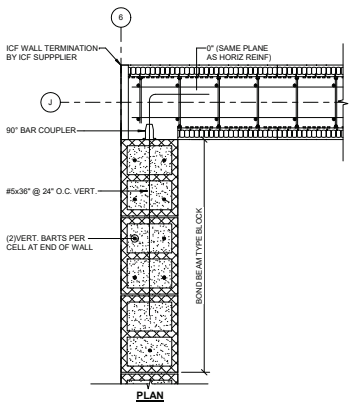
1 ICF HORIZONTAL CONSTRUCTION JOINT
SCALE: 1" = 1'-0"



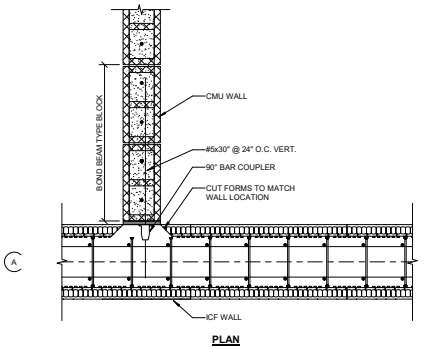
2 ICF VERTICAL CONSTRUCTION JOINT
SCALE: 1" = 1'-0"



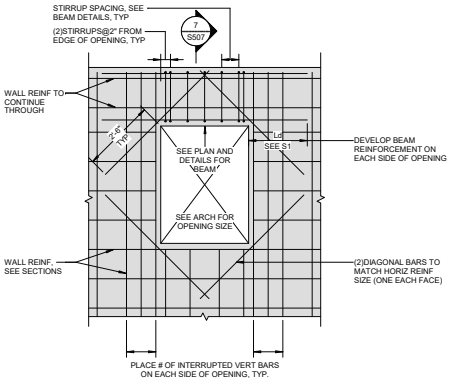
3 ICF CORNER DETAIL
SCALE: 1" = 1'-0"



4 ICF WALL TO CMU CORNER
SCALE: 1" = 1'-0"

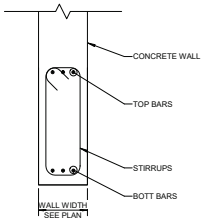


5 ICF WALL TO CMU
SCALE: 1" = 1'-0"



6 ICF CONCRETE WALL DOOR/WINDOW OPENING
SCALE: 1/2" = 1'-0"

BEAM	TOP BARS	BOTT BARS	STIRRUPS
BM1	(3)#5	(3)#5	#3@6"
BM2	(3)#6	(3)#6	#3@4"
BM3	(3)#6	(6)#6 2 LAYERS	#3@4"



BEAM IS INTEGRAL WITH WALL. WALL REINFORCEMENT NOT SHOWN FOR CLARITY.

7 TYP BEAM SECTION IN WALL
SCALE: 1" = 1'-0"

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1/27/2026
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REGISTERED PROFESSIONAL
GARY DAVID GARBACIK
ENGINEER
Signed by: Gary D. Garbacik

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
JR/DA	JR/KP	GG

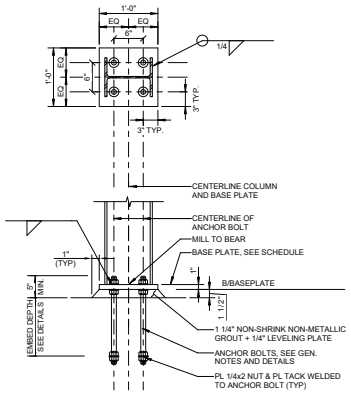
DATE: JANUARY 2026

DRAWING TITLE: STRUCTURAL
TYPICAL DETAILS - CONCRETE WALLS

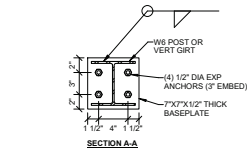
DRAWING NO.: **S507**

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_S_central_R23.rvt
Central File: BM1581_A_central_R21.rvt
Project Number: SHYQ149104
1/27/2026 3:43:50 PM

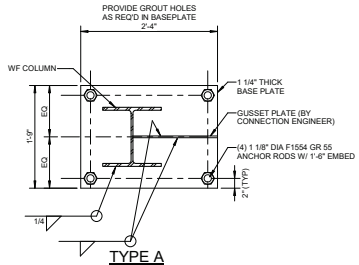
T/ROOF SIMULATOR																			T/ROOF SIMULATOR
43'-0" T/ROOF								28'-6 1/2"											43'-0" T/ROOF
28'-0" T/STEEL - LEVEL 2				W12X65	W12X72	W12X87	W12X65	W12X34		W12X87	W12X87			W12X106	W12X106	W12X65	W12X65	W12X65	28'-0" T/STEEL - LEVEL 2
13'-6" T/SOG	W10X33	W10X45	W10X33						W10X33			W10X45	W10X33						13'-6" T/SOG
0" B/BASEPLATE (TYP) -0'-10 1/2"																			0"
Column Locations	B-3	B-7	C-8	E-1	E-2	E-4	E-5	F-7	F-8	G-1	G-5	G-7	G-8	H-1	H-5	K-1	K-2	K-4	K-5	
BASE PLATE MARK	BP1	BP1	BP1	SEE ELEVATION				BP1	BP1	SEE ELEVATION		BP1	BP1	SEE ELEVATION						



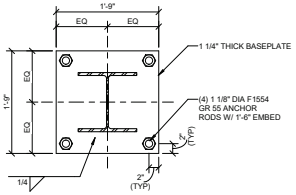
1 TYPICAL BASE PLATE - BP1
SCALE: 1" = 1'-0"



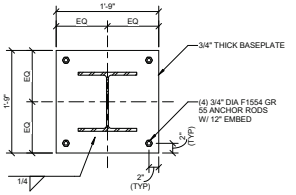
2 W6 POST & GIRT BASEPLATE DETAIL
SCALE: 1 1/2" = 1'-0"



TYPE A

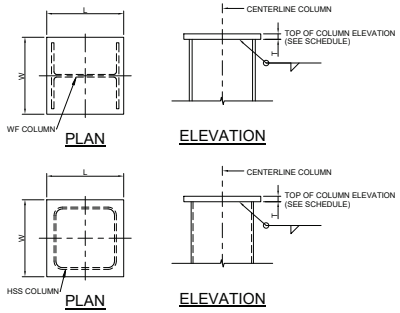


TYPE B



TYPE C

3 LATERAL BASEPLATE (LBP) DETAILS
SCALE: 1" = 1'-0"



4 CAP PLATE DETAIL
SCALE: 3/4" = 1'-0"

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GARY DAVID GARBACIK
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Signed by: Gary D. Garbacik

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: JR/DA | MODELED: JR/KP | CHECKED: GG
DATE: JANUARY 2026
DRAWING TITLE: STRUCTURAL COLUMN SCHEDULE AND DETAILS
DRAWING NO.: **S601**

ABBREVIATIONS

ABV	ABOVE
AC	AIR CONDITIONING
ACST	ACOUSTIC
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AL	ALUMINUM
ALT	ALTERNATE
ARCH	ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
ASSN	ASSOCIATION
ASST	ASSISTANT
ASSY	ASSEMBLY
AVE	AVENUE
AVG	AVERAGE
B	BOTTOM
BALC	BALCONY
BD	BOARD
BETW	BETWEEN
BLDG	BUILDING
BLKG	BLOCKING
BLR	BOILER
BM	BEAM
BM	BENCHMARK
BP	BASE PLATE
BRDG	BRIDGING
BRG	BEARING
BS	BOTH SIDES
BSMT	BASEMENT
CAB	CABINET
CAP	CAPACITY
CDR	COILING DOOR
CER	CERAMIC
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFGI	CONTRACTOR FURNISHED, GOVERNMENT INSTALLED
CI	CAST IRON
CIP	CAST IRON PIPE
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMIU	CONCRETE MASONRY INSULATED UNIT
CMU	CONCRETE MASONRY UNIT
CNCL	CONCEALED
CO	CLEANOUT
CO	COMPANY
COL	COLUMN
COMP	COMPOSITION
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CPT	CARPET
CRV	CURVED
CSK	COUNTERSINK/COUNTERSUNK
CTD	COATED
CTR	CENTER
CUH	CABINET UNIT HEATER
D	DEPTH
DBL	DOUBLE
DEG	DEGREE
DEP	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIV	DIVISION
DL	DEAD LOAD
DMPF	DAMPPROOFING
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
E	EAST
E.G.	FOR EXAMPLE
EA	EACH
EF	EXHAUST FAN
EGEN	EMERGENCY GENERATOR
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
ENTR	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
ESD	ELECTRO-STATIC DISCHARGE
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FAB	FABRICATE
FBD	FIBERBOARD
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FIRE DOOR
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FHY	FIRE HYDRANT
FIN	FINISH
FL	FLASHING
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FLRG	FLOORING
FP	FIREPROOF
FRP	FIBER-REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FTG	FOOTING
FURN	FURNITURE
GA	GAUGE / GAGE
GALV	GALVANIZED
GEN	GENERATOR
GFCI	GOVERNMENT FURNISHED, CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED
GL	GLASS
GLU-LAM	GLUE-LAMINATED
GOVT	GOVERNMENT
GR	GRADE
GRD	GROUND
GVL	GRAVEL
GYP	GYPSUM
H	HIGH
HDWE	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HPT	HIGH POINT
HT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
I.E.	THAT IS
ICF	INSULATED CONCRETE FORM
ID	INSIDE DIAMETER
IH	INTAKE HOOD
INSUL	INSULATED
INTR	INTERIOR
JST	JOIST
JT	JOINT
L	LONG
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LG	LENGTH
LH	LEFT HAND
LIB	LIBRARY
LIN	LINEAR
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LPT	LOW POINT
LT	LIGHT
LWC	LIGHTWEIGHT CONCRETE
M	METER
MAINT	MAINTENANCE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MGR	MANAGER
MH	MANHOLE
MIL	MILITARY
MIN	MINIMUM
MISC	MISCELLANEOUS
MLDG	MOLDING
MM	MILLIMETER
MO	MASONRY OPENING
MOD	MOTOR OPERATED DAMPER
MTG	MOUNTING
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NRC	NOISE-REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OPPOSITE HAND
OHC	OVERHEAD COILING DOOR
OHDR	OVERHEAD DOOR
OHS	OVERHEAD SECTIONAL DOOR
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
P/L	PROPERTY LINE
PASS	PASSENGER
PERF	PERFORATED
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLBG	PLUMBING
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT
PORC	PORCELAIN
PR	PAIR
PREFAB	PREFABRICATED
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PTD	PAINTED
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
QTF	QUARRY TILE FLOOR
R	RADIUS
R	RISER
RB	RESILIENT BASE
RD	ROOF DRAIN
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE
REQD	REQUIRED
RET	RETURN
REV	REVISION
RFG	ROOFING
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RWC	RAIN WATER CONDUCTOR
S	SOUTH
SAPC	SUSPENDED ACOUSTICAL PANEL CEILING
SCHED	SCHEDULE
SDG	SIDING
SEC	SECTION
SF	SQUARE FOOT
SGFT	STRUCTURAL GLAZED FACING TILE
SH	SHOWER
SHM	SECURITY HOLLOW METAL
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
SIM	SIMILAR
SKY	SKYLIGHT
SLDR	SLIDING DOOR
SMLS	SEAMLESS
SPA	SPACING
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SPKR	SPEAKER
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURE / STRUCTURAL
STWY	STAIRWAY
SUPT	SUPERINTENDENT
SUPVR	SUPERVISOR
SURF	SURFACE
SUSP	SUSPENDED / SUSPENSION
SYS	SYSTEM
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/	TOP OF
TAN	TANGENT
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRAZZO
THRU	THROUGH
TLT	TOILET
TRTD	TREATED
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VTR	VERTICAL
W	WEST
W	WIDE
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WTRPRF	WATERPROOFING
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER

SYMBOLS LEGEND

EXTERIOR ELEVATION REFERENCE
ELEVATION REFERENCE
DRAWING ON WHICH ELEVATION APPEARS

BUILDING SECTION REFERENCE
SECTION REFERENCE
DRAWING ON WHICH SECTION APPEARS

WALL SECTION REFERENCE
SECTION REFERENCE
DRAWING ON WHICH SECTION APPEARS

DETAIL REFERENCE
DETAIL REFERENCE
DRAWING ON WHICH DETAIL APPEARS

INTERIOR ELEVATION REFERENCE
ELEVATION REFERENCE
DRAWING ON WHICH DETAIL APPEARS

ROOM IDENTIFICATION REFERENCE
ROOM NAME
ROOM NUMBER

CEILING SYSTEM REFERENCE
CEILING SYSTEM REFERENCE
HEIGHT OF CEILING ABOVE FINISHED FLOOR

DOOR NUMBER REFERENCE

LINTEL TYPE REFERENCE

STRUCTURAL COLUMN REFERENCE

TOILET ACCESSORY REFERENCE

WALL PARTITION REFERENCE

WINDOW/LOUVER TYPE REFERENCE

ROOM SIGN REFERENCE

REVISION REFERENCE

KEYNOTE REFERENCE

NORTH ARROW REFERENCE
MAGNETIC NORTH
BUILDING NORTH

MATERIALS LEGEND

BRICK
CONCRETE MASONRY UNIT
CONCRETE
GYPSUM BOARD / GROUT
BATT INSULATION
RIGID INSULATION
FOAMED IN PLACE INSULATION
CAVITY MOISTURE PROTECTION MATERIAL
COARSE AGGREGATE / BALLAST
STEEL
ALUMINUM
FINISH LUMBER
DIMENSIONAL LUMBER
SHIM
PLYWOOD
PLASTIC / PVC
EARTH / SOIL

GENERAL NOTES

1. THIS DRAWING REFLECTS A STANDARD SYMBOLS AND ABBREVIATIONS DRAWING. NOT ALL OF THE ITEMS DEPICTED APPEAR IN THIS PROJECT.
2. GENERAL NOTES ON THIS DRAWING ARE APPLICABLE TO EACH DRAWING OF THIS SET. REFER TO DRAWINGS FOR SPECIFIC NOTES APPLICABLE TO EACH DRAWING.
3. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES.
4. PERFORM ALL WORK IN ACCORDANCE WITH GOVERNING BUILDING CODES, OSHA AND ALL OTHER APPLICABLE RULES, REGULATIONS, AND ORDINANCES AS LISTED ON THE CODE SUMMARY. CONFORM ALL WORK TO REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.
5. THOROUGHLY REVIEW ALL STRUCTURAL, MECHANICAL PLUMBING, AND ELECTRICAL DRAWINGS PRIOR TO ANY WORK BEING PERFORMED.
6. BECOME FAMILIAR WITH THE PROJECT THROUGH INSPECTION OF THE SITE AND REVIEW OF THE DRAWINGS SO AS TO THOROUGHLY UNDERSTAND THE NATURE AND REQUIREMENTS OF THE WORK. ANY AND ALL DISCREPANCIES ARE TO BE REPORTED TO THE GOVERNMENT PRIOR TO THE COMMENCEMENT OF ANY WORK AFFECTED BY SUCH DISCREPANCY. ANY AND ALL WORK PROCEEDING OTHERWISE AND THEN FOUND TO BE INCORRECT OR INCONSISTENT WITH THE INTENDED RESULT WILL BE REMOVED, REPLACED AND/OR CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST OR BURDEN TO THE GOVERNMENT.
7. VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AT THE WORK SITE PRIOR TO COMMENCEMENT OF WORK. COORDINATE ALL WORK WITH CONDITIONS ENCOUNTERED IN THE FIELD AND MAKE ALL NECESSARY ADJUSTMENTS ACCORDINGLY.
8. IT IS THE INTENTION OF THE DRAWINGS TO COVER ALL WORK AND MATERIAL FOR A COMPLETE INSTALLATION. ANY EQUIPMENT, HARDWARE, AND ACCESSORIES NORMALLY UTILIZED FOR A COMPLETE INSTALLATION, THOUGH NOT SPECIFICALLY STATED OR SHOWN, SHALL BE FURNISHED AND INSTALLED AS PART OF THE WORK.
9. ARRANGE AND COORDINATE ALL REQUIRED INSPECTIONS AND SECURE ALL NECESSARY APPROVALS OF THE WORK.
10. CONTRACTOR SHALL PRE-ARRANGE WITH THE GOVERNMENT ALL PHASING OF THE WORK INCLUDING DEMOLITION, DELIVERY OF MATERIALS, CONSTRUCTION, CLEAN-UP, ETC.
11. CLEAN ALL EXISTING SURFACES AFTER CONSTRUCTION, INCLUDING ALL WALLS, FLOORS, CEILINGS, LIGHT FIXTURE LENSES, DIFFUSERS AND RETURNS.
12. CONTRACTOR IS RESPONSIBLE FOR FINAL FIT, FINISH APPEARANCE AND PERFORMANCE OF ALL WORK.
13. ALL WORK TO BE PERFORMED IN A FIRST-CLASS WORKMANLIKE MANNER, MATCHING AND ALIGNING ALL SURFACES SO AS TO AFFORD A NEAT FINISHED APPEARANCE. CLEAN ALL SURFACES FREE OF SOIL, DIRT, REFUSE AND DEBRIS RESULTANT FROM THE WORK. AT CONCLUSION OF THE WORK, ALL FINISHED EXPOSED SURFACES INCLUDING GLASS, ALUMINUM AND FINISHED HARDWARE TO BE THOROUGHLY CLEANED TO THE SATISFACTION OF THE GOVERNMENT.
14. LEAVE ALL CHASES, HOLES, OPENINGS, ETC. PLUMB LEVEL, TRUE AND OF A PROPER SIZE OR CUT SAME INTO EXISTING WORK AS MAY BE NECESSARY FOR PROPER INSTALLATION OF WORK. CONSULT, CONFER AND OTHERWISE COORDINATE WITH ANY AND ALL OTHER CONTRACTORS AND CONCERNED PARTIES REGARDING PROPER LOCATION, SIZE, PLACEMENT, ALIGNMENT AND ORIENTATION OF SAME. IN CASE OF ANY FAILURE TO LEAVE OR CUT SUCH OPENINGS OR OTHERWISE LEAVE SUCH ACCOMMODATIONS IN PROPER PLACE, CUT THEM AFTERWARDS AT OWN EXPENSE. NO EXCESSIVE CUTTING WILL BE PERMITTED NOR ANY STRUCTURAL MEMBERS TO BE CUT WITHOUT THE CONSENT OF THE GOVERNMENT.
15. COMPLY WITH ALL GOVERNMENT SAFETY TRAINING REQUIREMENTS AND SITE PROCEDURES, AND COORDINATE THE FOREGOING WITH GOVERNMENT'S DESIGNATED REPRESENTATIVES.
16. PERFORM ALL WORK WITHOUT INTERFERING WITH GOVERNMENT'S NORMAL OPERATIONS.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL GENERAL NOTES, LEGENDS & ABBREVIATIONS

DRAWING NO.: **A001**

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt
Project Number: SHYQ149104
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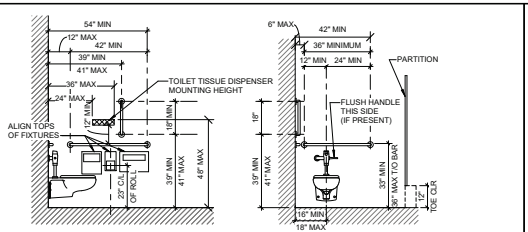
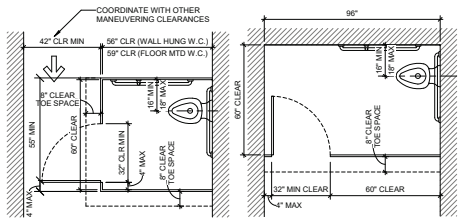


ACCESSORIES LAYOUT - SIDE VIEW

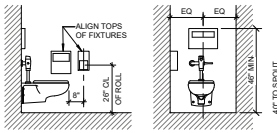
ACCESSORIES LAYOUT - FRONT VIEW



COMPARTMENT LAYOUT

INSWINGING COMPARTMENT LAYOUT

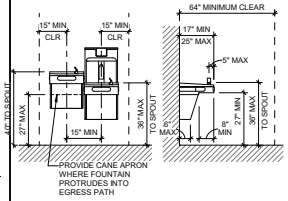
TRANSFER WATER CLOSET CLEARANCES



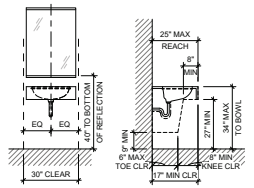
ACCESSORIES LAYOUT SIDE VIEW

ACCESSORIES LAYOUT FRONT VIEW

STD WATER CLOSET CLEARANCES



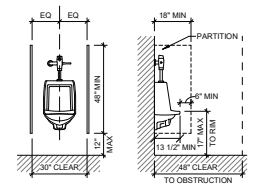
ACCESSIBLE WATER COOLERS



FRONT VIEW

SIDE VIEW

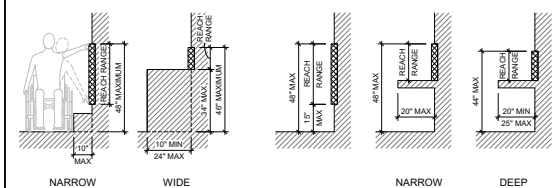
ACCESSIBLE LAVATORIES



FRONT VIEW

SIDE VIEW

STANDARD URINAL CLEARANCES



NARROW OBSTRUCTION

WIDE OBSTRUCTION

SIDE REACH

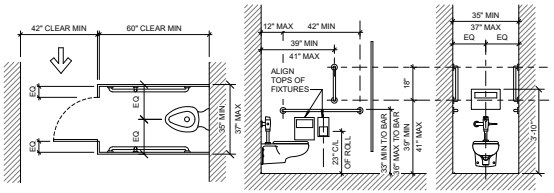
UNOBSTRUCTED

NARROW OBSTRUCTION

DEEP OBSTRUCTION

FORWARD REACH

REACH RANGES

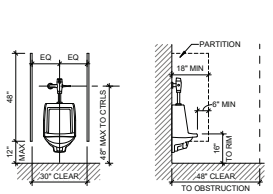


COMPARTMENT LAYOUT

ACCESSORIES LAYOUT SIDE VIEW

ACCESSORIES LAYOUT FRONT VIEW

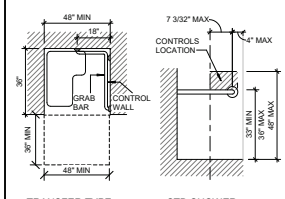
AMBULATORY WATER CLOSET CLEARANCES



FRONT VIEW

SIDE VIEW

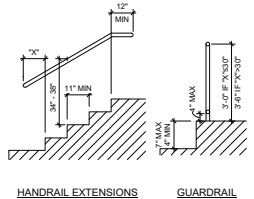
ACCESSIBLE URINAL CLEARANCES



TRANSFER TYPE COMPARTMENT

STD SHOWER ELEVATION

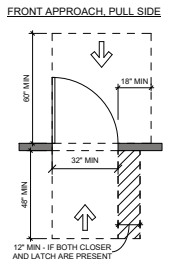
STD SHOWER CLEARANCES



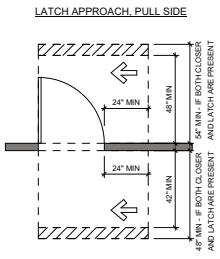
HANDRAIL EXTENSIONS

GUARDRAIL

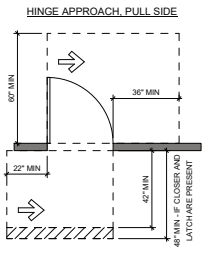
HANDRAILS AND GUARDRAILS



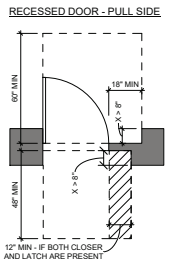
FRONT APPROACH, PUSH SIDE



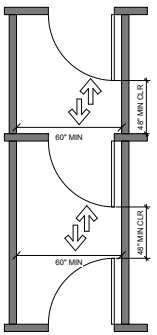
LATCH APPROACH, PUSH SIDE



HINGE APPROACH, PUSH SIDE

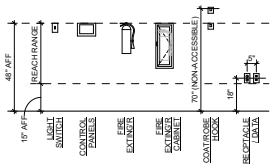


RECESSED DOOR - PUSH SIDE

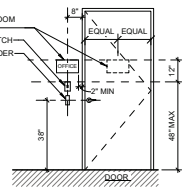


DOORS IN SERIES

MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS



WALL MOUNTED ELEMENTS



WALL ELEMENTS AT DOOR

ACCESSIBILITY NOTES

GENERAL

1. THE DIAGRAMS ON THIS DRAWING REPRESENT TYPICAL INSTALLATIONS. NOT ALL SITUATIONS SHOWN ARE PRESENT IN THIS PROJECT. DIAGRAMS AND CONDITIONS SHOWN MAY OR MAY NOT REFLECT EVERY CONDITION OF THIS PROJECT. COORDINATE WITH ARCHITECT FOR MOUNTING HEIGHTS NOT SHOWN.
2. THE REQUIREMENTS SHOWN ILLUSTRATE BEST PRACTICES. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE NATIONAL AND LOCAL CODE REQUIREMENTS. NOTIFY ARCHITECT IF A DISCREPANCY EXISTS.
3. LOCATE ALL FIXTURES SO THAT CRITICAL "CLEAR" DIMENSIONS ARE TAKEN AT THE FINISH FACE OF THE ADJACENT SURFACE.
4. SEE THE ENLARGED FLOOR PLANS FOR TOILET ACCESSORY LOCATIONS, STYLES, QUANTITIES, AND ADDITIONAL MOUNTING REQUIREMENTS.
5. ALL OBSTRUCTIONS ARE TO PROTRUDE LESS THAN 4" FROM WALL OR BE PLACED OUTSIDE OF A CIRCULATION PATH.
6. THE HIGHEST OPERABLE PART OF THE CONTROLS, DISPENSERS, RECEPTACLES, AND OTHER OPERABLE EQUIPMENT SHALL BE NO HIGHER THAN 42" ABOVE FINISHED FLOOR FOR FORWARD APPROACH, NOT HIGHER THAN 48" ABOVE FINISHED FLOOR FOR SIDE APPROACH, AND NOT LESS THAN 36" ABOVE FINISHED FLOOR FOR EITHER APPROACH.
7. ADJUST OPERATING CONTROLS TO LIMIT THE MAXIMUM REQUIRED FORCE TO BE NO GREATER THAN FIVE (5) POUNDS.

DOORS

1. REFER TO DOOR CLEARANCE DIAGRAMS ON THIS SHEET FOR REQUIRED MANEUVERING CLEARANCES AT DOORWAYS BASED UPON THE DIRECTION OF APPROACH. IF THESE CLEARANCES ARE NOT MET OR IF A DIMENSIONAL DISCREPANCY BETWEEN THESE CLEARANCES AND DIMENSIONS SHOWN OCCUR, THE DIMENSION(S) SHOWN ON THESE DIAGRAMS TAKE PRECEDENCE.
2. VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK. NOTIFY THE ARCHITECT IN THE EVENT OF A CONFLICT.
3. DOORS SHALL HAVE A MINIMUM CLEAR OPENING OF 34 INCHES WHEN THE DOOR IS OPEN 90 DEGREES.
4. DOORS SHALL HAVE A MINIMUM CLEAR OPENING HEIGHT OF 84 INCHES MEASURED FROM THE FINISHED FLOOR TO THE BOTTOM OF THE DOOR FRAME.
5. ADJUST DOOR CLOSERS AS REQUIRED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM.
6. ADJUST DOOR CLOSERS TO A MAXIMUM REQUIRED OPENING FORCE OF NO MORE THAN FIVE POUNDS.

URINALS, WATER CLOSETS AND COMPARTMENTS

1. THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE A MINIMUM OF 17" AND A MAXIMUM OF 19".
2. INSTALL HAND OPERATED CONTROLS (IF PRESENT) FOR FLUSH VALVES ON THE APPROACH (WIDE) SIDE OF THE TOILET COMPARTMENT/ROOM, NO GREATER THAN 44" ABOVE FINISHED FLOOR.
3. INSTALL COAT HOOK/BUMPER ON BACK OF STALL DOORS AT 48"A/FF IN ACCESSIBLE AND AMBULATORY STALLS AND 60" IN STANDARD STALLS.

GRAB BARS

1. GRAB BARS SHALL HAVE AN OUTSIDE DIAMETER OF NO LESS THAN 1-1/4 INCHES AND NO MORE THAN 1-1/2 INCHES.
2. ALL ACCESSORIES AND ADJACENT WALL SURFACES ARE TO BE KEPT A MINIMUM OF 1-1/2 INCHES CLEAR OF EDGES OF GRASPABLE SURFACES OF A GRAB BAR.
3. ALL GRAB BARS AND ADJACENT SURFACES SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. EDGES SHALL HAVE A MINIMUM RADIUS OF 1/4".
4. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
5. ANCHORS FOR SECURING GRAB BARS SHALL BE OF A TYPE CAPABLE OF MEETING ANSI-A24 FORCE REQUIREMENTS OR AN EQUAL OR STRICTER STANDARD.

LAVATORIES AND SINKS

1. ALL HOT WATER AND DRAIN PIPES EXPOSED UNDER LAVATORIES OR SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT.
2. THERE SHALL BE NO SHARP SURFACES UNDER LAVATORIES OR SINKS.
3. FAUCET CONTROLS AND OPERATING MECHANISMS (IF PRESENT) SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
4. SELF CLOSING FAUCET VALVES MUST REMAIN OPEN FOR AT LEAST TEN (10) SECONDS.
5. ALL LAVATORY AND SINK FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF NO MORE THAN 0.5 GALLONS PER MINUTE.
6. ALL LAVATORIES AND SINKS TO MEET REACH RANGE REQUIREMENTS TO DEPTH OF BOWL, UNLESS NOTED OTHERWISE.

SHOWER COMPARTMENTS

1. CONTROLS, OTHER THAN DRAIN STOPPERS SHALL BE INSTALLED ON THE SIDE WALL OPPOSITE THE SEAT NO LESS THAN 38" AND NO GREATER THAN 48" ABOVE FINISHED FLOOR, AND SHALL BE LOCATED WITHIN 15" FROM THE CENTERLINE OF THE SEAT TOWARD THE SHOWER OPENING.
2. THRESHOLDS AT THE ENTRANCE TO THE COMPARTMENT SHALL BE 1/2" HIGH MAXIMUM.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL ADA ACCESSIBILITY NOTES

DRAWING NO.: **A002**

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Central File: BM58301_A_central_R21.rvt
Project Number: SHYQ149104
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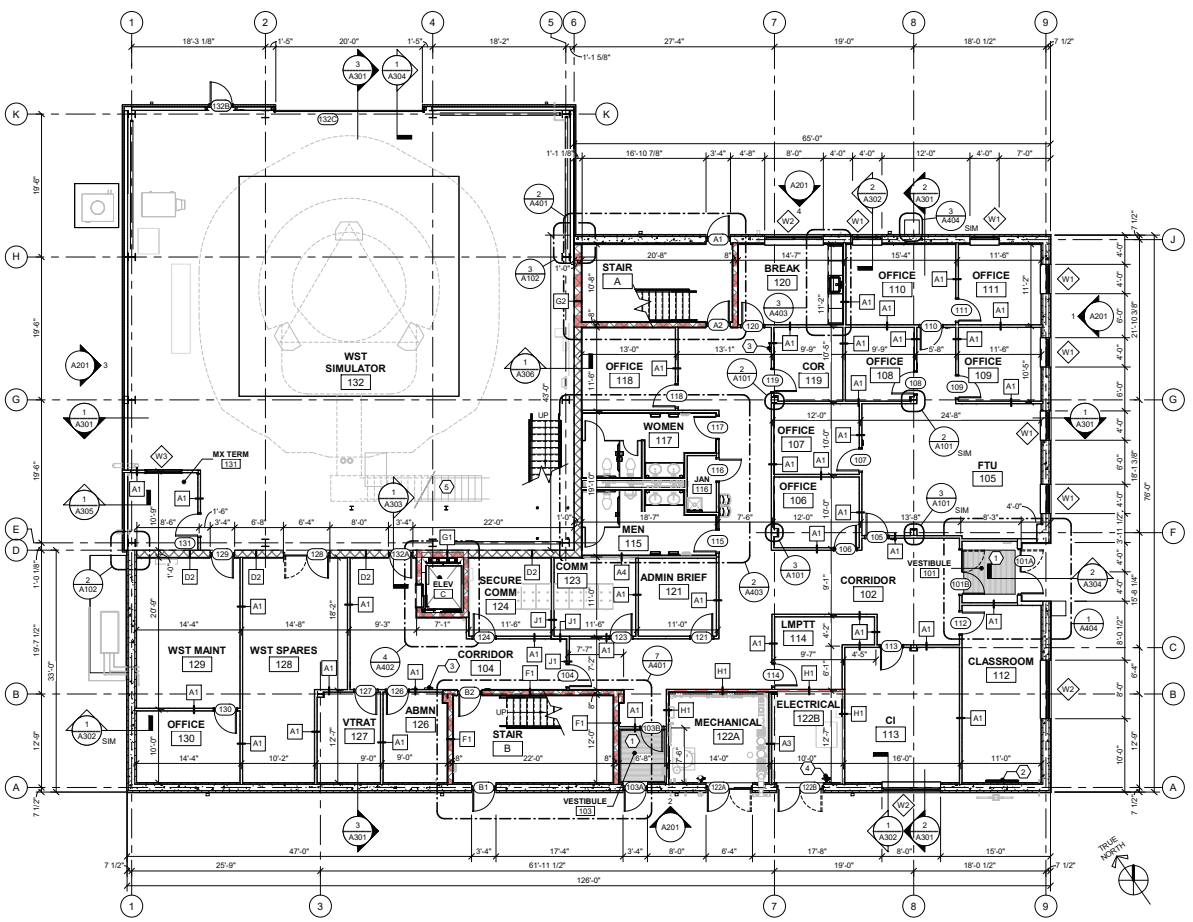


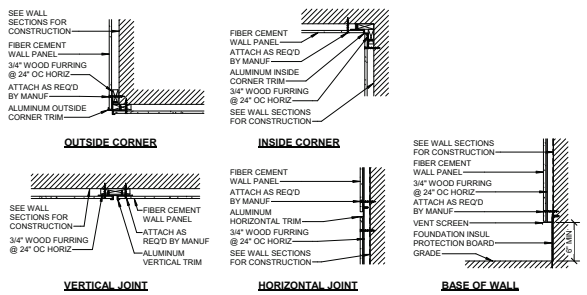
1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

FLOOR PLAN NOTES

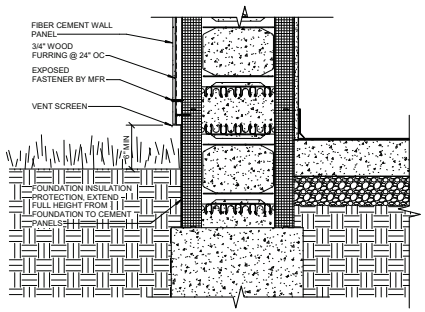
1. MASONRY DIMENSIONS ARE NOMINAL UNLESS NOTED OTHERWISE.
2. DIMENSIONS AT INSULATED CONCRETE FORMS AND CMU WALLS ARE TO THE FACE OF ICF/CMU UNLESS NOTED OTHERWISE.
3. DIMENSIONS AT INTERIOR STUD WALLS ARE TO THE CENTERLINE OF STUD UNLESS NOTED OTHERWISE.
4. DIMENSIONS AT EXTERIOR STUD WALLS ARE TO THE INSIDE FACE OF STUD UNLESS NOTED OTHERWISE.
5. DIMENSIONS FOLLOWED BY AN ASTERISK (*) ARE TO THE FACE OF STUD ON ONE OR BOTH SIDES.
6. PROVIDE BULLNOSED CMU AT ALL EXPOSED CORNERS IN CMU PARTITIONS.
7. PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS INCLUDING BUT NOT LIMITED TO OPENINGS FOR DOORS, WINDOWS, LOUVERS, AND MECHANICAL AND ELECTRICAL PENETRATIONS.
8. ARCHITECTURAL DRAWINGS SHOW FLOOR DRAINS, TRENCH DRAINS, AND FLOOR HATCHES. SEE STRUCTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
9. SEE 1/G006 AND 2/G006 FOR SECURE WALLS CONFORMING TO DoD 5200.R CRITERIA.
10. THE INSIDE EDGE OF DOOR FRAMES SHALL BE SET 6" CLEAR FROM THE FINISH FACE OF THE ADJACENT PERPENDICULAR PARTITION UNLESS OTHERWISE DIMENSIONED.
11. SEE CIVIL DRAWINGS FOR FINISHED FLOOR ELEVATIONS.
12. PROVIDE SUFFICIENT BLOCKING INSIDE THE WALLS FOR INSTALLATION OF WALL MOUNTED ITEMS INCLUDING, BUT NOT LIMITED TO, CASEWORK, TELEVISION BRACKETS AND TOILET ACCESSORIES.
13. PROVIDE CONTROL JOINTS IN GYPSUM BOARD SURFACES IN THE FOLLOWING LOCATIONS:
    a. WHERE THE WALL SURFACE RUNS UNINTERRUPTED (BOTH HORIZONTALLY AND VERTICALLY) IN A STRAIGHT PLANE IN EXCESS OF 30 FEET.
    b. WHERE THE PARTITION OR CEILING TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT).
    c. WHERE THE INTERIOR CEILING RUNS UNINTERRUPTED IN A STRAIGHT PLANE IN EXCESS OF 50 FEET.
    d. WHERE THE EXTERIOR CEILING RUNS UNINTERRUPTED IN A STRAIGHT PLANE IN EXCESS OF 30 FEET.
    e. WHERE A CONTROL JOINT OCCURS IN AN ACOUSTICAL OR FIRE-RATED SYSTEM. BLOCKING. PROVIDE BACKING MATERIAL BEHIND THE CONTROL JOINT SUCH AS 5/8 INCH TYPE X GYPSUM BOARD, MINERAL FIBER, OR OTHER TESTED EQUIVALENT.
14. SEE STRUCTURAL DRAWINGS FOR REINFORCEMENT OF INSULATED CONCRETE FORMS.
15. SEE CIVIL DRAWINGS FOR CONCRETE PADS AND BOLLARD LOCATIONS AT EXTERIOR DOORS.
16. AT TOILET ROOMS, TILE TO BE COORDINATED W/ WALL MOUNTED ITEMS. IF TILE TERMINATES BELOW WALL MOUNTED ITEM, PROVIDE BLOCKING AND SEALANT TO CLOSE OFF ANY GAPS. DO NOT RUN TILE AROUND ITEM. IF TILE TERMINATES HORIZONTALLY ALONG A WALL MOUNTED ITEM, COORDINATE TILE EXTENTS W/ ARCHITECT PRIOR TO INSTALL OF TILE.

KEYNOTES

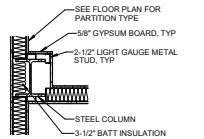
1 RECESSED WALK-OFF MAT
2 TELEVISION BRACKET, (TELEVISION GFGI)
3 FIRE EXTINGUISHER CABINET
4 FIRE EXTINGUISHER
5 STAIRCASE, BY OTHERS.



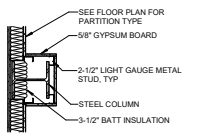
5 TYPICAL FIBER CEMENT PANEL EDGE DETAILS
SCALE: 1 1/2" = 1'-0"



4 TYPICAL FOUNDATION PROTECTION DETAIL
SCALE: 1 1/2" = 1'-0"



2 TYPICAL PILASTER DETAIL
SCALE: 3/4" = 1'-0"



3 TYPICAL PILASTER DETAIL
SCALE: 3/4" = 1'-0"

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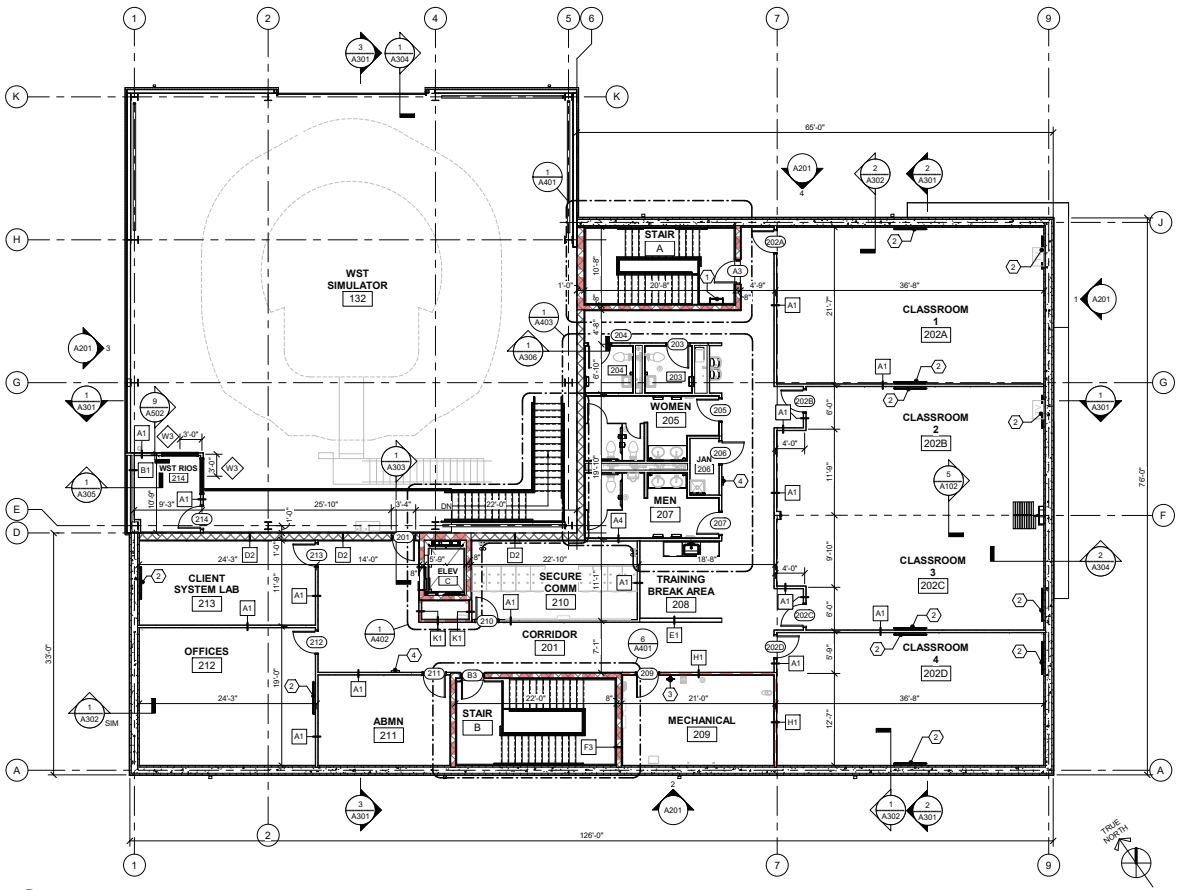
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: BJO | MODELED: BJO | CHECKED: JAS
DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL FIRST FLOOR PLAN
DRAWING NO.: **A101**

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt
Project Number: SHYQ149104
1/26/2026 9:52:29 AM



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

FLOOR PLAN NOTES

1. MASONRY DIMENSIONS ARE NOMINAL UNLESS NOTED OTHERWISE.
2. DIMENSIONS AT INSULATED CONCRETE FORMS AND CMU WALLS ARE TO THE FACE OF ICF/CMU UNLESS NOTED OTHERWISE.
3. DIMENSIONS AT INTERIOR STUD WALLS ARE TO THE CENTERLINE OF STUD UNLESS NOTED OTHERWISE.
4. DIMENSIONS AT EXTERIOR STUD WALLS ARE TO THE INSIDE FACE OF STUD UNLESS NOTED OTHERWISE.
5. DIMENSIONS FOLLOWED BY AN ASTERISK (*) ARE TO THE FACE OF STUD ON ONE OR BOTH SIDES.
6. PROVIDE BULLNOSED CMU AT ALL EXPOSED CORNERS IN CMU PARTITIONS.
7. PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS INCLUDING BUT NOT LIMITED TO OPENINGS FOR DOORS, WINDOWS, LOUVERS, AND MECHANICAL AND ELECTRICAL PENETRATIONS.
8. ARCHITECTURAL DRAWINGS SHOW FLOOR DRAINS, TRENCH DRAINS, AND FLOOR HATCHES. SEE STRUCTURAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
9. SEE 1/G006 AND 2/G006 FOR SECURE WALLS CONFORMING TO DoD 5200.R CRITERIA.
10. THE INSIDE EDGE OF DOOR FRAMES SHALL BE SET 6" CLEAR FROM THE FINISH FACE OF THE ADJACENT PERPENDICULAR PARTITION UNLESS OTHERWISE DIMENSIONED.
11. SEE CIVIL DRAWINGS FOR FINISHED FLOOR ELEVATIONS.
12. PROVIDE SUFFICIENT BLOCKING INSIDE THE WALLS FOR INSTALLATION OF WALL MOUNTED ITEMS INCLUDING, BUT NOT LIMITED TO, CASEWORK, TELEVISION BRACKETS AND TOILET ACCESSORIES.
13. PROVIDE CONTROL JOINTS IN GYPSUM BOARD SURFACES IN THE FOLLOWING LOCATIONS:
    a. WHERE THE WALL SURFACE RUNS UNINTERRUPTED (BOTH HORIZONTALLY AND VERTICALLY) IN A STRAIGHT PLANE IN EXCESS OF 30 FEET.
    b. WHERE THE PARTITION OR CEILING TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC, OR BUILDING CONTROL ELEMENT).
    c. WHERE THE INTERIOR CEILING RUNS UNINTERRUPTED IN A STRAIGHT PLANE IN EXCESS OF 50 FEET.
    d. WHERE THE EXTERIOR CEILING RUNS UNINTERRUPTED IN A STRAIGHT PLANE IN EXCESS OF 30 FEET.
    e. WHERE A CONTROL JOINT OCCURS IN AN ACOUSTICAL OR FIRE-RATED SYSTEM, BLOCKING. PROVIDE BACKING MATERIAL BEHIND THE CONTROL JOINT SUCH AS 5/8 INCH TYPE X GYPSUM BOARD, MINERAL FIBER, OR OTHER TESTED EQUIVALENT.
14. SEE STRUCTURAL DRAWINGS FOR REINFORCEMENT OF INSULATED CONCRETE FORMS.
15. SEE CIVIL DRAWINGS FOR CONCRETE PADS AND BOLLARD LOCATIONS AT EXTERIOR DOORS.
16. AT TOILET ROOMS, TILE TO BE COORDINATED W/ WALL MOUNTED ITEMS. IF TILE TERMINATES BELOW WALL MOUNTED ITEM, PROVIDE BLOCKING AND SEALANT TO CLOSE OFF ANY GAPS. DO NOT RUN TILE AROUND ITEM. IF TILE TERMINATES HORIZONTALLY ALONG A WALL MOUNTED ITEM, COORDINATE TILE EXTENTS W/ ARCHITECT PRIOR TO INSTALL OF TILE.

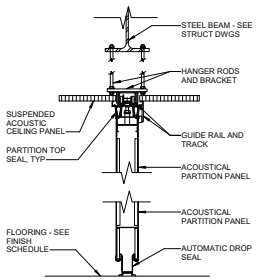
KEYNOTES

1 METAL ROOF LADDER - PAINT
2 TELEVISION BRACKET, (TELEVISION GFGI)
3 FIRE EXTINGUISHER
4 FIRE EXTINGUISHER CABINET

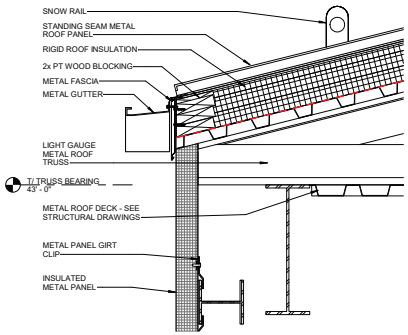
BID OPTION #1

FURNISH AND INSTALL OPERABLE PARTITION, TRACK, AND RELATED ITEMS BETWEEN CLASSROOMS #2 (ROOM 202B) AND #3 (ROOM 202C)

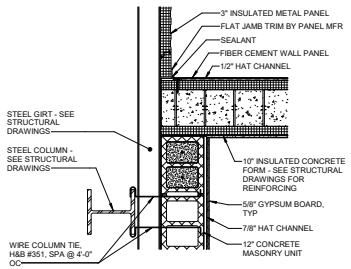
NOTE: STRUCTURAL STEEL ASSOCIATED WITH THE OPERABLE PARTITIONS IS TO BE INSTALLED AS PART OF THE BASE BID.



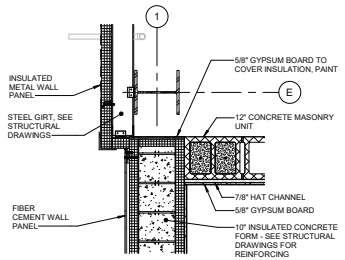
5 DETAIL
SCALE: 1 1/2" = 1'-0"



4 TYPICAL EAVE EDGE DETAIL
SCALE: 1 1/2" = 1'-0"



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



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

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL
SECOND FLOOR PLAN

DRAWING NO.: **A102**

Local File: Autodesk Docs://0709149-PANG_EC_130J_Simulator/0709146_MC130J_Sim_A_R23.com.rvt
Central File: BMS001_A_central_R21.rvt
Project Number: SHYQ149104
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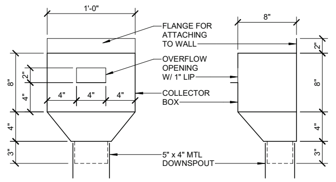
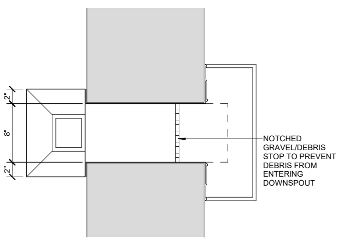
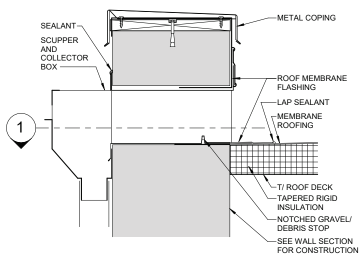


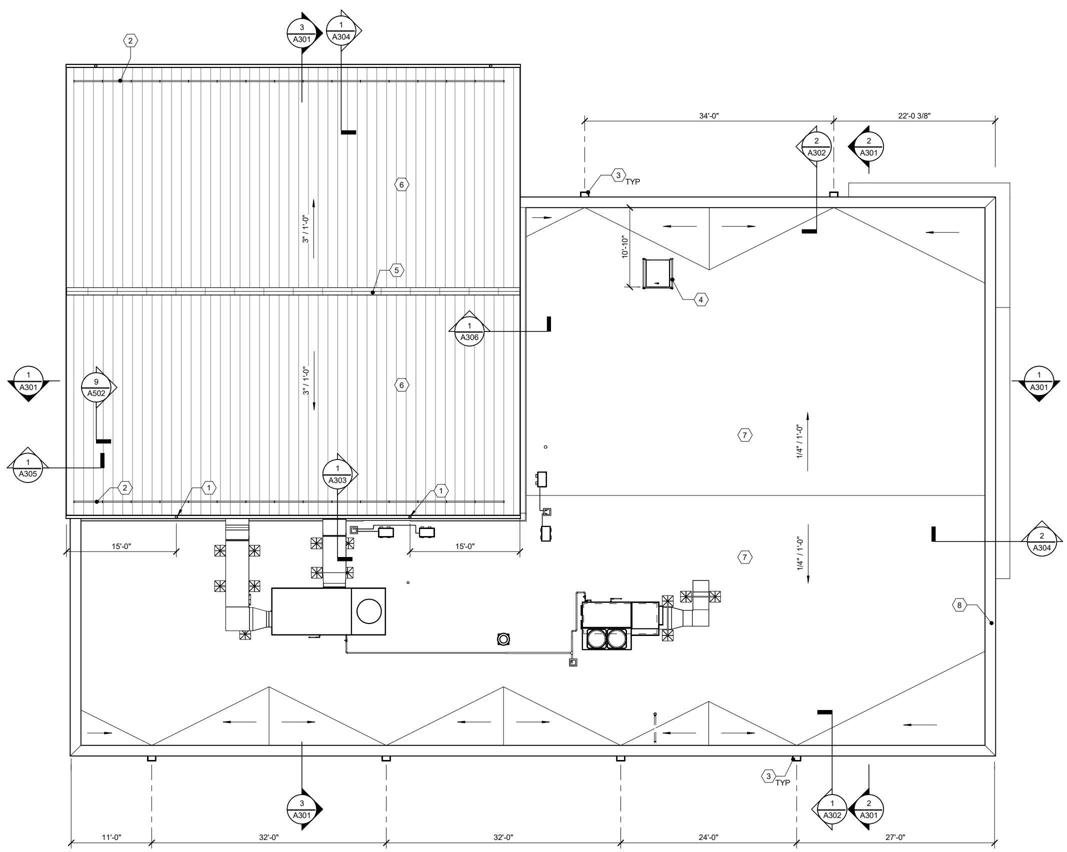
FRONT ELEVATION **SIDE ELEVATION**



SECTION 1



7 **TYPICAL SCUPPER DETAIL**
SCALE: 1 1/2" = 1'-0"



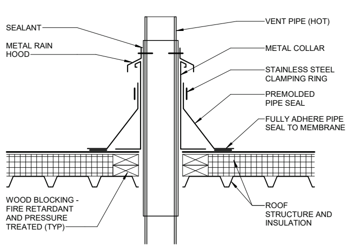
1 **ROOF PLAN**
SCALE: 1/8" = 1'-0"

ROOF NOTES

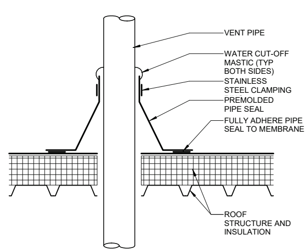
1. ALL ROOFING ON THE LOWER ROOF TO BE FULLY ADHERED SINGLE PLY TPO MEMBRANE ROOFING.
2. ALL ROOFING ON THE UPPER ROOF TO BE STANDING SEAM METAL PANEL ROOFING.
3. RIGID ROOF INSULATION, 6" MINIMUM TOTAL THICKNESS (R-30), MINIMUM TWO LAYERS WITH STAGGERED JOINTS.
4. INSTALL VAPOR BARRIER OVER METAL DECK UNDER RIGID INSULATION.
5. ALL LOW SLOPE ROOF SLOPES ARE TAPERED 1/4" PER FOOT UNLESS NOTED OTHERWISE.
6. ALL STEEP ROOF SLOPES ARE 3:12 UNLESS NOTED OTHERWISE.
7. ALL GUTTERS ARE 5"x5" SQUARE "D" STYLE UNLESS NOTED OTHERWISE.
8. ALL DOWNSPOUTS ARE 4"x4" UNLESS NOTED OTHERWISE.
9. SEE STRUCTURAL DRAWINGS FOR TRUSS AND JOIST BEARING ELEVATIONS.
10. VERIFY SIZE AND LOCATION OF ALL ROOF MOUNTED EQUIPMENT.
11. SEE MECHANICAL DRAWINGS FOR ROOF PENETRATIONS SUCH AS VENT PIPES AND EXHAUST FANS.
12. SEE ELECTRICAL DRAWINGS FOR LOCATIONS OF GOOSENECK PIPE PENETRATIONS.
13. ALL PLYWOOD AND BLOCKING ASSOCIATED WITH THE ROOF CONSTRUCTION SHALL BE FIRE RETARDANT TREATED.
14. PROVIDE MANUFACTURED CURBS WITH MINIMUM HEIGHT OF EIGHT INCHES ABOVE ADJACENT ROOF SURFACE.
15. INSULATION CRICKET LAYOUT IS SHOWN CONCEPTUALLY. INSULATION MANUFACTURER TO PROVIDE INSULATION LAYOUT DURING SUBMITTAL PROCESS BASED ON APPROVED PRODUCT.
16. PROVIDE INSULATION CRICKETS AT THE UPSLOPE SIDE OF ALL ROOF MOUNTED EQUIPMENT.
17. PROVIDE WALKWAY PADS ORIGINATING FROM THE ROOF LADDER TO ALL EQUIPMENT AND LOCATIONS REQUIRING SERVICE OR MAINTENANCE.

KEYNOTES

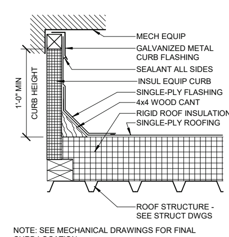
1 METAL DOWNSPOUT (COLOR TO MATCH GUTTER)
2 SNOW RAIL, COLOR TO MATCH ROOF PANELS
3 METAL SCUPPER, CONDUCTOR BOX AND DOWNSPOUT
4 ROOF HATCH WITH SAFETY RAILING
5 METAL RIDGE CAP, COLOR TO MATCH ROOF PANELS
6 STANDING SEAM METAL ROOF (COLOR #4)
7 SINGLE-PLY MEMBRANE ROOFING
8 METAL COPING (COLOR #1)



3 **TYPICAL HOT PIPE PENETRATION DETAIL**
SCALE: 1 1/2" = 1'-0"

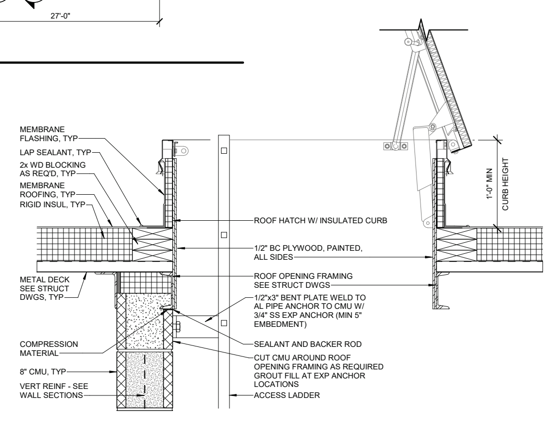


2 **HOT PIPE PENETRATION DETAIL**
SCALE: 1 1/2" = 1'-0"



NOTE: SEE MECHANICAL DRAWINGS FOR FINAL CURB LOCATION

4 **TYPICAL EQUIPMENT CURB DETAIL**
SCALE: 1 1/2" = 1'-0"



NOTE: SAFETY RAILING NOT SHOWN FOR CLARITY.

5 **TYPICAL ROOF HATCH DETAIL**
SCALE: 1 1/2" = 1'-0"

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL ROOF PLAN

DRAWING NO.: A103

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_A_R23.com.rvt
Central File: BIM360://_A_central_R20.rvt
Project Number: SHYQ149104
1/28/2026 9:52:33 AM

1 **REFLECTED CEILING PLAN - FIRST FLOOR**
SCALE: 1/8" = 1'-0"

CEILING PLAN LEGEND

CEILINGS

- TYPE A (10'-0") — CEILING SYSTEM REFERENCE; HEIGHT OF CEILING ABOVE FINISHED FLOOR
- GYPSUM BOARD CEILING
- PLYWOOD CEILING
- SUSPENDED ACOUSTIC CEILING PANELS
- EXPOSED METAL ROOF DECK

HVAC FIXTURES

- SUPPLY DIFFUSER
- RETURN GRILLE
- EXHAUST GRILLE
- VR CASSETTE UNIT

ELECTRICAL FIXTURES

- LIGHT FIXTURE
- EMERGENCY LIGHT FIXTURE

CEILING NOTES

1. PARTIAL ACOUSTIC CEILING PANELS AT OPPOSITE SIDES OF A ROOM SHALL BE EQUAL IN DIMENSION UNLESS OTHERWISE NOTED.
2. LIGHT FIXTURES AND OTHER CEILING MOUNTED EQUIPMENT SHALL BE CENTERED EACH DIRECTION IN ACOUSTIC PANELS.
3. PROVIDE HOLD DOWN CLIPS IN VESTIBULES.
4. SECURE WALLS IDENTIFIED ON THE SECURITY PLAN SHALL HAVE OPENINGS LARGER THAN 96 SQUARE INCHES AND/OR 6" WIDE IN ANY ONE DIRECTION COVERED WITH 18 GAUGE WOVEN WIRE MESH.
5. SPRINKLERS SHALL BE INSTALLED PER NFPA 13.

CEILING TYPES

TYPE A	24"x24" MINERAL FIBER ACOUSTIC PANELS WITH FINE TEXTURE FINISH AND BEVELED TEGULAR EDGES. EXPOSED 15/16" WIDE TEE PROFILE STEEL SUSPENSION SYSTEM.
TYPE B	1/2" GYPSUM BOARD CEILING ATTACHED TO 3-5/8" LIGHT GAGE METAL FRAMING.
TYPE C	STRUCTURAL METAL DECKING - SEE STRUCTURAL DRAWINGS, PAINT

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REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL
REFLECTED CEILING PLAN - FIRST FLOOR

DRAWING NO.: **A104**

Project Number: SHYQ149104
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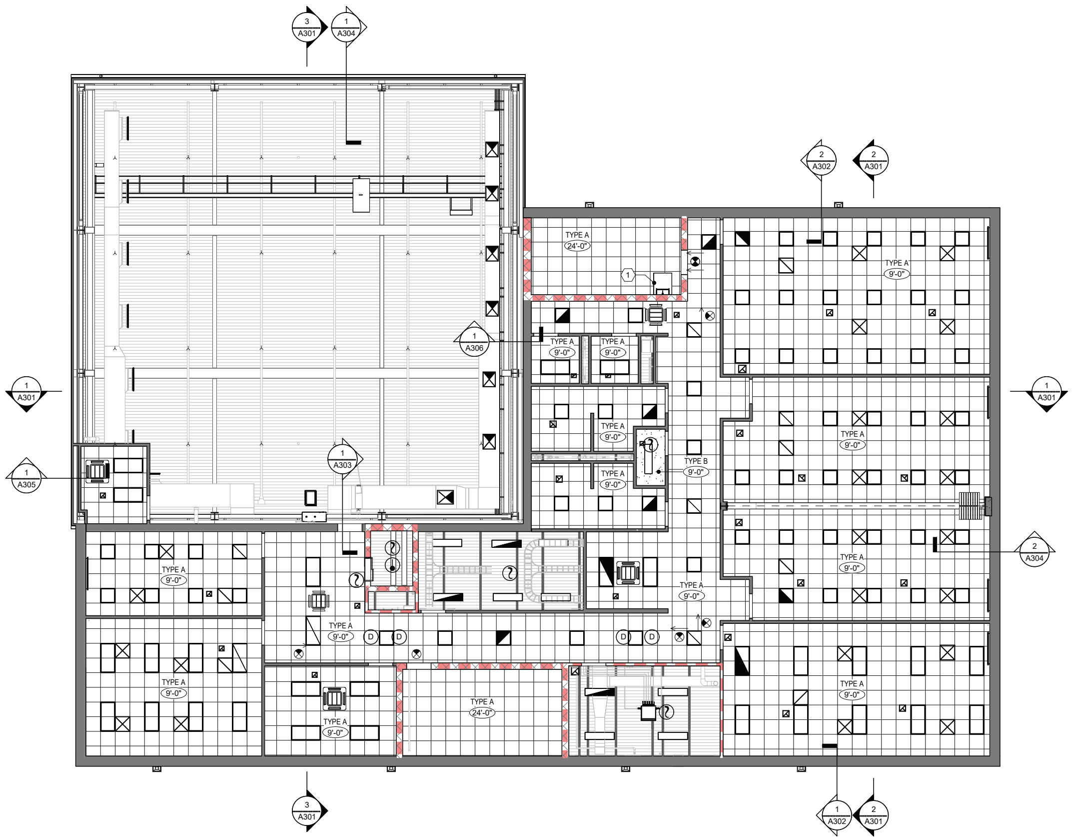
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt



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

CEILING PLAN LEGEND

CEILINGS

TYPE A (10'-0") — CEILING SYSTEM REFERENCE; HEIGHT OF CEILING ABOVE FINISHED FLOOR

GYPSUM BOARD CEILING

PLYWOOD CEILING

SUSPENDED ACOUSTIC CEILING PANELS

EXPOSED METAL ROOF DECK

HVAC FIXTURES

SUPPLY DIFFUSER

RETURN GRILLE

EXHAUST GRILLE

VR CASSETTE UNIT

ELECTRICAL FIXTURES

LIGHT FIXTURE

EMERGENCY LIGHT FIXTURE

CEILING NOTES

1. PARTIAL ACOUSTIC CEILING PANELS AT OPPOSITE SIDES OF A ROOM SHALL BE EQUAL IN DIMENSION UNLESS OTHERWISE NOTED.
2. LIGHT FIXTURES AND OTHER CEILING MOUNTED EQUIPMENT SHALL BE CENTERED EACH DIRECTION IN ACOUSTIC PANELS.
3. PROVIDE HOLD DOWN CLIPS IN VESTIBULES.
4. SECURE WALLS IDENTIFIED ON THE SECURITY PLAN SHALL HAVE OPENINGS LARGER THAN 96 SQUARE INCHES AND/OR 6" WIDE IN ANY ONE DIRECTION COVERED WITH 18 GAUGE WOVEN WIRE MESH.
5. SPRINKLERS SHALL BE INSTALLED PER NFPA 13.

CEILING TYPES

TYPE A	24"x24" MINERAL FIBER ACOUSTIC PANELS WITH FINE TEXTURE FINISH AND BEVELED TEGULAR EDGES. EXPOSED 15/16" WIDE TEE PROFILE STEEL SUSPENSION SYSTEM.
TYPE B	1/2" GYPSUM BOARD CEILING ATTACHED TO 3-5/8" LIGHT GAGE METAL FRAMING.
TYPE C	STRUCTURAL METAL DECKING - SEE STRUCTURAL DRAWINGS, PAINT

KEYNOTES

1 PROVIDE FINISHED CEILING EDGE TRIM AT LADDER OPENING.

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

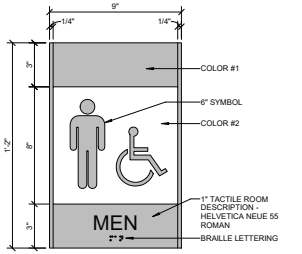
DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

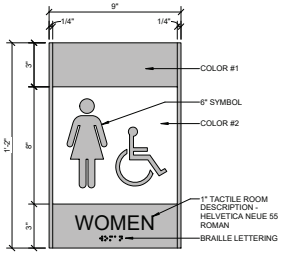
DRAWING TITLE: ARCHITECTURAL
REFLECTED CEILING PLAN - SECOND FLOOR

DRAWING NO.: A105

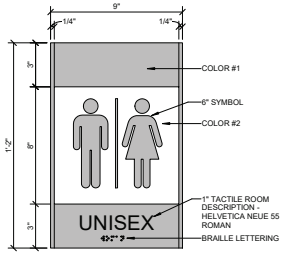
Project Number: SHYQ149104
1/28/2026 9:52:38 AM
Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_A_R23.com.rvt
Central File: BIM360://_A_central_R20.rvt



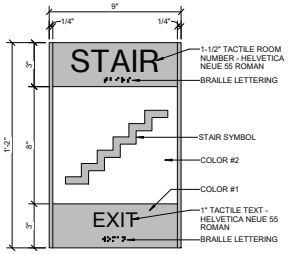
B1A - ACCESSIBLE RESTROOM IDENTIFICATION SIGN



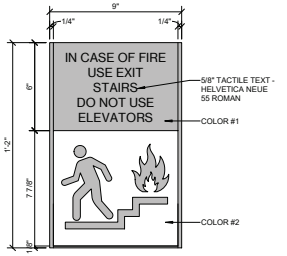
B2A - ACCESSIBLE RESTROOM IDENTIFICATION SIGN



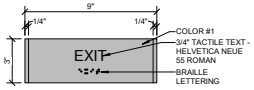
B3 - UNISEX RESTROOM IDENTIFICATION SIGN



S1 - STAIR EXIT SIGN

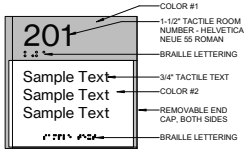


S2 - EMERGENCY STAIR USE

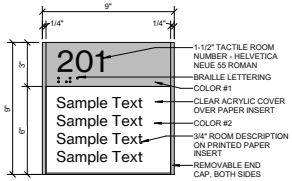


NOTE: WHERE ATTACHED TO GLAZING, PROVIDE SIGN BLANK OF MATCHING SIZE TO OPPOSITE FACE.

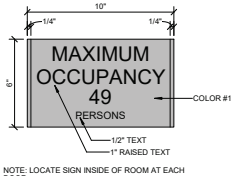
X1 - TACTILE EXIT SIGN



P1 - PERMANENT ROOM IDENTIFICATION SIGN



R1 - ROOM IDENTIFICATION SIGN



NOTE: LOCATE SIGN INSIDE OF ROOM AT EACH DOOR.

L1 - MAXIMUM OCCUPANCY LOAD SIGN

NOTE: MOUNT SIGNS AT 5'-0" AFF TO THEIR TOP EDGE. MOUNT ROOM SIGNS TO WALL ADJACENT DOOR LATCH, IF INFEASIBLE, MOUNT ON NEAREST ADJACENT WALL.

3 SIGNAGE TYPES

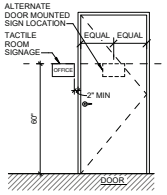
SCALE: 3" = 1'-0"

SIGNAGE SCHEDULE

ROOM NUMBER	SIGN TEXT	SIGN TYPE	MOUNTING TYPE	COUNT
104	SIMULATOR	R1	WALL MOUNTED	1
105	FTU	P1	WALL MOUNTED	1
106	OFFICE	R1	WALL MOUNTED	1
107	OFFICE	R1	WALL MOUNTED	1
108	OFFICE	R1	WALL MOUNTED	1
109	OFFICE	R1	WALL MOUNTED	1
110	OFFICE	R1	WALL MOUNTED	1
111	OFFICE	R1	WALL MOUNTED	1
112	CLASSROOM	P1	WALL MOUNTED	1
113	CI	R1	WALL MOUNTED	1
114	LMPTT	R1	WALL MOUNTED	1
115	MEN	B1A	WALL MOUNTED	1
116	CUSTODIAL	P1	WALL MOUNTED	1
117	WOMEN	B2A	WALL MOUNTED	1
118	OFFICE	R1	WALL MOUNTED	1
119	COR	R1	WALL MOUNTED	1
120	BREAK ROOM	P1	WALL MOUNTED	1
121	BRIEFING	R1	WALL MOUNTED	1
123	COMMUNICATIONS	P1	WALL MOUNTED	1
124	SECURE COMMS	P1	WALL MOUNTED	1
126	ABMN	R1	WALL MOUNTED	1
127	VTRAT	R1	WALL MOUNTED	1
128	WST SPARES	R1	WALL MOUNTED	1
129	WST MAINTENANCE	R1	WALL MOUNTED	1
130	OFFICE	R1	WALL MOUNTED	1
131	MX TERM	R1	WALL MOUNTED	1

SIGNAGE SCHEDULE

ROOM NUMBER	SIGN TEXT	SIGN TYPE	MOUNTING TYPE	COUNT
132A	SIMULATOR HALL	P1	WALL MOUNTED	1
132B	ADMINISTRATION	P1	WALL MOUNTED	2
202	MAXIMUM OCCUPANCY 49	L1	WALL MOUNTED	4
202A	CLASSROOM 1	P1	WALL MOUNTED	1
202B	CLASSROOM 2	P1	WALL MOUNTED	1
202C	CLASSROOM 3	P1	WALL MOUNTED	1
202D	CLASSROOM 4	P1	WALL MOUNTED	1
203	UNISEX	B3	WALL MOUNTED	1
204	UNISEX	B3	WALL MOUNTED	1
205	WOMEN	B2A	WALL MOUNTED	1
206	CUSTODIAL	P1	WALL MOUNTED	1
207	MEN	B1A	WALL MOUNTED	1
209	MECHANICAL	P1	WALL MOUNTED	1
210	SECURE COMMS	P1	WALL MOUNTED	1
211	ABMN	R1	WALL MOUNTED	1
212	OFFICE	R1	WALL MOUNTED	1
213	CLIENT SYSTEM LAB	R1	WALL MOUNTED	1
214	RIOS	R1	WALL MOUNTED	1
E1	STAIR	S1	WALL MOUNTED	3
S1	STAIR	S1	WALL MOUNTED	1
S2	-	S2	WALL MOUNTED	2
X1	EXIT	X1	WALL MOUNTED	3

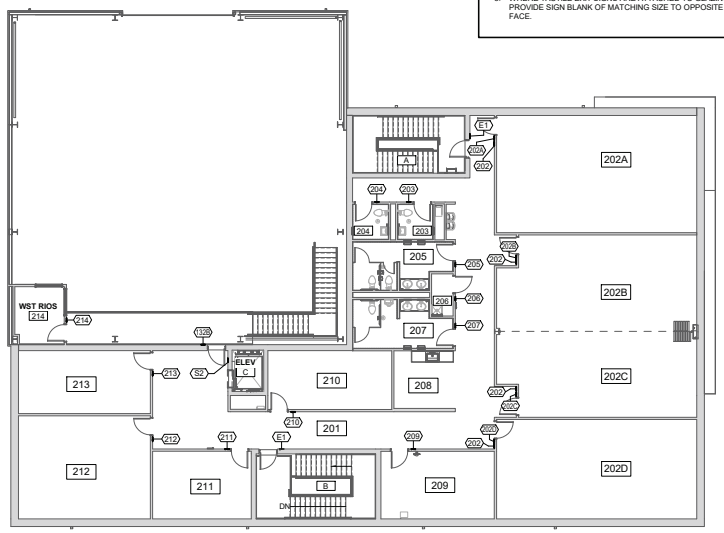


4 SIGN MOUNTING DETAIL

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

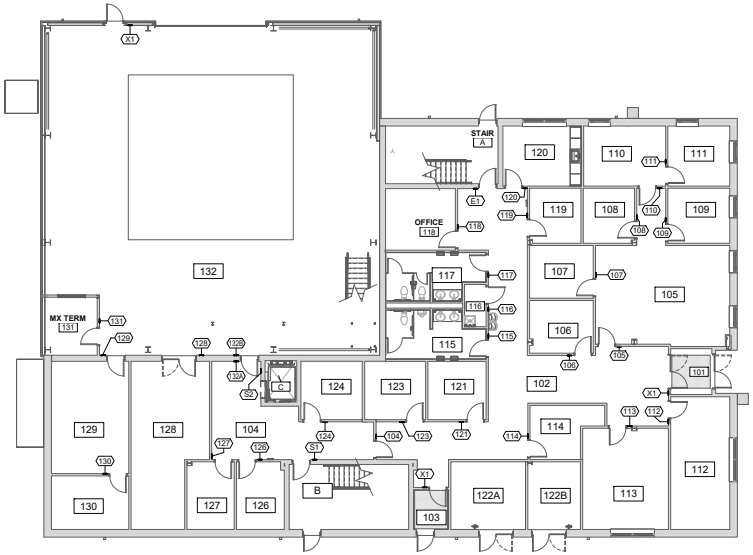
SIGNAGE NOTES

1. SIGNAGE NAMES AND NUMBERS TO BE VERIFIED WITH THE CONTRACTING OFFICER DURING THE SHOP DRAWING PROCESS PRIOR TO FABRICATION.
2. TACTILE EXIT SIGNAGE TO BE PROVIDED AT ALL EXIT DOORS WITH OVERHEAD LIT EXIT SIGN.
3. WHERE TACTILE EXIT SIGNS ARE ATTACHED TO GLAZING, PROVIDE SIGN BLANK OF MATCHING SIZE TO OPPOSITE FACE.



1 SIGNAGE PLAN - SECOND FLOOR

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



2 SIGNAGE PLAN - FIRST FLOOR

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

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL SIGNAGE PLANS AND DETAILS

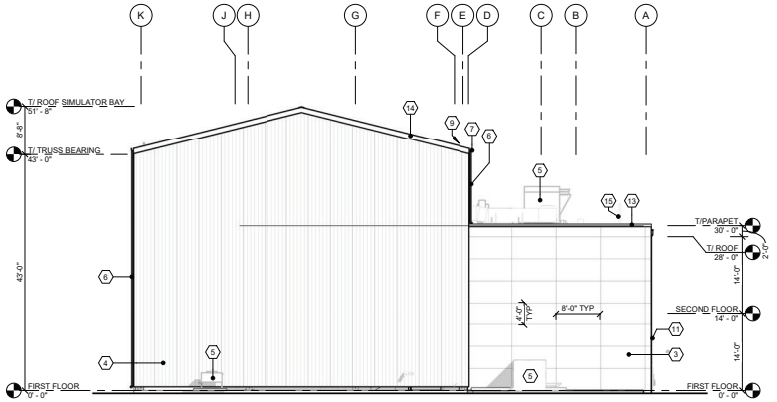
DRAWING NO.: A106

ELEVATION NOTES

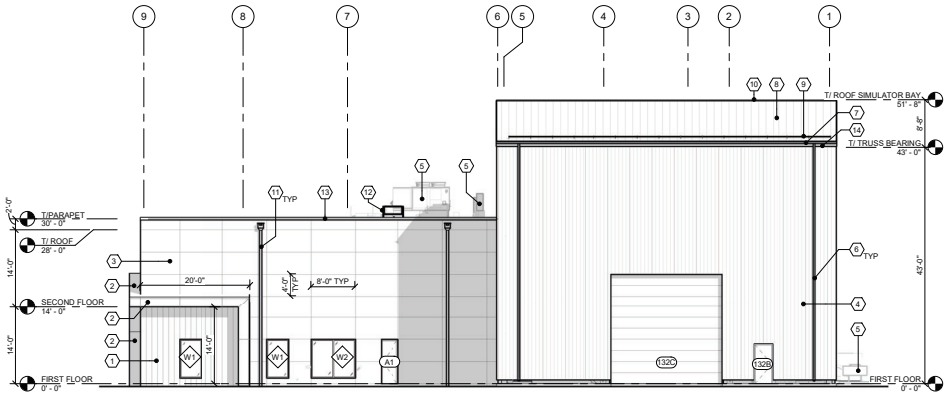
1. ALL GUTTERS AND DOWNSPOUTS TO MATCH FASCIA AND COPING COLORS.
2. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF WALL MOUNTED EQUIPMENT.

