

IN128 - JAMES T. MORRIS ARENA

IU Project NO. 20240127

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INDIANA UNIVERSITY BOARD OF TRUSTEES
 2901 EAST DISCOVERY PARKWAY
 BLOOMINGTON, IN 47408
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Code Consultant

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816-806-3729

SEAL | DATE 02/03/2017



SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25

RATIO

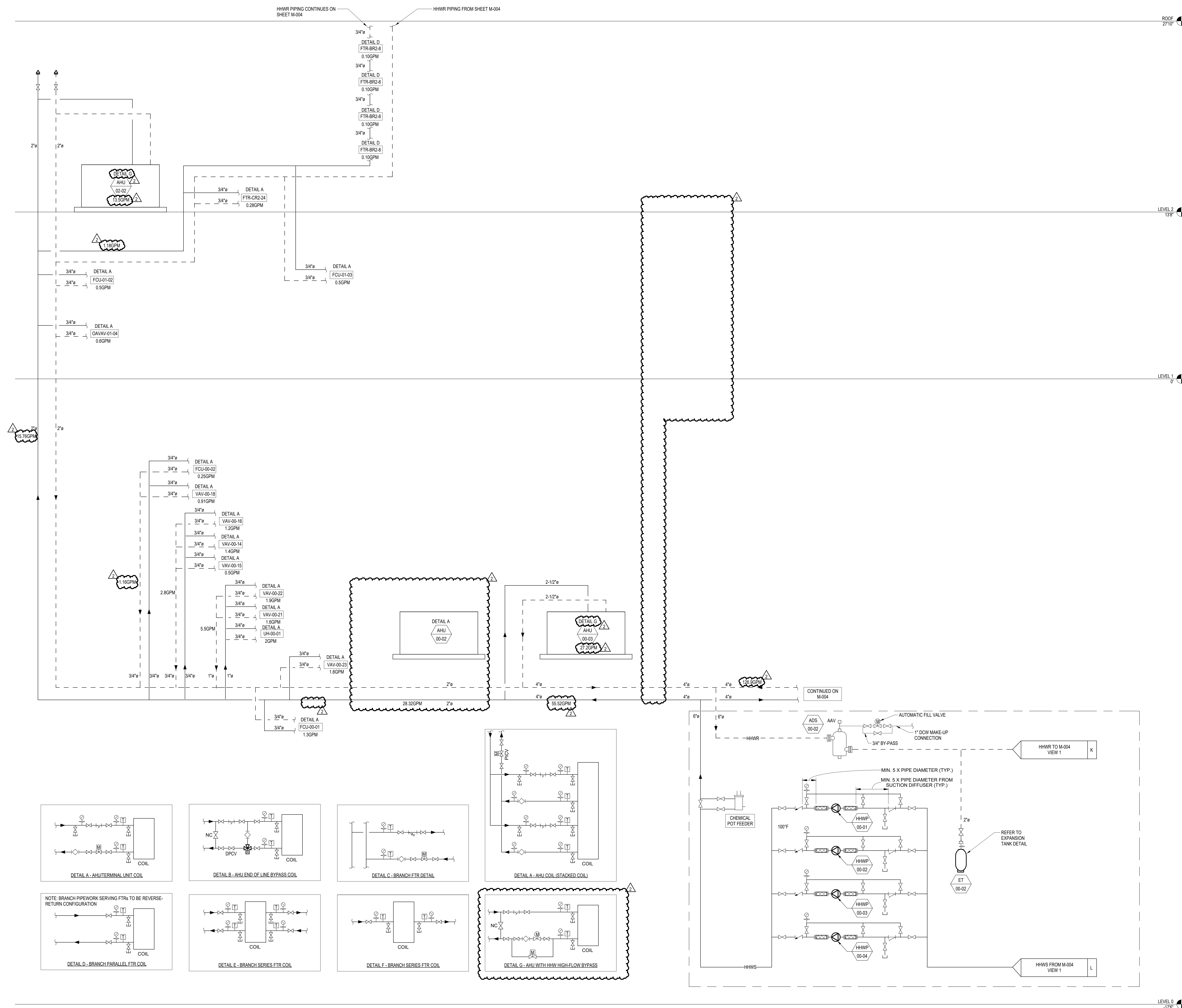
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PROJECT NO. 23112.000

SHEET TITLE
CHW DIAGRAM

SHEET NUMBER

M-002



IN128 - JAMES T.
MORRIS ARENA

IU Project NO. 20240127

Architect

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Acoustics / Technology Engineer

Civil Engineer
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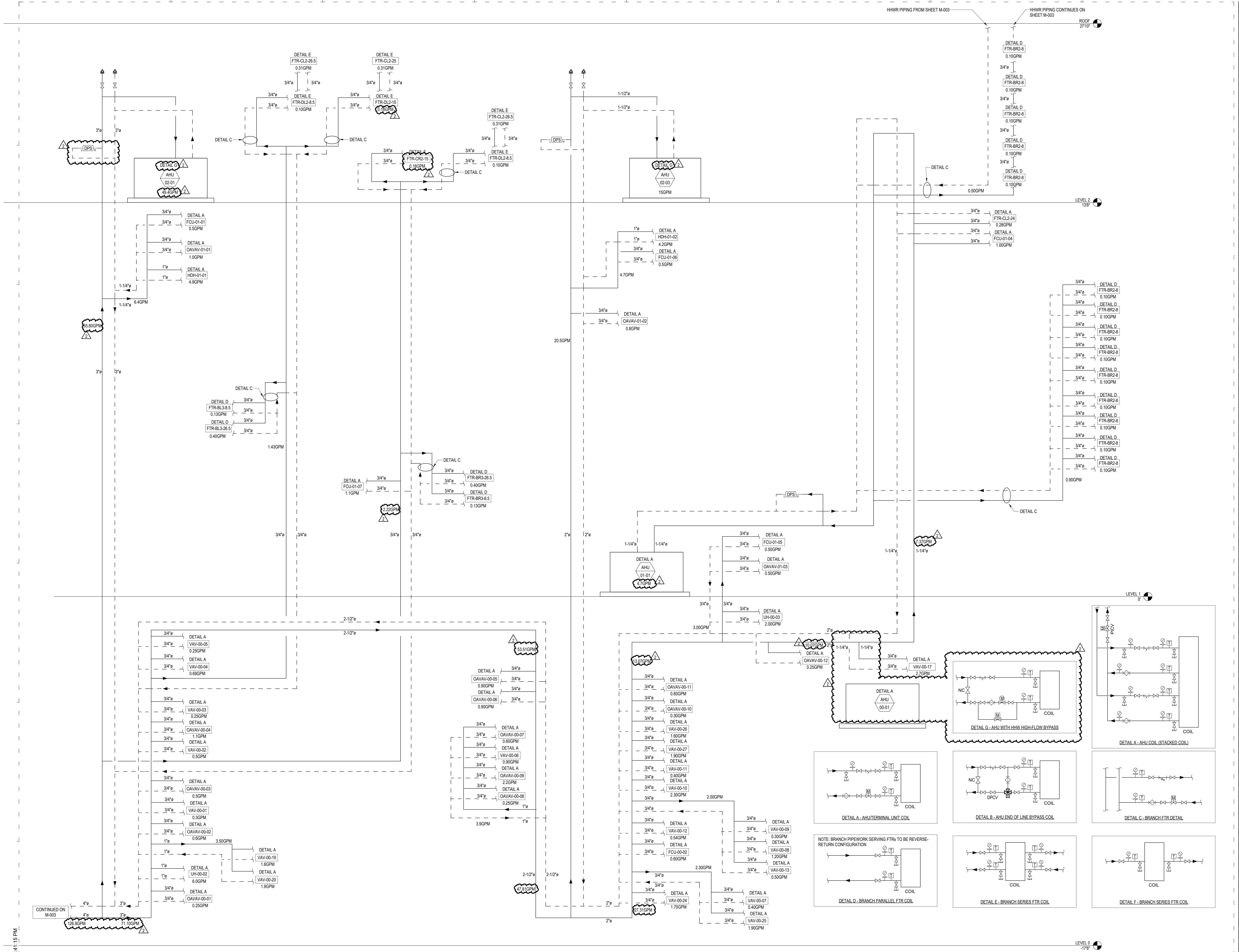
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SEAL | DATE 02/03/25

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PROJECT NO.	23112.000
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SHEET NUMBER



IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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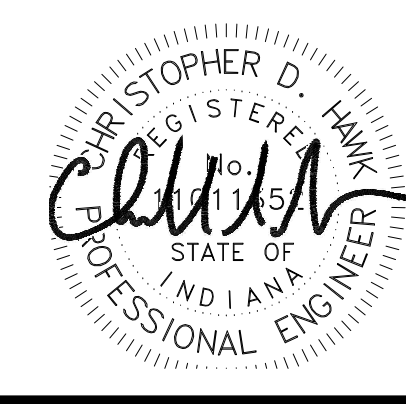
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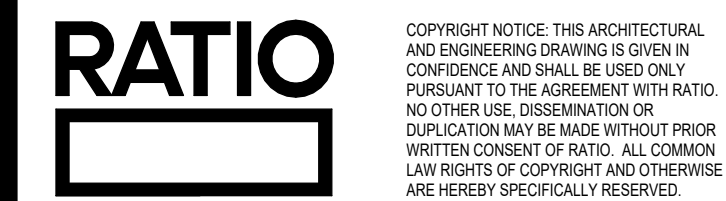
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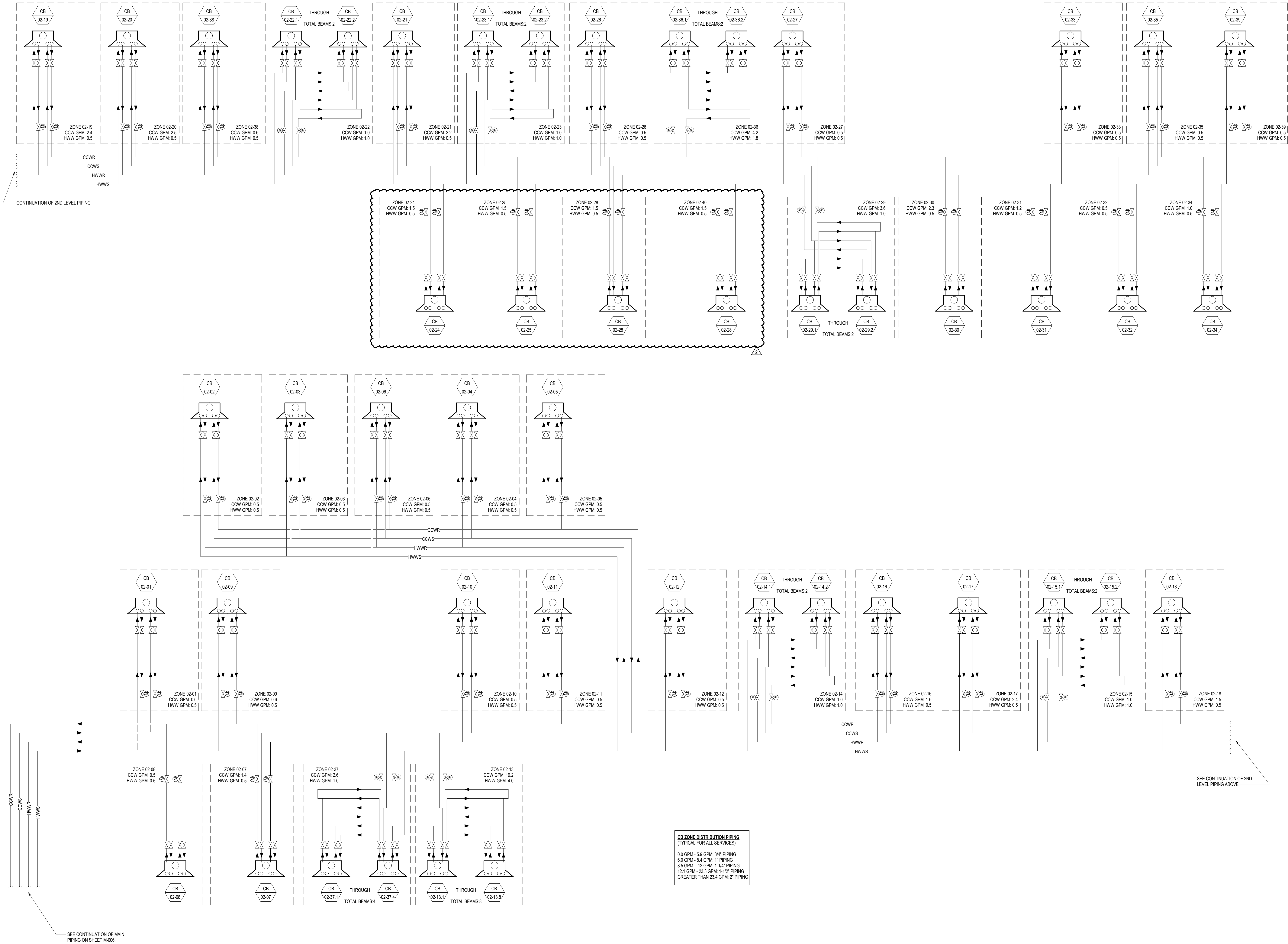
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3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25



PROJECT NO. 23112.000

SHEET TITLE
HHW DIAGRAM

SHEET NUMBER
M-004



IN128 - JAMES T. MORRIS ARENA

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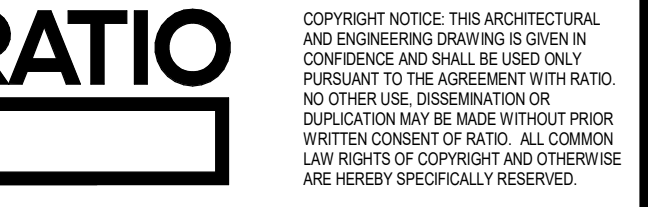
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7	ADDENDUM 02	02/03/25



PROJECT NO. 23112.000

SHEET TITLE
**CHILLED BEAMS
DIAGRAM**

SHEET NUMBER
M-007

IN128 - JAMES T. MORRIS ARENA

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IU Project NO. 20240127

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SEAL | DATE 02/03/25



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3	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE

VENTILATION
CALCULATION - AHU
00-03

SHEET NUMBER

M-010

AHU 00-03 VENTILATION CALCULATION

SUPPLY - INDIANA MECHANICAL CODE																				EXHAUST - INDIANA MECHANICAL CODE									
SYSTEM	ZONE	FLOOR	ROOM NUMBER	NAME	AREA, Az FT2	OCCUPANCY	SUPPLY/EXHAUST	OCCUPANT DENSITY (#/1000 FT2)	PEOPLE, Pz	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, Rp CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, Ra CFM/FT2	BREATHING ZONE OA, Vbz	Ez	REQUIRED OA (Voz)	MIN OA REQUIRED, CFM	DCV MIN OA, CFM	MIN OA PROVIDED W/ DCV, CFM	COOLING CFM REQUIRED	HEATING CFM REQUIRED	LOCKER #	SHOWERS	TOILETS	EXHAUST/ MIN AREA CFM/SQFT	CODE MINIMUM EA CFM	ADDITIONAL EXHAUST FOR NEGATIVE PRESSURIZATION	PROVIDED EA CFM			
AHU 00-03 DOAS	1	00 EVENT LEVEL	005	AUX LKR SHOWER/GROOM	508	Sports locker roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	260	170	4	2	2	0.50	340	0	340			
AHU 00-03 DOAS	2	00 EVENT LEVEL	006C	VISITOR SHOWER	445	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	245	145	0	4	4	50/20f	280	0	280			
AHU 00-03 DOAS	2	00 EVENT LEVEL	004	STORAGE	58	Storage rooms	Supply	0	0	0	0.12	7	1	7	10	10	10	25	25	0	4	0	0.00	0	0	0			
AHU 00-03 DOAS	2	00 EVENT LEVEL	006	VISITOR LOCKER	572	Sports locker roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	635	380	17	0	0	0.50	850	0	850			
AHU 00-03 DOAS	3	00 EVENT LEVEL	014	HOME COACH LOCKER	263	Sports locker roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	125	105	6	0	0	0.50	300	90	390			
AHU 00-03 DOAS	3	00 EVENT LEVEL	014B	HOME COACH LOUNGE	100	Breakrooms	Supply	25	3	5	0.06	19	1	19	20	20	20	50	40	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	3	00 EVENT LEVEL	006A	HOME COACH NUTRITION	140	Main entry lobbies	Supply	10	1	5	0.06	15	1	15	20	20	20	80	65	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	3	00 EVENT LEVEL	014D	HOME COACH TOILET	135	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	55	45	0	0	1	50/20f	50	50	100			
AHU 00-03 DOAS	3	00 EVENT LEVEL	014F	HOME COACH SHOWER N	115	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	70	60	0	1	1	50/20f	70	30	100			
AHU 00-03 DOAS	3	00 EVENT LEVEL	012	STORAGE	55	Storage rooms	Supply	0	0	0	0.12	7	1	7	10	10	10	25	25	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	3	00 EVENT LEVEL	-	CORRIDOR NW	2245	Corridors	Supply	0	0	0	0.06	135	1	135	140	140	140	140	140	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	3	00 EVENT LEVEL	014E	HOME COACH SHOWER S	134	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	70	60	0	1	1	50/20f	70	30	100			
AHU 00-03 DOAS	4	00 EVENT LEVEL	016	MBB LOCKER	522	Sports locker roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	690	530	16	0	0	0.50	800	160	960			
AHU 00-03 DOAS	4	00 EVENT LEVEL	016D	MBB SHOWER	448	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	280	220	0	4	4	50/20f	280	120	400			
AHU 00-03 DOAS	4	00 EVENT LEVEL	016A	MBB NUTRITION	150	Main entry lobbies	Supply	10	2	5	0.06	17	1	17	20	20	20	85	65	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	4	00 EVENT LEVEL	016B	MBB STORAGE	96	Storage rooms	Supply	0	0	0	0.12	12	1	12	20	20	20	70	55	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	5	00 EVENT LEVEL	022	WBB LOCKER	788	Sports locker roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	690	455	16	0	0	0.50	800	160	960			
AHU 00-03 DOAS	5	00 EVENT LEVEL	022D	WBB SHOWER	500	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	265	175	0	4	4	50/20f	280	120	400			
AHU 00-03 DOAS	5	00 EVENT LEVEL	022A	WBB STORAGE	122	Storage rooms	Supply	0	0	0	0.12	15	1	15	20	20	20	55	35	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	5	00 EVENT LEVEL	022B	WBB NUTRITION	139	Main entry lobbies	Supply	10	1	5	0.06	15	1	15	20	20	20	80	55	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	6	00 EVENT LEVEL	026	WVB SHOWER	404	Shower room (per shower head)	Exhaust	0	0	0	0	0	1	0	0	0	0	255	180	4	4	0	50/20f	280	120	400			
AHU 00-03 DOAS	6	00 EVENT LEVEL	026B	WVB NUTRITION	260	Main entry lobbies	Supply	10	3	5	0.06	29	1	29	30	30	30	200	140	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	6	00 EVENT LEVEL	026A	WVB STORAGE	40	Storage rooms	Supply	0	0	0	0.12	5	1	5	10	10	10	25	20	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	6	00 EVENT LEVEL	-	CORRIDOR SW	1759	Corridors	Supply	0	0	0	0.06	106	1	106	110	110	110	110	110	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	6	00 EVENT LEVEL	026D	WVB LOCKER	644	Sports locker roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	630	435	17	0	0	0.50	850	160	1,020			
AHU 00-03 DOAS	7	00 EVENT LEVEL	030	TRAINING	995	Health club/weight room	Supply	10	10	20	0.06	259	1	259	260	260	260	605	435	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	8	00 EVENT LEVEL	030A	HYDROTHERAPY	520	Physical therapy rooms	Supply	20	10	15	0	156	1	156	160	160	160	345	185	0	0	0	0.00	0	0	495			
AHU 00-03 DOAS	9	00 EVENT LEVEL	032	SPORTS PERFORMANCE	2187	Health club/weight room	Supply	10	22	20	0.06	569	1	569	570	570	570	1,425	1,270	0	0	0	0.00	0	1,530	1,530			
AHU 00-03 DOAS	9	00 EVENT LEVEL	030C	TRAINING RR	85	Toilet rooms — public	Supply	0	0	0	0	0	1	0	0	0	0	45	40	0	0	1	50/70e	50	25	75			
AHU 00-03 DOAS	10	00 EVENT LEVEL	044	MENS RR	431	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	325	220	0	0	6	50/70e	300	90	390			
AHU 00-03 DOAS	10	00 EVENT LEVEL	-	CORRIDOR SE	1391	Corridors	Supply	0	0	0	0.06	83	1	83	90	90	90	90	90	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	10	00 EVENT LEVEL	045	FAMILY RR	55	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	35	25	0	0	1	50/70e	50	0	50			
AHU 00-03 DOAS	11	00 EVENT LEVEL	046	WOMENS RR	755	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	455	445	0	0	12	50/70e	600	0	600			
AHU 00-03 DOAS	12	00 EVENT LEVEL	041	JAN SE	50	Storage rooms	Exhaust	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1.00	50	0	50			
AHU 00-03 DOAS	12	00 EVENT LEVEL	051	INDIVIDUAL LOCKER	217	Locker/dressing roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	80	60	1	1	1	0.25	120	0	120			
AHU 00-03 DOAS	12	00 EVENT LEVEL	052	INDIVIDUAL LOCKER	186	Locker/dressing roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	80	60	1	1	1	0.25	120	0	120			
AHU 00-03 DOAS	12	00 EVENT LEVEL	053	INDIVIDUAL LOCKER 3	221	Locker/dressing roomsg	Exhaust	0	0	0	0	0	1	0	0	0	0	80	60	1	1	1	0.25	120	0	120			
AHU 00-03 DOAS	13	01 CONCOURSE	103	WOMENS RR NW	1166	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	765	300	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	13	01 CONCOURSE	-	WOMENS RR VEST NW	56	Corridors	Supply	0	0	0	0.06	3	1	3	10	10	10	35	15	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	13	01 CONCOURSE	102B	STORAGE NW	45	Storage rooms	Supply	0	0	0	0.12	5	1	5	10	10	10	35	15	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	13	01 CONCOURSE	102A	JAN NW	30	Storage rooms	Exhaust	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1.00	30	0	30			
AHU 00-03 DOAS	13	01 CONCOURSE	102	KITCHEN NW	944	Kitchens (cooking)	Exhaust	20	19	7.5	0.12	255	1	255	260	260	260	260	260	0	0	0	0.70	661	0	665			
AHU 00-03 DOAS	13	01 CONCOURSE	102C	CONCESSIONS NW	297	Sales	Supply	15	4	7.5	0.12	69	1	69	70	70	70	70	70	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	14	01 CONCOURSE	105	WOMENS RR SW	1068	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	700	220	0	0	21	50/70e	1,050	0	1,050			
AHU 00-03 DOAS	14	01 CONCOURSE	106	WOMENS RR VEST SW	170	Corridors	Supply	0	0	0	0.06	10	1	10	20	20	20	70	25	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	14	01 CONCOURSE	104B	STORAGE SW	36	Storage rooms	Supply	0	0	0	0.12	4	1	4	10	10	10	20	10	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	14	01 CONCOURSE	104A	JAN SW	47	Storage rooms	Exhaust	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1.00	47	0	50			
AHU 00-03 DOAS	14	01 CONCOURSE	104	KITCHEN SW	944	Kitchens (cooking)	Exhaust	20	19	7.5	0.12	255	1	255	260	260	260	260	260	0	0	0	0.70	661	0	665			
AHU 00-03 DOAS	14	01 CONCOURSE	104C	CONCESSIONS SW	358	Sales	Supply	15	5	7.5	0.12	83	1	83	90	90	90	90	90	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	15	01 CONCOURSE	114	MENS RR SE	623	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	575	240	0	0	13	50/70e	650	240	890			
AHU 00-03 DOAS	15	01 CONCOURSE	114A	FAMILY RR SE	69	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	70	30	0	0	0	50/70e	50	24	70			
AHU 00-03 DOAS	15	01 CONCOURSE	-	MENS RR VEST SE	184	Corridors	Supply	0	0	0	0.06	11	1	11	20	20	20	40	20	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	15	01 CONCOURSE	114B	JAN SE	78	Storage rooms	Exhaust	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1.00	78	0	80			
AHU 00-03 DOAS	15	01 CONCOURSE	113	GRABNGO SE	473	Sales	Supply	15	7	7.5	0.12	110	1	110	110	110	110	110	110	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	16	01 CONCOURSE	-	MENS RR VEST NE	156	Corridors	Exhaust	0	0	0	0.06	9	1	9	10	10	10	115	70	0	0	0	0.00	0	0	0			
AHU 00-03 DOAS	16	01 CONCOURSE	119	MENS RR NE	517	Toilet rooms — public	Exhaust	0	0	0	0	0	1	0	0	0	0	330	200	0	0	13	50/70e	650	0	650			
AHU																													

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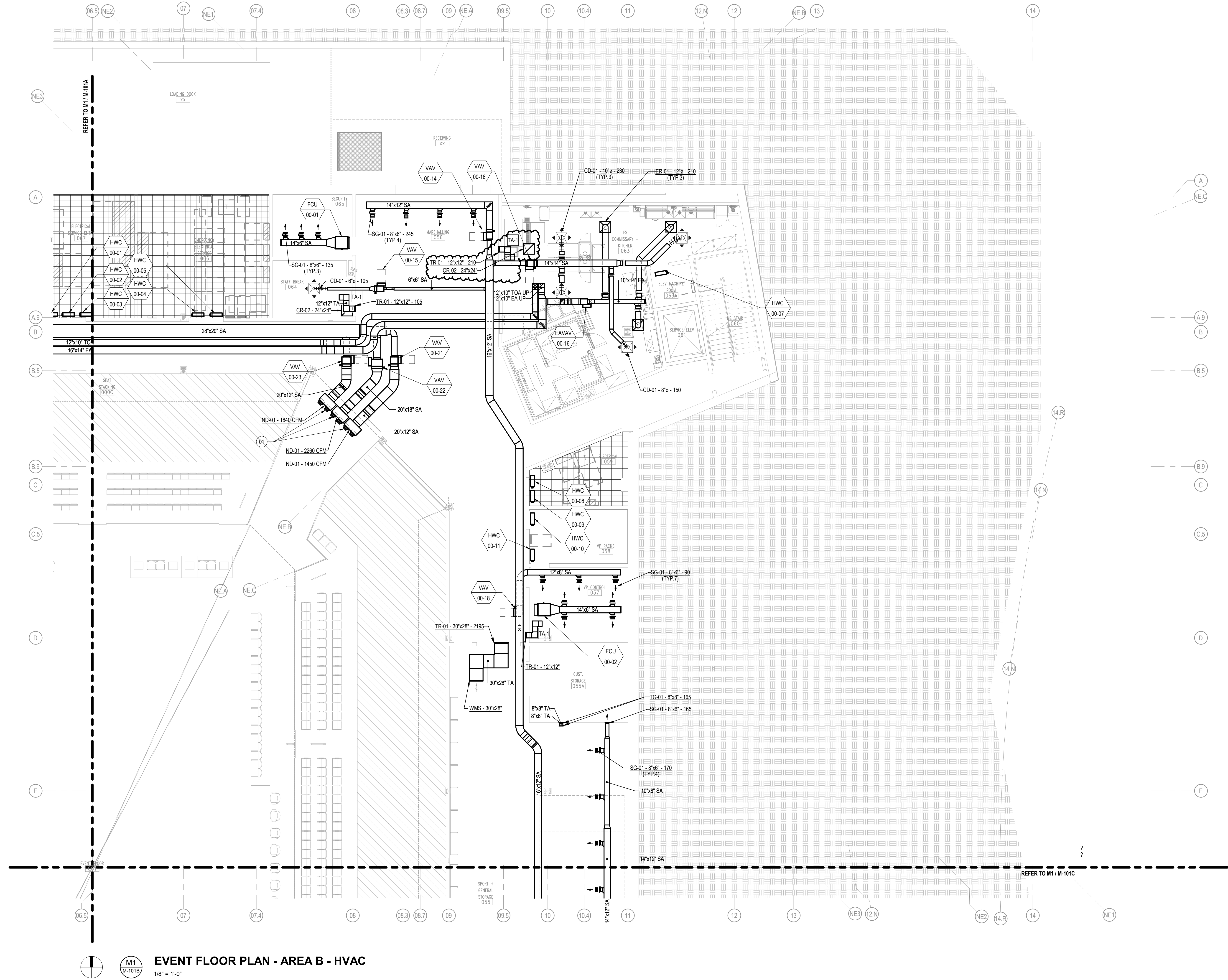
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HARRISBURG, MO 64701
816-806-3729

GENERAL HVAC NOTES:

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS PRIOR TO ORDERING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. ALL DUCT ELBOWS TO BE RADIUS 1.5 RW WHERE SPACE ALLOWS. RECTANGULAR ELBOWS TO BE C/W TURNING VANES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- C. DIRECTIONAL BAFFLES SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
- D. ALL VOLUME DAMPERS SHALL BE PROVIDED IN THE SUPPLY DUCTWORK NEAR THE BRANCH TAKEOFF FROM THE MAIN. BALANCING DAMPERS AT THE GRILLE FACE ARE NOT PERMITTED UNLESS OTHERWISE INDICATED.
- E. INSULATION SHALL BE APPLIED WHERE INDICATED BY SPECIFICATIONS. DIMENSIONS ON PLANS INDICATE FREE-AREA DIMENSIONS OF THE INSIDE OF THE DUCT.
- F. DUCT AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- G. BRANCH DUCTS TO TERMINAL DEVICES (CHILLED BEAMS, DIFFUSERS, ETC.) SHALL BE THE SAME SIZE AS INLET UNLESS SPECIFICALLY NOTED OTHERWISE.
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- K. WHERE LINEAR SLOTS ARE INSTALLED IN LINE AND ARE UNBROKEN BY WALL DIVIDERS, PROVIDE BLANK SECTIONS OF SLOTS MATCHING THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

SHEET NOTES:

- 01 DUAL NOZZLE BOXES ARE MOUNTED INSIDE EXTENDED SOFFIT.



EVENT FLOOR PLAN - AREA B - HVAC

1/8" = 1'-0"

SEAL | DATE 02/03/25



SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25

RATIO

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PROJECT NO. 23112.000

SHEET TITLE
EVENT FLOOR PLAN
- AREA B - HVAC

SHEET NUMBER

M-101B

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
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IU Project NO. 20240127

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SHEET NOTES:

- 01 DUCTWORK IS STACKED. EXHAUST DUCTWORK RUNS OVER TOP OF THE OUTSIDE AIR DUCTWORK.
- 02 DUCTS TO RUN IN TRENCH UP TO CONCOURSE LEVEL. REFER TO ARCHITECTURAL SET FOR TRENCH DETAIL. INSTALL COMBINATION FIRE-SMOKE DAMPERS AT FLOOR PENETRATION ON BOTH DUCT RISERS.

SEAL | DATE 02/03/25



SHEET ISSUE		
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2	DESIGN DEVELOPMENT	08/30/24
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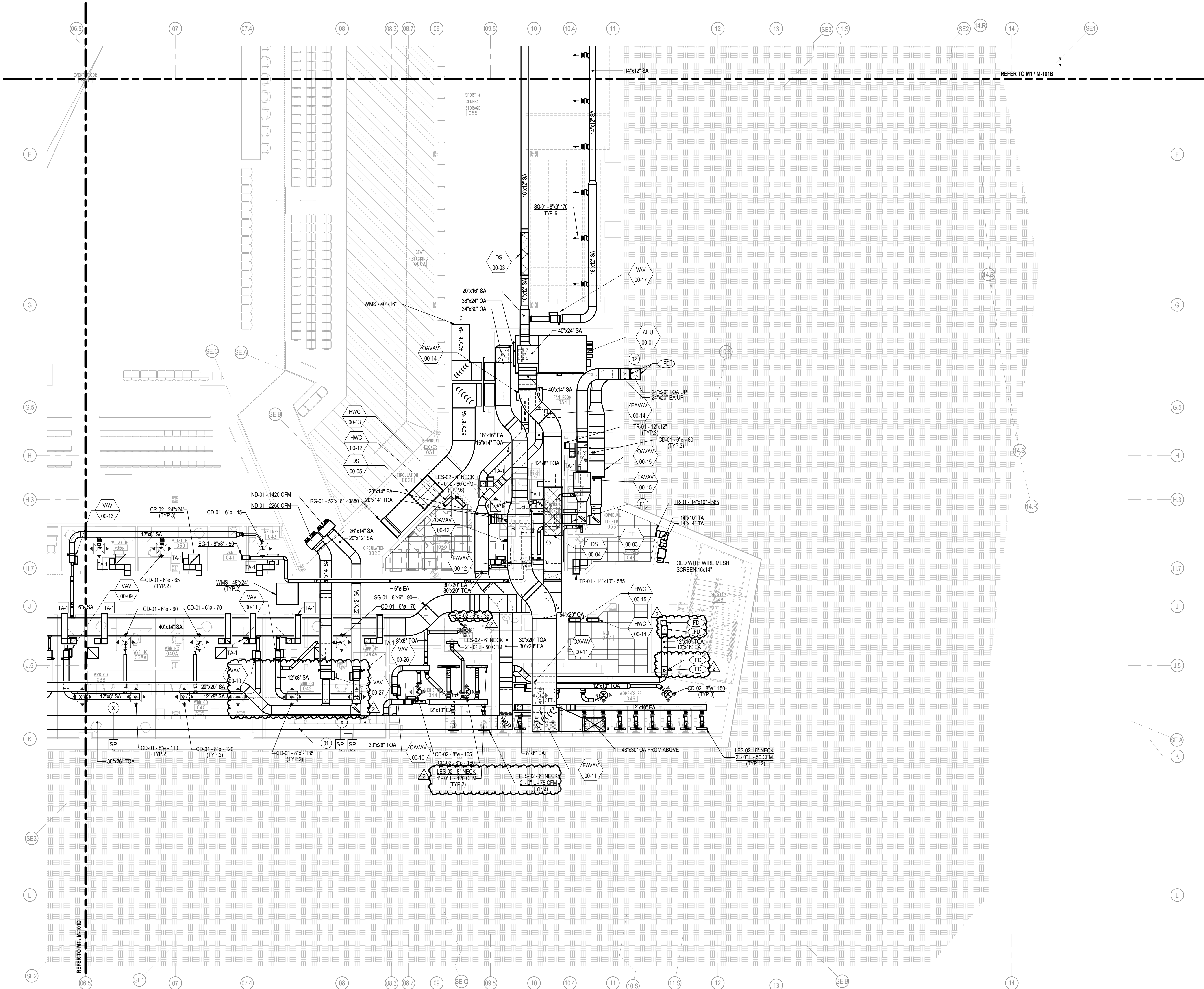
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PROJECT NO. 23112.000

SHEET TITLE
EVENT FLOOR PLAN
- AREA C - HVAC

SHEET NUMBER

M-101C



EVENT FLOOR PLAN - AREA C - HVAC

1/8" = 1'-0"

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Code Consultant
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816-806-3729

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- B. ALL DUCTS ELONGATE TO BE RADIUS 15' WITH WHERE SPACE ALLOWS. REBARS ALLOW 15' TO C/W TURNING VANES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- C. DIRECTIONAL Baffles SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
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- I. ALL TRANSFER OPENINGS UNDER 2'0" SHALT BE FREE OF OBSTRUCTION BY MIN. 12" ALL TRANSFER OPENINGS BETWEEN 2'0" AND 6'0" SHALT BE FREE OF OBSTRUCTION BY MIN. 16" ALL TRANSFER OPENINGS LARGER THAN 6'0" SHALT BE FREE OF OBSTRUCTION BY MIN. 24" UNLESS OTHERWISE NOTED.
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- K. WHERE LINE SLOTS ARE INSTALLED IN LINE AND ARE UNBOKEN BY WALL DIVIDERS, PROVIDE BALK SECTIONS OF SLOTS TO SHOW THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

01 GREASE DUCT SHALL CONNECT TO THE TOP OF THE EXHAUST HOOD (BY OTHERS) AND RUN HORIZONTALLY ABOVE CEILING WITHIN THE RATED ENCLOSURE. AT THE POINT OF EXITING THE ENCLOSURE, THE DUCT SHALL TRANSITION TO A ZERO-CLEARANCE RATED DUCT PRODUCT IN LIEU OF A BUILT-OUT RATED DUCT ENCLOSURE. PRODUCT SHALL BE PROVIDED AS CAPTIVEAIRE DW-30 OR APPROVED EQUAL. ALL HANGING, PENETRATION, AND CONSTRUCTION DETAILS SHALL BE COMPLIANT WITH MANUFACTURER'S RECOMMENDATIONS.

02 PROVIDE ACCESS DOOR FOR ACCESS TO FDS AND DUCT / PIPING PENETRATIONS.



IN128 - JAMES T. MORRIS ARENA

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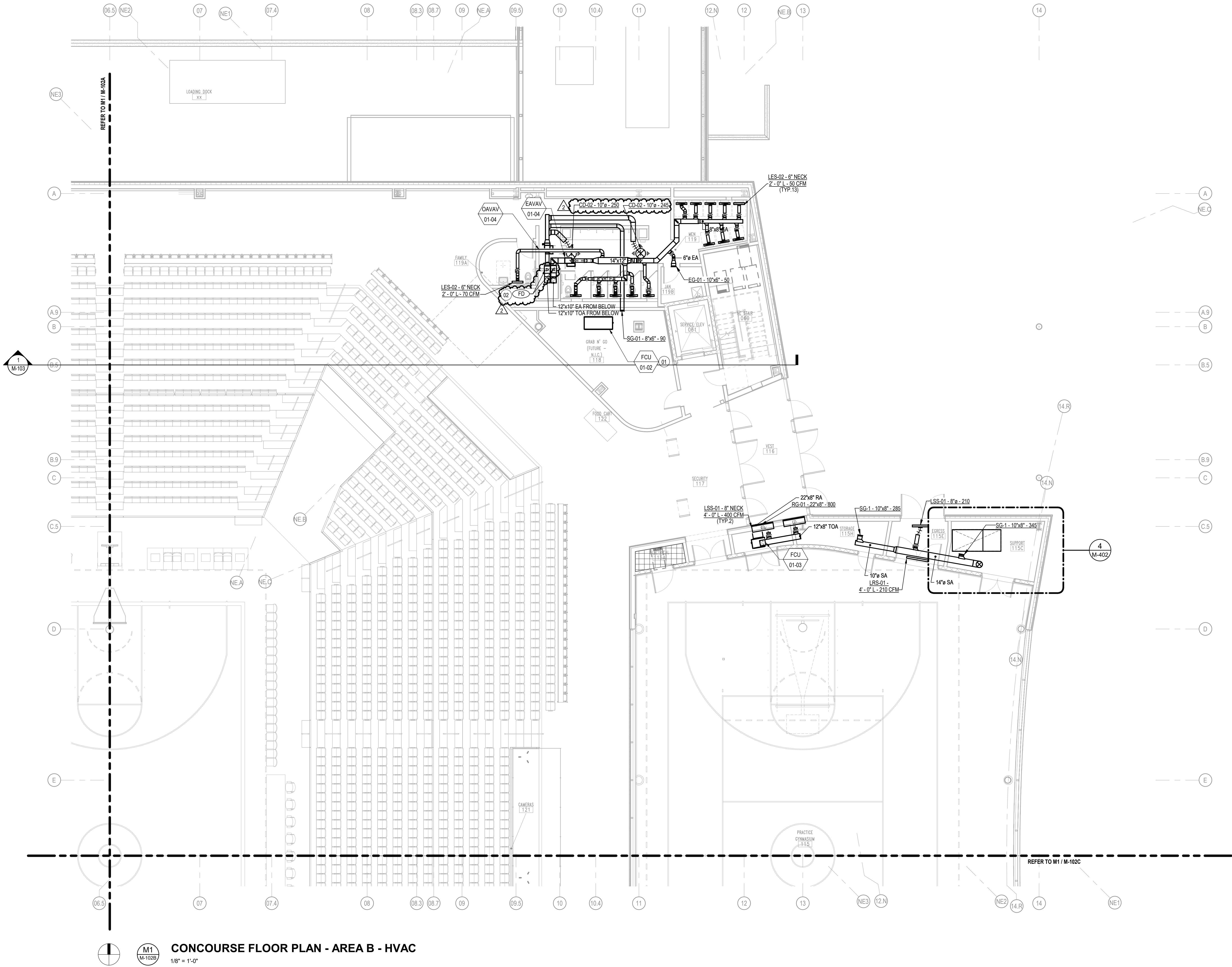
Code Consultant
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816-806-3729

GENERAL HVAC NOTES:

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SHEET NOTES:

- 01 FCU IS PROVIDED BASED ON BLOCK LOADING. USE OF THIS SPACE IS UNDEFINED IN THE DESIGN.
- 02 PROVIDE ACCESS DOOR FOR ACCESS TO FDS.



CONCOURSE FLOOR PLAN - AREA B - HVAC

1/8" = 1'-0"

RATIO

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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA B -
HVAC

SHEET NUMBER

M-102B

Ohio St & N Blackford S
Indianapolis, IN 46202

IU Project NO. 20240127

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- B. ALL DUCT ELBOWS TO BE RADIUS 15 R/W WHERE SPACE ALLOWED. ALL FRANGIBLE DUCTS TO HAVE 90° TURNING VANS. SEE DETAILS FOR ADDITIONAL INFORMATION.
- C. DIRECTIONAL BAFFLES SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
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SHEET NOTES

- 01 PROVIDE ACCESS DOOR FOR ACCESS TO FDS AND DUCT, PIPING PENETRATIONS.
- 02 2.DUCT RISER SHALL OFFSET WITHIN CHASE TO ACCOMMODATE PENETRATION OF SLAB TO EVENT LEVEL.
- 03 FCU IS PROVIDED BASED ON BLOCK LOADING. USE OF THIS SPACE IS UNDEFINED IN THE DESIGN PERIOD.

SEAL | DATE 02/03/25

[illegible]

RATIO

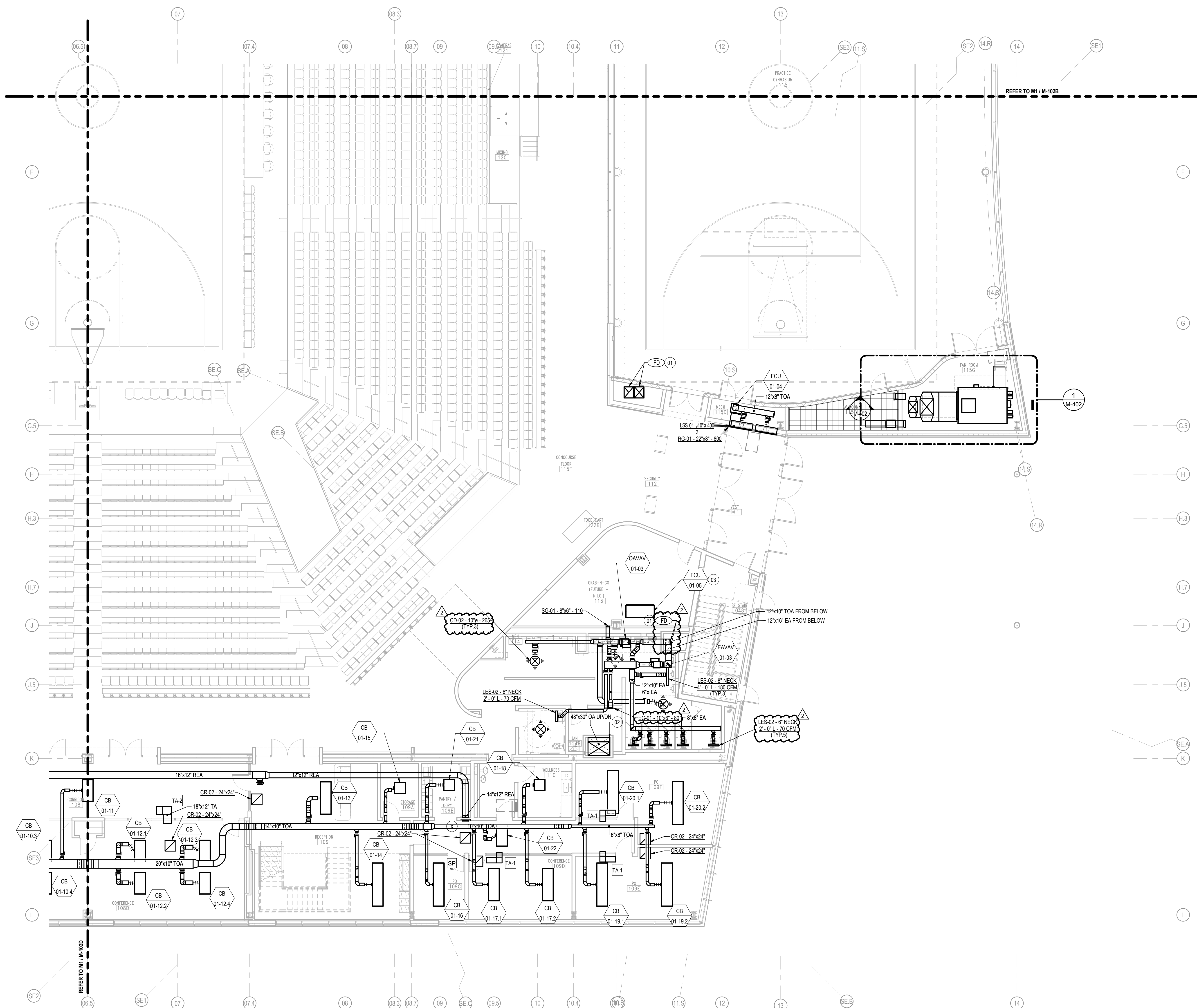
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PROJECT NO.	23112.000
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PROJECT NO.: 25112.00
SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA C -
HVAC

SHEET NUMBER

M-102C



 **CONCOURSE FLOOR PLAN - AREA C - HVAC**
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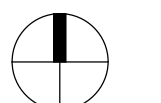
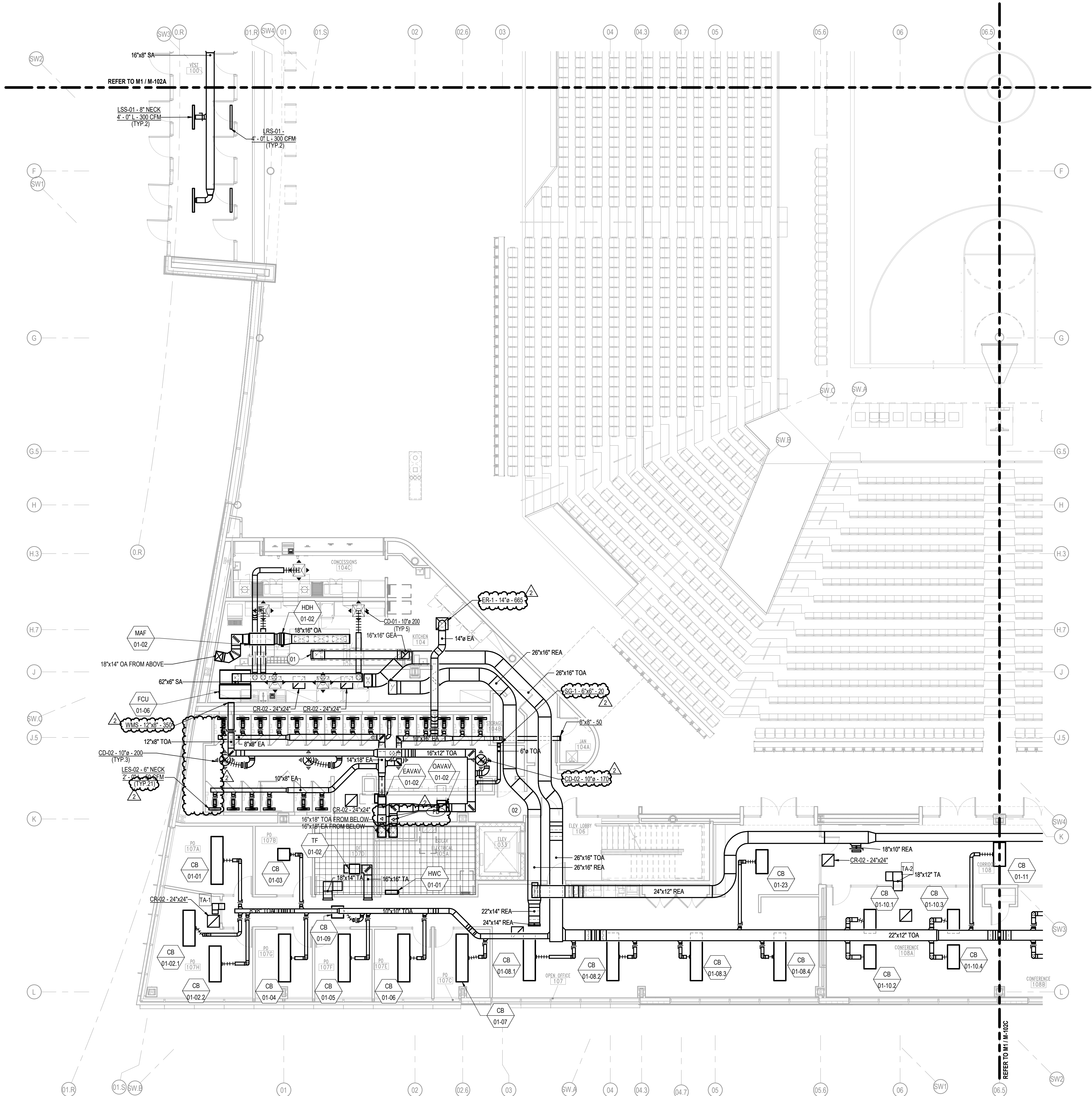
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- H. GREASE DUCT CLEANOUTS SHALL BE LOCATED TO COMPLY WITH IMC 506.3.8.
- I. ALL TRANSFER OPENINGS UNDER 2 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 12". ALL TRANSFER OPENINGS BETWEEN 2 SQFT AND 6 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 18". ALL TRANSFER OPENINGS LARGER THAN 6 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 24" UNLESS OTHERWISE NOTED.
- J. MC TO ENSURE ALL VOLUME CONTROL DAMPERS LOCATED ABOVE GYP CEILING TO HAVE REMOTE OPERATION CAPABILITIES OR BE PROVIDED WITH AN ACCESS PANEL. COORDINATE USE OF ACCESS PANELS WITH ARCHITECT.
- K. WHERE LINEAR SLOTS ARE INSTALLED IN LINE AND ARE UNBROKEN BY WALL DIVIDERS, PROVIDE BLANK SECTIONS OF SLOTS MATCHING THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

SHEET NOTES:

- 01 GREASE DUCT SHALL CONNECT TO THE TOP OF THE EXHAUST HOOD (BY OTHERS) AND RUN HORIZONTALLY ABOVE CEILING. THE DUCT SHALL BE INSTALLED AS A ZERO-CLEARANCE RATED DUCT PRODUCT IN LIEU OF A BUILT-OUT RATED DUCT ENCLOSURE. PRODUCT SHALL BE PROVIDED AS CAPTIVEAIRE DW-3Z OR APPROVED EQUAL. ALL HANGING, PENETRATION, AND CONSTRUCTION DETAILS SHALL BE COMPLIANT WITH MANUFACTURER'S RECOMMENDATIONS.
- 02 PROVIDE ACCESS DOOR FOR ACCESS TO FDS



M1
M-102D

CONCOURSE FLOOR PLAN - AREA D - HVAC
1/8" = 1'-0"

SEAL | DATE 02/03/25



SHEET ISSUE

1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25

RATIO

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PROJECT NO. 23112.000

SHEET TITLE

CONCOURSE FLOOR
PLAN - AREA D -
HVAC

SHEET NUMBER

M-102D

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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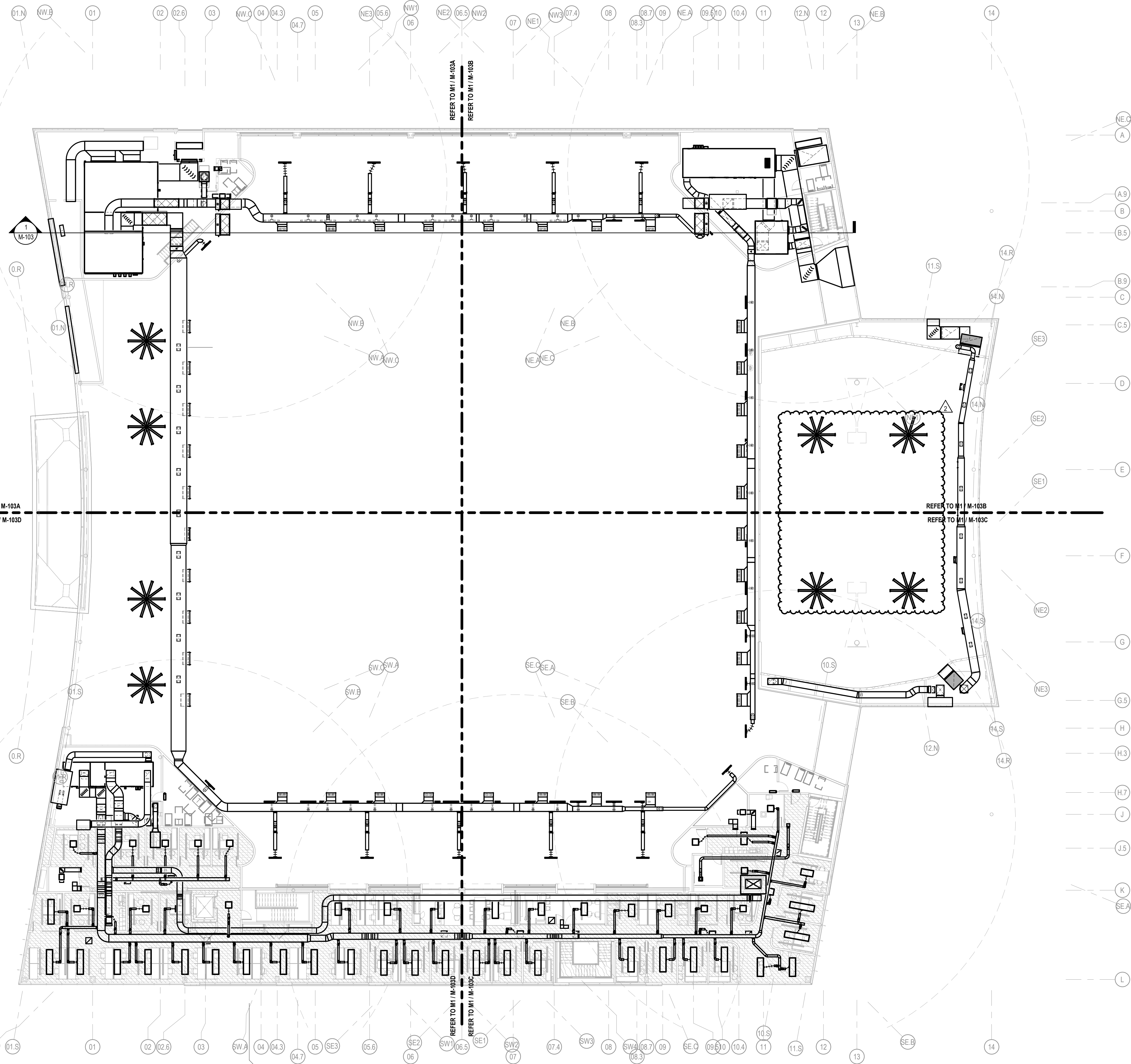
Code Consultant

FORZA

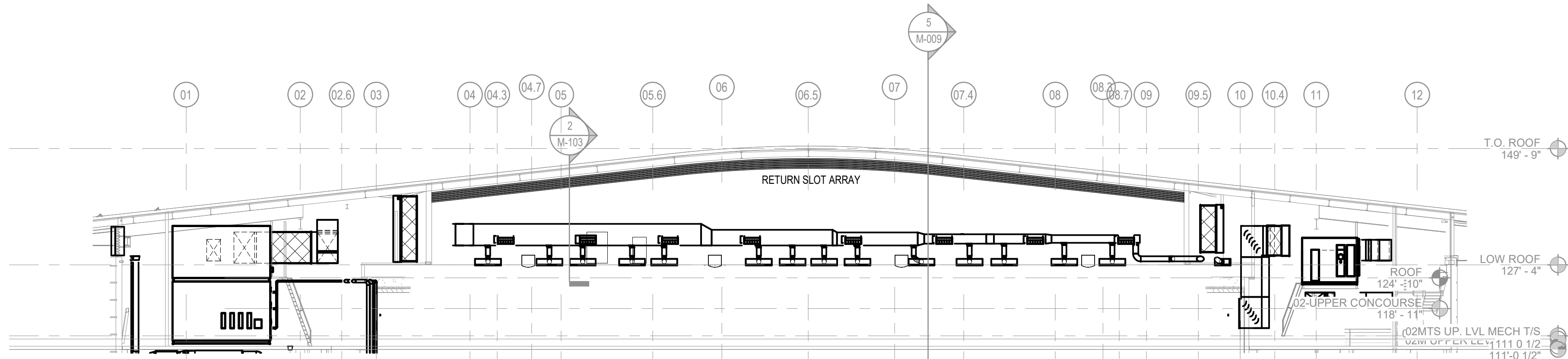
2502 WEST MECHANIC ST, SUITE C
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816-806-3729

SHEET NOTES:

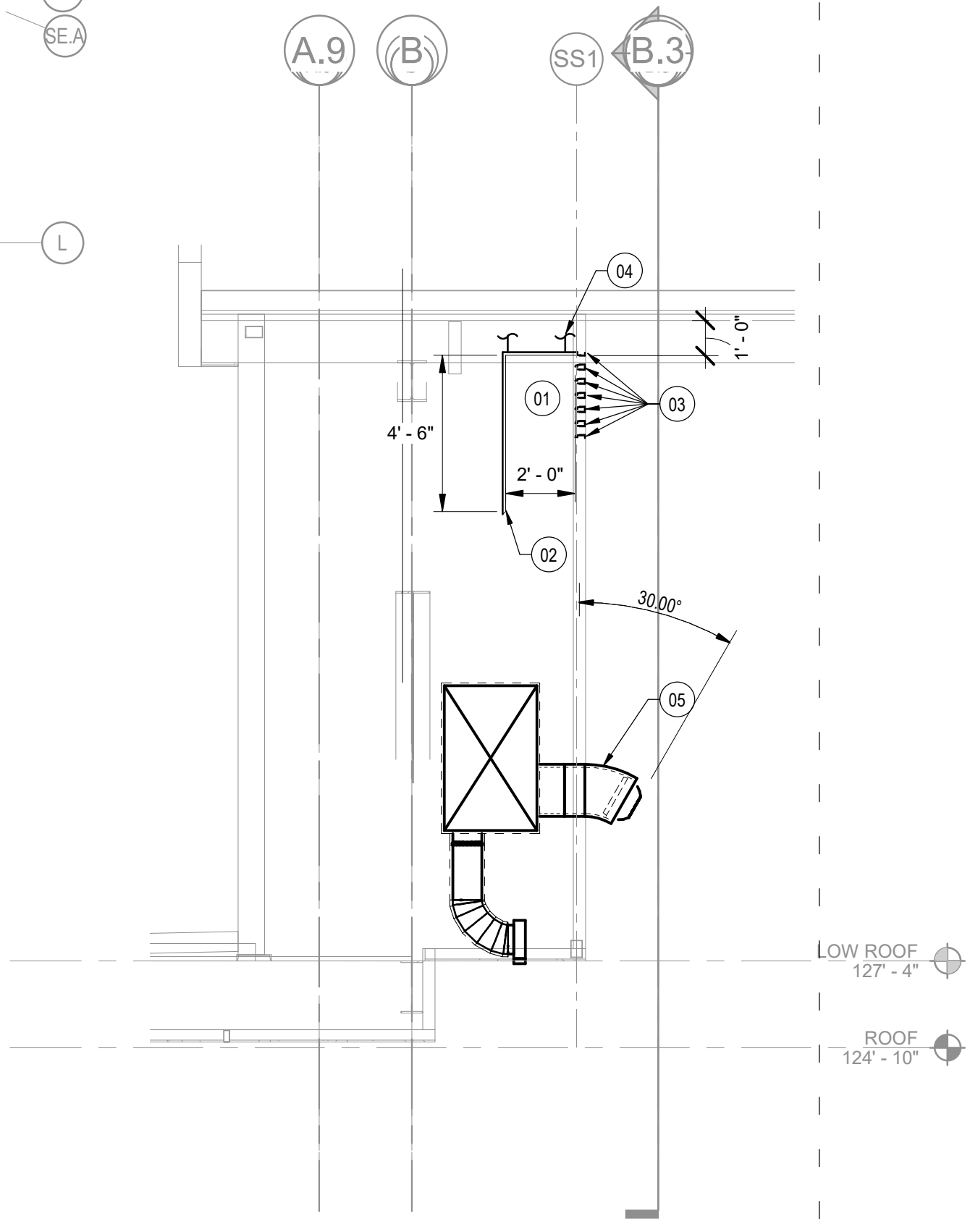
- 01 SIX (6) 3-INCH RETURN SLOTS (PRICE MODEL JS) SHALL BE PROVIDED CONTINUOUSLY ALONG THE ENTIRETY OF THE CURVED ROOF STRUCTURE. THE SLOTS SHALL BE PROVIDED WITH A FABRICATED SIGHT BAFFLE. THE BAFFLE SHALL SERVE ALL 6 SLOTS. THE CURVATURE OF THE SLOTS SHALL MATCH THE ROOF CURVATURE. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING MATCHED CURVATURE.
- 02 PROVIDE 1" BLACK ACOUSTICAL LINER ON THE INSIDE OF THE SIGHT BAFFLE.
- 03 FRAME SHALL BE MUDDED INTO WALL. SEE ARCHITECTURAL PLANS FOR WALL DETAILS.
- 04 SIGHT BAFFLE SHALL BE INDEPENDENTLY SUPPORTED FROM ABOVE.
- 05 PROVIDE 30" RADIUS DUCT FITTING OUT OF WALL TO MOUNT DRUM LOUVER. DUCT SHALL BE DOUBLE-WALL AND PAINTED TO MATCH THE FINISH OF THE DRUM LOUVER. DRUM LOUVER SHALL BE DEFLECTED DOWNWARD TOWARDS THE SEATING AND FINS SPREAD TO COVER SEATING AREA.



UPPER FLOOR PLAN - OVERALL - HVAC
1/16" = 1'-0"

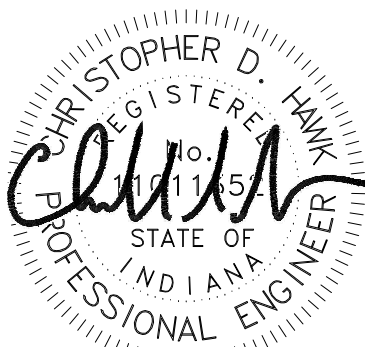


NORTH WALL SECTION RETURN
1/16" = 1'-0"



CONCOURSE RETURN AREA-WAY SECTION VIEW
1/4" = 1'-0"

SEAL | DATE 02/03/25



SHEET ISSUE		
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN - OVERALL - HVAC

SHEET NUMBER

M-103

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
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IU Project NO. 20240127

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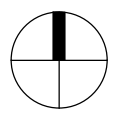
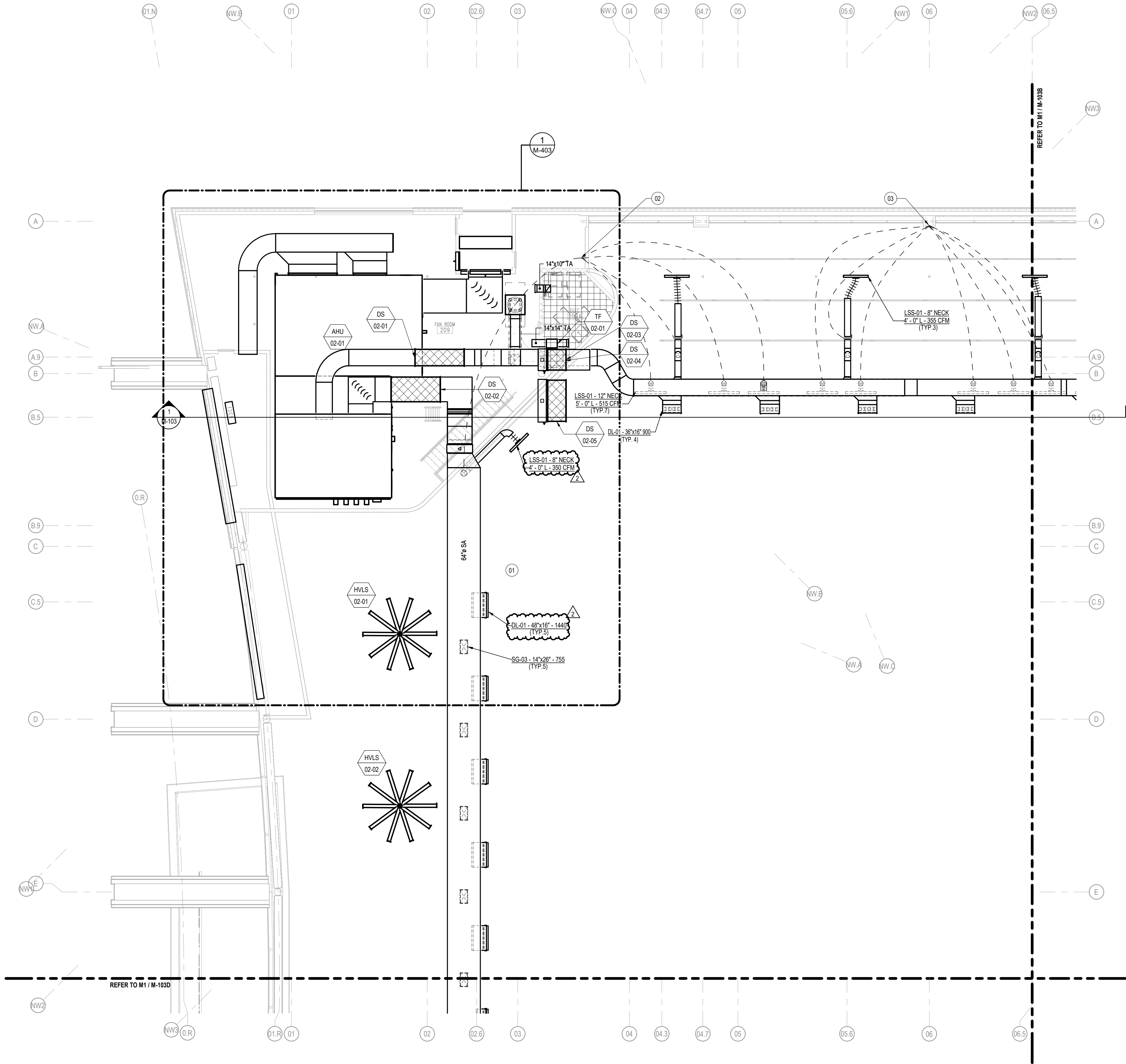
FORZA
2502 WEST MECHANIC ST, SUITE C
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816-806-3729

GENERAL HVAC NOTES:

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS PRIOR TO ORDERING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. ALL DUCT ELBOWS TO BE RADIUS 1.5 RW WHERE SPACE ALLOWS. RECTANGULAR ELBOWS TO BE CW TURNING VANES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- C. DIRECTIONAL BAFFLES SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
- D. ALL VOLUME DAMPERS SHALL BE PROVIDED IN THE SUPPLY DUCTWORK NEAR THE BRANCH TAKEOFF FROM THE MAIN. BALANCING DAMPERS AT THE GRILLE FACE ARE NOT PERMITTED UNLESS OTHERWISE INDICATED.
- E. INSULATION SHALL BE APPLIED WHERE INDICATED BY SPECIFICATIONS. DIMENSIONS ON PLANS INDICATE FREE-AREA DIMENSIONS OF THE INSIDE OF THE DUCT.
- F. DUCT AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- G. BRANCH DUCTS TO TERMINAL DEVICES (CHILLED BEAMS, DIFFUSERS, ETC.) SHALL BE THE SAME SIZE AS INLET UNLESS SPECIFICALLY NOTED OTHERWISE.
- H. GREASE DUCT CLEANOUTS SHALL BE LOCATED TO COMPLY WITH IMC 506.3.8.
- I. ALL TRANSFER OPENINGS UNDER 2 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 12". ALL TRANSFER OPENINGS BETWEEN 2 SQFT AND 6 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 18". ALL TRANSFER OPENINGS LARGER THAN 6 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 24" UNLESS OTHERWISE NOTED.
- J. MC TO ENSURE ALL VOLUME CONTROL DAMPERS LOCATED ABOVE GYP CEILING TO HAVE REMOTE OPERATION CAPABILITIES OR BE PROVIDED WITH AN ACCESS PANEL. COORDINATE USE OF ACCESS PANELS WITH ARCHITECT.
- K. WHERE LINEAR SLOTS ARE INSTALLED IN LINE AND ARE UNBROKEN BY WALL DIVIDERS, PROVIDE BLANK SECTIONS OF SLOTS MATCHING THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

SHEET NOTES:

- 01 ALL DUCT EXPOSED TO VIEW IN THE CONCOURSE AREA SHALL BE DOUBLE-WALL DUCTWORK WITH PERFORATED INNER WALL AND 2" ELASTOMERIC INTERSTITIAL INSULATION.
- 02 ROUTE REMOTE ACCESS CABLES TO LOCATION INDICATED AND LABEL EACH CABLE INDIVIDUALLY. PROVIDE ACCESS PANEL FOR TERMINATION POINTS OR A TERMINATION PANEL BY MANUFACTURER. CABLE LENGTH NOT TO EXCEED MANUFACTURER'S RECOMMENDED LENGTH. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS CABLES SHALL BE ACCESSIBLE WITHOUT THE NEED FOR A LADDER.
- 03 ROUTE REMOTE ACCESS CABLES TO LOCATION INDICATED AND LABEL EACH CABLE INDIVIDUALLY. PROVIDE ACCESS DOOR FOR TERMINATION POINTS. DOOR SELECTION AND TREATMENT BY ARCHITECT. CABLE LENGTH NOT TO EXCEED MANUFACTURER'S RECOMMENDED LENGTH. COORDINATE EXACT HEIGHT WITH ARCHITECTURAL DRAWINGS.

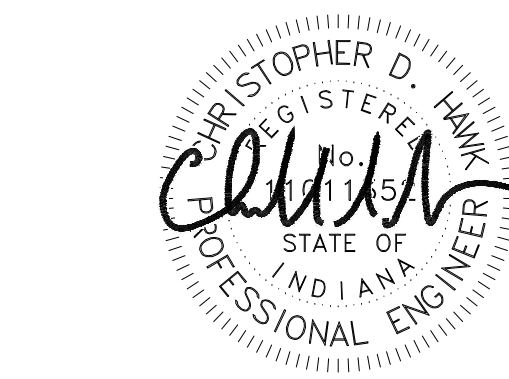


M1
M-103A

UPPER FLOOR PLAN - AREA A - HVAC

1/8" = 1'-0"

SEAL | DATE 02/03/25



SHEET ISSUE

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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA A - HVAC

SHEET NUMBER

M-103A

Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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954-846-9600

Code Consultant

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HARRISONVILLE, MO 64701
816-806-3729

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS. PROVIDE OR OBTAIN GENERAL CONTRACTOR'S RESPONSIBILITY FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. ALL DUCT ELBOWS TO BE RADIUS 15 R/W WHERE SPACE ALLOWED. RECTANGULAR ELBOWS TO BE C/W TURNING VANES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- C. DIRECTIONAL, Baffles SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
- D. ALL VOLUME DAMPERS SHALL BE PROVIDED IN THE SUPPLY DUCTWORK NEAR THE BRANCH TAKEOFF FROM THE MAIN. BALANCING DAMPERS AT THE GRILLE FACE ARE NOT PERMITTED UNLESS OTHERWISE NOTED.
- E. INSULATION SHALL BE APPLIED WHERE INDICATED BY THE SUPPLY DUCTWORK. DIMENSIONS SHALL INDICATE FREE-AIR DIMENSIONS OF THE INSIDE OF THE DUCT.
- F. DUCT AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- G. BRANCH DUCTS TO TERMINAL DEVICES (CHILLED BEAMS, DIFFUSERS, ETC.) SHALL BE THE SAME SIZE AS INLET UNLESS SPECIFICALLY NOTED OTHERWISE.
- H. GREASE DUCT CLEANOUTS SHALL BE LOCATED TO COMPLY WITH IMC 508.3.
- I. ALL TRANSFER OPENINGS UNDER 2'0" SHALL BE FREE OF OBSTRUCTION BY MIN. 12" ALL TRANSFER OPENINGS BETWEEN 2'0" AND 6'0" SHALL BE FREE OF OBSTRUCTION BY MIN. 16" ALL TRANSFER OPENINGS LARGER THAN 6'0" SHALL BE FREE OF OBSTRUCTION BY MIN. 24" UNLESS OTHERWISE NOTED.
- J. MC TO ENSURE ALL VOLUME CONTROL DAMPERS LOCATED ABOVE GYP CEILING TO HAVE REMOTE OPERATION CAPABILITIES OR BE PROVIDED WITH AN ACCESS PANEL COORDINATE USE OF ACCESS PANELS WITH ARCHITECT.
- K. WHERE LINE SLOTS ARE INSTALLED IN LINE AND ARE UNBOKEN BY BAL. DIVIDERS, PROVIDE BALANCE SLOTS OF SLOTS TO BE THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

01 ALL DUCT EXPOSED TO VIEW SHALL BE
DOUBLE-WALL DUCTWORK WITH PERFORATED
INNER WALL AND 2" ELASTOMERIC INTERSTITIAL
INSULATION.

02 ROUTE REMOTE ACCESS CABLES TO LOCATION
INDICATED AND LABEL EACH CABLE INDIVIDUALLY.
PROVIDE ACCESS PANEL FOR TERMINATION POINTS
OR A TERMINATION PANEL BY MANUFACTURER.
CABLE LENGTH NOT TO EXCEED MANUFACTURER'S
RECOMMENDED LENGTH. COORDINATE EXACT
LOCATION WITH ARCHITECTURAL DRAWINGS.
CABLES SHALL BE ACCESSIBLE WITHOUT THE NEED
FOR A LADDER.

03 ROUTE REMOTE ACCESS CABLES TO LOCATION
INDICATED AND LABEL EACH CABLE INDIVIDUALLY.
PROVIDE ACCESS DOOR FOR TERMINATION POINTS.
DOOR LOCATION AND TREATMENT BY ARCHITECT.
CABLE LENGTH NOT TO EXCEED MANUFACTURER'S
RECOMMENDED LENGTH. COORDINATE EXACT
HEIGHT WITH ARCHITECTURAL DRAWINGS.

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RATIO

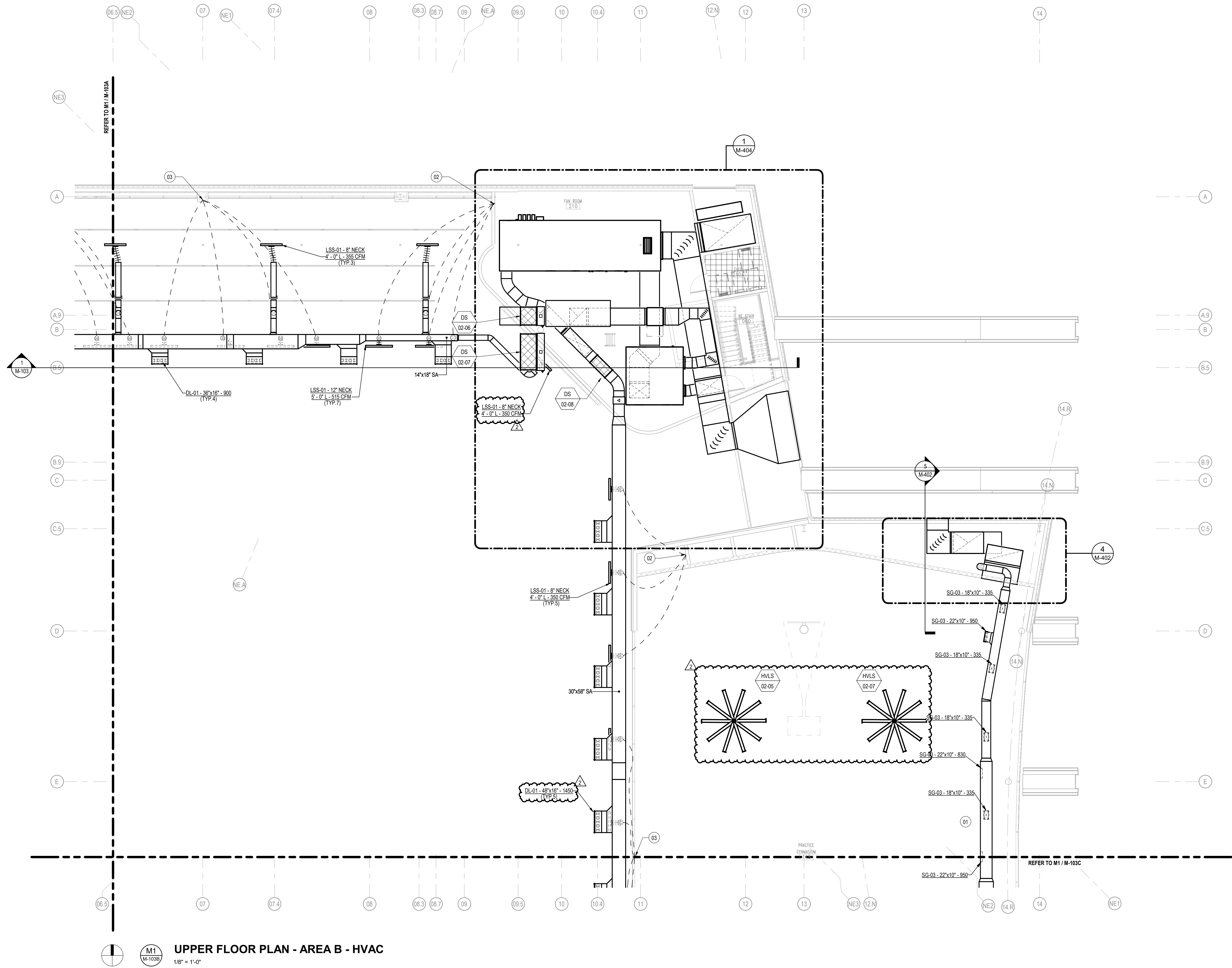
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA B - HVAC

SHEET NUMBER

M-103B



Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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Code Consultant

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816-806-3729

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- B. ALL DUCT FLOW MUST BE RADIOUS 15 R/W WHERE SPACE ALLOWS. RECTANGULAR FLOWS MUST BE CW TURNING VANES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- C. DIRECTIONAL Baffles SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
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- E. INSULATION SHALL BE APPLIED WHERE INDICATED BY ELECTRICAL CODES. DIMENSIONS AND TYPES INDICATE FREE-AIR DIMENSIONS OF THE INSIDE OF THE DUCT.
- F. DUCT AND EQUIPMENT ABOVE CEILING IS TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- G. BRANCH DUCTS TO TERMINAL DEVICES (CHILLED BEAMS, DIFFUSERS, ETC.) SHALL BE THE SAME SIZE AS INLET UNLESS SPECIFICALLY NOTED OTHERWISE.
- H. GREASE DUCT CLEARANCES SHALL BE LOCATED TO COMPLY WITH IMC 508.3.8.
- I. ALL TRANSFER OPENINGS UNDER 2'0" SHALL BE FREE OF OBSTRUCTION BY MIN. 12" LATER TRANSFER OPENINGS BETWEEN 2'0" AND 6'0" SHALL BE FREE OF OBSTRUCTION BY MIN. 18". ALL TRANSFER OPENINGS LARGER THAN 6'0" SHALL BE FREE OF OBSTRUCTION BY MIN. 24" UNLESS OTHERWISE NOTED.
- J. MC TO ENSURE ALL VOLUME CONTROL DAMPERS LOCATED ABOVE GYP CEILING TO HAVE REMOTE OPERATION CAPABILITIES OR BE PROVIDED WITH AN ACCESS PANEL COORDINATE USE OF ACCESS PANELS WITH ARCHITECT.
- K. WHERE LINE SLOTS ARE INSTALLED IN LINE AND ARE UNBOKEN BY WALL DIVIDERS, PROVIDE BULK SECTIONS OF DUCTS TO MAINTAIN THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

- 01 OUTSIDE AIR DUCT RUN WITHIN THE SHAFT SHALL CONNECT TO THE INTAKE HOOD LOCATED ON THE ROOF.
- 02 RELIEF AIR INLET SHALL BE BALANCED TO PREVENT STAGNANT AIRFLOW IN THE FURTHEST AREA OF THE OFFICE.
- 03 ALL DUCT EXPOSED TO VIEW SHALL BE DOUBLE-WALL, DUCTWORK WITH PERFORATED INNER WALL AND 2" ELASTOMERIC INTERSTITIAL INSULATION.
- 04 EXHAUST FLOW, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF CEF-02-01. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 75 CFM. THE PROVIDED FLOWER SHALL HAVE A CORE VELOCITY LESS THAN 500 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. PLenum OFF THE BACK OF THE FLOWER SHALL BE NO LESS THAN 24" DEEP. FREE AREA OF THE FLOWER IS 0.5 SFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 12" x 12". IF A FLOWER LARGER THAN WHAT IS SPECIFIED HERE IS PROVIDED, THE UNUSED AREAS SHALL BE BLANKED OFF AND INSULATED. REFER TO ARCHITECT PLANS FOR FLOWER SPECIFICATION.
- 05 ROUTE REMOTE ACCESS CABLES TO LOCATION INDICATED AND LABEL EACH CABLE INDIVIDUALLY. PROVIDE ACCESS PANEL FOR TERMINATION POINTS OR A TERMINATION PANEL BY MANUFACTURER. CABLE LENGTH NOT TO EXCEED MANUFACTURER'S RECOMMENDED LENGTH. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS. CABLES SHALL BE ACCESSIBLE WITHOUT THE NEED FOR A LADDER.
- 06 ROUTE REMOTE ACCESS CABLES TO LOCATION INDICATED AND LABEL EACH CABLE INDIVIDUALLY. PROVIDE ACCESS PANEL FOR TERMINATION POINTS OR A TERMINATION PANEL BY MANUFACTURER. CABLE LENGTH NOT TO EXCEED MANUFACTURER'S RECOMMENDED LENGTH. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS. ACCESS POINT FOR CABLES SHALL BE ABOVE THE CEILING.
- 07 PROVIDE DUCT MOUNTED AVERAGING TEMPERATURE AND HUMIDITY SENSORS. LOCATED SENSORS SUCH THAT THEIR REQUIREMENTS FOR STRAIGHT DUCT RUNS ARE OBSERVED. COORDINATE FINAL LOCATION WITH FIELD

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
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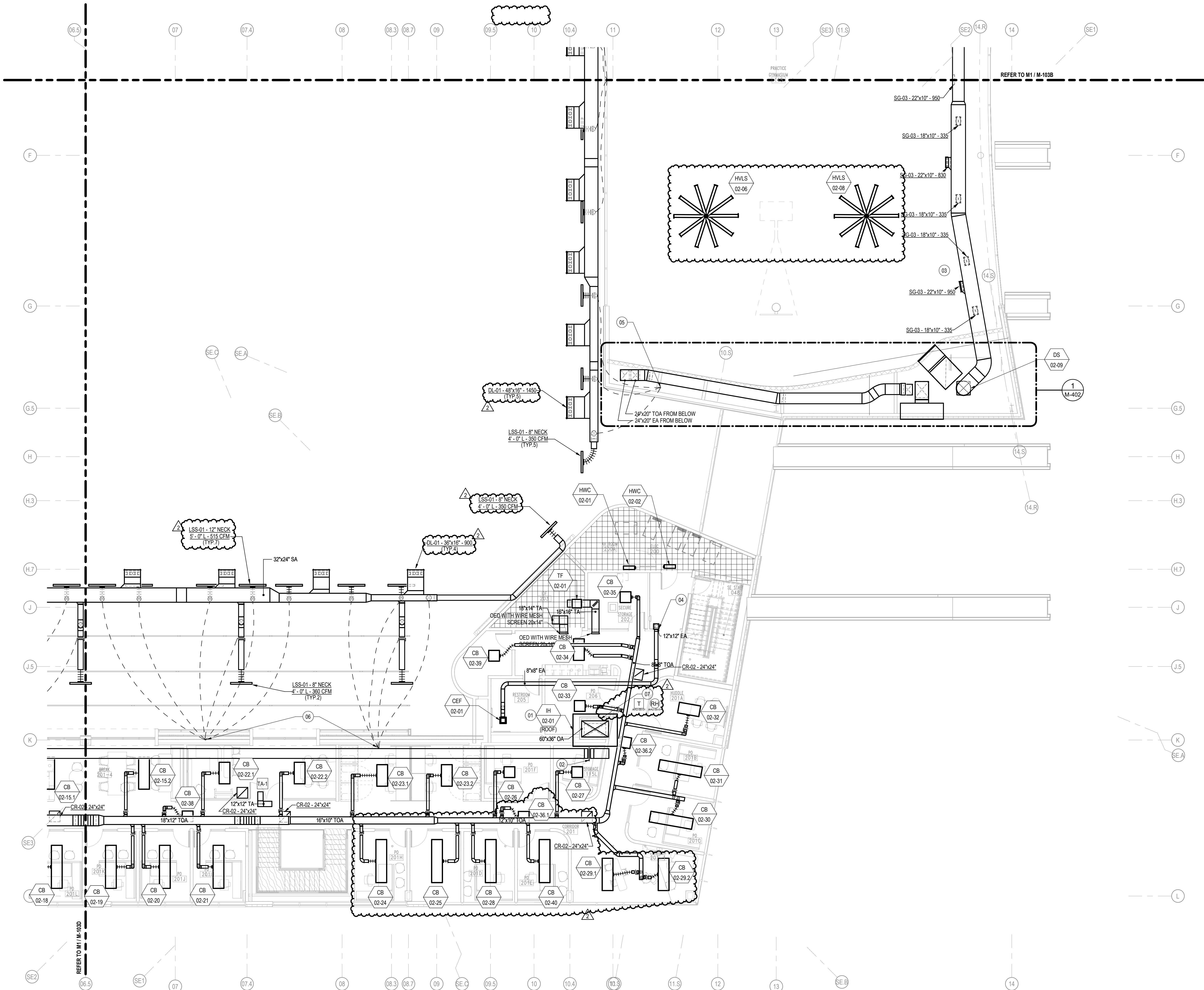
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA C - HVAC

SHEET NUMBER

M-103C



UPPER FLOOR PLAN - AREA C - HVAC

$$1/8'' = 1'-0''$$

IN128 - JAMES T. MORRIS ARENA

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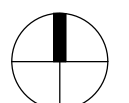
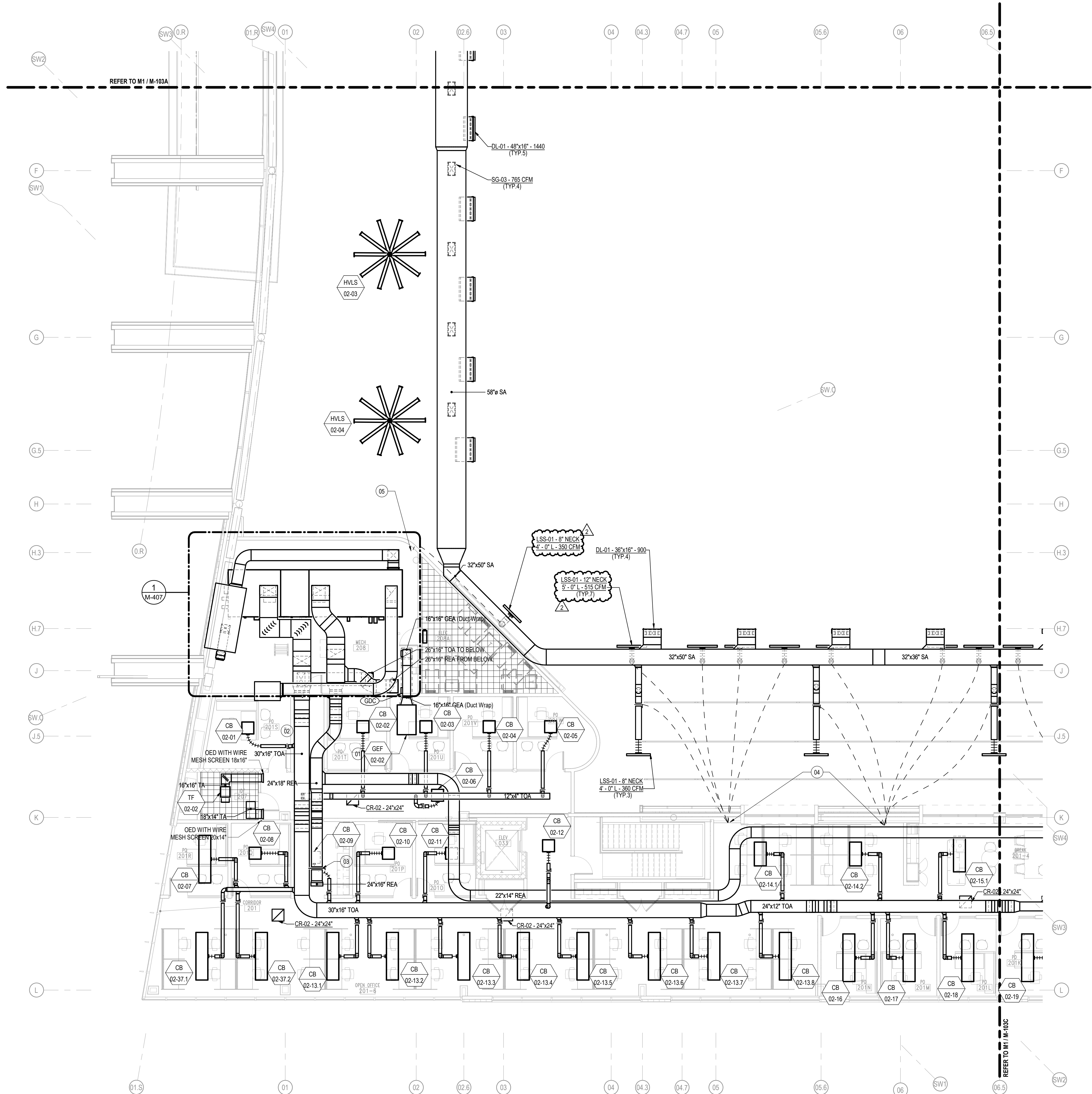
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GENERAL HVAC NOTES:

- VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS PRIOR TO ORDERING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- ALL DUCT ELBOWS TO BE RADIUS 1.5 RW WHERE SPACE ALLOWS. RECTANGULAR ELBOWS TO BE CW TURNING VANES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- DIRECTIONAL BAFFLES SHALL BE INSTALLED INSIDE OF DIFFUSERS TO ACHIEVE AIRFLOW DIRECTIONS INDICATED ON PLANS.
- ALL VOLUME DAMPERS SHALL BE PROVIDED IN THE SUPPLY DUCTWORK NEAR THE BRANCH TAKEOFF FROM THE MAIN. BALANCING DAMPERS AT THE GRILLE FACE ARE NOT PERMITTED UNLESS OTHERWISE INDICATED.
- INSULATION SHALL BE APPLIED WHERE INDICATED BY SPECIFICATIONS. DIMENSIONS ON PLANS INDICATE FREE-AREA DIMENSIONS OF THE INSIDE OF THE DUCT.
- DUCT AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- BRANCH DUCTS TO TERMINAL DEVICES (CHILLED BEAMS, DIFFUSERS, ETC.) SHALL BE THE SAME SIZE AS INLET UNLESS SPECIFICALLY NOTED OTHERWISE.
- GREASE DUCT CLEANOUTS SHALL BE LOCATED TO COMPLY WITH IMC 506.3.8.
- ALL TRANSFER OPENINGS UNDER 2 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 12". ALL TRANSFER OPENINGS BETWEEN 2 SQFT AND 6 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 18". ALL TRANSFER OPENINGS LARGER THAN 6 SQFT SHALL BE FREE OF OBSTRUCTION BY MIN. 24" UNLESS OTHERWISE NOTED.
- MC TO ENSURE ALL VOLUME CONTROL DAMPERS LOCATED ABOVE GYP CEILING TO HAVE REMOTE OPERATION CAPABILITIES OR BE PROVIDED WITH AN ACCESS PANEL. COORDINATE USE OF ACCESS PANELS WITH ARCHITECT.
- WHERE LINEAR SLOTS ARE INSTALLED IN LINE AND ARE UNBROKEN BY WALL DIVIDERS, PROVIDE BLANK SECTIONS OF SLOTS MATCHING THE APPEARANCE OF THE ACTIVE SECTIONS FOR A CONTINUOUS APPEARANCE.