KEYNOTES

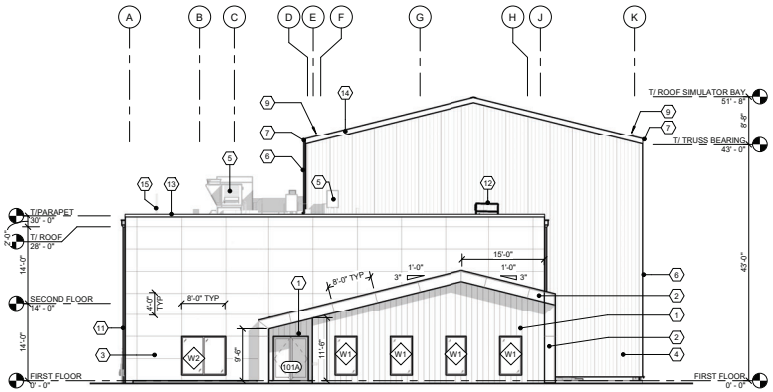
1 VERTICAL METAL WALL PANEL - TYPE 2 (COLOR #2)
2 VERTICAL ALUMINUM COMPOSITE WALL PANEL - TYPE 3 (COLOR #3)
3 4'-0"x 8'-0" FIBER CEMENT PANEL SYSTEM WITH ALUMINUM EDGE TRIM SYSTEM
4 VERTICAL INSULATED METAL WALL PANEL - TYPE 1 (COLOR #1)
5 MECHANICAL EQUIPMENT - SEE MECHANICAL DRAWINGS
6 METAL DOWNSPOUT (COLOR TO MATCH GUTTER)
7 METAL GUTTER (COLOR TO MATCH FASCIA)
8 STANDING SEAM METAL ROOF (COLOR #4)
9 SNOW RAIL, COLOR TO MATCH ROOF PANELS
10 METAL RIDGE CAP, COLOR TO MATCH ROOF PANELS
11 METAL SCUPPER, CONDUCTOR BOX AND DOWNSPOUT
12 ROOF HATCH WITH SAFETY RAILING
13 METAL COPING (COLOR #1)
14 METAL FASCIA (COLOR #1)
15 VENT PIPE - SEE PLUMBING DRAWINGS



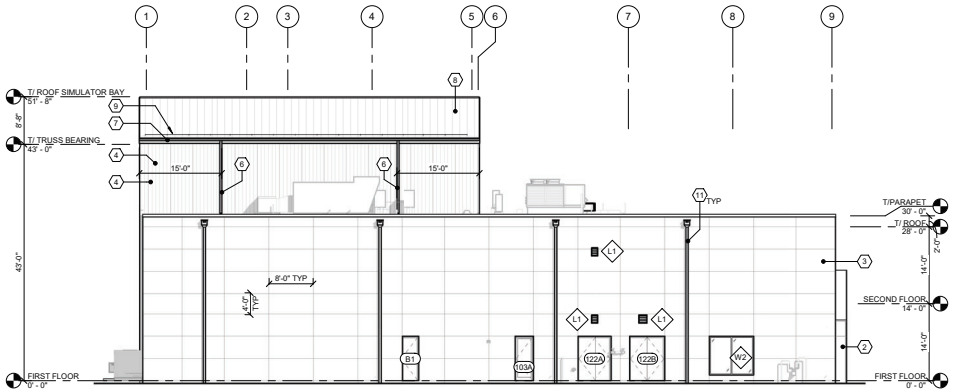
3 **WEST ELEVATION**
SCALE: 3/32" = 1'-0"



4 **NORTH ELEVATION**
SCALE: 3/32" = 1'-0"



1 **EAST ELEVATION**
SCALE: 3/32" = 1'-0"



2 **SOUTH ELEVATION**
SCALE: 3/32" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL BUILDING ELEVATIONS

DRAWING NO.: **A201**

Project Number: SHYQ149104
1/26/2026 9:53:12 AM
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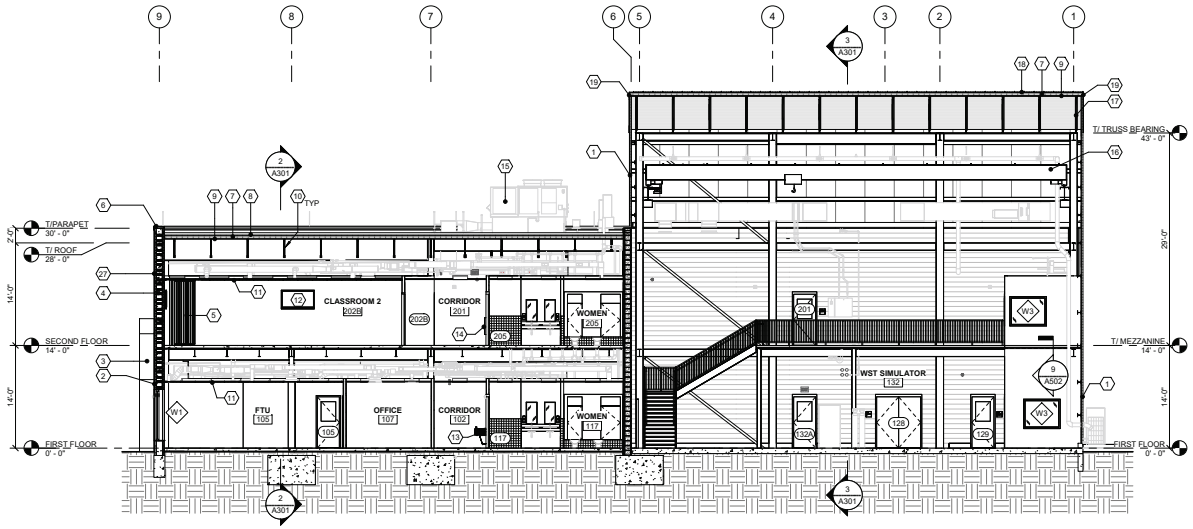
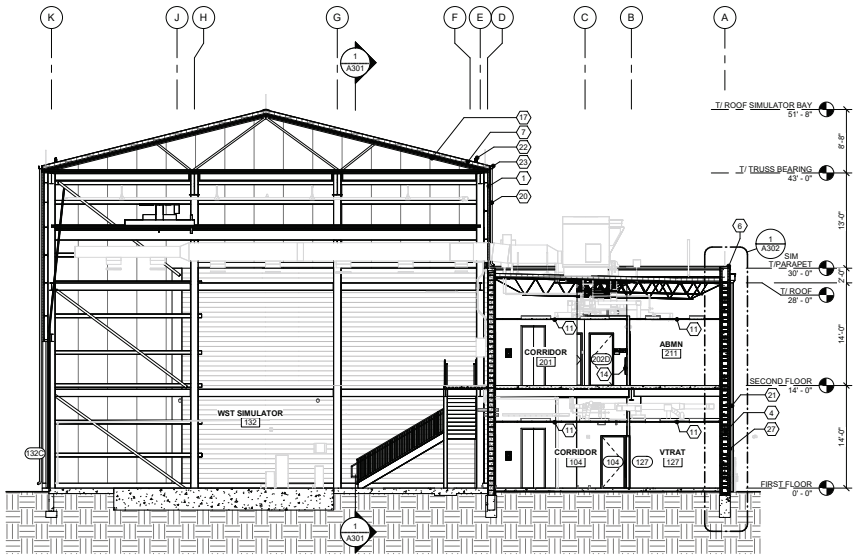
Central File: BM5581_A_central_R21.rvt



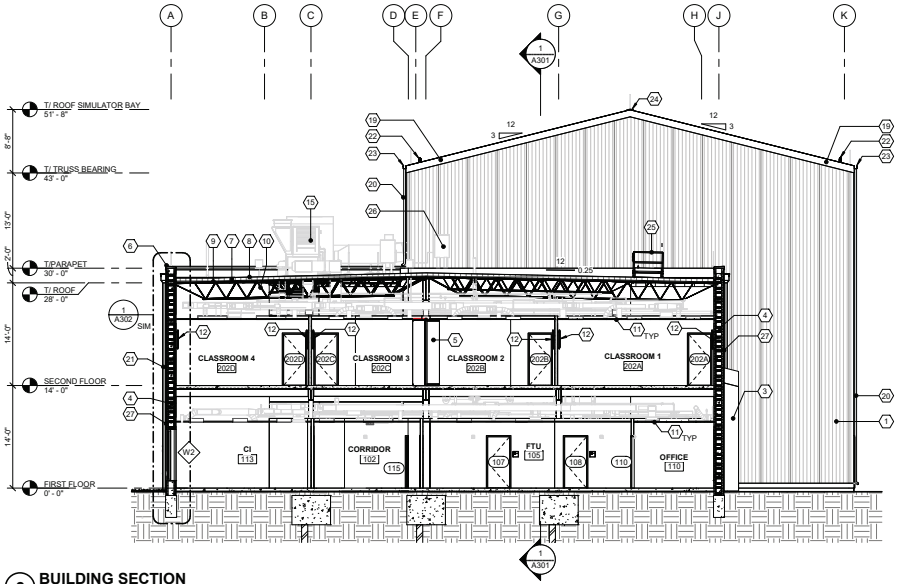
1 **BUILDING SECTION**
SCALE: 1/8" = 1'-0"

KEYNOTES

1 VERTICAL INSULATED METAL WALL PANEL - TYPE 1 (COLOR #1)
2 VERTICAL METAL WALL PANEL - TYPE 2 (COLOR #2)
3 VERTICAL ALUMINUM COMPOSITE WALL PANEL - TYPE 3 (COLOR #3)
4 INSULATED CONCRETE FORMS
5 OPERABLE PAIRED PANEL PARTITION
6 METAL COPING (COLOR #1)
7 RIGID INSULATION
8 SINGLE-PLY MEMBRANE ROOFING
9 METAL ROOF DECK - SEE STRUCTURAL DRAWINGS
10 STEEL BAR JOIST - SEE STRUCTURAL DRAWINGS
11 SUSPENDED ACOUSTIC CEILING PANELS
12 TELEVISION BRACKET, (TELEVISION GFGI)
13 ELECTRIC WATER COOLER
14 FIRE EXTINGUISHER CABINET
15 MECHANICAL EQUIPMENT - SEE MECHANICAL DRAWINGS
16 TWO-TON BRIDGE CRANE
17 LIGHT GAUGE METAL TRUSS
18 STANDING SEAM METAL ROOF (COLOR #4)
19 METAL FASCIA (COLOR #1)
20 METAL DOWNSPOUT (COLOR TO MATCH GUTTER)
21 METAL SCUPPER, CONDUCTOR BOX AND DOWNSPOUT
22 SNOW RAIL, COLOR TO MATCH ROOF PANELS
23 METAL GUTTER (COLOR TO MATCH FASCIA)
24 METAL RIDGE CAP, COLOR TO MATCH ROOF PANELS
25 ROOF HATCH WITH SAFETY RAILING
26 ELECTRICAL EQUIPMENT - SEE ELECTRICAL DRAWINGS
27 4'-0"x 8'-0" FIBER CEMENT PANEL SYSTEM WITH ALUMINUM EDGE TRIM SYSTEM



3 **BUILDING SECTION**
SCALE: 1/8" = 1'-0"



2 **BUILDING SECTION**
SCALE: 1/8" = 1'-0"

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PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL BUILDING SECTIONS

DRAWING NO.: **A301**

Project Number: SHYQ149104
1/26/2026 9:53:22 AM
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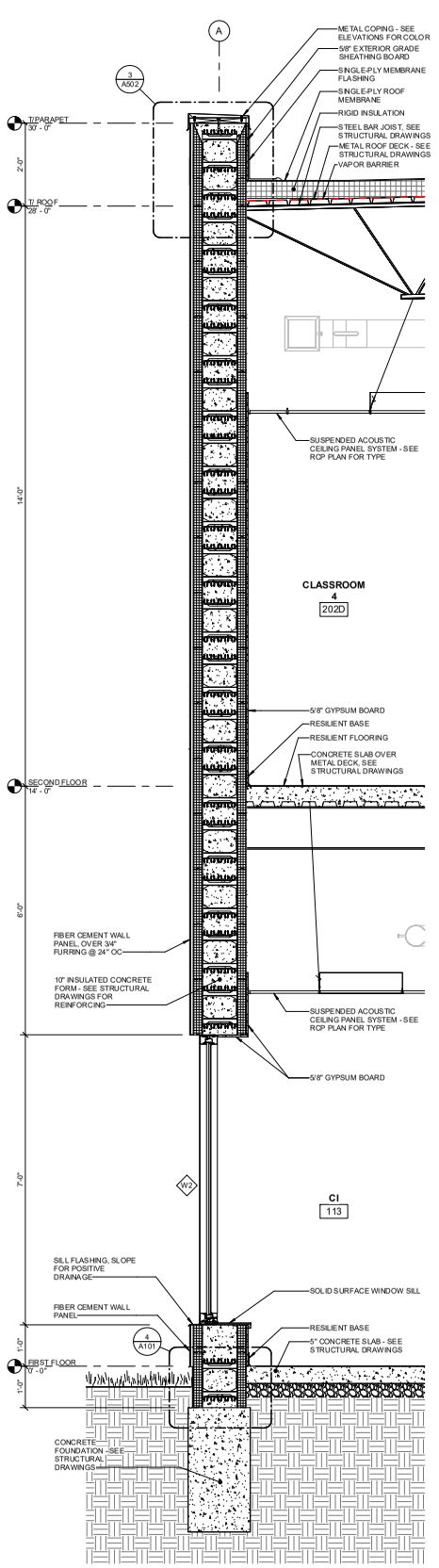
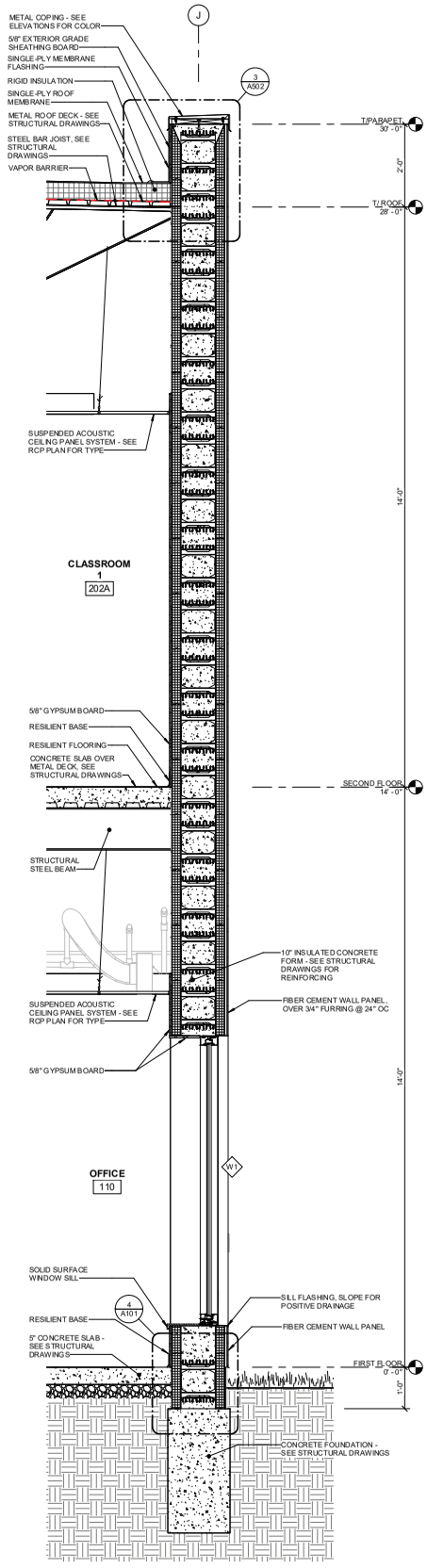


1 **WALL SECTION**
SCALE: 3/4" = 1'-0"



2 **WALL SECTION**
SCALE: 3/4" = 1'-0"

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NO.	DATE	DESCRIPTION

PROJECT NUMBER: SHYQ149104
DESIGNED: BJO
DRAWN: BJO
CHECKED: JAS
DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL WALL SECTIONS

DRAWING NO.: A302

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1/28/2026 9:53:26 AM
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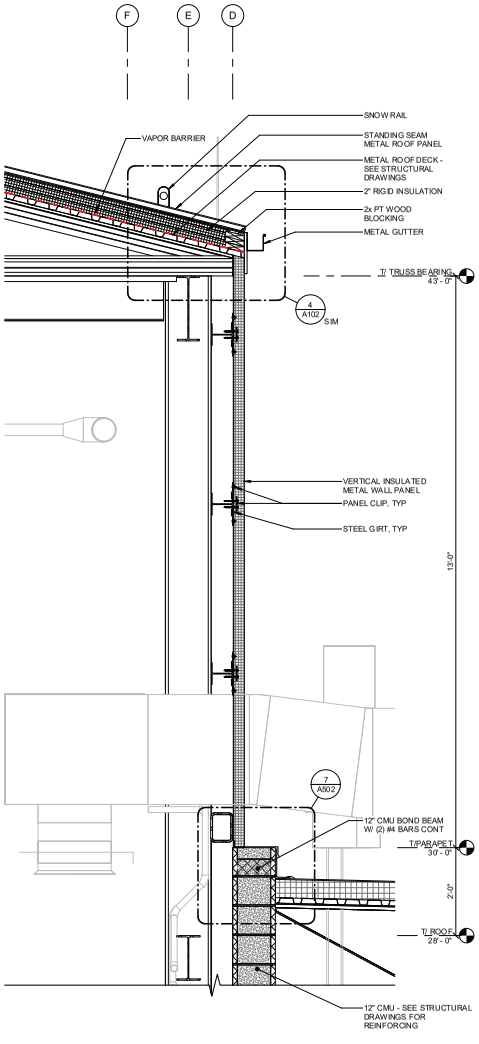
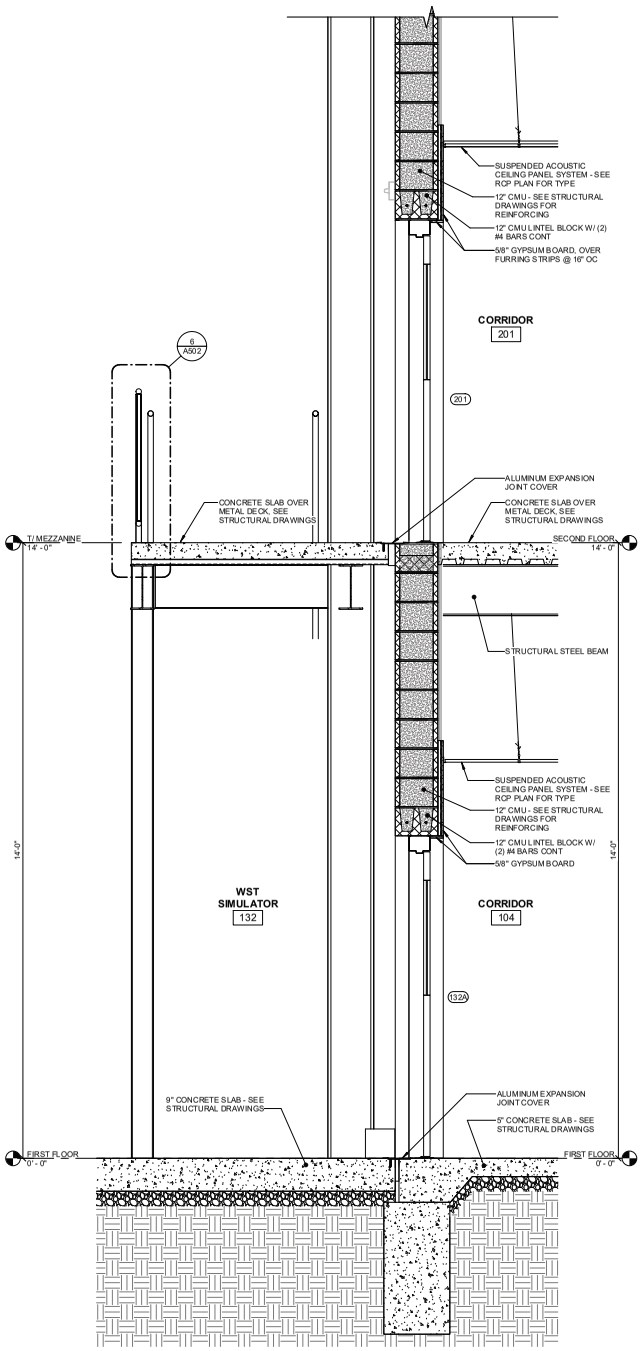


2 **WALL SECTION**
SCALE: 3/4" = 1'-0"



1 **WALL SECTION**
SCALE: 3/4" = 1'-0"

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DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL WALL SECTIONS
DRAWING NO.: A303

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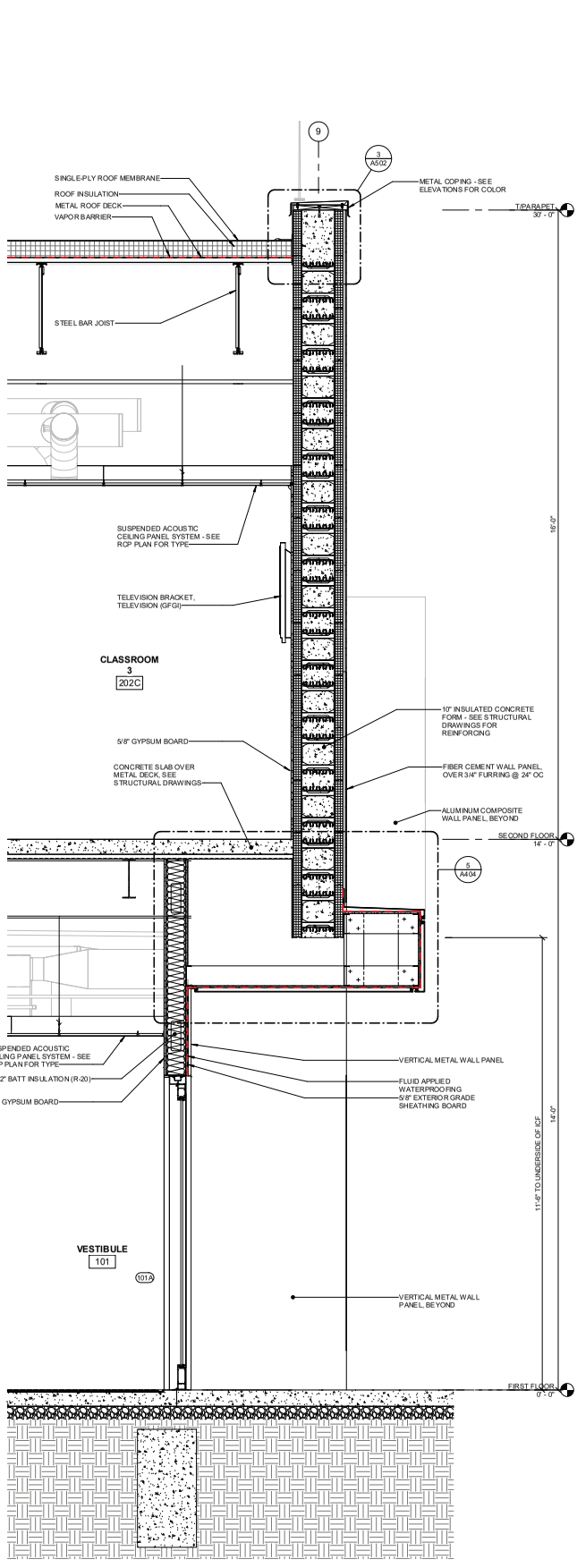
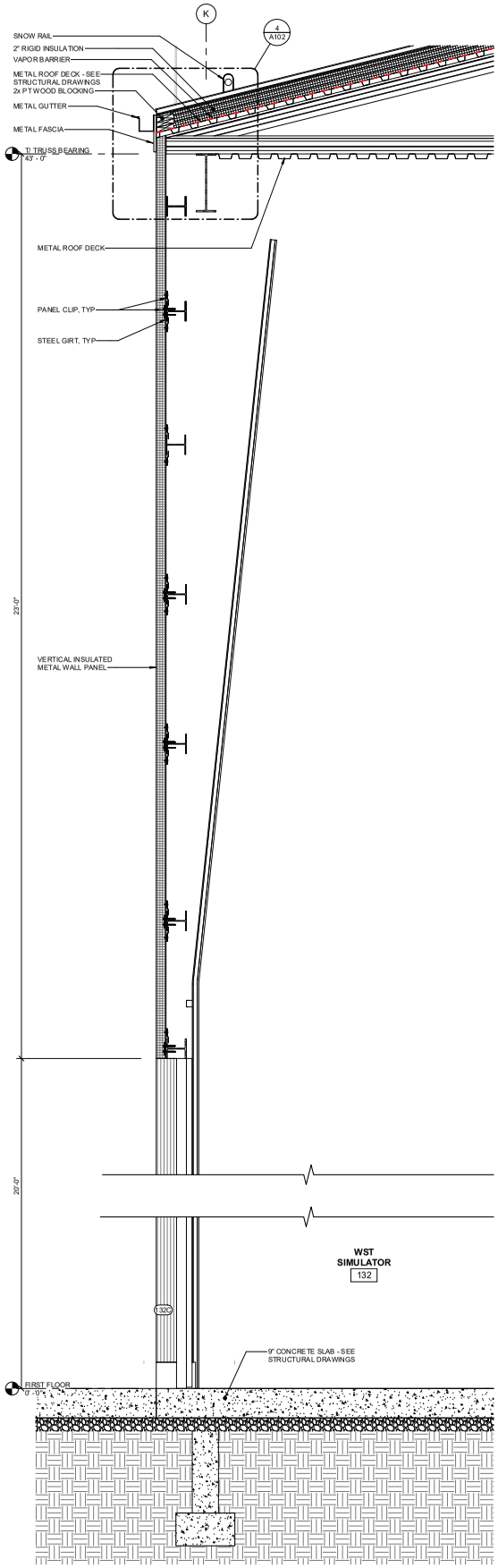


2 **WALL SECTION**
SCALE: 3/4" = 1'-0"



1 **WALL SECTION**
SCALE: 3/4" = 1'-0"

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PROJECT NUMBER: SHYQ149104
DESIGNED: BJO
MODELED: BJO
CHECKED: JAS
DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL WALL SECTIONS
DRAWING NO.: A304

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1/28/2026 9:53:28 AM
Local File: Autodesk Docs://076046-P AANG_EC_130J_Simulator/076046_MC130J_Sim_A_R23.com.rvt
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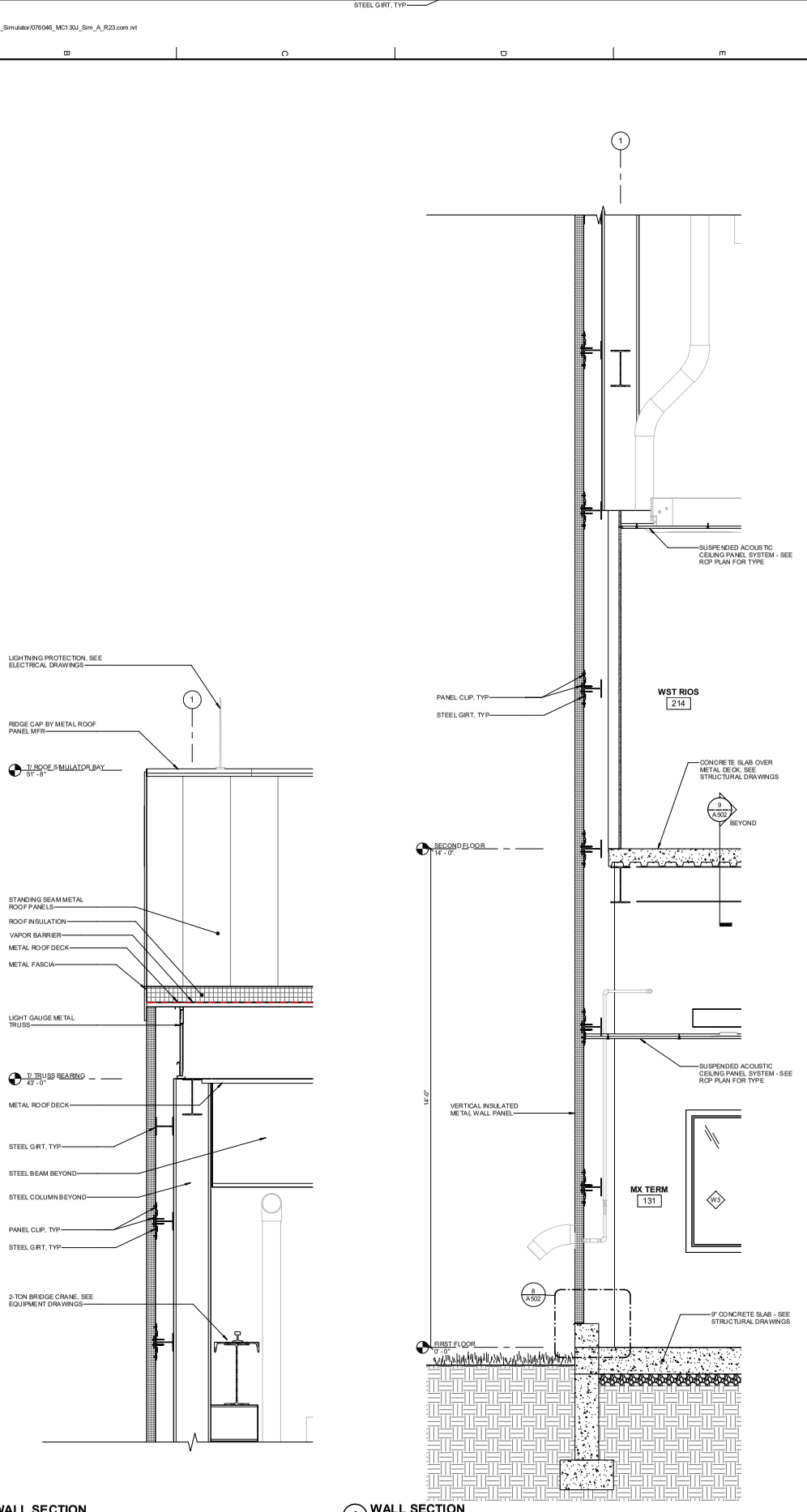

2 WALL SECTION
SCALE: 3/4" = 1'-0"

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

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REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NUMBER: SHYQ149104
DESIGNED: BJO
MODELED: BJO
CHECKED: JAS
DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL WALL SECTIONS
DRAWING NO.: A305

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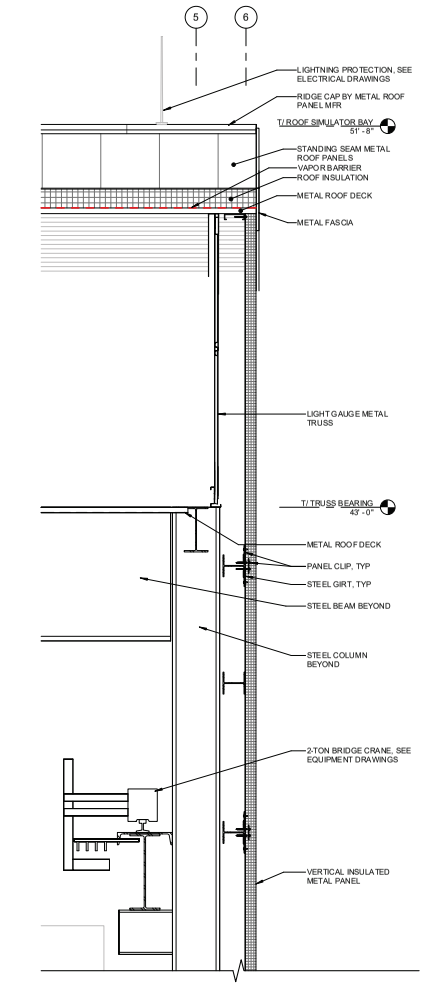
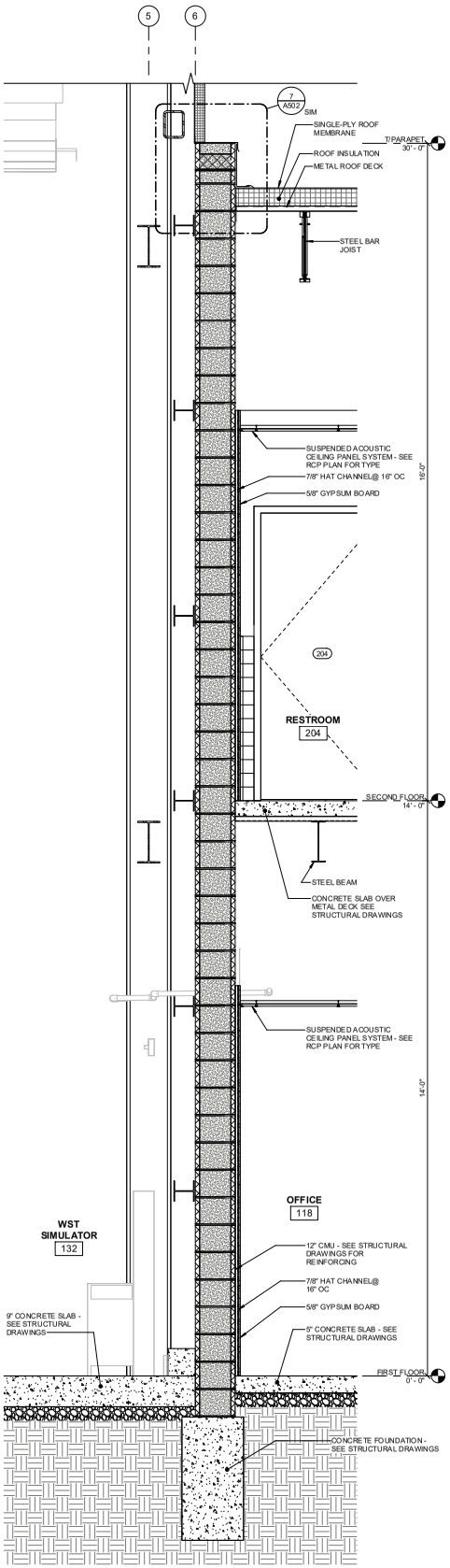


2 **WALL SECTION**
SCALE: 3/4" = 1'-0"



1 **WALL SECTION**
SCALE: 3/4" = 1'-0"

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BID DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NUMBER: SHYQ149104
DESIGNED: BJO
MODELED: BJO
CHECKED: JAS
DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL WALL SECTIONS
DRAWING NO.: A306

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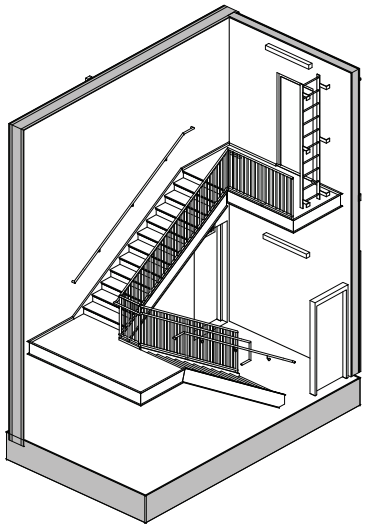
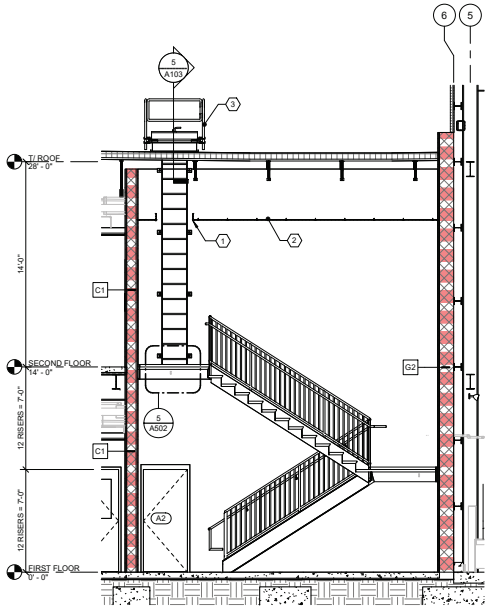
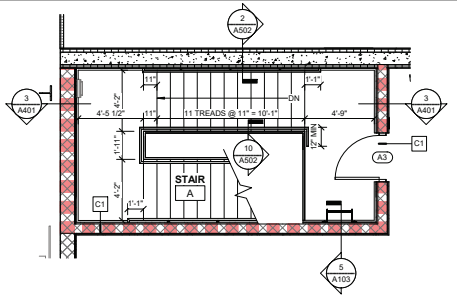


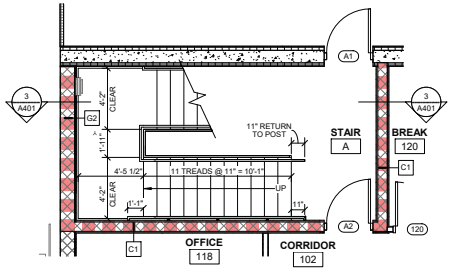
4 AXONOMETRIC
SCALE:



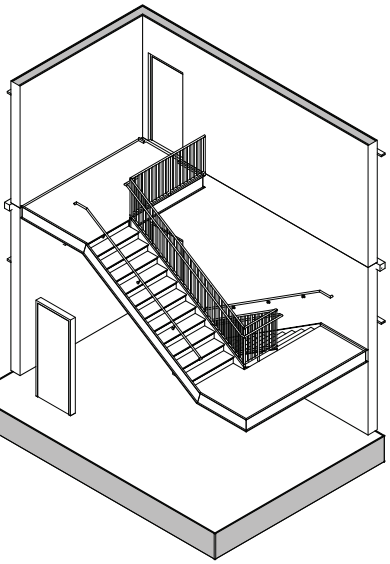
3 SECTION
SCALE: 1/4" = 1'-0"



1 ENLARGED FLOOR PLAN - STAIR A SECOND FLOOR
SCALE: 1/4" = 1'-0"



2 ENLARGED FLOOR PLAN - STAIR A FIRST FLOOR
SCALE: 1/4" = 1'-0"



9 AXONOMETRIC
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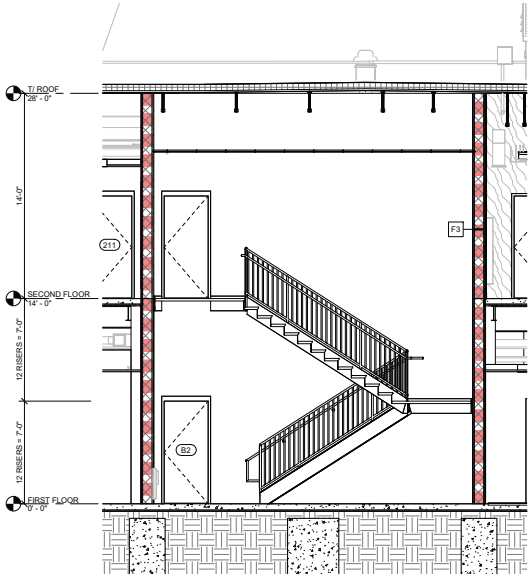
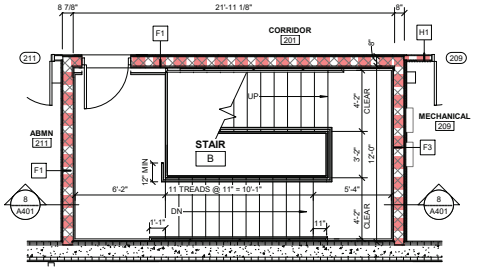
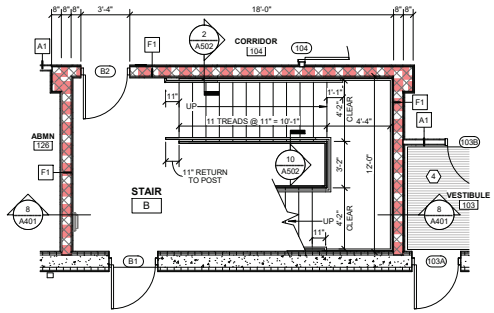


8 SECTION
SCALE: 1/4" = 1'-0"



6 ENLARGED FLOOR PLAN - STAIR B - SECOND FLOOR
SCALE: 1/4" = 1'-0"



7 ENLARGED FLOOR PLAN - STAIR B - FIRST FLOOR
SCALE: 1/4" = 1'-0"

KEYNOTES

1 PROVIDE FINISHED CEILING EDGE TRIM AT LADDER OPENING.
2 SUSPENDED ACOUSTIC CEILING PANELS
3 ROOF HATCH WITH SAFETY RAILING
4 RECESSED WALK-OFF MAT

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

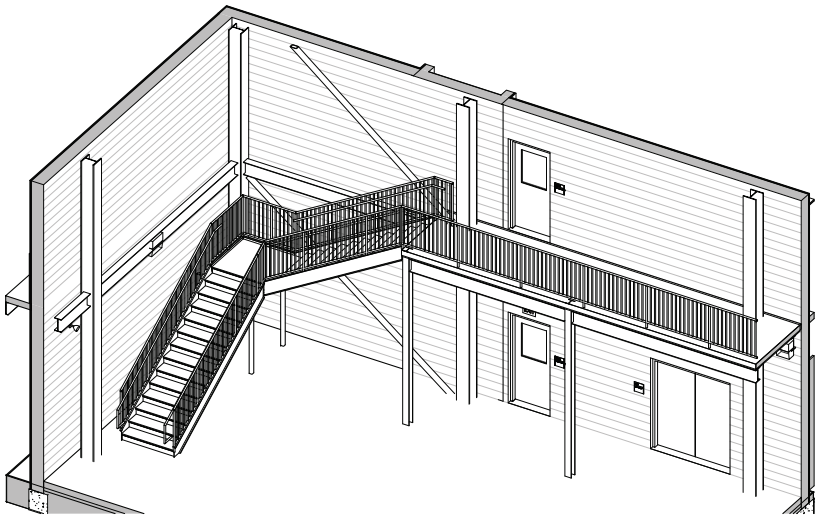
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

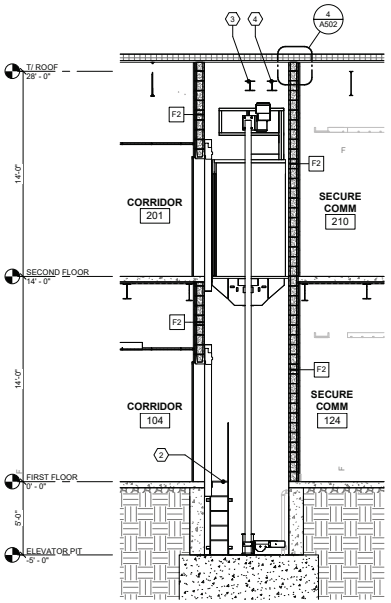
DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL STAIRS A&B - ENLARGED PLANS, SECTIONS, AND DETAILS

DRAWING NO.: **A401**



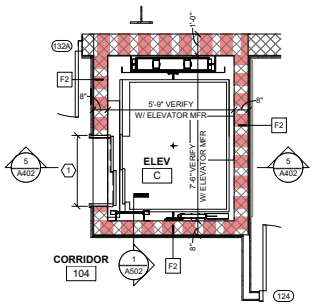
6 AXONOMETRIC
SCALE:



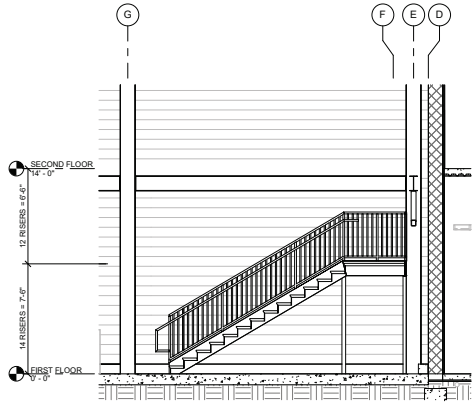
5 SECTION
SCALE: 1/4" = 1'-0"

KEYNOTES

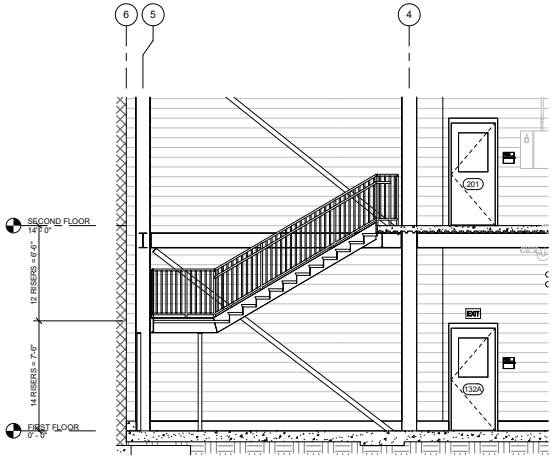
1 COORDINATE ELEVATOR DOOR OPENING WITH APPROVED ELEVATOR SHOP DRAWINGS.
2 ELEVATOR PIT LADDER
3 HOIST BEAM
4 LIFELINE BEAM



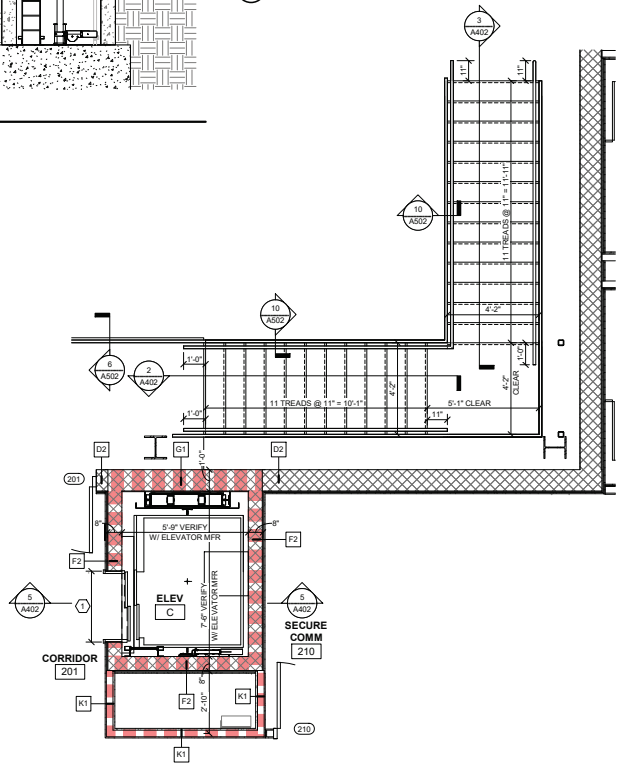
4 ENLARGED FLOOR PLAN - ELEVATOR SECOND FLOOR
SCALE: 3/8" = 1'-0"



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



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



1 ENLARGED FLOOR PLAN - ELEVATOR FIRST FLOOR
SCALE: 3/8" = 1'-0"

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

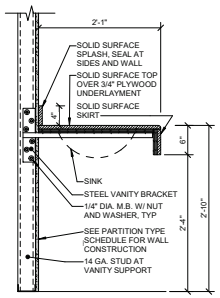
NO.	DATE	DESCRIPTION

REVISIONS

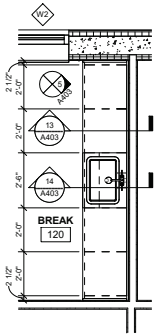
BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: BJO | MODELED: BJO | CHECKED: JAS
DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL ELEVATOR & STAIR - ENLARGED PLANS, SECTIONS, AND DETAILS
DRAWING NO.: **A402**

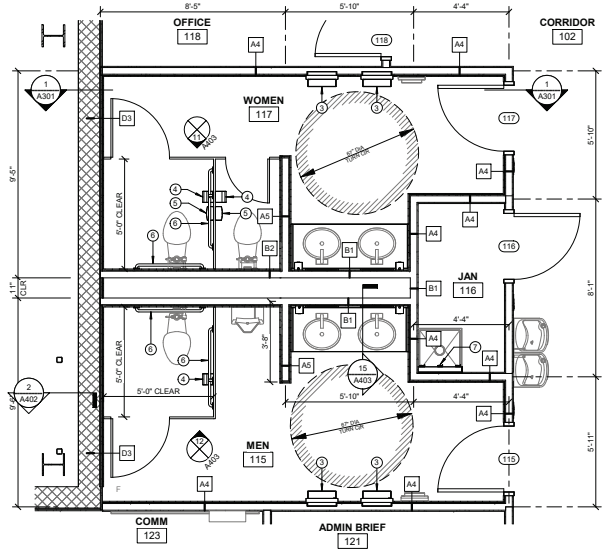
Project Number: SHYQ149104
1/26/2026 9:53:38 AM
Local File:Autodesk Docs:/070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BIM360://_A_central_R21.rvt



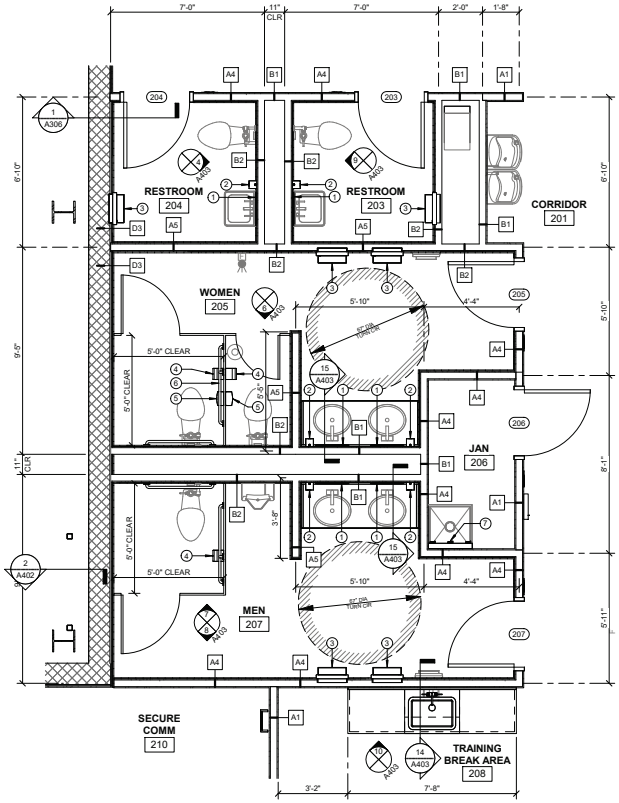
15 **TYPICAL VANITY SECTION**
SCALE: 1" = 1'-0"



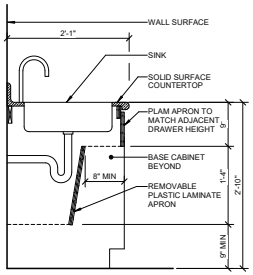
3 **ENLARGED FLOOR PLAN - ROOM 120**
SCALE: 3/8" = 1'-0"



2 **ENLARGED FLOOR PLAN - FIRST FLOOR**
SCALE: 3/8" = 1'-0"



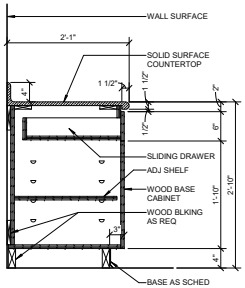
1 **ENLARGED FLOOR PLAN - SECOND FLOOR**
SCALE: 3/8" = 1'-0"



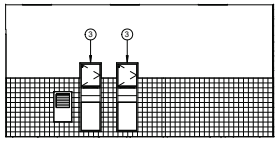
14 **TYPICAL ACCESSIBLE SINK SECTION**
SCALE: 1" = 1'-0"

TOILET ACCESSORY SCHEDULE

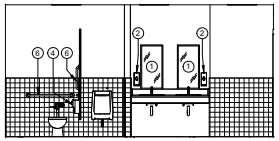
#	DESCRIPTION	MFGR	MODEL #	MOUNTING TYPE	MOUNTING HEIGHT	NOTES
1	18"x36" MIRROR	BOBRICK	B-290 1836	SURFACE MOUNTED	3'-4" TO BOTTOM OF REFLECTIVE SURFACE	
2	AUTOMATIC SOAP DISPENSER	BOBRICK	B-2012	SURFACE MOUNTED	3'-6" TO SENSOR	
3	COMBINATION PAPER TOWEL DISPENSER/WASTE RECEPTACLE	BOBRICK	B-3942	SEMI-RECESSED	40" TO DISPENSER	INSTALL CENTERED ON OPPOSITE SINK
4	TOILET PAPER DISPENSER	BOBRICK	B-2888	SURFACE MOUNTED	2'-6" TO CENTER OF ROLL (1'-8" AT GRAB BARS)	
5	SANITARY NAPKIN DISPOSER	BOBRICK	B-270	SURFACE MOUNTED	24" TO LID	
6	3-PIECE GRAB BAR SET	BOBRICK	B-5806 x18, x36, x42	SURFACE MOUNTED	2'-10" TO CENTER OF HORIZONTAL BARS, 2'-3" TO BOTTOM CL OF VERTICAL BAR	
7	MOP AND BROOM HOLDER	BOBRICK	B-223 x 24	SURFACE MOUNTED	4'-0" TO CENTERLINE	



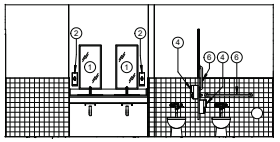
13 **TYPICAL BASE CABINET SECTION**
SCALE: 1" = 1'-0"



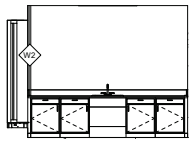
8 **INTERIOR ELEVATION - ROOM 207 OPPOSITE HAND - ROOM 205**
SCALE: 1/4" = 1'-0"



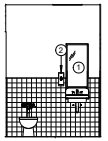
7 **INTERIOR ELEVATION - ROOM 207**
SCALE: 1/4" = 1'-0"



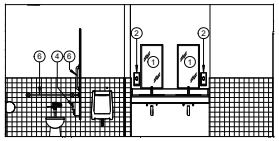
6 **INTERIOR ELEVATION - ROOM 205**
SCALE: 1/4" = 1'-0"



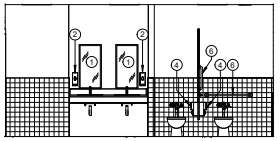
5 **INTERIOR ELEVATION ROOM 120**
SCALE: 1/4" = 1'-0"



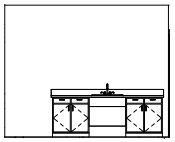
4 **INTERIOR ELEVATION ROOM 204**
SCALE: 1/4" = 1'-0"



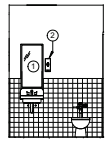
12 **INTERIOR ELEVATION - ROOM 115**
SCALE: 1/4" = 1'-0"



11 **INTERIOR ELEVATION - ROOM 117**
SCALE: 1/4" = 1'-0"



10 **INTERIOR ELEVATION ROOM 208**
SCALE: 1/4" = 1'-0"



9 **INTERIOR ELEVATION ROOM 203**
SCALE: 1/4" = 1'-0"

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

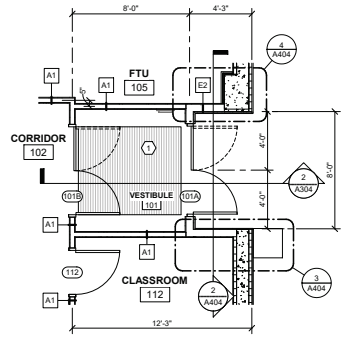
DRAWING TITLE: ARCHITECTURAL RESTROOMS - ENLARGED PLANS, SECTIONS, ELEVATIONS

DRAWING NO.: **A403**

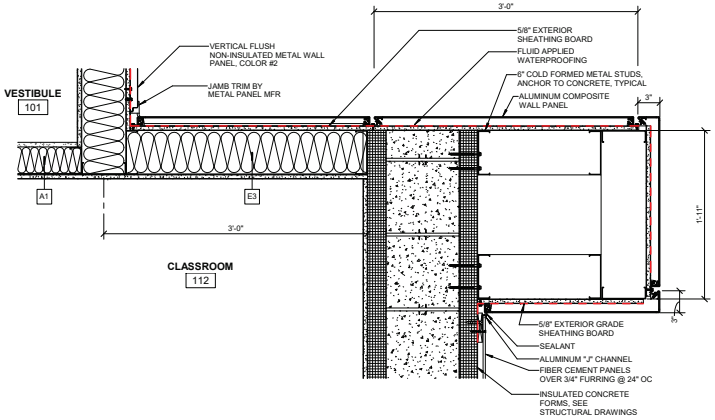
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt
Project Number: SHYQ149104
1/28/2026 9:53:44 AM

KEYNOTES

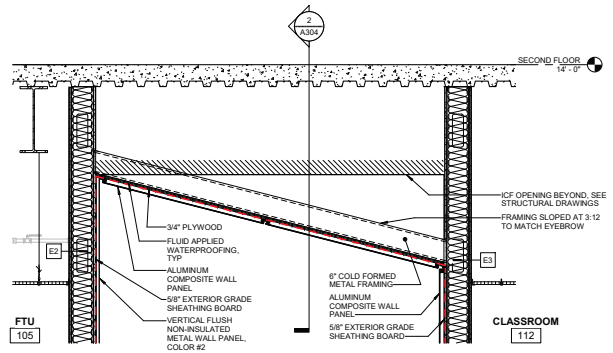
1 RECESSED WALK-OFF MAT



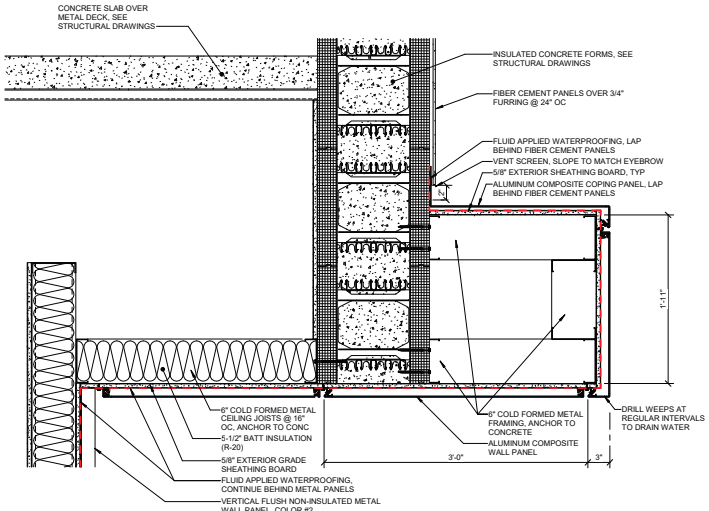
1 ENLARGED VESTIBULE PLAN
SCALE: 1/4" = 1'-0"



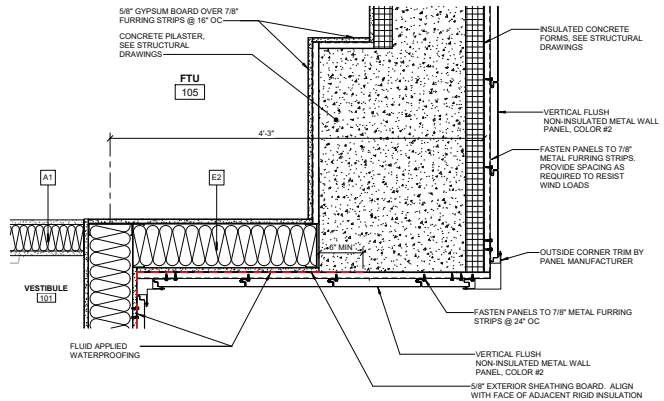
3 DETAIL
SCALE: 1 1/2" = 1'-0"



2 WALL SECTION
SCALE: 3/4" = 1'-0"



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



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

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NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

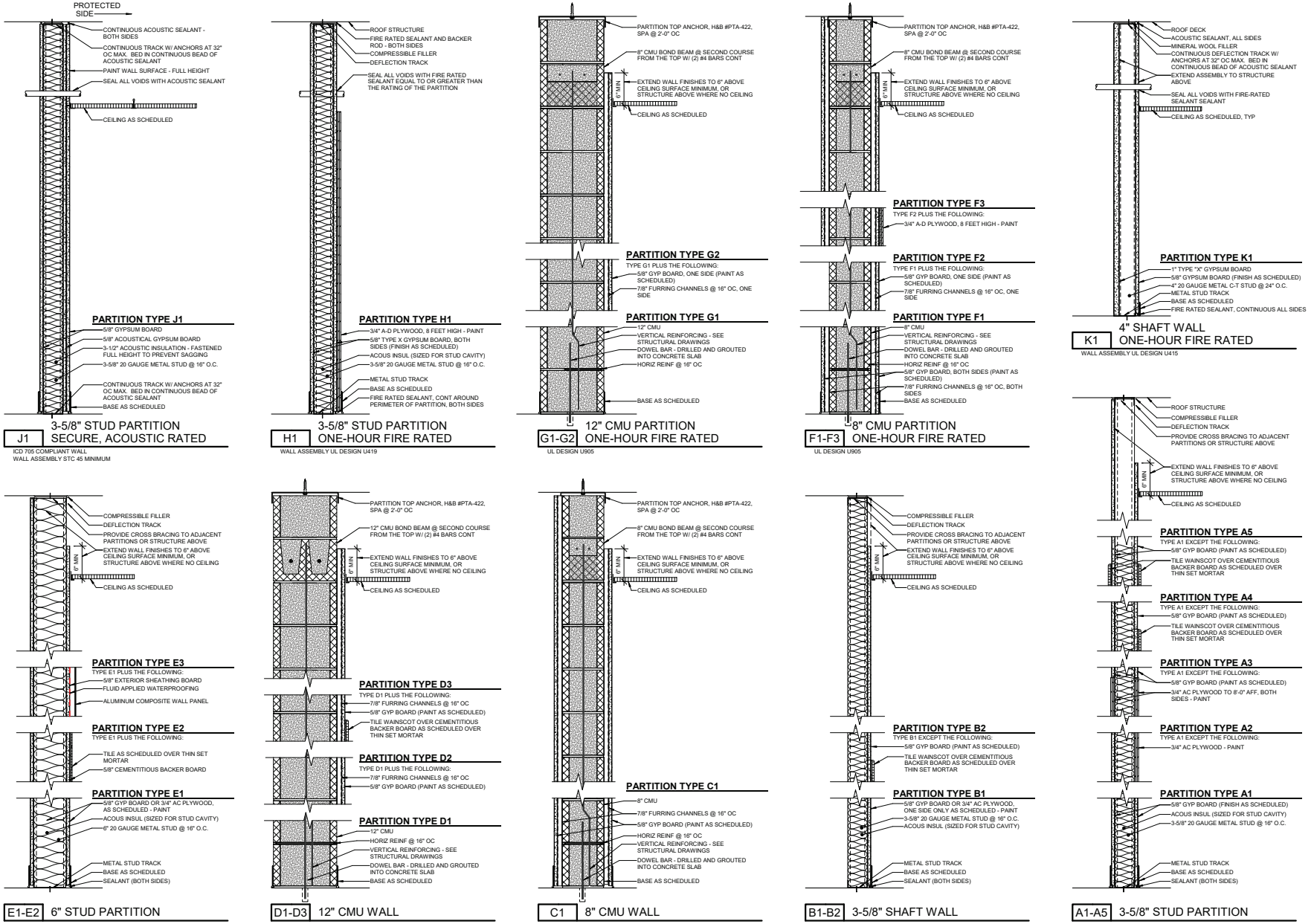
DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL VESTIBULE - ENLARGED PLANS, SECTIONS, AND DETAILS

DRAWING NO.: **A404**

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt
Project Number: SHYQ149104
1/26/2026 9:53:46 AM



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

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NO.	DATE	DESCRIPTION

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BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

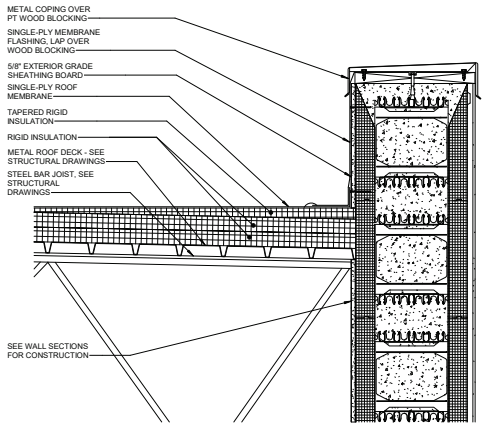
DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

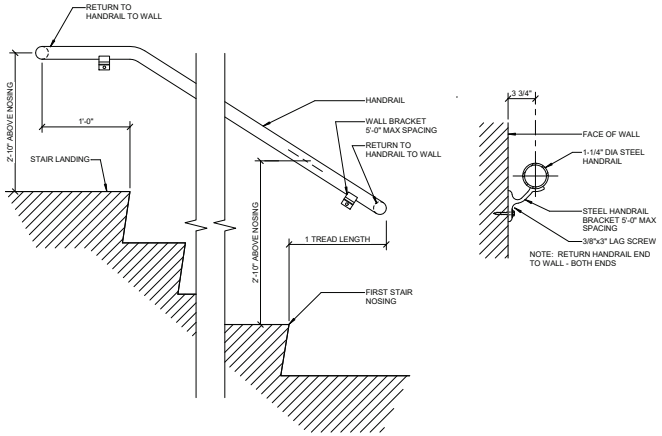
DRAWING TITLE: ARCHITECTURAL PARTITION TYPES

DRAWING NO.: **A501**

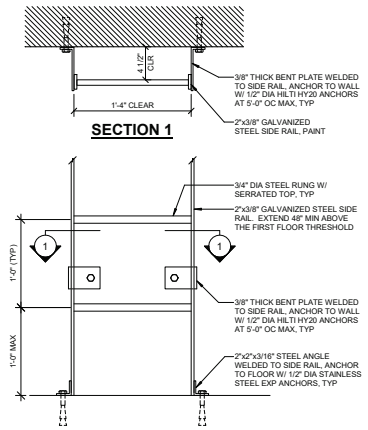
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BMS001_A_central_R21.rvt
Project Number: SHYQ149104
1/26/2026 9:53:46 AM



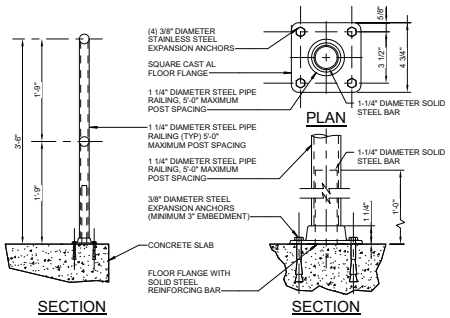
3 TYPICAL PARAPET DETAIL
SCALE: 1 1/2" = 1'-0"



2 TYPICAL WALL MOUNTED HANDRAIL DETAIL
SCALE: 1 1/2" = 1'-0"

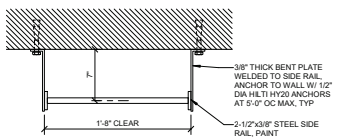


1 PIT LADDER DETAIL
SCALE: 1 1/2" = 1'-0"

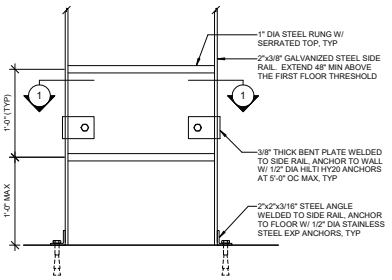


NOTE:
1. APPLY A HEAVY COAT OF BITUMASTIC TO ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

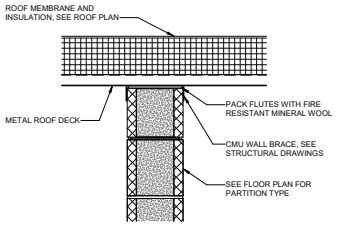
6 TYPICAL SURFACE MOUNTED GUARDRAIL DETAIL
SCALE: 1" = 1'-0"



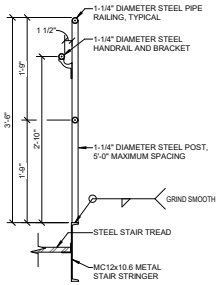
5 ROOF LADDER ANCHOR DETAIL
SCALE: 1 1/2" = 1'-0"



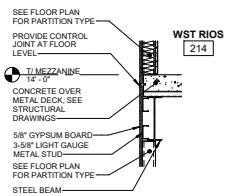
NOTE: LADDER EXTENDS TO ROOF HATCH - SEE DETAIL 5/A103



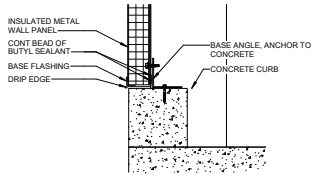
4 DETAIL
SCALE: 1 1/2" = 1'-0"



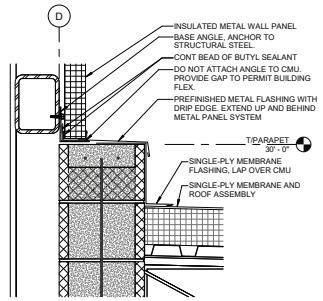
10 TYPICAL GUARDRAIL DETAIL
SCALE: 1" = 1'-0"



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



8 TYPICAL METAL PANEL BASE DETAIL
SCALE: 1 1/2" = 1'-0"



7 TYPICAL TOP OF CMU WALL DETAIL
SCALE: 1 1/2" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL DETAILS

DRAWING NO.: **A502**

Project Number: SHYQ149104
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Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt

ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR: FLOOR FINISH	FLOOR: BASE TRIM	TRIM: WAINSCOT	TRIM: CHAIR RAIL	WALLS: NORTH	WALLS: EAST	WALLS: SOUTH	WALLS: WEST	NOTES
101	VESTIBULE	LVT / WOM	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	6'-0"x7'-0" LONG RECESSED WALKOFF MAT
102	CORRIDOR	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
103	VESTIBULE	LVT / WOM	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	6'-0"x7'-0" LONG RECESSED WALKOFF MAT
104	CORRIDOR	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
105	FTU	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
106	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
107	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
108	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
109	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
110	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
111	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
112	CLASSROOM	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
113	CI	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
114	LMPTT	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
115	MEN	CT-1	CT-1	CT-2	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
116	JAN	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
117	WOMEN	CT-1	CT-1	CT-2	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
118	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
119	COR	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
120	BREAK	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
121	ADMIN BRIEF	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
122A	MECHANICAL	SLD-1	-	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	
122B	ELECTRICAL	SLD-1	-	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	
123	COMM	ESD TILE	RB-1	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	
124	SECURE COMM	ESD TILE	RB-1	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	
126	ABMN	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
127	VTRAT	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
128	WST SPARES	SLD-1	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
129	WST MAINT	SLD-1	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
130	OFFICE	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
131	MX TERM	SLD-1	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
132	WST SIMULATOR	SLD-1	-	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	DO NOT PAINT PREFINISHED METAL PANELS
201	CORRIDOR	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
202A	CLASSROOM 1	LVT	RB-1	-	-	PNT - 3	PNT - 3	PNT - 3	PNT - 3	
202B	CLASSROOM 2	LVT	RB-1	-	-	PNT - 3	PNT - 3	-	PNT - 3	
202C	CLASSROOM 3	LVT	RB-1	-	-	-	PNT - 3	PNT - 3	PNT - 3	
202D	CLASSROOM 4	LVT	RB-1	-	-	PNT - 3	PNT - 3	PNT - 3	PNT - 3	
203	RESTROOM	CT-1	CT-1	CT-2	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
204	RESTROOM	CT-1	CT-1	CT-2	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
205	WOMEN	CT-1	CT-1	CT-2	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
206	JAN	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
207	MEN	CT-1	CT-1	CT-2	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
208	TRAINING BREAK AREA	LVT	RB-1	-	-	PNT - 1	-	PNT - 1	PNT - 3	
209	MECHANICAL	SLD-1	RB-1	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	
210	SECURE COMM	ESD TILE	RB-1	-	-	PNT - 2	PNT - 2	PNT - 2	PNT - 2	
211	ABMN	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
212	OFFICES	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
213	CLIENT SYSTEM LAB	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
214	WST RIOS	SLD-1	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
A	STAIR	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
B	STAIR	LVT	RB-1	-	-	PNT - 1	PNT - 1	PNT - 1	PNT - 1	
C	ELEV	LVT	-	-	-	-	-	-	-	

ROOM FINISH LEGEND

PAINT
PNT-1 SHERWIN WILLIAMS, 7648-BIG CHILL
PNT-2 SHERWIN WILLIAMS, 7006-EXTRA WHITE
PNT-3 SHERWIN WILLIAMS, 6249-STORM CLOUD

WAINSCOT
CT-1 DALTILE, CLASSIC, 0109-ARCHITECTURAL GRAY

FLOORING
LVT-1 INTERFACE, TEXTURED STONES, C01302-LIGHT CONCRETE
CT-2 DALTILE, VOLUME 1.0, VL72-INTENSITY PEBBLE
SLD-1 CONCRETE SEALER, CLEAR GLOSS

RESILIENT BASE
RB-1 JOHNSONITE, 282-VAPORIZE

NOTES:
1. FOR CEILING PANEL TYPES AND LOCATIONS, SEE REFLECTED CEILING PLAN.

ABBREVIATIONS:
CT: CERAMIC TILE
LVT: LUXURY VINYL TILE
PNT: PAINT
RB: RESILIENT BASE
SLD: SEALED CONCRETE
WOM: WALK-OFF MAT

BUILDING INSULATION VALUES

WALLS
OFFICE (ICF):
R-VALUE: 22.5
U-FACTOR: 0.044

SIMULATOR BAY (INSULATED METAL PANELS):
R-VALUE: 26.9
U-FACTOR: 0.038

ROOF
RIGID INSULATION OVER METAL DECK:
R-VALUE: 30
U-FACTOR: 0.032

CEILINGS
SUSPENDED ACOUSTIC CEILING PANELS
R-VALUE: NEGLIGIBLE

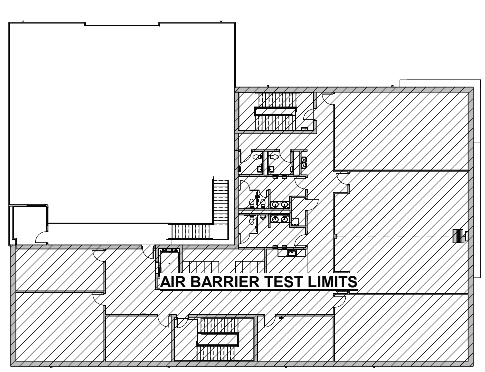
FLOORS
OFFICE (5" CONCRETE SOG):
R-VALUE: 0.5
U-FACTOR: 2
NOTE: WALL INSULATION EXTENDS DOWN TO 36" BELOW GRADE

SIMULATOR BAY (9" CONCRETE SOG):
R-VALUE: 0.9
U-FACTOR: 1.1
NOTE: WALL INSULATION EXTENDS DOWN TO 36" BELOW GRADE

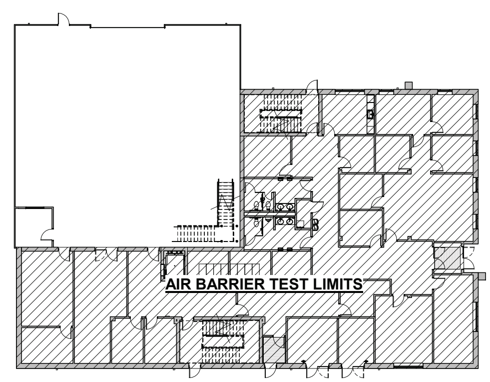
DOORS
ALUMINUM STOREFRONT WITH GLAZING:
R-VALUE: 3.4
U-FACTOR: 0.29

HOLLOW METAL FLUSH DOORS:
R-VALUE: 2.81
U-FACTOR: 0.36

WINDOWS
ALUMINUM STOREFRONT WITH GLAZING:
R-VALUE: 3.0
U-FACTOR: 0.33



2 AIR BARRIER TEST AREA - SECOND FLOOR
SCALE: 1/16" = 1'-0"



1 AIR BARRIER TEST AREA - FIRST FLOOR
SCALE: 1/16" = 1'-0"

GANNETT FLEMING
300 Sterling Parkway, Suite 200
Mechanicsburg • PA • 17050
717 • 763 • 7211
www.gannettfleming.com

REGISTERED ARCHITECT PENNSYLVANIA JOSHUA ADAM SILBAUGH No. RA-406169

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: BJO | MODELED: BJO | CHECKED: JAS
DATE: JANUARY 2026
DRAWING TITLE: ARCHITECTURAL ROOM FINISH SCHEDULE
DRAWING NO.: A601

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_A_R23.com.rvt
Central File: BIM360://_A_central_R20.rvt
Project Number: SHYQ149104
1/28/2026 9:53:49 AM

DOOR SCHEDULE

DOOR NO	DOOR								FRAME					HARDWARE		FIRE RATING (MINS)	STC RATING	DOOR NO.	NOTES
	LEAF 1		LEAF 2								DETAILS								
	WIDTH	TYPE	WIDTH	TYPE	HEIGHT	THK	MAT	GLAZING	TYPE	MAT	HEAD	JAMB	SILL	SET NO	KEYSIDE ROOM NO				
101A	36"	MS	36"	MS	84"	1 3/4"	AL	INSUL	1	AL	1	2	3	1	EXTERIOR	-	-	101A	
101B	36"	MS	36"	MS	84"	1 3/4"	AL	INSUL	1	AL	9	10	3	2	101	-	-	101B	
103A	36"	MS			84"	1 3/4"	AL	INSUL	1	AL	11	12	3	3	EXTERIOR	-	-	103A	
103B	36"	MS			84"	1 3/4"	AL	INSUL	1	AL	9	10	3	3	103	-	-	103B	
104	36"	F			84"	1 3/4"	WD	-	1	HM	4	5	6	9	102	-	45	104	
105	36"	HG			84"	1 3/4"	WD	TEMP	1	HM	7	8	-	13	102	-	-	105	
106	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	102	-	-	106	
107	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	105	-	-	107	
108	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	105	-	-	108	
109	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	105	-	-	109	
110	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	105	-	-	110	
111	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	110	-	-	111	
112	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	102	-	-	112	
113	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	102	-	-	113	
114	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	102	-	-	114	
115	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	12	102	-	-	115	
116	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	15	102	-	-	116	
117	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	12	102	-	-	117	
118	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	102	-	-	118	
119	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	102	-	-	119	
120	36"	HG			84"	1 3/4"	WD	TEMP	1	HM	7	8	-	16	102	-	-	120	
121	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	102	-	-	121	
122A	36"	F	36"	F	94"	1 3/4"	HM	-	1	HM	13	14	3	8	EXTERIOR	-	-	122A	
122B	36"	F	36"	F	94"	1 3/4"	HM	-	1	HM	13	14	3	8	EXTERIOR	-	-	122B	
123	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	11	102	-	-	123	
124	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	10	104	-	-	124	
126	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	104	-	-	126	
127	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	104	-	-	127	
128	36"	F	36"	F	84"	1 3/4"	HM	-	2	HM	15	16	-	17	132	-	-	128	
129	36"	HG			84"	1 3/4"	HM	TEMP	2	HM	15	16	-	13	132	-	-	129	
130	36"	HG			84"	1 3/4"	HM	TEMP	1	HM	7	8	-	13	129	-	-	130	
131	36"	F			84"	1 3/4"	HM	-	1	HM	7	8	-	13	132	-	-	131	
132A	36"	HG			84"	1 3/4"	HM	TEMP	2	HM	15	16	-	16	104	-	-	132A	
132B	36"	F			84"	1 3/4"	HM	-	1	HM	17	18	3	4	EXTERIOR	-	-	132B	
132C	240"	OHS			240"	1 3/4"	STL	-	3	STL	19	20	21	19	EXTERIOR	-	-	132C	
201	36"	HG			84"	1 3/4"	HM	TEMP	2	HM	15	16	-	13	201	-	-	201	
202A	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	201	-	-	202A	
202B	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	201	-	-	202B	
202C	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	201	-	-	202C	
202D	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	14	201	-	-	202D	
203	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	18	201	-	-	203	
204	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	18	201	-	-	204	
205	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	12	201	-	-	205	
206	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	15	201	-	-	206	
207	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	12	201	-	-	207	
209	36"	F			84"	1 3/4"	HM	-	1	HM	7 SIM	8 SIM	-	11	201	-	-	209	
210	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	11	201	-	-	210	
211	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	201	-	-	211	
212	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	201	-	-	212	
213	36"	F			84"	1 3/4"	WD	-	1	HM	7	8	-	13	201	-	-	213	
214	36"	F			94"	1 3/4"	HM	-	1	HM	7	8	-	13	132	-	-	214	
A1	36"	F			94"	1 3/4"	HM	-	1	HM	13	14	3	5	EXTERIOR	-	-	A1	
A2	36"	F			84"	1 3/4"	WD	-	2	HM	15	16	-	6	6	45	-	A2	
A3	36"	F			84"	1 3/4"	WD	-	2	HM	15	16	-	7	STAIR A	45	-	A3	
B1	36"	F			94"	1 3/4"	HM	-	1	HM	13	14	3	4	EXTERIOR	-	-	B1	
B2	36"	F			84"	1 3/4"	WD	-	2	HM	15	16	-	6	6	45	-	B2	
B3	36"	F			84"	1 3/4"	WD	-	2	HM	15	16	-	6	STAIR B	45	-	B3	

WINDOW & LOUVER SCHEDULE

MARK	WIDTH	HEIGHT	FRAME		GLAZING		DETAILS			HEAD HEIGHT	ASSOC BLDG ELEV	COMMENTS	MARK
			FINISH	MAT	TYPE	THICK	HEAD	JAMB	SILL				
L1	1'-6"	1'-6"	PNT	AL	-		22	23	24	11'-10"	FIRST FLOOR		L1
L1	1'-6"	1'-6"	PNT	AL	-		22	23	24	10'-3"	SECOND FLOOR		L1
W1	4'-0"	7'-0"	PNT	AL	INSUL	1"	25, 28	26, 29	27, 30	8'-0"	FIRST FLOOR		W1
W2	8'-0"	7'-0"	PNT	AL	INSUL	1"	25	26	27	8'-0"	FIRST FLOOR		W2
W3	5'-0"	4'-0"	PNT	HM	TEMP	1/4"	7 SIM	8 SIM	7 SIM	6'-8"	FIRST FLOOR		W3
W3	5'-0"	4'-0"	PNT	HM	TEMP	1/4"	7 SIM	8 SIM	7 SIM	6'-8"	SECOND FLOOR		W3

DOOR HARDWARE SCHEDULE

GENERAL NOTES

- ALL CYLINDERS TO BE BY BEST ACCESS SYSTEMS
- SECURITY VENDOR ITEMS BY OTHERS

SET #1

(6) BUTT HINGES	BY DOOR MFR	628	-
(2) EXIT DEVICE W/ ENTRY TRIM	8801x3080-01	US32D	AR
(2) CYLINDER CORE			BAS
(2) CLOSER	BY DOOR MFR	-	-
(1) THRESHOLD	BY DOOR MFR	-	-
(1) SEALS AND SWEEP	BY DOOR MFR	-	-

SET #2

(6) BUTT HINGES	BY DOOR MFR	-	-
(2) PUSH / PULL	BY DOOR MFR	-	-
(2) CLOSER	BY DOOR MFR	-	-
(1) THRESHOLD	BY DOOR MFR	-	-
(1) SEALS AND SWEEP	BY DOOR MFR	-	-

SET #3

(3) BUTT HINGES	BY DOOR MFR	628	
(1) EXIT DEVICE W/ ENTRY TRIM	8801x3080-01	US32D	AR
(1) CYLINDER CORE			BAS
(1) CLOSER	BY DOOR MFR	-	-
(1) THRESHOLD	BY DOOR MFR	-	-
(1) SWEEP AND GASKETING	BY DOOR MFR	-	-
(1) RAINDRIP (DR 103A ONLY)	346-C		PEM
(1) BALANCED MAGNETIC SWITCH	BY SECURITY VENDOR		

SET #4

(3) HEAVY DUTY HINGES	T4A3786xNRP	US26D	MCK
(1) EXIT DEVICE W/ NO EXT TRIM	8700	US32D	AR
(1) CLOSER	7500	689	NOR
(1) THRESHOLD	2005A	-	PEM
(1) DOOR SEALS	PK33xLAR	-	PEM
(1) DOOR SWEEP	3452AxLAR	-	PEM
(1) RAINDRIP	346-CxLAR	-	PEM
(1) BALANCED MAGNETIC SWITCH	BY SECURITY VENDOR		

SET #5

(3) HEAVY DUTY HINGESxNRP	T4A3786	US26D	MCK
(1) EXIT DEVICE W/ NO EXT TRIM	8700	US32D	AR
(1) CLOSER	7500	689	NOR
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) THRESHOLD	2005A	-	PEM
(1) DOOR SEALS	PK33xLAR	-	PEM
(1) DOOR SWEEP	3452AxLAR	-	PEM
(1) RAINDRIP	346-CxLAR	-	PEM

SET #6

(3) HEAVY DUTY HINGES	T4A3786	US26D	MCK
(1) EXIT DEVICE W/ ENTRY TRIM	3701x3080-01	US32D	AR
(1) CLOSER	7500	689	NOR
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC

SET #7

(3) HEAVY DUTY HINGES	T4A3786xNRP	US26D	MCK
(1) EXIT DEVICE W/ NO EXT TRIM	3700	US32D	AR
(1) CLOSER	7500	689	NOR
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC

SET #8

(6) HEAVY WEIGHT HINGES	T4A3786	US32D	MCK
(1) FLUSH BOLTS T&B	585-12	US26D	ROC
(1) LOCKSET (STOREROOM)	FW-10XG04-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(2) OVERHEAD STOP	OH1000 SERIES	US32D	ROC
(1) THRESHOLD	154SS	US26D	PEM
(1) DOOR SEALS	PK33xLAR	-	PEM
(1) DOOR SWEEP	3452AxLAR	-	PEM

SET #9

(3) CAM LIFT HINGES	MKCL260	-	MCK
(1) PANIC BAR W/ X10 (24V)	LKM10KPX10ABRS2	-	LKM
(1) DOOR SEALS	BY DOOR MFR		
(1) AUTO DOOR BOTTOM	BY DOOR MFR		
(1) POWER ASSIST	CONDOR SERIES	-	MAC
(1) KICKPLATE 12"x4" LDW	K1038	US26D	ROC
(1) THRESHOLD	154SS	US26D	PEM
(1) ELEC POWER TRANSFER	BY DOOR MFR		SEC
(1) INGRESS CARD READER	BY SECURITY VENDOR		
(1) EGRESS CARD READER	BY SECURITY VENDOR		
(1) DOOR CONTACT	BY SECURITY VENDOR		

SET #10

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (STOREROOM)	FW-10XG04-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) ELECTRIC STRIKE	7170	-	AR
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) INGRESS CARD READER	BY SECURITY VENDOR		

SET #11

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (STOREROOM)	FW-10XG04-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) DOOR STOP	409	US32D	ROC

SET #12

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) DOOR PULL / PUSH PLATE	111x73C/73CL	US32D	ROC
(1) CLOSER	7500	689	NOR
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC

SET #13

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (OFFICE)	FW-10XG24-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) DOOR STOP	409	US32D	ROC

SET #14

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (CLASSROOM)	FW-10XG37-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) DOOR STOP	409	US32D	ROC

SET #15

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (STOREROOM)	FW-10XG04-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) ARMOR PLATE 48"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) DOOR STOP	409	US32D	ROC

SET #16

(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (OFFICE)	FW-10XG24-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) CLOSER	7500	689	NOR
KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) DOOR STOP	409	US32D	ROC

SET #17

(6) HEAVY WEIGHT HINGES	T4A3786	US32D	MCK
(1) FLUSH BOLTS T&B	585-12	US26D	ROC
(1) LOCKSET (STOREROOM)	FW-10XG04-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS

SET #18

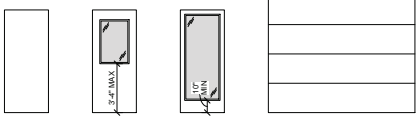
(3) STANDARD DUTY HINGES	TA2714	US26D	MCK
(1) LOCKSET (PRIVACY)	V30-10XU65-G-P	US26D	SA
(1) CYLINDER CORE	-	US25D	BAS
(1) CLOSER	7500	689	NOR
(1) KICK PLATE 10"x4" LDW	K1050 4BE CSK	US32D	ROC
(1) DOOR STOP	409	US32D	ROC

SET #19

ALL HARDWARE BY DOOR MANUFACTURER

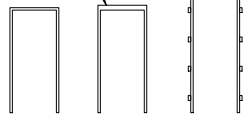
MANUFACTURER ABBREVIATIONS

AR	ADAMS RITE
BAS	BEST ACCESS SYSTEMS
LKM	LOCKMASTERS
MAC	MOTION ACCESS
MCK	MCKINNEY
NOR	NORTON
PEM	PEMKO
ROC	ROCKWOOD
SA	SARGENT
SEC	SECURITRON



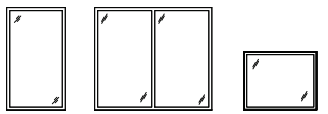
TYPE F FLUSH PANEL
TYPE HG HALF GLASS PANEL
TYPE MS MEDIUM STILE PANEL
TYPE OHS OVERHEAD SECTIONAL DOOR

DOOR TYPES



TYPE 1 2" HEAD FRAME
TYPE 2 4" HEAD FRAME
TYPE 3 SECTIONAL DOOR FRAME

FRAME TYPES



W1
W2
W3
L1

WINDOW AND LOUVER TYPES

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

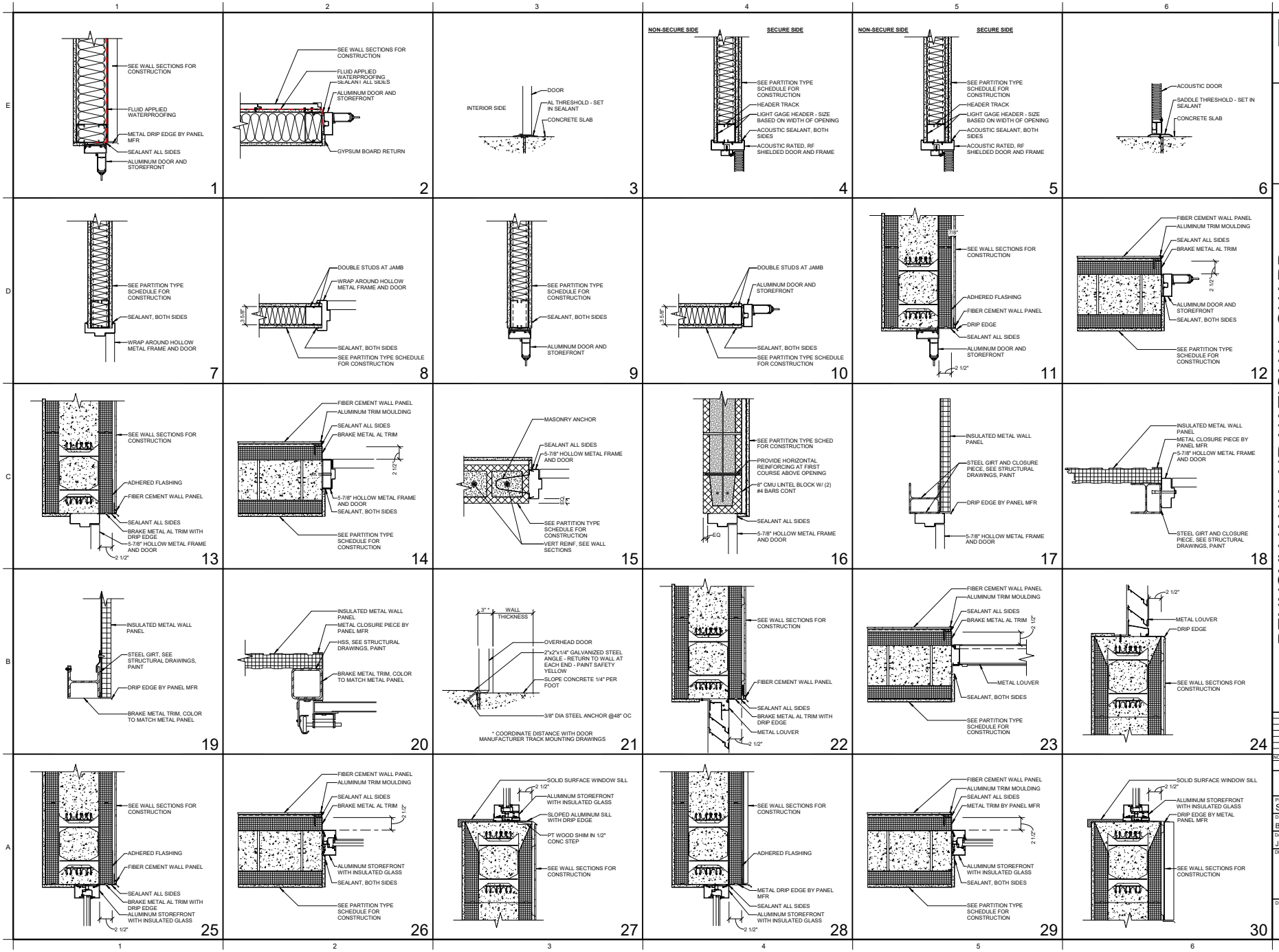
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL DOOR AND WINDOW SCHEDULES

DRAWING NO.: **A602**



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DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL DOOR AND WINDOW DETAILS

DRAWING NO.: **A603**

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1/28/2026 9:53:51 AM
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
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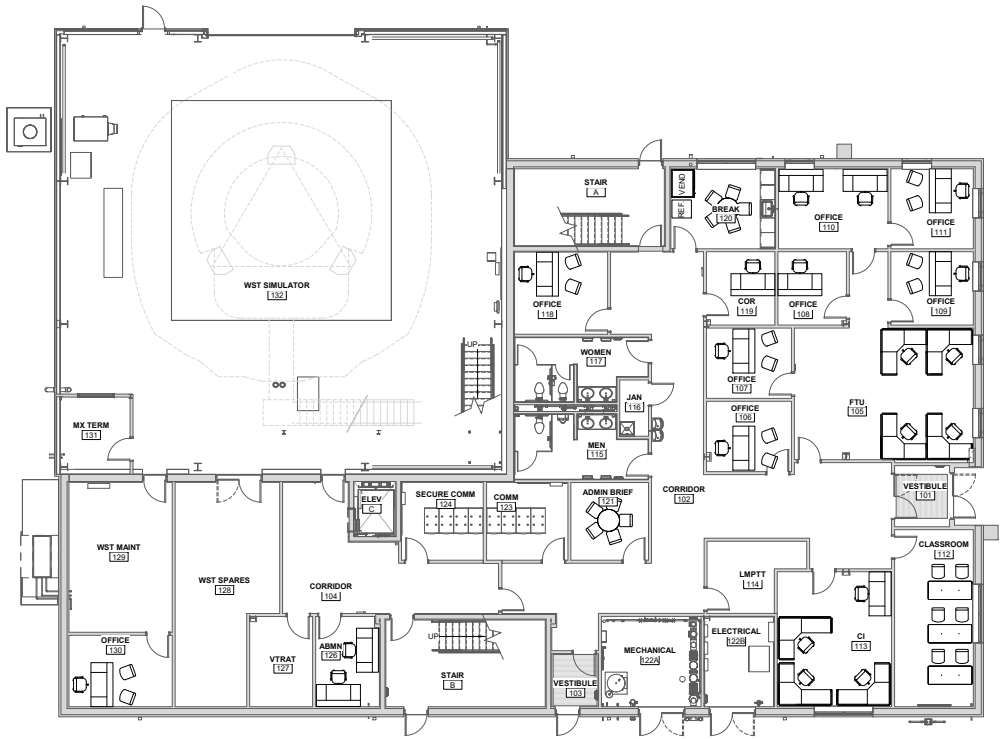

1 **FURNITURE PLAN - FIRST FLOOR**
SCALE: 1/8" = 1'-0"

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PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL
FURNITURE PLAN - FIRST FLOOR

DRAWING NO.: **A901**

Project Number: SHYQ149104
1/26/2026 9:53:52 AM
Local File:Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
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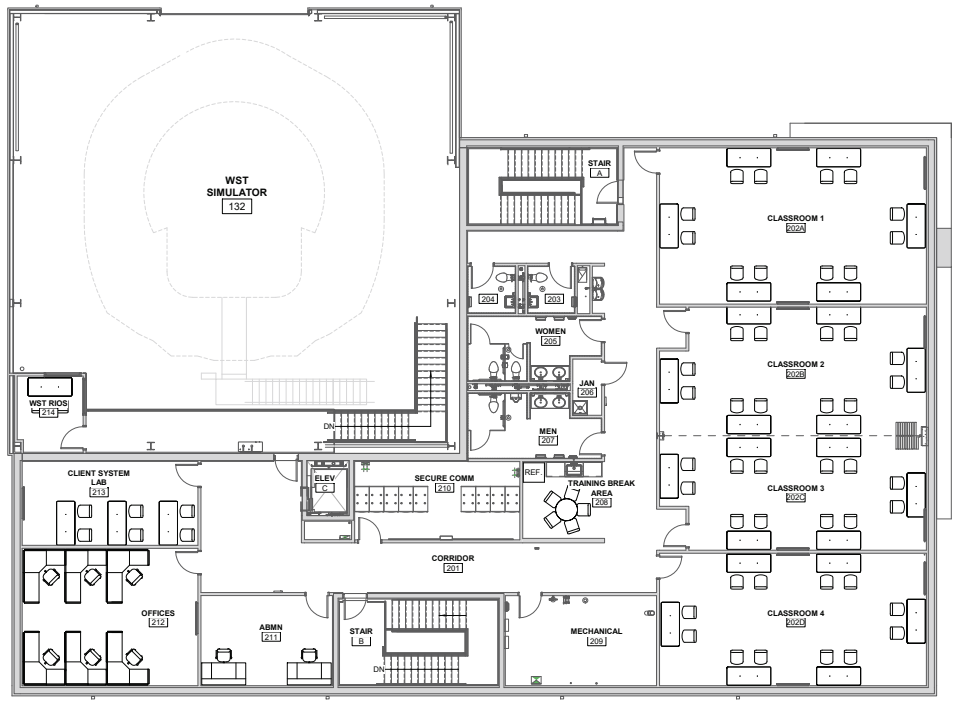

1 **FURNITURE PLAN - SECOND FLOOR**
SCALE: 1/8" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
BJO	BJO	JAS

DATE: JANUARY 2026

DRAWING TITLE: ARCHITECTURAL FURNITURE PLAN - SECOND FLOOR

DRAWING NO.: **A902**

Project Number: SHYQ149104
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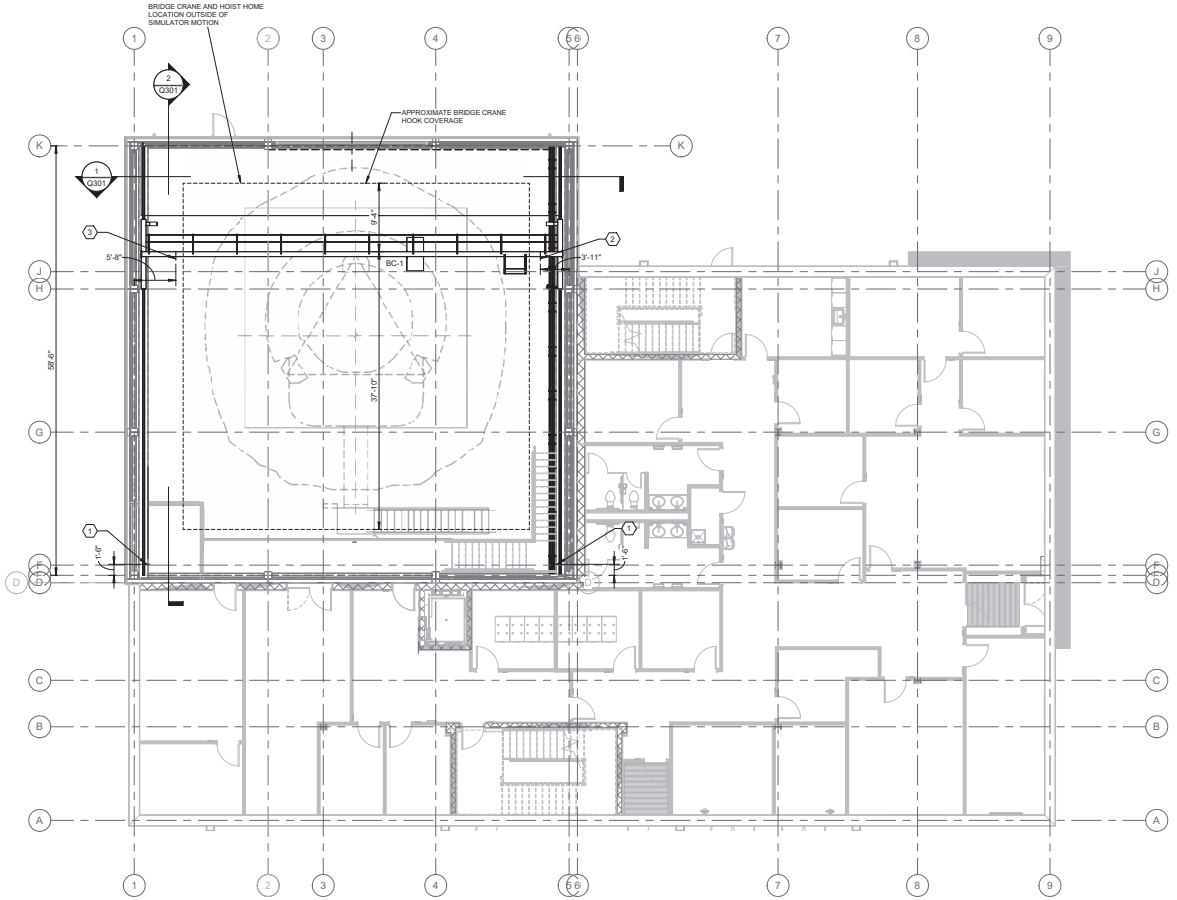
Local File:Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_A_R23.com.rvt
Central File: BM5581_A_central_R21.rvt

INDUSTRIAL EQUIPMENT SCHEDULE

ITEM NO	TYPE	STATUS	SUPPLIED BY	QTY	ELECTRICAL DATA							SIZE	SPEC SECTION	COMMENTS
					VOLTS	PHASE	HERTZ	AMP	HP	ELECTRICAL COMMENTS	PLUG REQ'D			
BC-1	BRIDGE CRANE WITH HOIST - 2 TON	N	CFCI	1	460 V	3	60 Hz	15 A	5.3	WITH 100A POWER BAR	No	56'-9" SPAN	41 22 13.13	KONECRANES SINGLE GIRDER 2 TON TOP RUNNING BRIDGE CRANE

CFCI - CONTRACTOR FURNISH / CONTRACTOR INSTALL
QTY - QUANTITY
A - AMP
PH - PHASE
HP - HP
SPEC - SPECIFICATION
N - NEW



1 Q101 **INDUSTRIAL EQUIPMENT FLOOR PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. EQUIPMENT DIMENSIONS, DETAILS AND LOCATION SHOW GENERAL INTENT AND EXTENT OF ALL WORK. ACTUAL CONSTRUCTION AND INSTALLATION SHALL COMPLY WITH APPROVED SHOP DRAWING SUBMITTALS.
2. REFER TO STRUCTURAL DRAWINGS FOR BRIDGE CRANE MOUNTING DETAILS.
3. BRIDGE CRANE SHALL BE INTERLOCKED WITH THE EMM CONTROL CABINET TO ENSURE THAT THERE IS NO CONFLICT WITH THE USE OF THE BRIDGE CRANE AND SIMULATOR.
4. REFER TO ELECTRICAL DRAWINGS FOR LOCATION OF THE ELECTRICAL CONNECTION.