SHEET NOTES:

- CONNECT TO GREASE FAN THROUGH WALL, WHERE FAN IS MOUNTED HORIZONTALLY ABOVE ROOF.
- A SECOND DAMPER OR OTHER STATIC ORIFICE PRESSURE REDUCER MAY BE REQUIRED FOR PROPER BALANCING OF THE FIRST 50% OF CHILLED BEAMS. CONTRACTOR SHALL DETERMINE DURING TAB WHERE ADDITIONAL AIR PRESSURE REDUCTION MEASURES ARE REQUIRED AND APPLY THEM AS NECESSARY.
- RELIEF AIR INLET SHALL BE BALANCED TO PREVENT STAGNANT AIRFLOW IN THE FURTHEST AREA OF THE OFFICE.
- ROUTE REMOTE ACCESS CABLES TO LOCATION INDICATED AND LABEL EACH CABLE INDIVIDUALLY. PROVIDE ACCESS PANEL FOR TERMINATION POINTS OR A TERMINATION PANEL BY MANUFACTURER. CABLE LENGTH NOT TO EXCEED MANUFACTURER'S RECOMMENDED LENGTH. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS. ACCESS POINT FOR CABLES SHALL BE ABOVE THE CEILING.
- ROUTE REMOTE ACCESS CABLES TO LOCATION INDICATED AND LABEL EACH CABLE INDIVIDUALLY. PROVIDE ACCESS PANEL FOR TERMINATION POINTS OR A TERMINATION PANEL BY MANUFACTURER. CABLE LENGTH NOT TO EXCEED MANUFACTURER'S RECOMMENDED LENGTH. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS. CABLES SHALL BE ACCESSIBLE WITHOUT THE NEED FOR A LADDER.



M1
M-103D

UPPER FLOOR PLAN - AREA D - HVAC
1/8" = 1'-0"

RATIO

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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA D - HVAC

SHEET NUMBER

M-103D

IN128 - JAMES T. MORRIS ARENA

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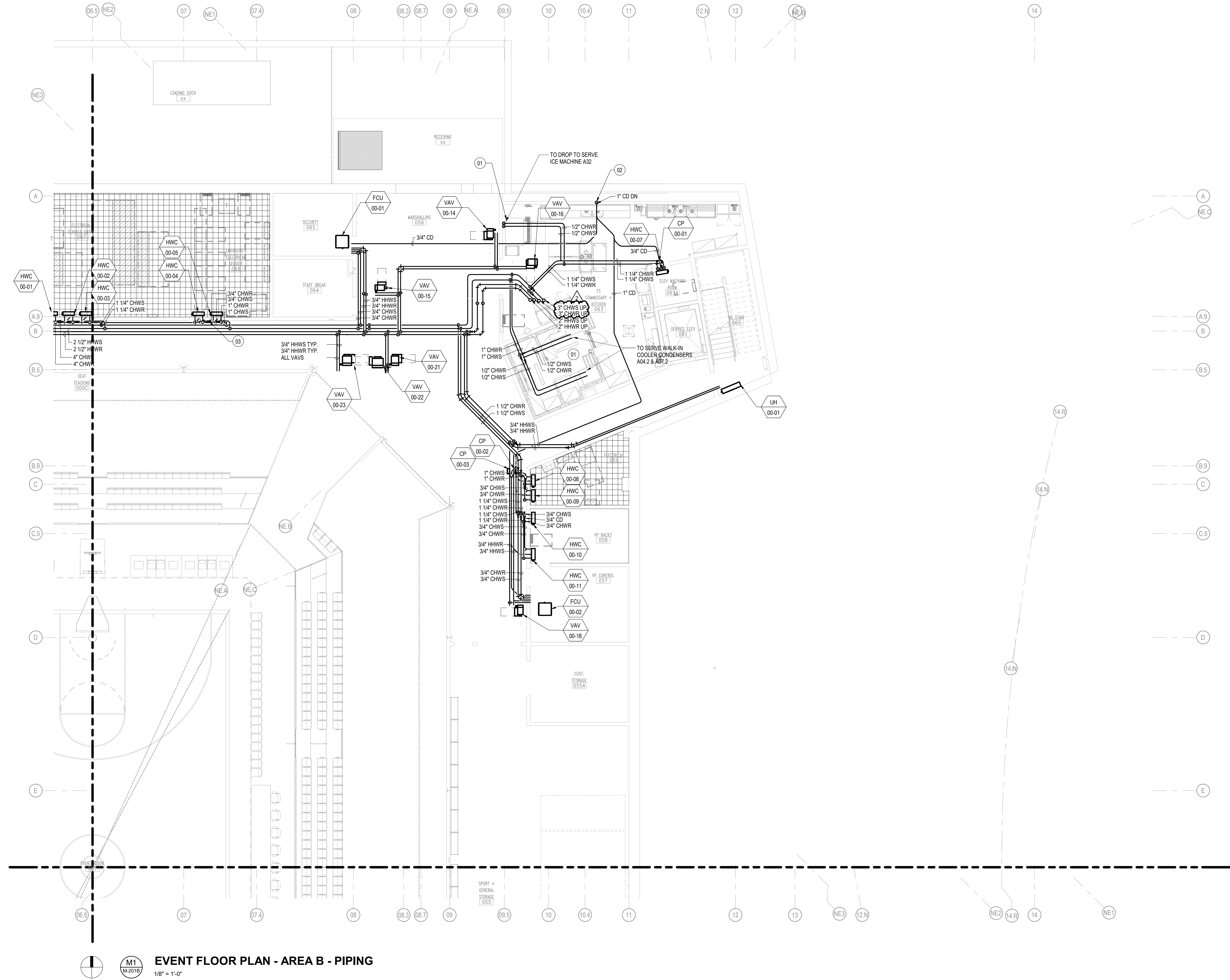
Code Consultant
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GENERAL PIPING NOTES:

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS PRIOR TO ORDERING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. PIPING AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- C. PUMPED CONDENSATE PIPING FIELD ROUTED TO A CONDENSATE HEADER SHALL CONNECT ON TOP OF THE HEADER, WHICH IS SLOPED AT 1/8" PER FOOT TOWARDS THE POINT OF DISCHARGE. CONDENSATE MAINS SHALL NOT TURN UP IN THE DIRECTION OF FLOW. CONDENSATE MAINS SHALL BE SIZED IN ACCORDANCE WITH TABLE 307.2.2 "CONDENSATE DRAIN SIZING" IN THE INTERNATIONAL MECHANICAL CODE.
- D. CONDENSATE PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO ALLOW CLEARING OF BLOCKAGES AND PERFORMANCE OF MAINTENANCE WITHOUT REQUIRING THE LINE TO BE CUT IN ACCORDANCE WITH SECTION 307.2.5 "DRAIN LINE MAINTENANCE" OF THE INTERNATIONAL MECHANICAL CODE.
- E. CONDENSATE PUMPS SHALL BE INSTALLED IN SUCH A WAY THAT FAILURE OF THE PUMP SHALL PREVENT THE ASSOCIATED UNIT FROM OPERATING.
- F. DRAIN VALVES WITH CAPS SHALL BE INSTALLED AT ALL LOCAL LOW POINTS IN THE HYDRONIC PIPING SYSTEM. IF THIS DRAIN VALVE IS LOCATED OVER A HARD CEILING, IT SHALL BE PIPED TO AN ACCESSIBLE LOCATION OR PROVIDED WITH AN ACCESS PANEL.
- G. ALL PIPING TO REMAIN SHALL BE CLEANED AND SEALED DURING CONSTRUCTION.
- H. PROVIDE AIR VENTS OR DRAINS AS APPROPRIATE FOR LOCAL HIGH OR LOW PIPING LOCATIONS. ALL DRAINS SHALL BE SEALED WITH VALVE AND CAP. SEE DETAILS FOR ADDITIONAL INFORMATION.
- I. ALL PRESSURIZED PIPING SYSTEMS IMPACTED BY CONSTRUCTION SHALL BE FLUSHED CLEAN PRIOR TO ANY STRAINERS OR COILS BEING ENGAGED.

SHEET NOTES:

- 01 COORDINATE FINAL CONNECTION LOCATIONS AND PIPING SIZE WITH KITCHEN CONSULTANT.
- 02 CONDENSATE PIPING SHALL RUN DOWN THROUGH WALL AND DISCHARGE INTO FLOOR SINK BELOW UTILITY SINK. MAINTAIN A MINIMUM 3" AIR GAP.
- 03 BRANCH PIPEWORK SERVING HWCs TO BE REVERSE-RETURN CONFIGURATION



RATIO

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PROJECT NO. 23112.000

SHEET TITLE
EVENT FLOOR PLAN
- AREA B - PIPING

SHEET NUMBER

M-201B

Ohio St & N Blackford St
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IU Project NO. 20240127

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Code Consultant
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816-806-3729

GENERAL PIPING NOTES:

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND THESE DISCREPANCIES MUST BE REPORTED TO ORDERING MANUFACTURER. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. PIPING AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- C. PUMPED CONDENSATE PIPING FLOW ROUTED TO A CONDENSATE DRAIN MUST CONNECT ON TOP OF THE HEADER, WHICH IS SLOPED AT 1/8" PER FOOT TOWARDS THE POINT OF DISCHARGE. CONDENSATE MAINS SHALL NOT TURN UP IN THE DIRECTION OF FLOW. CONDENSATE MAINS SHALL BE SIZED IN ACCORDANCE WITH TABLE 307.2.2 "CONDENSATE DRAIN SIZING" IN THE INTERNATIONAL MECHANICAL CODE.
- D. CONDENSATE PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO ALLOW CLEARING OF BLOCKAGES AND PERFORMANCE OF MAINTENANCE. THIS INCLUDES DRIPPING THE LINE TO BE DRAIN IN ACCORDANCE WITH SECTION 307.2.2 "CRUI IN LINE MAINTENANCE" OF THE INTERNATIONAL MECHANICAL CODE.
- E. CONDENSATE PUMPS SHALL BE INSTALLED IN SUCH A WAY THAT FAILURE OF THE PUMP SHALL PREVENT THE ASSOCIATED UNIT FROM OPERATING.
- F. DRAIN LOW VALUES WITH CAPS SHALL BE INSTALLED AT ALL DRAIN LOW POINTS IN THE HYDROHONIC PIPING SYSTEM. IF THIS DRAIN IS LOCATED UNDER A HARD CEILING, IT SHALL BE PIPED TO AN ACCESSIBLE LOCATION OR PROVIDED WITH AN ACCESS PANEL.
- G. ALL PIPING TO REMAIN SHALL BE CLEANED AND SEALED DURING CONSTRUCTION.
- H. PROVIDE AIR VENTS OR DRAINS AS APPROPRIATE FOR LARGE HIGH OR LOW PIPING LOCATIONS. ALL DRAINS SHALL BE SEALED WITH VALVE AND CAP. SEE DETAILS FOR ADDITIONAL INFORMATION.
- I. ALL PRESSURIZED PIPING SYSTEMS IMPACTED BY CONSTRUCTION SHALL BE CLEANED PRIOR TO ANY STRAINERS OR COILS BEING ENGAGED.

SHEET NOTES:

- 01 CONDENSATE SHALL RUN DOWN THROUGH WALL
CHASE. PIPE SHALL EXIT WALL AND TURN DOWN TO
DISCHARGE INTO JANITOR'S SINK. DISCHARGE
PIPING SHALL BE LOCATED SUCH THAT IT DOES NOT
IMPEDE ACCESS TO THE SINK.
- 02 PROVIDE A LINE-SIZED METAL-PIPE EXPANSION
ANCHOR OR APPROVED EQUIVALENT. A PIPE GUIDE SHALL BE
PROVIDED ON EACH SIDE OF THE EXPANSION
LOCK CONNECTIONS AT A DISTANCE COMPLIANT
WITH MANUFACTURER RECOMMENDATIONS.
- 03 PROVIDE A PIPE ANCHOR FOR EXPANSION LOCK
SYSTEM. PROVIDE ADDITIONAL PIPE GUIDES
COMPLIANT WITH MANUFACTURER
RECOMMENDATIONS. EXACT LOCATIONS OF
ANCHORS AND GUIDES SHALL BE COMPLIANT WITH
MANUFACTURER RECOMMENDATIONS.
- 04 CONDENSATE SHALL DROP DOWN TO DISCHARGE
INTO FLOOR DRAIN. MAINTAIN MINIMUM 3" AIR GAP.
- 05 BRANCH PIPE/WORK SERVING HWCs TO BE
REVERSE-RETURN CONFIGURATION

SEAL DATE	02/03/25
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SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

RATIO
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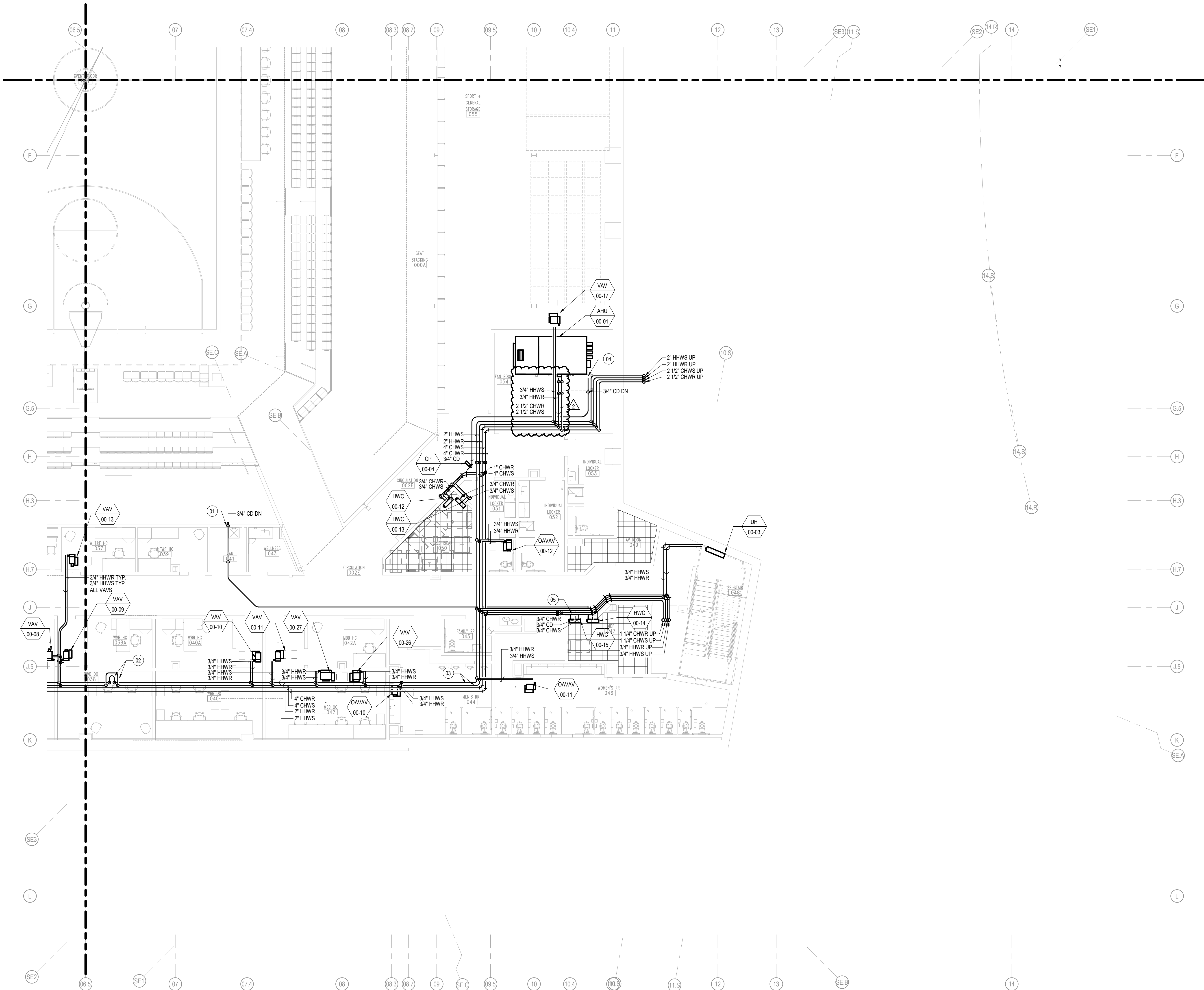
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PROJECT NO. 23112.000

SHEET TITLE
EVENT FLOOR PLAN
- AREA C - PIPING

SHEET NUMBER

M-201C



EVENT FLOOR PLAN - AREA C - PIPING

$$1/8" = 1'-0"$$

IN128 - JAMES T. MORRIS ARENA

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IU Project NO. 20240127

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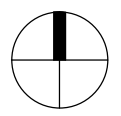
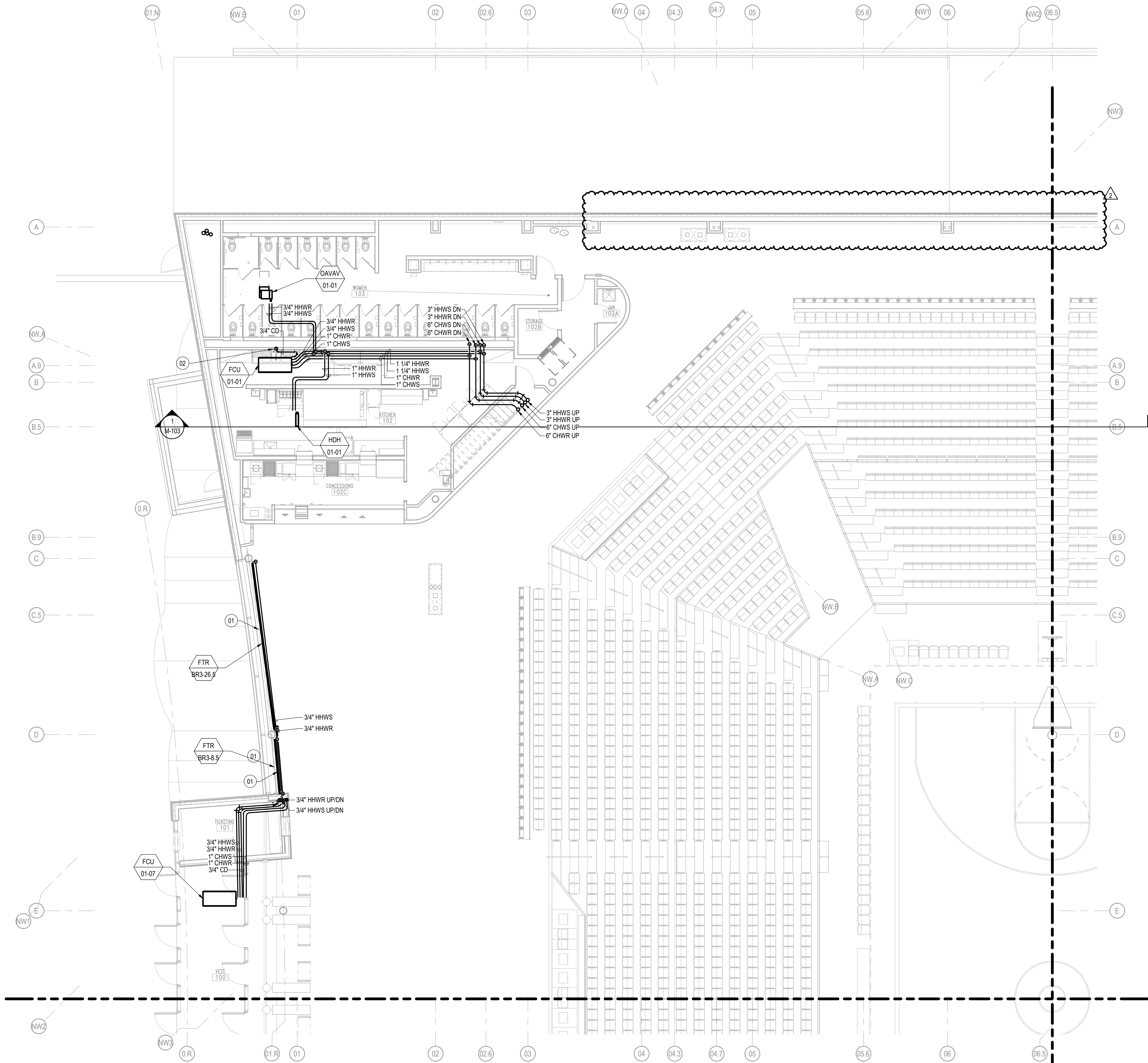
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GENERAL PIPING NOTES:

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS PRIOR TO ORDERING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. PIPING AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- C. PUMPED CONDENSATE PIPING FIELD ROUTED TO A CONDENSATE HEADER SHALL CONNECT ON TOP OF THE HEADER, WHICH IS SLOPED AT 1/8" PER FOOT TOWARDS THE POINT OF DISCHARGE. CONDENSATE MAINS SHALL NOT TURN UP IN THE DIRECTION OF FLOW. CONDENSATE MAINS SHALL BE SIZED IN ACCORDANCE WITH TABLE 307.2.2 "CONDENSATE DRAIN SIZING" IN THE INTERNATIONAL MECHANICAL CODE.
- D. CONDENSATE PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO ALLOW CLEARING OF BLOCKAGES AND PERFORMANCE OF MAINTENANCE WITHOUT REQUIRING THE LINE TO BE CUT IN ACCORDANCE WITH SECTION 307.2.5 "DRAIN LINE MAINTENANCE" OF THE INTERNATIONAL MECHANICAL CODE.
- E. CONDENSATE PUMPS SHALL BE INSTALLED IN SUCH A WAY THAT FAILURE OF THE PUMP SHALL PREVENT THE ASSOCIATED UNIT FROM OPERATING.
- F. DRAIN VALVES WITH CAPS SHALL BE INSTALLED AT ALL LOCAL LOW POINTS IN THE HYDRONIC PIPING SYSTEM. IF THIS DRAIN VALVE IS LOCATED OVER A HARD CEILING, IT SHALL BE PIPED TO AN ACCESSIBLE LOCATION OR PROVIDED WITH AN ACCESS PANEL.
- G. ALL PIPING TO REMAIN SHALL BE CLEANED AND SEALED DURING CONSTRUCTION.
- H. PROVIDE AIR VENTS OR DRAINS AS APPROPRIATE FOR LOCAL HIGH OR LOW PIPING LOCATIONS. ALL DRAINS SHALL BE SEALED WITH VALVE AND CAP. SEE DETAILS FOR ADDITIONAL INFORMATION.
- I. ALL PRESSURIZED PIPING SYSTEMS IMPACTED BY CONSTRUCTION SHALL BE FLUSHED CLEAN PRIOR TO ANY STRAINERS OR COILS BEING ENGAGED.

SHEET NOTES:

- 01 FLOOR MOUNTED FIN-TUBE RADIATORS TO BE PIPED IN PARALLEL UTILIZING A REVERSE RETURN CONFIGURATION.
- 02 CONDENSATE PIPING SHALL RUN DOWN THROUGH WALL AND DISCHARGE INTO FLOOR SINK BELOW UTILITY SINK. MAINTAIN A MINIMUM 3" AIR GAP.



M1
04-2024

CONCOURSE FLOOR PLAN - AREA A - PIPING

1/8" = 1'-0"

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

RATIO
ARCHITECTS

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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA A -
PIPING

SHEET NUMBER

M-202A

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IU Project NO. 20240127

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Code Consultant
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GENERAL PIPING NOTES:

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- B. PIPING AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- C. PUMPED CONDENSATE PIPING FIELD ROUTED TO A CONDENSATE HEADER SHALL CONNECT ON TOP OF THE HEADER, WHICH IS SLOPED AT 1/8" PER FOOT TOWARDS THE POINT OF DISCHARGE. CONDENSATE MAINS SHALL NOT TURN UP IN THE DIRECTION OF FLOW. CONDENSATE MAINS SHALL BE SIZED IN ACCORDANCE WITH TABLE 307.2.2 "CONDENSATE DRAIN SIZING" IN THE INTERNATIONAL MECHANICAL CODE.
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- G. ALL PIPING TO REMAIN SHALL BE CLEANED AND SEALED DURING CONSTRUCTION.
- H. PROVIDE AIR VENTS OR DRAINS AS APPROPRIATE FOR LOCAL HIGH OR LOW PIPING LOCATIONS. ALL DRAINS SHALL BE SEALED WITH VALVE AND CAP. SEE DETAILS FOR ADDITIONAL INFORMATION.
- I. ALL PRESSURIZED PIPING SYSTEMS IMPACTED BY CONSTRUCTION SHALL BE FLUSHED CLEAN PRIOR TO ANY STRAINERS OR COILS BEING ENGAGED.

SHEET NOTES:

- 01 FLOOR MOUNTED FIN-TUBE RADIATORS TO BE PIPED IN PARALLEL UTILIZING A REVERSE RETURN CONFIGURATION.
- 02 CONDENSATE SHALL RUN DOWN WALL TO TIE INTO JANITOR SINK TAILPIECE ABOVE THE WATER LEVEL OF THE TRAP.
- 03 CONDENSATE SHALL DROP DOWN TO DISCHARGE INTO FLOOR DRAIN. MAINTAIN MINIMUM 3" AIR GAP.

SEAL | DATE 02/03/25



SHEET ISSUE	
1	DO PROGRESS SET 07/18/24
2	DESIGN DEVELOPMENT 08/30/24
3	50% CONSTRUCTION DOCUMENTS 11/01/24
4	95% CONSTRUCTION DOCUMENTS 12/19/24
5	CONSTRUCTION DOCUMENTS 01/13/25
6	ADDENDUM 02 02/03/25

RATIO

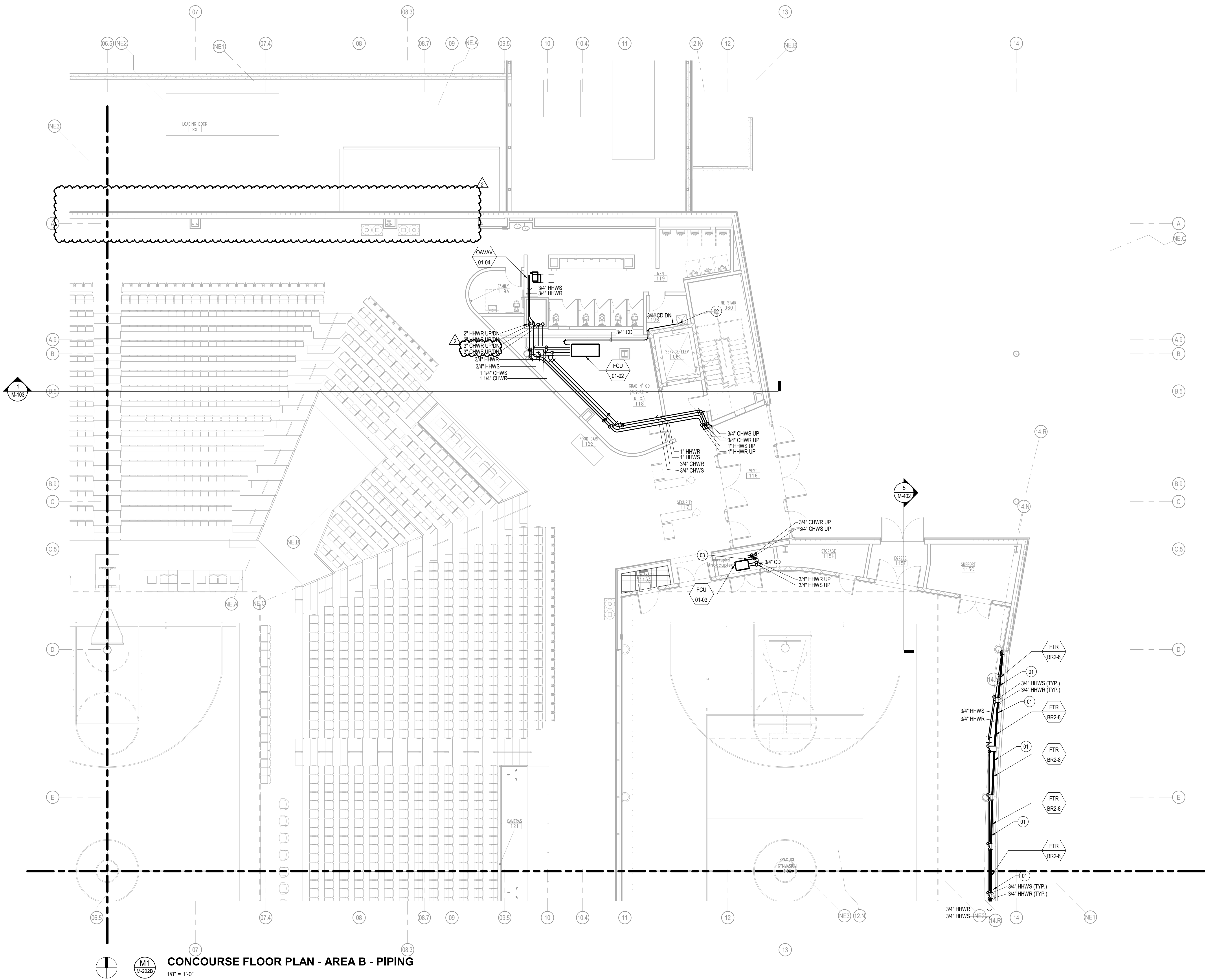
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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA B -
PIPING

SHEET NUMBER

M-202B



CONCOURSE FLOOR PLAN - AREA B - PIPING

1/8\" = 1'-0"

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
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IU Project NO. 20240127

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Code Consultant
FORZA
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HARRISONVILLE, MO 64701
816-806-3729

GENERAL PIPING NOTES:

- A. VERIFY ALL DIMENSIONS, CLEARANCES AND INTERFERENCES AGAINST ON SITE CONDITIONS AND OTHER DISCIPLINE DRAWINGS PRIOR TO ORDERING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT AND DUCT LOCATIONS WITH OTHER TRADES.
- B. PIPING AND EQUIPMENT ABOVE CEILING TO BE INSTALLED SO AS TO LEAVE ROOM TO INSTALL LIGHTS AND ASSOCIATED HARDWARE.
- C. PUMPED CONDENSATE PIPING FIELD ROUTED TO A CONDENSATE HEADER SHALL CONNECT ON TOP OF THE HEADER, WHICH IS SLOPED AT 1/8" PER FOOT TOWARDS THE POINT OF DISCHARGE. CONDENSATE MAINS SHALL NOT TURN UP IN THE DIRECTION OF FLOW. CONDENSATE MAINS SHALL BE SIZED IN ACCORDANCE WITH TABLE 307.2.2 "CONDENSATE DRAIN SIZING" IN THE INTERNATIONAL MECHANICAL CODE.
- D. CONDENSATE PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO ALLOW CLEARING OF BLOCKAGES AND PERFORMANCE OF MAINTENANCE WITHOUT REQUIRING THE LINE TO BE CUT IN ACCORDANCE WITH SECTION 307.2.5 "DRAIN LINE MAINTENANCE" OF THE INTERNATIONAL MECHANICAL CODE.
- E. CONDENSATE PUMPS SHALL BE INSTALLED IN SUCH A WAY THAT FAILURE OF THE PUMP SHALL PREVENT THE ASSOCIATED UNIT FROM OPERATING.
- F. DRAIN VALVES WITH CAPS SHALL BE INSTALLED AT ALL LOCAL LOW POINTS IN THE HYDRONIC PIPING SYSTEM. IF THIS DRAIN VALVE IS LOCATED OVER A HARD CEILING, IT SHALL BE PIPED TO AN ACCESSIBLE LOCATION OR PROVIDED WITH AN ACCESS PANEL.
- G. ALL PIPING TO REMAIN SHALL BE CLEANED AND SEALED DURING CONSTRUCTION.
- H. PROVIDE AIR VENTS OR DRAINS AS APPROPRIATE FOR LOCAL HIGH OR LOW PIPING LOCATIONS. ALL DRAINS SHALL BE SEALED WITH VALVE AND CAP. SEE DETAILS FOR ADDITIONAL INFORMATION.
- I. ALL PRESSURIZED PIPING SYSTEMS IMPACTED BY CONSTRUCTION SHALL BE FLUSHED CLEAN PRIOR TO ANY STRAINERS OR COILS BEING ENGAGED.

SHEET NOTES:

- 01 FLOOR MOUNTED FIN-TUBE RADIATORS TO BE PIPED IN PARALLEL UTILIZING A REVERSE RETURN CONFIGURATION.
- 02 CONDENSATE SHALL RUN DOWN THROUGH WALL CHASE TO TIE INTO JANITOR SINK TAILPIECE ABOVE THE WATER LEVEL OF THE TRAP.
- 03 CONDENSATE SHALL DROP DOWN TO DISCHARGE INTO FLOOR DRAIN. MAINTAIN MINIMUM 3" AIR GAP.
- 04 HYDRONIC DIFFERENTIAL PRESSURE SENSORS SHALL BE LOCATED ABOVE THE FLOOR PENETRATION. COORDINATE ACCESS DOOR LOCATION SUCH THAT A SINGLE ACCESS DOOR CAN BE USED FOR BOTH THE FIRE DAMPER AND DIFFERENTIAL PRESSURE SENSORS.

SEAL | DATE 02/03/25



SHEET ISSUE

1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
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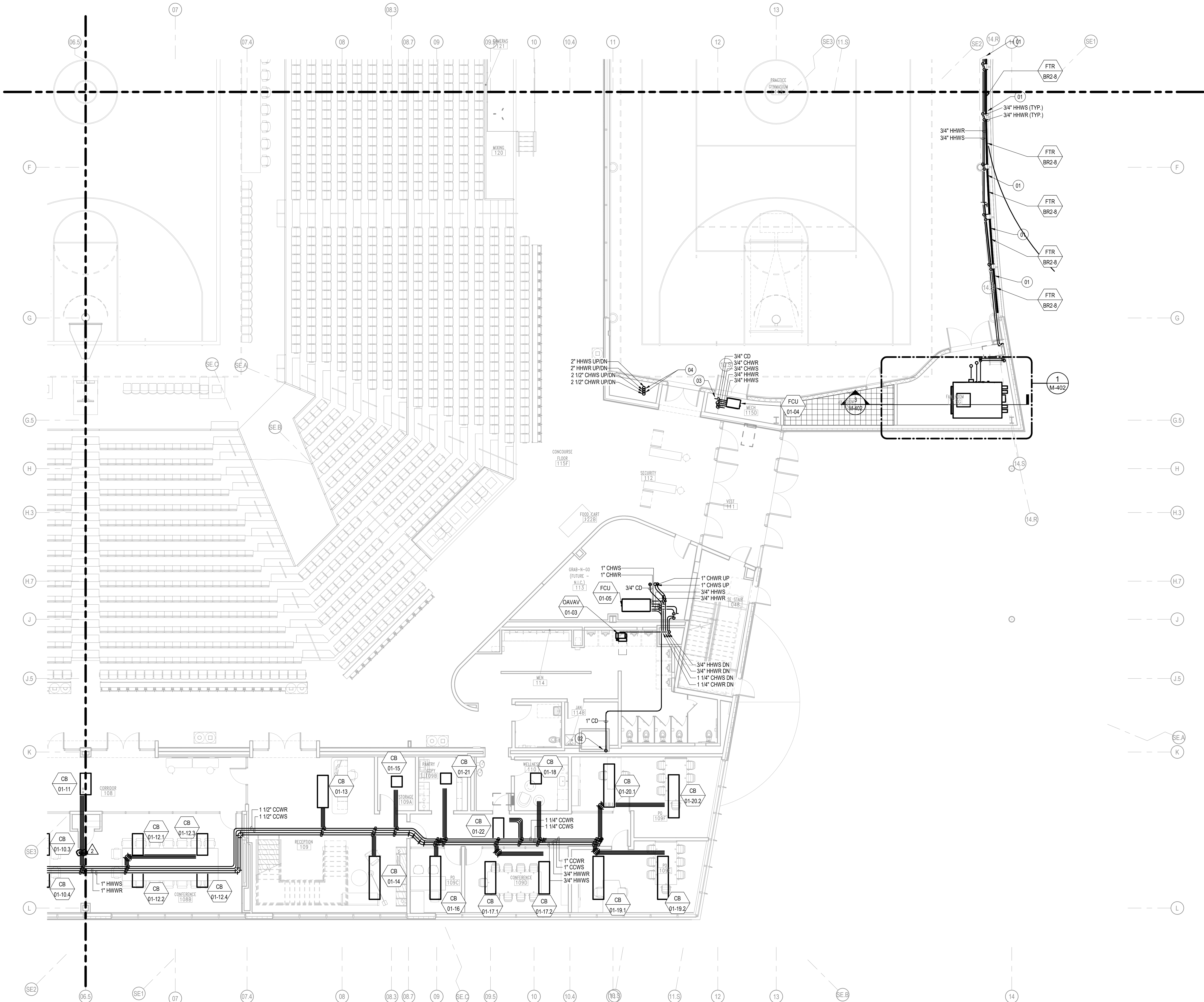
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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA C -
PIPING

SHEET NUMBER

M-202C



CONCOURSE FLOOR PLAN - AREA C - PIPING

1/8\" = 1'-0"

IN128 - JAMES T. MORRIS ARENA

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IU Project NO. 20240127

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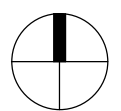
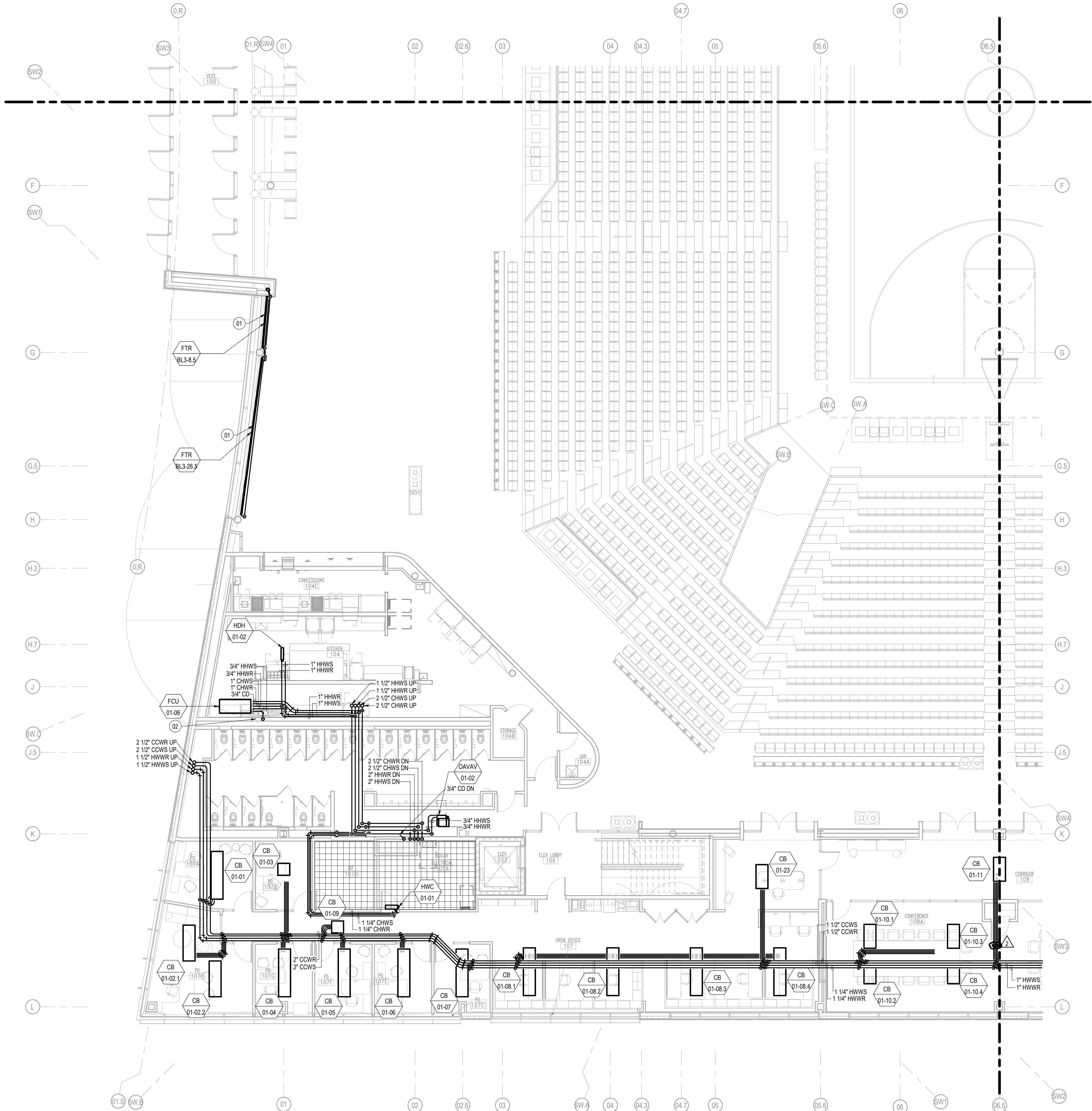
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SHEET NOTES:

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- 02 CONDENSATE PIPING SHALL RUN DOWN THROUGH WALL AND DISCHARGE INTO FLOOR SINK BELOW UTILITY SINK. MAINTAIN A MINIMUM 3" AIR GAP.



M1
M-202D

CONCOURSE FLOOR PLAN - AREA D - PIPING
1/8" = 1'-0"

SEAL | DATE 02/03/25



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RATIO
ARCHITECTS

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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA D -
PIPING

SHEET NUMBER

M-202D

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- C. PUMPED CONDENSATE PIPING FLOW ROUTED TO A DRAIN. IN ORDER TO ALLOW THEM TO CONNECT ON TOP OF THE HEADER, WHICH IS SLOPED AT 1/8" PER FOOT TOWARDS THE POINT OF DISCHARGE, CONDENSATE MAINS SHALL NOT TURN UP IN THE DIRECTION OF FLOW. CONDENSATE MAINS SHALL BE SIZED IN ACCORDANCE WITH TABLE 307.2.2 "CONDENSATE DRAIN SIZING" IN THE INTERNATIONAL MECHANICAL CODE.
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- I. ALL COLLUSIONED PIPING SYSTEMS IMPOSED BY PREVIOUS DESIGN SHALL BE FLAGGED CLEAR PRIOR TO ANY STRAINERS OR PRESSURES BEING ENGAGED.

SHEET NOTES:

- 01 FIN-TUBE RADIATORS TO BE INSTALLED ON THE MIDSPAN STRUCTURAL MEMBER AND BE PIPED IN A SAME END SERIES CONFIGURATION.
- 02 PIPING WILL PASS THROUGH CUT-OUTS IN COLUMNS IN A STACKED ORIENTATION.
- 03 FIN-TUBE RADIATORS TO BE INSTALLED ON THE MIDSPAN STRUCTURAL MEMBER OF THE CURTAIN WALL.

SEAL | DATE 02/03/25



SHEET ISSUE		
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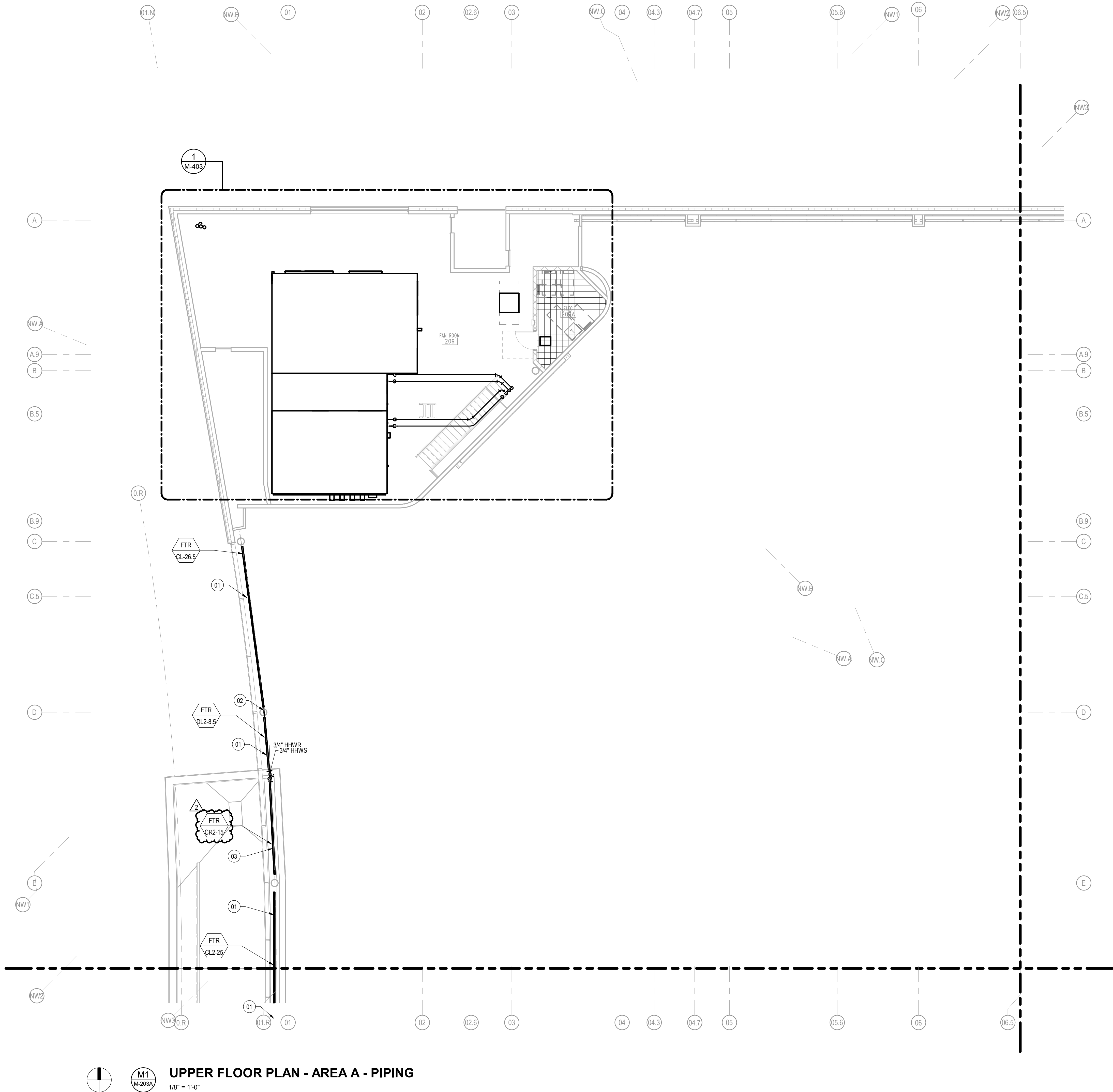
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA A - PIPING

SHEET NUMBER

M-203A



UPPER FLOOR PLAN - AREA A - PIPING

1/8" = 1'-0"

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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SHEET NOTES:

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RATIO

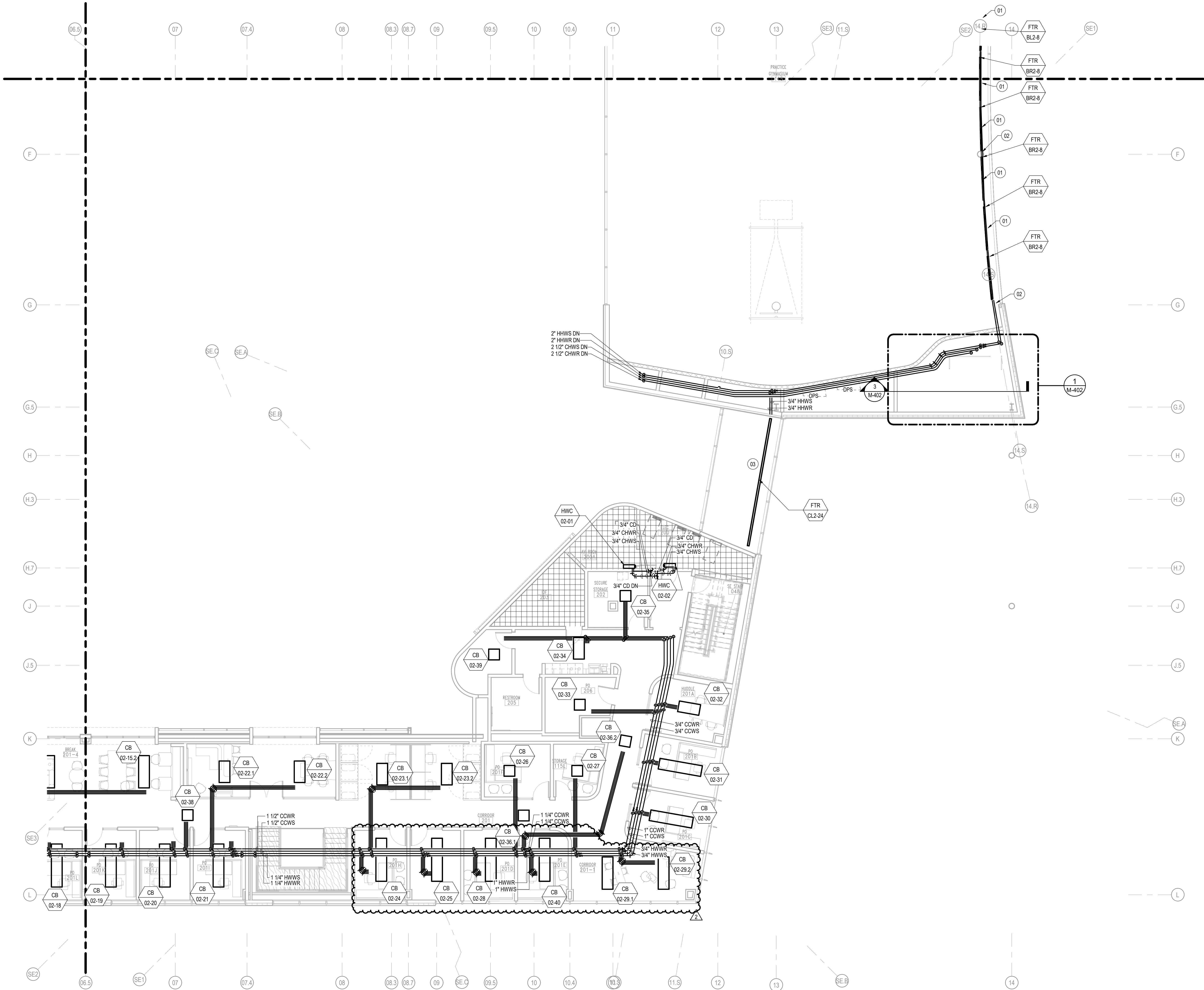
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA C - PIPING

SHEET NUMBER

M-203C



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SHEET NOTES:

- STEAM SERVICE ENTRANCE, COORDINATE HEIGHT AND LOCATION WITH UTILITY.
- STEAM UTILITY METER BY UTILITY.
- CHWS SERVICE ENTRANCE, COORDINATE HEIGHT AND LOCATION WITH UTILITY.
- CHWR SERVICE EXIT, COORDINATE HEIGHT AND LOCATION WITH UTILITY.
- STEAM VENTS SHALL PENETRATE WALL AND RUN AS HIGH AS INSTALLABLE, TRANSLATE OVER BENEATH WALL CHASE ABOVE, AND PENETRATE FLOORING SYSTEM TO ABOVE. STEAM VENT PIPING SHALL BE ROUTED STACKED 1 PIPE ACROSS AS CLOSE TO THE NORTH WALL AS INSTALLABLE.
- ALL PIPING CONNECTIONS TO HEX SHALL BE UNION OR FLANGE FOR EASY REMOVAL. PIPING SHALL BE INSTALLED IN SUCH A WAY AS TO FACILITATE REMOVAL OF THE HEX FOR MAINTENANCE. PIPING SECTIONS WHICH MAY INTERFERE WITH THE REMOVAL SHALL BE ABLE TO BE ISOLATED AND REMOVED VIA UNIONS OR FLANGES AS APPROPRIATE FOR THE SERVICE.
- ANY PIPING COMPONENTS REQUIRING ACCESS LOCATED ABOVE DUCTWORK SHALL BE ACCESSIBLE FROM A LADDER AT THE EDGE OF THE DUCTWORK. NO COMPONENTS REQUIRING MANIPULATION, SERVICING, OR WHICH ARE COMMONLY REPLACED SHALL BE LOCATED ABOVE DUCTWORK.
- PROVIDE ACCESS DOOR FOR ACCESS TO FDS AND DUCT / PIPING PENETRATIONS.
- DRYER EXHAUST SHALL BE ROUTED THROUGH SPACE IN A STRAIGHT RUN TO EXHAUST LOUVER. ANY DEVIATION SHALL REQUIRE COORDINATION WITH DRYER VENDOR.
- DRYER EXHAUST LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF BOTH DRYERS (BY OTHERS) EXHAUSTING AT 800 CFM EACH. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 1600 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. PLENUM OFF THE BACK OF THE LOUVER SHALL EXTEND NO LESS THAN 12" INTO THE SPACE AND SHALL NOT HAVE ANY DAMPERS INSTALLED. FREE AREA OF THE LOUVER IS 3 SQFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 36" X 24". IF A LOUVER LARGER THAN WHAT IS SPECIFIED HERE IS PROVIDED, THE UNUSED AREAS SHALL BE BLANKED OFF AND INSULATED. REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- OA LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF AHU-00-03, THE ECONOMIZER AIRFLOW OF AHU-00-02, AND THE MAKEUP AIRFLOW FOR THE LAUNDRY ROOM EXHAUST. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 44,000 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. DUCT CONNECTION SIZE AS SHOWN IS BASED ON 69.44 SQFT OF FREE AREA, A FREE AREA PERCENTAGE OF 64%, AND AN OVERALL SIZE OF 186" X 84". IF A LOUVER LARGER THAN WHAT IS SPECIFIED HERE IS PROVIDED, THE UNUSED AREAS SHALL BE BLANKED OFF AND INSULATED. REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- PROVIDE DUCT MOUNTED AVERAGING TEMPERATURE AND HUMIDITY SENSORS. LOCATED SENSORS SUCH THAT THEIR REQUIREMENTS FOR STRAIGHT DUCT RUNS ARE OBSERVED. COORDINATE FINAL LOCATION WITH FIELD INSTALLATION.

STEAM PRV PIPING HP TP LP SECTION VIEW

1/4" = 1'-0"

STEAM PRV PIPING MP TO LP SECTION VIEW

1/4" = 1'-0"

UTILITY ENTRANCE ROOM ISOMETRIC

3D VIEWS PROVIDED FOR CONVENIENCE. SOME MATERIAL MAY HAVE BEEN HIDDEN FOR CLARITY. REFER TO OTHER VIEWS FOR SYSTEM INFORMATION.

UTILITY ENTRANCE ROOM HYDRONIC SYSTEM PUMP ISOMETRIC

EVENT LEVEL ENLARGED PLAN - CHW, STM, HHW UTILITY

3/8" = 1'-0"

UTILITY PIPING ENTRANCE SECTION VIEW

1/4" = 1'-0"

HEAT EXCHANGER PIPING SECTION VIEW

1/4" = 1'-0"

1/31/2025 2:54:42 PM

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816-806-3729



SHEET NOTES:

- 01 AHU RELIEF LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF AHU-00-03. THIS EQUIALS A TOTAL AIRFLOW OF APPROXIMATELY 23,905 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND A PRESSURE DROP LESS THAN 1" WC. PLENUM OFF THE BACK OF THE LOUVER SHALL CONNECT TO THE DUCT ENCLOSURE FOR RAFA-00-03. FREE AREA OF THE LOUVER IS 32 SQFT BASED ON A FREE AREA PERCENTAGE OF 90% AND AN OVERHEAD SIZE OF 96" X 96". IF A LOUVER LARGER THAN WHAT IS SPECIFIED HERE IS PROVIDED, THE UNUSED AREAS SHALL BE BLANKED OFF AND INSULATED. REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 02 RAFA SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE. PROVIDE ACCESS DOORS ON EITHER SIDE OF THE FAN ARRAY TO PROVIDE MAINTENANCE ACCESS.
- 03 UNIT HEATER SHALL BE MOUNTED IN THE AIR-TIGHT DRYER EXHAUST MAKEUP AIR PLENUM. ACCESS DOOR SHALL BE SUFFICIENTLY LARGE TO MAINTAIN AND REPLACE UNIT HEATER IF REQUIRED.
- 04 ACOUSTICAL LOUVER SHALL BE MOUNTED THROUGH THE WALL AT 1'-0" A.F.F. A DUCTED PLENUM OF SUFFICIENT LENGTH SHALL BE PROVIDED OFF THE BACK OF THE LOUVER TO HOUSE THE DAMPERS AS SHOWN.
- 05 COP AND ASSOCIATED PIPING SHALL BE INSTALLED BENEATH THE ACCESS PLATFORM SUCH THAT THEY ALLOW EASY RELOCATION TO THE AHU AND ARE MAINTAINABLE FROM THE FLOOR.
- 06 RELIEF AIR CONNECTION SHALL TIE INTO PLENUM OF RAFA-00-03
- 07 REFRIGERATION AND CONDENSATE ROOM SHALL BE PROVIDED WITH WIRE MESH SCREEN AND SHALL BE UNOBSTRUCTED FOR PANEL ACCESS.
- 08 VFDS AND POWER DISTRIBUTION PANEL ARE SHIPPED LOOSE. COORDINATE FIELD INSTALLATION. PROVIDE MIN. 48" CLEAR IN FRONT OF ALL VFDS AND POWER DISTRIBUTION PANELS.
- 09 CONDENSATE SHALL SLLP INTO FLOOR SINK. COORDINATE EXHAUST ROUTE TO AVOID INTERFERING WITH ACCESS TO AHU.

SEAL | DATE 02/03/25

[illegible]RATIO

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PROJECT NO. 23112.000

SHEET TITLE
EVENT LEVEL
ENLARGED PLAN -
DOAS, AHU,
LAUNDRY ROOMS

SHEET NUMBER

M-401B

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
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IU Project NO. 20240127

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SHEET NOTES:

- 01 RAFA SHALL BE SUPPORTED INDEPENDENTLY BY THE FLOOR. PROVIDE A DUCT ACCESS DOOR FOR FAN MOTOR MAINTENANCE FOR EACH FAN.
- 02 AHU ECONOMIZER RELIEF LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF RAFA-01-01. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 9,000 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 1,000 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. PLENUM OFF THE BACK OF THE LOUVER SHALL BE NO LESS THAN 24" DEEP. FREE AREA OF THE LOUVER IS 11.3 SQFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 68" X 48". IF A LOUVER LARGER THAN WHAT IS SPECIFIED HERE IS PROVIDED, THE UNUSED AREAS SHALL BE BLANKED OFF AND INSULATED. REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 03 6" CONCRETE HOUSEKEEPING PAD BY OTHERS. MECHANICAL CONTRACTOR TO INFORM GC IF TRAP HEIGHT REQUIRES A TALLER PAD. PAD SHALL EXCEED FOOTPRINT OF UNIT BY MIN. 3" IN ALL DIMENSIONS.
- 04 RETURN AIR OPENING SHALL REMAIN UNOBSTRUCTED FOR MIN. 36".
- 05 VFDS AND POWER DISTRIBUTION PANEL ARE SHIPPED LOOSE. COORDINATE FIELD INSTALLATION. PROVIDE MIN. 48" CLEAR IN FRONT OF ALL VFDS AND POWER DISTRIBUTION PANELS.
- 06 AHU ECONOMIZER LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF AHU-01-01. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 9,000 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. PLENUM OFF THE BACK OF THE LOUVER SHALL BE NO LESS THAN 24" DEEP. FREE AREA OF THE LOUVER IS 16 SQFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 90" X 48". IF A LOUVER LARGER THAN WHAT IS SPECIFIED HERE IS PROVIDED, THE UNUSED AREAS SHALL BE BLANKED OFF AND INSULATED. REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 08 RETURN OPENING INTO MECHANICAL ROOM SHALL BE PROVIDED WITH WIRE MESH SCREEN AND SHALL BE UNOBSTRUCTED FOR MIN. 36".
- 09 RELIEF OPENING SHALL BE PROVIDED WITH WIRE MESH SCREEN AND SHALL BE UNOBSTRUCTED FOR MIN. 36".
- 10 LOCATE DIFFERENTIAL PRESSURE SENSOR IN THE RISER BEFORE HYDRONIC PIPING BRANCHES TO AHU 01-01.

SEAL | DATE 02/03/25



SHEET ISSUE

1	DESIGN DEVELOPMENT	08/30/24
2	50% CONSTRUCTION DOCUMENTS	11/01/24
3	95% CONSTRUCTION DOCUMENTS	12/19/24
4	CONSTRUCTION DOCUMENTS	01/13/25
5	ADDENDUM 01	01/27/25
6	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE

ENLARGED PLANS - PRACTICE GYM

SHEET NUMBER

M-402

CONCOURSE LEVEL SECTION VIEW - STORAGE 115D

1/4" = 1'-0"

CONCOURSE LEVEL ENLARGED PLAN - STORAGE 115D

1/4" = 1'-0"

3D VIEWS PROVIDED FOR CONVENIENCE. SOME MATERIAL MAY HAVE BEEN HIDDEN FOR CLARITY. REFER TO OTHER VIEWS FOR SYSTEM INFORMATION.

CONCOURSE LEVEL ISOMETRIC VIEW - STORAGE 115D

2
M-402

UPPER FLOOR LEVEL SECTION VIEW - SUPPORT 115B

1/4" = 1'-0"

UPPER FLOOR LEVEL ENLARGED PLAN - SUPPORT 115B

1/4" = 1'-0"

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SHEET NOTES:

- 1 FAN WALL IS HOSTED IN BUILT-UP FRAME INSIDE RELIEF FAN ROOM. ROOM CONSTRUCTION DETAILS BY ARCHITECT. FAN WALL STRUCTURE BY STRUCTURAL ENGINEER.
- 2 FAN WALL ROOM INLET DAMPER SHALL BE INSTALLED IN THE FACE OF THE WALL AND SHALL BE MOTOR OPERATED. OPERATION OF THE DAMPER IS INTERLOCKED WITH AHJ-02-01 DAMPER SHALL BE MOUNTED APPROXIMATELY 6' A.F.F.
- 3 GREASE DUCT SHALL BE PROVIDED AND INSTALLED AS A ZERO-CLEARANCE RATED DUCT PRODUCT IN LIEU OF A BUILT-UP RATED DUCT ENCLOSURE. PRODUCT SHALL BE PROVIDED AS CAPTURE THE DW-30 APPROVED EQUAL.
- 4 FAN WALL ROOM INLET DAMPER SHALL BE INSTALLED IN THE FACE OF THE WALL AND SHALL BE MOTOR OPERATED. OPERATION OF THE DAMPER IS INTERLOCKED WITH AHJ-02-01. DAMPER SHALL BE MOUNTED APPROXIMATELY 6' ABOVE THE PENETRATION OF THE AHJ RELIEF AIR DUCT.
- 5 RELIEF AIR OUTLET LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF RAFA-02-01. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 55,000 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 1000 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. LOUVER CONNECTS TO BUILT-UP FAN ROOM. FREE AREA OF THE LOUVER IS 60 SQ. FT. BASED ON A FREE AREA PERCENTAGE OF 30% AND AN OVERALL SIZE OF 96" X 180". REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 6 QA INLET LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL ECONOMIZER AIRFLOW OF AHJ-02-01 AND THE MAKEUP AIR TO THE KITCHEN HOOD ON THE FLOOR BELOW. BETWEEN THE TWO EQUALLY SIZED LOUVERS SHARING THIS PLENUM. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 56,700 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 1000 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. LOUVER CONNECTS INTO BUILT-UP FAN ROOM PLENUM. THE AREA OF THE LOUVER IS 60 SQ. FT. BASED ON A FREE AREA PERCENTAGE OF 30% AND AN OVERALL SIZE OF 264" X 86". THIS RESULTS IN AN OVERALL FREE AREA OF 121 SQFT, WHICH IS REDUCED TO APPROXIMATELY 86 SQFT DUE TO THE WRAPPED BEAMS DIRECTLY BEHIND THE FACE OF THE LOUVER. REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 7 THE CONNECTION TO THE QA LOUVER SHALL BE A BUILT-OUT INSULATED PLENUM. THE INNER WALL OF THE PLENUM SHALL CONSIST OF A SHEET METAL SKIN AND SHALL MEET ALL THE REQUIREMENTS OF 1" PRESSURE CLASS DUCTWORK PER SMACNA. WALL INSULATION SHALL MUST EXCEED THE REQUIREMENT OF 4" DUCTWORK FIBER PROVIDED SPECIFICATIONS.
- 8 VFDs AND POWER DISTRIBUTION PANEL ARE SHIPPED LOOSE. COORDINATE FIELD INSTALLATION. PROVIDE MIN. 48" CLEAR IN FRONT OF ALL VFDs AND POWER DISTRIBUTION PANELS.
- 9 ALL DUCT SHALL BE HUNG SUCH THAT 7'-0" CLEAR A.F.F. IS MAINTAINED.
- 10 FIRE-SMOKE DAMPERS WITH AN HOUR RATING COMPLIANT WITH THE WALL CONSTRUCTION SHALL BE INSTALLED IN A BUILT-UP WALL DIVIDING THE COMMON RETURN PLENUM AND THE MECHANICAL ROOM.
- 11 STEAM VENT PIPING FROM BELOW TO ABOVE ROOF. SEE RELIEF VENT DETAILS FOR INFORMATION ON TERMINATION HEIGHT.
- 12 6" CONCRETE HOUSEKEEPING PAD BY OTHERS. MECHANICAL CONTRACTOR TO INFORM GC IF TRAFFIC LOAD REQUIRES A TALLER PAD. PAD SHALL EXCEED FOOTPRINT OF UNIT BY MIN. 3" IN ALL DIMENSIONS.
- 13 PROVIDE DUCT-ARMOUNTED AVERAGING TEMPERATURE AND HUMIDITY SENSORS. LOCATED SENSORS SUCH THAT THEIR REQUIREMENTS FOR STRAIGHT DUCT RUNS ARE OBSERVED. COORDINATE FINAL LOCATION WITH FIELD INSTALLATION.
- 14 LOCATE DIFFERENTIAL PRESSURE SENSORS IN THE RISERS BEFORE HYDRONIC PIPING BRANCHES OFFER TO AHJ 02-01.

SEAL DATE	02/03/25
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RATIO

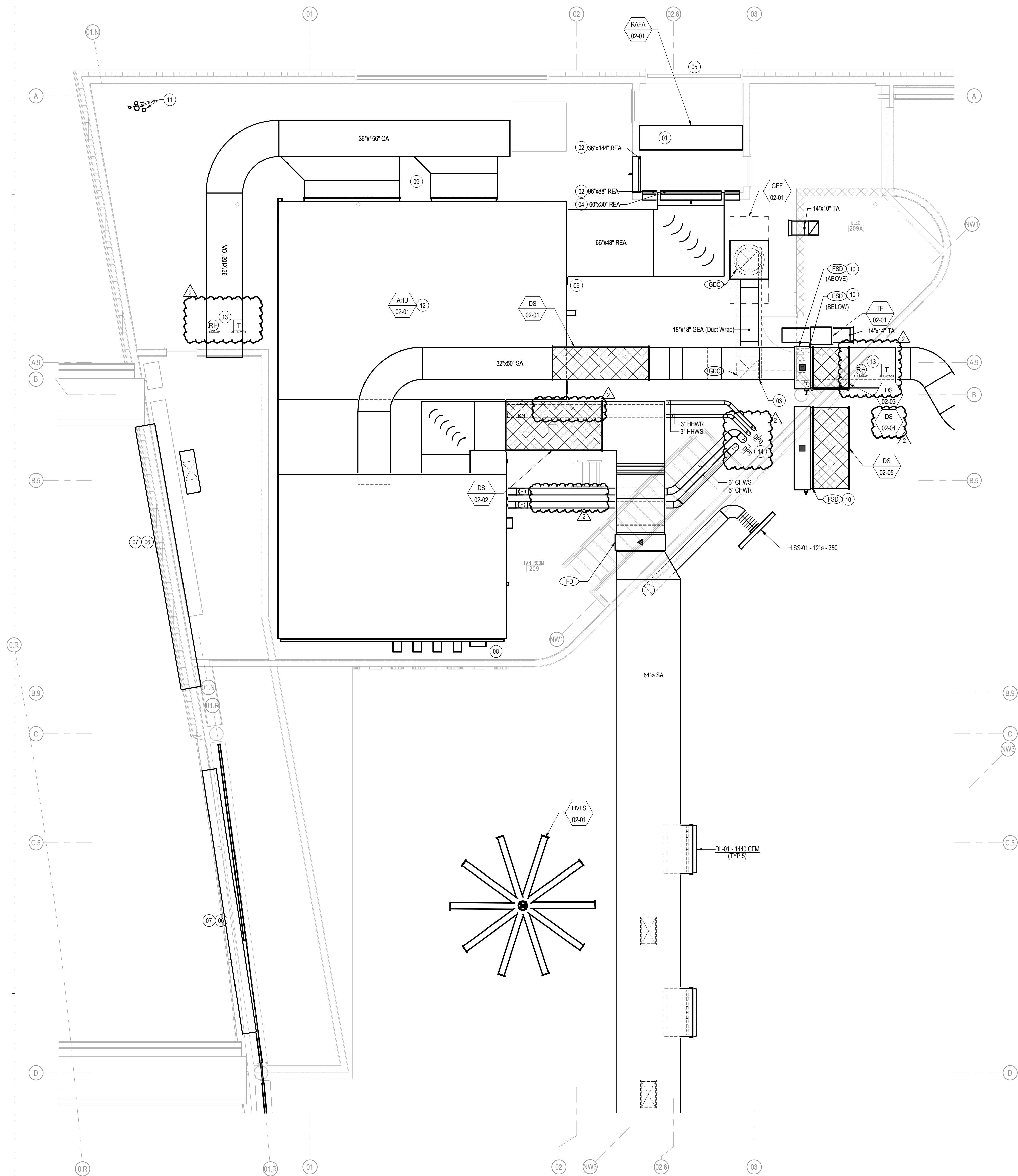
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PROJECT NO.	23112.000
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SHEET TITLE
ENLARGED PLAN -
FAN ROOM 209

SHEET NUMBER

M-403



1
M-403

UPPER LEVEL ENLARGED PLAN - FAN ROOM 209

1/4" = 1'-0"

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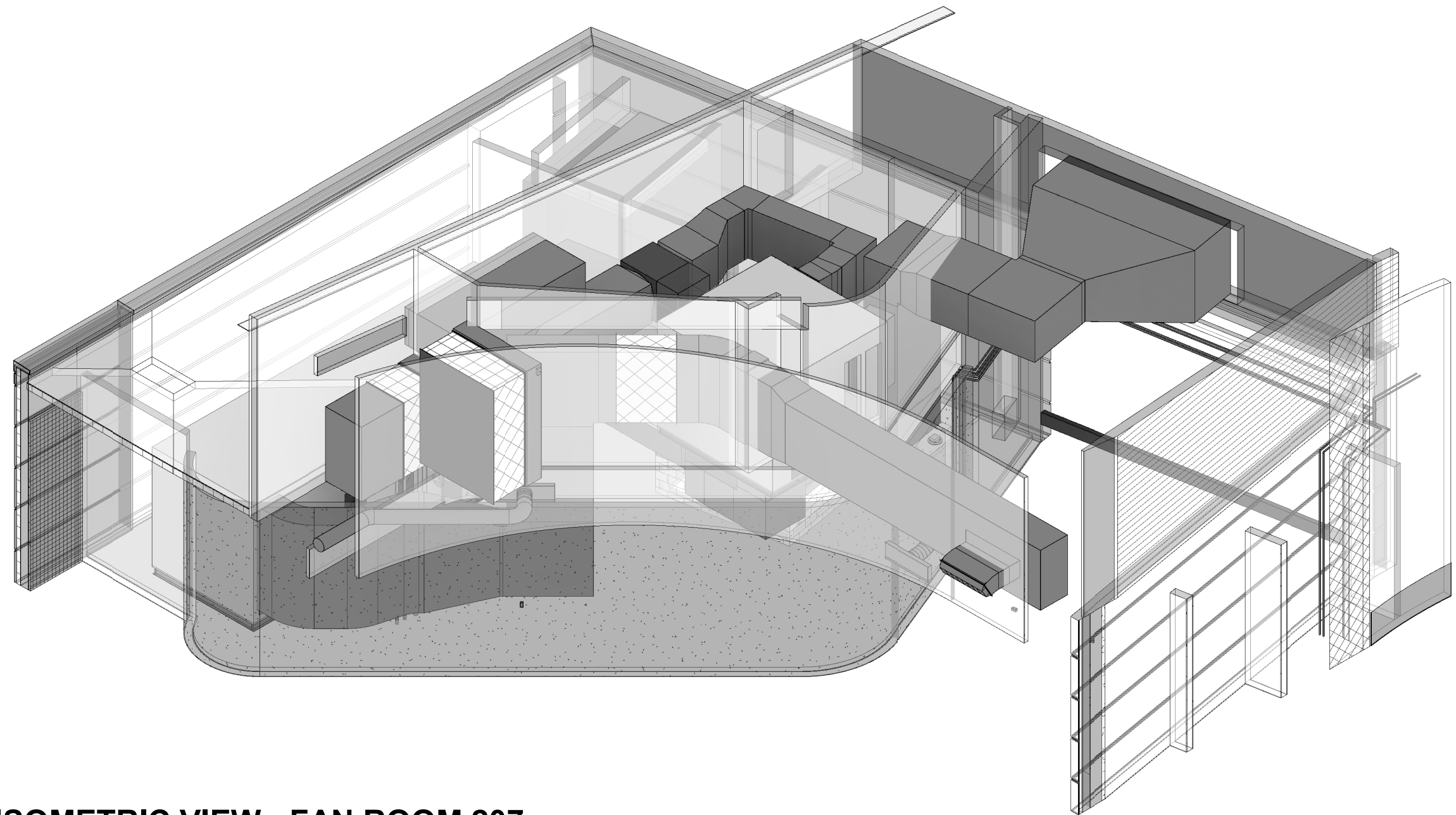
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**3D VIEWS PROVIDED FOR
CONVENIENCE. SOME MATERIAL
MAY HAVE BEEN HIDDEN FOR
CLARITY. REFER TO OTHER VIEWS
FOR SYSTEM INFORMATION.**



2
M-404

ISOMETRIC VIEW - FAN ROOM 207

- 01 FAN WALL IS HOSTED IN BUILT-UP FRAME INSIDE RELIEF FAN ROOM. ROOM CONSTRUCTION DETAILS BY ARCHITECT. FAN WALL STRUCTURE BY STRUCTURAL ENGINEER. EACH FAN IS PROVIDED WITH A WEIGHTED BACKDRIFT DAMPER ON THE INLET.
- 02 FAN WALL ROOM INLET DAMPER SHALL BE INSTALLED IN THE FACE OF THE WALL AND SHALL BE MOTOR OPERATED. OPERATION OF THE DAMPER IS INTERLOCKED WITH AHU-02-01. DAMPER SHALL BE MOUNTED APPROXIMATELY 6' A.F.F. DAMPER SHALL BE INSTALLED SUCH THAT IT IS REMOVABLE TO PROVIDE ACCESS TO THE FAN ARRAY.
- 03 FAN WALL ROOM INLET DAMPER SHALL BE INSTALLED HORIZONTALLY IN THE FACE OF THE UID AND SHALL BE MOTOR OPERATED. OPERATION OF THE DAMPER IS INTERLOCKED WITH RAFA-02-02.
- 04 RELIEF AIR OUTLET LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL AIRFLOW OF AHU-02-01. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 42,680 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. LOUVER CONNECTS INTO BUILT-UP FAN ROOM. FREE AREA OF THE LOUVER IS 80 SQFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 96" X 180". REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 05 OA INLET LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL ECONOMIZER AIRFLOW OF AHU-02-02. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 18,000 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 500 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. LOUVER CONNECTS INTO BUILT-UP SHARED PLenum. FREE AREA OF THE LOUVER IS 38 SQFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 156" X 70". REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 06 ALL DUCT SHALL BE HUNG SUCH THAT 7'-0" CLEAR A.F.F. IS MAINTAINED.
- 07 FIRE-SMOKE DAMPERS WITH AN HOUR RATING COMPLIANT WITH THE WALL CONSTRUCTION SHALL BE INSTALLED IN A BUILT-UP WALL DIVIDING THE COMMON RETURN PLenum AND THE MECHANICAL ROOM.
- 08 EA OUTLET LOUVER, SPECIFIED BY ARCHITECT, IS SIZED FOR THE FULL ECONOMIZER AIRFLOW OF ERU-02-02. THIS EQUALS A TOTAL AIRFLOW OF APPROXIMATELY 12,500 CFM. THE PROVIDED LOUVER SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND A PRESSURE DROP LESS THAN 0.1" WC. LOUVER CONNECTS INTO BUILT-UP SHARED PLenum. FREE AREA OF THE LOUVER IS 18 SQFT BASED ON A FREE AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF 144" X 36". REFER TO ARCHITECTURAL PLANS FOR LOUVER SPECIFICATION.
- 09 6" CONCRETE HOUSEKEEPING PAD BY OTHERS. MECHANICAL CONTRACTOR TO INFORM GC IF TRAP HEIGHT REQUIRES A TALLER PAD. PAD SHALL EXCEED FOOTPRINT OF UNIT BY MIN. 3" IN ALL DIMENSIONS.
- 10 PROVIDE DUCT-MOUNTED AVERAGING TEMPERATURE AND HUMIDITY SENSORS. LOCATED SENSORS SUCH THAT THEIR REQUIREMENTS FOR STRAIGHT DUCT RUNS ARE OBSERVED. COORDINATE FINAL LOCATION WITH FIELD INSTALLATION.

SEAL | DATE 02/03/25

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RATIO

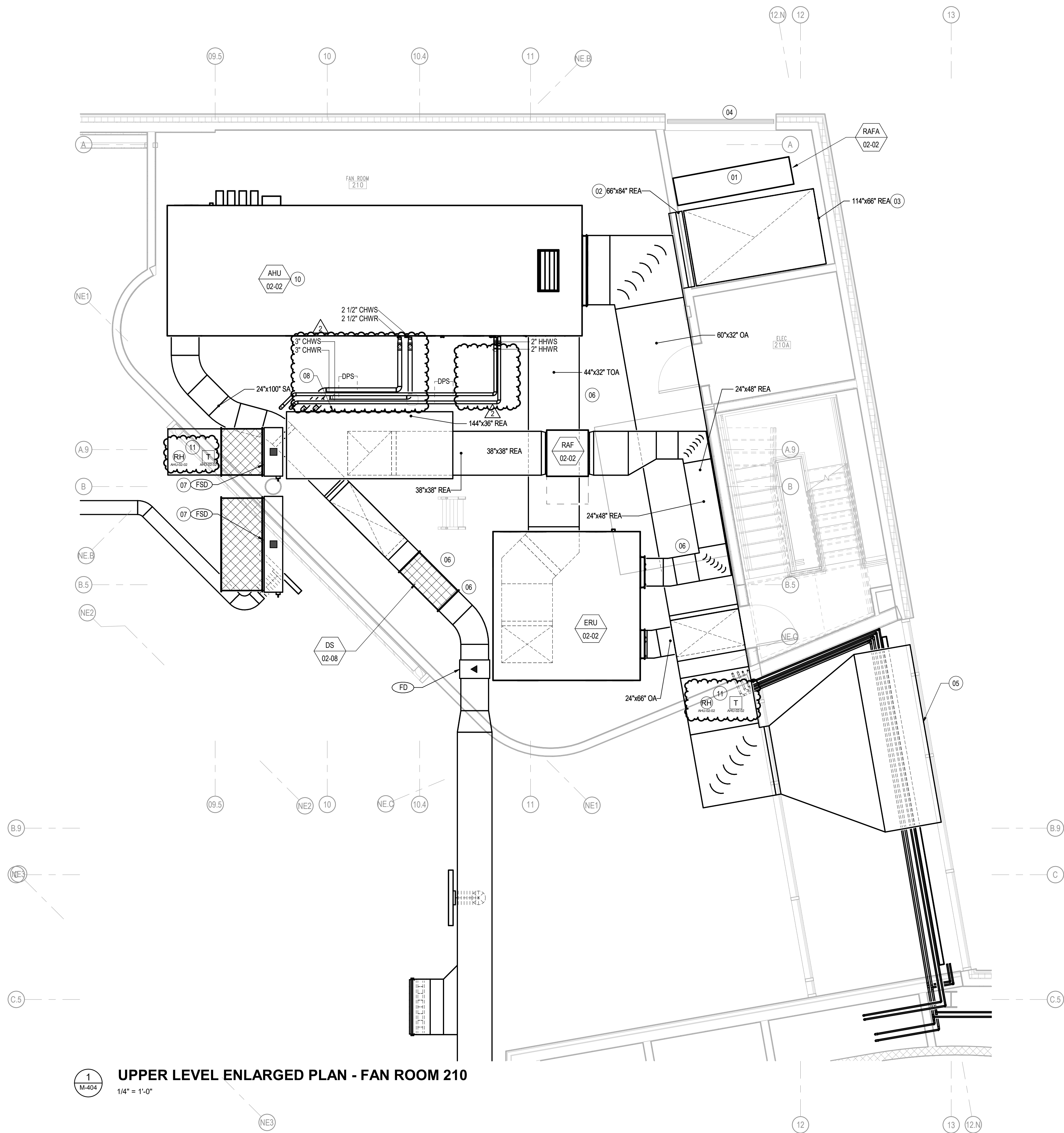
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PROJECT NO.	23112.000
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SHEET TITLE
ENLARGED PLAN -
FAN ROOM 210

SHEET NUMBER

M-404



UPPER LEVEL ENLARGED PLAN - FAN ROOM 210

$$1/4'' = 1'-0''$$

01 CONNECT EXHAUST DUCTWORK TO LOCKER
EXHAUST COLLAR (BY OTHERS).

02 ALL SPACE BETWEEN LINEAR SLOT
DIFFUSERS SHALL BE IN-FILLED WITH BLANK
SLOT SECTIONS TO PROVIDE A
CONTINUOUS APPEARANCE.

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SHEET ISSUE		
1	DESIGN DEVELOPMENT	08/30/24
2	50% CONSTRUCTION DOCUMENTS	11/01/24
3	95% CONSTRUCTION DOCUMENTS	12/19/24
4	CONSTRUCTION DOCUMENTS	01/13/25
5	ADDENDUM 02	02/03/25

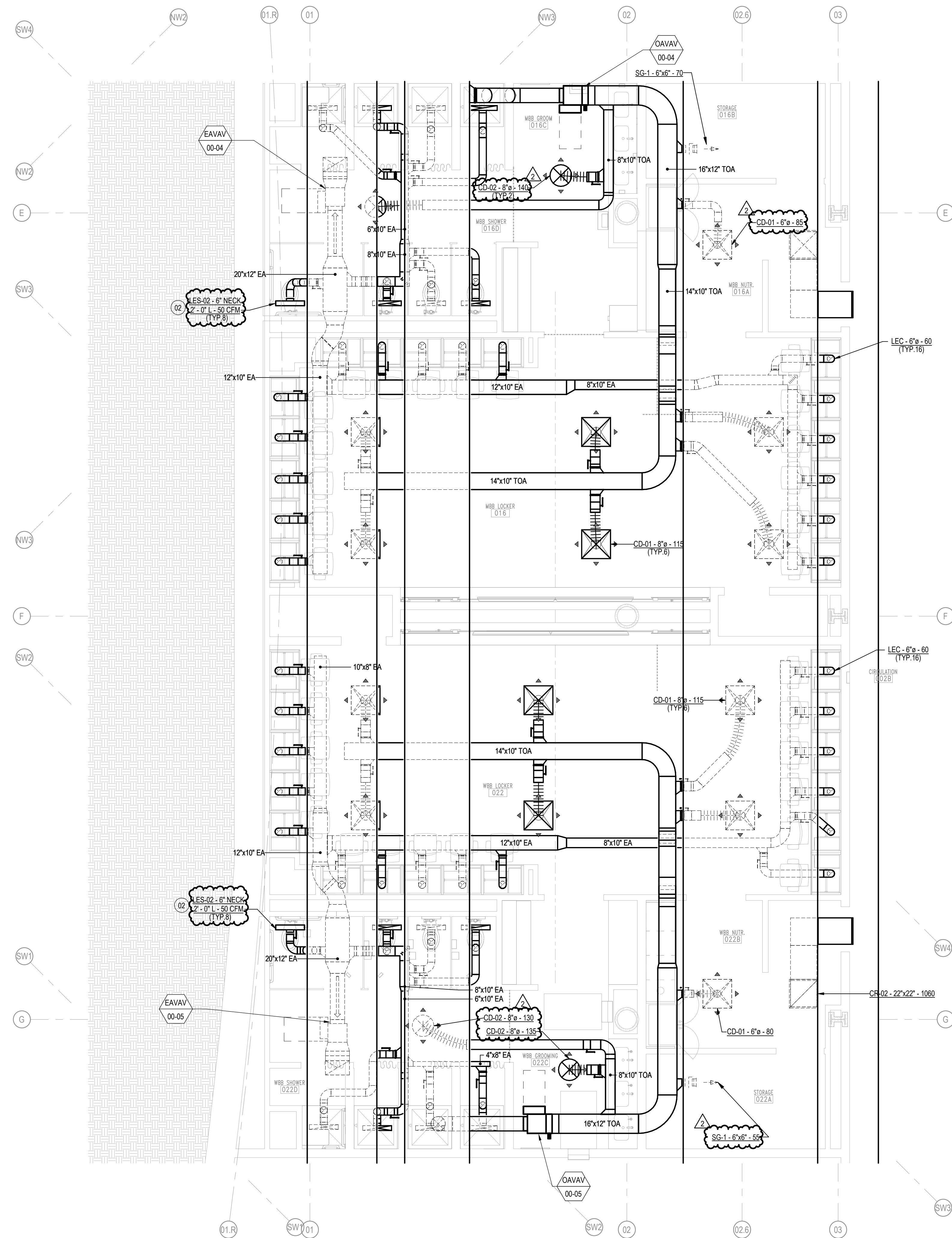
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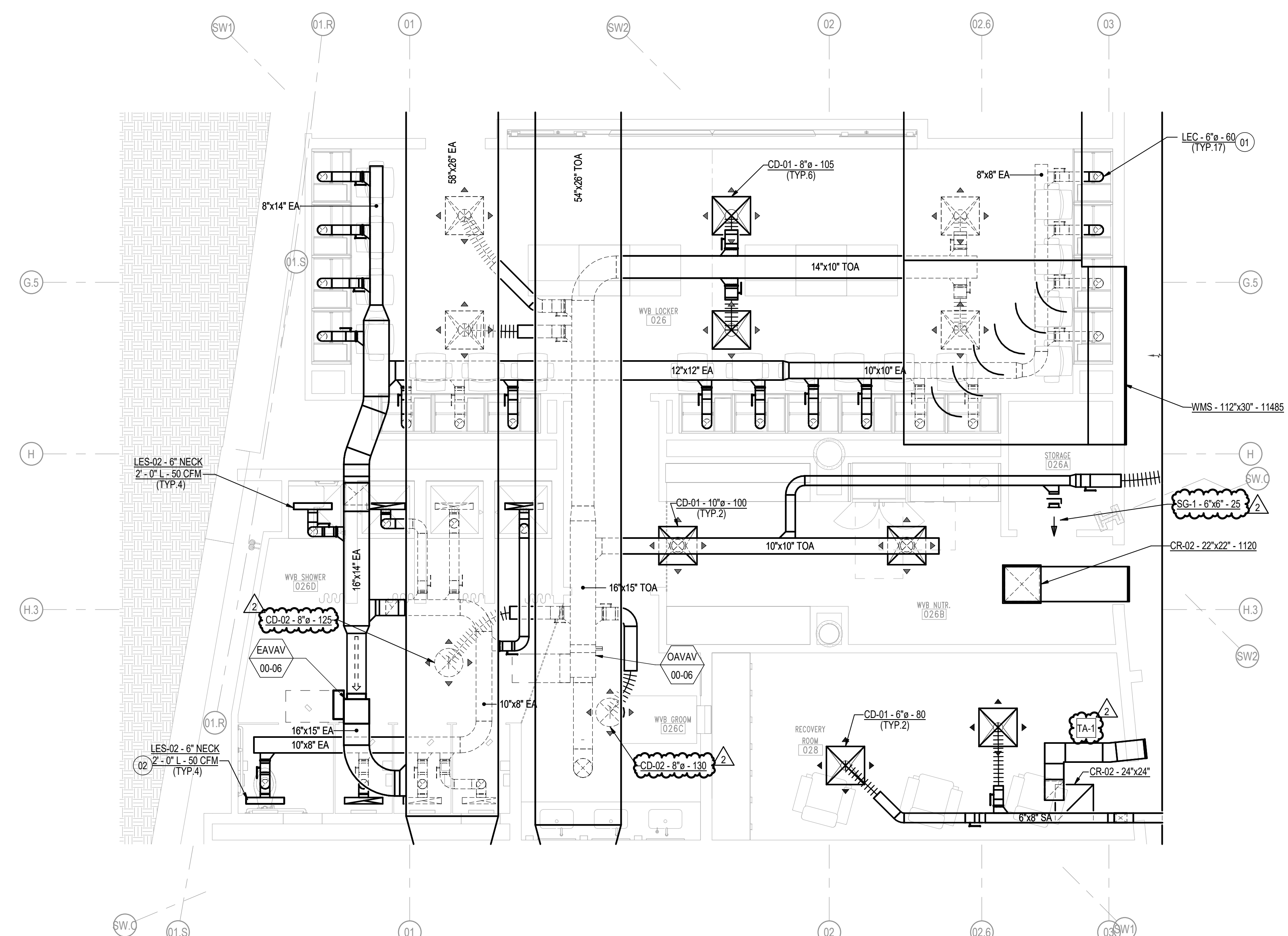
PROJECT NO.	23112.000
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SHEET TITLE
ENLARGED PLAN -
EVENT TEAM
LOCKERS

SHEET NUMBER
M-405



1 **M04 - EVENT LEVEL ENLARGED PLAN - BBALL LOCKERS**
1/4" = 1'-0"



2 M04 - EVENT LEVEL ENLARGED PLAN - WOMENS VOLLEYBALL LOCKER
1/4" = 1'-0"

- ## SHEET NOTES:**
- 01 CONNECT EXHAUST DUCTWORK TO LOCKER EXHAUST COLLAR (BY OTHERS).
- 02 ALL SPACE BETWEEN LINEAR SLOT DIFFUSERS SHALL BE IN-FILLED WITH BLANK SLOT SECTIONS TO PROVIDE A CONTINUOUS APPEARANCE.