SHEET NOTES

1. PROVIDE A BRIDGE CRANE STOP FOR BC-1 AT 1'-6" FROM GRIDLINE E. SEE MECHANICAL DRAWINGS TO ENSURE DUCTWORK AND CRANE ARE NOT IN CONFLICT.
2. PROVIDE A HOIST STOP AT 3'-11" FROM GRID LINE 5. SEE MECHANICAL DRAWINGS TO ENSURE DUCTWORK AND HOIST ARE NOT IN CONFLICT.
3. PROVIDE A HOIST STOP AT 5'-8" FROM GRID LINE 1. SEE MECHANICAL DRAWINGS TO ENSURE DUCTWORK AND HOIST ARE NOT IN CONFLICT.

BID OPTION #2

FURNISH AND INSTALL BC-1, BRIDGE CRANE WITH HOIST – 2 TON, AND ALL ASSOCIATED COMPONENTS INCLUDING BUT NOT LIMITED TO BRIDGE GIRDER, RUNWAYS, POWER BAR, CRANE STOPS, HOIST, HOOK, HOIST STOPS, STRUCTURAL COLUMN CONNECTIONS, ELECTRICAL DISCONNECT AND WIRING.

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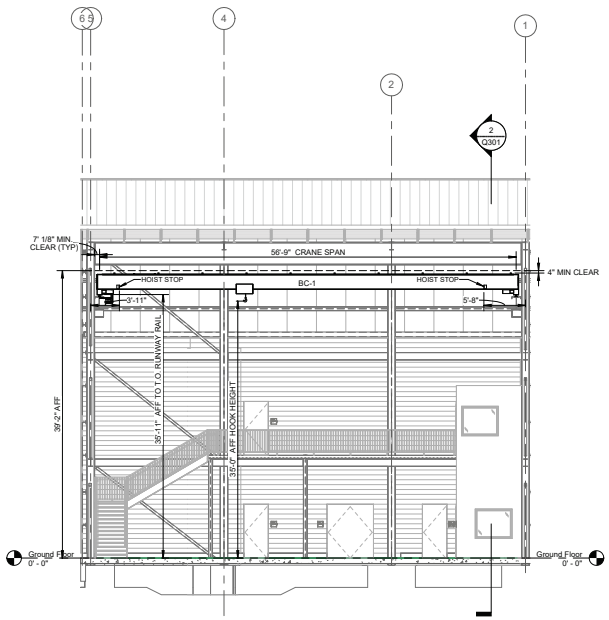
NO.	DATE	DESCRIPTION

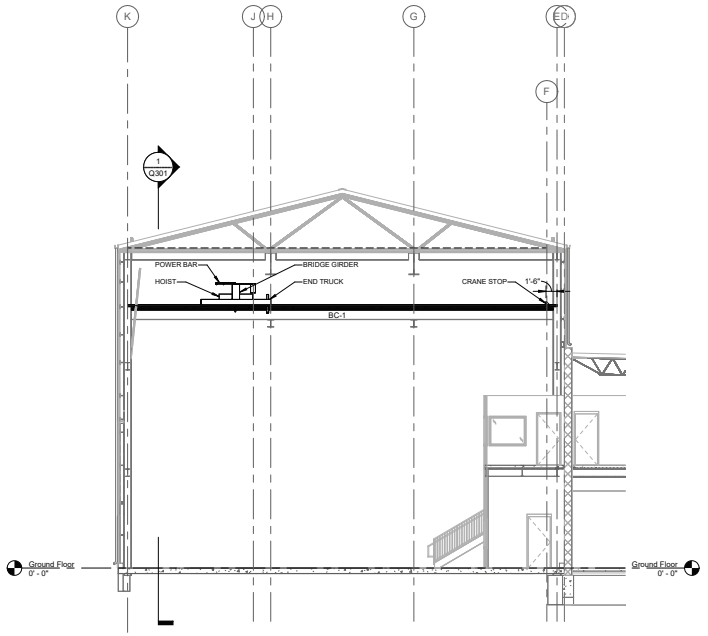
REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: SDB | MODELED: NF | CHECKED: TMD
DATE: JANUARY 2026
DRAWING TITLE: INDUSTRIAL EQUIPMENT PLAN
DRAWING NO.: Q101



1 **INDUSTRIAL EQUIPMENT SECTION**
SCALE: 1/8" = 1'-0"



2 **INDUSTRIAL EQUIPMENT SECTION**
SCALE: 1/8" = 1'-0"

BID OPTION #2

FURNISH AND INSTALL BC-1, BRIDGE CRANE WITH HOIST – 2 TON, AND ALL ASSOCIATED COMPONENTS INCLUDING BUT NOT LIMITED TO BRIDGE GIRDER, RUNWAYS, POWER BAR, CRANE STOPS, HOIST, HOOK, HOIST STOPS, STRUCTURAL COLUMN CONNECTIONS, ELECTRICAL DISCONNECT AND WIRING.

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BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SDB	NF	TMD

DATE: JANUARY 2026

DRAWING TITLE: INDUSTRIAL EQUIPMENT SECTIONS

DRAWING NO.: **Q301**

Local File: Autodesk Docs://076046-PANG_EC_130J_Simulator/076046_PANG_Q_R23.rvt
Central File: BIM360://_Q_R23.rvt
Project Number: SHYQ149104
12/10/25 3:02:29 PM

ABBREVIATIONS

A	AIR	ICC	INTERNATIONAL CODE COUNCIL
ABV	ABOVE	ID	INSIDE DIAMETER
ACV	ALARM CHECK VALVE	IN.	INCH
ADJ	ADJUSTABLE	ITS	INSPECTOR'S TEST STATION
AFF	ABOVE FINISHED FLOOR	ITS	INTERMEDIATE TEMPERATURE SPRINKLER
AHJ	AUTHORITY HAVING JURISDICTION		
AIP	ABANDONED IN PLACE	JP	JOCKEY PUMP
AMD	AIR MAINTENANCE DEVICE	JPC	JOCKEY PUMP CONTROLLER
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE		
AP	ACCESS PANEL	L	LENGTH
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	LB	POUND
ASPR	ABANDONED SPRINKLER SYSTEM PIPE	LF	LINEAR FEET
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LH	LIGHT HAZARD
ATS	AUTOMATIC TRANSFER SWITCH	LPS	LOW PRESSURE SWITCH
AWWA	AMERICAN WATER WORKS ASSOCIATION	LRA	LOCKED-ROTOR AMPERAGE
BFP	BACKFLOW PREVENTER	M	MANUAL
BHP	BRAKE HORSEPOWER	MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE
BLDG	BUILDING	MAX	MAXIMUM
BLW	BELOW	MFR	MANUFACTURER
		MIC	MICROBIOLOGICALLY INDUCED CORROSION
CA	CLEAN AGENT	MIN	MINIMUM
CLDIP	CEMENT-LINED DUCTILE IRON PIPE	MTD	MOUNTED
CLG	CEILING		
CO2	CARBON DIOXIDE	NC	NORMALLY CLOSED
COL	COLUMN	NEC	NATIONAL ELECTRICAL CODE
COMP	COMPRESSOR	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CON'T	CONTINUE		
CTE	CONNECT TO EXISTING	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
		NIC	NOT IN CONTRACT
(D)	DEMOLISH, REMOVE	NICET	NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES
D	DRAIN PIPE		
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	NO	NORMALLY OPEN
DCVA	DOUBLE CHECK VALVE ASSEMBLY	No	NUMBER
DESIG.	DESIGNATION	NOM	NOMINAL
DIA.	DIAMETER	NPSH	NET POSITIVE SUCTION HEAD
DN	DOWN	NPT	NATIONAL PIPE THREAD
DSP	DRY STANDPIPE	NTS	NOT TO SCALE
DSPR	DRY SPRINKLER PIPE		
DWG	DRAWING	OC	ON CENTER
		OD	OUTSIDE DIAMETER
(E)	EXISTING TO REMAIN	OH1	ORDINARY HAZARD GROUP 1
(ER)	EXISTING RELOCATED	OH2	ORDINARY HAZARD GROUP 2
E.G.	FOR EXAMPLE	ORD	ORDINARY TEMPERATURE SPRINKLER
EA	EACH	OS&Y	OUTSIDE STEM AND YOKE
ECS	EXTENDED COVERAGE SPRINKLER		
EH1	EXTRA HAZARD GROUP 1	PA	PREACTION
EH2	EXTRA HAZARD GROUP 2	PASPR	PREACTION SPRINKLER PIPE
ELEV	ELEVATION	PC	PLUMBING CONTRACTOR
EQ	EQUAL	PH	PHASE
EQUIP	EQUIPMENT	PIV	POST INDICATOR VALVE
ESFR	EARLY SUPPRESSION FAST-RESPONSE	PRESS	PRESSURE
		PRFHV	PRESSURE REDUCING FIRE HOSE VALVE
		PS	PRESSURE SWITCH
F	FIRE PROTECTION	PSI	POUNDS PER SQUARE INCH
FA	FIRE ALARM		
FACP	FIRE ALARM CONTROL PANEL	QR	QUICK RESPONSE
FCV	FLOOR CONTROL VALVE		
FD	FLOOR DRAIN	RM	ROOM
FDC	FIRE DEPARTMENT CONNECTION	RPM	REVOLUTIONS PER MINUTE
FF	FINISHED FLOOR	RPZ	REDUCED PRESSURE ZONE ASSEMBLY
FHC	FIRE HOSE CABINET		
FHR	FIRE HOSE RACK WITH HOSE	SD	SMOKE DETECTOR
FHV	FIRE HOSE VALVE	SF	SQUARE FOOT
FIN	FINISHED	SP	STANDPIPE
FLA	FULL LOAD AMPERAGE	SPKR	SPRINKLER
FLR	FLOOR	SPR	WET SPRINKLER PIPE
FM	FACTORY MUTUAL (FM GLOBAL)	SQ	SQUARE
FP	FIRE PUMP	SQ. FT.	SQUARE FEET
FPC	FIRE PUMP CONTROLLER	STD	STANDARD
FPTH	FIRE PUMP TEST HEADER	STL	STEEL
FS	FLOW SWITCH	SV	SUPERVISORY VALVE
FT	FEET	SYS	SYSTEM
FW	FIRE WATER		
FWP	FIRE WATER PIPE	TEMP	TEMPERATURE
FWSPR	FOAM-WATER SPRINKLER PIPE	TS	TAMPER SWITCH
°F	DEGREES FAHRENHEIT	TYP	TYPICAL
G	CAGE GUARD (SPRINKLER)	U.L.	UNDERWRITER'S LABORATORIES
GA	GAUGE	UFC	UNIFIED FACILITIES CRITERIA
GAL	GALLON	UG	UNDERGROUND
GPM	GALLONS PER MINUTE		
HD	HEAD, HEAT DETECTOR	V	VOLTS
HP	HORSEPOWER	VIF	VERIFY IN FIELD
HR	HOUR		
HT	HEIGHT	WSP	WET STANDPIPE
HTS	HIGH TEMPERATURE SPRINKLER		

LINES & REFERENCE SYMBOLS

—SPR—	WET SPRINKLER PIPE
—FW—	FIRE WATER PIPE
	NEW WORK LINE WEIGHT
	DEMOLITION WORK LINE WEIGHT
	AREA OF DEMOLITION
	EXISTING WORK LINE WEIGHT
	FUTURE WORK LINE WEIGHT
	POINT OF CONNECTION
	TERMINATION POINT OF DEMOLITION
	POINT OF FUTURE CONNECTION
#	SHEET NOTE REFERENCE
#	REVISION REFERENCE
FP-#	FIRE PROTECTION EQUIPMENT
SP #	FIRE PROTECTION STANDPIPE RISER
	NORTH ARROW

PIPING, FITTINGS, AND VALVES

PIPING SYMBOLS

- DIRECTION OF FLOW
- PIPE CAP
- GAUGE WITH GAUGE COCK
- REDUCER
- PIPE UP
- PIPE DOWN
- PIPE TEE OUTLET DOWN
- PIPE TEE OUTLET UP
- PIPE CONTINUATION
- UNION
- FLANGE

SPRINKLER SYMBOLS

- ALARM ANNUNCIATION, PREACTION HORN
- HEAT DETECTOR
- SPRINKLER BELL, WATER MOTOR GONG
- FIRE HOSE VALVE
- MAIN DRAIN VALVE
- FIRE PIPE CAP, FLANGE
- FIRE PIPE CAP, GROOVE
- FIRE HYDRANT
- FDC POST, SIAMESE
- FDC POST, SIAMESE
- FDC WALL, SIAMESE
- FDC WALL, SIAMESE
- DRY PIPE SPRINKLER VALVE
- PREACTION SPRINKLER VALVE
- WET PIPE SPRINKLER VALVE
- FIRE PUMP TEST HEADER
- SPRINKLER CONCEALED TYPE
- SPRINKLER DRY CONCEALED TYPE
- SPRINKLER TO BE REMOVED
- SPRINKLER DRY UPRIGHT TYPE
- SPRINKLER DRY PENDENT TYPE
- SPRINKLER TO REMAIN
- SPRINKLER PENDENT SURFACE TYPE
- SPRINKLER DRY PENDENT RECESS TYPE
- SPRINKLER PENDENT RECESS TYPE
- SPRINKLER SIDEWALL TYPE
- SPRINKLER CONCEALED SIDEWALL TYPE
- SPRINKLER EXISTING SIDEWALL TO REMAIN
- SPRINKLER WET UPRIGHT TYPE
- TS — TAMPER SWITCH
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- BALL VALVE
- BUTTERFLY CONTROL VALVE
- GATE VALVE
- OUTSIDE STEM & YOKE VALVE
- CHECK VALVE
- BACKFLOW PREVENTER W/OS&Y GATE VALVES W/ TAMPER SWITCH
- BACKFLOW PREVENTER DETECTOR CHECK W/ TAMPER SWITCH
- REDUCED PRESSURE ZONE BACKFLOW PREVENTER, RPZ BFP W/ TAMPER SWITCH
- FLOOR CONTROL VALVE ASSEMBLY

DESIGN CODES & STANDARDS

ALL CODES REFERENCED BELOW ARE TO BE MODIFIED AND AMENDED AS REQUIRED BY THE STATE, COUNTY, LOCAL, AUTHORITY HAVING JURISDICTION, OR GOVERNMENT REQUIREMENTS.

DAUPHIN COUNTY, PENNSYLVANIA

1. PENNSYLVANIA UNIFORM CONSTRUCTION CODE
2. 2018 INTERNATIONAL BUILDING CODE
3. 2018 INTERNATIONAL MECHANICAL CODE
4. 2018 INTERNATIONAL FIRE CODE
5. 2021 NFPA 1 - FIRE CODE
6. 2019 NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
7. 2020 NFPA 25 - STANDARD FOR THE INSPECTION, TESTING, AND MAINTENANCE OF WATER-BASED FIRE PROECTION SYSTEMS
8. 2020 NFPA 70 - NATIONAL ELECTRICAL CODE
9. 2019 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE
10. UFC 3-600-01 - DOD FIRE PROTECTION ENGINEERING FOR FACILITIES, WITH CHANGE 6.
11. TSFPEWG G 3-600-01.01-18 - AIR FORCE FIRE PROTECTION ENGINEERING CRITERIA AND TECHNICAL GUIDANCE FOR MISSION CONTINUITY OF ELECTRONIC, INFORMATION TECHNOLOGY, AND TELECOMMUNICATIONS EQUIPMENT INSTALLATIONS
12. AIR NATIONAL GUARD ENGINEERING TECHNICAL LETTER (ANGETL) 24-01-03: FIRE PROTECTION DESIGN GUIDANCE

HYDRANT FLOW TEST RESULTS

FLOW HYDRANT	TEST NO.	TEST DATE	FLOW NOZZLE (IN.)	DISCHARGE COEFFICIENT (NOTE 1)	CORRECTION FACTOR (NOTE 2)	FLOWING PRESSURE (PSI)	FLOW RATE (GPM)	PRESSURE HYDRANT	STATIC PRESSURE (PSI)	RESIDUAL PRESSURE (PSI)	Q_{20}, FLOW (GPM) (NOTE 3)
NO. 1	1	11/5/2024	4.5	0.9	0.83	14	1,692	NO. 2	54	33	2,195
NO. 3	2	11/5/2024	4.5	0.9	0.83	16	1,809	NO. 1	55	35.5	2,481

NOTES:
1. 0.9 FOR ROUNDED NOZZLE INLET, 0.8 FOR SQUARE NOZZLE INLET.
2. CORRECTION FACTOR ACCOUNTS FOR AIR VOIDS IN FLOW STREAM THROUGH STREAMER NOZZLE.
3. THE Q_{20} CORRESPONDS TO THE ESTIMATED AVAILABLE FLOW FROM THE FLOW HYDRANT WHILE MAINTAINING 20 PSI RESIDUAL PRESSURE AT THE PRESSURE HYDRANT.
4. THE FIRE HYDRANT TEST WAS WITNESSED BY THE DESIGN ENGINEER.

SPRINKLER DESIGN DEMAND AND MINIMUM K- FACTOR*

HAZARD CLASSIFICATION		CEILING HEIGHT UP TO 30 FT	CEILING HEIGHT >30 - 45 FT
		WET	WET
LIGHT	DESIGN (GPM/ FT^2)/ FT^2	0.1 / 1500	0.2 / 2500
	K-FACTOR	5.6	11.2
ORDINARY	DESIGN (GPM/ FT^2)/ FT^2	0.2 / 2500	0.2 / 2500
	K-FACTOR	8.0	11.2

NOTES:
*DESIGN CRITERIA DERIVED FROM UFC 3-600-01, TABLE 9-3 AND NFPA 13

THROUGH-PENETRATION FIRESTOP SYSTEM SCHEDULE

TYPE OF PENETRANT	F-RATING (HR)	CONCRETE FLOORS - UL SYSTEM	CONCRETE OR BLOCK WALLS - UL SYSTEM	GYPSUM WALLS - UL SYSTEM	BASIS OF DESIGN - HILTI PRODUCTS
CIRCULAR BLANK OPENINGS	1	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	N/A	CP 680, CP 618, FS ONE MAX, FIRESTOP BLOCK(CFS-BL)
	2	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	N/A	
	3	F-A-0006, C-AJ-0055, C-AJ-0086, F-A-0014	C-AJ-0055, C-AJ-0086	N/A	
METALLIC PIPE OR CONDUIT	1	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020	W-L-1054, W-L-1058, W-L-1164, W-L-1506	CP 680, FS ONE MAX, CP 606, CFS-S SIL GG, CFS-D, MINERAL WOOL
	2	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248	W-L-1054, W-L-1058, W-L-1164, W-L-1506	
	3	C-AJ-1226, F-A-1017	C-AJ-1226, W-J-1041, W-J-1068	N/A	
	4	C-BJ -1037, C-BJ-1034	C-BJ-1034, C-BJ-1037, W-J-1041, W-J-1042, W-J-1068	W-L-1110, W-L-1111, W-L-1165	
NON-METALLIC PIPE OR CONDUIT	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	CP 680, CP 643N, MINERAL WOOL, CP 644, FS ONE MAX, CFS-S SIL SL, CFS-S SIL GG, CP 648
	2	F-A 2053, F-A 2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	
	3	F-A-2054, C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342	N/A	
	4	C-BJ-2016, C-AJ-2017	W-J-2057, W-J-2091	W-L-2184, W-L-2245	
INSULATED PIPES	1	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090, C-AJ-5048	C-AJ-5090, C-AJ-5091, C-AJ 5061, W-J-5042	W-L-5028, W-L-5029, W-L-5047	CP 680, FS ONE MAX, MINERAL WOOL
	2	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090	C-AJ-5090, C-AJ-5091, C-AJ-5061, W-J-5042	W-L-5028, W-L-5029, W-L-5047	
	3	F-A 5016, C-AJ-5090, F-A-5018	C-AJ-5090, C-AJ-5061	N/A	
	4	C-BJ-5006	C-BJ-5006, W-J-5028	W-L-5073	
MIXED PENETRANTS	1	C-AJ-8099, C-AJ-8056, C-AJ-8143	C-AJ-8099, C-AJ-8056, W-J-8007, C-AJ-8143	W-L-1095, W-L-8013	FS ONE MAX, FIRESTOP BLOCK (CFS-BL), CP 620, CP 618
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143, C-AJ-8252	C-AJ 8099, C-AJ-8056, W-J-8007, C-AJ-8143, C-AJ-8252	W-L-1095, W-L-8013	
	3	C-AJ-8099, C-AJ-8056	C-AJ-8041, C-AJ-8056, W-J-8007, C-AJ-8099	N/A	
	4	C-AJ-8095	C-AJ-8095, W-J-8007	W-L-8014	

NOTES:
1. CONTACT HILTI FOR CURRENT UL CLASSIFIED SYSTEM.
2. ALL PRODUCT AND SYSTEM INSTALLATIONS SHALL MEET THE REQUIREMENTS OF ASTM E 814 AND UL 1479 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO THAT OF THE CONSTRUCTION PENETRATED.
3. ALL PRODUCT AND SYSTEMS SHALL BE PROPERLY LABELED.
4. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND OTHER TRADES.

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PENNSYLVANIA AIR NATIONAL GUARD

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION LEGEND & ABBREVIATIONS

DRAWING NO.: FP001

SCOPE OF WORK PROCEDURES

1. THE SCOPE OF WORK SHALL INCLUDE ALL WORK INDICATED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS AND THE COORDINATION OF WORK WITH ALL TRADES AND CONDITIONS. THE CONTRACT DOCUMENTS ARE ALL OF THE DRAWINGS AND SPECIFICATIONS, WHICH ARE COMPLIMENTARY. WORK SHOWN ON OTHER TRADES' DOCUMENTS SHALL BE INCLUDED AS IF SHOWN ON HERE. WHERE THE CONTRACT DOCUMENTS CONFLICT WITH THEMSELVES, CODES, AND/OR REGULATIONS, THEN FOLLOW THE STRICTER REQUIREMENT, HIGHER QUANTITY REQUIREMENT, AND/OR HIGHER QUALITY REQUIREMENT. NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO START OF WORK.
2. FIRE PROTECTION CONTRACTOR SHALL DETERMINE CONDITIONS AND WORK NECESSARY PRIOR TO THE SUBMISSION OF BID PRICE. INCLUDE ALL REQUIRED WORK IN BID PRICE.
3. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND EXISTING CONDITIONS PRIOR TO THE START OF FABRICATION AND INSTALLATION. NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO START OF WORK.
4. THE FIRE PROTECTION CONTRACTOR SHALL ADHERE AT ALL TIMES TO ALL SAFETY REGULATIONS AND PROCEDURES REQUIRED BY THE GOVERNMENT. ALL CONTRACTOR PERSONNEL WORKING ON SITE SHALL FIRST COMPLETE THE NECESSARY SAFETY TRAINING CONDUCTED BY THE GOVERNMENT AS REQUIRED.

CONSTRUCTION PROCEDURES

1. IT IS SOLELY THE FIRE PROTECTION CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITTING AND APPROVALS OF WORKING PLANS FROM THE GOVERNMENT'S INSURANCE CARRIER AND THE AUTHORITY HAVING JURISDICTION. ANY INSTALLATION OF THE SPRINKLER SYSTEM WITHOUT APPROVED WORKING PLANS SHALL BE AT THE SOLE RISK AND EXPENSE OF THE CONTRACTOR.
2. THE FIRE PROTECTION CONTRACTOR SHALL CONTACT THE GOVERNMENT'S CONSTRUCTION COORDINATOR AND REQUEST WHENEVER THE EXISTING SPRINKLER SYSTEM IS TO BE ISOLATED AND/OR DRAINED. THIS PROCEDURE SHALL BE ADHERED TO WHEN PRESSURE TESTING AND/OR PLACING ANY PORTION OF SPRINKLER SYSTEM IN OR OUT OF SERVICE.
3. THE GOVERNMENT'S CONSTRUCTION COORDINATOR AND THE AUTHORITY HAVING JURISDICTION SHALL WITNESS ALL SPRINKLER SYSTEM PRESSURE TESTS. THE CONTRACTOR MAKING THE TEST SHALL PROVIDE 72 HOURS NOTICE TO ALL REQUIRED TO BE IN ATTENDANCE AND SHALL NOT PROCEED WITHOUT WRITTEN AUTHORIZATION.
4. ALL WORK SHALL MEET THE REQUIREMENTS OF NFPA STANDARDS, THE AUTHORITY HAVING JURISDICTION, AND THE GOVERNMENT'S INSURANCE CARRIER REQUIREMENTS. ALL INSTALLATION PROCEDURES SHALL COMPLY WITH THE SAFETY RULES OF THE GOVERNMENT AND OSHA REQUIREMENTS AND LOCAL CODES.
5. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A FIRE WATCH WHENEVER ANY WELDING OR OPEN FLAME WORK IS DONE WITHIN THE AREA BEING WORKED, DURING THE WELDING OR OPEN FLAME OPERATION, AND FOR ONE HOUR AFTER WELDING OR OPEN FLAME WORK IS COMPLETE. PROVIDE ALL WELDING AND OPEN FLAME PROCEDURES AND QUALIFICATIONS IN ACCORDANCE WITH NFPA 13.
6. NO STOCK OF FURNISHINGS SHALL BE ALLOWED IN THE AREAS BEING WORKED UNTIL THE ENTIRE SPRINKLER SYSTEM IS COMPLETED IN ACCORDANCE WITH THESE NOTES AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
7. PROVIDE A MATERIAL TEST AND CERTIFICATION FORM TO THE AUTHORITY HAVING JURISDICTION AND GOVERNMENT'S INSURANCE CARRIER SO AS TO CERTIFY THAT THE SPRINKLER SYSTEM IS INSTALLED IN ACCORDANCE WITH THE CONTRACT DRAWINGS, SPECIFICATIONS, FEDERAL, STATE, COUNTY, AND LOCAL CODES AND PROCEDURES.
8. UPON COMPLETION OF SPRINKLER SYSTEM INSTALLATION, PERFORM A HYDROSTATIC TEST ON ALL PIPING AND ITS ATTACHED APPURTENANCES IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION. THE SPRINKLER SYSTEM SHALL BE HYDROSTATICALLY TESTED AT GAUGE PRESSURE OF 200 PSI OR 50 PSI IN EXCESS OF THE SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER, AND SHALL MAINTAIN THAT PRESSURE AT GAUGE PRESSURE OF +/- 5 PSI WITHOUT LOSS FOR 2 HOURS. SUCCESSFUL TEST RESULTS SHALL BE DETERMINED BY INDICATION OF EITHER A PRESSURE LOSS LESS THAN GAUGE PRESSURE OF 5 PSI OR BY NO VISIBLE LEAKAGE. THE TEST PRESSURE SHALL BE READ FROM A GAUGE LOCATED AT THE LOWEST ELEVATION POINT OF THE SYSTEM OR PORTION BEING TESTED. ALL SPRINKLER SYSTEM HYDROSTATIC TESTING SHALL BE IN ACCORDANCE WITH NFPA 13 AND NFPA 25.

GENERAL NEW WORK NOTES

1. THESE GENERAL NOTES ARE APPLICABLE TO ALL FIRE PROTECTION CONTRACT DOCUMENTS.
2. REFER TO SPECIFICATIONS FOR REQUIREMENTS ON MATERIALS, METHODS OF INSTALLATION, PRODUCTS, GENERAL PROVISIONS, AND ADDITIONAL INFORMATION.
3. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHOW THE GENERAL INTENT OF WORK. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE SCOPE OF WORK SPRINKLER SYSTEM COVERAGE. ADDITIONAL SPRINKLERS AND PIPING MAY BE REQUIRED TO ACCOMMODATE CONDITIONS SUCH AS SOFFITS, DUCTWORK, STRUCTURE, LIGHTING, EQUIPMENT, BOOK STACKS, PARTITIONS, OBSTRUCTIONS, ETC. THE CONTRACTOR SHALL PROVIDE A COMPLETE SPRINKLER SYSTEM INSTALLATION IN CONFORMANCE WITH NFPA 13, THE UNIFIED FACILITIES CRITERIA, ALL FEDERAL CODES AND THEIR APPLICABLE SUPPLEMENTS, AND THE GOVERNMENT.
4. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING, APPROVALS, CALCULATIONS, PRODUCTS, DATA SHEETS, SHOP DRAWINGS, AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL ARRANGE ALL INSPECTIONS AND BE AVAILABLE TO TEST THE SYSTEM AS DIRECTED.
5. ALL MATERIALS, EQUIPMENT, PIPING, FITTINGS, VALVES, HANGERS AND SUPPORTS, ALARM DEVICES, SPRINKLERS, ETC., ASSOCIATED WITH THE FIRE PROTECTION SYSTEM SHALL BE FM GLOBAL APPROVED AND U.L. LISTED AND DESIGNED, INSTALLED, AND COMPLY WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, THE UNIFIED FACILITIES CRITERIA, THE AUTHORITY HAVING JURISDICTION, AND THE GOVERNMENT.
6. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, AND SERVICES NECESSARY TO COMPLETE ALL WORK INDICATED ON THESE DOCUMENTS. SUCCESSFUL COMPLETION REQUIRES THAT ALL INSTALLED SYSTEMS SHALL BE INSPECTED, TESTED, AND FULLY OPERATIONAL IN ACCORDANCE WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, THE UNIFIED FACILITIES CRITERIA, THE AUTHORITY HAVING JURISDICTION, AND THE GOVERNMENT.
7. WORKING PLANS AND CALCULATIONS SHALL BE IN ACCORDANCE WITH NFPA 13. WORKING PLANS, SEISMIC BRACING (IF REQUIRED), MATERIALS AND DATA SHEETS, AND CALCULATIONS COVERING THE SPRINKLER SYSTEM SHALL BE PREPARED, SIGNED AND SEALED, AND SUBMITTED BY A REGISTERED OR CERTIFIED PROFESSIONAL TO THE ENGINEER OF RECORD, THE AUTHORITY HAVING JURISDICTION, AND THE GOVERNMENT, FOR REVIEW AND APPROVAL. WORKING PLANS SHALL INDICATE ALL FIRE PROTECTION EQUIPMENT, PIPING, VALVES, ALARM DEVICES, SPRINKLER LOCATIONS WITH THE ARCHITECTURAL FLOOR PLAN, LIGHT FIXTURES, CEILING DEVICES, ELECTRICAL EQUIPMENT, STRUCTURAL ELEMENTS, HVAC DUCTWORK, AND ALL OTHER ITEMS FROM VARIOUS TRADES WHICH MAY AFFECT THE LAYOUT OF THE SPRINKLERS. PROVIDE ALL REQUIRED HANGER AND SUPPORT AND PIPING INSTALLATION METHODS AND DETAILS. WORKING PLANS SHALL PROVIDE ALL INFORMATION THAT PERTAIN TO THE DESIGN OF THE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13 REQUIREMENTS AND THE UNIFIED FACILITIES CRITERIA, AND INDICATE THE MOST REMOTE DEMAND AREA. NO WORK SHALL BE STARTED UNTIL WORKING PLANS ARE APPROVED BY ALL THE REVIEWING AGENCIES. THE CONTRACTOR SHALL PROVIDE COPIES OF THE AUTHORITY HAVING JURISDICTION AND THE GOVERNMENT APPROVALS WITH THEIR SUBMITTAL.
8. ALL EQUIPMENT, PIPING, FITTINGS, VALVES, ETC. SHALL BE DESIGNED TO OPERATE AND LISTED AT A WORKING PRESSURE OF NOT LESS THAN 175 PSI.
9. ALL SPRINKLERS SHALL BE SPACED, LOCATED, AND POSITIONED TO PROVIDE PROPER SPRINKLER COVERAGE IN COORDINATION WITH WALLS, COLUMNS, ARCHITECTURAL FEATURES, AND BELOW ALL FIXED OBSTRUCTIONS OVER 4 FEET WIDE IN ACCORDANCE WITH NFPA 13. THE MAXIMUM PROTECTION AREA OF COVERAGE AND SPACING SHALL BE IN ACCORDANCE WITH ITS U.L. LISTING AND SHALL NOT EXCEED THE REQUIREMENTS PER NFPA 13. THE CONTRACTOR SHALL VERIFY ALL FIXED OBSTRUCTIONS, ARCHITECTURAL FEATURES, AND DUCTWORK DIMENSIONS IN THE FIELD AND INSTALL SPRINKLERS AS REQUIRED. PROVIDE UPRIGHT SPRINKLERS FOR OPEN CEILING AREAS. PROVIDE SPRINKLER GUARDS AND WATER SHIELDS WHERE REQUIRED.
10. SPRINKLERS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES. ANY SPRINKLER THAT INCURS DAMAGE OR IS PAINTED SHALL BE REPLACED AT NO ADDITIONAL COST TO THE GOVERNMENT. SPRINKLERS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 AND FACTORY MUTUAL AND PROPERLY COORDINATED WITH OTHER WORK. THE CORRECT TYPE OF SPRINKLER SHALL BE USED IN EVERY LOCATION. THE CORRECT TEMPERATURE RATING OF EVERY SPRINKLER SHALL BE USED ACCORDING TO THE MAXIMUM CEILING TEMPERATURE RATING AND REQUIREMENTS OF NFPA 13.
11. ALL PIPE SIZES SHOWN ON THE CONTRACT DRAWINGS ARE SUBJECT TO CHANGE UPON THE COMPLETION OF THE FIRE PROTECTION CONTRACTOR'S CALCULATIONS. ALL SPRINKLER SYSTEM PIPING SHALL BE SIZED BY THE CONTRACTOR.
12. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL HANGERS AND SUPPORTS, CLAMPS, RODS, ANCHORS, ETC. AS REQUIRED TO PROPERLY SUPPORT NEW PIPING AND EQUIPMENT IN ACCORDANCE WITH NFPA 13. ALL HANGERS AND SUPPORTS SHALL BE U.L. LISTED OR FM APPROVED AND DESIGNED, SIZED, SPACED, AND INSTALLED IN ACCORDANCE WITH NFPA 13. UTILIZE BUILDING STRUCTURE AND FRAMING FOR SUPPORTS WHERE POSSIBLE. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR PIPING AND COMPONENTS, FURNISH ADDITIONAL STRUCTURAL MEMBERS AND SUPPORTS AS REQUIRED IN ACCORDANCE WITH NFPA 13.
13. ALL HORIZONTAL SPRINKLER PIPING SHALL BE LOCATED ABOVE THE CEILING OR IN SOFFIT SPACES, UNLESS NOTED OTHERWISE. INSTALL ALL PIPING AT RIGHT ANGLES, STRAIGHT, AND PARALLEL TO BUILDING WALLS. FIELD ROUTE NEW PIPING TO MAXIMIZE STRAIGHT RUN LENGTHS AND TO COORDINATE WITH OTHER TRADES. DO NOT ROUTE NEW PIPING ABOVE ELECTRICAL EQUIPMENT AND PANELBOARDS.
14. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED AND CALCULATED. ALL CALCULATIONS SHALL BE MADE IN ACCORDANCE WITH NFPA 13 AND THE UNIFIED FACILITIES CRITERIA, AND SHALL INCLUDE THE WATER SUPPLY SOURCE CAPACITY INFORMATION AND THE TOTAL COMBINED INSIDE AND OUTSIDE HOSE STREAM DEMAND.
15. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH THE GOVERNMENT FOR ALL FLOW TEST REPORTS AND SITE UTILITY AND BUILDING DRAWINGS AS REQUIRED TO PERFORM CALCULATIONS.
16. THE CONTRACTOR SHALL MAKE PROVISIONS TO TEST AND DRAIN THE ENTIRE SPRINKLER SYSTEM. PROVIDE TEST AND DRAIN VALVES FOR EACH SPRINKLER ZONE AND AT SYSTEM LOW POINTS AND PIPE TO DRAIN CONNECTION OR TO OUTSIDE TO GRADE WITH SPLASH BLOCK. TEST AND DRAIN VALVE SHALL BE BY AGF MANUFACTURING, INC. OR APPROVED EQUAL. ALL DRAIN PIPING SHALL BE SIZED AND SLOPED IN ACCORDANCE WITH NFPA 13.
17. PROVIDE AIR VENTS AT THE SYSTEM HIGH POINTS IN ACCORDANCE WITH NFPA 13. THE AIR VENT SHALL BE A VERTICAL MANUAL AIR VENT WITH BALL FLOAT AND STRAINER SCREEN OR A 1/2" AUTOMATIC AIR-RELEASE WITH ISOLATION VALVE AND STRAINER. AIR VENT SHALL BE BY AGF MANUFACTURING, INC. OR APPROVED EQUAL.
18. PROVIDE A SPARE SPRINKLER CABINET WITH THE APPROPRIATE QUANTITY AND TYPES OF SPRINKLER IN COMPLIANCE WITH NFPA 13. LOCATED SPARE SPRINKLER CABINET NEAR ALARM VALVE RISER.
19. THE SPRINKLER SYSTEM CONTROL VALVES, TEST AND DRAIN VALVES, PIPING, SUPERVISORY TAMPER AND FLOW SWITCHES, ETC. SHALL BE PROVIDED WITH IDENTIFICATION, SIGNS, AND LABELS IN ACCORDANCE WITH NFPA 13. PROVIDE A HYDRAULIC DATA PLACARD AT ZONE VALVES.
20. PROVIDE A U.L. LISTED AND APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM, WITH A RATING GREATER THAN OR EQUAL TO THE FIRE-RATED ASSEMBLY FOR ALL PIPING PENETRATIONS THROUGH FIRE-RATED WALLS, PARTITIONS, AND FLOORS. PROVIDE WITH PIPE SLEEVES WHERE REQUIRED.
21. REVIEW THE ARCHITECTURAL DIVISION DRAWINGS, REFLECTED CEILING PLAN, ELEVATIONS AND SECTION PLANS AS PART OF THIS CONTRACT FOR ADDITIONAL INFORMATION SUCH AS CEILING HEIGHTS AND TYPES, SOFFITS, FOLDABLE PARTITIONS, OPEN CEILINGS, CLOUD CEILINGS, ETC. AND COORDINATE THE SPRINKLER LOCATIONS. VERIFY THE DISTANCE BETWEEN THE CEILING AND BOTTOM OF STRUCTURAL BEAMS IN ALL AREAS WITH REFLECTIVE CEILINGS.
22. REVIEW THE ELECTRICAL DIVISION DRAWINGS AND COORDINATE THE SPRINKLER LOCATIONS WITH LIGHT FIXTURES AND CEILING-MOUNTED DEVICES WHICH MAY INTERFERE WITH SPRAY PATTERNS.
23. REVIEW THE MECHANICAL DIVISION DRAWINGS AND COORDINATE THE SPRINKLER LOCATIONS WITH AIR DEVICES AND CEILING-MOUNTED DEVICES WHICH MAY INTERFERE WITH SPRAY PATTERNS. COORDINATE SPRINKLER LOCATIONS WITH HEAT PRODUCING EQUIPMENT AND DUCTWORK REQUIRING SPRINKLER PROTECTION BELOW IT.
24. SPRINKLER LOCATIONS IN FINISHED LAY-IN CEILING TILE AREAS SHALL ALWAYS BE LOCATED IN THE CENTER OR QUARTER-CENTER OF CEILING TILES.
25. PROVIDE SUPERVISORY TAMPER SWITCHES FOR ALL OS&Y, ISOLATION, AND WATERFLOW SWITCHES FOR EACH SPRINKLER ZONE IN ACCORDANCE WITH NFPA 13 AND NFPA 72. ALL ALARM SIGNAL LINE CIRCUITS AND POWER WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. ALL WORK SHALL BE COORDINATED BETWEEN TRADES. ALL CONTROL VALVES SHALL BE INDICATING-TYPE AND SUPERVISED IN THE OPEN POSITION.
26. PROVIDE SPRINKLER PIPE EXPANSION JOINTS AT ALL BUILDING EXPANSION JOINT LOCATIONS AND EXPANSION LOOPS AT ALL BUILDING EXPANSION/SEISMIC JOINT LOCATIONS AS REQUIRED PER NFPA 13 AND BUILDING CODES. REVIEW ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATIONS OF EXPANSION AND SEISMIC JOINTS. SEISMIC SEPARATION ASSEMBLIES SHALL BE INSTALLED WHERE SPRINKLER PIPING, REGARDLESS OF SIZE, CROSSES BUILDING SEISMIC SEPARATION JOINTS ABOVE GROUND LEVEL IN ACCORDANCE WITH NFPA 13. PROVIDE U.L. LISTED AND FM APPROVED EXPANSION JOINT ASSEMBLY WHERE SPRINKLER PIPING CROSSES BUILDING EXPANSION JOINTS. PIPING, HANGERS, AND SUPPORTS SHALL BE PROVIDED WITH SEISMIC RESTRAINT BRACING PER NFPA 13 REQUIREMENTS.
27. THE CONTRACTOR IS RESPONSIBLE TO RETURN THE CEILING SYSTEM TO PRE-CONSTRUCTION CONDITIONS. SUCH AS REPLACING REMOVED OR DAMAGED CEILING TILES AND GRID TO MATCH EXISTING.
28. THE CONTRACTOR SHALL TEST THE WATER FOR MICROBIOLOGICALLY INFLUENCED CORROSION (MIC). WHERE MIC CONDITIONS ARE FOUND, THE CONTRACTOR SHALL DEVELOP A TREATMENT PLAN FOR THE SYSTEM IN ACCORDANCE WITH NFPA 13 AND INSTRUCT THE GOVERNMENT ON MAINTAINING THE TREATMENT SYSTEM.
29. IN ACCORDANCE WITH THE 2018 INTERNATIONAL FIRE CODE, A CLASS III STANDPIPE SYSTEM SHALL NOT BE REQUIRED THROUGHOUT THE BUILDING AS THE FLOOR LEVEL OF THE HIGHEST STORY IS NOT LOCATED MORE THAN 30 FEET ABOVE THE LOWEST LEVEL OF THE FIRE DEPARTMENT VEHICLE ACCESS.
30. THE ENTIRE FIRE PROTECTION SYSTEM SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF DEFENSE UNITED FACILITIES CRITERIA, UFC-1-200-01 DoD BUILDING CODE (GENERAL BUILDING REQUIREMENTS), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 13), AIR NATIONAL GUARD (ANG) TECHNICAL LETTER (ANGETL) 24-01-03, AND LOCAL AND STATE AUTHORITIES. WHEN CONFLICT OCCURS BETWEEN APPLICABLE CODES, THE MOST STRINGENT APPLIES. AIR NATIONAL GUARD (ANG) TECHNICAL LETTER (ANGETL) 24-01-03 PROVIDES ADDITIONAL DESIGN REQUIREMENTS OR ALTERNATIVE DESIGN METHODS BUT DOES NOT SUPERCEDE UNITED FACILITIES REQUIREMENTS.
31. ALL PIPING AND EQUIPMENT SHALL BE SEISMICALLY BRACED IN ACCORDANCE WITH NFPA 13, ASCE 7, UFC 3-600-1, AND ANGETL24-01-03 REQUIREMENTS, FOR THE SEISMIC SITE CLASS C.

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PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	SRG	MJM

DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION GENERAL NOTES

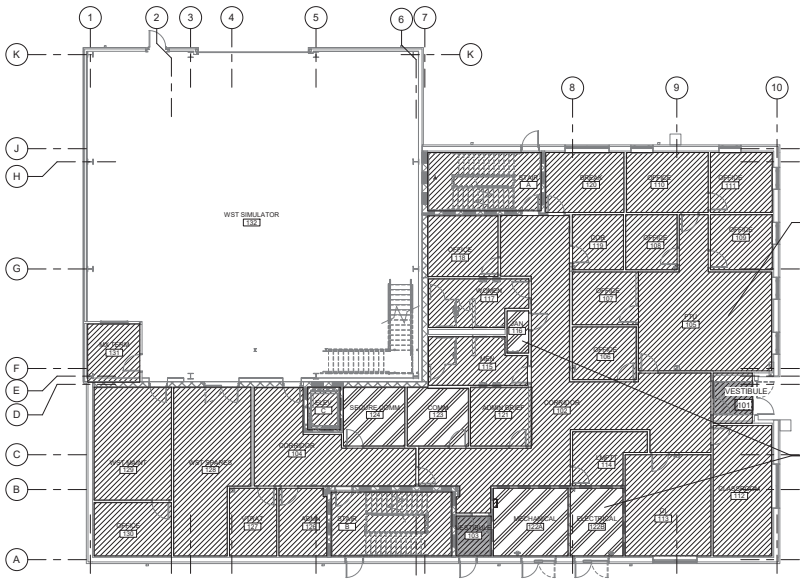
DRAWING NO.: **FP002**

Project Number: SHYQ149104
1/21/2026 7:17:32 PM
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM5690_M_R23

HAZARD PATTERN

LIGHT HAZARD

ORDINARY HAZARD



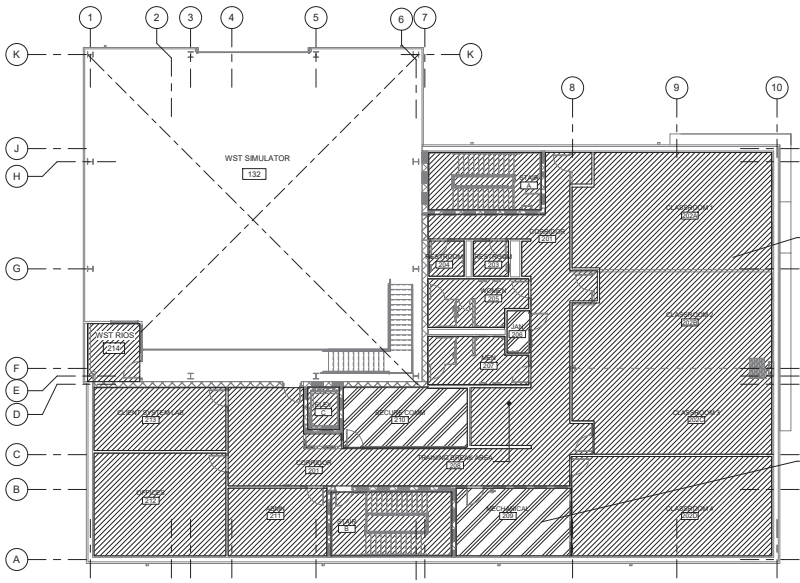
AREA	OFFICE AREA, 101-121, 126-131, STAIR A, STAIR B	
SYSTEM TYPE	WET	HAZARD *LIGHT
DENSITY(GPM/SF)	0.10	MIN. AREA (SF) 1500
K-FACTOR	5.6	MAX. AREA PER SPRINKLER (SF) 225
HOSE STREAM DEMAND (GPM,MIN.)	250 / 60	DISTANCE (FT) 15

NOTE: *DESIGN CRITERIA DERIVED FROM UFC 3-600-01 AND NFPA 13

AREA	JAN-116, MECH-122A, ELEC-122B, COMM-123, SECURE COMM-124	
SYSTEM TYPE	WET	HAZARD *ORDINARY
DENSITY(GPM/SF)	0.20	MIN. AREA (SF) 2500
K-FACTOR	8.0	MAX. AREA PER SPRINKLER (SF) 130
HOSE STREAM DEMAND (GPM,MIN.)	250 / 60	DISTANCE (FT) 15

NOTE: *DESIGN CRITERIA DERIVED FROM UFC 3-600-01 AND NFPA 13

1 FIRE PROTECTION FIRST FLOOR - CLASSIFICATION OF OCCUPANCY PLAN
SCALE: 3/32" = 1'-0"



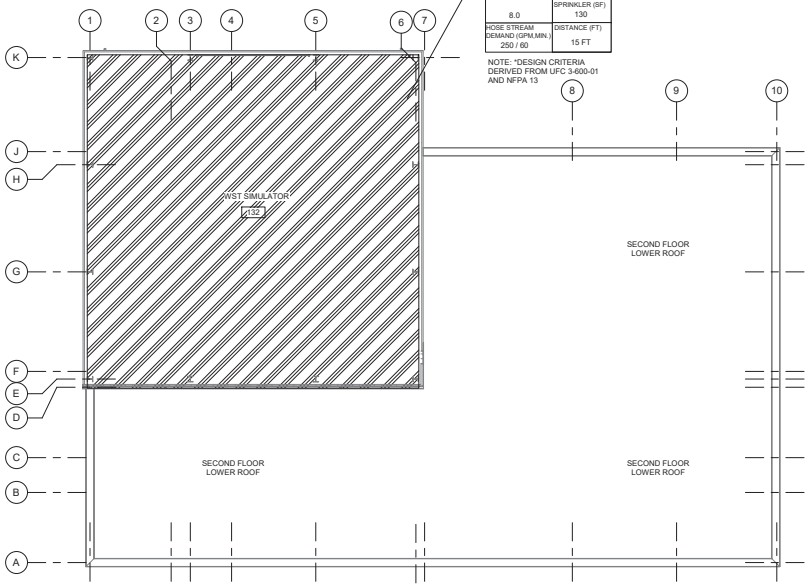
AREA	OFFICE AREA, 201-05, 207, 208, 210-214, STAIR A, STAIR B	
SYSTEM TYPE	WET	HAZARD *LIGHT
DENSITY(GPM/SF)	0.10	MIN. AREA (SF) 1500
K-FACTOR	5.6	MAX. AREA PER SPRINKLER (SF) 225
HOSE STREAM DEMAND (GPM,MIN.)	250 / 60	DISTANCE (FT) 15

NOTE: *DESIGN CRITERIA DERIVED FROM UFC 3-600-01 AND NFPA 13

AREA	JAN - 206, MECH - 209, SECURE COMM - 210	
SYSTEM TYPE	WET	HAZARD *ORDINARY
DENSITY(GPM/SF)	0.20	MIN. AREA (SF) 2500
K-FACTOR	8.0	MAX. AREA PER SPRINKLER (SF) 130
HOSE STREAM DEMAND (GPM,MIN.)	250 / 60	DISTANCE (FT) 15

NOTE: *DESIGN CRITERIA DERIVED FROM UFC 3-600-01 AND NFPA 13

2 FIRE PROTECTION SECOND FLOOR - CLASSIFICATION OF OCCUPANCY PLAN
SCALE: 3/32" = 1'-0"



AREA	SIMULATOR - 132 (CEILINGS > 30 FT TO 45 FT)	
SYSTEM TYPE	WET	HAZARD *ORDINARY
DENSITY(GPM/SF)	0.20	MIN. AREA (SF) 2500
K-FACTOR	8.0	MAX. AREA PER SPRINKLER (SF) 130
HOSE STREAM DEMAND (GPM,MIN.)	250 / 60	DISTANCE (FT) 15 FT

NOTE: *DESIGN CRITERIA DERIVED FROM UFC 3-600-01 AND NFPA 13

3 FIRE PROTECTION SECOND FLOOR SIMULATOR CEILING - CLASSIFICATION OF OCCUPANCY PLAN
SCALE: 3/32" = 1'-0"

TRUE NORTH

0' 8' 16'
SCALE: 3/32" = 1'-0"

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MICHAEL JOHN MORRISSEY
PE095944
01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

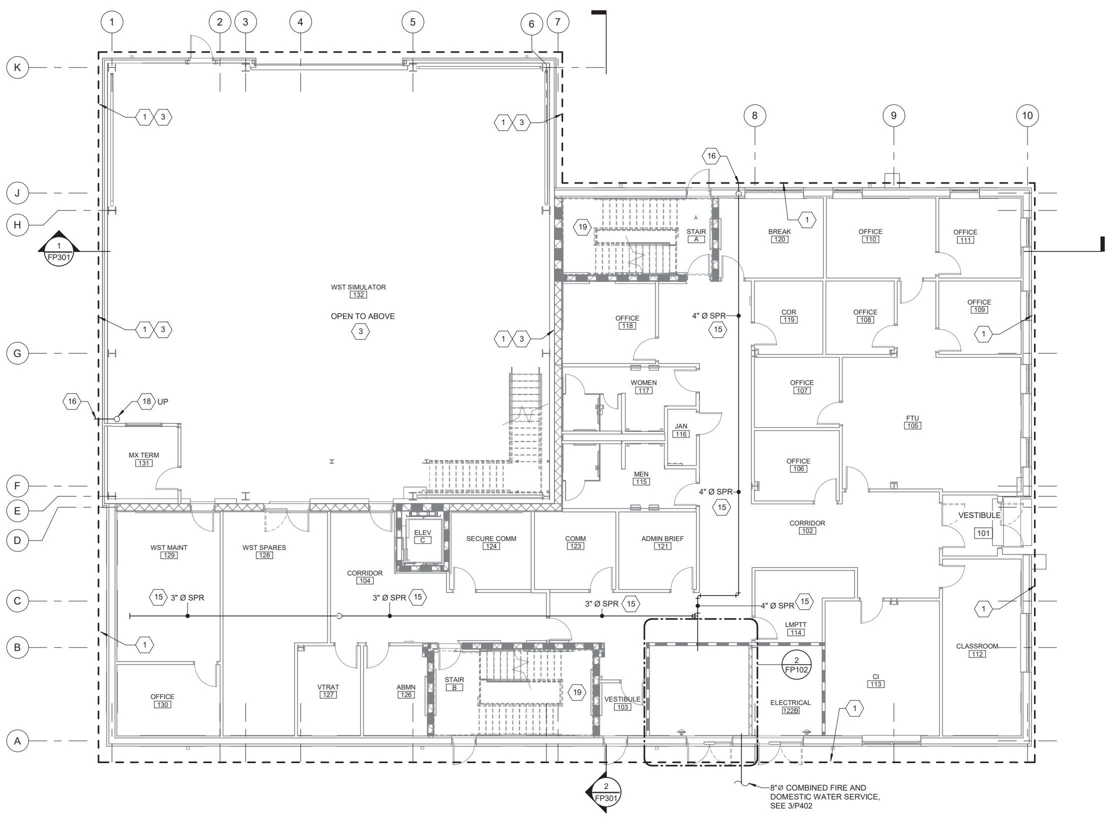
DESIGNED:	MODELED:	CHECKED:
SRG	SRG	MJM

DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION CLASSIFICATION OF OCCUPANCY

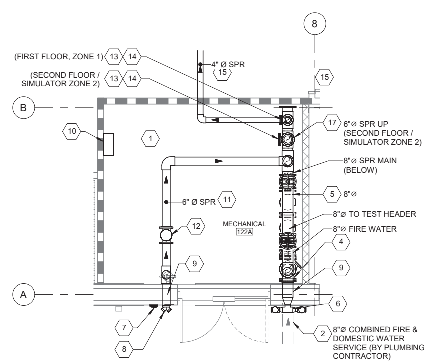
DRAWING NO.: **FP101**

Local File: Autodesk Docs://070046-PANNG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/21/2026 7:17:35 PM



1 FIRE PROTECTION FIRST FLOOR PLAN - SPRINKLER PIPING

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



2 FIRE PROTECTION - ENLARGED PART PLAN

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

GENERAL NOTES

1. SEE DRAWING FP001 AND FP002 FOR GENERAL NOTES AND PROJECT INFORMATION.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. FOR PIPING PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION, IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED. PROVIDE A U.L. LISTED AND APPROVED THROUGH PENETRATION FIRESTOP SYSTEM, HILTI OR APPROVED EQUAL, WITH A RATING GREATER THAN OR EQUAL TO THE FIRE-RATED ASSEMBLY FOR ALL PIPING PENETRATIONS THROUGH WALLS.
4. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. COORDINATE INSTALLATION WITH OTHER TRADES.
6. DUE TO THE SCALE OF THE DRAWINGS, NOT ALL PIPING, OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED ARE INDICATED.
7. ALL SPRINKLER SYSTEM PIPING SHALL BE SLOPED FOR FULL DRAINAGE.
8. THIS DRAWING IS INTENDED TO PROVIDE APPROXIMATE SPRINKLER PIPE ROUTING AND SIZES MEANT FOR DESIGN COORDINATION. FINAL SPRINKLER QUANTITY, LAYOUT, PIPE ROUTING, AND SIZING SHALL BE BY THE FIRE PROTECTION CONTRACTOR.
9. ALL SPRINKLER PIPING AND ASSOCIATED FITTINGS EXPOSED TO THE CEILING SHALL BE PAINTED SAFETY RED.

SHEET KEYNOTES

1. PROVIDE A FULLY AUTOMATIC CALCULATED AND DESIGNED WET PIPE SPRINKLER SYSTEM. PROVIDE ALL ASSOCIATED EQUIPMENT, PIPING, FITTINGS, HANGERS AND SUPPORTS, SPRINKLERS, AND DRAINS. COORDINATE SPRINKLER QUANTITY, MAXIMUM SPACING, AND AREA OF COVERAGE AND PROTECTION IN ACCORDANCE WITH UFC 3-600-01 AND NFPA 13. COORDINATE WITH THE ARCHITECTURAL LAYOUT.
2. COMBINED FIRE AND DOMESTIC WATER SERVICE ENTRANCE PIPING, BY PLUMBING CONTRACTOR.
3. THE SIMULATOR BAY CEILING IS OPEN TO ABOVE. SPRINKLER PROTECTION DESIGN INDICATED ON DRAWING FP104.
4. REFER TO PLUMBING DRAWINGS FOR CONTINUATION.
5. PROVIDE FLOOR-MOUNTED FIRE PROTECTION DOUBLE-CHECK DETECTOR ASSEMBLY, WITH OS&Y VALVES WITH TAMPER SWITCHES AND FORWARD FLOW TEST PIPING SUPPORTED FROM THE FLOOR.
6. PROVIDE FORWARD FLOW PIPING AND TEST HEADER.
7. PROVIDE SPRINKLER WATER MOTOR ALARM.
8. PROVIDE FIRE DEPARTMENT CONNECTION.
9. PROVIDE WATER TIGHT PIPE SLEEVE.
10. PROVIDE SPRINKLER CABINET.
11. PROVIDE FIRE DEPARTMENT CONNECTION PIPING SUPPORTED FROM THE STRUCTURE ABOVE.
12. PROVIDE U.L. LISTED FIRE DEPARTMENT CHECK VALVE.
13. PROVIDE WET PIPE SPRINKLER SYSTEM ALARM CHECK VALVE.
14. PROVIDE WET PIPE SPRINKLER SYSTEM RISER.
15. PROVIDE WET PIPE SPRINKLER SYSTEM PIPING MAIN SUPPORTED FROM THE STRUCTURE ABOVE AND SLOPED IN ACCORDANCE WITH NFPA 13. EXTEND PIPING TO SPRINKLERS (TYPICAL).
16. PROVIDE INSPECTOR'S TEST CONNECTION.
17. PROVIDE SPRINKLER PIPING UP THROUGH SECOND FLOOR.
18. PROVIDE INSPECTOR'S TEST CONNECTION PIPING UP.
19. PROVIDE SPRINKLER MAXIMUM SPACING OF COVERAGE AREA, AND PROTECTION, BELOW STAIR LOWEST LANDING, IN ACCORDANCE WITH NFPA 13.

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

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

TRUE NORTH

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Digitally signed by Michael John Morrissey
01/27/2026

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

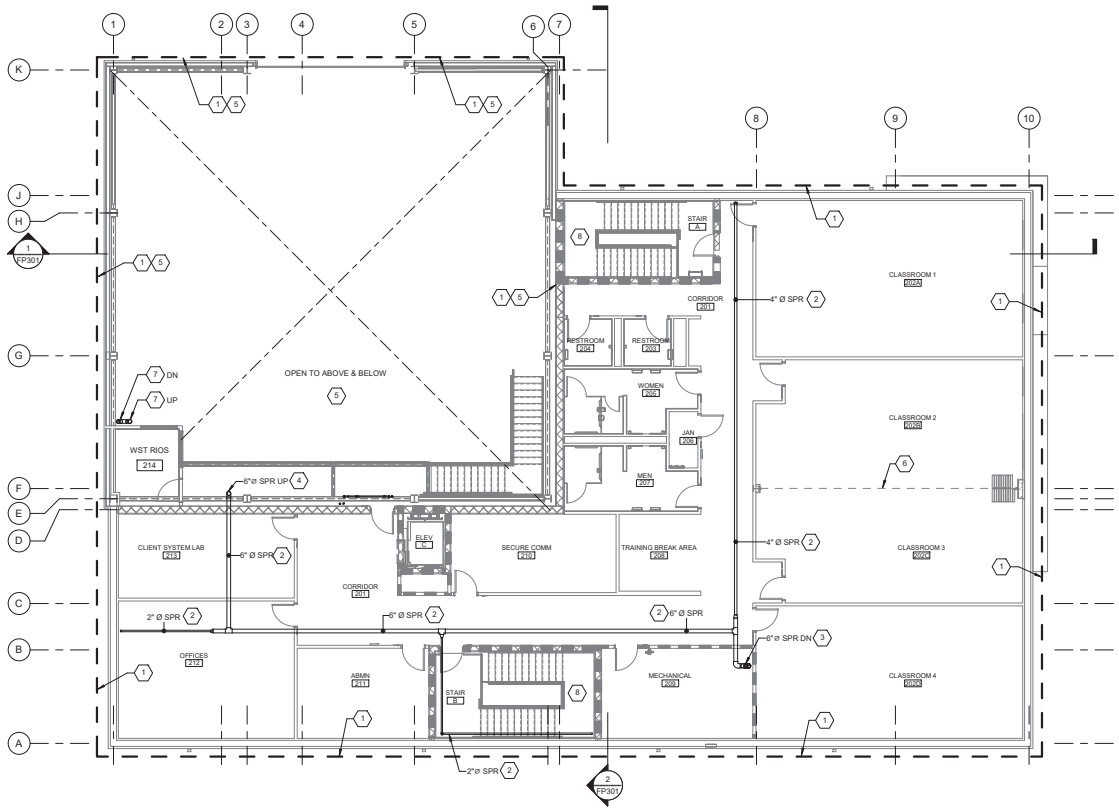
NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104		
DESIGNED: SRG	MODELED: APT	CHECKED: MJM
DATE: JANUARY 2026		
DRAWING TITLE: FIRE PROTECTION FIRST FLOOR PLAN - SPRINKLER PIPING		
DRAWING NO.: FP102		

Project Number: SHYQ149104
1/21/2026 7:17:39 PM
Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23



1 FIRE PROTECTION SECOND FLOOR OFFICE PLAN - SPRINKLER PIPING
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE DRAWING FP001 AND FP002 FOR GENERAL NOTES AND PROJECT INFORMATION.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. FOR PIPING PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION, IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED. PROVIDE A U.L. LISTED AND APPROVED THROUGH PENETRATION FIRESTOP SYSTEM, HILTI OR APPROVED EQUAL, WITH A RATING GREATER THAN OR EQUAL TO THE FIRE-RATED ASSEMBLY FOR ALL PIPING PENETRATIONS THROUGH WALLS.
4. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. COORDINATE INSTALLATION WITH OTHER TRADES.
6. DUE TO THE SCALE OF THE DRAWINGS, NOT ALL PIPING, OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED ARE INDICATED.
7. ALL SPRINKLER SYSTEM PIPING SHALL BE SLOPED FOR FULL DRAINAGE.
8. THIS DRAWING IS INTENDED TO PROVIDE APPROXIMATE SPRINKLER PIPE ROUTING AND SIZES MEANT FOR DESIGN COORDINATION. FINAL SPRINKLER QUANTITY, LAYOUT, PIPE ROUTING, AND SIZING SHALL BE BY THE FIRE PROTECTION CONTRACTOR.
9. ALL SPRINKLER PIPING AND ASSOCIATED FITTINGS EXPOSED TO THE CEILING SHALL BE PAINTED SAFETY RED.

SHEET KEYNOTES

1. PROVIDE A FULLY AUTOMATIC CALCULATED AND DESIGNED WET PIPE SPRINKLER SYSTEM. PROVIDE ALL ASSOCIATED EQUIPMENT, PIPING, FITTINGS, HANGERS AND SUPPORTS, SPRINKLERS, AND DRAINS. COORDINATE SPRINKLER QUANTITY, MAXIMUM SPACING, AND AREA OF COVERAGE AND PROTECTION IN ACCORDANCE WITH UFC 3-600-01 AND NFPA 13. COORDINATE WITH THE ARCHITECTURAL LAYOUT.
2. PROVIDE WET PIPE SPRINKLER SYSTEM PIPING MAIN SUPPORTED FROM STRUCTURE ABOVE AND SLOPED IN ACCORDANCE WITH NFPA 13. EXTEND PIPING TO SPRINKLERS (TYPICAL).
3. PROVIDE SPRINKLER PIPING DOWN THROUGH SECOND FLOOR.
4. PROVIDE SPRINKLER PIPING UP THROUGH FLOOR TO SIMULATOR CEILING.
5. THE SIMULATOR BAY CEILING IS OPEN TO ABOVE AND BELOW. SPRINKLER PROTECTION DESIGN INDICATED ON DRAWING FP104.
6. PROVIDE SPRINKLER MAXIMUM SPACING, AREA OF COVERAGE, AND PROTECTION, WITH THE FOLDABLE PARTITION CLOSED, IN ACCORDANCE WITH NFPA 13.
7. PROVIDE INSPECTOR'S TEST CONNECTION PIPING UP AND DOWN.
8. PROVIDE SPRINKLER MAXIMUM SPACING OF COVERAGE AREA, AND PROTECTION, BELOW STAIR LOWEST LANDING, IN ACCORDANCE WITH NFPA 13.

TRUE NORTH
0' 8' 16'
SCALE: 1/8" = 1'-0"

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MICHAEL JOHN MORRISSEY
Digitally signed by Michael John Morrissey
01/27/2026

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: SRG | MODELED: APT | CHECKED: MJM
DATE: JANUARY 2026
DRAWING TITLE: FIRE PROTECTION SECOND FLOOR PLAN - SPRINKLER PIPING
DRAWING NO.: **FP103**

Project Number: SHYQ149104
Local File: Autodesk Docs://079046-PANG_EC_130J_Simulator/079046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
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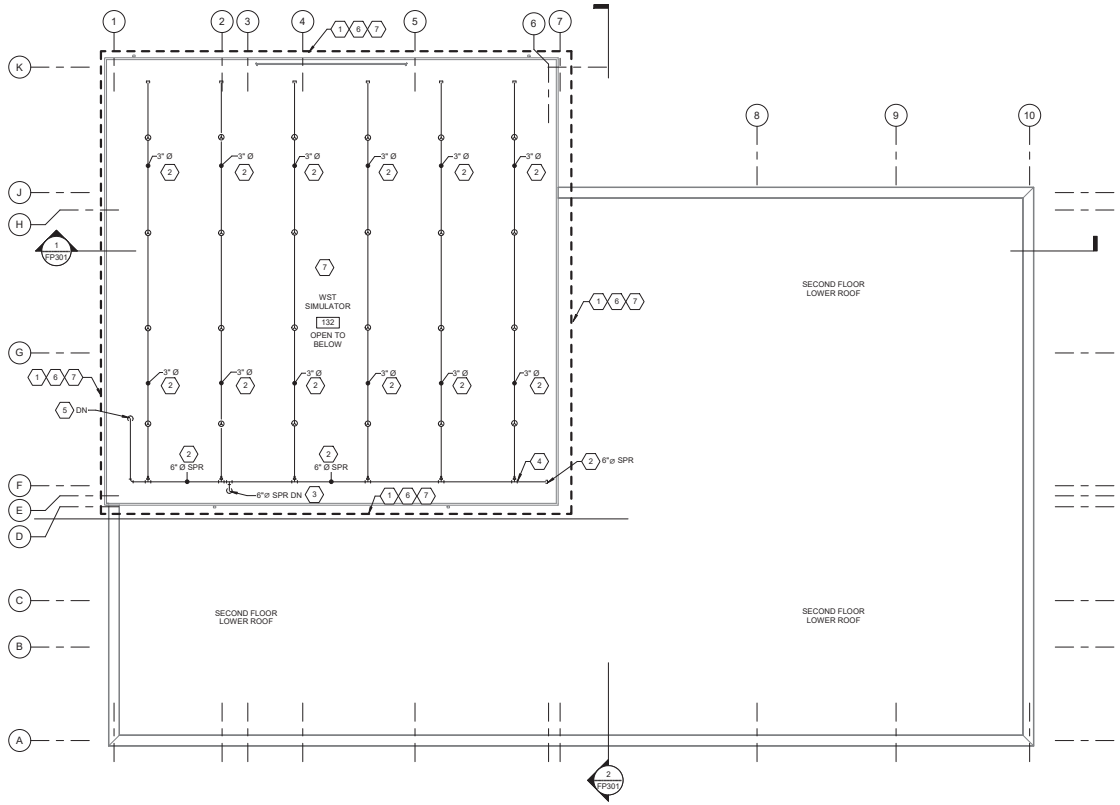

FIRE PROTECTION SECOND FLOOR SIMULATOR PLAN - SPRINKLER PIPING

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

GENERAL NOTES

1. SEE DRAWING FP001 AND FP002 FOR GENERAL NOTES AND PROJECT INFORMATION.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. FOR PIPING PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION, IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED. PROVIDE A U.L. LISTED AND APPROVED THROUGH PENETRATION FIRESTOP SYSTEM, HILTI OR APPROVED EQUAL, WITH A RATING GREATER THAN OR EQUAL TO THE FIRE-RATED ASSEMBLY FOR ALL PIPING PENETRATIONS THROUGH WALLS.
4. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. COORDINATE INSTALLATION WITH OTHER TRADES.
6. DUE TO THE SCALE OF THE DRAWINGS, NOT ALL PIPING, OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED ARE INDICATED.
7. ALL SPRINKLER SYSTEM PIPING SHALL BE SLOPED FOR FULL DRAINAGE.
8. THIS DRAWING IS INTENDED TO PROVIDE APPROXIMATE SPRINKLER PIPE ROUTING AND SIZES MEANT FOR DESIGN COORDINATION. FINAL SPRINKLER QUANTITY, LAYOUT, PIPE ROUTING, AND SIZING SHALL BE BY THE FIRE PROTECTION CONTRACTOR.

SHEET KEYNOTES

(#)

1. PROVIDE A FULLY AUTOMATIC CALCULATED AND DESIGNED WET PIPE SPRINKLER SYSTEM. PROVIDE ALL ASSOCIATED EQUIPMENT, PIPING, FITTINGS, HANGERS AND SUPPORTS, SPRINKLERS, AND DRAINS. COORDINATE SPRINKLER QUANTITY, MAXIMUM SPACING, AND AREA OF COVERAGE AND PROTECTION IN ACCORDANCE WITH UFC 3-600-01 AND NFPA 13. COORDINATE WITH THE ARCHITECTURAL LAYOUT.
2. PROVIDE WET PIPE SPRINKLER SYSTEM PIPING SUPPORTED FROM THE STRUCTURE ABOVE AND SLOPED IN ACCORDANCE WITH NFPA 13. EXTEND PIPING TO SPRINKLERS (TYPICAL).
3. PROVIDE SPRINKLER PIPING DOWN THROUGH FLOOR TO SECOND FLOOR.
4. PROVIDE AIR VENT.
5. PROVIDE INSPECTOR'S TEST CONNECTION PIPING DOWN THROUGH FLOOR.
6. COORDINATE SPRINKLER SPACING AND LOCATIONS WITH SIMULATOR EQUIPMENT AND CLEARANCES IN ACCORDANCE WITH UFC 3-600-01 AND NFPA 13.
7. ALL SPRINKLER PIPING AND ASSOCIATED FITTINGS EXPOSED TO THE SIMULATOR ROOM CEILING SHALL BE PAINTED SAFETY RED.

TRUE NORTH

0' 8' 16'

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

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PE095944
01/27/2026

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION SECOND FLOOR SIMULATOR & OUTLOOK PLAN - SPRINKLER PIPING

DRAWING NO.: **FP104**

Project Number: SHYQ149104
1/21/2026 7:17:42 PM
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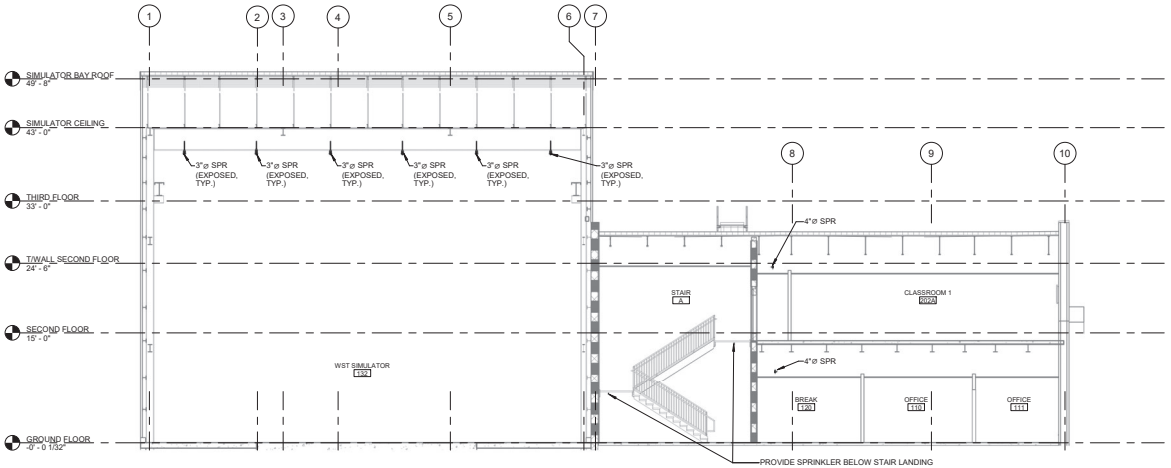
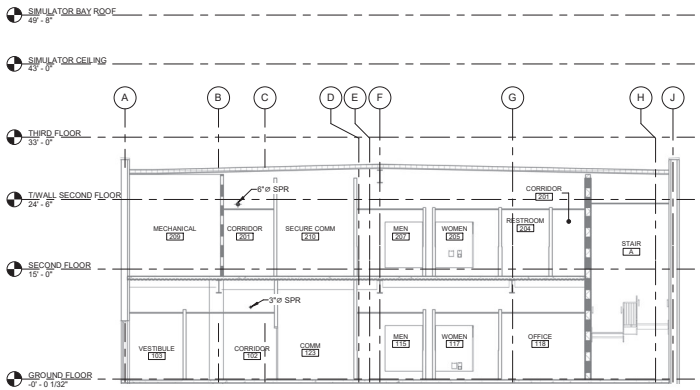
Central File: BM5595_M_R23



1 FIRE PROTECTION - SECTION 1
SCALE: 1/8" = 1'-0"



2 FIRE PROTECTION - SECTION 2
SCALE: 1/8" = 1'-0"

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION SECTIONS

DRAWING NO.: **FP301**

Project Number: SHYQ149104
1/21/2026 7:30:39 PM
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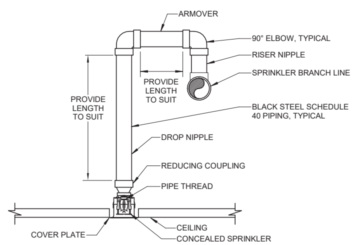
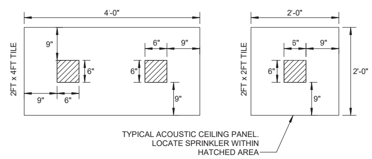
Central File: BM0580_M_R23



NOTES:
1. INSTALL SPRINKLER DROP AS REQUIRED TO COORDINATE WITH THE CEILING "T" BAR SUSPENSION SYSTEM, DRYWALL CEILING, LIGHT FIXTURES, DUCTWORK, PIPING, STRUCTURAL ELEMENTS, ETC. PROVIDE PIPE HANGERS IN ACCORDANCE WITH NFPA 13.
2. PROVIDE ADDITIONAL ELBOWS, PIPING, AND FITTINGS AS REQUIRED TO INSTALL SPRINKLER IN CENTER OF CEILING TILE.
3. SPRINKLER POSITION, LOCATION, AND SPACING SHALL BE IN ACCORDANCE WITH NFPA 13.

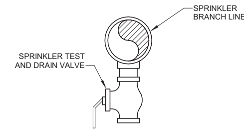
1 CONCEALED SPRINKLER

SCALE: NTS



2 SPRINKLER PLACEMENT

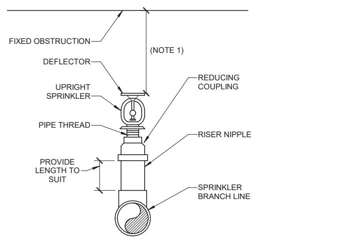
SCALE: NTS



NOTES:
1. PROVIDE WITH TEST AND DRAIN SIGN IN ACCORDANCE WITH NFPA 13.

3 SPRINKLER TEST AND DRAIN CONNECTION - WET SYSTEM

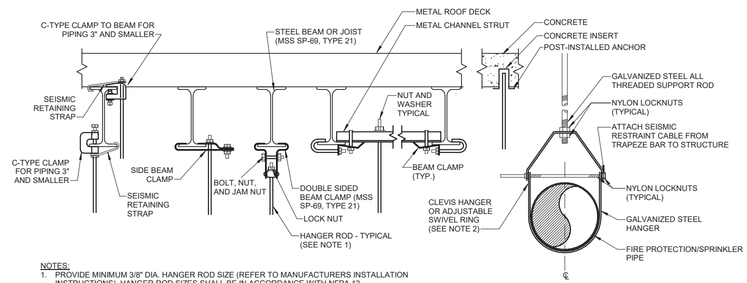
SCALE: NTS



NOTES:
1. SPRINKLER POSITION, LOCATION, AND SPACING SHALL COORDINATE WITH FIXED OBSTRUCTIONS TO PROVIDE PROPER COVERAGE IN ACCORDANCE WITH NFPA 13.
2. PROVIDE SPRINKLER GUARDS WHERE REQUIRED FOR PHYSICAL PROTECTION.
3. PROVIDE ADDITIONAL ELBOWS, PIPING, AND FITTINGS AS REQUIRED TO INSTALL SPRINKLER.

4 UPRIGHT SPRINKLER

SCALE: NTS

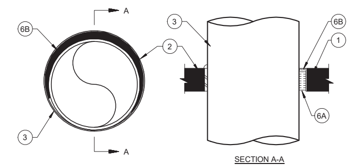


NOTES:
1. PROVIDE MINIMUM 3/8" DIA. HANGER ROD SIZE (REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS). HANGER ROD SIZES SHALL BE IN ACCORDANCE WITH NFPA 13.
2. ALL HANGERS AND ACCESSORIES SHALL BE SPACED, LOCATED, AND SIZED IN ACCORDANCE WITH NFPA 13.
3. ALL HANGERS SHALL BE U.L. LISTED AND FM APPROVED.
4. MAXIMUM DISTANCE BETWEEN HANGERS SHALL BE IN ACCORDANCE WITH NFPA 13.
5. MAXIMUM LENGTH FOR UNSUPPORTED ARMOVER SHALL BE IN ACCORDANCE WITH NFPA 13.
6. MAXIMUM DISTANCE FROM SPRINKLER TO HANGER SHALL BE IN ACCORDANCE WITH NFPA 13.

5 FIRE PROTECTION PIPE HANGER

SCALE: NTS

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 3 Hr
L Rating At 400 F — 4 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — 4 CFM/sq ft



1. FLOOR OR WALL ASSEMBLY — MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M°) CONCRETE. MAX DIAM OF OPENING IS 32 IN. (813 MM).
2. METALLIC SLEEVE — NOM 32 IN. (813 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES OR EXTENDING A MAX OF 3 IN. (76 MM) ABOVE FLOOR OR BEYOND BOTH SURFACES OF WALL.
3. SHEET METAL SLEEVE — MAX 6 IN. (152 MM) DIAM, MIN 26 GA. GALV STEEL PROVIDED WITH A 26 GA GALV STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROX MID-HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MIN OF 2 IN. (51 MM) LARGER THAN THE SLEEVE DIAM. THE SLEEVE IS TO BE CAST IN PLACE AND MAY EXTEND A MAX OF 4 IN. (102 MM) BELOW THE BOTTOM OF THE DECK AND A MAX OF 1 IN. (25 MM) ABOVE THE TOP SURFACE OF THE CONCRETE FLOOR.
4. SHEET METAL SLEEVE — MAX 12 IN. (305 MM) DIAM, MIN 24 GA GALV STEEL PROVIDED WITH A 24 GA GALV STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROX MID-HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MIN OF 2 IN. (51 MM) LARGER THAN THE SLEEVE DIAM. THE SLEEVE IS TO BE CAST IN PLACE AND MAY EXTEND A MAX OF 4 IN. (102 MM) BELOW THE BOTTOM OF THE DECK AND A MAX OF 1 IN. (25 MM) ABOVE THE TOP SURFACE OF THE CONCRETE FLOOR.
5. THROUGH-PENETRANT — ONE METALLIC PIPE, TUBE OR CONDUIT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PENETRANT AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 1-7/8 IN. (48 MM). PENETRANT MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PENETRANTS MAY BE USED:
   A. STEEL PIPE — NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE — NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. COPPER PIPE — NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
   D. COPPER TUBING — NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   E. CONDUIT — NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT.
   F. CONDUIT — NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT).
6. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   A. PACKING MATERIAL — MIN 4 IN. (102 MM) THICKNESS OF MIN 4 PCF (64 KG/M°) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
   B. FILL, VOID OR CAVITY MATERIAL' — SEALANT — MIN 1/4 IN. (6 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR SLEEVE OR WITH BOTH SURFACES OF WALL OR SLEEVE. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PENETRANT AND CONCRETE OR SLEEVE, A MIN 1/4 IN. (6 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE OR SLEEVE/ PIPE PENETRANT INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL.

UNDERWRITERS LABORATORIES, INC. UL 1479 AND CAN/ULC-S115

6 FIRE-RATED PIPE WALL/FLOOR PENETRATION

SCALE: NTS

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PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION DETAILS 1

DRAWING NO.: FP501

Project Number: SHYQ149104
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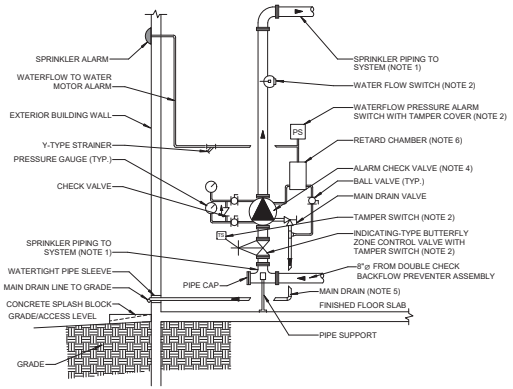
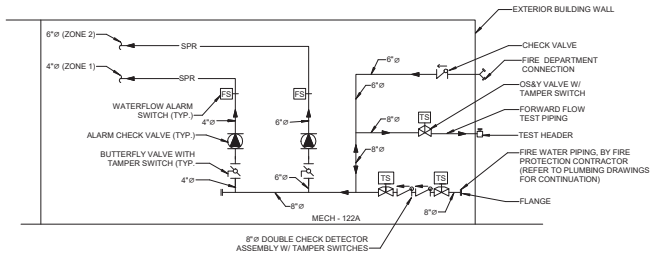
Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23

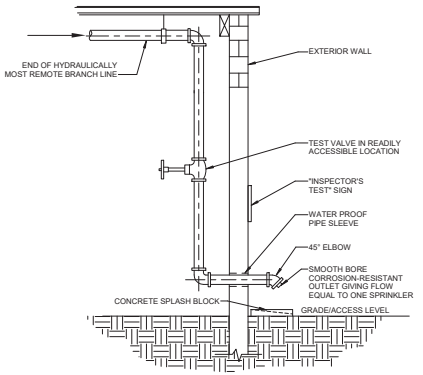


NOTES:
1. SPRINKLER SYSTEM PIPING SHALL BE SIZED BY THE FIRE PROTECTION CONTRACTOR IN ACCORDANCE WITH NFPA 13.
2. FIRE ALARM CONTRACTOR SHALL WIRE TO FIRE ALARM CONTROL PANEL IN ACCORDANCE WITH NFPA 72.
3. ALL EQUIPMENT, PIPING, VALVES, HANGERS, AND SUPPORTS SHALL BE DESIGNED AND INSTALLED IN COMPLIANCE WITH WITH NFPA 13.
4. PROVIDE HYDRAULIC DATA PLACARD.
5. ALL DRAIN PIPING SHALL BE SIZED BY THE FIRE PROTECTION CONTRACTOR.
6. OPTIONAL RETARD CHAMBER FOR VARIABLE WATER PRESSURE OR WATER SURGE.

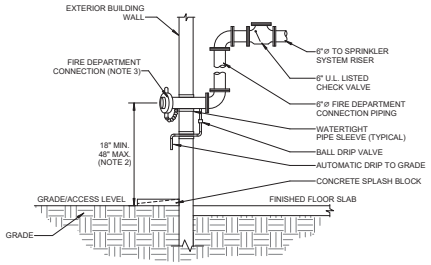
1 WET ALARM CHECK VALVE RISER DIAGRAM (TYPICAL OF 2)
SCALE: NTS



2 FIRE PROTECTION SCHEMATIC
SCALE: NTS

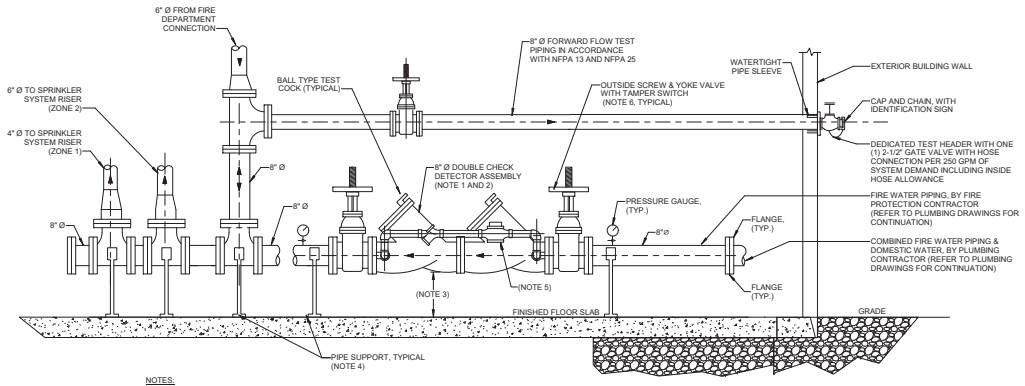


3 INSPECTORS TEST CONNECTION - WET SYSTEM
SCALE: NTS



NOTES:
1. FIRE DEPARTMENT CONNECTION SHALL BE PROVIDED WITH CAP WITH CHAIN AND IDENTIFICATION SIGN WITH LETTERING.
2. MOUNTING HEIGHT SHALL BE COORDINATED WITH GRADE/ACCESS LEVEL IN ACCORDANCE WITH NFPA 13.
3. FIRE DEPARTMENT CONNECTION THREAD TYPE SHALL BE COMPATIBLE WITH LOCAL FIRE DEPARTMENT EQUIPMENT THREADS.

4 FIRE DEPARTMENT CONNECTION
SCALE: NTS



NOTES:
1. ASSEMBLY SHALL BE INSTALLED WITH ADEQUATE ACCESS FOR SERVICE, INSPECTION, AND TESTING..
2. ASSEMBLY SHALL BE FM APPROVED AND U.L LISTED FOR FIRE PROTECTION SERVICE.
3. ASSEMBLY MINIMUM AND MAXIMUM MOUNTING HEIGHT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.
4. PIPE STANDS, BASES, AND ATTACHMENTS TO PIPING SHALL BE IN ACCORDANCE WITH NFPA 13.
5. PROVIDE WITH AUXILIARY LINE WITH AN APPROVED BACKFLOW PREVENTER AND WATER METER.
6. FIRE ALARM CONTRACTOR SHALL WIRE TO FIRE ALARM CONTROL PANEL IN ACCORDANCE WITH NFPA 72.

5 DOUBLE CHECK DETECTOR ASSEMBLY
SCALE: NTS

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PE095944 MICHAEL JOHN MORRISSEY Digitally signed by Michael John Morrissey 01/27/2026

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PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
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DATE: JANUARY 2026

DRAWING TITLE: FIRE PROTECTION DETAILS 2

DRAWING NO.: **FP502**

Project Number: SHYQ149104
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Central File: BM5180_M_R23

ABBREVIATIONS

@	AT		
A	AIR	KW	KILOWATTS
AAV	AIR ADMITTANCE VALVE		
ABV	ABOVE	L	LENGTH, LONG
AD	AREA DRAIN, ACCESS DOOR, AIR DRYER	LAV	LAVATORY
ADA	AMERICANS WITH DISABILITIES ACT	LBS	POUNDS
ADJ	ADJUST, ADJUSTABLE	LDR	LEADER
AF	ANTI-FREEZE	LEED	LEADERSHIP IN ENERGY &
AFF	ABOVE FINISHED FLOOR	LG	LIGHT GEAR LUBE
ALUM	ALUMINUM	LP	LIQUID PROPANE
AP	ACCESS PANEL	LRA	LOAD RATED AMPS
APPROX	APPROXIMATELY	LWT	LEAVING WATER TEMPERATURE
ARCH	ARCHITECTURAL		
AST	ABOVEGROUND STORAGE TANK	M	METER
ATF	AUTO TRANSMISSION FLUID	MA	MEDICAL AIR
ATV	ATMOSPHERIC VENT	MAV	MANUAL AIR VENT
AVG	AVERAGE	MAX	MAXIMUM
		MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
BA	BREATHABLE AIR		
BAS	BUILDING AUTOMATION SYSTEM	MCA	MINIMUM CIRCUIT AMPACITY
BFF	BELOW FINISHED FLOOR	MECH	MECHANICAL
BFP	BACKFLOW PREVENTER	MFR	MANUFACTURER
BFV	BUTTERFLY VALVE	MG	MEDICAL GAS
BLDG	BUILDING	MIN	MINIMUM
BLW	BELOW	MO	MOTOR OIL
BMS	BUILDING MANAGEMENT SYSTEM	MOCP	MAXIMUM OVERCURRENT PROTECTION
BOD	BASIS OF DESIGN	MTD	MOUNTED
BOT	BOTTOM	MTG	MOUNTING
BTU	BRITISH THERMAL UNIT	MUW	MAKE UP WATER
BTUH	BRITISH THERMAL UNITS PER HOUR	MV	MEDICAL VACUUM
BV	BALL VALVE		
		N	NITROGEN
C	COMMON	N/A	NOT APPLICABLE
CA	COMPRESSED AIR	NC	NORMALLY CLOSED, NOISE CRITERIA
CBV	CIRCUIT BALANCING VALVE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CD	CONDENSATE DRAIN	NFWH	NON-FREEZE WALL HYDRANT
CFH	CUBIC FEET PER HOUR	NG	NATURAL GAS
CI	CAST IRON	NIC	NOT IN CONTRACT
CL	CENTER LINE	NO	NORMALLY OPENED
CLDIP	CEMENT-LINED DUCTILE IRON PIPE	No	NUMBER
CLNG	CEILING	NOM	NOMINAL
CNG	COMPRESSED NATURAL GAS	NPW	NON-POTABLE WATER
CO	CLEANOUT, CARBON MONOXIDE	NTS	NOT TO SCALE
CO2	CARBON DIOXIDE		
COL	COLUMN	O /2, O2	OXYGEN
CONC	CONCRETE	OC	ON CENTER
CONN	CONNECTION	OFD	OVERFLOW DRAIN
CONT	CONTINUATION	OI	OIL INTERCEPTOR
CONTD	CONTINUED	OS&Y	OUTSIDE STEM AND YOKE VALVE
CP	CIRCULATING PUMP	OSD	OPEN SITE DRAIN
CPVC	CHLORINATED POLYVINYL CHLORIDE	OVH	OVERHEAD
CV	CLEANING VACUUM, CHECK VALVE	OWS	OIL WATER SEPARATOR
C+	COMMISSIONING		
CxA	COMMISSIONING AUTHORITY	%	PERCENT
		P	PUMP
(D)	DEMOLISH, REMOVE	PC	PUMPED CONDENSATE, PLUMBING CONTRACTOR
D	DRAIN, DEPTH	PD	PRESSURE DROP, PUMPED DISCHARGE
DB	DECIBELS	PH	PHASE
DCW	DOMESTIC COLD WATER	PIW	PUMPED INDUSTRIAL WASTE
DDC	DIRECT DIGITAL CONTROL	PLBG	PLUMBING
DEG, °	DEGREES	PNEU	PNEUMATIC
DEH	DEHUMIDIFIER	POS	POSITION
DEPT	DEPARTMENT	PRESS	PRESSURE
DESIG	DESIGNATION	PRV	PRESSURE REDUCING VALVE
DFU	DRAINAGE FIXTURE UNITS	PS	PRESSURE SWITCH
DFW	DOMESTIC FILTERED WATER	PSAN	PUMPED SANITARY
DHW	DOMESTIC HOT WATER	PSI	POUNDS PER SQUARE INCH
DHWR	DOMESTIC HOT WATER RETURN	PSIG	POUNDS PER SQUARE INCH GAUGE
DI	DEIONIZED WATER	PVC	POLYVINYL CHLORIDE
DIA, ø	DIAMETER		
DIFF	DIFFERENTIAL, DIFFERENCE	(RL)	RELOCATED POSITION
DISC	DISCONNECT	R	RISE
DN	DOWN	RD	ROOF DRAIN
DSB	DOWNSPOUT BOOT	REQ'D	REQUIRED
DSN	DOWNSPOUT NOZZLE	RLA	RATED LOAD AMPS
DTW	DOMESTIC TEMPERED WATER	RM	ROOM
DWG	DRAWING	RPM	REVOLUTIONS PER MINUTE
DWH	DOMESTIC WATER HEATER	RPZ	REDUCED PRESSURE ZONE BFP
		RW	RECLAIMED WATER
(E)	EXISTING TO REMAIN	RWC	RAIN WATER CONDUCTOR (INTERNAL OF BLDG)
(ER)	EXISTING RELOCATED		
EA	EACH	RWL	RAINWATER LEADER (EXTERNAL OF BLDG)
EFF	EFFICIENCY		
EJ	EXPANSION JOINT	S	SWITCH
EL	ELEVATION	S/S	START/STOP
ELEC	ELECTRIC, ELECTRICAL	SAN	SANITARY
ELEV	ELEVATOR	SCW	SOFTEN DOMESTIC COLD WATER
EQ	EQUAL	SD	SHOWER DRAIN
ET	EXPANSION TANK	SEP	SEWAGE EJECTOR, SEWAGE PUMP
EWC	ELECTRIC WATER COOLER	SF	SUPPLY FAN, SQUARE FEET
EWT	ENTERING WATER TEMPERATURE	SFU	SUPPLY FIXTURE UNITS
EXT	EXTERIOR	SHR	SHOWER
		SHT	SHEET
(F)	FUTURE	SHW	SOFTEN DOMESTIC HOT WATER
FCO	FLOOR CLEANOUT	SK	SINK
FD	FLOOR DRAIN	SNW	SOFTEN DOMESTIC NON-POTABLE WATER
FDC	FIRE DEPARTMENT CONNECTION	SP	STATIC PRESSURE, SUMP PUMP
FF	FINISHED FLOOR	SPEC	SPECIFICATION
FG	FUEL GAS	SPR	SPRINKLER
FLA	FULL LOAD AMPS	SQ	SQUARE
FLEX	FLEXIBLE	SQ FT	SQUARE FOOT, SQUARE FEET
FLR	FLOOR	SS	STAINLESS STEEL
FM	FLOW METER	SSK	SERVICE SINK
FO	FUEL OIL	ST	STORM WATER
FPM	FEET PER MINUTE	STD	STANDARD
FPS	FEET PER SECOND	STL	STEEL
FRP	FIBERGLASS REINFORCED PLASTIC	STO	STORM WATER OVERFLOW
FS	FLOW SWITCH		
FT HD	FEET OF HEAD	TEMP	TEMPERATURE, TEMPORARY
FT, '	FOOT, FEET	TP	TRAP PRIMER
FZ	FREEZE, FREEZSTAT	TYP	TYPICAL
°F	DEGREES FAHRENHEIT		
		UL	UNDERWRITERS LABORATORIES
G	GAS	UON	UNLESS OTHERWISE NOTED
GA	GAUGE	UR	URINAL
GAL	GALLON, GALLONS	UST	UNDERGROUND STORAGE TANK
GALV	GALVANIZED		
GCO	GRADE CLEANOUT	V	VOLTS, VENT
GEN	GENERATOR	VAC	VACUUM
GI	GREASE INTERCEPTOR	VCO	VERTICAL CLEAN OUT
GL	GEAR LUBE	VEL	VELOCITY
GO	GEAR OIL	VERT	VERTICAL
GPH	GALLONS PER HOUR	VFD	VARIABLE FREQUENCY DRIVE
GPM	GALLONS PER MINUTE	VIB	VIBRATION
GR	GREASE	VSD	VARIABLE SPEED DRIVE
GV	GATE VALVE	VTR	VENT THROUGH ROOF
GW	GREASE WASTE		
		W	WIDTH, WIDE
H	HEIGHT	W/	WITH
H2O	WATER	W/O	WITHOUT
HB	HOSE BIB	WA	WASTE ANTI-FREEZE
HORIZ	HORIZONTAL	WAGD	WASTE ANESTHETIC GAS DISPOSAL
HP	HORSEPOWER	WC	WATER CLOSET
HTG	HEATING	WCO	WALL CLEANOUT
HUM	HUMIDIFIER	WG	WATER GAUGE
HX	HEAT EXCHANGER	WH	WALL HYDRANT
HZ	HERTZ (CYCLES PER SECOND)	WHA	WATER HAMMER ARRESTOR
		WMS	WIRE MESH SCREEN
ID	INSIDE DIAMETER	WO	WASTE OIL
IN WG	INCHES OF WATER GAUGE	WPD	WATER PRESSURE DROP
IN, "	INCH, INCHES	WSFU	WATER SUPPLY FIXTURE UNITS
INFO	INFORMATION	WSHP	WATER SOURCE HEAT PUMP
INT	INTERIOR	WT	WEIGHT
INV EL, IE	INVERT ELEVATION	WW	WELL WATER
ISOL	ISOLATION		
IV	INDUSTRIAL VENT		
IW	INDUSTRIAL WASTE, INDIRECT WASTE	ZN	ZONE

PIPING & FITTINGS

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATION/RETURN
	VENT
	PIPING TURNING UP
	PIPING TURNING DOWN
	TEE DOWN
	PIPE BRANCH BOTTOM TAKEOFF
	PIPE BRANCH TOP TAKEOFF
	VALVE IN VERTICAL PIPE
	CAP
	FLOW DIRECTION
##	PIPE SLOPE WITH IN/FT OR %
	PIPE RISER UP/DOWN
	CONCENTRIC REDUCER/INCREASER
	ECCENTRIC REDUCER/INCREASER (FOB)
	UNION
	PIPE CONTINUATION
	FLEXIBLE PIPE CONNECTOR
HB	HOSEBIB
WH	WALL HYDRANT
NFWH	NON-FREEZE WALL HYDRANT
	WATER HAMMER ARRESTOR
	AIR ADMITTANCE VALVE
AAV	AUTOMATIC AIR VENT (EXTEND TO DRAIN)
MAV	MANUAL AIR VENT
	PRESSURE/TEMPERATURE TEST PORT
	AQUASTAT
	PRESSURE GAUGE WITH COCK
	THERMOMETER
T	TEMPERATURE SENSOR
P	PRESSURE SENSOR
DP	DIFFERENTIAL PRESSURE TRANSDUCER
FS	FLOW SWITCH
FM	FLOW METER
TS	TAMPER SWITCH
	PUMP
	ROOF DRAIN
	ROOF DRAIN WITH OVERFLOW
	FLOOR DRAIN
	FLOOR CLEANOUT
	GRADE CLEANOUT
CO	CLEANOUT
WCO	WALL CLEANOUT
M	WATER METER
MG	GAS METER
	ACCESS PANEL

VALVES

SYMBOL	DESCRIPTION
	GEN. SHUTOFF VALVE (BALL, GATE, BUTTERFLY)
	GATE VALVE
	GLOBE VALVE
	OUTSIDE STEM & YOKE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GAS COCK
	PRESSURE REDUCING VALVE
	CALIBRATED BALANCING VALVE
	CONTROL VALVE, TWO-WAY
	CONTROL VALVE, THREE-WAY
	THREE-WAY MANUAL VALVE
	SOLENOID VALVE
	ANGLE VALVE
	RELIEF/SAFETY VALVE
	STRAINER
	STRAINER WITH DRAIN VALVE AND CAP

LINES & REFERENCE SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NEW WORK LINE WEIGHT	NG / #	NATURAL GAS RISER
	DEMOLITION WORK LINE WEIGHT		
	AREA OF DEMOLITION	RWC / #	RAIN WATER CONDUIT RISER
	EXISTING WORK LINE WEIGHT		
	FUTURE WORK LINE WEIGHT	SAN / #	SANITARY RISER
	POINT OF CONNECTION	V / #	VENT RISER
	TERMINATION POINT OF DEMOLITION		
	POINT OF FUTURE CONNECTION		NORTH ARROW
#	SHEET NOTE REFERENCE		
#	DRAWING REVISION NUMBER		
E-1	EQUIPMENT DESIGNATION		
DCW / #	DOMESTIC WATER RISER		
CD / #	CONDENSATE DRAIN RISER		

GENERAL NOTES

1. PLUMBING SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES INDICATED ON THIS DRAWING ARE TYPICAL. PLUMBING DRAWINGS MAY NOT INDICATE ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS DRAWING.
2. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE PERFORMED. THE DRAWINGS ARE NOT INTENDED TO SHOW EXACT LOCATIONS OR TO SHOW EVERY PIPE, FITTING, VALVE OR APPURTENANCE REQUIRED FOR A COMPLETE INSTALLATION. DO NOT SCALE DIMENSIONS FROM THESE DRAWINGS.
3. INSTALL EQUIPMENT IN A SERVICEABLE MANNER WITHOUT DISRUPTION TO ADJACENT SERVICES OR DAMAGING INSULATION. THIS INCLUDES, BUT IS NOT LIMITED TO: PROVIDE VALVE OPERATOR EXTENSIONS TO EXTEND THRU THE INSULATION AND HANDLES TO SWING TOWARD THE OPERATOR FOR ISOLATION.
4. PROVIDE ALL NEW WALL PENETRATIONS WITH A SLEEVE/CONDUIT FOR SERVICES PENETRATING IT. THIS INCLUDES, BUT IS NOT LIMITED TO: PIPING, POWER, AND CONTROL WIRING.
5. THE SCOPE OF WORK SHALL INCLUDE PROVIDING ALL WORK INDICATED, AND COORDINATION WITH ALL TRADES. SCOPE OF WORK IS INDICATED ON THE CONTRACT DOCUMENTS INCLUDING THE DRAWINGS AND THE SPECIFICATIONS, WHICH ARE COMPLIMENTARY. WORK INDICATED IN ANY CONTRACT DOCUMENT SHALL BE CONSIDERED PART OF THE SCOPE OF WORK. IN GENERAL, WORK REQUIREMENTS ARE NOT INDICATED IN BOTH DOCUMENTS. WHERE DOCUMENTS CONFLICT WITHIN THEMSELVES OR WITH CODES AND REGULATIONS, PROVIDE THE HIGHER QUANTITY AND QUALITY AND FOLLOW THE STRICTER REQUIREMENTS.
   A. CHECK ARCH, ELEC, MECH, & FP DRAWINGS FOR WORK SHOWN TO BE DONE BY PC.
   B. COORDINATE PLUMBING WORK WITH OTHER DISCIPLINES. SEE SPECIFICATIONS FOR INFORMATION REGARDING COORDINATION DRAWINGS.
      a. PROVIDE DEDUCTIONS FOR ANY OWNER AGREED REDUCTIONS IN PIPING RUNS.
      b. COORDINATE ROUGH-IN INFORMATION WITH FIXTURES AND EQUIPMENT SUPPLIERS.
      c. COORDINATE PLUMBING FIXTURE LOCATIONS WITH ARCHITECTURAL PLANS. COORDINATE ALL BELOW GRADE PLUMBING PIPING WITH FOUNDATION ELEVATIONS AND SITE UTILITY INVERTS. VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
6. THE ENTIRE PLUMBING SYSTEM SHALL BE IN CONFORMANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
   A. CONFORM TO APPLICABLE BUILDING CODES AND THE OWNER'S INSURANCE AGENCY.
   B. PROCURE ALL LICENSES, PERMITS, CERTIFICATIONS, AND AGENCY APPROVALS PRIOR TO COMMENCING FABRICATION OR INSTALLATION.
   C. PROVIDE ALL REQUIRED DOCUMENTS, CALCULATIONS AND DRAWINGS.
7. PLUMBING SYSTEMS SHALL NOT BE LOCATED IN ELEVATOR SHAFTS AND ELEVATOR PIT ROOMS EXCEPT FLOOR DRAINS, SUMP PUMPS AND SUMP PUMP DISCHARGE PIPING DEDICATED TO THE SHAFT AND LOCATED AT THE BASE OF THE SHAFT.
8. PLUMBING SYSTEMS SHALL NOT BE LOCATED IN ELECTRICAL EQUIPMENT ROOMS, TRANSFORMER VAULT, ELECTRICAL CLOSETS, TELE DATA ROOMS OR SIMILAR AREAS CONTAINING ELECTRICAL EQUIPMENT.
   A. DO NOT INSTALL PIPING OVER, AROUND, IN FRONT OF, BEHIND OR DIRECTLY BELOW ELECTRICAL EQUIPMENT, SWITCHES, TERMINALS OR SIMILAR ELECTRICAL EQUIPMENT.
   B. MAINTAIN 42" IN FRONT OF 480 VAC EQUIPMENT AND 36" IN FRONT OF 240 VAC EQUIPMENT.
   C. CONFORM TO NEC.
9. NO PLUMBING SYSTEMS SHALL PENETRATE INTO OR PASS THROUGH STAIRWAYS UNLESS IT IS FOR SERVICING THE STAIRWAY.
10. INSTALL PIPING IN A CONCEALED MANNER, STRAIGHT, PLUMB, AND FORM RIGHT ANGLES PARALLEL WITH BUILDING WALLS. LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER. PIPE WILL BE LOCATED TO PERMIT ACCESS FOR SERVICE VALVES.
11. CONCRETE PADS AND PITS FOR PLUMBING EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL PLANS.
12. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY FLOW, STATIC AND RESIDUAL PRESSURE BY PERFORMING A HYDRANT FLOW TEST OF THE EXISTING STREET MAIN AT THE POINT OF NEW CONNECTION OR AS CLOSE AS POSSIBLE.
13. COORDINATE PLUMBING SYSTEM SHUT DOWN REQUIREMENTS WITH OWNER. NOTIFY OWNER A MINIMUM OF 48 HOURS PRIOR TO SYSTEM SHUT DOWN.
14. NOTIFY DESIGN ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
15. ONLY CAST IRON PIPING FOR SANITARY AND VENTING SHALL BE INSTALLED IN PLENUM SPACES. THE PLUMBING CONTRACTOR SHALL VERIFY / COORDINATE THE EXACT PLENUM SPACES WITH THE MECHANICAL PLANS AND CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
16. PROVIDE PIPING PENETRATIONS WITH FIRE RATINGS EQUAL TO OR GREATER THAN, THE FIRE RATING OF THE WALL OR FLOOR PENETRATED.
   A. COORDINATE PIPE PENETRATIONS WITH CONCRETE CONSTRUCTION.
   B. PROVIDE CORE DRILLED PENETRATIONS AT ALL LOCATIONS WHERE CONCRETE OR MASONRY WALLS OR FLOORS HAVE BEEN CONSTRUCTED PRIOR TO PLUMBING PIPING INSTALLATION.
   C. CORING SIZES AND LOCATIONS SHALL BE APPROVED BY THE ARCHITECT/ENGINEER.
   D. EXTEND SLEEVES 2" ABOVE FLOOR SLAB IN ALL WET AREAS SUCH AS MECHANICAL ROOMS AND WASH AREA.
17. PROVIDE FLUSH TYPE ACCESS DOORS OR PANELS FOR ALL VALVES OR APPARATUS LOCATED IN CHASES, WALLS, NON ACCESSIBLE CEILINGS OR FLOOR.
18. PROVIDE CLEANOUTS FOR ALL HORIZONTAL SANITARY PIPING AT EVERY CHANGE IN DIRECTION GREATER THAN 45-DEGREES AND AT THE BASE OF ALL STACKS.
19. PROVIDE PIPE IDENTIFICATION LABELS WITH DIRECTIONAL FLOW ARROWS ON ALL HORIZONTAL RUNS EVERY 20 FT.
20. PROVIDE BARRIER TYPE TRAP SEAL PROTECTION DEVICE COMPLYING WITH ASSE 1072.
21. SUPPORT ALL PIPING IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE.
   A. SEE PLUMBING CODE FOR SPACING REQUIREMENTS.
   B. CONFORM TO THE BUILDING CODE AND MSS SP-127 FOR SEISMIC, WIND AND DYNAMIC FORCES.
22. PROVIDE BACKFLOW PREVENTION DEVICES ON ALL WATER CONNECTIONS TO HVAC EQUIPMENT.
23. PROVIDE WATER HAMMER ARRESTORS ON SUPPLY LINES TO FLUSH VALVES, SOLENOID VALVES, EMERGENCY FIXTURE AND AUTOMATIC VALVES IN CONFORMANCE WITH PDI AND LOCAL ORDINANCES. INSTALL IN ACCESSIBLE LOCATIONS OR PROVIDE ACCESS PANEL FOR MAINTENANCE.
24. PROVIDE SHUT-OFF VALVES, WITHIN 2 FT. OF MAINS, ON ALL BRANCH PIPING SERVING PLUMBING FIXTURES, EQUIPMENT OR CASEWORK, CONNECT SERVICE BRANCHES TO TOP OF MAINS.
25. PROVIDE DRAIN VALVES AND HOSE CONNECTIONS AT ALL LOW POINTS IN SERVICE PIPING SYSTEM.
26. SLOPE ALL PIPING IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE.
27. PROVIDE WHITE CLOSED CELL MOLDED VINYL INSULATION ON EXPOSED LAVATORY DRAINS AND SUPPLIES FOR HANDICAPPED.
28. PROVIDE PIPING MATERIAL IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE.
29. TEST ALL PLUMBING SYSTEMS IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE.
30. FLUSH AND DISINFECT DOMESTIC WATER SYSTEM IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE. THE FINAL FLUSH AND DISINFECTION OF THE ENTIRE WATER PIPING SYSTEMS SHALL OCCUR WITHIN TWO WEEKS OF A SPACE OR BUILDING OCCUPANCY.
31. INSTALL PLUMBING FIXTURES AND EQUIPMENT IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE PLUMBING CODE.

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01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

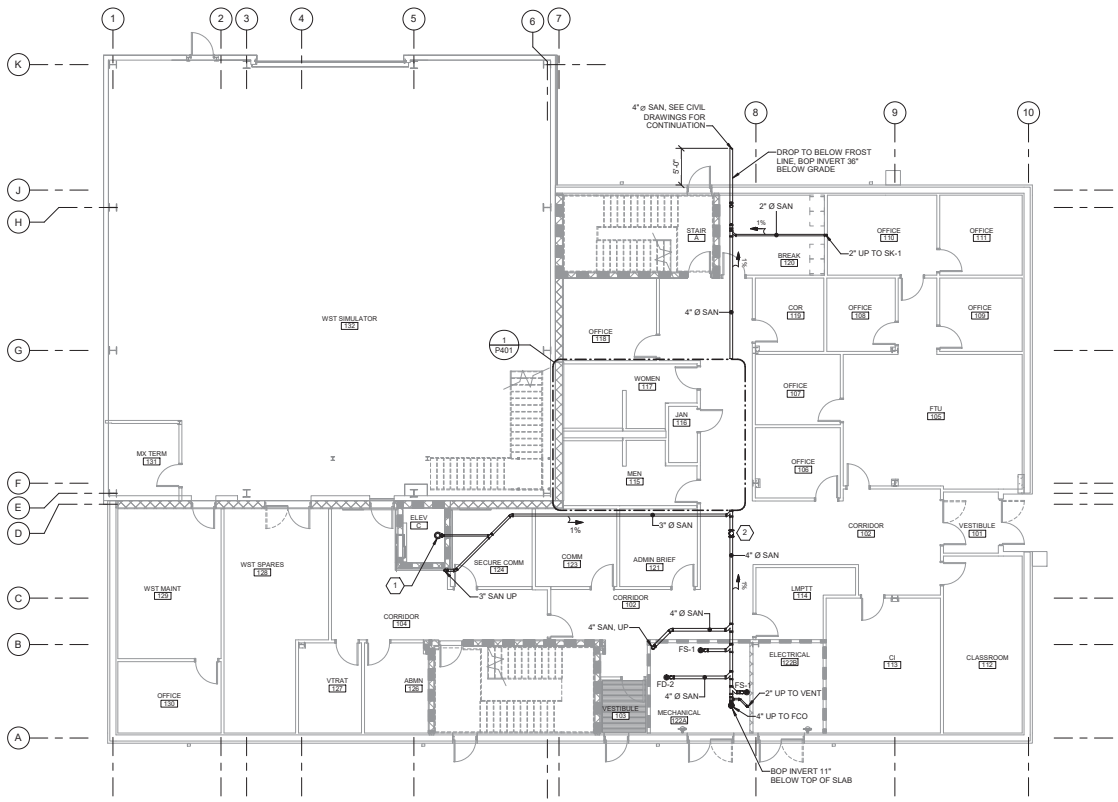
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE:
PLUMBING
LEGEND, GENERAL NOTES, & ABBREVIATIONS

DRAWING NO.:
P001



1 PLUMBING SANITARY AND VENT UNDER SLAB PLAN

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

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

SHEET KEYNOTES

1. PROVIDE SUMP PUMP (SP-1), CONTROLS, PUMP DISCHARGE PIPING, AND VALVES. LOCATE THE SUMP PUMP IN THE PRE-CAST CONCRETE SUMP PROVIDED BY THE GENERAL CONTRACTOR. REFER TO THE STRUCTURAL DRAWINGS FOR THE FINAL LOCATION. INSTALL BALL AND CHECK VALVES IN THE PUMP DISCHARGE PIPING WITHIN THE ELEVATOR SHAFT. EXTEND THE PUMP DISCHARGE PIPING BELOW THE SLAB AND CONNECT TO THE SANITARY PIPING.
2. PROVIDE A BACKWATER VALVE (BWV-1) WITH EXTENSION TO THE FLOOR SLAB. PROVIDE AN ACCESS COVER FLUSH WITH THE FLOOR MATERIAL.

TRUE NORTH

0' 8' 16'

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

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MICHAEL JOHN MORRISSEY
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01/27/2026

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

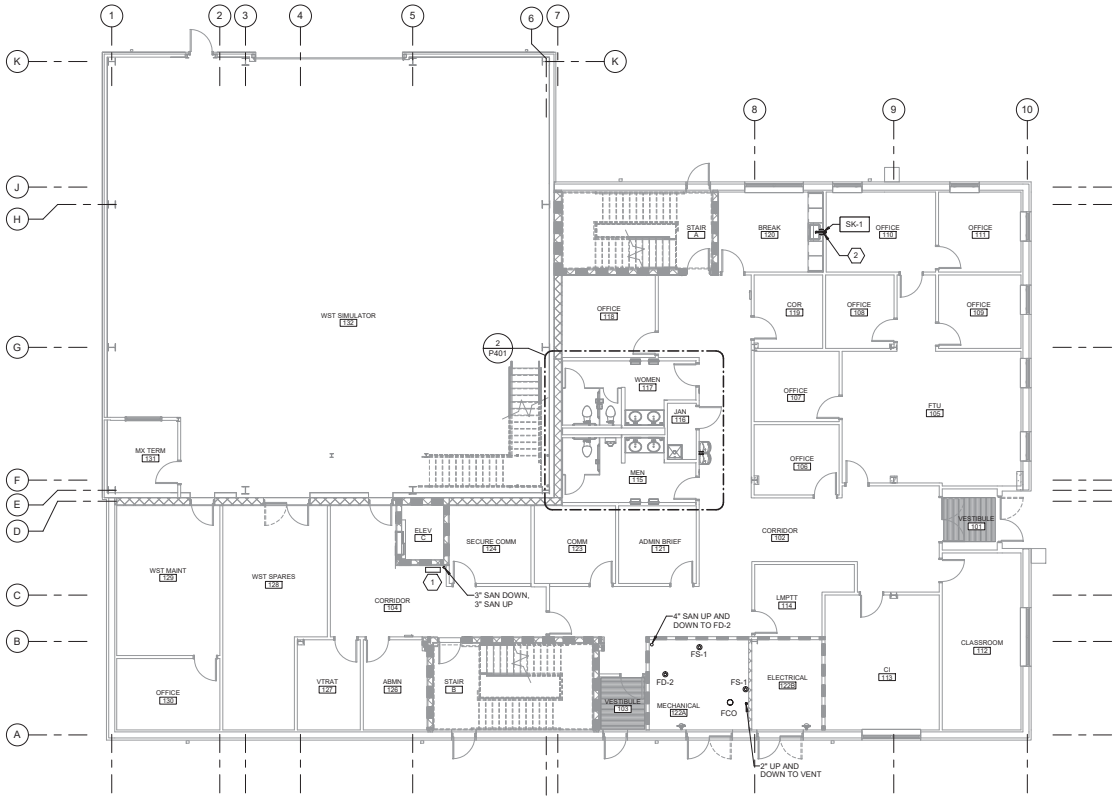
DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING UNDER SLAB SANITARY AND VENT PLAN

DRAWING NO.: **P101**

Local File: Autodesk Docs://079046-PANNG_EC_130J_Simulator/079046_MC130J_Sim_MEP_R23.rvt
Central File: BM1690_M_R23
Project Number: SHYQ149104
1/25/2026 8:50:59 PM



1 PLUMBING SANITARY AND VENT FIRST FLOOR PLAN

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

REFER TO P101 FOR UNDERSLAB SANITARY AND VENT PIPING.

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

SHEET KEYNOTES

1. LOCATE THE SUMP PUMP CONTROL PANEL ON THE WALL WITH THE BOTTOM OF THE PANEL LOCATED APPROXIMATELY 54" ABOVE THE FLOOR. EXTEND CONTROL WIRING IN CONDUIT INTO THE ELEVATOR SHAFT TO THE PUMP. SEAL AROUND THE CONDUIT AND LOCATE THE CONDUIT WITHIN THE SHAFT IN COORDINATION WITH THE ELEVATOR EQUIPMENT.
2. PROVIDE P-TRAP AND EXTEND TO WALL. DROP 2" SANITARY DOWN AND 1 1/4" VENT UP TO ABOVE CEILING.

TRUE NORTH

0' 8' 16'

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

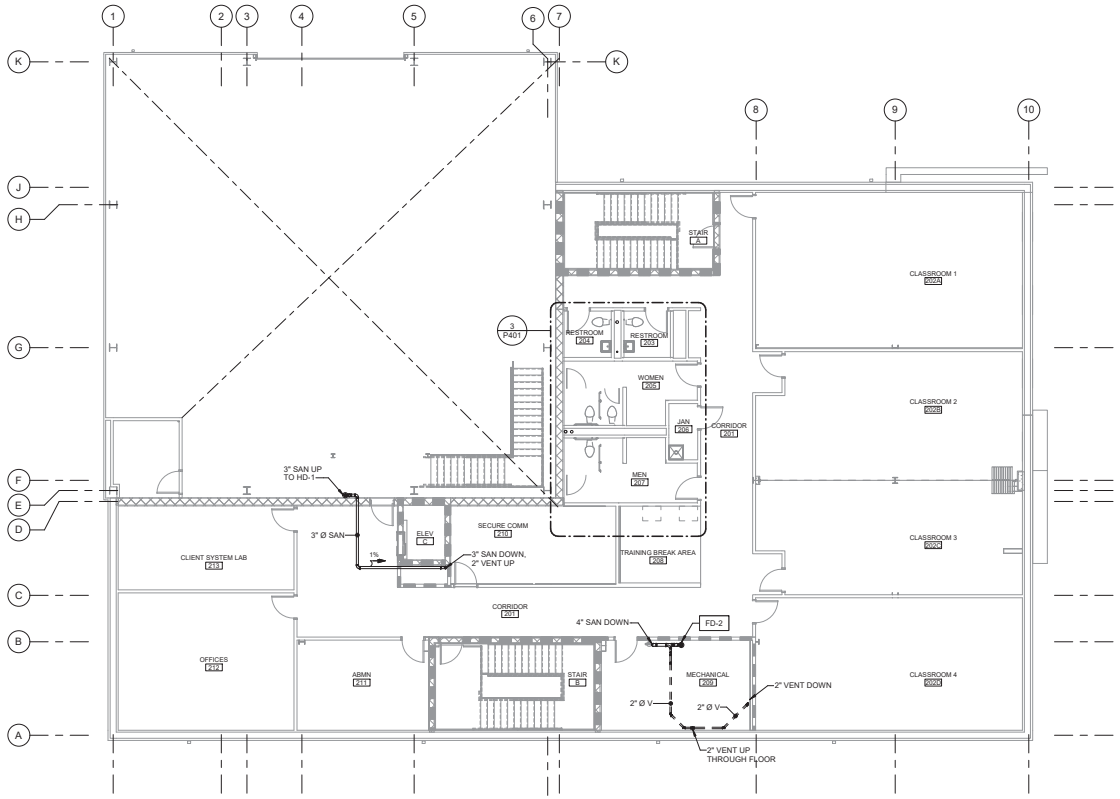
DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING FIRST FLOOR SANITARY AND VENT PLAN

DRAWING NO.: P102

Project Number: SHYQ149104
1/25/2026 8:51:01 PM
Local File: Autodesk Docs://070046-PANG_EC-130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23



1 PLUMBING SANITARY AND VENT SECOND FLOOR BELOW SLAB PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

TRUE NORTH
0' 8' 16'
SCALE: 1/8" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

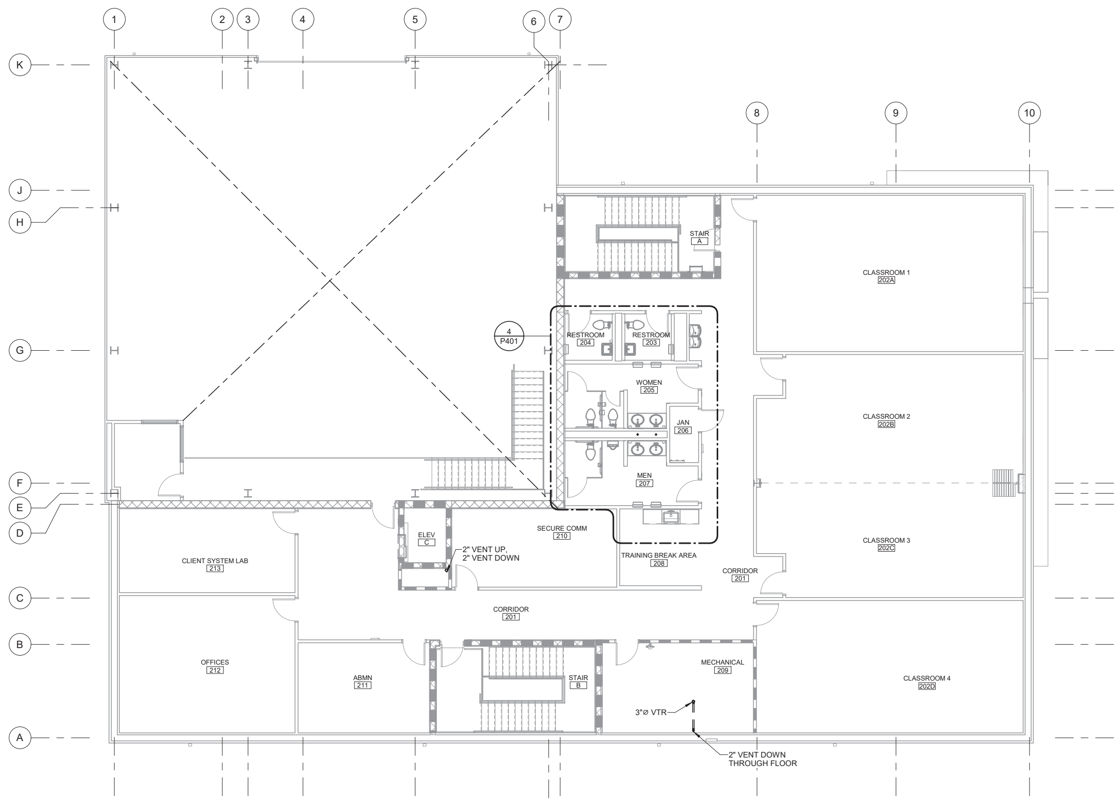
DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING SECOND FLOOR SANITARY AND VENT BELOW SLAB PLAN

DRAWING NO.: **P103**

Project Number: SHYQ149104
1/25/2026 8:51:02 PM
Local File: Autodesk Docs://070146-PANG_EC-130J_Simulator/070146_MC130J_Sim_MEP_R23.rvt
Central File: BMS6R_M_R23



1 PLUMBING SANITARY AND VENT SECOND FLOOR ABOVE SLAB PLAN

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

REFER TO P103 FOR UNDERSLAB SANITARY AND VENT PIPING.

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

TRUE NORTH

0' 8' 16'

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104		
DESIGNED: SRG	MODELED: EMC	CHECKED: WKK
DATE: JANUARY 2026		

DRAWING TITLE:
PLUMBING
SECOND FLOOR SANITARY AND VENT ABOVE SLAB PLAN

DRAWING NO.:
P104

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BM3601_M_R23
Project Number: SHYQ149104
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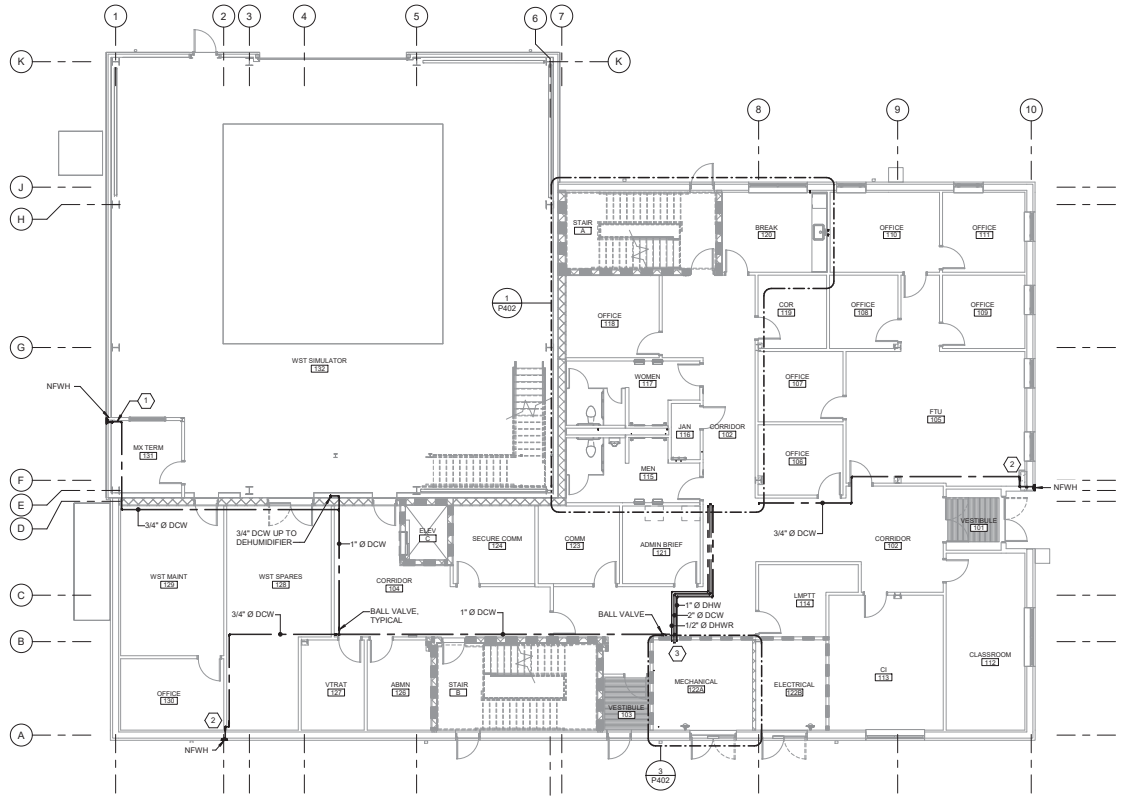

1 PLUMBING DOMESTIC WATER PIPING FIRST FLOOR PLAN

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

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

SHEET KEYNOTES

1. DROP 3/4" DOMESTIC COLD WATER DOWN IN WALL AND CONNECT TO NON-FREEZE WALL HYDRANT (NFWH). PROVIDE BALL VALVE IN PIPE DROP.
2. DROP 3/4" DOMESTIC COLD WATER DOWN IN WALL AND CONNECT TO NON-FREEZE WALL HYDRANT (NFWH). PROVIDE BALL VALVE IN OVERHEAD PIPING.
3. PROVIDE BALL VALVE ON THE 1" DOMESTIC HOT WATER, 2" DOMESTIC COLD WATER, AND THE 1/2" DOMESTIC HOT WATER RETURN PIPING ABOVE THE CORRIDOR CEILING.

TRUE NORTH

0' 8' 16'

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

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01/27/2026

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING FIRST FLOOR DOMESTIC WATER PIPING PLAN

DRAWING NO.: P105

Project Number: SHYQ149104
1/25/2026 8:51:06 PM
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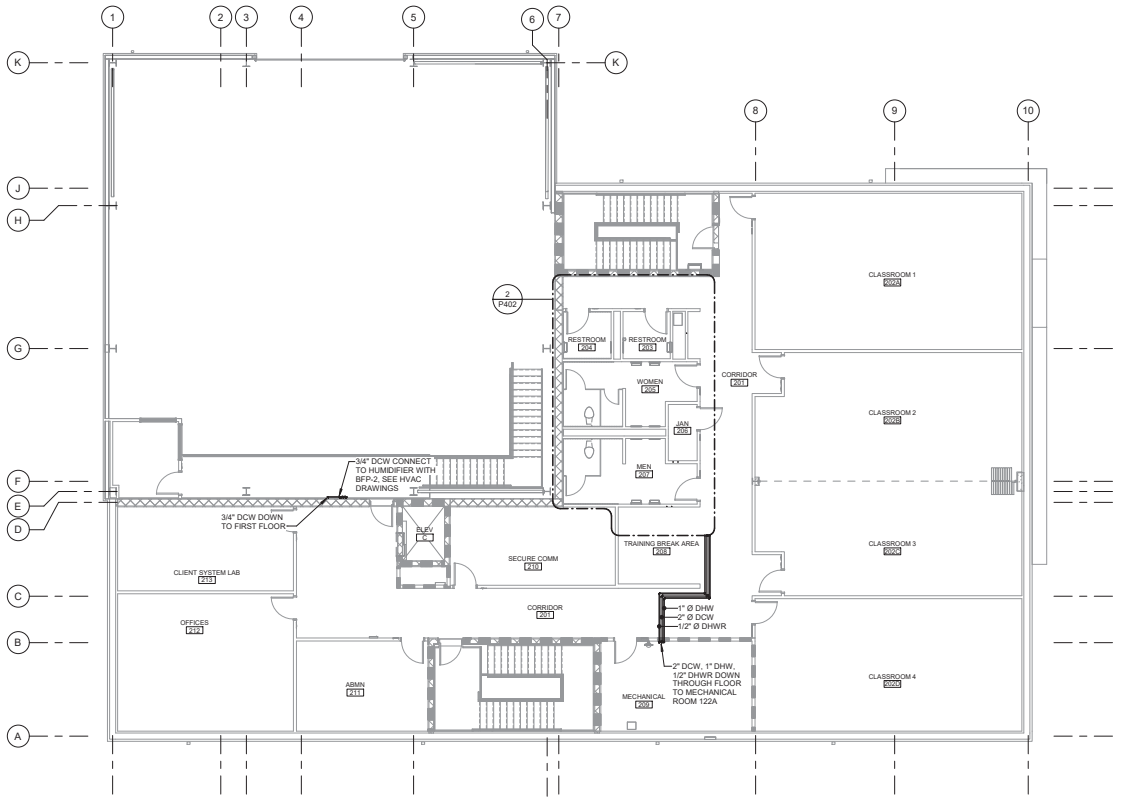
Central File: BM1690_M_R23



1 PLUMBING DOMESTIC WATER PIPING SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
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11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

TRUE NORTH

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING SECOND FLOOR DOMESTIC WATER PIPING PLAN

DRAWING NO.: **P106**

Project Number: SHYQ149104
1/25/2026 8:51:07 PM
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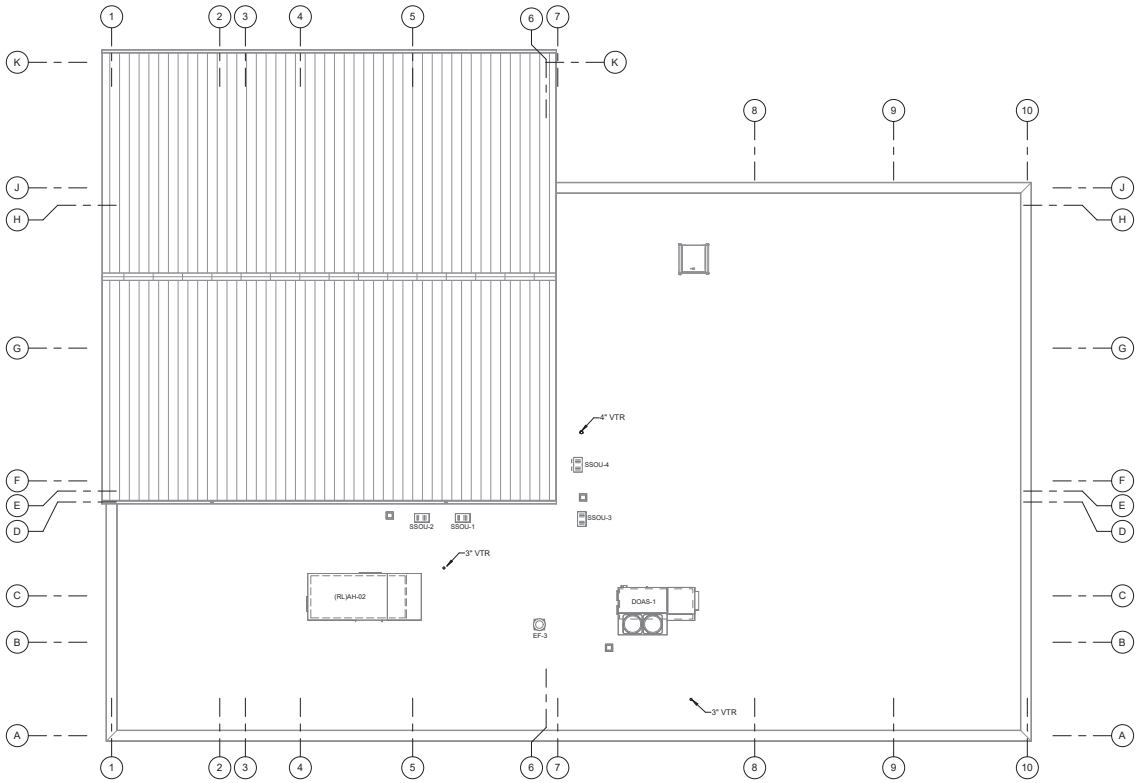
Central File: BM0580_M_R23



1 PLUMBING ROOF PLAN

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

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
7. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
8. SEAL AROUND ALL PIPE PENETRATIONS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.

TRUE NORTH

0' 8' 16'

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

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PE059944
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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING

PLUMBING ROOF PLAN

DRAWING NO.: **P107**

Project Number: SHYQ149104
1/25/2026 8:51:08 PM
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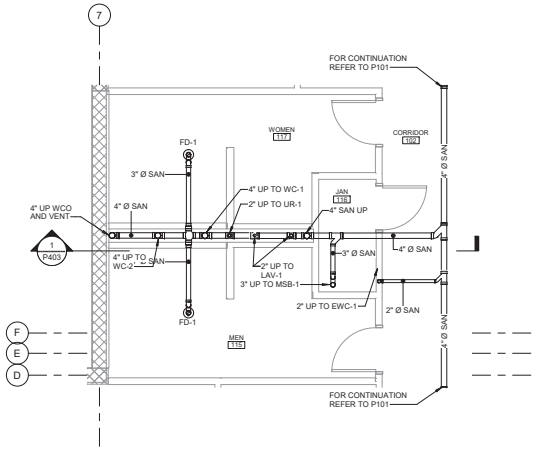
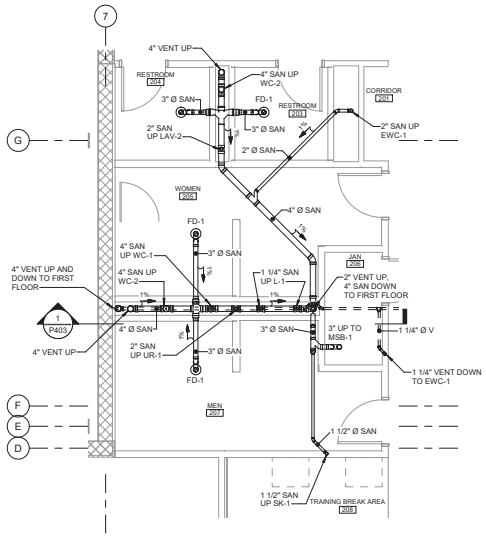


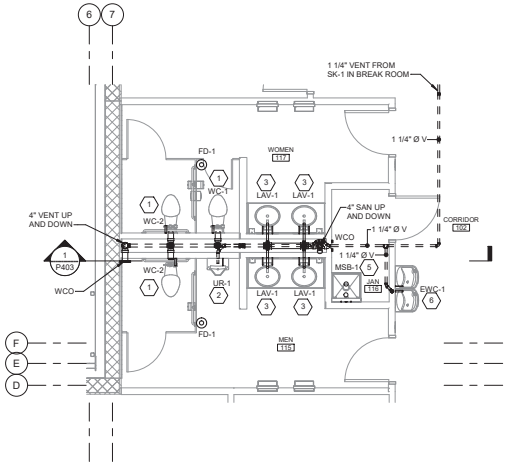
1 PLUMBING SANITARY AND VENT UNDER SLAB ENLARGED PLAN

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



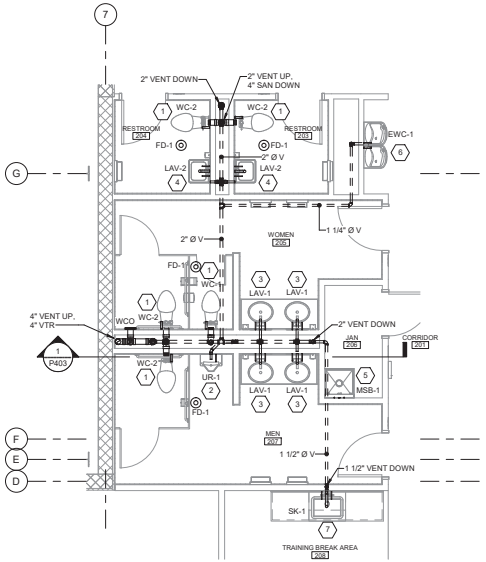
3 PLUMBING SANITARY AND VENT SECOND FLOOR BELOW SLAB ENLARGED PLAN

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



2 PLUMBING SANITARY AND VENT FIRST FLOOR ENLARGED PLAN

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



4 PLUMBING SANITARY & VENT SECOND FLOOR ENLARGED PLAN

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

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

SHEET KEYNOTES

(#)

1. PROVIDE WALL MOUNTED WATER CLOSET (WC-1 AND WC-2), FLUSH VALVE, AND CARRIER. CONNECT TO WATER AND SANITARY PIPING WITHIN THE CHASE.
2. PROVIDE WALL MOUNTED URINAL (UR-1), FLUSH VALVE, AND CARRIER. CONNECT TO WATER AND SANITARY PIPING WITHIN THE CHASE.
3. PROVIDE COUNTER MOUNTED LAVATORY (LAV-1), FAUCET, TRIM AND INSULATION PACKAGE. CONNECT TO WATER AND SANITARY PIPING WITHIN THE CHASE.
4. PROVIDE WALL MOUNTED LAVATORY (LAV-2), FAUCET, TRIM AND INSULATION PACKAGE. CONNECT TO WATER AND SANITARY PIPING WITHIN THE CHASE.
5. PROVIDE MOP SERVICE BASIN (MSB-1), FAUCET, TRAP, AND ACCESSORIES. DROP 1/2" DOMESTIC HOT AND COLD WATER PIPING IN THE WALL AND CONNECT TO THE FAUCET. CONNECT TRAP TO SANITARY PIPING BELOW THE FLOOR.
6. PROVIDE DUAL LEVEL WALL MOUNTED ELECTRIC WATER COOLER (EWC-1) CARRIER AND TRIM. DROP 1/2" DOMESTIC COLD WATER DOWN IN WALL AND CONNECT TO COOLER.
7. PROVIDE P-TRAP AND SANITARY TRIM. CONNECT TO SANITARY AND VENT PIPING IN THE WALL.

TRUE NORTH

0' 4' 8'

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

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL JOHN MORRISSEY
Digitally Signed by Michael John Morrissey
ENGINEER
PE095944
01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

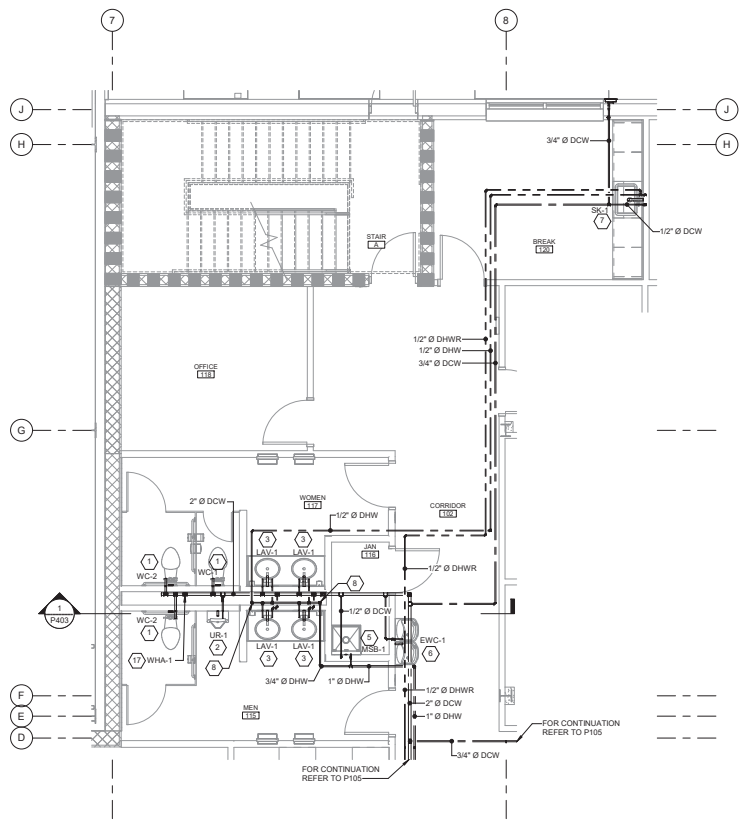
DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE:
PLUMBING
SANITARY & VENT
ENLARGED SCALE PLANS

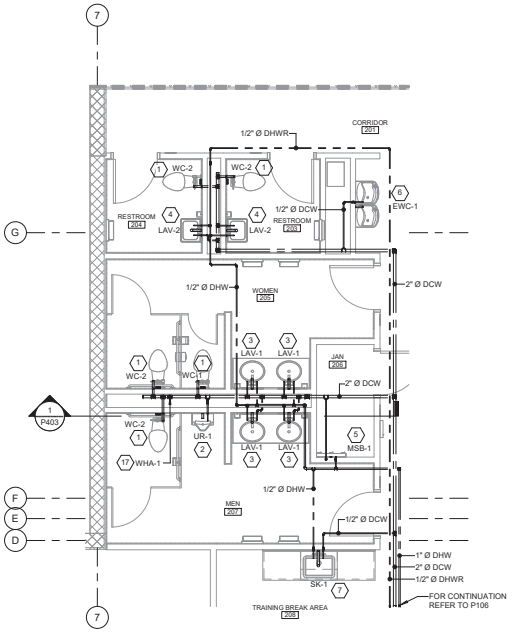
DRAWING NO.:
P401

Local File: Autodesk Docs://070046-PANNG_EC_130J_Simulator/070046_MC130J_Sim_MEP_P23.rvt
Central File: BIM360_M_P23
Project Number: SHYQ149104
1/25/2026 8:51:12 PM



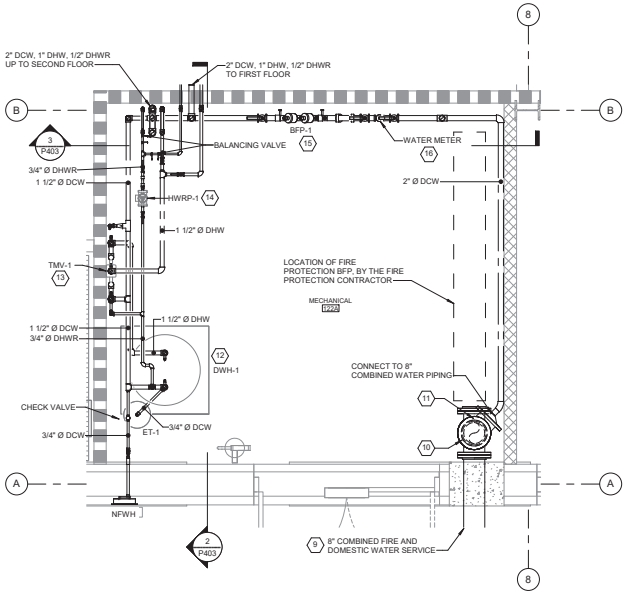
1 PLUMBING DOMESTIC WATER PIPING - ENLARGED FIRST FLOOR PART PLAN

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



2 PLUMBING DOMESTIC WATER PIPING - ENLARGED SECOND FLOOR PLAN

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



3 MECHANICAL ROOM ENLARGED PLUMBING PLAN

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

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

SHEET KEYNOTES

1. PROVIDE WALL MOUNTED WATER CLOSET (WC-1 AND WC2), FLUSH VALVE, AND CARRIER. CONNECT TO WATER PIPING WITHIN THE CHASE.
2. PROVIDE WALL MOUNTED URINAL (UR-1), FLUSH VALVE, AND CARRIER. CONNECT TO WATER PIPING WITHIN THE CHASE.
3. PROVIDE COUNTER MOUNTED LAVATORY (LAV-1), FAUCET, TRIM AND INSULATION PACKAGE. DROP 1/2" DOMESTIC HOT AND COLD WATER WITHIN THE CHASE AND CONNECT TO THE FAUCET.
4. PROVIDE WALL MOUNTED LAVATORY (LAV-2), FAUCET, TRIM AND INSULATION PACKAGE. DROP 1/2" DOMESTIC HOT AND COLD WATER PIPING IN THE WALL AND CONNECT TO THE FAUCET.
5. PROVIDE MOP SERVICE BASIN (MSB-1), FAUCET, TRAP, AND ACCESSORIES. DROP 1/2" DOMESTIC HOT AND COLD WATER PIPING IN THE WALL AND CONNECT TO THE FAUCET.
6. PROVIDE DUAL LEVEL WALL MOUNTED ELECTRIC WATER COOLER (EWC-1) CARRIER AND TRIM. DROP 1/2" DOMESTIC COLD WATER DOWN IN WALL AND CONNECT TO COOLER.
7. PROVIDE SINK (SK-1), FAUCET AND TRIM. DROP 1/2" DOMESTIC HOT AND COLD WATER PIPING IN THE WALL AND CONNECT TO THE FAUCET.
8. DROP 3/4" DOMESTIC HOT WATER DOWN WITHIN CHASE TO LEVEL OF FAUCETS. EXTEND THROUGH CHASE AND RISE UP.
9. EXTEND WATER SERVICE PIPING BELOW THE LOCAL FROST LINE TO 5'-0" BEYOND THE BUILDING. REFER TO THE CIVIL DRAWINGS FOR CONTINUATION.
10. 8" COMBINED FIRE AND DOMESTIC WATER SERVICES DOWN THROUGH THE FLOOR SLAB. PROVIDE PIPE SLEEVE AND MECHANICAL SEAL. COORDINATE WITH THE GENERAL CONTRACTOR.
11. PROVIDE A BLIND FLANGE FOR THE FIRE PROTECTION SYSTEM. COORDINATE WITH THE FIRE PROTECTION CONTRACTOR.
12. PROVIDE ELECTRIC DOMESTIC WATER HEATER (DHW-1), EXPANSION TANK (ET-1), PIPING, FITTINGS, AND VALVES. CONNECT HOT AND COLD WATER PIPING TO THE WATER HEATER. SET THE WATER HEATER ON A CONCRETE PAD BY GC. COORDINATE ENERGIZING THE WATER HEATER WITH THE ELECTRICAL CONTRACTOR.
13. PROVIDE THERMOSTATIC MIXING VALVE (TMV-1), INLET/OUTLET VALVES AND UNIONS. SET THE OUTLET TEMPERATURE AT 110 DEGREES. MOUNT THE BOTTOM OF THE VALVE AT 54" ABOVE FINISHED FLOOR.
14. PROVIDE HOT WATER RETURN PUMP (HWRP-1), INLET STRAINER, INLET/OUTLET VALVES, PIPE ACCESSORIES, AND DEMAND CONTROLS. COORDINATE ENERGIZING THE PUMP VIA OCCUPANCY SENSOR WITH THE ELECTRICAL CONTRACTOR.
15. PROVIDE REDUCED PRESSURE ZONE BACKFLOW PREVENTER (BFP-1), INLET STRAINER, INLET/OUTLET VALVES, AND AIR GAP DEVICE. PIPE THE AIR GAP DEVICE TO (AG-1).
16. PROVIDE WATER METER WITH MONITORING CAPABILITIES BY BASE CIVIL ENGINEERING.
17. PROVIDE WATER HAMMER ARRESTOR (WHA-1) AND ACCESS PANEL.
18. PROVIDE BALANCING VALVE AND FLOW METER FITTING. BALANCE TO 0.5 GPM.
19. DROP 3/4" DOMESTIC COLD WATER DOWN IN WALL AND CONNECT TO NON-FREEZE WALL HYDRANT (NFWH). PROVIDE BALL VALVE IN PIPE DROP.

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER
MICHAEL JOHN MORRISSEY
Digitally signed by Michael John Morrissey
PE095944
01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING DOMESTIC WATER ENLARGED SCALE PLANS

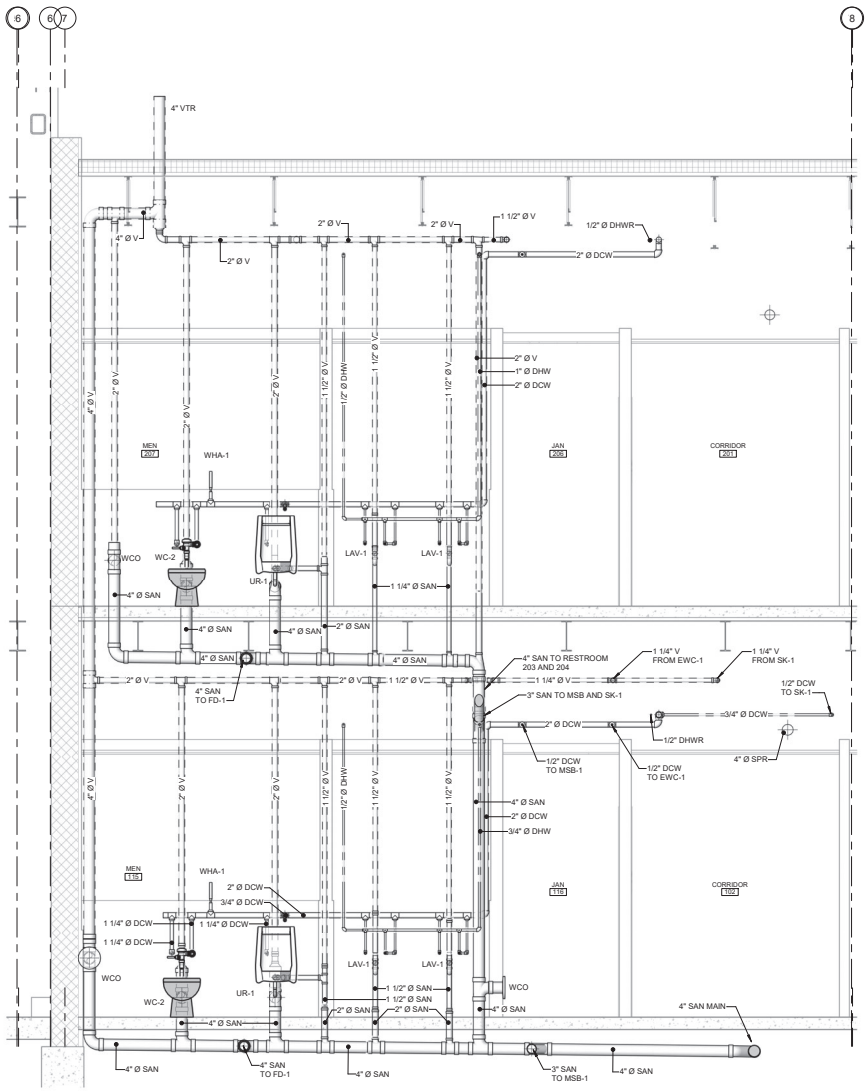
DRAWING NO.: P402

TRUE NORTH

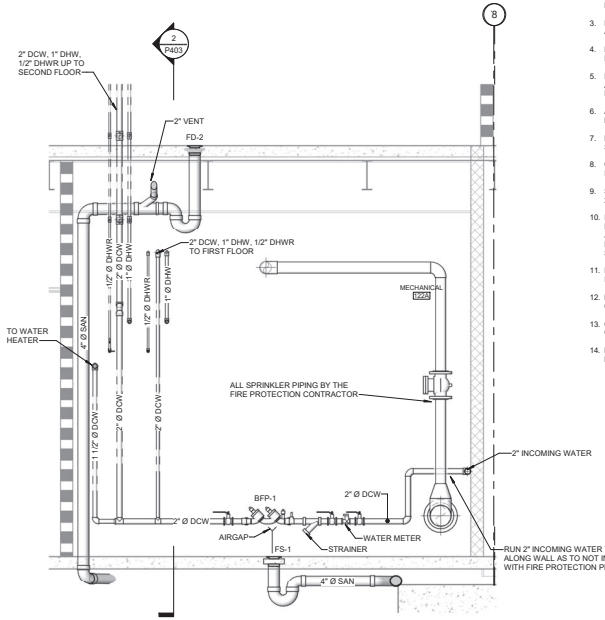
SCALE: 1/2" = 1'-0" (0', 2', 4')

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

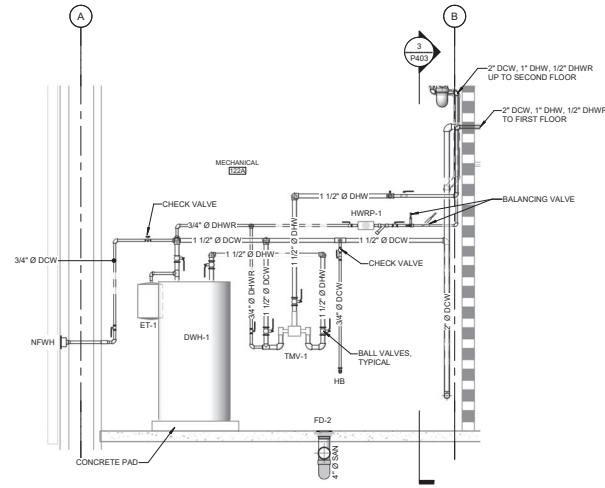
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_P23.rvt
Central File: BIM360_M_P23
Project Number: SHYQ149104
1/25/2026 8:51:16 PM



1 PLUMBING CHASE SECTION
SCALE: 1/2" = 1'-0"



3 INCOMING PLUMBING SECTION
SCALE: 1/2" = 1'-0"



2 PLUMBING EQUIPMENT SECTION
SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE SHEET P001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. SEE ARCHITECTURAL DRAWING A001 FOR GENERAL NOTES AND PROJECT INFORMATION.
3. FOR ALL EXTERIOR WALL PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. REFER TO DETAIL SHEETS P501 AND P502 AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FOR PIPING PENETRATIONS, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE CAULK AS REQUIRED.
6. ALL PIPING TO BE SET AT ELEVATIONS TO ALLOW FOR FULL MANUFACTURER'S CLEARANCE REQUIREMENTS.
7. REFER TO PIPING ISOMETRICS ON P701 THRU P705 FOR ALL PIPE SIZES, DRAINS AND PIPING ACCESSORIES.
8. COORDINATE WITH ALL DISCIPLINES MOUNTING HEIGHT OF ALL INSTALLED EQUIPMENT, CONDUIT AND PIPING.
9. SEAL AROUND ALL PIPE PENETRATIONS AND FLOOR DRAINS WITH 20-YEAR SILICONE CAULK UNLESS OTHERWISE NOTED.
10. INSULATE ALL DOMESTIC COLD, HOT, HOT WATER RETURN, FITTINGS, VALVES AND PIPING ACCESSORIES. PROVIDE PVC JACKETS ON ALL INSULATED PIPING EXPOSED ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. REFER TO INSULATION SCHEDULE.
11. FURNISH DISCONNECT SWITCHES FOR ALL EQUIPMENT TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
12. PROVIDE TRAPS AND TRAP SEALS FOR FLOOR DRAINS, UNLESS OTHERWISE NOTED.
13. COORDINATE SANITARY SEWER PIPING INVERTS WITH THE GENERAL CONTRACTOR.
14. DOMESTIC WATER SERVICE AND SANITARY SEWER PIPING SHALL BE INSTALLED BELOW THE LOCAL FROST DEPTH.

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

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MICHAEL JOHN MORRISSEY
Digitally signed by Michael John Morrissey
PE095944
01/27/2026

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

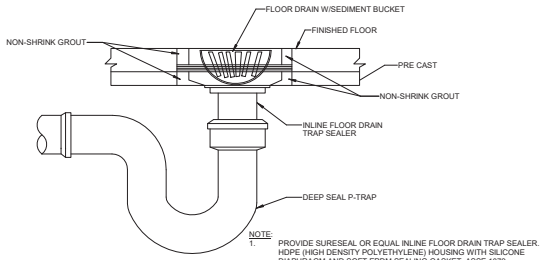
DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING SECTIONS

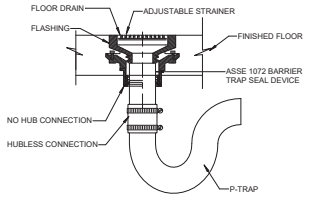
DRAWING NO.: **P403**

Local File: Autodesk Docs://070646-PANG_EC_130J_Simulator/070646_MC130J_Sim_MEP_P23.rvt
Central File: BIM360_M_P23
Project Number: SHYQ149104
1/25/2026 8:51:27 PM

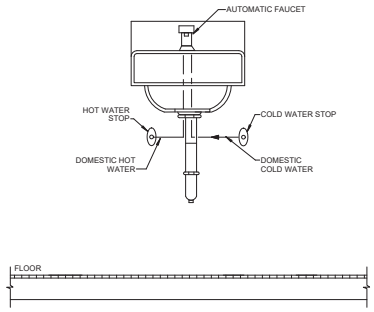


NOTE:
1. PROVIDE SURESEAL OR EQUAL INLINE FLOOR DRAIN TRAP SEALER. HDPE (HIGH DENSITY POLYETHYLENE) HOUSING WITH SILICONE DIAPHRAGM AND SOFT EPDM SEALING GASKET. ASSE 1072 CERTIFIED.

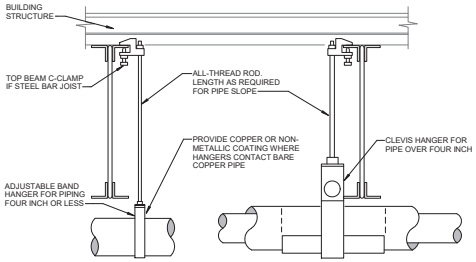
1 FLOOR DRAIN WITH SEDIMENT BUCKET
SCALE: NTS



2 FLOOR DRAIN
SCALE: NTS

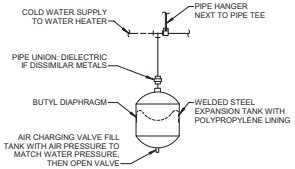


3 LAVATORY PIPING DETAIL
SCALE: NTS



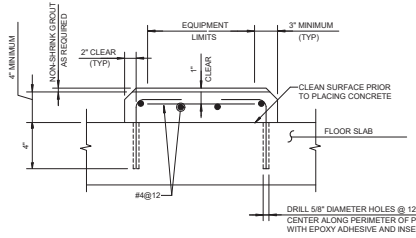
NOTE:
PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE: COPPER: 4"=12' 3"=11' 2-1/2"=10' 2"=9' 1-1/2"=8' 1-1/4"=7' 1"=6' 3/4"=6' 1/2"=5'. CAST IRON: 10' AND ONE NEAR ALL JOINTS. STEEL: 4"=14' 3"=12' 2-1/2"=11' 2"=10' 1-1/2"=9' 1"=7' 3/4"=6' 1/2"=5'. LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED. LOCATE HANGERS TO TAKE LOAD OFF OF EQUIPMENT CONNECTIONS. ANCHOR WATER PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES FOR FURTHER INFORMATION.

4 PLUMBING PIPE HANGER
SCALE: NTS

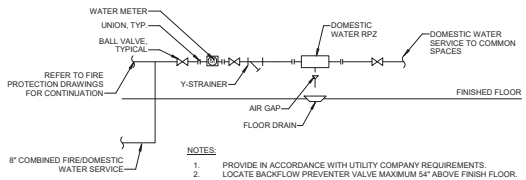


PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. MAKE PIPE SAME SIZE AS TANK FITTING. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION PROCEDURE. VERIFY PROPER OPERATION WHEN INSTALLED.

5 EXPANSION TANK
SCALE: NTS

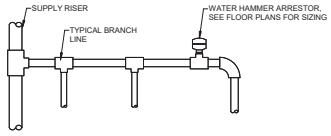


6 CONCRETE PAD ON SLAB
SCALE: NTS



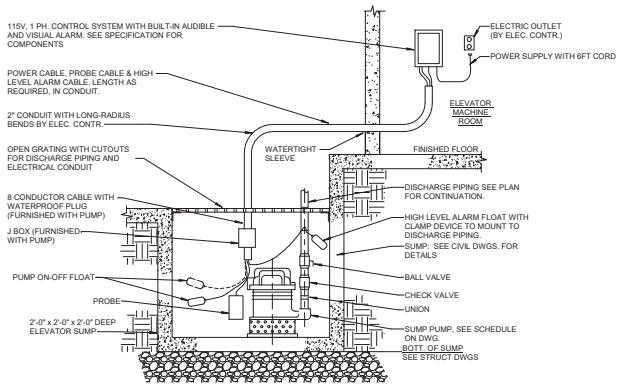
NOTES:
1. PROVIDE IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS.
2. LOCATE BACKFLOW PREVENTER VALVE MAXIMUM 54" ABOVE FINISH FLOOR.
3. BACKFLOW PREVENTER TO HAVE PRESSURE TEST PORTS.
4. PROVIDE WATER METER WITH BUILDING CONTROLS CONNECTION.

7 BUILDING INCOMING WATER
SCALE: NTS



NOTES:
1. PREFERRED INSTALL WATER ARRESTORS AT THE END OF BRANCH LINE BETWEEN THE LAST TWO FIXTURES.
2. ONE WATER HAMMER ARRESTOR PER 20' LINE.
3. INSTALL PER MANUFACTURER RECOMMENDATIONS.

8 WATER HAMMER ARRESTOR
SCALE: NTS



9 SUMP PUMP
SCALE: 12" = 1'-0"

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NO.	DATE	DESCRIPTION
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BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING DETAILS 1

DRAWING NO.: P501

Project Number: SHYQ149104
1/25/2026 8:51:28 PM
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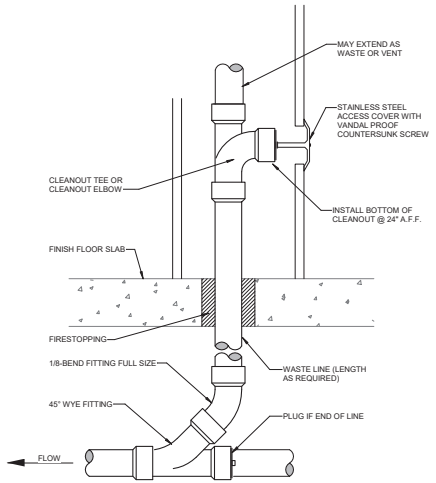
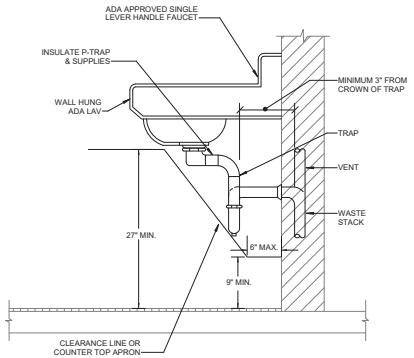
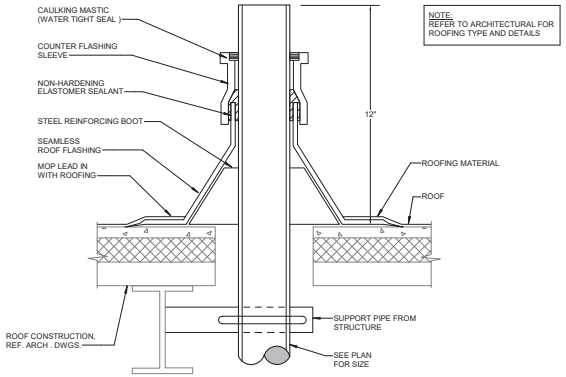
Central File: BM1650_M_R23



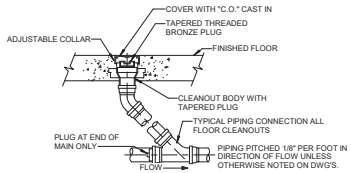
1 WALL CLEANOUT EXPANDED
SCALE: NTS



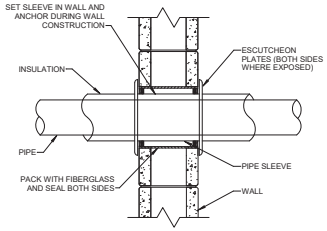
2 ADA LAVATORY PIPING
SCALE: NTS



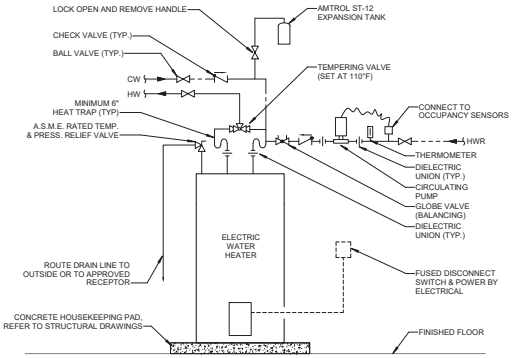
3 VENT THRU ROOF WITH BOOT
SCALE: NTS



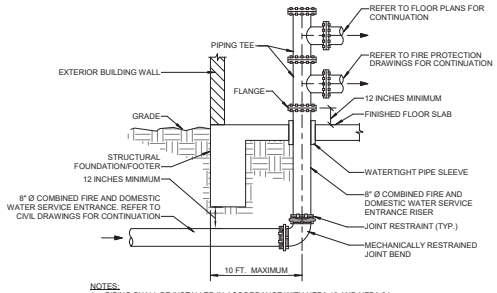
4 INTERIOR FLOOR CLEANOUT
SCALE: NTS



5 PIPE SLEEVE THRU INTERIOR WALL
SCALE: NTS

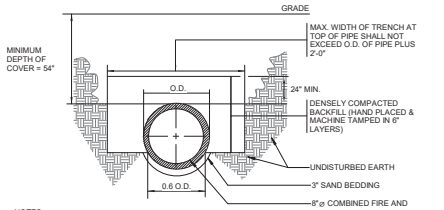


6 ELECTRIC WATER HEATER
SCALE: NTS



NOTES:
1. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 AND NFPA 24.
2. AT THE CONTRACTOR'S OPTION, A THRUST BLOCK AND TIE ROD RESTRAINTS MAY BE SUBSTITUTED, IN ACCORDANCE WITH NFPA 13 AND NFPA 24.
3. MAINTAIN MINIMUM DEPTH OF COVER. COORDINATE IN FIELD.
4. PIPE JOINTS AND FITTINGS SHALL NOT BE LOCATED DIRECTLY UNDER STRUCTURAL FOUNDATION.

7 WATER SERVICE ENTRANCE
SCALE: NTS



NOTES:
1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 24.