IN128 - JAMES T. MORRIS ARENA

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SEAL | DATE 02/03/25



SHEET ISSUE		
1	DESIGN DEVELOPMENT	08/30/24
2	50% CONSTRUCTION DOCUMENTS	11/01/24
3	95% CONSTRUCTION DOCUMENTS	12/19/24
4	CONSTRUCTION DOCUMENTS	01/13/25
5	ADDENDUM 02	02/03/25



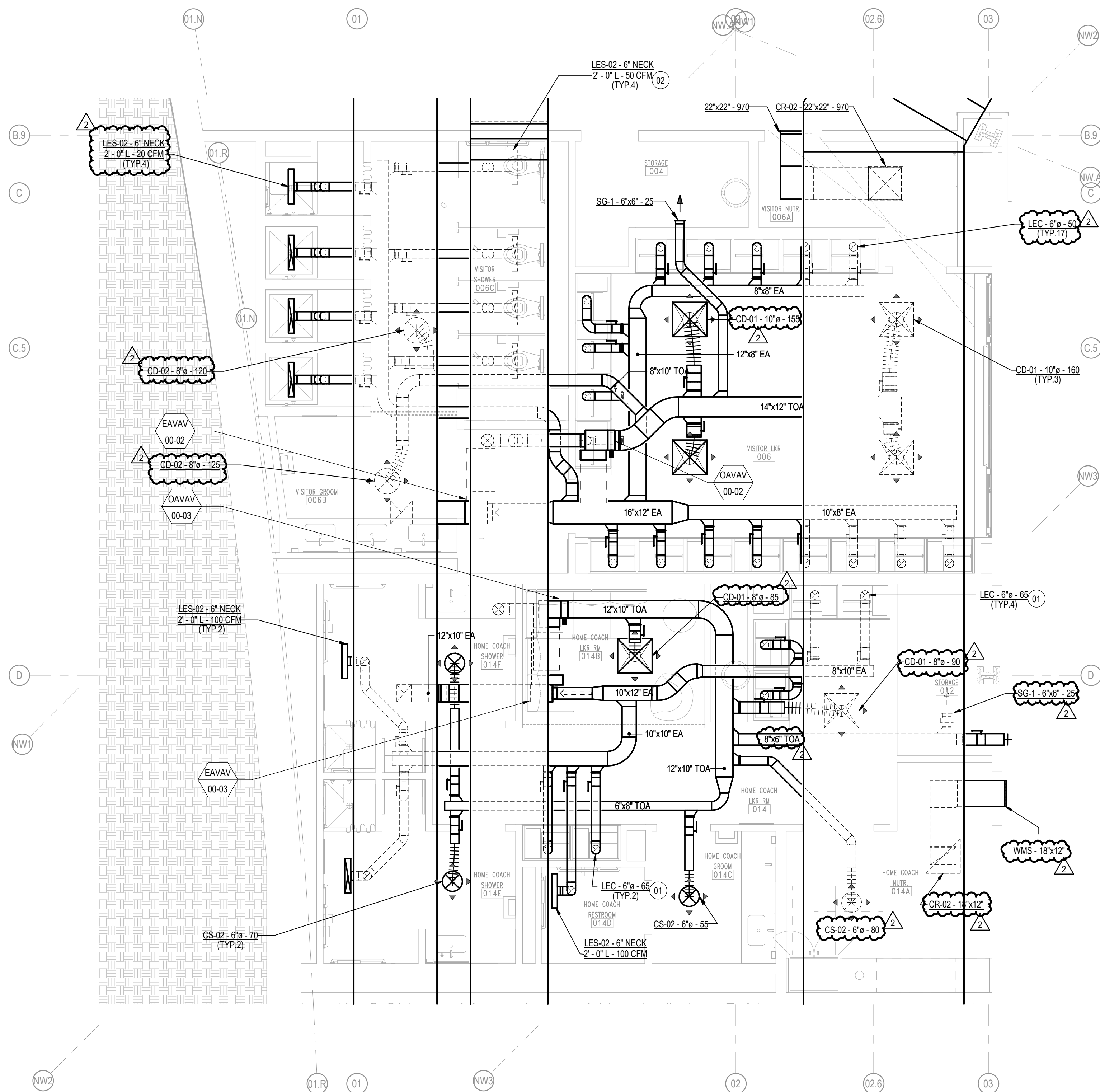
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PROJECT NO. 23112.000

SHEET TITLE
**ENLARGED PLAN -
EVENT
COACH/VISITOR
LOCKERS**

SHEET NUMBER

M-406



1 M04 - EVENT LEVEL ENLARGED PLAN - VISITOR/COACH LOCKER
1/4" = 1'-0"

Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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Civil Engineer
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 9025 RIVER ROAD
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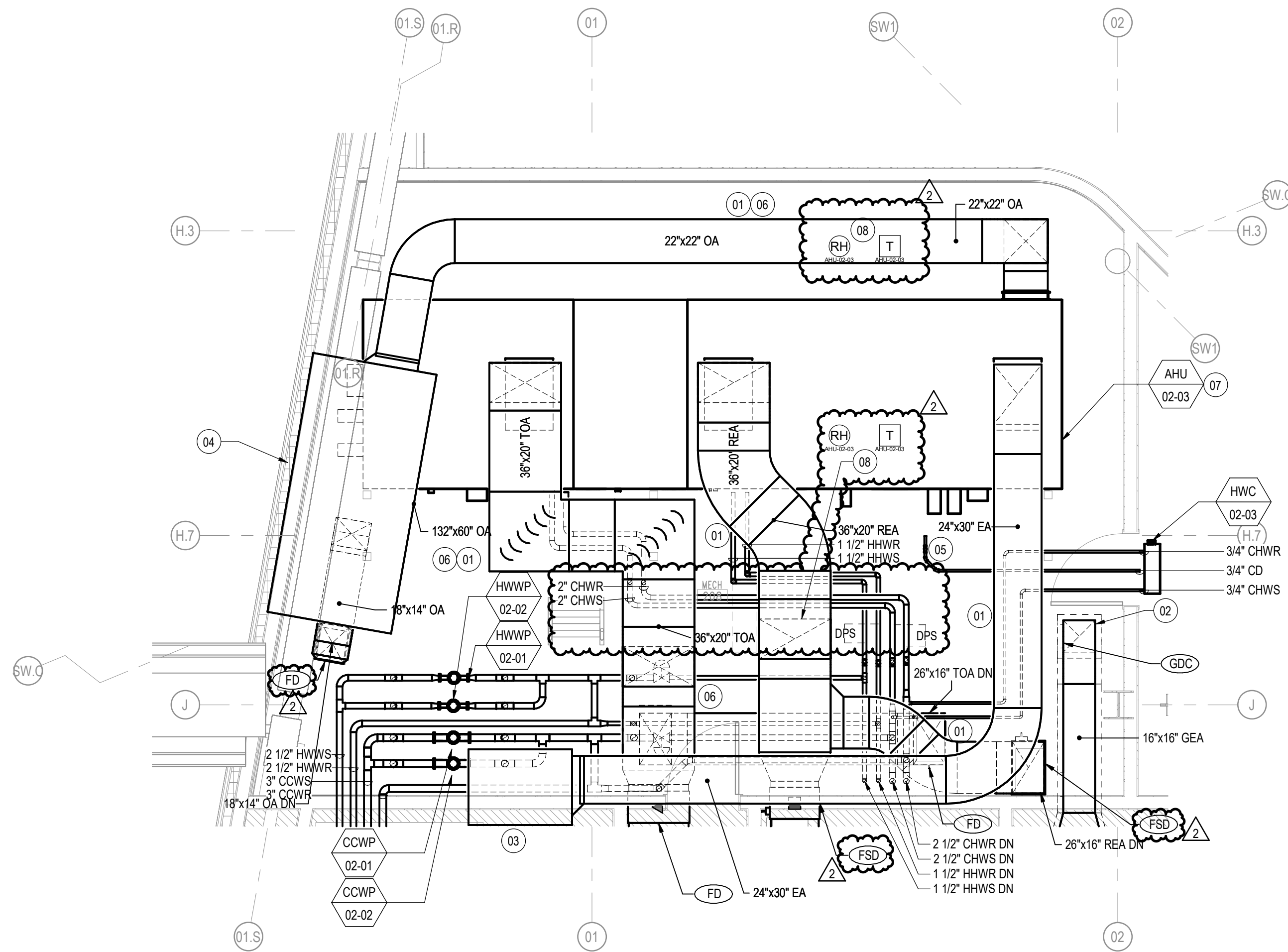
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 954-846-9600

Code Consultant
FORZA
 2502 WEST MECHANIC ST, SUITE C
 HARRISONVILLE, MO 64701
 816-806-3729

01 ALL DUCT INSIDE MECHANICAL ROOM SHALL BE
DOUBLE-WALL DUCTWORK WITH PERFORATED INNER
WALL AND 2" ELASTOMERIC INTERSTITIAL INSULATION.
02 GREASE DUCT SHALL BE PROVIDED AND INSTALLED AS
A PART OF THE EXHAUST SYSTEM. THE DUCT SHALL BE
OF A BUILT-OUT RATED DUCT ENCLOSURE. PRODUCT
SHALL BE PROVIDED AS CAPTIVEWARE DW-32 OR
APPROVED EQUAL.
03 EXHAUST AIR OUTLET LOUVER, SPECIFIED BY
ARCHITECT, IS SIZED FOR THE FULL EXHAUST AIRFLOW
OF AHJ-02-03. THIS EQUALS A TOTAL AIRFLOW OF
APPROXIMATELY 17,820 CFM. THE PROVIDED LOUVER
SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND
A PRESSURE DROP LESS THAN 0.1" W.C. FREE AREA
OF THE LOUVER IS 9.4 SQ FT BASED ON A FREE AREA
PERCENTAGE OF 50% AND AN OVERALL SIZE OF 52" X
52". REFER TO ARCHITECTURAL PLANS FOR LOUVER
SPECIFICATION.
04 ON INLET LOUVER, SPECIFIED BY ARCHITECT, IS SIZED
FOR THE FULL ECONOMIZER AIRFLOW OF AHJ-02-03
AND THE MAKEUP AIR TO THE KITCHEN HOOD ON THE
FLOOR BELOW. THIS EQUALS A TOTAL AIRFLOW OF
APPROXIMATELY 17,820 CFM. THE PROVIDED LOUVER
SHALL HAVE A CORE VELOCITY LESS THAN 750 FPM AND
A PRESSURE DROP LESS THAN 0.1" W.C. FREE
CONNECTION INTO BUILT-UP SHARED PLENUM. FREE
AREA OF THE LOUVER IS 60.5 SQ FT BASED ON A FREE
AREA PERCENTAGE OF 50% AND AN OVERALL SIZE OF
132" X 60". THIS RESULTS IN AN OVERALL FREE AREA OF
56.5 SQ FT. IT IS REDUCED TO APPROXIMATELY 15.0
SQ FT DUE TO THE WRAPPED BEAMS DIRECTLY BEHIND
THE FACE OF THE LOUVER. REFER TO ARCHITECTURAL
PLANS FOR LOUVER SPECIFICATION.
05 CONDENSATE SHALL SPILL INTO FLOOR SINK.
COORDINATE EXACT ROUTE TO AVOID INTERFERING
WITH ACCESS TO AHU.
06 ALL DUCT AND PIPING SHALL BE HUNG SUCH THAT 7"-0"
CLEARANCE IS MAINTAINED.
07 6" CONCRETE HOUSSKEEPING PAD BY OTHERS.
MECHANICAL CONTRACTOR TO INFORM GC IF TRAP
HEIGHT REQUIRES A TALLER PAD. PAD SHALL EXCEED
FOOTPRINT OF UNIT BY MIN. 3" IN ALL DIMENSIONS.

08 PROVIDE DUCT-MOUNTED AVERAGING TEMPERATURE AND HUMIDITY SENSORS. LOCATED SENSORS SUCH THAT THEIR REQUIREMENTS FOR STRAIGHT DUCT RUNS ARE OBSERVED. COORDINATE FINAL LOCATION WITH FIELD INSTALLATION.

3D VIEWS PROVIDED FOR CONVENIENCE. SOME MAY HAVE BEEN HIDDEN FOR CLARITY. REFER TO THE SYSTEM INFORMATION FOR MORE DETAILS.



1

$$1/4'' = 1'-0''$$

SEAL | DATE 02/03/25

SHEET ISSUE		
1	DESIGN DEVELOPMENT	08/30/24
2	50% CONSTRUCTION DOCUMENTS	11/01/24
3	95% CONSTRUCTION DOCUMENTS	12/19/24
4	CONSTRUCTION DOCUMENTS	01/13/25
5	ADDENDUM 01	01/27/25
6	ADDENDUM 02	02/03/25

RATIO

PROJECT NO. 23112.000

SHEET TITLE
ENLARGED PLAN -
MECHANICAL ROOM
208

SHEET NUMBER

M-407

AHU PLACEMENT AND ROOM CONFIGURATIONS ARE BASED OFF OF THE AHU DIAGRAMS SHOWN ON THIS SHEET. ANY ALTERNATE AHU SUBMITTED SHALL MATCH ALL OF THE PHYSICAL DIMENSIONS IDENTIFIED ON THE AHU DIAGRAMS SHOWN ON THIS SHEET. DUCT AND PIPING CONNECTIONS SHALL BE COORDINATED AND UPDATED AS REQUIRED TO MATCH FIELD INSTALLATION. COORDINATE WITH MANUFACTURER.

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
Indianapolis, IN 46202

IU Project NO. 20240127

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SEAL / DATE

CHRISTOPHER D. HANKS
Professional Engineer
No. 17414
State of Indiana

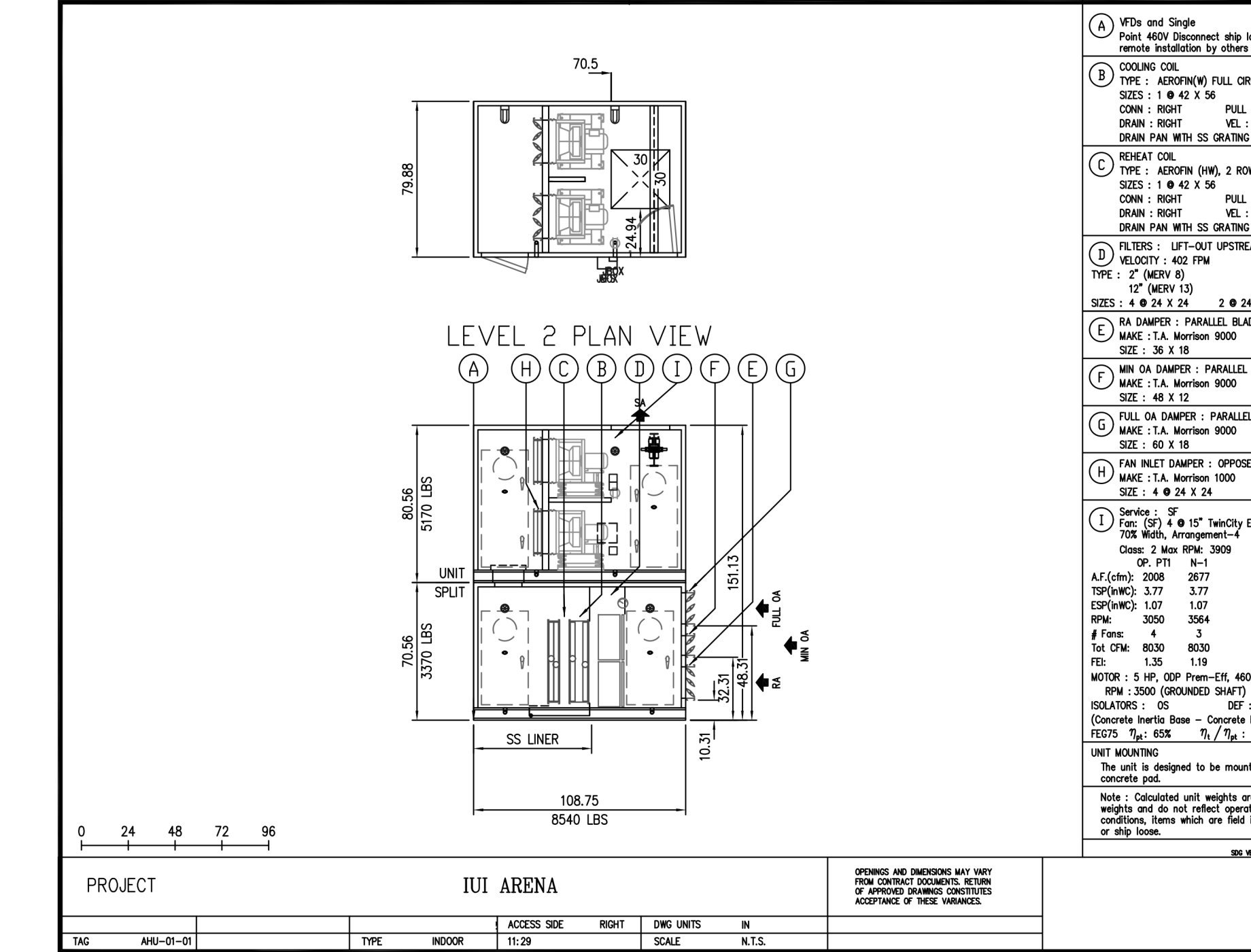
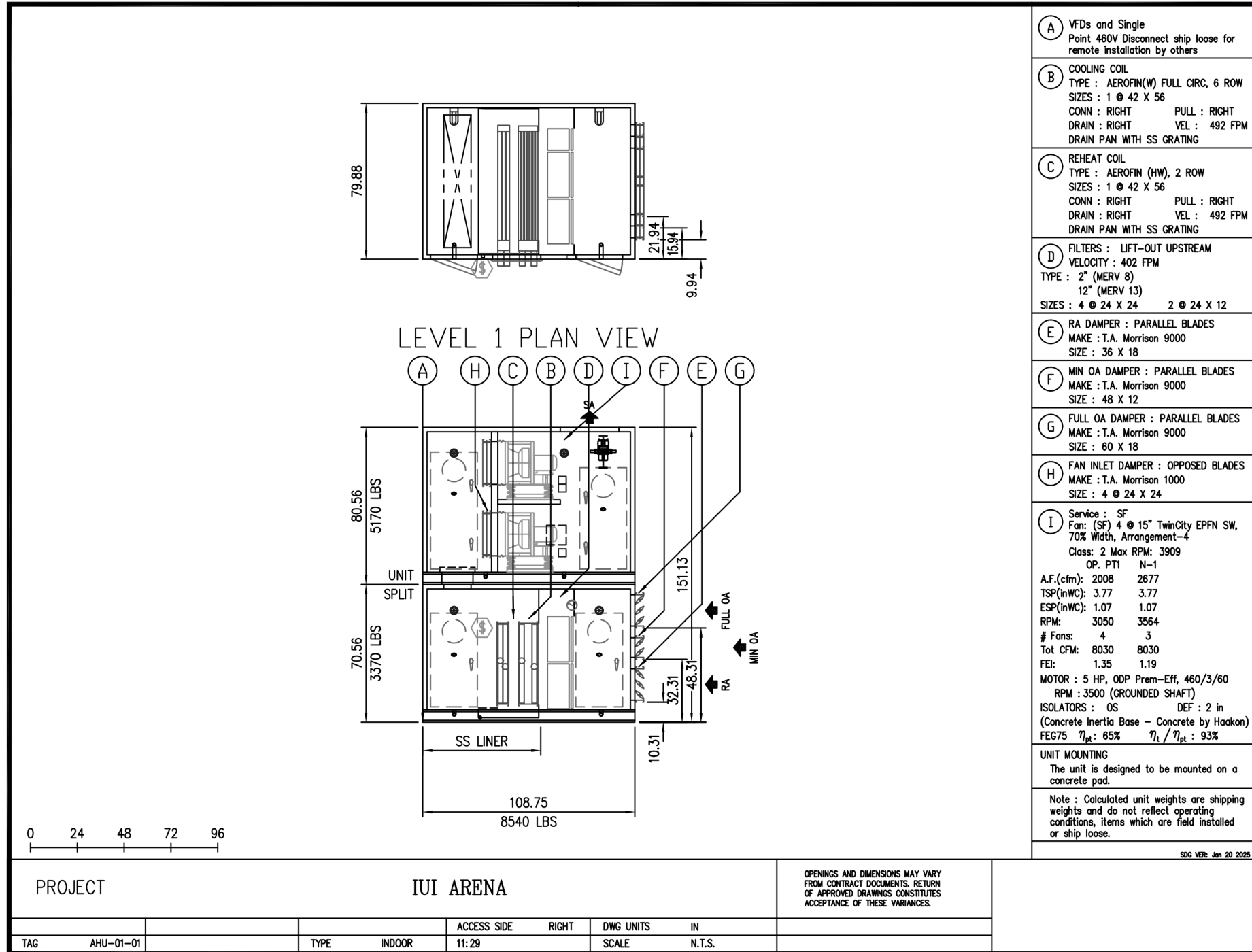
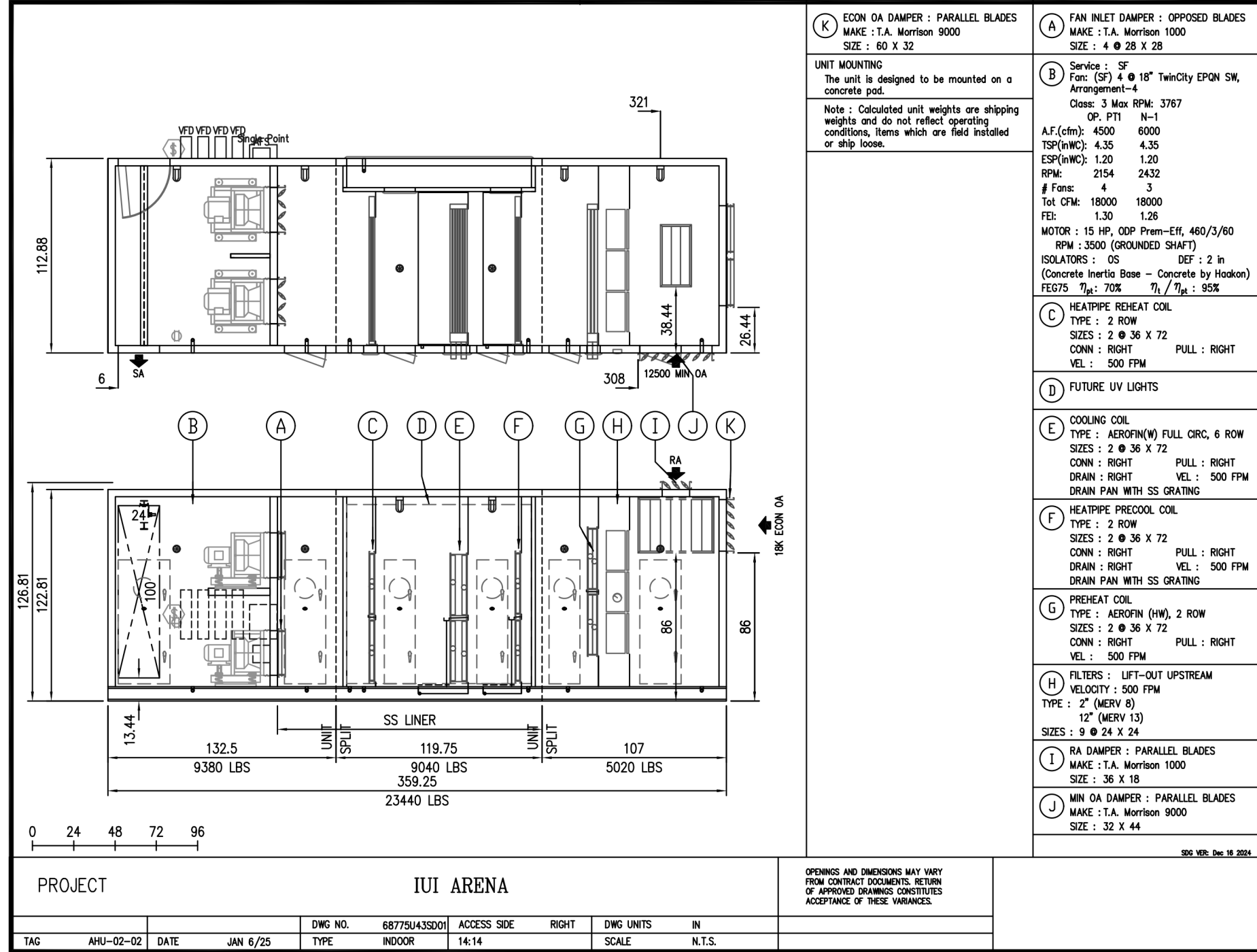
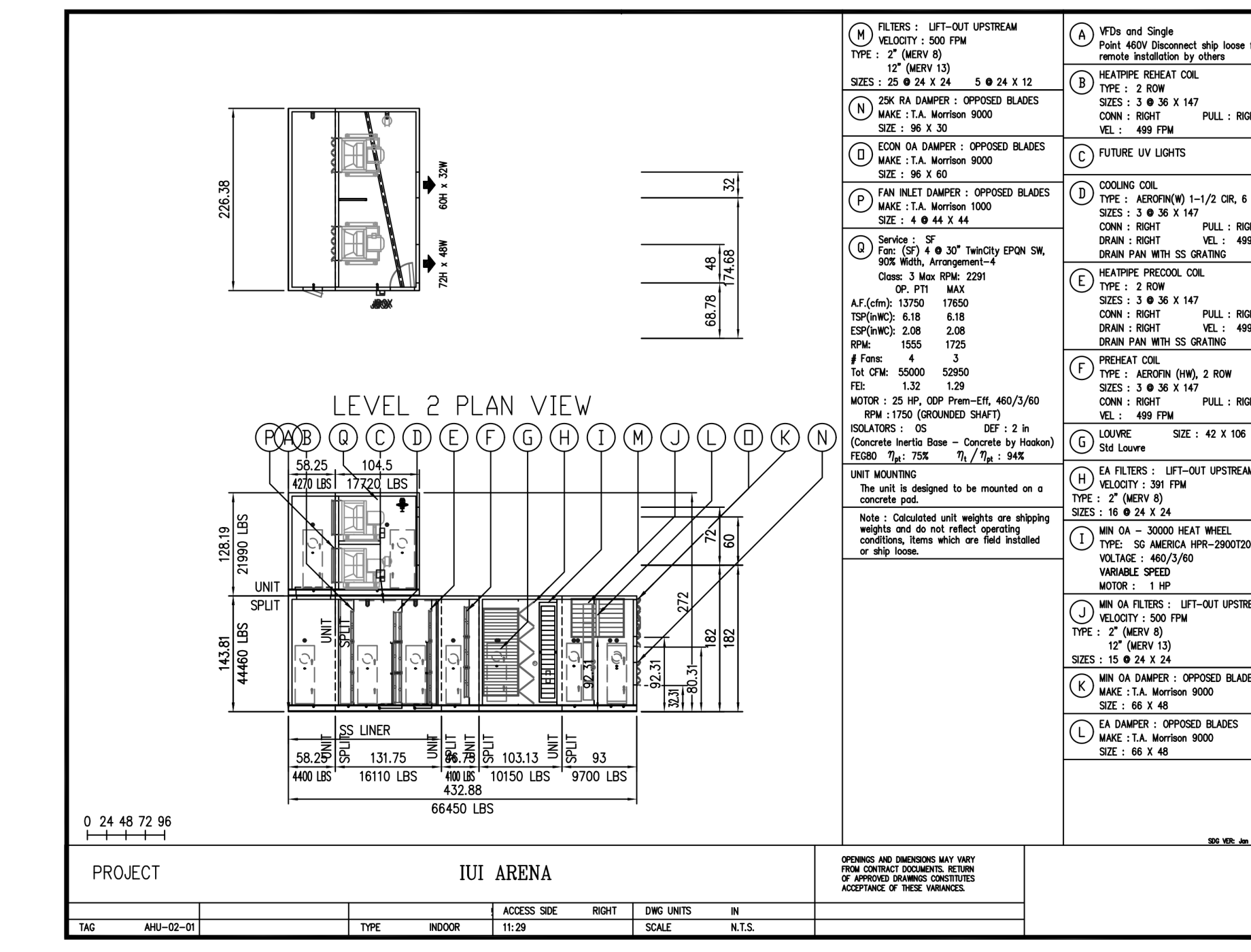
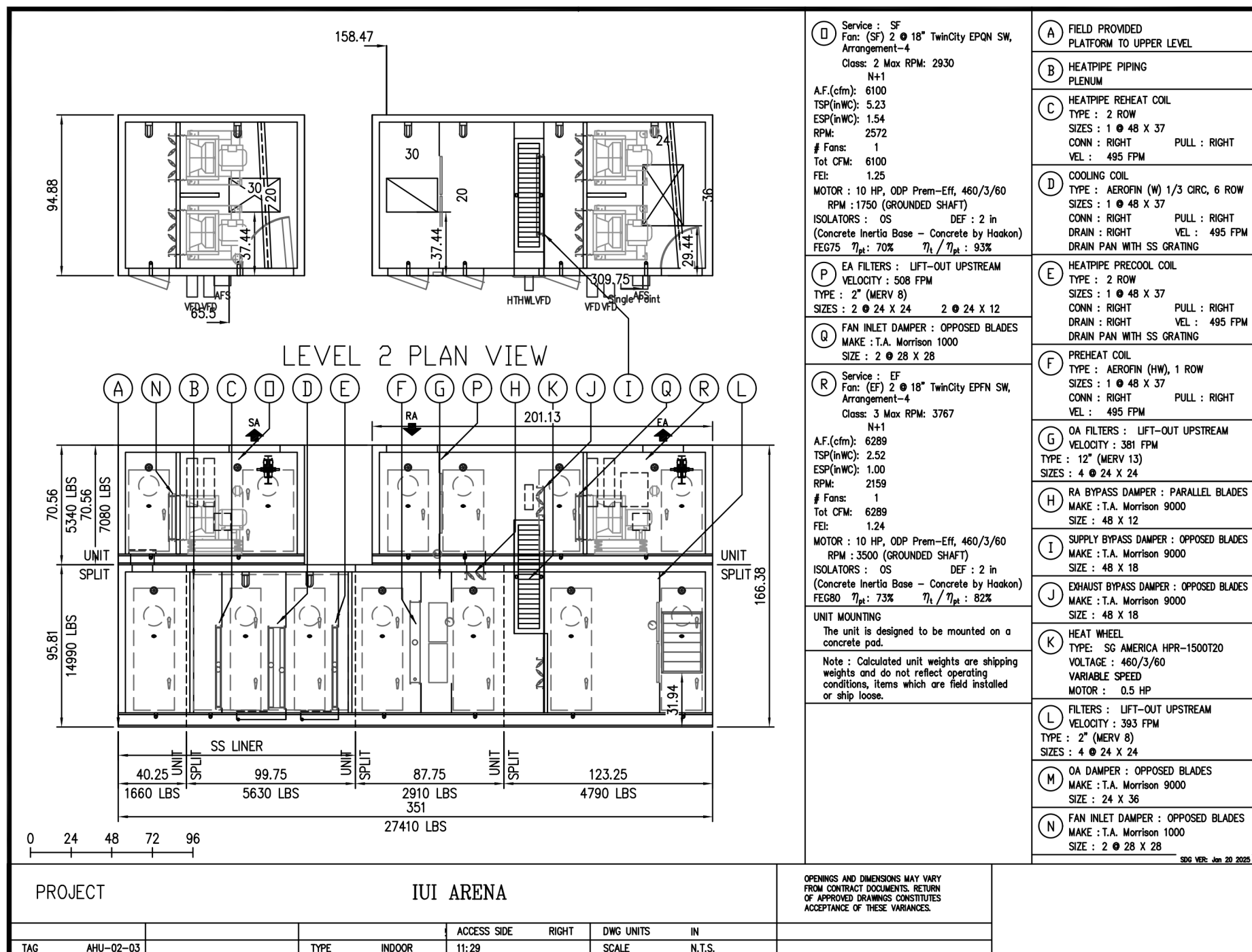
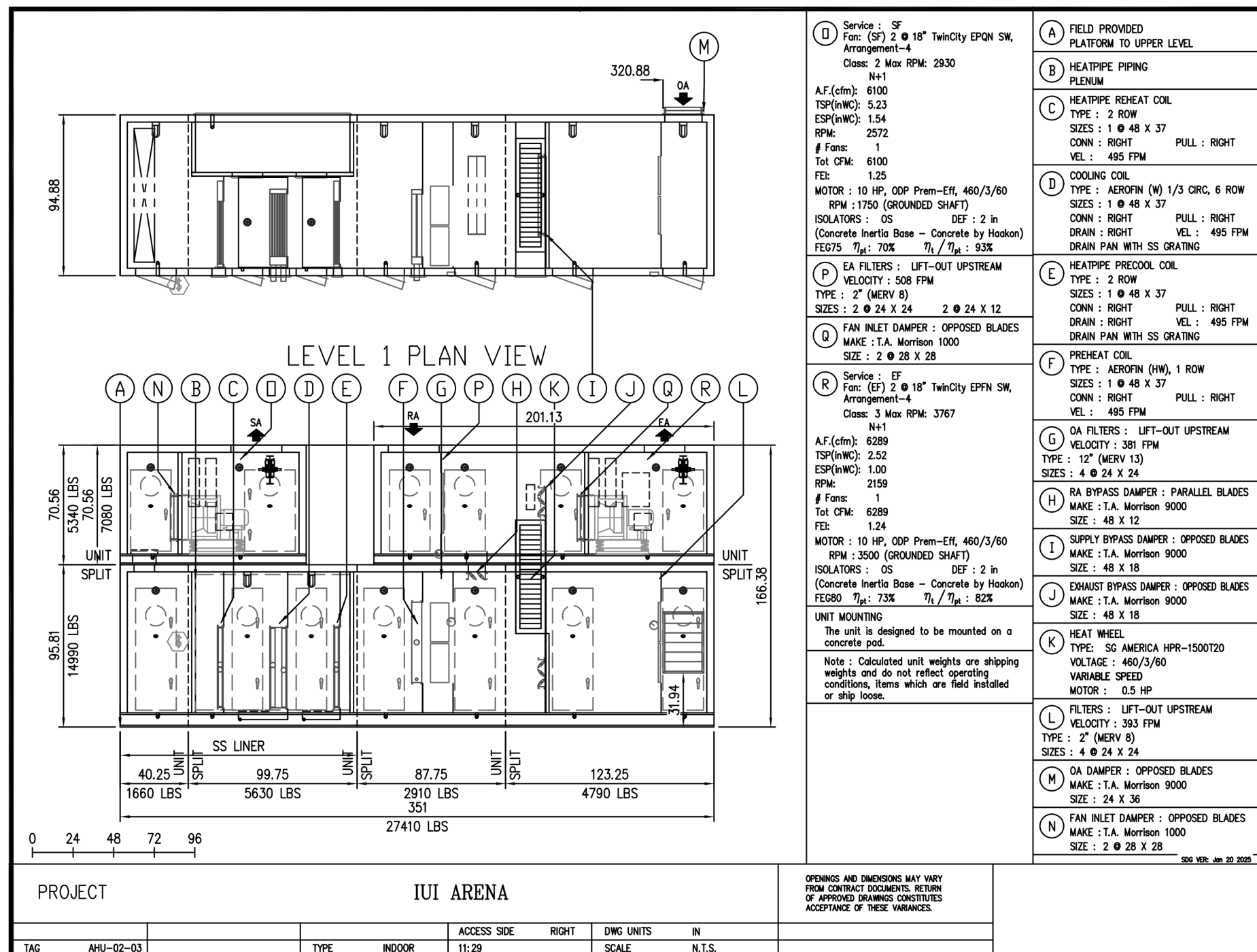
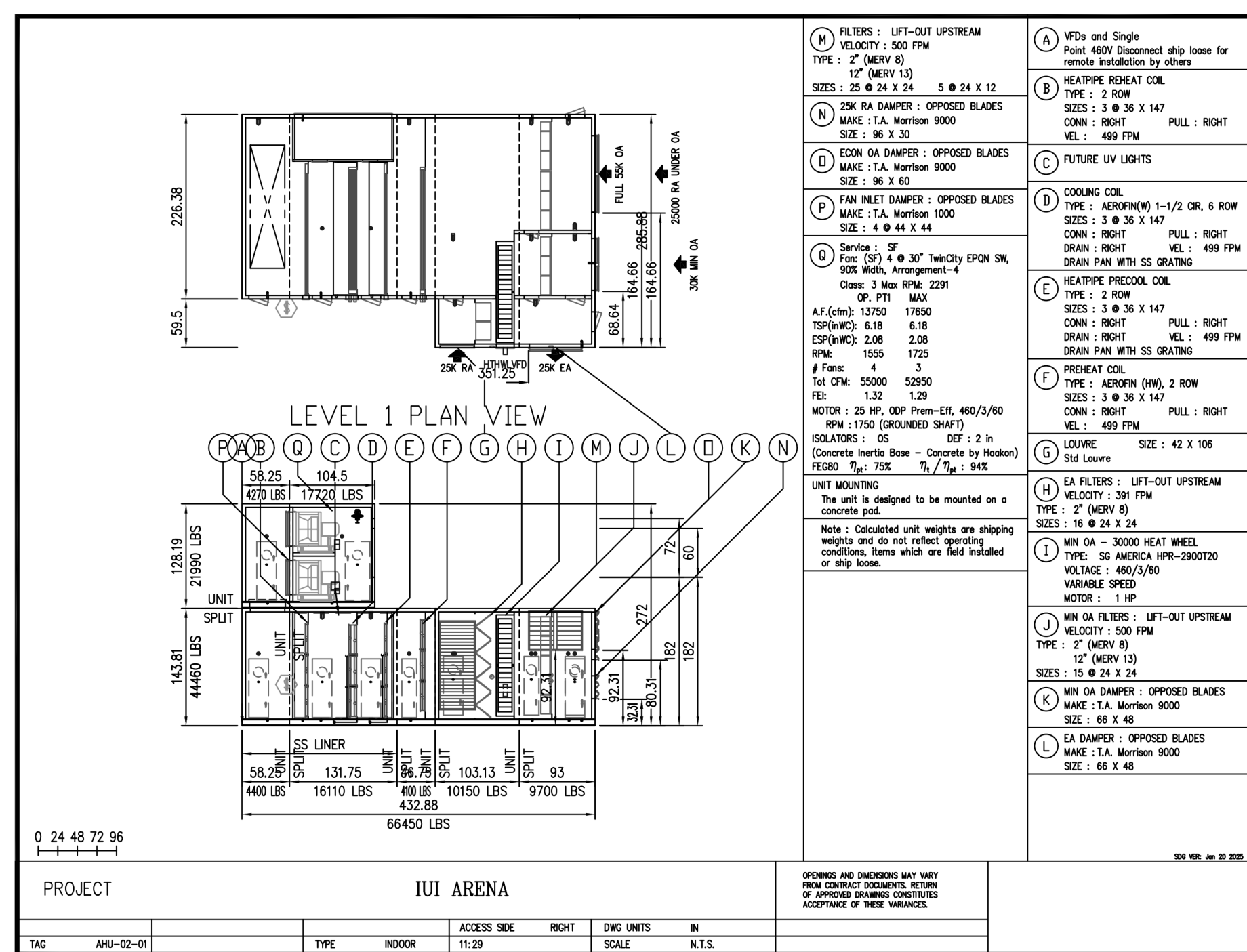
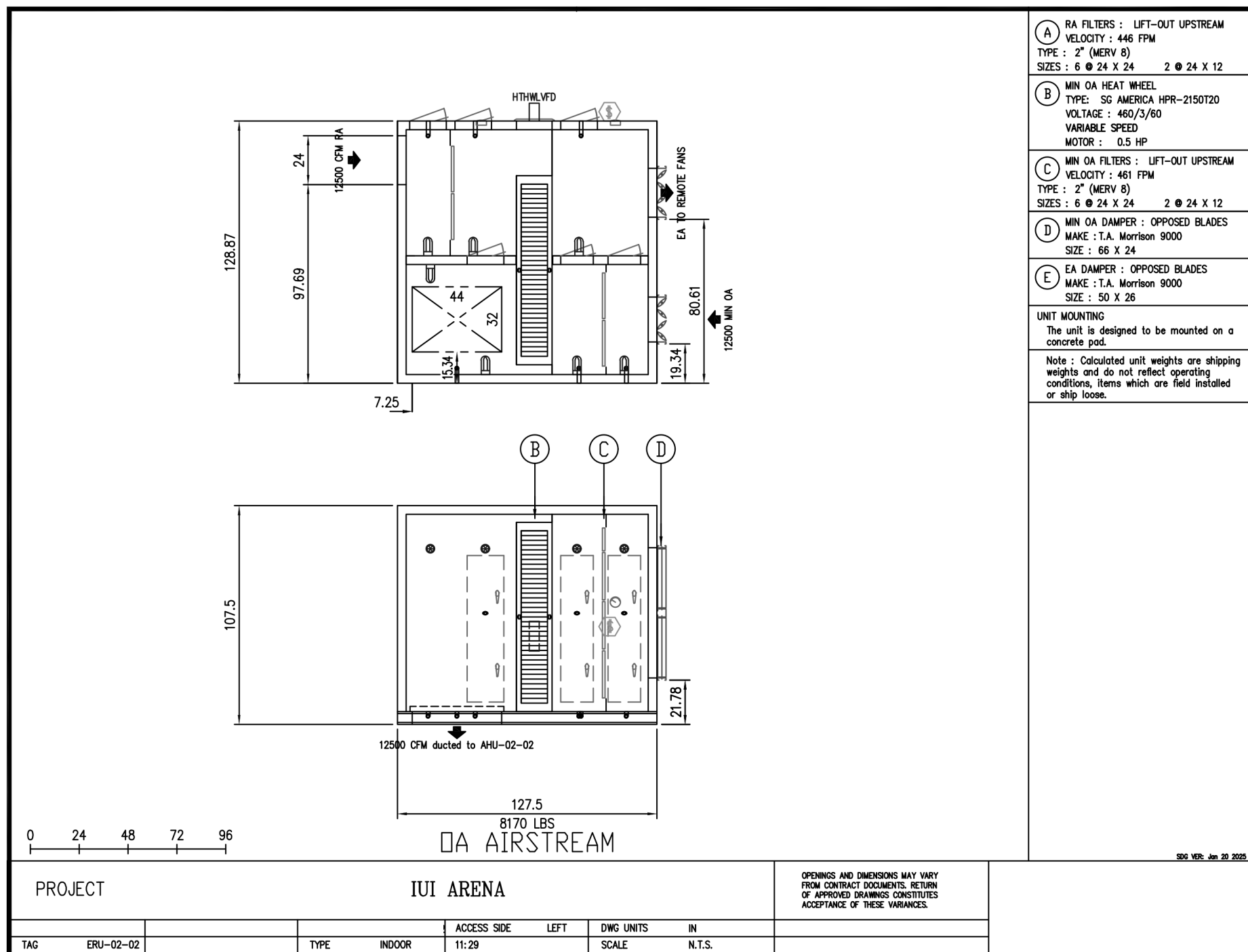
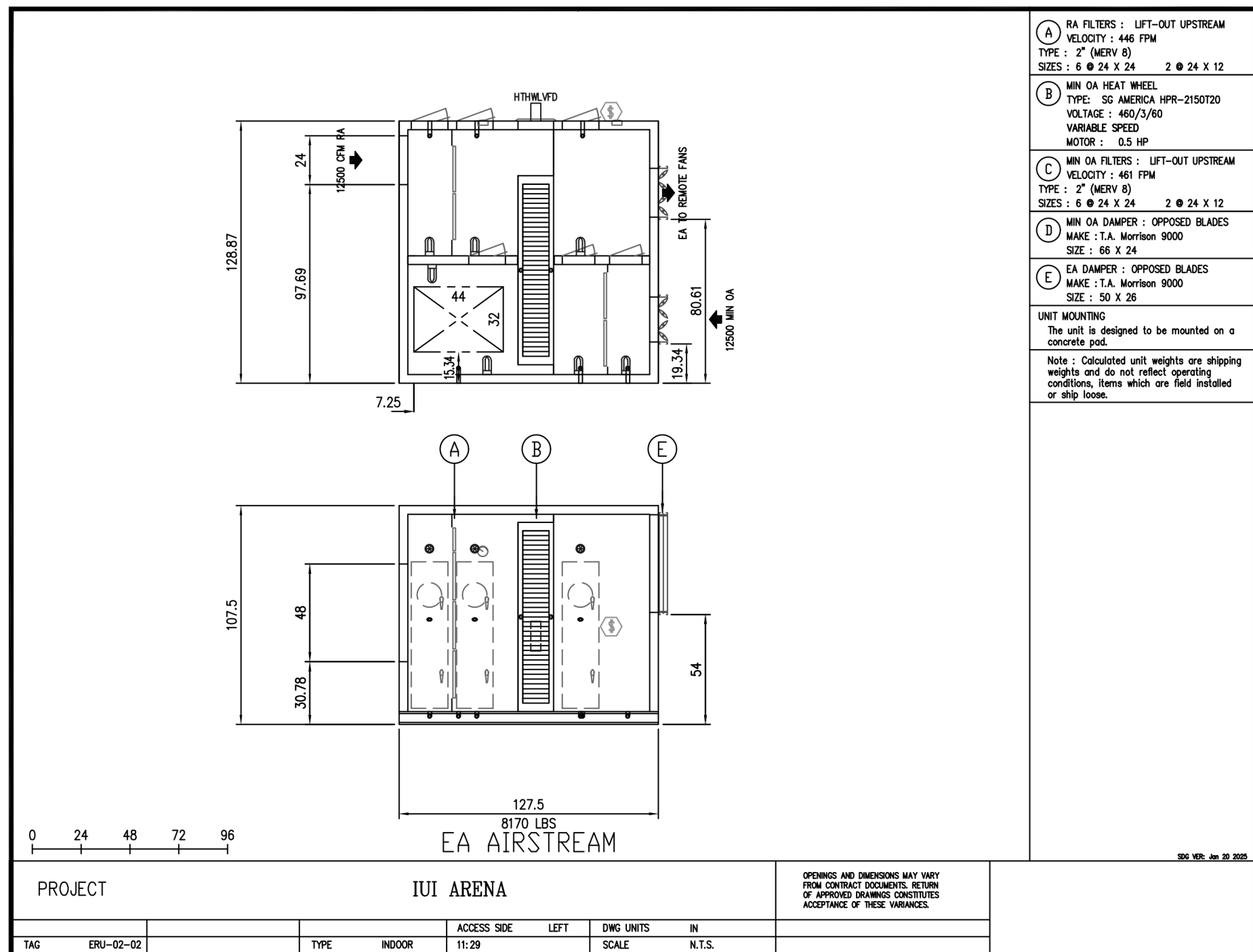
SHEET ISSUE		
1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

RATIO

PROJECT NO. 23112.000

SHEET TITLE
MECHANICAL
DETAILS - AHU

SHEET NUMBER
M-501



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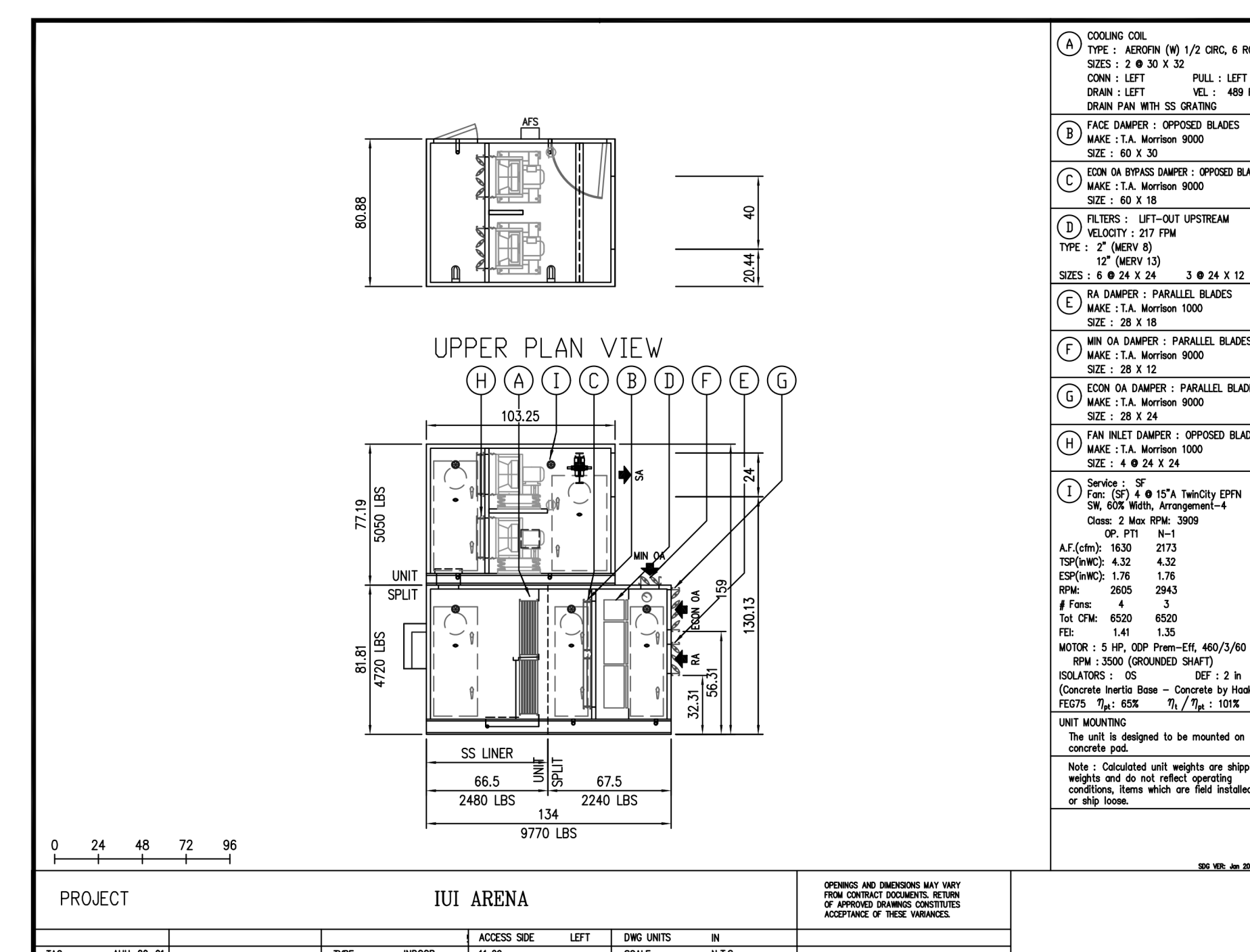
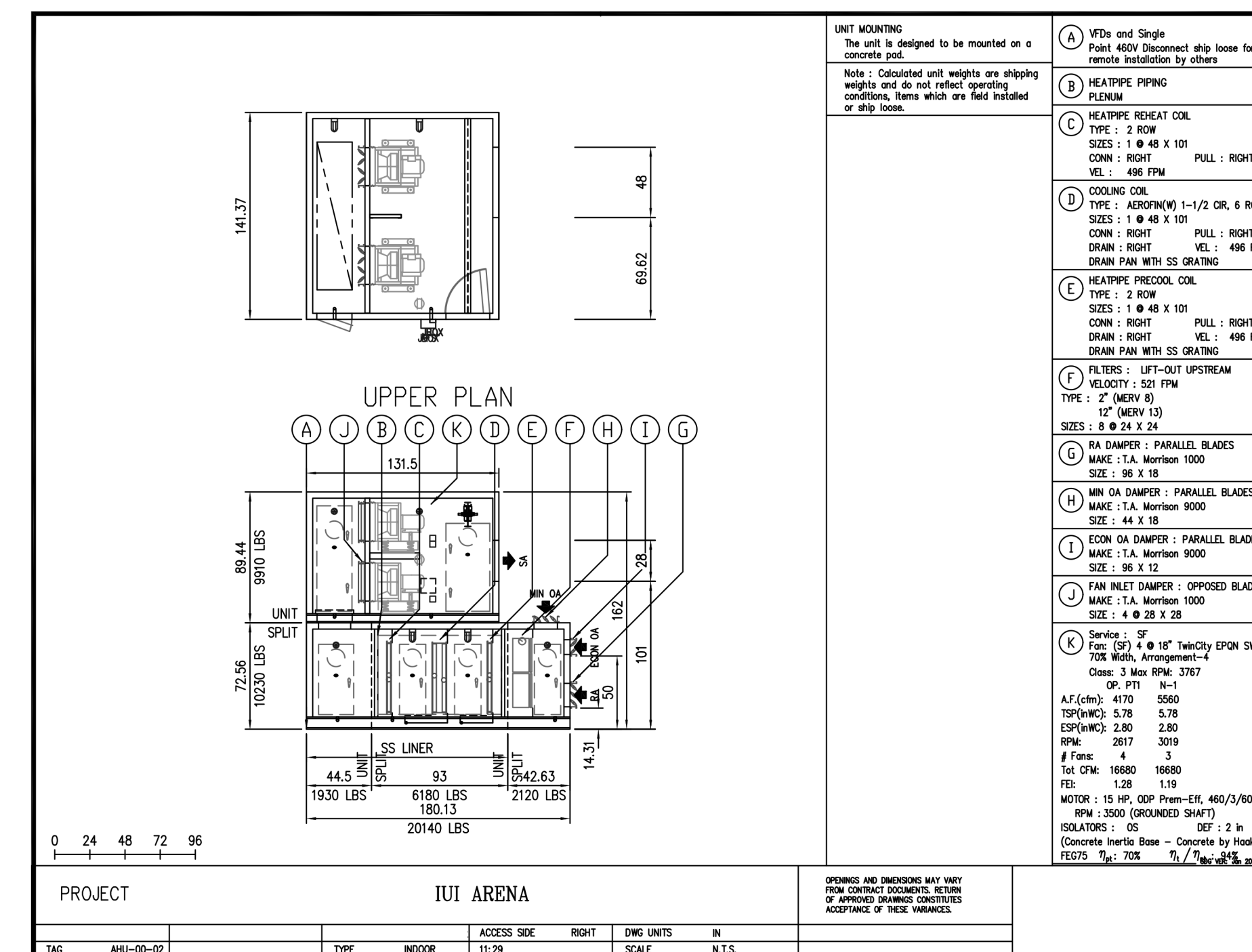
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[illegible]

RATIO

PROJECT NO. 23112.00

SHEET TITLE
MECHANICAL
DETAILS - AHU

SHEET NUMBER

M-502

MECHANICAL - AHU GENERAL INFORMATION SCHEDULE (COMPONENTS)																													
<div>NOTES:</div> <div>GENERAL:</div> <div>(1) PROVIDE WITH SEPARATE MIN OA AND MODULATING OA DAMPER SECTIONS.</div> <div>(2) PROVIDE WITH FULL ECONOMIZER SECTION IF APPLICABLE.</div> <div>(3) REFER TO SPECIFICATION FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT REQUIREMENTS (230548).</div> <div>(4) HEATING COIL TO BE SIZED TO MINIMIZE PRESSURE DROP AT PEAK COOLING AIR FLOW.</div> <div>(5) PROVIDE AIR BLENDER (TEMPS LESS THAN 35 DEG F ONLY).</div> <div>(6) PROVIDE INTAKE HOOD.</div> <div>(7) PROVIDE SMOKE DETECTOR ON SUPPLY DUCT OF ALL UNITS >=2,000CFM HARD WIRED TO SHUT DOWN UNIT.</div> <div>(8) FANS SHALL BE SELECTED SUCH THAT THE LOSS OF ONE FAN REMAINING FANS CAN STILL PROVIDE FULL AIR FLOW.</div> <div>(9) ALL DAMPERS CONTROLLING OR ISOLATING OUTSIDE AIR SHALL BE PROVIDED WITH SPRING RETURN FAIL CLOSED DAMPERS.</div> <div>(10) ALL VFDs AND POWER DISTRIBUTION PANELS SHIPPED LOOSE SHALL BE INSTALLED NEARBY BY EC WITH A MINIMUM CLEARANCE TO OBSTRUCTIONS OF 48".</div> <div>(11) PEAK AIRFLOW FOR THIS UNIT IS A COMBINATION OF HEATING AND COOLING AIRFLOWS. AIRFLOW ON PLANS SHOW PEAK AIRFLOW PER ZONE.</div>										<div>FILTERS:</div> <div>(1) FILTER PRESSURE DROP IS AT 100% AIR FLOW</div>																			
TYPE	EQUIPMENT NUMBER	MANUFACTURER	LOCATION	UNIT AIR FLOW (CFM)	OSA MIN OSA (CFM)	AHU EA FAN (Y/N)	AHU RA FAN (Y/N)	AHU SA FAN (Y/N)	AHU ECONOMIZER (Y/N)	CC COIL (Y/N)	RE-HEAT COIL (Y/N)	PREHEAT COIL Y(N)	ERW (Y/N)	PREFILTER (Y/N)	FINAL FILTER (Y/N)	WIDTH	HEIGHT	LENGTH	VOLTAGE	PHASE	FREQUENCY (HZ)	120 V CONTROL Y/N	SINGLE POINT OF CONN Y/N	EMERGENCY POWER	OPERATING WEIGHT (LB)	NOTES			
AHU	00-01	HAAKON	FAN ROOM 054	6520	2,300	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	84"	133"	159"	460	3	60	Yes	Yes	No	10910.00	1,2,3,4,5,6,7,8,9,11			
AHU	00-02	HAAKON	FAN ROOM 068	16680	5,550	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	134"	160"	216"	460	3	60	Yes	No	Yes	22320.00	2,3,4,5,7,8,9,10			
AHU	00-03	HAAKON	FAN ROOM 068	23905	23,905	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	137"	168"	430"	460	3	60	Yes	Yes	No	35750.00	2,3,4,5,7,8,9			
AHU	01-01	HAAKON	FAN ROOM 115D	8030	3,620	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	83"	210"	118"	460	3	60	Yes	No	No	9020.00	2,3,4,5,7,8,9,10			
AHU	02-01	HAAKON	FAN ROOM 209	55000	30,000	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	286"	174"	441"	460	3	60	Yes	No	No	68320.00	2,3,4,5,7,8,9,10			
AHU	02-02	HAAKON	FAN ROOM 210	18000	12,500	No	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	113"	126"	367"	460	3	60	Yes	Yes	No	24490.00	2,3,4,5,7,8,9			
AHU	02-03	HAAKON	MECH 208	6100	6,100	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	71"	154"	317"	460	3	60	Yes	Yes	No	27480.00	2,3,4,5,7,8,9			

MECHANICAL - AHU SCHEDULE (ENERGY RECOVERY WHEEL)																									
TYPE	EQUIPMENT NUMBER	ENERGY RECOVERY WHEEL																							
		SUMMER										WINTER										ERW CFM PER WHEEL (CFM)	ERW NO OF WHEELS	ERW MOTOR HP (W)	ERW NO OF MOTOR
		ERW COOLING LOAD SUMMER (BTU/H)	ERW EA DB SUMMER (°F)	ERW EA WB SUMMER (°F)	ERW OA DB SUMMER (°F)	ERW OA WB SUMMER (°F)	ERW RA DB SUMMER (°F)	ERW RA WB SUMMER (°F)	ERW SA DB SUMMER (°F)	ERW SA WB SUMMER (°F)	ERW PRESS DROP SUMMER (IN-WG)	ERW HEATING LOAD WINTER (BTU/H)	ERW EA DB WINTER (°F)	ERW EA WB WINTER (°F)	ERW OA DB WINTER (°F)	ERW OA WB WINTER (°F)	ERW RA DB WINTER (°F)	ERW RA WB WINTER (°F)	ERW SA DB WINTER (°F)	ERW SA WB WINTER (°F)	ERW PRESS DROP WINTER (IN-WG)				
AHU	00-03	545,000	90.7	73.9	95.0	76.0	78.0	68.0	81.8	70.1	0.9	2,345,000	10.3	16.7	-10.2	-10.7	68.0	60.0	49.5	47.9	0.9	23,905	1	1.0	1
AHU	02-01	593,000	91.7	74.4	95.0	76.0	78.0	68.0	83.6	70.9	0.8	2,602,000	5.8	11.7	-10.2	-10.7	68.0	60.0	41.8	42.4	0.8	30,000	1	1.0	1
AHU	02-03	146,000	91.2	74.2	95.0	76.0	78.0	68.0	81.3	69.8	0.7	624,000	8.2	14.4	-10.2	-10.7	68.0	60.0	52.1	49.6	0.7	6,120	1	0.5	1
ERU	02-02	293,000	91.1	74.1	95.0	76.0	78.0	68.0	81.5	69.9	0.7	1,258,000	8.5	14.8	-10.2	-10.7	68.0	60.0	51.3	49.1	0.7	12,500	1	0.5	1

MECHANICAL - AHU SCHEDULE (FILTER - ALL)												
TYPE	EQUIPMENT NUMBER	LEVEL	FILTERS									
			MERV RATING	CLEAN APD (IN-WG)	DIRTY APD (IN-WG)	PREFILTER DEPTH	MERV RATING	CLEAN APD (IN-WG)	DIRTY APD (IN-WG)	FILTER DEPTH		
AHU	00-01	00-EVENT LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		
AHU	00-02	00-EVENT LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		
AHU	00-03	00-EVENT LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		
AHU	01-01	01-CONCOURSE LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		
AHU	02-01	02-UPPER LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		
AHU	02-02	02-UPPER LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		
AHU	02-03	02-UPPER LEVEL	8	0.2	0.6	2"	13	0.3	0.9	12"		

MECHANICAL - AHU SCHEDULE (COILS - COOLING)														
TYPE	EQUIPMENT NUMBER	COOLING COIL						COOLING COIL						
		CC DESIGN AIRFLOW (CFM)	CC TOTAL CAPACITY (BTU/H)	CC EAT DB (°F)	CC EAT WB(°F)	CC LAT DB(°F)	CC LAT WB(°F)	CC FPI	CC NO ROWS	APD [IN WG]	CC EWT(°F)	CC LWT(°F)	CC (GPM)	CC WPD (FT.WC)
AHU	00-01	6,520	320,200	82.9	70.3	55.5	55.0	10	6	0.61	42.0	55.0	49.2	4.5
AHU	00-02	16,680	722,100	73.4	68.7	55.2	55.0	10	6	0.64	42.0	55.0	111.0	4.7
AHU	00-03	23,905	954,700	73.4	67.7	55.2	55.0	10	6	0.64	42.0	55.0	146.8	3.3
AHU	01-01	8,030	425,000	84.9	71.3	55.6	55.0	10	6	0.62	42.0	55.0	65.4	4.0
AHU	02-01	55,000	2,238,100	76.1	68.0	55.3	55.0	10	6	0.64	42.0	55.0	344.2	12.2
AHU	02-02	18,000	762,000	76.3	68.3	55.4	55.0	10	6	0.65	42.0	55.0	115.7	4.5
AHU	02-03	6,120	248,400	75.5	68.1	55.2	55.0	10	6	0.63	42.0	55.0	35.2	11.0

MECHANICAL - AHU SCHEDULE (COILS - HEATING)											
TYPE	EQUIPMENT NUMBER	HEATING COIL									
		HC DESIGN AIRFLOW (CFM)	HC CAPACITY (BTU/H)	HC EAT DB (°F)	HC LAT DB (°F)	HC NO OF ROWS	HC FPI	HC APD (IN-WG)	HC EWT (°F)	HC LWT (°F)	HC (GPM)
AHU	00-03	23,905	530,000	49.5	70.0	2	8	0.22	100.0	27.2	0.90
AHU	01-01	8,030	92,000	64.4	75.0	2	6	0.18	140.0	100.0	4.7
AHU	02-01	55,000	968,300	53.7	70.0	2	8	0.22	140.0	100.0	49.4
AHU	02-02	18,000	264,000	56.4	70.0	2	6	0.18	140.0	100.0	13.5
AHU	02-03	6,100	51,600	52.1	60.0	1	8	0.10	140.0	133.0	15.0

MECHANICAL - AHU SCHEDULE (FAN - EXHAUST)													
TYPE	EQUIPMENT NUMBER	AHU FAN EA NO OF FANS/MOTORS	EXHAUST FANS										
			AHU FAN EA CFM PER FAN (CFM)	AHU FAN EA TYPE	AHU FAN EA ESP (IN-WG)	AHU FAN EA TSP (IN-WG)	AHU FAN EA FAN RPM	AHU FAN EA MIN WHEEL DIA	AHU FAN EA EFF	AHU FAN EA MOTOR HP	AHU FAN EA BHP (HP)	AHU FAN EA FLA (A)	AHU FAN EA VFD Y/N
AHU	02-03	2	6,309	CENTRIFUGAL	1.0	2.5	2159	18	0.61	10	4.1	12.0	Yes

MECHANICAL - AHU SCHEDULE (FAN - SUPPLY)														
TYPE	EQUIPMENT NUMBER	AHU FAN SA NO OF FANS/MOTORS	AHU FAN SA TYPE	AHU FAN SA CFM PER FAN (CFM)	AHU FAN SA ESP (IN-WG)	AHU FAN SA TSP (IN-WG)	AHU FAN SA FAN RPM	AHU FAN SA MIN WHEEL DIA	AHU FAN SA EFF	AHU FAN SA MOTOR HP	AHU FAN SA BHP (HP)	AHU FAN SA FLA (A)	AHU FAN SA VFD Y/N	AHU FAN SA DRIVE (DIRECT/BELT)
AHU	00-01	4	CENTRIFUGAL	1630	1.8	4.3	2605	15	0.67	5	1.7	6	Yes	DIRECT
AHU	00-02	4	CENTRIFUGAL	4170	2.8	5.8	2617	18	0.67	15	5.7	17.5	Yes	DIRECT
AHU	00-03	4	CENTRIFUGAL	5976	2.7	6.6	2727	18	0.67	20	9.2	23.5	Yes	DIRECT
AHU	01-01	4	CENTRIFUGAL	2008	1.1	3.8	3050	15	0.61	5	1.9	6	Yes	DIRECT
AHU	02-01	4	CENTRIFUGAL	13750	2.1	6.2	1555	30	0.71	25	18.7	30	Yes	DIRECT
DS	02-02	4	CENTRIFUGAL	4500	1.7	4.9	2240	18	0.67	15	5.1	17.5	Yes	DIRECT
AHU	02-03	2	CENTRIFUGAL	6120	1.5	5.2	2159	18	0.66	10	7.8	12.5	Yes	DIRECT

MECHANICAL - SOUND ATTENUATOR SCHEDULE																						
NOTES: 1. IDEAL PRESSURE DROP AS DETERMINED PER ASTM E477-20 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY. 2. SILENCER INCLUDES ADJACENT ELBOW.																						
MARK		DYNAMIC INSERTION LOSS -dB																			NOTES	
ID	#	MFR.	MODEL	TYPE	LOCATION	SERVICE	SIZE WxH (IN)	LENGTH (IN)	AIRFLOW (CFM)	AIR FLOW VELOCITY (FPM)	STATIC PN (IN WC)	OCTAVE BAND (HZ)										
												63	125	250	500	1000	2000	4000	8000			
DS	00-01	VIBRO-ACOUSTICS	RD-UHV-F7	RECTANGULAR DISSIPATIVE	CIRCULATION 002F	AHU-00-02 SUPPLY	18x18	96	3802	1690	0.11	4	6	19	37	42	26	16	12	1		
DS	00-02	VIBRO-ACOUSTICS	RD-HV-F8	RECTANGULAR DISSIPATIVE	CIRCULATION 002F	AHU-00-02 SUPPLY	28x20	60	6571	1690	0.19	4	5	15	27	32	18	14	11	1		
DS	00-03	VIBRO-ACOUSTICS	RD-HV-F8	RECTANGULAR DISSIPATIVE	LOOKER 052	AHU-00-01 SUPPLY	16x12	96	2045	1534	0.24	7	9	26	46	50	28	20	16	1		
DS	00-04	VIBRO-ACOUSTICS	RD-HV-F8	RECTANGULAR DISSIPATIVE	SPORT STORAGE 055	AHU-00-01 SUPPLY	40x14	108	5686	1462	0.16	5	13	26	43	46	26	17	11	1		
DS	00-05	VIBRO-ACOUSTICS	RD-UHV-F7	RECTANGULAR DISSIPATIVE	CIRCULATION 002F	AHU-00-01 RETURN	50x16	60	8100	1458	0.06	5	4	11	22	29	24	20	19	1		
DS	00-06	KINETICS NOISE	KCFL	LOUVER	CIRCULATION 002F	FAN ROOM 068	96x72	8"	11485	239	0.04	12	12	14	17	21	21	19	16	1		
DS	00-07	VIBRO-ACOUSTICS	RD-HV-F8	RECTANGULAR DISSIPATIVE	FAN ROOM 209	AHU-02-01 SUPPLY	28x20	96	6571	1690	0.25	7	9	22	41	50	37	25	20	1		
DS	00-08	VIBRO-ACOUSTICS	RED-MHY-32271	RECTANGULAR ELBOW DISSIPATIVE	FAN ROOM 209	AHU-02-01 SUPPLY	48x72	96	20000	833	0.18	9	17	15	25	28	27	22	16	1.2		
DS	00-23	VIBRO-ACOUSTICS	RD-MLY-F6	RECTANGULAR DISSIPATIVE	FAN ROOM 209	AHU-02-01 RETURN	40x36	36	7700	495	0.04	5	7	13	21	27	21	13	10	1		
DS	00-24	VIBRO-ACOUSTICS	RD-MLY-F6	RECTANGULAR DISSIPATIVE	FAN ROOM 209	AHU-02-01 RETURN	40x36	36	4950	524	0.05	5	7	13	21	27	21	13	10	1		
DS	00-25	VIBRO-ACOUSTICS	RD-MLY-F3	RECTANGULAR DISSIPATIVE	FAN ROOM 209	AHU-02-01 RETURN	80x150	36	42350	508	0.04	5	8	15	19	20	16	12	10	1		
DS	00-26	VIBRO-ACOUSTICS	RD-LV-F6	RECTANGULAR DISSIPATIVE	FAN ROOM 210	AHU-02-02 RETURN	40x72	36	10415	521	0.07	6	9	15	23	30	24	15	11	1		
DS	00-27	VIBRO-ACOUSTICS	RD-LV-F3	RECTANGULAR DISSIPATIVE	FAN ROOM 210	AHU-02-02 RETURN	80x108	36	31245	521	0.07	6	9	17	21	23	18	13	11	1		
DS	00-28	VIBRO-ACOUSTICS	RED-UHV-F8	RECTANGULAR ELBOW DISSIPATIVE	FAN ROOM 210	AHU-02-01 SUPPLY	24x68	48	18000	1538	0.21	5	6	10	17	23	19	14	14	1		
DS	00-29	VIBRO-ACOUSTICS	CD-HV-32271	CIRCULAR DISSIPATIVE	FAN ROOM 118G	AHU-01-01 SUPPLY	32	96	8000	1439	0.03	7	14	20	35	42	32	22	16	1		

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MECHANICAL - FIN TUBE RADIATION SCHEDULE

- NOTES:
- 1. PROVIDE 3/4-INCH, SAME-END PIPE CONNECTIONS.
 - 2. PROVIDE HIGH WATER PRESSURE CONSTRUCTION.
 - 3. PROVIDE BLANK-OFF PLATES AND CORNERS FOR A COMPLETE LOOK. COORDINATE WITH ARCHITECTURAL DETAILS/DRAWINGS. GMPs ARE NOT ADDITIVE.
 - 4. PROVIDE STANDARD WHITE COLOR. COLOR TO BE APPROVED BY ARCHITECT.

TYPE MARK	EQUIPMENT NUMBER	MODEL	MANUFACTURER	CONNECTION TYPE	TYPE	CAPACITY (BTU/HF)	EAT (°F)	EWT (°F)	LWT (°F)	ZONE WATER FLOW RATE (GPM)	WPD (FT WG)	UNIT DIMENSIONS			NOTES
												L	W	H	
FTR	BL2-8	RF-2	RUNTAL	BL	BASEBOARD RADIATOR	233	68	140	100	0.09	0.0	96"	2"	5.8"	ALL
FTR	BL3-8.5	RF-3	RUNTAL	BL	BASEBOARD RADIATOR	300	68	140	100	0.13	0.0	102"	2"	8.6"	ALL
FTR	BL3-26.5	RF-3	RUNTAL	BL	BASEBOARD RADIATOR	300	68	140	100	0.40	0.0	318"	2"	8.6"	ALL
FTR	BR2-8	RF-2	RUNTAL	BR	BASEBOARD RADIATOR	233	68	140	100	0.09	0.0	96"	2"	5.8"	ALL
FTR	BR3-8.5	RF-3	RUNTAL	BR	BASEBOARD RADIATOR	300	68	140	100	0.13	0.0	102"	2"	8.6"	ALL
FTR	BR3-26.5	RF-3	RUNTAL	BR	BASEBOARD RADIATOR	300	68	140	100	0.40	0.0	318"	2"	8.6"	ALL
FTR	CL2-24	RF-2	RUNTAL	CL	BASEBOARD RADIATOR	233	68	140	100	0.28	0.0	288"	2"	5.8"	ALL
FTR	CL2-25	RF-2	RUNTAL	CL	BASEBOARD RADIATOR	233	68	140	100	0.29	0.0	300"	2"	5.8"	ALL
FTR	CL-26.5	RF-2	RUNTAL	CL	BASEBOARD RADIATOR	233	68	140	100	0.31	0.0	318"	2"	5.8"	ALL
FTR	CR2-15	RF-2	RUNTAL	CR	BASEBOARD RADIATOR	233	68	140	100	0.18	0.0	180"	2"	5.8"	ALL
FTR	CR2-24	RF-2	RUNTAL	CR	BASEBOARD RADIATOR	233	68	140	100	0.28	0.0	288"	2"	5.8"	ALL
FTR	CR2-26.5	RF-2	RUNTAL	CR	BASEBOARD RADIATOR	233	68	140	100	0.31	0.0	318"	2"	5.8"	ALL
FTR	DL2-8.5	RF-2	RUNTAL	DL	BASEBOARD RADIATOR	233	68	140	100	0.10	0.0	102"	2"	5.8"	ALL
FTR	DL2-15	RF-2	RUNTAL	DL	BASEBOARD RADIATOR	233	68	140	100	0.18	0.0	180"	2"	5.8"	ALL
FTR	DR2-8.5	RF-2	RUNTAL	DR	BASEBOARD RADIATOR	233	68	140	100	0.10	0.0	102"	2"	5.8"	ALL

MECHANICAL - HYDRONIC DUCT HEATERS

- NOTES:
- 1. COILS SHALL BE PARALLEL FED. CONTROL LOGIC SHALL SWITCH THE LEAD COIL MONTHLY.
 - 2. COIL FACE VELOCITY SHALL BE LIMITED TO 450 FPM.
 - 3. COIL SHALL BE ORIENTED IN THE PRE-HEAT POSITION.
 - 4. CIRCULATING PUMP SHALL BE PROVIDED SIZED TO MAINTAIN A WATER VELOCITY OF 3 FPS THROUGH THE COIL AND TO OVERCOME THE PRESSURE LOSS OF THE VOIL AND ALL APPURTENANCES SHOWN. PUMP SHALL BE LOCATED OUTSIDE OF THE PRIMARY FLOW PATH AND ISOLATED BY CONTROL VALVES.
 - 5. HEATING COIL TO BE SIZED TO MINIMIZE PRESSURE DROP AT PEAK COOLING AIR FLOW....

TYPE	EQUIPMENT NUMBER	MANUFACTURER	HEATING COIL										
			HC DESIGN AIRFLOW (CFM)	HC CAPACITY (BTU/H)	HC EAT DB (°F)	HC LAT DB (°F)	HC NO OF ROWS	HC FPI	HC APD (IN-WG)	HC EWT (°F)	HC LWT (°F)	HC (GPM)	HC WPD (FT WG)
HDH	01-01	TRANE	1,700	98,080	2.0	55.0	2	10	0.1	140.0	100.0	4.9	0.38
HDH	01-02	TRANE	1,700	98,080	2.0	55.0	2	10	0.1	140.0	100.0	4.9	0.38

MECHANICAL - UNIT HEATER (HOT WATER)

- NOTES:
- 1. PROVIDE REMOTE THERMOSTAT. SET TO 68F.
 - 2. PROVIDE AQUASTAT. FAN TO ENERGIZE ONLY WHEN HHW IS AVAILABLE.
 - 3. PROVIDE A LOCAL MEANS OF DISCONNECT.
 - 4. PROVIDE HANGER VIBRATION ISOLATIONS.
 - 5. PROVIDE SUPPORT BRACKET BY MANUFACTURER.

TYPE MARK	EQUIPMENT NUMBER	MODEL	MANUFACTURER	TYPE	FAN TYPE	CAPACITY (BTU)	LOCATION	SUPPLY CFM	EAT (°F)	EWT (°F)	LWT (°F)	GPM	WPD (FT WG)	FLA (A)	MOTOR HP	VOLTAGE	PHASE	FREQUENCY (HZ)	L	W	H	OPERATING WEIGHT (LB)	NOTES
UH	00-01	003	MODINE	CABINET HEATER	CENTRIFUGAL	11,200	NE STAIR 060	330	68 °F	140	100	2	0.30	1	0.03	115	1	60 Hz	10"	43"	25"	100	ALL
UH	00-02	HC-165	MODINE	UNIT HEATER	AXIAL	120,000	LAUNDRY MAKEUP AIR ENCLOSURE	1600	-10 °F	140	100	6	1.00	4	0.33	115	1	60 Hz	10"	27"	29"	100	ALL
UH	00-03	003	MODINE	CABINET HEATER	CENTRIFUGAL	11,200	SE STAIR 048	330	68 °F	140	100	2	0.20	1	0.03	115	1	60 Hz	10"	43"	25"	100	ALL



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PROJECT NO. 23112.000

SHEET TITLE
MECHANICAL
SCHEDULES - UH & FTR

SHEET NUMBER

M-603

MECHANICAL - VAV OUTSIDE AIR WITH REHEAT COIL SCHEDULE																						
<div>NOTES:</div> <div>(1) CONNECT TO DDC SYSTEM.</div> <div>(2) NO RE-HEAT COIL</div> <div>(3) IF DCV AIRFLOW REQUIRED IS "0" THEN DCV IS NOT REQUIRED FOR THE SPACES BEING SERVED.</div>																						
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	AREA SERVED	ZONE WEIGHTING FACTOR	INLET SIZE (IN)	AIRFLOW (CFM)			HEATING COIL										OPERATING WEIGHT (LB)	NOTES
								DESIGN AIRFLOW	BOX MINIMUM AIRFLOW	DCV AIRFLOW REQUIRED	TOTAL HEATING (BTU/H)	DESIGN HEATING AIR FLOW (CFM)	EAT DB (°F)	LAT DB (°F)	EWT (°F)	LWT (°F)	WATER FLOW (GPM)	WPD (PSI)	NO. OF ROWS	APD (IN.WG)		
OAVAV	00-01	PRICE	SDV	AUX LKR SHOWER / GROOM 005A	AUX LCKR ROOM	1	6	260	65	0	2,526	170	60.0	83.0	140.0	133.1	1.54	1.53	1	0.05	19	1
OAVAV	00-02	PRICE	SDV	VISITOR LKR 006	VISITOR LCKR ROOM	1	9	905	160	0	7,803	530	60.0	83.0	140.0	101.3	0.64	0.25	2	0.36	29	1
OAVAV	00-03	PRICE	SDV	HOME COACH LKR RM 014B	HOME COACH LCKR ROOM	1	8	615	95	6	5,456	370	60.0	83.0	140.0	102.1	0.46	0.11	2	0.35	22	1
OAVAV	00-04	PRICE	SDV	MBB GROOM 016C	MENS BBALL	1	12	1,125	300	0	12,833	860	60.0	83.0	140.0	104.0	1.11	0.81	2	0.31	36	1
OAVAV	00-05	PRICE	SDV	WBB GROOMING 022C	WOMENS BBALL	1	12	1,090	300	0	10,608	720	60.0	83.0	140.0	100.9	0.86	0.52	2	0.29	36	1
OAVAV	00-06	PRICE	SDV	WVB GROOM 026C	WOMENS VBALL	1	12	1,220	300	0	11,436	770	60.0	83.0	140.0	102.0	0.94	0.61	2	0.36	36	1
OAVAV	00-07	PRICE	SDV	TRAINING 030	TRAINING ROOM	1	8	605	125	0	6,451	440	60.0	83.0	140.0	105.5	0.59	0.17	2	0.34	22	1
OAVAV	00-08	PRICE	SDV	HYDROTHERAPY 030A	HYDROTHERAPY	1	6	345	65	0	2,609	190	60.0	83.0	140.0	98.6	0.25	0.02	2	0.18	19	1
OAVAV	00-09	PRICE	SDV	STORAGE 030B	SPORTS PERFORMANCE	1	12	1,470	300	0	20,129	1,350	60.0	83.0	140.0	114.8	2.18	3.35	2	0.52	36	1
OAVAV	00-10	PRICE	SDV	MENS RR 044	MENS RR	1	7	450	65	0	3,624	250	60.0	83.0	140.0	96.8	0.33	0.03	2	0.21	22	1
OAVAV	00-11	PRICE	SDV	WOMENS RR 046	WOMENS RR	1	7	455	95	0	6,573	445	60.0	83.0	140.0	105.8	0.59	0.18	2	0.21	22	1
OAVAV	00-12	PRICE	SDV	INDIVIDUAL LOCKER 051	INDIVIDUAL LCKRS	1	6	240	65	0	2,578	180	60.0	83.0	140.0	97.9	0.25	0.02	2	0.10	19	1
OAVAV	00-13	PRICE	SDV	FAN ROOM 068	AHU 00-02	0	24X16	5,550	1,185	0	0	0	0.0	0.0	0.0	0.0	0.00	0.00	0	0.00	62	1,2
OAVAV	00-14	PRICE	SDV	FAN ROOM 054	AHU 00-01	1,2	16	2,640	575	0	0	0	0.0	0.0	0.0	0.0	0.00	0.00	0	0.00	54	1,2
OAVAV	00-15	PRICE	SDV	INDIVIDUAL LOCKER 053	AHU 01-01	0	24X16	3,650	1,185	0	0	0	0.0	0.0	0.0	0.0	0.00	0.00	0	0.00	62	1,2
OAVAV	01-01	PRICE	SDV	WOMEN 105	NW WOMENS RR	1	12	1,165	300	0	11,805	800	60.0	83.0	140.0	102.7	1.33	0.67	2	0.33	36	1
OAVAV	01-02	PRICE	SDV	WOMEN 118	SW WOMENS RR	1	12	1,140	300	0	9,627	650	60.0	83.0	140.0	98.9	0.98	0.39	2	0.32	36	1
OAVAV	01-03	PRICE	SDV	MEN 114	SE MENS RR	1	8	795	125	0	6,224	450	60.0	83.0	140.0	106.1	0.83	0.18	2	0.54	22	1
OAVAV	01-04	PRICE	SDV	MEN 119	NE MENS RR	1	8	585	125	0	6,292	430	60.0	83.0	140.0	105.3	0.77	0.16	2	0.32	22	1

MECHANICAL - VAV SUPPLY AIR WITH REHEAT COIL SCHEDULE																					
<div>NOTES:</div> <div>(1) CONNECT TO DDC SYSTEM.</div> <div>(2) IF DCV AIRFLOW REQUIRED IS "0" THEN DCV IS NOT REQUIRED FOR THE SPACES BEING SERVED.</div>																					
TYPE	EQUIPMENT NUMBER	ASSOCIATED AHU	MANUFACTURER	MODEL	LOCATION	AREA SERVED	ZONE WEIGHTING FACTOR	INLET SIZE (IN)	AIRFLOW (CFM)			HEATING COIL									
									DESIGN AIRFLOW	BOX MINIMUM AIRFLOW	DCV MIN AIRFLOW	TOTAL HEATING (BTU/H)	DESIGN HEATING AIR FLOW (CFM)	EAT DB (°F)	LAT DB (°F)	EWT (°F)	LWT (°F)	WATER FLOW (GPM)	WPD (PSI)	NO. OF ROWS	APD (IN.WG)
VAV	00-01	AHU-00-01	PRICE	SDV	GOLF OO 059AA	GOLF	ALL	5	160	60	0	1,501	105	60.0	83.0	140.0	125.0	0.45	0.17	1	0.02
VAV	00-02	AHU-00-01	PRICE	SDV	W TN HC 028	TENNIS	ALL	5	220	60	0	2,197	150	60.0	83.0	140.0	130.6	1.00	0.71	1	0.04
VAV	00-03	AHU-00-01	PRICE	SDV	M T&F HC 028	UNASSIGNED OFFICES	ALL	4	130	45	0	1,279	90	60.0	83.0	140.0	122.9	0.33	0.11	1	0.02
VAV	00-04	AHU-00-01	PRICE	SDV	W SOC HC 490	SOCCER	ALL	5	210	60	0	1,934	130	60.0	83.0	140.0	128.1	0.69	0.37	1	0.02
VAV	00-05	AHU-00-01	PRICE	SDV	NUTRITION ZONE 038	NUTRITION	ALL	6	340	65	0	2,859	195	60.0	83.0	140.0	99.3	0.31	0.02	2	0.17
VAV	00-06	AHU-00-01	PRICE	SDV	OFFICE 024C	TRAINING OFFICE	ALL	4	105	45	0	1,488	100	60.0	83.0	140.0	124.4	0.41	0.15	1	0.01
VAV	00-07	AHU-00-01	PRICE	SDV	ATHLETE LOUNGE 039	ATHLETE LOUNGE	ALL	12	1,180	300	326	5,463	370	60.0	83.0	140.0	92.0	0.47	0.11	2	0.31
VAV	00-08	AHU-00-01	PRICE	SDV	SOFTBALL OO 059Y	SOFTBALL	ALL	5	220	60	0	3,194	215	60.0	83.0	140.0	99.0	0.33	0.02	2	0.04
VAV	00-09	AHU-00-01	PRICE	SDV	WVB OO 059V	VOLLEYBALL	ALL	6	280	60	0	3,294	225	60.0	83.0	140.0	99.5	0.34	0.02	2	0.13
VAV	00-10	AHU-00-01	PRICE	SDV	WBB AC 044A	WBB OFFICES	ALL	6	310	60	0	3,733	250	60.0	83.0	140.0	101.2	0.40	0.04	2	0.07
VAV	00-11	AHU-00-01	PRICE	SDV	WBB AC 044A	MBB OFFICES	ALL	6	340	60	0	4,155	280	60.0	83.0	140.0	103.3	0.47	0.05	2	0.17
VAV	00-12	AHU-00-01	PRICE	SDV	STAFF BREAK 045	STAFF BREAK S	ALL	5	210	60	110	1,649	115	60.0	83.0	140.0	126.4	0.54	0.24	1	0.01
VAV	00-13	AHU-00-01	PRICE	SDV	EXAM ROOM 046	T&F	ALL	5	175	60	0	2,189	150	60.0	83.0	140.0	130.6	1.00	0.71	1	0.04
VAV	00-14	AHU-00-01	PRICE	SDV	MARSHALLING 056	MARSHALLING	ALL	10	980	210	0	13,616	910	60.0	83.0	140.0	113.1	2.09	1.20	2	0.42
VAV	00-15	AHU-00-01	PRICE	SDV	MARSHALLING 056	STAFF BREAK N	ALL	4	105	65	65	1,118	95	60.0	83.0	140.0	123.7	0.37	0.13	1	0.01
VAV	00-16	AHU-00-01	PRICE	SDV	FS COMMISSARY + KITCHEN 063	FS COMMISSARY + KITCHEN 063	ALL	10	840	210	0	9,310	840	60.0	83.0	140.0	111.0	1.79	0.91	2	0.32
VAV	00-17	AHU-00-01	PRICE	SDV	SPORT + GENRAL STORAGE 059	SPORT + GENERAL STORAGE 059	ALL	12	1,525	300	0	22,531	1,530	60.0	83.0	140.0	118.9	4.46	5.69	2	0.53
VAV	00-18	AHU-00-01	PRICE	SDV	MARSHALLING 056	VP CONTROL 057	ALL	6	270	65	0	1,973	145	60.0	83.0	140.0	130.0	0.91	0.60	1	0.02
VAV	00-19	AHU-00-02	PRICE	SDV	CIRCULATION 060	NW OPEN COURT	ALL	12	1,480	300	0	16,823	1,130	60.0	83.0	140.0	110.0	2.33	1.80	2	0.50
VAV	00-20	AHU-00-02	PRICE	SDV	CIRCULATION 060	NW COURT	ALL	16	2,260	575	0	22,862	1,535	60.0	83.0	140.0	102.1	2.50	0.98	2	0.39
VAV	00-21	AHU-00-02	PRICE	SDV	CIRCULATION 060	NE OPEN COURT	ALL	12	1,480	300	0	16,823	1,110	60.0	83.0	140.0	109.6	2.26	1.70	2	0.50
VAV	00-22	AHU-00-02	PRICE	SDV	CIRCULATION 060	NE COURT	ALL	16	2,260	575	0	22,862	1,535	60.0	83.0	140.0	102.1	2.50	0.98	2	0.38
VAV	00-23	AHU-00-02	PRICE	SDV	CIRCULATION 060	N OPEN COURT	ALL	14	1,840	430	0	20,755	1,400	60.0	83.0	140.0	104.6	2.44	0.88	2	0.39
VAV	00-24	AHU-00-02	PRICE	SDV	ATHLETE LOUNGE 039	SW OPEN COURT	ALL	12	1,480	300	0	17,015	1,150	60.0	83.0	140.0	110.4	2.40	1.90	2	0.50
VAV	00-25	AHU-00-02	PRICE	SDV	VIDEO ROOM 040	SW COURT	ALL	16	2,260	575	0	22,862	1,535	60.0	83.0	140.0	102.1	2.50	0.98	2	0.38
VAV	00-26	AHU-00-02	PRICE	SDV	WBB HC 036	SE OPEN COURT	ALL	12	1,480	300	0	16,832	1,130	60.0	83.0	140.0	110.0	2.33	1.80	2	0.50
VAV	00-27	AHU-00-02	PRICE	SDV	WBB HC 036	SE COURT	ALL	16	2,260	575	0	22,862	1,535	60.0	83.0	140.0	102.1	2.50	0.98	2	0.38

MECHANICAL - VAV EXHAUST AIR SCHEDULE											
<div>NOTES:</div> <div>(1) CONNECT TO DDC SYSTEM.</div>											
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	AREA SERVED	INLET SIZE (IN)	AIRFLOW (CFM)		MAX PRESS. DROP (IN-WG)	OPERATING WEIGHT (LB)	NOTES
							DESIGN AIRFLOW	MINIMUM AIRFLOW			
EAVAV	00-01	PRICE	SDV	GREEN ROOM / VIS COACH LOCKER 003	AUX LCKR ROOM	6	340	65	0.2	12	ALL
EAVAV	00-02	PRICE	SDV	VISITOR LOCKER 019	VISITOR LCKR ROOM	12	1,130	300	0.2	22	ALL
EAVAV	00-03	PRICE	SDV	HOME COACH LKR RM 023	HOME COACH LCKR ROOM	8	690	125	0.2	14	ALL
EAVAV	00-04	PRICE	SDV	MBB NUTR. 020	MENS BBALL	12	1,360	300	0.2	22	ALL
EAVAV	00-05	PRICE	SDV	WBB LOUNGE 021B	WOMENS BBALL	12	1,360	300	0.2	22	ALL
EAVAV	00-06	PRICE	SDV	WVB LOCKER 022	WOMENS VBALL	12	1,420	300	0.2	22	ALL
EAVAV	00-07	PRICE	SDV	TRAINING 024	TRAINING ROOM	8	700	125	0.2	14	ALL
EAVAV	00-08	PRICE	SDV	HYDROTHERAPY 024AA	HYDROTHERAPY	7	495	95	0.2	14	ALL
EAVAV	00-09	PRICE	SDV	SPORTS PERFORMANCE 025	SPORTS PERFORMANCE	12	1,605	300	0.2	22	ALL
EAVAV	00-10	PRICE	SDV	MENS RR 050	MENS RR	7	440	95	0.2	14	ALL
EAVAV	00-11	PRICE	SDV	WOMENS RR 051	WOMENS RR	8	600	125	0.2	14	ALL
EAVAV	00-12	PRICE	SDV	INDIVIDUAL LOCKER 057	INDIVIDUAL LCKRS	6	410	65	0.2	12	ALL
EAVAV	00-13	PRICE	SDV	FAN ROOM 068	FAN ROOM 068	24X16	5,550	1,185	0.2	62	ALL
EAVAV	00-14	PRICE	SDV	FAN ROOM 054	FAN ROOM 054	16	2,640	430	0.2	33	ALL
EAVAV	00-15	PRICE	SDV	INDIVIDUAL LOCKER 053	SUPPORT 115D	24X16	3,620	1,185	0.2	62	ALL
EAVAV	00-16	PRICE	SDV	FS COMMISSARY + KITCHEN 063	FS COMMISSARY + KITCHEN 063	8	630	125	0.2	14	ALL
EAVAV	01-01	PRICE	SDV	CONCESSIONS 102	NW WOMENS RR	14	1,795	430	0.2	28	ALL
EAVAV	01-02	PRICE	SDV	WOMEN 118	SW WOMENS RR	14	1,765	430	0.2	28	ALL
EAVAV	01-03	PRICE	SDV	MEN 112	SE MENS RR	10	1,040	210	0.2	18	ALL
EAVAV	01-04	PRICE	SDV	MEN 104	NE MENS RR	8	770	125	0.2	14	ALL

NOTES:

(1) RAFA IS PROVIDED AS AN ASSEMBLED UNIT FROM MANUFACTURER WITH SINGLE POINT OF POWER CONNECTION AND SPEED CONTROLLER.