8 TRENCH DETAIL
SCALE: NTS

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BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	EMC	WKK

DATE: JANUARY 2026

DRAWING TITLE: PLUMBING DETAILS 2

DRAWING NO.: **P502**

Project Number: SHYQ149104
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Central File: BIM360_M_P23

FIXTURE CONNECTION SCHEDULE

MARK	FIXTURE	DCW		DHW		DRAIN		VENT	REMARKS
		PIPE	SFU	PIPE	SFU	PIPE	DFU		
EWC-1	ELECTRIC WATER COOLER	1/2"	0.25			1 1/4"	0.5	1 1/4"	
LAV-1	LAVATORY COUNTER MOUNTED	1/2"	1.5	1/2"	1.5	1 1/4"	1	1 1/4"	
LAV-2	LAVATORY WALL MOUNTED	1/2"	1.5	1/2"	1.5	1 1/4"	1	1 1/4"	
MSB-1	MOP SERVICE BASIN	1/2"	2.25	1/2"	2.25	2"	2	1 1/4"	
SK-1	KITCHEN SINK-UNDERMOUNT	1/2"	1	1/2"	1	1 1/4"	2	1 1/4"	
UR-1	URINAL	3/4"	5			1 1/2"	4	1 1/4"	
WC-1	WATER CLOSET	1"	10			4"	4	2"	
WC-2	WATER CLOSET	1"	10			4"	4	2"	

FIXTURE SCHEDULE

MARK	DESCRIPTION	BASIS OF DESIGN					ACCESSORIES			REMARKS
		FIXTURE		FAUCET/ FLUSH VALVE		CARRIER/ SUPPORT				
		MANUFACTURER	MODEL	MANUFACTURER	MODEL	MANUFACTURER	MODEL	SUPPLIES	DRAIN	TRAP	
EWC-1	ELECTRIC WATER COOLER	ELKAY	LZSTL8WSLK			ZURN	Z-1225	McGUIRE LFBV2166CCSS12	-	McGUIRE 8089C	WALL MOUNTED, CARRIER, SUPPLIES, STOPS, AND P-TRAP
LAV-1	LAVATORY COUNTER MOUNTED	AMERICAN STANDARD	OVALYN 9482.000	AMERICAN STANDARD	SELECTRONIC 775B.305-PK00.HAC & PK00.MAC, 775P-40	-	-	McGUIRE LFBV2166CCSS12	-	McGUIRE 8088C	COUNTERTOP MOUNTED, FAUCET, CARRIER, SUPPLIES, STOPS, AND P-TRAP
LAV-2	LAVATORY WALL MOUNTED	AMERICAN STANDARD	DECLYN 0321.075	AMERICAN STANDARD	SELECTRONIC 775B.305-PK00.HAC & PK00.MAC, 775P-40	ZURN	Z-1231	McGUIRE LFBV2166CCSS12	-	McGUIRE 8088C	WALL MOUNTED, CARRIER, SUPPLIES, STOPS, TRIM, INSULATION KIT, AND P-TRAP
MSB-1	MOP SERVICE BASIN	FIAT	MSBIDTG2424	FIAT	830AA	-	-		-		
SK-1	KITCHEN SINK-UNDERMOUNT	ELKAY	LR-3322	ELKAY	LKD-2223C	-	-	McGUIRE LFBV2166CCSS12	-	McGUIRE 8089C	COUNTE MOUNTED, FAUCET, CARRIER, SUPPLIES, STOPS, AND P-TRAP
UR-1	URINAL	AMERICAN STANDARD	WASHBROOK FLOWISE 6590.001	AMERICAN STANDARD	SELECTRONIC 6590.111-PK00.HAC & PK00.MAC	ZURN	Z-1222	-	-	-	WALL MOUNTED, FLUSH VALVE, CARRIER
WC-1	WATER CLOSET	AMERICAN STANDARD	AFWALL 3351.101	AMERICAN STANDARD	SELECTRONIC 606B.111-PK.HAC & PK00.MAC	ZURN	Z-1203/ Z-1204	-	-	-	WALL MOUNTED, FLUSH VALVE, CARRIER
WC-2	WATER CLOSET	AMERICAN STANDARD	AFWALL 3351.101	AMERICAN STANDARD	SELECTRONIC 606B.111-PK.HAC & PK00.MAC	ZURN	Z-1203/ Z-1204	-	-	-	WALL MOUNTED, FLUSH VALVE, CARRIER

MIXING VALVE SCHEDULE

MARK	SERVING	MAXIMUM FLOW	MINIMUM FLOW	TEMP SET POINT (°F)	INLET	OUTLET	PRESSURE DROP (PSI)	BASIS OF DESIGN		REMARKS
								MANUFACTURER	MODEL	
TMV-1	DOMESTIC HOT WATER	2.3 GPM	0.3 GPM	110	1 1/2"	1 1/2"	10	LEONARD	170-LF-BRK-BV	ANSI/ASSE 1017

DOMESTIC WATER HEATER (ELECTRIC) SCHEDULE

MARK	CAPACITY (GAL.)	TEMP RISE (°F)	WATER LVG (°F)	RECOVERY (GAL/HR)	ELECTRIC COIL		ELECTRICAL DATA			OPERATING WEIGHT (LBS)	BASIS OF DESIGN		REMARKS
					INPUT (KW)	NUMBER OF ELEMENTS	V	Ø	FLA		MANUFACTURER	MODEL	
DWH-1	55	90	140	20	4.5	2	208	1	24	605	A.O. SMITH	ENT-40	ET-1

EXPANSION TANK SCHEDULE

MARK	TANK VOL (GAL)	ACCEPTANCE VOL. (GAL)	SYSTEM VOLUME (GAL)	MAX SYSTEM PRESSURE (PSIG)	SYSTEM FILL PRESSURE (PSIG)	BLADDER PRESSURE (PSIG)	MAXIMUM OPERATING WEIGHT (LBS)	BASIS OF DESIGN		REMARKS
								MANUFACTURER	MODEL	
ET-1	4.5	3.2	30	150	54	35	45	HYDRAPRO	HPTET45	DWH-1

PLUMBING PUMP SCHEDULE

MARK	SERVICE	FLOW (GPM)	HEAD (FT/H20)	TYPE	ELECTRICAL DATA				OPERATING WEIGHT (LBS)	BASIS OF DESIGN		REMARKS
					V	Ø	HP	DRIVE		MANUFACTURER	MODEL	
HWRP-1	DOMESTIC HOT WATER RECIRCULATION	3.2 GPM	5	INLINE CARTRIDGE PUMP	120	1	0.13	DIRECT	7	TACO	IL006	INLET STRAINER, INLET/OUTLET VALVES, OUTLET CHECK VALVES, DEMAND CONTROL VIA OCCUPANCY SENSOR
SP-1	ELEVATOR SUMP PUMP	50 GPM	15	SUBMERSIBLE	120	1	0.5	DIRECT	40	LIBERTY PUMPS	ELV280	SIMPLEX, CONTROLS WITH HYDROCARBON SENSOR

BACKFLOW PREVENTER SCHEDULE

MARK	TYPE	SERVICE	SIZE (IN)	LOCATION	RATED FLOW (GPM)	MAXIMUM PRESSUR DROP (PSI)	BASIS OF DESIGN		REMARKS
							MANUFACTURER	MODEL	
BFP-1	RPZ	DOMESTIC COLD WATER	2"	MECH ROOM	55.0	10.00	WATTS	LF-909M1	INLET STRAINER, INLET/OUTLET VALVES, AIR GAP DEVICE
BFP-2	RPZ	HUMIDIFER	3/4"	SIMULATOR ROOM	10.0	13.00	WATTS	LF-909	INLET STRAINER, INLET/OUTLET VALVES, AIR GAP DEVICE

PLUMBING DRAIN SCHEDULE

MARK	TYPE	OUTLET (IN)	BODY	STRAINER	BASIS OF DESIGN		REMARKS
					MANUFACTURER	MODEL	
FD-1	FLOOR DRAIN	3"	CAST IRON	SS	ZURN	ZS415BS	MEDIUM DUTY GRATE, SEDIMENT BUCKET, IN-LINE TRAP SEAL
FD-2	FLOOR DRAIN	4"	CAST IRON	CAST IRON	ZURN	Z550-Y	WITH TRAP, SEDIMENT BUCKET, IN-LINE TRAP SEAL
FS-1	FLOOR SINK	4"	CAST IRON	CAST IRON	ZURN	Z1920	PROVIDE WITH TRAP, DOME STRAINER
HD-1	HUB DRAIN	2"	SS	-	ZURN	Z1870	

PLUMBING SPECIALITY

MARK	DESCRIBTION	PIPE SIZE	BASIS OF DESIGN		REMARKS
			MANUFACTURER	MODEL	
BV	BALANCING VALVE	1/2"	THERMOMEGATECH	CS-U-S-110	THERMOSTATICALLY CONTROLLED
BWV-1	BACKWATER VALVE	4"	ZURN	Z1095	
HB	HOSE BIBB	3/4"	NIBCO	QT63X	WITH VACUUM BREAKER
NFWH	NON-FREEZE WALL HYDRANT	3/4"	ZURN	Z-1310	WITH BACKFLOW PREVENTER
WHA-1	WATER HAMMER ARRESTER	1"	WATTS	LF15M2	
WM	WATER METER	2"			PROVIDED BY OWNER

PLUMBING PIPE INSULATION SCHEDULE

SYSTEM TYPE	PIPE SIZE	INSULATION CONDUCTIVITY	THICKNESS
DOMESTIC COLD WATER	1 1/2" AND ABOVE	0.21 - 0.28	1.0"
DOMESTIC COLD WATER	1 1/4" AND SMALLER	0.21 - 0.28	0.5"
DOMESTIC HOT WATER	1" AND SMALLER	0.21 - 0.28	1.0"
DOMESTIC HOT WATER RETURN	1" AND SMALLER	0.21 - 0.28	1.0"

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PE095944
01/27/2026

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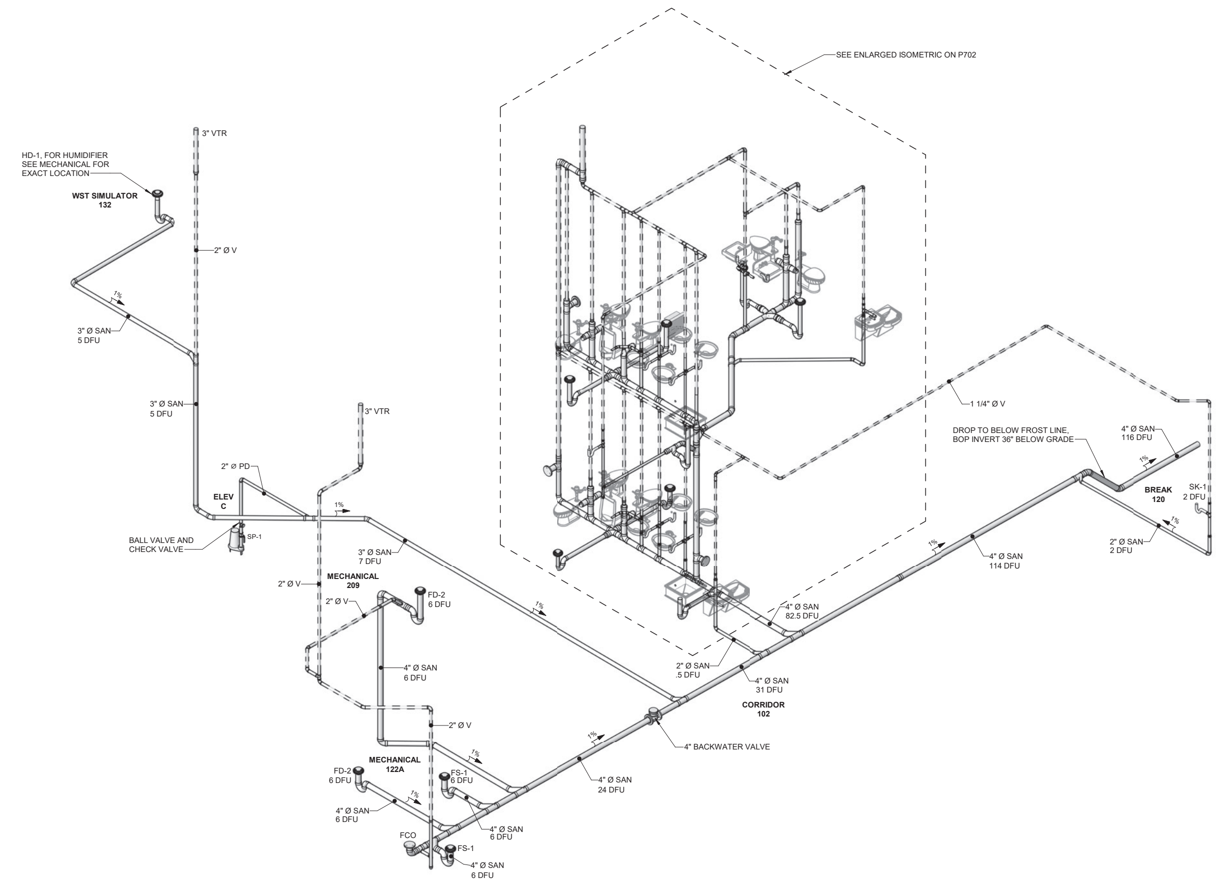
DATE: JANUARY 2026

DRAWING TITLE: PLUMBING SCHEDULES

DRAWING NO.: P601



1 PLUMBING SANITARY & VENT ISOMETRIC

SCALE: NTS

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DATE: JANUARY 2026

DRAWING TITLE: PLUMBING WASTE ISOMETRIC

DRAWING NO.: P701

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23

Project Number: SHYQ149104
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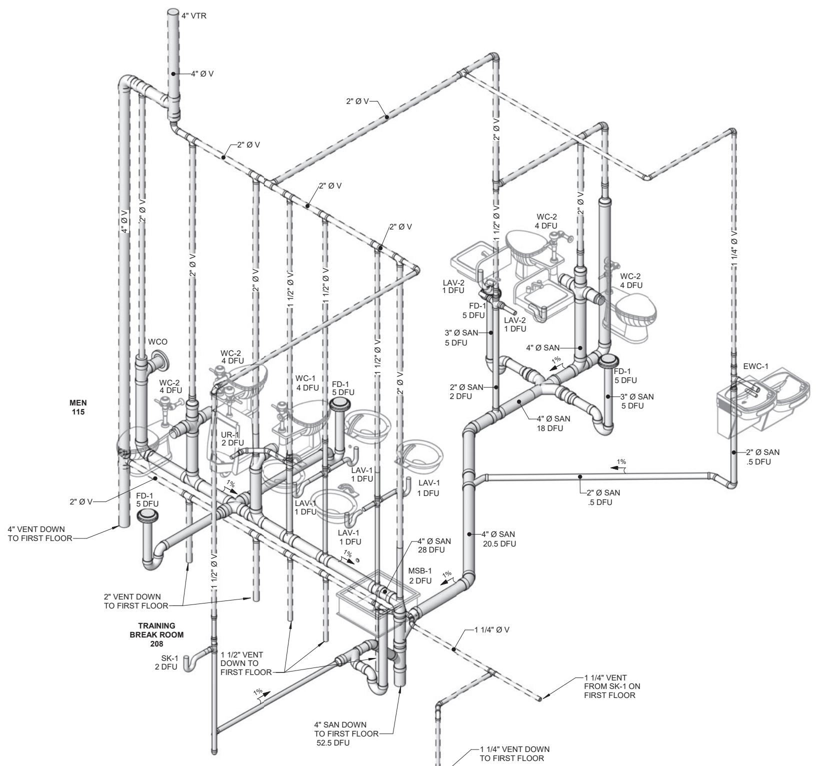
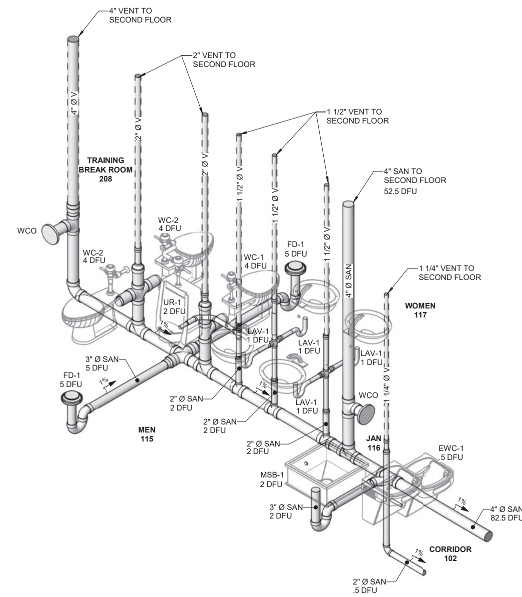


2 **PLUMBING SANITARY & VENT SECOND FLOOR RESTROOMS ISOMETRIC**

SCALE:



1 **PLUMBING SANITARY & VENT FIRST FLOOR RESTROOMS ISOMETRIC**

SCALE: NTS

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SHYQ149104		
DESIGNED: SRG	MODELED: EMC	CHECKED: WKK
DATE: JANUARY 2026		

DRAWING TITLE:
PLUMBING
WASTE ISOMETRIC

DRAWING NO.:
P702

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Central File: BIM360:_M_R23

Project Number: SHYQ149104
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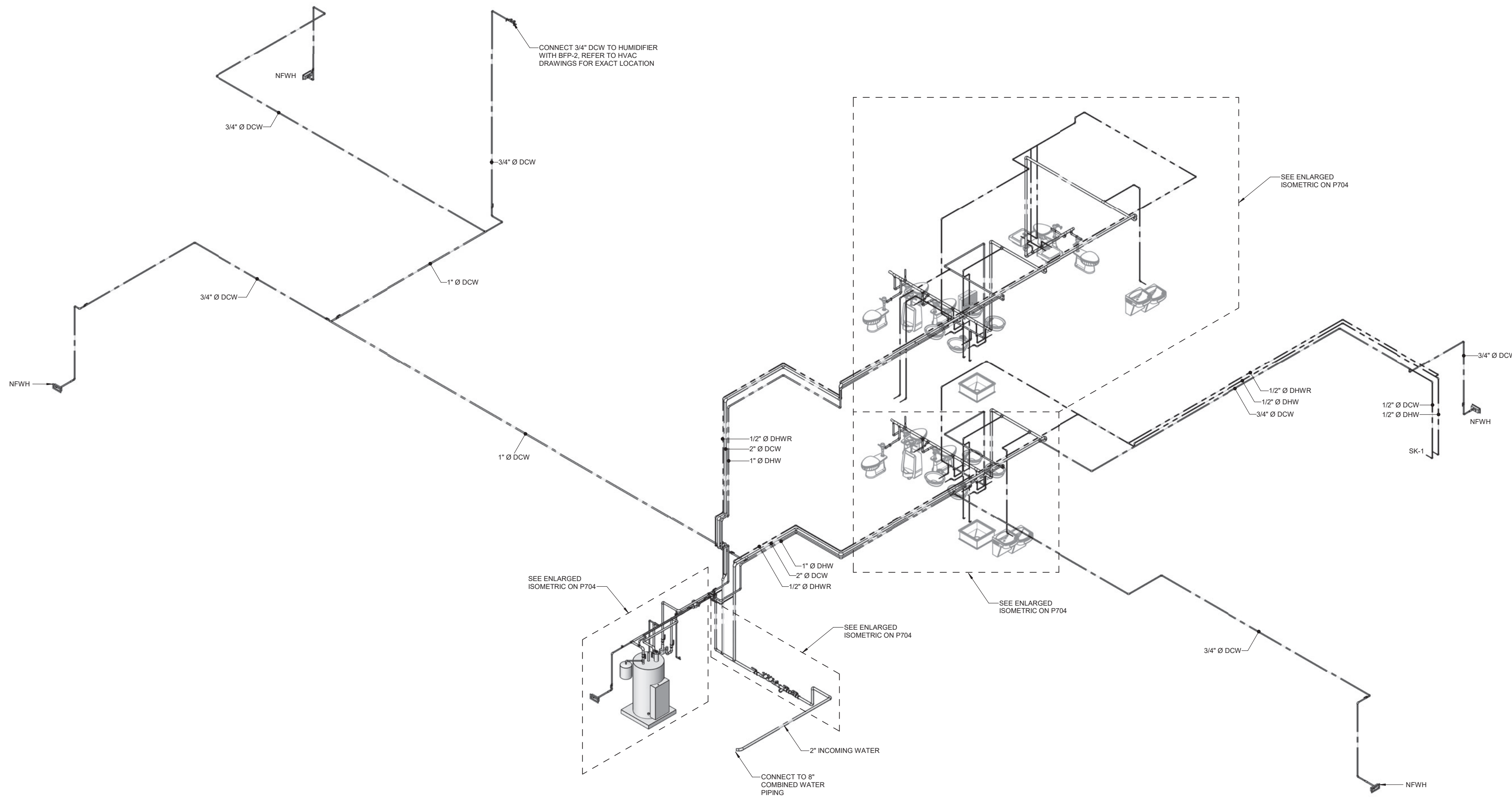

1 PLUMBING DOMESTIC WATER ISOMETRIC
SCALE: NTS

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
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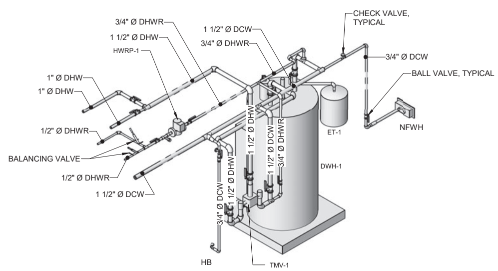
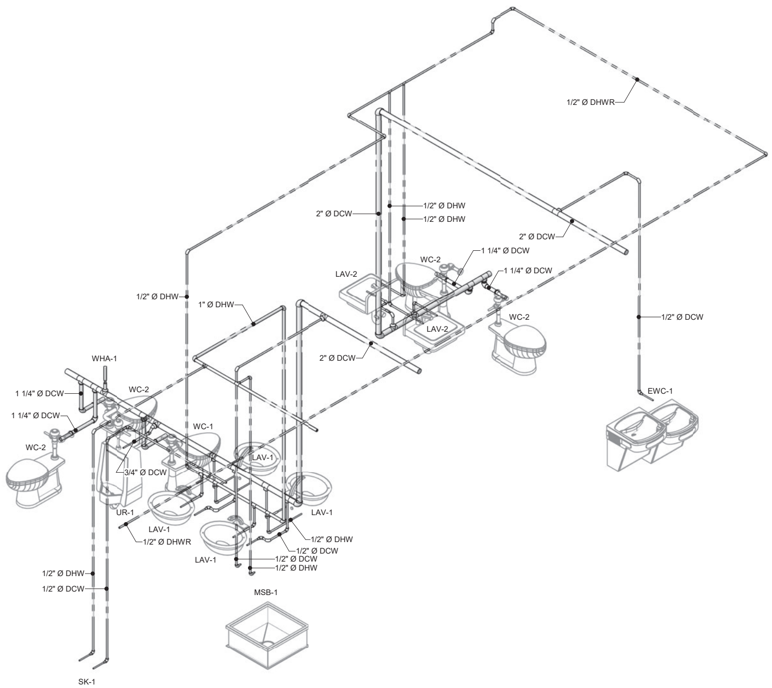
DATE: JANUARY 2026		

DRAWING TITLE:
PLUMBING
DOMESTIC WATER ISOMETRIC

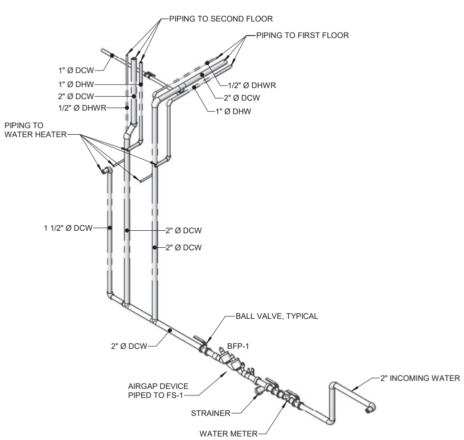
DRAWING NO.:
P703



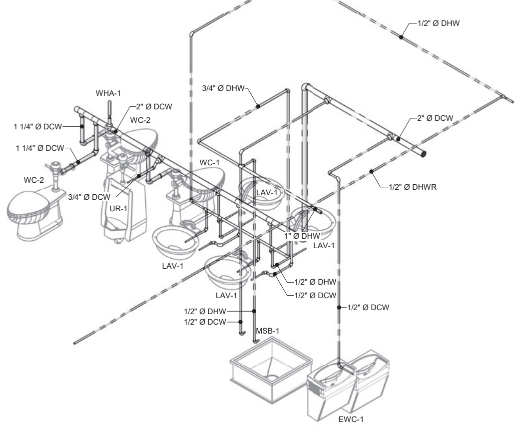
3 PLUMBING DOMESTIC WATER EQUIPMENT
SCALE: NTS



2 PLUMBING DOMESTIC WATER SECOND FLOOR RESTROOMS
SCALE: NTS



4 PLUMBING DOMESTIC WATER BACKFLOW PREVENTER
SCALE: NTS



1 PLUMBING DOMESTIC WATER FIRST FLOOR RESTROOMS
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DATE: JANUARY 2026

DRAWING TITLE: PLUMBING DOMESTIC WATER ISOMETRIC

DRAWING NO.: P704

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	HWS	HOT WATER SUPPLY
ABV	ABOVE	HX	HEAT EXCHANGER
AD	AREA DRAIN, ACCESS DOOR, AIR DRYER	HZ	HERTZ (CYCLES PER SECOND)
ADA	AMERICANS WITH DISABILITIES ACT	ID	INSIDE DIAMETER
ADJ	ADJUST, ADJUSTABLE	IN WG	INCHES OF WATER GAUGE
AF	ANTI-FREEZE	IN, "	INCH, INCHES
AFF	ABOVE FINISHED FLOOR	INFO	INFORMATION
AHU	AIR HANDLING UNIT	INT	INTERIOR
ALUM	ALUMINUM	INV EL	INVERT ELEVATION
AP	ACCESS PANEL	ISOL	ISOLATION
APPROX	APPROXIMATELY		
ARCH	ARCHITECTURAL	kAIC	KILO AMPERE INTERRUPTING CAPACITY
AS	AIR SEPARATOR	KW	KILOWATTS
AST	ABOVEGROUND STORAGE TANK		
ATV	ATMOSPHERIC VENT	L	LENGTH, LONG
AVG	AVERAGE	LAV	LAVATORY
		LBS	POUNDS
BA	BREATHABLE AIR	LDR	LEADER
BAS	BUILDING AUTOMATION SYSTEM	LP	LIQUID PROPANE
BFF	BELOW FINISHED FLOOR	LPCR	LOW PRESSURE CONDENSATE RETURN
BPP	BACKFLOW PREVENTER	LPS	LOW PRESSURE STEAM
BLDG	BUILDING	LRA	LOAD RATED AMPS
BLW	BELOW	LWT	LEAVING WATER TEMPERATURE
BMS	BUILDING MANAGEMENT SYSTEM		
BOD	BASIS OF DESIGN	M	METER
BOT	BOTTOM	MA	MEDICAL AIR
BTU	BRITISH THERMAL UNIT	MAV	MANUAL AIR VENT
BTUH	BRITISH THERMAL UNITS PER HOUR	MAX	MAXIMUM
		MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
C	COMMON		
CA	COMPRESSED AIR	MCA	MINIMUM CIRCUIT AMPACITY
CD	CONDENSATE DRAIN	MECH	MECHANICAL
CFH	CUBIC FEET PER HOUR	MFR	MANUFACTURER
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM
CHWR	CHILLED WATER RETURN	MO	MOTOR OIL
CHWS	CHILLED WATER SUPPLY	MOCP	MAXIMUM OVERCURRENT PROTECTION
CI	CAST IRON	MPS	MEDIUM PRESSURE STEAM
CL	CENTER LINE	MTD	MOUNTED
CLNG	CEILING	MTG	MOUNTING
CNG	COMPRESSED NATURAL GAS	MUW	MAKE UP WATER
CO	CLEANOUT, CARBON MONOXIDE	MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE		
COL	COLUMN	N	NITROGEN
CONC	CONCRETE	N/A	NOT APPLICABLE
COND	CONDENSATE	NC	NORMALLY CLOSED, NOISE CRITERIA
CONN	CONNECTION	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CONT	CONTINUATION		
CONT'D	CONTINUED	NG	NATURAL GAS
CPVC	CHLORINATED POLYVINYL CHLORIDE	NIC	NOT IN CONTRACT
CUH	CABINET UNIT HEATER	NO	NORMALLY OPENED
CV	CLEANING VACUUM, CHECK VALVE	No	NUMBER
CW	COLD WATER	NOM	NOMINAL
CWR	CONDENSER WATER RETURN	NTS	NOT TO SCALE
CWS	CONDENSER WATER SUPPLY		
Cx	COMMISSIONING	O/2, O2	OXYGEN
CxA	COMMISSIONING AUTHORITY	OA	OUTSIDE AIR
		OC	ON CENTER
(D)	DEMOLISH, REMOVE	OFD	OVERFLOW DRAIN
D	DRAIN, DEPTH	OS&Y	OUTSIDE STEM AND YOKE VALVE
DB	DECIBELS	OSD	OPEN SITE DRAIN
DCW	DOMESTIC COLD WATER	OVH	OVERHEAD
DDC	DIRECT DIGITAL CONTROL	OWS	OIL WATER SEPARATOR
DEG. °	DEGREES		
DEH	DEHUMIDIFIER	P	PUMP
DEPT	DEPARTMENT	PB	PUSH BUTTON
DESIG	DESIGNATION	PC	PUMPED CONDENSATE
DHW	DOMESTIC HOT WATER	PD	PRESSURE DROP
DHWR	DOMESTIC HOT WATER RETURN	PG	PRESSURE GAUGE
DI	DEIONIZED WATER	PH	PHASE
DIA, Ø	DIAMETER	PLBG	PLUMBING
DIFF	DIFFERENTIAL, DIFFERENCE	PNEU	PNEUMATIC
DISC	DISCONNECT	POS	POSITION
DN	DOWN	PRESS	PRESSURE
DOAS	DEDICATED OUTSIDE AIR SYSTEM	PROP	PROPELLER
DWG	DRAWING	PRV	PRESSURE REDUCING VALVE
		PS	PRESSURE SWITCH
(E)	EXISTING TO REMAIN	PSC	PUMPED STEAM CONDENSATE RETURN
(ER)	EXISTING RELOCATED	PSI	POUNDS PER SQUARE INCH
EA	EACH	PSIG	POUNDS PER SQUARE INCH GAUGE
EA	EXHAUST AIR	PVC	POLYVINYL CHLORIDE
EDB	ENTERING DRY BULB		
EF	EXHAUST FAN	(RL)	RELOCATED
EFF	EFFICIENCY	R	RISE
EJ	EXPANSION JOINT	RA	RETURN AIR
EL	ELEVATION	RD	ROOF DRAIN, REFRIGERANT DISCHARGE
ELEC	ELECTRIC, ELECTRICAL	REF	REFRIGERANT
ELEV	ELEVATOR	REQ'D	REQUIRED
EQ	EQUAL	RF	RETURN FAN
ESB	EMERGENCY SHUTDOWN BUTTON	RL	REFRIGERANT LIQUID
ET	EXPANSION TANK	RLA	RATED LOAD AMPS
EWB	ENTERING WET BULB	RM	ROOM
EWC	ELECTRIC WATER COOLER	RPM	REVOLUTIONS PER MINUTE
EXT	EXTERIOR	RPZ	REDUCED PRESSURE BFP
		RS	REFRIGERANT SUCTION
(F)	FUTURE	RTU	ROOFTOP UNIT
FCO	FLOOR CLEANOUT		
FCU	FAN COIL UNIT	S	SWITCH
FD	FLOOR DRAIN, FIRE DAMPER	S/S	START/STOP
FDC	FIRE DEPARTMENT CONNECTION	SA	SUPPLY AIR
FF	FINISHED FLOOR	SC	STEAM CONDENSATE RETURN
FG	FUEL GAS	SCCR	SHORT CIRCUIT CURRENT RATING
FLA	FULL LOAD AMPS	SF	SUPPLY FAN, SQUARE FEET
FLEX	FLEXIBLE	SK	SINK
FLR	FLOOR	SP	STATIC PRESSURE
FM	FLOW METER	SPEC	SPECIFICATION
FO	FUEL OIL	SPR	SPRINKLER
FOF	FUEL OIL FILL	SQ	SQUARE
FOR	FUEL OIL RETURN	SQ FT	SQUARE FOOT, SQUARE FEET
FOS	FUEL OIL SUPPLY	SS	STAINLESS STEEL
FOV	FUEL OIL VENT	STD	STANDARD
FPM	FEET PER MINUTE	STL	STEEL
FPS	FEET PER SECOND	STM	STEAM
FRP	FIBERGLASS REINFORCED PLASTIC		
FS	FLOW SWITCH	TEMP	TEMPERATURE, TEMPORARY
FT HD	FEET OF HEAD	TP	TEST PORT, TRAP PRIMER
FT, '	FOOT, FEET	TW	TEPID WATER
FZ	FREEZE, FREEZSTAT	TYP	TYPICAL
°F	DEGREES FAHRENHEIT		
		UL	UNDERWRITERS LABORATORIES
G	GAS	UON	UNLESS OTHERWISE NOTED
GA	GAUGE	UV	UNIT VENTILATOR
GAL	GALLON, GALLONS		
GALV	GALVANIZED	V	VOLTS, VENT
GCO	GRADE CLEANOUT	VD	VOLUME DAMPER
GEN	GENERATOR	VEL	VELOCITY
GPH	GALLONS PER HOUR	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
GUH	NATURAL GAS UNIT HEATER	VIB	VIBRATION
GWR	GLYCOL WATER SUPPLY	VSD	VARIABLE SPEED DRIVE
GWS	GLYCOL WATER RETURN	VTR	VENT THROUGH ROOF
H	HEIGHT	W	WIDTH, WIDE
H2O	WATER	W/	WITH
HB	HOSE BIB	W/O	WITHOUT
HHWR	HEATING HOT WATER RETURN	WC	WATER CLOSET
HHWS	HEATING HOT WATER SUPPLY	WG	WATER GAUGE
HORIZ	HORIZONTAL	WH	WATER HEATER, WALL HYDRANT
HP	HORSEPOWER	WMS	WIRE MESH SCREEN
HPS	HIGH PRESSURE STEAM	WPD	WATER PRESSURE DROP
HTG	HEATING	WSHP	WATER SOURCE HEAT PUMP
HUH	HYDRONIC UNIT HEATER	WT	WEIGHT
HUM	HUMIDIFIER		
HVLS	HIGH VOLUME, LOW SPEED	ZN	ZONE
HWR	HOT WATER RETURN		

PIPING

SYMBOL	DESCRIPTION
	PIPING TURNING UP
	PIPING TURNING DOWN
	TEE DOWN
	PIPE BRANCH BOTTOM TAKEOFF
	PIPE BRANCH TOP TAKEOFF
	VALVE IN VERTICAL PIPE
	CAP
	FLOW DIRECTION
R/D	PIPE SLOPE RISE/DROP
	PIPE RISER UP/DOWN
	CONCENTRIC REDUCER/INCREASER
	ECCENTRIC REDUCER/INCREASER (FOB)
	UNION
	PIPE CONTINUATION
W H	EXPANSION LOOP (WxH)
	PIPE ANCHOR
	FLEXIBLE PIPE CONNECTOR
EJ	EXPANSION JOINT
	PIPE GUIDE
	STEAM TRAP
	BLIND FLANGE
T	TEMPERATURE SENSOR
P	PRESSURE SENSOR
DP	DIFFERENTIAL PRESSURE TRANSDUCER
FS	FLOW SWITCH
FM	FLOW METER
	VENTURI FLOW METER
	PUMP

LINES & REFERENCE SYMBOLS

	NEW WORK LINE WEIGHT
	DEMOLITION WORK LINE WEIGHT
	AREA OF DEMOLITION
	EXISTING WORK LINE WEIGHT
	POINT OF CONNECTION
	TERMINATION POINT OF DEMOLITION
#	SHEET NOTE REFERENCE
A	REVISION REFERENCE
E-1	EQUIPMENT TAG
PB	PUSH BUTTON
	NORTH ARROW

CD-1 8" 150 — CD-1 150 — CD-1-150 — NECK — TYPE — DIFFUSER, REGISTER, OR GRILLE DESIGNATION AND AIRFLOW TAG(S) — CFM

VAV-1 8" 150 — DESIGNATION — DUCT INLET/PIPE SIZE — CFM/GPM — VAV/AIR VALVE TAG

1 VIEW TITLE SCALE: — INDICATES PLAN/DETAIL NUMBER — PLAN/DETAIL TITLE — SCALE (AS REQUIRED)

1 M001 WHP — INDICATES PLAN/DETAIL NUMBER — INDICATES DRAWING ON WHICH DRAWING SECTION APPEARS

DUCTWORK

SYMBOL, DOUBLE LINE	DESCRIPTION
20x12	DUCTWORK, SIZE AS INDICATED
20x12	DUCTWORK, WITH SOUND OUTLINING
	VANED ELBOW
	UN-VANED ELBOW
	RADIUS ELBOW
	VANED TEE
	UN-VANED TEE
	SUPPLY DUCT TURNING UP AND DOWN
	RETURN DUCT TURNING UP AND DOWN
	EXHAUST/RELIEF DUCT TURNING UP AND DOWN
R/D	DUCT RISE/DROP IN AIRFLOW DIRECTION
	DUCT TRANSITION, SQUARE TO SQUARE
	DUCT TRANSITION, SQUARE TO ROUND
	DUCT CAPPED
	45 DEGREE TAP
	CONICAL TAP
	SPUN-IN RUNOUT FITTING W/ FLEX. & VD
	FLEXIBLE DUCT
	FLEXIBLE CONNECTION
	MANUAL VOLUME DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
BDD	BACKDRAFT DAMPER
MD	MOTORIZED DAMPER
BD	BAROMETRIC DAMPER
	DUCT CONTINUATION
	SUPPLY AIR FLOW DIRECTION
OA	OUTSIDE AIR FLOW DIRECTION
	RETURN/EXHAUST AIR FLOW DIRECTION
	RETURN, EXHAUST GRILLE OR REGISTER
	SUPPLY AIR DIFFUSER, 4-WAY BLOW
	SUPPLY AIR DIFFUSER, 3-WAY BLOW
	SUPPLY AIR DIFFUSER, 2-WAY BLOW
	SUPPLY AIR DIFFUSER, 1-WAY BLOW
	LINEAR SLOT DIFFUSER
UC	UNDERCUT DOOR
DL 12x12	DOOR LOUVER
AD AD	DUCT ACCESS DOOR
T T	THERMOSTAT, MASTER THERMOSTAT
TS	TEMPERATURE SENSOR
H	HUMIDISTAT
FZ	FREEZESTAT
HS	HUMIDITY SENSOR
D	DUCT SMOKE DETECTOR
CO2	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
NOx	NITROGEN OXIDES SENSOR
SOx	SULFUR OXIDES SENSOR
	GAS CONCENTRATION MONITOR
SP	STATIC PRESSURE SENSOR
AFMS	AIR FLOW MEASURING STATION
IAQ	INDOOR AIR QUALITY SENSOR
S	SWITCH OR TOGGLE SWITCH
TIM	MANUAL TIMER SWITCH
HOA	HAND/OFF/AUTO SWITCH
PB	SAFETY SWITCH/PUSH BUTTON
1 2	STATIC PRESSURE CLASSIFICATION DESIGNATION (IN. W.G.)

MECH VALVES

SYMBOL	DESCRIPTION
	GEN. SHUTOFF VALVE (BALL, GATE, BUTTERFLY)
	GATE VALVE
	GLOBE VALVE
	OUTSIDE STEM & YOKE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GAS COCK
	PRESSURE REDUCING VALVE
	CALIBRATED BALANCING VALVE
	CONTROL VALVE, TWO-WAY (ELECTRIC)
	CONTROL VALVE, THREE-WAY (ELECTRIC)
	THREE-WAY MANUAL VALVE
	SOLENOID VALVE
	RELIEF/SAFETY VALVE
	STRAINER
	STRAINER WITH DRAIN VALVE AND CAP
	PRESSURE GAUGE WITH COCK
	THERMOMETER
AAV	AUTOMATIC AIR VENT (EXTEND TO DRAIN)
MAV	MANUAL AIR VENT
	PRESSURE/TEMPERATURE TEST PORT
	AQUASTAT
	NORMALLY CLOSED PORT (NC)

DESIGN CRITERIA

- IBC - INTERNATIONAL BUILDING CODE, 2021
- ASHRAE STANDARD 62.1 - 2022 - VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY
- ASHRAE STANDARD 90.1 - 2016 - ANSI/ASHRAE/IES 90.1, ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS
- ASHRAE STANDARD 135 - BACNET- A DATA COMMUNICATION PROTOCOL FOR BUILDING AUTOMATION AND CONTROL NETWORKS
- NFPA 54 - NATIONAL FUEL GAS CODE
- UFC 1-200-02, 2022 CH2 - HIGH PERFORMANCE AND SUSTAINABLE DESIGN REQUIREMENTS
- UFC 3-410-01, 2024 CH9 - HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS
- UFC 3-410-02, 2021 CH2 - DIRECT DIGITIAL CONTROL FOR HVAC AND OTHER BUILDING CONTROL SYSTEMS
- UFC 3-070-01, 2018 - UTILITY MONITORING AND CONTROL SYSTEM (UMCS) FRONT END AND INTEGRATION
- UFC 4-010-01, 2024 CH3 - DOD MINIMUM ANTI-TERRORISM STANDARDS FOR BUILDINGS
- UFC 3-600-01, 2021 CH6 - FIRE PROTECTION ENGINEERING FOR FACILITIES

DESIGN CONDITIONS		
OUTSIDE AIR	SUMMER:	90°F DB / 74°F WB
	WINTER:	15°F DB
OFFICES, CORRIDORS, OPEN OFFICE AREAS	SUMMER:	78°F DB, 50% RH
	WINTER:	68°F DB
MECH / ELEC ROOMS	SUMMER:	85 °F DB
	WINTER:	55 °F DB
SIMULATOR BAY	SUMMER:	75°F DB, 50% RH
	WINTER:	70 °F DB, 50% RH
RESTROOMS/ JAN CLOSETS	SUMMER:	85 °F DB
	WINTER:	68 °F DB
COMMUNICATION ROOMS	SUMMER:	76°F DB
	WINTER:	76 °F DB
VESTIBULES	SUMMER:	N/A
	WINTER:	50 °F DB

GENERAL NOTES

1. NOT ALL ABBREVIATIONS, LINE TYPES, OR SYMBOLS MAY APPEAR ON THESE CONTRACT DOCUMENTS.
2. DRAWINGS SHALL BE CONSIDERED DIAGRAMMATIC AND ARE INTENDED TO INDICATE CAPACITY, SIZE, APPROXIMATE LOCATION AND GENERAL ARRANGEMENT. WHILE THE DRAWINGS ARE GENERALLY TO SCALE AND ARE AS ACCURATE AS THE SCALE WILL PERMIT, DIMENSIONS SHALL BE CONFIRMED IN THE FIELD.
3. THE CONTRACTOR SHALL COMPLY WITH THE LAWS, ORDINANCES, RULES AND REGULATIONS OF LOCAL AND STATE GOVERNMENTAL AUTHORITIES; OF THE NATIONAL FIRE PROTECTION ASSOCIATION AS INTERPRETED BY THE ENFORCING AUTHORITY HAVING JURISDICTION; AND OF PUBLIC UTILITIES HAVING CONNECTION WITH ANY OF THE SYSTEMS HEREIN SPECIFIED.
4. INSTALL EQUIPMENT IN A SERVICEABLE MANNER.
5. PROVIDE ALL NEW AND REUSED WALL PENETRATIONS WITH A SLEEVE/CONDUIT FOR SERVICES PENETRATING IT. THIS INCLUDES, BUT IS NOT LIMITED TO: DUCTWORK, PIPING, POWER, AND CONTROL WIRING.
6. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY OF THE FOREGOING AUTHORITIES, AND PAY FOR ALL OTHER COSTS IN CONNECTION WITH THE WORK. CERTIFICATES SHALL BE IN DUPLICATE AND SHALL BE DELIVERED TO THE GOVERNMENT.
7. THE SITE, LOCATION, AND ROUTING OF SYSTEMS INDICATED TO HAVE NEW CONNECTIONS MADE TO THEM ARE SHOWN AS ACCURATELY AS FIELD CONDITIONS PERMIT. CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY EXAMINE THE CONTRACT DRAWINGS. ALL EXISTING CONDITIONS SHALL BE EXAMINED AND THEIR EXACT LOCATIONS VERIFIED. THE CONTRACTOR SHALL REPORT TO THE ENGINEER ANY CONDITIONS WHICH MIGHT MAKE INSTALLATION OF REQUIRED EQUIPMENT A PROBLEM. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO INVESTIGATE CONDITIONS OR MISUNDERSTANDINGS OF THE CONTRACTUAL REQUIREMENTS.
8. THE CONTRACTOR SHALL INSTALL AND CONNECT EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE BEST ENGINEERING PRACTICE AND, UNLESS OTHERWISE SHOWN OR SPECIFIED, FOLLOW THE MANUFACTURER'S PRINTED INSTALLATION REQUIREMENTS AND RECOMMENDATIONS, AND FURNISH AND INSTALL REQUIRED AUXILIARY ITEMS TO PROVIDE A COMPLETE INSTALLATION.
9. THE CONTRACTOR SHALL REPAIR WALLS, CEILING, FLOORS, ETC., THAT ARE REQUIRED TO BE PENETRATED, OR OTHERWISE DISTURBED. THE REPAIRS SHALL BE WITH MATERIALS AND FINISHES TO MATCH EXISTING. FIRE WALL PENETRATIONS SHALL BE SEALED WITH SUITABLE MATERIALS TO PRESERVE FIRE WALL INTEGRITY.
10. THE CONTRACTOR SHALL REMOVE EQUIPMENT NOT INDICATED TO BE REUSED TO A DESIGNATED LOCATION AT THE PROJECT SITE. AFTER THE EQUIPMENT HAS BEEN ASSEMBLED FOR THE GOVERNMENT'S INSPECTION AND POSSIBLE RETENTION, ALL EQUIPMENT NOT TO BE RETAINED BY THE GOVERNMENT SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
11. COORDINATE WITH OTHER TRADES TO AVOID INTERFERENCE AMONG MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL, PLUMBING, ETC. PROVIDE NECESSARY OFFSETS IN PIPING, DUCTWORK AND FITTINGS ETC., REQUIRED TO PROPERLY INSTALL WORK WITHOUT INTERFERENCES.
12. BUILDING SYSTEMS SHALL REMAIN IN SERVICE UNLESS INDICATED OTHERWISE. OUTAGES OR INTERRUPTIONS SHALL BE KEPT TO A MINIMUM DURATION. NOTIFY THE GOVERNMENT 48 HOURS IN ADVANCE OF ANY OUTAGE OR INTERRUPTION. IF TEMPORARY CONNECTIONS ARE NECESSARY TO ASSURE THIS CONTINUITY OF SERVICES, THEY SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE GOVERNMENT AND SHALL BE REMOVED WHEN NO LONGER NEEDED.
13. THE CONTRACTOR SHALL ARRANGE AND EXECUTE HIS WORK SUCH THAT ANY CONNECTIONS, BOTH TEMPORARY OR PERMANENT, TO, OR REARRANGEMENT OF, PRESENT EQUIPMENT, PIPING, ETC., SHALL BE MADE IN SUCH A MANNER AS TO ASSURE FULL RESUMPTION OF SERVICE AT THE TIME DESIGNATED BY THE GOVERNMENT.
14. THE CONTRACTOR SHALL LOCATE EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS. FURNISH ACCESS DOORS AS REQUIRED FOR BETTER ACCESSIBILITY. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ALLOW FOR ACCESSIBILITY, BUT CHANGES OF MAGNITUDE WHICH INVOLVE EXTRA COSTS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL.
15. ALL DIMENSIONS FOR EXISTING PIPING AND DUCTWORK SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. WHERE NEW WORK CONNECTIONS ARE INDICATED. NEW DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.
16. OPENINGS REMAINING IN EXISTING PIPING/DUCTWORK AS A RESULT OF DEMOLITION SHALL BE SEALED WITH AN AIRTIGHT/WATERTIGHT SHEET METAL CAP. WHERE EXISTING SYSTEMS ARE INSULATED, WORK SHALL INCLUDE REPAIR AND REPLACEMENT OF INSULATION EITHER DAMAGED OR REMOVED AS A RESULT OF DEMOLITION.
17. PIPING SCOPE REQUIREMENTS: HORIZONTAL CONDENSATE DRAINAGE PIPING SHALL BE INSTALLED IN UNIFORM ALIGNMENT AT UNIFORM SLOPES. THE MINIMUM SLOPE OF HORIZONTAL CONDENSATE DRAINAGE PIPE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

SIZE (INCHES)	MINIMUM SLOPE (INCHES PER FOOT)
2-1/2 OR LESS	1/4

18. TO MEET ANIT-TERRORISM / FORCE PROTECTION REQUIREMENTS OF UFC 4-010-01, ALL FRESH AIR INTAKES WILL BE LOCATED A MINIMUM OF 10 FEET ABOVE THE GROUND. NO OPAQUE FENCING OR WALLS WILL BE USED TO HIDE GROUND MOUNTED EQUIPMENT TO PERMIT THE OBSERVATION OF DEVICES PLACED NEAR THEM.

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — MICHAEL JOHN MORRISSEY — Digitally signed by Michael John Morrissey — PE095944 — 01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL LEGEND, GENERAL NOTES, & ABBREVIATIONS

DRAWING NO.: **M001**

Local File: Autodesk Docs://070046-PANNG_E-C_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
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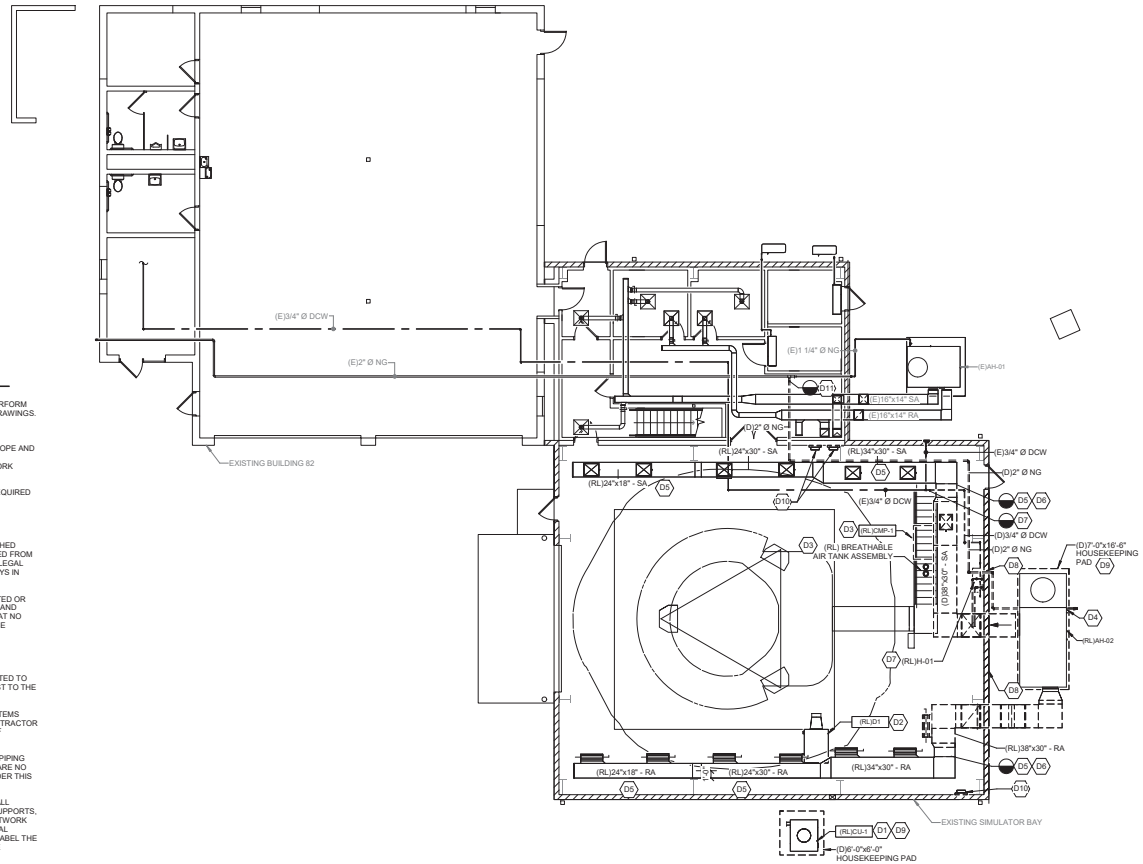
GENERAL DEMOLITION NOTES

1. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT AS REQUIRED TO PERFORM THE DEMOLITION SCOPE OF WORK AS INDICATED ON THE CONTRACT DRAWINGS. ALL DEMOLITION WORK SHALL BE PERFORMED AND COMPLETED IN A PROFESSIONAL MANNER TO THE SATISFACTION OF THE OWNER.
2. THE DEMOLITION DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE SCOPE AND INTENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ALL DEMOLITION WORK TO THE EXTENT TO COORDINATE WITH THE NEW WORK SCOPE.
3. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK, AND REQUIRED PHASING AND OUTAGES, IN ADVANCE WITH THE OWNER.
4. THE CONTRACTOR SHALL PERFORM ALL DEMOLITION WORK TO LIMIT DISTURBANCES TO OCCUPIED AREAS.
5. ALL EQUIPMENT, MATERIALS, AND SERVICES INDICATED TO BE DEMOLISHED SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE WORK SITE, HAULED FROM THE PREMISES, AND DISPOSED OF IN A LEGAL MANNER. THE CONTRACTOR SHALL COORDINATE ALL RIGGING PATHWAYS IN ADVANCE WITH THE OWNER.
6. ALL EQUIPMENT, MATERIALS, AND SERVICES INDICATED TO BE RELOCATED OR SALVAGED SHALL BE FULLY PROTECTED BY THE CONTRACTOR DURING AND AFTER ITS REMOVAL. ANY DAMAGE DURING REMOVAL WORK SHALL BE AT NO COST TO THE OWNER. ALL EQUIPMENT AND MATERIALS INDICATED TO BE RELOCATED SHALL BE PROTECTED.
7. ALL EQUIPMENT AND MATERIALS INDICATED TO BE SALVAGED SHALL BE RETURNED TO THE OWNER IN ITS FULLY FUNCTIONING FORM.
8. PROTECT ALL EXISTING EQUIPMENT, MATERIALS, AND SERVICES INDICATED TO REMAIN. ANY DAMAGE DURING DEMOLITION WORK SHALL BE AT NO COST TO THE OWNER.
9. ALL LOCATIONS OF EXISTING EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS INDICATED ON THE CONTRACT DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF DEMOLITION WORK.
10. PRIOR TO THE DEMOLITION OF EXISTING EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS, THE CONTRACTOR SHALL FIELD VERIFY THAT THE SYSTEMS ARE NO LONGER IN SERVICE TO ANY AREAS OUTSIDE THE SCOPE OF WORK UNDER THIS CONTRACT.
11. ALL EXISTING EQUIPMENT SYSTEMS INDICATED TO BE DEMOLISHED SHALL REMOVED IN ITS ENTIRETY. REMOVE ALL ASSOCIATED HANGERS AND SUPPORTS, CONCRETE SUPPORT PADS, WIRING AND CONTROLS, DRAIN PANS, DUCTWORK AND PIPING CONNECTIONS, AND ACCESSORIES. REMOVE ALL ELECTRICAL CONNECTIONS, POWER WIRING, AND CONDUIT BACK TO THE SOURCE. LABEL THE EXISTING CIRCUIT BREAKER ACCORDINGLY AND COORDINATE WITH THE ELECTRICAL CONTRACTOR.
12. ALL EXISTING DUCTWORK SYSTEMS INDICATED TO BE DEMOLISHED SHALL BE REMOVED IN ITS ENTIRETY. REMOVE ALL ASSOCIATED HANGERS AND SUPPORTS, FITTINGS, INSULATION, DAMPERS, AIR DEVICES, AND ACCESSORIES. EXISTING DUCTWORK SHALL BE PATCHED AND SEALED AIR-TIGHT.
13. PROVIDE ALL REQUIRED CUTTING OF EXISTING CEILINGS, PARTITIONS, WALLS, FLOORS, AND SLABS DUE TO DEMOLITION WORK. PATCH, SEAL, AND REPAIR TO MATCH EXISTING.
14. WHERE REQUIRED DUE TO DEMOLITION WORK, PROVIDE FIRESTOPPING AT ALL OPENINGS TO MATCH AND MAINTAIN THE EXISTING FIRE-RATED CONSTRUCTION ASSEMBLY.
15. ALL REFRIGERANT SHALL BE EVACUATED, RECOVERED, AND DISPOSED OF IN ACCORDANCE WITH LOCAL AND EPA REGULATIONS REQUIREMENTS PRIOR TO ANY DEMOLITION. CONTRACTOR TO PROVIDE A MANIFEST OF DISPOSAL TO THE OWNER.



1 **MECHANICAL FIRST FLOOR HVAC DEMOLITION PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET M001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. UNLESS NOTED OTHERWISE, ALL EXISTING HVAC EQUIPMENT AND PIPING IS EXISTING TO REMAIN.

D# DEMOLITION SHEET KEYNOTES

1. COORDINATE WITH SIMULATOR MANUFACTURER TO RELOCATE AIR COOLED CONDENSING UNIT FOR SIMULATOR FLIGHT DECK BY SIMULATOR MANUFACTURER. FIELD COORDINATE UNIT LOCATION WITH GOVERNMENT AND SIMULATOR MANUFACTURER.
2. COORDINATE WITH SIMULATOR MANUFACTURER TO RELOCATE AIR COCKPIT AIR CONDITIONING UNIT AND ASSOCIATED RAIL SUPPORT FRAME WITH FLOOR-MOUNTED CONDENSATE PUMP FOR SIMULATOR FLIGHT DECK. RELOCATION OF COCKPIT AIR CONDITIONING UNIT, ASSOCIATED CONDENSING UNIT, SUPPLY AIR FLEX DUCT, AND ALL ASSOCIATED ACCESSORIES BY SIMULATOR MANUFACTURER.
3. COORDINATE WITH SIMULATOR MANUFACTURER. SIMULATOR MANUFACTURER TO RELOCATE BREATHING AIR COMPRESSOR, CMP-1, AND ASSOCIATED BREATHABLE AIR TANK ASSEMBLY, FOR SIMULATOR FLIGHT DECK. EXISTING COMPRESSED AIR PIPING TO BE REMOVED BY SIMULATOR MANUFACTURER.
4. CAREFULLY DISCONNECT DISCHARGE AIR TEMPERATURE SENSOR, WIRE TO AH-02, FOR RE-USE. DISCONNECT EXISTING SUPPLY AND RETURN DUCTWORK. TEMPORARILY CAP DUCTWORK OPENING TO PROTECTION FROM DEBRIS. RELOCATE AH-02 TO NEW SIMULATOR BUILDING. UNBOLT AH-02 FROM EXISTING DUNNAGE. DEMOLISH ASSOCIATED DUNNAGE.
5. CAREFULLY DISCONNECT AND PREPARE TO RELOCATE SUPPLY AND RETURN DUCTWORK. REPAIR ANY INSULATION DAMAGED DURING RELOCATION. REMOVE ASSOCIATED HANGERS AND SUPPORTS.
6. CAREFULLY DISCONNECT EXISTING SUPPLY AND RETURN DUCTWORK FROM EXISTING VESDA SMOKE DETECTION SYSTEM PIPING. VESDA SYSTEM TO BE RELOCATED BY OTHERS.
7. CAREFULLY DISCONNECT EXISTING 3/4" DCW FROM HUMIDIFIER AND DEMOLISH DCW BACK TO POINT INDICATED. CAREFULLY DISCONNECT STEAM HUMIDIFIER FROM WALL AND DUCTWORK. PREPARE TO RELOCATE EXISTING HUMIDIFIER. ASSOCIATED STEAM DISPERSION COIL, ASSOCIATED CONTROLS AND ACCESSORIES.
8. REPAIR AND PATCH RESULTANT WALL OPENING TO MATCH EXISTING. SEAL OPENING WEATHER TIGHT.
9. AFTER RELOCATION OF HVAC EQUIPMENT, DEMOLISH EXISTING CONCRETE HOUSEKEEPING PAD.
10. VESDA SMOKE DETECTION SYSTEM TO BE RELOCATED BY SIMULATOR MANUFACTURER.
11. PURGE EXISTING NATURAL GAS PIPING AND DISCONNECT 2"ø NG FROM AH-02, AND DEMOLISH 2"ø NG BACK TO POINT INDICATED AND CAP PIPING.

TRUE NORTH

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

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HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL FIRST FLOOR HVAC DEMOLITION PLAN

DRAWING NO.: **MD101**

Local File: Autodesk Docs://070646-PANG_EC_130J_Simulator/070646_MC130J_Sim_MEP_R23.rvt
Central File: BM1650_M_R23
Project Number: SHYQ149104
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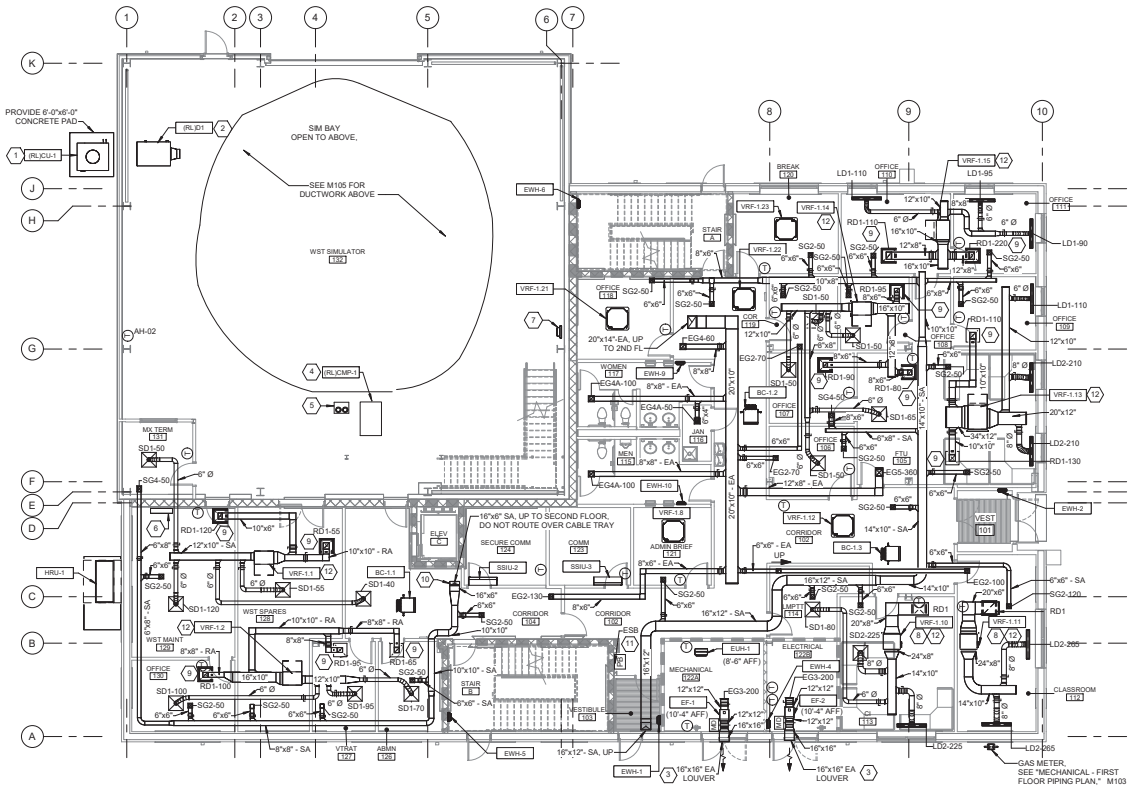

1 MECHANICAL FIRST FLOOR HVAC PLAN

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

GENERAL NOTES

1. SEE SHEET M001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. LABEL ALL DUCTWORK, CONTROLS, AND EQUIPMENT.
3. FOR ALL EXTERIOR WALL/ROOF PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. FOR DUCTWORK PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE DAMPERS AND FIRE CAULK AS REQUIRED.

SHEET KEYNOTES

1. PROVIDE 6'-0"x6'-0" CONCRETE HOUSEKEEPING PAD. AIR COOLED CONDENSING UNIT, CU-1, TO SERVE SIMULATOR FLIGHT DECK. TO BE RELOCATED BY SIMULATOR MANUFACTURER.
2. AIR HANDLING UNIT ON RAIL SUPPORT FRAME WITH FLOOR-MOUNTED CONDENSATE PUMP FOR SIMULATOR FLIGHT DECK TO BE RELOCATED BY SIMULATOR MANUFACTURER. SIMULATOR MANUFACTURER TO RELOCATE AND INSTALL EXISTING SUPPLY AIR FLEX DUCT TO SIMULATOR.
3. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOUVER REQUIREMENTS. PROVIDE EXHAUST AIR DUCT FULL-SIZE OF LOUVER.
4. BREATHABLE AIR COMPRESSOR, TO BE RELOCATED BY SIMULATOR MANUFACTURER. COORDINATE WITH SIMULATOR MANUFACTURER TO PROVIDE COMPRESSED AIR PIPING AND ASSOCIATED SPECIALTIES TO SIMULATOR FLIGHT DECK.
5. BREATHABLE AIR TANK ASSEMBLY, TO BE RELOCATED BY SIMULATOR MANUFACTURER.
6. PROVIDE BAS CONTROL PANEL(S).
7. RELOCATED VESDA SMOKE DETECTION SYSTEM AND ACCESSORIES. VESDA SYSTEM TO BE RELOCATED BY SIMULATOR MANUFACTURER.
8. PROVIDE 20"x8" DUCT UP FROM RETURN GRILLE. RD1 TO DUCTED VRF UNIT RETURN DUCT. SEE 1/M501,"TYPICAL DUCTWORK" DETAIL.
9. PROVIDE 20"x20"x4" DUCT PLENUM CAP ON FROM RD1. CONNECT RETURN AIR DUCT TO 20"x20" PLENUM CAP. SEE 1/M501,"TYPICAL DUCTWORK" DETAIL.
10. PROVIDE MAN BARS AT SECURE CEILING PENETRATION. SEE MECHANICAL DETAILS "DUCT AND OPENING SECURE AREA PENETRATION" DETAIL, 5/M501 AND "MAN BAR ELEVATION" DETAIL, 6/M501.
11. PROVIDE EMERGENCY HVAC SHUTDOWN BUTTON (ESB) MOUNTED ON WALL. PROVIDE CONTROL WIRING. FIELD COORDINATE EXACT LOCATION WITH GOVERNMENT.
12. PROVIDE DUCTED FAN COIL UNIT WITH SECONDARY DRAIN PAN AND CONDENSATE OVERFLOW SWITCH. DRAIN PAN TO HAVE 3/4" DRAIN CONNECTION WITH SHUTOFF VALVE.

TRUE NORTH

0' 8' 16'

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

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MICHAEL JOHN MORRISSEY
Digitally signed by Michael John Morrissey
PE095944
01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

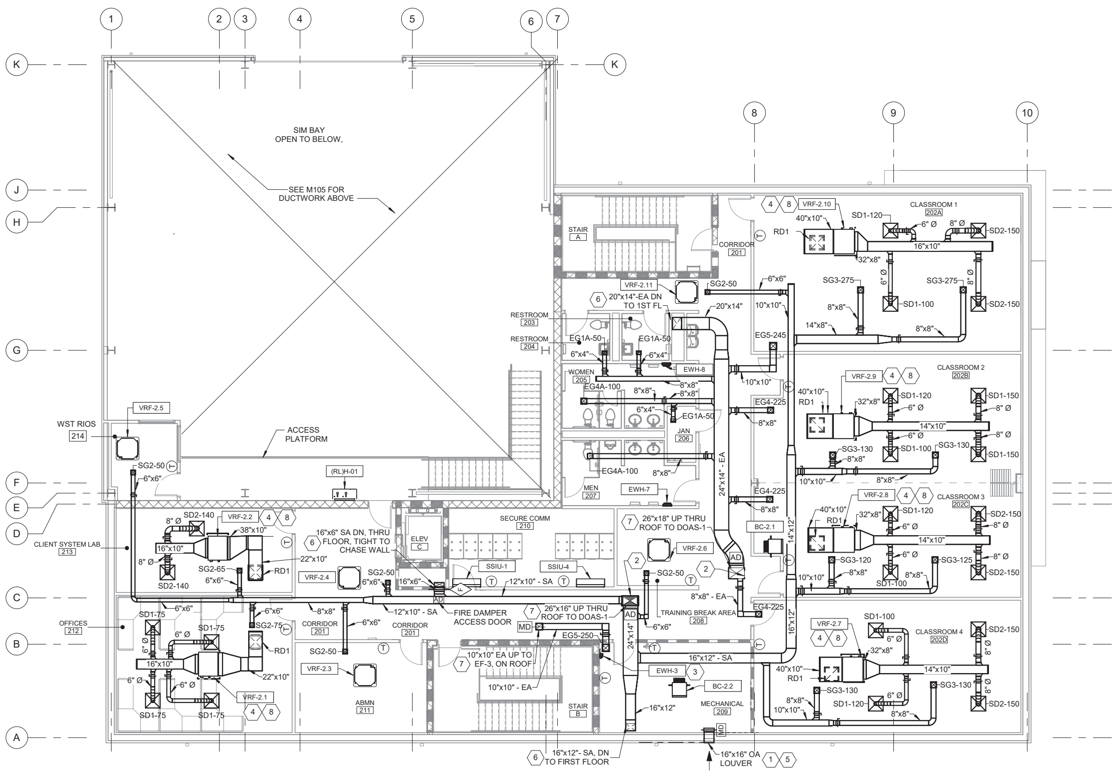
DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL FIRST FLOOR HVAC PLAN

DRAWING NO.: **M101**

Project Number: SHYQ149104
1/26/2026 8:04: 16 PM
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM1690_M_R23



1 MECHANICAL SECOND FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET M001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. LABEL ALL DUCTWORK, CONTROLS, AND EQUIPMENT.
3. FOR ALL EXTERIOR WALL/ROOF PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. FOR DUCTWORK PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTOR IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE DAMPERS AND FIRE CAULK AS REQUIRED.

SHEET KEYNOTES

1. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOUVER REQUIREMENTS. PROVIDE MOTORIZED DAMPER, 24V, FULL SIZE OF LOUVER.
2. PROVIDE DUCT SMOKE DETECTOR AND ACCESS DOOR FOR DOAS-1 SUPPLY / EXHAUST DUCTWORK
3. ROUTE DUCT DOWN TO EXHAUST GRILLE, INSTALL EXHAUST GRILLE 8'-0" AFF.
4. PROVIDE 20"x20" DUCT UP FROM R4 TO DUCTED VRF UNIT RETURN DUCT. SEE 1/M501,"TYPICAL DUCTWORK" DETAIL.
5. PROVIDE MAN BARS AT SECURE WALL PENETRATION. SEE MECHANICAL DETAILS "DUCT AND OPENING SECURE AREA PENETRATION" DETAIL, 5/M501 AND "MAN BAR ELEVATION" DETAIL, 6/M501.
6. PROVIDE MAN BARS AT SECURE FLOOR PENETRATION. SEE MECHANICAL DETAILS "DUCT AND OPENING SECURE AREA PENETRATION" DETAIL, 5/M501 AND "MAN BAR ELEVATION" DETAIL, 6/M501.
7. PROVIDE MAN BARS AT SECURE ROOF PENETRATION. SEE MECHANICAL DETAILS "DUCT AND OPENING SECURE AREA PENETRATION" DETAIL, 5/M501 AND "MAN BAR ELEVATION" DETAIL, 6/M501.
8. PROVIDE DUCTED FAN COIL UNIT WITH SECONDARY DRAIN PAN AND CONDENSATE OVERFLOW SWITCH. DRAIN PAN TO HAVE 3/4" DRAIN CONNECTION WITH SHUTOFF VALVE.

TRUE NORTH
0' 8' 16'
SCALE: 1/8" = 1'-0"

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HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL SECOND FLOOR HVAC PLAN

DRAWING NO.: M102

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23

Project Number: SHYQ149104
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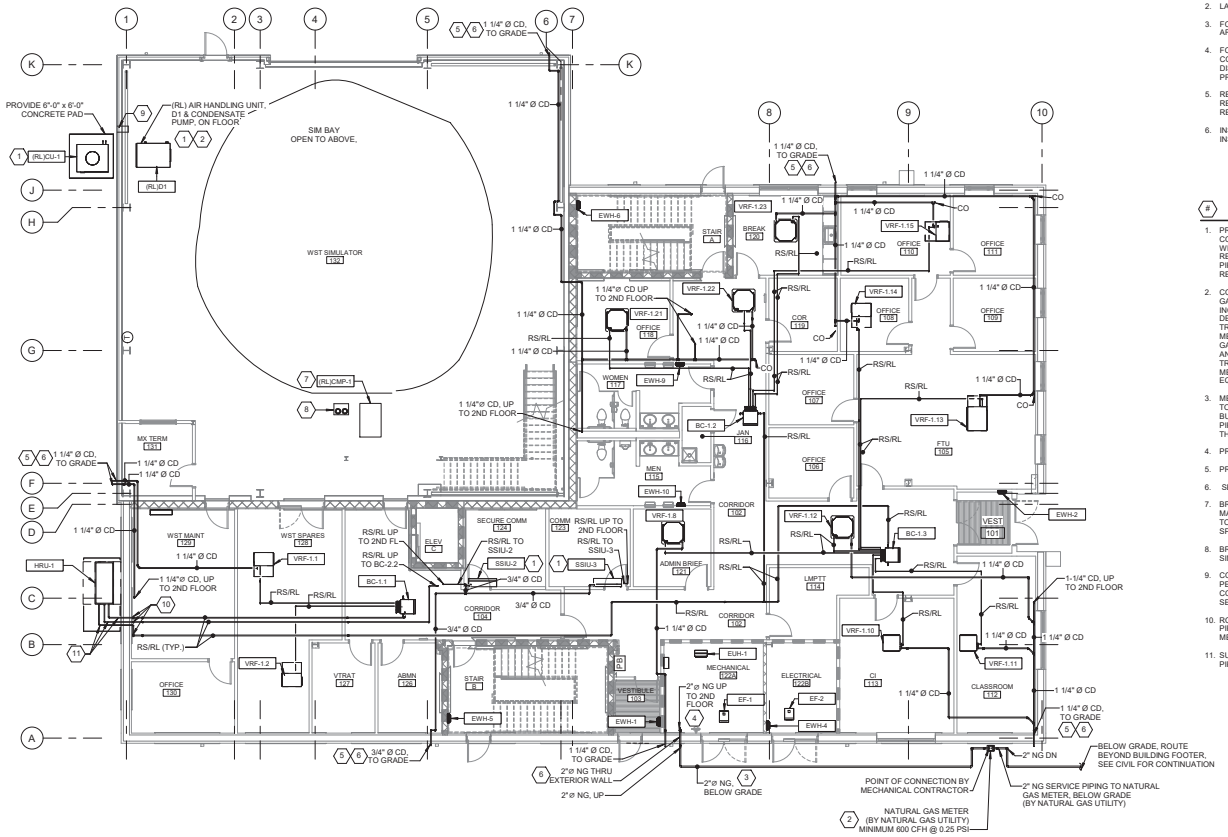

1 MECHANICAL FIRST FLOOR PIPING PLAN

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

GENERAL NOTES

1. SEE SHEET M001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. LABEL ALL PIPING, VALVES, CONTROLS, AND EQUIPMENT.
3. FOR ALL EXTERIOR WALL/ROOF PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. FOR PIPING PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTORS IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE DAMPERS AND FIRE CAULK AS REQUIRED.
5. REFER TO "MECHANICAL PIPING DIAGRAMS," SHEET M-701 FOR REFRIGERANT PIPING QUANTITIES, SIZE PER MANUFACTURER'S RECOMMENDATIONS.
6. INSTALL CONDENSATE DRAIN PIPING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.

SHEET KEYNOTES

(#)

1. PROVIDE REFRIGERANT PIPING BETWEEN OUTDOOR CONDENSING UNIT TO ASSOCIATED INDOOR UNIT. COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFRIGERANT PIPING TO BE INSULATED. REFRIGERANT PIPING TO BE SIZED AND TRAPPED PER MANUFACTURER'S REQUIREMENTS.
2. CONTRACTOR TO COORDINATE WITH GOVERNMENT AND NATURAL GAS UTILITY FOR ALL WORK ASSOCIATED WITH NEW GAS SERVICE, INCLUDING BUT NOT LIMITED TO, SUBMITTING A GAS SERVICE DESIGN, PROVIDING A CONCRETE HOUSEKEEPING PAD, AND TRENCHING FOR GAS PIPING. THE NEW NATURAL GAS PIPING AND METER SERVICE LINE WILL BE FURNISHED AND INSTALLED BY THE GAS UTILITY (UGI UTILITIES INC.) FROM THE SERVICE MAIN UP TO AND INCLUDING THE METER SET ASSEMBLY AT THE BUILDING. TRENCHING AND BACKFILLING BY MECHANICAL CONTRACTOR. GAS METER TO BE STARTED ONLY AFTER PIPING TO ROOFTOP EQUIPMENT INSTALLED AND GAS PIPING PRESSURE TESTED.
3. MECHANICAL CONTRACTOR TO ROUTE PIPING FROM GAS METER TO BUILDING. ROUTE NATURAL GAS PIPING BELOW GRADE UP TO BUILDING. PROVIDE POLYETHYLENE PIPING BELOW GRADE. ROUTE PIPING UP AT MECHANICAL ROOM EXTERIOR WALL, AND THEN THROUGH MECHANICAL ROOM WALL.
4. PROVIDE NATURAL GAS DIRT LEG.
5. PROVIDE SPLASH BLOCK FOR CONDENSATE OUTLET AT GRADE.
6. SEAL PIPING PENETRATION THROUGH WALL WATERTIGHT.
7. BREATHABLE AIR COMPRESSOR, TO BE RELOCATED BY SIMULATOR MANUFACTURER. COORDINATE WITH SIMULATOR MANUFACTURER TO PROVIDE COMPRESSED AIR PIPING AND ASSOCIATED SPECIALTIES TO SIMULATOR FLIGHT DECK.
8. BREATHABLE AIR TANK ASSEMBLY, TO BE RELOCATED BY SIMULATOR MANUFACTURER.
9. COORDINATE WITH SIMULATOR MANUFACTURER TO PROVIDE PIPE PENETRATION THROUGH EXTERIOR WALL FOR REFRIGERANT AND CONDENSATE DRAIN PIPING LINES. PROVIDE PIPE SLEEVES AND SEAL PENETRATIONS WEATHER TIGHT.
10. ROUTE REFRIGERANT PIPE UP ALONG INTERIOR WALL, PROVIDE PIPE ENCLOSURE. SEE MECHANICAL DETAIL 5 / M502, "INTERIOR METAL PIPE ENCLOSURES."
11. SUPPORT EXTERIOR REFRIGERANT PIPING ON NON-PENETRATING PIPE SUPPORTS.

TRUE NORTH

0' 8' 16'

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

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL FIRST FLOOR PIPING PLAN

DRAWING NO.: **M103**

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM1695_M_R23
Project Number: SHYQ149104
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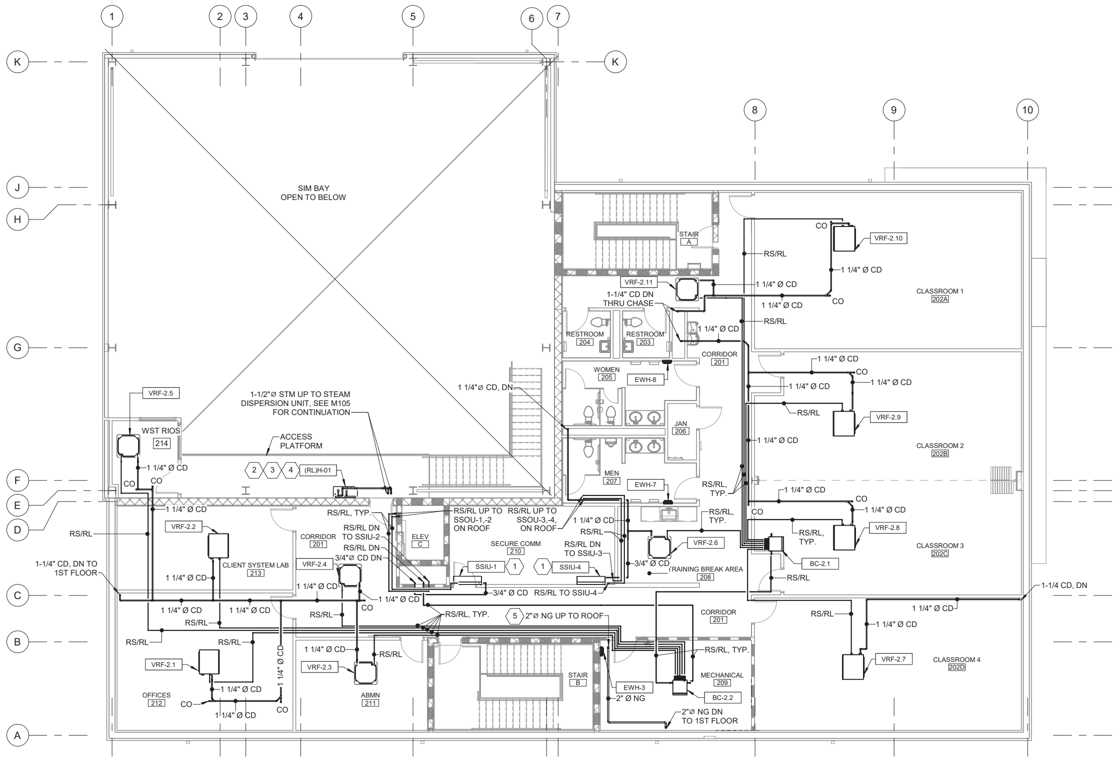

1 MECHANICAL SECOND FLOOR PIPING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET M001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. LABEL ALL PIPING, VALVES, CONTROLS, AND EQUIPMENT.
3. FOR ALL EXTERIOR WALL/ROOF PENETRATIONS, COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. FOR PIPING PENETRATING PARTITIONS ABOVE THE CEILING, CONTRACTORS IS TO PROVIDE SLEEVE AND SEAL OPENING BACK TO DISTRIBUTION. IN THE EVENT THAT A FIRE RATING IS CROSSED, PROVIDE FIRE DAMPERS AND FIRE CAULK AS REQUIRED.
5. REFER TO "MECHANICAL PIPING DIAGRAMS," SHEET M-701 FOR REFRIGERANT PIPING QUANTITIES, SIZE PER MANUFACTURER'S RECOMMENDATIONS.
6. INSTALL CONDENSATE DRAIN PIPING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.

SHEET KEYNOTES

1. PROVIDE REFRIGERANT PIPING BETWEEN OUTDOOR CONDENSING UNIT TO ASSOCIATED INDOOR UNIT. COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFRIGERANT PIPING TO BE INSULATED. REFRIGERANT PIPING TO BE SIZED AND TRAPPED PER MANUFACTURER'S REQUIREMENTS.
2. RELOCATE HUMIDIFIER ABOVE SIMULATOR ACCESS PLATFORM. PROVIDE MANUFACTURER'S WALL SUPPORT AND INSTALL UNIT ON WALL, 36" ABOVE ACCESS PLATFORM.
3. PROVIDE TWO (2) 2"Ø STEAM SUPPLY DISTRIBUTION PIPES UP FROM UNIT CONNECTIONS UP TO STEAM DISPERSION UNIT IN 38"x30" SA DUCT. SEE M105 FOR STEAM DISPERSION LOCATION IN DUCTWORK.
4. PROVIDE CONDENSATE DRAIN PIPING DOWN TO FIRST FLOOR. SEE MECHANICAL DETAILS. LOCATE CONDENSATE TRAP MINIMUM 12" BELOW HUMIDIFICATION UNIT. SEE MECHANICAL DETAILS.
5. PROVIDE NATURAL GAS DIRT LEG.

TRUE NORTH
0' 8' 16'
SCALE: 1/8" = 1'-0"

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104		
DESIGNED: SRG	MODELED: APT	CHECKED: MJM
DATE: JANUARY 2026		

DRAWING TITLE:
MECHANICAL
SECOND FLOOR PIPING PLAN

DRAWING NO.:
M104

Project Number: SHYQ149104
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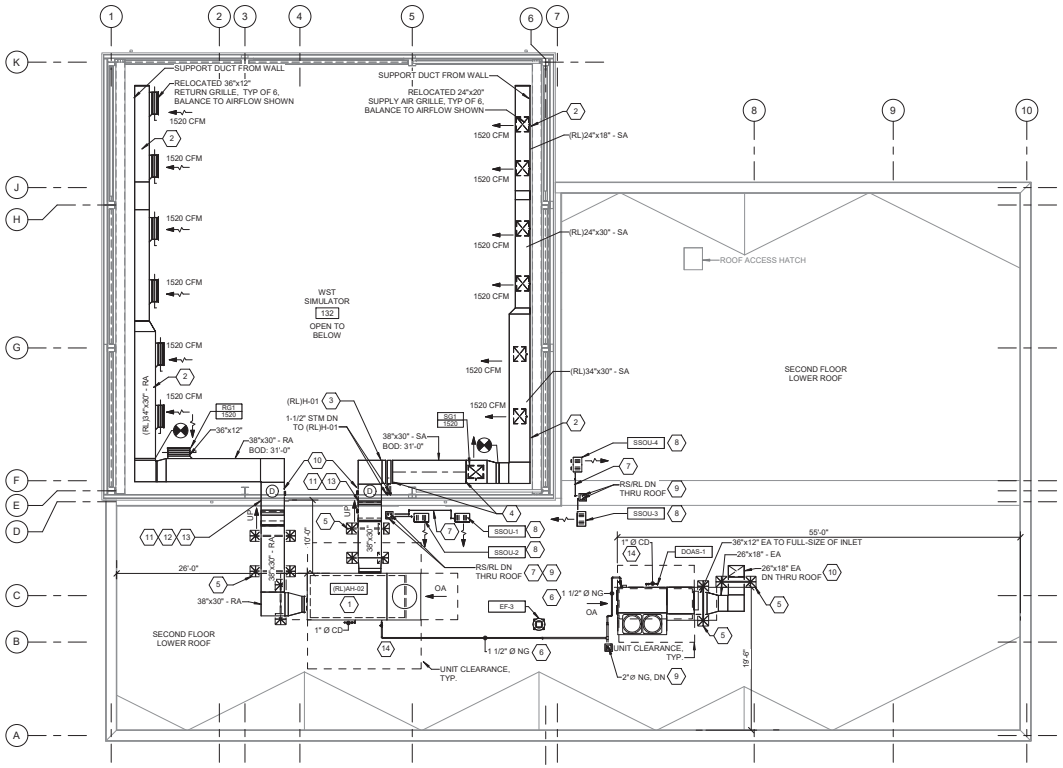

1 MECHANICAL ROOF HVAC & PIPING PLAN

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

GENERAL NOTES

1. SEE SHEET M001 FOR LEGEND, GENERAL NOTES, & ABBREVIATIONS.
2. LABEL ALL DUCTWORK, CONTROLS, AND EQUIPMENT.
3. FOR ALL EXTERIOR ROOF PENETRATIONS, COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
4. ROOF PENETRATION WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR SUCH THAT EXISTING ROOF WARRANTY SHALL NOT BE VOID.

SHEET KEYNOTES

1. PROVIDE RELOCATED AH-02 ON ROOF. PROVIDE NEW ROOF CURB PER MANUFACTURER'S REQUIREMENTS. TRANSITION SUPPLY AND RETURN DUCTS TO THE FULL SIZE OF AIR HANDLING UNIT CONNECTIONS, 36"x20" SUPPLY, 35"x30" RETURN. PROVIDE 1" CONDENSATE DRAIN PIPE WITH P-TRAP TO ROOF.
2. INSTALL RE-LOCATED DUCT WITH DIFFUSERS AND BOARD INSULATION FROM EXISTING BUILDING 82. CAREFULLY PROTECT DUCT AND INSULATION DURING DUCT RELOCATION. RE-INSULATE ANY DUCTWORK WITH INSULATION DAMAGED DURING CONSTRUCTION. PROVIDE NEW DUCTWORK HANGERS AND SUPPORTS.
3. RELOCATE AND INSTALL STEAM DISPERSION TUBE, SERVED BY (RL)H-01, IN NEW 38"x20" SUPPLY AIR DUCTWORK. RELOCATE EXISTING STEAM HUMIDISTAT TO NEW DUCTWORK. SEE DETAIL ON M503.
4. PROVIDE A 38"x30" STAINLESS STEEL DUCT SECTION 84" IN LENGTH FOR STEAM DISPERSION MANIFOLD IN SUPPLY AIR DUCT. THE BOTTOM OF THE DUCT SHALL BE CONTOURED FOR A CENTRAL DRAIN LOCATION, ROUTE 3/4" COPPER DRAIN LINE TO HUB DRAIN.
5. PROVIDE NON-PENETRATING ROOFTOP SUPPORTS FOR DUCTWORK WITH MAXIMUM 5'-0" SPACING. ROUTE BOTTOM OF DUCTWORK 1'-4" ABOVE FINISHED ROOF.
6. PROVIDE NON-PENETRATING ROOFTOP SUPPORTS FOR NATURAL GAS PIPING. ROUTE GAS PIPING 1'-2" ABOVE FINISHED ROOF.
7. PROVIDE NON-PENETRATING ROOFTOP SUPPORTS FOR REFRIGERANT PIPING. ROUTE REFRIGERANT PIPING 1'-4" ABOVE FINISHED ROOF.
8. PROVIDE DUCTLESS SPLIT SYSTEM UNIT ON EQUIPMENT RAILS. MOUNT TO ROOF CURB OR EQUIPMENT RAILS WITH STAINLESS STEEL ANCHORS. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
9. PROVIDE PIPING ROOF CURB. SEE MECHANICAL DETAILS.
10. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY / RETURN MAIN, WITH ACCESS DOOR.
11. ROUTE DUCT BETWEEN STRUCTURAL FRAMING.
12. FLASH AND SEAL DUCTWORK PENETRATION THROUGH EXTERIOR BUILDING WALL.
13. PROVIDE MAN BARS AT SECURE WALL PENETRATION. SEE MECHANICAL DETAILS 5/M501, "DUCT AND OPENING SECURE AREA PENETRATION" DETAIL, AND 6/M501, "MAN BAR ELEVATION" DETAIL.
14. PROVIDE NATURAL GAS DIRT LEG.
15. ROUTE DUCT DOWN THROUGH ROOF, SEE 10/M502, "DUCT PENETRATION AT ROOF, DETAIL.

TRUE NORTH

0' 8' 16'

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

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

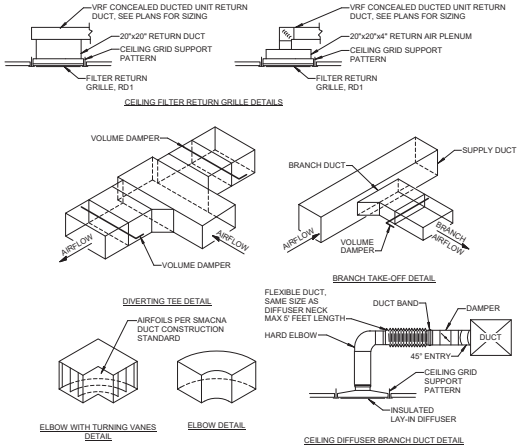
DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

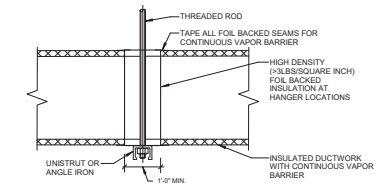
DRAWING TITLE: MECHANICAL ROOF & UPPER SIM BAY HVAC & PIPING PLAN

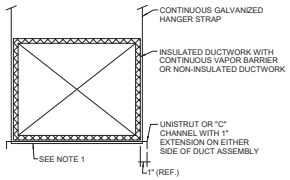
DRAWING NO.: **M105**

Project Number: SHYQ149104
1/26/2026 8:04:29 PM
Local File:Autodesk Docs:/070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM5I5R_M_R23



1 TYPICAL DUCTWORK
SCALE: NTS

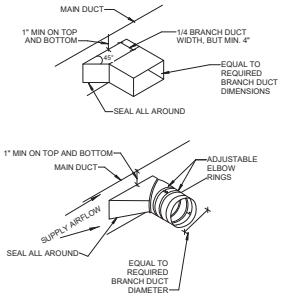




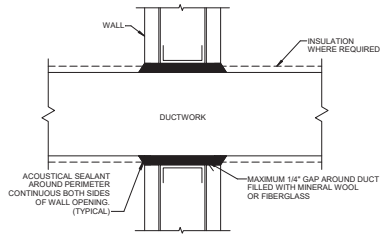
NOTES:

1. FOR CROSS SECTIONAL AREA OF MORE THAN 8 SQ FT, DUCT SHALL BE REINFORCED BY ANGLES ON ALL FOUR SIDES, COORDINATE HANGER AND REINFORCING LOCATIONS.
2. SUPPORTS AND DUCT REINFORCEMENT SHALL BE SPACED AND SIZED AS PER SMACNA.
3. SUPPORTS AND DUCT REINFORCEMENT SHALL BE SPACED AND SIZED AS PER SMACNA. CONTRACTOR SHALL DETAIL AND CONSTRUCT HANGER WITH ZERO DUCT PENETRATIONS.