(2) UNIT IS SIZED WITH N-1 OPERATION OF FANS. PERFORMANCE IS INDICATED WITH ALL FANS RUNNING.

(3) UPON ANY SINGULAR FAN FAILURE, THE UNIT SHALL ADJUST THE REMAINING FANS TO COMPENSATE.

(4) ALL FAN MOTORS ARE DIRECT-DRIVE.

(5) ADD-ALT SHALL BE PROVIDED FOR UNIT TO BE PROVIDED BY AHU MANUFACTURER WITH INDEPENDENT VFDS WITH MOTORIZED SHUTOFF DAMPERS ON EACH FAN. IF THE ADD-ALT IS SELECTED, A REVISION TO THE ELECTRICAL DESIGN WILL BE REQUIRED.

MECHANICAL - RELIEF AIR FAN ARRAY																									
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	SERVICE	FANS										ELECTRICAL						OPERATING WEIGHT (LB)	HEIGHT	WIDTH	NOTES
						AIR FLOW (EACH) (CFM)	OVERALL ESP (IN-WG)	OVERALL TSP (IN-WG)	ECM	SPEED (RPM)	FAN QTY	HP (EACH)	BHP (EACH)	MCA (A)	MOCP (A)	VOLT (V)	PHASE	FREQUENCY (HZ)	EMERG. PWR. (Y/N)						
RAFA	00-03	GREENHECK	MOA-560	FAN ROOM 068	RELIEF AIR	6,625	2.0	2.0	Yes	1295	4	8	5.1	32	40	460	3	60	No	902	8' - 0"	8' - 0"	ALL		
RAFA	01-01	GREENHECK	MOA-560	SUPPORT 115B	RELIEF AIR	4,470	1.0	1.0	Yes	994	2	8	5.2	17	25	460	3	60	No	518	4' - 0"	9' - 0"	ALL		
RAFA	02-01	GREENHECK	MOA-560	FAN ROOM 209	RELIEF AIR	9,165	1.0	1.0	Yes	1780	6	8	5.1	46	50	460	3	60	No	1133	12' - 0"	8' - 6"	ALL		
RAFA	02-02	GREENHECK	MOA -560	FAN ROOM 210	RELIEF AIR	6,945	1.0	1.0	Yes	1356	6	8	5.1	46	50	460	3	60	No	1133	12' - 0"	8' - 6"	ALL		

MECHANICAL - RELIEF FAN SCHEDULE																							
<div>NOTES: (1) BACKDRAFT DAMPER (2) REFER TO SPECIFICATIONS FOR VIBRATION ISOLATION REQUIREMENTS</div>																							
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	FAN						MOTOR DRIVE			ELECTRICAL					EMERG. PWR. (Y/N)	OPERATING WEIGHT (LB)	NOTES
							AIR FLOW (CFM)	TYPE	ESP (IN-WG)	TSP (IN-WG)	SPEED [RPM]	MIN. STATIC EFFICIENCY [%]	HP	BHP	ECM	FLA (A)	MOCP (A)	VOLT(V)	PH	Hz			
RAF	02-02	GREENHECK	SQ-27-M2-VG	FAN ROOM 203	EXHAUST	IN-LINE	12,500	IN-LINE	2.0	2.0	1111	59	10	6.6	Yes	14	20	460	3	60	No	494	ALL

MECHANICAL - GREASE EXHAUST FAN SCHEDULE																							
<div>NOTES: (1) GREASE TRAP (2) HERESITE COATED FAN (3) REFER TO SPECIFICATIONS FOR VIBRATION ISOLATION REQUIREMENTS (4) PROVIDE MATCHED VENTILATED ROOF CURB (5) PROVIDE WALL MOUNTING SUPPORT FOR GREASE EXHAUST APPLICATIONS BY MANUFACTURER.</div>																							
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	FAN					MOTOR DRIVE			ELECTRICAL					EMERG. PWR. (Y/N)	OPERATING WEIGHT (LB)	NOTES	
							AIR FLOW (CFM)	TYPE	ESP (IN-WG)	TSP (IN-WG)	SPEED (RPM)	STATIC EFFICIENCY [%]	HP	BHP	ECM	FLA (A)	MOCp (A)	VOLT(V)	PH				HZ
GEF	02-01	GREENHECK	CUE-180HP-VG	ROOF	GREASE EXHAUST	UPBLAST	1,890	UP-BLAST	1.5	1.5	1220	59	1	0.8	Yes	4	15	208	3	60	No	119	1-4
GEF	02-02	GREENHECK	CUE-180HP-VG	ROOF	GREASE EXHAUST	UPBLAST	1,890	UP-BLAST	1.5	1.5	1220	59	1	0.8	Yes	4	15	208	3	60	No	119	1-3, 5

MECHANICAL - MAKE UP AIR FAN SCHEDULE																										
<div>NOTES: (1) BACKDRAFT DAMPER. (2) REFER TO SPECIFICATIONS FOR VIBRATION ISOLATION REQUIREMENTS. (3) REQUIRES GREENHECK SQ DIRECT DRIVE FILTER BOX EQUAL OR APPROVED.</div>																										
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	FAN					MOTOR DRIVE			ELECTRICAL					EMERG. PWR. (Y/N)	FILTER BOX				NOTES	
							AIR FLOW (CFM)	TYPE	ESP (IN-WG)	TSP (IN-WG)	SPEED [RPM]	MIN. STATIC EFFICIENCY [%]	HP	BHP	ECM	FLA (A)	MOCP (A)	VOLT(V)	PH		HZ	FILTER TYPE	FILTER QUANTITY	FILTER SIZE (IN)		FILTER BOX LENGTH (IN)
MAF	01-01	GREENHECK	SQ-140-VG	CONCESSIONS 102	MAKE-UP AIR	IN-LINE	1,700	AXIAL	1.3	1.3	1522	49	1.00	0.6	Yes	4	15	230	3	60	No	MERV 8	2	20x25	28	ALL
MAF	01-02	GREENHECK	SQ-140-VG	CONCESSIONS 119	MAKE-UP AIR	IN-LINE	1,700	AXIAL	1.3	1.3	1522	49	1.00	0.6	Yes	4	15	230	3	60	No	MERV 8	2	20x25	28	ALL

MECHANICAL - TRANSFER FAN SCHEDULE																									
<div>NOTES: (1) BACKDRAFT DAMPER. (2) REFER TO SPECIFICATIONS FOR VIBRATION ISOLATION REQUIREMENTS.</div>																									
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	FAN						MOTOR DRIVE			ELECTRICAL					EMERG. PWR. (Y/N)	OPERATING WEIGHT (LB)	NOTES		
							AIR FLOW (CFM)	WHEEL		ESP (IN-WG)	TSP (IN-WG)	SPEED (RPM)	STATIC EFFICIENCY (%)	HP	BHP	ECM (Y/N)	FLA (A)	MOCp (A)	VOLT(V)	PH				HZ	
								TYPE	MIN. DIA. (IN)																
TF	00-01	GREENHECK	SQ-120-VG	IDF 009	TRANSFER AIR	IN-LINE	1,275	AXIAL	19	0.5	0.5	1409	40	0.25	0.17	Yes	6	15	115	1	60	Yes	63	ALL	
TF	00-02	GREENHECK	SQ-100-VG	AV ROOM 010	TRANSFER AIR	IN-LINE	585	AXIAL	17	0.5	0.5	1221	59	0.25	0.17	Yes	3	15	115	1	60	No	55	ALL	
TF	00-03	GREENHECK	SQ-100-VG	AV ROOM 049	TRANSFER AIR	IN-LINE	585	AXIAL	17	0.5	0.5	1221	59	0.25	0.17	Yes	3	15	115	1	60	No	55	ALL	
TF	01-01	GREENHECK	SQ-100-VG	AV ROOM 010	TRANSFER AIR	IN-LINE	585	AXIAL	17	0.5	0.5	1221	59	0.25	0.17	Yes	3	15	115	1	60	No	55	ALL	
TF	01-02	GREENHECK	SQ-120-VG	IDF 107D	TRANSFER AIR	IN-LINE	1,275	AXIAL	19	0.5	0.5	1409	40	0.25	0.17	Yes	6	15	115	1	60	Yes	63	ALL	
TF	02-01	GREENHECK	SQ-120-VG	IDF 202	TRANSFER AIR	IN-LINE	1,275	AXIAL	19	0.5	0.5	1409	40	0.25	0.17	Yes	6	15	115	1	60	Yes	63	ALL	
TF	02-01	GREENHECK	SQ-100-VG	AV ROOM 010	TRANSFER AIR	IN-LINE	730	AXIAL	17	0.5	0.5	1297	56	0.25	0.10	Yes	3	15	115	1	60	Yes	55	ALL	
TF	02-02	GREENHECK	SQ-120-VG	IDF 204	TRANSFER AIR	IN-LINE	1,275	AXIAL	19	0.5	0.5	1409	40	0.25	0.17	Yes	6	15	115	1	60	Yes	63	ALL	

MECHANICAL - CEILING EXHAUST FAN SCHEDULE'															
<div>NOTES: (1) BACKDRAFT DAMPER. (2) FAN INTERLOCK WITH LIGHTING POWER AND WIRING BY ELECTRICAL. (3) FAN CONTROLLED BY WALL ON/OFF SWITCH WITH LIGHT INDICATOR. (4) PROVIDE LAY-IN FRAMING FOR GYPSUM INSTALLATION TO ALLOW UNIT ACCESS THROUGH CEILING.</div>															
TYPE	EQUIPMENT NUMBER	MANUFACTURER	SYSTEM MODEL/ FAN MODEL	LOCATION SPACE NAME NUMBER	SERVICE	TYPE	FAN		ELECTRICAL				EMERGENCY POWER (Y/N)	OPERATING WEIGHT (LB)	NOTES
							AIR FLOW (CFM)	ESP (IN-WG)	FLA (A)	VOLT (V)	PHASE	FREQUENCY (HZ)			
CEF	02-01	GREENHECK	SP-A200-QD	RESTROOM 205	RESTROOM EXHAUST	CENTRIFUGAL	75	0.04	0.47	115	1	60	No	18	ALL

MECHANICAL - HIGH VOLUME LOW SPEED FAN SCHEDULE'										
<div>NOTES: 1. PROVIDE BACNET ADAPTER BY MANUFACTURER 2. FAN TO BE REVERSIBLE 3. DIRECT DRIVE IP56 MOTOR WITH VFD BY MANUFACTURER.</div>										
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	DIAMETER	ELECTRICAL			OPERATING WEIGHT (LB)	NOTES
						MOTOR (HP)	VOLT	PHASE		
HVLS	02-01	BAF	PFX4.0	WEST CONCOURSE	12' - 0"	2	460	3	60	245 ALL
HVLS	02-02	BAF	PFX4.0	WEST CONCOURSE	12' - 0"	2	460	3	60	245 ALL
HVLS	02-03	BAF	PFX4.0	WEST CONCOURSE	12' - 0"	2	460	3	60	245 ALL
HVLS	02-04	BAF	PFX4.0	WEST CONCOURSE	12' - 0"	2	460	3	60	245 ALL
HVLS	02-05	BAF	PFX4.0	PRACTICE COURT	12' - 0"	2	460	3	60	245 ALL
HVLS	02-06	BAF	PFX4.0	PRACTICE COURT	12' - 0"	2	460	3	60	245 ALL
HVLS	02-07	BAF	PFX4.0	PRACTICE COURT	12' - 0"	2	460	3	60	245 ALL
HVLS	02-08	BAF	PFX4.0	PRACTICE COURT	12' - 0"	2	460	3	60	245 ALL

MECHANICAL - INTAKE HOOD SCHEDULE												
<div>NOTES: (1) PROVIDE MOTORIZED BACKDRAFT DAMPER (2) PROVIDE MATCHED ROOF CURB</div>												
TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	AIR FLOW (CFM)	MAX VELOCITY (FPM)	MAX APD (IN-WG)	THROAT AREA (SF)	DIMENSIONS (IN)			NOTES
IH	02-01	GREENHECK	FGI-36X60	ROOF	6,520	750	0.1	15	99"	72"	31"	ALL

IN128 - JAMES T. MORRIS ARENA

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Indianapolis, IN 46202

IU Project NO. 20240127

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SEAL | DATE 02/03/25



SHEET ISSUE	
1	DO PROGRESS SET
2	DESIGN DEVELOPMENT
3	50% CONSTRUCTION DOCUMENTS
4	95% CONSTRUCTION DOCUMENTS
5	CONSTRUCTION DOCUMENTS
6	ADDENDUM 01
7	ADDENDUM 02

MECHANICAL - ACTIVE CHILLED BEAMS SCHEDULE

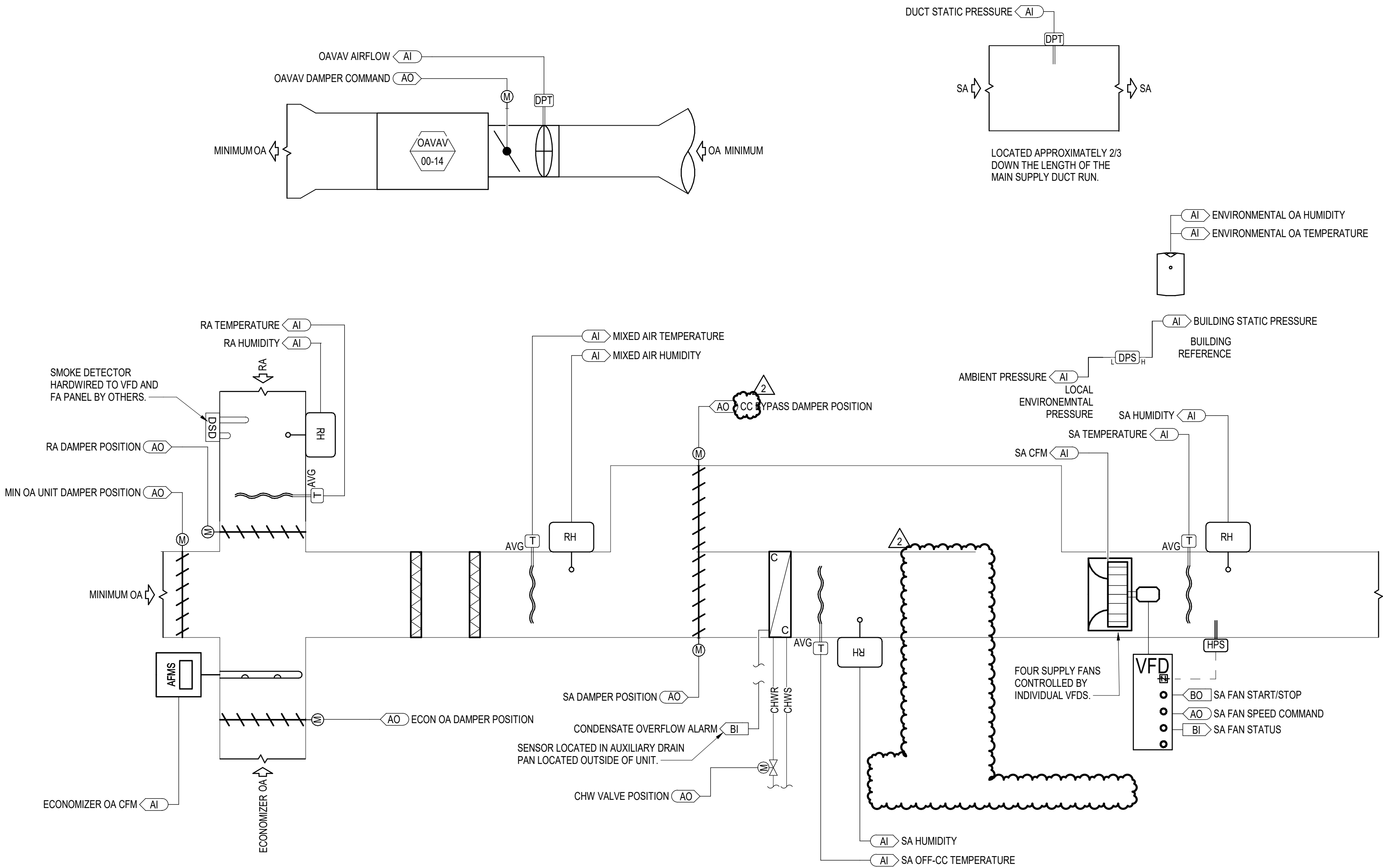
NOTES:

(1) PROVIDE BLANK-OFF BEAM SECTIONS TO MATCH LENGTH OF LIGHT FIXTURES.

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	TYPE	LENGTH	WIDTH	COIL CIRCUIT	PRIMARY AIRFLOW (CFM)	TOTAL DISCHARGE (CFM)	INDUCTION RATIO	BEAM APD (IN-WG)	COOLING COIL										HEATING COIL										DUCT CONNECTION SIZE (IN)	MAX APD SOUND PRESSURE (dBA)	NOTES
												AIR SIDE					WATER SIDE					AIR-SIDE					WATER SIDE							
												COOLING AIR SIDE CAPACITY (BTU/H)	COOLING PRIMARY AIR TEMP DB (°F)	COOLING ROOM AIR TEMP DB (°F)	LAT DB (°F)	EWT (°F)	LWT (°F)	FLOW (GPM)	WPD (FT WC)	HEATING AIR SIDE CAPACITY (BTU/H)	HEATING PRIMARY AIR TEMP (°F)	HEATING ROOM AIR TEMP DB (°F)	LAT DB (°F)	EWT (°F)	LWT (°F)	FLOW (GPM)	WPD (FT WC)							
CB	01-01	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	45	307.5803	5.8	0.54	5564.4	57.5	54.9	78	61.7	58.0	64.1	1.5	7.4	6396.9	60	68.0	86.7	120.0	93.2	0.5	0.4	5"	26				
CB	01-02.1	PRICE	ACBL24_2W	4 PIPE	6'-0"	2'-0"	SINGLE	50	302.4321	5	0.72	5512.2	57.5	54.9	78	61.5	58.0	62.9	1.8	8.1	5615.1	60	68.0	84.7	120.0	96.1	0.5	0.3	5"	31				
CB	01-02.2	PRICE	ACBL24_2W	4 PIPE	6'-0"	2'-0"	SINGLE	50	302.4321	5	0.72	5512.2	57.5	54.9	78	61.5	58.0	62.9	1.8	8.1	5615.1	60	68.0	84.7	120.0	96.1	0.5	0.3	5"	31				
CB	01-03	PRICE	ACBL24_2W	4 PIPE	2'-0"	2'-0"	SINGLE	40	148.1237	2.7	0.56	2159.6	57.5	54.9	78	64.8	58.0	63.0	0.5	0.3	1848.7	60	68.0	79.2	120.0	111.3	0.5	0.1	5"	34				
CB	01-04	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	50	341.7559	5.8	0.65	5905.2	57.5	54.9	78	62.4	58.0	65.3	1.3	5.7	6722.1	60	68.0	85.7	120.0	91.7	0.5	0.4	5"	28				
CB	01-05	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	50	341.7559	5.8	0.65	5990.2	57.5	54.9	78	62.2	58.0	64.9	1.4	6.6	6722.1	60	68.0	85.7	120.0	91.7	0.5	0.4	5"	28				
CB	01-06	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	50	341.7559	5.8	0.65	6203.2	57.5	54.9	78	61.6	58.0	64.0	1.7	9.3	6722.1	60	68.0	85.7	120.0	91.7	0.5	0.4	5"	28				
CB	01-07	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	60	362.9186	5	0.58	6526.9	57.5	54.9	78	61.8	58.0	63.2	2.0	2.9	6349.5	60	68.0	83.8	120.0	92.9	0.5	0.4	5"	29				
CB	01-08.1	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	105	532.0735	4.1	0.69	8917.2	57.5	54.9	78	62.9	58.0	64.2	2.1	3.1	6925.4	60	68.0	79.7	120.0	89.0	0.5	0.4	5"	38				
CB	01-08.2	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	105	532.0735	4.1	0.69	8917.2	57.5	54.9	78	62.9	58.0	64.2	2.1	3.1	6925.4	60	68.0	79.7	120.0	89.0	0.5	0.4	5"	38				
CB	01-08.3	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	105	532.0735	4.1	0.69	8917.2	57.5	54.9	78	62.9	58.0	64.2	2.1	3.1	6925.4	60	68.0	79.7	120.0	89.0	0.5	0.4	5"	38				
CB	01-08.4	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	105	532.0735	4.1	0.69	8917.2	57.5	54.9	78	62.9	58.0	64.2	2.1	3.1	6925.4	60	68.0	79.7	120.0	89.0	0.5	0.4	5"	38				
CB	01-09	PRICE	ACBL24_2W	4 PIPE	2'-0"	2'-0"	SINGLE	40	148.1237	2.7	0.56	2618.6	57.5	54.9	78	62.0	58.0	59.6	2.1	4.3	2281.7	60	68.0	81.9	120.0	114.2	0.9	0.4	5"	34				
CB	01-10.1	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-10.2	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-10.3	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-10.4	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-11	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	50	253.3684	4.1	0.70	4504.2	57.5	54.9	78	61.9	58.0	63.2	1.3	3.2	4277.1	60	68.0	83.2	120.0	101.4	0.5	0.2	5"	34				
CB	01-12.1	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-12.2	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-12.3	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-12.4	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	115	425.8558	2.7	0.74	6008.9	57.5	54.9	78	65.2	58.0	69.4	0.6	0.8	4159.9	60	68.0	76.8	120.0	99.6	0.5	0.2	8"	45				
CB	01-13	PRICE	ACBL24_2W	4 PIPE	6'-0"	2'-0"	SINGLE	165	611.0105	2.7	0.60	7402.1	57.5	54.9	78	67.0	58.0	72.7	0.5	0.8	5639.0	60	68.0	76.3	120.0	92.0	0.5	0.3	8"	44				
CB	01-14	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	50	341.7559	5.8	0.65	6307.2	57.5	54.9	78	61.3	58.0	62.1	2.5	4.4	6381.1	60	68.0	84.8	120.0	93.1	0.5	0.4	5"	28				
CB	01-15	PRICE	ACBL24_2W	4 PIPE	2'-0"	2'-0"	SINGLE	40	148.1237	2.7	0.56	2159.6	57.5	54.9	78	64.8	58.0	63.0	0.5	0.3	1848.7	60	68.0	79.2	120.0	111.3	0.5	0.1	5"	34				
CB	01-16	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	DUAL	50	341.7559	5.8	0.65	6233.2	57.5	54.9	78	61.5	58.0	62.4	2.3	3.7	6381.1	60	68.0	84.8	120.0	93.1	0.5	0.4	5"	28				
CB	01-17.1	PRICE	ACBL24_2W	4 PIPE	6'-0"	2'-0"	SINGLE	100	432.4117	3.3	0.52	6644.4	57.5	54.9	78	64.1	58.0	67.7	0.9	2.3	5647.2	60	68.0	79.8	120.0	94.3	0.5	0.3	5"	38				
CB	01-17.2	PRICE	ACBL24_2W	4 PIPE	6'-0"	2'-0"	SINGLE	100	432.4117	3.3	0.52	6644.4	57.5	54.9	78	64.1	58.0	67.7	0.9	2.3	5647.2	60	68.0	79.8	120.0	94.3	0.5	0.3	5"	38				
CB	01-18	PRICE	ACBL24_2W	4 PIPE	2'-0"	2'-0"	SINGLE	40	148.1237	2.7	0.56	2159.6	57.5	54.9	78	64.8	58.0	63.0	0.5	0.3	1848.7	60	68.0	79.2	120.0	111.3	0.5	0.1	5"	34				
CB	01-19.1	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	50	341.7559	5.8	0.65	5990.2	57.5	54.9	78	62.2	58.0	64.9	1.4	6.6	6722.1	60	68.0	85.7	120.0	91.7	0.5	0.4	5"	28				
CB	01-19.2	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	50	341.7559	5.8	0.65	5990.2	57.5	54.9	78	62.2	58.0	64.9	1.4	6.6	6722.1	60	68.0	85.7	120.0	91.7	0.5	0.4	5"	28				
CB	01-20.1	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	45	307.5803	5.8	0.54	5340.4	57.5	54.9	78	62.3	58.0	65.2	1.2	5.0	6396.9	60	68.0	86.7	120.0	93.2	0.5	0.4	5"	26				
CB	01-20.2	PRICE	ACBL24_2W	4 PIPE	8'-0"	2'-0"	SINGLE	45	307.5803	5.8	0.54	5340.4	57.5	54.9	78	62.3	58.0	65.2	1.2	5.0	6396.9	60	68.0	86.7	120.0	93.2	0.5	0.4	5"	26				
CB	01-21	PRICE	ACBL24_2W	4 PIPE	2'-0"	2'-0"	SINGLE	40	148.1237	2.7	0.56	2159.6	57.5	54.9	78	64.8	58.0	63.0	0.5	0.3	1848.7	60	68.0	79.2	120.0	111.3	0.5	0.1	5"	34				
CB	01-22	PRICE	ACBL24_2W	4 PIPE	4'-0"	2'-0"	SINGLE	40	202.6947	4.1	0.46	3174.6	57.5	54.9	78	63.8	58.0	67.1	0.5	0.6	3958.7	60	68.0	85.6	120.0	103.1								

GENERAL CONTROLS NOTES:

- A. TEMPERATURE SENSORS, HUMIDISTATS, AND THERMOSTATS SHALL NOT BE INSTALLED ON EXTERIOR WALLS OR COLUMNS, OR WHERE EXPOSED TO SOLAR RADIATION, WHERE THERE ARE NO OTHER OPTIONS, A SOLAR BLOCKING ENCLOSURE AND INSULATED BACKPLATE TO ELIMINATE TEMPERATURE INFLUENCE FROM DIRECT SOLAR EXPOSURE SHALL BE PROVIDED.
- B. VAVS ARE POWERED BY CONTROL VOLTAGE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ROUTING, GROUPING, AND POWER FOR THE LOW-VOLTAGE VAV UNITS.
- C. ALL NECESSARY CONTROL POINTS SHALL BE PROVIDED TO ACHIEVE THE WRITTEN SEQUENCES OF OPERATION WHETHER OR NOT THEY ARE EXPLICITLY NAMED.
- D. PROVIDE ANALOGUE FIELD SENSORS NEXT TO AIR TEMPERATURE AND PRESSURE CONTROL POINTS.
- E. CONTROLS CONTRACTOR SHALL COORDINATE WITH THE IU CONTROL INTEGRATOR.
- F. ALL IN-SPACE TEMPERATURE, HUMIDITY, AND CO2 SENSORS SHALL BE BLIND SENSORS WITH ONLY THE ABILITY TO INDUCE AN OCCUPANCY OVERRIDE WITH A BUTTON UNLESS OTHERWISE REQUESTED BY IU.
- G. LOCAL MAGNETIC GAUGE SUPPLIED AT EACH FILTER SECTION.
- H. WHERE AIRFLOW MONITORING IS INDICATED ON FANS, PIEZOMETER RING SHALL BE SUPPLIED AT EACH INLET CONE BY MANUFACTURER.



SEQUENCE OF OPERATIONS - AHU-00-01, ASSOCIATED OAVAV, AND VAVS

- A. AHU-00-01 IS A VARIABLE VOLUME HYDRO-PNEUMATIC AHU CONSISTING OF A SUPPLY FAN ARRAY, COIL BYPASS DAMPER, AND COOLING COIL. THE AHU SERVES OFFICE AND SUPPORT STAFF SPACES ON THE EVENT LEVEL, WHICH ARE NOT DIRECTLY SERVED BY AHU-00-01. THE AHU IS RESERVED FOR A DEDICATED EAVAV AND OAVAV FROM AHU-00-01. ADDITIONALLY, THE AHU HAS THE CAPABILITY OF OPERATING IN ECONOMIZER MODE VIA A SEPARATE ECONOMIZER AIR CONNECTION.
2. CONTROLS MONITORING
- A. CONTROL POINTS SHALL BE CONTROLLED BY THE CENTRAL BAS VIA BACNET COMMUNICATION PROTOCOL. ALL CONTROL POINTS, WHETHER EXPLICITLY LISTED OR NOT, SHALL BE VISIBLE AND CONTROLLABLE VIA THE BAS.
- B. UNIT START COMMAND.
- C. OPERATIONALLY RELEVANT DAMPER ACTUATORS ARE POWERED.
- D. SUPPLY FANS START AFTER A 15 SEC (ADJ.) DELAY WHEN THE ASSOCIATED DAMPERS ARE PROVEN OPEN.
- E. TEMPERING OPTIONS TO FUNCTION AS DESCRIBED.
- F. UNIT STOP COMMAND (OR DE-ENERGIZED).
- G. SUPPLY FANS, ASSOCIATED OAVAV, AND TEMPERING OPTIONS DE-ENERGIZED.
- H. OPERATIONAL DAMPERS ARE CLOSED AND DAMPER ACTUATOR IS SPRING RETURN CLOSE.
3. OCCUPIED/UNOCCUPIED MODES
- A. TEMPERATURE SETPOINTS
- B. OCCUPIED:
- C. UNOCCUPIED:
- D. SCHEDULE SHALL BE BASED ON AN OCCUPANCY SCHEDULE PROVIDED BY THE OWNER.
- E. OCCUPANCY OVERRIDE: IF DURING THE UNOCCUPIED PERIOD THERE IS A REQUEST FOR OCCUPANCY OVERRIDE, THE OCCUPANCY MODE SHALL BECOME ACTIVE FOR 2 HOURS (ADJ.).
- F. PRIOR TO SCHEDULED OCCUPANCY, OCCUPIED MODE SHALL BE ENGAGED WITH SUFFICIENT TIME TO ENSURE THE SPACES SERVED ARE AT THE OCCUPIED TEMPERATURE SETPOINT AND VENTILATION RATES PRIOR TO THE SCHEDULED OCCUPANCY.
- G. OCCUPIED MODE:
- H. SUPPLY FANS ON.
- I. ALL COILS AVAILABLE FOR OPERATION.
- J. OPERATIONAL DAMPERS PROVEN OPEN AND ENGAGED TO THEIR OPERATING POSITION.
- K. TEMPERATURE CONTROL PER SUPPLY AIR RESET SEQUENCE.
- L. UNOCCUPIED MODE (UNIT OFF): UNIT REMAINS OFF WHEN IN UNOCCUPIED MODE.
- M. SUPPLY FANS OFF.
- N. ASSOCIATED RAFA OFF.
- O. TEMPERING OFF.
- P. OPERATIONAL DAMPERS CLOSED.
4. SUPPLY FANS SEQUENCE
- A. START/STOP: BAS SHALL COMMAND THE RELEVANT OPERATIONAL DAMPERS OPEN WHENEVER THE DOAS IS ENERGIZED. UPON PROOF OF THE DAMPER POSITION, THE INTERLOCKED SUPPLY FANS SHALL RUN CONTINUOUSLY.
- B. THE SUPPLY FANS ARE PROVIDED WITH A FACTORY PROVIDED VARIABLE FREQUENCY DRIVE(S). THE SUPPLY FAN SPEED WILL BE CONTROLLED TO MEET THE AIRFLOW SPECIFIED IN THE DESIGN DOCUMENTS.
5. ECONOMIZER MODE
- A. WHEN OUTSIDE AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY AND OUTSIDE AIR TEMPERATURE IS ABOVE 53°F, THE BAS SHALL:
- B. CLOSE THE ASSOCIATED OAVAV.
- C. MODULATE THE ECONOMIZER OUTSIDE AIR AND RETURN AIR DAMPERS TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.
- D. SEND A SIGNAL TO THE PRESSURIZATION EAVAV ASSOCIATED WITH DOAS-00-01 AND RAFA-02-02 TO OPERATE UNDER ECONOMIZER CONDITIONS.
- E. WHEN OUTSIDE AIR ENTHALPY IS GREATER THAN RETURN AIR ENTHALPY, THE BAS SHALL:
- F. RETURN THE ASSOCIATED OAVAV TO STANDARD OPERATION.
- G. CLOSE THE ECONOMIZER OA DAMPER AND OPEN THE MINIMUM OA AND RA DAMPER.
- H. SEND A SIGNAL TO THE PRESSURIZATION EAVAV ASSOCIATED WITH DOAS-00-01 AND RAFA-02-02 TO RETURN TO NORMAL OPERATION.
6. FAN OPERATION AND PROTECTION
- A. THE FAN SPEEDS WILL NOT DROP BELOW 20 HZ (ADJ.) AND SHALL NOT EXCEED 60 HZ.
- B. THE DUCT STATIC PRESSURE SHALL BE ESTABLISHED DURING THE SYSTEM TESTING AND BALANCING.
- C. MECHANICAL HIGH STATIC PROTECTION OUTOFFS SHALL BE INSTALLED TO PROTECT THE SYSTEM AND EQUIPMENT FROM PRESSURIZATION-RELATED DAMAGE.
- D. THE FANS ARE SIZED FOR N+1 OPERATION. IN THE EVENT OF A FAN FAILURE, THE REMAINING FANS WILL ADJUST TO COMPENSATE FOR THE MISSING FAN.
7. DUCT STATIC PRESSURE CONTROL
- A. THE CONTROLLER WILL MEASURE DUCT STATIC PRESSURE AND MODULATE THE SUPPLY FAN VFD SPEEDS TO MAINTAIN A DUCT STATIC PRESSURE SETPOINT. THE FAN SPEEDS WILL NOT DROP BELOW 20 HZ (ADJ.) AND SHALL NOT EXCEED 60 HZ.
- B. THE STATIC PRESSURE SETPOINT WILL BE RESET BASED UPON THE POSITION OF THE DOWNSTREAM SUPPLY VAV AND EXHAUST VAV ZONE DAMPERS, WITH A GOAL OF REDUCING THE STATIC PRESSURES UNTIL AT LEAST ONE SUPPLY OR EXHAUST ZONE DAMPER IS 90% (ADJ.) OPEN. THE INITIAL DUCT STATIC PRESSURE SETPOINTS SHALL BE DETERMINED BY TAB. IF NO ZONE DAMPER IS NEARLY WIDE OPEN AT THE INITIAL SETPOINT, IT WILL INCREMENTALLY RESET DOWN TO A PREDEFINED MINIMUM, AS DETERMINED BY TAB (ADJ.). AS ONE OR MORE DAMPERS EXCEEDS 90% OPEN, THE SETPOINT WILL INCREMENTALLY RESET UP TO A MAXIMUM SETPOINT, AS DETERMINED BY TAB (ADJ.).
- C. THE DUCT STATIC PRESSURE SHALL BE ESTABLISHED DURING THE SYSTEM TESTING AND BALANCING.
- D. THE CONTROLLER WILL MODULATE THE FANS BASED UPON A COMPARISON OF THE DUCT STATIC PRESSURE SETPOINT (ADJ.) TO THE ACTUAL DUCT STATIC PRESSURE LEVEL REPORTED FROM THE SENSOR.
- E. MECHANICAL HIGH STATIC PROTECTION OUTOFFS SHALL BE INSTALLED TO PROTECT THE SYSTEM AND EQUIPMENT FROM PRESSURIZATION-RELATED DAMAGE.
- F. THE SUPPLY FANS ARE SIZED FOR N+1 OPERATION. IN THE EVENT OF A FAN FAILURE, THE REMAINING FANS WILL ADJUST TO COMPENSATE FOR THE MISSING FAN.
8. SUPPLY AIR TEMPERATURE CONTROL (OPTIMIZED)
- A. THE CONTROLLER WILL MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON ZONE COOLING AND HEATING REQUIREMENTS. THE SUPPLY AIR TEMPERATURE SETPOINT WILL BE RESET BASED UPON VAV TERMINAL EQUIPMENT HEATING AND COOLING REQUESTS, WITH A GOAL OF REDUCING THE SUM OF ALL REQUESTS TO ZERO. ALL SUPPLY AIR TEMPERATURES SHALL BE OFF-COIL TEMPERATURES. EACH ZONE SHALL HAVE ITS REQUESTS WEIGHTED ACCORDING TO THE SIZE AND CRITICALITY OF THE SPACE (A LARGER, MORE CRITICAL ENVIRONMENT GENERATES MORE REQUESTS THAN A SMALLER, LESS CRITICAL ONE). CUMULATIVE REQUESTS SHALL BE GENERATED BY EACH ZONE AS FOLLOWS:
- B. 1 HEATING OR COOLING REQUEST WHEN THE ASSOCIATED VAV IS >90% OPEN FOR COOLING OR THE HHW REHEAT VALVE IS 90% OPEN (ADJ.)
- C. HEATING OR COOLING REQUEST WHEN THE ZONE TEMP IS <2°F (ADJ.) FROM HOT/COLD ALARM
- D. HEATING OR COOLING REQUEST WHEN THE ZONE TEMP IS IN HOT/COLD ALARM
- E. TOTAL REQUESTS AND MULTIPLY BY ZONE WEIGHTING FACTOR (ADJ.)
- F. IF THE NUMBER OF COOLING REQUESTS EXCEEDS THE NUMBER OF HEATING REQUESTS FOR 30 MINUTES (ADJ.), THE SUPPLY AIR TEMPERATURE SETPOINT WILL BE RESET FOR 'COOLING MODE' AS FOLLOWS:
- G. THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT WILL BE 60°F (ADJ.).
- H. AS COOLING DEMAND INCREASES, THE SETPOINT WILL INCREMENTALLY RESET DOWN TO A MINIMUM OF 53°F (ADJ.).
- I. AS COOLING DEMAND DECREASES, THE SETPOINT WILL INCREMENTALLY RESET UP TO A MAXIMUM OF 72°F (ADJ.).
- J. WHEN THE COOLING DEMAND DECREASES TO A LEVEL WHERE THE SETPOINT IS NEARLY WIDE OPEN, THE SETPOINT WILL INCREMENTALLY RESET DOWN TO A MINIMUM OF 53°F AND THE COIL BYPASS DAMPER SHALL BE ENGAGED TO MIX THE SUPPLY AIR TO MATCH THE SYSTEM-INDICATED SUPPLY AIR TEMPERATURE. AFTER THE ZONE DEWPOINT IS BELOW 56°F (ADJ.) FOR 30 MINUTES (ADJ.) THE COIL BYPASS DAMPER WILL BE DISENGAGED AND THE SYSTEM WILL RETURN TO THE PRESCRIBED RESET STRATEGY AT THE TEMPERATURE CALLED FOR BY THE SEQUENCE AT THE TIME.
- K. UPON INITIAL START-UP THE CONTROLLER WILL DEFAULT TO 'COOLING MODE'. A HYSTERESIS DEADBAND OF 2 REQUESTS (ADJ.) SHALL BE USED TO PREVENT SHORT CYCLING BETWEEN HEATING/COOLING MODES.

POINTS TABLE AHU-00-01				
POINT DISCRIPTION	POINT TYPE	HARDWIRED (H) OR NETWORKED (N)?	EXPECTED RANGE	
AMBIENT	PRESSURE	AI	H	-05" WC - 0.5" WC
BUILDING	STATIC PRESSURE	AI	H	-05" WC - 0.5" WC
CC BYPASS DAMPER	POSITION	AO	N	0-100%
CHW VALVE	POSITION	AO	N	0-100%
CONDENSATE	OVERFLOW ALARM	BI	N	ON/OFF
DUCT	STATIC PRESSURE	AI	H	0-3 IN. W.C.
ECON OA DAMPER	POSITION	AO	N	0-100%
ECONOMIZER OA	CFM	AI	H	0-75000 CFM
ENVIRONMENTAL OA	TEMPERATURE	AI	H	30-110°F
ENVIRONMENTAL OA	HUMIDITY	AI	H	20%-80%
MIN OA UNIT DAMPER	POSITION	AO	N	0-100%
MIXED AIR	HUMIDITY	AI	H	20%-80%
MIXED AIR	TEMPERATURE	AI	H	30-110°F
OAVAV	AIRFLOW	AI	H	VARIES BY BOX SIZE
OAVAV	DAMPER COMMAND	AO	N	0-100%
RA	TEMPERATURE	AI	H	30-110°F
RA	HUMIDITY	AI	H	20%-80%
RA DAMPER	POSITION	AO	N	0-100%
SA	CFM	AI	H	50-90°F
SA	HUMIDITY	AI	H	20%-80%
SA	TEMPERATURE	AI	H	30-110°F
SA	OFF-CC TEMPERATURE	AI	H	30-110°F
SA	HUMIDITY	AI	H	20%-80%
SA DAMPER	POSITION	AO	N	0-100%
SA FAN	START/STOP	BO	N	START/STOP
SA FAN	SPEED COMMAND	AO	N	0-100%

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SEAL / DATE 02/03/25



SHEET ISSUE

1	95% CONSTRUCTION DOCUMENTS	12/19/24
2	CONSTRUCTION DOCUMENTS	01/13/25
3	ADDENDUM 01	01/27/25
4	ADDENDUM 02	02/03/25



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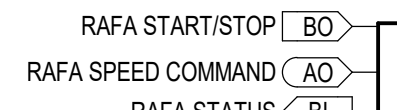
SHEET TITLE

**MECHANICAL
CONTROLS -
AHU-00-01**

SHEET NUMBER

M-703

A. TEMPERATURE SENSORS, HUMIDISTATS, AND THERMOSTATS SHALL NOT BE INSTALLED ON EXTERIOR WALLS OR COLUMNS, OR WHERE EXPOSED TO SOLAR RADIATION. WHERE THERE ARE NO OTHER OPTIONS, A SOLAR BLOCKING ENCLOSURE AND INSULATED BACKPLATE TO ELIMINATE TEMPERATURE INFLUENCE FROM DIRECT SOLAR EXPOSURE SHALL BE PROVIDED.



3. OCCUPIED/UNOCCUPIED MODES
- A. TEMPERATURE SETPOINTS
- a. OCCUPIED:
- COOLING: 78°F +/- 2°F
 - HEATING: 68°F +/- 2°F
 - RELATIVE HUMIDITY: 50%
- b. UNOCCUPIED:
- COOLING: 82°F +/- 2°F
 - HEATING: 60°F +/- 2°F

- B. UPON INITIAL START-UP THE CONTROLLER WILL CYCLING BETWEEN HEATING/COOLING MODES.

- G. PRESSURE SENSOR ALARM:
 - a. THE CONTROLLER SENDS AN ALARM
- H. HUMIDITY SENSOR ALARM:
 - a. THE CONTROLLER SENDS AN ALARM
- I. FROST CONTROL:
 - a. THE CONTROLLER SENDS AN ALARM
- J. BUILDING FREEZE PROTECTION:
 - a. THE CONTROLLER SENDS AN ALARM
- K. SMOKE DETECTION:

VALVE	
HHW VALVE	POSITION
OA	CFM
OA	TEMPERATURE
OA	HUMIDITY
OA DAMPER	POSITION
RAFA	START/STOP
RAFA	SPEED COMMAND
RAFA	STATUS
SA	CFM
SA	HUMIDITY
SA	TEMPERATURE
SA	OFF-CC TEMPERATURE

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Abstract

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Abstract

Abstract

CHRISTOPHER D. REGISTER, HA



1	95% CONSTRUCTION DOCUMENTS
2	CONSTRUCTION DOCUMENTS

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C. ALL NECESSARY CONTROL POINTS SHALL BE PROVIDED TO ACHIEVE THE WRITTEN SEQUENCES OF OPERATION, WHETHER OR NOT THEY ARE EXPLICITLY NAMED.

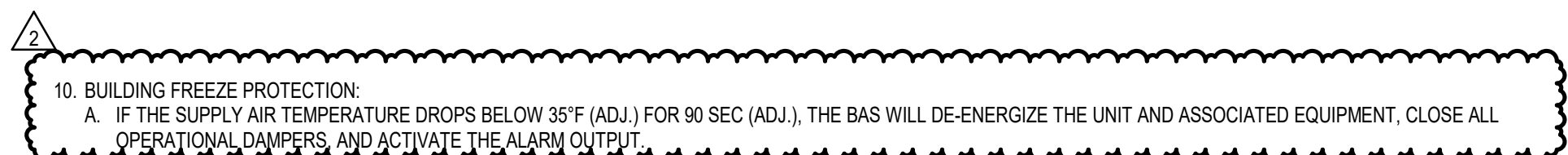
D. PROVIDE ANALOGUE FIELD SENSORS NEXT TO ALL TEMPERATURE AND PRESSURE CONTROL POINTS.

E. CONTROLS CONTRACTOR SHALL COORDINATE WITH T
IU CONTROL INTEGRATOR.

F. ALL IN-SPACE TEMPERATURE, HUMIDITY, AND CO2 SENSORS SHALL BE BLIND SENSORS WITH ONLY THE ABILITY TO INDUCE AN OCCUPANCY OVERRIDE WITH A BUTTON UNLESS OTHERWISE REQUESTED BY IU.

G. LOCAL MAGNEHELIC GAUGE SUPPLIED AT EACH FILTER SECTION.

H. WHERE AIRFLOW MONITORING IS INDICATED ON FANS
PIEZIOMETER RING SHALL BE SUPPLIED AT EACH INLE
CONE BY MANUFACTURER.



SEQUENCE OF OPERATIONS – AHU-01-01, RAFA-01-01, ASSOCIATED EAVAV AND OAVAV

1. GENERAL:
a. AHU-01/01 IS A CONSTANT-VOLUME HYDRAONIC FAH CONSISTING OF A SUPPLY FAN ARRAY, COOLING COIL, RE-HEAT COIL, AND A DECOUPLED RELIEF AIR FAN ARRAY (RAFA). THE AHU SERVES THE PRACTICE GYMNASIUM 115 AND THE ANCILLARY SPACES. THE AHU RECEIVED OA FROM A DEDICATED EAVAW AND OA/AVW FROM AHU-03/03. ADDITIONALLY, THE AHU HAS THE CAPABILITY OF OPERATING IN ECONOMIZER MODE VIA A SEPARATE ECONOMIZER AIR CONNECTION.

2. CONTROLS ARCHITECTURE:
a. CONTROL POINTS SHALL BE CONTROLLED BY THE CENTRAL BAS VIA BACNET COMMUNICATION PROTOCOL. ALL CONTROL POINTS, WHETHER EXPLICITLY LISTED OR NOT, SHALL BE VISIBLE AND CONTROLLABLE VIA THE BAS.

3. UNIT START COMMAND:
a. OPERATIONALLY RELEVANT DAMPER ACTUATORS ARE POWERED.
b. SUPPLY FANS START AFTER A 15 SEC (ADJ.) DELAY WHEN THE ASSOCIATED DAMPERS ARE PROVEN OPEN.
c. TEMPERING OPTIONS TO FUNCTION AS DESCRIBED.

4. UNIT STOP COMMAND (OR DE-ENERGIZED):
a. SUPPLY FANS, ASSOCIATED RAFA AND TEMPERING OPTIONS DE-ENERGIZED.
b. OPERATIONAL DAMPERS ARE CLOSED AND DAMPER ACTUATOR IS SPRING RETURN CLOSE.

5. OCCUPIED/UNOCCUPIED MODES
a. TEMPERATURE SETPOINTS
i. OCCUPIED:
• COOLING: 78°F +/- 2°F
• HEATING: 68°F +/- 2°F
• RELATIVE HUMIDITY: 55%
ii. UNOCCUPIED:
• COOLING: 82°F +/- 2°F
• HEATING: 60°F +/- 2°F
b. SCHEDULE SHALL BE BASED ON AN OCCUPANCY SCHEDULE PROVIDED BY THE OWNER.

6. OCCUPANCY OVERRIDE: IF DURING THE UNOCCUPIED PERIOD THERE IS A REQUEST FOR OCCUPANCY OVERRIDE, THE OCCUPANCY MODE SHALL BECOME ACTIVE FOR 2 HOURS (ADJ.).

7. OCCUPIED/UNOCCUPIED SCHEDULED OCCUPANCY: OCCUPIED MODE SHALL BE ENGAGED WITH SUFFICIENT TIME TO ENSURE THE SPACES SERVED ARE AT THE OCCUPIED TEMPERATURE SETPOINT AND VENTILATION RATES PRIOR TO THE SCHEDULED OCCUPANCY.

8. OCCUPIED MODE:
a. SUPPLY FANS ON.
b. ALL COILS AVAILABLE FOR OPERATION.
c. OPERATIONAL DAMPERS PROVEN OPEN AND ENGAGED TO THEIR OPERATING POSITION.
d. ASSOCIATED RAFA IS AVAILABLE FOR PRESSURIZATION CONTROL.

9. TEMPERATURE CONTROL PER SUPPLY AIR RESET SEQUENCE:
f. UNOCCUPIED MODE (UNIT OFF): UNIT REMAINS OFF WHEN IN OCCUPIED MODE.

10. SUPPLY FANS OFF:
a. SUPPLY FANS OFF
b. ASSOCIATED RAFA OFF
c. TEMPERING OFF
d. OPERATIONAL DAMPERS CLOSED

11. SUPPLY FANS SEQUENCE:
a. STARTUP/STOP: BAS SHALL COMMAND THE RELEVANT OPERATIONAL DAMPERS OPEN WHENEVER THE AHU IS ENERGIZED. UPON PROOF OF THE DAMPER POSITION, THE INTERLOCKED SUPPLY FANS SHALL RUN CONTINUOUSLY.
b. THE SUPPLY FANS ARE PROVIDED WITH A FACTORY PROVIDED VARIABLE FREQUENCY DRIVE(S). THE SUPPLY FAN SPEED WILL BE CONTROLLED TO MAINTAIN CONSTANT SUPPLY AIRFLOW.

12. EAVAW SEQUENCE:
a. THE EAVAW RESPONDS TO ROOM-SPACE PRESSURIZATION SENSORS. IS PROVIDED WITH A FACTORY MOUNTED CONTROL ENCLOSURE.
b. THE RAFA SPEED WILL BE CONTROLLED WITH THE FOLLOWING SEQUENCE:
c. ROOM PRESSURIZATION SHALL BE MAINTAINED EQUAL TO THE BUILDING PRESSURIZATION OF MINIMUM 0.025" WC.
d. THE ROOM PRESSURIZATION SHALL BE RELAYED THROUGH A SERIES OF SPACE PRESSURE SENSORS LOCATED THROUGHOUT THE SPACE SERVED.
e. THE EAVAW SERVING THE SPACE SHALL MODULATE TO MAINTAIN THE ROOM PRESSURIZATION.
f. MECHANICAL HIGH STATIC PROTECTION CUTOFFS SHALL BE INSTALLED TO PROTECT THE SYSTEM AND EQUIPMENT FROM PRESSURIZATION RELATED DAMAGE.

13. ECONOMIC ZONE (CONSTANT VOLUME):
a. WHEN OUTSIDE AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY AND OUTSIDE AIR TEMPERATURE IS ABOVE 53°F, THE BAS SHALL:
i. CLOSE THE ASSOCIATED OA/AVW AND EAVAW.
ii. MODULATE THE ECONOMIZER CUTOFFS AND RETURN AIR DAMPERS TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT
c. ENERGIZE THE ASSOCIATED RAFA AND OPEN THE ASSOCIATED DAMPERS
d. MODULATE THE FAN SPEED OF THE ASSOCIATED RAFA TO MAINTAIN ROOM PRESSURIZATION EQUAL TO THE BUILDING PRESSURIZATION SETPOINT.
e. WHEN OUTSIDE AIR ENTHALPY IS GREATER THAN RETURN AIR ENTHALPY, THE BAS SHALL:
i. RETURN THE ASSOCIATED OA/AVW AND EAVAW TO STANDARD OPERATION
ii. CLOSE THE ECONOMIZER OR A DAMPER AND OPEN THE MINIMUM OA AND RA DAMPER
iii. DE-ENERGIZE THE ASSOCIATED RAFA AND CLOSE THE ASSOCIATED DAMPERS

14. FAN OPERATION AND PROTECTION:
a. THE FAN SPEEDS WILL NOT DROP BELOW 20 HZ (ADJ.) AND SHALL NOT EXCEED 60 HZ.
b. THE STATIC PRESSURE SHALL BE ESTABLISHED DURING THE SYSTEM TESTING AND BALANCING.
c. MECHANICAL HIGH STATIC PROTECTION CUTOFFS SHALL BE INSTALLED TO PROTECT THE SYSTEM AND EQUIPMENT FROM PRESSURIZATION-RELATED DAMAGE.
d. THE FANS ARE SIZED FOR N+1 OPERATION. IN THE EVENT OF A FAN FAILURE, THE REMAINING FANS WILL ADJUST TO COMPENSATE FOR THE MISSING FAN.

15. SUPPLY AIR TEMPERATURE CONTROL (OPTIMIZED):
a. THE CONTROLLER WILL MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON ZONE COOLING AND HEATING REQUIREMENTS. THE VALVES TO THE COOLING AND RE-HEAT COILS WILL MODULATE TO MAINTAIN SPACE TEMPERATURE AND HUMIDITY REQUIREMENTS.

16. DEMUMIFICATION:
a. WHEN THE EVENT THAT COOLING DEMAND IS SATISFIED BUT A ZONE DEWPOINT IS ABOVE 58°F (ADJ.), THE OA/AVW AND EAVAW WILL MODULATE OPEN INCREMENTALLY. AFTER THE ZONE DEWPOINT IS BELOW 56°F (ADJ.) FOR 30 MINUTES (ADJ.), THE UNIT WILL RETURN TO STANDARD CONDITIONING MODE.

17. DEMAND CONTROLLED VENTILATION:
a. THE BAS SHALL MODULATE RESPONSE TO CO2 SENSORS LOCATED THROUGHOUT THE SPACE TO MAINTAIN A CO2 CONCENTRATION LESS THAN 800 PPM (ADJ.)

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PROJECT NO. 23112.000

SHEET TITLE
MECHANICAL
CONTROLS -
AHU-01-01

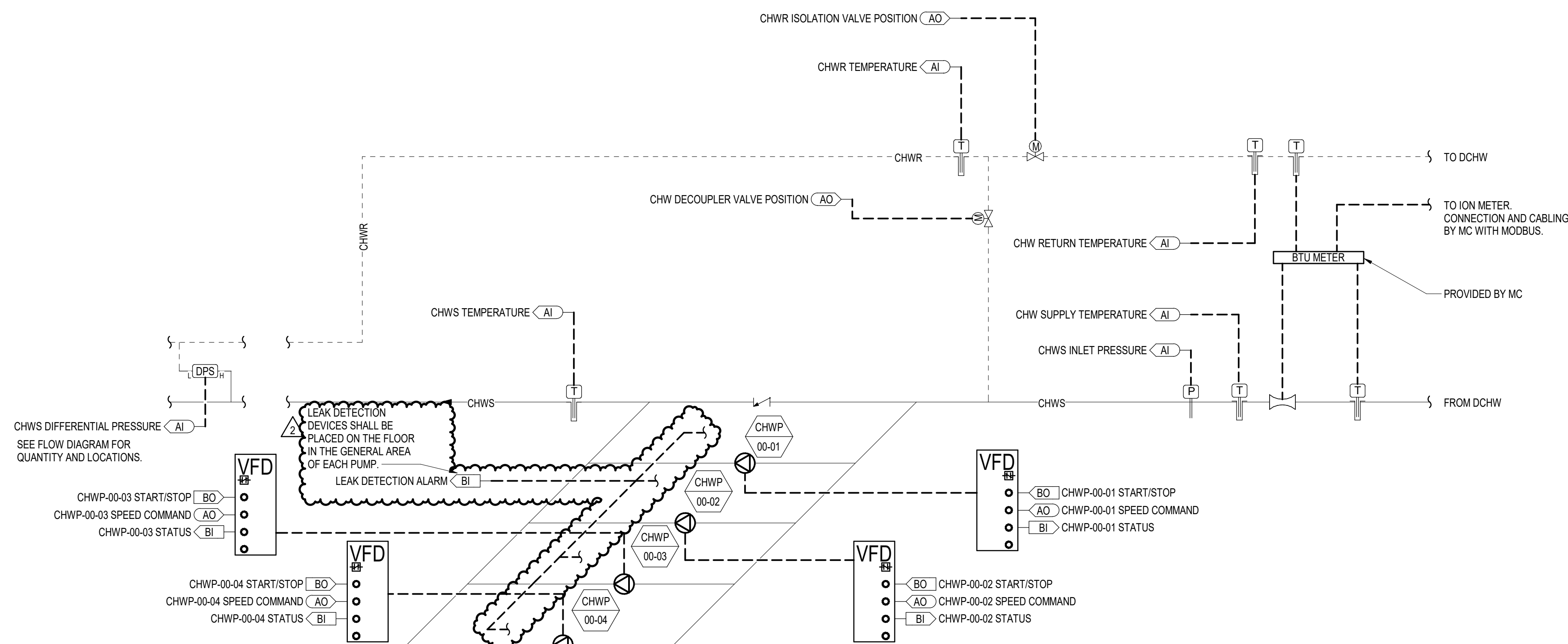
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M-706

H. WHERE AIRFLOW MONITORING IS INDICATED ON FANS, PIEZOMETER RING SHALL BE SUPPLIED AT EACH INLET CONE BY MANUFACTURER.

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- D. TEMPERATURE SENSORS, HUMIDISTATS, AND THERMOSTATS SHALL NOT BE INSTALLED ON EXTERIOR WALLS, ROOFS, OR WHERE EXPOSED TO SOLAR RADIATION, WHERE THERE ARE NO OTHER OPTIONS, A SOLAR BLOCKING ENCLOSURE AND INSULATED BATTERY BACKED MIMIC SHALL BE PROVIDED FROM DIRECT SOLAR EXPOSURE SHALL BE PROVIDED.
- B. VABS ARE POWERED BY CONTROL VOLTAGE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING RACEWAY GROUPING, AND POWER FOR THE LOW-VOLTAGE VAV UNITS.
- C. ALL NECESSARY CONTROL POINTS SHALL BE PROVIDED TO ACHIEVE THE WRITTEN SPECIFICATIONS OF OPERATION WHETHER OR NOT THEY ARE EXPLICITLY NAMED.
- D. PROVIDE ANALOGUE FIELD SENSORS NEXT TO ALL TEMPERATURE AND PRESSURE CONTROL POINTS.
- E. CONTROL CONTRACTOR SHALL COORDINATE WITH THE IU CONTROL INTEGRATOR.
- F. ALL IN-SPACE TEMPERATURE, HUMIDITY, AND CO2 SENSORS MUST BE BUILT TO A MINIMUM OF 100% RELIABILITY TO AVOID AN OCCUPANCY OVERRIDE WITH A BUTTON UNLESS OTHERWISE REQUESTED BY IU.
- G. LOCAL MAGNETIC GAGE SUPPLY AT EACH FILTER SECTION.
- H. WHERE AIRFLOW MONITORING IS INDICATED ON FANS, PIEZOMETRIC RING SHALL BE SPOOLED AT EACH INLET AND OUTLET.



1. GENERAL

A. THE BUILDING CHILLED WATER SYSTEM INCLUDES FOUR VARIABLE SPEED PRIMARY PUMPS (CHWP-00-01, CHWP-00-02, CHWP-00-03, CHWP-00-04). CHILLED WATER IS SUPPLIED BY LOCAL THERMAL UTILITY (CITIZENS ENERGY GROUP).

2. CONTROLS ARCHITECTURE

A. CONTROL POINTS SHALL BE CONTROLLED BY THE CENTRAL BAS VIA BACNET COMMUNICATION PROTOCOL. ALL CONTROL POINTS, WHETHER EXPLICITLY LISTED OR NOT, SHALL BE VISIBLE AND ACCESSIBLE VIA THE BAS.

B. PRIMARY OPERATION

1. THE CHW SYSTEM SHALL UTILIZE THE PRESSURE AVAILABLE BY THE UTILITY PROVIDER AS A PRIMARY MEANS OF SATISFYING THE PRESSURE AND FLOW REQUIREMENTS OF THE FACILITY AND MAINTAIN MINIMUM CHILLED WATER RETURN TEMPERATURE. IF MINIMUM CHW RETURN TEMPERATURE CANNOT BE MAINTAINED, THE DECOUPLER TIE-IN VALVE WILL BE UTILIZED TO MAINTAIN MINIMUM CHW RETURN TEMPERATURE.

C. SECONDARY OPERATION

1. IN THE EVENT ANY CHW VALVE POSITION IS 100% ON ANY AHU AND THE ASSOCIATED COOLING COIL DISCHARGE AIR TEMP IS ABOVE SETPOINT OR ANY AHU IS IN DEHUMIDIFICATION MODE FOR MORE THAN 15 MINUTES (ADJ), THE CHW PUMPS SHALL BE ENGAGED. VERIFY PUMPS ARE RUNNING BY WAY OF PUMP STATUS.

2. THE OPERATION MODE SHALL CONTINUE UNTIL ALL COOLING COIL VALVE POSITIONS ARE BELOW 80% (ADJ) FOR MORE THAN 60 MINUTES (ADJ). WHEN THIS IS SATISFIED, THE PUMPS SHALL BE DEENERGIZED AND THEIR RELEVANT ISOLATION VALVES SHALL CLOSE. IF THE MAIN BUILDING RETURN TEMPERATURE DROPS BELOW 53 F AN EXCEED THE TEMPERATURE RETURN CONTROL SEQUENCE.

D. DISCHARGE OPERATION

1. IN THE EVENT THAT ALL CHW VALVE POSITIONS ARE CLOSED FOR 30 MINUTES (ADJ), THE MAIN CHW SERVICE ISOLATION VALVES SHALL CLOSE.

E. RETAIN TEMPERATURE CONTROL

1. MODULATE MAIN BUILDING RETURN VALVE TO MAINTAIN A MINIMUM RETURN TEMPERATURE OF 53 F. PROVIDE METHOD OF MONITORING INDIVIDUAL COIL RETURN TEMPERATURES TO FACILITATE THE AVOIDANCE OF TEMPERATURE RETURN CONTROL. DISPLAY OF MINIMUM COIL RETURN TEMPERATURE ON GRAPHIC OR POINT NAME OF TEMPERATURE UNDER THE 53 F THRESHOLD WOULD SUFFICE.

3. PUMP CONTROL

A. PUMP START COMMAND:

1. OPERATIONALLY RELEVANT VALVE ACTUATORS ARE POWERED.

2. CHWPS START AFTER A 15 SEC (ADJ.) DELAY WHEN THE ASSOCIATED VALVES ARE PROVEN OPEN.

3. PUMP STATUS PROVIDES ON.

B. PUMP STOP COMMAND (OR DE-ENERGIZED):

1. PUMPS DE-ENERGIZED.

2. OPERATIONAL VALVES ARE CLOSED AND VALVE ACTUATOR IS SPRING RETURN CLOSE.

4. PUMP CONTROL (LEAD/LAG/STANDBY EACH PUMP SIZED AT 33%)

A. ONCE EVALUATED THE PUMP SPEED SHALL BE MODULATED TO MAINTAIN THE DIFFERENTIAL SETPOINT. SOFTWARE LEAD/LAG/STANDBY FUNCTION SHALL ALLOW ANY OF THE CHILLED WATER PUMPS TO TAKE THE LEAD. PUMP SPEED SHOULD THE LEAD PUMP FAIL TO START, AS SENSED BY THE PUMPS CT SWITCH. AN ALARM SHALL BE SENT TO THE OPERATORS WORKSTATION AND THE BAS SHALL START THE LAG PUMP. THE OBJECTIVE IS TO ALWAYS HAVE ONE COOLING COIL CONTROL VALVE 80% OPEN SO THE PUMPS OPERATE AT THE LOWEST SPEED AND PRESSURE POSSIBLE TO SATISFY THE CURRENT LOAD. CONTINUOUSLY MONITOR THE COOLING VALVE POSITIONS. WHEN THE MOST OPEN VALVE IS MORE THAN 80% OPEN FOR 10 MIN (ADJ), THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET DOWN BY 0.25 PSI (ADJ). WHEN ALL VALVES ARE 80% (ADJ) OR BELOW FOR 10 MIN (ADJ), THE DIFFERENTIAL SETPOINT SHALL BE RESET DOWN BY 0.25 PSI. CONTINUE TO RESET DIFFERENTIAL SETPOINT DOWN 0.25 PSI AT 10 MINUTE INTERVALS (ADJ) UNTIL ONE COOLING COIL CONTROL VALVE IS 75% (ADJ) OPEN.

B. THE REMOTE DP SETPOINT SHALL BE MAINTAINED BETWEEN MAXIMUM AND MINIMUM PRESSURE. THE MAXIMUM PRESSURE LIMIT IS THE PRESSURE REQUIRED TO PROVIDE FULL FLOW TO ALL COOLING COILS. WHEN VALVES SHUT CLOSELY (VMAJORED DURING THE INITIAL PROJECT TEST EFFORTS), THE MINIMUM PRESSURE LIMIT IS THE PRESSURE CORRELATING TO THE LOWEST SPEED OF THE PUMP MOTOR IS ALLOWED TO BE OPERATED (PER MOTOR MANUF. AND TAB). THE VPD INTERNAL SETTING WILL ALLOW THE VPD TO RUN THE PUMPS TO THEIR MINIMUMS.

C. WHEN MULTIPLE REMOTE DIFFERENTIAL PRESSURE SENSORS ARE IN USE, CONTROL TO THE SENSOR WITH THE HIGHEST DIFFERENTIAL PRESSURE SETPOINT.

D. WHEN RUNNING WITH REMOTE DIFFERENTIAL PRESSURE, THE PUMP COMMAND REACHES 100% AND THE DIFFERENTIAL PRESSURE DROPS MORE THAN 2 PSI BELOW THE SETPOINT FOR 10 MINUTES (ALL ADJ), START THE LAG PUMP. BOTH PUMPS SHALL CONVERGE AND RUN IN PARALLEL TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT AND THE REMOTE DP SETPOINT. WHEN THE PUMPS DROP TO THEIR MINIMUM OPERATING SPEED FOR 10 MINUTES (ADJ), THE LAG PUMP SHUTS OFF AND THE LEAD PUMP RESUMES CONTROL. THE SAME LOGIC SHALL APPLY TO THE SECOND LAG PUMP.

E. ALARM LOGIC: THE DESIGNATION OF THE LEAD/LAG/STANDBY PUMP TO MAINTAIN THE OPERATING TIME OF EACH PUMP TO BE WITHIN 200 HOURS OF EACH OTHER.

5. PUMP OPERATION AND PROTECTION

A. THE PUMP SPEEDS WILL NOT DROP BELOW 20HZ (ADJ) AND SHALL NOT EXCEED 60 HZ.

B. THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE ESTABLISHED DURING THE SYSTEM TESTING AND BALANCING.

C. MECHANICAL HIGH STATIC PROTECTION CUTOFFS SHALL BE INSTALLED TO PROTECT THE SYSTEM AND EQUIPMENT FROM PRESSURIZATION-RELATED DAMAGE.

D. THE PUMPS ARE SIZED FOR N-1 OPERATION. IN THE EVENT OF A PUMP FAILURE, THE REMAINING PUMPS WILL ADJUST TO COMPENSATE FOR THE MISSING PUMP.

6. ALARM LOGIC: THE CONTROLLER WILL DISPLAY ALARMS AND HAVE ONE DIGITAL OUTPUT FOR REMOTE INDICATION OF AN ALARM CONDITION. POSSIBLE ALARMS INCLUDE:

A. BUILDING MANAGEMENT SYSTEM

B. LEAK DETECTION

1. THE CONTROLLER SENDS AN ALARM IN THE CASE OF A SIGNAL FROM THE LEAK DETECTION SYSTEM.

C. TEMPERATURE SENSOR ALARM

1. THE CONTROLLER SENDS AN ALARM IN THE CASE OF A FAILED AIR TEMPERATURE SENSOR.

D. PRESSURE SENSOR ALARM

1. THE CONTROLLER SENDS AN ALARM IN THE CASE OF A FAILED PRESSURE SENSOR.

E. PUMP FAILURE

1. BAS SHALL PROVIDE FAN ARRAY OPERATION AND USE THE STATUS INDICATION TO ACCUMULATE RUNTIME. UPON FAILURE OF ANY OF THE PUMPS, THE BAS SHALL ALARM THAT PUMP FAILURE CONDITION.

F. HIGH OR LOW PRESSURE SAFETY

1. UPON ACTIVATION OF A HIGH OR LOW PRESSURE SAFETY SWITCH, AH SHALL BE DEENERGIZED, PUMPS SHALL BE DEENERGIZED VIA A HARD WIRED INTERLOCK, AND AN INDICATION OF THE OPERATION SHALL BE SENSED BY THE BAS. BAS SHALL ANNUNCIATE APPROPRIATE ALARM AND REMOVE AND LOCK OUT THE START COMMAND.

7. ACCESSORIES PROVIDE THE FOLLOWING:

A. BAS INTERFACING

1. A BAS PORT OR SERIAL CARD IS PROVIDED WITH THE CONTROLLER FOR FIELD INTERFACING WITH A BUILDING AUTOMATION SYSTEM.

2. UPDATE DEFAULT SETTINGS TO THE APPROPRIATE ADDRESSES TO MATCH THE BAS SETTINGS.

B. DDC/PLC INTERFACING

1. A FACTORY PROVIDED, FIELD MOUNTED INTERFACE PANEL THAT WILL BE WIRED TO THE MAIN CONTROLLER FOR MONITORING AND REMOTE ADJUSTMENTS OF SET POINTS.

C. PHASE AND BROWNOUT PROTECTION

1. A FACTORY MOUNTED AND WIRED COMPONENT WHICH MONITORS THE MAIN POWER COMING INTO THE UNIT.

D. IF A PHASE DROPS OUT, OR IF THE INCOMING VOLTAGE EXCEEDS THE ACCEPTABLE RANGE, THE COMPONENT WILL TURN OFF THE UNIT TO HELP PROTECT THE ELECTRICAL SYSTEMS.

8. MINIMUM REQUIREMENTS FOR OPERATOR WORKSTATION DISPLAY

A. CHW SYSTEM FLOW

B. ALL DATA FROM RTU METER

C. MAJOR VALVE STATUS

D. PUMP ON/OFF STATUS

E. PUMP SPEED

F. PUMP ASSIGNMENT (LEAD/LAG/STANDBY)

G. ALL TEMPERATURE SENSORS

H. ALL DIFFERENTIAL PRESSURE SENSORS

I. OPERATIONAL STATUS OF EACH CHW USER

POINT DISCRPTION		POINT TYPE	HARDWIRED (H) OR NETWORKED (N)?	EXPECTED RANGE
CHW	SUPPLY TEMPERATURE	AI	N	0-100%
CHW	RETURN TEMPERATURE	AI	N	0-100%
CHW DECOUPLER VALVE	POSITION	AO	N	0-100%
CHWP-00-01	START/STOP	BO	N	-
CHWP-00-01	SPEED COMMAND	AO	N	0-100%
CHWP-00-01	STATUS	BI	N	0-100%
CHWP-00-02	START/STOP	BO	N	-
CHWP-00-02	SPEED COMMAND	AO	N	0-100%
CHWP-00-02	STATUS	BI	N	0-100%
CHWP-00-03	START/STOP	BO	N	-
CHWP-00-03	SPEED COMMAND	AO	N	0-100%
CHWP-00-03	STATUS	BI	N	0-100%
CHWP-00-04	START/STOP	BO	N	-
CHWP-00-04	SPEED COMMAND	AO	N	0-100%
CHWP-00-04	STATUS	BI	N	0-100%
CHWR	TEMPERATURE	AI	H	35-65°F
CHWR ISOLATION VALVE	POSITION	AO	N	0-100%
CHWS	TEMPERATURE	AI	H	35-65°F
CHWS	DIFFERENTIAL PRESSURE	AI	H	0-40 psi
CHWS	INLET PRESSURE	AI	N	0-200 psi
LEAK DETECTION	ALARM	BI	N	ON/OFF

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SHEET ISSUE		
1	95% CONSTRUCTION DOCUMENTS	12/19/24
2	CONSTRUCTION DOCUMENTS	01/13/25
3	ADDENDUM 01	01/27/25
4	ADDENDUM 02	02/03/25

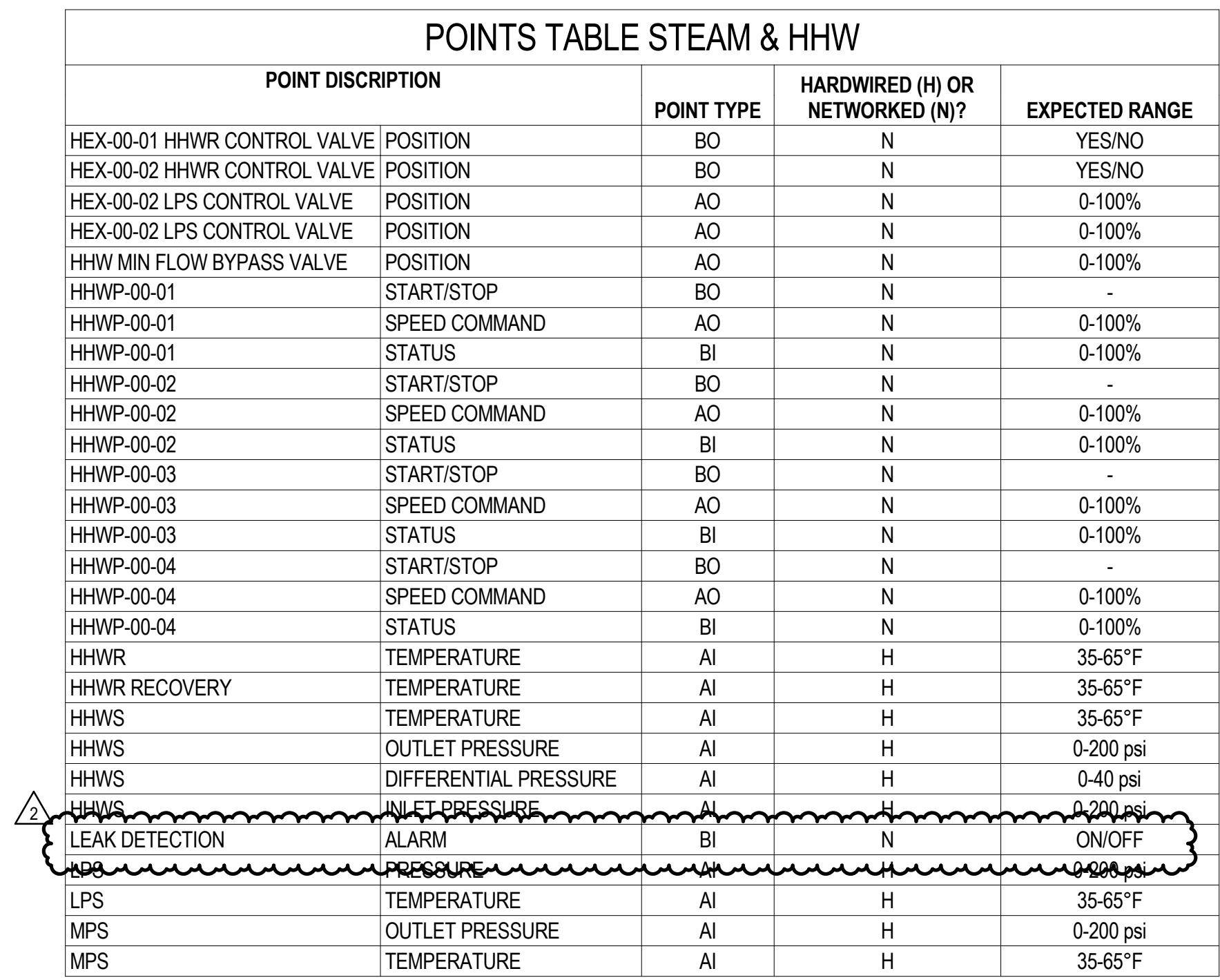
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PROJECT NO. 23112.00

SHEET TITLE
**MECHANICAL
CONTROLS - CHW
PUMPS**

SHEET NUMBER

M-710



- GENERAL CONTROLS NOTES:**

- D. TEMPERATURE SENSORS, HUMIDITY/STATS AND THERMOSTATS SHALL NOT BE INSTALLED ON EXTERIOR WALLS, ROOFS, OR WHERE EXPOSED TO EXTERIOR RADIATION, WHERE THERE ARE NO OTHER OPTIONS. A. ALL LOGIC CONTROLS SHALL BE INSTALLED IN A PROTECTED LOCATION TO ELIMINATE TEMPERATURE INFLUENCE FROM DIRECT SOLAR EXPOSURE SHALL BE PROVIDED.
- B. VAVS ARE POWERED BY CONTROL VOLTAGE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING RATING, WIRING, AND POWER FOR THE LOW VOLTAGE VAV UNITS.
- C. ALL NECESSARY CONTROL POINTS SHALL BE PROVIDED TO ALLOW THE WRITTEN SEQUENCES OF OPERATION WHETHER OR NOT THEY ARE EXPLICITLY NAMED.
- D. PROVIDE ANALOGUE FIELD SENSORS NEXT TO ALL TEMPERATURE AND PRESSURE CONTROL POINTS.
- E. CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL ENGINEER FOR THE FOLLOWING:
 - A. IN-SPACE TEMPERATURE, HUMIDITY, AND CO₂ SENSORS SHALL BE SENSORS WITH ION-02 THE ABILITY TO INDUCE AN OCCUPANCY OVERRIDE WITH A BUTTON UNLESS OTHERWISE REQUESTED BY IJ.
 - B. LOCAL MAGNETIC GAGE SUPPLIED AT EACH FLOOR SECTION.
 - C. WHERE AIR FLOW MONITORING IS INDICATED ON FANS, PRESSURE RING SHALL BE SUPPLIED AT EACH FAN COME BY MANUFACTURER.

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SHEET TITLE

MECHANICAL CONTROLS - HHW AND STEAM PLANT

SHEET NUMBER

M-711

FAN SHALL BE ENERGIZED WHENEVER THE TEMPERATURE FALLS BELOW SETPOINT.

SETPOINTS:

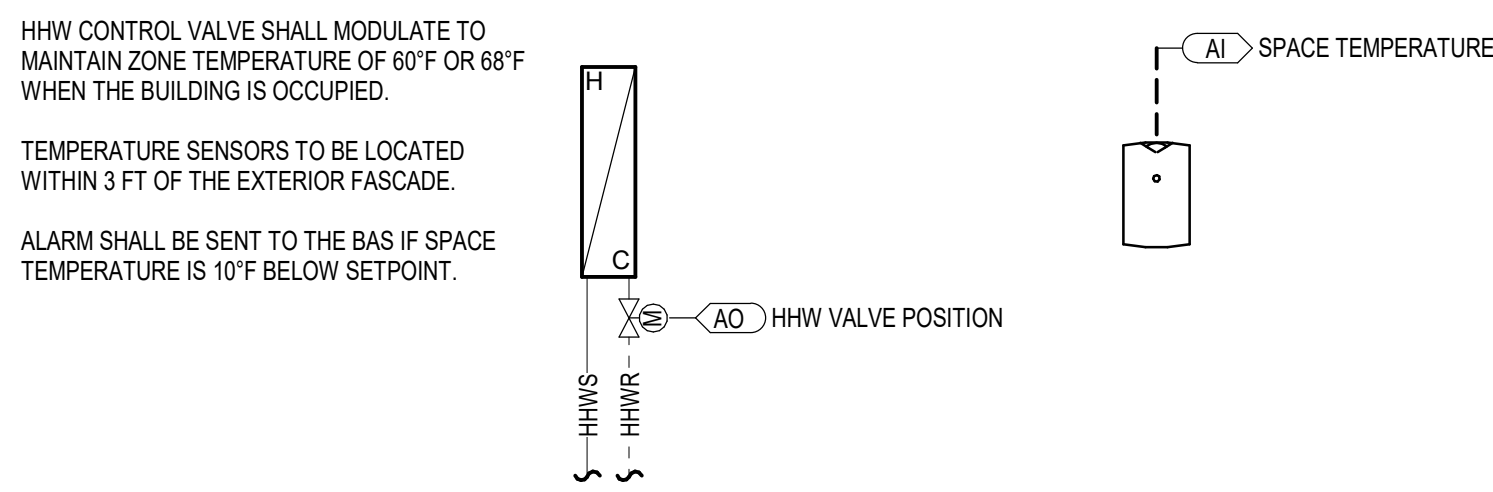
STAIRWELL TEMPERATURE: 65°F
LAUNDRY MAKEUP AIR ENCLOSURE: 50°F

HHW VALVE SHALL MODULATE TO MAINTAIN SETPOINT.

ALARM SHALL BE SENT TO THE BAS IF SPACE TEMPERATURE IS 10°F BELOW SETPOINT.

SEE MECHANICAL PLANS FOR SENSOR QUANTITIES AND LOCATIONS

POINTS TABLE FTR				
POINT DISCRPTION		POINT TYPE	HARDWIRED (H) OR NETWORKED (N)?	EXPECTED RANGE
HHW VALVE	POSITION	AO	N	0-100%
SPACE	TEMPERATURE	AI	H	0-1500 PPM



POINT DESCRIPTION		POINT TYPE	HARDWIRED (H) OR NETWORKED (N)?	EXPECTED RANGE
TF	START/STOP	BO	N	-
TF	SPEED COMMAND	AO	N	0-100%
TF	SPACE TEMPERATURE	AI	H	65-80°F

TF SPACE TEMPERATURE < AI

BO TF START/STOP

AO TF SPEED COMMAND

TF CTRL

TEMP

FAN

TRANSFER FANS SHALL ALWAYS BE AVAILABLE FOR OPERATION. FANS SHALL RESPOND TO WALL-MOUNTED TEMPERATURE SENSORS LOCATED IN THE SPACE SERVED TO MAINTAIN THE ROOM AT 80°F (ADJ.).

IF THE SPACE TEMPERATURE IS IN EXCESS OF THE TEMPERATURE SETPOINT FOR LONGER THAN 15 MINUTES (ADJ.) AND THE FAN IS OPERATING, A HIGH SPACE TEMPERATURE ALARM SHALL BE GENERATED.

[illegible]

SEQUENCE OF OPERATIONS – HWC

1. GENERAL:
 - a. HYDRONIC WALL CASSETTE (HWC) ON THIS PROJECT ARE CONSTANT AIR VOLUME (CAV) HYDRONIC HEATING AND COOLING HWCS AS SPECIFIED AND SERVE SPACES WHICH EITHER REQUIRE 247 AIR CHANGEABILITY.
2. CONTROLS ARCHITECTURE:
 - a. HWC SYSTEMS SHALL BE CONTROLLED BY THE CENTRAL BAS VIA BACNET COMMUNICATION PROTOCOL. HWC SHALL BE SUPPLIED WITH A BACNET CAPABLE THERMOSTAT, WHICH WILL RELAY THE FAN STATUS OF THE UNIT. ALL CONTROL POINTS, WHETHER EXPLICITLY LISTED OR NOT, SHALL BE VISIBLE AND CONTROLLABLE VIA THE BAS.
 - b. UNIT START COMMAND:
 - a. SUPPLY FAN SHALL ALWAYS RUN.
 - c. UNIT STOP COMMAND (OR DE-ENERGIZED):
 - a. SUPPLY FAN AND TEMPERING OPTIONS DE-ENERGIZED.
3. OCCUPIED/OCCUPIED MODES
 - a. TEMPERATURE SETPOINTS
 - a. OCCUPIED:
 - COOLING: 76°F +/- 2°F
 - HEATING: 68°F +/- 2°F
 - b. ZONES CONDITIONED BY HWCS ARE ALWAYS CONSIDERED OCCUPIED.
 - c. OCCUPIED MODE:
 - a. SUPPLY FAN ON
 - b. ALL COILS AVAILABLE FOR OPERATION.
4. SUPPLY FAN SEQUENCE:
 - a. START/STOP: BAS SHALL COMMAND THE SUPPLY FAN TO RUN CONTINUOUSLY.
 - b. THE SUPPLY FAN ARE PROVIDED WITH EGRS. THE SUPPLY FAN SPEED WILL BE CONTROLLED TO MEET THE AIRFLOW SPECIFIED IN THE DESIGN DOCUMENTS.
5. TEMPERING OPTIONS:
 - a. THE CHW COIL OR THE HWV COIL CONTROL VALVE SHALL BE MODULATED TO MAINTAIN THE TEMPERATURE WITHIN THE SPACE SERVED. THE VALVES SHALL NOT BE OPEN LONGER THAN 15 MINUTES. THE VALVE SHALL BE A 30 MIN (ADJ.) DELAY IN CHANGEOVER FROM COOLING MODE TO HEATING MODE TO PREVENT SHORT CYCLING.
6. CONDENSATE OVERFLOW:
 - a. IN THE EVENT THAT THE HIGH-LEVEL CONDENSATE SWITCH IS TRIPPED, ALL COOLING COMPONENTS SHALL SHUT DOWN AND ALARMS SHALL BE SENT TO THE BAS.
7. HUMIDITY SENSOR SHUTDOWN
 - a. IN THE EVENT THAT THE MOISTURE SENSOR MOUNTED IN THE CATCH PAN BELOW THE HVC SENSES MOISTURE, THE CHW CONTROL AND ISOLATION VALVES SHALL CLOSE AND THE UNIT SHALL SEND A HIGH-PRIORITY ALARM TO THE BAS.
8. ALARM INDICATION: THE CONTROLLER WILL DISPLAY ALARMS AND HAVE ONE DIGITAL OUTPUT FOR REMOTE INDICATION OF AN ALARM CONDITION. POSSIBLE ALARMS INCLUDE:
 - a. BUILDING MANAGEMENT SYSTEM
 - a. THE CONTROLLER WILL SEND ALL ALARMS TO THE BAS.
 - b. DIRTY FILTER ALARM:
 - a. A DIGITAL SIGNAL IS SENT TO THE CONTROLLER INDICATING AN INCREASED PRESSURE DROP ACROSS AN AIR FILTER (MUST BE ADJUSTED IN FIELD DURING START UP). THE CONTROLLER WILL THEN PROVIDE A DIRTY FILTER ALARM.
 - c. TEMPERATURE SENSOR ALARM:
 - a. THE CONTROLLER SENDS AN ALARM IN THE CASE OF A FAILED AIR TEMPERATURE SENSOR.
 - d. FAN FAILURE:
 - a. BAS SHALL PROVE FAN OPERATION AND USE THE STATUS INDICATION TO ACCUMULATE RUNTIME. UPON FAILURE OF ANY OF THE FAN, THE BAS SHALL ALARM THAT FAN FAILURE HAS OCCURRED.
 - e. CONDENSATE OVERFLOW:
 - a. THE OVERFLOW SENSOR SHALL SEND AN ALARM TO THE BAS UPON EITHER CONDENSATE PUMP FAILURE OR OVERFLOW SENSOR ACTIVATION.
 - f. MOISTURE SENSOR DETECTION:
 - a. THE MOISTURE SENSOR IN THE CATCH TRAY WILL SEND AN ALARM TO THE BAS UPON DETECTION OF MOISTURE.
9. ACCESSORIES: PROVIDE THE FOLLOWING:
 - a. BAS INTERFACING:
 - a. BAS PORT OR SERIAL CARD IS PROVIDED WITH THE CONTROLLER FOR FIELD INTERFACING WITH A BUILDING AUTOMATION SYSTEM.
 - b. UPDATE DEFAULT SETTINGS TO THE APPROPRIATE ADDRESSES TO MATCH THE BAS SETTINGS.
 - b. DDC REMOTE INTERFACE:
 - a. DDC REMOTE PROVIDED. FIELD MOUNTED INTERFACE PANEL THAT WILL BE WIRED TO THE MAIN CONTROLLER FOR MONITORING AND REMOTE ADJUSTMENTS OF SET POINTS.
 - c. PHASE AND BROWNOUT PROTECTION
 - a. FACTORY MOUNTED AND WIRED COMPONENT WHICH MONITORS THE MAIN POWER COMING INTO THE UNIT.
 - b. FACTORY MOUNTED DROPS OUT OR THE INCOMING VOLTAGE EXCEEDS THE ACCEPTABLE RANGE. THE COMPONENT WILL TURN OFF THE UNIT TO HELP PROTECT THE ELECTRICAL SYSTEMS.
 - d. CONDENSATE OVERFLOW UNIT SHUTDOWN
 - a. FACTORY MOUNTED CONDENSATE OVERFLOW SWITCH WIRED TO THE UNIT CONTROLLER. THE CONTROLLER MONITORS THE CONDENSATE OVERFLOW SWITCH.
 - b. IF THE WATER LEVEL IN THE DRAIN PAN REACHES A CERTAIN LEVEL, THE UNIT WILL SHUTDOWN AND SEND AN ALARM.
10. MINIMUM REQUIREMENTS FOR OPERATOR WORKSTATION DISPLAY
 - a. SUPPLY FAN ON-OFF STATUS
 - b. SUPPLY FAN SPEED
 - c. ALL TEMPERATURE SENSORS ON THE UNIT
 - d. CHW AND HWV VALVE POSITIONS
 - e. COOLING DEMAND % OF TOTAL CAPACITY
 - f. TEMPERATURE LEAVING UNIT
 - g. ALARMS

FAN START/STOP BO
FAN SPEED AO

ECM CTRL

RA

SA

AI ZONE TEMPERATURE

SA TEMPERATURE
CHW VALVE POSITION
HHW VALVE POSITION

SEE MECHANICAL
SENSOR QUANTITY
LOCATIONS

SEQUENCE OF OPERATIONS - FCU

1. GENERAL
 - a. FAN COIL UNITS (FCU) ON THIS PROJECT ARE CONSTANT AIR VOLUME (CAV) HYDRONIC HEATING AND COOLING FCUS AS SPECIFIED AND SERVED SPACES WHICH EITHER REQUIRE 24/7 AVAILABILITY OR ARE OTHERWISE NOT SUITABLE TO BE SERVED BY ONE OF THE AHUS.
2. CONTROL ARCHITECTURE
 - a. OCCUPANT'S SETTINGS SHALL BE CONTROLLED BY THE CENTRAL BAS VIA BACNET COMMUNICATION PROTOCOL. ALL CONTROL POINTS, WHETHER EXPLICITLY LISTED OR NOT, SHALL BE USABLE AND CONTROLLABLE VIA THE BAS.
3. UNIT START COMMAND
 - a. SUPPLY FAN STARTS AFTER A 15 SEC (ADJ.) DELAY WHEN THE ASSOCIATED DAMPERS ARE PROVEN OPEN.
 - b. TEMPERING OPTIONS TO FUNCTION AS DESCRIBED.
4. UNIT STOP COMMAND (OR DE-ENERGIZED)
 - a. SUPPLY FAN AND TEMPERING OPTIONS DE-ENERGIZED.
5. OCCUPIED/UNOCCUPIED MODES
 - a. TEMPERATURE SETPOINTS
 - a. OCCUPIED:
 - COOLING: $78^{\circ}\text{F} \pm 2^{\circ}\text{F}$
 - HEATING: $68^{\circ}\text{F} \pm 2^{\circ}\text{F}$
 - RELATIVE HUMIDITY: 55%
 - IDF, ELECTRICAL, AV, AND OTHER ROOMS CONTAINING HEAT GENERATING ELECTRICAL EQUIPMENT ARE CONSIDERED OCCUPIED 24/7.
 - b. UNOCCUPIED:
 - COOLING: $82^{\circ}\text{F} \pm 2^{\circ}\text{F}$
 - HEATING: $60^{\circ}\text{F} \pm 2^{\circ}\text{F}$
- b. SCHEDULE SHALL BE BASED ON AN OCCUPANCY SCHEDULE PROVIDED BY THE OWNER.
- c. OCCUPANCY OVERRIDE: IF DURING THE UNOCCUPIED PERIOD THERE IS A REQUEST FOR OCCUPANCY OVERRIDE, THE OCCUPANCY MODE SHALL BECOME ACTIVE FOR 2 HOURS (ADJ.) PRIOR TO SCHEDULED OCCUPANCY. OCCUPIED MODE SHALL BE ENGAGED WITH SUFFICIENT TIME TO ENSURE THE SPACES SERVED ARE AT THE OCCUPIED TEMPERATURE SETPOINT AND VENTILATION RATES PRIOR TO THE SCHEDULED OCCUPANCY.
6. OCCUPIED MODE
 - a. SUPPLY FAN ON
 - b. ALL COILS AVAILABLE FOR OPERATION.
7. UNOCCUPIED MODE (UNIT OFF): UNIT REMAINS OFF WHEN IN UNOCCUPIED MODE.
 - a. SUPPLY FAN OFF
 - b. TEMPERING OFF
8. SUPPLY FAN SEQUENCE:
 - a. START/STOP: BAS SHALL COMMAND THE SUPPLY FAN TO RUN CONTINUOUSLY.
 - b. THE SUPPLY FAN SHALL BE PROVIDED WITH ECMS. THE SUPPLY FAN SPEED WILL BE CONTROLLED TO MEET THE AIRFLOW SPECIFIED IN THE DESIGN DOCUMENTS.
9. TEMPERING OPTIONS:
 - a. THE CHW COIL OR THE HHW COIL CONTROL VALVE SHALL BE MODULATED TO MAINTAIN THE TEMPERATURE WITHIN THE SPACE SERVED. THE VALVES SHALL NOT BE OPEN SIMULTANEOUSLY. THERE SHALL BE A 30 MIN (ADJ.) DELAY IN CHANGEOVER FROM COOLING MODE TO HEATING MODE TO PREVENT SHORT CYCLING.
 - b. IN THE EVENT THAT THE HIGH-LEVEL CONDENSATE SWITCH IS TRIPPED, ALL COILING COMPONENTS SHALL SHUT DOWN AND ALARMS SHALL BE SENT TO THE BAS.
10. ALARMS INDICATION: THE CONTROLLER WILL DISPLAY ALARMS AND HAVE ONE DIGITAL OUTPUT FOR REMOTE INDICATION OF AN ALARM CONDITION. POSSIBLE ALARMS INCLUDE:
 - a. BUILDING MANAGEMENT SYSTEM
 - a. THE CONTROLLER WILL SEND ALL ALARMS TO THE BAS.
 - b. DIRTY FILTER ALARM
 - a. A DIGITAL SIGNAL IS SENT TO THE CONTROLLER INDICATING AN INCREASED PRESSURE DROP ACROSS AN AIR FILTER (MUST BE ADJUSTED IN FIELD DURING START UP). THE CONTROLLER WILL THEN PROVIDE A DIRTY FILTER ALARM.
 - c. TEMPERATURE SENSOR ALARM
 - a. THE CONTROLLER SENDS AN ALARM IN THE CASE OF A FAILED AIR TEMPERATURE SENSOR.
 - d. FAN FAILURE:
 - a. BAS SHALL PROVE FAN OPERATION AND USE THE STATUS INDICATION TO ACCUMULATE RUNTIME. UPON FAILURE OF ANY OF THE FAN, THE BAS SHALL ALARM THAT FAN FAILURE CONDITION.
11. ACCESSORIES: PROVIDE THE FOLLOWING.
 - a. BAS PORT OR SERIAL CARD IS PROVIDED WITH THE CONTROLLER FOR FIELD INTERFACING WITH A BUILDING AUTOMATION SYSTEM.
 - b. UPDATE DEFAULT SETTINGS TO THE APPROPRIATE ADDRESSES TO MATCH THE BAS SETTINGS.
12. BDC REMOTE INTERFACE
 - a. FACTORY PROVIDED, FIELD MOUNTED INTERFACE PANEL THAT WILL BE WIRED TO THE MAIN CONTROLLER FOR MONITORING AND REMOTE ADJUSTMENTS OF SET POINTS.
13. PHASE AND BROWNOUT PROTECTION
 - a. FACTORY MOUNTED AND WIRING COMPONENT WHICH MONITORS THE MAIN POWER COMING INTO THE UNIT.
 - b. IF A PHASE DROPS OUT, OR IF THE INCOMING VOLTAGE EXCEEDS THE ACCEPTABLE RANGE, THE COMPONENT WILL TURN OFF THE UNIT TO HELP PROTECT THE ELECTRICAL SYSTEMS.
14. CONDENSATE OVERFLOW UNIT SHUTDOWN
 - a. FACTORY MOUNTED CONDENSATE OVERFLOW SWITCH WIRED TO THE UNIT CONTROLLER. THE CONTROLLER MONITORS THE CONDENSATE OVERFLOW SWITCH.
 - b. IF THE WATER LEVEL IN THE DRAIN PAN REACHES A CERTAIN LEVEL, THE UNIT WILL SHUTDOWN AND SEND AN ALARM.
15. MINIMUM REQUIREMENTS FOR OPERATOR WORKSTATION DISPLAY
 - a. SUPPLY FAN ON-OFF STATUS
 - b. SUPPLY FAN SPEED
 - c. ALL TEMPERATURE SENSORS ON THE UNIT
 - d. CHW AND HHW VALVE POSITIONS
 - e. COOLING DEMAND % OF TOTAL CAPACITY
 - f. TEMPERATURE LEAVING UNIT
 - g. ALARMS

- TEMPERATURE SENSORS, HUMIDITY/STARS AND THERMISTORS SHALL NOT BE INSTALLED ON EXTERNAL WALLS OR SURFACES EXPOSED TO SOLAR RADIATION, WHERE THERE ARE NO OTHER OPTIONS: A SOLAR SHADING ENCLOSURE AND INSULATED BACKLASHING TREATMENT TO MINIMIZE THE INFLUENCE FROM DIRECT SOLAR EXPOSURE SHALL BE PROVIDED.
- B. VAYS ARE POWERED BY CONTACT VOLTAGE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING RATING, WIRING, AND POWER FOR THE LOW-VOLTAGE VAY UNITS.
- C. ALL NECESSARY CONTROL POINTS SHALL BE PROVIDED TO ACHIEVE THE WRITTEN SEQUENCES OF OPERATION WHETHER OR NOT THEY ARE EXPLICITLY NAMED.
- D. PROVIDE ANALOGUE FIELD SENSORS NEXT TO ALL TEMPERATURE AND PRESSURE CONTROL POINTS.
- E. CONTROLS CONTRACTOR SHALL COORDINATE WITH THE I/O CONTROL INTEGRATOR.
- F. ALL IN-SPACE TEMPERATURE, HUMIDITY, AND CO2 SENSORS SHALL BE FIELD SENSORS (WITH ONLY THE ABILITY TO INDUCE AN OCCUPANCY OVERRIDE WITH A BUTTON UNLESS OTHERWISE REQUESTED BY IJ).
- G. LOCAL MAGNETIC GAUGE SUPPLIED AT EACH FILTER SECTOR.
- H. WHERE AIR FLOW MONITORING IS INDICATED ON PANELS, THE AIR FLOW METER SHALL BE SUPPLIED AT EACH FAN SLOT AS PER MANUFACTURER.