2 RECTANGULAR HANGER SUPPORT
SCALE: NTS



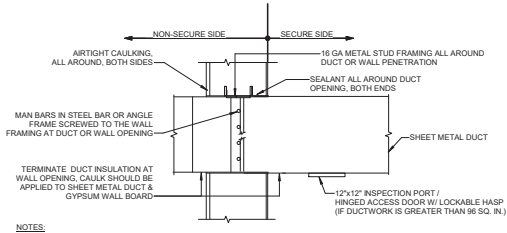
3 TYPICAL BRANCH TAKEOFF FITTING
SCALE: NTS



NOTES:

1. REFER TO "DUCT AND OPENINGS SECURE AREA PENETRATION DETAIL", FOR DUCTWORK GREATER THAN 96 SQ. IN.

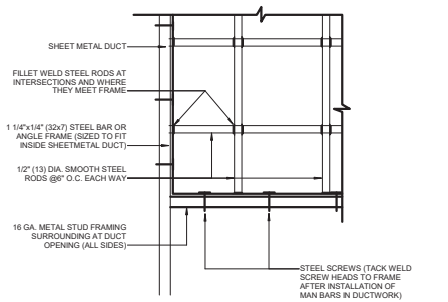
4 NON-SECURE DUCTWORK PENETRATION
SCALE: NTS



NOTES:

1. PROVIDE 12"x12" INSPECTION PORT WITH HINGED ACCESS DOOR WITH LOCKABLE HASP ON SECURE SIDE FOR VISUAL AND PHYSICAL INSPECTION OF MANBAR INSTALLATION. ENSURE ACCESS HATCH OPENS A MINIMUM OF 90 DEGREES AND IS NOT OBSTRUCTED.
2. DUCT AND OPENINGS WITH CROSS AREA LESS THAN 96" SQ. IN. AND LESS THAN 6" IN ALL DIRECTIONS DO NOT REQUIRE SECURITY BARS.
3. SECURITY BAR ARRAY: BARS SHALL BE 1/2"∅ STEEL, WELDED VERTICALLY AND HORIZONTALLY 6" ON CENTER. A MAXIMUM DEVIATION OF 1/2" IN VERTICAL AND/OR HORIZONTAL SPACING IS ACCEPTABLE. SEE" MAN BAR ELEVATION DETAIL," THIS SHEET.
4. DUCTS, WALL, AND ROOF OPENINGS OVER 96 SQUARE INCHES THAT PENETRATE THE PERIMETER WALL MUST HAVE 1/2" MAN BARS INSTALLED AT THE POINT OF ENTRY.
5. MANBAR SPACING TO BE WITHIN 1/2" VERTICAL AND/OR 1/2" HORIZONTAL SPACING TOLERANCE.

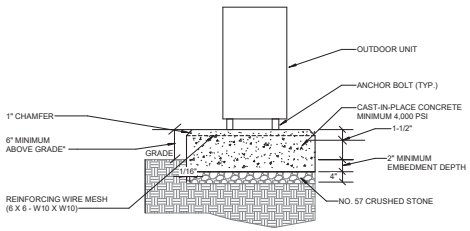
5 DUCT AND OPENINGS SECURE AREA PENETRATION
SCALE: NTS



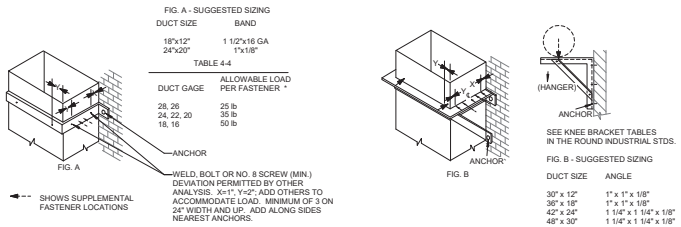
NOTES:

1. MAN BARS IN STEEL BAR OR ANGLE FRAME SCREWED TO THE WALL FRAMING AT DUCT OPENING.
2. MAN BARS REQUIRED FOR DUCT, WALL, AND ROOF OPENINGS GREATER THAN 96 SQ INCHES. MAN BARS NOT REQUIRED FOR DUCT OPENING EQUAL TO OR LESS THAN 96 SQ INCHES.
3. ALL SCREW HEADS INTO THE MANBAR FRAME AND THE 16 GAUGE FRAME SHALL BE MADE NON-REMOVABLE BY TACK WELDING SCREW HEADS TO FRAME AFTER INSTALLATION.

6 MAN BAR ELEVATION
SCALE: NTS



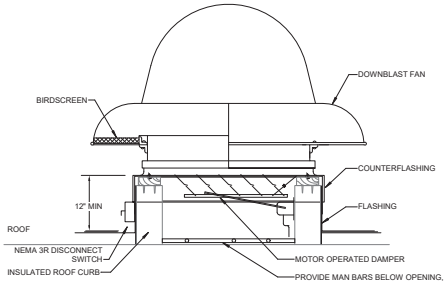
7 CONCRETE PAD ON GRADE
SCALE: NTS



NOTES:

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

8 WALL SUPPORTED DUCTWORK
SCALE: NTS



9 DOWNBLAST EXHAUST FAN
SCALE: NTS

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01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

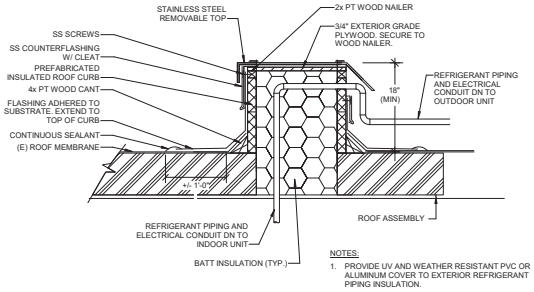
DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL DETAILS 1

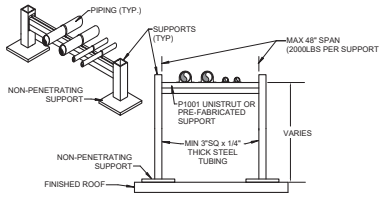
DRAWING NO.: M501

Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM1500_M_R23
Project Number: SHYQ149104
1/26/2026 8:04:30 PM



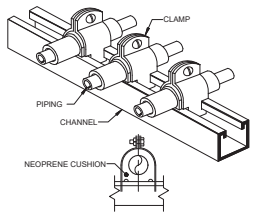
NOTES:
1. PROVIDE UV AND WEATHER RESISTANT PVC OR ALUMINUM COVER TO EXTERIOR REFRIGERANT PIPING INSULATION.

1 ROOF PIPING CURB
SCALE: NTS



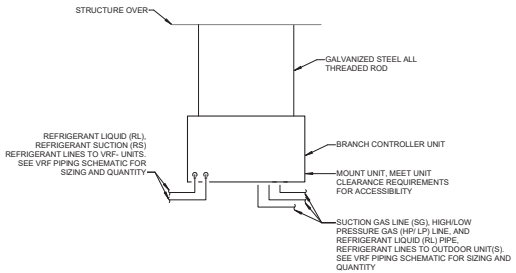
NOTE:
1. PROVIDE INSULATED REFRIGERANT PIPING LOCATED OUTSIDE WITH METAL CLAD JACKET PER SPECIFICATIONS.

2 PIPE SUPPORT ON GRADE OR ROOF DETAIL
SCALE: NTS

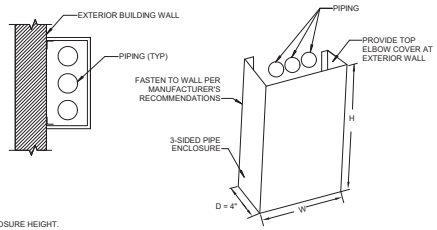


NOTES:
1. USE GRINNELL PS SERIES POWER-STRUT (OR APPROVED EQUAL) AND A THERMOPLASTIC RUBBER INSERT.
2. NECESSARY TO PREVENT MOVEMENT, BETWEEN ANCHORAGE POINTS = 4'-0"

3 REFRIGERANT AND CONDENSATE DRAIN PIPING SUPPORT
SCALE: NTS

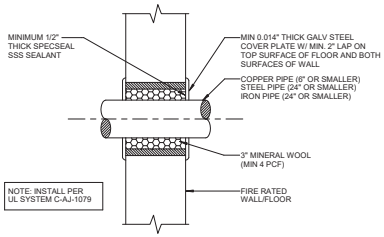


4 BRANCH CONTROLLER UNIT SUPPORT
SCALE: NTS

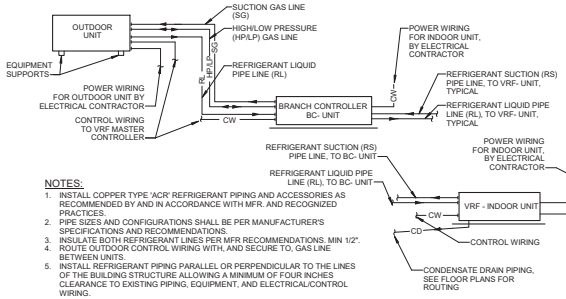


NOTES:
1. COLOR: IVORY.
2. FIELD COORDINATE ENCLOSURE HEIGHT.
3. BASIS:
   A. INTERIOR PIPE ENCLOSURE:
      a. 20 GAUGE, STEEL, PAINTED.
      b. BASIS: SOFFI-STEEL SYSTEM U-SHIELD OR APPROVED EQUAL.

5 INTERIOR METAL PIPE ENCLOSURES
SCALE: NTS

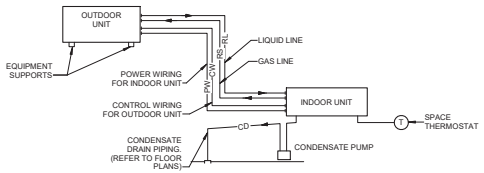


6 INTERIOR FIRE RATED WALL OR FLOOR PENETRATION
SCALE: NTS



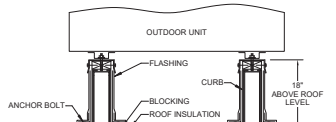
NOTES:
1. INSTALL COPPER TYPE 'ACR' REFRIGERANT PIPING AND ACCESSORIES AS RECOMMENDED BY AND IN ACCORDANCE WITH MFR. AND RECOGNIZED PRACTICES.
2. PIPE SIZES AND CONFIGURATIONS SHALL BE PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
3. INSULATE BOTH REFRIGERANT LINES PER MFR.RECOMMENDATIONS. MIN 1/2".
4. ROUTE OUTDOOR CONTROL WIRING WITH, AND SECURE TO, GAS LINE BETWEEN UNITS.
5. INSTALL REFRIGERANT PIPING PARALLEL OR PERPENDICULAR TO THE LINES OF THE BUILDING STRUCTURE ALLOWING A MINIMUM OF FOUR INCHES CLEARANCE TO EXISTING PIPING, EQUIPMENT, AND ELECTRICAL/CONTROL WIRING.
6. REFER TO M-801 FOR CONTROL WIRING DIAGRAMS.

7 TYPICAL VRF SYSTEM HEAT RECOVERY
SCALE: NTS



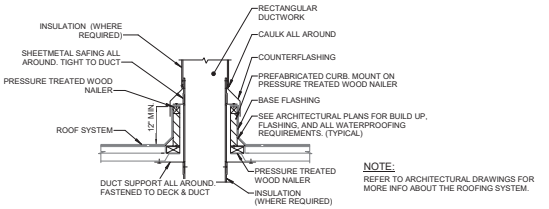
NOTES:
1. INSTALL COPPER TYPE 'ACR' REFRIGERANT PIPING AND ACCESSORIES AS RECOMMENDED BY AND IN ACCORDANCE WITH MANUFACTURER AND RECOGNIZED PRACTICES.
2. PIPE SIZES AND CONFIGURATIONS SHALL BE PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
3. INSULATE BOTH REFRIGERANT LINES PER MANUFACTURER RECOMMENDATIONS. MIN 1/2". PROVIDE INSULATED REFRIGERANT PIPING LOCATED OUTDOORS WITH METAL CLAD JACKETING PER SPECIFICATIONS.
4. ROUTE OUTDOOR CONTROL WIRING WITH, AND SECURE TO, GAS LINE BETWEEN UNITS.
5. INSTALL REFRIGERANT PIPING PARALLEL OR PERPENDICULAR TO THE LINES OF THE BUILDING STRUCTURE ALLOWING A MINIMUM OF FOUR INCHES CLEARANCE TO EQUIPMENT AND ELECTRICAL/CONTROL WIRING.

8 DUCTLESS SPLIT SYSTEM EQUIPMENT PIPING
SCALE: NTS



1. ANCHOR SECURELY PER MANUFACTURERS INSTALLATION GUIDE.
2. VERIFY SPACING WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
3. RE-FLASH AND PATCH ROOF WATER TIGHT.

9 SPLIT SYSTEM OUTDOOR UNIT SUPPORT
SCALE: NTS



NOTE:
REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFO ABOUT THE ROOFING SYSTEM.

10 DUCT PENETRATION AT ROOF
SCALE: NTS

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

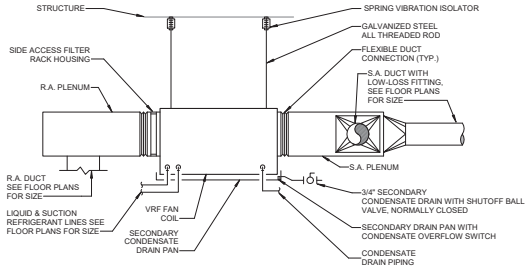
DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

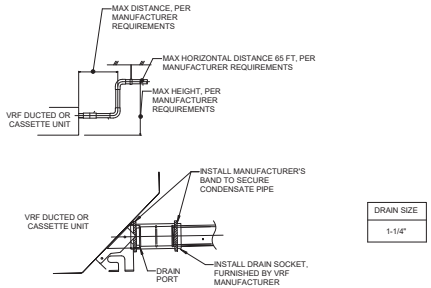
DRAWING TITLE: MECHANICAL DETAILS 2

DRAWING NO.: **M502**

Project Number: SHYQ149104
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BMS80_M_R23
1/26/2026 8:04:31 PM

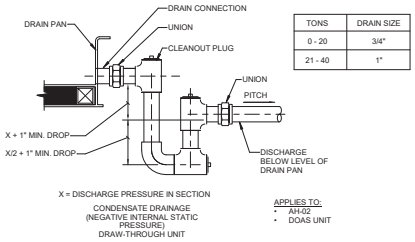


1 VRF FAN COIL UNIT
SCALE: NTS



DRAIN SIZE
1-1/4"

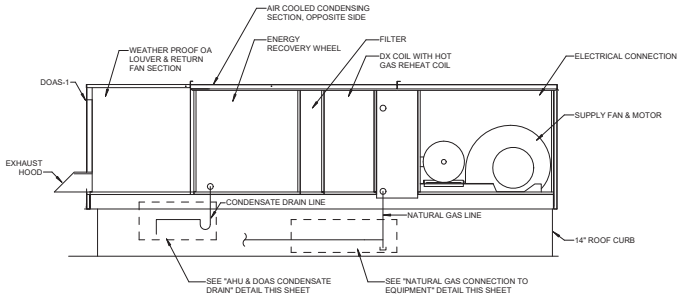
2 VRF CONDENSATE DRAIN
SCALE: NTS



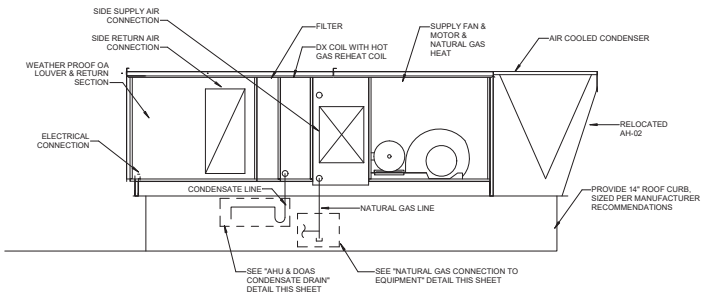
TONS	DRAIN SIZE
0 - 20	3/4"
21 - 40	1"

APPLIES TO:
- AH-02
- DOAS UNIT

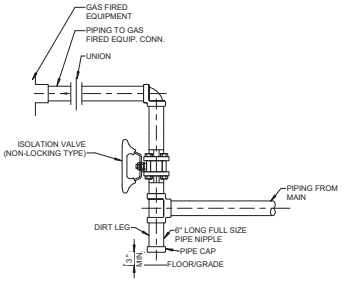
3 AHU & DOAS CONDENSATE DRAIN
SCALE: NTS



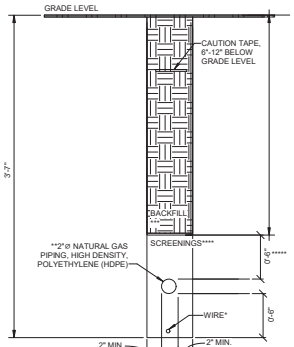
4 DOAS UNIT CONNECTIONS
SCALE: NTS



5 AH-02 UNIT CONNECTIONS
SCALE: NTS

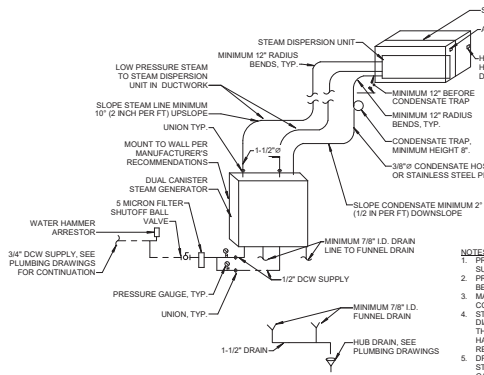


6 NATURAL GAS CONNECTION TO EQUIPMENT
SCALE: NTS



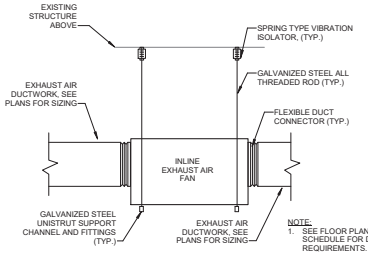
NOTES:
- * WIRE MUST BE APPROXIMATELY 6" FROM PIPE (BELOW OR ABOVE)
- ** PIPE PROVIDED BY CONTRACTOR, FROM METER TO GENERATOR.
- *** TRENCH AND BACKFILL BY CONTRACTOR.
- **** APPROVED ROCK SHIELD SHALL BE USED AS A SECONDARY MEANS OF PROTECTING POLYETHYLENE PIPE IF SCREENINGS ARE UNAVAILABLE OR NOT FEASIBLE.
- ***** MAINTAIN GAS PIPING MINIMUM DISTANCE OF 1 FT FROM ELECTRICAL CONDUIT

7 TYPICAL TRENCH FOR BELOW GRADE NATURAL GAS PIPING
SCALE: NTS



NOTES:
1. PROVIDE MINIMUM 12" BEND RADIUS FOR STEAM SUPPLY HOSE
2. PROVIDE STEAM CONDENSATE DRAIN MINIMUM 12" BELOW STEAM DISTRIBUTOR.
3. MAINTAIN MINIMUM SLOPE FOR STEAM AND CONDENSATE LINES.
4. STEAM LINES CANNOT MERGE OR REDUCE IN DIAMETER EXCEPT AT STEAM DISTRIBUTOR, THROUGH MANUFACTURER'S ADAPTOR, AND MUST HAVE A CONDENSATE LINE JUST BEFORE THE RESTRICTION.
5. DRAIN LINES FROM LARGE HUMIDIFIERS WITH DUAL STEAM CYLINDERS MUST EMPTY INTO SEPARATE AIR GAP FUNNELS BEFORE CONNECTING TO THE DRAIN. COMBINED DRAIN LINE MINIMUM 1-1/2".

8 STEAM HUMIDIFIER
SCALE: NTS



NOTE:
1. SEE FLOOR PLANS AND SCHEDULE FOR DAMPER REQUIREMENTS.

9 SUSPENDED INLINE EXHAUST AIR FAN
SCALE: NTS

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL DETAILS 3

DRAWING NO.: M503

Project Number: SHYQ149104
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Local File: Autodesk Docs://070046-PANG_EC-130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM5I5R_M_R23

DEDICATED OUTSIDE AIR HANDLING SYSTEM (DOAS-) ROOFTOP UNIT SCHEDULE

		SUPPLY FAN				EXHAUST FAN			ENERGY RECOVERY										DX COOLING COIL											
									SUMMER CONDITIONS						WINTER CONDITIONS																
MARK	MIN OA (CFM)	MAXIMUM AIRFLOW (CFM)	FAN HP	FAN QTY.	ESP (IN WG)	MAXIMUM AIRFLOW (CFM)	ESP (IN WG)	FAN HP	TOTAL CAPACITY (MBH)	SENS. CAPACITY (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL CAPACITY (MBH)	SENS. CAPACITY (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	MAX FACE VELOCITY (FPM)	EVAPORATOR TEMP (°F)	COMPRESSOR TYPE	HOT GAS REHEAT COIL CAPACITY (MBH)	REFRIGERANT TYPE
DOAS-1	1660	2700	5	1	1.5	2300	1	3	75.6	30	92.4	75.1	81.4	67.5	145.5	103.9	10	7.5	45.6	39.4	139.1	89	92.4	75.1	50.2	50.2	500	95	VARIABLE SPEED	95	R-454B

DEDICATED AIR HANDLING SYSTEM (DOAS-) ROOFTOP UNIT SCHEDULE (CONTINUED)

	HEATING								ELECTRICAL DATA									
			HEAT PUMP		NATURAL GAS													
MARK	EAT (°F)	LAT (°F)	HEAT PUMP - MAX TEMP RISE(°F)	MIXED AIR TEMP (°F)	INPUT MBH	OUTPUT (MBH)	MIN GAS PRESSURE (IN WC)	MAX GAS PRESSURE (IN WC)	V	Ø	FLA	MCA	MOCP	SCCR (kA)	EER	ISMRE	OPERATING WEIGHT (LBS)	REMARKS
DOAS-1	16	83	36	47	300	243	7	14	460	3	28.3	35.3	40	10	18.6	7.5	2737	1, 2, 3

1. PROVIDE MANUFACTURER'S 36" HEIGHT INSULATED ROOF CURB.
2. PROVIDE UNIT WITH BAROMETRIC RELIEF FOR ECONOMIZER MODE.
3. PROVIDE 4" MERV 15 AND 2" MERV 13 FILTERS PER MANUFACTURER RECOMMENDATIONS TO PROTECT ENERGY RECOVERY WHEEL.

VARIABLE REFRIGERANT FLOW (VRF-) UNIT SCHEDULE

				SUPPLY FAN		DX COOLING COIL				HEATING CAPACITY			ELECTRICAL DATA								
MARK	ASSOCIATED OUTDOOR UNIT	TYPE	SERVICE	AIRFLOW (CFM)	ESP (I.N. W.C.)	NOMINAL TOTAL CAPACITY (MBH)	REQUIRED TOTAL CAPACITY (MBH)	EAT (°F DB)	LAT (°F DB)	NOMINAL CAPACITY (MBH)	REQUIRED HEATING CAPACITY (MBH)	EAT (°F DB)	VOLTAGE	Ø	FLA	MCA	MOCP	kAIC	OPERATING WEIGHT (LBS)	REMARKS
VRF-1.1	HRU-1	CONCEALED DUCTED	WST SPARES-128, WST MAINT-129,MX TERM-131, CORR.-104	265	0.4	7	5.6	78	60	8.5	2.7	70	208	1	0.6	0.8	15	5	55	1, 2, 3, 4
VRF-1.2	HRU-1	CONCEALED DUCTED	OFFICE 130, VTRAT-127,ADMIN-126	265	0.4	9	6.9	78	60	9	3.8	70	208	1	0.6	0.8	15	5	55	1, 2, 3, 4
VRF-1.3 - 1.7	NOT USED	-	-	-															-	-
VRF-1.8	HRU-1	CEILING CASSETTE	ADMIN BRIEF - 121	300		5	1.9	78	60	5.6	0.6	70	208	1	0.2	0.3	15	5	55	1, 2, 3, 4
VRF-1.9	NOT USED	-	-	-															-	-
VRF-1.10	HRU-1	CONCEALED DUCTED	CI - 113, LMPTT-114	530	0.4	15	10	78	60	13.5	2.1	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-1.11	HRU-1	CONCEALED DUCTED	CLASSROOM - 112	530	0.4	15	11.3	78	60	14	3.1	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-1.12	HRU-1	CEILING CASSETTE	CORRIDOR-102	300		5	1.2	78	60	5.6	0.6	70	208	1	0.2	0.3	15	5	55	1, 2, 3, 4
VRF-1.13	HRU-1	CONCEALED DUCTED	FTU-105, OFFICE-109	530	0.4	15	13.8	78	60	40	3.7	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-1.14	HRU-1	CONCEALED DUCTED	OFFICES 106, 107, 108, COR-119	265	0.4	5	4.3	78	60	8.5	0.6	70	208	1	0.6	0.8	15	5	55	1, 2, 3, 4
VRF-1.15	HRU-1	CONCEALED DUCTED	OFFICES 110,111	330	0.4	9	7	78	60	8.5	3.8	70	208	1	0.6	0.8	15	5	55	1, 2, 3, 4
VRF-1.16 - 1.20	NOT USED	-	-	-															-	-
VRF-1.21	HRU-1	CEILING CASSETTE	OFFICE - 118	300		5	1.1	78	60	5.6	0.7	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4
VRF-1.22	HRU-1	CEILING CASSETTE	CORRIDOR-102	300		5	2.5	78	60	5.6	4	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4
VRF-1.23	HRU-1	CEILING CASSETTE	BREAK - 120	300		7	4.7	78	60	9.0	2	70	208	1	0.2	0.3	15	5	34.2	1, 2, 3, 4
VRF-2.1	HRU-1	CONCEALED DUCTED	OFFICES - 212	300	0.4	9	6.3	78	60	13.5	4.5	70	208	1	0.6	0.8	15	5	55	1, 2, 3, 4
VRF-2.2	HRU-1	CONCEALED DUCTED	CLIENT SYSTEM LAB - 213	280	0.4	5	4.1	78	60	13.5	2.3	70	208	1	0.6	0.8	15	5	55	1, 2, 3, 4
VRF-2.3	HRU-1	CEILING CASSETTE	ABMN - 211	300		5	3.1	78	60	5.6	2.2	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4
VRF-2.4	HRU-1	CEILING CASSETTE	CORRIDOR - 201	300		5	3.6	78	60	5.6	4	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4
VRF-2.5	HRU-1	CEILING CASSETTE	WST RIOS-214	300		5	1.4	78	60	17	1.3	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4
VRF-2.6	HRU-1	CEILING CASSETTE	TRAINING BREAK AREA - 208	300		5	4.7	78	60	5.6	0.7	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4
VRF-2.7	HRU-1	CONCEALED DUCTED	CLASSROOM 4 - 202D	530	0.4	15	9.8	78	60	15	5.5	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-2.8	HRU-1	CONCEALED DUCTED	CLASSROOM 3 - 202C	440	0.4	15	7.3	78	60	12	3.5	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-2.9	HRU-1	CONCEALED DUCTED	CLASSROOM 2 - 202B	440	0.4	15	7.9	78	59	12	4	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-2.10	HRU-1	CONCEALED DUCTED	CLASSROOM 1 - 202A	530	0.4	15	12.1	78	60	15	5.5	70	208	1	1.1	1.4	15	5	60	1, 2, 3, 4
VRF-2.11	HRU-1	CEILING CASSETTE	CORRIDOR - 201	300		9	6	78	60	5.6	3.1	70	208	1	0.2	0.3	15	5	28.9	1, 2, 3, 4

1. UNIT TO HAVE MANUFACTURER'S INTEGRAL CONDENSATE PUMP.
2. UNIT TO HAVE ECM MOTOR.
3. UNIT TO HAVE MANUFACTURER'S INTEGRAL REFRIGERANT GAS DETECTION.
4. REFER TO "HEAT RECOVERY OUTDOOR (HRU-) UNIT SCHEDULE FOR REFRIGERANT REQUIREMENTS.

BRANCH CONTROLLER (BC-) UNIT SCHEDULE

	ELECTRICAL DATA					
MARK	V	Ø	MCA	MOCP	OPERATING WEIGHT (LBS)	REMARKS
BC-1.1	208	1	0.8	15.0	81.6	
BC-1.2	208	1	0.8	15.0	81.6	
BC-1.3	208	1	0.8	15.0	81.6	
BC-2.1	208	1	0.6	15.0	72.8	
BC-2.2	208	1	0.6	15.0	72.8	

HEAT RECOVERY OUTDOOR (HRU-) UNIT SCHEDULE

					ELECTRICAL DATA											
MARK	NOMINAL COOLING CAPACITY (MBH)	RATED COOLING CAPACITY (MBH)	NOMINAL HEATING CAPACITY @ 47 DEG F (MBH)	RATED HEATING CAPACITY (MBH)	V	Ø	MCA	MOCP	REFRIGERANT TYPE	COMPRESSOR QUANTITY	EER	IEER	COP @ 47 DEG F	COP @ 17 DEG F	SOUND PRESSURE LEVEL (dBA)	SOUND PRESSURE LEVEL DISTANCE	OPERATING WEIGHT (LBS)	REMARKS
HRU-1	216	183	243	138	460	3	29.9	35	NOTE 1	2	10.5	20.5	3.25	2	71	3'-0"	972	1, 2, 3

1. PROVIDE REFRIGERANT MEETING GLOBAL WARMING POTENTIAL (GWP) LESS THAN 700. ACCEPTABLE REFRIGERANTS INCLUDE R-32 (HFC), R-454B, OR APPROVED EQUAL.
2. HEATING CAPACITY RATED AT 5 °F AMBIENT, COOLING CAPACITY RATED AT 90°F AMBIENT.
3. SYSTEM TO HAVE MANUFACTURER'S INTEGRAL REFRIGERANT GAS DETECTION AND REFRIGERANT MITIGATION INCLUDING SOLENOID SHUTOFF VALVES.

DUCTLESS SPLIT SYSTEM INDOOR (SSIU-) UNIT SCHEDULE

				ELECTRICAL DATA			
MARK	SERVES	AIRFLOW (CFM)	COOLING CAPACITY (BTU/H)	MCA	FLA	APPROX. OPERATING WEIGHT (LBS)	REMARKS
SSIU-1	210 - SECURE COMM	705	30	1.0	1.07	46	1, 2, 3, 4
SSIU-2	124 - SECURE COMM	705	30	1.0	1.07	46	1, 2, 3, 4
SSIU-3	123 - COMM	705	30	1.0	1.07	46	1, 2, 3, 4
SSIU-4	210 - SECURE COMM	705	30	1.0	1.07	46	1, 2, 3, 4

1. SEE "DUCTLESS SPLIT SYSTEM OUTDOOR (SSOU-) UNIT SCHEDULE, " FOR ASSOCIATED OUTDOOR UNIT.
2. INDOOR UNIT POWERED BY ASSOCIATED OUTDOOR UNIT.
3. PROVIDE ELECTRONIC CONDENSATE OVERFLOW SWITCH TO BE INSTALLED AT INDOOR UNIT COIL.
4. PROVIDE MANUFACTURER'S CONDENSATE PUMP.

DUCTLESS SPLIT SYSTEM OUTDOOR (SSOU-) UNIT SCHEDULE

						ELECTRICAL DATA						
MARK	SERVES	COOLING CAPACITY (BTU/H)	REFRIGERANT TYPE	REFRIGERANT CHARGE (LBS)	SEER RATING	V	Ø	HZ	MCA	MOCP	APPROX. OPERATING WEIGHT (LBS)	REMARKS
SSOU-1	SSIU-1	30	R-454B	7.68	19.1	208	1	60	22	37	155	1, 2, 3, 4
SSOU-2	SSIU-1	30	R-454B	7.68	19.1	208	1	60	22	37	155	1, 2, 3, 4
SSOU-3	SSIU-1	30	R-454B	7.68	19.1	208	1	60	22	37	155	1, 2, 3, 4
SSOU-4	SSIU-1	30	R-454B	7.68	19.1	208	1	60	22	37	155	1, 2, 3, 4

1. OUTDOOR UNIT POWERS INDOOR UNIT.
2. PROVIDE LOW-AMBIENT TEMPERATURE KIT (WIND BAFFLE)
3. PROVIDE WIRED, WALL-MOUNTED THERMOSTAT.
4. FURNISH MANUFACTURER'S DISCONNECT SWITCH, TO BE INSTALLED BY ELECTRICAL CONTRACTOR.

EXHAUST FAN (EF-) SCHEDULE

							ELECTRICAL DATA						
MARK	SERVES	FAN TYPE	AIRFLOW (CFM)	ESP (IN/WC)	FAN RPM	CONTROL METHOD	V	Ø	HZ	HP	DRIVE	APPROX. OPERATING WEIGHT (LBS)	REMARKS
EF-1	MECHANICAL - 122A	CENTRIFUGAL INLINE	200	0.33	1328	TEMPERATURE	120	1	60	0.167	DIRECT	34	1, 2
EF-2	ELECTRICAL- 122B	CENTRIFUGAL INLINE	200	0.33	1328	TEMPERATURE	120	1	60	0.167	DIRECT	34	1, 2
EF-3	MECHANICAL - 209	CENTRIFUGAL ROOF	250	0.33	1620	TEMPERATURE	120	1	60	0.167	DIRECT	36	1, 2, 3

1. PROVIDE MANUFACTURER'S 24V MOTORIZED DAMPER, LOW LEAKAGE, CLASS 1A.
2. PROVIDE FAN WITH ECM MOTOR WITH DIAL POTENTIOMETER.
3. PROVIDE MANUFACTURER'S 14" HEIGHT ALUMINUM ROOF CURB.

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MICHAEL JOHN MORRISSEY PE059944 01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL SCHEDULES 1

DRAWING NO.: M601

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(EXISTING TO BE RELOCATED) PACKAGED DX AIR HANDLING UNIT SCHEDULE

		SUPPLY FAN				COOLING COIL									HOT GAS REHEAT COIL				NATURAL GAS				ELECTRICAL DATA							BASIS OF DESIGN		
MARK	MIN OA (CFM)	AIRFLOW (CFM)	FAN HP	FAN QTY.	ESP (IN WG)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	MAX FACE VELOCITY (FPM)	APD (IN WG)	DX COIL # OF COMPRESSORS	DX COIL AMBIENT TEMP (°F)	REHEAT TOTAL CAPACITY (MBH)	MAX TEMP RISE (°F)	EAT (°F)	LAT (°F)	INPUT MBH	OUTPUT (MBH)	MIN GAS PRESSURE (IN WC)	MAX GAS PRESSURE (IN WC)	V	Ø	MCA	MOCP	EER	IEER	OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	REMARKS
(RL)AH-02	230	10640	10	1	0.75	298.8	249.6	71	59	48.6	48.4	500	0.70	2	95	227.3	60	49	70	300	240	7	14	460	3	63.2	80	10.36	18	3988	DAIKIN APPLIED	DPS-025A	1, 2, 3

1. RELOCATE EXISTING DISCHARGE AIR TEMPERATURE SENSOR WIRED IN UNIT, MOUNTED IN SUPPLY DUCT.
2. PROVIDE MANUFACTURER'S ROOF CURB, CABINET C, 154.6"x68.9" INSIDE DIMENSIONS, 14" HEIGHT, WEIGHT: 300 LBS.
3. UNIT WEIGHT DOES NOT INCLUDE CURB WEIGHT.

(EXISTING TO BE RELOCATED) HUMIDIFIER SCHEDULE

		AIR TEMPS				STEAM			ELECTRICAL DATA						BASIS OF DESIGN		
MARK	TYPE	EA DB (°F)	EA %RH	LA DB (°F)	LA %RH	MIN. STEAM SUPPLY PRESSURE (PSIG)	MAX. LBS/HR	ABSORPTION DISTANCE (INCH)	V	Ø	KW	MCA	SCCR (kA)	OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	REMARKS
(RL)H-01	ELECTRODE STEAM HUMIDIFIER	54	49	55	72	25	150	96	460	3	56.1	88.1	5	245	CONDAIR	EL 150	1

1. PROVIDE NEW STEAM DISTRIBUTION PIPING TO RELOCATED STEAM MANIFOLD. FIELD VERIFY EXISTING STEAM DISTRIBUTION MANIFOLD DIMENSIONS. EXISTING DIMENSIONS, APPROXIMATELY 38"x30".

(EXISTING TO BE RELOCATED) BREATHING AIR COMPRESSOR (CMP-) UNIT SCHEDULE

	COMPRESSOR							ELECTRICAL DATA			
MARK	MAX AIRFLOW (SCFM)	OUTLET PRESSURE (PSI)	INLET AIR TEMP (°F)	DISCHARGE AIR TEMP (°F)	STAGES	MOTOR QUANTITY	MOTOR HP	V	Ø	OPERATING WEIGHT (LBS)	REMARKS
(RL)CMP-1	21	300	70	70	4	1	15	460	3	1300	1, 2, 3

1. EXISTING TO BE RELOCATED BREATHING AIR COMPRESSOR AND ASSOCIATED BREATHABLE AIR TANK ASSEMBLY AND AIR COMPRESSOR PIPING BY SIMULATOR MANUFACTURER.
2. FIELD VERIFY EXISTING ELECTRICAL REQUIREMENTS INCLUDING AMPERAGE AND BREAKER REQUIREMENTS.
3. PRESSURE REGULATOR AND FITTINGS BY SIMULATOR MANUFACTURER.

(EXISTING TO BE RELOCATED) COCKPIT AIR CONDITIONING UNIT SCHEDULE

			ELECTRICAL DATA							
MARK	COOLING CAPACITY (MBH)	COOLING COIL - LDB (F)	V	Ø	MCA	MOCP	REFRIGERANT TYPE	COMPRESSOR QUANTITY	APPROX OPERATING WEIGHT (LBS)	REMARKS
(RL)D1	60	53	460	3	4.5	15	R410A	1	80	1

1. EXISTING TO BE RELOCATED COCKPIT AIR CONDITIONING UNIT AND ASSOCIATED CONDENSATE PUMP AND ACCESSORIES.

(EXISTING TO BE RELOCATED) CONDENSING (CU-) UNIT SCHEDULE

		ELECTRICAL DATA								
MARK	COOLING CAPACITY (MBH)	V	Ø	MCA	MOCP	REFRIGERANT TYPE	COMPRESSOR QUANTITY	EER	APPROX OPERATING WEIGHT (LBS)	REMARKS
(RL)CU-1	60	460	3	25	30	NOTE 1	1	NOTE 1	NOTE 1	1

1. EXISTING TO BE RELOCATED CONDENSING UNIT INSTALLED BY SIMULATOR MANUFACTURER. SERVES COCKPIT AIR CONDITIONING UNIT, D1.

GRILLE, REGISTER AND DIFFUSER SCHEDULE

MARK	TYPE	MAX AIRFLOW RATE (CFM)	THROW (FT)	FACE SIZE (IN)	NECK SIZE (IN)	PRESSURE DROP (IN WG)	MAX NC LEVEL	MATERIAL	REMARKS
EG1A	EXHAUST GRILLE	0-90		6"x4"	6"x4"	0.10	30	ALUMINUM	4
EG2	EXHAUST GRILLE	95-140		8"x8"	6"x6"	0.10	30	STEEL	4
EG3	EXHAUST GRILLE	0-250		14"x14"	12"x12"	0.10	30	STEEL	4
EG4	EXHAUST GRILLE	0-140		10"x10"	8"x8"	0.10	30	STEEL	4
EG4A	EXHAUST GRILLE	0-140		10"x10"	8"x8"	0.10	30	ALUMINUM	4
EG5	EXHAUST GRILLE	145-350		12"x12"	10"x10"	0.10	30	STEEL	4
LD1	LINEAR SUPPLY DIFFUSER- 1-SLOT	0-120	6'-0"	48"	6" Ø	0.10	25	ALUMINUM	5
LD2	LINEAR SUPPLY DIFFUSER- 2-SLOT	125-150	9'-0"	48"	8" Ø	0.10	25	ALUMINUM	6
RD1	FILTER RETURN GRILLE	0-1500		24"x24"	20"x20"	0.10	20	STEEL	2
RG1	RETURN GRILLE	0-1650	38'-0"	38"x14"	36"x12"	0.00	25	STEEL	4
SD1	SUPPLY DIFFUSER	0-125	3'-0"	24"x24"	6" Ø	0.10	25	STEEL	1
SD2	SUPPLY DIFFUSER	130-285	4'-0"	24"x24"	8" Ø	0.10	25	STEEL	1
SG1	SUPPLY GRILLE	1000-1600	40'-0"	22"x24"	20"x24"	0.10	25	STEEL	3
SG2	SUPPLY GRILLE	0-90	10'-0"	6"x6"	6"x6"	0.10	25	STEEL	3
SG3	SUPPLY GRILLE	95-200	11'-0"	12"x12"	8"x8"	0.00	25	STEEL	4
SG4	SUPPLY GRILLE	0-140	13'-0"	8"x10"	6"x8"	0.10	25	STEEL	3

1. THREE CONE SUPPLY DIFFUSER.
2. FILTER GRILLE FOR 1" MERV 8, 20"x20" FILTER, 20"x20" NECK WITH 24"x24" BORDER.
3. DOUBLE-DEFLECTION SUPPLY GRILLE.
4. LOUVERED FACE GRILLE.
5. 4'-0" LENGTH, 1-SLOT, 1" SPACING LINEAR DIFFUSER.
6. 4'-0" LENGTH, 2-SLOT, 1" SPACING LINEAR DIFFUSER.

ELECTRIC WALL HEATER (EWH-) SCHEDULE

					ELECTRIC HEAT		ELECTRICAL DATA							
MARK	AREA SERVED	TYPE	AIRFLOW (CFM)	HP	KW	STAGES	V	Ø	FLA	MCA	MOCP	SCCR (kA)	OPERATING WEIGHT (LBS)	REMARKS
EWH-1	VESTIBULE - 101A	SURFACE MOUNTED	350	0.01	4	1	277	1	14.4	18	20	5	25	2, 3, 4
EWH-2	VEST - 101	SURFACE MOUNTED	350	0.01	4	1	277	1	14.4	18	20	5	25	2, 3, 4
EWH-3	MECHANICAL - 209	SURFACE MOUNTED	350	0.01	4	1	277	1	14.4	18	20	5	25	2, 3, 4
EWH-4	ELECTRICAL - 122B	SURFACE MOUNTED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	2, 3, 4
EWH-5	STAIR B	SURFACE MOUNTED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	2, 3, 4
EWH-6	STAIR A	SURFACE MOUNTED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	2, 3, 4
EWH-7	MEN - 207	SEMI-RECESSED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	1, 3, 4
EWH-8	WOMEN - 205	SEMI-RECESSED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	1, 3, 4
EWH-9	WOMEN - 117	SEMI-RECESSED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	1, 3, 4
EWH-10	MEN - 115	SEMI-RECESSED	350	0.01	3	1	277	1	10.8	13.5	15	5	25	1, 3, 4

1. PROVIDE ARCHITECTURAL HEAVY DUTY WALL HEATER WITH MANUFACTURER'S 2" SEMI-RECESSED WALL TRIM KIT.
2. PROVIDE ARCHITECTURAL HEAVY DUTY WALL HEATER WITH MANUFACTURER'S SURFACE MOUNTING WALL TRIM KIT.
3. PROVIDE MANUFACTURER'S 24-VOLT RELAY OPTION FOR BMS COMPATIBILITY AND INTEGRATION.
4. PROVIDE WITH MANUFACTURER'S DOUBLE-POLE, SINGLE THROW ON/OFF SWITCH, MOUNTED ON BACK BOX FOR POSITIVE DISCONNECT OF POWER.

ELECTRIC UNIT HEATER (EUH-) SCHEDULE

						ELECTRICAL DATA							
MARK	TYPE	AREA SERVED	AIRFLOW (CFM)	HEATING CAPACITY (KW)	HP	V	Ø	FLA	MCA	MOCP	SCCR (kA)	OPERATING WEIGHT (LBS)	REMARKS
EUH-1	HORIZONTAL	MECHANICAL - 112A	350	2.2	0.1	208	1	11	13.8	15	5	27	1, 2, 3

1. PROVIDE MANUFACTURER'S WALL MOUNTING BRACKET.
2. PROVIDE MANUFACTURER'S BACNET COMPATIBLE THERMOSTAT CONTROLLER TO ALLOW SCHEDULING THE UNIT THROUGH THE BAS.
3. PROVIDE MANUFACTURER'S 3-POLE NON=FUSED DISCONNECT SWITCH ACCESSORY.

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MICHAEL JOHN MORRISSEY PE095944 01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL SCHEDULES 2

DRAWING NO.: **M602**

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VENTILATION SCHEDULE - WST SIMULATOR 132

FLOOR ID	FACILITY MAP ROOM #	UNIT ID #	OCCUPIABLE ROOM SQUARE FOOTAGE	PER IMC PEOPLE TOTAL 1	OA CFM # / PERSON 5	OA CFM CFM /SQ. FT.	OA CFM BREATHING ZONE CFM	OA CFM Ez	OA CFM TOTAL	DESIGN PRIMARY ZONE CFM
1ST	132 - WST SIMULATOR		3590	1	5	0.06	220	1	220	230
	TOTAL		**3591**						**220**	**230**

VENTILATION SCHEDULE

FLOOR ID	FACILITY MAP ROOM #	UNIT ID #	OCCUPIABLE ROOM SQUARE FOOTAGE	PER IMC PEOPLE TOTAL	OA CFM # / PERSON	OA CFM CFM/SQ. FT.	OA CFM BREATHING ZONE CFM	OA CFM Ez	OA CFM TOTAL	DESIGN PRIMARY ZONE CFM	EXHAUST AIR CFM # / FIXTURE	EXHAUST AIR CFM FIXTURE QTY	EXHAUST AIR CFM CFM / SQ. FT	EXHAUST AIR CFM REQUIRED EXHAUST CFM	DESIGN EXHAUST CFM
1ST	101 - VEST		-	-	-	-	-	-	-	-	-	-	-	-	-
1ST	102 - CORRIDOR		877	-	-	0.06	52.6	1	52.6	100	-	-	-	-	60
1ST	103 - VEST		-	-	-	-	-	-	-	-	-	-	-	-	-
1ST	104 - CORRIDOR		320	-	-	0.06	19.2	1	19.2	50	-	-	-	-	120
1ST	105 - FTU		493	4	5	0.06	49.6	1	49.6	100	-	-	-	-	350
1ST	106 - OFFICE		111	1	5	0.06	11.7	1	11.7	50	-	-	-	-	70
1ST	107 - OFFICE		111	1	5	0.06	11.7	1	11.7	50	-	-	-	-	-
1ST	108 - OFFICE		94	1	5	0.06	10.5	1	10.6	50	-	-	-	-	-
1ST	109 - OFFICE		113	1	5	0.06	11.8	1	16.8	50	-	-	-	-	-
1ST	110 - OFFICE		163	2	5	0.06	19.8	1	19.8	50	-	-	-	-	-
1ST	111 - OFFICE		112	1	5	0.06	12.3	1	11.7	50	-	-	-	-	-
1ST	112 - CLASSROOM		255	6	10	0.12	90.6	1	90.6	120	-	-	-	-	100
1ST	113 - CI		287	4	5	0.06	35.6	1	37.2	50	-	-	-	-	-
1ST	114 - LMPTT		107	1	5	0.06	13.0	1	11.4	50	-	-	-	-	-
1ST	115 - MEN		147	-	-	-	-	-	-	-	2	50	-	100	100
1ST	116 - JAN		31	-	-	-	-	-	-	-	-	-	1	30	50
1ST	117 - WOMEN		145	-	-	-	-	-	-	-	2	50	-	100	100
1ST	118 - OFFICE		142	1	5	0.06	13.5	1	13.5	50	-	-	-	-	-
1ST	119 - COR		93	1	5	0.06	10.6	1	10.6	50	-	-	-	-	70
1ST	120 - BREAK		156	4	5	0.06	29.4	1	29.4	50	-	-	-	-	-
1ST	121 - ADMIN BRIEF		113	5	5	0.06	31.8	1	31.8	50	-	-	-	-	-
1ST	122A - MECHANICAL		-	-	-	-	-	-	-	-	-	-	-	-	-
1ST	122B - ELECTRICAL		-	-	-	-	-	-	-	-	-	-	-	-	-
1ST	123 - COMM		-	-	-	-	-	-	-	-	-	-	-	-	-
1ST	124 - SECURE COMM		-	-	-	-	-	-	-	-	-	-	-	-	-
1ST	126 - AMBNT		106	1	5	0.06	11.4	1	11.4	50	-	-	-	-	-
1ST	127 - VTRAT		106	1	5	0.06	11.3	1	6.4	50	-	-	-	-	-
1ST	128 - WST SPARES		380	1	5	0.06	27.9	1	22.8	50	-	-	-	-	-
1ST	129 - WST MAINT		288	1	5	0.06	22.4	1	17.3	50	-	-	-	-	-
1ST	130 - OFFICE		138	1	5	0.06	13.3	1	13.3	50	-	-	-	-	-
1ST	131 - MX TERM		106	1	5	0.06	11	1	11.4	50	-	-	-	-	-
	TOTAL		**5,000**						**512**	**1270**				**230**	**1030**

NOTES:
1. PROVIDE MINIMUM 50 CFM PER DIFFUSER PER UFC 3-410-01.

DUCTWORK CONSTRUCTION AND LEAKAGE TESTING SCHEDULE

SYSTEM	DUCT PRESSURE CLASS INCHES OF WATER COLUMN SUPPLY DUCT	RETURN DUCT	EXHAUST DUCT	OUTSIDE AIR DUCT	SUPPLY ROUND/OVAL DUCT SEAL CLASS	ROUND/OVAL DUCT LEAK CLASS	SUPPLY RECTANGULAR DUCT SEAL CLASS	RECTANGULAR DUCT LEAK CLASS	RETURN/ OUTSIDE AIR DUCT SEAL CLASS	RETURN/ OUTSIDE AIR DUCT LEAK CLASS	DUCT TEST PRESSURE: INCHES OF WATER COLUMN	REMARKS
AIR HANDLING UNIT	2	-	-	-	A	6	A	12	-	-	2.0	1
	-	-2	-	-	-	-	-	-	A	12	2.0	1
DEDICATED OUTSIDE AIR HANDLING SYSTEM	2	-	-	-	A	6	A	12	-	-	2.0	1
	-	-	-2	-	-	-	A	12	A	12	1.0	1
VRF DUCTED TERMINAL UNIT	1	-	-	-	-	-	A	24	-	-	1.0	1
	-	-1	-	-	-	-	-	-	A	24	1.0	1
EXHAUST DUCT	-		-1	-	-	-	A	24	-	-	1.0	1

1. TEST IN ACCORDANCE WITH SMACNA HVAC AIR DUCT LEAKAGE AND TEST MANUAL.

VENTILATION SCHEDULE

FLOOR ID	FACILITY MAP ROOM #	UNIT ID #	OCCUPIABLE ROOM SQUARE FOOTAGE	PER IMC PEOPLE TOTAL	OA CFM # / PERSON	OA CFM CFM/SQ. FT.	OA CFM BREATHING ZONE CFM	OA CFM Ez	OA CFM TOTAL	DESIGN PRIMARY ZONE CFM	EXHAUST AIR CFM # / FIXTURE	EXHAUST AIR CFM FIXTURE QTY	EXHAUST AIR CFM CFM / SQ. FT	EXHAUST AIR CFM REQUIRED EXHAUST CFM	DESIGN EXHAUST CFM
2ND	201 - CORRIDOR		1064	-	-	0.06	66.8	1	66.8	100	-	-	-	-	-
2ND	202A - CLASSROOM 1		778	12	10	0.12	209.5	1	209.5	275	-	-	-	-	245
2ND	202B - CLASSROOM 2		621	12	10	0.12	195.4	1	195.4	260	-	-	-	-	225
2ND	202C - CLASSROOM 3		545	12	10	0.12	185.3	1	185.3	245	-	-	-	-	225
2ND	202D - CLASSROOM 4		659	12	10	0.12	199	1	199	260	-	-	-	-	225
2ND	203 - RESTROOM		42	-	-	-	-	-	-	-	50	1	-	50	50
2ND	204 - RESTROOM		42	-	-	-	-	-	-	-	50	1	-	50	50
2ND	205 - WOMEN		145	-	-	-	-	-	-	-	50	2	-	100	100
2ND	206 - JAN		31	-	-	-	-	-	-	-	-	-	1	30	50
2ND	207 - MEN		148	-	-	-	-	-	-	-	50	2	-	100	100
2ND	208 - TRAINING BREAK AREA		117	5	5	0.06	32	1	32	50	-	-	-	-	-
2ND	209 - MECHANICAL		-	-	-	-	-	-	-	-	-	-	-	-	-
2ND	210 - SECURE COMM		-	-	-	-	-	-	-	-	-	-	-	-	-
2ND	211 - ABMN		221	2	5	0.06	23.3	1	23.3	50	-	-	-	-	-
2ND	212 - OFFICES		450	6	5	0.06	57	1	57	75	-	-	-	-	-
2ND	213 - CLIENT SYSTEM LAB		275	6	5	0.06	46.5	1	46.5	65	-	-	-	-	-
2ND	214 - WST RIOS		108	1	5	0.06	11	1	11	50	-	-	-	-	-
	TOTAL		**5,259**						**1025.8**	**1430**				**330**	**1270**

NOTES:
1. PROVIDE MINIMUM 50 CFM PER DIFFUSER PER UFC 3-410-01.

BUILDING TOTAL **2,700** **BUILDING TOTAL** **2,300**

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MICHAEL JOHN MORRISSEY
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ENGINEER PE095944
01/27/2026

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: SRG | MODELED: APT | CHECKED: MJM
DATE: JANUARY 2026
DRAWING TITLE: MECHANICAL SCHEDULES 3
DRAWING NO.: **M603**

Project Number: SHYQ149104
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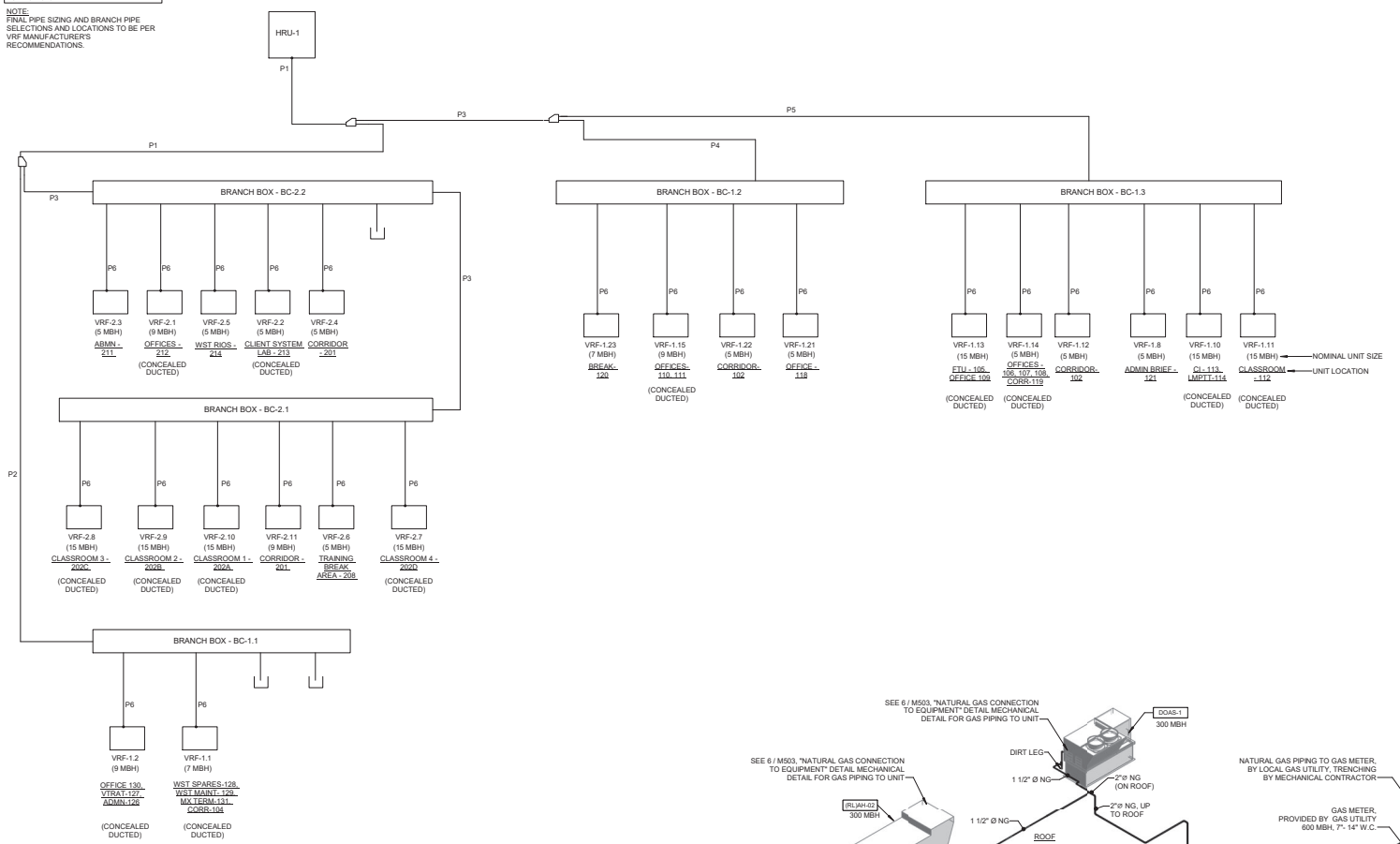
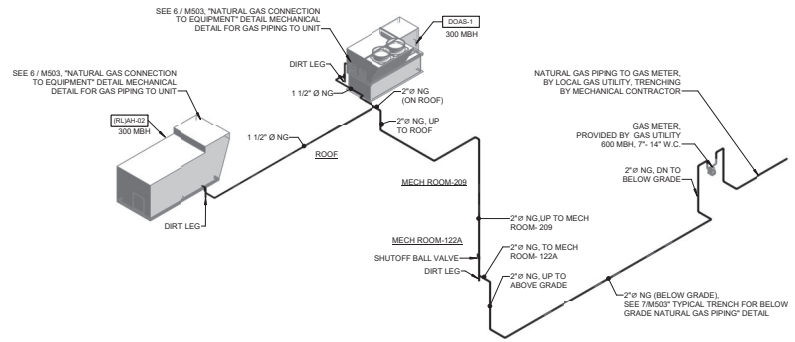
Central File: BM1690_M_R23

PIPING AND CONTROLS
SYMBOL BRANCH PIPE MODEL NAME
J1 ## J2 ##
SYMBOL LIQUID PIPE/GAS PIPE SIZE
P1 3/4" / 1-1/8" / 1-1/8" P2 3/8" / 5/8" / 1/2" P3 1/2" / 7/8" / 3/4" P4 1/2" / 5/8" / 1/2" P5 1/2" / 3/4" / 5/8" P6 1/4" / 1/2"

NOTE:
FINAL PIPE SIZING AND BRANCH PIPE SELECTIONS AND LOCATIONS TO BE PER VRF MANUFACTURER'S RECOMMENDATIONS.



1 VRF- PIPING DIAGRAM
SCALE: NTS



2 MECHANICAL GAS PIPING RISER DIAGRAM
SCALE: NTS

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01/27/2026

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE:
MECHANICAL
MECHANICAL PIPING DIAGRAMS

DRAWING NO.:
M701

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Project Number: SHYQ149104
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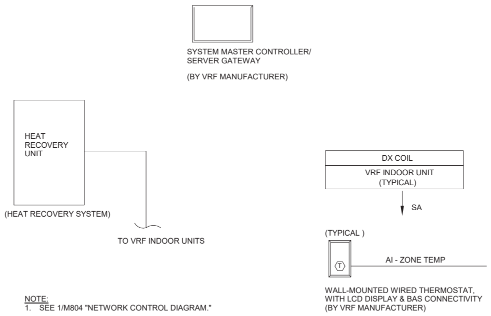
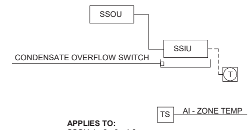


NOTE:
1. SEE 1/M804 "NETWORK CONTROL DIAGRAM."

VRF INDOOR UNIT (TYPICAL)
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
INDOOR FAN STATUS (MONITOR ONLY)			■								
ZONE TEMPERATURE (MONITOR ONLY)	■								■		■
ON/OFF STATUS (MONITOR ONLY)			■								
OCCUPANCY MODE (MONITOR ONLY)											
UNOCCUPIED COOLING SETPOINT					■						■
UNOCCUPIED HEATING SETPOINT					■						■
OCCUPIED COOLING SETPOINT					■						■
OCCUPIED HEATING SETPOINT					■						■
ALARM STATUS (MONITOR ONLY)			■							■	
TOTALS	1	0	3	0	4	0	0	0	1	1	5

1 CONTROLS DIAGRAM - VRF CONTROLS
SCALE: NTS



APPLIES TO:
SSOU-1, -2, -3, -4 &
SSIU-1, -2, -3, -4

DUCTLESS SPLIT SYSTEM UNIT
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
COOLING SETPOINT					■						■
ZONE TEMPERATURE	■								■		■
HIGH ZONE TEMPERATURE										■	■
TOTALS	1	0	0	0	1	0	0	0	1	1	3

2 CONTROLS DIAGRAM - DUCTLESS SPLIT SYSTEM UNIT
SCALE: NTS

SEQUENCE OF OPERATIONS:

GENERAL:
1. CONTROLLER SHALL BE SET TO AUTOMATIC MODE.
2. THE VARIABLE REFRIGERANT FLOW SYSTEM (VRF) SHALL INCLUDE A COMBINATION OF INDOOR VRF UNITS (VRF-) INCLUDING CEILING CASSETTES, WALL-MOUNTED UNITS, AND FAN COIL UNITS, THREE BRANCH SELECTOR BOXES (BC), AND ONE HEAT RECOVERY UNIT (HRU-1), WITH THERMOSTATS FOR EACH INDOOR VRF UNIT AND INTEGRAL CONTROLS.
3. ATC TO MONITOR SPACE TEMPERATURE SENSOR FROM THE VRF INDOOR UNIT WALL-MOUNTED WIRED CONTROLLER. ON A CALL FOR COOLING OR HEATING, THE INDOOR UNIT'S WILL ENERGIZE IN BOTH UNOCCUPIED AND OCCUPIED MODES.
4. PROVIDE POINTS AND GRAPHICS TO GOVERNMENT SITE MANAGEMENT SYSTEM.

SYSTEM MASTER CONTROLLER
1. CONTROLLER SHALL BE SET TO AUTOMATIC MODE. THE VRF ENERGY RECOVERY SYSTEM SHALL DETERMINE HEATING AND COOLING MODES AT THE INDIVIDUAL BRANCH CONTROLLERS.

VRF OUTDOOR UNIT, (TYPICAL OF 1)
RUN CONDITIONS - TEMPERATURE CONTROLLED

THE ASSOCIATED AIR-COOLED HEAT PUMP(HRU-) SHALL ENERGIZE AS REQUIRED BY THE INDOOR VRF UNITS.

VRF INDOOR UNITS, (TYPICAL OF 23)
RUN CONDITIONS - TEMPERATURE CONTROLLED

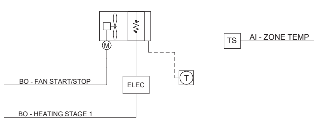
1. PRE-OCCUPIED MODE:
   A. THE SYSTEM SHALL OPERATE IDENTICAL TO THE OCCUPIED MODE, EXCEPT ANY ASSOCIATED OUTSIDE AIR LOOPS SHALL BE DISABLED. PRE-OCCUPIED MODE SHALL BE ENABLED, ACCORDING TO A USE DEFINED SCHEDULE, EX. 2-HOURS (ADJ.) BEFORE OCCUPIED MODE.
2. OCCUPIED MODE:
   A. THE UNIT DDC HARDWARE SHALL BE IN OCCUPIED MODE WHEN THE INPUT FROM THE SYSTEM SCHEDULER IS OCCUPIED.
   B. THE INDOOR UNIT SETPOINT SHALL BE 75°F (ADJ) IN COOLING AND 70°F (ADJ.) IN HEATING. DEADBAND BETWEEN HEATING AND COOLING TO BE 5°F.
3. UNOCCUPIED MODE:
   A. THE UNIT DDC HARDWARE SHALL BE IN UNOCCUPIED MODE WHEN THE INPUT FROM THE SYSTEM SCHEDULER IS UNOCCUPIED.
   B. THE INDOOR UNIT SETPOINT SHALL BE 85°F (ADJ) IN COOLING AND 65°F (ADJ) IN HEATING.

DUCTED FAN COIL UNIT - CONDENSATE OVERFLOW SWITCH:
1. UPON DETECTION OF CONDENSATE OVERFLOW IN SECONDARY DRAIN PAN, CONDENSATE OVERFLOW SWITCH TO ACTIVATE AND DE-ENERGIZE ASSOCIATED INDOOR UNIT, AND AN ALARM SHALL BE SENT TO THE BAS,

RUN CONDITIONS - TEMPERATURE:
THE ASSOCIATED DUCTLESS SPLIT SYSTEM OUTDOOR UNIT SHALL ENERGIZE OR DE-ENERGIZE AS REQUIRED BY THE EVAPORATOR (DESIGNATED AS "SSIU- ").

COOLING MODE:
1. THE UNIT CONTROLLER SHALL BE SET TO AUTOMATIC MODE. THE UNIT SHALL PROVIDE COOLING TO MAINTAIN THE SPACE TEMPERATURE SETPOINT AS DETERMINED BY THE UNIT'S WIRED CONTROLLER. SET SPACE TEMPERATURE SETPOINT TO BE 70 °F (ADJ.) IN COOLING MODE:
2. THE INDOOR UNIT TO HAVE CONDENSATE OVERFLOW DETECTOR.
3. MONITOR SPACE TEMPERATURE THROUGH THE BUILDING AUTOMATION SYSTEM VIA A SPACE TEMPERATURE SENSOR. ALARM WILL BE PROVIDED IF UNIT SHUTS DOWN AND ROOM TEMPERATURE RISES ABOVE THE HIGH TEMPERATURE LIMIT .

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS HIGHER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- CONDENSATE OVERFLOW SWITCH: IF CONDENSATE OVERFLOW DETECTED, UNIT TO DE-ENERGIZE.



APPLIES TO:
EWH-3,-4;
EWH -7-,8,-9,-10

WALL HEATER
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
HEATING SETPOINT					■						■
ZONE TEMPERATURE	■										■
FAN START / STOP				■							■
HEATING ON / OFF				■							■
SCHEDULE								■			■
LOW ZONE TEMP										■	
TOTALS	1	0	0	2	1	0	0	1	6	1	5

3 CONTROLS DIAGRAM -WALL HEATER CONTROLS
SCALE: NTS

RUN CONDITIONS - MECHANICAL/ELECTRICAL ROOMS: EWH-3, -4

THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE SCHEDULE IN THE FOLLOWING MODES, WHEN THERE IS A CALL FOR HEATING:
- UNOCCUPIED / OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 60°F (ADJ.).

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

THE HEATING SHALL BE ENABLED WHENEVER:
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT AND THE FAN IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

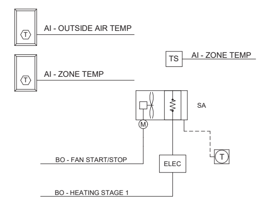
RUN CONDITIONS - SCHEDULED - RESTROOMS: EWH -7, -8, -9, -10

THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 65°F (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 55°F (ADJ.).

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

THE HEATING SHALL BE ENABLED WHENEVER:
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT AND THE FAN IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).



APPLIES TO:
EWH-1, EWH-2, EWH-5, EWH-6

STAIRS & VESTIBULES - WALL HEATER
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
HEATING SETPOINT					■						■
ZONE TEMPERATURE	■										■
FAN START / STOP				■							■
HEATING ON / OFF				■							■
LOW ZONE TEMP										■	
OUTSIDE AIR TEMP	■										■
TOTALS	2	0	0	2	1	0	0	0	6	1	5

4 CONTROLS DIAGRAM -STAIRS & VESTIBULES, WALL UNIT HEATER CONTROLS
SCALE: NTS

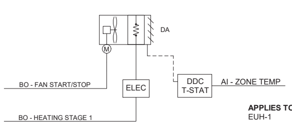
RUN CONDITIONS - SCHEDULED:

THE UNIT SHALL RUN WHEN THERE IS A CALL FOR HEATING:
- THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 50°F (ADJ.).

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT AND OUTSIDE AIR TEMPERATURE IS LESS THAN 45°F, UNLESS SHUTDOWN ON SAFETIES.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT AND THE FAN IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).



APPLIES TO:
EUH-1

RUN CONDITIONS - SCHEDULED : EUH-1:
THE UNIT SHALL RUN ACCORDING TO DDC COMPATIBLE THERMOSTAT:
- UNOCCUPIED / OCCUPIED MODE: THE UNIT SHALL MAINTAIN A HEATING SETPOINT OF 55°F (ADJ.).

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

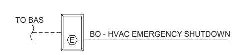
THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT AND THE FAN IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

UNIT HEATER
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
HEATING SETPOINT					■						■
ZONE TEMPERATURE	■										■
FAN START / STOP				■							■
HEATING ON / OFF				■							■
SCHEDULE								■			■
LOW ZONE TEMP										■	
TOTALS	1	0	0	2	1	0	0	1	6	1	5

5 CONTROLS DIAGRAM - UNIT HEATER CONTROLS
SCALE: NTS



HVAC EMERGENCY SHUTDOWN BUTTON
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
HVAC SHUTDOWN ACTIVATION				■					■	■	■
TOTALS	0	0	0	1	0	0	0	0	1	1	1

HVAC SHUTDOWN BUTTON:
1. UPON ACTIVATION OF THE EMERGENCY SHUTDOWN BUTTON, ACTIVATION BUTTON TO BE LIGHTED WHEN PRESSED, OR ADJACENTLY LOCATED LED LIGHT OR STROBE TO ILLUMINATE.
2. UPON DE-ACTIVATION OF THE EMERGENCY SHUTDOWN BUTTON (ESB), THE HVAC SYSTEM SHALL REVERT BACK TO THEIR PROGRAMMED SCHEDULE.
3. UPON ACTIVATION OF THE EMERGENCY SHUTDOWN BUTTON, A SIGNAL SHALL BE SENT VIA THE BAS, AND THE FOLLOWING.
   - DOAS-1
   - AH-02
   - EF-3 & ASSOCIATE OA DAMPER
   - EF-1
   - EF-2

6 HVAC EMERGENCY SHUTDOWN BUTTON
SCALE: NTS

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104		
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DATE: JANUARY 2026		
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DRAWING NO.: M801		

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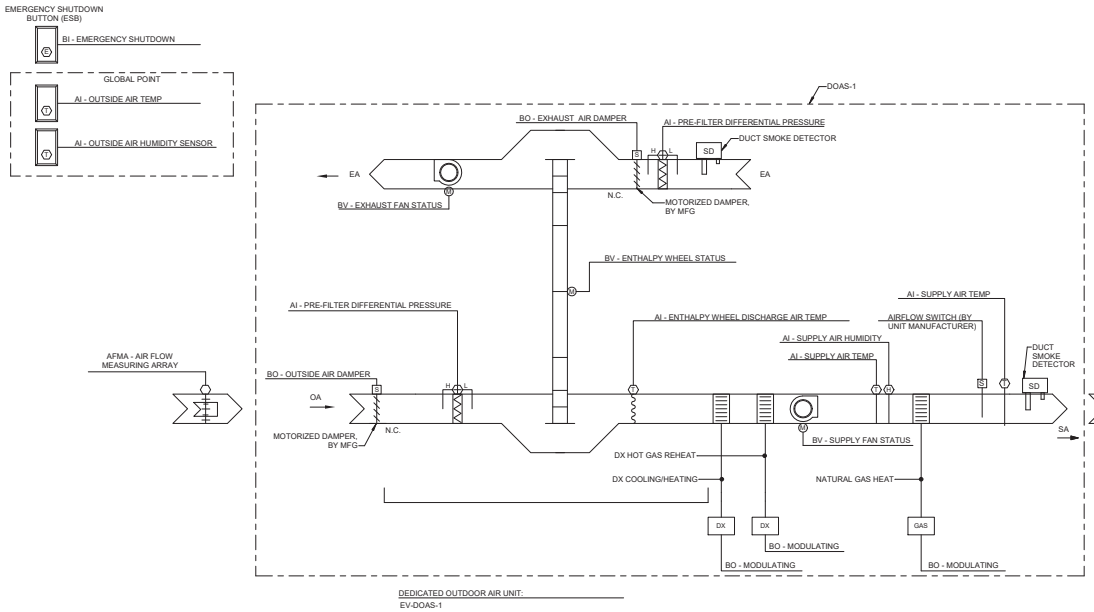
Central File: BIM360_M_R23

DOAS INDOOR UNIT
MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS					SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
UNIT ON/OFF						■		■			■
SUPPLY FAN ON/OFF						■			■		■
EXHAUST FAN ON/OFF						■			■		■
VARIABLE SPEED COMPRESSOR ON/OFF						■			■		■
MODULATING HOT GAS REHEAT ON/OFF						■			■		■
ENTHALPY WHEEL START/STOP						■					■
COOLING MODE						■			■		■
HEATING MODE						■			■		■
DEFROST MODE						■					■
SUPPLY AIR DEWPOINT TEMPERATURE	■										■
SUPPLY AIR DRY BULB TEMPERATURE	■										■
COOLING SETPOINT					■						■
HEATING SETPOINT					■						■
SUPPLY AIRFLOW SETPOINT					■						■
EXHAUST AIRFLOW SETPOINT					■						■
SUPPLY AIRFLOW CFM					■				■		■
EXHAUST AIRFLOW CFM					■				■		■
ENTHALPY WHEEL CONTROL DISCHARGE AIR TEMP	■								■		■
ENTHALPY WHEEL RUNTIME					■						
SUPPLY FAN RUNTIME					■						
EXHAUST FAN RUNTIME					■						
LOSS OF AIRFLOW ALARM										■	
DRAIN PAN OVERFLOW ALARM										■	
PRE-FILTER CHANGE REQUIRED										■	
COMPRESSOR HIGH PRESSURE ALARM										■	
COMPRESSOR LOW PRESSURE ALARM										■	
SUPPLY AIR TEMP											■
OUTSIDE AIR DAMPER STATUS			■								■
PROOF OF AIRFLOW	■										■
MODULATING NATURAL GAS HEAT ON/OFF				■							■
HIGH SUPPLY AIR TEMP										■	
LOW SUPPLY AIR TEMP										■	
OUTSIDE AIR DAMPER FAILURE										■	
OUTSIDE AIR DAMPER IN HAND										■	
OUTSIDE AIRFLOW	■				■				■	■	■
OUTSIDE AIR ENTHALPY	■				■				■		■
SUPPLY FAN SMOKE DETECTOR			■			■			■	■	■
EXHAUST FAN SMOKE DETECTOR			■			■			■	■	■
EXHAUST AIR DAMPER STATUS			■								■
OUTSIDE AIR DAMPER FAILURE										■	
OUTSIDE AIR DAMPER IN HAND										■	
EXHAUST AIR DAMPER FAILURE										■	
EXHAUST AIR DAMPER IN HAND										■	
EMERGENCY HVAC SHUTDOWN										■	
TOTALS	6	0	4	1	11	11	0	1	7	17	27



1 DEDICATED OUTDOOR UNIT ENERGY RECOVERY UNIT CONTROLS SCHEMATIC
SCALE: NTS

GENERAL:

ENERGY RECOVERY SYSTEM (DOAS-1)

1. OCCUPIED MODE:
   A. CONTROLLER SHALL BE SET TO AUTOMATIC MODE AND RUN THE SUPPLY AND RETURN FANS CONTINUOUSLY AT CONSTANT SPEED DURING THE BUILDING OCCUPIED MODE, ACCORDING TO A USER DEFINABLE SCHEDULE, UNLESS SHUTDOWN ON SAFETIES OR VIA EMERGENCY HVAC SHUTDOWN BUTTON.
   B. THE SELF-CONTAINED UNIT SHALL PROVIDE DX COOLING AND HOT GAS REHEAT TO MAINTAIN DUCT TEMPERATURE AND HUMIDITY SETPOINT AS DETERMINED BY THE DUCT TEMPERATURE AND HUMIDITY SENSORS.

2. IN UNOCCUPIED MODE AND PRE-OCCUPIED MODE, THE UNIT SHALL BE OFF AND ASSOCIATED DAMPERS CLOSED.

ENTHALPY RECOVERY WHEEL

THE CONTROLLER SHALL RUN THE ENTHALPY WHEEL AS FOLLOWS:

1. COOLING RECOVERY MODE: THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND RUN THE ENTHALPY WHEEL TO MAINTAIN THE UNIT SUPPLY AIR TEMPERATURE SETPOINT OF 73°F (ADJ.) AT 45% RH. THE HEAT WHEEL SHALL RUN FOR COOLING RECOVERY WHENEVER:
   A. THE UNIT RETURN AIR TEMPERATURE IS 5°F (ADJ.) OR MORE BELOW THE OUTSIDE AIR TEMPERATURE
   B. AND THE UNIT IS IN COOLING MODE
   C. AND THE SUPPLY FAN IS ON.

2. HEATING RECOVERY MODE: THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND RUN THE WHEEL TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT OF 70°F (ADJ.). THE ENTHALPY WHEEL SHALL RUN FOR HEAT RECOVERY WHENEVER:
   A. UNIT RETURN AIR TEMPERATURE IS 5°F (ADJ.) OR MORE ABOVE THE OUTSIDE AIR TEMPERATURE
   B. AND THE UNIT IS IN HEATING MODE
   C. AND THE SUPPLY FAN IS ON..

4. PERIODIC SELF-CLEANING:
   THE ENTHALPY WHEEL SHALL RUN CLEANING CYCLE AT USER DEFINED INTERVAL WHEN THE ENERGY RECOVERY WHEEL SITS IDLE.

5. FROST PROTECTION: THE HEAT WHEEL SHALL SLOW DOWN WHENEVER:
   - OUTSIDE AIR TEMPERATURE DROPS 5°F BELOW FROST CONTROL SETPOINT OF 20°F (ADJ.) AND THE WHEEL PRESSURE SWITCH IS CLOSED DUE TO A HIGH WHEEL PRESSURE DROP.
   - ONCE THE PRESSURE DROP DECREASES BELOW THE PRESSURE SWITCH POINT OR THE OUTSIDE AIR TEMPERATURE INCREASE, THE UNIT WILL RESUME NORMAL OPERATION.

THE BYPASS DAMPERS WILL OPEN WHENEVER THE ENTHALPY WHEEL DISABLED

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME, UNLESS SHUTDOWN ON SAFETIES.

BAS TO MONITOR SUPPLY AIR DUCT STATIC PRESSURE. WHEN CLASSROOM DAMPERS CLOSE IN OCCUPIED MODE, SUPPLY AND EXHAUST FAN TO MODULATE SPEED TO MAINTAIN DUCT SUPPLY AIR STATIC PRESSURE SETPOINT.

EXHAUST FAN:
THE EXHAUST FAN SHALL RUN ANYTIME THE SUPPLY FAN RUNS.

ENTHALPY WHEEL DISCHARGE AIR TEMPERATURE SETPOINT:
THE CONTROLLER SHALL MONITOR THE ENTHALPY DISCHARGE AIR TEMPERATURE AT THE ENTHALPY WHEEL AND MAINTAIN A FIXED SUPPLY AIR TEMPERATURE SETPOINT AT 55°F (ADJ.).

SUPPLY AIR DISCHARGE AIR TEMPERATURE SETPOINT:
THE CONTROLLER SHALL MONITOR THE SUPPLY DISCHARGE AIR TEMPERATURE AND HUMIDITY.

COOLING STAGES:
THE UNIT CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE OR MODULATE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.)
- AND THE SUPPLY AIR TEMPERATURE IS ABOVE COOLING SETPOINT
- AND THE FAN STATUS IS ON.

GAS HEATING STAGES:
THE UNIT CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING LEAVING AIR TEMPERATURE SETPOINT OF 68° F (ADJ.). TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEATING SHALL ENABLE WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 60°F (ADJ.)
- AND THE SUPPLY AIR TEMPERATURE IS BELOW HEATING SETPOINT
- AND THE FAN STATUS IS ON

SUPPLY AIR FINAL FILTER DIFFERENTIAL PRESSURE MONITOR:
THE BAS SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE SUPPLY AIR FINAL FILTER.

EXHAUST AIR PRE-FILTER DIFFERENTIAL PRESSURE MONITOR:
THE BAS SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE EXHAUST PRE-FILTER.

DEHUMIDIFICATION MODE - HOT GAS REHEAT COIL:
IN COOLING MODE, THE CONTROLLER SHALL MODULATE THE HOT GAS REHEAT COIL TO MAINTAIN DISCHARGE AIR HUMIDITY SETPOINT. REHEAT COIL TO MAINTAIN UNIT DISCHARGE AIR TEMPERATURE OF 73°F.

ECONOMIZER MODE:
IF THERE IS A CALL OF COOLING, AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN 60°F (ADJ), THE UNIT SHALL ENTER ECONOMIZER MODE. IF THE UNIT IS IN ECONOMIZING MODE AND DISCHARGE AIR TEMPERATURE IS NOT BEING MET THE CONTROLLER SHALL ENABLE MECHANICAL COOLING. WHEN ECONOMIZER MODE IS ENABLED AND THERE IS A CALL OF COOLING, THE CONTROLLER SHALL MODULATE THE ENTHALPY RECOVERY WHEEL SPEED TO MAINTAIN THE SUPPLY TEMPERATURE SETPOINT.

THE ECONOMIZER WILL BE LOCKED OUT WHEN:
- THE OUTSIDE AIR IS GREATER THAN THE ECONOMIZER HIGH LOCKOUT OF 65°F (ADJ)
- THE OUTSIDE AIR GREATER THAN THE ECONOMIZER HIGH ENTHALPY LOCKOUT OF 23 BTU/LB
- THE UNIT IS OPERATING IN DEHUMIDIFICATION MODE
- THERE IS A CALL FOR HEATING

SAFETIES:

1. IF THE OUTSIDE AIR DAMPER IS NOT PROVEN, THEN THE SUPPLY FAN SHALL REMAIN DE-ENERGIZED.

ALARMS:

- HIGH SUPPLY AIR TEMPERATURE (COOLING COIL): IF THE COOLING COIL SUPPLY AIR TEMPERATURE IS GREATER THAN 5°F ABOVE THE DESIGN DEW POINT TEMPERATURE. A VISUAL ALARM TO BE INITIATED AT OPERATOR WORK STATION (OWS) OR AT DOAS WITHOUT IF AN OWS DOES NOT EXIST.
- HIGH SUPPLY AIR TEMPERATURE (FURNACE): IF THE HEATING SUPPLY AIR TEMPERATURE IS GREATER THAN 15°F (ADJ.) ABOVE THE DESIGN DRY BULB TEMPERATURE.
- LOW SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 5°F (ADJ.) BELOW THE DESIGN AIR LEAVING TEMPERATURE.
- FINAL FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE AMOUNT.
- PRE-FILTER CHANGE REQUIRED: PRE-FILTER DIFFERENTIAL PRESSURE EXCEED A USER DEFINABLE AMOUNT.
- LOSS OF AIRFLOW: COMMANDED ON, BUT THERE IS NO PROOF OF AIRFLOW.
- PRE-FILTER CHANGE REQUIRED: PRE-FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.)
- COMPRESSOR HIGH PRESSURE: IF THE COMPRESSOR PRESSURE IS EXCEEDED BY THE MANUFACTURER'S DEFINED LIMIT.
- COMPRESSOR LOW PRESSURE: IF THE COMPRESSOR PRESSURE IS BELOW THE MANUFACTURER'S DEFINED LIMIT.
- DRAIN PAN OVERFLOW: DRAIN PAN LEVEL OVERFLOW DETECTED.
- HIGH ENTHALPY WHEEL PRESSURE

EMERGENCY HVAC SHUTDOWN:

UPON ACTIVATION OF THE EMERGENCY HVAC SHUTDOWN BUTTON (ESB), THE BAS IS SEND A SIGNAL TO THE DEDICATED OUTSIDE AIR HANDLING UNIT TO DE-ENERGIZE, AND CLOSE ASSOCIATED DAMPERS.

SMOKE DETECTION (SUPPLY & EXHAUST):
THE UNIT SHALL SHUT DOWN AND GENERATE A TROUBLE SIGNAL ALARM AT THE FIRE ALARM CONTROL PANEL UPON RECEIVING A SMOKE DETECTOR STATUS.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
SRG	APT	MJM

DATE: JANUARY 2026

DRAWING TITLE: MECHANICAL CONTROLS DIAGRAMS 2

DRAWING NO.: **M802**

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Project Number: SHYQ149104
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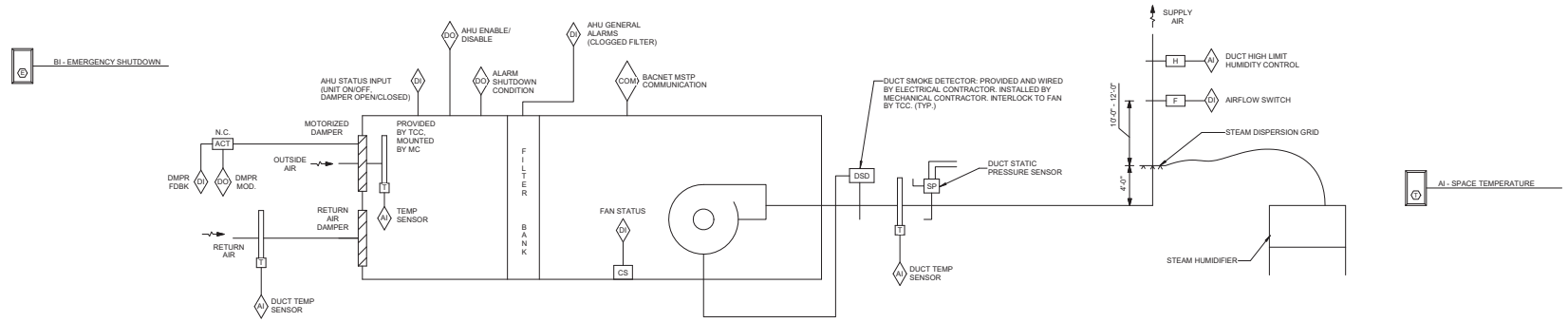

POINTS PROVIDED WITH AHU CONTROLLER:
POINTS WILL BE MADE AVAILABLE TO BMCS OVER INTERFACE CARD.

PACKAGED AIR HANDLING UNIT CONTROL - AH-02

PACKAGED AHU SYSTEM DESCRIPTION:

THE AHU MANUFACTURER SHALL PROVIDE A FACTORY MOUNTED CONTROL PANEL. ALL AVAILABLE DATA PROVIDED/MONITORED BY THE AHU CONTROL PANEL SHALL BE AVAILABLE TO AND MONITORED BY THE DDC SYSTEM.

THE CONTROLS CONTRACTOR SHALL EXTEND THE DDC NETWORK TO THE AIR HANDLING UNIT UNITARY CONTROLLER. THE CONTROLS CONTRACTOR SHALL PROVIDE ALL ADDITIONAL CONTROL COMPONENTS REQUIRED TO ACCOMPLISH THE SEQUENCE OF OPERATION.