MFR WALL CONTROLLER COMMUNICATES WITH FAN DIRECTLY. NO BAS CONNECTION. HANDHELD REMOTE CONTROL IS NOT ACCEPTABLE SUBSTITUTE.

ANY AUXILIARY SENSORS REQUIRED SHALL BE PROVIDED BY MANUFACTURER. MANUFACTURER PROGRAMMING SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING FAN SPEED BASED TEMPERATURE AND/OR SCHEDULE.

MANUFACTURER'S CONTROLLER SHALL BE MOUNTED ON WALL BEHIND TRANSPARENT LOCKABLE TAMPER-RESISTANT BOX.

MANUFACTURER'S CONTROLLER SHALL BE PASSWORD PROTECTED. COORDINATE ACCESS WITH OWNER.

SEPARATE CONTROLLERS SHALL BE PROVIDED FOR EACH OF THE GROUPINGS OF HVLS FANS (ONE FOR THE WEST CONCOURSE, ONE FOR THE PRACTICE GYM,

A diagram of a three-bladed propeller. It has a central hub with a small circle in the middle. Three blades extend from the hub. A dashed horizontal line passes through the center of the hub, representing the axis of rotation.

GREASE FAN, MAKEUP AIR FAN, ISOLATION DAMPER, AND HYDRONIC DUCT HEATER OPERATION IS INTERLOCKED WITHIN AND CONTROLLED BY THE MILLIKITCHEN CONTROL SYSTEM (BY OTHERS). OUTPUT TO BAS IS FOR MONITORING STATUS ONLY. COORDINATE REQUIREMENTS WITH KITCHEN DESIGN DRAWINGS.

HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN 55°F LAT.

BRANCH CIRCUIT LENGTH FOR 3% MAX VOLTAGE DROP COPPER CONDUCTORS IN CONDUIT												
VOLT	BREAKER TRIP	WIRE SIZE										
		12	10	8	6	4	2	1	1/2	2/3	3/4	4/5
120 V	20 AMP	50'	80'	130'	205'	330'						
	30 AMP	55'	85'	135'	220'	350'						
	40 AMP			65'	100'	165'	265'	330'				
	50 AMP				80'	130'	210'	265'	335'			
	70 AMP					95'	150'	190'	240'	300'		
	90 AMP						115'	145'	185'	235'	295'	
208V 1PH	125 AMP						105'	135'	170'	210'	270'	
	150 AMP							110'	140'	175'	225'	
208V 3PH	20 AMP		90'	140'	225'	360'	575'					
	30 AMP			95'	150'	240'	385'	610'				
	40 AMP				110'	180'	285'	455'	575'			
	50 AMP					140'	230'	365'	465'	590'		
	70 AMP						165'	260'	330'	415'	525'	
	90 AMP							200'	255'	325'	405'	515'
208V 3PH	125 AMP							185'	230'	295'	370'	465'
	150 AMP								195'	245'	310'	390'
277V 1PH	20 AMP		100'	165'	260'	420'	665'					
	30 AMP			110'	175'	280'	445'	705'				
	40 AMP				130'	210'	330'	530'	665'			
	50 AMP					165'	265'	420'	535'	675'		
	70 AMP						190'	300'	380'	480'	605'	
	90 AMP							235'	295'	375'	470'	595'
277V 1PH	125 AMP							210'	270'	340'	425'	540'
	150 AMP								225'	285'	355'	450'
480V 1PH	20 AMP		120'	190'	300'	480'	770'					
	30 AMP			125'	200'	320'	510'	815'				
	40 AMP				150'	240'	385'	610'	770'			
	50 AMP					190'	305'	485'	615'	775'		
	70 AMP						220'	345'	440'	555'	700'	
	90 AMP							270'	340'	430'	545'	695'
480V 1PH	125 AMP							245'	310'	390'	495'	620'
	150 AMP								255'	325'	410'	520'
480V 3PH	20 AMP		205'	330'	525'	835'	1330'					
	30 AMP			220'	350'	560'	885'	1410'				
	40 AMP				260'	415'	665'	1060'	1335'			
	50 AMP					335'	530'	845'	1070'	1345'		
	70 AMP						380'	605'	760'	960'	1215'	
	90 AMP							470'	590'	740'	945'	1190'
480V 3PH	125 AMP							425'	535'	680'	855'	1080'
	150 AMP								450'	560'	715'	900'
480V 3PH	20 AMP		240'	380'	605'	965'	1540'					
	30 AMP			265'	405'	645'	1025'	1630'				
	40 AMP				300'	480'	770'	1225'	1545'			
	50 AMP					385'	615'	980'	1235'	1555'		
	70 AMP						440'	700'	880'	1110'	1400'	
	90 AMP							540'	680'	860'	1090'	1375'
480V 3PH	125 AMP							490'	620'	785'	995'	1250'
	150 AMP								515'	655'	825'	1040'

NOTES
1. TABLE IS BASED UPON COPPER CONDUCTORS USING 80% OF BREAKER TRIP RATING.
2. MAXIMUM CONDUIT FILL IS 3 CURRENT CARRYING CONDUCTORS. APPLY DERATING FACTOR AS FOLLOWS FOR ADDITIONAL CURRENT CARRYING CONDUCTORS.
A 4-6 CONDUCTORS 80%
B 7-9 CONDUCTORS 70%
3. VOLTAGE DROP LENGTH IS BASED UPON THE MID POINT OF THE LOAD.
4. CONDUCTOR LENGTHS MAY BE INCREASED IF CONTRACTOR PROVIDES VOLTAGE DROP CALCULATION USING ACTUAL LOAD AND CONDUCTOR LENGTHS.
5. WHERE VOLTAGE DROP CONDUCTOR SIZE EXCEEDS TERMINAL CONDUCTOR RATING REDUCE CONDUCTOR SIZE FOR MAXIMUM 20' PRIOR TO TERMINATION POINT.

CONTRACTOR'S REQUIRED SUBMITTALS		ELECTRICAL ABBREVIATIONS	
A. GENERAL		A. AMP	AMPERE
1. REFER TO SPECIFICATIONS FOR ADDITIONAL SUBMITTAL REQUIREMENTS.		AC	ALTERNATING CURRENT
2. PRODUCT DATA AND SUBMITTALS NOT REQUESTED IN SPECIFICATIONS WILL BE RETURNED WITHOUT REVIEW		AF	AMPERE FRAME, AMPERE FUSE
3. PROVIDE LIST OF ALL PLANNED SUBMITTALS AND SCHEDULE WHEN THEY WILL BE PROVIDED FOR REVIEW		AFC	ABOVE FINISHED CEILING
4. SUBMITTALS SHALL BE COMPLETE AND PROVIDED BY SPECIFICATION SECTION. COMBINING MULTIPLE SECTIONS INTO A SINGLE SUBMITTAL IS NOT ALLOWED WITHOUT PRIOR APPROVAL. INCOMPLETE SUBMITTALS OR SUBMITTALS COVERING MULTIPLE SPECIFICATION SECTIONS WITHOUT PRIOR APPROVAL WILL BE REJECTED AND NOT REVIEWED.		AFF	ABOVE FINISHED FLOOR
B. DELEGATED DESIGN SUBMITTALS		AFG	ABOVE FINISHED GRADE
1. SUPPORT SYSTEMS AND CALCULATIONS FOR ELECTRICAL RACEWAYS, PADS AND EQUIPMENT.		AIC	AMPERE INTERRUPTING CAPACITY
2. SHORT CIRCUIT STUDY, COORDINATION STUDY AND ARC-FLASH STUDY.		ANN	ANNUNCIATOR
C. INFORMATIONAL COORDINATION DRAWINGS		AS	AMPERE SWITCH
1. ELECTRICAL SPACES SHOP DRAWINGS		AT	AMPERE TRIP
2. IN WALL COORDINATION DRAWINGS		ATS	AUTOMATIC TRANSFER SWITCH
3. IN FLOOR COORDINATION DRAWINGS		AWG	AMERICAN WIRE GAUGE
4. EXPOSED SPACES COORDINATION DRAWINGS		BATT	BATTERY
D. 260513 - MEDIUM VOLTAGE CABLES		BC	BARE COPPER
1. PRODUCT DATA FOR EACH SIZE CABLE. INCLUDE SPLICES AND TERMINATIONS		BCW	BARE COPPER WIRE
2. TEST AND INSPECTION REPORTS		BKBD	BACKBOARD
E. 260519 - LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLESAND 260523 - CONTROL-VOLTAGE ELECTRICAL POWER CABLES SECTIONS MAY BE COMBINED		BKR	BREAKER
1. TEST AND INSPECTION REPORTS		BLDG	BUILDING
2. FEEDER SCHEDULE INDICATING THE FOLLOWING INFORMATION:		C	CONDUIT
a. RACEWAY TYPE AND SIZE		CATV	CABLE TELEVISION
b. CONDUCTOR INSULATION TYPE AND MATERIAL		CB	CIRCUIT BREAKER
c. CONDUCTOR SIZE AND QUANTITY		CEC	CALIFORNIA ELECTRICAL CODE
d. RACEWAY FILL PERCENTAGE BASED UPON ACTUAL RACEWAY SIZE AND CONDUCTORS AREAS		CKT	CIRCUIT
e. INCLUDE CABLE PULLING CALCULATIONS FOR ALL UNDERGROUND FEEDERS AND ANY FEEDER WITH CONDUIT FILL > 35%		CLG	CEILING
F. 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS		CO	CONDUIT ONLY
1. TEST AND INSPECTION REPORTS		COM	COMMON
2. CLOSEOUT SUBMITTALS AND AS BUILT DOCUMENTATION		COMM	COMMUNICATIONS
G. 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS		CONN	CONNECT
1. DELEGATED DESIGN SUBMITTAL		CONT	CONTINUE
H. 260533.13 - CONDUITS FOR ELECTRICAL SYSTEMS		CT	CURRENT TRANSFORMER
1. PRODUCT DATA FOR EACH PRODUCT TYPE		CU	COPPER
I. 260533.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS		(D)	DEMOLISH
1. TEST AND INSPECTION REPORTS		DB	DIRECT BURIED
J. 260543 - UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS		DEF	DUAL ELEMENT FUSE
1. PRODUCT DATA FOR MANHOLES, PULL BOXES AND HANDHOLES		DIA	DIAMETER
2. SUSTAINABLE DESIGN SUBMITTALS		DIM	DIMENSION
3. COORDINATION DRAWINGS: FOR DUCT AND DUCT BANK		DISC	DISCONNECT
4. TEST AND INSPECTION REPORTS		DIST	DISTRIBUTION
K. 260544 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING		DN	DOWN
1. PRODUCT DATA FOR EACH TYPE OF PRODUCT		DP	DISTRIBUTION PANEL
2. TEST AND INSPECTION REPORTS		DPDT	DOUBLE-POLE DOUBLE-THROW
L. 260548 - VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMSAND260548.16 - SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS SECTIONS MAY BE COMBINED		DWG	DRAWING
1. DELEGATED DESIGN SUBMITTAL		(E)	EXISTING
2. TEST AND INSPECTION REPORTS		EGC	EQUIPMENT GROUND CONDUCTOR
M. 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS		ELEC	ELECTRICAL
1. SAMPLES FOR EACH LABEL OR SIGN		EM, EMER	EMERGENCY
2. IDENTIFICATION SCHEDULE		EMT	ELECTRICAL METALLIC TUBING
N. 260573 - POWER SYSTEM STUDIES		ENCL	ENCLOSURE
1. SHORT CIRCUIT REPORT		EPO	EMERGENCY POWER OFF
2. COORDINATION STUDY REPORT		EQUIP	EQUIPMENT
3. TEST AND INSPECTION REPORTS		(F)	FUTURE
4. ARC-FLASH HAZARD ANALYSIS REPORT		F FUSE(D)	
5. CLOSEOUT SUBMITTALS AND AS BUILT DOCUMENTATION		FA	FIRE ALARM
6. ARC-FLASH LABELS		FACP	FIRE ALARM CONTROL PANEL
O. LIGHTING CONTROLS, NETWORK LIGHTING CONTROLSPROVIDE SEPARATE SUBMITTAL FOR EACH		FATC	FIRE ALARM TERMINAL CABINET
1. PRODUCT DATA FOR EACH PRODUCT TYPE		FLA	FULL LOAD AMPERES
2. SUSTAINABLE DESIGN SUBMITTALS		FLEX	FLEXIBLE
3. TEST AND INSPECTION REPORTS		FLR	FLOOR
4. CLOSEOUT SUBMITTALS		FT	FOOT, FEET
P. 260578 - MEDIUM AND LOW VOLTAGE TRANSFORMERS, SWITCHBOARDS, PANELBOARDS,TRANSFER SWITCHES REFERENCE INDIVIDUAL SPECIFICATION SECTIONS AND PROVIDE SEPARATE SUBMITTAL FOR EACH SECTION		G, GNDGROUND	
1. PRODUCT DATA FOR EACH PRODUCT TYPE		GALV	GALVANIZED(D)
2. COORDINATION DRAWINGS		GEC	GROUNDING ELECTRODE CONDUCTOR
3. TEST AND INSPECTION REPORTS		GEN	GENERATOR
4. CLOSEOUT SUBMITTALS		GFI	GROUND FAULT CIRCUIT INTERRUPTER
Q. 26 2550 - DUAL PURPOSE DOCKING STATION WITH GENERATOR ISOLATION BREAKER		HID	HIGH INTENSITY DISCHARGE
1. PRODUCT DATA FOR DOCKING STATION		HOA	HAND-OFF-AUTOMATIC
2. SHOP DRAWINGS		HP	HORSEPOWER, HEAT PUMP
3. COORDINATION DRAWINGS		HPF	HIGH POWER FACTOR
4. TEST AND INSPECTION REPORTS		HPS	HIGH PRESSURE SODIUM
5. CLOSEOUT SUBMITTALS		HV	HIGH VOLTAGE
R. 262726 - WIRING DEVICES		HVAC	HEATING, VENTILATING AND AIR CONDITIONING
1. TEST AND INSPECTION REPORTS		HZ	HERTZ
S. 26 2813 - FUSES, 262816 - ENCLOSED SWITCHES, STARTERS AND CONTROLLERS SECTIONS MAY BE COMBINED		IC	INTERRUPTING CAPACITY IN AMPS RMS
1. COORDINATION DRAWINGS		IDF	INTERMEDIATE DISTRIBUTION FRAME
2. TEST AND INSPECTION REPORTS		IG	ISOLATED GROUND
3. CLOSEOUT SUBMITTALS		IMB	MAX POWER CURRENT
T. 263213.13 - EMERGENCY ENGINE GENERATOR		IN	INCH, INCHES
1. PRODUCT DATA FOR EACH PRODUCT TYPE		INV	INVERTER
2. COORDINATION DRAWINGS		ISC	SHORT CIRCUIT CURRENT
3. SUSTAINABLE DESIGN SUBMITTALS		J, JB	JUNCTION BOX
4. TEST AND INSPECTION REPORTS		KAIC	KILOAMPERE INTERRUPTING CAPACITY
5. CLOSEOUT SUBMITTALS		KA	THOUSAND AMPERES
U. GEN26 3000 - TRANSFER SWITCHES		KCMIL	THOUSAND CIRCULAR MILS
1. PRODUCT DATA FOR EACH PRODUCT TYPE		KV	KILOVOLT
2. SHOP DRAWINGS		KVA	KILOVOLT-AMPERE
3. INFORMATIONAL SUBMITTALS		KW	KILOWATT
4. COORDINATION DRAWINGS		KWH	KILOWATT-HOUR
5. TEST AND INSPECTION REPORTS		KVAR	KILOVAR
6. CLOSEOUT SUBMITTALS		LCL	LONG CONTINUOUS LOAD
V. 264113 -LIGHTNING PROTECTION FOR STRUCTURES		LF	LINEAR FOOT
1. PRODUCT DATA FOR EACH PRODUCT TYPE		LRA	LOCKED ROTOR AMP
2. COORDINATION DRAWINGS		LTS	LIGHTING
3. TEST AND INSPECTION REPORTS		LV	LOW VOLTAGE
4. CLOSEOUT SUBMITTALS		M	MAGNETIC STARTER COIL
W. 26 4913 - SURGE PROTECTION FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS		MAX	MAXIMUM
1. PRODUCT DATA FOR EACH PRODUCT TYPE		MC	METAL CLAD CABLE
2. COORDINATION DRAWINGS		MCB	MAIN CIRCUIT BREAKER
3. CLOSEOUT SUBMITTALS		MCC	MOTOR CONTROL CENTER
4. TEST AND INSPECTION REPORTS		MCM	THOUSAND CIRCULAR MILS
5. WARRANTY		MDF	MAIN DISTRIBUTION FRAME
X. LIGHTING AND ILLUMINATION PRODUCTS COMBINE ALL PRODUCTS INDICATED ON SCHEDULE INTO ONE SUBMITTAL		MDP	MAIN DISTRIBUTION PANEL
1. PRODUCT DATA FOR EACH LIGHTING FIXTURE AND PRODUCT TYPE		MFR	MANUFACTURER
2. UNIT PRICING FOR EACH LIGHTING FIXTURE TYPE		MH	METAL HALIDE
3. ANCHORAGE DRAWINGS		MI	MINERAL INSULATED
4. TEST AND INSPECTION REPORTS		MIN	MINIMUM
5. CLOSEOUT SUBMITTALS		MLO	MAIN LUGS ONLY
		MTD	MOUNTED
		MTR	MOTOR
		MTS	MANUAL TRANSFER SWITCH
		(N)	NEW
		N	NEUTRAL
		NB	NEUTRAL BUS
		NEC	NATIONAL ELECTRIC CODE
		NF	NON-FUSED
		NIC	NOT IN CONTRACT
		NO	NORMALLY OPEN
		NC	NORMALLY CLOSED
		NTS	NOT TO SCALE
		P	POLE(S)
		PF	POWER FACTOR
		PH/Ø	PHASE
		PNL	PANEL
		PRI	PRIMARY
		PT	POTENTIAL TRANSFORMER
		PV	PHOTOVOLT/AC
		PVC	POLYVINYL CHLORIDE
		PWR	POWER
		QTY	QUANTITY
		(R)	EXISTING TO BE RELOCATED
		RECP	RECEPTACLE
		RGS	RIGID GALVANIZED STEEL CONDUIT
		RM, RMS	ROOM, ROOMS
		RT	RADIOTOUCH SYSTEM
		SCA	SHORT CIRCUIT AMPS
		SEC	SECONDARY
		SFD	SMOKE FIRE DAMPER
		SPKR	SPEAKER
		SQ FT	SQUARE FEET
		SUSP	(SUSPENDED)
		SW	SWITCH
		SWBD	SWITCHBOARD
		SWGR	SWITCHGEAR
		TC	TIME CLOCK
		TEL	TELEPHONE
		TEMP	TEMPORARY
		TTB	TELECOMMUNICATIONS BACKBOARD
		TMH	TELECOMMUNICATIONS MANHOLE
		TRANSF	TRANSFORMER
		TYP	TYPICAL
		TVSS	TRANSIENT VOLTAGE SUPPRESSION SYSTEM
		US	UNDERGROUND
		UN	UNLESS OTHERWISE NOTED
		UNO	UNLESS NOTED OTHERWISE
		UPS	UNINTERRUPTIBLE POWER SUPPLY
		V	VOLT, VOLTS
		VA	VOLT-AMPERES
		VAV	VARIABLE AIR VOLUME
		VFD	VARIABLE FREQUENCY DRIVE
		VMP	VOLTAGE AT MAXIMUM POWER
		VOC	VOLTAGE OPEN CIRCUIT
		W	WATT OR WIRE
		WAP	WIRELESS ACCESS POINT
		WP	WEATHER PROOF
		WT	WATERTIGHT

PLUMBING EQUIPMENT ELECTRICAL CONNECTION SCHEDULE													
GENERAL NOTES: A. MAKE CONNECTIONS TO EQUIPMENT VIA STARTER AND/OR DISCONNECT SWITCHES). B. WHERE STARTER IS NOT WITHIN LINE OF SITE OF EQUIPMENT OR SOURCE BREAKER, PROVIDE ADDITIONAL DISCONNECT SWITCH FOR STARTER. C. ALL CONNECTIONS, MOTOR CONTROLS, AND DISCONNECTS USED OUTSIDE OR IN DAMP OR WET LOCATIONS SHALL BE NEMA 3R OR BETTER. D. PROVIDE FUSES IN DISCONNECT SWITCHES PER MANUFACTURER'S RECOMMENDATIONS. DO NOT EXCEED MCCP RATINGS ON NAMEPLATES. E. ALL CIRCUIT BREAKERS FEEDING EQUIPMENT SHALL BE HACR RATED. F. CONTRACTOR SHALL CONFIRM EXACT SIZE, LOCATION, AND WIRING REQUIREMENTS OF ACTUAL EQUIPMENT BEING PROVIDED PRIOR TO ROUGH-IN. G. ALL STARTERS AND DISCONNECT SWITCHES SHALL BE PROVIDED BY DIVISION 26 UNLESS SCHEDULED OR NOTED ON THE DRAWINGS OF OTHER DIVISIONS. H. ALL EQUIPMENT SHALL HAVE LOCAL DISCONNECTING MEANS UNLESS WITHIN LINE OF SIGHT OF SOURCE BREAKER. I. ALL DISCONNECT SWITCHES LOCATED DOWNSTREAM OF VFDs SHALL HAVE SIGN READING, "DO NOT OPERATE WHILE VFD IS ENERGIZED".										STARTER ABBREVIATIONS: FVNR = FULL VOLTAGE NON-REVERSING FVR = FULL VOLTAGE REVERSING RV = REDUCED VOLTAGE VFD = VARIABLE FREQUENCY DRIVE INT = INTEGRAL TO EQUIPMENT HON = FURNISH WITH HAND-OFF-AUTO SWITCH MAN = MANUAL MOTOR STARTER WITH PILOT LIGHT ENCB = ENCLOSED CIRCUIT BREAKER DISCONNECT MTS = MOTOR RATED TOGGLE SWITCH REC = RECEPTACLE SERVES AS LOCAL DISCONNECT			
KEYED NOTES: 1. PROVIDE GFI BREAKER TO SERVE EQUIPMENT.													
ITEM ID	EQUIP. NO.	VOLTAGE	POLES	CALCULATED AMPS	APPARENT LOAD (VA)	PANEL	CIRCUIT #	FEEDER SIZE	DISCONNECT	VFD	EMERGENCY POWER	LEVEL	KEYED NOTES
DVBP	1	480 V	3	43.3 A	36000	E0SHD1	7.9.11	3#4 #86.1 1/4"	60A/3P	No	Yes	00-EVENT LEVEL	
IBP	1	480 V	3	7.6 A	6300	ENHD1	26.28.30	3#10.1#10G.3/4"	60A/3P	No	No	00-EVENT LEVEL	
RCP	1	120 V	1	0.8 A	100	ENLB1	27	2#12.1#12G.1/2"	MTR RD SWITCH	No	No	00-EVENT LEVEL	
RCP	2	120 V	1	0.8 A	100	ENLB1	27	2#12.1#12G.1/2"	MTR RD SWITCH	No	No	00-EVENT LEVEL	
RPZ	1	120 V	1	0.4 A	50	E0SLD1	15	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
RPZ	2	120 V	1	0.4 A	50	E0SLD1	15	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
SE	1	480 V	3	6.8 A	5653.4	OSDP	4	3#12.1#12G.1/2"	30A/3P	No	Yes	00-EVENT LEVEL	
SE	2	480 V	3	7.6 A	6300	E0SHD1	13.15.17	3#10.1#10G.3/4"	30A/3P	No	Yes	00-EVENT LEVEL	
TMZ	1	120 V	1	0.8 A	100	E0SLB2	13	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
WH	1	120 V	1	0.7 A	86	E0SLB1	3	2#12.1#12G.1/2"	SIMPLEX OUTLET	No	Yes	00-EVENT LEVEL	1
WS	2	120 V	1	0.7 A	86	E0SLB1	5	2#12.1#12G.1/2"	SIMPLEX OUTLET	No	Yes	00-EVENT LEVEL	1
WH	1	120 V	1	0.4 A	50	E0SLD1	15	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	1

CONTROL VOLTAGE ELECTRICAL CONNECTION SCHEDULE					
GENERAL NOTES: A. PROVIDE CONDUIT (SIZE AS INDICATED) FROM EQUIPMENT INDICATED TO BAS. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL. B. CONTROL CABLEING BY OTHERS.				ABBREVIATIONS: BAS = BUILDING AUTOMATION SYSTEM	
KEYED NOTES:					
ITEM ID					
EQUIP. NO.	PANEL	CONDUIT SIZE	LEVEL	NOTES	
EAVAV 00-01	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-02	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-03	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-04	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-05	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-06	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-07	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-08	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-09	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-10	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-11	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-12	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-13	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-14	BAS	1/2"	00-EVENT LEVEL		
EAVAV 00-15	BAS	1/2"	00-EVENT LEVEL		
EAVAV 01-01	BAS	1/2"	01-CONCOURSE LEVEL		
EAVAV 01-02	BAS	1/2"	01-CONCOURSE LEVEL		
EAVAV 01-03	BAS	1/2"	01-CONCOURSE LEVEL		
EAVAV 01-04	BAS	1/2"	01-CONCOURSE LEVEL		
OAVAV 00-01	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-02	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-03	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-04	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-05	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-06	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-07	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-08	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-09	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-10	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-11	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-12	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-13	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-14	BAS	1/2"	00-EVENT LEVEL		
OAVAV 00-15	BAS	1/2"	00-EVENT LEVEL		
OAVAV 01-01	BAS	1/2"	01-CONCOURSE LEVEL		
OAVAV 01-02	BAS	1/2"	01-CONCOURSE LEVEL		
OAVAV 01-03	BAS	1/2"	01-CONCOURSE LEVEL		
OAVAV 01-04	BAS	1/2"	01-CONCOURSE LEVEL		
VAV 00-01	BAS	1/2"	00-EVENT LEVEL		
VAV 00-02	BAS	1/2"	00-EVENT LEVEL		
VAV 00-03	BAS	1/2"	00-EVENT LEVEL		
VAV 00-04	BAS	1/2"	00-EVENT LEVEL		
VAV 00-05	BAS	1/2"	00-EVENT LEVEL		
VAV 00-06	BAS	1/2"	00-EVENT LEVEL		
VAV 00-07	BAS	1/2"	00-EVENT LEVEL		
VAV 00-08	BAS	1/2"	00-EVENT LEVEL		
VAV 00-09	BAS	1/2"	00-EVENT LEVEL		
VAV 00-10	BAS	1/2"	00-EVENT LEVEL		
VAV 00-11	BAS	1/2"	00-EVENT LEVEL		
VAV 00-12	BAS	1/2"	00-EVENT LEVEL		
VAV 00-13	BAS	1/2"	00-EVENT LEVEL		
VAV 00-14	BAS	1/2"	00-EVENT LEVEL		
VAV 00-15	BAS	1/2"	00-EVENT LEVEL		
VAV 00-16	BAS	1/2"	00-EVENT LEVEL		
VAV 00-17	BAS	1/2"	00-EVENT LEVEL		
VAV 00-19	BAS	1/2"	00-EVENT LEVEL		
VAV 00-20	BAS	1/2"	00-EVENT LEVEL		
VAV 00-21	BAS	1/2"	00-EVENT LEVEL		
VAV 00-22	BAS	1/2"	00-EVENT LEVEL		
VAV 00-23	BAS	1/2"	00-EVENT LEVEL		
VAV 00-24	BAS	1/2"	00-EVENT LEVEL		
VAV 00-25	BAS	1/2"	00-EVENT LEVEL		
VAV 00-26	BAS	1/2"	00-EVENT LEVEL		
VAV 00-27	BAS	1/2"	00-EVENT LEVEL		

MECHANICAL EQUIPMENT ELECTRICAL CONNECTION SCHEDULE													
GENERAL NOTES: A. MAKE CONNECTIONS TO EQUIPMENT VIA STARTER AND/OR DISCONNECT SWITCHES). B. WHERE STARTER IS NOT WITHIN LINE OF SITE OF EQUIPMENT OR SOURCE BREAKER, PROVIDE ADDITIONAL DISCONNECT SWITCH FOR STARTER. C. ALL CONNECTIONS, MOTOR CONTROLS, AND DISCONNECTS USED OUTSIDE OR IN DAMP OR WET LOCATIONS SHALL BE NEMA 3R OR BETTER. D. PROVIDE FUSES IN DISCONNECT SWITCHES PER MANUFACTURER'S RECOMMENDATIONS. DO NOT EXCEED MCCP RATINGS ON NAMEPLATES. E. ALL CIRCUIT BREAKERS FEEDING EQUIPMENT SHALL BE HACR RATED. F. CONTRACTOR SHALL CONFIRM EXACT SIZE, LOCATION, AND WIRING REQUIREMENTS OF ACTUAL EQUIPMENT BEING PROVIDED PRIOR TO ROUGH-IN. G. ALL STARTERS AND DISCONNECT SWITCHES SHALL BE PROVIDED BY DIVISION 26 UNLESS SCHEDULED OR NOTED ON THE DRAWINGS OF OTHER DIVISIONS. H. ALL EQUIPMENT SHALL HAVE LOCAL DISCONNECTING MEANS UNLESS WITHIN LINE OF SIGHT OF SOURCE BREAKER. I. ALL DISCONNECT SWITCHES LOCATED DOWNSTREAM OF VFDs SHALL HAVE SIGN READING, "DO NOT OPERATE WHILE VFD IS ENERGIZED". J. PROVIDE 120V OPTIONAL STANDBY POWER AS REQUIRED TO ALL OF THE BAS CONTROL PANELS. COORDINATE EXACT QUANTITIES, LOCATIONS AND REQUIREMENTS WITH SHOP DRAWINGS. K. PROVIDE 120V NORMAL POWER/OPTIONAL STANDBY POWER AS REQUIRED FOR VFDs.										STARTER ABBREVIATIONS: FVNR = FULL VOLTAGE NON-REVERSING FVR = FULL VOLTAGE REVERSING RV = REDUCED VOLTAGE VFD = VARIABLE FREQUENCY DRIVE INT = INTEGRAL TO EQUIPMENT HON = FURNISH WITH HAND-OFF-AUTO SWITCH MAN = MANUAL MOTOR STARTER WITH PILOT LIGHT ENCB = ENCLOSED CIRCUIT BREAKER DISCONNECT MTS = MOTOR RATED TOGGLE SWITCH REC = RECEPTACLE SERVES AS LOCAL DISCONNECT BAS = BUILDING AUTOMATION SYSTEM			
KEYED NOTES: 1. MAKE FINAL POWER CONNECTIONS TO VFD FROM SERVING BREAKER/DISCONNECT AS REQUIRED. PROVIDE 1/2" CONDUIT FROM VFD TO BAS FOR CONTROLS. COORDINATE FINAL/EXACT LOCATION OF VFD AND BAS WITH SHOP DRAWINGS AND CONTROLS CONTRACTOR. 2. COORDINATE UNIT OPERATION SHUT DOWN REQUIREMENTS WITH FIRE ALARM. 3. WHEN VFD MOUNTED TO UNIT, MOUNT VFD CLEAR OF ALL ACCESS PANELS AND DOORS. PROVIDE METAL CHANNEL RACKS TO MOUNT VFD TO AS REQUIRED.													
ITEM ID	EQUIP. NO.	VOLTAGE	POLES	CALCULATED AMPS	APPARENT LOAD (VA)	PANEL	CIRCUIT #	FEEDER SIZE	DISCONNECT	VFD	EMERGENCY POWER	LEVEL	KEYED NOTES

ITEM ID	NO.	VOLTAGE	POLES	CALCULATED AMPS	APPARENT LOAD (VA)	PANEL	CIRCUIT #	FEEDER SIZE	DISCONNECT	VFD	EMERGENCY POWER	LEVEL	KEYED NOTES
AHU	00-01	480 V	3	43.0 A	35749.53	H0CP	4	3#6 #863.1 1/4"	60A/3P	Yes	No	00-EVENT LEVEL	1,2,3
AHU	00-02 #1	480 V	3	18.0 A	15000	E0SHA1	26.28.30	3#10.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,2,3
AHU	00-02 #2	480 V	3	18.0 A	15000	E0SHA1	25.27.29	3#10.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,2,3
AHU	00-02 #3	480 V	3	18.0 A	15000	E0SHA1	31.33.35	3#10.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,2,3
AHU	00-02 #4	480 V	3	18.0 A	15000	E0SHA1	32.34.36	3#10.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,2,3
AHU	00-03	480 V	3	117.5 A	97687	HBDP	5	3#10 #863.1 1/2"	200A/3P	Yes	Yes	00-EVENT LEVEL	1,2,3
AHU	01-01 #1	480 V	3	6.0 A	5000	CNHC1	1.3.5	3#12.1#12G.3/4"	NONE	Yes	Yes	01-CONCOURSE LEVEL	1,2,3
AHU	01-01 #2	480 V	3	6.0 A	5000	CNHC1	2.6.8	3#12.1#12G.3/4"	NONE	Yes	Yes	01-CONCOURSE LEVEL	1,2,3
AHU	01-01 #3	480 V	3	6.0 A	5000	CNHC1	7.9.11	3#12.1#12G.3/4"	NONE	Yes	Yes	01-CONCOURSE LEVEL	1,2,3
AHU	01-01 #4	480 V	3	6.0 A	5000	CNHC1	8.10.12	3#12.1#12G.1/2"	NONE	Yes	Yes	01-CONCOURSE LEVEL	1,2,3
AHU	02-01 #1	480 V	3	33.7 A	28000	UNHA1	7.9.11	3#8.1#10G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,2,3
AHU	02-01 #2	480 V	3	33.7 A	28000	UNHA1	1.3.5	3#8.1#10G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,2,3
AHU	02-01 #3	480 V	3	33.7 A	28000	UNHA1	10.12.14	3#8.1#10G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,2,3
AHU	02-01 #4	480 V	3	33.7 A	28000	UNHA1	13.15.17	3#8.1#10G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,2,3
CHWP	00-01	480 V	3	21.7 A	18000	E0SHA1	2.6.8	3#8.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
CHWP	00-02	480 V	3	21.7 A	18000	E0SHA1	8.10.12	3#8.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
CHWP	00-03	480 V	3	21.7 A	18000	E0SHA1	14.16.18	3#8.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
CHWP	00-04	480 V	3	21.7 A	18000	E0SHA1	20.22.24	3#8.1#10G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
CP	00-01	120 V	1	1.0 A	120	E0SLB1	15	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
CP	00-02	120 V	1	1.0 A	120	E0SLB1	17	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
CP	00-03	120 V	1	1.0 A	120	E0SLC1	17	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
CP	00-04	120 V	1	1.0 A	120	E0SLD1	25	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
CP	00-05	120 V	1	1.0 A	120	E0SLD1	20	2#12.1#12G.1/2"	MTR RD SWITCH	No	Yes	00-EVENT LEVEL	
FCU	00-01	208 V	2	0.6 A	120	E0SLB2	15.17	2#12.1#12G.1/2"	30/31			00-EVENT LEVEL	
FCU	00-02	208 V	2	0.6 A	120	E0SLB2	25.27	2#12.1#12G.1/2"	30/31			00-EVENT LEVEL	
FCU	01-01	277 V	1	4.0 A	1100	ENHA1	20	2#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
FCU	01-02	277 V	1	4.0 A	1100	UNHB1	14	2#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
FCU	01-03	480 V	3	3.0 A	2500	UNHB1	13.15.17	3#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
FCU	01-04	480 V	3	3.0 A	2500	ENHC1	9.11.13	3#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
FCU	01-05	277 V	1	4.0 A	1100	ENHC1	10	2#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
FCU	01-06	277 V	1	4.0 A	1100	ENHD1	23	2#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
FCU	01-07	277 V	1	2.2 A	600	ENHA1	21	2#12.1#12G.1/2"	30/31			01-CONCOURSE LEVEL	
GEF	00-01	208 V	3	13.8 A	4988.3	UNLA1	2.6.8	3#10.1#10G.3/4"	30A/3P/3R	No	No	02-UPPER LEVEL	
GEF	00-02	208 V	3	13.8 A	4988.3	UNLD1	2.6.8	3#10.1#10G.3/4"	30A/3P/3R	No	No	02-UPPER LEVEL	
HWHP	00-01	480 V	3	11.0 A	9110	E0SHA1	1.3.5	3#12.1#12G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
HWHP	00-02	480 V	3	11.0 A	9110	E0SHA1	7.9.11	3#12.1#12G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
HWHP	00-03	480 V	3	11.0 A	9110	E0SHA1	13.15.17	3#12.1#12G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
HWHP	00-04	480 V	3	11.0 A	9110	E0SHA1	19.21.23	3#12.1#12G.3/4"	NONE	Yes	Yes	00-EVENT LEVEL	1,3
HVLS	02-01	480 V	3	3.6 A	3000	UNHA1	22.24.26	3#12.1#12G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,3
HVLS	02-02	480 V	3	3.6 A	3000	UNHA1	19.21.23	3#12.1#12G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,3
HVLS	02-03	480 V	3	3.6 A	3000	UNHD1	24.26.28	3#12.1#12G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,3
HVLS	02-04	480 V	3	3.6 A	3000	UNHD1	23.25.27	3#12.1#12G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,3
HVLS	02-05	480 V	3	3.6 A	3000	UNHB1	8.10.12	3#12.1#12G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,3
HVLS	02-06	480 V	3	3.6 A	3000	UNHC1	20.22.24	3#12.1#12G.3/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,3
HWC	00-01	120 V	1	1.0 A	120	E0SLB1	9	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-02	120 V	1	1.0 A	120	E0SLB1	10	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-03	120 V	1	1.0 A	120	E0SLB1	9	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-04	120 V	1	1.0 A	120	E0SLB1	11	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-05	120 V	1	1.0 A	120	E0SLB1	11	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-07	120 V	1	1.0 A	120	E0SLB1	15	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-08	120 V	1	1.0 A	120	E0SLB1	17	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-09	120 V	1	1.0 A	120	E0SLB1	17	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-10	120 V	1	1.0 A	120	LAV	14	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-11	120 V	1	1.0 A	120	LAV	14	2#12.1#12G.1/2"	SIMPLEX OUTLET	No		00-EVENT LEVEL	
HWC	00-12	120 V	1	1.0 A	120	E0SLC1	17	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-13	120 V	1	1.0 A	120	E0SLC1	17	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-14	120 V	1	1.0 A	120	E0SLC2	22	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-15	120 V	1	1.0 A	120	E0SLC2	24	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-16	120 V	1	1.0 A	120	E0SLD1	14	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-17	120 V	1	1.0 A	120	E0SLD1	20	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	00-18	120 V	1	1.0 A	120	E0SLB1	19	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	00-EVENT LEVEL	
HWC	01-01	120 V	1	1.0 A	120	UNSLD1	22	2#12.1#12G.1/2"	SIMPLEX OUTLET	No		01-CONCOURSE LEVEL	
HWC	00-01	120 V	1	1.0 A	120	CNLC2	12	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	02-UPPER CONCOURSE	
HWC	00-02	120 V	1	1.0 A	120	UNSLC2	12	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	02-UPPER LEVEL	
HWC	02-03	120 V	1	1.0 A	120	UNSLD1	1	2#12.1#12G.1/2"	SIMPLEX OUTLET	Yes	Yes	02-UPPER LEVEL	
HWHP	02-01	480 V	3	3.4 A	2826.71	U0SHD1	2.6.8	3#12.1#12G.1/2"	30A/3P	Yes	Yes	02-UPPER LEVEL	1,3
HWHP	02-02	480 V	3	3.4 A	2826.71	U0SHD1	8.10.12	3#12.1#12G.1/2"	30A/3P	Yes	Yes	02-UPPER LEVEL	1,3
MAF	01-01	208 V	3	4.2 A	1500	CNLA2	19.21.23	3#12.1#12G.1/2"	30A/3P/3R	Yes	No	01-CONCOURSE LEVEL	2
MAF	01-02	208 V	3	4.2 A	1500	CNLD3	16.18.20	3#12.1#12G.1/2"	30A/3P/3R	Yes	No	01-CONCOURSE LEVEL	2
RAF	00-01	480 V	3	13.2 A	11000	UNHB1	7.9.11	3#10.1#10G.3/4"	60/31		No	00-EVENT LEVEL	2
RAF	00-03	480 V	3	32.5 A	27000	HBDP	4	3#6 #863.1 1/4"	60/31		No	00-EVENT LEVEL	2
RAFA	01-01	480 V	3	10.8 A	9000	HBDP	7	3#8.1#10G.3/4"	60/31		No	01-CONCOURSE LEVEL	2
RAFA	02-01	480 V	3	54.1 A	45000	UNHA1	16.18.20	3#4.1#863.1 1/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,2,3
RAFA	02-02	480 V	3	54.1 A	45000	UNHB2	2.6.8	3#4.1#863.1 1/4"	NONE	Yes	Yes	02-UPPER LEVEL	1,2,3
TF	00-01	120 V	1	4.2 A	500	E0SLB2	29	2#12.1#12G.1/2"	MTR RD SWITCH			00-EVENT LEVEL	
TF	00-02	120 V	1	4.2 A	500	E0SLB2	29	2#12.1#12G.1/2"	MTR RD SWITCH			00-EVENT LEVEL	
TF	00-03	120 V	1	4.2 A	500	E0SLC2	28	2#12.1#12G.1/2"	MTR RD SWITCH			00-EVENT LEVEL	
TF	01-01	120 V	1	4.2 A	500	E0SLC2	30	2#12.1#12G.1/2"	MTR RD SWITCH			01-CONCOURSE LEVEL	
TF	01-02	120 V	1	4.2 A	500	U0SLD1	15	2#12.1#12G.1/2"	MTR RD SWITCH			01-CONCOURSE LEVEL	
TF	02-01	120 V	1	4.2 A	500	UNSLC1	13	2#12.1#12G.1/2"	MTR RD SWITCH			02-UPPER CONCOURSE	
TF	02-02	120 V	1	4.2 A	500	UNSLD1	18	2#12.1#12G.1/2"	MTR RD SWITCH			02-UPPER CONCOURSE	
UH	00-01	120 V	1	0.8 A	100	UNLA1	5	2#12.1#12G.1/2"	MTR RD SWITCH			02-UPPER LEVEL	
UH	00-01	120 V	1	0.8 A	100	E0SLB2	21	2#12.1#12G.1/2"	MTR RD SWITCH	Yes		00-EVENT LEVEL	
UH	00-02	120 V	1	3.3 A	400	E0SLB2	23	2#12.1#12G.1/2"	MTR RD SWITCH			00-EVENT LEVEL	
UH	00-03	120 V	1	0.8 A	100	E0SLB2	20	2#12.1#12G.1/2"	MTR RD SWITCH	Yes		00-EVENT LEVEL	

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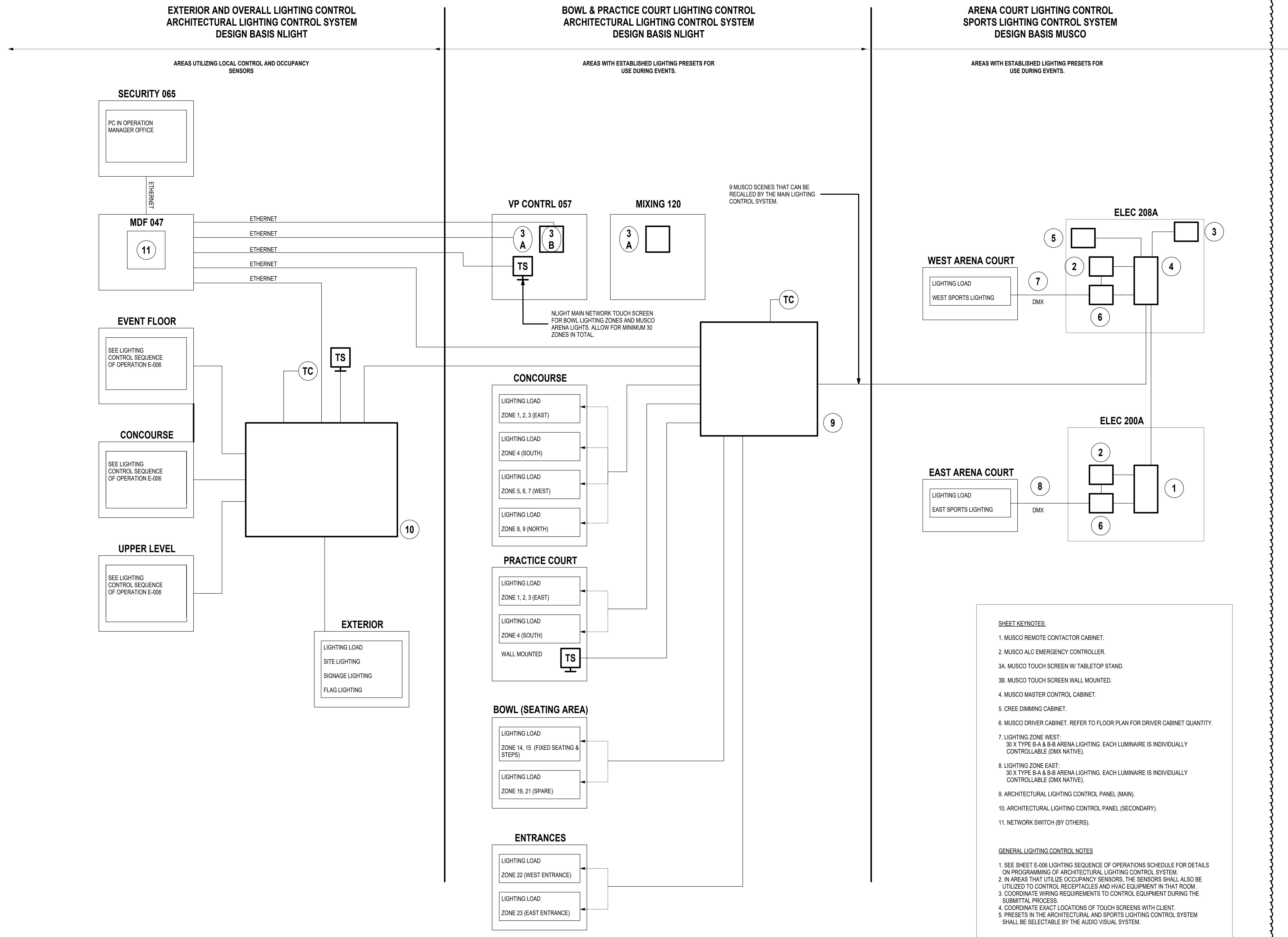
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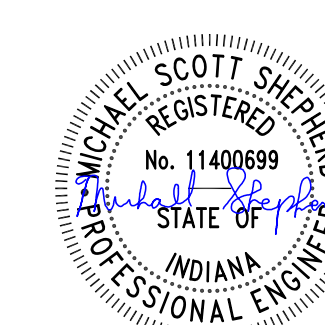
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SEAL | DATE 02/03/25



SHEET ISSUED

1	DD PROGRESS SET	07/18/2
2	DESIGN DEVELOPMENT	08/30/2
3	50% CONSTRUCTION DOCUMENTS	11/01/2
4	CONSTRUCTION DOCUMENTS	01/13/2
5	ADDENDUM 02	02/03/2

RATIC

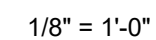
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PROJECT NO. 23112.00

SHEET TITLE
LIGHTING CONTROL
RISER DIAGRAM

SHEET NUMBER

E-609



1/31/2025 12:22:40 PM

1. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILINGS AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING HEIGHTS WITH ARCHITECTURAL CONSTRUCTION DOCUMENTS TO REFLECT LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL RELEASED GLASS PLAN DRAWINGS.

2. REFER TO ELECTRICAL SCHEDULE TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM ILLUMINATION FROM END TO END OF COVE. MAXIMUM SPACING IS ALLOWED AT EACH END OF COVE.

3. REFER TO LIGHTING CONTROLS SCHEDULE OF OPERATIONS SCHEDULE FOR CONTROL SYSTEMS. REQUIREMENTS FOR CONTROLS SHALL BE IDENTICAL TO ELECTRICAL AND MECHANICAL SCHEDULES. SHOW FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL LIGHTING LAYOUT. COORDINATE LIGHTING LAYOUT WITH ACTUAL PENDANT, WALL OR CEILING MOUNT AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF OR LIGHTER LEVELS.

4. SEE VOLTAGE DROP TABLE, SHEET E-003 FOR LONG CONDUCTOR RUNS (100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DENSITY.

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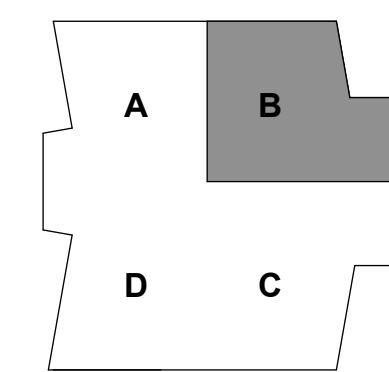
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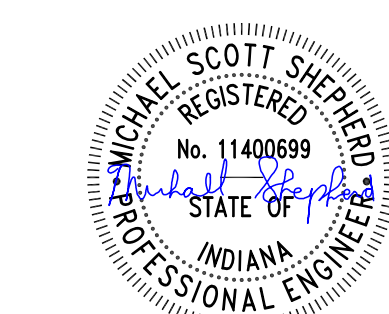
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

RATIO

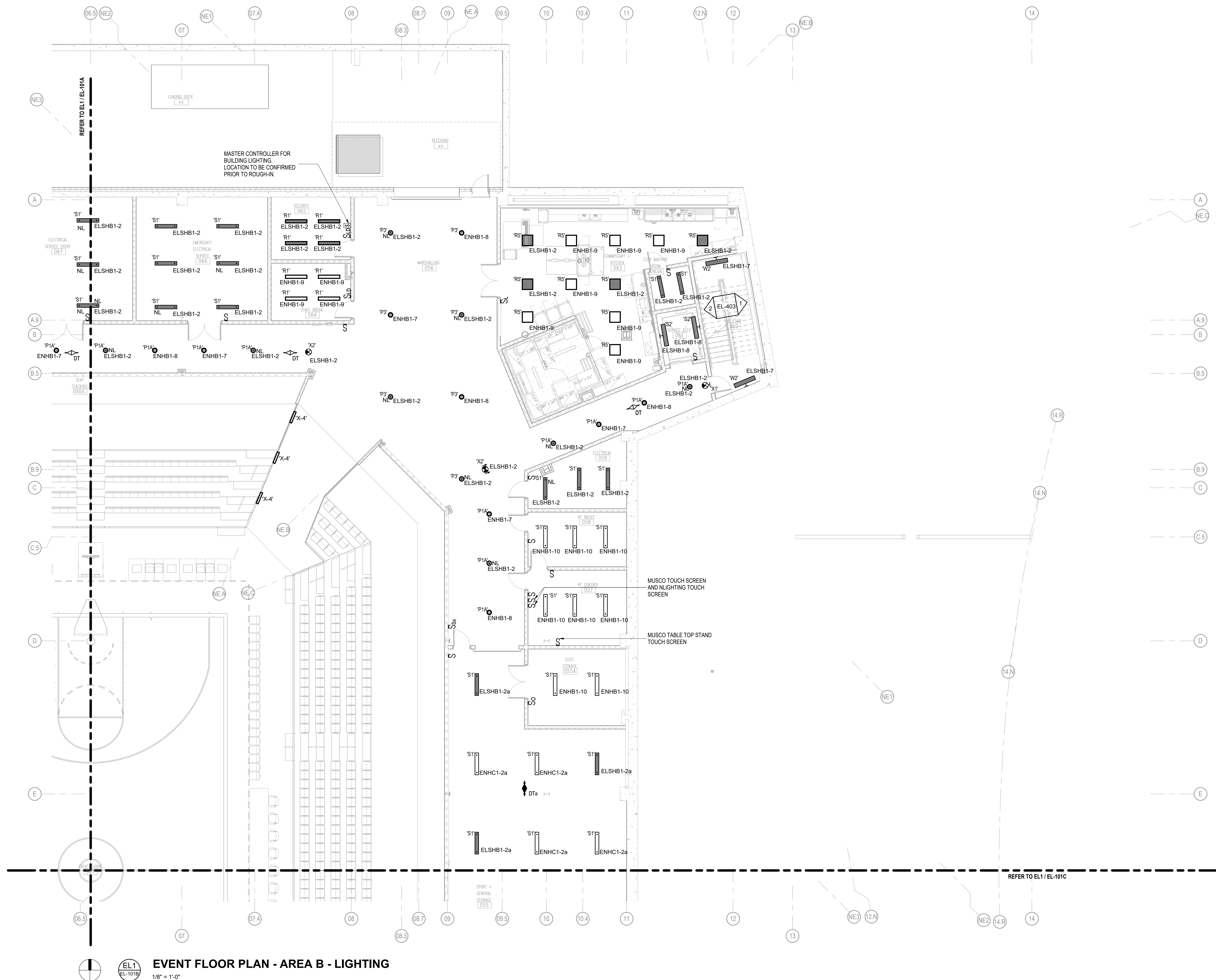
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PROJECT NO. 23112.000

SHEET TITLE
EVENT FLOOR PLAN
- AREA B - LIGHTING
LAYOUT

SHEET NUMBER

EL-101B



EVENT FLOOR PLAN - AREA B - LIGHTING

$$1/8'' = 1'-0''$$

IN128 - JAMES T. MORRIS ARENA

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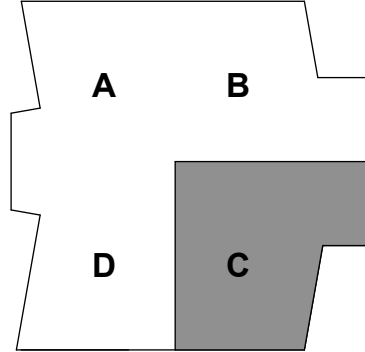
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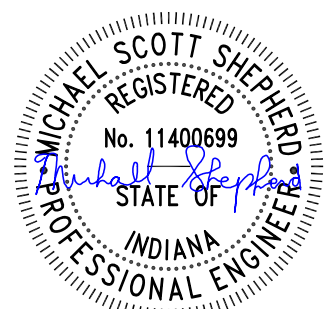
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE
EVENT FLOOR PLAN
- AREA C - LIGHTING
LAYOUT

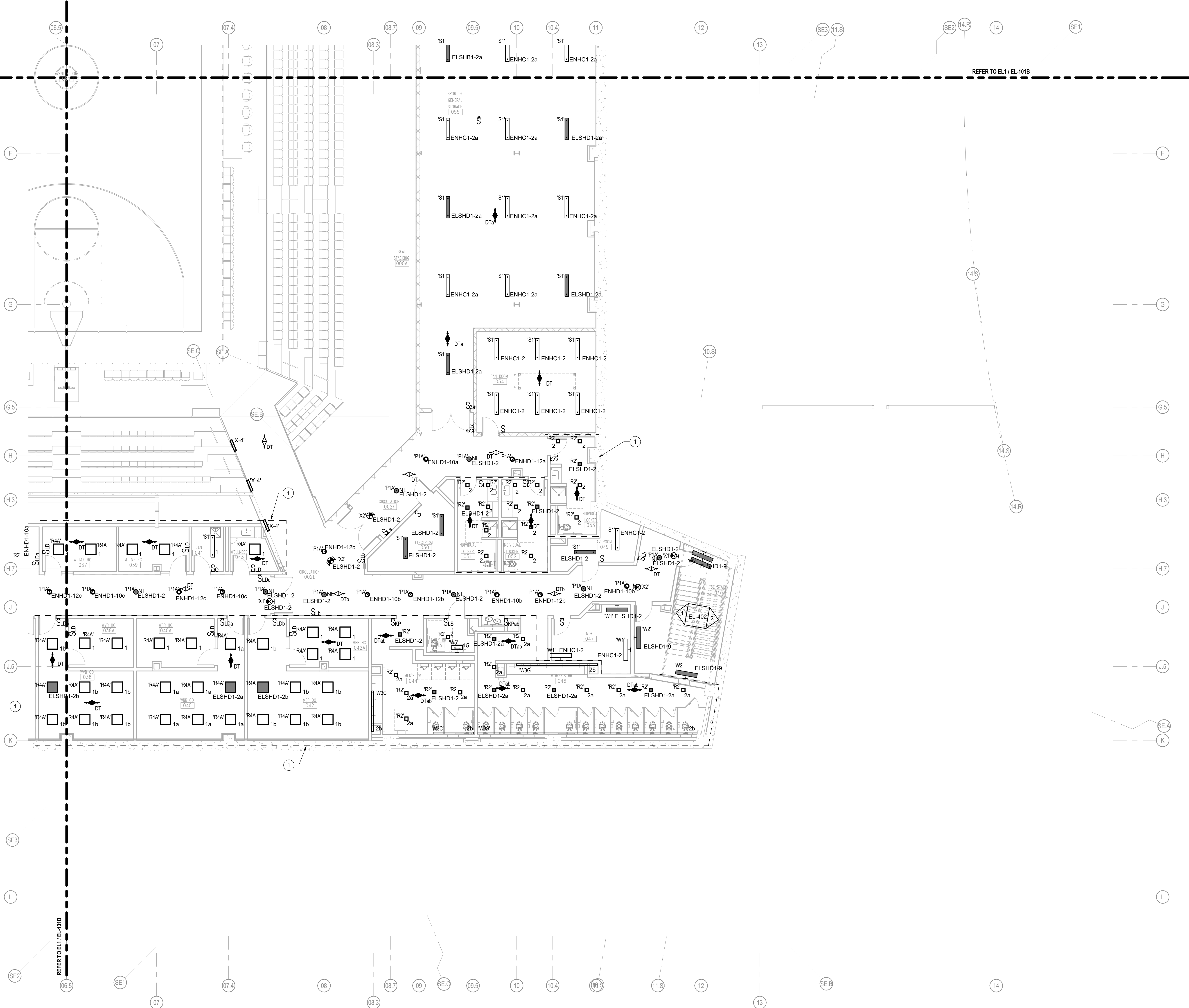
SHEET NUMBER
EL-101C

GENERAL NOTES

- REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILINGS AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS.
- FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.
- REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE FOR CONTROLS PROGRAMMING REQUIREMENTS IN EACH SPACE.
- LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL EQUIPMENT LAYOUT AND WORK OF OTHER TRADES. FIXTURES SHALL BE PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF ALL LIGHTING IN ROOM.
- ALL LIGHTING CONTROL WIRING SHALL BE ROUTED ALONG CONDUIT.
- SEE VOLTAGE DROP TABLE SHEET FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

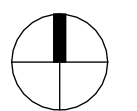
SHEET KEYNOTES

- ALL NON-EMERGENCY LIGHT FIXTURES IN THIS AREA TO BE CIRCUITED TO PANEL ENHD1.



EVENT FLOOR PLAN - AREA C - LIGHTING

1/8" = 1'-0"



EVENT FLOOR PLAN - AREA D - LIGHTING

1/8" = 1'-0"

GENERAL NOTES

- REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILING AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS.
- FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.
- REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE FOR CONTROLS PROGRAMMING REQUIREMENTS IN EACH SPACE.
- LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL EQUIPMENT LAYOUT AND WORK OF OTHER TRADES. FIXTURES SHALL BE PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF ALL LIGHTING IN ROOM.
- ALL LIGHTING CONTROL WIRING SHALL BE ROUTED AS CONDUIT.
- SEE VOLTAGE DROP TABLE SHEET FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET), PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- ALL NON-EMERGENCY LIGHT FIXTURES IN THIS AREA TO BE CIRCUITED TO PANEL ENHC1.

IN128 - JAMES T. MORRIS ARENA

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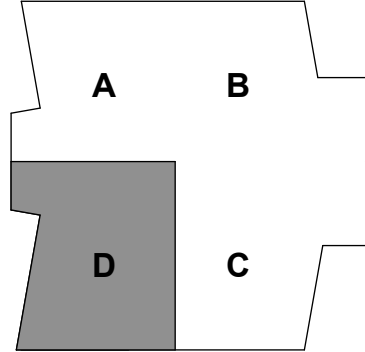
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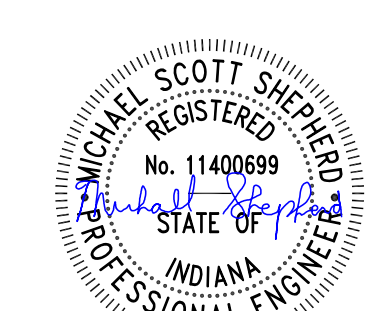
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
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4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE

EVENT FLOOR PLAN
- AREA D - LIGHTING
LAYOUT

SHEET NUMBER

EL-101D

A. REFLECT TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILINGS AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING HEIGHTS, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RECEIVING LIGHTING EQUIPMENT. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS.

B. FIELD MEASURE ALL LIGHTING Coves TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR LIGHTING FIXTURES TO BE PLACED.

C. REFLECT TO LIGHTING CONTROLS SPECIFICATION OF OPERATIONS SCHEDULE FOR CONTROLS PROGRAMMING REQUIREMENTS IN EACH SPACE.

D. LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR PENDANT ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL EQUIPMENT LAYOUT AND ELECTRICAL PANEL LAYOUT. LIGHTING FIXTURES SHALL BE PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF ALL LIGHTING IN ROOM.

2

1. REFER TO UPPER LEVEL LIGHTING PLANS FOR LIGHTING ON THE CONCOURSE.
2. UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING IN THIS AREA IS ASSIGNED TO RAINFALL AREA.

IU Project NO. 20240127

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954-846-9600

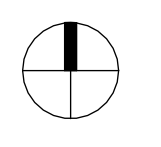
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SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA A -
LIGHTING LAYOUT

103A


$$1/8'' = 1'-0''$$

- D TO REPAIR ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF BELINGS AND MATERIALS. COORDINATE LIGHTING FIXTURE CILING DOWN AND SCHEDULE WORK WITH OTHER TRADES TO PREVENT RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURE RELEASED GELING PLAN DRAWINGS.
- E TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM ILLUMINATION FROM END TO END AT MAXIMUM SPACING ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.
- F TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE AND CONTROL PRODUCTION OF LIGHTING SYSTEMS.
- G LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL PLUMBING, HEAVY WIRE, AND AIR CONDITIONING. THERE SHALL BE PENETRATED WALL OR CEILING MOUNT AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO MATCH EXISTING MAINTENANCE LIGHTING EQUIPMENT.

SEE VOLUME DROP TABLE SHEET E-503 FOR LONG CONDUCTOR RUNS MORE THAN TEN FEET. PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

1. REFER TO UPPER LEVEL LIGHTING PLANS FOR LIGHTING ON THE CONCOURSE.
2. UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING IN THIS AREA IS CIRCUITED TO PANEL 'ELSHB1'.

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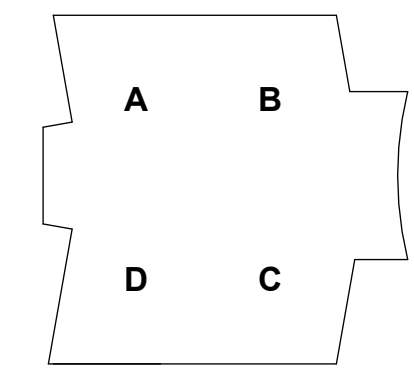
Civil Engineer
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317-547-5580

954-846-9600

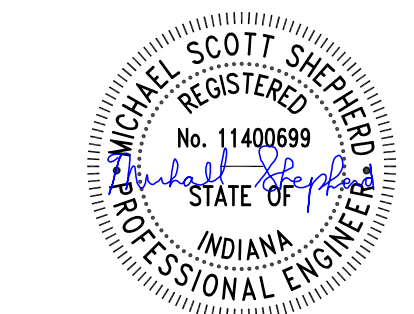
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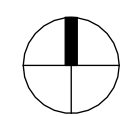
SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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SHEET TITLE

CONCOURSE FLOOR
PLAN - AREA B -
LIGHTING LAYOUT

EL-102B



EL1
EL-102B

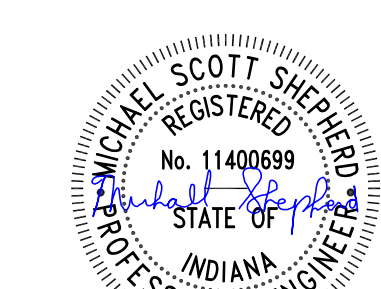
CONCOURSE FLOOR PLAN - AREA B - LIGHTING

$$1/8'' = 1'-0''$$

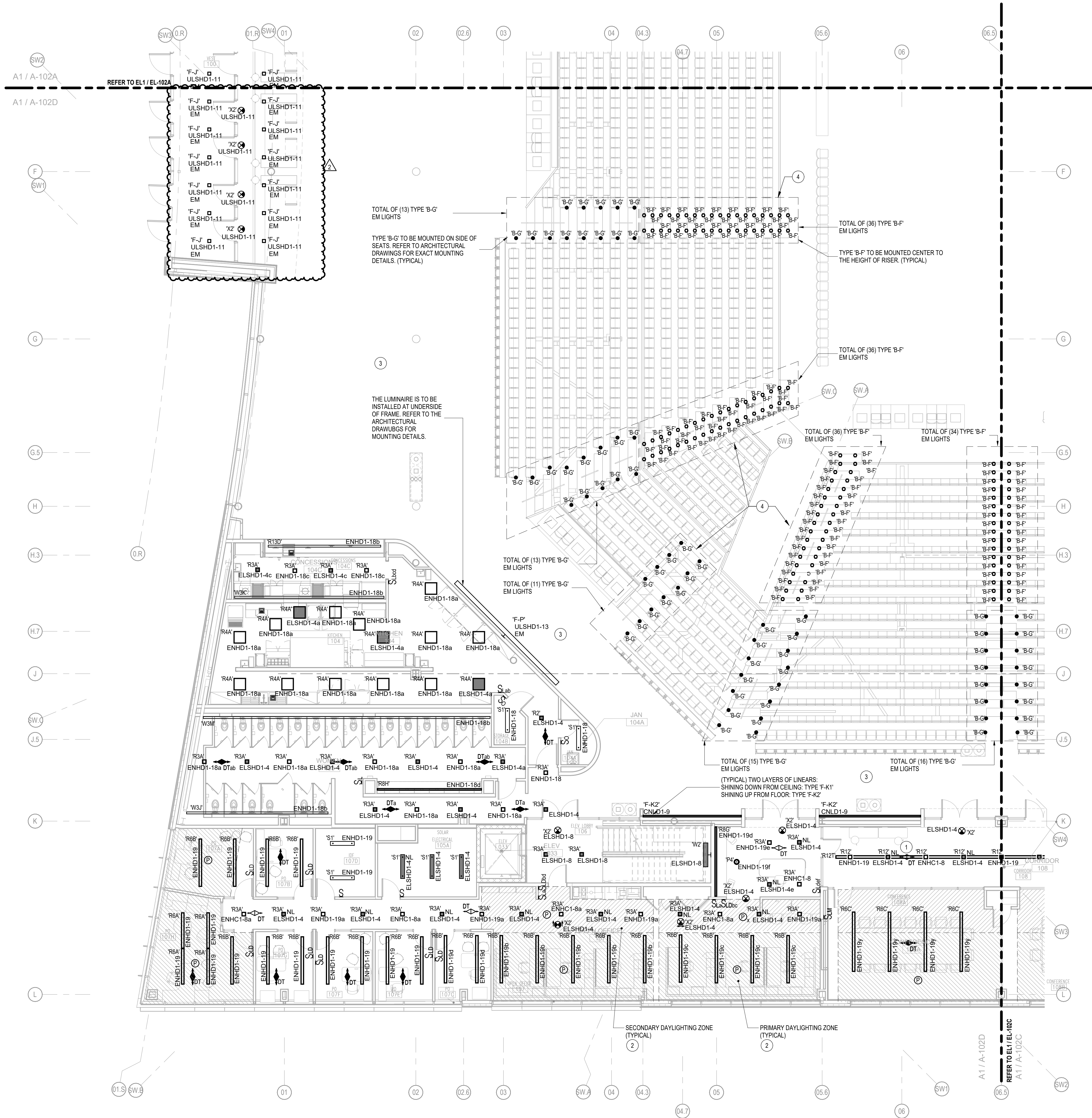
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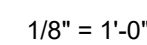
1. OCCUPANCY SENSOR IS INTEGRAL TO THE LIGHTING FIXTURE TYPE 'R12T'.
2. ALL LIGHT FIXTURES COMPLETELY OR PARTIALLY WITHIN THE DAYLIGHTING ZONE SHALL BE CONTROLLED BY THE PHOTOSENSOR IN THAT DAYLIGHTING ZONE.
3. REFER TO UPPER LEVEL LIGHTING PLANS FOR LIGHTING ON THE CONCOURSE.
4. UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING IN THIS AREA IS CIRCUITED TO PANEL ELSH01A.

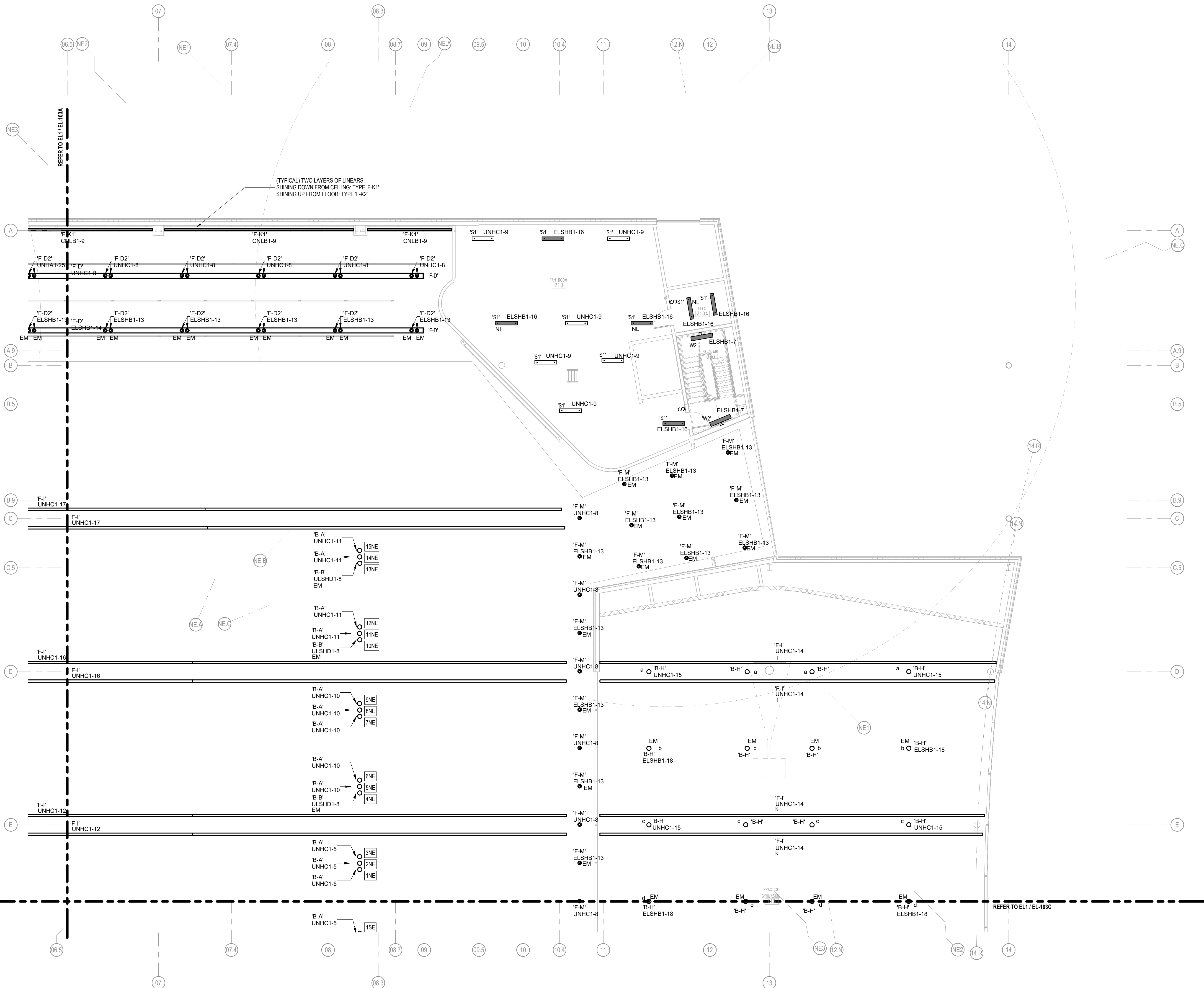
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EL-102C







UPPER FLOOR PLAN - AREA B - LIGHTING

1/8" = 1'-0"

GENERAL NOTES

- REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILING AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS.
- FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.
- REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE FOR CONTROLS PROGRAMMING REQUIREMENTS IN EACH SPACE.
- LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL EQUIPMENT LAYOUT AND WORK OF OTHER TRADES. FIXTURES SHALL BE PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF ALL LIGHTING IN ROOM.
- ALL LIGHTING CONTROL WIRING SHALL BE ROUTED ALONG CONDUIT.
- SEE VOLTAGE DROP TABLE SHEET FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET), PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING IN THIS AREA IS CIRCUITED TO PANEL 'EL-SH-01' AND 'UL-SH-01'.

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AMERICAN STRUCTUREPOINT, INC.

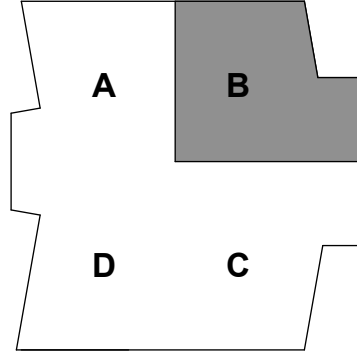
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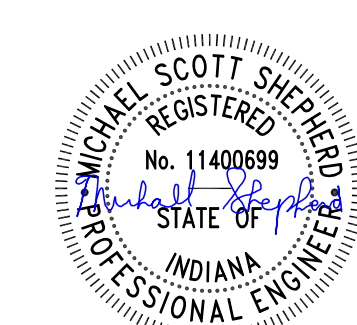
Code Consultant

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816-806-3729



KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25

RATIO

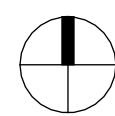
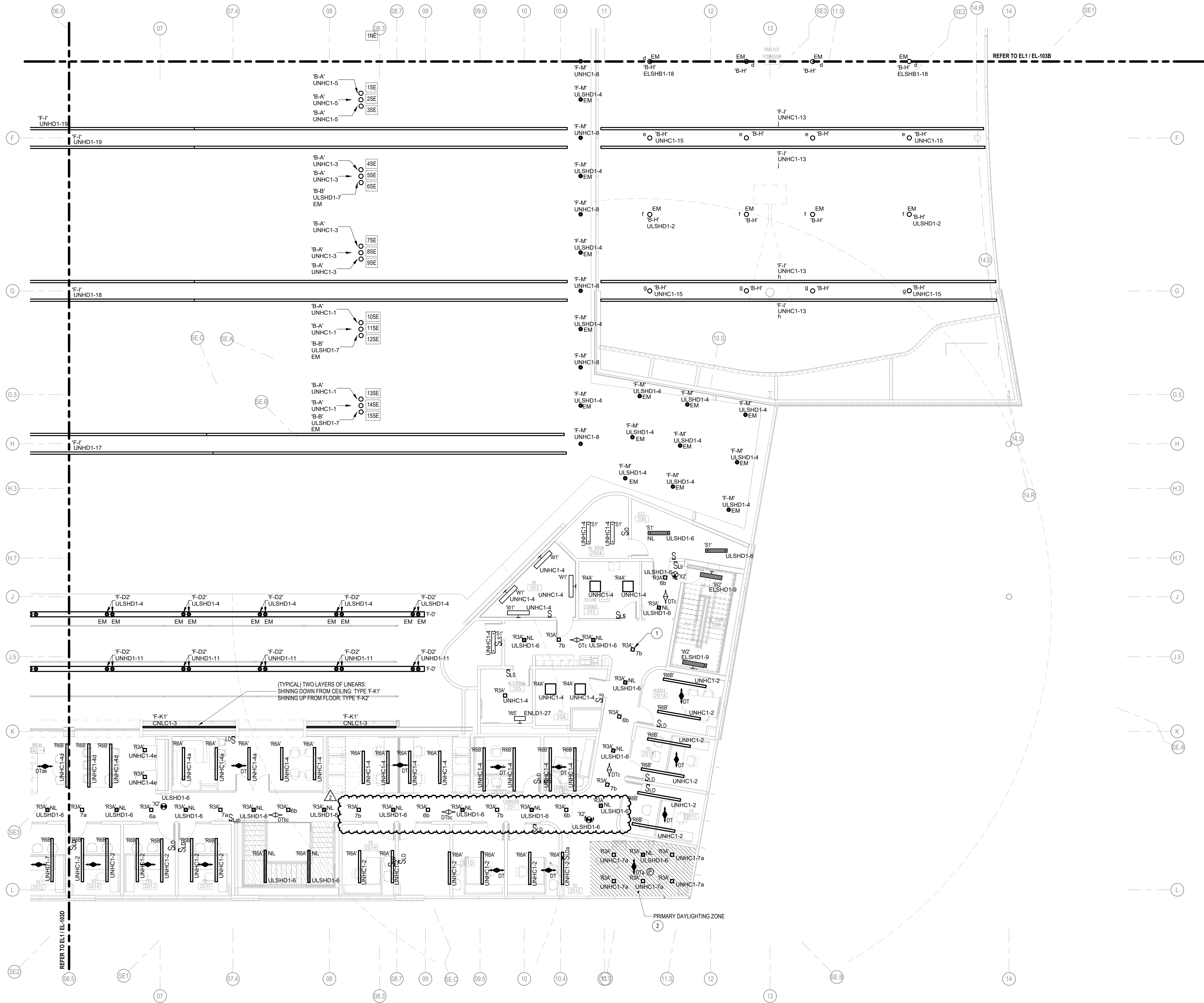
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA B - LIGHTING
LAYOUT

SHEET NUMBER

EL-103B



UPPER FLOOR PLAN - AREA C - LIGHTING

1/8" = 1'-0"

GENERAL NOTES

- REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILINGS AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS.
- FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.
- REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE FOR CONTROLS PROGRAMMING REQUIREMENTS IN EACH SPACE.
- LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL EQUIPMENT LAYOUT AND WORK OF OTHER TRADES. FIXTURES SHALL BE PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF ALL LIGHTING IN ROOM.
- SEE VOLTAGE DROP TABLE SHEET FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- UNLESS OTHERWISE NOTED, ALL NON-EMERGENCY CORRIDOR LIGHTING IN AREA C, IS CIRCUITED TO PANEL UNHC1.
- ALL LIGHT FIXTURES COMPLETELY OR PARTIALLY WITHIN THE DAYLIGHTING ZONE SHALL BE CONTROLLED BY THE PHOTOSENSOR IN THIS AREA.
- UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING IN THIS AREA IS CIRCUITED TO PANEL ULSD1.

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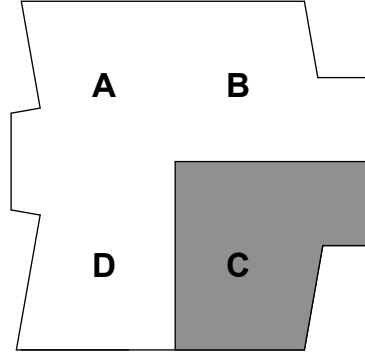
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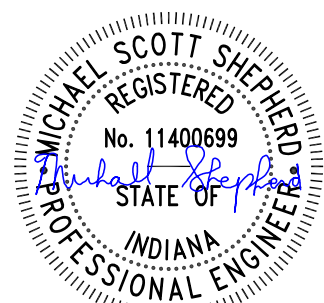
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25



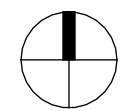
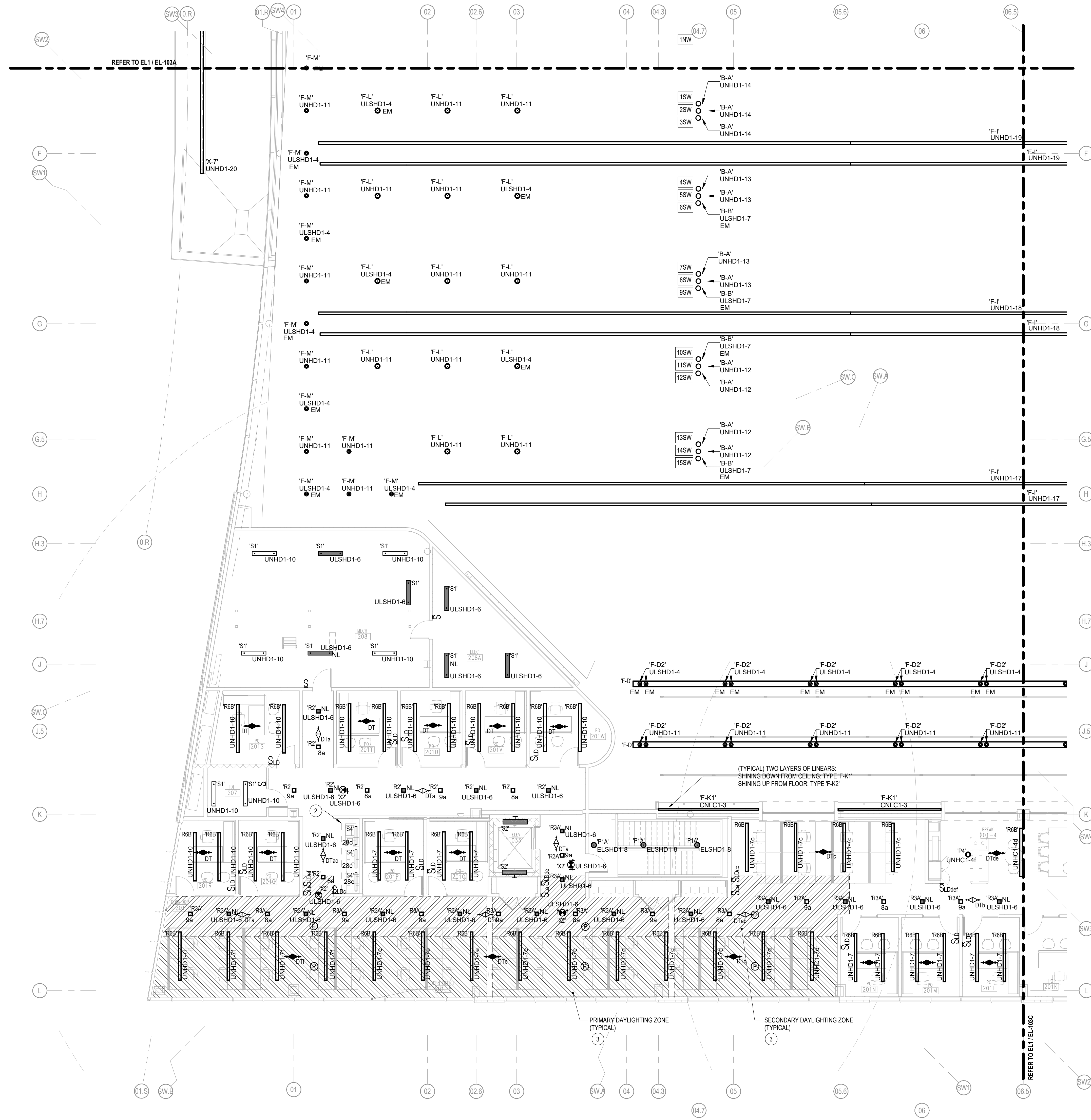
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PROJECT NO. 23112.000

SHEET TITLE
**UPPER FLOOR PLAN
- AREA C - LIGHTING
LAYOUT**

SHEET NUMBER

EL-103C



UPPER FLOOR PLAN - AREA D - LIGHTING

$$1/8'' = 1'-0''$$

GENERAL NOTES

- REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF
CEILINGS AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING
HEIGHTS TO PROVIDE UNIFORM ILLUMINATION AND TO AVOID GLARE
TO RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL
REFLECTED GLING PLAN DRAWINGS.
- COORDINATE WITH ALL LIGHTING FIXTURES TO DETERMINE EXACT LENGTHS
LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO
END OF COVE. MAXIMUM IF SPACING IS ALLOWED AT EACH END OF COVE
TO BE 1/4 OF THE COVE LENGTH.
- REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE
FOR LIGHTING CONTROL SEQUENCE. COORDINATE WITH ELECTRICAL
LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR
QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL
MECHANICAL AND ELECTRICAL LAYOUTS. COORDINATE WITH WALL BE
PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE
EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO
FACILITATE MAINTENANCE OF ALL LIGHTING BEAMS AND FOCUS.
- SEE PAGE DROP TABLE SHEET E-003 FOR LONG CONDUIT FOR RUNS
OVER 10 FEET. PROVIDE CONDUITS ACCORDINGLY FOR
CIRCUIT DISTANCE.