BUILDING OCCUPANCY SCHEDULING:

DDC SYSTEM SHALL BE PROGRAMMED WITH THE FOLLOWING TENTATIVE SCHEDULE:

- OCCUPIED MODE: MONDAY - FRIDAY 6:00 AM - 6:00 PM (ADJ.); SATURDAY - SUNDAY 8:00AM - 6:00 PM (ADJ.)
- UNOCCUPIED MODE: MONDAY - FRIDAY 6:00 PM - 6:00 AM (ADJ.); SATURDAY - SUNDAY 6:00 PM - 8:00 AM (ADJ.)

EXACT SCHEDULE SHALL BE VERIFIED WITH THE COR.

START-UP AND SYSTEM CHANGE-OVER: CHANGE-OVER OCCURS AT THE BEGINNING OF EVERY OCCUPIED PERIOD AND WHENEVER THE AHU CONTROLLER SWITCHES BETWEEN COOLING AND HEATING MODES.

OCCUPIED MODE: DURING OCCUPIED PERIODS, THE AHU CONTROLLER SHALL RECEIVE INPUT FROM THE SPACE TEMPERATURE SENSOR(S) AND AVERAGE THE INPUT WHEN APPLICABLE. A CALL FOR A PARTICULAR MODE (HEATING OR COOLING) IS BASED UPON THE AVERAGE OF REQUESTS FROM THE SPACE SENSOR(S).

UNOCCUPIED MODE: IN UNOCCUPIED MODE, CLOSE THE OUTSIDE AIR DAMPER, AND POSITION THE RETURN/EXHAUST AIR DAMPERS FOR FULL RETURN AIR (NO EXHAUST). WHEN A ZONE SENSOR'S OVERRIDE BUTTON IS DEPRESSED DURING UNOCCUPIED PERIOD, OPERATE THE SYSTEM IN OCCUPIED MODE FOR ONE HOUR (ADJ.). UNIT TO RUN TO MAINTAIN SPACE TEMPERATURE.

FAN OPERATION: RUN THE UNIT FAN IN ALL MODES EXCEPT UNOCCUPIED MODE. ANY TIME THE SUPPLY FAN IS RUNNING, OPEN THE OUTSIDE AIR DAMPER TO PROVIDE MINIMUM OUTDOOR AIR. AHU CONTROLLER SHALL MODULATE SIGNAL TO SUPPLY FAN MOTOR BASED ON SPACE TEMPERATURE (SINGLE ZONE VAV CONTROL).

SHUTDOWN: WHEN SHUTDOWN IS INITIATED, CLOSE THE OUTSIDE AIR DAMPERS, OPEN THE RETURN AIR DAMPERS, AND DE-ENERGIZE THE UNIT.

COOLING MODE ENABLE: WHEN THE AHU CONTROLLER RECEIVES A CALL FOR COOLING, ENABLE THE UNIT'S COMPRESSOR. RESET THE SUPPLY AIR TEMPERATURE UPWARD FROM 55°F TO 65°F AS THE OUTDOOR TEMPERATURE FALLS FROM 90°F OR GREATER TO 65°F OR LOWER. ALLOW THE PACKAGE UNITS CONTROLS TO MODULATE THE COMPRESSOR TO SUPPLY THE NEEDED AIR TEMPERATURE. THE PACKAGE UNIT'S INTERNAL CONTROLS PROTECT THE EQUIPMENT FROM EXCESSIVE OPERATING CONDITIONS INCLUDING LOW OIL PRESSURE, HIGH DISCHARGE PRESSURE, LOW SUCTION PRESSURE, EXCESSIVE CYCLING (MORE THAN ONE EVERY 5 MINUTES OR 6 CYCLES/HOUR), LOW REFRIGERANT CHARGE, HIGH AND LOW REFRIGERANT TEMPERATURES, ETC. IF EXCESSIVE OPERATING CONDITIONS OCCUR, GENERATE AN ALARM ON THE AHU CONTROLLER AND SHUT DOWN THE PACKAGE UNIT TO PROTECT IT.

COOLING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60F (ADJ)
- AND THE ECONOMIZER IS NOT ENERGIZED.
- AND THE SUPPLY FAN STATUS IS ON
- AND THE HEATING IS NOT ACTIVE.

DEHUMIDIFICATION MODE: UNIT CONTROLS SHALL MODULATE COMPRESSOR(S) AND CONTROL HOT GAS REHEAT TO MAINTAIN SPACE RELATIVE HUMIDITY WITHIN 40-60% (ADJ).

COOLING MODE SHUTDOWN: IF A CALL FOR COOLING HAS BEEN SATISFIED, A SYSTEM FAILURE HAS OCCURRED, OR THE SUPPLY AIR TEMPERATURE HAS FALLEN BELOW 50°F FOR MORE THAN ONE MINUTE, CYCLE THE COMPRESSOR OFF. AFTER THE COMPRESSOR HAS SHUT DOWN, CONTINUE RUNNING THE SUPPLY FAN FOR 5 MINUTES BEFORE SHUTTING IT DOWN (EVEN IF THE UNOCCUPIED MODE IS ISSUED).

HEATING MODE ENABLE: WHEN THE AHU CONTROLLER RECEIVES A CALL FOR HEATING THE PACKAGED UNIT SHALL STAGE THE GAS HEATER TO SUPPLY HEAT TO THE SPACE AND MAINTAIN RETURN AIR TEMPERATURE SETPOINT. RESET THE SUPPLY AIR TEMPERATURE UPWARD FROM 80°F (ADJ.) TO 90° (ADJ.) AS THE OUTDOOR TEMPERATURE FALLS FROM 65°F OR GREATER TO 40°F OR LOWER.

THE PACKAGE UNIT'S INTERNAL CONTROLS PROTECT THE EQUIPMENT FROM EXCESSIVE OPERATING CONDITIONS INCLUDING HIGH TEMPERATURE, FLAME FAILURE, EXCESSIVE CYCLING (MORE THAN ONE EVERY 5 MINUTES OR 6 CYCLES/HOUR), LOW GAS PRESSURE, ETC. IF EXCESSIVE OPERATING CONDITIONS OCCUR, GENERATE AN ALARM ON THE AHU CONTROLLER AND SHUT DOWN THE PACKAGE UNIT TO PROTECT IT.

HEATING MODE SHUTDOWN: IF A CALL FOR HEATING HAS ENDED, A SYSTEM FAILURE HAS OCCURRED, OR THE SUPPLY AIR TEMPERATURE HAS RISEN ABOVE 110°F FOR MORE THAN ONE MINUTE, CYCLE THE HEATER OFF. AFTER THE HEATER HAS SHUT DOWN, CONTINUE RUNNING THE SUPPLY FAN FOR 5 MINUTES BEFORE SHUTTING IT DOWN (EVEN IF THE UNOCCUPIED MODE IS ISSUED BY THE AHU CONTROLLER).

HEATING SYSTEM OUTDOOR AIR TEMPERATURE LOCKOUT: IF THE OUTDOOR AIR TEMPERATURE RISES ABOVE 68°F (ADJ.), THE HEATING SYSTEM SHALL BE LOCKED OUT. IF THE OUTDOOR AIR TEMPERATURE FALLS BELOW 65°F (ADJ.), THE HEATER WILL BE ALLOWED TO FUNCTION AS REQUIRED TO MAINTAIN LOAD.

MIXED AIR TEMPERATURE:

THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE AND USE AS REQUIRED FOR ECONOMIZER CONTROL.

ECONOMIZER MODE:

THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.

THE ECONOMIZER SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR ENTHALPY IS LESS THAN 28 BTUH/HR (ADJ.)
- AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE.]
- AND THE SUPPLY FAN STATUS IS ON.

THE ECONOMIZER SHALL CLOSE WHENEVER:

- MIXED AIR TEMPERATURE DROP FROM 40°F TO 35°F (ADJ)
- OR THE FREEZESTAT IS ON
- OR ON LOSS OF SUPPLY FAN STATUS

ECONOMIZER MODE SHALL BE LOCKED OUT WHEN UNIT IS IN DEHUMIDIFICATION MODE.

THE OUTSIDE AIR DAMPER SHALL CLOSE AND RETURN DAMPER SHALL OPEN WHEN THE UNIT IS OFF. FOR OPTIMAL STARTUP, THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN OCCUPIED MODE, EXCEPT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION -FIXED PERCENTAGE:

THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION DURING BUILDING OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS.

EMERGENCY HVAC SHUTDOWN:

WHENEVER ANY OF THE HVAC EMERGENCY SHUTOFF SWITCHES ARE SWITCHED TO THE ON POSITION. ALL OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE ASSOCIATED EQUIPMENT SHALL TURN OFF. SHUTOFF SWITCH SHALL CONSIST OF RED PUSH BUTTON TO ACTIVATE, LOCATED AS SHOWN ON THE PLAN IN A POLYCARBONATE HOUSING AND SHALL BE LABELED "EMERGENCY HVAC SHUTOFF." HVAC EMERGENCY SHUTOFF SWITCHES SHALL BE HARD WIRED TO THE AHU.

ALARMS:

HIGH SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) GREATER THAN SETPOINT.

PRE-FILTER CHANGE REQUIRED: PRE-FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE AMOUNT

HIGH MIXED AIR TEMPERATURE: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.)

HIGH RETURN AIR TEMPERATURE: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).

HIGH RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS GREATER THAN 80% (ADJ.).

LOW MIXED AIR TEMPERATURE: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45°F (ADJ.)

LOW RETURN AIR TEMPERATURE: IF THE RETURN AIR TEMPERATURE IS LESS THAN 50°F (ADJ).

FIRE ALARM: FOR FIRE ALARM MODE OPERATION, THE SUPPLY FAN WILL BE SHUT DOWN BY HARDWIRED CONTACT. ONCE RESET, THE AFFECTED UNIT(S) WILL RESUME THE CURRENT MODE OF OPERATION.

AIR HANDLING UNIT REPORT GENERATION:
DDC SYSTEM SHALL MONITOR THE FOLLOWING POINTS ON 10 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR 100-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL AUTOMATICALLY OVERWRITE THE OLDEST VALUES:

THIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN GRAPHICAL FORM ON THE DDC OPERATOR WORKSTATION.

ONCE PER MONTH, THE DDC SYSTEM SHALL RECORD THE LARGEST AIR HANDLING UNIT AIRFLOW WHICH OCCURRED DURING THAT MONTH. THE DATE, TIME, OUTSIDE AIR TEMPERATURE (AND ALL OTHER VALUES LISTED ABOVE) THAT COINCIDED WITH THAT EVEN SHALL ALSO BE RECORDED. THIS INFORMATION SHALL BE STORED TO A MEMORY LOCATION ON THE DDC OPERATOR WORKSTATION THAT IS MAINTAINED (NOT AUTOMATICALLY OVERWRITTEN).

AIR HANDLING UNIT MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
MIXED AIR TEMPERATURE	■								■		■
PREFILTER DIFFERENTIAL PRESSURE	■								■		
SUPPLY AIR TEMPERATURE	■								■		■
OUTSIDE AIR ENTHALPY	■								■		■
RETURN AIR TEMPERATURE	■								■		■
RETURN AIR ENTHALPY	■								■		■
LEAVING COIL / PRE-FAN TEMPERATURE	■								■		■
MIXED AIR DAMPERS		■							■		■
FREEZESTAT			■						■	■	■
SUPPLY AIR STATIC PRESSURE	■										■
SUPPLY AIR SMOKE DETECTION			■						■	■	■
RETURN AIR SMOKE DETECTION			■						■	■	■
SUPPLY FAN VFD SPEED		■							■		■
SUPPLY FAN STATUS			■						■		■
SUPPLY FAN VFD FAULT			■							■	■
COOLING ENABLE				■					■		■
HEATING STAGE 1				■					■		■
HEATING STAGE 2				■					■		■
HEATING STAGE 3				■					■		■
HEATING STAGE 4				■					■		■
SUPPLY FAN START/STOP				■					■		■
DEHUMIDIFICATION SETPOINT					■				■		■
MIXED AIR TEMP SETPOINT					■						■
SUPPLY AIR STATIC PRESSURE SETPOINT					■						■
SUPPLY AIR TEMPERATURE SETPOINT					■						■
SUPPLY AIRFLOW PROVEN											■
COMPRESSOR RUNTIME EXCEEDED									■		
HIGH MIXED AIR TEMPERATURE										■	
HIGH RETURN AIR HUMIDITY										■	
HIGH RETURN AIR TEMPERATURE										■	
HIGH SUPPLY AIR STATIC PRESSURE SHUTDOWN										■	
HIGH SUPPLY AIR TEMPERATURE										■	
LOW MIXED AIR TEMPERATURE										■	
LOW RETURN AIR TEMPERATURE										■	
LOW SUPPLY AIR TEMPERATURE										■	
PRE-FILTER CHANGE REQUIRED										■	
SUPPLY FAN FAILURE										■	
SUPPLY FAN IN HAND										■	
SUPPLY FAN RUNTIME EXCEEDED										■	
EMERGENCY HVAC SHUTDOWN										■	■
TOTALS	8	2	5	6	4	0	0	0	21	17	26

PACKAGED HUMIDIFIER SYSTEM DESCRIPTION:

THE HUMIDIFIER MANUFACTURER SHALL PROVIDE FACTORY CONTROLS TO FULLY OPERATE HUMIDIFIER. ALL AVAILABLE DATA PROVIDED/MONITORED BY THE HUMIDIFIER CONTROLS SHALL BE AVAILABLE TO AND MONITORED BY THE DDC SYSTEM.

THE CONTROLS CONTRACTOR SHALL EXTEND THE DDC NETWORK TO THE HUMIDIFIER UNITARY CONTROLLER. THE CONTROLS CONTRACTOR SHALL PROVIDE ALL ADDITIONAL CONTROL COMPONENTS REQUIRED TO ACCOMPLISH THE SEQUENCE OF OPERATION.

OPERATION: HUMIDIFIER CONTROL SYSTEM SHALL MODULATE STEAM OUTPUT TO DISPERSION GRID TO MAINTAIN A SPACE HUMIDITY SETPOINT OF 45% RH (ADJ.). AIRFLOW PROVING SWITCH LOCATED IN THE SUPPLY DUCT DOWNSTREAM OF THE DISPERSION GRID SHALL PROVE AIRFLOW PRIOR TO ALLOWING HUMIDIFIER TO DISPERSE STEAM FOR HUMIDIFICATION. HIGH LIMIT TRANSMITTER LOCATED IN THE SUPPLY DUCT DOWNSTREAM OF THE DISPERSION GRID SHALL SENSE HUMIDITY IN SUPPLY AIRSTREAM AND SHUT DOWN HUMIDIFIER IF ADJUSTABLE UPPER LIMIT IS REACHED.

1 (RELOCATED) AH-02 CONTROLS DIAGRAM
SCALE: NTS

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

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DRAWING NO.: **M803**

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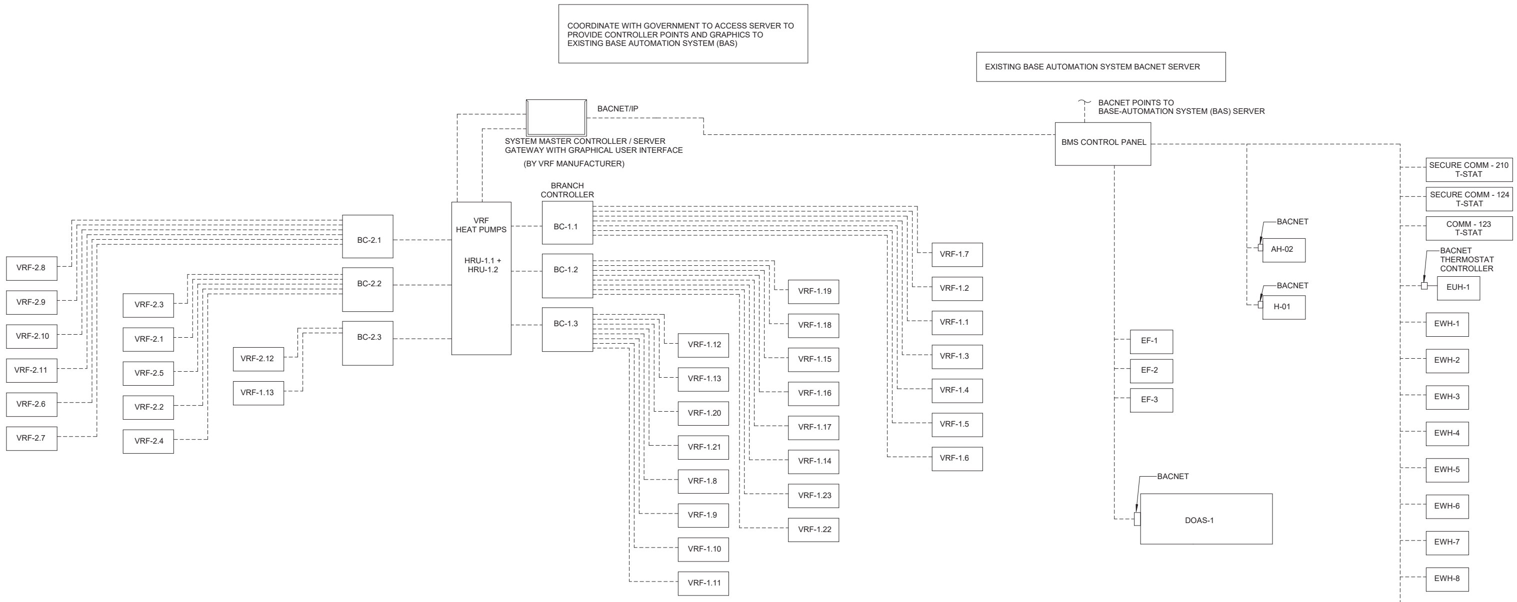
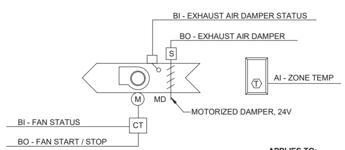


1 NETWORK CONTROL DIAGRAM

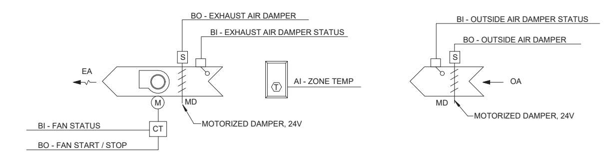
SCALE: NTS



APPLIES TO:
EF-1, -2

2 CONTROLS DIAGRAM - EXHAUST FANS - TEMPERATURE CONTROLLED

SCALE: NTS



APPLIES TO:
EF-3

3 CONTROLS DIAGRAM - EXHAUST FANS - TEMPERATURE CONTROLLED

SCALE: NTS

RUN CONDITIONS - TEMPERATURE:

GENERAL
THE UNIT SHALL BE ENABLED TO MAINTAIN A ZONE TEMPERATURE SETPOINT OF 85°F (ADJ.)

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

DAMPER STATUS:
THE FAN SHALL BE ENABLED AFTER THE DAMPER STATUS HAS PROVEN.

EMERGENCY HVAC SHUTDOWN:
UPON ACTIVATION OF THE EMERGENCY HVAC SHUTDOWN BUTTON (ESB), THE BAS IS SEND A SIGNAL TO THE EXHAUST FAN TO DE-ENERGIZE, AND CLOSE ASSOCIATED EXHAUST AIR DAMPER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.
- HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 15°F (ADJ.)

EXHAUST FANS - TEMPERATURE CONTROLLED MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
ZONE TEMPERATURE	■								■		■
EXHAUST AIR DAMPER STATUS			■						■		■
EXHAUST AIR DAMPER				■					■		■
FAN STATUS			■						■		■
FAN START / STOP				■					■		■
COOLING SETPOINT					■				■		■
EXHAUST AIR DAMPER FAILURE										■	
EXHAUST AIR DAMPER IN HAND										■	
FAN FAILURE										■	
FAN IN-HAND										■	
FAN RUNTIME EXCEEDED										■	
HIGH ZONE TEMPERATURE										■	
EMERGENCY HVAC SHUTDOWN										■	■
TOTALS	1	0	2	2	1	0	0	0	6	7	7

RUN CONDITIONS - TEMPERATURE:

GENERAL
THE UNIT SHALL BE ENABLED TO MAINTAIN A ZONE TEMPERATURE SETPOINT OF 85°F (ADJ.)

FAN:
THE FAN SHALL RUN ANYTIME THE ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT, UNLESS SHUTDOWN ON SAFETIES.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

DAMPER STATUS:
THE FAN SHALL BE ENABLED AFTER THE DAMPER STATUS HAS PROVEN.

EMERGENCY HVAC SHUTDOWN:
UPON ACTIVATION OF THE EMERGENCY HVAC SHUTDOWN BUTTON (ESB), THE BAS IS SEND A SIGNAL TO THE EXHAUST FAN TO DE-ENERGIZE, AND CLOSE ASSOCIATED EXHAUST AIR DAMPER AND OUTSIDE AIR DAMPER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- FAN RUNTIME EXCEEDED FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- EXHAUST AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- EXHAUST AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.
- OUTSIDE AIR DAMPER FAILURE: COMMANDED OPEN, BUT THE STATUS IS CLOSED.
- OUTSIDE AIR DAMPER IN HAND: COMMANDED CLOSED, BUT THE STATUS IS OPEN.
- HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 15°F (ADJ.)

EXHAUST FAN & OA DAMPER - TEMPERATURE CONTROLLED MINIMUM BAS POINTS LIST

POINT NAME	HARDWARE POINT				SOFTWARE POINTS						SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	LOOP	SCHEDULE	TREND	ALARM	
ZONE TEMPERATURE	■								■		■
EXHAUST AIR DAMPER STATUS			■						■		■
EXHAUST AIR DAMPER				■					■		■
OUTSIDE AIR DAMPER			■						■		■
OUTSIDE AIR DAMPER STATUS				■					■		■
FAN STATUS			■						■		■
FAN START / STOP				■					■		■
COOLING SETPOINT					■				■		■
EXHAUST AIR DAMPER FAILURE										■	
EXHAUST AIR DAMPER IN HAND										■	
OUTSIDE AIR DAMPER FAILURE										■	
OUTSIDE AIR DAMPER IN HAND										■	
FAN FAILURE										■	
FAN IN-HAND										■	
FAN RUNTIME EXCEEDED										■	
HIGH ZONE TEMPERATURE										■	■
TOTALS	1	0	3	3	1	0	0	0	8	8	9

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

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DRAWING NO.: M804

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LIGHTING

(NOTE: CAPITAL LETTER @ SYMBOL DENOTES FIXTURE TYPE, LOWER CASE LETTER DENOTES CONTROL DEVICE.)

- CEILING MOUNT 2x2 LED FIXTURE
- CEILING MOUNT 2x4 LED FIXTURE
- 4' CEILING MOUNT LED FIXTURE
- 8' CEILING MOUNT LED FIXTURE
- WALL MOUNT LED FIXTURE
- CEILING MOUNT LED FIXTURE
- WALL MOUNT LED FIXTURE
- LED SPOT/FLOOD LIGHT FIXTURE
- WALL MOUNT LED SPOT/FLOOD LIGHT FIXTURE
- LED LIGHT FIXTURE DEDICATED FOR UNSWITCHED
- POLE STANDARD LIGHT FIXTURE (ONE LUMINAIRE INDICATED)
- EXIT SIGN FIXTURE (SINGLE FACE UNIVERSAL MOUNT INDICATED)
- EXIT SIGN FIXTURE W/DIRECTIONAL ARROWS (DOUBLE FACE UNIVERSAL MOUNT INDICATED)
- S — SWITCH, SINGLE POLE
- S_3 — SWITCH, 3-WAY
- S_4 — SWITCH, 4-WAY
- S_D — SWITCH, DIMMER
- PHOTOELECTRIC CONTROL
- LIGHTING CONTACTOR:
  - LC1 — REPRESENTS LIGHTING CONTACTOR IDENTIFICATION
- OS — PIR OCCUPANCY SENSOR CEILING MOUNT
- OS — PIR OCCUPANCY SENSOR WALL MOUNT
- DT — DIGITAL TIME SWITCH WALL MOUNT

EMERGENCY LIGHTING

- LUMINAIRE PROVIDING EMERGENCY ILLUMINATION
- EMERGENCY BATTERY PACK
- EXIT — EMERGENCY EXIT SIGN
- REMOTE TWIN HEADS

GENERAL POWER

- SINGLE RECEPTACLE
- DUPLEX RECEPTACLE, NEMA 5-20R
- GF — RECEPTACLE WIRED TO GROUND FAULT CIRCUIT BREAKER
- GFI — GROUND FAULT CIRCUIT INTERRUPTER
- CTR — COUNT TOP
- S — SWITCHED
- TR — TAMPER RESISTANT
- WP — WEATHER RESISTANT RECEPTACLE WHILE-IN-USE COVER
- WR — WEATHER RESISTANT RECEPTACLE
- DUPLEX RECEPTACLE, NEMA 5-20R
  - TV — RECEPTACLE FOR TV/MONITOR, FIELD VERIFY MOUNTING HEIGHT
- DOUBLE DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE DEDICATED FOR UPS POWER
- SPECIAL PURPOSE RECEPTACLE (AMPACITY AS NOTED)
  - A - 30A, 2 POLE + GROUND, 208VAC, 1-PHASE, NEMA 4X, IP66/IP67
  - B - 30A, 1POLE + NEUTRAL + GROUND, 125VAC, NEMA 4X, IP66/IP67
  - C - 30A, 3 POLE + GROUND, 208VAC, 3-PHASE, NEMA 4X, IP66/IP67
  - D - 60A, 3 POLE + GROUND, 208VAC, 3-PHASE, NEMA 4X, IP66/IP67
  - E - 30A, 2 POLE + GROUND, 250VAC, 1-PHASE, TWISTLOCK
  - F - 30A, 1 POLE + NEUTRAL + GROUND, 125VAC, TWISTLOCK
- DUPLEX RECEPTACLE FLOOR MOUNTED
- SPECIAL PURPOSE RECEPTACLE FLOOR MOUNTED (AMPACITY AS NOTED)
- B10 — SURFACE MOUNTED RACEWAY, LETTER INDICATES TYPE (SEE E600), NUMBER INDICATES LENGTH
- J — JUNCTION BOX
- NON FUSED DISCONNECT SWITCH
- F — FUSED DISCONNECT SWITCH
- MOTOR STARTER
- COMBINATION MOTOR STARTER
- CONTACTOR
- TS — TIME CLOCK SWITCH CONTROL
- S_T — TIME SWITCH
- S_M — MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOADS
- S_{MT} — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOADS
- S_{MF} — MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOADS WITH PILOT LIGHT
- PANELBOARD
- PB — PUSHBUTTON STATION TYPE AS NOTED
- MUSHROOM SWITCH
- MOTOR (HORSEPOWER INDICATED ON PLANS)
- T — TRANSFORMER
- GENERATOR
- MOD — MOTOR OPERATED DAMPER
- T — THERMOSTAT
- UPS — UNINTERRUPTIBLE POWER SUPPLY
- SPD — SURGE PROTECTION DEVICE
- UNIT HEATER
- VFD — VARIABLE FREQUENCY DRIVE

ACCESS CONTROL/INTRUSION ALARM

- AICP — ACCESS/INTRUSION ALARM CONTROL PANEL
- DC W — DOOR CONTACT "W" = WIDE
- KP — ACCESS KEYPAD
- CR — CARD READER
- ES — ELECTRIC DOOR STRIKE
- GR — GATE RELEASE
- RX — REQUEST TO EXIT
- SECURITY MOTION SENSOR
- WALL SECURITY MOTION SENSOR

ONE LINE DIAGRAM

- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER
  - AF — AMP FRAME
  - AT — AMP TRIP
  - EO — ELECTRICALLY OPERATED
  - LISG — TRIP ELEMENTS: L- LONG TIME, S- SHORT TIME, I- INSTANTANEOUS, G GROUND FAULT
  - ST — SHUNT TRIP
- LOW VOLTAGE CIRCUIT BREAKER
- M — CURRENT TRANSFORMER/METER COMBINATION
- ST — ST - SHUNT TRIP, GF - GROUND FAULT, EO - ELECTRICALLY OPERATED
- MEDIUM VOLTAGE ISOLATION SWITCH
- FUSED CUTOUT
- FUSED LOAD BREAK SWITCH
- CONTACTOR
  - 7 — NEMA SIZE
- 1 — MAGNETIC MOTOR STARTER. NUMERAL INDICATES NEMA SIZE (FVNR UNLESS OTHERWISE NOTED)
- CAPACITOR
- VFD — VARIABLE FREQUENCY DRIVE
- POWER TRANSFORMER
- VOLTAGE TRANSFORMER
  - 480-120 — RATIO
  - 2 — NUMBER REQUIRED
  - X — POLARITY MARK
- CURRENT TRANSFORMER
  - 600/5 MR C/200 — MULTI RATIO, ACCURACY CLASS
- GROUND FAULT CURRENT TRANSFORMER (CORE BALANCE)
- S — MOTOR, NUMBER INDICATES HORSE POWER
- GENERATOR
- ATS — ATS - AUTOMATIC TRANSFER SWITCH, MTS - MANUAL TRANSFER SWITCH
- FUSE
- GROUND
- A — METER
  - A - AMMETER
  - V - VOLTMETER
  - W - WATT METER
  - WH - WATT HOUR METER
  - KWH - KILOWATT HOUR
  - KVAR - KILOVAR METER
  - VAR - VAR METER
  - HZ - FREQUENCY METER
  - PF - POWER FACTOR METER
- DPM — DIGITAL POWER METER
- SPD — SURGE PROTECTION DEVICE
- LIGHTNING ARRESTOR
- NON FUSED SAFETY SWITCH
- F — FUSED SAFETY SWITCH
- 600A 3P — MANUAL TRANSFER SWITCH WITH CONNECTION FOR PERMANENT GENERATOR (HARDWIRED) PORTABLE GENERATOR (CAM CONNECTIONS) & LOAD BANK (CAM CONNECTIONS) (TRIPLE SWITCH OR APPROVED EQUAL)

FIRE ALARM SYSTEM

- FACP — FIRE ALARM/MASS NOTIFICATION CONTROL PANEL
- FAAP — FIRE ALARM ANNUNCIATOR PANEL
- LOC — FIRE ALARM ANNUNCIATOR PANEL
- F — FIRE ALARM MANUAL PULL STATION
- F — FIRE ALARM STROBE
  - C — CEILING MOUNTED
  - (15) — CANDELL RATING
- F — FIRE ALARM SPEAKER/STROBE
- F — FIRE ALARM SPEAKER
  - WP — WEATHERPROOF
- S — SMOKE DETECTOR
- D — DUCT SMOKE DETECTOR
- HEAT DETECTOR
  - C — RATE OF RISE
- MM — MONITOR MODULE
- CM — CONTROL MODULE
- TS — SPRINKLER SYSTEM TAMPER SWITCH
- FS — SPRINKLER SYSTEM WATER FLOW SWITCH

COMMUNICATION

- S — CEILING SPEAKER
- S — WALL MOUNTED SPEAKER
- S S — WALL MOUNTED DOUBLE SPEAKER
- S — POLE MOUNTED SPEAKER
- S S — POLE MOUNTED DOUBLE SPEAKER
- TELEPHONE OUTLET
- DATA OUTLET
  - # = QUANTITY OF PORTS
  - S = SIPRNET CLASSIFIED* (COORDINATE HEIGHT)
  - N = NIPRNET NON-CLASSIFIED*
  - * SPACE BETWEEN SIPRNET AND NIPRNET DEVICES AND CABLES SHALL BE 1 METER MINUMUM.
- TELEPHONE / DATA OUTLET
- TTC — TELEPHONE TERMINAL CABINET
- D — DESKTOP HAND SET
- WALL MOUNTED HAND SET
- TV — TV OUTLET, FIELD VERIFY MOUNTING HEIGHT

CONDUIT FEEDERS & BRANCH CIRCUITS

- CONDUIT - EXPOSED
- CONDUIT TURNED
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- CONDUIT CAPPED
- CIRCUIT HOME RUN
- 10 — CONDUIT FEEDER IDENTIFICATION (SEE FEEDER LEGEND ON DRAWING)
- 3 #8, 1 #10 EGC - 3/4"C. — CONDUIT FEEDER IDENTIFICATION

LINES & REFERENCE SYMBOLS

- NEW WORK LINE WEIGHT
- DEMOLITION WORK LINE WEIGHT
- EXISTING WORK LINE WEIGHT
- FUTURE WORK LINE WEIGHT
- POINT OF CONNECTION
- TERMINATION POINT OF DEMOLITION
- POINT OF FUTURE CONNECTION
- # — SHEET NOTE REFERENCE
- # — REVISION REFERENCE
- E-1 — EQUIPMENT TAG
- NORTH ARROW
- INDICATES PLAN/DETAIL NUMBER
- PLAN/DETAIL TITLE
- 1 VIEW TITLE, SCALE: — SCALE (AS REQUIRED)
- INDICATES PLAN/DETAIL NUMBER
- 1 / M301 — INDICATES DRAWING ON WHICH DRAWING SECTION APPEARS

GROUNDING

- GROUND ROD
- G — BARE COPPER CONDUCTOR EXPOSED
- G — BARE COPPER CONDUCTOR BURIED OR EMBEDDED IN CONCRETE
- GROUND BUS/BAR
- TEST WELL

GENERAL SYMBOL SHEET, NOT ALL SYMBOLS ARE USED.

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ABBREVIATIONS

A or AMP	AMPERE
AC	ALTERNATING CURRENT
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AS	AMMETER SELECTOR SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
DISC	DISCONNECT
DIV	DIVISION
DS	DISCONNECT SWITCH
EC	ELECTRICAL CONTRACTOR
ECH	ELECTRIC CABINET HEATER
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING (CONDUIT)
EP	EXPLOSION PROOF
EUH	ELECTRIC UNIT HEATER
F/T	FEED THROUGH
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP/MNS	FIRE ALARM CONTROL PANEL / MASS NOTIFICATION SYSTEM
FRE	FIBERGLASS REINFORCED EPOXY
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GRD	GROUND
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING - VENTILATION - AIR CONDITIONING
IG	ISOLATED GROUND
IND	INDUSTRIAL
JIC	JOINT INDUSTRIAL COUNCIL
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
LA	LIGHTNING ARRESTOR
LC	LIGHTING CONTACTOR
LTG	LIGHTING
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUG ONLY
MOA	MULTI OUTLET ASSEMBLY
MOD	MOTOR OPERATED DAMPER
MS	MOTOR STARTER
MTD	MOUNTED
MV	MEDIUM VOLTAGE
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
No	NUMBER
PMT	PAD MOUNTED TRANSFORMER
PNL	PANEL
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE (CONDUIT)
RECP	RECEPTACLE
RGS	RIGID GALVANIZED STEEL(CONDUIT)
RVAT	REDUCED VOLTAGE AUTOTRANSFORMER
RVSS	REDUCED VOLTAGE SOLID STATE
SC	SURGE CAPACITOR
SPD	SURGE PROTECTION DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
TC	CABLE TRAY - CABLE
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITER LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VS	VOLTMETER SELECTOR SWITCH
W	WIRE
WP	WEATHERPROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER
1-PH	SINGLE PHASE
3-PH	THREE PHASE

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA-70) AS ADOPTED BY AUTHORITIES HAVING JURISDICTION.
2. ALL ELECTRICAL WORK SHALL BE PROPERLY GROUNDED AND SHALL MEET ALL REQUIREMENTS OF THE APPLICABLE SECTION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ANY AUTHORITIES HAVING JURISDICTION.
3. DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DIVISIONS TRADES TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. CONTRACTOR SHALL COORDINATE LOCATION OF FIXTURES, DEVICES, ETC WITH OTHER TRADES IN ORDER TO AVOID INTERFERENCES.
4. ARCHITECTURAL FEATURES SHOWN ON THESE DRAWINGS ARE FOR BACKGROUND INFORMATION ONLY. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ACTUAL BUILDING CONSTRUCTION WALLS AND CURBS. REFER TO EQUIPMENT DRAWINGS FOR ACTUAL LOCATION OF EQUIPMENT.
5. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE ELECTRICAL CONTRACTOR BASED ON THE CERTIFIED MANUFACTURER'S DRAWINGS OF RESPECTIVE EQUIPMENT. CONDUITS SHALL BE INSTALLED TO AGREE WITH EQUIPMENT FURNISHED.
6. WALL AND FLOOR PENETRATIONS SHALL BE BY THE ELECTRICAL CONTRACTOR. PROVIDE FIRESTOP AS REQUIRED FOR ALL PENETRATIONS MADE FOR ELECTRICAL WORK.
7. COORDINATE THE COLORS OF WIRING DEVICES AND FACEPLATES WITH THE ARCHITECT.
8. EQUIPMENT AND DEVICES SHALL MATCH THE BUILDING STANDARD.

WIRING METHODS

1. UNDERGROUND
   A. UNLESS OTHERWISE NOTED ON THE DRAWINGS CONCRETE ENCASED AND DIRECT BURIED CONDUIT SHALL BE SCHEDULE 40 PVC. WHERE CONDUITS PASS THROUGH GRADE, THROUGH CONCRETE PADS, OR THROUGH BUILDING FOUNDATION WALLS OR FLOOR SLABS CONDUIT SHALL BE PVC COATED.
2. OUTDOORS
   A. UNLESS OTHERWISE NOTED ON THE DRAWINGS CONDUIT INSTALLED OUTDOORS SHALL BE GALVANIZED RIGID STEEL AND FLEXIBLE CONNECTIONS SHALL BE LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
3. INDOORS
   A. IN FINISHED AREAS ALL RACEWAY AND WIRING SHALL BE CONCEALED AND BOXES RECESSES. WIRING INSTALLED IN MASONRY WALLS SHALL BE EMT OR GALVANIZED RIGID STEEL. WIRING INSTALLED IN STUD WALL CAVITIES OR ABOVE HUNG CEILINGS MAY BE EMT.
   B. IN UNFINISHED AREAS SUCH AS MECHANICAL AND ELECTRICAL ROOMS WIRING SHALL BE INSTALLED IN RGS.

GENERAL DEMOLITION NOTES

1. ALL RELOCATED EQUIPMENT SHALL COME FROM EXISTING SIMULATOR ROOM. COORDINATE LOCATION AND REMOVAL OF ELECTRICAL EQUIPMENT WITH GOVERNMENT AND CAE. REFER TO ONE-LINE, POWER, AND MECHANICAL POWER DRAWINGS FOR ADDITIONAL INFORMATION.

PAD MOUNTED SECTIONALIZING CABINET

ENCLOSURE
- 12-GAUGE GALVANIZED STEEL MANUFACTURED TO ANSI C37.72 AND C57.12.28 STANDARDS.
- TAMPER RESISTANT WITH TOP HINGED (FLIP TOP) ACCESS DOOR.
- STAINLESS STEEL HARDWARE
- PENTA-HEAD LOCKING BOLT AND PROVISIONS FOR PADLOCKING ENCLOSURE LID
- MAX SIZE 4/0 AWG (CU) MECHANICAL GROUND LUGS AND GROUND NUTS ON MOUNTING BARS
- JUNCTION BARS BOLTED TO MILD STEEL MOUNTING PLATE AND ACCOMMODATE UP TO 4-POINT CONFIGURATIONS (4-WAY) OF 200A LOAD BREAK ELBOWS. JUNCTION BARS SHALL BE LIGHT GRAY IN COLOR WITH DURABLE POWDER-PAINT FINISH PER ANSI STANDARDS.
- INCLUDE LIFTING PROVISIONS FOR INSTALLATION.
- STANDARD GREEN FINISH (MUNSELL 7.0GY3.29/1.5)
- INCLUDE STANDARD HIGH VOLTAGE WARNING LABEL ON EXTERIOR OF CABINET - WARNING - KEEP OUT - HAZARDOUS VOLTAGE INSIDE OR EQUAL.
- INCLUDE STANDARD LABELING INCLUDING MANUFACTURER, CATALOG/MODEL NUMBER, DATE OF MANUFACTURE, SERIAL NUMBER, CONTINUOUS CURRENT RATING, VOLTAGE RATING AND CONNECTION DIAGRAM(S)
- SECTIONALIZING CABINET SHALL SHIP FULLY ASSEMBLED FROM FACTORY

EQUIPMENT RATINGS
- 600A CONTINUOUS CURRENT AMPERAGE, DEAD-FRONT CONSTRUCTION
- 15KV PHASE-TO-PHASE, 3-PHASE, 3-WIRE + GROUND
- MAXIMUM DESIGN VOLTAGE SHALL BE 15.5KV
- BASIC IMPULSE LEVEL VOLTAGE (BIL) SHALL BE 110KV
- 200A LOAD BREAK BUSHING WELLS AND INSERTS
- PARKING STANDS

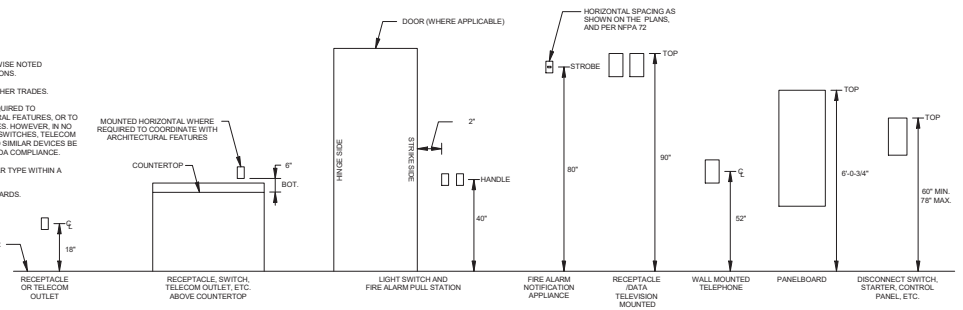
FACTORY TESTING (PRIOR TO SHIPPING)
- AC HI-POT TEST, ONE MINUTE PHASE-TO-PHASE AND PHASE-TO-GROUND
- CONTINUITY TEST
- CIRCUIT RESISTANCE

MANUFACTURERS
- MANUFACTURED BY EATON (G&W), HUBBELL, OR EQUAL.
- BABA REQUIRED

WARRANTY
- PROVIDE STANDARD 1-YEAR WARRANTY

NOTES:

1. ALL DIMENSIONS ARE TYPICAL, UNLESS OTHERWISE NOTED ELSEWHERE ON THE PLANS, DETAILS, OR SECTIONS.
2. COORDINATE ALL WORK WITH THE WORK OF OTHER TRADES.
3. DIMENSIONS SHOWN MAY BE ADJUSTED AS REQUIRED TO ACCOMMODATE ARCHITECTURAL OR STRUCTURAL FEATURES, OR TO COORDINATE WITH THE WORK OF OTHER TRADES. HOWEVER, IN NO CASE SHALL THE TOP OF RECEPTACLES, LIGHT SWITCHES, TELECOM OUTLETS, PULL STATIONS, CARD READERS, AND SIMILAR DEVICES BE MORE THAN 48" ABOVE FINISHED FLOOR FOR ADA COMPLIANCE.
4. MOUNTING HEIGHT OF ALL DEVICES OF A SIMILAR TYPE WITHIN A ROOM OR SPACE SHALL BE CONSISTENT.
5. COORDINATE WITH RSA CONSTRUCTION STANDARDS.



1 **TYPICAL MOUNTING HEIGHTS**
SCALE: NOT TO SCALE

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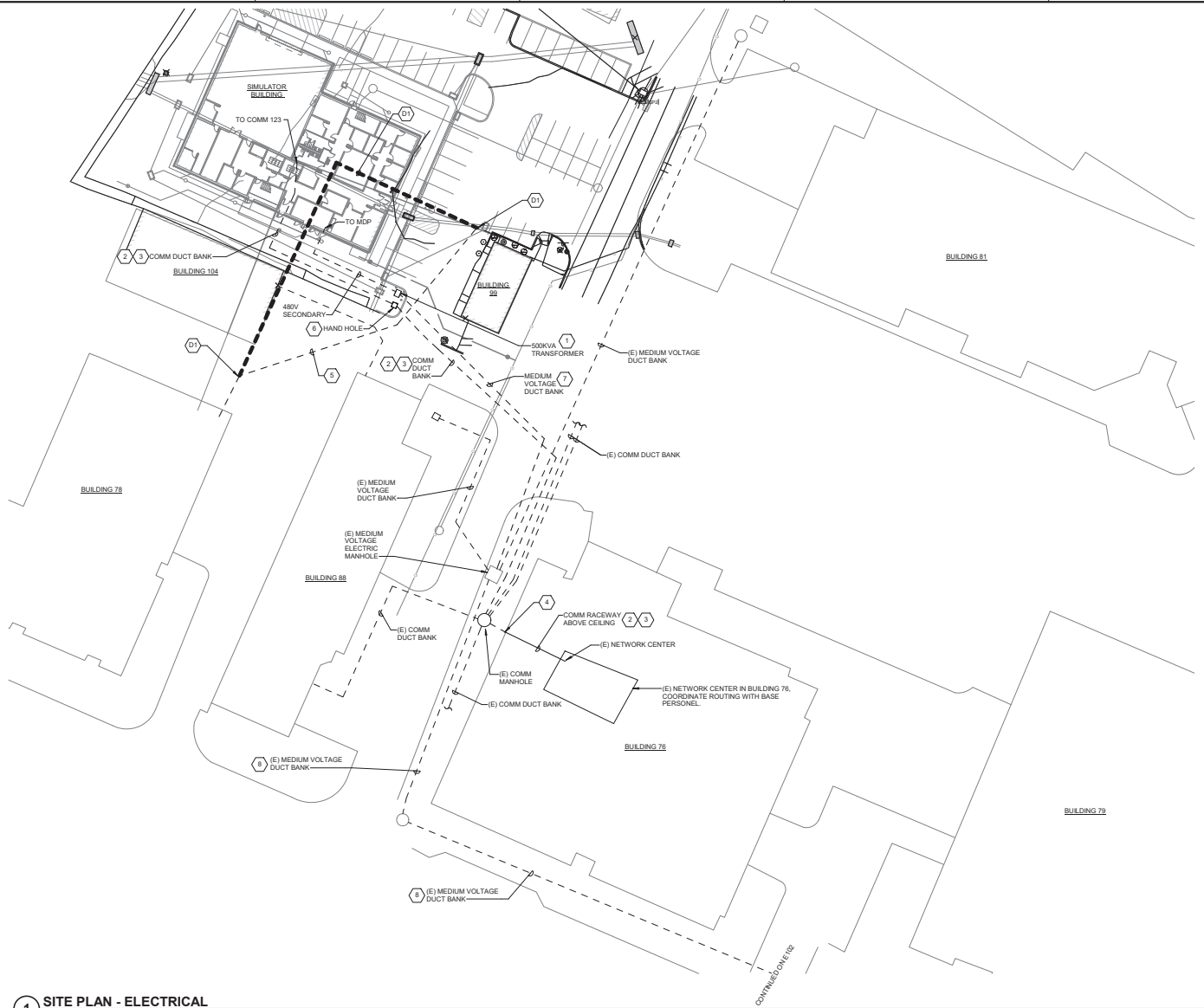

1 SITE PLAN - ELECTRICAL
SCALE: 1" = 30'-0"

GENERAL NOTES:

1. FIELD VERIFY ROUTING OF ALL UNDERGROUND DUCT BANKS WITH GOVERNMENT.
2. COORDINATE WITH CIVIL DRAWINGS AND OTHER DISCIPLINES FOR OTHER EXISTING AND NEW UTILITIES AND EXTERIOR FEATRUES.
3. DUCT BANK SUBJECT TO CAR/TRUCK TRAVEL SHALL BE CONCRETE ENCASED.
4. REFER TO DETAIL SHEET FOR ADDITIONAL INFORMATION.

DEMOLITION NOTES: (D#)

1. INTERCEPT EXISTING UNDER GROUND DUCT BANK TO BUILDING 99. REMOVE UNUSED UNDERGROUND DUCT BANK. COORDINATE DOWN TIME WITH GOVERNMENT.

DRAWING NOTES: (#)

1. PROVIDE EQUIPMENT PAD, VERIFY SIZE OF EQUIPMENT. REFER TO EQUIPMENT PAD DETAIL FOR ADDITIONAL INFORMATION.
2. PROVIDE (4) 4" SCHED 40 PVC RACEWAY FROM EXISTING NETWORK ROOM IN BUILDING 76 THROUGH EXISTING MANHOLE TO COMM ROOM IN SIMULATOR. (2) 4" RACEWAY SHALL HAVE 3X3 INNER DUCT. (1) 4" SHALL BE USED FOR COPPER AND (1) INNER DUCT SHALL BE USED FOR FIBER. FOR SPARE (1) 4" RACEWAY, (2) INNER DUCT (WITHIN 4" RACEWAY), AND (3) INNER DUCT (WITHIN 4" RACEWAY) SHALL BE PROVIDED PULL CORD.
3. PROVIDE 100 PAIR INDOOR/OUTDOOR COPPER AND 48 STRANDS INDOOR/OUTDOOR MULTI-MODE FIBER FROM EXISTING NETWORK ROOM IN BUILDING 76 THROUGH EXISTING MANHOLE TO COMM ROOM IN SIMULATOR. COIL 30' OF SPARE COPPER AND FIBER ON BOTH ENDS. CONTRACTOR SHALL PROVIDE EQUIPMENT IN BUILDING 76 AS REQUIRED, COORDINATE WITH GOVERNMENT.
4. ROUTE COMMUNICATION RACEWAY UP EXTERIOR WALL TO ABOVE INTERIOR CEILING AND THEN TURN INTO BUILDING, FIELD COORDINATE EXACT LOCATION AND HEIGHT. CONCRETE ENCASE EXPOSED RACEWAY IN A MINIMUM OF 2" CONCRETE. COORDIANTE WORK WITH GOVERNMENT.
5. PROVIDE NEW 13.2KV UNDERGROUND DUCT BANK TO MATCH EXISTING. PROVIDE RACEWAY AND CONCRETE IF APPLICABLE TO MATCH EXISTING. PROVIDE NEW CONDUCTORS TO MATCH EXISTING FROM SOURCE TO LOAD.
6. FIELD VERIFY EXACT MOUNTING LOCATION. REFER TO HAND HOLE DETAIL FOR ADDITIONAL INFORMATION.
7. NEW MEDIUM VOLTAGE DUCT BANK, REFER TO ONE-LINE FOR ADDITIONAL INFORMATION.
8. EXISTING MEDIUM VOLTAGE DUCT BANK, REFER TO ONE-LINE FOR ADDITIONAL INFORMATION. USE SPARE RACEWAY FOR NEW 13.2KV SIMULATOR.

TRUE NORTH

0' 30' 60'
SCALE: 1/30" = 1'-0"

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1-28-26

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HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

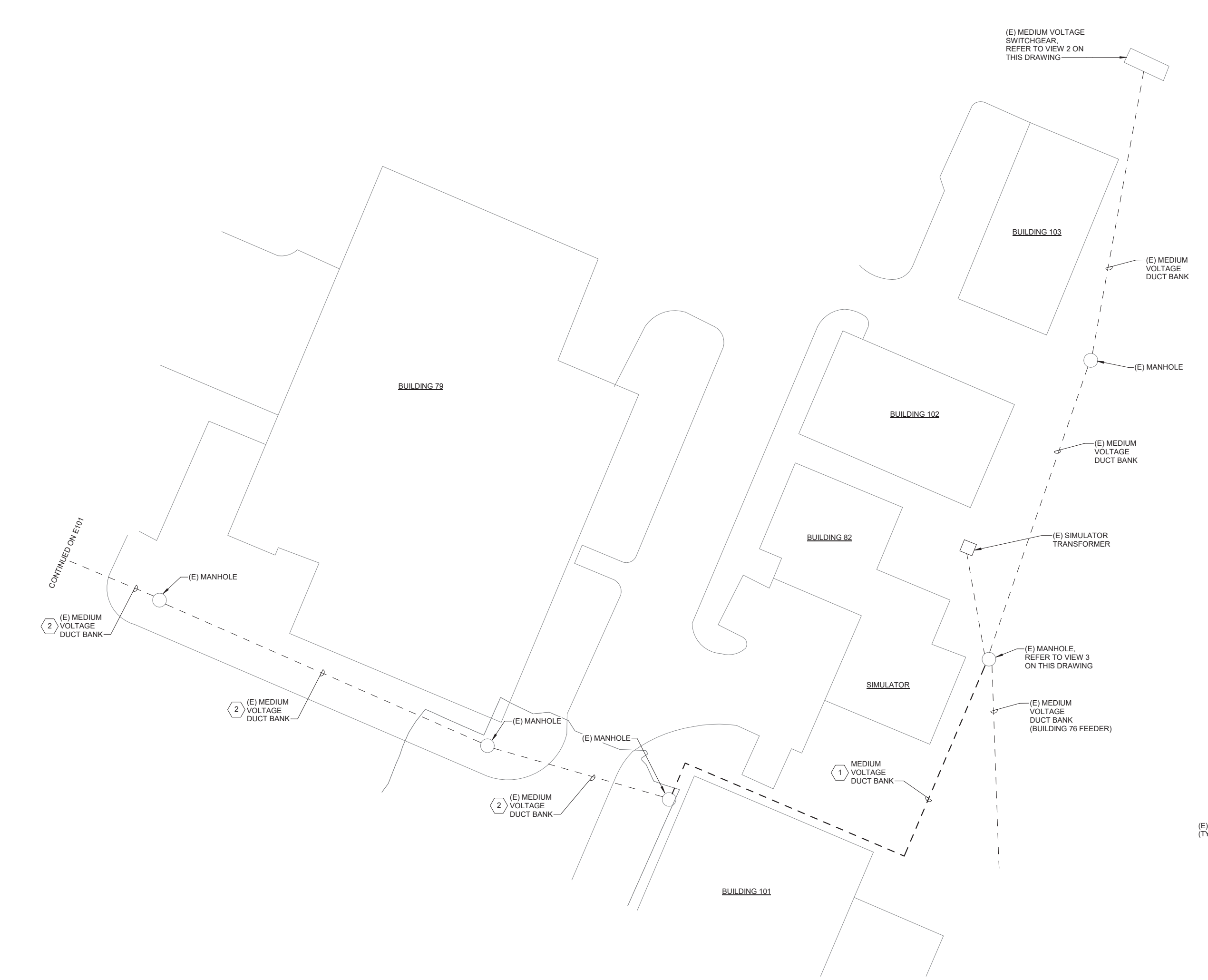
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL SITE

DRAWING NO.: **E101**

Project Number: SHYQ149104
1/27/2026 8:53:43 AM
Local File:Autodesk Docs:/070046-PANNG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM1690_M_R23



1 SITE PLAN (EAST) - ELECTRICAL

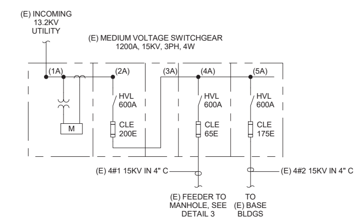
SCALE: 1" = 30'-0"

GENERAL NOTES:

1. FIELD VERIFY ROUTING OF ALL UNDERGROUND DUCT BANKS WITH GOVERNMENT.
2. COORDINATE WITH CIVIL DRAWINGS AND OTHER DISCIPLINES FOR OTHER EXISTING AND NEW UTILITIES AND EXTERIOR FEATRUES.
3. DUCT BANK SUBJECT TO CAR/TRUCK TRAVEL SHALL BE CONCRETE ENCASED.
4. REFER TO DETAIL SHEET FOR ADDITIONAL INFORMATION.

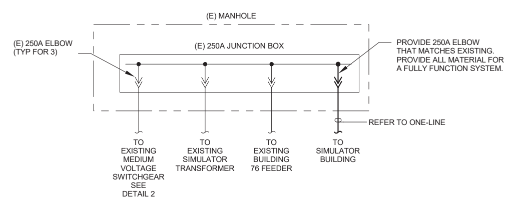
DRAWING NOTES:

1. NEW MEDIUM VOLTAGE DUCT BANK, REFER TO ONE-LINE FOR ADDITIONAL INFORMATION.
2. EXISTING MEDIUM VOLTAGE DUCT BANK, REFER TO ONE-LINE FOR ADDITIONAL INFORMATION. USE SPARE RACEWAY FOR NEW 13.2KV SIMULATOR.



2 MEDIUM VOLTAGE SWITCHGEAR

SCALE: NTS



3 MEDIUM VOLTAGE MANHOLE

SCALE: NTS

TRUE NORTH

0' 30' 60'

SCALE: 1/30" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

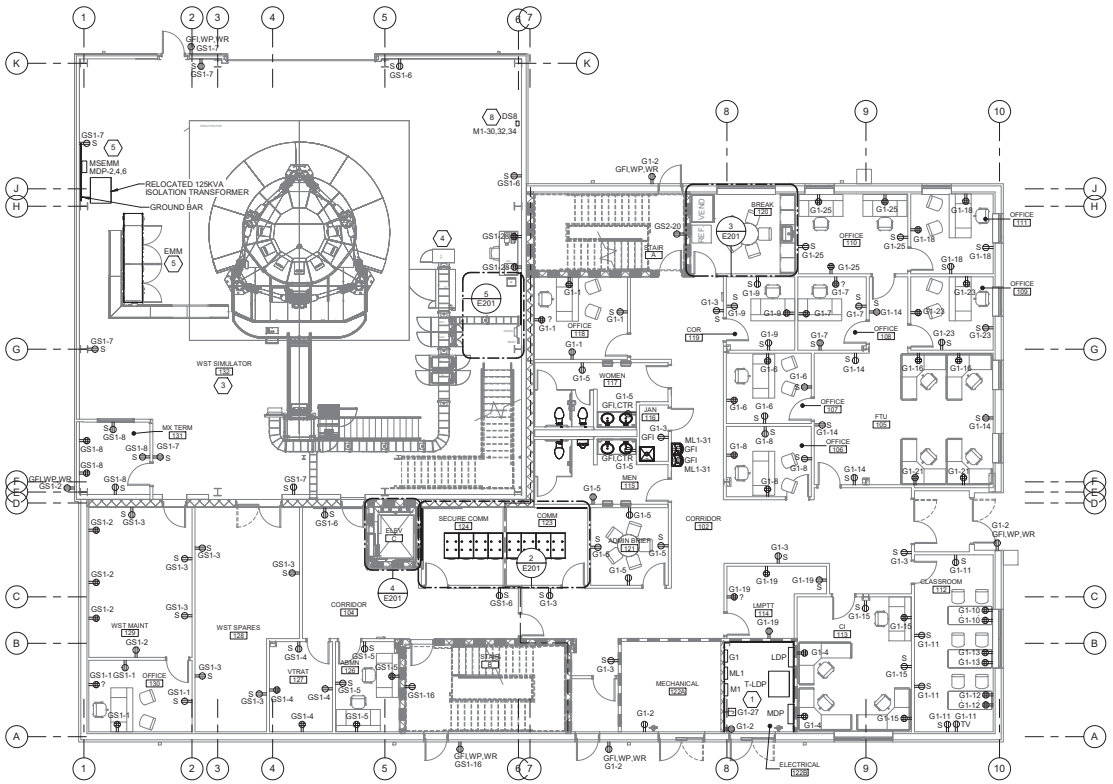
DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL SITE

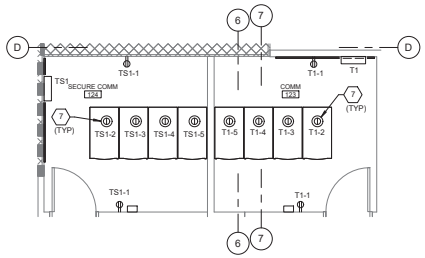
DRAWING NO.: E102

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23

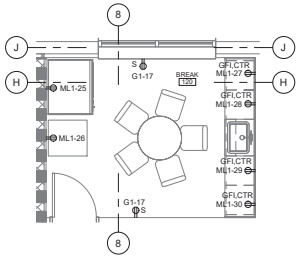
Project Number: SHYQ149104
1/27/2026 8:54:14 AM



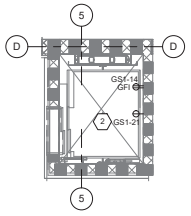
1 GROUND FLOOR - POWER
SCALE: 1/8" = 1'-0"



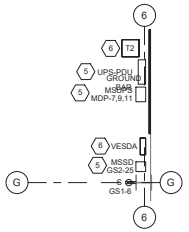
2 FIRST FLOOR COMM ROOMS - POWER
SCALE: 1/4" = 1'-0"



3 ENLARGE BREAK - POWER
SCALE: 1/4" = 1'-0"



4 ELEVATOR PIT - POWER
SCALE: 1/4" = 1'-0"



5 ENLARGED SIMULATOR
SCALE: 1/4" = 1'-0"

TRUE NORTH

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

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

GENERAL NOTES:

1. SWITCHED RECEPTACLES ARE CONTROLLED VIA LIGHTING CONTROL SYSTEM. REFER TO LIGHTING CONTROL DETAIL FOR ADDTIONAL INFORMATION.

SHEET KEYNOTES:

1. FACP/MASS NOTIFICATION SYSTEM POWER.
2. SINGLE RECEPTACLE FOR SUMP PUMP, FIELD VERIFY EXACT MOUNTING LOCATION. PROVIDE WITH WHILE-IN-USE COVER.
3. REFER TO ONE-LINE FOR ADDITIONAL INFORMATION.
4. EQUIPMENT PROVIDE AND INSTALLED BY CAE (LOCKHEED MARTAIN). REFER TO ONE-LINE FOR ADDITIONAL INFORMATION.
5. RELOCATED EQUIPMENT FROM EXISTING SIMULATOR. COORDINATE WITH GOVERNMENT AND CAE.
6. EQUIPMENT RELOCATED BY OTHERS.
7. COORDINATE PLUG CONFIGURATION WITH DATA RACK.
8. POWER AND DISCONNECT SWITCH FOR CRANE, FIELD VERIFY EXACT MOUNTING LOCATION.

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NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

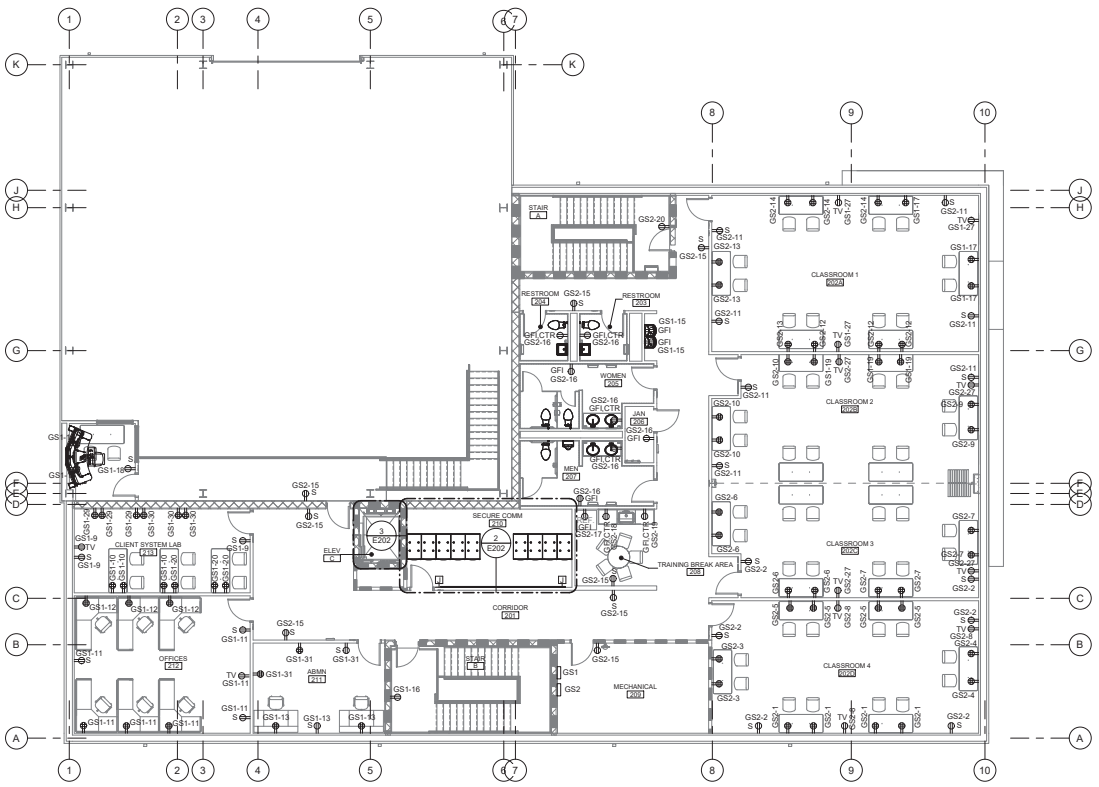
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL GROUND FLOOR - POWER

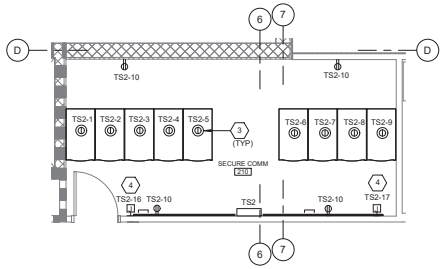
DRAWING NO.: **E201**

Local File:Autodesk Docs://070046-PANNG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/27/2026 8:53:42 AM



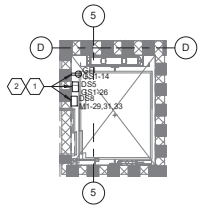
1 SECOND FLOOR - POWER

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



2 ENLARGED SECURE COMM - POWER

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



3 ELEVATOR SHAFT

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

SHEET KEYNOTES:

1. DISCONNECT SWITCHES FOR ELEVATOR MOTOR AND CAB LIGHTS, FIELD VERIFY EXACT MOUNTING LOCATION. GFI DUPEX RECEPTACLE SHALL BE MOUNTED ADJACENT TO DISCONNECT SWITCHES.
2. COORDINATE REQUIREMENTS WITH PROVIDED ELEVATOR MANUFACTURER. ADJUST DISCONNECT SWITCHES, RACEWAY, AND CONDUCTORS SIZES AS REQUIRED TO MEET MANUFACTURER REQUIREMENTS. ALL SIZES SHALL BE A MINIMUM OF NEC REQUIREMENTS.
3. COORDINATE PLUG CONFIGURATION WITH DATA RACK.
4. POWER FOR SECURITY PANEL AND DOOR PANEL POWER.

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL SECOND FLOOR - POWER

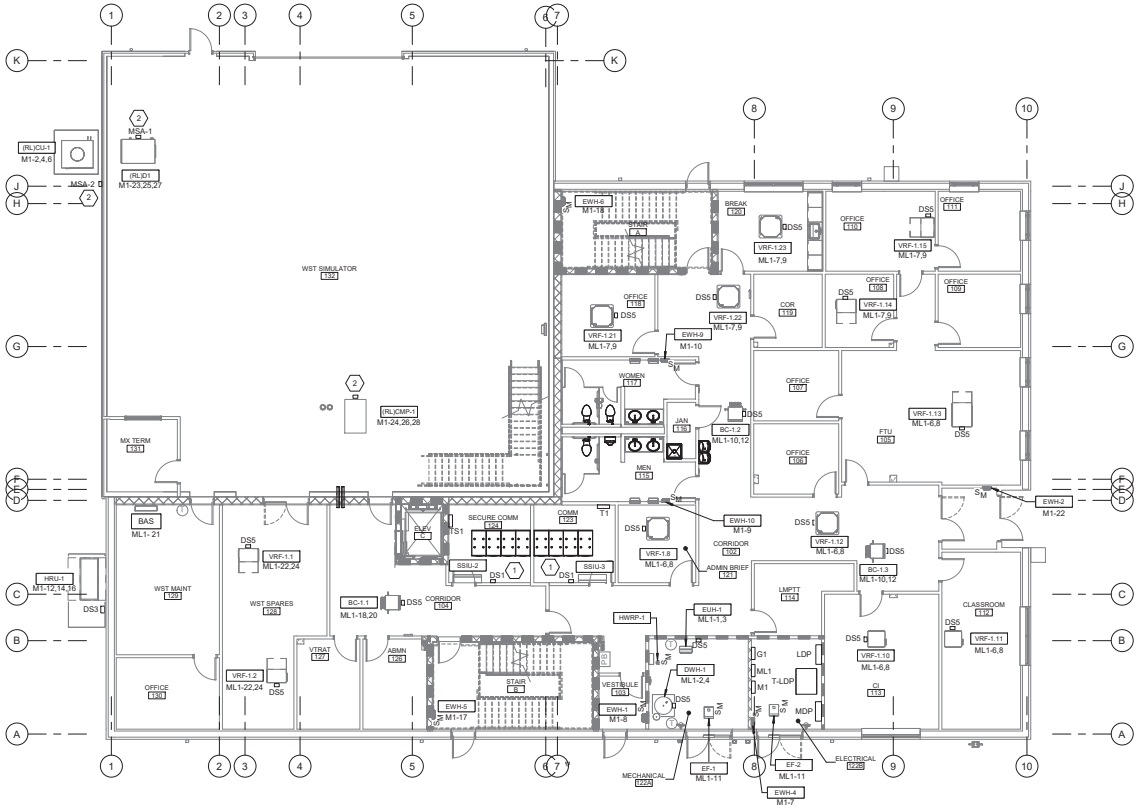
DRAWING NO.: **E202**

TRUE NORTH

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

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

Local File: Autodesk Docs://070646-PANG_EC_130J_Simulator/070646_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/27/2026 8:53:46 AM



1 GROUND FLOOR - MECHANICAL POWER

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

GENERAL NOTES:

1. FIELD VERIFY MOUNTING LOCATION OF DISCONNECT SWITCHES, ENCLOSED CIRCUIT BREAKERS, AND MOTOR RATED SWITCHES, PROVIDE ALL MOUNTING HARDWARD AS REQUIRED.

SHEET KEYNOTES:

1. INDOOR UNIT IS POWERED BY OUTDOOR UNIT, PROVIDE RACEWAY AND CONDUCTORS PER MANUFACTURER RECOMMENDATIONS.
2. RELOCATE EXISTING DISCONNECTING MEANS FROM EXISTING SIMULATOR ROOM.

TRUE NORTH

0' 8' 16'

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL
GROUND FLOOR - MECHANICAL POWER

DRAWING NO.: **E203**

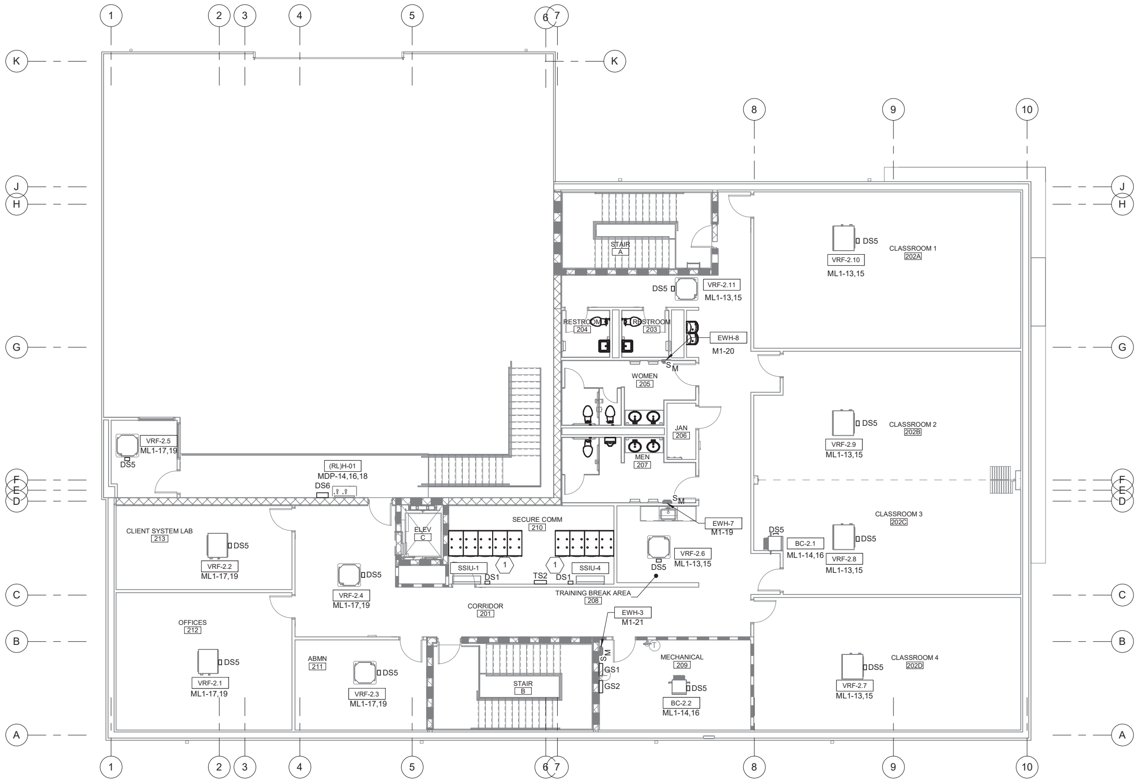
Project Number: SHYQ149104
1/27/2026 8:54:01 AM
Local File:Autodesk Docs:/079046-PANG_EC_130J_Simulator/079046_MC130J_Sim_MEP_R23.rvt
Central File: BM1695_M_R23

GENERAL NOTES:

1. FIELD VERIFY MOUNTING LOCATION OF DISCONNECT SWITCHES AND MOTOR RATED SWITCHES, PROVIDE ALL MOUNTING HARDWARD AS REQUIRED.

SHEET KEYNOTES:

1. INDOOR UNIT IS POWERED BY OUTDOOR UNIT, PROVIDE RACEWAY AND CONDUCTORS PER MANUFACTURER RECOMMENDATIONS.



1 SECOND FLOOR - MECHANICAL POWER

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

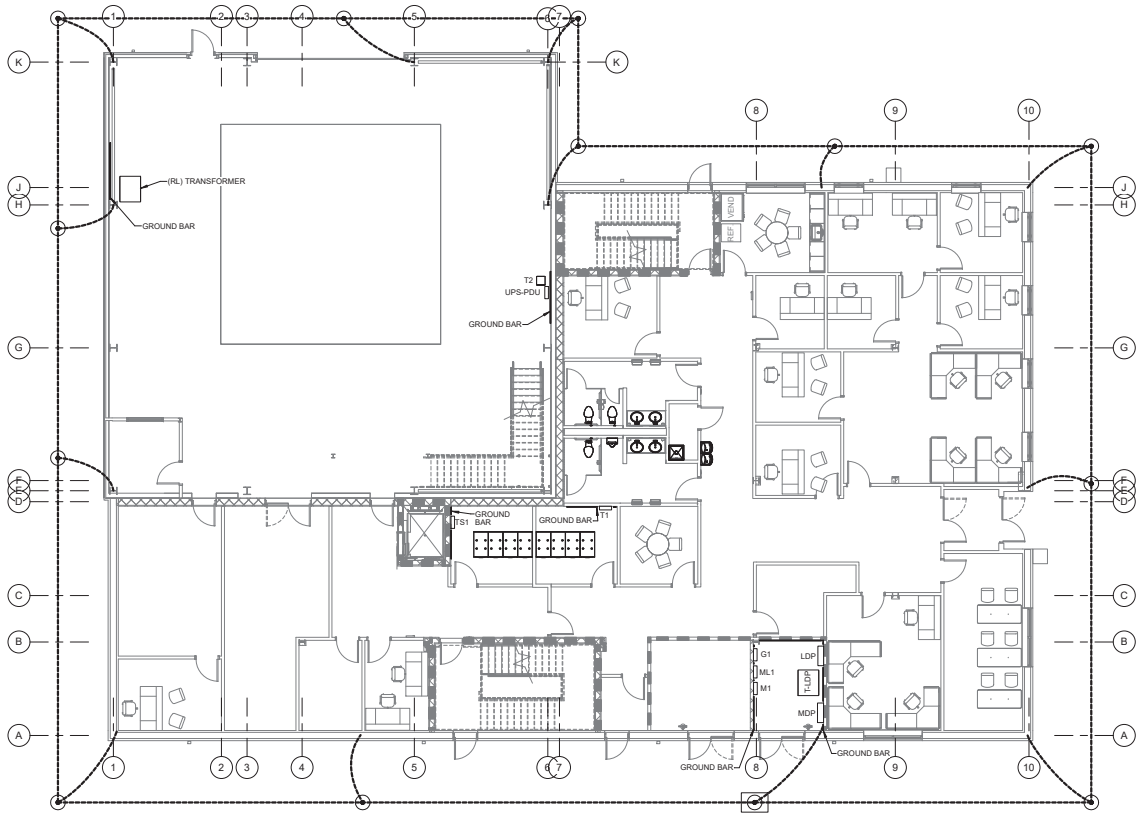
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

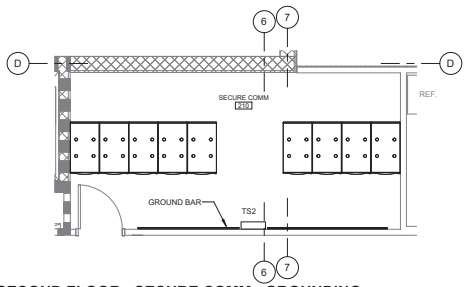
DRAWING TITLE: ELECTRICAL
SECOND FLOOR - MECHANICAL POWER

DRAWING NO.: E204

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



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



2 SECOND FLOOR - SECURE COMM - GROUNDING
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO GROUNDING DETAILS AND RISER FOR ADDITIONAL INFORMATION.

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NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL GROUND FLOOR - GROUNDING

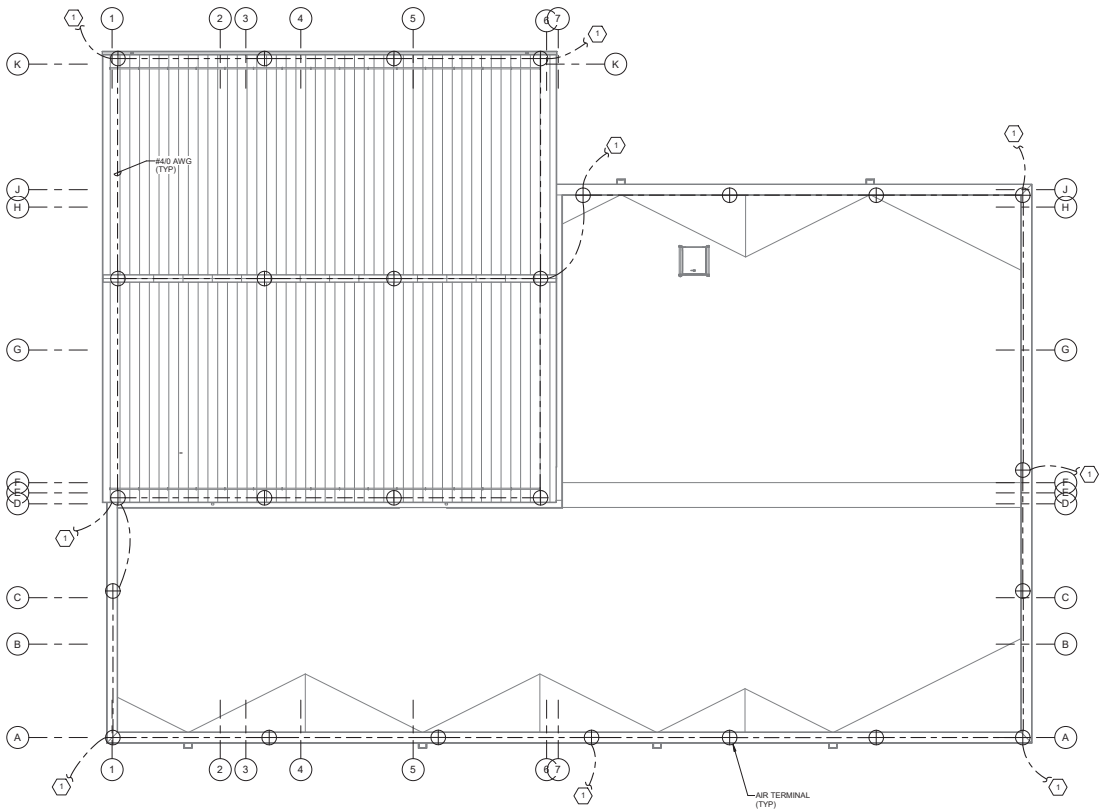
DRAWING NO.: **E205**

TRUE NORTH

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

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

Project Number: SHYQ149104
1/27/2026 8:54:05 AM
Local File:Autodesk Docs:/070046-PANNG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM0580_M_R23



1 ROOF PLAN - LIGHTNING PROTECTION
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ROOF AREA TO BE EQUIPPED WITH LIGHTING PROTECTION SYSTEM PER SPECIFICATION 13 46 13 LIGHTNING PROTECTION FOR STRUCTURES.

SHEET KEYNOTES:

1. DOWN TO GROUND ROD/RING.

TRUE NORTH

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

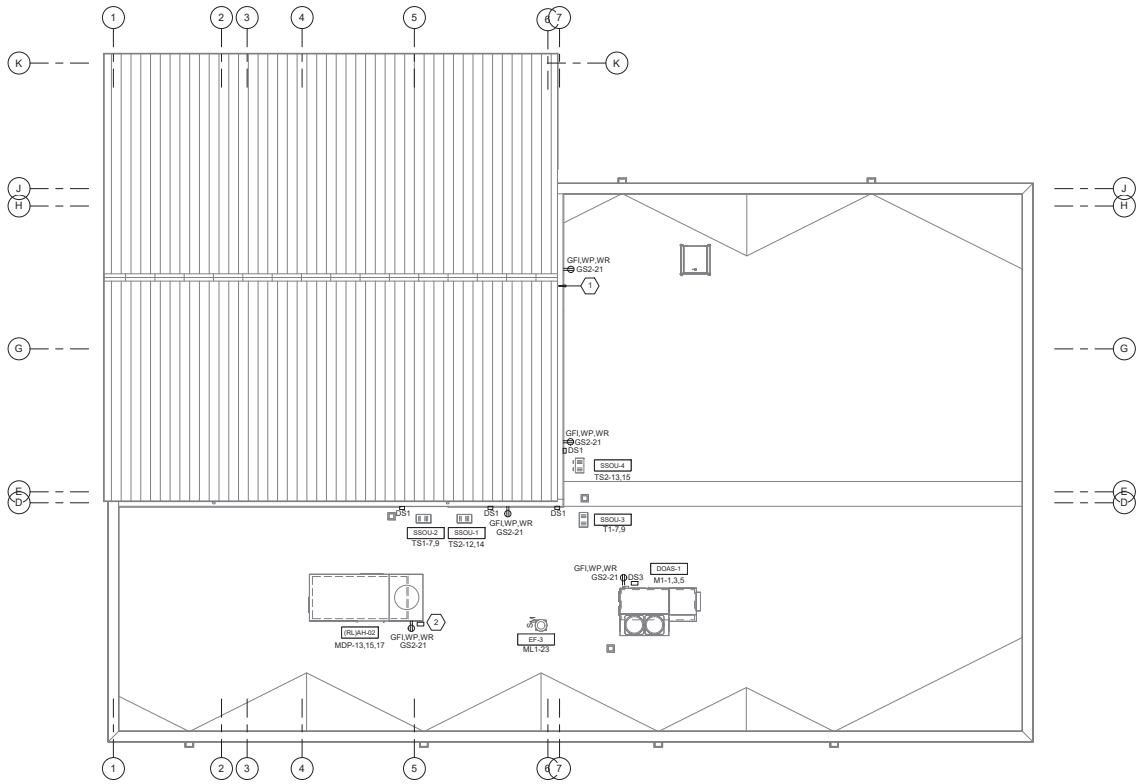
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE:
ELECTRICAL
GROUND FLOOR - LIGHTNING PROTECTION

DRAWING NO.:
E206

Project Number: SHYQ149104
1/27/2026 8:54:10 AM
Local File:Autodesk Docs:/079046-PANG_EC_130J_Simulator/079046_MC130J_Sim_MEP_R23.rvt
Central File: BM0580_M_R23



1 ROOF PLAN - POWER
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. PROVIDE STRUT SUPPORT FOR ALL EQUIPMENT AND DEVICES AS REQUIRED. PROVIDE ALL MATERIAL FOR A FULLY FUNCTIONAL SYSTEM.
2. EXTERIOR MOTOR RATED SWITCHES SHALL BE PROVIDED WITH A WEATHERPROOF COVER.

SHEET KEYNOTES:

1. REFER TO ANTENNA SUPPORT DETAIL FOR ADDITIONAL INFORMATION. FIELD COORDINATE EXACT LOCATION.
2. RELOCATE DISCONNECT SWITCH WITH EQUIPMENT.

TRUE NORTH

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

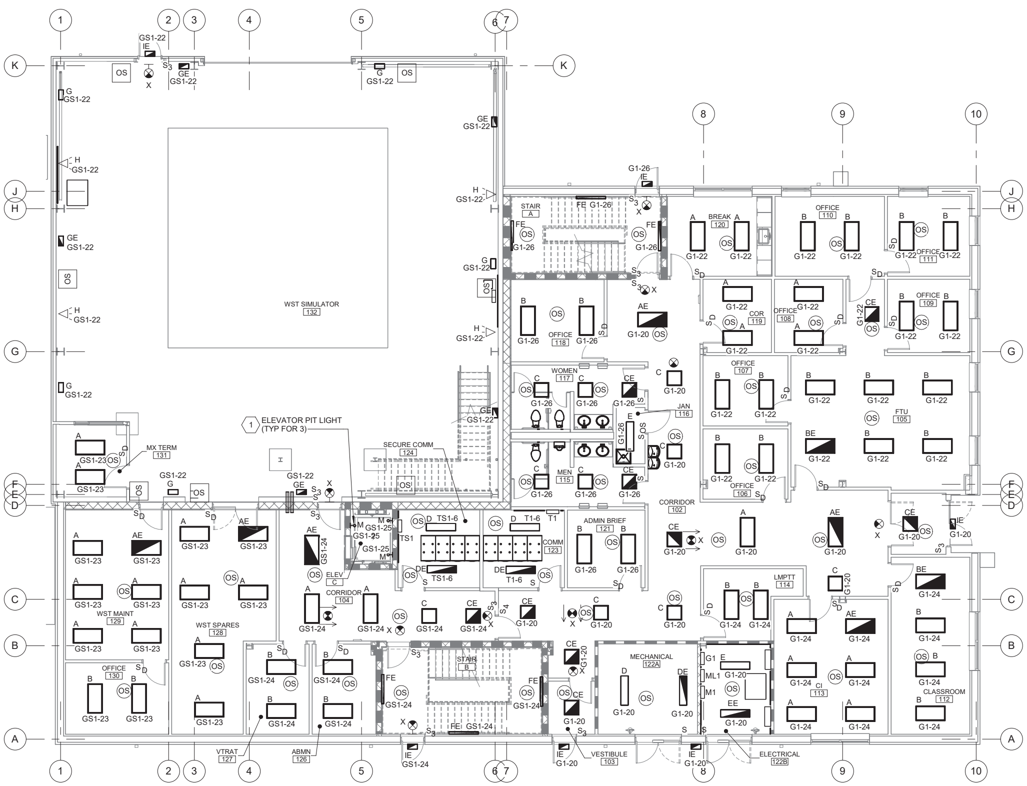
DESIGNED:	MODELED:	CHECKED:
KAM	KAM	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL
ROOF PLAN - POWER

DRAWING NO.: **E207**

Project Number: SHYQ149104
1/27/2026 8:54:07 AM
Local File: Autodesk Docs://079046-PANNG_EC_130J_Simulator/079046_MC130J_Sim_MEP_R23.rvt
Central File: BM5581_M_R23



1 GROUND FLOOR - LIGHTING

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

GENERAL NOTES:

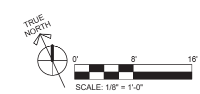
1. FOR ALL EXIT SIGNS CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF LOCAL CONTROL WITH 2#12, 1#12 GRD IN 3/4" C.
2. WIRELESS AND BLUETOOTH DEVICES AND OPTIONS ARE NOT PERMITTED.

SHEET KEYNOTES:

1. FIELD COORDINATE EXACT MOUNTING LOCATION.

LIGHTING FIXTURE SCHEDULE

TYPE	BASIS OF DESIGN		INPUT WATTS	VOLTS	LAMP	MOUNTING	DESCRIPTION
	MANUFACTURER	CATALOG #					
A	LITHONIA LIGHTING	2BLT4-30L-ADSM-GZ10-LP840-BAA	23	120/277	LED	CEILING RECESSED	
AE	LITHONIA LIGHTING	2BLT4-30L-ADSM-GZ10-LP840-E10WLCP-BAA	23	120/277	LED	CEILING RECESSED	
B	LITHONIA LIGHTING	2BLT4-40L-ADSM-GZ10-LP840-BAA	31	120/277	LED	CEILING RECESSED	
BE	LITHONIA LIGHTING	2BLT4-40L-ADSM-GZ10-LP840-E10WLCP-BAA	31	120/277	LED	CEILING RECESSED	
C	LITHONIA LIGHTING	2BLT2-20L-ADSM-GZ10-LP840-BAA	16	120/277	LED	CEILING RECESSED	
CE	LITHONIA LIGHTING	2BLT2-20L-ADSM-GZ10-LP840-E10WLCP-BAA	16	120/277	LED	CEILING RECESSED	
D	LITHONIA LIGHTING	ZL1D-L45-ASR-5000LM-FST-MVOLT-40K-80CRI-BAA-WH-ZACVH M100	41	120/277	LED	PENDANT	9'-0" AFF
DE	LITHONIA LIGHTING	ZL1D-L45-ASR-5000LM-FST-MVOLT-40K-80CRI-E10W-BAA-WH-ZACVH M100	41	120/277	LED	PENDANT	9'-0" AFF
E	LITHONIA LIGHTING	ZL1D-L45-ASR-3000LM-FST-MVOLT-40K-80CRI-BAA-WH-ZACVH M100	24	120/277	LED	PENDANT	9'-0" AFF
EE	LITHONIA LIGHTING	ZL1D-L45-ASR-3000LM-FST-MVOLT-40K-80CRI-E10W-BAA-WH-ZACVH M100	24	120/277	LED	PENDANT	9'-0" AFF
FE	LITHONIA LIGHTING	BLWP4-40L-ADSM-GZ10-LP840-E10WLCP-BAA	32	120/277	LED	WALL MOUNTED	9'-0" AFF
G	HOLOPHANE LIGHTING	WCNG-P5-40K-T4M-MVOLT-ZT-GYSDP-BAA	93	120/277	LED	WALL MOUNTED	9'-0" AFF
GE	HOLOPHANE LIGHTING	WCNG-P5-40K-T4M-MVOLT-ZT-GYSDP-ELSW-BAA	93	120/277	LED	WALL MOUNTED	9'-0" AFF
H	HOLOPHANE LIGHTING	PSLED-P2-40K-MVOLT-44-BZSDP-BAA-PSLEDFV BZSDP	52	120/277	LED	WALL MOUNTED	9'-0" AFF
IE	LITHONIA LIGHTING	WST LED-P3-40K-VF-277-PE-E20WC-BAA-DDBXD	50	120/277	LED	WALL MOUNTED	ABOVE DOOR
J	LITHONIA LIGHTING	2BLT2-33L-ADSM-GZ10-LP840-BAA	27	120/277	LED	CEILING RECESSED	
JE	LITHONIA LIGHTING	2BLT2-33L-ADSM-GZ10-LP840-E10WLCP-BAA	27	120/277	LED	CEILING RECESSED	
K	LITHONIA LIGHTING	2BLT2-40L-ADSM-GZ10-LP840-BAA	31	120/277	LED	CEILING RECESSED	
KE	LITHONIA LIGHTING	2BLT2-40L-ADSM-GZ10-LP840-E10WLCP-BAA	31	120/277	LED	CEILING RECESSED	
LE	HOLOPHANE LIGHTING	WCNG-P4-40K-T4M-MVOLT-ZT-GYSDP-ELSW-BAA	72	120/277	LED	WALL MOUNTED	9'-0" AFF
M	SOLAS RAY LIGHTING	HBVT-016-50-U-C-WM	16	120/277	LED	WALL MOUNTED	FIELD VERIFY MOUNTING HEIGHT
X	LITHONIA LIGHTING	LQM-S-3-R-120/277-EL N-SD	1	120/277	LED	WALL AND CEILING	REFER TO FLOOR PLANS FOR MOUNTING AND CHEVRON REQUIREMTNS.



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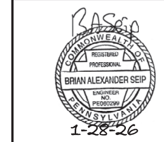

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

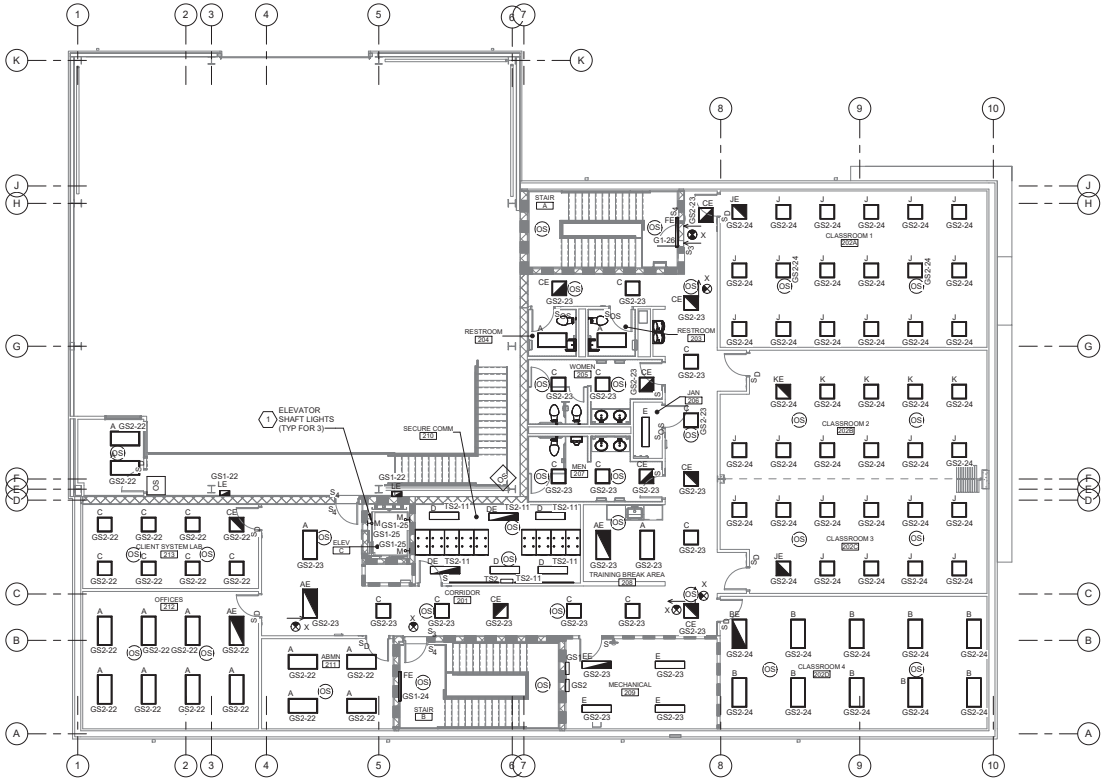
PROJECT NUMBER: SHYQ149104

DESIGNED: RLP | MODELED: RLP | CHECKED: RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL GROUND FLOOR - LIGHTING

DRAWING NO.: E301



1 SECOND FLOOR - LIGHTING

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

GENERAL NOTES:

1. FOR ALL EXIT SIGNS CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF LOCAL CONTROL WITH 2#12, 1#12 GRD IN 3/4" C.
2. WIRELESS AND BLUETOOTH DEVICES AND OPTIONS ARE NOT PERMITTED.

(#) SHEET KEYNOTES:

1. FIELD COORDINATE EXACT MOUNTING LOCATION.

TRUE NORTH

0' 8' 16'

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

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

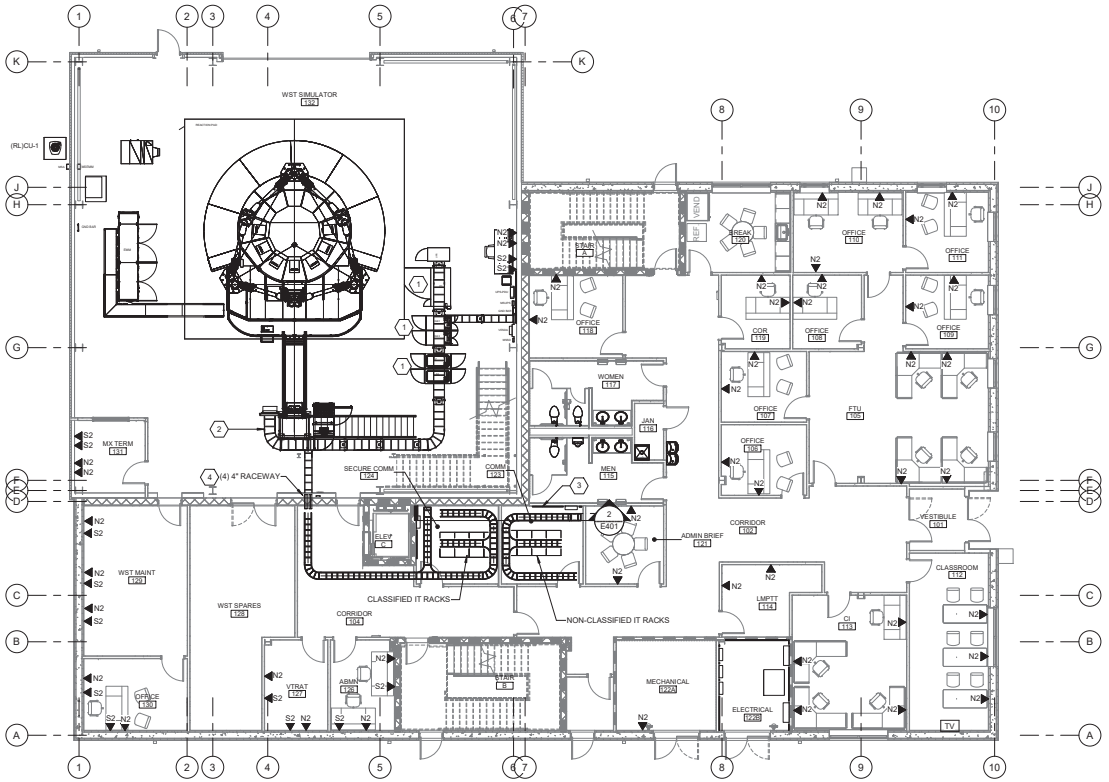
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

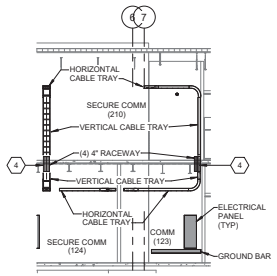
DRAWING TITLE: ELECTRICAL SECOND FLOOR - LIGHTING

DRAWING NO.: **E302**

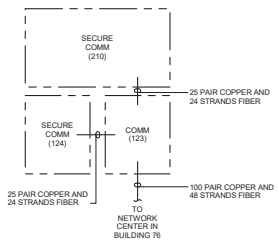
Project Number: SHYQ149104
Local File:Autodesk Docs:/070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
1/27/2026 8:53:49 AM



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



2 SECURE COMM ROOMS SECTION
SCALE: 1/8" = 1'-0"



NOTES:
1. ALL COPPER AND FIBER SHALL LAND ON RACK.

3 TELECOM RISER
SCALE: NOT TO SCALE

GENERAL NOTES:

1. SIMULATOR CABLING BY CAE (LOCKHEED MARTIN).
2. SIPRNET AND NIPRNET DEVICES AND CABLES SHALL HAVE A MINIMUM OF 1 METER SEPARATION BETWEEN THEM, FIELD COORDINATE WITH GOVERNMENT MOUNTING LOCATION AND ROUTING.
3. SIPRNET DEVICES SHALL BE MOUNTING HIGHER ON WALL THEN NIPRNET DEVICES, COORDINATE EXACT MOUNTING HEIGHT WITH GOVERNMENT.
4. SIPRNET DEVICES SHALL BE ROUTED BACK TO THE CLASSIFIED IT RACKS. NIPRNET DEVICES SHALL BE ROUTED BACK TO THE NON-CLASSIFIED IT RACKS.
5. CONTRACTOR TO COORDINATE LOCATION OF RACK MOUNTED EQUIPMENT WITH GOVERNMENT PRIOR TO ROUGH-IN.

(#) SHEET KEYNOTES:

1. EQUIPMENT PROVIDE AND INSTALLED BY CAE. REFER TO ONE-LINE FOR ADDITIONAL INFORMATION.
2. PROVIDE CABLE TRAY, COORDINATE WITH CAE. REUSE EXISTING CABLE TRAY FROM EXISTING SIMULATOR ROOM, COORDINATE WITH GOVERNMENT AND CAE.
3. COMMUNICATION RACEWAY SHALL STUB UP ALONG WALL, FIELD VERIFY EXACT MOUNTING LOCATION. PROVIDE FIRE RATED 4' X 8' PLYWOOD BACKBOARD ON WALL.
4. FIRE SEAL ALL WALL AND FLOOR PENETRATIONS.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

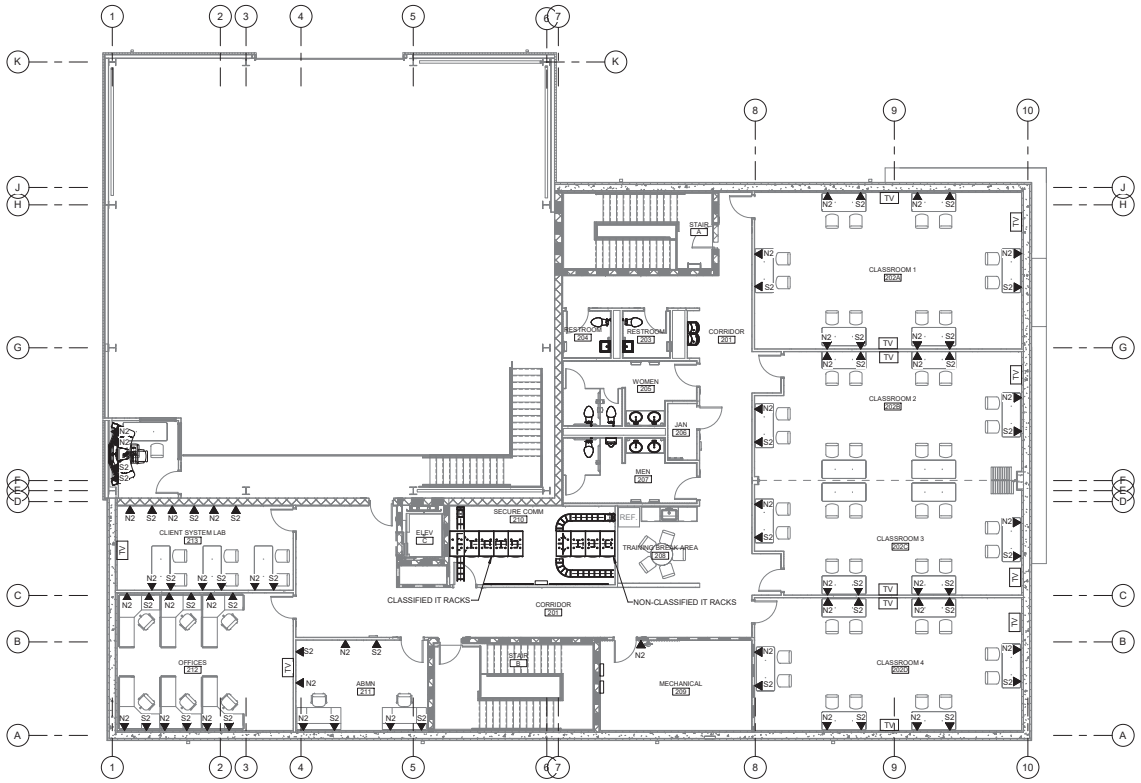
DRAWING TITLE: ELECTRICAL
GROUND FLOOR - COMMUNICATION

DRAWING NO.: **E401**

TRUE NORTH

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

Local File:Autodesk Docs:/070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/27/2026 8:53:30 AM



1 SECOND FLOOR - COMMUNICATION

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

GENERAL NOTES:

1. SIMULATOR CABLING BY CAE (LOCKHEED MARTIN).
2. SIPRNET AND NIPRNET DEVICES AND CABLES SHALL HAVE A MINIMUM OF 1 METER SEPARATION BETWEEN THEM, FIELD COORDINATE WITH GOVERNMENT MOUNTING LOCATION AND ROUTING.
3. SIPRNET DEVICES SHALL BE MOUNTING HIGHER ON WALL THEN NIPRNET DEVICES, COORDINATE EXACT MOUNTING HEIGHT WITH GOVERNMENT.
4. SIPRNET DEVICES SHALL BE ROUTED BACK TO THE CLASSIFIED IT RACKS. NIPRNET DEVICES SHALL BE ROUTED BACK TO THE NON-CLASSIFIED IT RACKS.
5. CONTRACTOR TO COORDINATE LOCATION OF RACK MOUNTED EQUIPMENT WITH GOVERNMENT PRIOR TO ROUGH-IN.

TRUE NORTH

0' 8' 16'

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

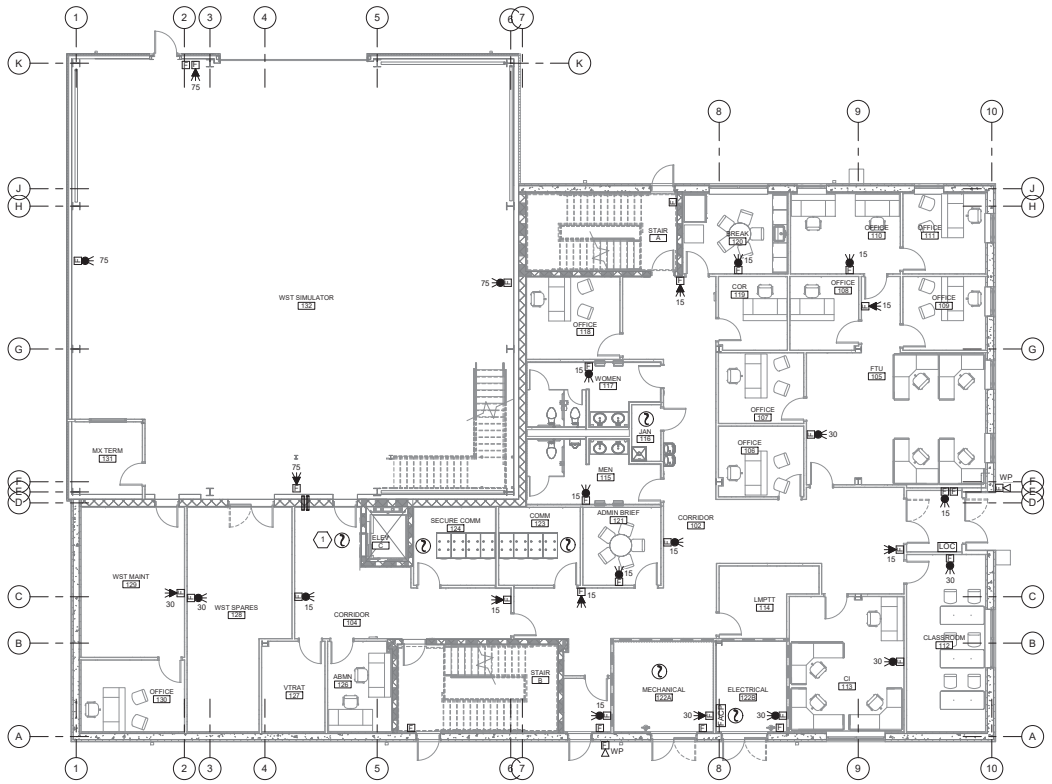
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL
SECOND FLOOR - COMMUNICATION

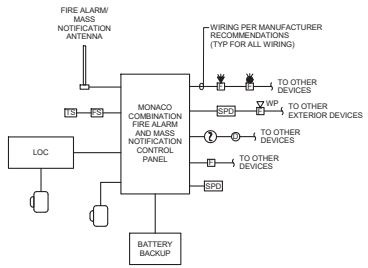
DRAWING NO.: **E402**

Project Number: SHYQ149104
1/27/2026 8:53:51 AM
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23



1 GROUND FLOOR - FIRE ALARM

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



2 FIRE ALARM RISER

SCALE: NOT TO SCALE

FIRE ALARM NOTES:

1. REFER TO FLOOR PLANS FOR EXACT QUANTITY OF DEVICES.
2. COORDINATE WITH EXISTING BASE WIDE FIRE ALARM SYSTEM AND CYBER SECURITY REQUIREMENTS.

ANTENNA DETAIL NOTES:

1. ANTENNA TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
2. FOR EACH ANTENNA, PROVIDE A LIGHTNING ARRESTOR KIT (STATIC DISCHARGE UNIT WITH TWO (2) 10" STRIPS OF COAX SEAL) IN A NEMA 3R RAINTIGHT ENCLOSURE.
3. PROVIDE A MINIATURE RG8-X 50 OHM COAXIAL CABLE ASSEMBLY, TYPE II WITH 2PL-259 CONNECTORS (LENGTH AS REQUIRED).
4. PROVIDE A VHF OMNIDIRECTIONAL ANTENNA. TRIM THE LENGTH OF THE ANTENNA FOR THE BASE FREQUENCY.
5. ANTENNA CABLE SHALL BE IN RIGID RACEWAY.
6. ANTENNA SHALL BE PLACED IN LINE OF SIGHT WITH FIRE STATION. COORDINATE LOCATION.
7. BASE FREQUENCY TO BE COORDINATED.
8. BOND CONDUIT TO LIGHTNING PROTECTION SYSTEM. CONDUCTOR SIZE SHALL MATCH THE ROOF MAIN CONDUCTOR SIZE.

FIRE ALARM/MASS NOTIFICATION SYSTEM OUTPUTS

		1 ALARM SIGNAL AT FACP AND REMOTE ANNUNCIATOR	2 TRANSMISSION OF ALARM SIGNAL TO THE FIRE DEPARTMENT	3 SUPERVISORY SIGNAL AT FACP AND REMOTE ANNUNCIATOR	4 TRANSMISSION OF SUPERVISORY SIGNAL TO THE FIRE DEPARTMENT	5 TROUBLE SIGNAL AT FACP AND REMOTE ANNUNCIATOR	6 TRANSMISSION OF TROUBLE SIGNAL TO THE FIRE DEPARTMENT	7 SILENCE AUDIBLE/VISIBLE SUPERVISORY/TROUBLE SIGNAL	8 ACTIVATE FIRE ALARM MESSAGE AND STROBE LIGHTS THROUGHOUT BUILDING	9 ACTIVATE SOUNDER BASE	10 SILENCE AUDIBLE NOTIFICATION (OVERRIDDEN UPON SUBSEQUENT ALARM)	11 SHUTDOWN ASSOCIATED AIR HANDLING UNIT	12 SHUTDOWN ALL FIRE ALARM AUDIBLE NOTIFICATION	13 ACTIVATE RECORDED MASS NOTIFICATION MESSAGE/OPERATORS MICROPHONE	14 TRANSMIT SIGNAL TO RECEIVING STATION
ALARM INPUTS															
A	ADDRESSABLE MANUAL FIRE ALARM BOX	X	X						X						
B	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTORS	X	X						X						
C	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR SOUNDER BASE	X	X						X						
SUPERVISORY INPUTS															
D	ADDRESSABLE PHOTOELECTRIC DUCT SMOKE DETECOR			X	X							X			
TROUBLE CONDITIONS															
E	OPEN CIRCUIT					X	X								
F	SHORT CIRCUIT					X	X								
G	GROUND FAULT					X	X								
H	DEVICE MALFUNCTION, SENSITIVITY EXCEEDED, NO RESPONSE/HEAD REMOVED FROM BASE					X	X								
I	AMPLIFIER FAILURE/AUXILIARY INPUT TROUBLE					X	X								
J	LOW BATTERY/LOSS OF BATTERY POWER SUPPLY/LOSS OF SECONDARY POWER					X	X								
K	LOSS OF PRIMARY POWER SUPPLY					X	X								
L	FMCP MALFUNCTION (LOSS OF COMMUNICATIONS, CARD FAILURE, REMOVAL OF MODULE, ETC.)					X	X								
SYSTEM CONTROL INPUTS															
M	ACTIVATION OF LOC											X	X		
N	MASS NOTIFICATION MESSAGE SWITCH AT FACP											X	X	X	
O	BASE WIDE MASS NOTIFICATION ACTIVATION											X	X	X	
P	ALARM SILENCING SWITCH										X				
Q	SUPERVISORY/TROUBLE SILENCING SWITCH							X							

GENERAL NOTES:

1. FIRE ALARM / MASS NOTIFICATION SYSTEM SHALL BE MONACO SYSTEM (MONACO-INC.COM), COORDINATE EXACT REQUIREMENTS.

SHEET KEYNOTES:

1. SMOKE DETECTOR FOR ELEVATOR RECALL.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

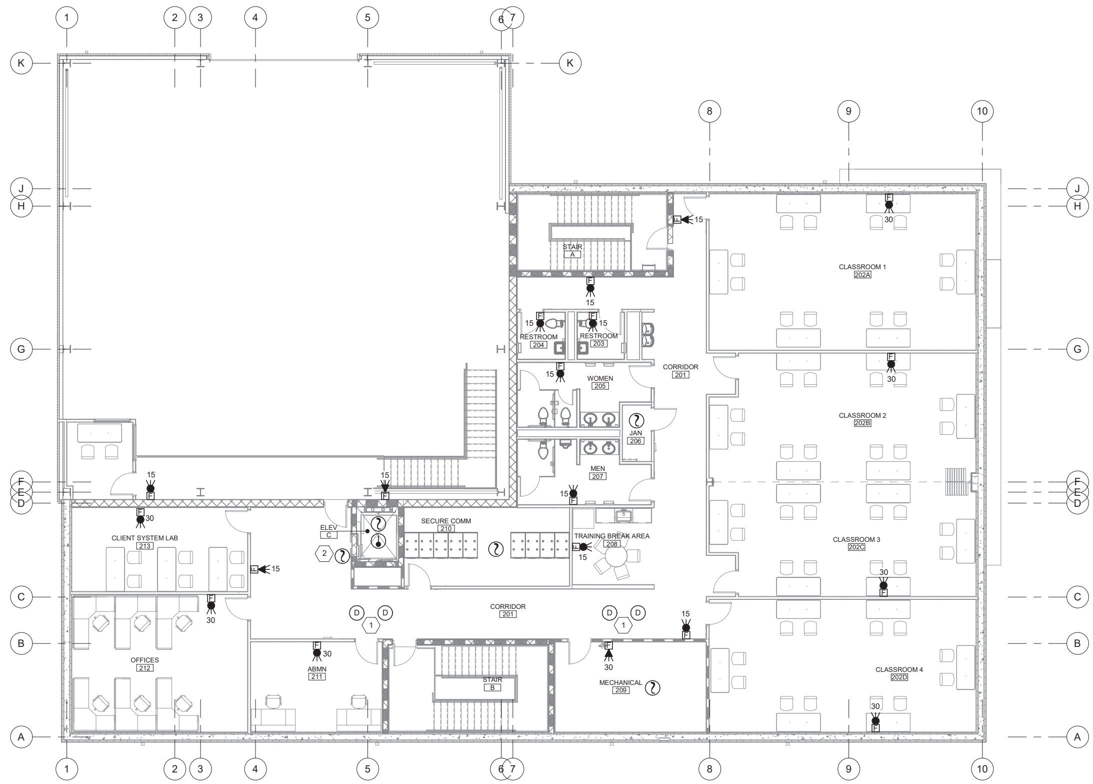
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL GROUND FLOOR - FIRE ALARM

DRAWING NO.: E501

Local File:Autodesk Docs:/070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/27/2026 8:53:16 AM



1 SECOND FLOOR - FIRE ALARM

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

SHEET KEYNOTES:

1. DUCT DETECTORS FOR DUCT SUPPLY AND RETURN OF EQUIPMENT ON ROOF, FIELD COORDINATE EXACT MOUNTING LOCATION.
2. SMOKE DETECTOR FOR ELEVATOR RECALL.

TRUE NORTH

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

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

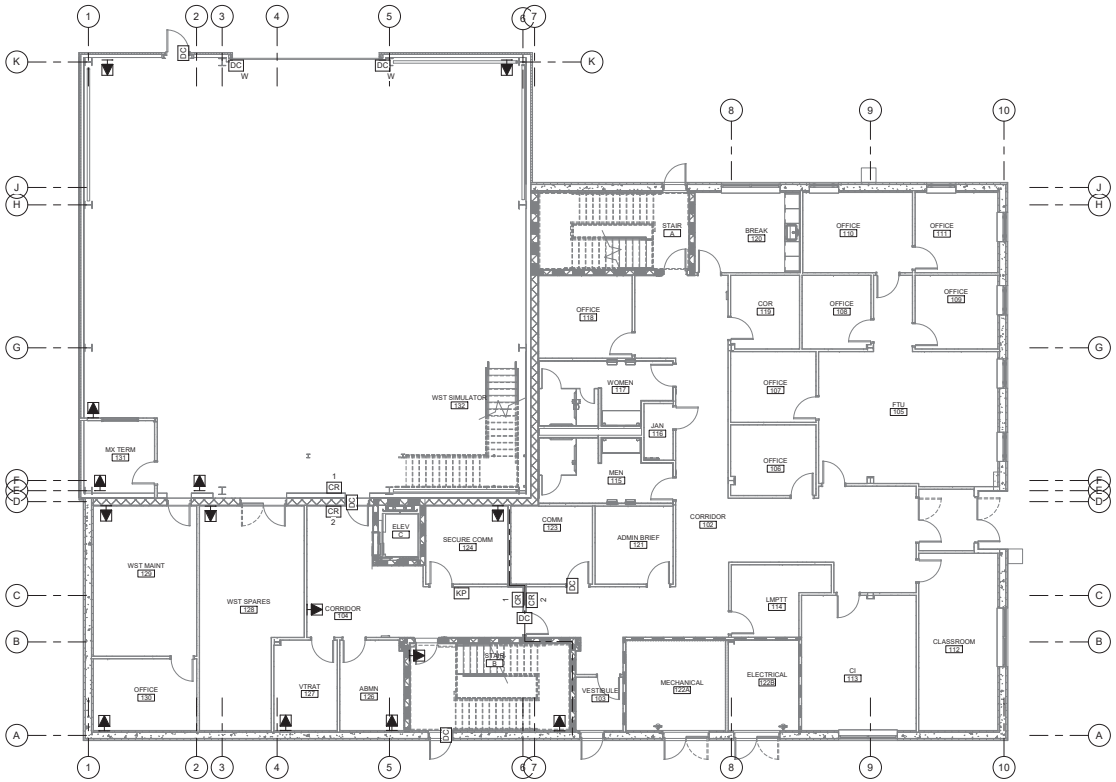
DRAWING TITLE: ELECTRICAL
SECOND FLOOR - FIRE ALARM

DRAWING NO.: E502

Project Number: SHYQ149104
1/27/2026 8:53:54 AM
Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BM360I_M_R23

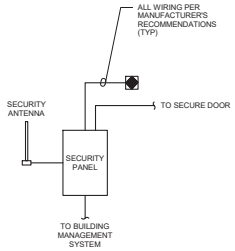
GENERAL NOTES:

1. SECURITY SYSTEM SHALL BE BY ADVANTOR (ADVANTOR.COM), COORDINATE EXACT REQUIREMENTS.



1 GROUND FLOOR - SECURITY

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



2 SECURITY RISER

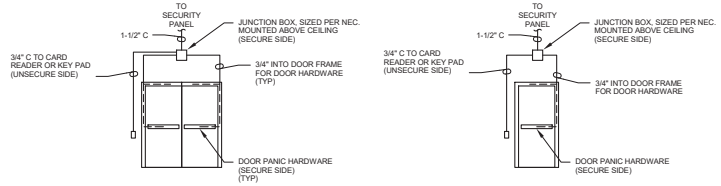
SCALE: NOT TO SCALE

ALARM NOTES:

1. REFER TO FLOOR PLANS FOR EXACT QUANTITY OF DEVICES.
2. SECURITY SYSTEM SHALL BE ADVANTOR (ADVANTOR.COM), COORDINATE EXACT REQUIREMENTS.

ANTENNA DETAIL NOTES:

1. ANTENNA TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
2. FOR EACH ANTENNA, PROVIDE A LIGHTNING ARRESTOR KIT (STATIC DISCHARGE UNIT WITH TWO (2) 10" STRIPS OF COAX SEAL) IN A NEMA 3R RAINTIGHT ENCLOSURE.
3. PROVIDE A MINIATURE RG8-X 50 OHM COAXIAL CABLE ASSEMBLY, TYPE II WITH 2PL-259 CONNECTORS (LENGTH AS REQUIRED).
4. PROVIDE A VHF OMNIDIRECTIONAL ANTENNA. TRIM THE LENGTH OF THE ANTENNA FOR THE BASE FREQUENCY.
5. ANTENNA CABLE SHALL BE IN RIGID RACEWAY.
6. ANTENNA SHALL BE PLACED IN LINE OF SIGHT WITH FIRE STATION. COORDINATE LOCATION.
7. BASE FREQUENCY TO BE COORDINATED.
8. BOND CONDUIT TO LIGHTNING PROTECTION SYSTEM. CONDUCTOR SIZE SHALL MATCH THE ROOF MAIN CONDUCTOR SIZE.



ALARM NOTES:

1. SECURITY SYSTEM SHALL BE PROVIDED BY ADVANTOR (ADVANTOR.COM), COORDINATE EXACT REQUIREMENTS.

3 TYPICAL SECURITY DOOR DETAILS

SCALE: NOT TO SCALE

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

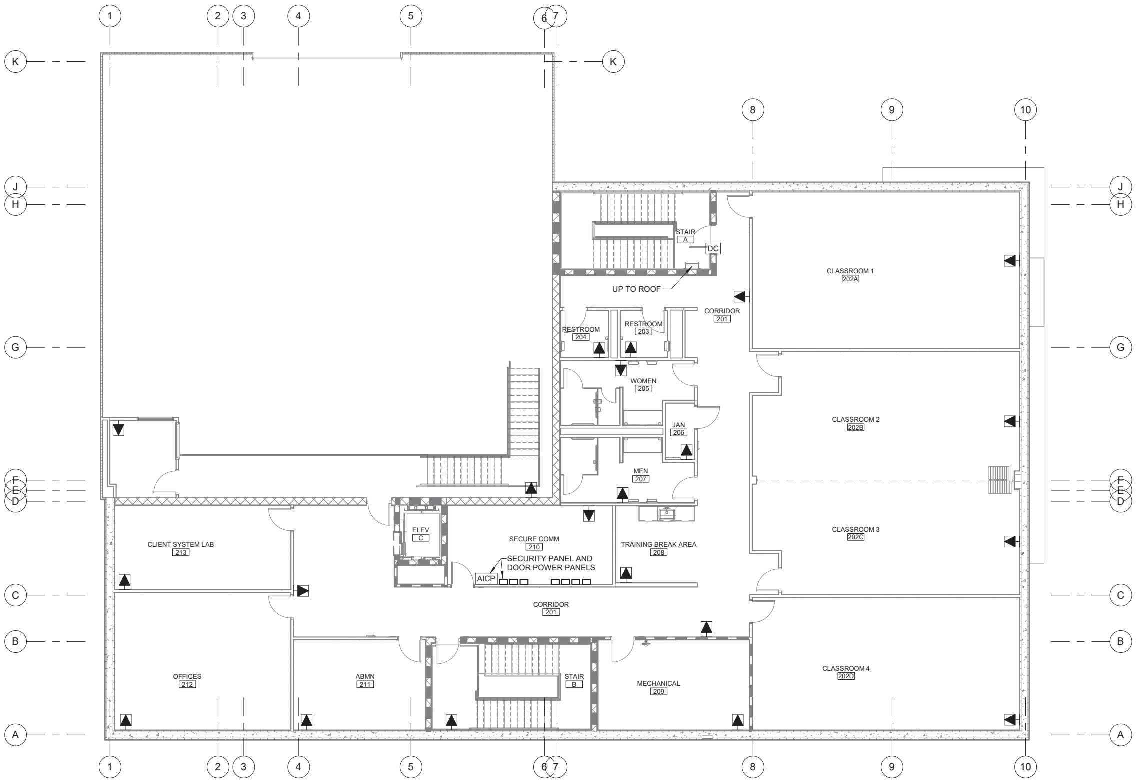
DRAWING TITLE: ELECTRICAL GROUND FLOOR - SECURITY

DRAWING NO.: **E601**

Project Number: SHYQ149104
1/27/2026 8:53:55 AM
Local File:Autodesk Docs://070646-PANG_EC_130J_Simulator/070646_MC130J_Sim_MEP_R23.rvt
Central File: BM5I90_M_R23

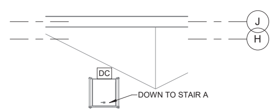
GENERAL NOTES:

1. SECURITY SYSTEM SHALL BE BY ADVANTOR (ADVANTOR.COM), COORDINATE EXACT REQUIREMENTS.



1 SECOND FLOOR - SECURITY

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



2 ROOF FLOOR - SECURITY

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

TRUE NORTH

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

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NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

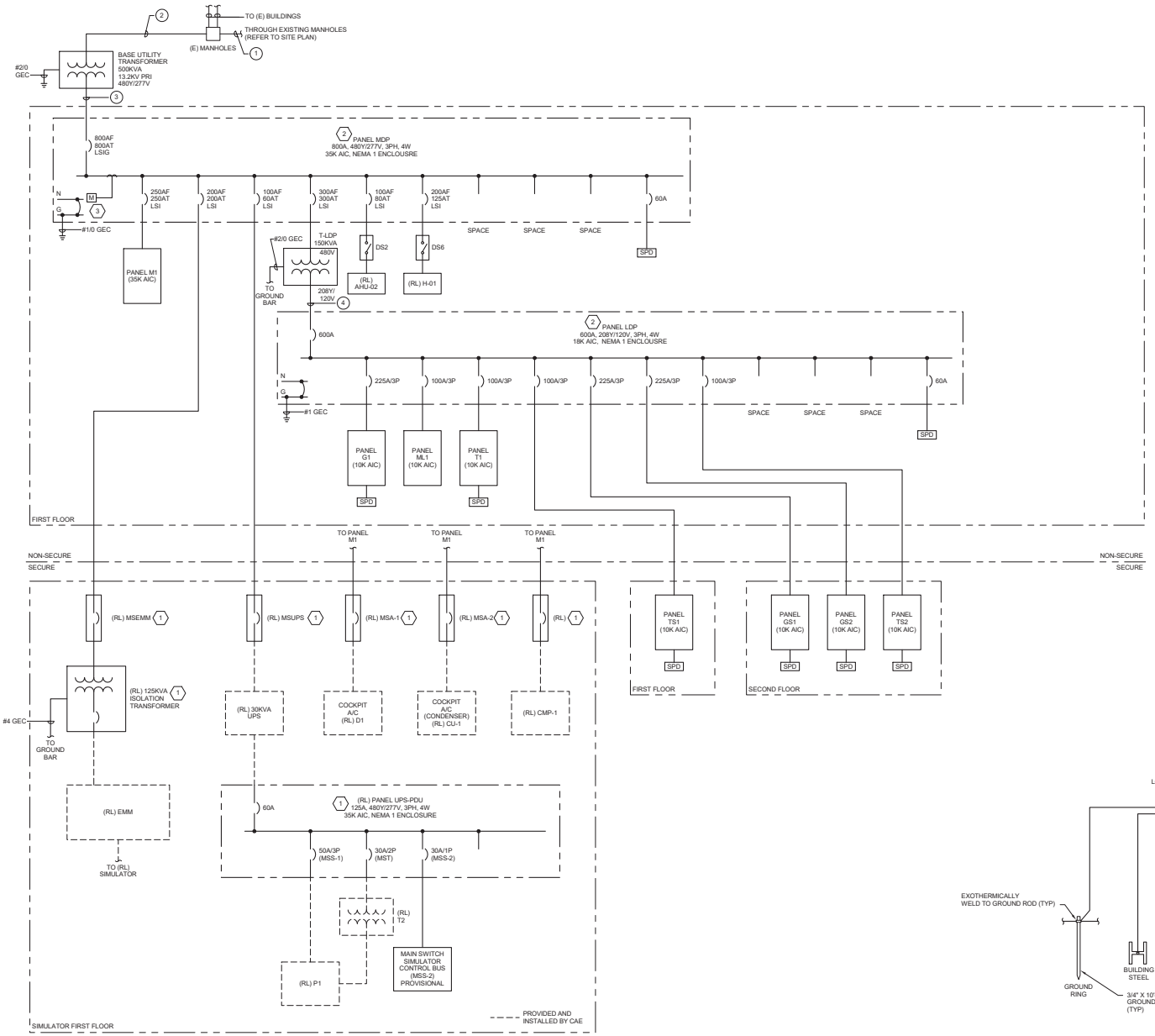
DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

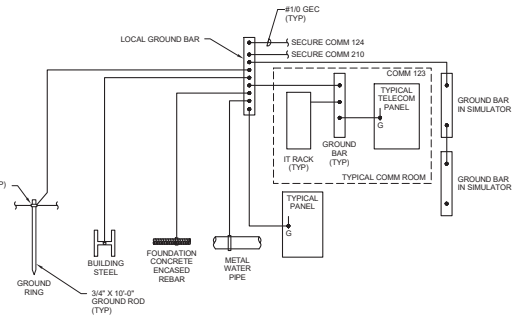
DRAWING TITLE: ELECTRICAL SECOND FLOOR - SECURITY

DRAWING NO.: E602

Local File: Autodesk Docs://076046-PAANG_EC_130J_Simulator/076046_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/27/2026 8:53:58 AM



1 ONE-LINE DIAGRAM
SCALE: NTS



2 GROUNDING
SCALE: NOT TO SCALE

GENERAL NOTES:

1. REFER TO PANEL SCHEDULE FOR RACEWAY AND CONDUCTOR SIZES.

(#) SHEET KEYNOTES:

1. RELOCATED EQUIPMENT FROM EXISTING SIMULATOR ROOM. COORDINATE REMOVAL OF EXISTING EQUIPMENT WITH GOVERNMENT AND CAE.
2. REFER TO PANELBOARD SCHEDULE FOR RACEWAY AND CONDUCTOR SIZES.
3. PROVIDE COMMUNICATION CABLE IN RACEWAY PER MANUFACTURERS RECOMMENDATIONS TO BUILDING MANAGEMENT SYSTEM.

(#) WIRING LEGEND:

1. (3) #2 1/C CU 15KV MEDIUM VOLTAGE CABLE IN EXISTING RACEWAY.
2. (3) #2 1/C CU 15KV MEDIUM VOLTAGE CABLE IN 4" C, (1) 4" RACEWAY WITH PULL CORD (SPARE).
3. 3 SETS OF (4#300 KCMIL, 1#1/0 GRD IN 3-1/2"), (1) 3-1/2" RACEWAY WITH PULL CORD (SPARE).
4. 2 SETS OF (4#350 KCMIL, 1#1 GRD IN 3-1/2")

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HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL ONE-LINE DIAGRAM

DRAWING NO.: **E701**

Project Number: SHYQ149104
1/27/2026 8:53:31 AM
Local File:Autodesk Docs:/070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BMS80_M_R23

PANEL DESIGNATION: **MDP**
LOCATION: ELECTRICAL 122B
FED FROM:

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 800.0
MAINS RATING: 800A MCB
VOLTAGE: 480Y/277V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 35K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA A	LOAD KVA B	LOAD KVA C	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1						45.75			26.67								2
3	250	PANEL M1	3"	1#4	4#250		47.75			26.67		4#250	1#6	3"	(RL) EMM VIA MSEMM AND 125KVA XFMR	200	4
5								39.76			26.67						6
7						0.42			48.02								8
9	60	PANEL UPS-PDU VIA MSUPS & 30KVA UPS	1-1/4"	1#10	4#4		0.42			42.32		3#350	1#4	3-1/2"	PANEL LDP VIA T-LDP	300	10
11								0.42			32.91						12
13						17.51			18.70								14
15	80	(RL) AHU-02 (ROOF)	1-1/2"	1#8	3#2		17.51			18.70		3#1/0	1#6	2"	(RL) H-01 (132)	125	16
17								17.51			18.70						18
19	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	20
21	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	22
23	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	24
25	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	26
27	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	28
29	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	30
31	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	32
33	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	34
35	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	36
37	--	SPACE	--	--	--	--			0.00								38
39	--	SPACE	--	--	--		--			0.00		4#4	1#10	1-1/4"	SPD	60	40
41	--	SPACE	--	--	--			--			0.00						42

CONNECTED LOAD - KVA
AØ 157.07
BØ 153.37
CØ 135.98
446.42 *KVA TOTAL*

448.27 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1. REFER TO ONE-LINE FOR AMP FRAME AND AMP TRIP OF CIRCUIT BREAKERS.
2.
3.
4.
5.

PANEL DESIGNATION: **M1**
LOCATION: ELECTRICAL 122B
FED FROM: MDP

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 250.0
MAINS RATING: 250A MCB
VOLTAGE: 480Y/277V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 35K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1						7.84			6.93								2
3	40	DOAS-1 (ROOF)	1"	1#10	3#6		7.84			6.93		3#10	1#10	3/4"	(RL) CU-1	30	4
5								7.84			6.93						6
7	15	EWH-4	3/4"	1#12	2#12	1.99			3.99			2#12	1#12	3/4"	EWH-1	20	8
9	15	EWH-10	3/4"	1#12	2#12		1.99			1.99		2#12	1312	3/4"	EWH-9	15	10
11								0.00			7.84						12
13	35	SPARE	--	--	--	0.00			7.84			3#8	1#10	1"	HRU-1	35	14
15							0.00			7.84							16
17	15	EWH-5	3/4"	1#12	2#12			1.99			1.99	2#12	1#12	3/4"	EWH-6	15	18
19	15	EWH-7	3/4"	1#12	2#12	1.99			1.99			2#12	1#12	3/4"	EWH-8	15	20
21	20	EWH-3	3/4"	1#12	2312		4.00			3.99		2#12	1#12	3/4":	EWH-2	20	22
23								1.25			5.82						24
25	15	(RL) D1	3/4"	1#12	3#12	1.25			5.82			3#6	1#10	1"	(RL) CMP-1	40	26
27							1.25			5.82							28
29								3.88			2.22						30
31	50	ELEVATOR	1-1/2"	1#10	3#4	3.88			2.22			3#12	1#12	3/4"	CRANE	15	32
33							3.88			2.22							34
35	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	36
37	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	38
39	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	40
41	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	42

CONNECTED LOAD - KVA
AØ 45.75
BØ 47.75
CØ 39.76
133.26 *KVA TOTAL*

133.26 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
____ **INTERNAL/EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1. COORDINATE CIRCUIT BREAKER, RACEWAY, AND CONDUCTORS SIZES WITH PROVIDED MANUFACTURER. UPDATE AS REQUIRED.
2.
3.
4.
5.

PANEL DESIGNATION: **LDP**
LOCATION: ELECTRICAL 122B
FED FROM: T-LDP

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 600.0
MAINS RATING: 600A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 18K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1						9.21			5.53								2
3	225	PANEL G1	3"	1#4	4#4/0		6.98			5.16		4#1	1#8	2"	PANEL ML1	100	4
5								7.10			2.07						6
7						3.45			3.45								8
9	100	PANEL T1	2"	1#8	4#1		3.89			3.89		4#1	1#8	2"	PANEL TS1	100	10
11								0.88			0.88						12
13						10.24			8.36								14
15	225	PANEL GS1	3"	1#4	4#4/0		8.11			8.49		4#4/0	1#4	3"	PANEL GS2	225	16
17								9.90			7.55						18
19						7.78			--			--	--	--	SPACE	--	20
21	100	PANEL TS2	2"	1#8	4#1		5.81			--		--	--	--	SPACE	--	22
23								4.53			--	--	--	--	SPACE	--	24
25	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	26
27	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	28
29	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	30
31	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	32
33	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	34
35	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	36
37	--	SPACE	--	--	--	--			0.00								38
39	--	SPACE	--	--	--		--			0.00		4#10	1#10	3/4"	SPD	30	40
41	--	SPACE	--	--	--			--			0.00						42

CONNECTED LOAD - KVA
AØ 48.02
BØ 42.32
CØ 32.91
123.25 *KVA TOTAL*

125.10 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
2.
3.
4.
5.

PANEL DESIGNATION: **ML1**
LOCATION: ELECTRICAL 122B
FED FROM: LDP

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 100.0
MAINS RATING: 100A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1 ENCLOSURE
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA A	LOAD KVA B	LOAD KVA C	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	15	EUH-1	3/4"	1#12	2#12	1.14			2.50			2#10	1#10	3/4"	DWH-1	30	2
3							1.14			2.50							4
5	20	HWRP-1	3/4"	1#12	2#12			0.20			0.36	2#12	1#12	3/4"	VRF-1.8, VRF-1.12, VRF-1.13, VRF-1.10, VRF-1.11	15	6
7	15	VRF-1.21, VRF-1.22, VRF-1.14, VRF-1.15, VRF-1.23	3/4"	1#12	2#12	0.31			0.36			2#12	1#12	3/4"			8
9							0.31			0.12							10
11	20	EF-1, EF-2	3/4"	1#12	2#12			0.40			0.12	2#12	1#12	3/4"	BC-1.2, BC-1.3	15	12
13	15	VRF-2.6, VRF-2.7, VRF-2.8, VRF-2.10, VRF-2.11	3/4"	1#12	2#12	0.15			0.05			2#12	1#12	3/4"	BC-2.1, BC-2.2	15	14
15							0.15			0.05							16
17	15	VRF-2.1, VRF-2.2, VRF-2.3, VRF-2.4, VRF-2.5	3/4"	1#12	2#12	0.24			0.06			2#12	1#12	3/4"	BC-1.1	15	18
19							0.24			0.06							20
21	20	BAS	3/4"	1#12	2#12		0.40			0.12		2#12	1#12	3/4"	VRF-1.1, VRF-1.2	15	22
23	20	EF-3	3/4"	1#12	2#12			0.20			0.12						24
25	20	REC: VENDING 120	3/4"	1#12	2#12	0.18			0.18			2#12	1#12	3/4"	REC: REF 120	20	26
27	20	REC: 120	3/4"	1#12	2#12		0.18			0.18		2#12	1#12	3/4"	REC: 120	20	28
29	20	REC: 120	3/4"	1#12	2#12			0.18			0.18	2#12	1#12	3/4"	REC: 120	20	30
31	20	REC: WATER COOLER 102	3/4"	1#12	2#12	0.36			--			--	--	--	SPACE	--	32
33	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	34
35	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	36
37	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	38
39	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	40
41	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	42

CONNECTED LOAD - KVA
AØ 5.53
BØ 5.16
CØ 2.07
12.76 *KVA TOTAL*

12.76 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
____ **INTERNAL/EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
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4.
5.

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: RLP | MODELED: RLP | CHECKED: RRC
DATE: JANUARY 2026
DRAWING TITLE: ELECTRICAL PANEL SCHEDULES
DRAWING NO.: **E702**

PANEL DESIGNATION: **G1**
LOCATION: ELECTRICAL 122B
FED FROM: LDP

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 225.0
MAINS RATING: 225A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	20	REC: 118	3/4"	1#12	2#12	1.08			0.90			2#12	1#12	3/4"	REC: EXTERIOR, 122A, 122B	20	2
3	20	REC: 102, 116	3/4"	1#12	2#12		1.08			0.72		2#12	1#12	3/4"	REC: 113	20	4
5	20	REC: 115, 117,121	3/4"	1#12	2#12			1.44			1.08	2#12	1#12	3/4"	REC: 106	20	6
7	20	REC: 108	3/4"	1#12	2#12	1.08			1.08			2#12	1#12	3/4"	REC: 106	20	8
9	20	REC: 119	3/4"	1#12	2#12		0.90			0.72		2#12	1#12	3/4"	REC: 112	20	10
11	20	REC: 112	3/4"	1#12	2#12			1.02			0.72	2#12	1#12	3/4"	REC: 112	20	12
13	20	REC: 112	3/4"	1#12	2#12	0.72			0.90			2#12	1#12	3/4"	REC: 105	20	14
15	20	REC: 113	3/4"	1#12	2#12		1.08			0.72		2#12	1#12	3/4"	REC: 105	20	16
17	20	REC: 120	3/4"	1#12	2#12			0.36			1.08	2#12	1#12	3/4"	REC: 111	20	18
19	20	REC: 114	3/4"	1#12	2#12	1.08			0.51			2#12	1#12	3/4"	LTG: 102, 103, 122A, 122B, EXTERIOR	20	20
21	20	REC: 105	3/4"	1#12	2#12		0.72			0.64		2#12	1#12	3/4"	LTG: 105,106,108,109,110,111,119,120	20	22
23	20	REC: 109	3/4"	1#12	2#12			1.08			0.32	2#12	1#12	3/4"	LTG: 112, 113, 114	20	24
25	20	REC: 110	3/4"	1#12	2#12	1.44			0.42			2#12	1#12	3/4"	LTG:115,116,117,118,121,STAIR B,EXT	20	26
27	20	FACP/MNS	3/4"	1#12	2#12		0.40			0.00		--	--	--	SPARE	20	28
29	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	30
31	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	32
33	20	SPARE	--	--	--		0.00			0.00		--	--	--	SPARE	20	34
35	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	36
37	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	38
39	20	SPARE	--	--	--		0.00			0.00		4#10	1#10	3/4"	SPD	30	40
41	20	SPARE	--	--	--			0.00			0.00						42

CONNECTED LOAD - KVA
AØ 9.21
BØ 6.98
CØ 7.10
23.29 *KVA TOTAL*

23.76 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
2.
3.
4.
5.

PANEL DESIGNATION: **GS1**
LOCATION: MECHANICAL 209
FED FROM: LDP

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 225.0
MAINS RATING: 225A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA A	LOAD KVA B	LOAD KVA C	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	20	REC: 130	3/4"	1#12	2#12	1.08			1.44			2#12	1#12	3/4"	REC: 129	20	2
3	20	REC: 128, 129	3/4"	1#12	2#12		1.26			1.08		2#12	1#12	3/4"	REC: 127	20	4
5	20	REC: 126	3/4"	1#12	2#12			1.08			0.90	2#12	1#12	3/4"	REC: 132	20	6
7	20	REC: 132	3/4"	1#12	2#12	1.08			1.26			2#12	1#12	3/4"	REC: 131	20	8
9	20	REC: 213	3/4"	1#12	2#12		0.66			1.08		2#12	1#12	3/4"	REC: 213	20	10
11	20	REC: 212	3/4"	1#12	2#12			1.92			1.08	2#12	1#12	3/4"	REC: 212	20	12
13	20	REC: 201 & 211	3/4"	1#12	2#12	0.90			0.36			2#12	1#12	3/4"	REC: ELEVATOR PIT	20	14
15	20	REC: WATER COOLER	3/4"	1#12	2#12		0.36			0.54		2#12	1#12	3/4"	REC: STAIR B, EXTERIOR	20	16
17	20	REC: 202A	3/4"	1#12	2#12			1.08			0.90	2#12	1#12	3/4"	REC: 214	20	18
19	20	REC: 202B	3/4"	1#12	2#12	1.08			1.08			2#12	1#12	3/4"	REC: 213	20	20
21	20	REC: ELEVATOR SUMP PUMP	3/4"	1#12	2#12		0.18			1.33		2#12	1#12	3/4"	LTG: 132	20	22
23	20	LTG:128, 129, 130, 131	3/4"	1#12	2#12			0.38			0.40	2#12	1#12	3/4"	LTG: 104, 126, 127, STAIR B, EXTERIOR	20	24
25	20	LTG: ELEVATOR PIT & SHAFT	3/4"	1#12	2#12	0.56			0.50			2#12	1#12	3/4"	LTG: ELEVATOR CAB	20	26
27	20	REC: TV 202A	3/4"	1#12	2#12		0.90			0.72		2#12	1#12	3/4"	REC:132	20	28
29	20	REC: 213	3/4"	1#12	2#12			1.08			1.08	2#12	1#12	3/4"	REC: 213	20	30
31	20	REC: 211	3/4"	1#12	2#12	0.90			0.00			--	--	--	SPARE	20	32
33	20	SPARE	--	--	--		0.00			0.00		--	--	--	SPARE	20	34
35	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	36
37	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	38
39	20	SPARE	--	--	--		0.00			0.00		4#10	1#10	3/4"	SPD	30	40
41	20	SPARE	--	--	--			0.00			0.00						42

CONNECTED LOAD - KVA
AØ 10.24
BØ 8.11
CØ 9.90
28.25 *KVA TOTAL*

28.92 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
2.
3.
4.
5.

PANEL DESIGNATION: **GS2**
LOCATION: MECHANICAL 209
FED FROM: LDP

TYPE:
NUMBER OF POLES: 42
MAIN BUS RATINGS: 225.0
MAINS RATING: 225A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	20	REC: 202D	3/4"	1#12	2#12	1.44			1.08			2#12	1#12	3/4"	REC: 202C, 202D	20	2
3	20	REC: 202D	3/4"	1#12	2#12		0.72			0.72		2#12	1#12	3/4"	REC: 202D	20	4
5	20	REC: 202D	3/4"	1#12	2#12			1.44			1.44	2#12	1#12	3/4"	REC: 202C	20	6
7	20	REC: 202C	3/4"	1#12	2#12	1.44			0.90			2#12	1#12	3/4"	REC: TV 202D	20	8
9	20	REC: 202B	3/4"	1#12	2#12		0.72			1.08		2#12	1#12	3/4"	REC: 202B	20	10
11	20	REC: 202A, 202B	3/4"	1#12	2#12			1.26			1.08	2#12	1#12	3/4"	REC: 202A	20	12
13	20	REC: 202A	3/4"	1#12	2#12	1.08			1.08			2#12	1#12	3/4"	REC: 202A	20	14
15	20	REC: 132, 201, 208	3/4"	1#12	2#12		1.44			1.26		2#12	1#12	3/4"	REC: 203, 204, 205, 206, 207	20	16
17	20	REC: 208 REFRIG	3/4"	1#12	2#12			0.18			0.18	2#12	1#12	3/4"	REC: 208 KITCHENETTE	20	18
19	20	REC: 208 KITCHENETTE	3/4"	1#12	2#12	0.18			0.36			2#12	1#12	3/4"	REC: STAIR A	20	20
21	20	REC: ROOF	3/4"	1#12	2#12		0.90			0.45		2#12	1#12	3/4"	LTG: 132, 211, 212, 213, 214	20	22
23	20	LTG: 201,203,204 205, 206,207 208,209	3/4"	1#12	2#12			0.58			1.39	2#12	1#12	3/4"	LTG: 202A, 202B, 202C, 202D	20	24
25	20	VESDA VIA MSSD	3/4"	1#12	2#12	0.80			0.00			--	--	--	SPARE	20	26
27	20	REC: TV 202B, 202C	3/4"	1#12	2#12		1.20			0.00		--	--	--	SPARE	20	28
29	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	30
31	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	32
33	20	SPARE	--	--	--		0.00			0.00		--	--	--	SPARE	20	34
35	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	36
37	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	38
39	20	SPARE	--	--	--		0.00			0.00		4#10	1#10	3/4"	SPD	30	40
41	20	SPARE	--	--	--			0.00			0.00						42

CONNECTED LOAD - KVA
AØ 8.36
BØ 8.49
CØ 7.55
24.40 *KVA TOTAL*

25.00 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
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3.
4.
5.

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL BRIAN ALEXANDER SEIP ENGINEER 1-28-26

PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104
DESIGNED: RLP | MODELED: RLP | CHECKED: RRC
DATE: JANUARY 2026
DRAWING TITLE: ELECTRICAL PANEL SCHEDULES
DRAWING NO.: **E703**

Local File: Autodesk Docs://070G46-PANG_EC_130J_Simulator/070G46_MC130J_Sim_MEP_R23.rvt
Central File: BIM360_M_R23
Project Number: SHYQ149104
1/27/2026 8:54:12 AM

PANEL DESIGNATION: **T1**
LOCATION: COMM 123
FED FROM: LDP

TYPE:
NUMBER OF POLES: 30
MAIN BUS RATINGS: 100.0
MAINS RATING: 100A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA A	LOAD KVA B	LOAD KVA C	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	20	REC: 123	3/4"	1#12	2#12	0.36			0.80			2#12	1#12	3/4"	REC: IT RACK 123	20	2
3	20	REC: IT RACK 123	3/4"	1#12	2#12		0.80			0.80		2#12	1#12	3/4"	REC: IT RACK 123	20	4
5	20	REC: IT RACK 123	3/4"	1#12	2#12			0.80			0.08	2#12	1#12	3/4"	LTG: 123	20	6
7	40	SSOU-3/SSIU-3	1"	1#10	2#6	2.29			0.00			--	--	--	SPARE	20	8
9							2.29			0.00		--	--	--	SPARE	20	10
11	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	12
13	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	14
15	20	SPARE	--	--	--		0.00			0.00		--	--	--	SPARE	20	16
17	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	18
19	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	20
21	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	22
23	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	24
25	--	SPACE	--	--	--	--			0.00								26
27	--	SPACE	--	--	--		--			0.00		4#10	1#10	3/4"	SPD	30	28
29	--	SPACE	--	--	--			--			0.00						30

CONNECTED LOAD - KVA
AØ 3.45
BØ 3.89
CØ 0.88
8.22 *KVA TOTAL*

8.24 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
2.
3.
4.
5.

PANEL DESIGNATION: **TS1**
LOCATION: SECURE COMM 124
FED FROM: LDP

TYPE:
NUMBER OF POLES: 30
MAIN BUS RATINGS: 100.0
MAINS RATING: 100A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA A	LOAD KVA B	LOAD KVA C	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	20	REC: 124	3/4"	1#12	2#12	0.36			0.80			2#12	1#12	3/4"	REC: IT RACK124	20	2
3	20	REC: IT RACK 124	3/4"	1#12	2#12		0.80			0.80		2#12	1#12	3/4"	REC: IT RACK124	20	4
5	20	REC: IT RACK124	3/4"	1#12	2#12			0.80			0.08	2#12	1#12	3/4"	LTG: 124	20	6
7	40	SSOU-2/SSIU-2	1"	1#10	2#6	2.29			0.00			--	--	--	SPARE	20	8
9							2.29			0.00		--	--	--	SPARE	20	10
11	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	12
13	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	14
15	20	SPARE	--	--	--		0.00			0.00		--	--	--	SPARE	20	16
17	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	18
19	--	SPACE	--	--	--	--			--			--	--	--	SPACE	--	20
21	--	SPACE	--	--	--		--			--		--	--	--	SPACE	--	22
23	--	SPACE	--	--	--			--			--	--	--	--	SPACE	--	24
25	--	SPACE	--	--	--	--			0.00								26
27	--	SPACE	--	--	--		--			0.00		4#10	1#10	3/4"	SPD	30	28
29	--	SPACE	--	--	--			--			0.00						30

CONNECTED LOAD - KVA
AØ 3.45
BØ 3.89
CØ 0.88
8.22 *KVA TOTAL*

8.24 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
2.
3.
4.
5.

PANEL DESIGNATION: **TS2**
LOCATION: COMM 123
FED FROM: LDP

TYPE:
NUMBER OF POLES: 30
MAIN BUS RATINGS: 100.0
MAINS RATING: 100A MCB
VOLTAGE: 208Y/120V, 3PH, 4W
PANEL MOUNTING: SURFACE
PANEL ENCLOSURE: NEMA 1
PANEL MIN. A.I.C. RATING: 10K

CIR. No.	CIR. BKR.	DESCRIPTION	COND.	GRND.	WIRE SIZE	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	LOAD KVA AØ	LOAD KVA BØ	LOAD KVA CØ	WIRE SIZE	GRND.	COND.	DESCRIPTION	CIR. BKR.	CIR. No.
1	20	REC: IT RACK	3/4"	1#12	2#12	0.80			0.80			2#12	1#12	3/4"	REC: IT RACK	20	2
3	20	REC: IT RACK	3/4"	1#12	2#12		0.80			0.80		2#12	1#12	3/4"	REC: IT RACK	20	4
5	20	REC: IT RACK	3/4"	1#12	2#12			0.80			0.80	2#12	1#12	3/4"	REC: IT RACK	20	6
7	20	REC: IT RACK	3/4"	1#12	2#12	0.80			0.80			2#12	1#12	3/4"	REC: IT RACK	20	8
9	20	REC: IT RACK	3/4"	1#12	2#12		0.80			0.72		2#12	1#12	3/4"	REC: 210	20	10
11	20	LTG: 210	3/4"	1#12	2#12			0.25			2.29	2#6	1#10	1"	SSOU-1/SSIU-1	40	12
13	40	SSOU-4/SSIU-4	1"	1#10	2#6	2.29			2.29								14
15							2.29			0.40		2#12	1#12	3/4"	SECURITY PANEL	20	16
17	20	SECURITY DOOR PANEL	3/4"	1#12	2#12			0.40			0.00	--	--	--	SPARE	20	18
19	20	SPARE	--	--	--	0.00			0.00			--	--	--	SPARE	20	20
21	20	SPARE	--	--	--		0.00			0.00		--	--	--	SPARE	20	22
23	20	SPARE	--	--	--			0.00			0.00	--	--	--	SPARE	20	24
25	--	SPACE	--	--	--	--			0.00								26
27	--	SPACE	--	--	--		--			0.00		4#10	1#10	3/4"	SPD	30	28
29	--	SPACE	--	--	--			--			0.00						30

CONNECTED LOAD - KVA
AØ 7.78
BØ 5.81
CØ 4.53
18.12 *KVA TOTAL*

18.18 **TOTAL ESTIMATED DEMAND**

X **SOLID NEUTRAL BUS**
X **EQUIPMENT GROUND BUS**
X **EXTERNAL SURGE PROTECTION DEVICE**
____ **DIGITAL POWER METER**
____ **FEED THROUGH LUGS**
____ **SHUNT TRIP**

NOTES:
1.
2.
3.
4.
5.

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1-28-26

PENNSYLVANIA AIR NATIONAL GUARD

HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION
		REVISIONS

BID DOCUMENTS

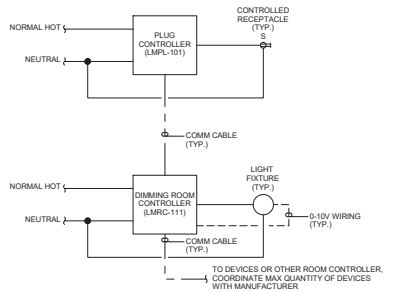
PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

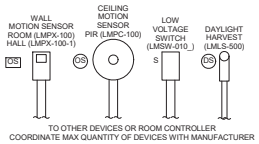
DRAWING TITLE: ELECTRICAL PANEL SCHEDULES

DRAWING NO.: **E704**



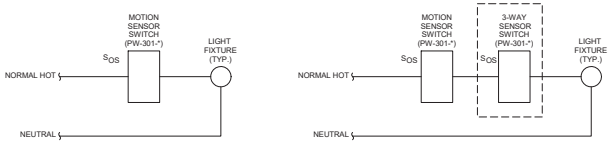
NOTES:

1. BASIS OF DESIGN IS WATTSTOPPER.
2. REFER TO LIGHTING CONTROL SEQUENCE NOTES FOR ADDITIONAL INFORMATION.
3. PROVIDE ALL MATERIAL, COMPONENTS, WIRING, AND MOUNTING HARDWARE FOR A FULLY FUNCTION SYSTEM. ALL DEVICES SHALL BE MOUNTED AND WIRED PER MANUFACTURER'S RECOMMENDATIONS.
4. ROOM CONTROLLERS AND EMERGENCY BYPASS SHALL BE MOUNTED ABOVE CEILING IN AN ACCESSIBLE LOCATION. IF CEILING IS UNAVAILABLE MOUNT ON WALL IN AN ACCESSIBLE LOCATION. COORDINATE FINAL LOCATION WITH OWNER.
5. COORDINATE ROOM CONTROLLER RELAY QUANTITY WITH QUANTITY OF ZONES CONTROLLED.
6. VERIFY MOTION SENSOR COVERAGE WITH MANUFACTURER, PROVIDE ADDITIONAL MOTION DEVICES WHERE REQUIRED.
7. COORDINATE MAX QUANTITY OF DEVICES ON A SINGLE ROOM CONTROLLER WITH MANUFACTURER, PROVIDE ADDITIONAL POWER PACKS AS REQUIRED TO POWER ADDITIONAL DEVICES.
8. WIRELESS AND BLUETOOTH DEVICES AND OPTIONS ARE NOT PERMITTED.

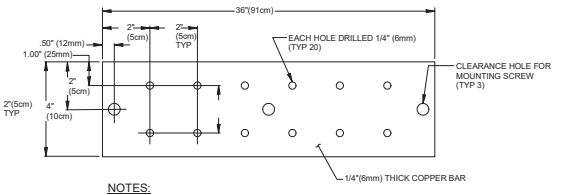


LIGHTNG CONTROL SEQUENCE:

1. OFFICE/CLASS ROOM:
   - 1.1. SWITCH: 3-BUTTON
     - 1.1.1. ALL ON/ALL OFF
     - 1.1.2. ALL RAISE
     - 1.1.3. ALL LOWER
   - 1.2. CONTROL:
     - 1.2.1. AUTO OFF/MANUAL ON
     - 1.2.2. DIMMING MANUAL
   - 1.3. EMERGENCY: BATTERY
2. CORRIDOR/VESTIBULE/RESTROOM:
   - 2.1. SWITCH: 1-BUTTON
     - 2.1.1. ALL ON/ALL OFF
   - 2.2. CONTROL:
     - 2.2.1. AUTO OFF/AUTO ON
   - 2.3. EMERGENCY: BATTERY
3. SIMULATOR/STORAGE ROOM:
   - 3.1. SWITCH: 1-BUTTON
     - 3.1.1. ALL ON/OFF OFF
   - 3.2. CONTROL:
     - 3.2.1. AUTO OFF/MANUAL ON
   - 3.3. EMERGENCY: BATTERY
4. DATA:
   - 4.1. SWITCH: 1-BUTTON
     - 4.1.1. ALL ON/ALL OFF
   - 4.2. CONTROL:
     - 4.2.1. AUTO OFF/MANUAL ON
   - 4.3. EMERGENCY: BATTERY
5. ELECTRICAL/MECHANICAL:
   - 5.1. LINE VOLTAGE SWITCH
     - 5.1.1. MANUAL OFF/MANUAL ON
   - 5.2. EMERGENCY: BATTERY



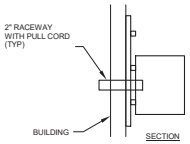
1 LIGHTING CONTROL
SCALE: 12" = 1'-0"

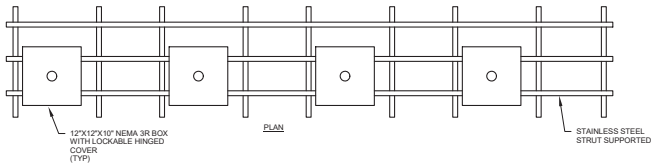


NOTES:

1. MOUNT BUS BAR ON INSULATORS 2" (51mm) FROM WALL AND 18" AFF.
2. PROVIDE GROUND BAR IN EACH ELECTRICAL ROOM AND SERVER ROOM.

2 GROUND BAR
SCALE: NOT TO SCALE

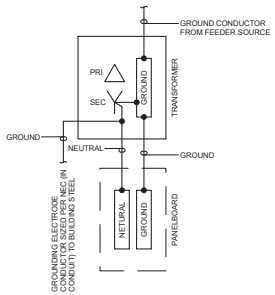




ANTENNA SUPPORT NOTES:

1. COORDINATE QUANTITY OF BOXES WITH OWNER.
2. PROVIDE ADDITIONAL STRUT SUPPORT FOR LARGER ANTENNA, COORDINATE WITH OWNER.
3. STRUT TO BE SUPPORTED FROM BUILDING STEEL, FIELD COORDIANTE.

3 ANTENNA SUPPORT DETAIL
SCALE: NTS



4 TYPICAL PANELBOARD AND TRANSFORMER GROUNDING DETAIL
SCALE: NOT TO SCALE

DISCONNECT/ENCLOSED CIRCUIT BREAKER SCHEDULE

DESIGNATION	DESCRIPTION	FUSE	ENCLOSURE	EQUIPMENT
DS1	60A, 240V, 2-POLE, HD	NF	NEMA 3R	SSOU/SSIU
DS2	100A, 600V, 3-POLE, HD	NF	NEMA 3R	AHU-02
DS3	60A, 600V, 3-POLE, HD	NF	NEMA 3R	DOAS-1, HRU-(#)
DS4	30A, 600V, 3-POLE, HD	NF	NEMA 3R	
DS5	30A, 240V, 2-POLE, HD	NF	NEMA 1	EUH-1, DWH-1, VRF-(#), BC-(#)
DS6	200A, 600V, 3-POLE, HD	NF	NEMA 1	H-01
DS7	30A, 600V, 3-POLE, HD	NF	NEMA 1	
DS8	60A, 600V, 3-POLE, HD	NF	NEMA 1	CMP-1, CRANE

6 DISCONNECT MEANS SCHEDULE
SCALE: NOT TO SCALE

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PENNSYLVANIA AIR NATIONAL GUARD
HARRISBURG ANGB, MIDDLETOWN, PA
SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

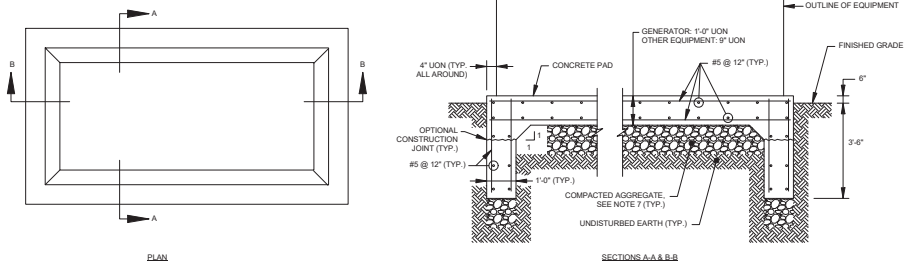
DRAWING TITLE: ELECTRICAL DETAILS

DRAWING NO.: **E801**

Project Number: SHYQ149104
Local File:Autodesk Docs:/079046-PANG_EC_130J_Simulator/079046_MC130J_Sim_MEP_R23.rvt
Central File: BM1690_M_R23
1/27/2026 8:53:58 AM

DETAIL NOTES:

1. COORDINATE PAD LENGTH AND WIDTH WITH FINAL APPROVED EQUIPMENT DRAWINGS.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE NOT LESS THAN 4000 PSI (28 DAYS).
3. SLOPE TOP OF PAD TO DRAIN AWAY FROM EQUIPMENT IN ALL DIRECTIONS.
4. REINFORCEMENT BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60, DEFORMED.
5. REINFORCEMENT BARS SHALL BE SPLICED 24" MINIMUM.
6. CHAMFER EXPOSED CONCRETE EDGES 3/4 INCH x 3/4 INCH UNLESS OTHERWISE NOTED.
7. PROVIDE MINIMUM AGGREGATE DEPTH OF 1'-0" UNDER ENTIRE AREA OF SLAB AND LEGS.

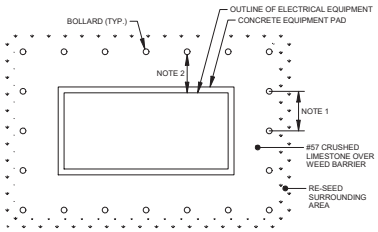


1 TYPICAL OUTDOOR ELECTRICAL EQUIPMENT PAD

SCALE: NOT TO SCALE

DETAIL NOTES:

1. UNLESS A TIGHTER SPACING IS INDICATED ELSEWHERE, MAXIMUM CENTERLINE SPACING BETWEEN BOLLARDS SHALL NOT EXCEED 48".
2. UNLESS A GREATER DISTANCE IS INDICATED ELSEWHERE, MINIMUM CLEAR SPACING FROM BOLLARDS TO EQUIPMENT PROTECTED SHALL BE NOT LESS THAN 24". INCREASE CLEAR SPACE AS REQUIRED TO ALLOW EQUIPMENT DOORS TO SWING OPEN 90° AND ACCOMMODATE NEC ARTICLE 110 WORKING SPACE REQUIEMENTS.

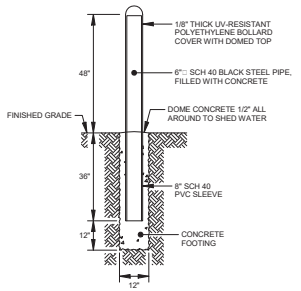


2 TYPICAL OUTDOOR ELECTRICAL EQUIPMENT

SCALE: NOT TO SCALE

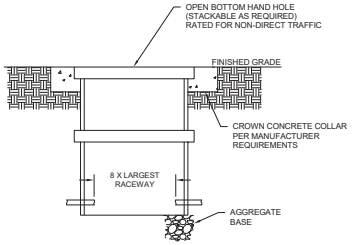
DETAIL NOTES:

1. UNLESS A TIGHTER SPACING IS INDICATED ELSEWHERE, MAXIMUM CENTERLINE SPACING BETWEEN BOLLARDS SHALL NOT EXCEED 48".
2. UNLESS A GREATER DISTANCE IS INDICATED ELSEWHERE, MINIMUM CLEAR SPACING FROM BOLLARDS TO EQUIPMENT PROTECTED SHALL BE NOT LESS THAN 24".
3. FILL INTERSTITIAL SPACE BETWEEN PVC SLEEVE AND STEEL PIPE WITH NON- SHRINK GROUT.



3 TYPICAL EQUIPMENT PROTECTION BOLLARD

SCALE: NOT TO SCALE



NOTES:

1. INSTALL HAND HOLE PER MANUFACTURER RECOMMENDATIONS.
2. COORDINATE EXACT SIZE REQUIREMENT WITH QUANTITY AND SIZES OF RACEWAY. HAND HOLE SHALL BE SIZED PER NEC REQUIREMENTS.
3. HAND HOLE RATING:
   - 3.1. SIDEWALK APPLICATION WITH NON-DELIBERATE VEHICULAR TRAFFIC: TIER 8
   - 3.2. DRIVEWAY, PARKING LOT, AND OFF-ROADWAY APPLICATION WITH OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC: TIER 15

4 TYPICAL HANDHOLE

SCALE: NOT TO SCALE

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HARRISBURG ANGB, MIDDLETOWN, PA

SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
RLP	RLP	RRC

DATE: JANUARY 2026

DRAWING TITLE: ELECTRICAL DETAILS

DRAWING NO.: **E802**

Local File: Autodesk Docs://070146-PANG_EC_130J_Simulator/070146_MC130J_Sim_MEP_R23.rvt
Central File: BM1695_M_R23
Project Number: SHYQ149104
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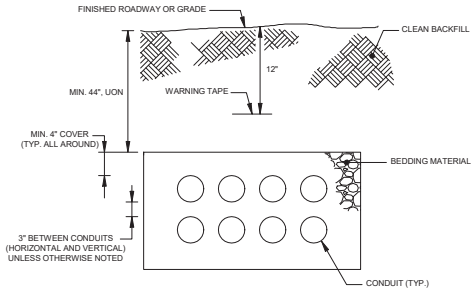
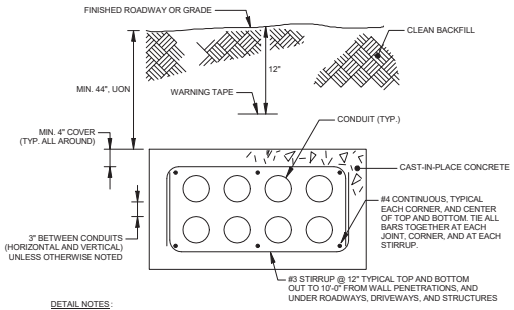


DETAIL NOTES :

1. REFER TO PLANS AND/OR CROSS SECTIONS FOR SIZE AND QUANTITY OF CONDUITS.
2. DO NO USE DUCT SPACERS BETWEEN CONDUITS; MAINTAIN SPACING USING FILL MATERIAL ONLY.
3. ALL DIRECT BURIED CONDUCTORS OR CABLES SHALL BE INSTALLED IN RACEWAY FIRST.

DIRECT BURIED



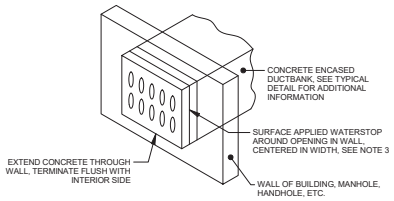
DETAIL NOTES:

1. REFER TO PLANS AND/OR CROSS SECTIONS FOR SIZE AND QUANTITY OF CONDUITS IN EACH DUCTBANK.
2. PROVIDE PLASTIC DUCT SPACERS AT INTERVALS OF NOT LESS THAN 4 SPACERS PER 20 LINEAR FEET OF DUCTBANK, AND VERTICALLY STAGGERED AT NOT LESS THAN 6 INCHES.
3. ANY REQUIRED CONSTRUCTION JOINTS SHALL BE MADE WATERPROOF BY USE OF SURFACE APPLIED WATERSTOP, COATING WITH BITUMINOUS COATING COMPOUND, OR OTHER APPROVED MEANS.

CONCRETE ENCASED

1 TYPICAL DUCT BANK

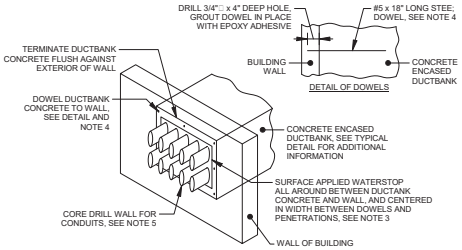
SCALE: NOT TO SCALE



DETAIL NOTES:

1. THIS DETAIL IS APPLICABLE TO ALL INTERFACES BETWEEN NEW DUCTBANKS AND THE FOLLOWING: NEW CONCRETE BUILDING WALLS, EXISTING OR NEW CONCRETE HANDHOLES, EXISTING OR NEW MANHOLES. THIS DETAIL IS ALSO APPLICABLE TO INTERFACES BETWEEN NEW DUCTBANKNS AND EXISTING CONCRETE BUILDING WALLS WHERE SO INDICATED ON THE PLANS.
2. CONDUITS SHOWN ARE FOR ILLUSTRATION ONLY. REFER TO PLANS AND/OR DIAGRAMS FOR QUANTITY AND SIZE(S) OF REQUIRED CONDUITS.
3. INSTALL WATERSTOP ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

KEYED TO WALL



DETAIL NOTES:

1. THIS DETAIL IS APPLICABLE TO ALL INTERFACES BETWEEN NEW DUCTBANKS AND EXISTING CONCRETE BUILDING WALLS. THIS DETAIL IS ALSO APPLICABLE TO INTERFACES BETWEEN NEW DUCTBANKNS AND NEW CONCRETE BUILDING WALLS WHERE SO INDICATED ON THE PLANS. THIS DETAIL SHALL NOT BE USED FOR INTERFACES BETWEEN DUCTBANK AND HANDHOLES OR MANHOLES, UNLESS SO INDICATED ON THE PLANS OR WITH THE SPECIAL PERMISSION OF THE ENGINEER ON A CASE-BY-CASE BASIS.
2. CONDUITS SHOWN ARE FOR ILLUSTRATION ONLY. REFER TO PLANS AND/OR DIAGRAMS FOR QUANTITY AND SIZE(S) OF REQUIRED CONDUITS.
3. INSTALL WATERSTOP IN A CONTINUOUS BAND, AND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. QUANTITY AND SPACING OF DOWELS TO MATCH DUCTBANK LONGITUDINAL REINFORCING. ENSURE THAT THERE IS NO LESS THAN 2" OF CONCRETE COVER OVER DOWELS.
5. CORE DRILL AN INDIVIDUAL HOLE THROUGH THE WALL FOR EACH CONDUIT. FILL FULL DEPTH OF ANNULAR SPACES BETWEEN CONDUITS AND HOLES WITH WATER SWELLING SEALANT.

DOWELED TO WALL

2 TYPICAL DUCT BANK WALL PENETRATION

SCALE: NOT TO SCALE

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SOF CONSTRUCT SIMULATOR FACILITY MC-130J

NO.	DATE	DESCRIPTION

REVISIONS

BID DOCUMENTS

PROJECT NUMBER: SHYQ149104

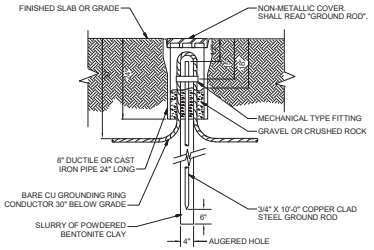
DESIGNED:	MODELED:	CHECKED:
KAM	KAM	RRC

DATE: JANUARY 2026

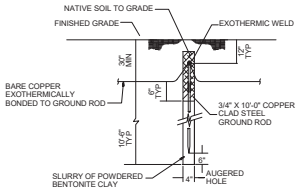
DRAWING TITLE: DETAILS

DRAWING NO.: **E803**

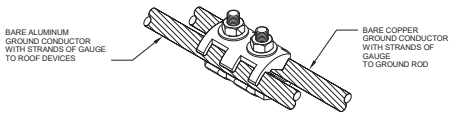
Project Number: SHYQ149104
1/27/2026 8:54:08 AM
Local File: Autodesk Docs://070046-PANG_EC_130J_Simulator/070046_MC130J_Sim_MEP_R23.rvt
Central File: BM0580_M_R23



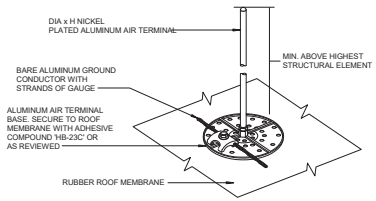
1 TYPICAL GROUND AND TEST WELL DETAIL
SCALE: NOT TO SCALE



2 TYPICAL GROUND ROD DETAIL
SCALE: NOT TO SCALE



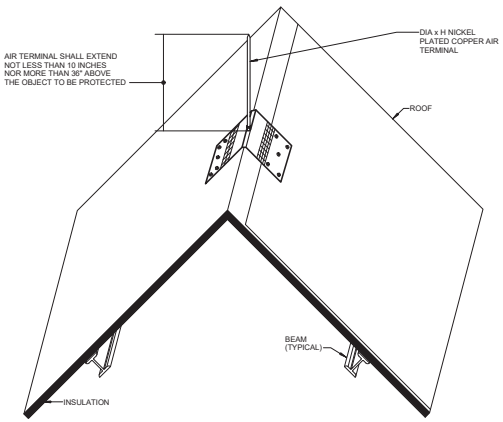
3 TYPICAL LIGHTNING PROTECTION SPLICE
SCALE: NOT TO SCALE



NOTES:

1. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.
2. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE CORROSION RESISTANT.
3. PROVIDE AND INSTALL ALL REQUIRED COMPONENTS TO OBTAIN UL MASTER LABEL.
4. THIS DETAIL IS PROVIDED TO INDICATE SCOPE. PROVIDE COORDINATED DETAIL FOR ACTUAL MOUNTING CONDITIONS. ALL MOUNTING DETAILS SHALL BE REVIEWED BY ARCHITECT.

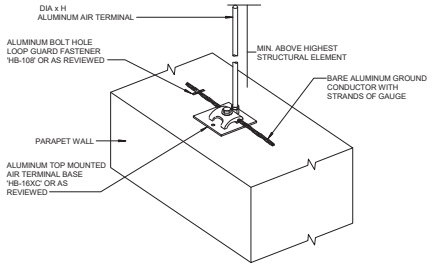
4 TYPICAL LIGHTNING PROTECTION AIR TERMINAL ROOF MOUNT
SCALE: NOT TO SCALE



NOTES:

1. COORDINATE ROOF PENETRATIONS AND FRAMING WITH ARCHITECT AND STRUCTURAL ENGINEER.
2. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.
3. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE CORROSION RESISTANT.
4. PROVIDE ALL REQUIRED COMPONENTS TO OBTAIN UL MASTER LABEL.
5. THIS DETAIL IS PROVIDED TO INDICATE SCOPE. PROVIDE COORDINATED DETAIL FOR ACTUAL MOUNTING CONDITIONS. ALL MOUNTING DETAILS SHALL BE REVIEWED BY ARCHITECT.

5 TYPICAL LIGHTNING PROTECTION AIR TERMINAL PITCHED ROOF MOUNT
SCALE: NOT TO SCALE



NOTES:

1. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS, REQUIREMENTS AND RECOMMENDATIONS.
2. ALL LIGHTNING PROTECTION SYSTEM COMPONENTS SHALL BE CORROSION RESISTANT.
3. PROVIDE AND INSTALL ALL REQUIRED COMPONENTS TO OBTAIN UL MASTER LABEL.
4. THIS DETAIL IS PROVIDED TO INDICATE SCOPE. PROVIDE COORDINATED DETAIL FOR ACTUAL MOUNTING CONDITIONS. ALL MOUNTING DETAILS SHALL BE REVIEWED BY ARCHITECT.

6 TYPICAL LIGHTNING PROTECTION AIR TERMINAL PARAPET MOUNT
SCALE: NOT TO SCALE

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PROJECT NUMBER: SHYQ149104

DESIGNED:	MODELED:	CHECKED:
KAM	KAM	RRC

DATE: JANUARY 2026

DRAWING TITLE: DETAILS

DRAWING NO.: **E804**

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