SHEET KEYNOTES

1. UNLESS OTHERWISE NOTED, ALL NON-EMERGENCY CORRIDOR LIGHTING IN AREA D, IS CIRCUITED TO PANEL 'UNHD1'.
2. 1. LIGHTING FIXTURES ARE CIRCUITED TO PANEL 'UNLD1'.
3. 2. ALL LIGHT FIXTURES COMPLETELY OR PARTIALLY WITHIN THE DAYLIGHTING ZONE SHALL BE CONTROLLED BY THE PHOTOSENSOR IN THAT DAYLIGHTING ZONE.
4. 3. UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING IN THIS AREA IS CIRCUITED TO PANEL 'UNSD1'.

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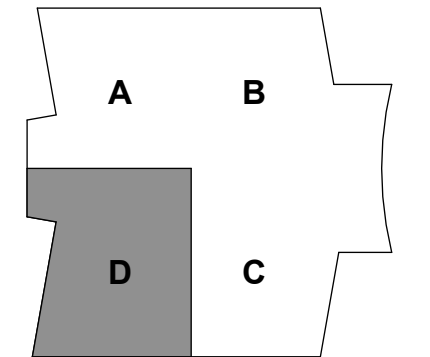
Civil Engineer
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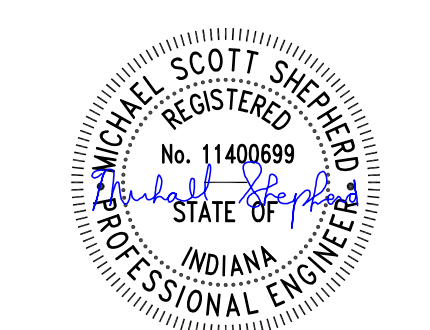
Code Consultant

FORZA
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

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5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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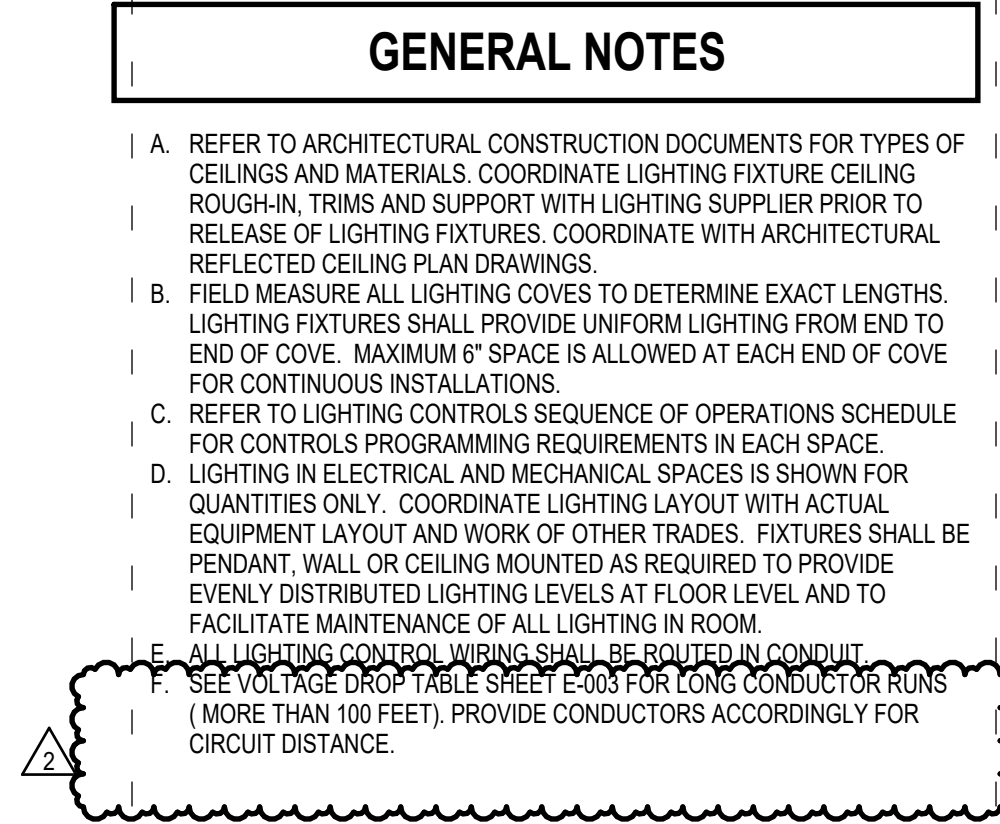
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA D - LIGHTING
LAYOUT

SHEET NUMBER

EL-103D



EL-104B

IN128 - JAMES T. MORRIS ARENA

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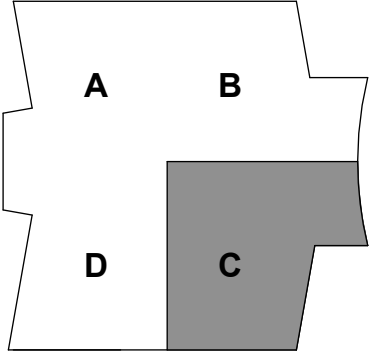
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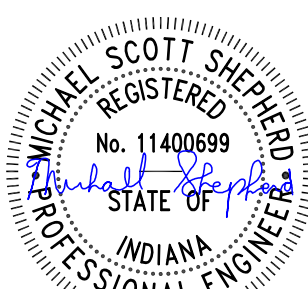
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

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2	50% CONSTRUCTION DOCUMENTS	11/01/24
3	95% CONSTRUCTION DOCUMENTS	12/19/24
4	CONSTRUCTION DOCUMENTS	01/13/25
5	ADDENDUM 02	02/03/25

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SHEET TITLE

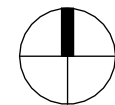
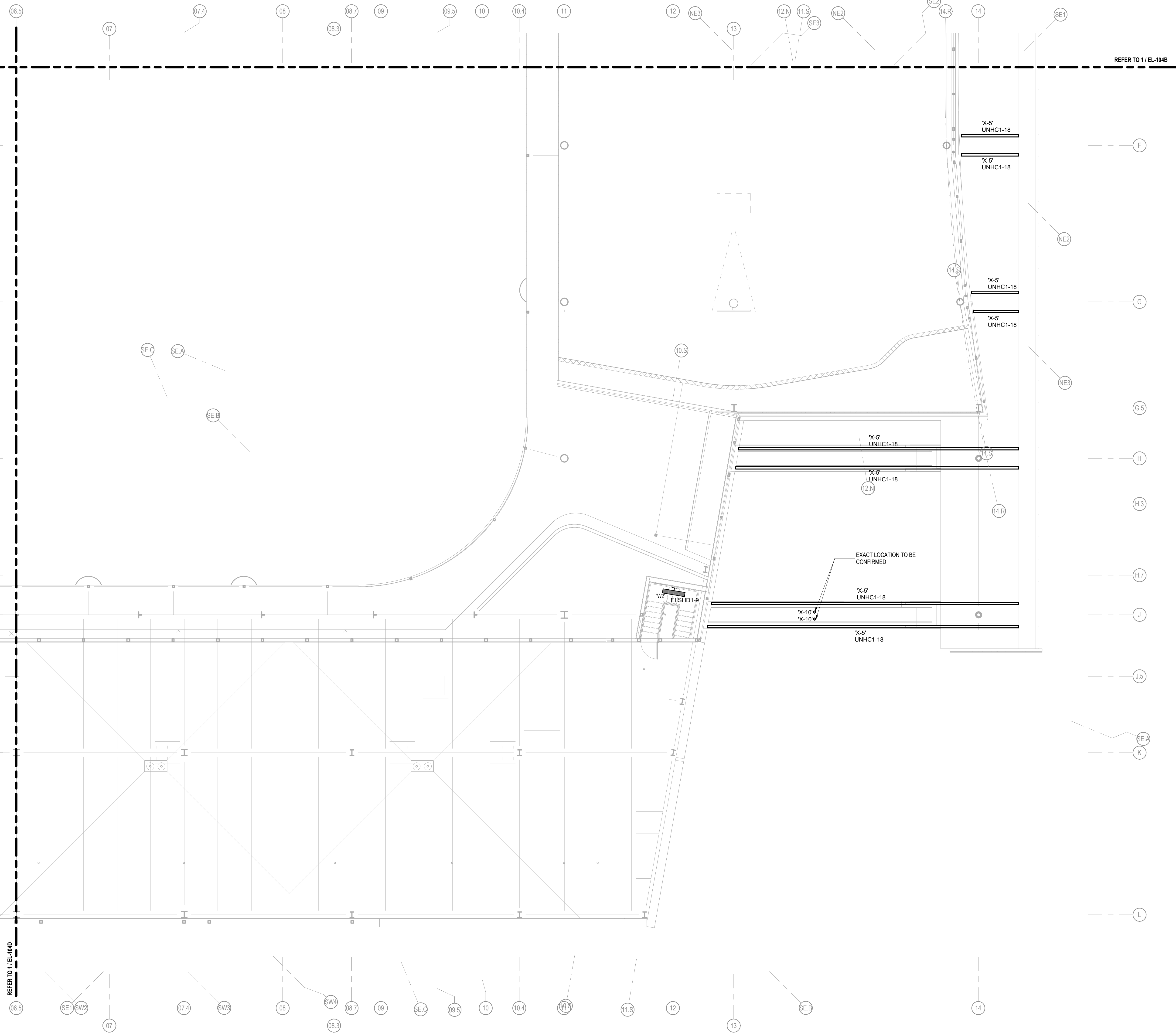
LOW ROOF FLOOR
PLAN - AREA C -
LIGHTING LAYOUT

SHEET NUMBER

EL-104C

GENERAL NOTES

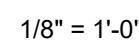
- REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES OF CEILING AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS.
- FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.
- REFER TO LIGHTING CONTROLS SEQUENCE OF OPERATIONS SCHEDULE FOR CONTROLS PROGRAMMING REQUIREMENTS IN EACH SPACE.
- LIGHTING IN ELECTRICAL AND MECHANICAL SPACES IS SHOWN FOR QUANTITIES ONLY. COORDINATE LIGHTING LAYOUT WITH ACTUAL EQUIPMENT LAYOUT AND WORK OF OTHER TRADES. FIXTURES SHALL BE PENDANT, WALL OR CEILING MOUNTED AS REQUIRED TO PROVIDE EVENLY DISTRIBUTED LIGHTING LEVELS AT FLOOR LEVEL AND TO FACILITATE MAINTENANCE OF ALL LIGHTING IN ROOM.
- ALL LIGHTING CONTROL WIRING SHALL BE ROUTED ALONG CONDUIT.
- SEE VOLTAGE DROP TABLE SHEET FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.



1
EL-104C

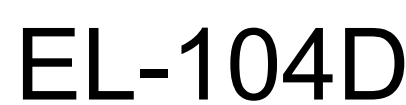
LOW ROOF - OVERALL - LIGHTING - AREAS - AREA C

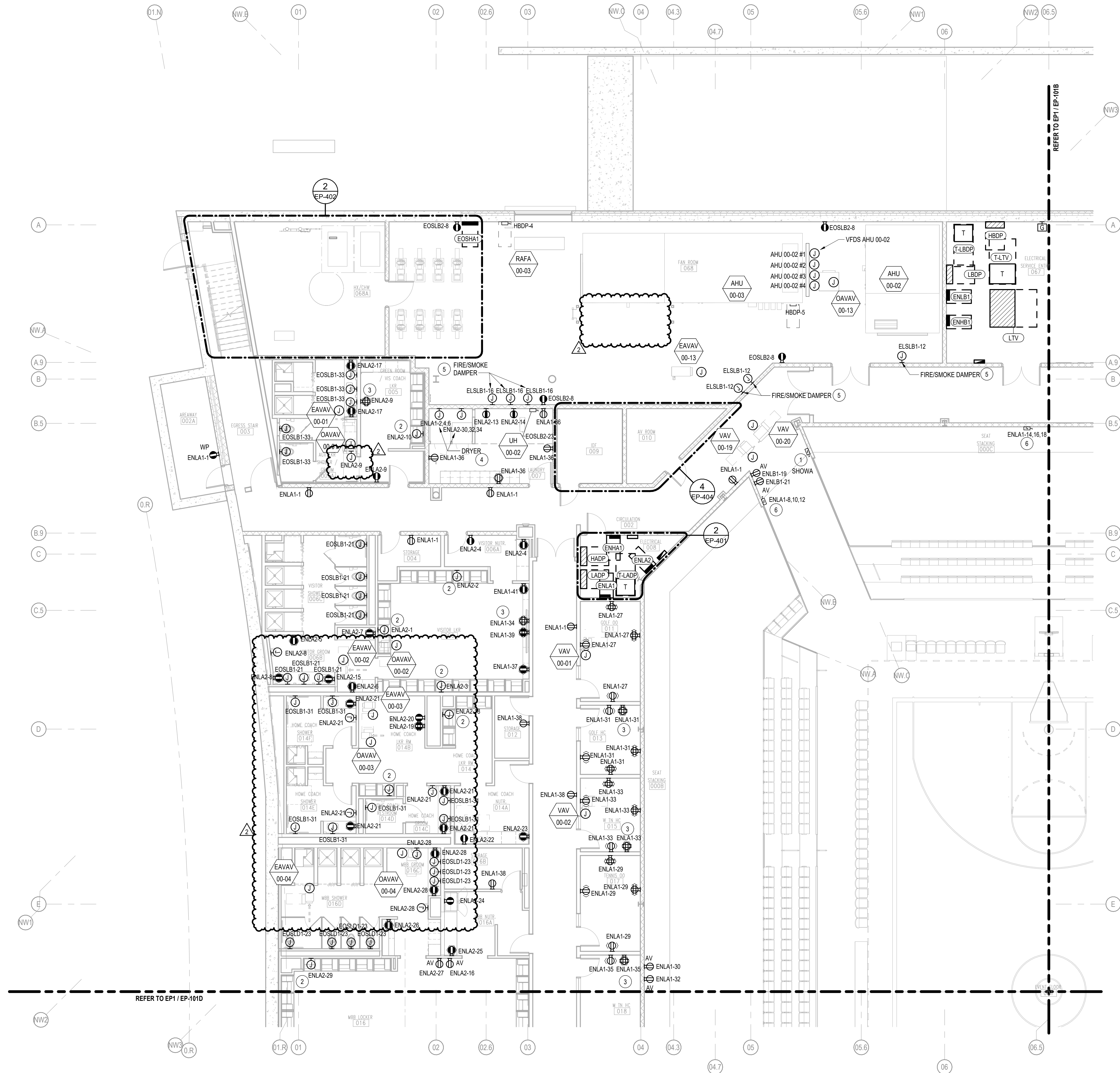
1/8" = 1'-0"



2

FORZA
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816-806-3729





EVENT FLOOR PLAN - AREA A - POWER
1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATATELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND PULL BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- PROVIDE A COMPANY SWITCH WITH CIRCUIT BREAKER AND CAM-LOCK CONNECTORS. SEE SINGLE LINE DIAGRAM FOR CIRCUITING AND FEEDER SIZE.
- PROVIDE POWER CONNECTION TO LOCKER SYSTEM.
- PROVIDE DEVICE TO BE MOUNTED IN DISPLAY BOX. SEE AV DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE POWER CONNECTION TO DRYER. ROUTE #1, 1#6G - 2" TO CIRCUIT INDICATED.
- PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
- PROVIDE POWER CONNECTION TO RETRACTABLE SEATING. PROVIDE 30/1 DISCONNECT SWITCH. ROUTE 3#10, 1#10G-3/4" TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH SEATING MANUFACTURER.

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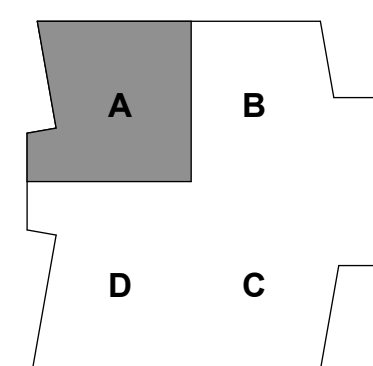
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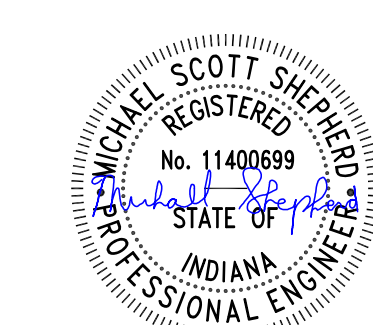
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

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PROJECT NO. 23112.000

SHEET TITLE

EVENT FLOOR PLAN
- AREA A - POWER

SHEET NUMBER

EP-101A

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SHEET TITLE
EVENT FLOOR PLAN
- AREA B - POWER

SHEET NUMBER

EP-101B

A. CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.

B. REFER TO DATATELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

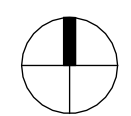
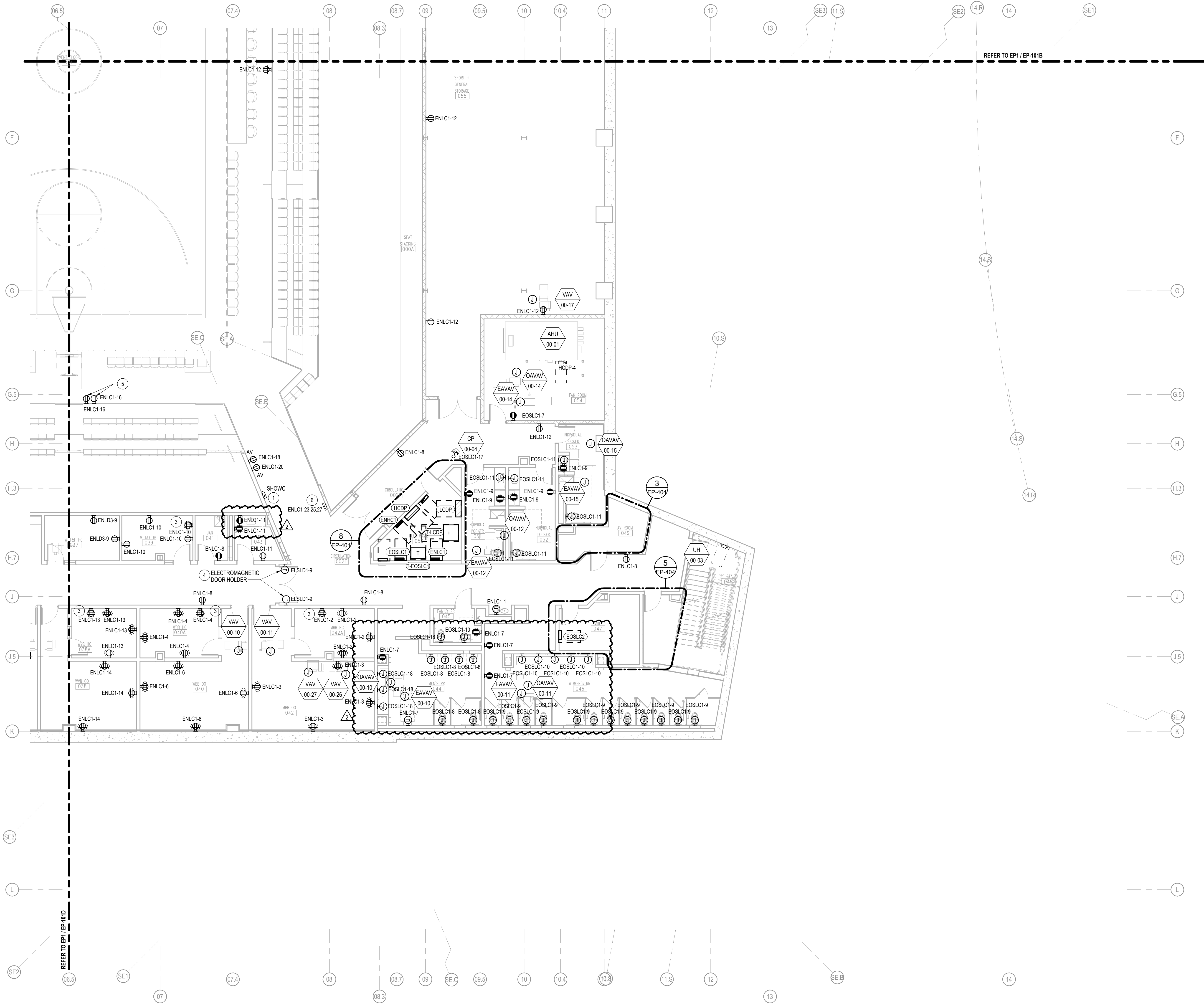
C. SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

1. CONNECT CONTROL BOX FOR DOCK LIFT. PROVIDE ALL CONDUIT AND WIRING AS DIRECTED BY MANUFACTURER AND CONNECT ALL LIMIT SWITCHES, SENSORS, CONTROLS, ETC. CONTROL BOX BY MANUFACTURER.
2. PROVIDE 303P NEMA 3R NOT FUSIBLE DISCONNECT SWITCH FOR DOCK LIFT. ROUTE 3#8, 11/10G - 3/4" TO CIRCUIT INDICATED. LOCATE DISCONNECT SWITCH AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE 30A/3P NOT-FUSIBLE DISCONNECT SWITCH FOR CONNECTION TO OVERHEAD DOOR OPERATOR. PROVIDE (4)112, (1)112G, 3/4". HOMERUN FOR BRANCH CIRCUIT INDICATED. COORDINATE ALL PUSHBUTTON OPERATOR STATIONS, SENSORS, ETC. COORDINATE ALL REQUIREMENTS WITH SUPPLIER.
4. NOT USED

PROVIDE A COMPANY SWITCH WITH CIRCUIT BREAKER AND CAM-LOCK CONNECTORS. SEE SINGLE LINE DIAGRAM FOR CIRCUITING AND FEEDER SIZE.

6. PROVIDE POWER CONNECTION TO HYDRONIC VALVE CASSETTE, CIRCULATING MOUNTING HEIGHT SO THAT RECEPTACLE IS LOCATED ADJACENT TO UNIT.
7. PROVIDE 303P NEMA 3R NOT-FUSIBLE DISCONNECT SWITCH FOR CONNECTION TO TRASH COMPACTOR. 10 HP. ROUTE 3#8, 11/10G - 3/4" TO CIRCUIT INDICATED.
8. PROVIDE RECEPTACLES FOR POWER CONNECTIONS FOR SCOREBOARD AND GAME CLOCK. COORDINATE EXACT LOCATION WITH AV CONNECTIONS.
9. PROVIDE POWER CONNECTION TO RETRACTABLE SEATING. PROVIDE 303P DISCONNECT SWITCH. ROUTE 3#10, 11/10G-3/4" TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH SEATING MANUFACTURER.





EVENT FLOOR PLAN - AREA C - POWER
1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA/TELECOM, AUDIO-VISUAL, AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND CONDUIT BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- PROVIDE A COMPANY SWITCH WITH CIRCUIT BREAKER AND CAM-LOCK CONNECTORS. SEE SINGLE LINE DIAGRAM FOR CIRCUITING AND FEEDER SIZE.
- PROVIDE POWER CONNECTION TO HYDRONIC WALL CASSETTE. COORDINATE MOUNTING HEIGHT SO THAT RECEPTACLE IS LOCATED ADJACENT TO UNIT.
- PROVIDE DEVICE TO BE MOUNTED IN DISPLAY BOX. SEE AV DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
- PROVIDE RECEPTACLES FOR POWER CONNECTIONS FOR SCOREBOARD AND GAME CLOCK. COORDINATE EXACT LOCATION WITH AV CONNECTIONS.
- PROVIDE POWER CONNECTION TO RETRACTABLE SEATING. PROVIDE 30/31 DISCONNECT SWITCH. ROUTE 3#10, 1#10G-3/4" TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH SEATING MANUFACTURER.

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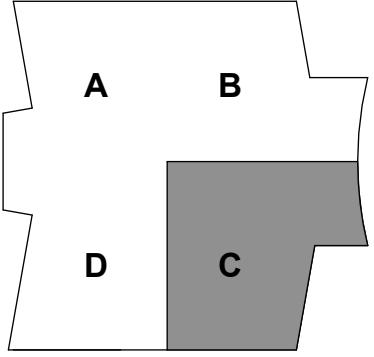
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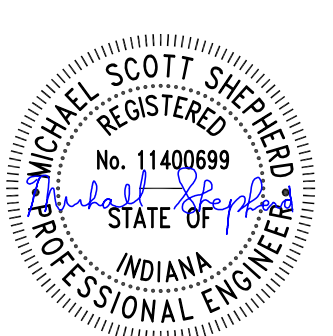
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
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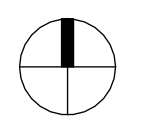
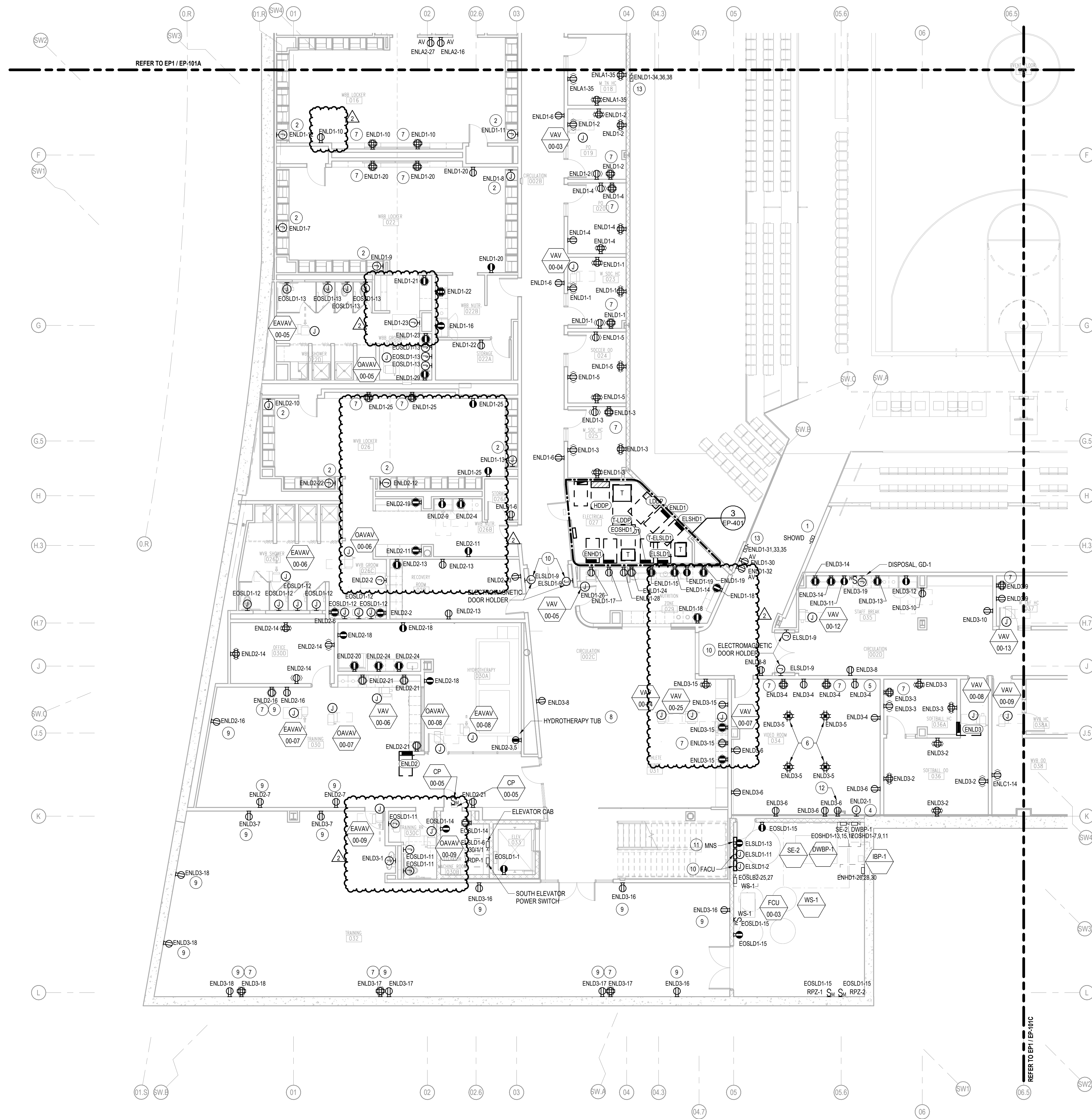


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PROJECT NO. 23112.000

SHEET TITLE
**EVENT FLOOR PLAN
- AREA C - POWER**

SHEET NUMBER
EP-101C



EVENT FLOOR PLAN - AREA D - POWER

1/8" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- B. REFER TO DATA/TELECOM, AUDIO VISUAL, AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUIT AND CABLE ROUTING.
- C. SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

1. PROVIDE A COMPANY SWITCH WITH CIRCUIT BREAKER AND CAM-LOCK CONNECTORS. SEE SINGLE LINE DIAGRAM FOR CIRCUITING AND FEEDER SIZE.
2. PROVIDE POWER CONNECTION TO LOCKER SYSTEM.
3. PROVIDE POWER CONNECTION TO HYDRONIC WALL CASSETTE. COORDINATE MOUNTING HEIGHT SO THAT RECEPTACLE IS LOCATED ADJACENT TO UNIT.
4. PROVIDE JUNCTION BOX WITH (1) 120V-20A CIRCUIT FOR PRESS JUNCTION BOX. MOUNT JUNCTION BOX AT 4'-0" AFF.
5. PROVIDE DUPLEX RECEPTACLE ADVACENT AV PLATE FOR MICROPHONE PLATE.
6. PROVIDE CEILING MOUNTED RECEPTACLES FOR TEMPORARY BROADCAST LIGHTING. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.
7. RECEPTACLE TO BE MOUNTED IN DISPLAY BOX. SEE AV DRAWINGS FOR ADDITIONAL INFORMATION.
8. NEMA 14-50R FOR HYDROTHERAPY UNIT. ROUTE #28, 1#10G - 3/4" TO CIRCUIT INDICATED.
9. COORDINATE LOCATION OF RECEPTACLES WITH LOCATION OF MIRRORS.
10. PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
11. PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED INSIDE UNIT.
12. PROVIDE RECEPTACLE MOUNTED ADJACENT TO AV PLATE FOR CONNECTION TO PTZ CAMERA. REFER TO ES DRAWINGS FOR ADDITIONAL INFORMATION.
13. PROVIDE POWER CONNECTION TO RETRACTABLE SEATING. PROVIDE 30/31 DISCONNECT SWITCH. ROUTE 3#10, 1#10G-3/4" TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH SEATING MANUFACTURER.

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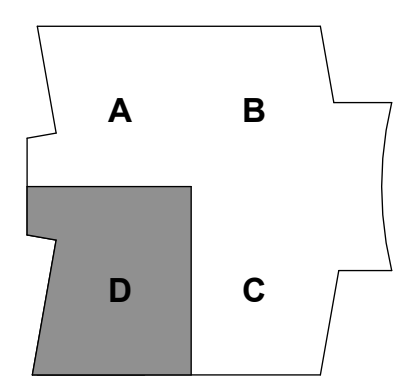
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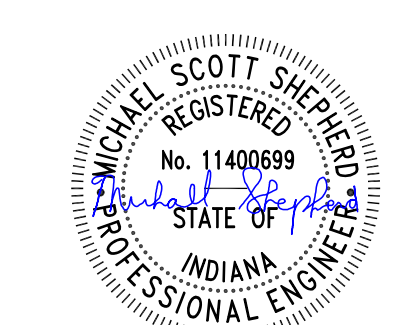
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

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PROJECT NO. 23112.000

SHEET TITLE

EVENT FLOOR PLAN
- AREA D - POWER

SHEET NUMBER

EP-101D

A. CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.

B. REFER TO DATATELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT TO BE INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUCITS AND JUNCTION BOXES.

C. SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

- 1 PROVIDE DIRECT 120V POWER CONNECTION TO SECURITY GATE. PROVIDE 1 1/2" CONDUIT FROM SECURITY GATE TO CONTROLS. COORDINATE EXACT LOCATION WITH SECURITY GATE MANUFACTURER'S SHOP DRAWINGS.
- 2 PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.

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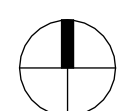
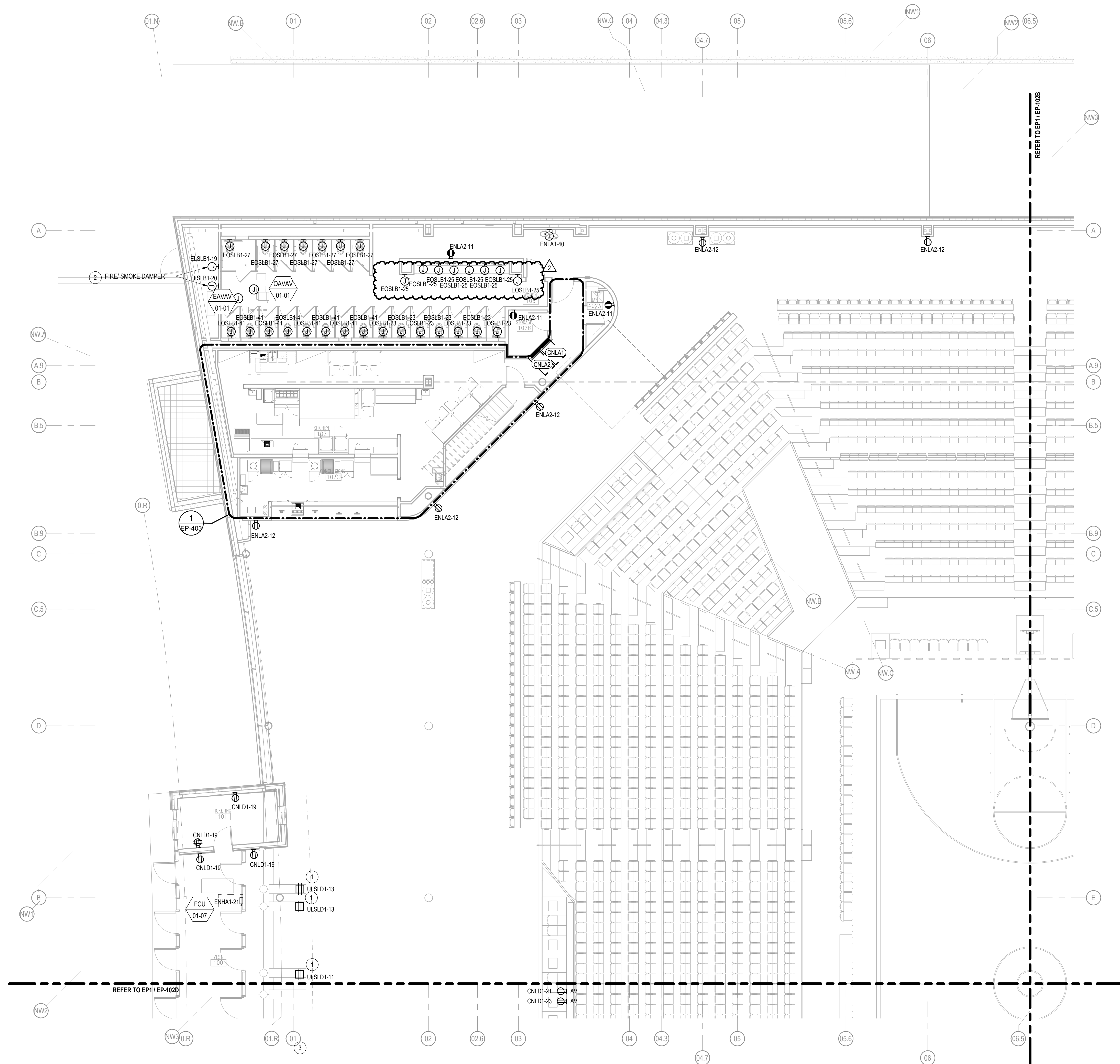
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RATIO

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA A -
POWER

EP-102A



CONCOURSE FLOOR PLAN - AREA A - POWER

$$1/8'' = 1'-0''$$

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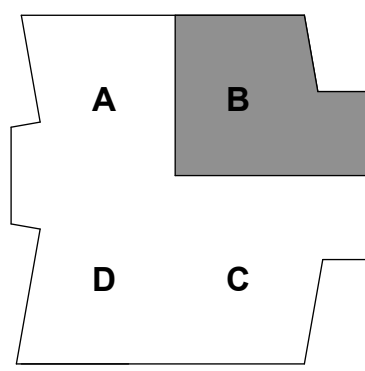
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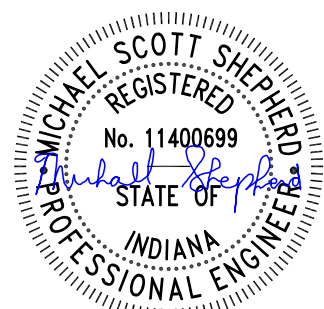
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KEY PLAN

SEAL | DATE 02/03/25



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SHEET TITLE
CONCOURSE FLOOR PLAN - AREA B - POWER

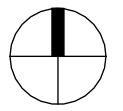
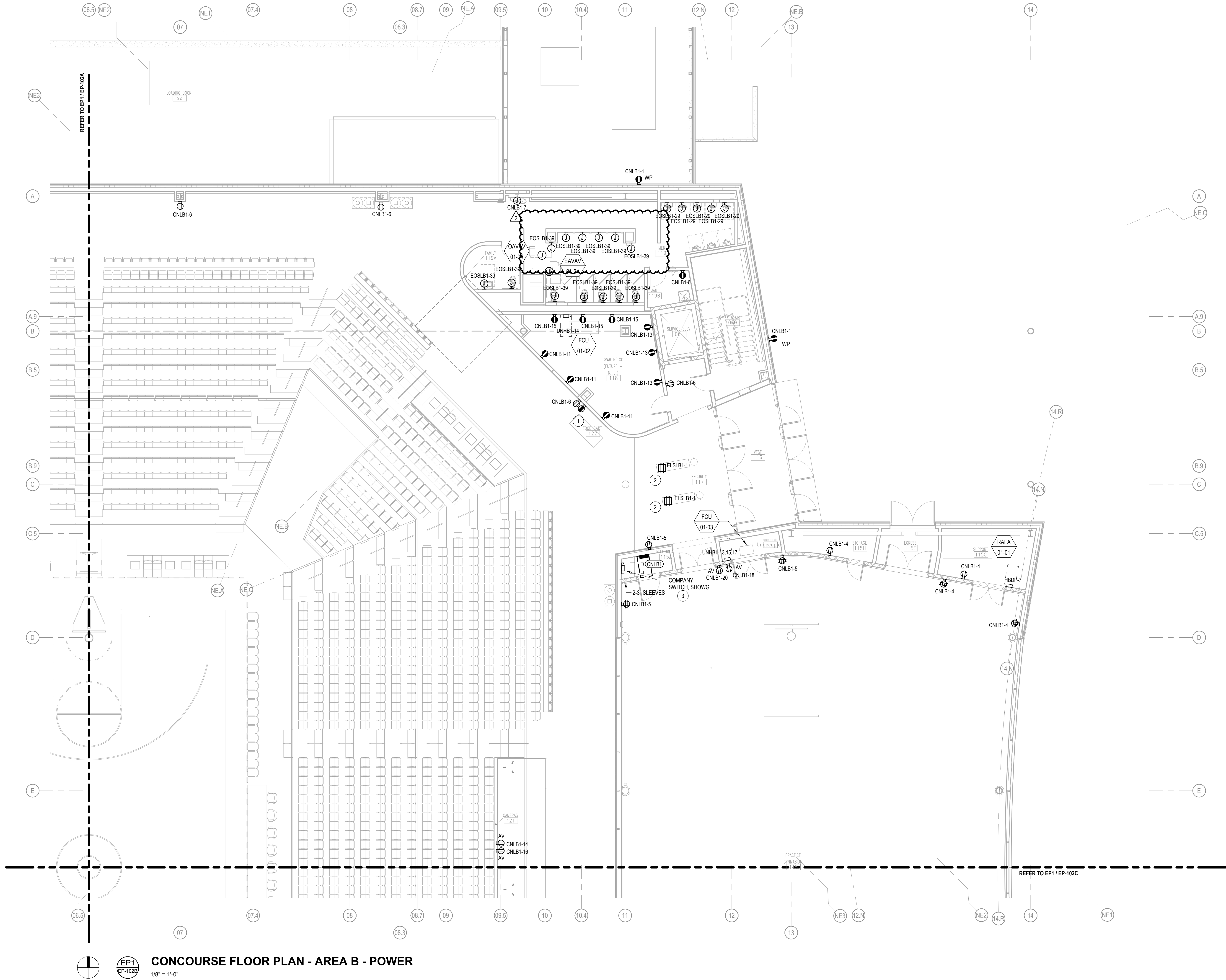
SHEET NUMBER
EP-102B

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA/TELECOM, AUDIO-VISUAL, AND SECURITY PLANS FOR ALL DETAILS.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR VOLTAGE DROP.

SHEET KEYNOTES

- 30 AMP 208V RECEPTACLE FOR RETHERMING OR HOT HOLDING FOOD CART. COORDINATE EXACT NEMA CONFIGURATION.
- PROVIDE DIRECT 120V POWER CONNECTION TO SECURITY GATE. PROVIDE 1 1/2" CONDUIT FROM SECURITY GATE TO CONTROLS. COORDINATE EXACT LOCATION WITH SECURITY GATE MANUFACTURER'S SHOP DRAWINGS. COORDINATE LOW VOLTAGE CONDUIT REQUIREMENT.
- PROVIDE A COMPANY SWITCH WITH CIRCUIT BREAKER AND CAM-LOCK CONNECTORS. SEE SINGLE LINE DIAGRAM FOR CIRCUITING AND FEEDER SIZE.



EP1
EP-102B

CONCOURSE FLOOR PLAN - AREA B - POWER

1/8" = 1'-0"

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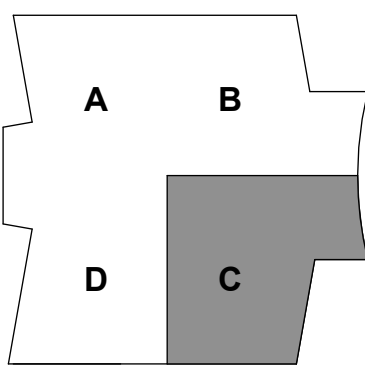
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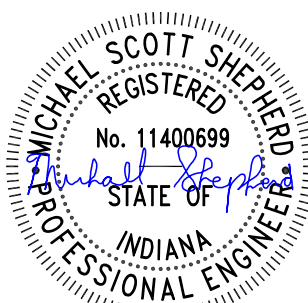
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
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5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE

CONCOURSE FLOOR PLAN - AREA C - POWER

SHEET NUMBER

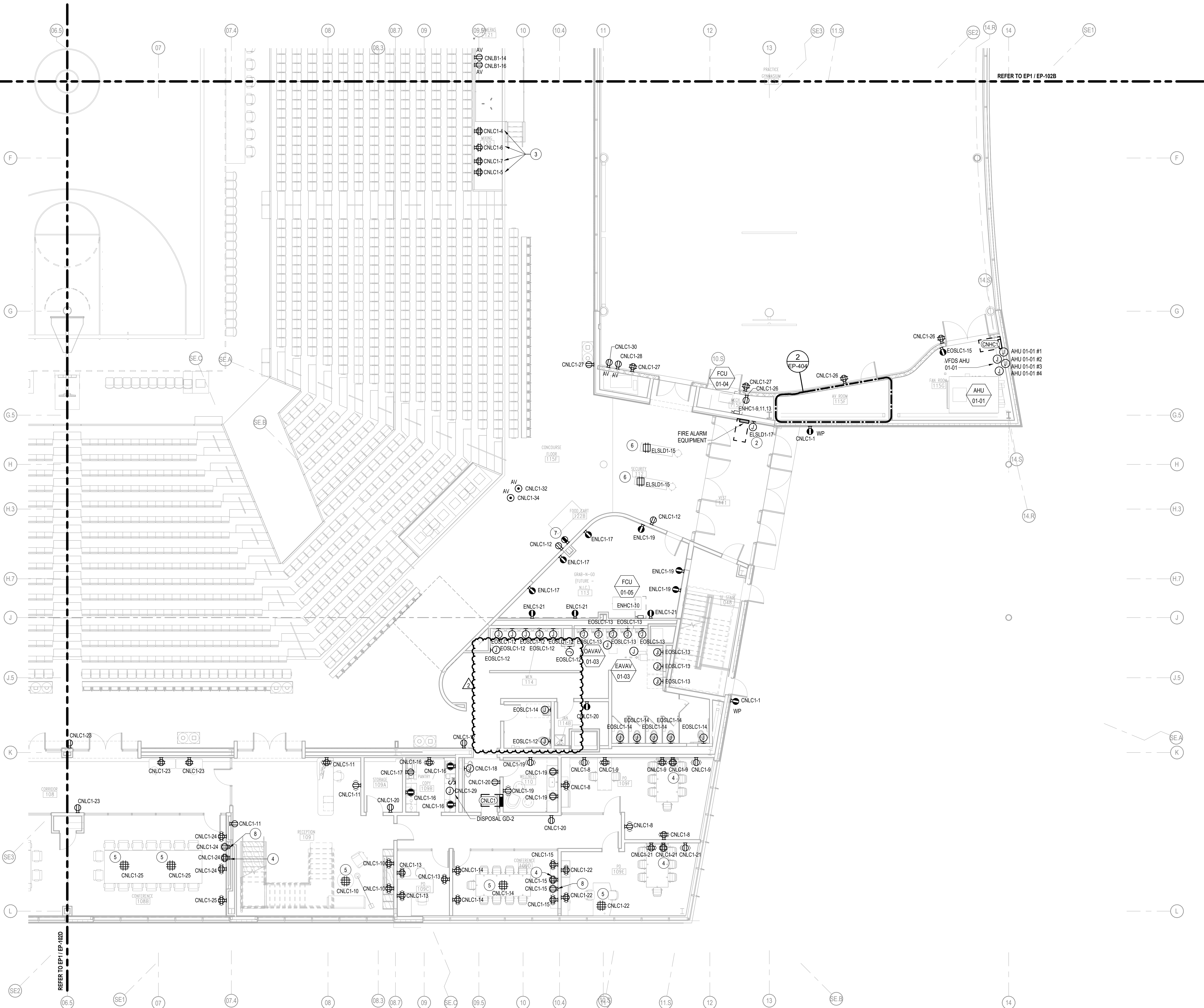
EP-102C

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING UTILITY AND OTHER SPECIAL REQUIREMENTS.
- REFER TO DATA/ELECTRICAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS. MAKE SURE TO PROVIDE CONDUIT SIZES ACCORDINGLY FOR CIRCUIT DISTANCE.

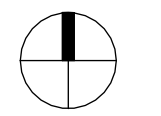
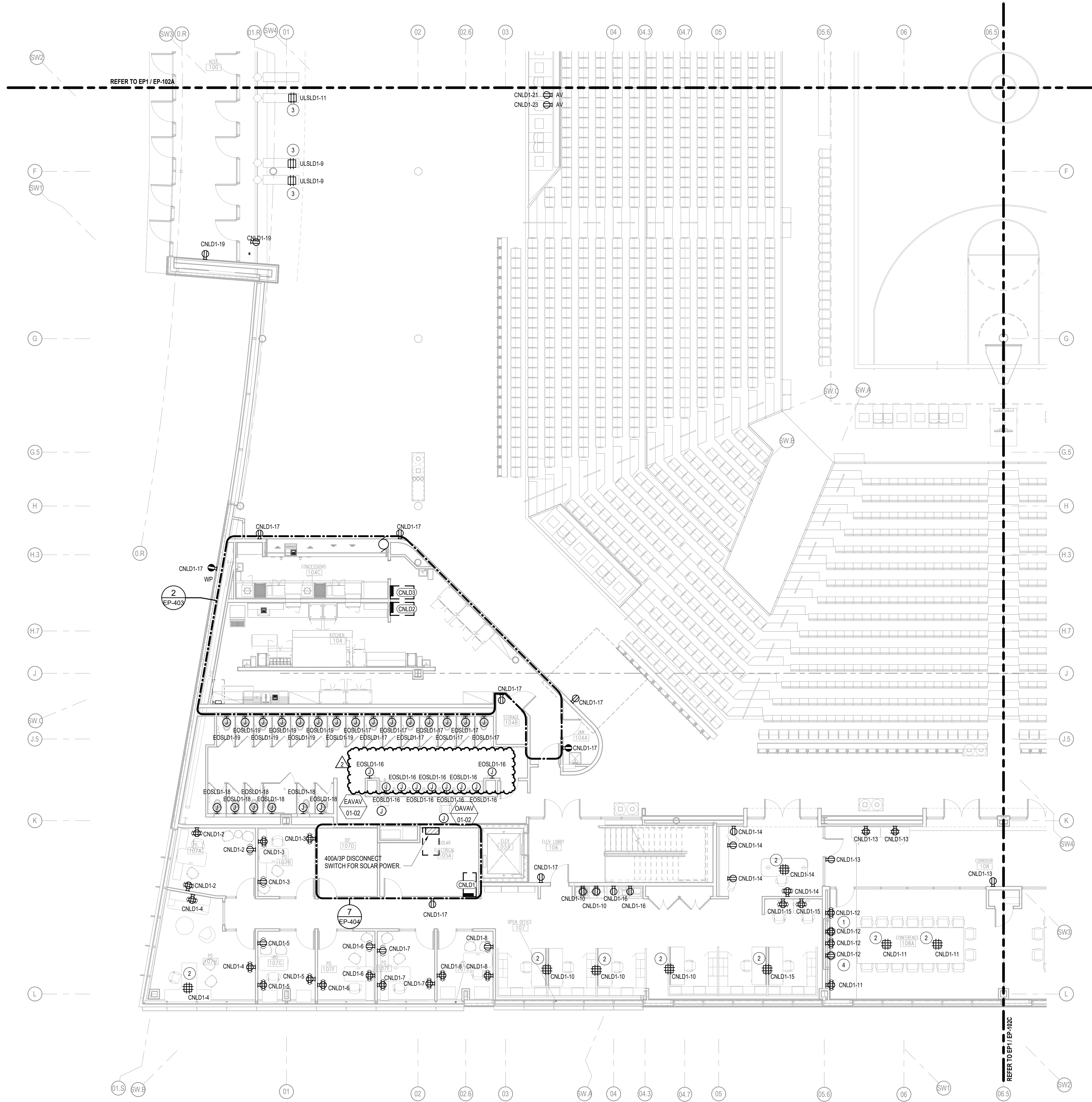
SHEET KEYNOTES

- PROVIDE POWER CONNECTION TO HYDRONIC WALL CASSETTE. COORDINATE MOUNTING HEIGHT SO THAT RECEPTACLE IS LOCATED ADJACENT TO UNIT.
- PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
- PROVIDE DEDICATED POWER CONNECTIONS FOR ANNOUNCER, DJ, AUDIO TECH, AND EQUIPMENT RACK. COORDINATE EXACT LOCATIONS PRIOR TO INSTALLATION.
- PROVIDE DEVICE TO BE MOUNTED IN DISPLAY BOX. SEE AV DRAWINGS FOR ADDITIONAL INFORMATION.
- FLOOR BOX FOR FURNITURE WITH TWO DUPLEX RECEPTACLES AND TWO GANGS FOR LOW VOLTAGE DEVICES. PROVIDE 1 1/2" CONDUIT FOR COMMUNICATION CABLEING AND COORDINATE COVER STYLE, FINISH, AND LOCATION WITH ARCHITECT.
- PROVIDE DIRECT 120V POWER CONNECTION TO SECURITY GATE. PROVIDE 1 1/2" CONDUIT FROM SECURITY GATE TO CONTROLS. COORDINATE EXACT LOCATION WITH SECURITY GATE MANUFACTURER'S SHOP DRAWINGS. COORDINATE LOW VOLTAGE CONDUIT REQUIREMENT.
- 30 AMP 208V RECEPTACLE FOR RETHERMING OR HOT HOLDING FOOD CART. COORDINATE EXACT NEMA CONFIGURATION.
- PROVIDE RECEPTACLE MOUNTED ADJACENT TO AV PLATE FOR CONNECTION TO PTZ CAMERA. REFER TO ES DRAWINGS FOR ADDITIONAL INFORMATION.



CONCOURSE FLOOR PLAN - AREA C - POWER

1/8" = 1'-0"



CONCOURSE FLOOR PLAN - AREA D - POWER
1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA/TELECOM, AUDIO-VISUAL, AND SECURITY PLANS FOR ALL INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR REQUIRED VOLTAGE.

SHEET KEYNOTES

- PROVIDE DEVICE TO BE MOUNTED IN DISPLAY BOX, SEE AV DRAWINGS FOR ADDITIONAL INFORMATION.
- FLOOR BOX FOR FURNITURE WITH TWO DUPLEX RECEPTACLES AND TWO GANGS FOR LOW VOLTAGE DEVICES. PROVIDE 1 1/2" CONDUIT FOR COMMUNICATION CABLEING AND COORDINATE COVER STYLE, FINISH, AND LOCATION WITH ARCHITECT.
- PROVIDE DIRECT 120V POWER CONNECTION TO SECURITY GATE. PROVIDE 1 1/2" CONDUIT FROM SECURITY GATE TO CONTROLS. COORDINATE EXACT LOCATION WITH SECURITY GATE MANUFACTURER'S SHOP DRAWINGS. COORDINATE LOW VOLTAGE CONDUIT REQUIREMENT.
- PROVIDE RECEPTACLE MOUNTED ADJACENT TO AV PLATE FOR CONNECTION TO PTZ CAMERA. REFER TO ES DRAWINGS FOR ADDITIONAL INFORMATION.

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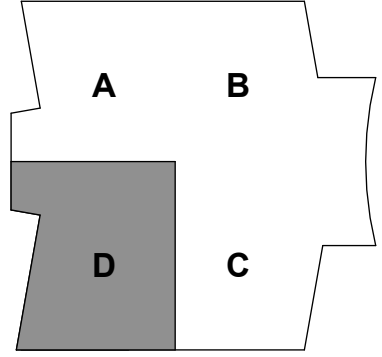
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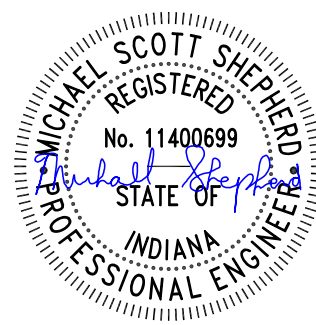
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
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7	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR PLAN - AREA D - POWER

SHEET NUMBER
EP-102D

A. CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS

B. REFER TO DATATELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL VIDEO, SECURITY DEVICES AND SECURITY EQUIPMENT TO BE INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

C. SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

- 1 PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
- 2 PROVIDE POWER CONNECTION TO HEAT TRACE. COORDINATE EXACT LOCATION IN FIELD WITH PLUMBING CONTRACTOR, ENSURE IT IS ACCESSIBLE.

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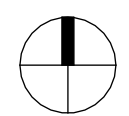
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SHEET TITLE
UPPER FLOOR PLAN
- AREA A - POWER

EP-103A



EP1
EP-103A

UPPER FLOOR PLAN - AREA A - POWER

$$1/8" = 1'-0"$$

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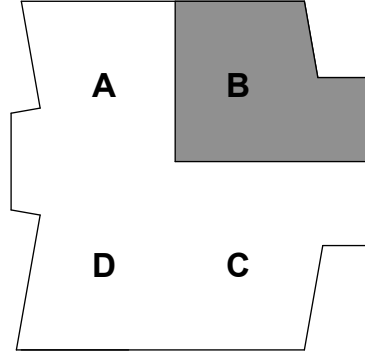
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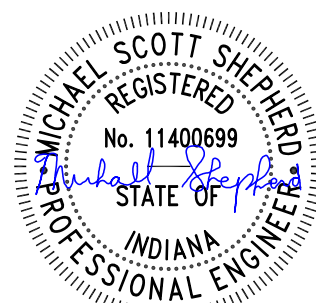
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KEY PLAN

SEAL | DATE 02/03/25



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7	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA B - POWER

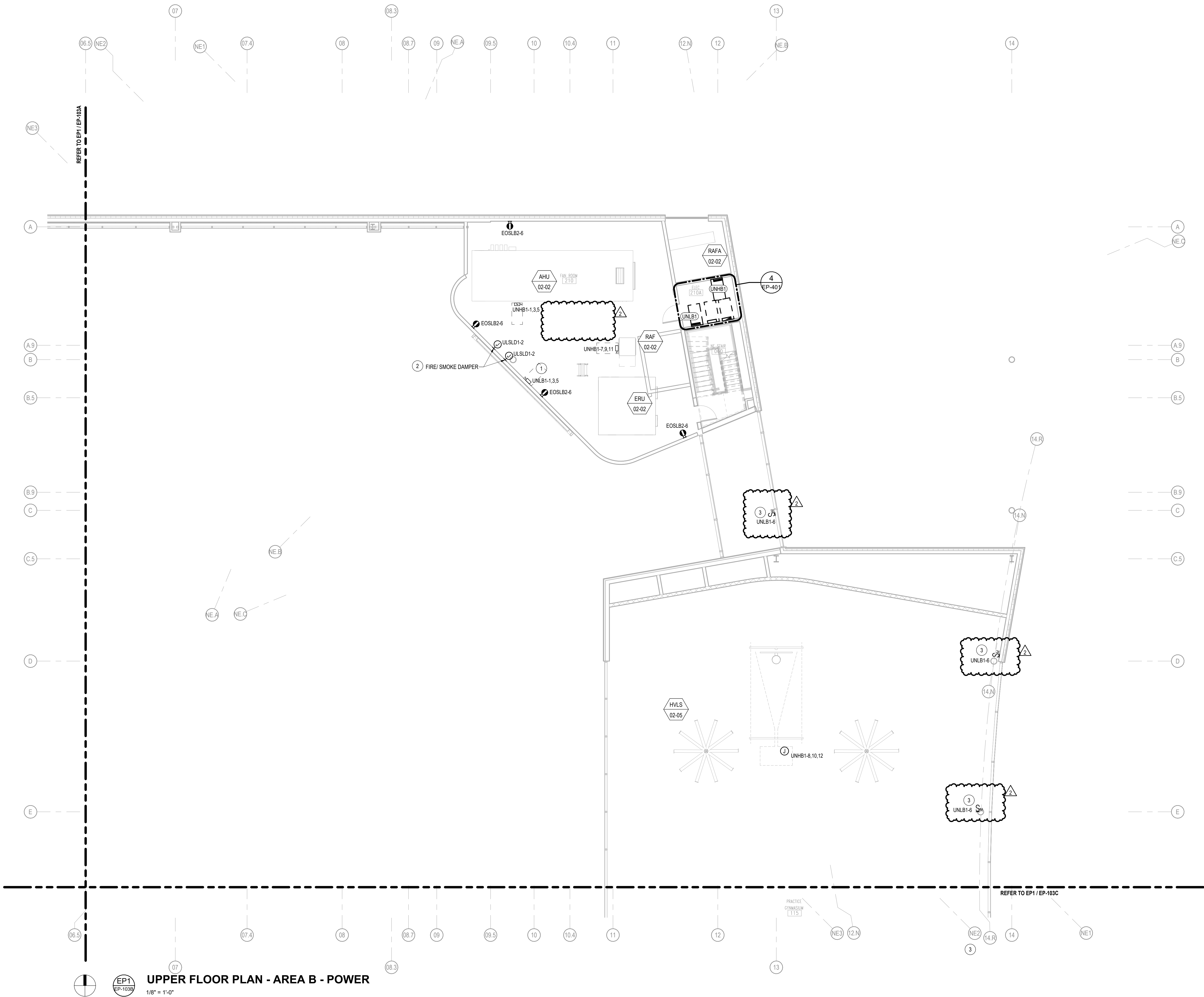
SHEET NUMBER
EP-103B

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES FOR DISCONNECT SWITCH AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA/TELECOM ADD-1030C AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS. MAKE SURE TO TEST, PROVIDE CONDUITS ACCORDINGLY FOR CIRCUIT DISTANCE.

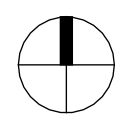
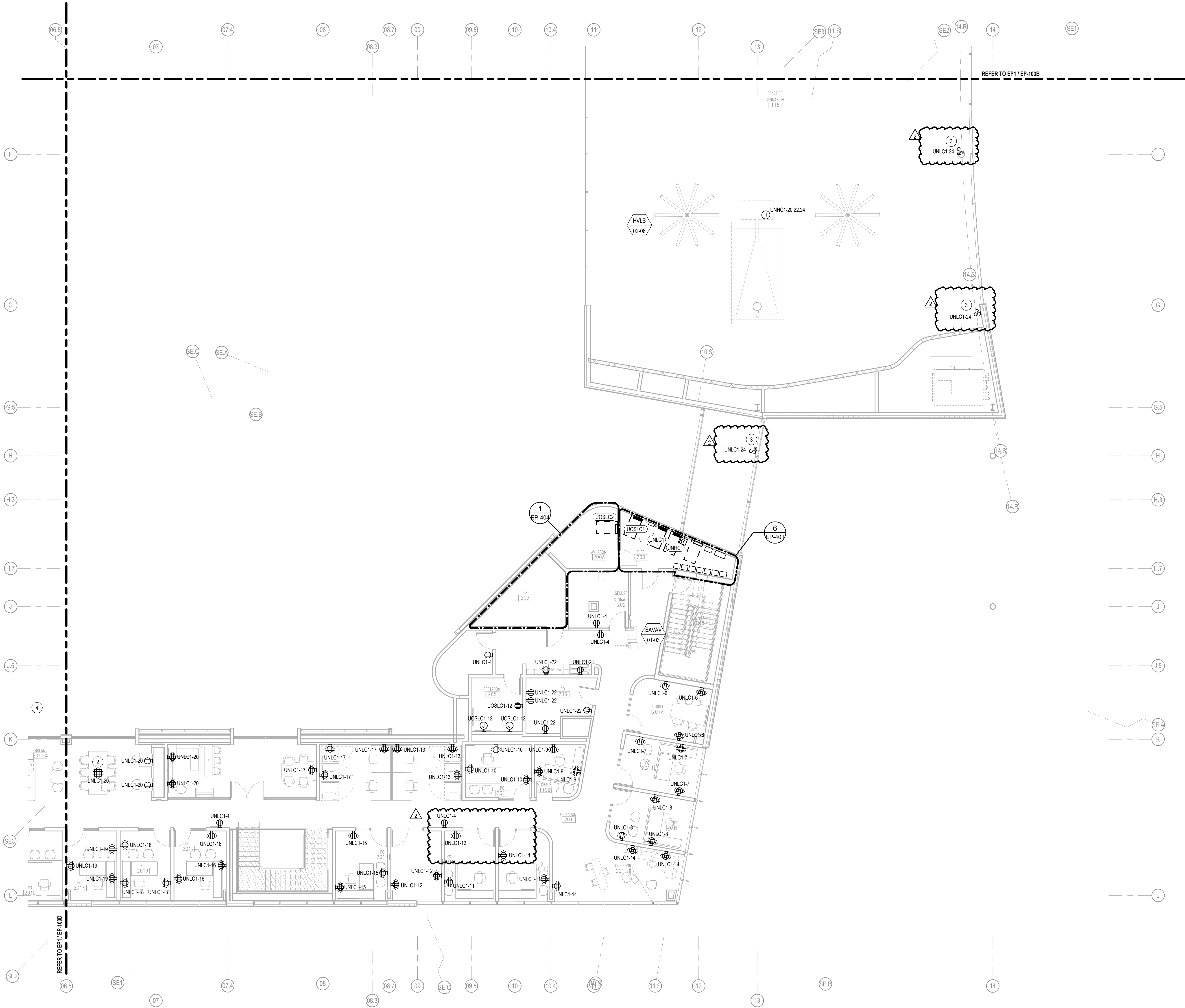
SHEET KEYNOTES

- 100/3 DISCONNECT SWITCH FOR PRIMARY VIDEO SCREEN. EXACT LOCATION TO BE COORDINATED PRIOR TO INSTALLATION. ROUTE #43, 1#8G - 1 1/4" C TO CIRCUIT INDICATED. COORDINATE FINAL CONNECTION TO SCREEN WITH MANUFACTURER.
- PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
- PROVIDE POWER CONNECTION TO HEAT TRACE. COORDINATE EXACT LOCATION IN FIELD WITH PLUMBING CONTRACTOR. ENSURE IT IS ACCESSIBLE.



UPPER FLOOR PLAN - AREA B - POWER

1/8" = 1'-0"



UPPER FLOOR PLAN - AREA C - POWER
1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE REFINISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- PROVIDE POWER CONNECTION TO HYDRONIC WALL CASSETTE. COORDINATE MOUNTING HEIGHT SO THAT RECEPTACLE IS LOCATED ADJACENT TO UNIT
- FLOOR BOX FOR FURNITURE WITH TWO DUPLEX RECEPTACLES AND TWO GANGS FOR LOW VOLTAGE DEVICES. PROVIDE 1 1/2" CONDUIT FOR COMMUNICATION CABLEING AND COORDINATE COVER STYLE, FINISH AND LOCATION WITH ARCHITECT
- PROVIDE POWER CONNECTION TO HEAT TRACE. COORDINATE EXACT LOCATION IN FIELD WITH PLUMBING CONTRACTOR. ENSURE IT IS ACCESSIBLE.

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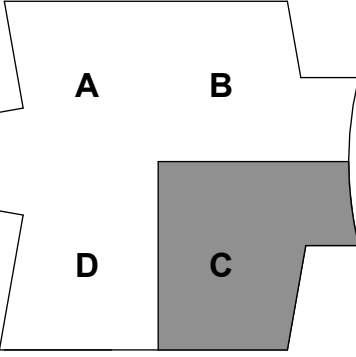
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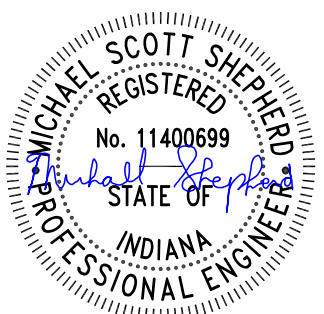
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

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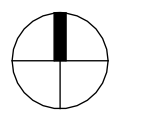
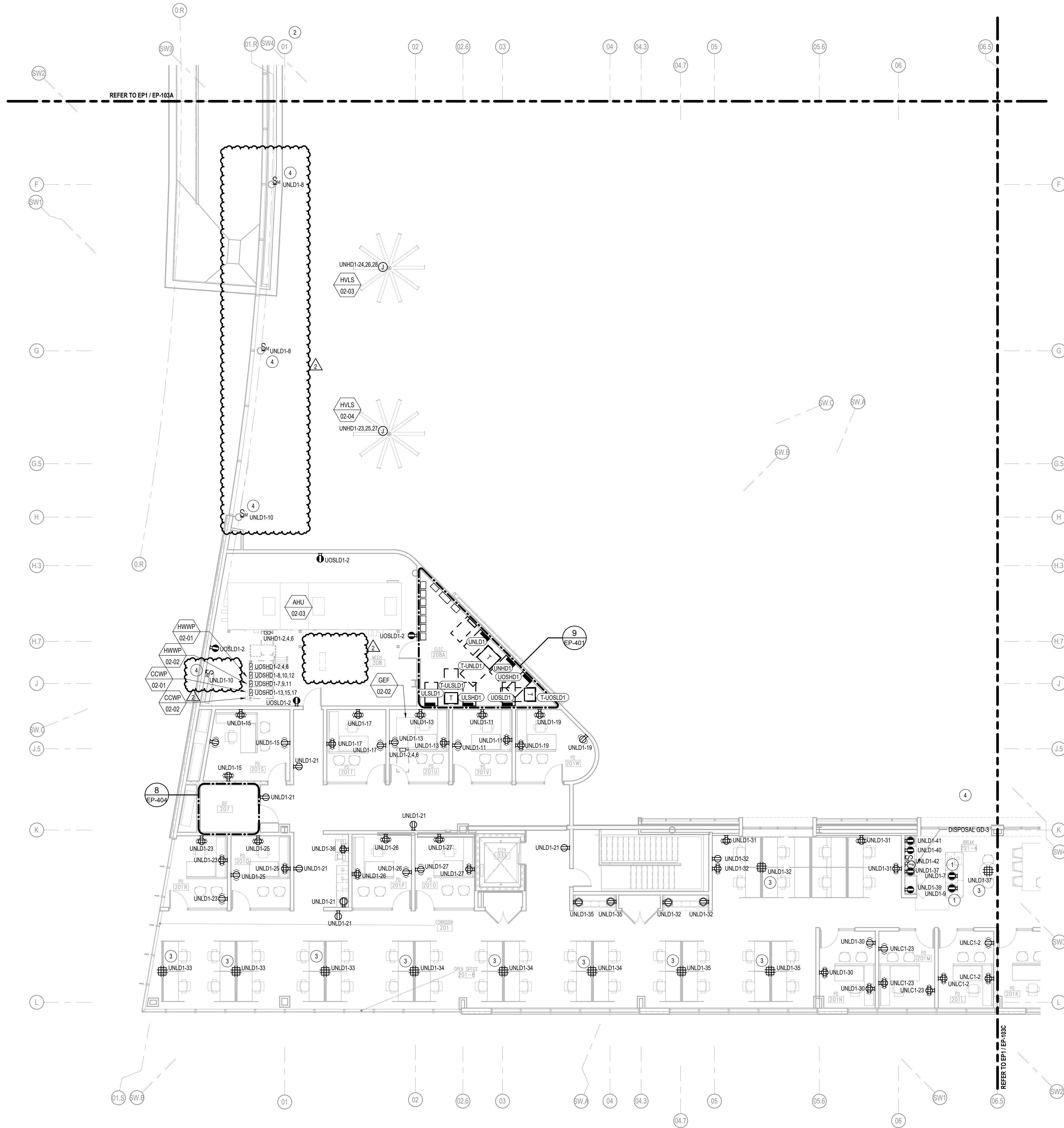


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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA C - POWER

SHEET NUMBER
EP-103C



UPPER FLOOR PLAN - AREA D - POWER

1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES NOT SHOWN HEREON AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA TELECOM ADDENDUM AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.
- SEE VOLTAGE DROP TABLE SHEET E-003 FOR LONG CONDUCTOR RUNS. MAKE SURE TO TEST, PROVIDE CONDUITS ACCORDINGLY FOR CIRCUIT DISTANCE.

SHEET KEYNOTES

- DUPLEX RECEPTACLE FOR MICROWAVE, COORDINATE LOCATION WITH ARCHITECT.
- PROVIDE POWER CONNECTIONS TO ACCESS CONTROL PANEL. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.
- FLOOR BOX FOR FURNITURE WITH TWO DUPLEX RECEPTACLES AND TWO GANGS FOR LOW VOLTAGE DEVICES. PROVIDE 1 1/2" CONDUIT FOR COMMUNICATION CABLING AND COORDINATE COVER STYLE, FINISH, AND LOCATION WITH ARCHITECT.
- PROVIDE POWER CONNECTION TO HEAT TRACE. COORDINATE EXACT LOCATION IN FIELD WITH PLUMBING CONTRACTOR, ENSURE IT IS ACCESSIBLE.

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317-872-8400

Mechanical / Electrical
INTROBA
8250 HAVERSTICK ROAD
SUITE 285
INDIANAPOLIS, IN 46240
800-404-7677

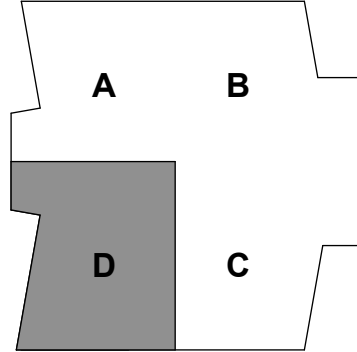
Plumbing Engineer
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317-633-4120

Acoustics / Technology Engineer
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SUITE 216
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Civil Engineer
AMERICAN STRUCTUREPOINT, INC.
9025 RIVER ROAD
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INDIANAPOLIS, IN 46240
317-547-5580

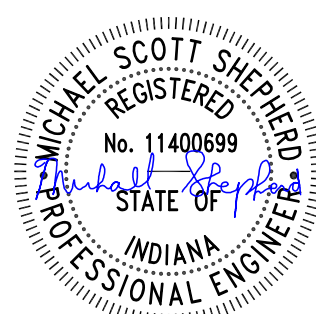
Food Service Consultant
CINILITTLE
3405 NW 9TH AVENUE #1202
FORT LAUDERDALE, FL 33309
954-846-9600

Code Consultant
FORZA
2502 WEST MECHANIC ST, SUITE C
HARRISONVILLE, MO 64701
816-806-3729



KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 01	01/27/25
7	ADDENDUM 02	02/03/25



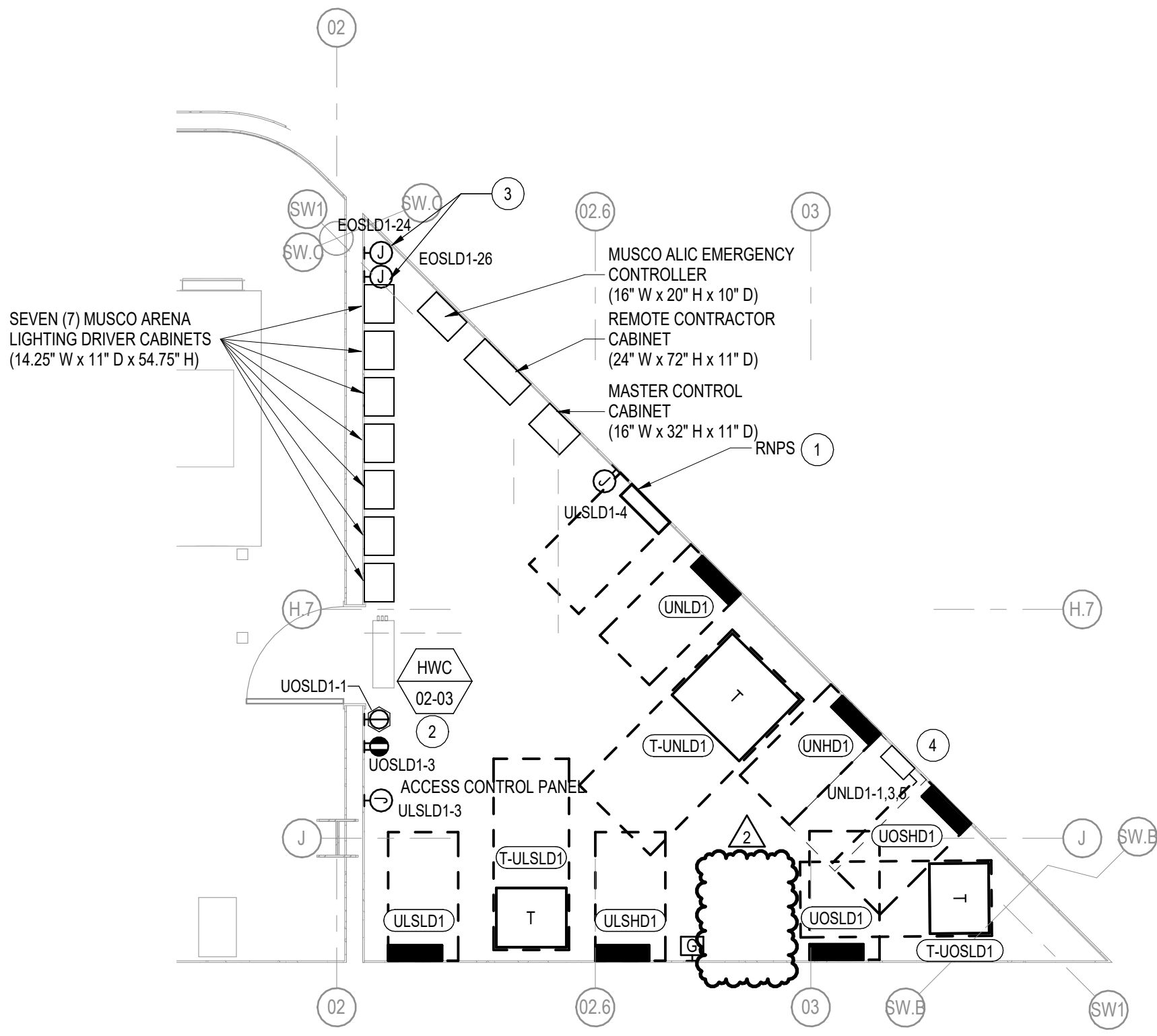
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PROJECT NO. 23112.000

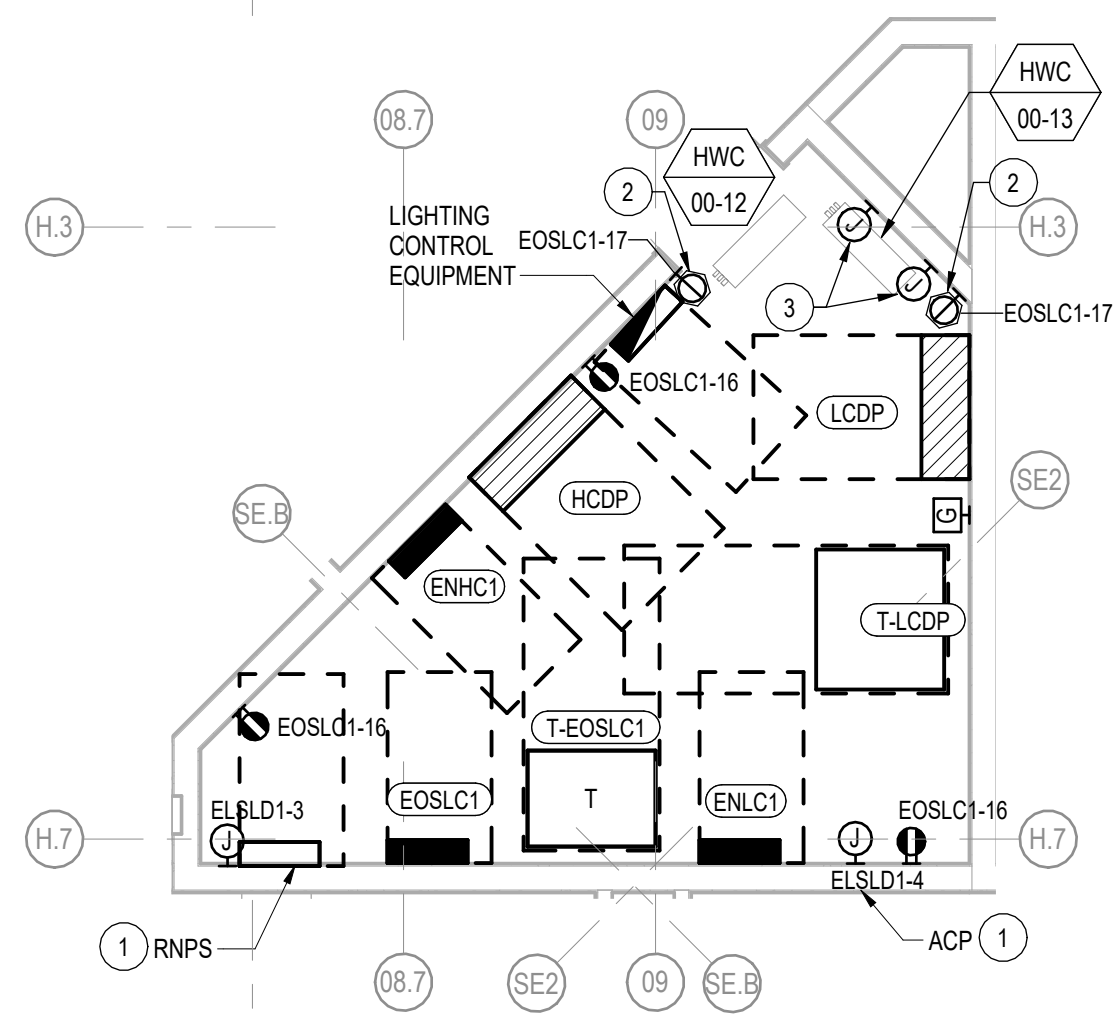
SHEET TITLE
UPPER FLOOR PLAN
- AREA D - POWER

SHEET NUMBER

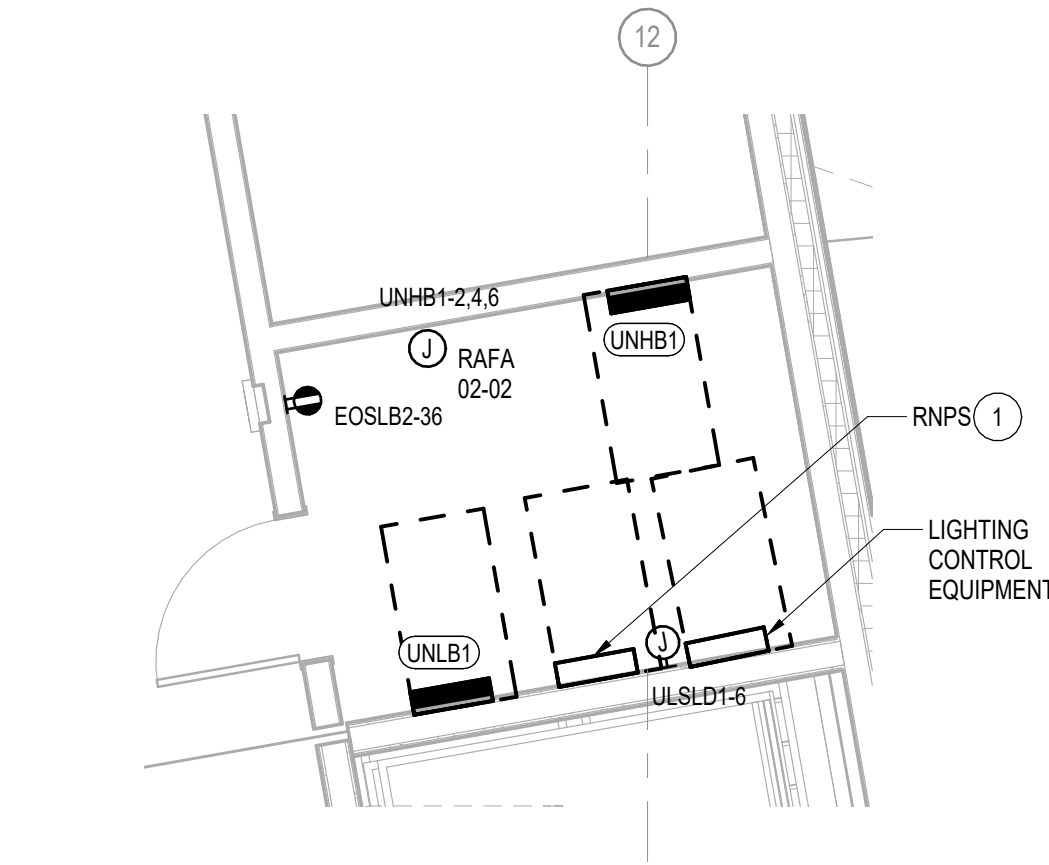
EP-103D



UPPER LEVEL ENLARGED PLAN - ELEC 208A
1/4" = 1'-0"

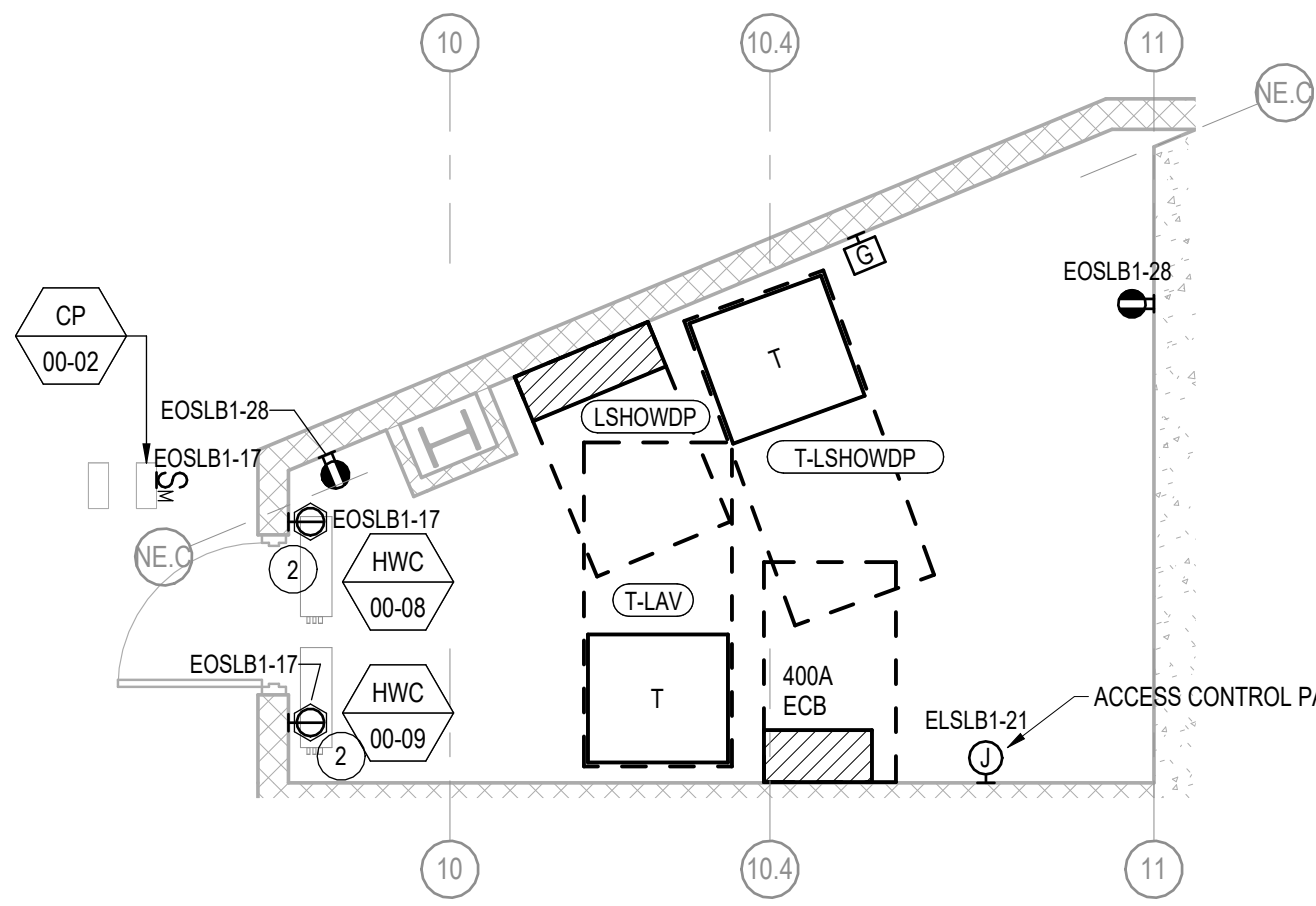


UPPER LEVEL ENLARGED PLAN - ELEC 209A
1/4" = 1'-0"

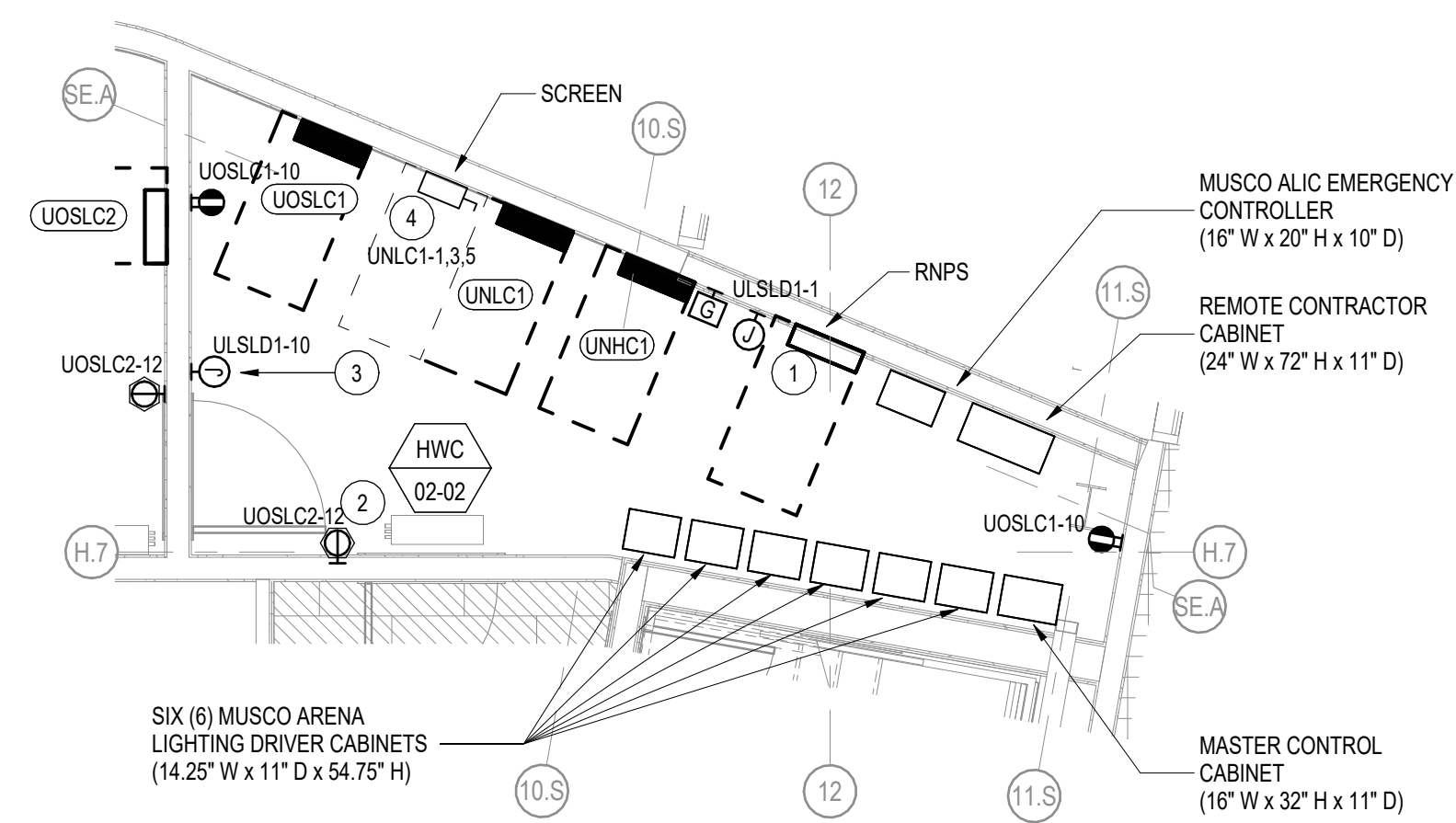


UPPER LEVEL ENLARGED PLAN - ELEC 210A
1/4" = 1'-0"

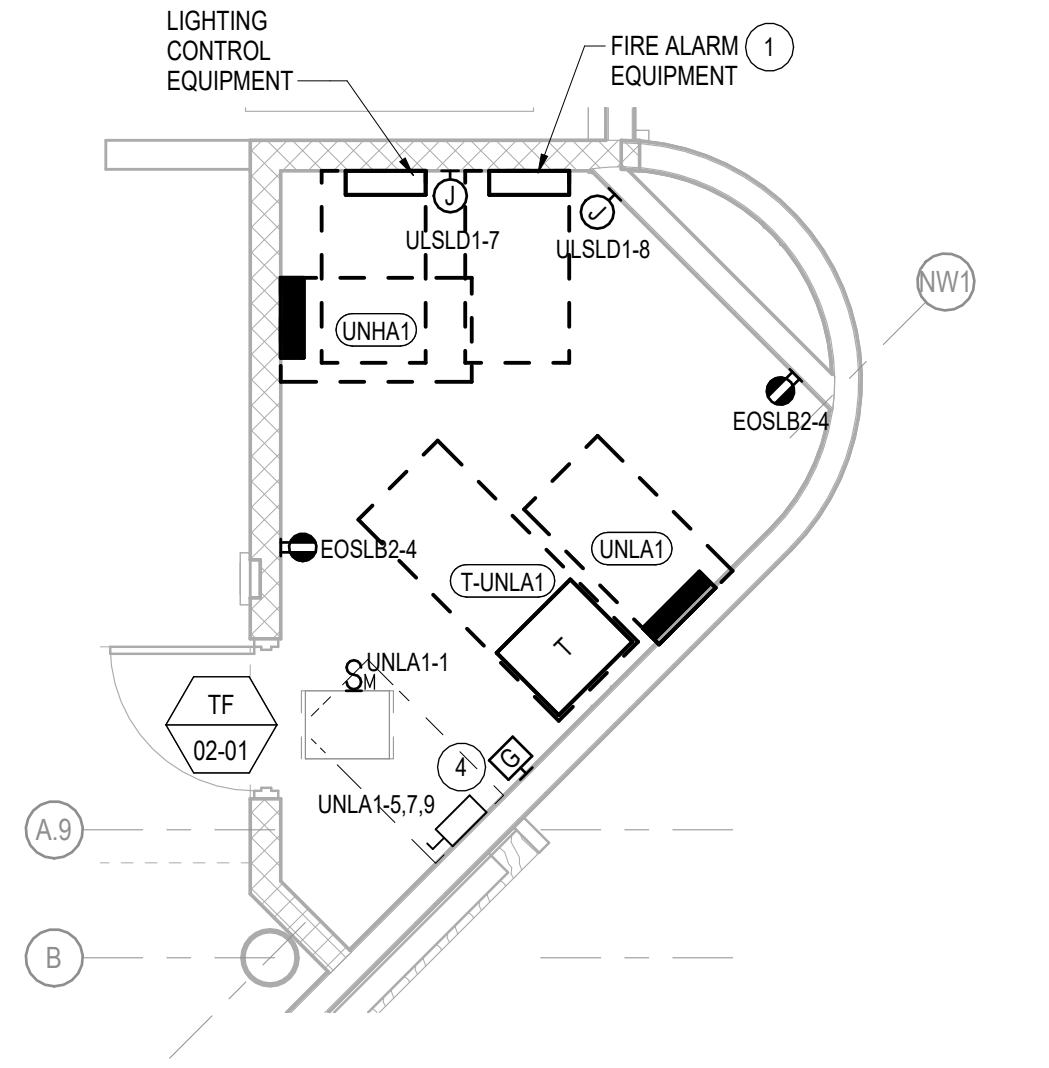
EVENT LEVEL ENLARGED PLAN - ELECTRICAL ROOM 050
1/4" = 1'-0"



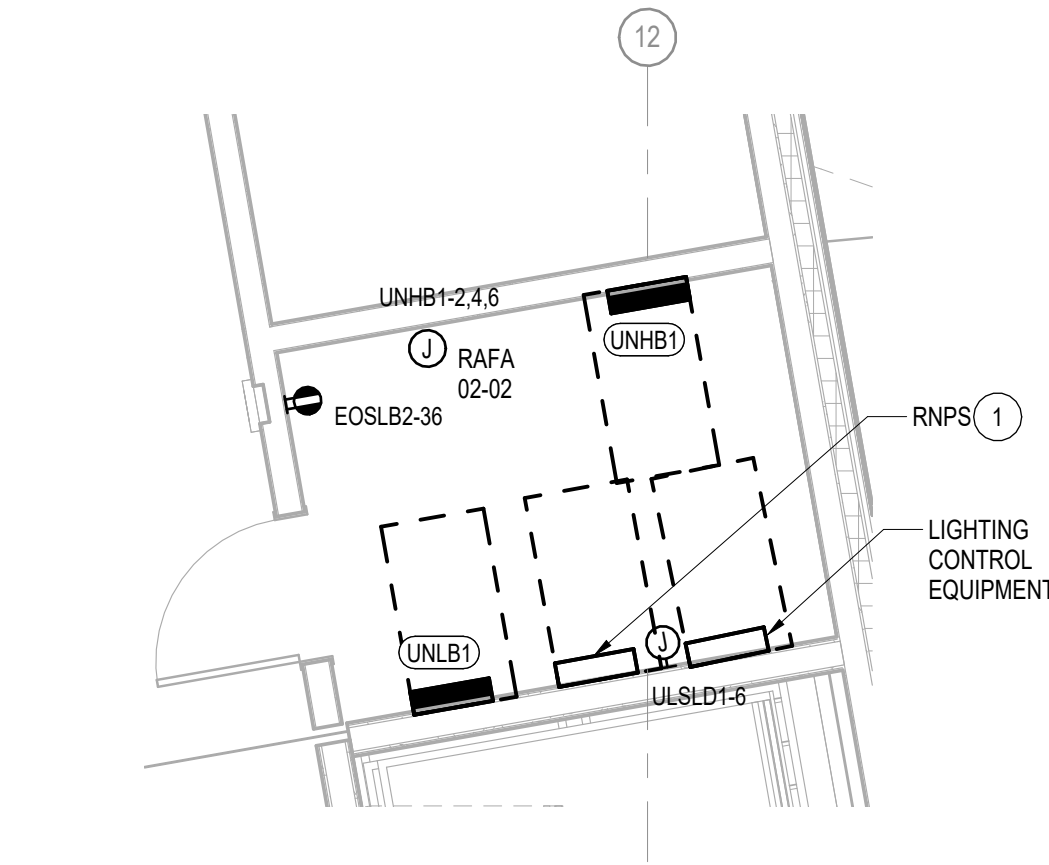
EVENT LEVEL ENLARGED PLAN - ELECTRICAL ROOM 059
1/4" = 1'-0"



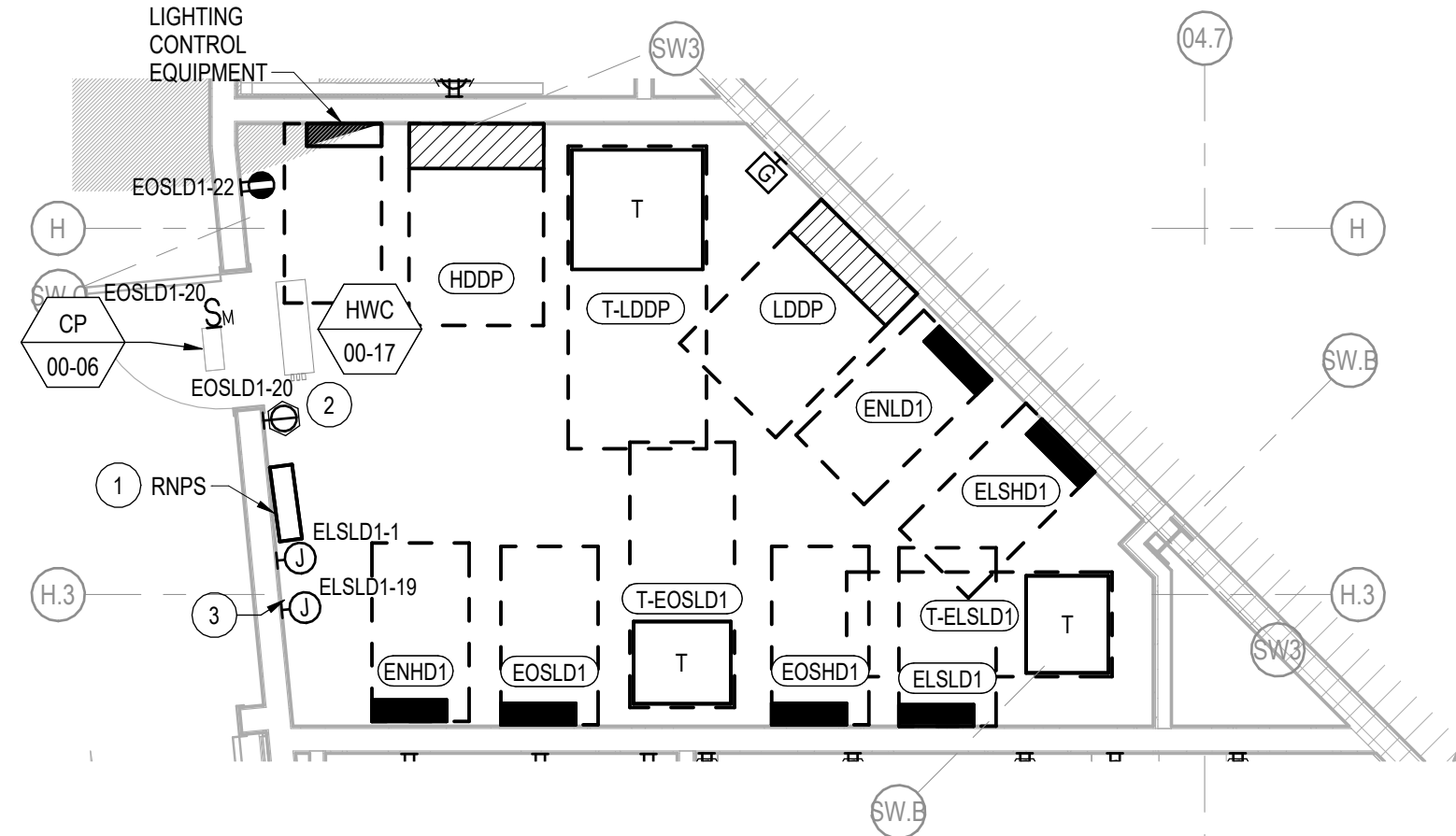
UPPER LEVEL ENLARGED PLAN - ELEC 200
1/4" = 1'-0"



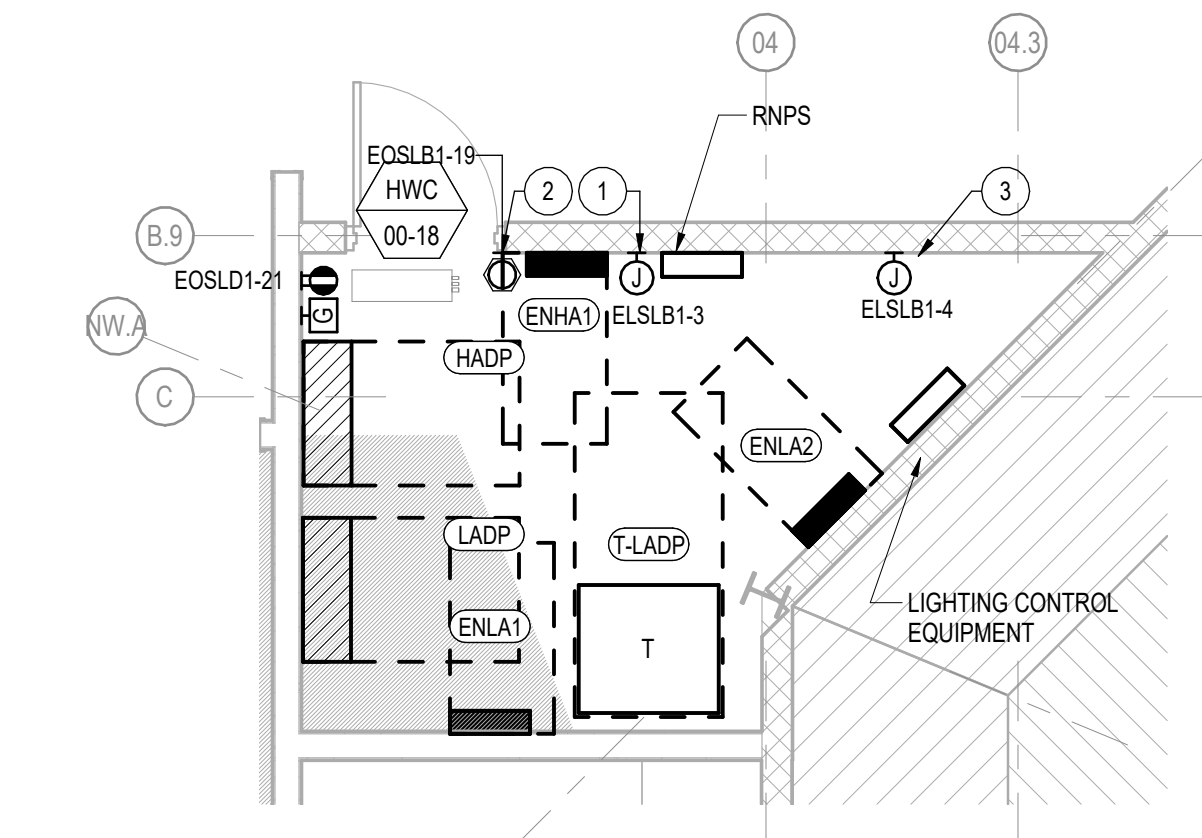
UPPER LEVEL ENLARGED PLAN - ELEC 209A
1/4" = 1'-0"



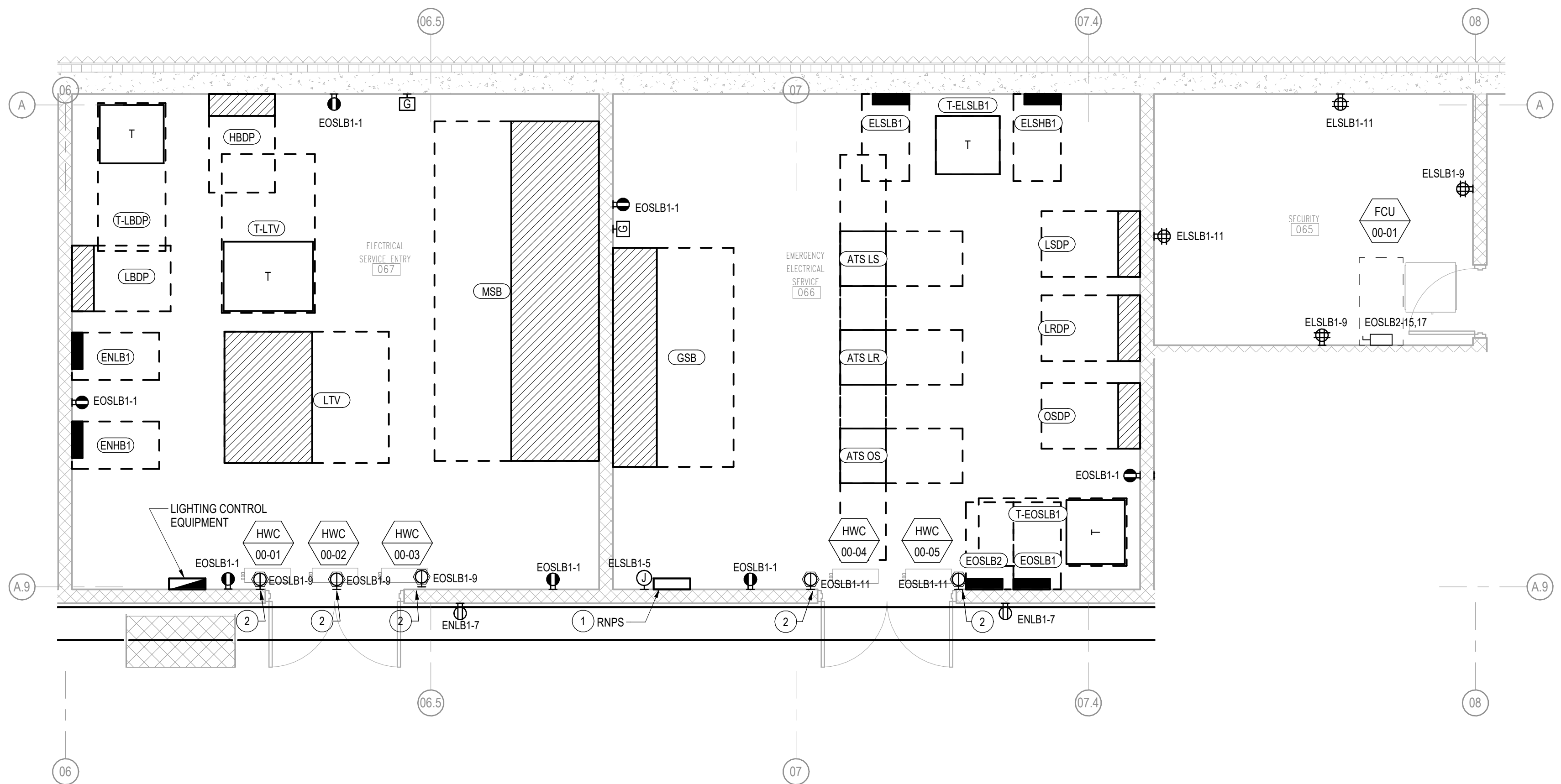
UPPER LEVEL ENLARGED PLAN - ELEC 210A
1/4" = 1'-0"



EVENT LEVEL ENLARGED PLAN - ELEC 027
1/4" = 1'-0"



EVENT LEVEL ENLARGED PLAN - ELEC 008
1/4" = 1'-0"



EVENT LEVEL ENLARGED PLAN - ELECTRICAL SERVICE ENTRY 067 AND EMERGENCY ELECTRICAL SERVICE 066
1/4" = 1'-0"

GENERAL NOTES

- CONTRACTOR TO REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT AND DEVICES INCLUDING INTERLOCK AND OTHER SPECIFIC REQUIREMENTS.
- REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.
- SEE VOLTAGE DROP TABLE E-003 FOR LONG CONDUCTOR RUNS (MORE THAN 100 FEET). PROVIDE CONDUCTORS ACCORDINGLY FOR CIRCUIT DISTANCE.

GENERAL NOTES

ELECTRICAL ROOMS

- ELECTRICAL ROOM EQUIPMENT SIZES ARE GENERIC. CONTRACTOR SHALL PROVIDE 1/2" SCALE LAYOUT DRAWINGS OF ALL ELECTRICAL SPACES USING ACTUAL EQUIPMENT SIZES PROVIDED. LAYOUT DRAWINGS SHALL INCLUDE WORK OF OTHER TRADES, ARCHITECTURAL AND STRUCTURAL ELEMENTS AS WELL AS LOCATIONS OF LIGHTING, LIGHTING CONTROLS AND WIRING DEVICES.
- PROVIDE NATIONAL ELECTRICAL CODE SECTION 110.26 MINIMUM CODE CLEARANCE IN FRONT OF ALL ELECTRICAL EQUIPMENT AND MINIMUM HEADROOM OF 7'0" OR THE HEIGHT OF THE EQUIPMENT WHICH EVER IS GREATER. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO A HEIGHT OF 6 FEET ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE.
- COORDINATE LOCATIONS OF HVAC EQUIPMENT AND DUCTWORK SERVING THE ELECTRICAL SPACE(S) WITH HVAC TRADE PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.
- ALL RACEWAYS SHALL BE INSTALLED AS HIGH AS POSSIBLE AND TIGHT AGAINST THE SLAB ABOVE.

SHEET KEYNOTES

- PROVIDE POWER CONNECTION TO FIRE ALARM EQUIPMENT. COORDINATE LOCATION SO THAT DEVICE IS LOCATED ADJACENT TO UNIT.
- PROVIDE POWER CONNECTION TO HYDRONIC WALL CASSETTE. COORDINATE MOUNTING HEIGHT SO THAT RECEPTACLE IS LOCATED ADJACENT TO UNIT.
- PROVIDE POWER CONNECTIONS TO ACCESS CONTROL PANEL. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION.
- 100A/3P DISCONNECT SWITCH FOR PRIMARY VIDEO SCREEN. EXACT LOCATION TO BE COORDINATED PRIOR TO INSTALLATION. ROUTE 4#3, 1#8G - 1 1/4" C TO CIRCUIT INDICATED. COORDINATE FINAL CONNECTION TO SCREEN WITH MANUFACTURER.

IN128 - JAMES T. MORRIS ARENA

Ohio St & N Blackford St
Indianapolis, IN 46202

Project NO. 20240127

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812-855-1692

Architect

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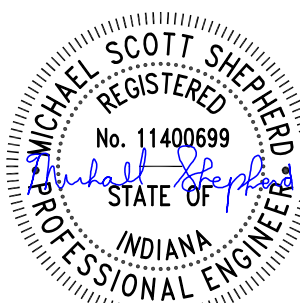
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2502 WEST MECHANIC ST, SUITE C
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816-806-3729

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

RATIO

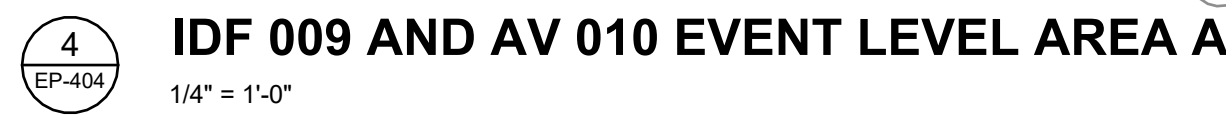
PROJECT NO. 23112.000

SHEET TITLE

ENLARGED PLANS - POWER

SHEET NUMBER

EP-401



FORZA
2502 WEST MECHANIC ST, SUITE C
HARRISONVILLE, MO 64701
816-806-3729

EP-404

2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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(M) - Morot = 100% + 25% of largest	50	63

(W) + (W)tot = 100 % + 25 % of largest	50	65	Total Est. Demand w/ Spare.	20	97

(GIV) - General, Non Continuous Equipment - Constant, 100 %	10010	10010	Total Est. Demand w/ Spare.	49	150

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SHEET ISSUE

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SHEET TITLE
PANEL SCHEDULES

EP-602

IN128 - JAMES T. MORRIS ARENA

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Plumbing Engineer
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317-633-4120

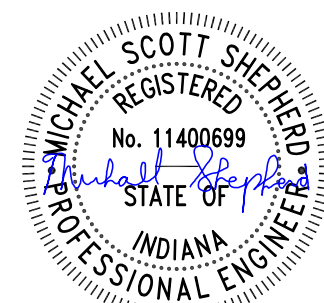
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HARRISONVILLE, MO 64701
816-806-3729

SEAL / DATE 02/03/25



SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25



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PROJECT NO. 23112.000

SHEET TITLE
PANEL SCHEDULES

SHEET NUMBER

EP-610

Branch Panel: UNHC1

VOLTS: 277/480V/3PH/4W
PHASES: 3
WIRES: 4
MOUNTING: SURFACE

LOCATION: ELEC 200
SUPPLY FROM: HCDP
KAIC: SEE STUDY
KAIC AVAILABLE: SEE STUDY

MAIN BREAKER: 200 A
AMP BUSSING: 200
NEUTRAL BUS: WITH
IG BUS: WITHOUT

CKT	Circuit Description	Load Class	Type	BRKR	ØA	ØB	ØC	BRKR	Type	Load Class	Circuit Description	CKT	
1	AREA TRUST LIGHTS	L	20	1	2160	1189		1	20	L	LTS BOH LEVEL 3 SOUTH	2	
3	ARENA LIGHTS CENTER COUR.	L	20	1		2700	1444	1	20	L	LTS BOH LEVEL 3 NORTH	4	
5	ARENA LIGHTS CENTER COUR.	L	20	1			3240	150	1	20	L	LTS BOH LEVEL 3 CORRIDOR	6
7	LTS BOH LEVEL 3 CORRIDOR	L	20	1	300	665		1	20	L	ARENA LIGHTS UPPER LVL	8	
9	LIGHTS 210 & 201A	L	20	1		240	2700	1	20	L	ARENA LIGHTS CENTER COUR.	10	
11	ARENA LIGHTS CENTER COUR.	L	20	1			2160	3562	1	20	L	ARENA LIGHTS CENTER COUR.	12
13	ARENA LIGHTS PRACTICE	L	20	1	2637	2637		1	20	L	ARENA LIGHTS PRACTICE	14	
15	ARENA LIGHTS PRACTICE	L	20	1		4320	3562	1	20	L	ARENA LIGHTS CENTER COUR.	16	
17	ARENA LIGHTS CENTER COUR.	L	20	1			3510	2236	1	20	L	SOFFIT LIGHTING SOUTH EAST	18
19	SOFFIT LIGHTINGS NORTH EAST	L	20	1	2237	1000							20
21	SPARE	--	20	1		0	1000		3	15	M	HVLS 02-06	22
23	SPARE	--	20	1			0	1000					24
25	SPARE	--	20	1	0	0			1	20	--	SPARE	26
27	SPARE	--	20	1		0	0						28
29	SPARE	--	20	1			0	0	1	20	--	SPARE	30
31	SPARE	--	20	1	0	0			1	20	--	SPARE	32
33	SPARE	--	--	1		--	--	--	1	--	--	SPARE	34
35	SPARE	--	--	1		--	--	--	1	--	--	SPARE	36
37	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	38
39	SPARE	--	--	1		--	--	--	1	--	--	SPARE	40
41	SPARE	--	--	1		--	--	--	1	--	--	SPARE	42
Total Load (KVA)					12825	15966	15858						
Total Load (A)					46	59	59						

Load Classifications:		Conn. Load (VA)	Calc. Demand (VA)	Panel Totals:	KVA	A	Notes:
(L) - Lighting = Constant, 125%		41649	52061	Subtotal connected load:	45	54	
(M) - Motor = 100% + 25% of largest		3000	3750	Subtotal Estimated Demand:	56	67	
				Desired Spare Capacity:	20	24	
				Spare Capacity Used:	11	13	
				Total Est. Demand w/ Spare:	67	81	

Branch Panel: UNLC1

VOLTS: 120/208V/3PH/4W
PHASES: 3
WIRES: 4
MOUNTING: SURFACE

LOCATION: ELEC 200
SUPPLY FROM: LCDP
KAIC: SEE STUDY
KAIC AVAILABLE: SEE STUDY

MAIN BREAKER: 200 A
AMP BUSSING: 200
NEUTRAL BUS: WITH
IG BUS: WITHOUT

CKT	Circuit Description	Load Class	Type	BRKR	ØA	ØB	ØC	BRKR	Type	Load Class	Circuit Description	CKT	
1					8333	540		1	20	R	RM 201L	2	
3	SCREEN	M		100	3	8333	900	1	20	R	CORRIDOR 201	4	
5								1	20	R	RM 201A	6	
7	RM 201B	R	20	1	540	540		1	20	R	RM 201C	8	
9	RM 201E	R	20	1		540	540	1	20	R	RM 201F	10	
11	RM 201D	R	20	1			540	540	1	20	R	RM 201G	12
13	RM 201-2	R	20	1	540	540		1	20	R	RM 201-1	14	
15	RM 201H	R	20	1		540	540	1	20	R	RM 201I	16	
17	RM 201-3	R	20	1			720	540	1	20	R	RM 201J	18
19	RM 201K	R	20	1	540	1080		1	20	R	RM 201-4	20	
21	PRINTER CORRIDOR 201	R	20	1		180	900	1	20	R	COUNTER CORRIDOR 201	22	
23	RM 201M	R	20	1			540	600	1	20	M	HEAT TRACE QUAD C	24
25	SPARE	--	20	1	0	0			1	20	--	SPARE	26
27	SPARE	--	20	1		0	0		1	20	--	SPARE	28
29	SPARE	--	20	1			0	0	1	20	--	SPARE	30
31	SPARE	--	20	1	0	0			1	20	--	SPARE	32
33	SPARE	--	20	1		0	0		1	20	--	SPARE	34
35	SPARE	--	20	1			0	0	1	20	--	SPARE	36
37	SPARE	--	20	1	0	0			1	20	--	SPARE	38
39	SPARE	--	20	1		0	0		1	20	--	SPARE	40
41	SPARE	--	20	1			0	0	1	20	--	SPARE	42
Total Load (KVA)					12653	12473	12353						
Total Load (A)					106	104	103						

Load Classifications:		Conn. Load (VA)	Calc. Demand (VA)	Panel Totals:	KVA	A	Notes:
(M) - Motor = 100% + 25% of largest		25600	31850	Subtotal connected load:	37	104	
(R) - Receptacles = 10KVA @ 100% + Remainder @ 50%		11890	10940	Subtotal Estimated Demand:	43	119	
				Desired Spare Capacity:	20	24	
				Spare Capacity Used:	9	24	
				Total Est. Demand w/ Spare:	51	143	

Branch Panel: ULSHD1

VOLTS: 277/480V/3PH/4W
PHASES: 3
WIRES: 4
MOUNTING: SURFACE

LOCATION: ELEC 208A
SUPPLY FROM: LSDP
KAIC: SEE STUDY
KAIC AVAILABLE: SEE STUDY

MAIN BREAKER: 200 A
AMP BUSSING: 200
NEUTRAL BUS: WITH
IG BUS: WITHOUT

CKT	Circuit Description	Load Class	Type	BRKR	ØA	ØB	ØC	BRKR	Type	Load Class	Circuit Description	CKT		
1					3360	1080		1	20	L	(L) - LIGHTING = CONSTANT ...	2		
3	T-ULSLD1	R, G	45	3		1460	1445	1	20	L	LIGHTING	4		
5					3780	3240		1	20	L	(L) - LIGHTING = CONSTANT ...	6		
7	(L) - LIGHTING = CONSTANT ...	L	20	1		60	0	1	20	--	SPARE	8		
9	(L) - LIGHTING = CONSTANT ...	L	20	1			261	0	1	20	--	SPARE	10	
11	ARENA EM LIGHTS VEST. 100	L	20	1	186	0			1	20	--	SPARE	12	
13	ARENA EM LIGHTS...	L	20	1			0		1	20	--	SPARE	14	
15								0	1	20	--	SPARE	16	
17									0	1	20	--	SPARE	18
19	SPARE	--	20	1	0	0			1	20	--	SPARE	20	
21	SPARE	--	20	1		0	0		1	20	--	SPARE	22	
23	SPARE	--	20	1			0	0	1	20	--	SPARE	24	
25	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	26	
27	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	28	
29	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	30	
31	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	32	
33	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	34	
35	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	36	
37	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	38	
39	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	40	
41	SPARE	--	--	1	--	--	--	--	1	--	--	SPARE	42	
Total Load (KVA)					11646	2965	2899							
Total Load (A)					42	11	10							

Load Classifications:		Conn. Load (VA)	Calc. Demand (VA)	Panel Totals:	KVA	A	Notes:
(L) - Lighting = Constant, 125%		11089	13861	Subtotal connected load:	18	21	
(R) - Receptacles = 10KVA @ 100% + Remainder @ 50%		1080	1080	Subtotal Estimated Demand:	20	24	
Lighting		240	300	Desired Spare Capacity:	20	24	
(GN) - General, Non Continuous Equipment = Constant, 100%		5100	5100	Spare Capacity Used:	4	5	
				Total Est. Demand w/ Spare:	24	29	

Branch Panel: UNHD1

VOLTS: 277/480V/3PH/4W
PHASES: 3
WIRES: 4
MOUNTING: SURFACE

LOCATION: ELEC 208A
SUPPLY FROM: HCDP
KAIC: SEE STUDY
KAIC AVAILABLE: SEE STUDY

MAIN BREAKER: 400 A
AMP BUSSING: 400
NEUTRAL BUS: WITH
IG BUS: WITHOUT

CKT	Circuit Description	Load Class	Type	BRKR	ØA	ØB	ØC	BRKR	Type	Load Class	Circuit Description	CKT		
3	T-UNLD1	M, L, R, G	80	3	14896	16333		3	90	GC	AHU 02-03	2		
5							13846	16333				4		
7	LTS 201/LN, OPEN OFFICE 201	L	20	1	1994	225			1	20	L	LTS BOH LEVEL 3 CORRIDOR	6	
9	LTS BOH LEVEL 3 CORRIDOR	L	20	1		225	1237		1	20	L	LTS PO 2010	8	
11	ARENA LIGHTS UPPER LVL	L	20	1				1850	2160	1	20	L	ARENA LIGHTS CENTER COUR.	10
13	ARENA LIGHTS CENTER COUR.	L	20	1	2160	3240			1	20	L	ARENA LIGHTS CENTER COUR.	12	
15	ARENA LIGHTS CENTER COUR.	L	20	1		2700	2160		1	20	L	ARENA LIGHTS CENTER COUR.	14	
17	ARENA LIGHTS CENTER COUR.	L	20	1				3456	3562	1	20	L	ARENA LIGHTS CENTER COUR.	16
19	ARENA LIGHTS CENTER COUR.	L	20	1	3562	159			1	20	L	ARENA LIGHT	18	
21	SOFFIT LIGHTING WEST	L	20	1		3005							20	
23								1000	1000				22	
25	HVLS 02-04	M	15	3	1000	1000			3	15	M	HVLS 02-03	24	
27							1000	1000					26	
29	SPARE	--	20	1				0	0	1	20	--	SPARE	28
31	SPARE	--	20	1	0	0			1	20	--	SPARE	30	
33	SPARE	--	20	1		0	0		1	20	--	SPARE	32	
35	SPARE	--	20	1				0	0	1	20	--	SPARE	34
37	SPARE	--	20	1	0	0			1	20	--	SPARE	36	
39	SPARE	--	20	1		0	0		1	20	--	SPARE	38	
41	SPARE	--	20	1				0	0	1	20	--	SPARE	40
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SHEET TITLE
PANEL SCHEDULES

SHEET NUMBER

EP-611

Branch Panel: UOSHDI1

VOLTS: 277/480V/3PH/4W

PHASES: 3

WIRES: 4

MOUNTING: SURFACE

LOCATION: ELEC 208A

SUPPLY FROM: EOSHDI

KAIC: SEE STUDY

KAIC AVAILABLE: SEE STUDY

MAIN BREAKER: 100 A

AMP BUSSING: 100

NEUTRAL BUS: WITH

IG BUS: WITHOUT

CKT	Circuit Description	Load Class	Type	BRKR	ØA	ØB	ØC	BRKR	Type	Load Class	Circuit Description	CKT
1					4800	942						2
3	T-UOSLD1	M, R		45	3	15				GC	HHWP 02-01	4
5												6
7					942	942		5040	942			8
9	COWP 02-01		GC	15	3	15				GC	HHWP 02-02	10
11												12
13					942	0		942	942			14
15	COWP 02-02		GC	15	3	15						16
17						942	0		1	20	--- SPARE	18
19	SPARE	---		20	1	0	0		1	20	---	20
21	SPARE	---		20	1		0	0	1	20	---	22
23	SPARE	---		20	1				1	20	---	24
25	SPARE	---		20	1	0	0		1	20	---	26
27	SPARE	---		20	1		0	0	1	20	---	28
29	SPARE	---		20	1				0	0	1	20
31	SPARE	---		20	1	0	0		1	20	---	30
33	SPACE	---		1		---	---		1	---	---	32
35	SPACE	---		1					1	---	---	34
37	SPACE	---		1		---	---		1	---	---	36
39	SPACE	---		1		---	---		1	---	---	38
41	SPACE	---		1		---	---		1	---	---	40
												42
Total Load (KVA)					8569	6029		8809				
Total Load (A)					32	22		33				
					ØA	ØB	ØC					
Load Classifications:					Conn. Load (VA) Calc. Demand (VA)			Panel Totals:			KVA	A
(M) - Motor = 100% + 25% of largest					1000			1125			20	28
(R) - Receptacles = 10KVA @ 100% + Remainder @ 50%					11100			10550			23	28
(GC) - General Continuous Equipment = Constant, 125%					11307			11307				
								Subtotal connected load:				
								Subtotal Estimated Demand:			23	28
								Desired Spare Capacity:			20	%
								Spare Capacity Used:			5	6
								Total Est. Demand w/ Spare:			28	33

Notes:

Branch Panel: UOSLD1

VOLTS: 120/208V/3PH/4W

PHASES: 3

WIRES: 4

MOUNTING: SURFACE

LOCATION: ELEC 208A

SUPPLY FROM: T-UOSLD1

KAIC: SEE STUDY

KAIC AVAILABLE: SEE STUDY

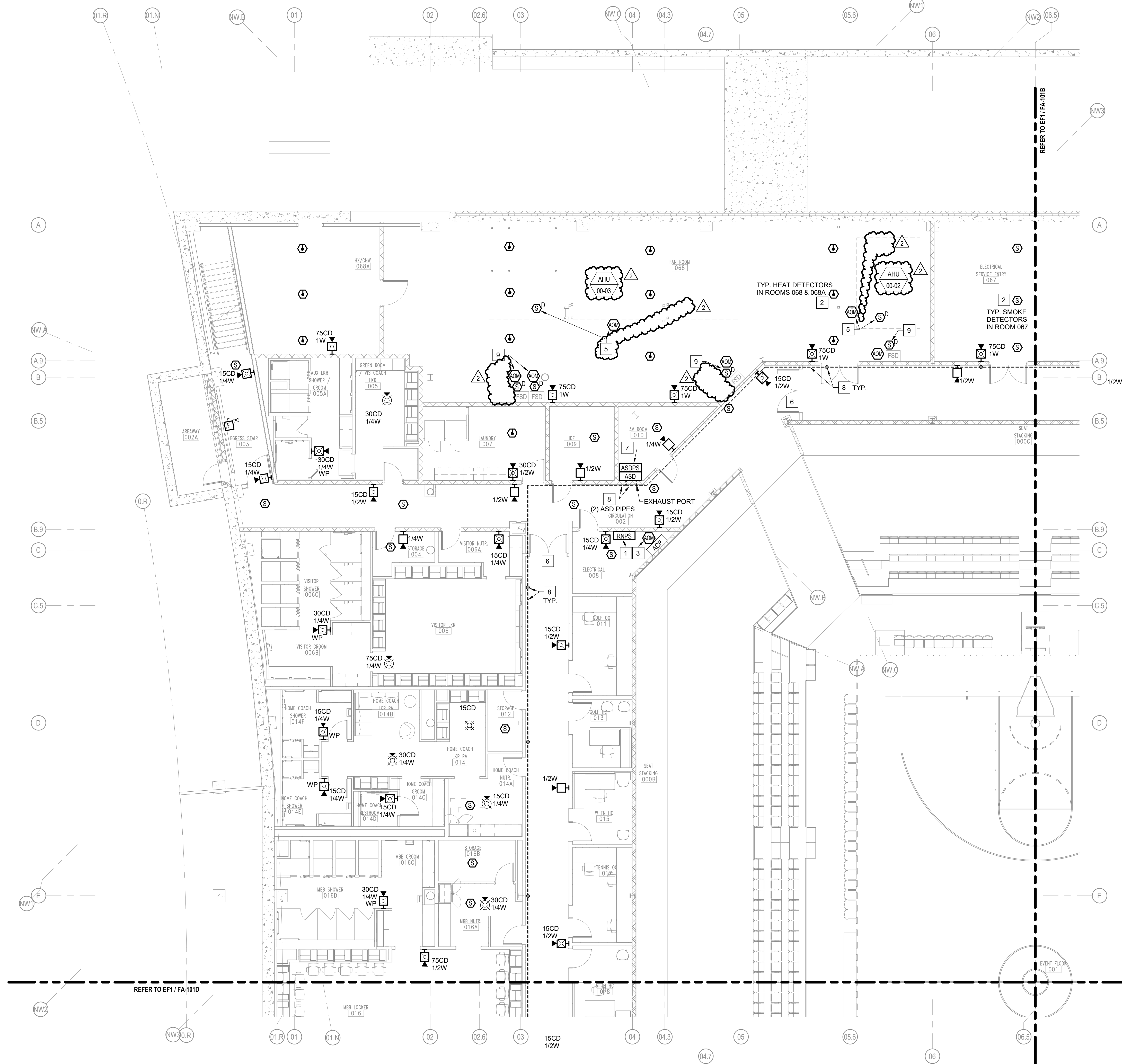
MAIN BREAKER: 100 A

AMP BUSSING: 100

NEUTRAL BUS: WITH

IG BUS: WITHOUT

CKT	Circuit Description	Load Class	Type	BRKR	ØA	ØB	ØC	BRKR	Type	Load Class	Circuit Description	CKT	
1	HWC 02-03	R	15	1	120	720		1	20	R	MECH 205	2	
3	ELEC 208A	R	20	1		180	720	1	20	R	RECEPT IDF 105A	4	
5	RECEIPT IDF 207	R	20	1			720	720	1	20	R	RECEPT IDF 107D	6
7	TELECOM RACK IDF 207	R	20	1	180	180		1	20	R	(TELECOM RACK IDF 107D	8	
9	TELECOM RACK IDF 207	R	20	1		180	180	1	20	R	TELECOM RACK IDF 107D	10	
11												12	
13	TELECOM RACK IDF 207	R	20	2	1800	1800		2	20	R	TELECOM RACK IDF 107D	14	
15	TF 01-02	M	15	1		500	500	1	20	M	IDF 207	16	
17	SPARE	--	20	1			0	0	1	20	--	SPARE	18
19	SPARE	--	20	1	0	0			1	20	--	SPARE	20
21	SPARE	--	20	1		0	0		1	20	--	SPARE	22
23	SPARE	--	20	1			0	0	1	20	--	SPARE	24
25	SPARE	--	20	1	0	0			1	20	--	SPARE	26
27	SPARE	--	20	1		0	0		1	20	--	SPARE	28
29	SPARE	--	20	1			0	0	1	20	--	SPARE	30
31	SPACE	--	1	1	--	--	--	--	1	--	--	SPACE	32
33	SPACE	--	1	1	--	--	--	--	1	--	--	SPACE	34
35	SPACE	--	1	1	--	--	--	--	1	--	--	SPACE	36
37	SPACE	--	1	1	--	--	--	--	1	--	--	SPACE	38
39	SPACE	--	1	1	--	--	--	--	1	--	--	SPACE	40
41	SPACE	--	1	1	--	--	--	--	1	--	--	SPACE	42
Total Load (KVA)					4800	2260	5040						
Total Load (A)					43	19	45						
					ØA	ØB	ØC						
Load Classifications:					Conn. Load (VA) / Calc. Demand (VA)			Panel Totals:			KVA	A	Notes:
(R) - Motor = 100% + 25% of largest					1000			Subtotal connected load:			12	34	
(R) - Recipitators = 100kVA @ 100% + Remainder @ 50%					11100			Subtotal Estimated Demand:			12	32	
								Desired Spare Capacity:			20	2%	
								Spare Capacity Used:			2	6	
								Total Est. Demand w/ Spare:			14	39	



EVENT FLOOR PLAN - AREA A - FIRE ALARM
1/8" = 1'-0"

GENERAL NOTES

1. REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
2. THE SPEAKER WATTAGE TAP SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND INTELLIGIBILITY LEVELS ARE MET. CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE WATTAGE TAP SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
3. THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITIES PREFERRED VENDOR. VERIFY WITH IU FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
4. ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN 'RED' CONDUIT IN A CLASS B CONFIGURATION. FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
5. PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
6. PROVIDE A REMOTE LED/TEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND/OR NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIRECT PROXIMITY OF THE LABEL WITH THE ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

SHEET KEYED NOTES

1. NAC EXTENDER PANEL LOCATION AND QUANTITY SHOWN ARE PRELIMINARY IN NATURE. EXACT QUANTITY OF NAC EXTENDER PANELS WILL BE DETERMINED BY THE SELECTED FIRE ALARM MANUFACTURER. NAC EXTENDER PANELS SHALL BE INSTALLED IN THIS ROOM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION(S) PRIOR TO ROUGH-IN. PROVIDE 120V DEDICATED POWER FOR NAC EXTENDER PANEL(S).
2. SMOKE & HEAT DETECTORS SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION, CENTERED IN THE BEAM POCKET BAY AT THIS APPROXIMATE LOCATION. COORDINATE WITH OTHER CEILING WORK (PPRG, DUCT WORK, LIGHTING, ETC.) FOR EXACT LOCATION PRIOR TO ROUGH-IN.
3. PROVIDE ADDRESSABLE RELAY MODULE AT ACCESS CONTROL HEAD-END EQUIPMENT FOR DOOR UNLOCKING SEQUENCE. RELAY SHALL BE INSTALLED WITHIN 3'-0" OF ACCESS CONTROL PANEL. PROVIDE PROGRAMMING FOR DOORS TO UNLOCK UPON ACTIVATION OF THE FIRE ALARM SYSTEM. COORDINATE REQUIRED PROGRAMMING, INTEGRATION AND CONNECTIONS WITH ACCESS CONTROL INSTALLING CONTRACTOR.
4. NOT USED.
5. PROVIDE DUCT DETECTORS ON THE RETURN SIDE OF THE AHU UNIT FOR THE AUTOMATIC FAN SHUTDOWN SEQUENCE. DETECTORS SHALL BE INSTALLED ON THE MAIN RETURN AIR DUCT CONNECTED TO THE AHU UNIT. PROVIDE AN ADDRESSABLE RELAY MODULE FOR FAN SHUTDOWN SEQUENCE. INSTALL RELAY MODULE WITHIN 3'-0" OF THE FAN CONTROLLER AT AN ACCESSIBLE LOCATION. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
6. DOORS CONTROLLED BY ACCESS CONTROL SYSTEM.
7. PROVIDE AN ASPIRATING SMOKE DETECTOR (ASD) AND POWER SUPPLY FOR CORRIDOR DETECTION AS INDICATED. MOUNT THE DETECTOR AT 5'-0" A.F.F., AND THE POWER SUPPLY A MINIMUM OF 18" BELOW THE DETECTOR. FIELD COORDINATE EQUIPMENT LOCATION WITH TECHNOLOGY DIVISION. REFER TO DETAIL SHEET FA-203 FOR ADDITIONAL INFORMATION.
8. ASD SAMPLING PIPE ROUTED IN CORRIDOR AND MOUNTED EITHER TO THE UNDERSIDE OF THE PRECAST SEATING BOWL FOR A SMOOTH CEILING APPLICATION OR ON THE WALL BELOW STRUCTURE USING BEAM POCKET STANCHION APPLICATION, WHERE THE SAMPLING HOLE WILL BE LOCATED IN AREAS ABOVE CORRIDOR MECHANICAL AND ELECTRICAL MATERIAL.
 - AIR SAMPLING HOLE SPACING SHOWN IS 20'-0" ON CENTER. MAXIMUM HOLE SPACING 30'-0" ON CENTER. FIELD DETERMINE SPACING BASED ON ACCESSIBILITY.
 - HOLE SIZE TO BE DETERMINED BY THE SYSTEM CALCULATIONS.
 - FIELD VERIFY PIPE LENGTH, HOLE SPACING AND HOLE SIZE PRIOR TO MOUNTING.
 - REFER TO DETAIL SHEET FA-203 FOR ADDITIONAL INFORMATION.
9. PROVIDE DUCT DETECTOR AND AN ADDRESSABLE RELAY MODULE FOR AUTOMATIC FIRESMOKE DAMPER CLOSING SEQUENCE. INSTALL DUCT DETECTOR WITHIN 5'-0" OF THE FIRESMOKE DAMPER AND THE RELAY MODULE WITHIN 5'-0" OF THE DAMPER CONTROLLER. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

IN128 - JAMES T. MORRIS ARENA

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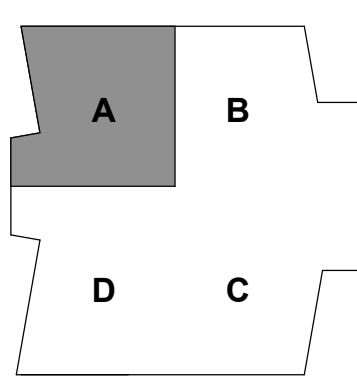
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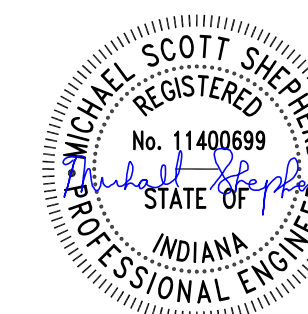
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

RATIO

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PROJECT NO. 23112.000

SHEET TITLE
**EVENT FLOOR PLAN
- AREA A - FIRE
ALARM**

SHEET NUMBER
FA-101A

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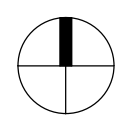
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SHEET TITLE
EVENT FLOOR PLAN
- AREA C - FIRE
ALARM

FA-101C

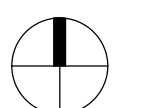
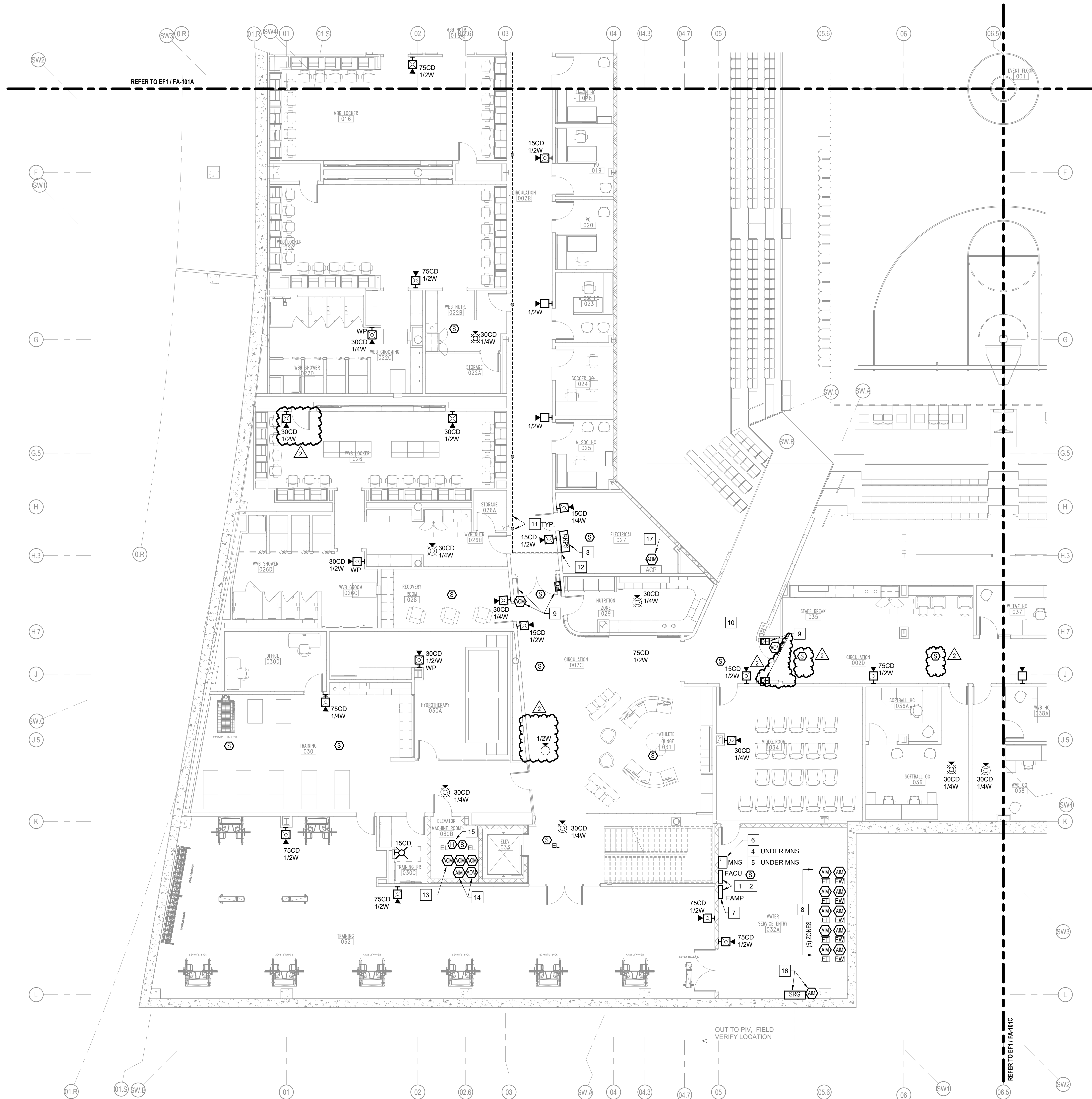
1. REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
2. THE SPEAKER WATTAGE/PAZT SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND NOTIFICATION LEVELS ARE MET. THE CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE WATTAGE/PAZT SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
3. THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES, FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM.
4. THE UNIVERSITY OF ILLINOIS AT CHICAGO POLICE DEPARTMENT FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
4. ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN "RED" CONDUIT IN A CLASS B CONFIGURATION, FOR SURFACE MOUNTING, CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
5. PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
6. PROVIDE A REMOTE LEDTEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND/OR NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN AN ACCESSIBLE LOCATION NEAR THE LATEST ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

1. NAC EXTENDER PANEL LOCATION AND QUANTITY SHOWN ARE PRELIMINARY IN NATURE. EXACT QUANTITY OF NAC EXTENDER PANELS WILL BE DETERMINED BY THE FIELD ENGINEER AND MANUFACTURER. NAC EXTENDER PANELS REQUIRED SHALL BE INSTALLED IN THIS ROOM. THE FIELD ENGINEER WILL PROVIDE FIELD VERIFICATION TO ROUGH-IN, PROVIDE 120V DEDICATED POWER FOR NAC EXTENDER PANEL(S).
2. SMOKE DETECTOR LOCATED ON THE BOTTOM OF THE BEAM. COORDINATE WITH OTHER CEILING WORK (PIPING, DUCT WORK, LIGHTING, ETC) FOR EXACT LOCATION PRIOR TO ROUGH-IN.
3. PROVIDE DETECTOR CONTROL ON THE RETURN SIDE OF THE AHU UNIT FOR THE AUTOMATIC FAN SHUTDOWN SEQUENCE. DETECTOR SHALL BE INSTALLED IN THE MAIN FAN RETURN AIR DUCT. PROVIDE AN ADDRESSABLE RELAY MODULE FOR FAN SHUTDOWN. INSTALL A RELAY MODULE WITH 24VDC AND 10Amp. THE FAN SHUTDOWN CONTROLLER AT THE COORDINATE LOCATION. FIELD ENGINEER TO COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
4. PROVIDE ADDRESSABLE RELAY MODULE AT ACCESS CONTROL HEAD-DOOR. PROVIDE 24VDC UNLOADING SEQUENCE. RELAY SHALL BE INSTALLED WITHIN 3" OF ACCESS CONTROL PANEL. PROVIDE PROGRAMMING FOR DOOR(S) TO UNLOCK UPON ACTIVATION OF THE FIRE ALARM SYSTEM. COORDINATE RELOCATION, PROGRAMMING, INTEGRATION AND CONNECTIONS WITH ACCESS CONTROL INSTALLING CONTRACTOR.
5. PROVIDE A RELAY MODULE FOR ELECTROMAGNETIC DOOR HOLDER. PROVIDE 24VDC UNLOADING SEQUENCE. FIELD ENGINEER TO PROVIDE LOCATION TO MOUNT THE MODULE. POWER FOR THE DOOR HOLDERS FURNISHED BY OTHERS, UNLESS NOTED OTHERWISE.
6. DOORS CONTROLLED BY ACCESS CONTROL SYSTEM.



EVENT FLOOR PLAN - AREA C - FIRE ALARM

$$1/8'' = 1'-0''$$



EVENT FLOOR PLAN - AREA D - FIRE ALARM
1/8" = 1'-0"

GENERAL NOTES

- REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
- THE SPEAKER WATTAGE TAP SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND INTELLIGIBILITY LEVELS ARE MET. CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE WATTAGE TAP SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
- THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITY'S PREFERRED VENDOR. VERIFY WITH IU FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
- ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN "RED" CONDUIT IN A CLASS B CONFIGURATION. FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
- PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
- PROVIDE A REMOTE LED TEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND/OR NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIRECT PROXIMITY OF THE LABEL WITH THE ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

SHEET KEYED NOTES

- PROVIDE 120V DEDICATED POWER FOR FIRE ALARM SYSTEM EQUIPMENT. COORDINATE SPACE AND CLEARANCES REQUIRED BY OTHER EQUIPMENT AND FIELD VERIFY PANEL LOCATIONS PRIOR TO ROUGH-IN.
- FIELD VERIFY THE FIRE ALARM CONTROL UNIT (FACU) AND AMPLIFIER PANEL (FAMP) LOCATIONS PRIOR TO MOUNTING.
- NAC EXTENDER PANEL LOCATION AND QUANTITY SHOWN ARE PRELIMINARY IN NATURE. EXACT QUANTITY OF NAC EXTENDER PANELS WILL BE DETERMINED BY THE SELECTED FIRE ALARM MANUFACTURER. NAC EXTENDER PANELS REQUIRED SHALL BE INSTALLED IN THIS ROOM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION(S) PRIOR TO ROUGH-IN. PROVIDE 120V DEDICATED POWER FOR NAC EXTENDER PANEL(S).
- THE FIRE ALARM SYSTEM REQUIRES A MINIMUM OF (1) EXTERNAL DUAL PATH DIALER. GENERAL ALARM SIGNALS WILL REPORT TO THE IU POLICE DEPARTMENT THROUGH ONE DIALER. ALL OTHER SIGNALS WILL REPORT TO THE CAMPUS CONTROL CENTER THROUGH THE SECOND DIALER. VERIFY THAT BOTH DIALERS CAN BE INTEGRATED WITH THE FIRE ALARM PANEL. VERIFY DIALER MOUNTING LOCATIONS AND STACK AS REQUIRED PRIOR TO ROUGH-IN.
- PROVIDE A FIRE ALARM DOCUMENT CABINET PER REQUIREMENTS OF THE NFPA72. FIELD LOCATE.
- PROVIDE A CAMPUS WIDE MASS NOTIFICATION SYSTEM (MNS) CABINET WITHIN CLOSE PROXIMITY TO THE FACU. FACU SHALL INCLUDE ADDITIONAL INTERNAL MODULES TO INTEGRATE WITH THE MNS SYSTEM. A DEDICATED EMERGENCY POWER CIRCUIT RECEPTACLE SHALL BE LOCATED WITHIN THE MNS CABINET FOR THE MNS EQUIPMENT. REFER TO THE SPECIFICATIONS FOR MNS EQUIPMENT REQUIRED AND SUPPLIER.
- FIELD LOCATE THE BATTERY CABINET ADJACENT TO THE FACU AND BELOW THE FAMP PANEL.
- PROVIDE ADDRESSABLE MONITOR MODULES FOR MONITORING (5) ZONED SPRINKLER SYSTEM WATER FLOW AND TAMPER SWITCHES AS REQUIRED WITHIN THIS SPACE. INSTALL MONITOR MODULES ADJACENT TO SPRINKLER SYSTEM DEVICES, COORDINATING WITH THE SPRINKLER SYSTEM INSTALLING CONTRACTOR FOR EXACT QUANTITY AND LOCATIONS.
- PROVIDE A RELAY MODULE FOR ELECTROMAGNETIC DOOR HOLDER RELEASE UPON A FIRE ALARM SIGNAL. FIELD VERIFY AN ACCESSIBLE LOCATION TO MOUNT THE MODULE. POWER FOR THE DOOR HOLDERS FURNISHED BY OTHERS, UNLESS NOTED OTHERWISE.
- DOORS CONTROLLED BY ACCESS CONTROL SYSTEM.
- ADD SAMPLING PIPE ROUTED IN CORRIDOR AND MOUNTED EITHER TO THE UNDERSIDE OF THE PRECAST SEATING BOWL FOR A SMOOTH CEILING APPLICATION OR ON THE WALL BELOW STRUCTURE USING BEAM POCKET STANCHION APPLICATION. WHERE THE SAMPLING HOLE WILL BE LOCATED IN AREAS ABOVE CORRIDOR MECHANICAL AND ELECTRICAL MATERIAL.
 - AIR SAMPLING HOLE SPACING SHOWN IS 20'-0" ON CENTER.
 - MAXIMUM HOLE SPACING 36'-0" ON CENTER.
 - FIELD DETERMINE SPACING BASED ON ACCESSIBILITY.
 - HOLE SIZE TO BE DETERMINED BY THE SYSTEM CALCULATIONS.
 - FIELD VERIFY PIPE LENGTH, HOLE SPACING AND HOLE SIZE PRIOR TO MOUNTING.
 - REFER TO DETAIL SHEET FA-203 FOR ADDITIONAL INFORMATION.
- PROVIDE AN ASPIRATING SMOKE DETECTOR (ASD) TEST PORT AT 4'-0" A.F.F. AT OR NEAR THIS LOCATION. REFER TO DETAIL SHEET FA-203 FOR ADDITIONAL ASD INFORMATION.
- PROVIDE THREE (3) ADDRESSABLE RELAY MODULES FOR THE ELEVATOR RECALL EMERGENCY FUNCTIONS NOTED BELOW. RELAY MODULES SHALL BE INSTALLED WITHIN 3'-0" OF THE ASSOCIATED ELEVATOR CONTROLLER. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
 - PRIMARY LEVEL RECALL.
 - ALTERNATE LEVEL RECALL.
 - FIRE FIGHTER WARNING LIGHT.
- PROVIDE ONE ADDRESSABLE RELAY MODULE AND ONE ADDRESSABLE MONITOR MODULE FOR PHASE 1 ELEVATOR SHUTDOWN EMERGENCY FUNCTIONS NOTED BELOW. RELAY MODULES SHALL BE INSTALLED WITHIN 3'-0" OF THE COMPONENT CONTROLLED. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
 - RELAY MODULE FOR ACTUATION ELEVATOR SHUNT TRIP DEVICE.
 - MONITOR MODULE TO INITIATE A SUPERVISORY SIGNAL UPON LOSS OF VOLTAGE IN CONTROL CIRCUITS.
- INSTALL HEAT DETECTOR WITHIN 24" OF SPRINKLER HEAD IN THE ELEVATOR MACHINE ROOM.
- PROVIDE MONITOR MODULE TO MONITOR THE POST INDICATING VALVE. INCLUDE A SURGE SUPPRESSION DEVICE FOR PROTECTING THE SUPERVISORY CIRCUIT OUT TO THE PIV. FIELD LOCATE MODULE AND SURGE DEVICE.
- PROVIDE ADDRESSABLE RELAY MODULE AT ACCESS CONTROL HEAD-END EQUIPMENT FOR DOOR UNLOCKING SEQUENCE. RELAY SHALL BE INSTALLED WITHIN 3'-0" OF ACCESS CONTROL PANEL. PROVIDE PROGRAMMING FOR DOOR(S) TO UNLOCK UPON ACTIVATION OF THE FIRE ALARM SYSTEM. COORDINATE REQUIRED PROGRAMMING, INTEGRATION AND CONNECTIONS WITH ACCESS CONTROL. INSTALLING CONTRACTOR.

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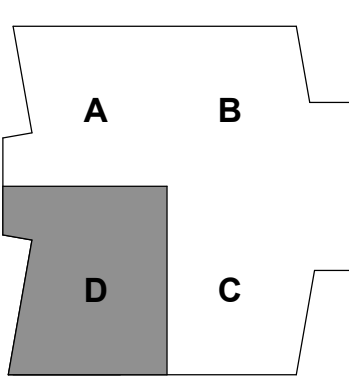
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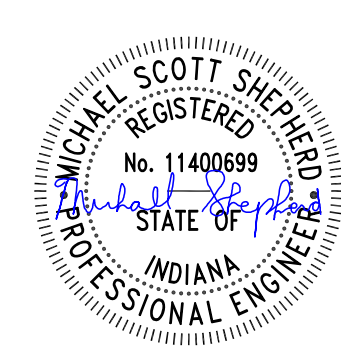
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE

1	DD PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE

**EVENT FLOOR PLAN
- AREA D - FIRE
ALARM**

SHEET NUMBER

FA-101D

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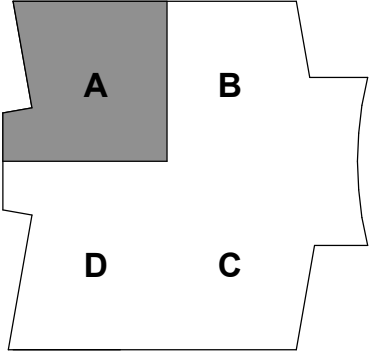
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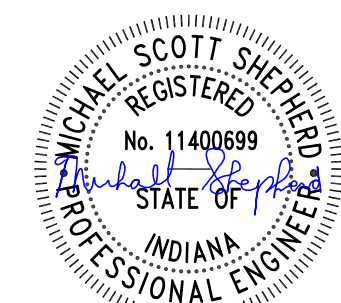
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR PLAN - AREA A - FIRE ALARM

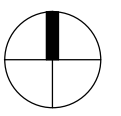
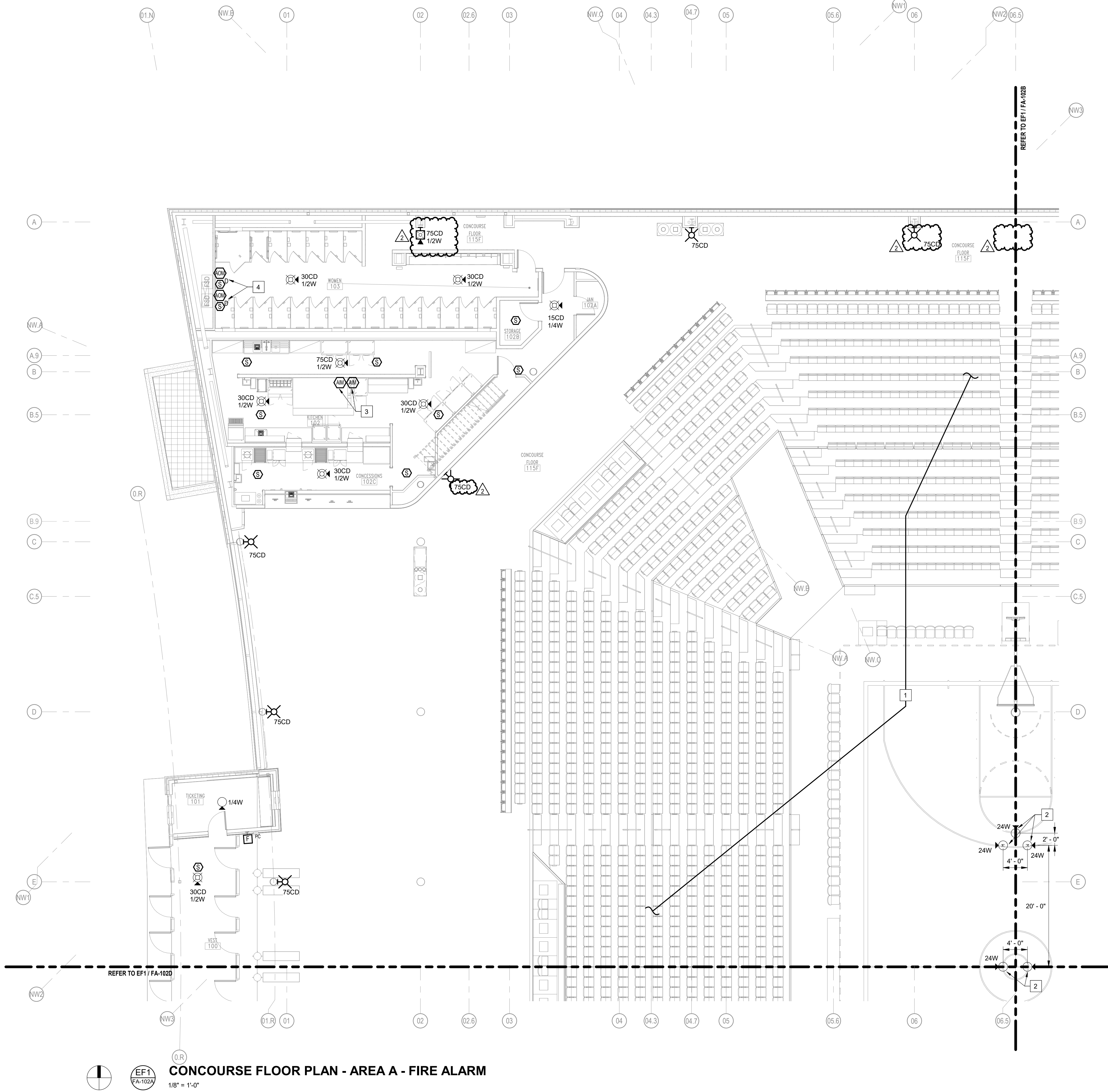
SHEET NUMBER
FA-102A

GENERAL NOTES

- REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
- THE SPEAKER WATTAGE TAP SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND INTELLIGIBILITY LEVELS ARE MET. CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE WATTAGE TAP SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
- THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITY'S PREFERRED VENDOR. VERIFY WITH IU FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
- ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN "RED" CONDUIT IN A CLASS B CONFIGURATION, FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
- PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
- PROVIDE A REMOTE LED/TEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND/OR NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIRECT PROXIMITY OF THE LABEL WITH THE ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

SHEET KEYED NOTES

- STADIUM BOWL DIGITAL DISPLAY SCREENS WILL BE USED FOR FIRE ALARM AND MASS NOTIFICATION MESSAGING IN THIS AREA OF THE BUILDING. REFER TO FIRE ALARM OPERATIONS MATRIX ON SHEET FA-201 FOR ADDITIONAL INFORMATION.
- PENDANT MOUNT FIRE ALARM / MASS NOTIFICATION 24W HYPERSPIKE SPEAKERS, 45'-0" ABOVE THE FINISHED FLOOR. DIMENSIONS SHOWN ARE REFERENCED FROM CENTER COURT. FIELD VERIFY ALL SPEAKER LOCATIONS.
- PROVIDE ADDRESSABLE INPUT MODULES TO MONITOR THE KITCHEN HOOD SYSTEM FOR ALARM AND TROUBLE CONDITIONS. FIELD VERIFY THE LOCATIONS OF THE MODULES WITH THE KITCHEN HOOD SYSTEM VENDOR.
- PROVIDE DUCT DETECTOR AND AN ADDRESSABLE RELAY MODULE FOR AUTOMATIC FIRE/SMOKE DAMPER CLOSING SEQUENCE. INSTALL DUCT DETECTOR WITHIN 5'-0" OF THE FIRE/SMOKE DAMPER AND THE RELAY MODULE WITHIN 3'-0" OF THE DAMPER CONTROLLER. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.



EF1
FA-102A

CONCOURSE FLOOR PLAN - AREA A - FIRE ALARM

1/8" = 1'-0"

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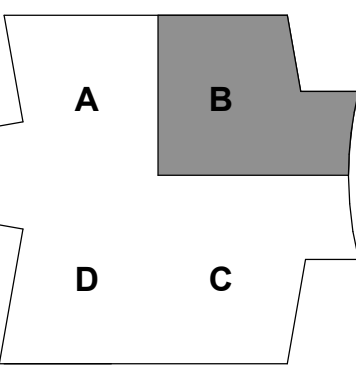
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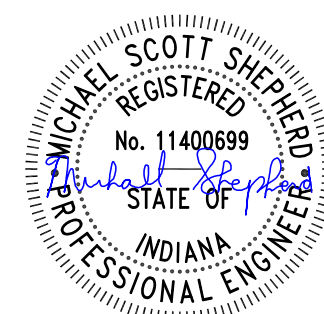
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR PLAN - AREA B - FIRE ALARM

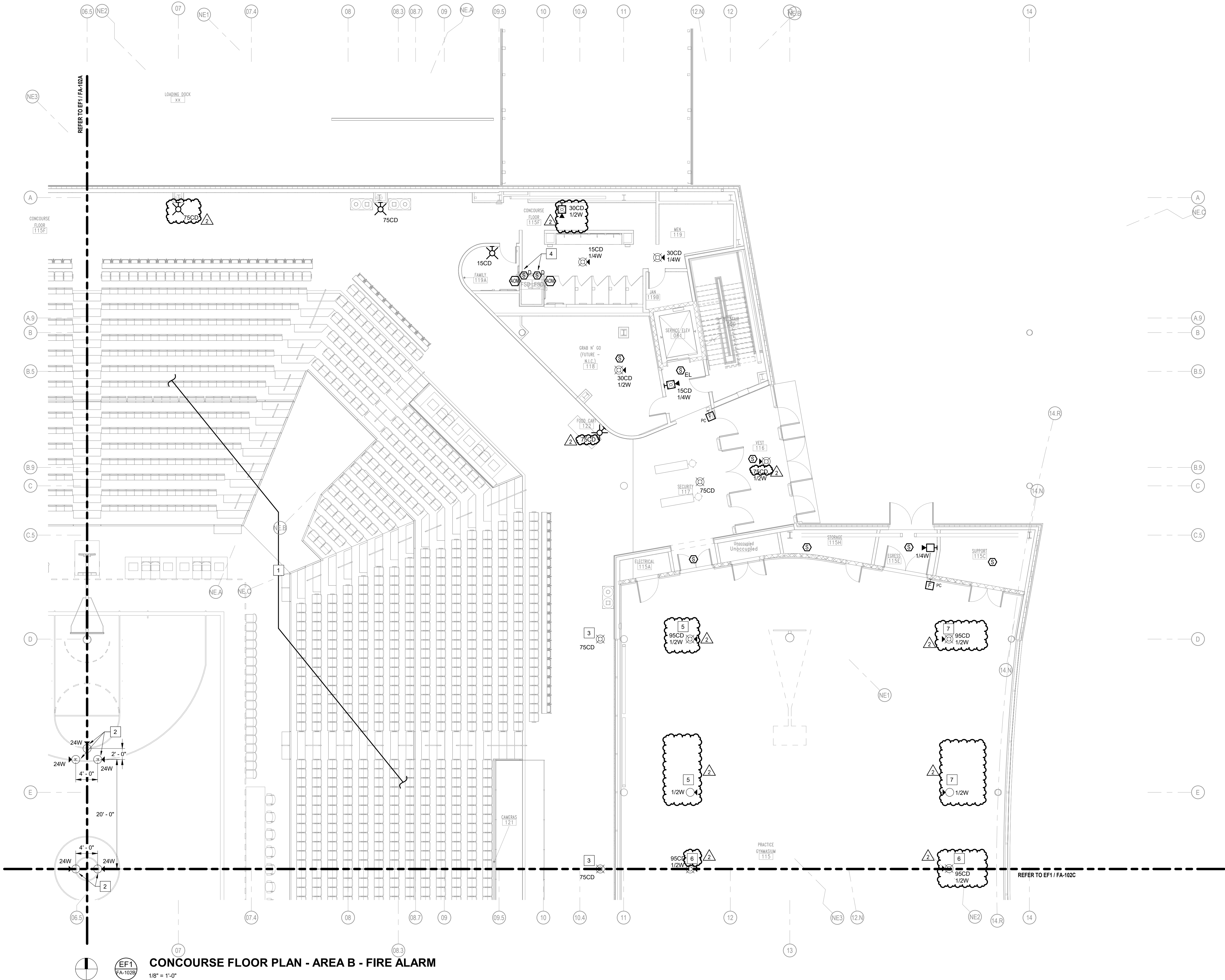
SHEET NUMBER
FA-102B

GENERAL NOTES

- REFER TO SPECIFICATION SECTION 28311 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
- THE SPEAKER WATTAGE TAP SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND INTELLIGIBILITY LEVELS ARE MET. CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE WATTAGE TAP SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
- THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITIES PREFERRED VENDOR. VERIFY WITH IU FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
- ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN 'RED' CONDUIT IN A CLASS B CONFIGURATION. FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
- PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
- PROVIDE A REMOTE LED/TEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND/OR NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIRECT PROXIMITY OF THE LABEL WITH THE ASSOCIATED AHJ, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

SHEET KEYED NOTES

- STADIUM BOWL DIGITAL DISPLAY SCREENS WILL BE USED FOR FIRE ALARM AND MASS NOTIFICATION MESSAGING IN THIS AREA OF THE BUILDING. REFER TO FIRE ALARM OPERATIONS MATRIX ON SHEET FA-201 FOR ADDITIONAL INFORMATION.
- PENDANT MOUNT FIRE ALARM / MASS NOTIFICATION 24W HYPERSPEKE SPEAKERS, 45" ABOVE THE FINISHED FLOOR. DIMENSIONS SHOWN ARE REFERENCED FROM CENTER COURT, FIELD VERIFY ALL SPEAKER LOCATIONS.
- CEILING MOUNT FIRE ALARM STROBES IN BULKHEAD ABOVE.
- PROVIDE DUCT DETECTOR AND AN ADDRESSABLE RELAY MODULE FOR AUTOMATIC FIRE/SMOKE DAMPER CLOSING SEQUENCE. INSTALL DUCT DETECTOR WITHIN 5'-0" OF THE FIRE/SMOKE DAMPER AND THE RELAY MODULE WITHIN 3'-0" OF THE DAMPER CONTROLLER. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- INSTALL FIRE ALARM NOTIFICATION DEVICE PENDANT MOUNTED FROM STRUCTURAL BEAM AT THIS APPROXIMATE LOCATION. DEVICE SHALL BE INSTALLED COMPLETELY LEVEL AND AT AN ELEVATION OF 30'-0" A.F.F. MAXIMUM TO DEVICE HOUSING. ALL DEVICES INSTALLED IN THIS SPACE AT THE CEILING STRUCTURAL BEAMS OR PENDANT MOUNTED SHALL BE INSTALLED AT THE SAME ELEVATION. PAINT PENDANT MOUNTING CONDUIT, MOUNTING BOXES AND BACK BOXES TO MATCH COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR PRIOR TO PAINTING.
- INSTALL FIRE ALARM NOTIFICATION DEVICE PENDANT MOUNTED FROM CEILING AT THIS APPROXIMATE LOCATION. DEVICE SHALL BE INSTALLED COMPLETELY LEVEL AND AT AN ELEVATION OF 30'-0" A.F.F. MAXIMUM TO DEVICE HOUSING. ALL DEVICES INSTALLED IN THIS SPACE AT THE CEILING STRUCTURAL BEAMS OR PENDANT MOUNTED SHALL BE INSTALLED AT THE SAME ELEVATION. PAINT PENDANT MOUNTING CONDUIT, MOUNTING BOXES AND BACK BOXES TO MATCH COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR PRIOR TO PAINTING.
- INSTALL FIRE ALARM NOTIFICATION DEVICE ON BOTTOM OF STRUCTURAL BEAM AT THIS APPROXIMATE LOCATION. DEVICE SHALL BE INSTALLED COMPLETELY LEVEL AND AT AN ELEVATION OF 30'-0" A.F.F. MAXIMUM TO DEVICE HOUSING. ALL DEVICES INSTALLED IN THIS SPACE AT THE CEILING STRUCTURAL BEAMS OR PENDANT MOUNTED SHALL BE INSTALLED AT THE SAME ELEVATION. PAINT BACK BOXES TO MATCH COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR PRIOR TO PAINTING.



CONCOURSE FLOOR PLAN - AREA B - FIRE ALARM

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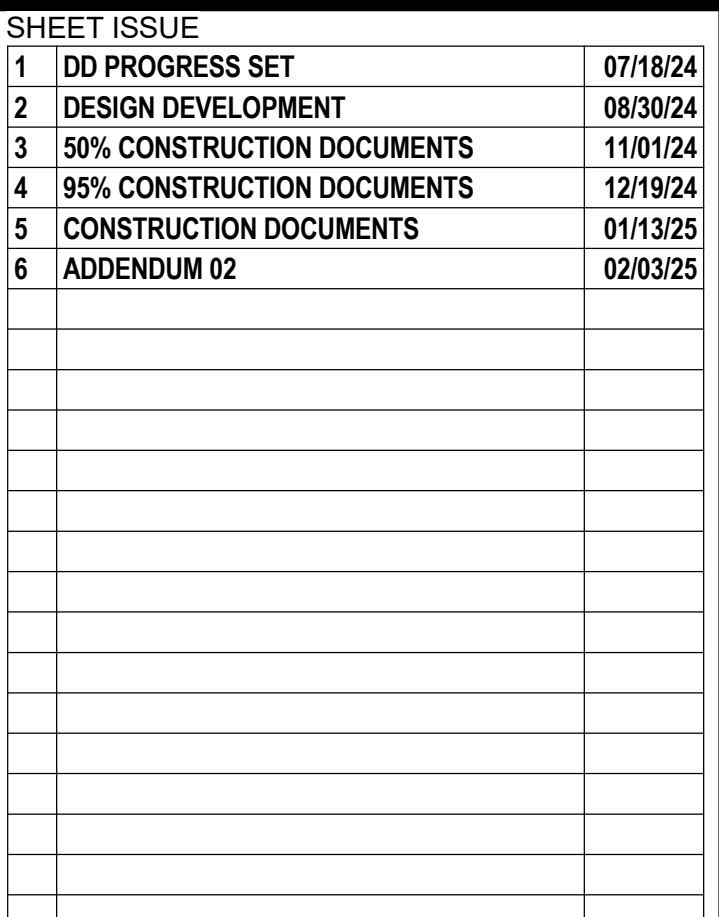
Food Service Consultant
CINILITTLE

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Code Consultant
FORZA



SEAL | DATE 02/03/25



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PROJECT NO. 23112.000

SHEET TITLE
CONCOURSE FLOOR
PLAN - AREA C - FIRE
ALARM

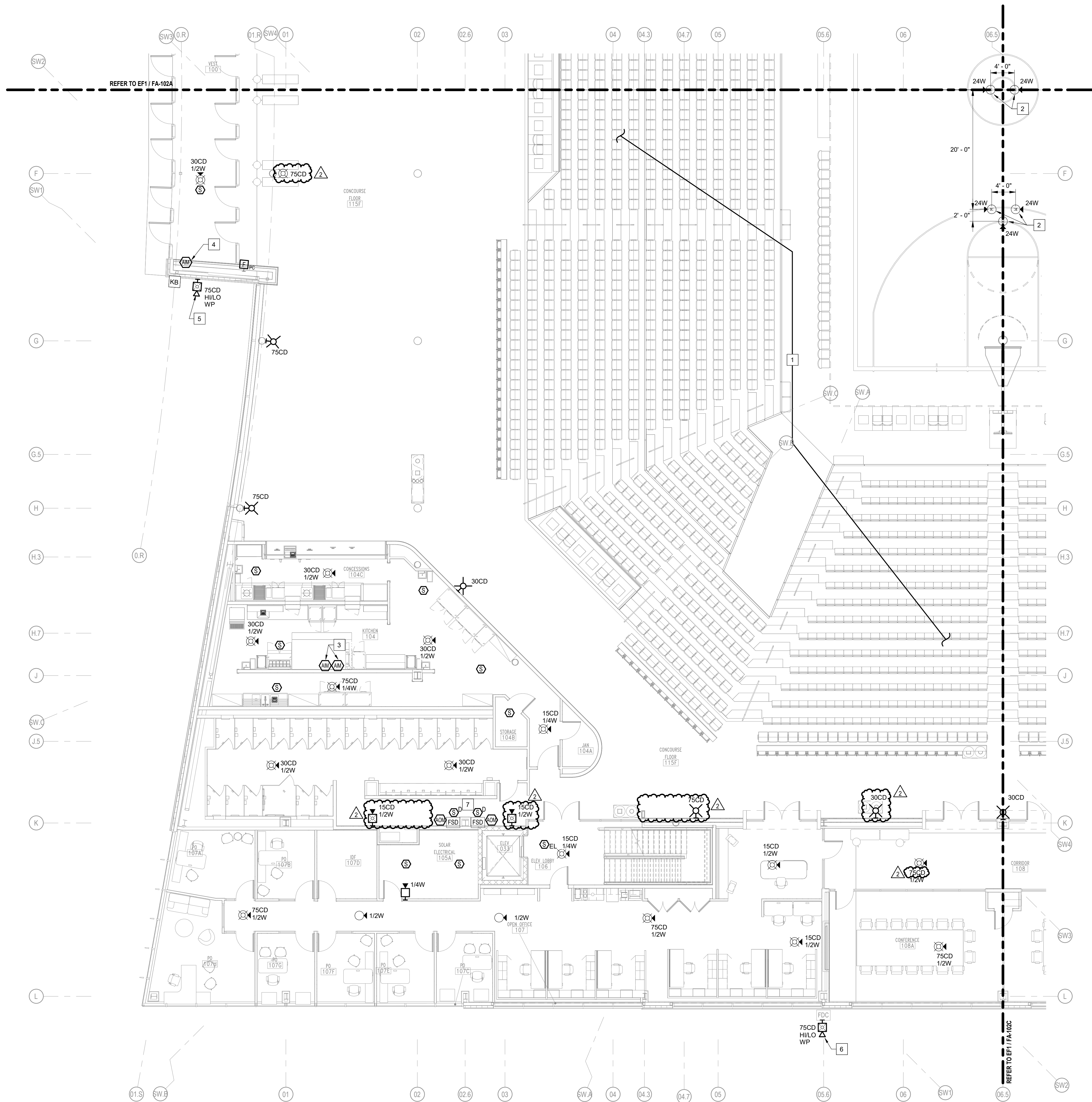
SHEET NUMBER

FA-102C

1. REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
2. THE SPEAKER WATTAGE PLAT SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL, SOUND LEVELS AND NATURAL LEVELS. THE CONTRACTOR SHALL VERIFY AND ADJUST THE WATTAGE PLAT SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
3. THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IJ DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITIES PREFERRED VENDOR. VERIFY WITH U/FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
4. ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN "RED" CONDUIT IN A CLASS C CONFIGURATION FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
5. PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
6. PROVIDE A REMOTE LED/TEST SWITCH FOR ALL FLUID DETECTORS ABOVE A CEILING AND NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIVISION 26, 26.05.00, 26.05.01, 26.05.02, THE ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

3. STADIUM BOWL DIGITAL DISPLAY SCREENS WILL BE USED FOR FIRE ALARM AND MASS NOTIFICATION MESSAGING IN THIS AREA OF THE STADIUM. REFER TO THE FIRE ALARM NOTIFICATION MATRIX ON SHEET FA-201 FOR ADDITIONAL INFORMATION.
4. PENDANT MOUNT FIRE ALARM 1 MASS NOTIFICATION MATRIX 40 SPEAKER SPEAKERS, 45'-0" ABOVE THE FINISHED FLOOR. DIMENSIONS SHOWN ARE REFERENCED FROM CENTER POINT. FIELD VERIFY ALL SPEAKER LOCATIONS.
5. CEILING MOUNT FIRE ALARM STROBES IN BULKHEAD ABOVE.
6. PROVIDE DETECTOR ON THE RETURN SIDE OF THE AHU UNIT FOR THE AUTOMATIC FAN SHUTDOWN SEQUENCE. DETECTOR SHALL BE INSTALLED AT APPROXIMATE LOCATION. DETECTOR SHALL BE MOUNTED ON THE RETURN SIDE OF THE AHU UNIT. PROVIDE AN ADDRESSABLE REPLAY MODULE FOR FAN SHUTDOWN. SEQUENCE: INSTALL REPLAY MODULE WITHIN 3'-0" OF THE FAN COUPLER AT AN ADDRESSABLE LOCATION. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
7. PROVIDE DETECTOR AND AN ADDRESSABLE REPLAY MODULE FOR AUTOMATIC FIRE/SMOKE DAMPER CLOSING SEQUENCE. INSTALL DETECTOR AT APPROXIMATE LOCATION. DETECTOR SHALL BE MOUNTED ON THE RETURN SIDE OF THE AHU UNIT. PROVIDE AN ADDRESSABLE REPLAY MODULE WITHIN 3'-0" OF THE DAMPER CONTROLLER. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
8. INSTALL FIRE ALARM NOTIFICATION DEVICE MOUNTED MOUNTED FROM CEILING BEAM AT APPROXIMATE LOCATION. DEVICE SHALL BE INSTALLED COMPLETELY LEVEL AND AT AN ELEVATION OF 30'-0" A.F.F. MAXIMUM TO DEVICE HOUSING. ALL DEVICES INSTALLED IN THIS SPACE AT THE SAME ELEVATION. COORDINATE WITH ARCHITECT FOR APPROVED COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR PRIOR TO PAINTING.
9. INSTALL FIRE ALARM NOTIFICATION DEVICE MOUNTED MOUNTED FROM STRUCTURAL BEAM AT THIS APPROXIMATE LOCATION. DEVICE SHALL BE INSTALLED COMPLETELY LEVEL AND AT AN ELEVATION OF 30'-0" A.F.F. MAXIMUM TO DEVICE HOUSING. ALL DEVICES INSTALLED IN THIS SPACE AT THE SAME ELEVATION. COORDINATE WITH ARCHITECT FOR APPROVED COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR PRIOR TO PAINTING.
10. INSTALL FIRE ALARM NOTIFICATION DEVICE ON BOTTOM OF STRUCTURAL BEAM AT THIS APPROXIMATE LOCATION. DEVICE SHALL BE INSTALLED COMPLETELY LEVEL AND AT AN ELEVATION OF 30'-0" A.F.F. MAXIMUM TO DEVICE HOUSING. ALL DEVICES INSTALLED IN THIS SPACE AT THE CEILING STRUCTURAL BEAMS OR PENDANT MOUNTED SHALL BE INSTALLED AT THE SAME ELEVATION. PENDANT MOUNTING SHALL BE INSTALLED IN THE SAME ELEVATION. COORDINATE WITH ARCHITECT FOR APPROVED COLOR OF CEILING. COORDINATE WITH ARCHITECT FOR APPROVED COLOR PRIOR TO PAINTING.


$$1/8" = 1'-0"$$



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SHEET TITLE
UPPER FLOOR PLAN
- AREA A - FIRE
ALARM

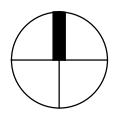
FA-103A

1. REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
2. THE SPEAKER WATTAGE PA-T SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL, SOUND LEVELS AND INTENSITY LEVELS ARE MET. CONTRACTOR SHALL VERIFY AND ADJUST THE WATTAGE PA-T SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
3. THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IJ DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTRACTOR SHALL CONSULT WITH THE UNIVERSITY OF MASS IJ FACILITY OPERATIONS PERSONNEL, FOR ADDITIONAL INFORMATION.
4. ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN "PICK" CONDUIT IN A CLASS B CONFIGURATION, FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
5. PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
6. PROVIDE A REMOTE LEDTEST SWITCH FOR ALL DETECTORS ABOVE A CEILING AND NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIRECT LINE OF SIGHT OF THE DETECTOR AND THE ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

1. NAC EXTERIOR PANEL LOCATION AND QUANTITY SHOWN ARE PRELIMINARY IN NATURE. EXACT QUANTITY OF NAC EXTERIOR PANELS WILL BE DETERMINED BY THE ELECTRICAL CONTRACTOR. NAC EXTERIOR PANELS REQUIRED SHALL BE INSTALLED IN THIS ROOM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION(S) PRIOR TO ROUGH-IN. PROVIDE LOW VOLTAGE POWER FOR NAC EXTERIOR PANELS.
2. PROVIDE CUTOFF DETECTOR ON THE RETURN SIDE OF THE AHU(FAN) FOR EXHAUST FAN SHUTDOWN SEQUENCE. DETECTOR SHALL BE INSTALLED ON THE MAIN RETURN AIR DUCTS CONNECTED TO THE AIR HANDLING UNIT. PROVIDE AN ADDRESSABLE RELAY MODULE FOR FAN SHUTDOWN. DETECTOR SHALL BE INSTALLED IN THE MAIN RETURN AIR FAN CONTROLLER AT AN ACCESSIBLE LOCATION. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. NOT USED
4. PROVIDE SMOKE DETECTORS AND RELAY MODULES FOR (3) RETURN AIR SYSTEM OPENING FIRE/SMOKE DAMPERS. REFER TO DETAIL SHEET FA-203 AND THE NFPA 72 FOR SPACING REQUIREMENTS. TO DETERMINE THE EXACT LOCATION OF THE DETECTOR, COORDINATE RELAY MODULES WITH THE LOCATION OF EACH DAMPER CONTROLLER.



1. ELEVATION VIEW IS DIAGRAMMATICAL AND DETECTOR LOCATIONS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. REFER TO NFPA 72 AND SHEET FA-203 FOR SPACING REQUIREMENT DETAILS.
2. SMOKE DETECTOR SPACING FOR RETURN AIR SYSTEM OPENINGS SHOWN ON DETAIL SHEET FA-203 BASED ON THE REQUIREMENTS OF 2010 NFPA 72, FIGURE A.17.7.5.4.2(a).
3. CALCULATE THE QUANTITY AND LOCATIONS OF DETECTORS REQUIRED INSTALLED ON EITHER THE INTAKE OR DISCHARGE SIDE OF THE FIRE/SMOKE DAMPER OPENING, UP TO 12' OFF THE DAMPER AS STATED IN NFPA 72.
4. DIMENSIONS REPRESENT OPENING SIZES ONLY. REFER TO MECHANICAL DRAWINGS FOR OVERALL DAMPER SIZE, IF REQUIRED.



EF1
FA-103A

UPPER FLOOR PLAN - AREA A - FIRE ALARM

$$1/8" = 1'-0"$$

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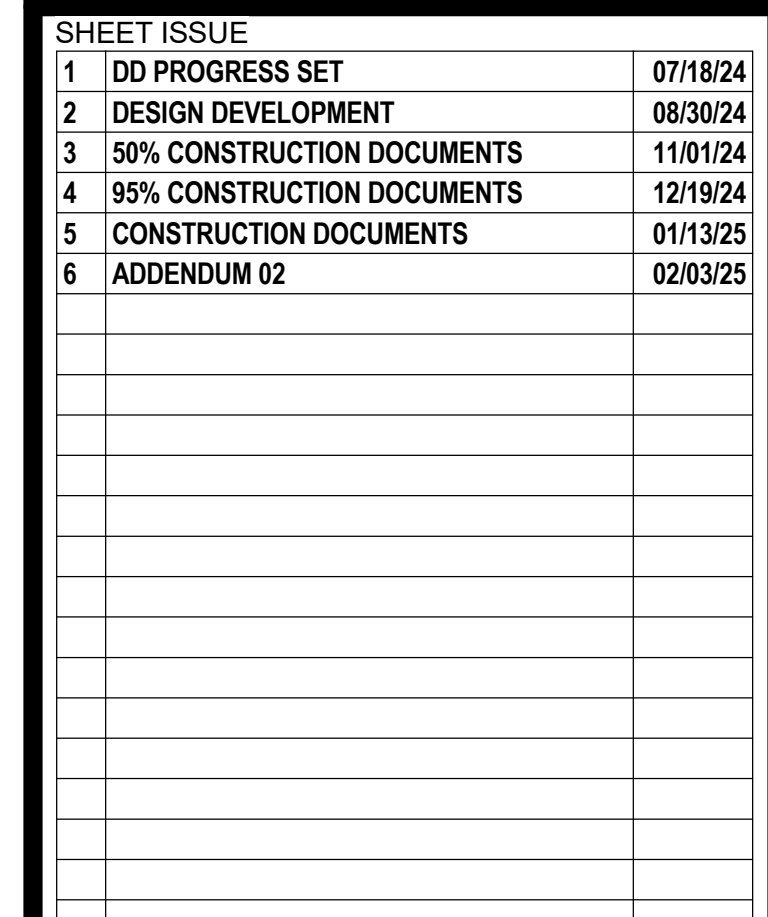
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PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR PLAN
- AREA B - FIRE
ALARM

SHEET NUMBER

FA-103B

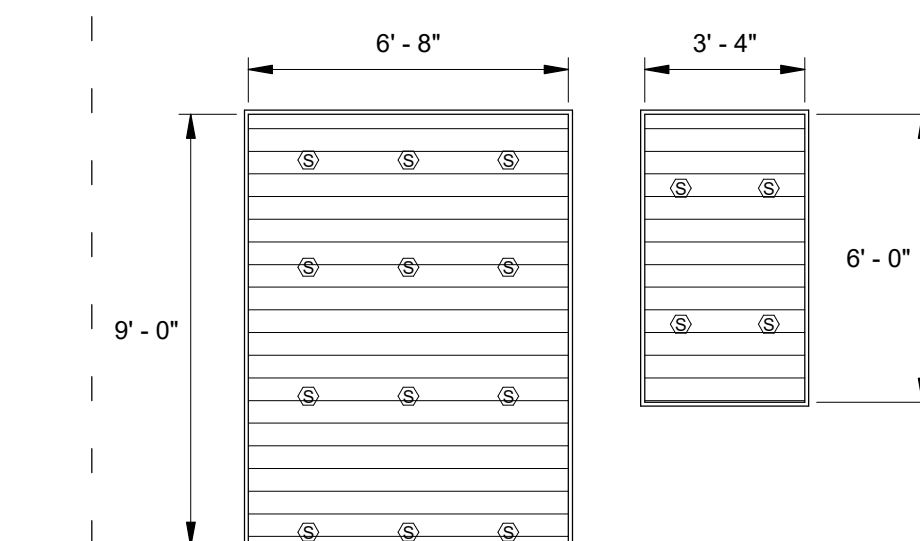
1. REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
2. THE SPEAKER WATTAGE PAI SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND INTelligIBILITY LEVELS. THE USER SHALL VERIFY THE SOUND LEVELS AND ADJUST THE WATTAGE SETTINGS AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTelligIBILITY LEVELS.
3. THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITIES PREFERRED VENDOR. VERIFY WITH IU FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
4. ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN "RED" CONDUIT IN A CLASS 2 CONFIGURATION, FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
5. PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
6. PROVIDE A REMOTE LED/TEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND NOT SWITCH FROM A FLOOR STANDING POSITION. MOUNT IN ONE INCH DIA. HOLES IN THE CEILING. THE TEST SWITCH SHALL BE ASSOCIATED AWH, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

1 NAC EXTERIOR PANEL LOCATION AND QUANTITY SHOWN ARE PRELIMINARY IN NATURE. EXACT QUANTITY OF NAC EXTERIOR PANELS WILL BE DETERMINED BY THE FIELD VERIFICATION OF THE PROJECT. NAC EXTERIOR PANELS REQUIRED SHALL BE INSTALLED IN THIS ROOM. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS PRIOR TO ROUGH-IN. PROVIDE 120V DEDICATED POWER FOR NAC EXTERIOR PANELS.

2 PROVIDE CUTOFF DETECTOR ON THE RETURN SIDE OF THE AHU UNIT FOR THE AUTOMATIC FAN SHUTDOWN SEQUENCE. DETECTOR SHALL BE MOUNTED ON THE MAIN RETURN AIR DUCTS CONNECTED TO THE AIR HANDLING UNIT. PROVIDE AN ADDRESSABLE RELAY MODULE FOR FAN SHUTDOWN SEQUENCE. INSTALL RELAY MODULE WITHIN 3'-0" OF THE DETECTOR MODULE AT AN ACCESSIBLE LOCATION. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

3 NOT USED

PROVIDE SMOKE DETECTORS AND RELAY MODULES FOR (2) RETURN AIR SYSTEM OPENING FIRE SOURCE DAMPERS. REFER TO UTA SYSTEM SHEET FA-203 AND THE NFPA 72 FOR SPACING REQUIREMENTS TO DETERMINE QUANTITY OF DETECTORS REQUIRED. FIELD LOCATE DETECTORS WITHIN



NOTES

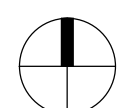
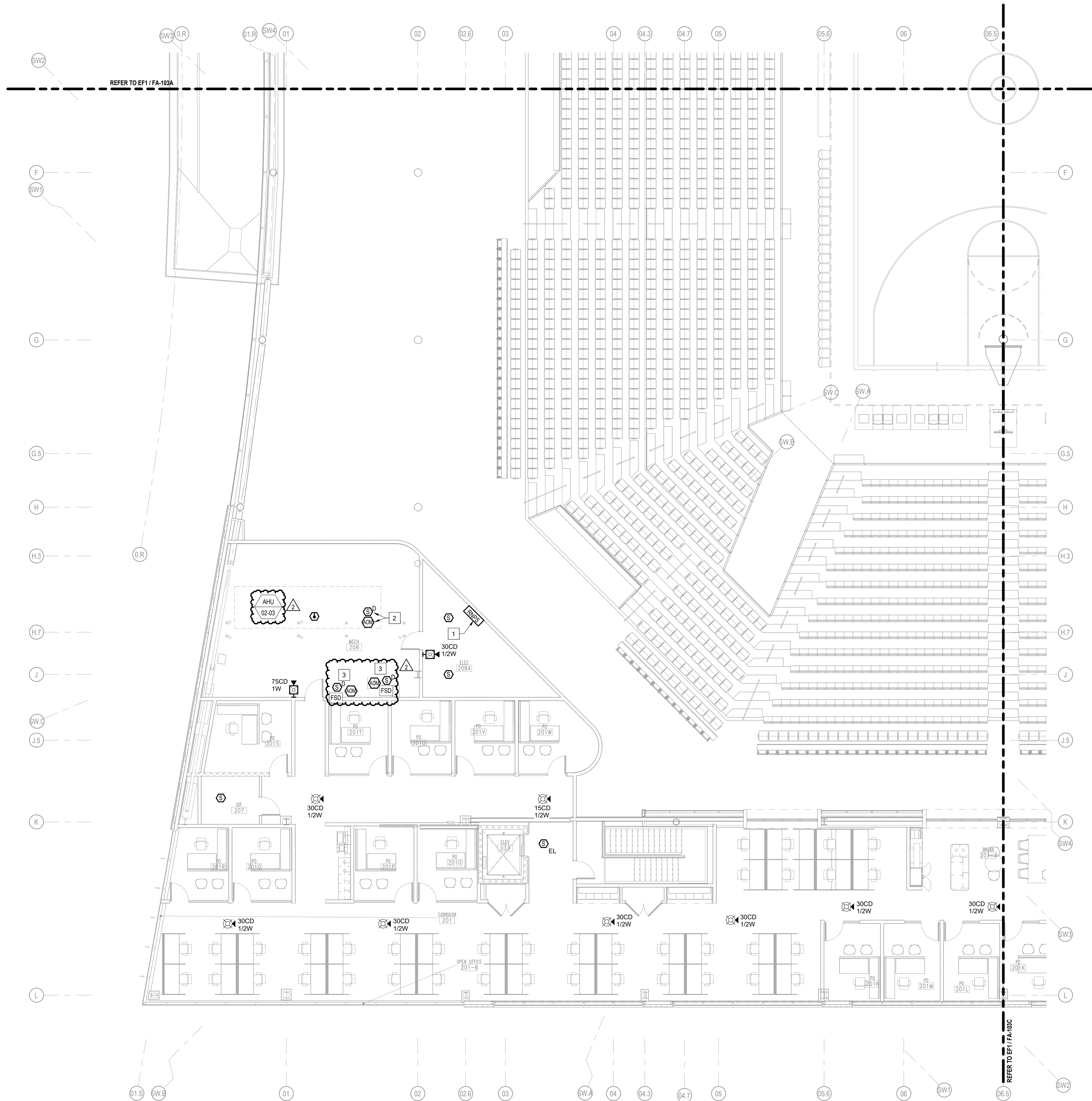
1. ELEVATION VIEW IS DIAGRAMMATICAL, AND DETECTOR LOCATIONS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. REFER TO NFPA 72 AND SHEET FA-203 FOR SPACING REQUIREMENT DETAILS.
2. SMOKE DETECTOR SPACING FOR RETURN AIR SYSTEM OPENINGS SHOWN ON DETAIL SHEET FA-203 BASED ON THE REQUIREMENTS OF 2010 NFPA 72, FIGURE A.17.7.5.4.2.2(a).
3. CALCULATE THE QUANTITY AND LOCATIONS OF DETECTORS REQUIRED INSTALLED ON EITHER THE INTAKE OR DISCHARGE SIDE OF THE FIRE/SMOKE DAMPER OPENING, UP TO 12" OFF THE DAMPER AS STATED IN NFPA 72.
4. DIMENSIONS REPRESENT OPENING SIZES ONLY. REFER TO MECHANICAL DRAWINGS FOR OVERALL DAMPER SIZE, IF REQUIRED.

EF1
FA-103B

1/8" = 1'-0"



FA-103C



UPPER FLOOR PLAN - AREA D - FIRE ALARM

1/8" = 1'-0"

GENERAL NOTES

1. REFER TO SPECIFICATION SECTION 283111 FOR ADDITIONAL INFORMATION PERTAINING TO THE FIRE ALARM SYSTEM DESIGN.
2. THE SPEAKER WATTAGE TAP SETTINGS SHOWN ON THIS DRAWING ARE SUGGESTIVE, AND ARE MEANT TO PROVIDE GUIDANCE TO ENSURE CODE REQUIRED MINIMUM AUDIBLE SIGNAL SOUND LEVELS AND INTELLIGIBILITY LEVELS ARE MET. CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE WATTAGE TAP SETTING AS NECESSARY TO MEET THE CODE REQUIRED AUDIBLE AND INTELLIGIBILITY LEVELS.
3. THE CAMPUS MASS NOTIFICATION SYSTEM WILL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM PER THE IU DESIGN GUIDELINES. FOR REQUIRED EQUIPMENT FOR THE MASS NOTIFICATION SYSTEM, CONTACT THE UNIVERSITIES PREFERRED VENDOR. VERIFY WITH IU FACILITY OPERATIONS PERSONNEL FOR ADDITIONAL INFORMATION.
4. ALL FIRE ALARM CIRCUITS SHALL BE ROUTED IN 'RED' CONDUIT IN A CLASS B CONFIGURATION. FOR SURFACE MOUNTED CONDUIT IN FINISHED AREAS, PAINT TO MATCH WALL OR COLUMN COLOR.
5. PROVIDE PROTECTIVE COVERS ON ALL MANUAL PULL STATIONS.
6. PROVIDE A REMOTE LED/TEST SWITCH FOR ALL DUCT DETECTORS ABOVE A CEILING AND/OR NOT VISIBLE FROM A FLOOR STANDING POSITION. LOCATE IN DIRECT PROXIMITY OF THE LABEL WITH THE ASSOCIATED AHU, FSD, DEVICE AND ADDRESS. MOUNT IN AN ACCESSIBLE LOCATION WITH APPROVAL FROM FACILITIES PERSONNEL.

SHEET KEYED NOTES

1. NAC EXTENDER PANEL LOCATION AND QUANTITY SHOWN ARE PRELIMINARY IN NATURE. EXACT QUANTITY OF NAC EXTENDER PANELS WILL BE DETERMINED BY THE SELECTED FIRE ALARM MANUFACTURER. NAC EXTENDER PANELS REQUIRED SHALL BE INSTALLED IN THIS ROOM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION(S) PRIOR TO ROUGH-IN. PROVIDE 120V DEDICATED POWER FOR NAC EXTENDER PANEL(S).
2. PROVIDE DUCT DETECTOR ON THE RETURN SIDE OF THE AHU FOR THE AUTOMATIC FAN SHUTDOWN SEQUENCE. DETECTOR SHALL BE INSTALLED ON THE MAIN RETURN AIR DUCT CONNECTED TO THE UNIT. PROVIDE AN ADDRESSABLE RELAY MODULE FOR FAN SHUTDOWN SEQUENCE. INSTALL RELAY MODULE WITHIN 3'-0" OF THE FAN CONTROLLER AT AN ACCESSIBLE LOCATION. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. PROVIDE DUCT DETECTOR AND AN ADDRESSABLE RELAY MODULE FOR AUTOMATIC FIRE/SMOKE DAMPER CLOSING SEQUENCE. INSTALL DUCT DETECTOR WITHIN 5'-0" OF THE FIRE/SMOKE DAMPER AND THE RELAY MODULE WITHIN 5'-0" OF THE DAMPER CONTROLLER. FIELD VERIFY AND COORDINATE EXACT LOCATIONS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

IN128 - JAMES T. MORRIS ARENA

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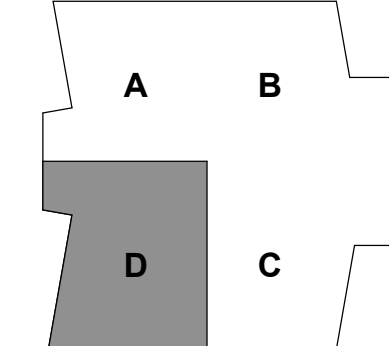
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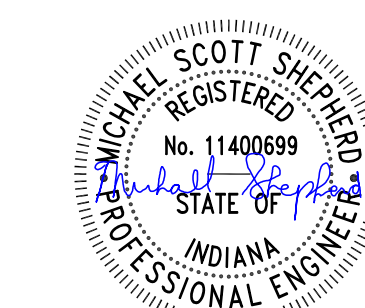
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KEY PLAN

SEAL | DATE 02/03/25



SHEET ISSUE		
1	DO PROGRESS SET	07/18/24
2	DESIGN DEVELOPMENT	08/30/24
3	50% CONSTRUCTION DOCUMENTS	11/01/24
4	95% CONSTRUCTION DOCUMENTS	12/19/24
5	CONSTRUCTION DOCUMENTS	01/13/25
6	ADDENDUM 02	02/03/25

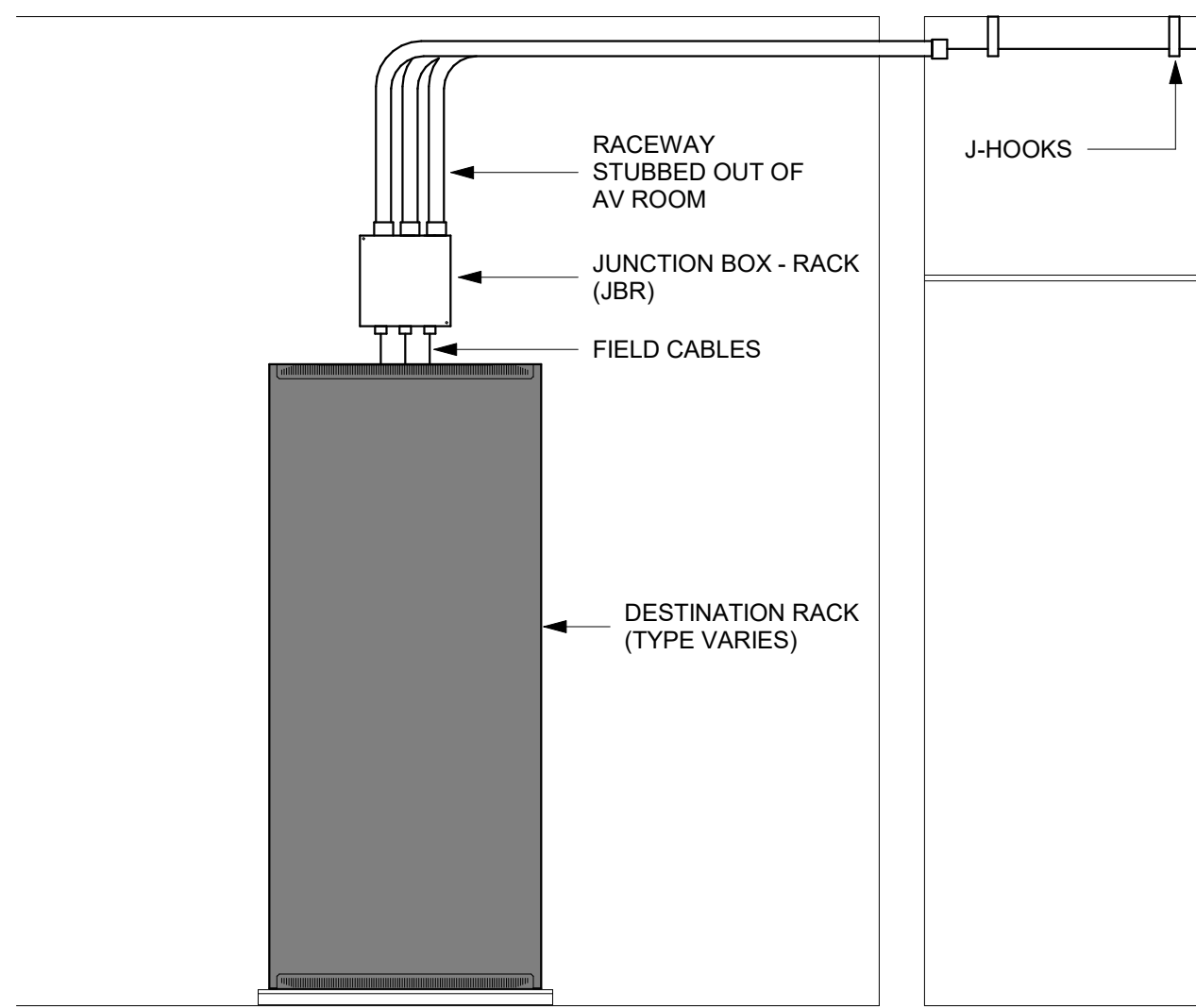
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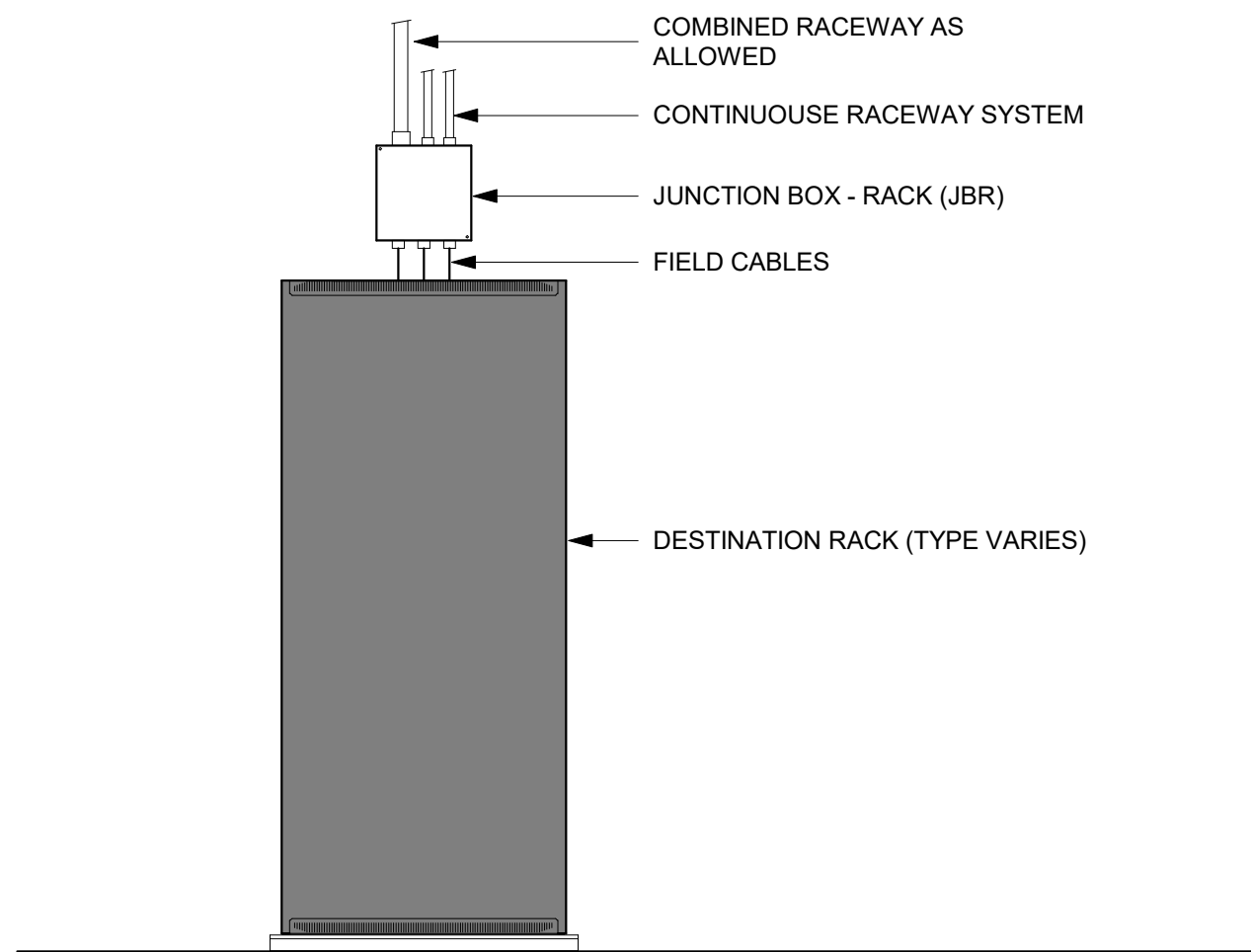
PROJECT NO. 23112.000

SHEET TITLE
**UPPER FLOOR PLAN
- AREA D - FIRE
ALARM**

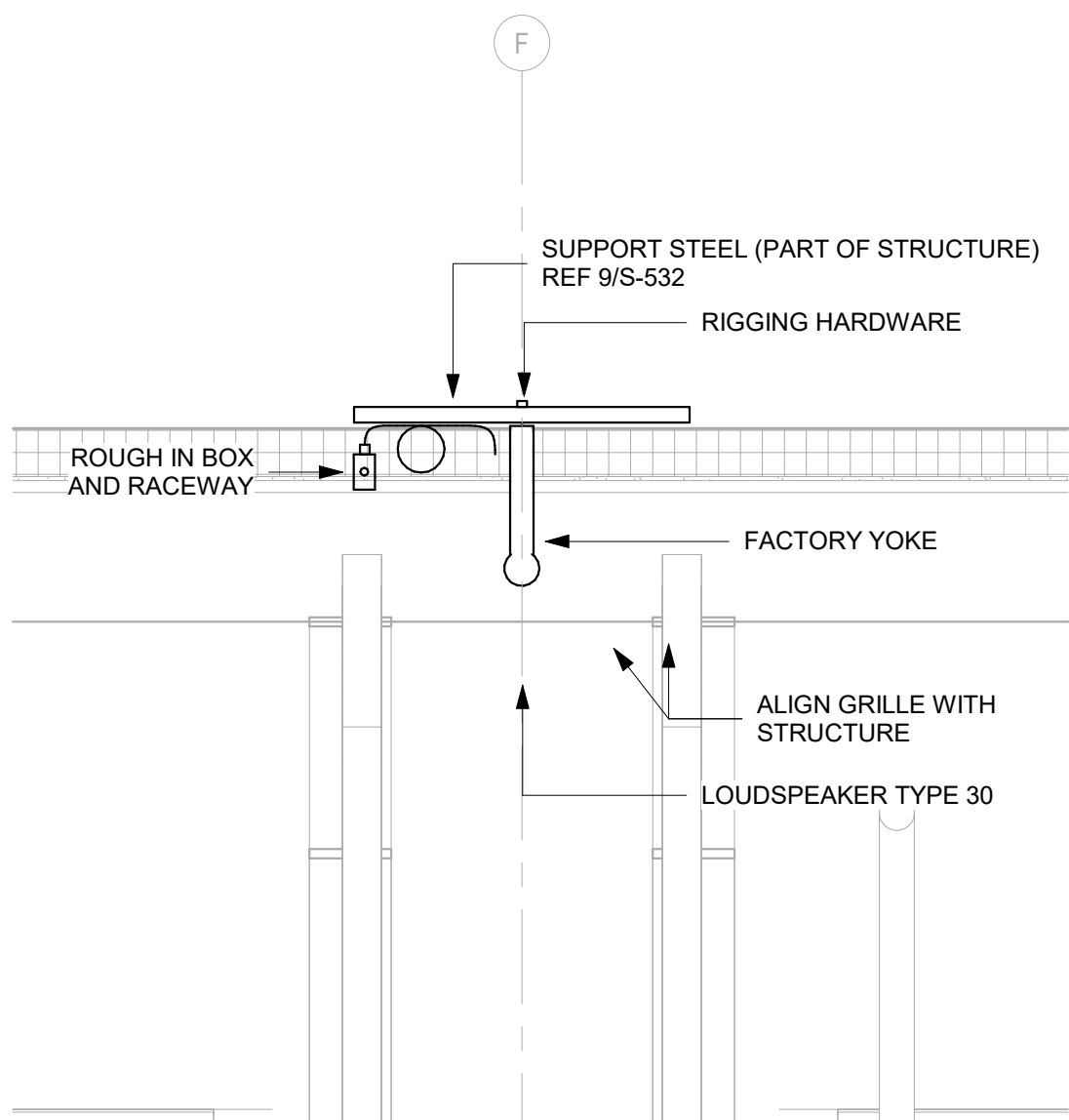
SHEET NUMBER
FA-103D



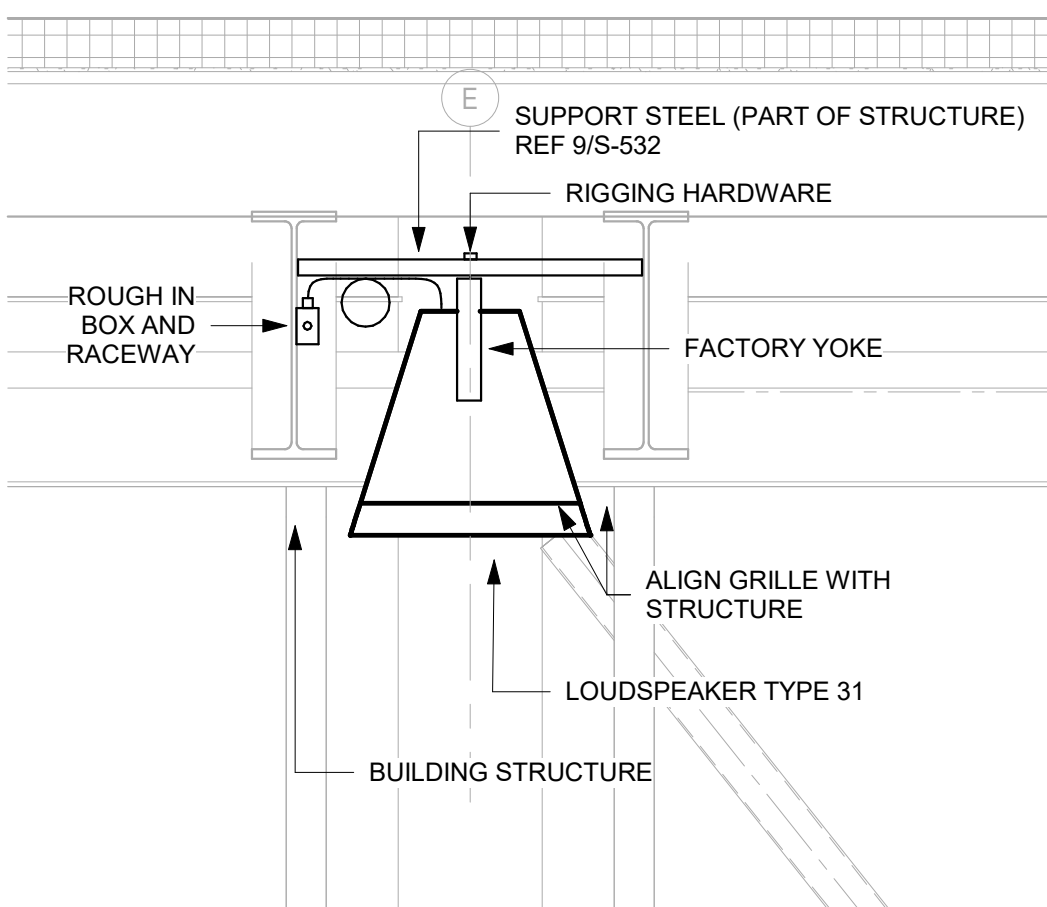
8 J-HOOK TO JBR RUN TYPE (JJBR)
1/2" = 1'-0"



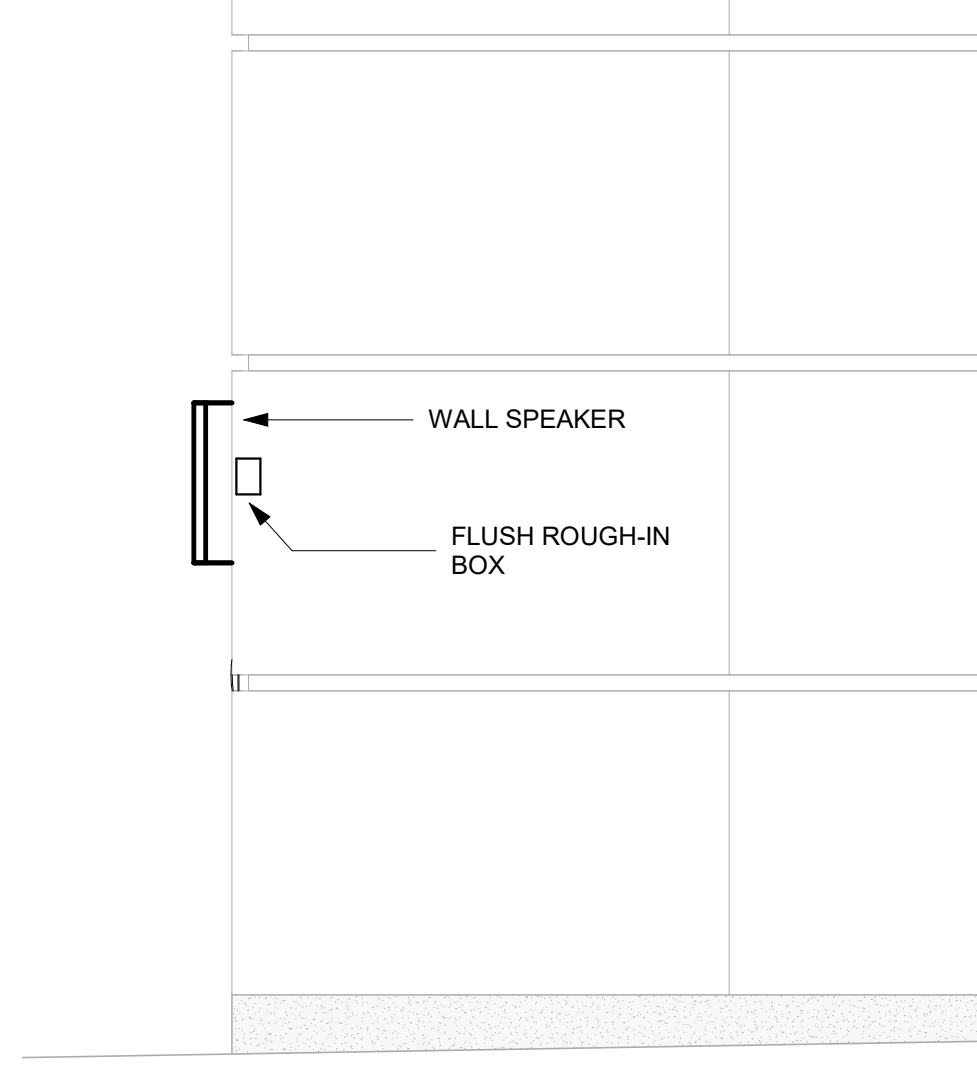
7 CONDUIT TO JBR RUN TYPE (CJBR)
1/2" = 1'-0"



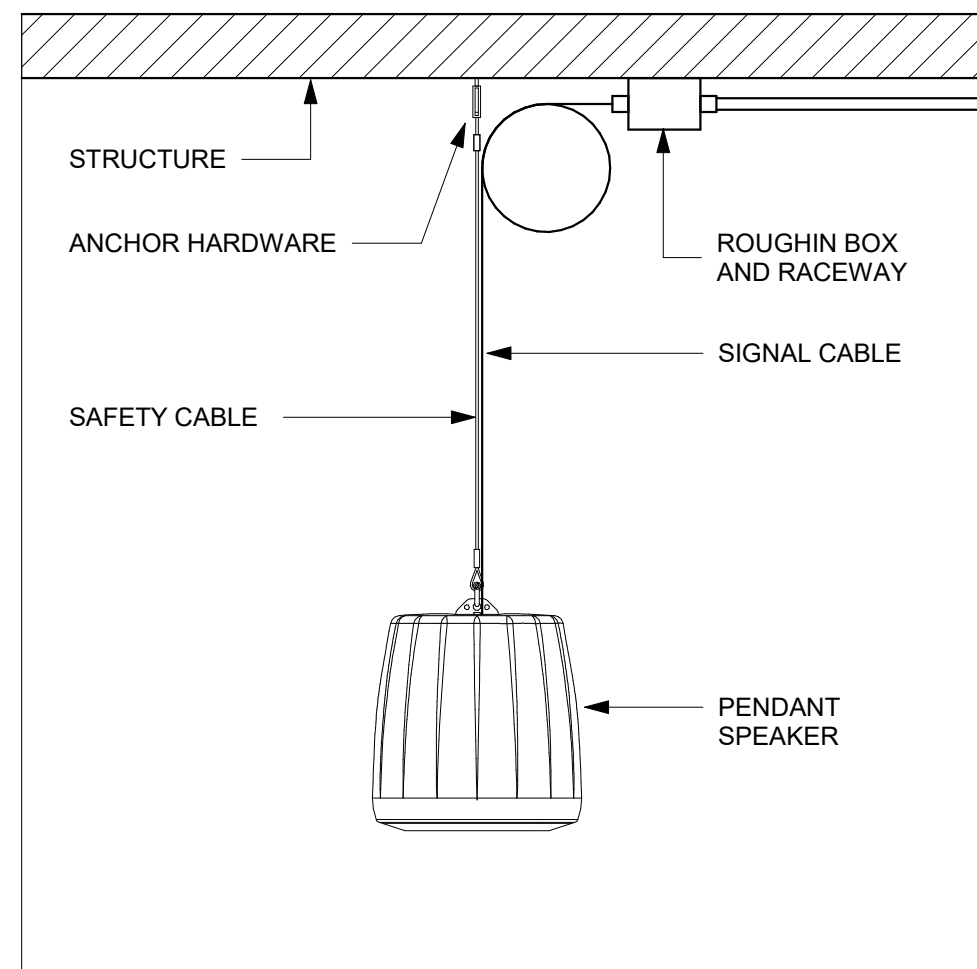
6 ARENA LOUDSPEAKER DETAIL
1/2" = 1'-0"



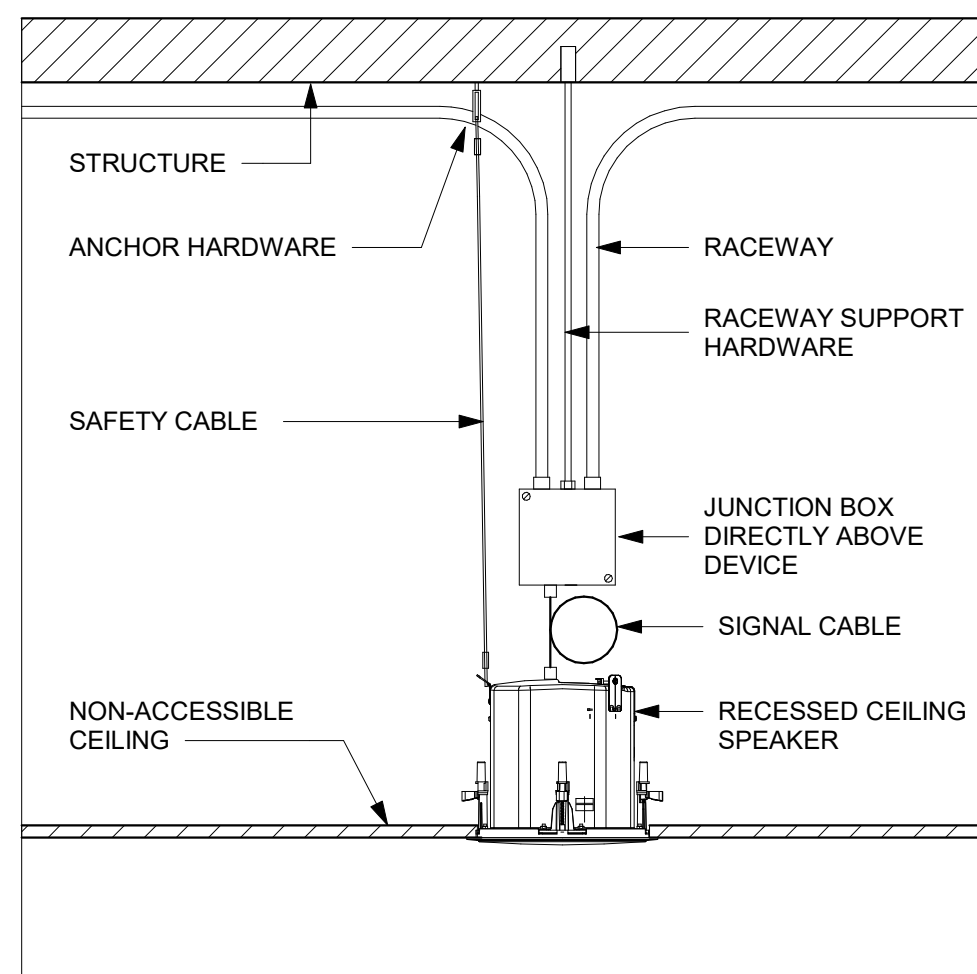
5 PRACTICE GYM LOUDSPEAKER DETAIL
1/2" = 1'-0"



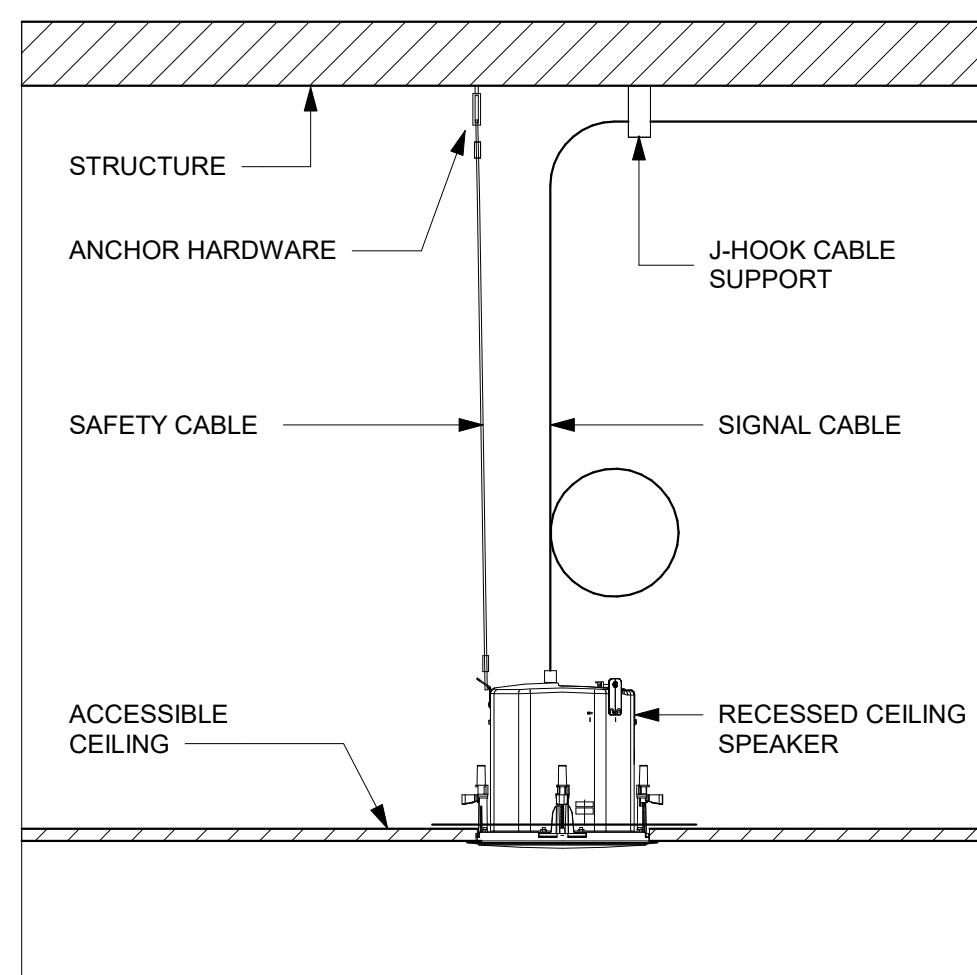
4 WALL SPEAKER DETAIL
1/2" = 1'-0"



3 PENDANT SPEAKER DETAIL
1" = 1'-0"



2 RECESSED CEILING SPEAKER
NON ACCESSIBLE CEILING DETAIL
1" = 1'-0"



1 RECESSED CEILING SPEAKER
ACCESSIBLE CEILING DETAIL
1" = 1'-0"

LOUDSPEAKER CIRCUIT ID LEGEND	
VENUE LEVEL (#-#)	AMPLIFIER NUMBER IN RACK
1A1a	
VENUE SECTOR (#-#)	LOUDSPEAKER CIRCUIT / AMPLIFIER CHANNEL

CIRCUIT RUN TYPE LEGEND	
CJBR - CONDUIT TO RACK JUNCTION BOX (JBR) - SEE DETAIL 7/AV-091	
JJBR - J-HOOK AND SLEEVES TO RACK JUNCTION BOX (JBR) - SEE DETAIL 8/AV-091	

LOUDSPEAKER CIRCUIT SCHEDULE							
RACK DESIGNATION	CIRCUIT ID	SPEAKER TYPE REF AV-000	AMPLIFIER TYPE	CIRCUIT DETAIL REF AV11.11	CIRCUIT RUN TYPE	MOUNTING DETAIL	FINISH COLOR
ER-1A1	1A1a	1	1	715	JBR	1/AV-091	WHITE
ER-1A1	1A1b	2	1	730	JBR	1/AV-091	BLACK
ER-1A1	1A1c	2	1	730	JBR	1/AV-091	BLACK
ER-1A1	1A1d	2	1	730	JBR	1/AV-091	BLACK
ER-1A1	1A2a	2	1	730	JBR	1/AV-091	BLACK
ER-1A1	1A2b	2	1	730	JBR	1/AV-091	BLACK
ER-1A1	1A2c	20	1	7100	CJBR	4/AV-091	BLACK
ER-1A1	1A2d	20	1	7100	CJBR	4/AV-091	BLACK
ER-1C1	1C1a	2	1	730	JBR	1/AV-091	WHITE
ER-1C1	1C1b	3	1	730	JBR	2/AV-091	WHITE
ER-1C1	1C1c	10	1	760	JBR	3/AV-091	BLACK
ER-1C1	1C1d	2	1	760	JBR	1/AV-091	WHITE
ER-1C1	1C2a	2	1	730	JBR	1/AV-091	WHITE
ER-1C1	1C2b	2	1	730	JBR	1/AV-091	WHITE
ER-1C1	1C2c	2	1	730	JBR	1/AV-091	WHITE
ER-1C1	1C2d	2	1	730	JBR	1/AV-091	WHITE
ER-1C1	1C3a	1	1	730	JBR	2/AV-091	WHITE
ER-1C1	1C3b	1	1	730	JBR	2/AV-091	WHITE
ER-1C1	1C3c	1	1	730	JBR	2/AV-091	WHITE
ER-1C1	1C3d	20	4	7100	CJBR	4/AV-091	BLACK
ER-3C3	3C1a	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C1b	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C1c	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C1d	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C2a	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C2b	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C2c	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C2d	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C3a	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C3b	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C3c	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C3d	30	4	4	CJBR	6/AV-091	CUSTOM COLOR
ER-3C3	3C4a	30	4	4	CJBR	9/AV-091	WHITE
ER-3C3	3C4b	30	4	4	CJBR	9/AV-091	WHITE
ER-3C3	3C4c	30	4	4	CJBR	9/AV-091	WHITE
ER-3C3	3C4d	30	4	4	CJBR	9/AV-091	WHITE
ER-3C3	3C5a	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C5b	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C5c	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C6a	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C6b	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C6c	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C6d	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C7a	31	3	4	CJBR	5/AV-091	CUSTOM COLOR
ER-3C3	3C7b	31	3	4	CJBR	5/AV-091	CUSTOM COLOR

IN128 - JAMES T. MORRIS ARENA

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816-806-3729

SEAL | DATE 02/03/25

SHEET ISSUE

Construction Documents	01/13/25
1 Addendum 01	01/27/25
2 Addendum 02	02/03/25

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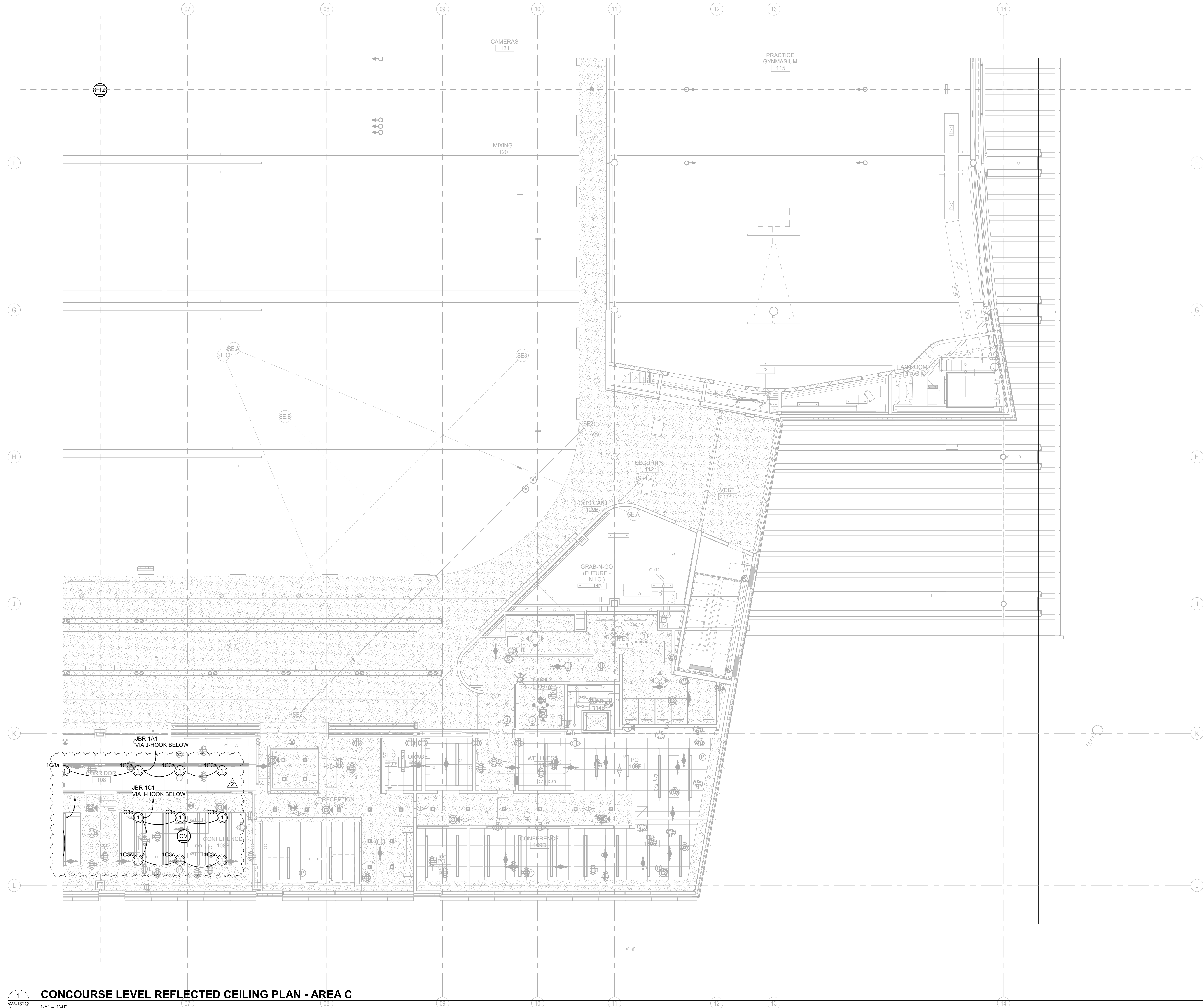
PROJECT NO. 23112.000

SHEET TITLE

LOUDSPEAKER
SCHEDULE AND
DETAILS

SHEET NUMBER

AV-091



1
AV-132C
1/8" = 1'-0"

CONCOURSE LEVEL REFLECTED CEILING PLAN - AREA C

KEYNOTES

IN128 - JAMES T. MORRIS ARENA

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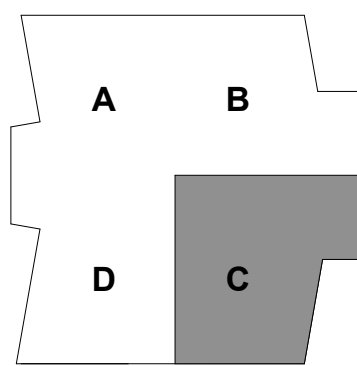
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KEY PLAN

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SHEET ISSUE	
1	Addendum 01
2	Addendum 02

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PROJECT NO. 23112.000

SHEET TITLE
**CONCOURSE
REFLECTED CEILING
PLAN - AREA C**

SHEET NUMBER

AV-132C

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816-806-3729



1

RATIO

SHEET TITLE
CONCOURSE
REFLECTED CEILING
PLAN - AREA D

SHEET NUMBER
AV 132D



KEYNOTES	
201	LOUDSPEAKER RACEWAY RUN CONCEALED BETWEEN STRUCTURAL STEEL
206	MOUNT JUNCTION BOXES TO STRUCTURE ABOVE. INSTALL CAMERA TO BOTTOM OF POLE WITH CABLING FED THROUGH INSIDE OF POLE. REFER TO ARCHITECTURAL DRAWINGS. RACEWAY TO BE CONCEALED AT BEAMS.

IN128 - JAMES T.
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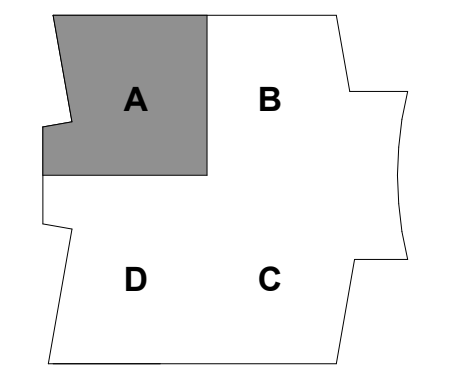
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HARRISONVILLE, MO 64701
816-806-3729



SEAL | DATE 02/03/25

[illegible]

RATIO

PROJECT NO.	23112.000
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SHEET TITLE
UPPER FLOOR
REFLECTED CEILING
PLAN - AREA A

SHEET NUMBER
AV-133A

UPPER CONCOURSE LEVEL REFLECTED CEILING PLAN - AREA A

1
AV-133A

AREA

1/8" = 1'-0"

IN128 - JAMES T.
MORRIS ARENA

IU Project NO. 20240127

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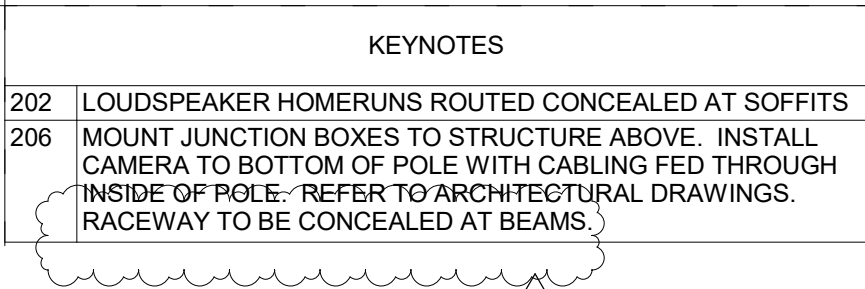
PROJECT NO. 23112.000

SHEET TITLE
UPPER FLOOR
REFLECTED CEILING
PLAN - AREA B

SHEET NUMBER

AV-133B


$$1/8" = 1'-0"$$



Ohio St & N Blackford St
Indianapolis, IN 46202

Owner

Architect

Structura

Mechanical / Electrical

Plumbing Engineer

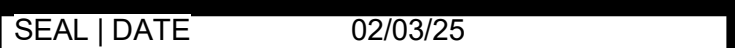
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Food Service Consultant

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FORZA

A diagram of a 2x2 matrix. The top-left quadrant is labeled 'A', the top-right is 'B', the bottom-left is 'D', and the bottom-right is 'C'. The quadrant labeled 'C' is shaded gray.



RATIO

SHEET TITLE
UPPER FLOOR
REFLECTED CEILING
PLAN - AREA C

SHEET NUMBER

AV-133C

KEYNOTES	
201	LOUDSPEAKER RACEWAY RUN CONCEALED BETWEEN STRUCTURAL STEEL
206	MOUNT JUNCTION BOXES TO STRUCTURE ABOVE. INSTALL CAMERA TO BOTTOM OF POLE WITH CABLING FED THROUGH INSIDE OF POLE. REFER TO ARCHITECTURAL DRAWINGS. RACEWAY TO BE CONCEALED AT BEAMS.

IN128 - JAMES T.
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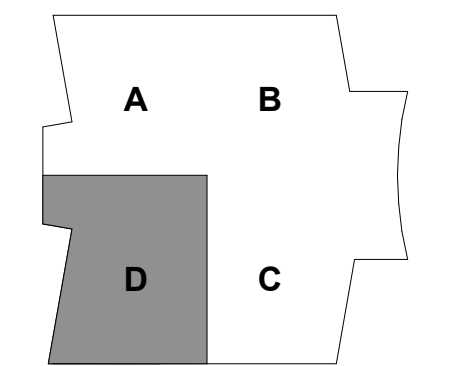
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KEY PLAN

SEAL | DATE 02/03/25

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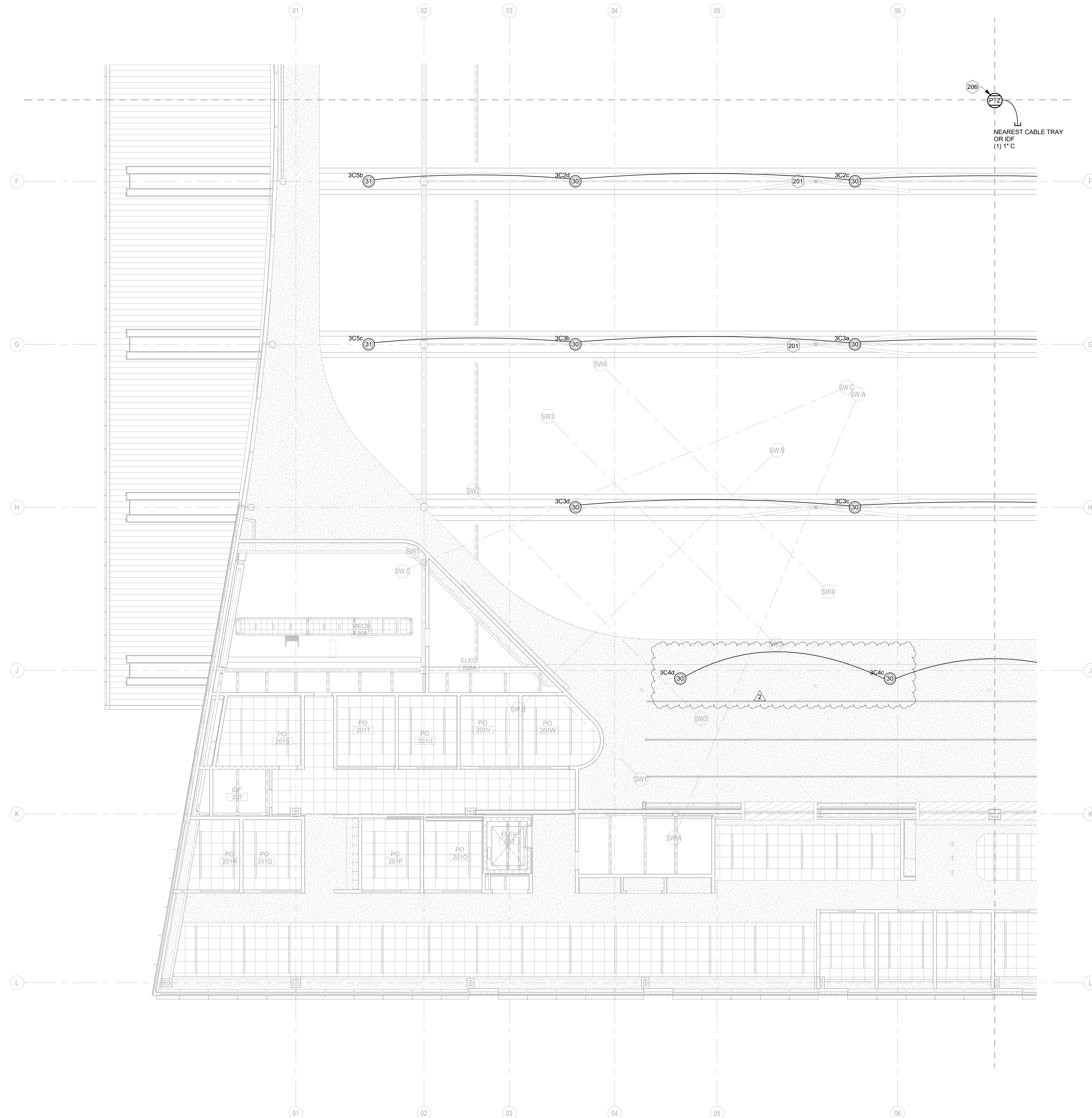
RATIO

PROJECT NO.	23112.000
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SHEET TITLE

UPPER FLOOR
REFLECTED CEILING
PLAN - AREA D

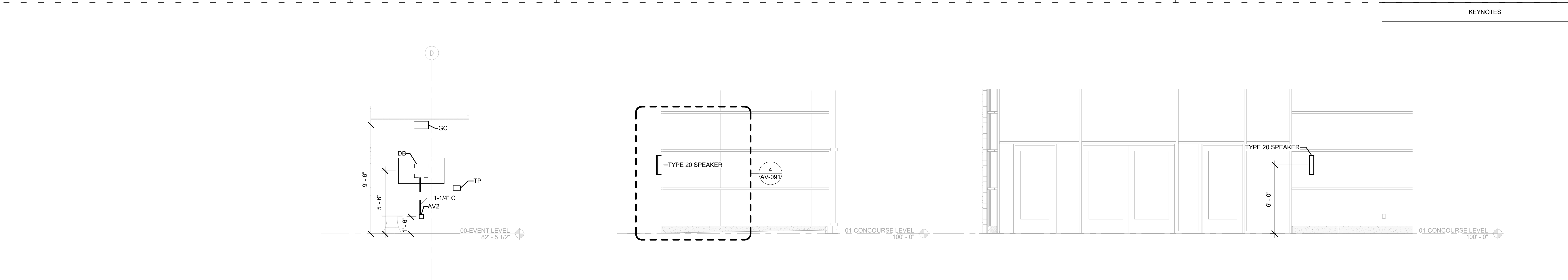
SHEET NUMBER
AV-133D



UPPER CONCOURSE LEVEL REFLECTED CEILING PLAN - AREA D

$$1/8^* = 1'-0^*$$

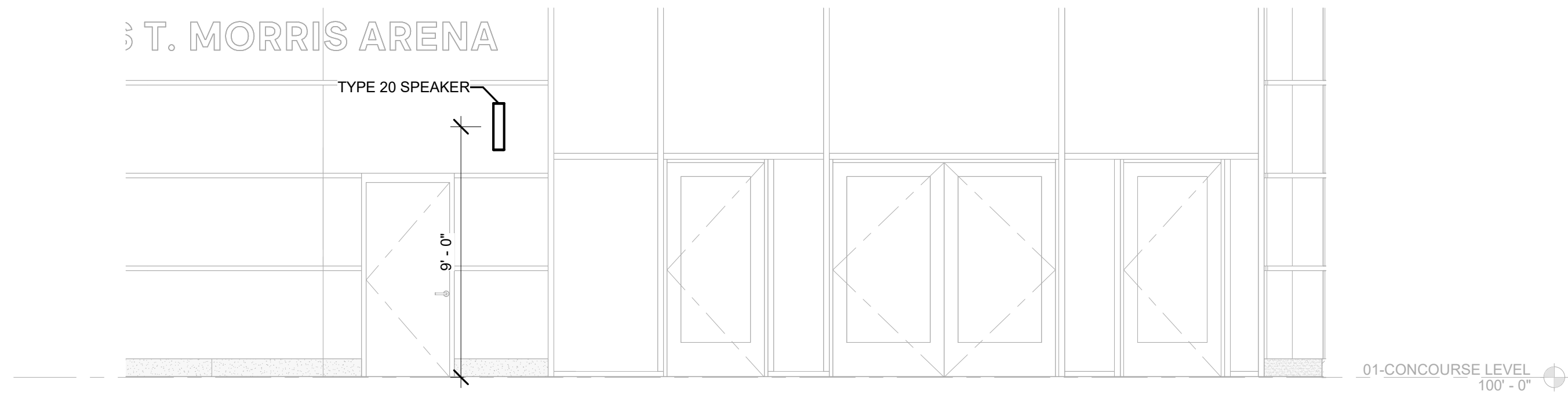
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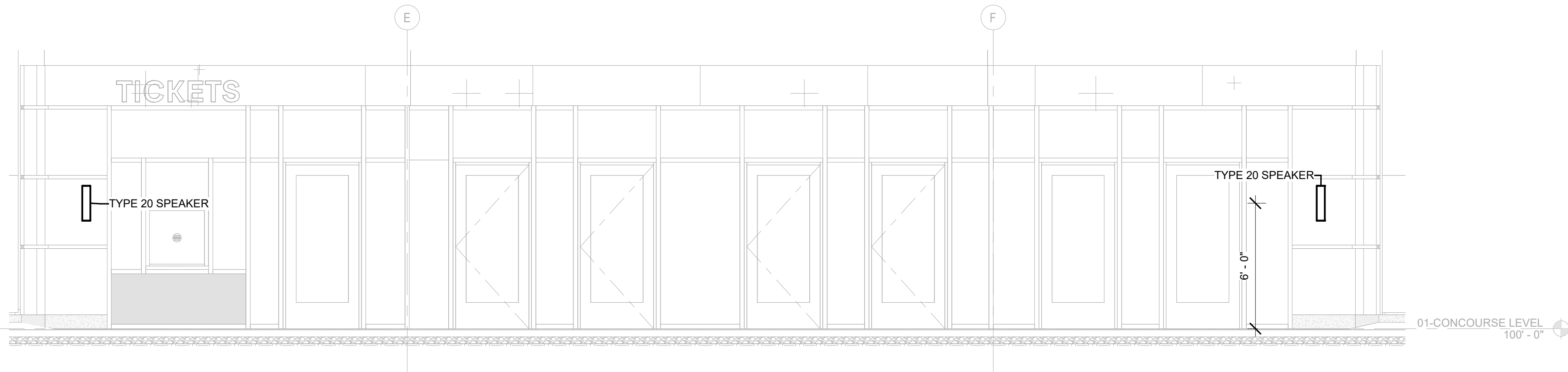
7 ELEVATION - HOME COACH LOCKER
1/4" = 1'-0"

6 VESTIBULE ENTRY LOUDSPEAKER DETAIL
1/4" = 1'-0"

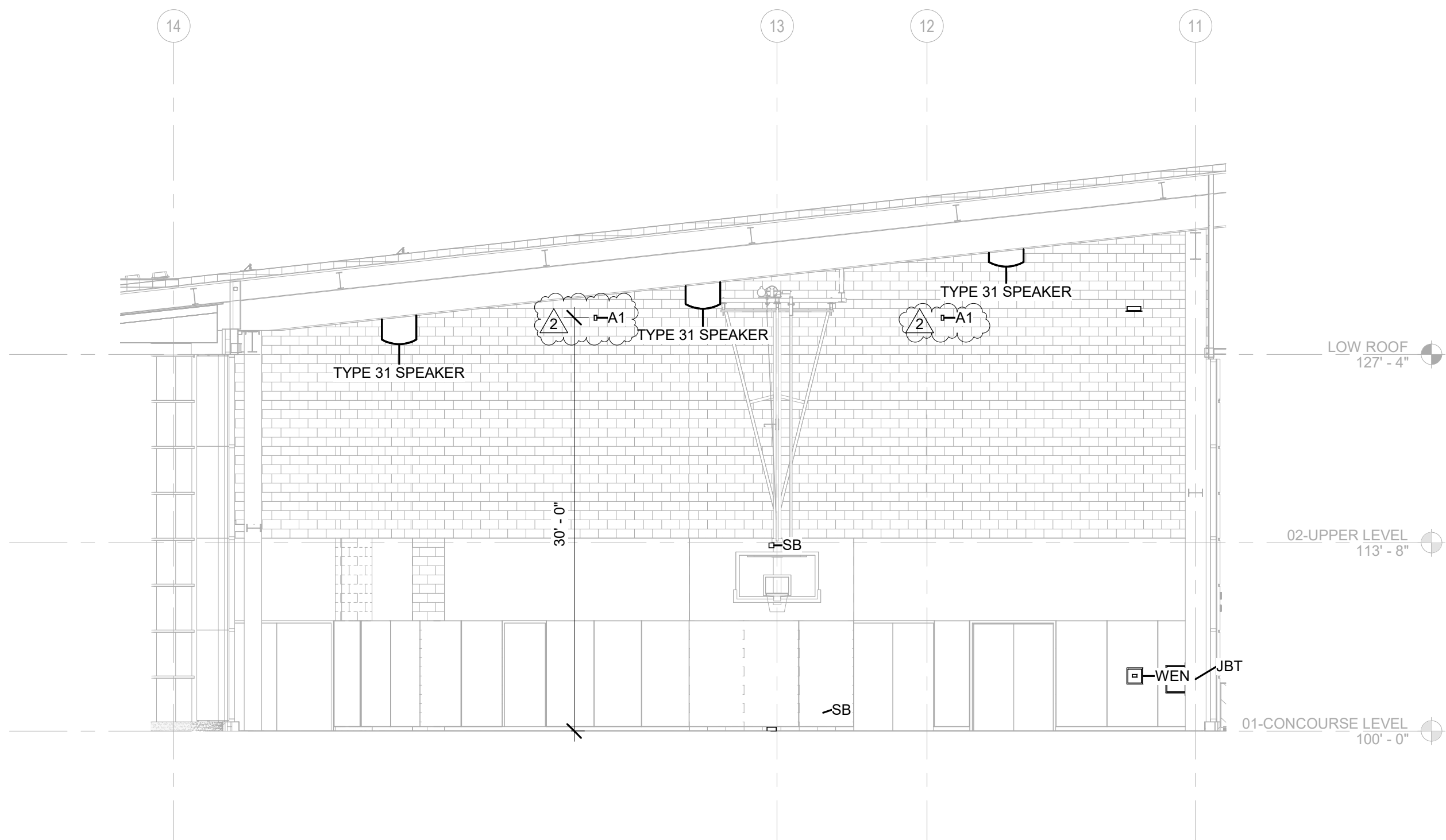
5 ELEVATION - VESTIBULE NORTHEAST
1/4" = 1'-0"



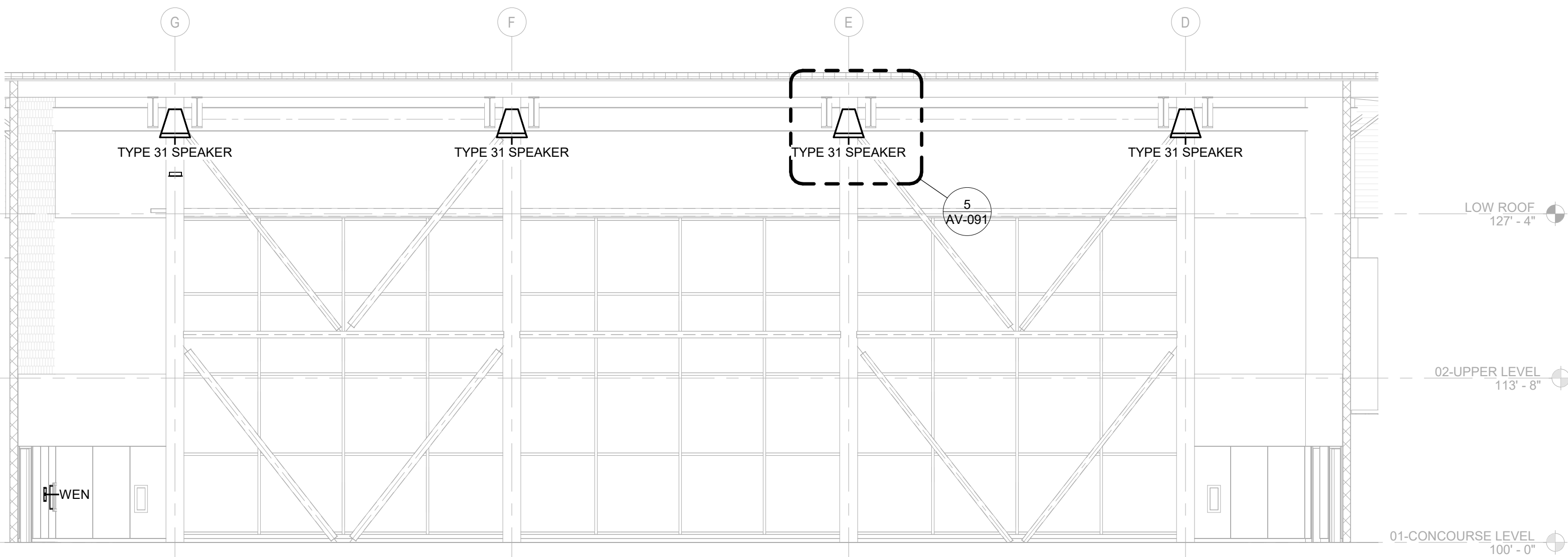
4 ELEVATION - VESTIBULE SOUTHEAST
1/4" = 1'-0"



3 ELEVATION - VESTIBULE WEST
1/4" = 1'-0"



2 ELEVATION - PRACTICE GYM SOUTH
1/8" = 1'-0"



1 ELEVATION - PRACTICE GYM WEST
1/8" = 1'-0"

KEYNOTES

IN128 - JAMES T. MORRIS ARENA

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SHEET ISSUE

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PROJECT NO. 23112.000

SHEET TITLE
AV ELEVATIONS

SHEET NUMBER

AV-201

KEYNOTES	
209	OUTLETS SURFACE MOUNTED ON DESK SIDE PANEL WITH CABLES DRESSED TO RACK
210	JUNCTION BOX - LOCATED AT 12" AFF, COORDINATE WITH RACK SECTION
221	OUTLETS CUT INTO BACKSIDE OF DESK

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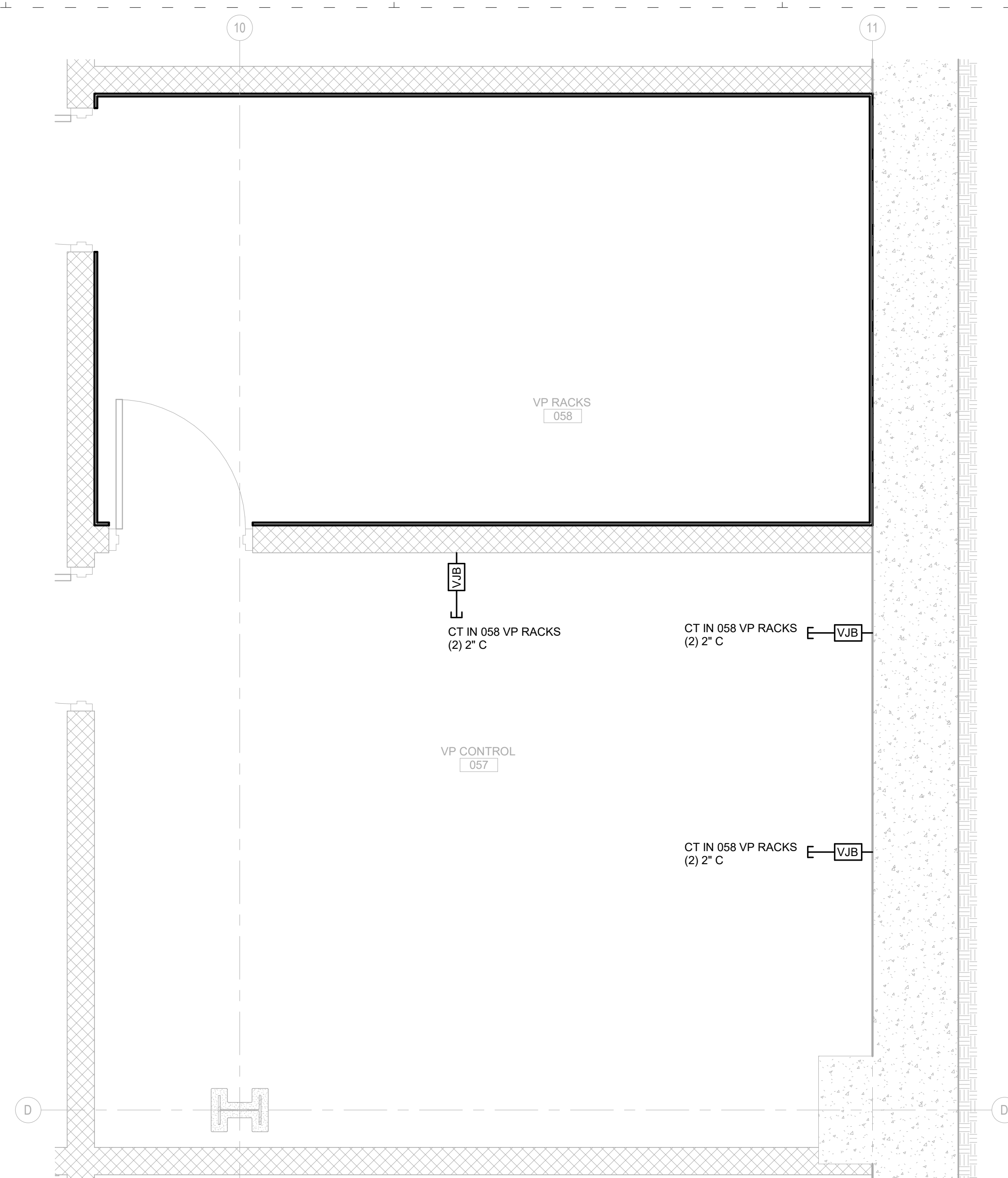
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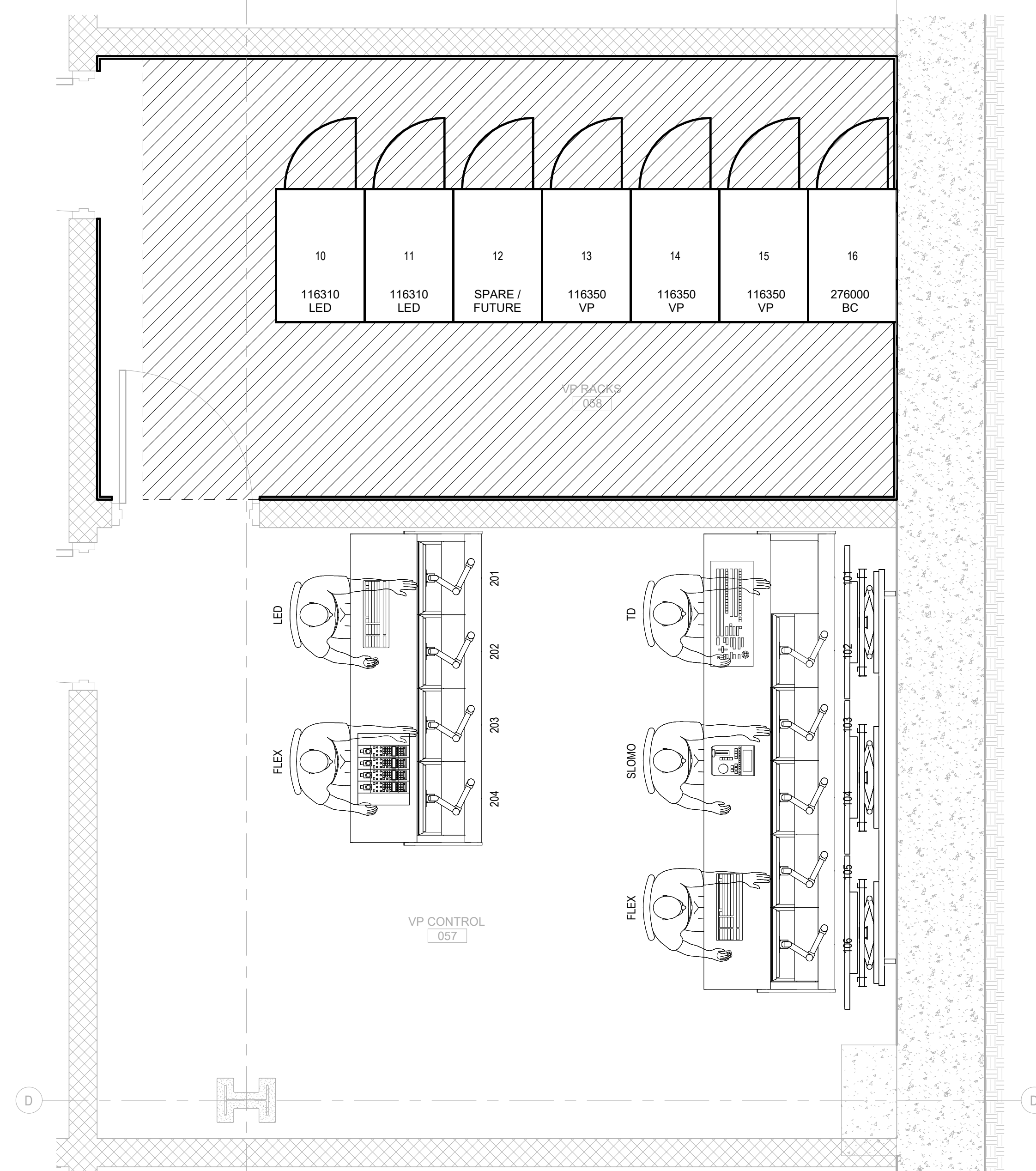
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954-846-9600

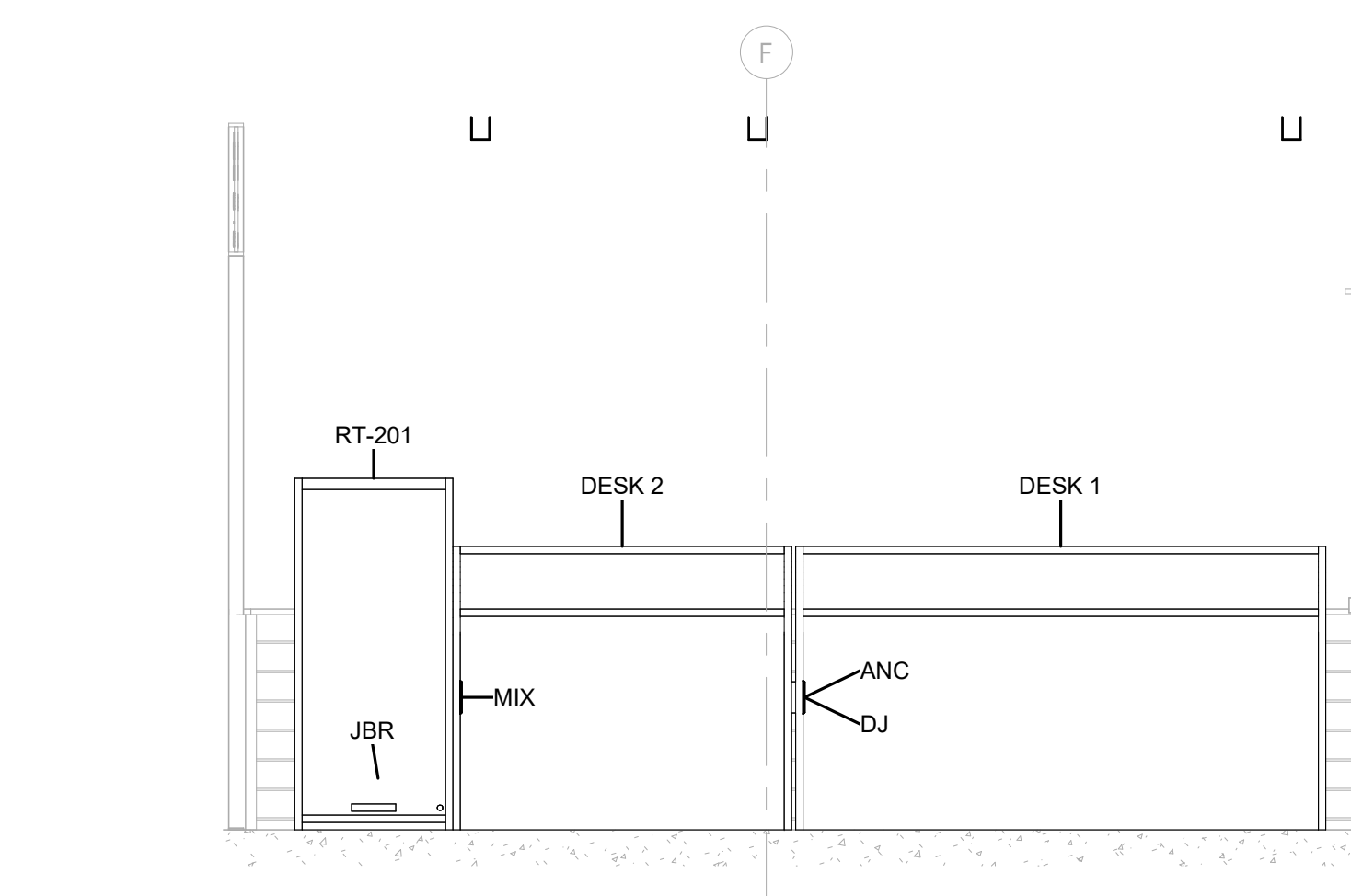
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HARRISONVILLE, MO 64701
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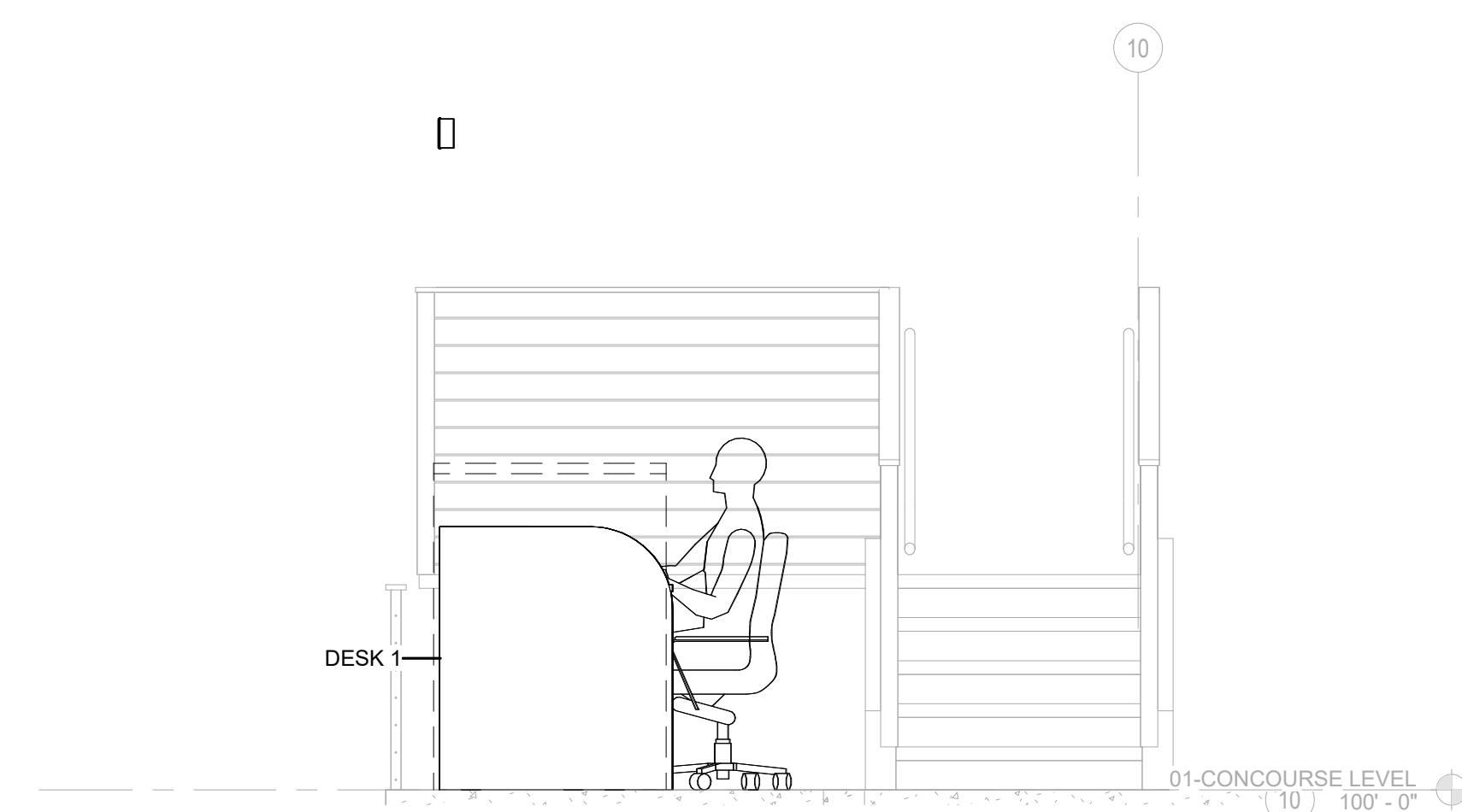
4 ENLARGED INFRASTRUCTURE PLAN - VIDEO PRODUCTION CONTROL AND RACK ROOMS



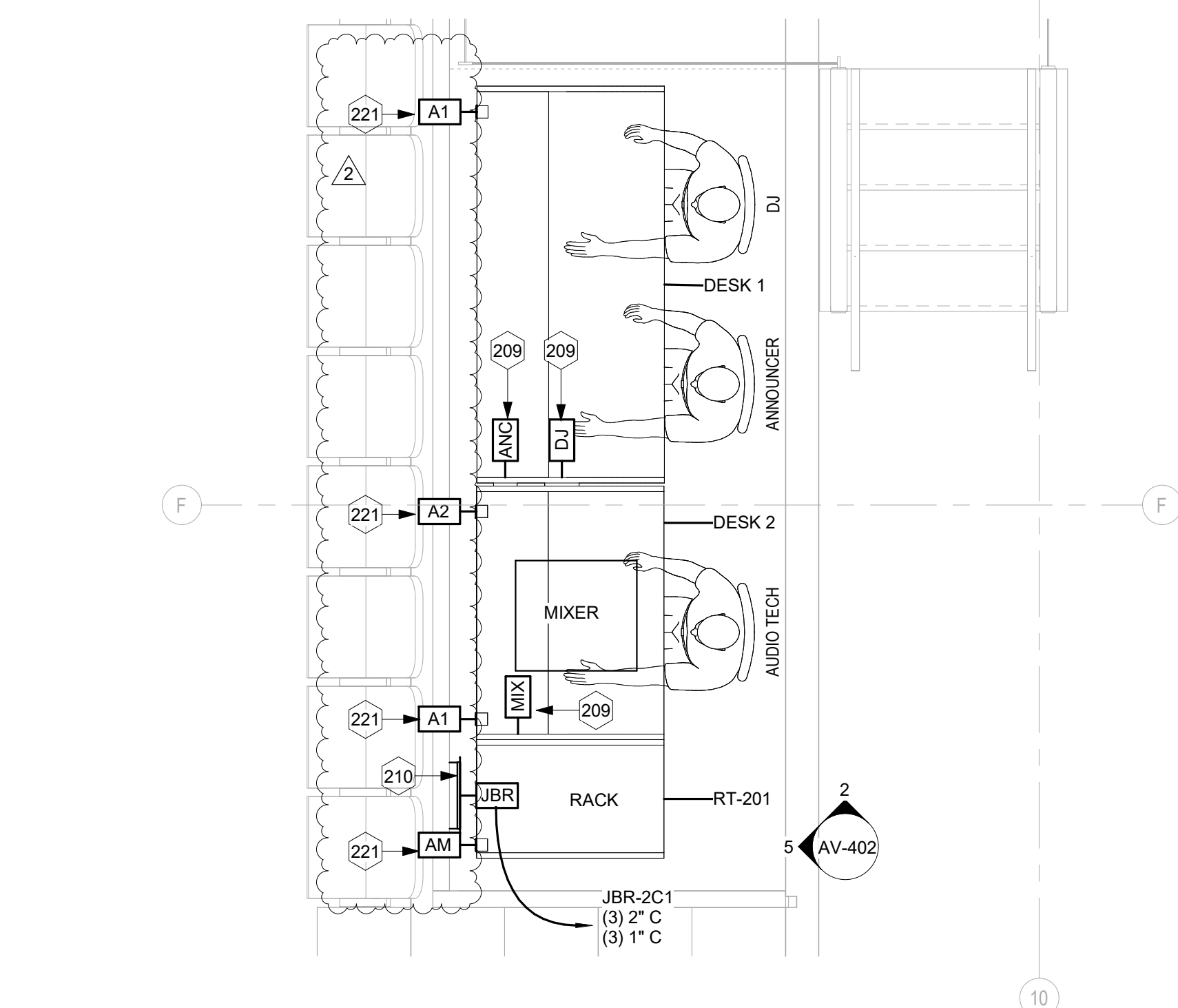
3 ENLARGED EQUIPMENT PLAN - VIDEO PRODUCTION
CONTROL AND RACK ROOMS



5 ELEVATION - CONCOURSE CONTROL POSITION WEST



2 ELEVATION - CONCOURSE CONTROL POSITION



1 ENLARGED PLAN - CONCOURSE CONTROL POSITION NORTH